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GUIDE TO PRODUCT SECTIONS

As publisher of The Radio-Electronic MASTER, we take great pride in the fact that this publication has reflected the progress and growth of the electronic industry for more than 34 years.

The 35 Product Sections listed below broadly categorize related electronic products and services so that you can quickly compare similar items within the sections. However, to locate specific products, always refer to the General Index. NOTE: Catalog pages are arranged alphabetically by manufacturers' names within each section.

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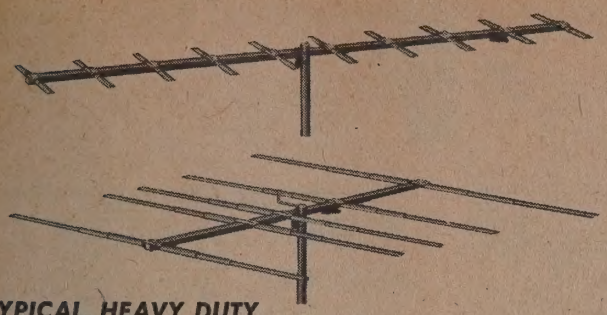

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FINCO wide-spaced single channel 75-ohm matched Yagi antennas are designed and factory tuned for maximum electrical performance.

Of heavy duty construction, incorporating multiple sleeved elements, super rigid box girder brackets and full 1" square thick wall seamless booms, they are factory pre-assembled for ease of installation.

Y5-HD-GMC SERIES (LOW BAND AND FM) — 5 ELEMENTS

Model	List Price	Channel	Length	Max. Width	dB Gain	Degrees Half Pow. Beam Width	Max. V.S.W.R.
Y5-2HD-GMC	$47.50	2(54-60mc)	100"	100"	7.3	58°	1.4:1
Y5-3HD-GMC	45.00	3(60-66mc)	93"	100"	8.0	57°	1.4:1
Y5-4HD-GMC	45.00	4(66-72mc)	100"	92"	8.8	56°	1.4:1
Y5-5HD-GMC	39.95	5(76-82mc)	69¾"	79"	8.0	57°	1.4:1
Y5-6HD-GMC	39.95	6(82-88mc)	69¾"	72"	8.8	56°	1.4:1
Y5-FM-HD-GMC	39.95	FM(88-108mc)	69¾"	68"	6.8 avg.	58°	1.5:1

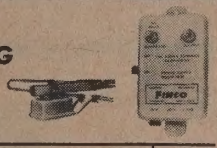
Y5-HD-GMC SERIES (HIGH BAND) — 5 ELEMENTS

Y5-7HD-GMC	31.50	7(174-180mc)	69¾"	35"	8.0	52°	1.4:1
Y5-8HD-GMC	31.50	8(180-186mc)	69¾"	33"	8.4	51°	1.4:1
Y5-9HD-GMC	31.50	9(186-192mc)	69¾"	31"	8.9	50°	1.4:1
Y5-10HD-GMC	31.50	10(192-198mc)	59⅜"	30"	9.0	50°	1.4:1
Y5-11HD-GMC	31.50	11(198-204mc)	62"	30"	9.0	49°	1.4:1
Y5-12HD-GMC	31.50	12(204-210mc)	62"	28"	9.0	50°	1.4:1
Y5-13HD-GMC	31.50	13(210-216mc)	62"	27"	9.0	50°	1.4:1

Y10-HD-GMC SERIES (HIGH BAND) — 10 ELEMENTS

Y10-7HD-GMC	47.50	7(174-180mc)	118¾"	35"	9.9	50°	1.35:1
Y10-8HD-GMC	47.50	8(180-186mc)	118¾"	33"	10.4	49°	1.35:1
Y10-9HD-GMC	47.50	9(186-192mc)	118¾"	32"	10.9	49°	1.35:1
Y10-10HD-GMC	47.50	10(192-198mc)	118¾"	30"	11.0	48°	1.35:1
Y10-11HD-GMC	47.50	11(198-204mc)	118¾"	30"	11.0	47°	1.35.1
Y10-12HD-GMC	47.50	12(204-210mc)	118¾"	28"	11.0	47°	1.35:1
Y10-13HD-GMC	47.50	13(210-216mc)	118¾"	27"	11.0	47°	1.35:1

SOLID STATE MAST MOUNTING PREAMPLIFIERS



Model	Description	List Price
M-10	3 Silicon Transistor Preamplier. 300 ohm input—300 ohm output. VHF-FM 20dB Gain. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Radiation and Lightning Protection. Power Supply Included.	$49.95
M-11	3 Silicon Transistor Preamplifier. 300 ohm input—75 ohm output. VHF-FM 20dB Gain. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Radiation and Lightning Protection. Power Supply Included.	52.50
M-12	3 Silicon Transistor Preamplifier. 75 ohm input—75 ohm output. VHF-FM 20dB Gain. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Radiation and Lightning Protection. Power Supply Included.	57.50
M-13-* *Specify Channel	Single Channel Transistorized Preamplifier. 300 ohm input—75 ohm output. Lo Band Channels 30dB Gain. Hi Band Channels 20db Gain. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Radiation and Lightning Protection. Power Supply Included.	99.95
M-14-* *Specify Channel	Single Channel Transistorized Preamplifier. 75 ohm input—75 ohm output. Lo Band Channels 30dB Gain. Hi Band Channels 20db Gain. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Radiation and Lightning Protection. Power Supply Included.	102.00
M-17	Transistorized Preamplifier. FM 88-108mHz. 300 ohm input—300 ohm output. 20dB Gain. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Radiation and Lightning Protection. Power Supply Included.	77.50
M-18	Transistorized Preamplifier. FM 88-108 mHz. 300 ohm input—75 ohm output. 20dB Gain. Weatherproof Die-Cast Housing. SS Hardware. Radiation and Lightning Protection. Power Supply Included.	99.95
M-19	Same as Model M-18 with 75 ohm input—75 ohm output.	102.00

SOLID STATE BROADBAND AMPLIFIERS

Model	Description	List Price
M-100	3 Silicon Transistor Home Amplifier, 300 ohm input. Single 75 ohm output. VHF-FM-15dB.	$42.50
M-101	3 Silicon Transistor Home Amplifier. 300 ohm input. Four 300 ohm outputs. VHF-FM-6db to each of 4 outlets.	42.50
M-102	3 Silicon Transistor Home Amplifier. 300 ohm input. Four 75 ohm outputs. VHF-FM-6dB to each of 4 outlets.	44.95
M-103	3 Silicon Transistor Home Amplifier. 75 ohm input. Four 75 ohm outputs. VHF-FM-6dB to each of 4 outlets.	44.95

SPECIFICATIONS	
Power Requirements	110 volts—60 Hz
Bandwidth	Channels 2-13 including F.M.
Gain	+6 dB to each of 4 outputs
Input	300 ohm
Output	4 x 75 ohm—'F' Connector
Max. Input	Lo Band 100,000 uV Hi Band 90,000 uV
Max. Output	Lo Band 140,000 uV Hi Band 120,000 uV

Model	Description	List Price
M-104	5 Silicon Transistor Amplifier. 75 or 300 ohm input. 75 ohm output. Lo Band-FM 24dB. Hi Band 26dB. Lo Band and Hi Band Manual Gain Controls. U.L. Approved.	$75.00
M-105	5 Silicon Transistor Amplifier. Same as M-104 but separate 75 ohm Lo Band and Hi Band inputs. 75 ohm output.	81.25
M-106	5 Silicon Transistor Amplifier. 75 or 300 ohm input. 75 ohm output. Lo Band-FM 34dB. Hi Band 36dB. Lo Band and Hi Band Manual Gain Controls. U.L. Approved.	99.95
M-107	5 Silicon Transistor Amplifier. Same as M-106 but separate 75 ohm Lo Band and Hi Band inputs. 75 ohm output.	105.00
M-108	9 Silicon Transistor Amplifier Single 75 ohm input. 75 ohm output. Lo Band-FM 40dB. Hi Band 42dB. Lo Band and Hi Band Manual Gain and Tilt Controls. I U.L. Approved.	165.00
M-109	9 Silicon Transistor Amplifier. Same as M-108 but separate 75 ohm Lo Band and Hi Band inputs. 75 ohm output.	171.50
M-111	2 Volt Composite VHF Broadband Solid State Amplifier. 75 ohm input and 75 ohm output. —20dB Test Point.	125.00

SPECIFICATIONS	Lo-Band	Hi-Band
Gain	50 dB	50 dB
Bandwidth	50-108 MHz	174-216 MHz
Frequency Resp.	± 1 dB	± 1 dB
Rated Output 0.5 % I. M.	5 Channels + 60 dB	4 Channels + 60 dB
Manual Gain Control Range	16 dB	16 dB
Tilt Control Range	6 dB	6 dB
Input	75 ohm	75 ohm
Output	75 ohm	75 ohm

SPECIFICATIONS	Lo-Band	Hi-Band
Monitor Points	—20 dB Input	—20 dB Output
Tubes	(6) 6CY5; (2) 12BY7; (1) 6GK5; (2) 8233	
Power Requiremts.	117 Volt A.C. 60 Hz	
Mounting	Reversible end brackets. 19" centers or surface mounting.	
Dimensions	17" x 17" x 5"	

Model	Description	List Price
M-110	High Output Distribution Amplifier. +60dB 11 Tubes. 1 Volt per Channel on each of 9 Channels. Separate 75 ohm Lo Band and Hi Band inputs. Separate Lo Band and Hi Band Manual Gain and Tilt Controls.	315.00

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ANTENNAS ACCESSORIES **FINCO®** COMPONENTS MATV SYSTEMS

MATV SYSTEMS PRODUCTS

SOLID STATE SINGLE CHANNEL AMPLIFIERS

Model	Description	List Price
M-169-* *Specify Channel or FM	40db Gain Transistorized Single Channel Amplifier. 10dB Gain Control Plus Plug in Gain Control pip. Shipped with 0dB pads available. (See M-180.) Single 75 ohm input and 75 ohm output.	$135.00

SPECIFICATIONS	
Frequency Range/Gain	54-220 MHz, 40 dB ± 2 dB
Channel Bandwidth	6 MHz ± 0.5 dB
Skirt Selectivity	14 MHz at 20 dB points (with combiner network)
Noise Figure	5.75 dB (with combiner network)
Max. Total Output	2 volts (+66 dBm) for 5% sync pulse compression
Max. Total Input	20 millivolts (+26 dBm)
Min. Recom. Input	300 microvolts
Gain Control Range	10 dB minimum
Input/Output Imped.	75 ohms nominal
Input VSWR — Out-Output VSWR	Better than 1.5:1 — Better than 1.3:1
Operating Temp. Range	—30 to +65°C
Power Requirements	117 volts AC, 60 Hz, 10 watts
RF Terminations	Type "F" female connectors
Mechanical	9½" x 4" x 2" (approx.), 2¾ lbs.

Model	Description	List Price
M-177-* *Specify Channel or FM	70dB Gain Strip Amplifier, Tube Type With 20dB AGC. Single 75 ohm input. Dual 75 ohm Bridged outputs. Maximum output plus 54dB MV.	$195.00

SPECIFICATIONS	
Power Requirements	110 volts; 60 C.P.S.
Power Consumption	35 V.A.
Fuse Protection	Primary. 1 type 3AG; 0.5 amp. Slo-Blo
Convience Outlet	4 amp. maximum
Bandwidth	6 Megahertz; Flat within ±0.5 dB between P. and S. carriers
A.G.C.	Input variation 20 dB Output change 1.5 dB (Monitor Jack Provided)
Output Voltage (max.)	A.G.C. controlled; +50 dB
Input Voltage	2,000 uV maximum
Input Impedance	75 ohms
Output Impedance	Dual 75 ohms; bridged
Level Control	Flat resp. at all setings
Tubes	1 6ES8; 4 6CY5; 1 7308 (10,000 hours)
Connectors	"F" type standard; other types available

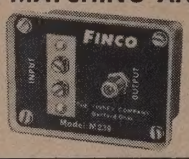
Model	Description	List Price
M-180-* *Specify Attenuation	Plug in Gain Control Pads for Models M-170, M-171 and M-172. Passes AC. Available for 0, 3, 6, 10, 12, 15 or 20dB attenuation.	$3.00

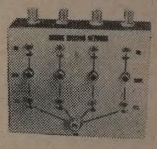
SOLID STATE CONVERTERS

Model	Description	List Price
M-400-* *Specify Channels	Transistorized VHF to VHF Channel Converter (Lo to Hi Channel or Hi to Lo Channel Only). Custom Made to Order. 4 Week Delivery. Non Cancellable.	$172.50
M-401-* *Specify Channels and Frequencies	VHF Transistorized Crystal controlled Converter. (Hi-Lo), (Lo-Hi), (VHF-Sub), (Sub-VHF). Custom Made to Order. 4 Week Delivery. Non Cancellable.	325.00
M-402-* *Specify Channels	Transistorized UHF to VHF Converter. Custom Made to Order. 4 Week Delivery. Non Cancellable.	227.50
M-403-* *Specify Channels	Transistorized UHF to VHF Crystal Controlled Converter. Custom Made to Order. 4 Week Delivery. Non Cancellable.	345.00

M-403 SPECIFICATIONS	
Gain (Typical)	Channel 2—12 dB
	Channel 13—6 dB
Bandpass (6 MHz)	Lo-band—0.5 dB Hi-band—1.0 dB
Minimum Input	200-250 uV
Maximum Input	50,000 uV
Noise Figure	9-15 dB
Oscillator Stability	.005%
Recom. Operating Temperature Range	14°F to 110°F
Input/Output	75 ohm
Connectors	"F" standard—other types to order
Power Requirements	117 volts A-C—60 Hz
Dimensions	9" x 3" x 2½"

ANTENNA MATCHING AND BALANCING DEVICES





Model	Description	List Price
M-230	Broadband Antenna Mounting Transformer. 300 ohm to 75 ohm. Passes AC. Weatherproof Die-Cast Housing. Stainless Steel Hardware.	$10.00
M-231-* *Specify Channel	Single Channel Antenna Mounting Transformer. 300 ohm to 75 ohm. Passes AC. Weatherproof Die-Cast Housing. Stainless Steel Hardware.	10.85
M-235	Hi Band Lo Band Mast Mounting Antenna Coupler. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Two 300 ohm inputs, One 300 ohm output.	10.00
M-236	Hi Band Lo Band Mast Mounting Antenna Coupler. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Two 300 ohm inputs, One 75 ohm output.	14.15
M-237	Hi Band Lo Band Mixer/Splitter. Two 75 ohm inputs. One 75 ohm output.	13.75
M-238	Hi Band Lo Band Mixer/Splitter. 75 ohm. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Two 75 ohm inputs. One 75 ohm output.	16.80
M-239-*-* *Specify Channels SPECIAL ORDER	Antenna Coupler. Any Two Specified Channels, Not Adjacent. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Two 300 ohm inputs. One 75 ohm output.	14.75
M-240-*-* *Specify Channels SPECIAL ORDER	Antenna Coupler. Any Two Specified Channels, Not Adjacent. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Two 75 ohm inputs. One 75 ohm output.	18.25

Model	Description	List Price
M-241-* *Specify Channel or FM	Signal Injector. Single Channel Into All Band Downlead. 300 ohm. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Two 300 ohm inputs. One 300 ohm output. Adjacent Channel Use Not Recommended	$12.75
M-242-* *Specify Channel or FM	Signal Injector. Single Channels Into All Band Downlead. 75 ohm. Weatherproof Die-Cast Housing. Stainless Steel Hardware. Two 75 ohm inputs. One 75 ohm output. Adjacent Channel Use Not Recommended	15.50
M-243	Mixing/Dividing Network. Combines or Divides four Hi Band and three Lo Band Channels.	78.50
M-244	Mixing/Dividing Network. Combines or Divides three Lo Band Channels.	38.60
M-245	Mixing/Dividing Network. Combindes or Divides four Hi Band Channels.	43.25
M-252-*-* *Specify Channels SPECIAL ORDER	Signal Injector. Single UHF Channel Into All Band Downlead. 75 ohm input and 75 ohm output.	20.00
M-246	Two Position Antenna Changeover Switch. 300 ohm.	7.50
M-247	Three Position Antenna Changeover Switch. 300 ohm.	9.00

SPECIAL NOTE!

A COMPLETE SYSTEM LAYOUT AND DESIGN SERVICE BY FINCO SYSTEM ENGINEERS IS AVAILABLE FREE OF CHARGE ON SUBMISSION OF BUILDING PLANS AND SPECIFIC REQUIREMENTS! Form No. 20-441-100 for this purpose available on request.

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ANTENNAS ACCESSORIES **FINCO** COMPONENTS MATV SYSTEMS

MATV SYSTEMS PRODUCTS

BACK MATCHED SPLITTERS — LINE TAPS — MATCHING TRANSFORMERS

Model	Description	List Price
M-203	Two Way 75 ohm Back Matched Splitter. Side "F" Fittings. Surface Mount. Enameled Metal Housing. VHF. One 75 ohm input. Two 75 ohm outputs.	$8.40
M-204	Two Way 75 ohm Back Matched Splitter. Top "F" Fittings. Surface Mount. Enameled Metal Housing. VHF. One 75 ohm input. Two 75 ohm outputs.	8.40
M-205	Three Way 75 ohm Back Matched Splitter. Top "F" Fittings. Surface Mount. Enameled Metal Housing. VHF. One 75 ohm input. Three 75 ohm outputs.	10.50
M-206	Four Way 75 ohm Back Matched Splitter. Top "F" Fittings. Surface Mount. Enameled Metal Housing. VHF. One 75 ohm input. Four 75 ohm outputs.	11.10
M-207	Two Way 75 ohm Back Matched Splitter. Weatherproof Die-Cast Housing. Stainless Steel Hardware. VHF. One 75 ohm input. Two 75 ohm outputs.	10.50
M-208	Three Way 75 ohm Back Matched Splitter. Weatherproof Die-Cast Housing. VHF. Stainless Steel Hardware. One 75 ohm input. Three 75 ohm outputs.	13.60
M-209	Four Way 75 ohm Back Matched Splitter. Weatherproof Die-Cast Housing. Stainless Steel Hardware. VHF. One 75 ohm input. Four 75 ohm outputs.	15.70
M-210	Eight Way 75 ohm Back Matched Splitter. Weatherproof Die-Cast Housing. Stainless Steel Hardware. VHF. One 75 ohm input. Eight 75 ohm outputs.	$29.50
M-211-* *Specify Isolation	Matched Line Tap Unit. One Drop With Isolation. 12, 17 or 23 dB. Surface Mount. Enameled Metal Housing. VHF. 1.0 dB thru loss.	7.80
M-212-* *Specify Isolation	Matched Line Tap Unit. Two Drop With Isolation. 12, 17 or 23 dB. Surface Mount. Enameled Metal Housing. VHF. 1.0 dB thru loss.	11.10
M-213-* *Specify Isolation	Matched Line Tap Unit. Four Drops with Isolation. 12, 17 or 23dB. VHF. Surface Mount. Enameled Metal Housing. 1.5 dB thru loss.	14.75
M-214-* *Specify Isolation	Matched Line Tap Unit. Two Drops With Isolation. 12, 17 or 23dB. VHF. Weatherproof Die-Cast Housing. Stainless Steel Hardware. 1.0 dB thru loss.	14.75
M-215-* *Specify Isolation	Matched Line Tap Unit. Four Drops With Isolation. 12, 17 or 23dB. VHF. Weatherproof Die-Cast Housing. Stainless Steel Hardware. 1.5 dB thru loss.	19.95
M-216-*	Solderless Line Tap for RG-59/U. VHF. Specify R, Y or G.	6.75
M-217	Pressure Tap Clamp on Solderless Line Tap for RG-11/U Body Only. VHF. NOTE: See Model Numbers M-281 for Capacitive, M-282 for Resistive, and M-283 and M-284 for Transformer Type Inserts.	2.25
M-281-* *Specify W, R, Y or G	Pressure Tap Insert. Capacitive for M-217 Pressure Tap. See Catalog for Isolation Values. VHF.	$3.20
M-282-* *Specify Isolation	Pressure Tap Insert. Resistive for M-217 Pressure Tap. 30, 35, 40 and 45dB Isolation. VHF.	3.20
M-283-* *Specify Isolation	Pressure Tap Insert. Transformer for M-217 Pressure Tap. 12, 16, 20 and 24dB Isolation. VHF.	3.75
M-284-* *Specify Isolation	Pressure Tap Insert. Back Matched Transformer for M-217 Pressure Tap. 12, 16, 20 and 24dB Isolation. VHF.	7.50
M-218	FM Line Tap. Taps Off FM Only.	10.25
M-219	VHF Set Matching Transformer. 75-300 ohm Metal Housing for Improved Isolation From Interference. DC Isolation. Excellent Match.	3.00
M-200	Two Set Coupler. 300 ohm. Low Loss Transformer Type. Indoor. Surface Mount. Enameled Metal Housing.	4.25
3001	Two Set Coupler. 300 ohm. Low Loss Transfer Type. Outdoor.	3.95
3003	Four Set Coupler. 300 ohm. Low Loss. Low Loss Transformer Type. Outdoor.	5.75

TRAPS AND ATTENUATORS

Model	Description	List Price
M-522-* *Specify Isolation	Band Reject Filter. 300 ohm. Radiationproof Die-Cast Housing. Stainless Steel Hardware. VHF.	$8.95
M-523	FM Trap. 300 ohm. Radiationproof Die-Cast Housing. Stainless Steel Hardware. VHF.	8.95
M-525-* *Specify Channel	75 ohm Inline Band Reject Filter, Metal Housing. "F" Connectors Supplied. Can Be Adjusted in Field to Favor Video or Audio. VHF.	15.75
M-526-* *Specify Channel & Picture or Sound Carrier	"Ultra" Hi-Q Single Carrier Trap Provides Greater Than 60dB Attenuation. Radiationproof Metal Enclosure. Complete With "F" Connectors Made To Order. 4 Weeks Delivery. VHF.	62.50
M-527-* *Specify Channel & Picture or Sound Carrier	Special Adjacent Channel Trap For Lo Band Channels. Switchable. In or Out. 300 ohm. Special Order. 4 Week Delivery. VHF.	18.50
M-528-* *Specify Channel & Picture or Sound Carrier	Special Adjacent Channel Trap For Hi Band Channels. Switchable. In or Out. 300 ohm. Special Order. 4 Week Delivery. VHF.	22.00
M-529-* *Specify Channel Any Two Carriers	Special Dual Trap For Any Two VHF Carriers. Switchable. In or Out. 300 ohm. Special Order. 4 Week Delivery. VHF.	25.50

WEATHERPROOF HOUSINGS

Model	Description	List Price
M-565	Weatherproof Housing. 15" x 12" x 6" I.D.	Price on Request
M-566	Weatherproof Housing. 30" x 16" x 8" I.D.	Price on Request
M-567	Weatherproof Housing. 30" x 24" x 8" I.D.	Price on Request
M-568	Weatherproof Housing. 20" x 26" x 10" I.D. (for 19" centers)	Price on Request

BACK MATCH OUTLET PLATES — FLUSH MOUNTING — SOLDERLESS

Model	Description	List Price
M-300-* *Specify Isolation	Single 300 ohm Outlet Solderless Plate. Specify 23, 17, or 12dB Isolation. VHF. Boxed Complete With Attractive Ivory Face Plate.	$3.50
M-301-* *Specify TV Isolation	Dual Output 300 ohm Plate. TV and FM Outlet. Specify 23, 17 or 12dB Isolation. The FM Isolation is 10dB More Than the Specified TV Isolation. Boxed Complete With Attractive Ivory Face Plate. VHF.	4.50
M-302	Matching Transformer Plate. 75 to 300 ohm. Boxed Complete With Attractive Ivory Face Plate. VHF.	3.40
M-303-* *Specify Isolation	Single 75 ohm Outlet Plate. 23, 17 or 12dB Isolation. Includes F 59-P. Boxed Complete With Attractive Ivory Face Plate. VHF.	3.95
M-304-* *Specify TV Isolation	Dual Output Plate. 75 ohm Outlet TV. 300 ohm Outlet FM. 23, 17 or 12dB Isolation. The FM Isolation is 10dB More Than the Specified TV Isolation. Boxed Complete With Ivory Face Plate. VHF.	6.00

OUTLET PLATES — SURFACE MOUNTING

M-320-* *Specify Isolation	Outlet Plate, Surface Mounting. Single 300 ohm Outlet. 23, 17 or 12dB Isolation. VHF.	$3.25
M-321-* *Specify Isolation	Outlet Plate, Surface Mounting. Dual 300 ohm Outlets/one TV—one FM. 23, 17 or 12dB Isolation. VHF.	3.50
M-322	Outlet Plate, Surface Mounting. Matching Transformer 75 to 300 ohms. VHF.	2.75
M-323-* *Specify Isolation	Outlet Plate, Surface Mounting. Single 75 ohm Outlet. 23, 17 or 12dB Isolation. Includes "F" Connector. VHF.	3.95
M-324-* *Specify Isolation	Outlet Plate, Surface Mounting. Dual Outlets, 75 ohm for TV and 300 ohm for FM. 23, 17 or 12dB Isolation. Includes "F" Connector. VHF.	6.00

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MATV SYSTEMS PRODUCTS

TEST EQUIPMENT

Model	Description	List Price
M-550	Silicon Transistorized VHF Solid State Field Strength Meter. Battery and AC Operation. 9 Ranges. Fully Temperature Compensated. Individually Calibrated. Ear Phone For Monitoring. Battery Check Level. Voltage Regulated. Separate Video Output.	$465.00

MODEL M-550 SPECIFICATIONS	
Frequency Range	54-250 MHz continuous in one range
Intermed. Freq. (I.F.)	20 MHz
Input Impedance	75 ohms co-axial, 300 ohms balanced
Sensitivity	5uV min. readable signal
Bandwidth	3 dB points—0.4 MHz
VSWR	Better than 1.1 except in 100 uV range, then 1.2
Spurious Responses	at least 60 dB down
Overall Accuracy	0-120° F—1dB
Calibration Reference Standard	Hewlett Packard power meter type 431B and calibrator type 8402A
Ranges, Full Scale	100uV, 300uV, 1mV, 3mV, 10mV, 100mV, 300mV, 1V, 3V
Attenuator	Rotary 6 step—10 dB per step, plus two 20 dB step attenuators
Tuning Compen. Range	6 dB minimum
Video Output	0.75V P-P sync. pos. going
Reading below peak carrier on a TV modulated signal (neg. mod.)	1 dB
Semi-Conductors	6 type PADT, 28, 1 type 2N2712, 1-2N2431, 1-BZY69, 1-BZY63, 1-1N3122, 5-1N539
Power Line Supply	117V 60 Hz
Battery Type	2 Ever-ready type 216 or 2 Burgess type 2U6
Current Consumption	13 m. a.
Battery Life	better than 14 hours continuous running
Min. Battery voltage required to op. unit.	11.5V
Standard Accessories	Earphone, two F59 connectors and rings
Dimensions	Width 10⅝", depth 6", height 8"
Weight	7 lbs. 10 oz.

Model	Description	List Price
M-551	Accurate Lab-Type Matching Transformer. 75 to 300 ohm For Use With Field Strength Meter Model M-550.	$8.82
M-552	Variable Attenuator. (0-82dB in 1dB steps.) Precision Built. Each Section Is Accurately Matched. 50 to 220 mHz.	59.95
M-553	Variable Attenuator. (0-21dB in 3dB steps.) Precision Built. Each Section Is Accurately Matched. 50 to 220 mHz.	12.75
M-554-* *Specify Attenuation	Inline Tabular Attenuator. Fixed Value. 3, 6, 10 and 20dB. Supplied With "F" Connectors. High Accuracy.	6.90
M-549-* *Specify Attenuation	Power Passing Inline Attenuator. Fixed Value. 3, 6, 10 and 20dB. Supplied With "F" Connectors. High Accuracy.	8.85
M-555	Feed Through R.F. Detector. Frequency Range. 5 through 250 mHz. Provision For Marker Insertion. 75 ohm "F" Connectors.	17.00

SOLID STATE 82 CHANNEL ANTENNA MOUNTING PREAMPLIFIERS

Model	Description	List Price
M-22	82 Channel Antenna Mounted Preamplifier. Silicon Transistors. 15dB Gain. 300 ohm input and output. Weather and Radiation Proof Die-Cast Housing.	$59.95
M-23	82 Channel Antenna Mounting Preamplifier. Silicon Transistors. 15dB Gain. 300 ohm input, 75 ohm output. Weather and Radiation Proof Die-Cast Housing.	62.50

SPECIFICATIONS		
	M-22	M-23
Bandwidth	54-216 MHz 470-890 MHz	54-216 MHz 470-890 MHz
Gain	15 dB	15 dB
Noise Figure	7.5 dB VHF 8.0 dB UHF	7.5 dB VHF 8.0 dB UHF
Input	300 ohm	300 ohm
Output	300 ohm	75 ohm

SOLID STATE 82 CHANNEL AMPLIFIERS — LINE EXTENDERS

Model	Description	List Price
M-116	82 Channel Distribution Amplifier. 25dB Gain. Silicon Transistors. 75 ohm input, 75 ohm output.	$106.00
M-115	82 Channel Solid State Distribution Amplifier. 12dB Gain. Silicon Transistors. 75 ohm input, 75 ohm output.	$49.95
M-118	82 Channel Solid State Distribution Amplifier. 6dB Gain VHF and 5dB Gain UHF To Each of 4 Outputs. Silicon Transistors. 75 ohm input. Four 75 ohm outputs.	49.95
M-26	82 Channel Solid State Line Powered Line Extender-Amplifier. 75 ohm input and Two 75 ohm outputs Each Having 9dB Gain Relative to Input. Power Supplied Through Line From Amplifier Model M-116.	43.75

M-116, M-26 SPECIFICATIONS	
Bandwidth	54-216 MHz; 470-890 MHz
Gain	25 dB ± 3 dB
Max. Input VHF (3 Low Band-4 High Band)	+27 DBMV (22,000 uV)
Max. Output VHF	+48 DBMV (250,000 uV)
Max. Input UHF (4 VHF Channels)	+28 DBMV (25,000 uV)
Max. Output	+49 DBMV (270,000 uV)
Noise Figure	Less than 5 dB VHF Less than 9 dB UHF
Inputs	Separate VHF and UHF
Output	Composite UHF and VHF
Connectors	"F" type coaxial
Power Requirements	117V AC; 60 Hz; 2.5 watts

Finco also offers a complete line of tools, connectors, and coax cable . . . making your Finco Distributor your one-stop source for all your MATV requirements.

SOLID STATE SINGLE CHANNEL AMPLIFIERS

Model	Description	List Price
M-16-* *Specify Channel	UHF Single Channel Antenna Mounted Preamplifier. Silicon Transistors. 15dB Gain 300 ohm input, 75 ohm output. Weather and Radiation Proof Die-Cast Housing. Stainless Steel Hardware. Made to Order. 4 Week Delivery. Non Cancellable.	$79.00

82 CHANNEL TRANSFORMERS — COUPLERS — SPLITTERS

Model	Description	List Price
M-248	82 Channel Antenna Mounting Matching Transformer. 300 ohm to 75 ohm. Weather and Radiation Proof Die-Cast Housing. Stainless Steel Hardware.	$9.95
7512-A	82 Channel Antenna Mounting Matching Transformer. 300 to 75 ohm Plastic Housing. Mounting Hardware Included.	4.95
M-250	UHF-VHF Antenna Coupler. Couples 300 ohm UHF and 300 ohm VHF Antennas to 75 ohm Downlead. Weather and Radiation Proof Die-Cast Housing.	11.85
M-251	UHF-VHF Antenna Coupler. Couples 75 ohm UHF and 75 ohm VHF Antennas to 75 ohm Downlead. Weather and Radiation Proof Die-Cast Housing.	12.95
3014	UHF-VHF Antenna Coupler. Couples 300 ohm UHF and 300 ohm VHF Antennas to 300 ohm Downlead. Plastic Housing. Hardware Included	4.25
M-260	82 Channel Two Way Splitter. Single 75 ohm input, Two 75 ohm outputs.	11.25
M-261	82 Channel Four Way Splitter, Single 75 ohm Input. Four 75 ohm Outputs.	16.90
3020	Behind-The-Set UHF-VHF Splitter.	2.95
7520	Behind-The-Set 75 ohm to 300 ohm Matching Transformer With a UHF-VHF Splitter.	4.95

82 CHANNEL DROP TAPS

Model	Description	List Price
M-262-* *Specify Isolation	82 Channel Single Line Drop Tap 75 ohm. 10, 15, 20dB Isolation. Surface Mount. Metal Housing. 1.0 dB thru loss.	$10.20
M-263-* *Specify Isolation	82 Channel Two Line Drop Tap 75 ohm. 10, 15 20dB Isolation. Surface Mount. Metal Housing. 1.0 dB thru loss.	12.60
M-264-* *Specify Isolation	82 Channel Four Line Drop Tap 75 ohm. 10, 15, 20dB Isolation. Surface Mount. Metal Housing. 1.5 dB thru loss.	17.70

Trade Discount Applies To List Prices Only

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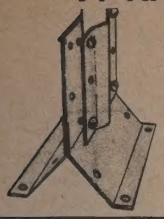
GC-TELCO TV HARDWARE - MOUNTS

TV ANTENNA ROOF MOUNTS



TELCO ALL-PURPOSE ANTENNA MOUNT

Mast will mount vertically on roof or horizontally on house wall

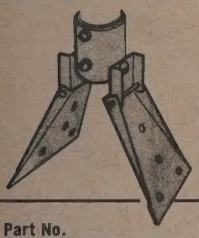
For angle of flat roofs and corners. Will support masts up to 1¾" diameter. Made of extra heavy gauge steel, zinc plated, clear chromate dipped — doubly protected against rust. Salt spray and corrosion resistant.

Part No.	Description	Wt. per Std. Ctn.	Std. Ctn.	Net
8575	All purpose antenna mount	30 lbs.	12	2.83

HEAVY DUTY ALL-POSITION MAST BRACKET

Mast holder swivels 360 degrees to mount bracket in any posiiton. Ideal for ground-up mast installations. For use with push-up (telescoping) masts. Made of heavy duty steel stock, accommodates large masts up to 3" O.D.

Part No.	Description	Std. Pkg.	Net
9028	Heavy duty all-position bracket	6	2.40

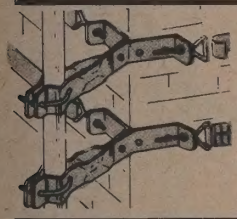


TELCO HINGED TYPE RIDGE MOUNT

Adjustable to peaked or flat roofs and side walls. Made of extra heavy gauge steel with heavy pipe supports. Zinc plated and clear chromate dipped for double rust protection.

Part No.	Description	Wt. per Std. Ctn.	Std. Ctn.	Net
9021	Fits masts up to 1½"	19 lbs.	12	2.00
9022	Fits masts up to 2"	22 lbs.	12	3.83
9019	Fits masts up to 2¼"	28 lbs.	12	3.29

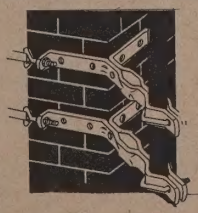
CHIMNEY MOUNTS



TELCO "SNAP-IN" CHIMNEY MOUNT

Fits masts up to 1¾" diameter. Extra heavy gauge steel construction. Doubly protected against rust. Zinc plated and clear chromate dipped for long life. Chimney clearance of 4". Simply "Snap" mast in place and tighten bolts. Easy to handle. Complete with straps and necessary hardware.

Part No.	Description	Wt. per Std. Ctn.	Std. Ctn.	Net
	GALVANIZED STEEL STRAPPING—Heavy Duty Strap Clamp			
8612	Mount with Two ¾" x 10' Straps	43 lbs.	12	3.00
8610	Mount with Two ¾" x 12' Straps	43 lbs.	12	3.09
8610-L	Mount with Two ¾" x 18' Straps	49 lbs.	12	3.70
	GALVANIZED STEEL STRAPPING—Speed-E Strap Clamp			
8610-F	Mount with Two ¾" x 12' Straps	43 lbs.	12	3.10
8610-LF	Mount with Two ¾" x 18' Straps	49 lbs.	12	3.70
	STAINLESS STEEL STRAPPING—Heavy Duty Strap Clamp			
8614	Mount with Two ¾" x 10' Straps	43 lbs.	12	3.66
8930	Mount with Two ¾" x 12' Straps	43 lbs.	12	4.46
8930-L	Mount with Two ¾" x 18' Straps	44 lbs.	12	5.54
	STAINLESS STEEL STRAPPING—Speed-E Strap Clamp			
8930-F	Mount with Two ¾" x 12' Straps	43 lbs.	12	4.46
8930-LF	Mount with Two ¾" x 18' Straps	44 lbs.	12	5.54

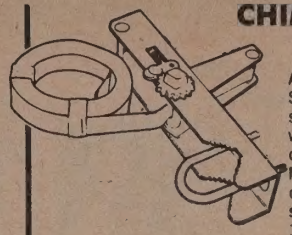


HEAVY DUTY GOLD FINISHED SNAP-IN CHIMNEY MOUNTS

Zinc di-chromate gold finish for long life and beauty. Steel strapping and mounting hardware included.

Part No.	Description	Std. Pkg.	Net
	GALVANIZED STEEL STRAPPING		
8646	Mount with two ¾" x 12' straps	12	3.09
8646-L	Mount with two ¾" x 18' straps	12	3.70
	STAINLESS STEEL STRAPPING		
8946	Mount with two ¾" x 12' straps	12	4.46
8946-L	Mount with two ¾" x 18' straps	12	5.54

CHIMNEY MOUNTS



RATCHET-TYPE CHIMNEY MOUNT

A new concept in antenna mounts. Easily installed Supplied with 2 brackets per set. A quality constructed chimney mount designed to withstand high winds and adverse weather conditions. Requires only a wrench to fasten to chimney. The Ratchet Mount is chromate dipped—for long life. Accepts masts up to 1½" in diameter. Available in stainless steel or galvanized strapping in 12 or 18 foot lengths.

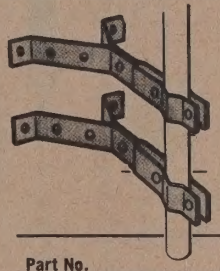
Part No.	Description	Wt. per Std. Ctn.	Std. Ctn.	Net
	GALVANIZED STRAPPING ¾"			
8006	Mount with Two 12' Lengths of Strapping	42 lbs.	12	4.33
8006-L	Mount with Two 18' Lengths of Strapping	48 lbs.	12	4.94
	STAINLESS STEEL STRAPPING ¾"			
8008	Mount with Two 12' Lengths of Strapping	42 lbs.	12	5.18
8008-L	Mount with Two 18' Lengths of Strapping	48 lbs.	12	6.17

HEAVY DUTY SINGLE STRAP CHIMNEY MOUNT WITH RATCHET

One piece rugged construction, single triple-duty ratchet strap. Faster, easier, safer and neater than regular two bracket type mounts. All materials are extra heavy duty. Includes aluminum chimney corner guards.

Part No.	Description	Std. Pkg.	Net
8010	Dual mount with ratchet and 12' of stainless steel strapping	6	7.21
8010-L	Dual mount with ratchet and 18' of stainless steel strapping	6	7.65

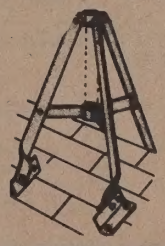
TV ANTENNA WALL MOUNTS



TELCO "SNAP-IN" WALL MOUNT

Simply snap mast into brackets, tighten, and the job is done. brackets made of heavy gauge steel, zinc plated and clear chromate dipped for long life. Individually boxed, all hardware included. Accepts masts up to 1¾" diameters.

Part No.	Description	Wt. per Std. Ctn.	Std. Ctn.	Net
8302	Wall Mounts, 2¼" Clearance	35 lbs.	24	1.36
8304	Wall Mount, 4" Clearance	21 lbs.	12	1.76
8306	6" Snap-In Wall Mount	28 lbs.	12	2.22



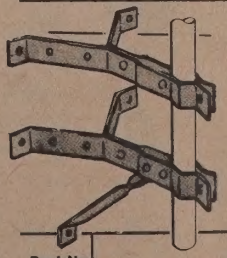
TRI-POD TOWER ANTENNA BASES

1¼" diameter galvanized steel legs offer superior strength and quality. Mount accepts masts up to 1¾" in diameter to support large antenna configurations.

EASY INSTALLATION:

1. Mount tower on roof.
2. Remove nut and bolt from leg.
3. Tilt tower to install antenna.
4. After installing antenna, raise tower, replace nut and bolt.

Part No.	Description	Wt. per Std. Ctn.	Std. Ctn.	Net
9143	5 ft. Tower	13 lbs.	1	9.34
9144	3 ft. Tower	11 lbs.	1	6.00



TELCO MASTER DELUXE "SNAP-IN" WALL MOUNT

Brackets are spaced 16" wide for fastening to 16" 2 x 4 centers. Eliminates "side sway" of antennas. Made of extra heavy gauge steel zinc plated and clear chromate dipped for duble weather protection. Will accept masts up to 1¾" diameter. Individually boxed, all hardware included.

Part No.	Description	Wt. per Std. Ctn.	Std. Ctn.	Net
8308	8" Snap-In Wall Mount	40 lbs.	12	3.09
8312	Wall Mount, 12" Clearance	57 lbs.	12	3.78
8318	Wall Mount, 18" Clearance	72 lbs.	12	5.03
8324	Wall Mount, 24" Clearance	62 lbs.	6	6.92

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

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Net

PREMAX ANTENNAS--MOUNTINGS--ACCESSORIES

SERIES C CENTER-LOADED MARINE ANTENNAS

A Center-Loaded Collapsible type Antenna, consisting of two telescoping, adjustable base sections on which the loading coil is mounted, with a tapered top whip section, giving a total extended length of about 19 feet. This Antenna collapses to a single unit with the whip section telescoping through the coil into the lower section, making a collapsed length of 7 feet. The sections are of seamless aluminum, polished or gold anodized, or stainless steel and the coil is wound on low-loss bakelite tubing and treated after assembly with weatherproof coating.

No.	Type	Base O.D.	Base I.D.	Wt. Lbs.	Net Selling Price
CLA-619	Aluminum	1.000"	.834"	5	$36.00
CLS-1119	Stainless	1.000"	.900"	7	44.00
CLGA-619	Gold Anodized Aluminum	1.000"	.834"	5	39.00

SERIES B CENTER-LOADED ANTENNAS FOR MOBILE & MARINE USE

Center-Loaded Whip-Type Antennas consist of a standard base section or spring-type on which is mounted a special Premax coil. The top is a taper-ground stainless steel whip 6 ft. in length, giving a total overall height of 9 ft. Various coils are available or the standard 75-meter coil can be adapted by shorting out turns on the coil. Antennas can be used with any of the Standard Premax Mountings shown below, or will fit any 3/8" x 24-thread mounting.

NO.	FREQ.	Net Selling PRICE
BXS-14	14,000 kc. (20M.)	$15.00
BXS-23	2374 kc. (CAP)	15.60
BXS-31	3105 kc. (APT)	15.60
BXS-38	3800 kc. (75M)	15.60
BXS-43	4325 kc. (CAP)	15.60
BXS-46	4585 kc. (CAP)	15.60
BXM-25	2000 to 3000 kc. (Marine)	15.60
	(Same as BXS but with Spring)	
BSS-14	14,000 kc. (20M.)	25.20
BSS-23	2374 kc. (CAP)	27.00
BSS-31	3105 kc. (APT)	27.00
BSS-38	3800 kc. (75M.)	27.00
BSS-43	4325 kc. (CAP)	27.00
BSS-46	4585 kc. (CAP)	27.00
BSM-25	2000 to 3000 kc. (Marine)	27.00

SERIES B COILS

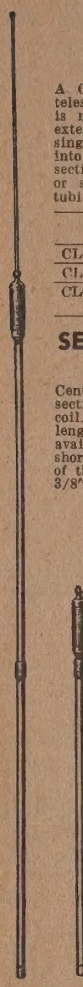
Premax also supplies the Series "B" coils in the standard frequencies above. Special frequencies available on request.

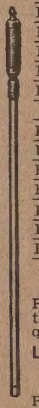
List Price .....$9.00 ea.

MAST EXTENSIONS

Polished Stainless Mast Extensions—threaded 3/8"-24 on both ends and supplied with stainless nuts and lockwashers. Available in 12", 18", 24", 30" and 36" lengths.

Prices range from $3.90 to $9.00 each


SERIES C


BX Mast Extension

Style B Coil

Type BXS

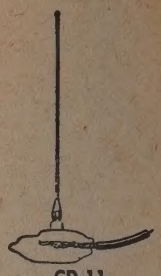
Type BSS

MOBILE VHF WHIPS

Style CD-11 Series—Permanent type. Porcelain insulator mounts thru 1/2" hole in rooftop.

Style CD-21 Series—Emergency type. Attaches by heavy duty suction cup.

NO.	FREQ.	Net Selling PRICE
CD-112	108 to 120 mc.	$3.60
CD-114	144 mc.	3.60
CD-115	152 to 162 mc.	3.60
CD-212	108 to 120 mc.	2.52
CD-214	144 mc.	2.52
CD-215	152 to 162 mc.	2.52

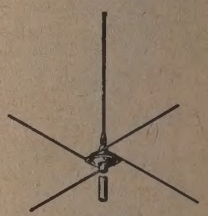

CD-11

CD-21

GROUND PLANE ANTENNAS FOR POINT-TO-POINT USE

For point-to-point installations, Premax has two VHF Antennas: The Style GP-3 which has elements of heavily-plated spring steel with skirt wires that can be bent down to any angle to match coax cable. Mounting is within a water-proof housing that fits standard 1/2" pipe. Cable carries down thru pipe.

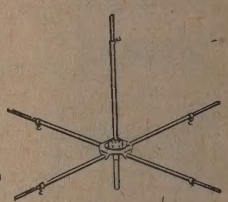
NO.	FREQ.	USE	PRICE
GP-312	120 mc.	For aircraft and CAP.	$7.20
GP-314	140 mc.	For 2 meter and CD.	7.20
GP-315	150 mc.	For police and taxi	7.20


GP-3

PREMAX ADJUSTABLE GROUND PLANE ANTENNAS 20-60 mc

Another low-cost type Ground Plane Antenna is adjustable from 20 to 40 mc. or 40 to 60 mc. Standing wave ratio matching to 52-ohm line is 1.07 to 1.13 and to 72-ohm line is 1.27 to 1.23 depending on type of transformer cable. All-aluminum construction employing adjustable tubular elements.

GP-430	Adjustable 20-40 mc.	$45.00
GP-450	Adjustable 40-60 mc.	36.00


GP-400 Series

MOBILE MOUNTINGS FOR USE WITH WHIPS WITH 3/8"—24 MALE THREAD

Type CA

CA BUMPER MOUNTING

"Chain Style — clamps on any bumper with 1" clearance; no drilling; theft-proof.

Price $9.00

Type SA-2

SA-2 SPRING ADAPTOR

Stainless steel Spring Adaptor—can be attached to types R-2, R-3, L-1, CA and NA-1 to provide greater flexibility. Height 4 1/4", diameter 2 3/8".

Price $9.60

Type R-2

R-2 UNIVERSAL COAX TYPE MOUNTING

Solid Polished Aluminum splitball can be adjusted to any angle. Has shielded coax connection and stainless hardware

Price $11.40

Type R-3

R-3 UNIVERSAL MOUNTING

Solid Polished Aluminum Swivel Ball. Heavy stainless steel backup plate with grounding screws. Stainless steel hardware.

Price $14.40

Type NA-1

TYPE NA-1

Bumper mounting with ceramic cone insulator and steel bracket.

Price $8.40

Type RS-2

TYPE RS-2 COMBINATION

Similar to R-2 except has spring as shown under SA-2.

Price $24.00

Type F

TYPE F

30° adjustable mounting for fender, cowl or gravel pan. Chromeplated brass with phenolic insulation.

Price $13.80

Type V

TYPE V

Thru-deck mounting designed for Style BX and BS Center-Loaded Marine Antennas. White porcelain cones with a maximum opening for 1-1/2" deck. Stud threaded 7/16"-24.

Price $8.40

MINI-MOBILE ANTENNAS

Model CBMSF-27 25-50 MHz
New from Premax — Mini CB Spring and Chrome-plated Adjustable 30° Mounting for roof, fender or trunk. Overall height only 27". Stainless steel Whip, chrome-plated brass base with heavy phenolic insulator. Complete with 16' RG-58/U 50-OHM coaxial cable with connector and adapter.
Price $22.20

Model CBMS-25
Same as CBMSF-27 but without Adjustable Mount.
Price $13.50

Model CBF-24
Same as CBMSF-27 but without Spring.
Price $19.50

CITIZENS BAND 27 MHz WHIP MOBILE ANTENNAS

Model CB-4 includes type RS-2 Mobile Mounting and Style VS-9108 Whip Antenna.
Price $32.10

Model CB-5
Same as above but with type S-2 Mobile Mounting and Style TS-8108 Whip Antenna.
Price $22.20

Model CB-3
Same as CB-4 but without spring.
Price $18.60

CB-4

CBMSF-27

ALSO AVAILABLE: CITIZEN BAND BUMPER MOUNTINGS WITH FULLY ADJUSTABLE CHAIN TO FIT ANY BUMPER CONTOUR. AVAILABLE WITH OR WITHOUT SPRING.

PREMAX PRODUCTS DIV., CHISHOLM-RYDER CO., INC.

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PREMAX ANTENNAS--MOUNTINGS--ACCESSORIES

VERTICAL TELESCOPING ANTENNAS
PREMAX STAINLESS STEEL ANTENNAS

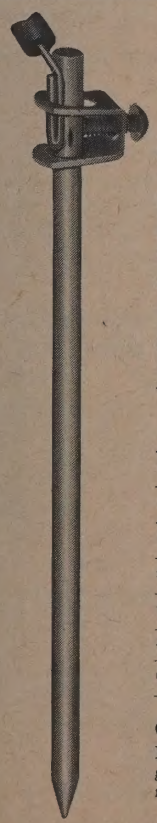
Premax stainless steel antennas, fully telescoping and adjustable, have a locking device that holds the sections firmly at any desired point insuring a perfect electrical contact. Made of a high grade polished stainless steel tubing, hard-drawn to an extremely high tensile and yield strength, they are well suited for the most severe strains from high seas or winds.

PREMAX ALUMINUM ANTENNAS

Premax aluminum antennas are lightweight, corrosion resistant and have adequate strength to meet practically all needs for marine, commercial and mobile installations that demand convenience in erecting and dependable performance. They are constructed of highly polished, specially tempered aluminum tubing engineered to withstand wind velocities up to 60 miles per hour. Also available in gold anodized finish.

SPECIFICATIONS & DESCRIPTIONS OF TELESCOPING VERTICALS

NO.	DESCRIPTION	EXTD.	COLL.	BASE O.D.	BASE I.D.	WGT.	PRICE
SS-1118	3-Sec. Stainless	18'4"	6'3"	.750"	.680"	6	$ 54.00
SS-1124	4-Sec. Stainless	24'3"	6'3"	1.000"	.900"	9	81.00
SS-1130	5-Sec. Stainless	30'0"	6'4"	1.250"	1.120"	13	111.00
SS-1135	6-Sec. Stainless	35'7"	6'4"	1.500"	1.370"	19	153.00
AL-312	2-Sec. Aluminum	12'4"	6'4"	.500"	.334"	1½	9.00
AL-518	3-Sec. Aluminum	18'5"	6'4"	.750"	.584"	3	18.00
AL-324	4-Sec. Aluminum	24'4"	6'4"	1.000"	.834"	5	27.00
AL-530	5-Sec. Aluminum	30'0"	6'5"	1.250"	1.084"	7	36.00
AL-535	6-Sec. Aluminum	35'8"	6'5"	1.500"	1.310"	12	51.00
Gold anodized aluminum finish ..... $12.00 to $58.50							



GET POSITIVE PROTECTION FOR YOUR EQUIPMENT WITH A PREMAX GROUND ROD

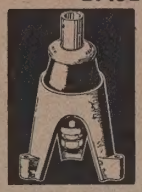
High quality, low cost Premax Ground Rods make it impractical to fuss with makeshift grounding methods. Made of smooth drawn steel with newly designed pencil-point tip for easier driving. Heavy copper plate prevents rust and assures sensitive electrical contact. Available in 4 ft. to 8 ft. lengths; ⅜", ½" and ⅝" diameters. Styles J and G have simple clamp with set-screw for attaching ground lead. Style H has a ⅛" hole drilled in rod through which ground lead can be fastened. Style X is a plain rod to which ground lead can be clamped or soldered.

Size	Weight per 100 Pieces	STYLE J & G Screw Clamp No.	Price	STYLE H With Hole No.	Price	STYLE X Plain No.	Price
⅜"x4'	160	J-64	.90				
⅜"x6'	230	J-66	1.14				
⅜"x8'	320	J-68	1.35				
½"x6'	400	G-86T	1.83	H-86T	1.86	X-86T	1.71
½"x8'	540	G-88T	2.22	H-88T	2.25	X-88T	2.04
⅝"x6'	630	G-106T	2.67	H-106T	2.70	X-106T	2.58
⅝"x8'	840	G-108T	3.30	H-108T	3.33	X-108T	3.21

GALVANIZED RODS QUOTED ON REQUEST

Freight Allowance of up to $2.00 per cwt. granted on all Ground Rods based on lowest rail freight rate.

BASE MOUNTINGS FOR VERTICALS



TYPE 1 BASE INSULATOR

Heavy-duty type Base Mounting Insulator with compression rating up to 10,000 lbs. Has wet-process brown-glazed porcelain cones. Available in galvanized malleable iron, gold anodized aluminum, and chrome-plated brass, in rigid-post, hinged-post. Ht. to post base, 7 to 9 inches. Wt. 8 lbs. Alum. 5 lbs.

Price ..... $33.00 to $66.00

TYPE 6 BASE INSULATOR

For marine, mobile unit, roof-top or tower. Lead-thru construction permits connections below deck. Flanges 6" in diameter with 6 bolts on a 5" circle. For ½" to 3" deck. Available in galvanized malleable iron, gold anodized aluminum, and chrome-plated brass. Rigid post, and hinged post styles. Ht. from flange to post base, 3" to 5". Wt. 11½ lbs. Alum. 8 lbs.

Price ..... $48.00 to $102.00

STANDOFF INSULATORS

TYPE 10-S

A heavy-duty Insulator with chrome-plated brass base and head caps—regular or hinged clamps. Insulator is brown-glazed porcelain in extra heavy style. Ht. to center of clamp, about 4½". Wt., 3 lbs.

Price ..... $43.20 to $78.00

TYPE 13-S

Heavy, rugged cast caps and base plates in aluminum, plain or gold anodized, or chrome-plated brass. Heavy brown-glazed porcelain insulator, 3 inches in diameter. Ht. to center of clamp, 4¾". Wt., 2½ lbs.

Price ..... $12.00 to $31.80

MOBILE WHIP ANTENNAS

HEAVY DUTY TAPERED STAINLESS—TYPE ES

Solid one-piece taper-ground whips, ¼" at base tapering to 3/32" at tip with top ball. High-tensile stainless steel fabricated by special formula, comparing favorably with the best spring steel, yet having excellent corrosion-resistant properties.

STANDARD WEIGHT TAPERED STAINLESS WHIP WITH NON-REMOVABLE ADAPTOR—TYPE TS

Stainless steel whips of extremely high tensile strength with a permanent type stainless adaptor, with ⅜" male thread.

STANDARD WEIGHT WHIP WITH REMOVABLE ADAPTOR—TYPE VS

Same whip as above except supplied with a removable adaptor locked in place by dual set screws.

NO.	LENGTH	PRICE
ES-760	60"	$ 6.30
ES-772	72"	6.30
ES-784	84"	7.20
ES-796	96"	7.20

AD-700 — Separate Stainless Adaptor with ⅜" male thread for ES and ES series whips. $2.04

NO.	LENGTH	PRICE
TS-860	60"	$ 6.30
TS-872	72"	6.30
TS-884	84"	6.75
TS-896	96"	6.75
TS-8108	108"	7.20
VS-960	60"	7.20
VS-972	72"	7.20
VS-984	84"	7.65
VS-996	96"	7.65
VS-9108	108"	8.10

AD-900 Same as AD-700 except drilled for VS series whips. $2.04

PRICES EFFECTIVE AT TIME OF PRINTING AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

PREMAX PRODUCTS DIV., CHISHOLM-RYDER CO., INC.

JONTZ MFG. CO.

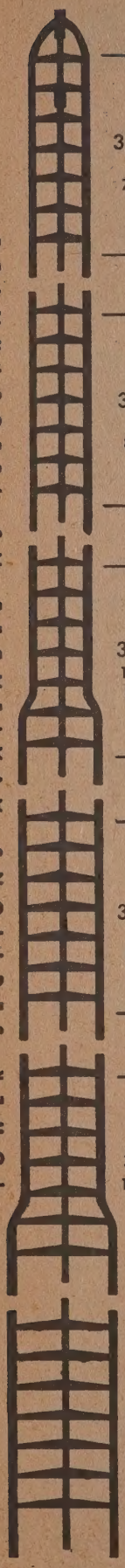
SELF-SUPPORTING

Super Kwick-Climb

TOWERS

SELF-SUPPORTING UP TO 60 FEET HIGH
HOT DIP GALVANIZED HEAVY DUTY MODELS
ZINC ELECTROPLATED ECONOMY MODELS
NO LOST TOWER FOOTAGE
FAST, EASY SECTIONAL ERECTING

TOWER SECTIONS AVAILABLE AS ILLUSTRATED



SECTION
300A or 500A
11½"x10'
7 Crossbraces

SECTION
300B or 500B
11½"x10'
8 Crossbraces

SECTION
300C or 500C
11½"—16"x10'
8 Crossbraces

SECTION
300D or 500D
16"x10'
8 Crossbraces

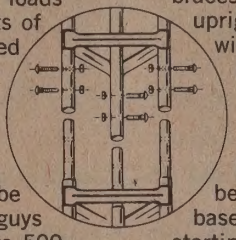
SECTION
300E or 500E
16"—20¼"x10'
8 Crossbraces

SECTION
300F or 500F
20¼"x10'
9 Crossbraces

With these two Jontz Tower models you can fill any tower needs . . . from small suburban to heavy-duty commercial installations. Sectional construction and special drive-in bases make erection fast and simple. The Zinc Electroplated Economy Model No. 300 will easily withstand high wind loads normally encountered in most parts of the country. The Hot Dip Galvanized Heavy Duty Model No. 500 will withstand hurricane force winds having been tested at wind loads of 80 mph.

Model No. 500 is self-supporting up to 60 feet high. Model 300 can be extended to 200 ft. by use of guys every 20 feet and Model 500 up to 500 ft. by use of guys every 20 feet. There is no lost tower footage when mounting in either concrete or the special drive-in base. Since the tower is separate from the base, it may be moved to another location without impairing strength.

Both towers are fabricated in 10'0" sections and can be erected in one piece or by sections. Model 300 is made from 1¼"x18 ga. tubular uprights and is zinc electroplated and dipped in clear Butyrate lacquer. The Model 500 is made from 1¼" x 16 ga. tubular uprights and is hot dip galvanized.



New, extra-wide corrugated crossbraces give 75% more weld contact with uprights. Tower sections lock together with 2 self-locking ⅜" bolts in each leg. The splined bolts prevent thread damage and stop hole stretch when tower moves in the wind.

HOW TO ORDER: 1. Specify if to be mounted in concrete or drive-in base. 2. Order by specific sections, starting at the base. See illustration for section numbers.

SHIPPING: For best freight rates, 40 ft. and over towers will be shipped in section combinations permitting 2 telescoped bundles, unless otherwise specified. (Example: a 60 ft. tower will consist of section A, C, D, E, and 2 F's.)

ZINC ELECTROPLATED ECONOMY MODEL NO. 300

Size	Net	Ship Wt.
40'0"	$ 70.80	130 lbs.
50'0"	91.05	172 lbs.
60'0"	111.30	215 lbs.
70'0"	128.15	245 lbs.
80'0"	148.40	292 lbs.

HOT DIP GALVANIZED HEAVY-DUTY MODEL NO. 500

Size	Net	Ship Wt.
40'0"	$ 97.55	160 lbs.
50'0"	122.80	211 lbs.
60'0"	148.05	262 lbs.
70'0"	172.15	302 lbs.
80'0"	197.40	357 lbs.

Add 15 lbs. per Tower for hardware.
Add approximately 3 lbs. per section for galvanized No. 300 Towers.

DRIVE IN TEMPLATE

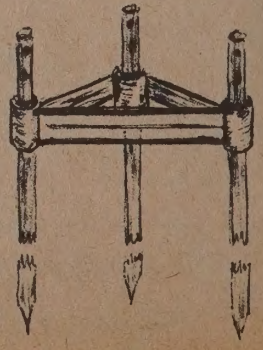
For Jontz self-supporting towers

Specifications:

1—Drive-in legs: 1¼" x 16 gauge x 36".

2—Template: 18" triangle for 40' towers — 22" triangle for 50' or higher — state tower height.

3—Driving cap: 2" x 1¼" to drive individual legs.



2—TEMPLATE: 18" triangle for 40'

Net
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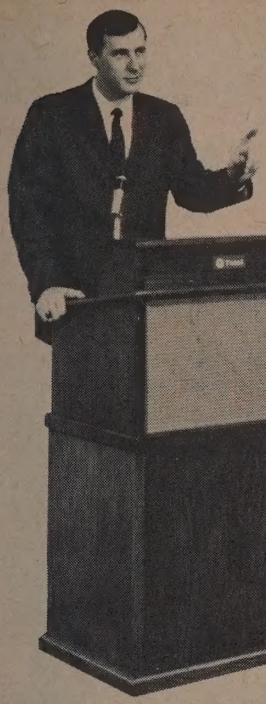
Audio • Visual • Signal Systems & Parts
for Hotels, Motels & Institutions



Portable Lecterns

UNQUESTIONABLY THE BEST HEAVY-DUTY ELECTRONIC LECTERN MADE

- **The greatest advance in Lecterns — anechoic speaker suspension system!**
- Completely self-contained. Demountable Base is optional!
- Use anywhere. More built-in features than any other make!
- Most RUGGED, RELIABLE Portable Electronic Lectern on the market!
- **IDEAL** for banquets, conventions, auctions, sales meetings, dances, at Churches, Schools, Hospitals, etc.

AMERICAN'S improved No. A-203 Electronic Lectern is efficient, portable and unified — nothing else to buy (includes microphone, amplifier, anechoic speaker suspension system and long line fluorescent reading light, with provision for optional equipment). When combined with Base, it constitutes a Podium. High-quality cardiod microphone, w/Off-On switch, is adjustable in height and position; side mounted for maximum desk room. Amplifier is high-quality, reliable, high-fidelity type, w/separate Bass and Treble controls to suit any acoustic situation of speaker or audience, and for maximum voice fidelity and minimum feedback. Lectern (top section) lifts off Base (bottom section) for table top use, and has space for reference material under sloped reading desk. Base folds for easy, convenient storage!

Optional equipment: (1) jack with extra speaker for covering large audiences; (2) extra mike jack; (3) neck microphone with long lead, for speaking away from Lectern (as for audience participation, etc.); (4) built-in or remote timer, and signal light. Engraved bakelite Nameplate is extra, **Net: $15.00.**

SPECIFICATIONS

No. A-203A Lectern (only) is fully equipped, ready to use, as described. **A-203B** is above Lectern, plus Base; latter has quiet, ballbearing casters. Made of selected hard wood, in rich walnut. A-203B, overall: 28″ x 19″ x 50″ high. Approx. weights: A-203A, 75 lbs.; A-203B, 105 lbs. Microphone has gooseneck stand. Amplifier audio output, 35 watts. Junction box for A-C linecord. Operates on 115 V., 60 cy. **No. A-203C** is **A-203B** w/jack for second, auxiliary speaker (supplied).

Net Prices

A-203A: $335 A-203B: $430 A-203C: $482

Completely Suspended Speaker System

Message-Mail Rack System

Totel Systems Corp. manufactures two signal systems, either of which may be used to expedite message and/or mail handling in hotels, motels, schools, factories, hospitals, and other institutions.

The **Mail (and Message) Rack Signal System** is comprised of numbered pockets, one for each room with a push button light switch, or light and switch for each pocket. Each pocket is wired to a guest-room. When clerk files mail (or message) in pocket, he lights corresponding lamp; simultaneously, a duplicate lamp in the guest room lights, and advises guest he has a message at main desk.

Long-life bayonet lamps in Signal Mail Racks and Message-at-Desk units are easily replaced from front.

A new **2-Way model, No. A-MR2,** with access from either side and lamps and switches on both, enables Mail Clerk to insert mail from one side and silently signal guest and for Telephone Operator to insert messages from the opposite side (and also signal the guest).

No. A-P20-3-A Signal Plate, in guest room, mounts on standard 1-gang outlet box.

The Racks and Panels are available in a variety of constructions to suit individual requirements as to location and number of rooms, and in standard or special finishes as decor dictates. The Mail Rack is available with key slots.

If guest room is not wired for radio, a separate wall plate, **A-P20-3-A,** is provided for the signal lamp; otherwise, it can be included on the radio control panel or the TV Remote Control Unit.

They may be made for Flush-wall (recessed), Surface-wall or Desk (table-top) mounting. An easily removable end cover plate permits access to wiring. Power Supply unit (included) is controlled by a switch.

SPECIFICATIONS — Signal Mail/Message Racks

Standard finish, velvet black enamel. Material is steel. Standard pocket measurements: approx. 8″ deep x 7¾″ high (incl. 1⅛″ for Key Shelf, where used) x 2″ wide. Specify whether wiring termination board is to be placed at left or right end of Rack.

A-MR3/Signal Mail Rack System: $23.00 per pocket.
Price includes room signal plate (above) and power supply.
Connecting cable not included in price.

American Communications Division of Totel Systems Corp.

'Totel' TV Theft Controls

All Prices Subject to Revision without notice. Contact factory for specifics.

TV-set Theft Alarm is now available in designs that meet the needs of occupancies of any size; in addition to the **Model B,** for hotels of 50 rooms or more, there is the new **Model C,** for motels of under 50 room units.

Both models operate to signal any attempt to steal the television set it protects.

Installation may be made by any technician, following detailed instructions supplied with each System (Console, and Room Units). **Requires only one control wire per guest room.**

Operation: Equipment under protection (TV-set, appliance, etc.) is electronically protected. Any attempt to remove connection from wall outlet, or cut power cord, starts alarm signal. This signal is indicated at the Front Office as a flashing light, and loud buzz.

There is no alarm in the guest room to alert the thief, but the Front Office signal, once triggered, cannot be stopped until Front Office attendant has operated a Reset switch (which cancels buzz); a room indicator lamp remains lit, however, until house personnel has checked the guest room and restored the circuit to its normal alert condition.

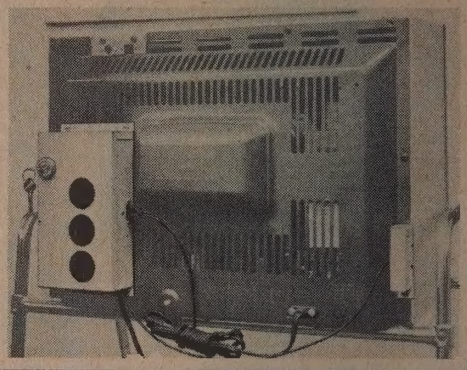
Apartment House owners can now offer their tenants maximum security at negligible cost. Tenant is protected against an unlawful entry.

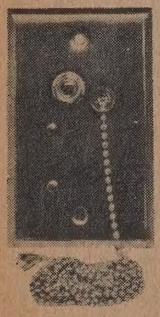
NEW SELF-CONTAINED TV THEFT ALARM. The TV-3 Theft Alarm mounts on the back of each TV set. Should anyone attempt to cut the power line, pull out the power plug or remove the Theft Alarm, an extremely shrill piercing alarm is set off. The alarm, which is audible throughout the entire building, will run for about an hour. Two options are available to the owner. Option 1 requires the management's presence to shut the alarm off. Option 2 — If the plug is re-inserted in the receptacle, the alarm will shut off by itself. This option allows for a test of the alarm.

The TV-3 is held in place by screws. No internal connections have to be made to the set. All that's required is to plug the TV set's power cord into the TV-3 and then plug the TV-3 into any power receptacle.

NOTE: If Power goes off, Alarm will not be set off.

$25.00 per room





No. A-RW1
Radio Wall-plate.

PATIENT'S RADIO WALL-PLATE

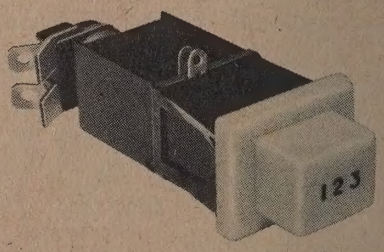
Although designed for use by patients in hospitals, the No. A-RW1 Radio Wall-plate shown here, is a convenience wherever used. Operates by pull chain or Nylon cord.

Has stepper switch and a jack. Switch has continuous rotation through "Off", 5 positions for selection of radio programs, and back to "Off", and so-on. Jack provides connection for pillow speaker.

SPECIFICATIONS

No. A-RW1 Radio Wall-plate. Switch is pull-chain actuated, continuous rotation, single-pole. 5 positions and "Off". Either single-circuit or seize-type jack can be supplied, for PL-55 plug; specify which desired. Plate is stainless steel, 2¾ x 4½" high; overall depth, from front of plate, 2¼". Fits standard outlet box. Bead chain is nylon cord. 3 ft long: cut to desired length. **Net Price, $12.00**

No. A-RW2 Radio Wall-plate. Dual unit placed between two beds for two patients' use. Size: 4⅝" x 4⅝". **Net Price, $27.00**



Alternate-Action Push-Button Switch

Uses standard bayonet type lamps of any voltage from 6 V. to 110 V. A-C or D-C, either incandescent or neon. Switch and lamp are each on separate circuits. Switch can be supplied with either SPST or SPDT. Switching is UL Approved. Lamps can be replaced from front. Lamp does not move when button is pressed, avoiding lamp burnout due to vibration. Normally supplied with SPST and 28 V., 40 Ma. bayonet lamp.

Net 1-99: $3.75 100-499: $3.25 500+: $3.00

MESSAGE AT DESK CONSOLES

The small Message at Desk consoles are a new development of American. They usually are located on the dresser adjacent to the T.V. set. There is a back mounting plate for screwing to the back of the dresser. A 6 ft. cord with plug connects the console to the master antenna plate. Consoles are finished in satin black, other finishes available.

Message at desk with light dimensions: 2¼ in. high plus 1¾ in. back plate extension, 2 5/8 in. wide, 1¼ in. deep.

$9.80 (including wall plate)

American Communications Division of Totel Systems Corp.

Net

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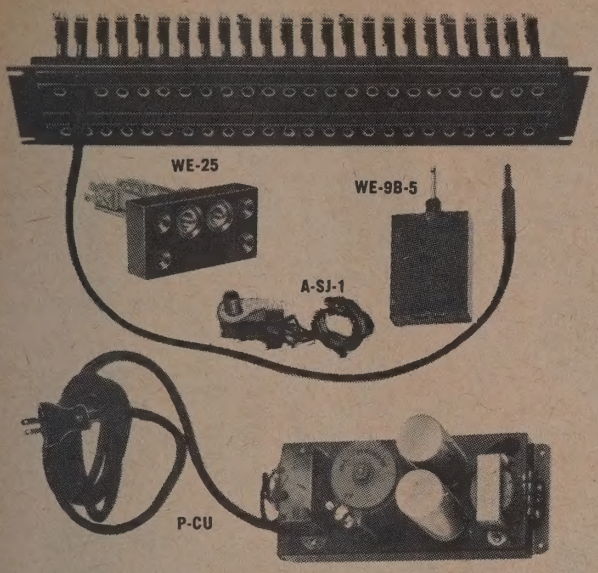
Cue Phone System



P-CU Power Supply. As many as 10 head sets can be powered simultaneously by this supply. Supply has proper retard coil for phone operation. Used extensively in hotel ball rooms and other large public areas for communications between control room and personnel. **P-CU** is supplied with a dust cover. **Net: P-CU $63.75**

Type WE-52D Operator's Head Set for intercommunication. Signals can be transmitted over extremely long distances on an ordinary pair of wires when used with P-CU Cue Phone Power Supply. **Net: WE-52D $60.75**

Not Shown — **WE-52 DLS,** 15′ coiled cord, including integral switch for mike and 289B plug. **Net $59.81**

Type WE-9B-5 Adapter. Adapts the WE-289-B Plug to a Cue Phone A-SJ-1 Seize Jack. **Net: WE-9B-5 $16.94**

Type WE-238-A Jack Panel WE-48. Uses 48 type WE-238-A open circuited telephone jacks with tip ring and sleeve connections. Can be supplied with double-circuited type WE-239-A at additional cost of $1.25 per jack. Size 3½″ x 19″ for standard rack panel.
Net: WE-48 with type **WE-238-A** jacks, **$135.85**

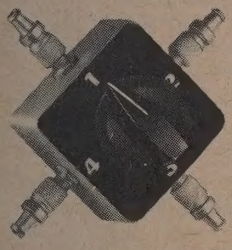
Type WE-110 Telephone Patch Cord. Uses tip ring and sleeve plug. Designed for use with type WE-238-A jack as used in WE-48 Jack Panel. Supplied in 2 ft. lengths. Other lengths to 10 ft. available. **Net: Type WE-110, 2 ft., $8.10**

A-SJ-1 Seize Jack (circuit opening), wired, **Net $2.98**

WE-25 Dual Jack Mounting to accept WE-289B dual plug on Operator's Head Set WE-52D. **Net $7.50.**

For quantity discounts, consult factory.

Coaxial Switches



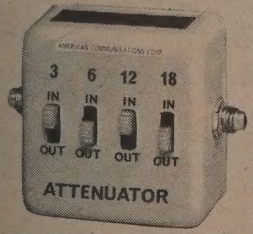
No. A-SW/- Coaxial Switch. Low-cost, small-space, light-weight coaxial switch; with positive detent action; C, F or BN connectors for coax. cable. Illustrated is a 1-pole, 4-position unit for switching one input to four circuits (antennas, transmitters, exciters, receivers, test equipment, etc.). Almost any number of circuits can be switched with 72Ω terminations on all unused circuits. Power rating up to 1 kw., amplitude modulated; impedance, 52-75 ohms. Approx. 2″ x 2″ diam. Supplied w/hardware (pointer knob, mounting bushing, and C, F or BN connectors w/ferrules).

No. A-SW/4 Coaxial Switch. Inexpensive, functional equivalent of lab-type switching units, for general-purpose use.

ASW/2 1-pole 2-position: Net $9.69
ASW/4 Cor F connectors: Net $10.63

SALES FINAL: Offered at reduced rate. All sales COD and final.

DB Attenuators



No. A-DB/39 Attenuator. Pays for itself in the time it saves determining loss required for best TV picture, etc. Slide switches are used.

AMERICAN'S No. A-DB/39 and **No. A-DB/58 Attenuators** (the latter not illustrated) provide at low cost, quick and convenient means for determining losses in a number of essential tests in TV installations. These include: measurement of amplifier gain, and equipment losses.

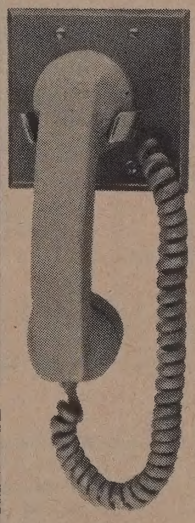
SPECIFICATIONS

Insertion loss of **A-DB/39** is in fixed steps of 3 to 39 db, and, of the **A-DB/59,** 3 to 59 db, for TV frequencies, when used in 75-ohm circuits. Two **A-CH61** solderless TV connectors afford connection to 75-ohm coaxial connectors. Housing is steel, ecru enameled; overall, 2″ x 2″ x 1″ deep **(A-DB/39).**

Net: A-DB/39: $12.19 A-DB/59: $24.88

SALES FINAL: Offered at reduced rate. All sales COD and final.

Telephone Handsets



Three types of high-quality telephone handsets are available — SH-500, SH-502 and SH-504. Each is equipped with Western Electric high-gain transmitter and receiver, plus 4-conductor cord. SH-502 has a press-to-talk switch on the side of handle. SH-504 has a bar-type switch under handle. Receiver operates at 400 to 3300 cps frequency range. Outstanding reproduction because rattle and distortion are minimized. Seven standard colors.

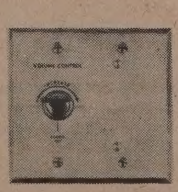
SH-500: $16.20
SH-502: $20.25
SH-504: $21.60

HANGERS & CRADLES

The UH-100 Handset Holder is available with or without the handset. Mounted in stainless-steel, 2-gang plate drilled to fit standard box. Aluminum body.

The UH-102 Handset Cradle is made of black thermoplastic material. The 4 oz. cradle is cup-shaped and offered with switch-spring combinations for either two or four Form C's.

UH-100 Hanger: $13.50
UH-101 Hanger: $ 2.15
UH-102 Cradle: $8.75
UH-102A Cradle: $2.97

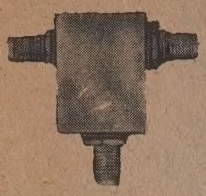


ALL NEW — KEY LOCK CONTROLS P.A. VOLUME

No. AKTVC/1 Complete transformer volume control. Step-less locks at any position. Handles 10 watts. **Net $15.00.**

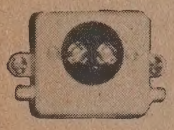
American Communications Division of Totel Systems Corp.

C.A.T.V. and Master Antenna System Components

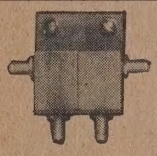


A-1601-1 Isolation Unit
A single-unit TV line tap. Attenuation color codes per Note 1. Outdoor housing; 75 ohms.
Net: $2.00

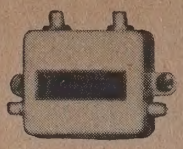
A-1601-2 Single Unit Line Tap
75 Ohms; Indoor housing. See Notes 1 and 3. **Net: $2.00**



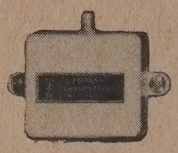
A-1601-3 Single Unit Line Tap
75 ohms; Screw Terminals. See Note 3.
Net: $2.00



A-1601-2 Double-Unit Line Tap
For 2 TV Sets; See Notes 1 and 2
Net: $3.65



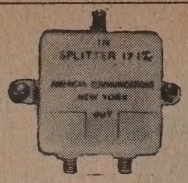
A-1602-2 Double-Unit Line Tap
For 2 TV Sets;
See Notes 1 and 3.
Net: $3.65



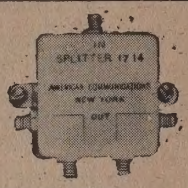
A-CTVB Convenience TV Box
With A-CH61 Connector; See Note 3.
Net: $0.97

A-T/R-T Trunk-Riser Tap
Various db values of isolation. Creates risers from trunk line. See Note 4.
Net: $2.00

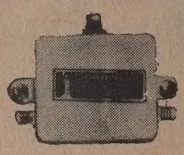
A-DBLA DB Line Attenuator Pad
3-6-10-20-30. See Note 4.
Net : $2.21



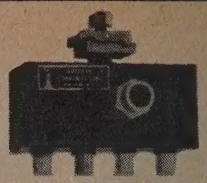
A-1712 Line Splitter
2-way Hybrid. Has 3 db forward attenuation. See Note 3.
Net: $2.70



A-1714 Line Splitter
4-way Hybrid. Has 6 db forward attenuation. See Note 3.
Net: $4.38



FM Tap Off
Totel's FM Tap is used to connect an FM set to trunk line with minimum insert loss. Unit conists of a band pass filter for the FM band only, but allows TV spectrum to pass through; supplied with three, C or F fittings.
Net: $2.81

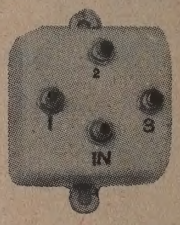


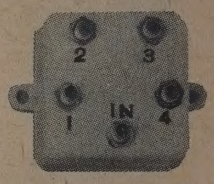
BACK MATCHED DIRECTIONAL COUPLERS WITH UP TO 6 HOUSE TAP-OFFS

A-C or D-C feed through, with complete tap isolation. 100% weatherproof, designed to mount on the strand. Low insulation loss and excellent response over entire 50 to 220 MC spectrum. Uses F61 house tap connectors. Input and output connectors are designed for up to ¾" cables (per your order). Tap values available in 10-12-15-18-22-26 and 30 db attenuation. VSWR 1.2:1 max. with up to 20 db or better return loss.

(Net Prices)

Type	No. of House Tap-offs	F. or .308 Connectors	.412 Cable Connectors	.500 Cable Connectors	.750 Cable Connectors
DC2T	2	$9.95	$13.50	$16.38	$18.88
DC4T	4	$11.88	$15.13	$ 18.85	$21.35
DC6T	6	$13.88	$16.31	$20.95	$22.70





BACK MATCHED HYBRID DIRECTIONAL SPLITTERS

From 2-way to 6-way with VSWR of 1.2:1 max. and with either C or F fittings. Frequency Range of 50 to 220 MC @ 72 ohms impedance.

	Net		Net
SP2----2 way	$3.31	SP4----4 way	$5.56
SP3----3 way	$4.44	SP5----6 way	$8.44

All components are VHF Approved. At press time, UHF approval underway.

Notes:
1. Attenuation coded red, yellow, green, blue.
2. On mounting bracket.
3. Surface mount in A-BC1 accessory box.
4. Surface mount.

SALES FINAL: Components above are offered at reduced rate. All sales are C.O.D. and final.

Pillow Speaker/"Mike"

'Totel' offers several Pillow Speaker-Microphones for use in hospitals, hotel, motels and institutions.

The water-resistant speakers have a heavy-duty, stainless-steel case. They provide exceptional fidelity and come with a special flat-to-wall plug. Voice call impedances are 3.2 ohms (SM-30 & SM-32, not shown); 15-16 ohms (SM-16, not shown); and 10,000 ohms (SM-VA3, shown). The standard SM-VA3 unit has an 8-foot cord, 10,000 ohms and a 227 plug. (Other cord lengths available.) The speakers measure 1" x 3" diam.

SM-30: $8.94 **SM-32: $9.54** **SM-16: $9.54** **SM-VA3: $11.56**

TV Mounts

A-TVS Roll-away TV Stand is easily positioned under a hospital or hotel bed. Shelf holds over bed. Stand has hard-rubber casters, bolted 1" dia. steel tubing, bar to hold pillow speaker cord and a TV remote control cord. Shipped KD. **Net: $44.95**

A-TVB-96 Bracket — swivel wall-mounted support for 19" TV sets, particularly Designer series. Saves floor space; easily positions set for best viewing. **Net: $13.60** (Other brackets available.)

NEW, 2-POSITION KEY LOCK SWITCH

10 Amps., 110 Volt rated. Beautiful finish, keyed tumbler pin lock, installs on any electrical device. Key is removable for safety and security. ¾" dia. threaded mounting bushing with mounting nut. Can mount on panel from ⅛" to ¾" thick. Discounts in quantity.

$2.50 each

TERMS
1. **All shipments F.O.B., Jamaica, N.Y.**
2. **Minimum order is $10.00**
3. **All orders under $75.00 are C.O.D. or cash in advance.**
4. **All prices subject to change without notice.**
5. **For quantity discounts, consult factory.**

American Communications Division of Totel Systems Corp.

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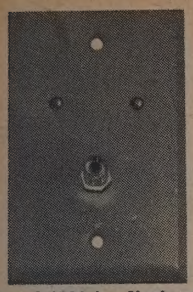
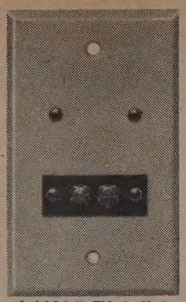
Master Antenna System Components

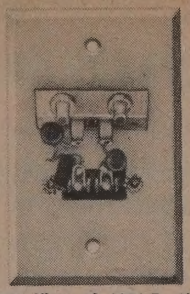
All Prices Subject to Revision without notice. Contact factory for specifics.



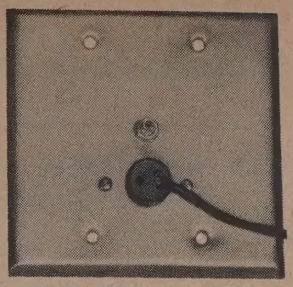
No. A-1601-4 Single-unit Line Tap. TV outlet, 75 ohms (Note 4) **Net $1.60.**



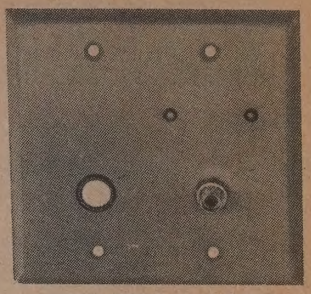
No. A-1601-5 TV Outlet. 300 ohms, screw terminals. (Note 4) **Net $1.60.**



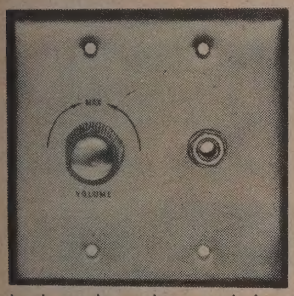
Rear View of 1601-5. Similar circuitry for other TV line taps.



Model 2MA is a 2-gang plate with a master antenna outlet and jack for message at desk or other wired service. **Net $3.00.**



Model 1601-R, is a 2-gang plate with antenna outlet and cable hole for centralized radio or other wired service. **Net $3.00.** Single gang, deduct **$.50 ea.**; Stainless add **$.50 ea.**

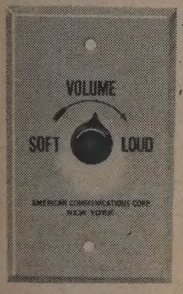


NEW INTERLOCK SPEAKER VOLUME CONTROL & SEIZE JACK, Model A-CU-IN

New, patented interlock speaker volume control and seize jack arrangement performs dual functions.

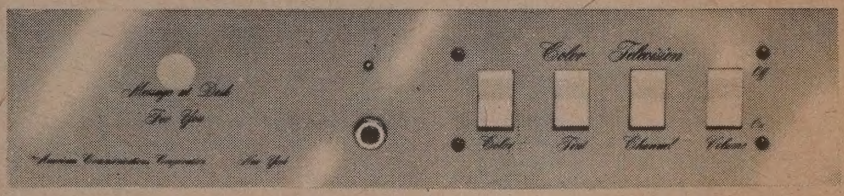
1. Push phone plug all the way into seize jack and remove. This automatically cuts out local speaker volume control and connects line directly to speaker.
2. When local speaker volume control is again wanted, reinsert plug, remove, and volume control will again operate speaker.
3. To connect local speaker to local microphone and amplifier, push amplifier output plug into seize jack.

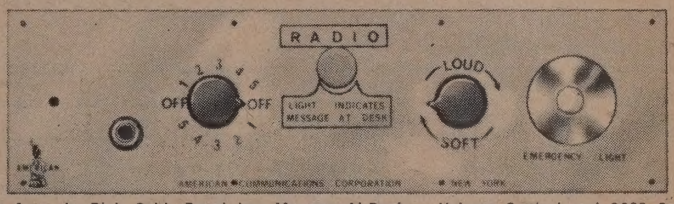
A-CU-, 2 gang plate, white, insulated seize jack, **$7.50.**
A-CU-IN, same as A-CU but with interlock, 2½" deep, **$9.75.** Stainless steel or brass, **$.50 ea. extra.**



Model VCA volume control is single gang white plate. 7 to 10 watts @ 70 v., or 8 to 16 ohms. **Net $5.00.** If unit is to be 2-gang, or stainless steel or brass add **$.50** each option.

Television & Radio Parts





ROOM PANELS —BEAUTIFULLY AND ELEGANTLY MADE—

PANEL A — In Rich Gold. Panel has Message-At-Desk Light. Room Status Control and Color T.V. Remote Control. Terminates on screw terminal board or can be furnished with cable for direct connection. Panel — as shonn. **Cost $28.00.**

PANEL B — Central Radio Panel using patented 360° Volume Control and 360° Selector Switch. Message at Desk Light. Status Control. Emergency light that goes on in the event of a black-out. In Rich Gold or Silver, **$27.80.**

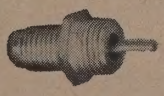
PANEL C — Same Panel, less emergency light, **Cost $23.00.**

TV COAXIAL CONNECTORS

A-61

C-56

C-51


C-61

C-52

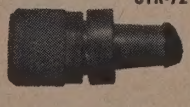
C-81

F-59

F-81

CTR-72 C

F-61



Net Prices Per Units Noted	1-25	26-100	101-500
A-61 Adapter. ¼ in.-32 inside; 3/8 in.-32 outside. Changes fitting C to F.		Net: $2.19 for 25.	
C-51 Connector to be swagged for RG-59/U Coaxial	.19	.15	.13
C-52 Solderless TV Connector for RG-59/U Coaxial	.24	.19	.16
C-56 Solderless TV Connector for RG-6/U Coaxial	.36	.25	.23
C-61 Convenience Connector for C-52 Conn., chassis mount, with ¼ in.-32 frontnut and 5/16 in.-32 rear	.44	.38	.28
C-81 Solderless Cable Connector, or TV convenience connector with ¼ in.-32 nut	.48	.41	.33
F-59 Solderless TV Connector for F fitting and RG-59/U Coaxial	.36	.25	.23
F-61 Convenience Connector, chassis mount, for F-59 Connector, with 3/8 in.-32 front nut and 3/8 in.-32 rear.	.48	.44	.38
F-81 Solderless Cable Connector or TV Convenience Connector with 3/8 in.-32 nut	.61	.54	.48
NW ¼ in. Nut & Washer, for C fittings		Net: .04	
NW 5/16 In. Nut & Washer for C-61 Convenience Connector		Net: .04	
NW 3/8 in. Nut & Washer for F fittings		Net: .04	
CTR-72 C Terminator, 72 ohms	.53	.44	.35
FTR-72 F Terminator, 72 ohms	.53	.44	.35
6U Ferrule, crimping ring for RG-6/U Coaxial		$2.07 per 100	
59U Ferrule, crimping ring for RG-59/U Coaxial		$2.07 per 100	

SALES FINAL: Components above are offered at reduced rate. All sales are COD and final.

American Communications Division of Totel Systems Corp.

BELL p/a / COMMERCIAL SOUND EQUIPMENT

TRANSISTORIZED POWER AMPLIFIERS

FEATURES:

- All silicon, solid state circuitry.
- Full automatic output circuit protection (with indicator light).
- Full bass and treble control.
- 4, 8 and 16 ohm output, bal. 25 & 70 V line.
- Available in package or rack mount.

GENERAL:

TPA Series amplifiers are heavy duty, full fidelity. Conservatively designed to meet the most extreme performance requirements within each power range. Special low-noise FET transistors in front end, and four feedback loops for super stable operation and low driving impedance. Rugged aluminum "beam" type chassis combines strength with light weight. Extremely efficient transistor design permits constant use with low power consumption.

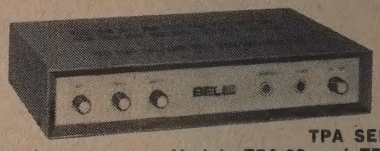
OUTPUT CIRCUIT PROTECTION:

TPA Series amplifiers incorporate the exclusive, fully automatic Bell P/A sensor circuit which protects output transistors against overload or short circuit. Front panel amber light gives visual indication of any such condition. When condition is corrected, sensor circuit automatically and immediately restores amplifier to normal function. No manual reset or time delay required. This feature is invaluable when replacing amplifier in an old system where load and condition of wiring are not known, or in event of accidental shorting.

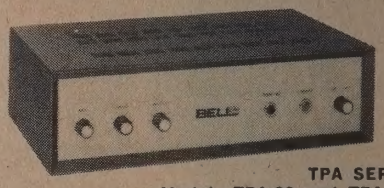
CONTROL FEATURES:

Full bass and treble controls, as well as master gain control on front panel permitting use of amplifier as power booster for tape playback, phonograph, tuner, or preamp. Two can be used for stereo systems. In a multi-function sound system, amplifiers can be adjusted to produce tonal quality required by each speaker array or to acoustical requirements of each particular area.

Input level to amplifier may be adjusted on rear panel to make unit compatible with nearly any program source.
Provision for a plug-in balanced 600 ohm input transformer makes this amplifier ideal for telephone paging systems or as a booster amplifier for paging with an intercom system.



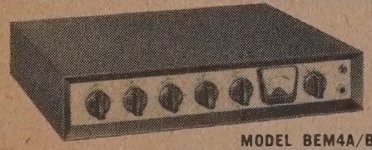
TPA SERIES
Models TPA-20 and TPA-45



TPA SERIES
Models TPA-90 and TPA-200

SPECIFICATIONS — Transistorized Power Amplifiers

	TPA-20	TPA-45	TPA-90	TPA-200
POWER OUTPUT:	20 W @ 5%	45 W @ 5%	90 W @ 5%	200 W @ 5%
REGULATION:	1 db @ 1000 Hz better than 3 db overall	1 db @ 1000 Hz better than 3 db overall	1 db @ 1000 Hz better than 3 db overall	1 db @ 1000 Hz better than 3 db overall
HUM & NOISE:	90 db below rated output	90 db below rated output	90 db below rated output	90 db below rated output
GAIN	75 db aux input	75 db aux input	75 db aux input	75 db aux input
INPUT SENSITIVITY:	150 MV	150 MV	150 MV	150 MV
FREQUENCY RESPONSE:	20-20,000 Hz ±1 db	20-20,000 Hz ±1 db	20-20,000 Hz ±1 db	20-20,000 Hz ±1 db
OUTPUT IMPEDANCE:	4, 8, 16Ω 41 (bal 25 V)Ω 333 (bal 70 V)Ω	4, 8, 16Ω 21 (bal 25 V)Ω 167 (bal 70 V)Ω	4, 8, 16Ω 10 (bal 25 V)Ω 80 (bal 70 V)Ω	4 (bal 25 V CT)Ω 8, 16, 32 (bal 70 V CT)Ω
POWER RESPONSE:	50-20,000 Hz, 15 W @ less than 2%	50-20,000 Hz, 30 W @ less than 2%	50-20,000 Hz, 60 W @ less than 2%	50-20,000 Hz, 150 W @ less than 2%
TONE CONTROL:	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut to 50 Hz	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut to 50 Hz	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut to 50 Hz	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut to 50 Hz
INPUTS:	Aux (hi Z hi level) bal 600Ω w 2275 trans.	Aux (hi Z hi level) bal 600Ω w 2275 trans.	Aux (hi Z hi level) bal 600Ω w 2275 trans.	Aux (hi Z hi level) bal 600Ω w 2275 trans.
TRANSISTORS:	14 transistors (2 FET's) 7 diodes	16 transistors, (2 FET's), 7 diodes, 1 zener	15 transistors, (2 FET's), 7 diodes, 1 zener	17 transistors, (2 FET's), 7 diodes, 1 zener
POWER CONSUMPTION:	50 W, 120 V, 60 Hz	100 W, 120 V, 60 Hz	150 W, 120 V, 60 Hz	350 W, 120 V, 60 Hz
DIMENSIONS:	3¼" H, 16¼" W, 8½" D	3¼" H, 16¼" W, 8½" D	4¾" H, 16¼" W, 10¼" D	4¾" H, 16¼" W, 10¼" D
WEIGHT:	16 lbs	17 lbs	22 lbs	29 lbs
LIST PRICE:	$187.50 (Zone — 2 $190.00)	$237.50 (Zone 2 — $240.00)	$300.00 (Zone 2 — $304.00)	$400.00 (Zone 2 — $404.00)



MODEL BEM4A/BEM5
SOLID STATE MIXER PREAMP

Two models: one with four mics and cueing-monitoring feature; one with five mics without cueing-monitoring. All hi Z mics with plug-in lo Z transformer option. Over 70 db gain. Output: +15 dbm @ .5% THD. 4.25 V out. Freq. resp.: 20-20,000 Hz ±2 dbm; Input Sensitivity: Hi Z mic 2 mv; aux 100 mv; Lo Z mic (with No. 2274 trans.). Built-in provision for battery use. Power consumption less than 5 W, 117 V, 60 Hz. Dim.: 2⅞" h, 15" w, 10⅛" d. Ship wt. 9 lbs. **List Prices: BEM4A $225.00 (Zone 2 — $232.50); BEM5 $180.00 (Zone 2 — $184.00).**

MODEL TT-100 SOLID STATE AM/FM TUNER

Adds on to any p.a. system. FM: 3 μv for 30 db, quieting at 300 ohms; 200 kc bandwidth; 40 db image rejection; 50 db signal-to-noise min.; wideband ratio detector; 3 IF stages full limiting at 15 μv; 300 ohms bal., 75 ohm unbal. antenna. AM: 10 μv sensitivity, 8 kc bandwidth (@ 6 db) sensitivity; 10 kc whistle filter; 0.5 RMS min. audio output. Will work into loads over 1,000 ohms. Adj. output level control. Dim.: 4" h, 13¾" w, 8¾" d. Ship wt. 12 lbs. **List Price: $250.00; (Zone 2 — $257.50).**

MODEL 75 BA BOOSTER AMPLIFIER

Specs similar to Model CNA-75. Provides additional power for any amplifier, or may be used with Bell P/A Mixer to form complete system. Accessory plug-in relay provides for remote control of AC input power or standby operation. Power output: 75 W. Freq. resp.: 30 Hz to 15 KC ±2 db. Dim.: 8" h, 15" w, 11" d. Ship wt.: 36 lbs. **List Price: $162.50; (Zone 2 — $167.50).**

Request detailed spec sheets from your BELL P/A Products distributor. Specs and prices subject to change without notice.

Trade Discount Applies To List Prices Only
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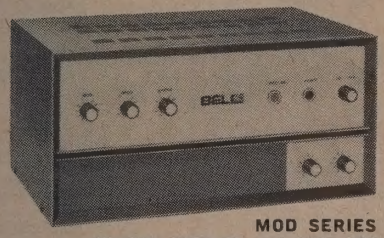
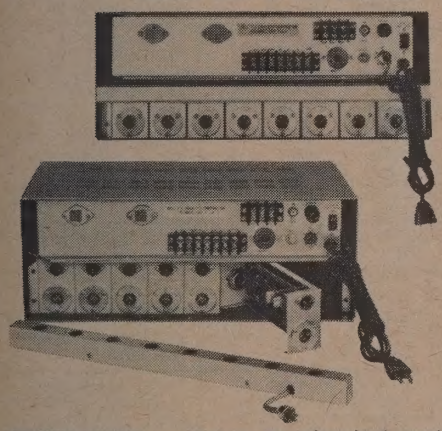
BELL p/a COMMERCIAL SOUND EQUIPMENT

MOD SERIES
Models MOD-20 and MOD-45



MOD SERIES
Models MOD-90 and MOD-200



TRUE MODULAR AMPLIFIERS

FEATURES:

- 1 to 8 modular input preamps.
- Thousands of possible combinations.
- Hundreds of modular arrangements.
- Dozens of basic applications.

GENERAL:

The new Bell P/A MOD Series modular amplifiers incorporate the TPA Series in a unique package concept that makes possible a virtually unlimited number of applications. The new line provides unprecedented flexibility in modules. The new MOD amps are full fidelity, heavy duty construction, conservatively designed to meet the most extreme performance requirements within each power range. As in the TPA Series, Bell P/A's high standards of quality prevail throughout the new modular line.

INPUT MODULES:

Bell P/A MOD Series units are each equipped with one hi Z mic preamp (Model No. MMH-1) and one hi Z, high level, aux program preamp (Model No. PMH-1). Six other preamp modules* may be added, for a total of 8, to satisfy input requirements of nearly any installation. Modules are simple to install in field, requiring no special tools or wiring.

The "stacking" principle utilized in Bell P/A MOD Series permits unusual design flexibility. Channel 1 (to extreme right, facing front of unit) is base channel, and all input modules are stacked to left. Special control modules, such as "priority paging" or "limiter" module, may be placed in any channel so as to mute or limit the gain of all inputs to the left of its position. In this way, it is possible to control from one to all seven other inputs.

When designing a system, it is recommended that MOD xx Basic be special-ordered with required input configuration. Completed unit will be shipped from factory, ready to operate.

* Input modules can be supplied with any standard audio input connector, on special order. For complete information on input modules and specifications, see individual module spec sheets.

MODULAR PREAMPS AND CONTROL UNITS

CUMULATIVE MIXING MODULES

MMH-1	MicPreamp, HiZ	$30.00
MML-1	MicPreamp, Bal. LoZ	52.50
PMH-1	Program Preamp, HiZ	25.00
PMH-2	Program Preamp, Mag Phono	30.00
PML-1	Program Preamp, Bal 600 ohm	50.00
TGM-1	Tone Generator (Siren Alarm)	65.00

CONTROL-MIXING MODULES

MMH-2	MicPreamp, HiZ Precedence Paging..	38.75
MML-2	MicPreamp, Bal. LoZ Precedence Paging	68.75
PML-2	Program Preamp, Bal. 600 ohm Precedence Paging	52.50

CONTROL MODULES

VLM-1	Volume Limiter	50.00
RVM-1	Remote Volume Control	45.00

SPECIAL MODULES

OMR-1	Record Output Module	30.00
OML-1	Balanced 600 ohm Output Module	52.50
MPS-1	Power Supply Module	25.00

SPECIFICATIONS — Modular Transistorized Amplifiers

	MOD-20	MOD-45	MOD-90	MOD-200
POWER OUTPUT:	20 W @ 5%	45 W @ 5%	90 W @ 5%	200 W @ 5%
REGULATION:	1 db @ 1000 Hz better than 3 db overall	1 db @ 1000 Hz better than 3 db overall	1 db @ 1000 Hz better than 3 db overall	1 db @ 1000 Hz better than 3 db overall
HUM & NOISE:	90 db below rated output	90 db below rated output	90 db below rated output	90 db below rated output
GAIN:	130 db mic 90 db program	130 db mic 90 db program	130 db mic 90 db program	130 db mic 90 db program
INPUT SENSITIVITY:	1 MV mic 100 MV program	1 MV mic 100 MV program	1 MV mic 100 MV program	1 MV mic 100 MV program
FREQUENCY RESPONSE:	20-20,000 Hz ±1 db	20-20,000 Hz ±1 db	20-20,000 Hz ±1 db	20-20,000 Hz ±1 db
OUTPUT IMPEDANCES:	4, 8, 16Ω 41 (bal 25 V)Ω 333 (bal 70 V)Ω	4, 8, 16Ω 21 (bal 25 V)Ω 167 (bal 70 V)Ω	4, 8, 16Ω 10 (bal 25 V)Ω 80 (bal 70 V)Ω	4 (bal 25 V CT)Ω 8, 16, 32 (bal 70 V CT)Ω
POWER RESPONSE:	50-20,000 Hz, 15 W @ less than 2%	50-20,000 Hz, 30 W @ less than 2%	50-20,000 Hz, 60 W @ less than 2%	50-20,000 Hz, 150 W @ less than 2%
TONE CONTROL:	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut 50 Hz	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut 50 Hz	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut 50 Hz	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 14 db cut 50 Hz
INPUTS:	Aux (hi Z hi level) bal 600Ω w 2275 trans. Plus 1 hi X mic and 1 aux	Aux (hi Z hi level) bal 600Ω w 2275 trans. Plus 1 hi X mic and 1 aux	Aux (hi Z hi level) bal 600Ω w 2275 trans. Plus 1 hi X mic and 1 aux	Aux (hi Z hi level) bal 600Ω w 2275 trans. Plus 1 hi X mic and 1 aux ux
TRANSISTORS:	19 transistors, (5 FET's), 7 diodes	21 transistors, (5 FET's), 7 diodes	20 transistors, (5 FET's), 7 diodes	22 transistors, (5 FET's), 7 diodes
POWER CONSUMPTION:	50 W, 120 V, 60 Hz	100 W, 120 V, 60 Hz	150 W, 120 V, 60 Hz	350 W, 120 V 60 Hz
DIMENSIONS:	6¼" H, 16¼" W, 8½" D	6¼" H, 16¼" W, 8½" D	7¾" H, 16¼" W, 10¼" D	7¾" H, 16¼" W, 10¼" D
WEIGHT:	19 lbs	20 lbs	25 lbs	32 lbs
LIST PRICE:	$262.50 (Zone 2 — $265.50)	$312.50 (Zone 2 — $315.50)	$375.00 (Zone 2 — $379.00)	$475.00 (Zone 2 — $479.00)

Request detailed spec sheets from your BELL P/A products distributor. Specs and prices subject to change without notice.

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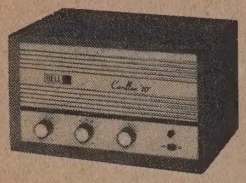
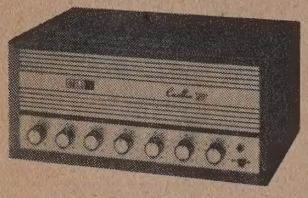
BELL p/a / COMMERCIAL SOUND EQUIPMENT

ONE-MIC CARILLON SERIES — Models CN-10 and CN-20



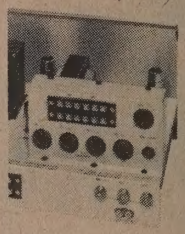
THREE-MIC CARILLON SERIES — Model CN-23, CN-35, CN-75 and CN-110



ALL-PURPOSE AMPLIFIERS

with exclusive lo Z adapters

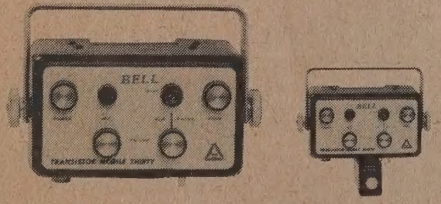
Bell P/A's "Carillon" Series, with circuit design and performance proven over 36 years. Compactly built, economically priced, designed for exceptional hi-fi performance in all types of systems. All units are optional with Bell P/A's exclusive lo Z adapters to improve versatility, performance and simplicity of operation. Models CN35, 75 and 110 have DC filament voltage on all preamp stages to reduce hum and noise to more than 65 db below rated output. Models CNA-10 and CNA-20 have three inputs for simultaneous use of mic, recorder tape player, plus tuner or other program source. (Models CNA-23, CNA-35, CNA-75 and CNA-110 have five of these inputs.)



Bell P/A exclusive lo Z adapters provide screw terminal, male XLR and female XLR input connectors for lo Z mic, 600 ohm line inputs and relay paging.

SPECIFICATIONS — "Carillon" Series Amplifiers

	MODEL CNA-10	MODEL CNA-20	MODEL CNA-23	MODEL CNA-35	MODEL CNA-75	MODEL CNA-110
POWER OUTPUT:	10 W @ less than 8% 20 W peak power	17.5 W @ less than 5% 35 W peak power	17.5 W @ less than 5% 35 W peak power	35 W less than 5% 70 W peak power	65 W @ less than 5% 130 W peak power	110 W @ 5% 220 W peak power
REGULATION:	Better than 3 db	Better than 3 db	Better than 3 db	Better than 3 db	Better than 3 db	Better than 3 db
HUM & NOISE:	More than 60 db below 10 W	More than 65 db below 20 W	More than 65 db below 20 W	More than 65 db below 35 W	70 db below rated output	70 db below rated output
GAIN:	108 db overall	118 db overall	120 db overall	120 db overall	120 db overall	120 db overall
INPUT SENSITIVITY:	Aux .170 V Phono .210 V Mic .0025 V WITH ADAPTER: Program (600Ω) .014 V Mic (50Ω) .0001 V	Aux .260 V Phono .330 V Mic .0037 V WITH ADAPTER: Program (600Ω) .016 V Mic (50Ω) .0002 V	Aux .180 V Phono .230 V Mic .004 V WITH ADAPTER: Program (600Ω) .013 V Mic (50Ω) .0002 V	Aux .240 V Phono .330 V Mic .005 V WITH ADAPTER: Program (600Ω) .020 V Mic (50Ω) .0002 V	Aux .280 V Phono .330 V Mic .005 V WITH ADAPTER: Program (600Ω) .018 V Mic (50Ω) .0002 V	Aux .250 V Phono .300 V Mic .004 V WITH ADAPTER: Program (600Ω) .018 V Mic (50Ω) .00016 V
FREQUENCY RESPONSE:	20 to 20,000 Hz ±2 db	20 to 20,000 Hz ±2 db	20 to 20,000 Hz ±2 db	20 to 20,000 Hz ±2 db	20 to 20,000 Hz ±2 db	20 to 20,000 Hz ±2 db
OUTPUT IMPEDANCE:	4, 8, 16, 500 (70 V)Ω	4, 8, 16, 250 (70 V)Ω	4, 8, 16, 250 (70 V)Ω	4, 8, 16 (25 V), and 125 (70 V)Ω	4, 8 (25 V), 16, 83 (70 V)Ω	4, 8 (25 V), 16, 50 (70 V)Ω
POWER CONSUMPTION:	120 V, 60 Hz, 65 W (.63 amps)	At 120 V, 60 Hz, 75 W (.70 amp)	120 V, 60 Hz, 80 W (0.8 amps)	At 120 V, 60 Hz, 130 W (1.4 amps)	At 123 V, 60 Hz, 175 W (1.9 amps)	123 V, 60 Hz, 350 W (3.5 amps)
TONE CONTROL:	High cut at 10,000 Hz — 20 db	High cut at 10,000 Hz — 20 db	Treble, 12 db boost, 15 db cut 10,000 Hz Bass, 16 db boost, 7.5 db cut 50 Hz	Treble, 12 db boost 15 db cut 10,000 Hz Bass, 16 db boost, 7.5 db cut 50 Hz	Treble, 11 db boost, 16 db cut 10,000 Hz Bass, 18 db boost, 10 db cut 50 Hz	Treble, 11 db boost, 16 db cut 10,000 Hz Bass, 18 db boost, 10 db cut to 50 Hz
TUBES:	6L6GC, 12AX7, 6AV6 (2) Silicon Diodes	(2) 6V6GT, 12AX7, (2) 6AV6 (2) Silicon Diodes	(2) 6V6GT, (3) 12AX7, 6AV6 (2) Silicon Diodes	(2) 6L6GC, (3) 12AX7, 12AV6 (4) Silicon Diodes (Rectifier)	(2) 6CA7 (EL34), (3) 12AX7 (ECC-83), 12AV6 (8) Silicon Diodes (Rectifier)	(4) 6CA7 (EL34), (3) 12AX7 (ECC83), 12AV6 (8) Silicon Diodes (Rectifier)
DIMENSIONS:	7⅛" H, 11⅝" W, 9½" D	7⅛" H, 11⅝" W, 9½" D	7⅞" H, 15" W, 11" D	7⅞" H, 15" W, 11" D	7⅞" H, 15" W, 11" D	7⅞" H, 15" W, 11" D
WEIGHT:	14 lbs	16 lbs.	19 lbs	22 lbs	28 lbs	34 lbs
LIST PRICE:	**$80.00** **(Zone 2 — $82.50)**	**$107.50** **(Zone 2 — $110.00)**	**$122.50** **(Zone 2 — $126.25)**	**$145.00** **(Zone 2 — $147.50)**	**$195.00** **(Zone 2 — $198.75)**	**$245.00** **(Zone 2 — $247.50)**



MODEL TM-30 MOBILE AMPLIFIER

Compact, solid state, with universal mounting sling for top, rear or bottom mounting and positioning. Power output 30 W (50 W with Model S/TM-30 siren). Power consumption: 12 V, DC nominal, 200 ma quiescent, 4a @ 30 W output. Freq. resp. 100 Hz to 10 kc. Mic sensitivity 1 mv; phono .2v; aux .1v. One each mic, phono and aux inputs. 4, 8 & 16 ohm outputs (plug-in connector). One tone control, 15 db cut @ 10 kc. Quick-change front panel fuse. Dim.: 5⅞" h, 8½" w, 5" d (including mounting bar in up position). Ship wt. 4¼ lbs. **List Price: $122.50; (Zone 2 — $126.25.)**

MODEL UT-35 UTILITY AMPLIFIER

Solid state circuitry. 30 W 5% — 35 W less than 10% 120 V, 60 Hz; 27.5 W — 32.5 W less than 10%, 14.7 V dc (car batt./gen.). Regulation: 1.5 db @ 1,000 Hz, better than 3 db @ 50-15KHz. Hum & noise: 70 db below rated output. Gain: aux 59 db, .130 V; mic 90 db, .0035 V. Freq. resp.: 6 db below rated output, 30 to 20 KHz ±1 db. Output Z: 4, 8, 16, 25 (25 V) 200 (70 V) ohm. Hi level, hi aux and phono inputs. Lo level, lo Z mic input. 85 W-.80 Amp power consumption @ rated output, 120 V, 60 Hz. 14.7 V dc @ 3.75 Amps. Dim.: 7⅞" h, 15" w, 11" d. Ship wt. 25 lbs. **List Price: $200.00; (Zone 2 — $204.00.)**

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The
RADIO-ELECTRONIC
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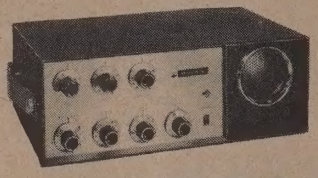
BOGEN SOUND SYSTEMS

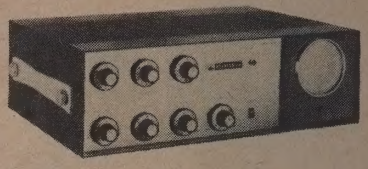
FLEX-PAK® PA AMPLIFIERS

Combining operational flexibility, sound quality and dependability, Bogen professional amplifiers offer functions and features unmatched at any price, by any maker. Adaptable to a wide variety of applications once served only by custom designed, custom fabricated equipment, these amplifiers will accommodate virtually any audio signal source, providing a degree of intelligibility and control not previously obtainable in a single chassis amplifier. They include facilities for a host of accessories, engineered to satisfy specific requirements: two and four channel remote controllers, peak limiters, standby controllers for microphone or music channels; optional monitor and speaker units to allow checking of sound levels by both ear and eye; 600-ohm balanced line transformers; high-fidelity phono tops; plug-in microphone transformers, control locking plates, wall mounting kits and many more. All models include output jacks for driving tape recorders and booster amplifiers.

MX60A/MX30A/ MTX30B Shown with MMS-1



M330A/M60A Shown with MSK-1



M120

	*MTX30B All Transistor	MX60A	MX30A	M330A	M60A	M120
POWER OUTPUT	30 w. rms @ 2% (Full pwr: 30-20,000 Hz)	60 w. rms @ 2% (Full pwr: 21-30,000 Hz ± 1 db)	30 w. rms @ 2% (Full pwr: 21-40,000 Hz ± 1½ db)	30 w. rms @ 2%	60 w. rms @ 3%	120 w. rms @ 3%
PEAK POWER	50 watts	85 watts	50 watts	50 watts	100 watts	200 watts
POWER CONSUM.	60 watts	180 watts	125 watts	120 watts	160 watts	320 watts
FREQ. RESPONSE	±1 db, 15-25,000 Hz	±1½ db, 10-38,000 Hz	±2 db, 10 - 40,000 Hz	±2 db, 20-20,000 Hz	±2 db, 20-20,000 Hz	±1 db, 20-20,000 Hz
SENSITIVITY	**Mic.:** 2 MV (high imp); **Mag.:** 3 MV; **Aux.:** 0.3-v	**Mic.:** 3.5 MV (high imp); **Mag.:** 2 MV; **Aux.:** 0.15-v	**Mic.:** 3.5 MV (high imp); **Mag.:** 2 MV; **Aux.:** 0.15-v	**Mic.:** 6 MV; **Mag.:** 50 MV; **Aux.:** 0.3-v	**Mic.:** 9 MV **Mag.:** 24 MV; **Aux.:** 0.4-v	**Mic.:** 9 MV; **Mag.:** 24 MV; **Aux.:** 0.4-v
GAIN	**Mic.:** 125 db; **Mag.:** 120 db; **Aux.:** 95 db	**Mic.:** 125 db; **Mag.:** 120 db; **Aux.:** 85 db	**Mic.:** 125 db; **Mag.:** 120 db; **Aux.:** 85 db	**Mic.:** 120 db; **Mag.:** 105 db; **Aux.** 95 db	**Mic.:** 122 db; **Mag.:** 115 db; **Aux.:** 96 db	**Mic.:** 125 db; **Mag.:** 118 db; **Aux.** 99 db
HUM and NOISE (below rated output)	**Mic.** — 70 db; **Mag.** —65 db; **Aux.**—85 db.	**Mic.** — 70 db	**Mic.** — 70 db	**Mic.** — 65 db; **Aux.** — 80 db	**Mic.:** — 65 db; **Aux.** — 80 db	**Mic.** —65 db; **Mag.** — 65 db; **Aux.** — 80 db
INPUTS	4 mic. (convert to low impedance, with T200, T500 or T50 transformer); 2 mic. (high imp.); 2 mag. phono or tape playback heads; 2 aux. (high imp., high level); 1 600-ohm balanced telephone line with WMT1 transformer; 2 bridging. Note: 4 mics. and any two of the other nine inputs may be simultaneously mixed and faded.	4 mic. (convert to low impedance with T200, T500 or T50 transformer); 1 mic. (high imp. or mag. tape); 2 aux. (high imp. high level/fader); 1 600-ohm balanced telephone line with WMT1 transformer; 1 bridging input/output. Note: 6 inputs can be simultaneously mixed and faded.	4 mic. (convert to low impedance with T200, T500 or T50 transformer); 1 mic. (high imp. or mag. tape); 2 aux. (high imp. high level/fader); 1 600-ohm balanced telephone line with WMT1 transformer; 1 bridging input/output. Note: 6 inputs can be simultaneously mixed and faded.	3 mic. (convert to low impedance with T200, T500 or T50 transformer or 2 convert to mag.); 1 aux. channel (2 inputs/ fader control); 1 600-ohm balanced telephone line with WMT1 transformer. Note: 4 inputs can be simultaneously mixed and faded.	3 mic. (convert to low impedance with T200, T500 or T50 transformer or 2 convert to mag.); 1 aux. channel (2 inputs/ fader control); 1 600-ohm balanced telephone line with WMT1 transformer. Note: 4 inputs can be simultaneously mixed and faded.	3 mic. (convert to low impedance with T200, T500 or T50 transformer or 2 convert to mag.); 1 aux. channel (2 inputs/ fader control); 1 600-ohm balanced telephone line with WMT1 transformer. Note: 4 inputs can be simultaneously mixed and faded.
OUTPUT IMPEDANCE	4, 8, 16 ohms, tape and booster jack, 25-v, balanced (21 ohms), 70-v. balanced (163 ohms)	4, 8, 16 and 83 ohms, balanced 25-v. line, balanced 70-v. line; tape/booster jack	4, 8, 16 and 163 ohms, balanced 25-v. line, balanced 70-v. line; tape/booster jack	4, 8, 16 ohms, balanced 25-v (16 ohms), 70-v (163 ohms); tape /booster jack	4, 8, 16 ohms, balanced 25-v (16 ohms), balanced 70-v (82 ohms); tape/booster jack	8, 16 ohms, bal'd 25-v (5 ohms), bal'd 70-v (41 ohms), bal'd 25-v center tap (1.25 ohms); tape/booster jack
CONTROLS	4 individual mic. (each with speech filter or wide-range switch) • 1 high imp. mic./mag. phono/ tape head/aux.-fader control with speech filter switch • 1 high imp. mic./mag. phono/tape head/ aux.-600 ohm line fader control with speech filter switch • master vol. • bass • treble • power switch • calibrated low freq. filter (variable) determines low freq. cut-off of any of 6 inputs • provision for remote control or precedence of all six inputs and master vol.	4 individual mic. (each with speech filter switch) • 1 mic. /mag./tape with speech filter switch • aux.1/aux. 2 • master vol. • bass • treble • power switch • calibrated low freq. filter (variable) determines low freq. cut-off of all inputs • provision for remote control or precedence of all six inputs and master vol.	4 individual mic. (each with speech filter switch) • 1 mic. /mag./tape with speech filter switch • aux. 1/aux. 2 • master vol. • bass • treble • power switch • calibrated low freq. filter (variable) determines low freq. cut-off of all inputs • provision for remote control or precedence of all six inputs and master vol.	3 mic. • aux. 1/2 • master vol. • bass • treble • power switch • provision for remote control or precedence for mic.	3 mic. • aux. 1/2 • master vol. • bass • treble • power switch • provision for remote control or precedence for mic.	3 mic. • aux. 1/2 • master vol. • bass • treble • power switch • provision for remote control or precedence for mic.
TONE CONTROL ACTION	Treble (10 KHz) +12 db to −14 db; Bass (50Hz) + 15 db to −9 db	Treble (10 KHz) +13 db to −15 db; Bass (50Hz) +15 db to −10 db	Treble (10 KHz) +13 db to −15 db; Bass (60Hz) +15 db to −10 db	Treble (10 KHz) +10.5 db to −14.5 db; Bass (50 Hz) +13.5 db to −9 db	Treble (10 KHz) +12 db to −15.5 db; Bass (50 Hz) +15 db to −9.5 db	Treble (10 KHz) +12 db to −14.5 db; Bass (50 Hz) +15 db to −9.5 db
TRANSISTORS or TUBES	All Silicon 32-transistors, 3-diodes, 2-zener diodes	8 tubes: 3–12AX7A, 3–7247, 2–8417 plus 5-silicon rectifiers	8 tubes: 3–12AX7A, 3–7247, 2–7868 plus 5-silicon rectifiers	5 tubes: 2–7868, 1–7247, 2–6EU7 plus 2-silicon rectifiers and 1-bias silicon diode	5 tubes: 2–8417, 1–7247, 2–6EU7 plus 2-silicon rectifiers and 1-bias silicon diode	7 tubes: 4-8417, 1-7247, 2-6EU7 plus 3-silicon rectifiers
DIMENSIONS	16½" W, 12" D, 4¾" H	16½" W, 12" D, 4¾" H	16½" W, 12" D, 4¾" H	14⅞" W, 9⅞" D, 5¾" H	14⅞" W, 9⅞" D, 5¾" H	16½" W, 12" D, 4¾" H
SHIP. WEIGHT	28 lbs.	37 lbs.	29 lbs.	20 lbs.	28 lbs.	43 lbs.
NET EACH	$262.50 (Zone 2: $265.30)	$229.50 (Zone 2: $232.65)	$187.50 (Zone 2: $190.55)	$126.00 (Zone 2: $128.05)	$165.00 (Zone 2: $167.60)	$217.50 (Zone 2: $220.75)

* Operates on 105-125 VAC or 12-15 VDC — from −20°C to +70°C (158°F)

(SOLID STATE)

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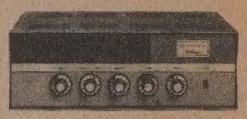
"CHS" SOLID STATE PA AMPLIFIERS

BOGEN SOUND SYSTEMS

These new "CHS" p.a. amplifiers feature ruggedness, flexibility and dependable performance. Every day their systems-tested circuitry and unique features gain growing acclaim from users in professional sound studios, government, industry, churches and schools throughout the world.

The degree of reliability achieved through advanced, conservative solid-state design could not be realized with conventional tube amplifiers. . . so, Bogen created "CHS" . . . the popular-priced series of solid-state amplifiers to suit every p.a. need. Safe continuous operations from −20°C. (−4°F.) to +65°C. (149°F.).

Unique features: optional panel-mounted preamp. provides 2 additional mic. inputs • hi or lo imped. mic. inputs (no transformer required) • all solid-state (CHS100, CHS50 are all-silicon) • automatic wave-soldered printed circuit boards • AC/DC operation (12 v. battery) with CHS35, CHS20 • provision for mic. precedence and remote vol. control.



	CHS 100	CHS 50	CHS 35	CHS 20
POWER OUTPUT	100 W.	50 W.	35 W.	20 W.
PEAK POWER	200 W.	100 W.	70 W.	40 W.
FREQ. RESPONSE	40-20,000 Hz ±2db	40-20,000 Hz ±2db	60-15,000 Hz ±2db	50-15,000 Hz ±2db
SENSITIVITY	Mic. (Lo-imp.): 0.3 mv. Mic. (Hi-imp.): 4.0 mv. Aux.: 0.3 v. Bridging: 1.0 v.	Mic. (Lo-imp.): 0.5 mv. Mic. (Hi-imp.): 3.0 mv. Aux.: 0.2 v. Bridging: 1.0 v.	Mic. (Lo-imp.): 0.6 mv. Mic. (Hi-imp): 4.0 mv. Aux.: 0.5 v. Bridging: 1.0 v.	Mic. (Lo-imp.): 0.6 mv. Mic. (Hi-imp): 4.0 mv. Aux.: 0.5 v. Bridging: 1.0 v.
INPUTS (impedance)	2 Mic. (Hi or Lo imp. unbal.) Hi imp.: 100k ohms Lo imp.: 200 ohms Aux.: (2 inputs on fader): 300k ohms Bridging: Hi imp. (1.0 v.)	2 Mic. (Hi or Lo imp. unbal.) Hi imp.: 100k ohms Lo imp.: 200 ohms Aux.: (2 inputs on fader): 300k ohms Bridging: Hi imp. (1.0 v.)	2 Mic. (Hi or Lo imp. unbal.) Hi imp.: 100k ohms Lo imp.: 200 ohms Aux: (2 inputs on fader): 300k ohms Bridging: Hi imp. (0.6 v.)	1 Mic. (Hi or Lo imp. unbal.) Hi imp.: 100k ohms Lo imp.: 200 ohms Aux: (2 inputs on fader): 300k ohms Bridging: Hi imp. (1.0 v.)
CONTROLS	2 indiv. mic. (plus 2 on PMA-2 preamp.) 1 vol. (fader) for Aux. 1 and 2 Master Volume Bass Treble Power Switch Provision for remote control or mic. precedence (all inputs)	2 indiv. mic. (plus 2 on PMA-2 preamp.) 1 vol. (fader) for Aux. 1 and 2 Master Volume Bass Treble Power Switch Provision for remote control or mic. precedence (all inputs)	2 indiv. mic. (plus 2 on PMA-2) preamp.) 1 vol. (fader) for Aux. 1 and 2 Master Volume Bass Treble Power Switch Provision for remote control or mic. precedence (all inputs)	1 mic. (plus 2 on PMA-2 preamp.) 1 vol. (fader) for Aux. 1 and 2 Master Volume Bass Treble Power Switch Provision for remote control or mic. precedence (all inputs)
OUTPUT IMPEDANCE	2, 8, 16 ohms 25 v. bal. (c.t.) = 6 ohms 70 v. bal. = 49 ohms 2 quick-disconnect sockets and screw terminals. Tape/Booster: 10k ohms 5.0 v. Bridging: Hi imp. at 0.5v.	4, 8, 16 ohms 25 v. bal. (c.t.) = 12 ohms 70 v. bal. = 100 ohms 2 quick-disconnect sockets and screw terminals Tape/Booster: 10k ohms 5.0 v. Bridging: Hi imp. at 0.5v.	4, 8, 16 ohms 25 v. = 16 ohms 70 v. = 143 ohms 2 quick-disconnect sockets and screw terminals Tape/Booster: 10k ohms 5.0 v. Bridging: Hi imp. at 0.5v.	4, 8, 16 ohms 25 v. = 31 ohms 70 v. = 250 ohms 2 quick-disconnect sockets and screw terminals Tape/Booster: 10k ohms 5.0 v. Bridging: Hi imp. at 0.5v.
TONE CONTROLS	Bass: +10db to −10db at 50 Hz Treble: +10db to −10db at 10 KHz	Bass: +10db to −10db at 50 Hz Treble: +11db to −12db at 10 KHz	Bass: +8db to −23db at 50 Hz Treble: +8db to −15db at 10 KHz	Bass: +8db to −19db at 50 Hz Treble: +12db to −15db at 10 KHz
HUM & NOISE (below rated output)	Mic.: 65db Aux.: 70db	Mic.: 67db Aux.: 70db	Mic.: 64db Aux.: 67db	Mic.: 66db Aux.: 70db
POWER CONSUMPTION	105-125 v. 50-60 Hz	105-125 v. 50-60 Hz	105-125 v. 50-60 Hz 12-15 VDC at 3A	105-125 v. 50-60 Hz 12-15 VDC at 2A
SEMI-CONDUCTORS	All-silicon, 10 transistors, 2 diodes	All-silicon, 10 transistors, 2 diodes	7 silicon transistors, 2 germanium, 3 diodes	6 silicon transistors, 2 germanium, 3 diodes
DIMENSIONS	5½"Hx10½"Dx15¼"W	5½"Hx10½"Dx15¼"W	5½"Hx10½"Dx15¼"W	5½"Hx10½"Dx15¼"W
SHIPPING WEIGHT	24 lbs.	21 lbs.	17 lbs.	15 lbs.
NET EACH	$157.15 (Zone 2: $159.20)	$127.45 (Zone 2: $129.35)	$104.95 (Zone 2: $106.50)	$92.25 (Zone 2: $93.60)

Accessories: PMA-2 Preamplifier — panel mounts to provide 2 additional high or low impedance microphone inputs (no transformers required for low impedance). Knobs come through front panel of amplifier.

Matching phono-top. Control-guard locking plate. Plug-in remote volume controllers. Rack panel mounting kits. Carrying cases. WMT-1 transformer—provides 500/600 ohm telephone line input for wired background music.

(SOLID STATE)

All prices and specifications subject to change without notice. Zone 2 includes the states of Ariz., Ark., Cal., Col., Ida., La., Miss., Mont., Nev., N.M., Okla., Oreg., Tex., Utah, Wash. and Wyo. Alaska and Hawaii run slightly higher.

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Net

BOGEN SOUND SYSTEMS

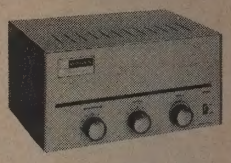
"CHB" SERIES PA AMPLIFIERS

Models CHB100, CHB50 and CHB35A share these outstanding features: systems-tested circuitry for continuous, heavy-duty operation; protected against circuit damage caused by accidental shorting or disconnecting of loudspeaker lines; no "double duty" control devices; built-in remote control circuit permits volume adjustment from up to 2,000 feet away; Memory Level Markers; tape output/booster jack.

CHB100 Shown with phono-top

CHB50/CHB35A

CHB20A

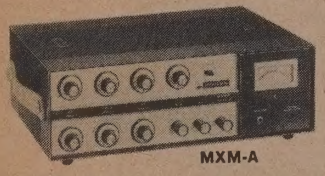


CHB10A

	CHB100	CHB50	CHB35A	CHB20A	CHB10A
PWR. OUTPUT	100 w.	50 w.	35 w.	20 w.	10 w.
FREQ. RESP.	±2 db, 20 to 20,000 Hz	±2 db, 20 to 20,000 Hz	±2 db, 20 to 20,000 Hz	±2 db, 20 to 20,000 Hz	±2 db, 40 to 12,000 Hz
INPUTS	**2 Mic.** (hi-imped.) **1 Mag. Phono 2 Aux.** (hi-imped. hi-level) Provision for WMT-1	**2 Mic.** (hi-imped.) **1 Mag. Phono 2 Aux.** (hi-imped. hi-level) Provision for WMT-1	**2 Mic.** (hi-imped.) **1 Mag. Phono 2 Aux.** (hi-imped. hi-level) Provision for WMT-1	**1 Mic.** (hi-imped.) **2 Aux.** (hi-imped. hi-level) Provision for WMT-1	**1 Mic.** (hi-imped.) **1 Phono** (hi-imped. hi-level) Provision for WMT-1
HUM & NOISE	**Mic.** −70 db **Aux.** −80 db	**Mic.** −70 db **Aux.** −80 db	**Mic.** −65 db **Aux.** −80 db	**Mic.** −65 db **Aux.** −80 db	**Mic.** −60 db **Phono** −75 db
SENSITIVITY	**Mic.** 5 mv **Aux.** .3-v **Mag. Phono** 15 mv	**Mic.** 5 mv **Aux.** .3-v **Mag. Phono** 15 mv	**Mic.** 4 mv **Aux.** .2-v **Mag. Phono** 12 mv	**Mic.** 3 mv **Aux.** .5-v	**Mic.** 6 mv **Phono** .2-v
OUTPUT IMPEDANCE	4, 8 and 16 ohms, 25-v line bal., (6 ohms) 70-v line (50 ohms) 2 speaker sockets, screw terminals; tape/booster jack	4, 8 and 16 ohms, 25-v line (12 ohms) 70-v line (100 ohms) 2 speaker sockets, screw terminals; tape/booster jack	4, 8 and 16 ohms, 25-v line (18 ohms) 70-v line (143 ohms) 2 speaker sockets, screw terminals; tape/booster jack	4, 8 and 16 ohms, 25-v line balanced (31 ohms), 70-v line (250 ohms) 2 speaker sockets, screw terminals; tape/booster jack	4, 8 and 16 ohms, 25-v line (62 ohms), 70-v (500 ohms) 1-speaker socket and screw terminal; tape/booster jack
TONE CONTROL ACTION	Treble (10 KHz) +12 db to −15 db Bass (50 Hz) +14 db to −9 db	Treble (10 KHz) +10 db to −15 db Bass (50 Hz) +11 db to −10 db	Treble (10 KHz) +10 db to −16 db Bass (50 Hz) +14 db to −10 db	Treble (10 KHz) +10 db to −16 db Bass (50 Hz) +14 db to −10 db	Treble (10 KHz) −24 db
TUBES	Total of 7 tubes and silicon rectifier: 1—6EU7, 1—12AX7, 4—7868, 1—6C4	Total of 5 tubes and silicon rectifier: 1—6EU7, 1—12AX7, 2—6L6GC, 1—6C4	Total of 5 tubes, 2 silicon rectifiers and 1- silicon diode: 1—6EU7, 2—7868, 1—12AX7, 1—6C4	Total of 3 tubes, 2 silicon rectifiers and 1-silicon diode: 1—6EU7, 2—6GW8	Total of 2 tubes and silicon rectifier: 1—12AX7/ECC 83, 1—7868
POWER CONSUMPTION	300 w. 105-125 VAC 50-60 cycles	150 w. 105-125 VAC 50-60 cycles	125 w. 105-125 VAC 50-60 cycles	90 w. 105-125 VAC 50-60 cycles	50 w. 105-125 VAC 50-60 cycles
DIMENSIONS	6¾" H, 15¾" W, 10" D	6¾" H, 15¾" W, 10" D	6¾" H, 15¾" W, 10" D	6¾" H, 15¾" W, 10" D	5¾" H, 11¼" W, 8¼" D
SHIP. WGHT.	25 lbs.	21 lbs.	20 lbs.	17 lbs.	12 lbs.
NET EACH	$133.50 (Zone 2: $135.75)	$103.50 (Zone 2: $105.50)	$85.50 (Zone 2: $87.30)	$70.50 (Zone 2: $72.05)	$42.75 (Zone 2: $43.85)

Accessories: matching phono-top, control-guard locking plate, rack panel mounting kits, carrying cases, remote volume controls . . . and more. WMT-1 transformer provides 500/600 ohm telephone line input for wired background music.

MIXER-PREAMPLIFIERS



MXM-A

MTM

MXM-A MIXER-PREAMPLIFIER −20°C to +70°C (158 F).

Professional, broadcast quality, self-powered unit which accommodates 7 mixed input signals simultaneously (5 may be from high or low impedance mics). One mic. input converts to an equalized mag. phono cartridge or tape playback head. Two aux. (high imped., high level) are connected to a fader control. Bridging input accepts signals from a remote preamplifier or a zero level line. Up to 3 MXM-A's may be paralleled to provide 21 inputs (up to 15 mics.). Output level may be monitored aurally and visually by headset and built-in VU meter. Panel-controlled speech filters for all mic. inputs; separate bass and treble tone controls. Provision for converting high imped. to balanced low imped. microphone inputs by using plug-in transformers. Sockets accept remote control and precedence plug-in units. Panel-controlled calibrated low frequency (notch) filter effectively "tunes out" hum, turntable rumble, etc. **Output:** 20 V. into high imped. load at 1%; 4 V. into 600 ohms at 1%; (from bridging output) 0.1 V. into 1 Meg. **Freq. Response:** 18-38,000 Hz ±1 db. **Output Imped.:** high imped. (less than 3,000 ohms); 500/600 ohms with TL 600 (broadcast quality) plug-in transformer. **Sensitivity:** high imped. 2 MV.; low imped. 0.1 V.; Mag., 1 MV.; bridging 0.5 V.; Aux., 0.1 V. **Hum: (below rated output)** Mic. 60 db. **Tone Controls:** treble: (10 KHz) + 12 db to − 12 db; bass: (50 Hz) + 14 db to − 8 db. **Tubes:** 4-12AX7A, 1-7247, 1-12AU7A plus 3 silicon rectifiers. **Power Consumption:** 47 watts, 117 VAC; 50/60 Hz **Dimen.:** 16½" W, 12" D, 4¾" H. **Ship. Wt.:** 23 lbs. **Net Each: $187.50** (Zone 2: $189.55)

MTM ALL-SILICON TRANSISTOR MIXER-PREAMPLIFIER −20°C to +70°C (158 F).

Professional, all-silicon transistor, self-powered unit (operates from 120 VAC or 12-15 VDC). Mixes 6 input signals (4 may be low impedance microphones). Unbalanced low impedance microphone inputs convert to balanced (50-600 ohms) with T525U plug-in transformer — or convert to mag. phono/tape input with PMC-1 plug-in module. 2 aux. (high impedance, high level) are connected to a fader control. Up to 3 MTM's may be paralleled to provide 18 inputs. Output level may be monitored aurally (head set) and visually (built-in meter). Sockets accept individual remote control, precedence and compressor plug-in units. Speech filters in mic. channels 1 and 2. R.F. filters in all mic. channels. **Output:** at 0 db: 1.8 V. into 500 ohms (0.5%); at +12 db: 7 V. into 500 ohms (2.5%); output transformer is built-in; no high impedance output. **Freq. Response:** 40-15,000 Hz ±1½ db. **Output Imped.:** (split output) 125/150 ohms and 125/150 ohms or 500/600 ohms balanced. **Input Imped.:** Mic.: low imped. unbalanced (balanced with T525U transformer); Aux.: 0.2 Meg. **Sensitivity:** low imped. Mic. 0.1 MV; Aux. 0.15 V. **Gain:** Mic. 75 db; Aux. 60 db; Bridging 60 db. **Bass Cut:** −15 db at 50 Hz **Treble Cut:** −15 db at 10 KHz **Hum:** Mic.: −65 db; Aux. −70 db. **Power Consum.:** 5 watts at 117 VAC 50/60 Hz, .12 A at 12 VDC. **Transistors:** 11 silicon plus 5 silicon diodes. **Dimen.:** 16¼" W, 8½" D, 3¾" H. **Ship. Wt.:** 13 lbs. **Net Each: $145.50** (Zone 2: $146.65)

(SOLID STATE)

LEAR SIEGLER, INC. / ISi / BOGEN DIVISION

Net

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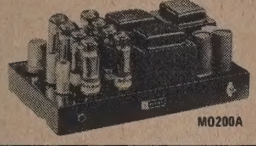
BOOSTER AMPLIFIERS

BOGEN SOUND SYSTEMS

Bogen's booster amplifiers embody the most advanced developments in design and techniques of construction. These units deliver maximum power from a small package. They are ideal for sound systems in industrial plants, airports, stadia, schools ... wherever undistorted power is required. Note their exceptionally wide-range response characteristics. Built-in provision permits paralleling any number of power amplifiers to multiply power output. The Bogen models described below are ideal preamplifiers for these boosters.

The MO200A, MO100A, MT100 and NTB250 units are unsurpassed for both PA and industrial uses. Their 115-volt output makes them adaptable to unique applications. With a variable frequency audio generator input, they represent relatively inexpensive power sources — any frequency or voltage within their power range — capable of driving servos, motors, vibration(shake) tables, ultrasonic equipment. The unique all-silicon transistor model MT100 may be operated from a 12-16 VDC source as well as from 117 VAC; NTB250 may be operated from a 24 VDC source. Highly flexible in combination, inputs of identical amplifiers can be paralleled; outputs can be wired in series or parallel to provide any reasonable voltage or power (except MBT60 outputs). No case is furnished with MO200A.


MO200A

MO100A
MO30A
MBT60

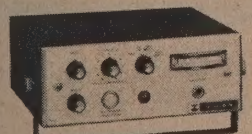
MT100

NTB250

	MO200A	MO100A	MO30A	ALL-SILICON TRANSISTOR MBT60 ▨	MT100 ▨	NTB250 ▨
POWER OUTPUT	200 w. rms at less than 2% distortion (Full power: 21-50,000 Hz ±1 db at 5%)	100 w. rms at less than 2% distortion (Full power: 21-50,000 Hz ±1 db at 5%)	30 w. rms at less than 2% distortion (Full power: 21-40,000 Hz ±1½ db at 5%)	60 w. rms at less than 3% distortion −20°C to +70°C (158°F)	100 w. rms at less than 1% distortion −20°C to +70°C (158°F)	350 w. rms at less than 5% 50-12,000 Hz.; 250 w. rms at less than 5% 35-20,000 Hz.; 250 w. rms at less than 3% 40-5000 Hz*
FREQUENCY RESPONSE	8-50,000 Hz ±1 db	8-50,000 Hz ±1 db	10-40,000 Hz ±2 db	12-20,000 Hz ±1 db	15-35,000 Hz ±1 db	20-30,000 Hz ±1 db
OUTPUT IMPEDANCE	Bal. 8 ohms, bal. 25-v (3 ohms) C.T., bal. 70-v (25 ohms) C.T. and 115-v (66 ohms) (for industrial uses)	Bal. 16 ohms, bal. 25-v (6.25 ohms) C.T., bal. 70-v (49 ohms) C.T. and 115-v (132 ohms) (for industrial uses)	Bal. 4, 8, 16 ohms, bal. 25-v (21 ohms), bal. 70-v (163 ohms)	Bal. 2.6, 8 and 16 ohms, bal. 25-v (10.4 ohms) C.T., bal. 70-v (82 ohms)	16 ohms, bal. 25-v (6 ohms) C.T., bal. 70-v (49 ohms) C.T., and 115-v (132 ohms) bal. (for industrial uses)	Bal. or Unbal. For 250 w. output: 25 V.C.T. (.625Ω), 25v. (2.5Ω), 70 V.C.T. (5Ω), 70v. (20Ω), 120v. (57Ω), 8Ω (44.7v.) For 350 v. output; 70v. (14.3Ω), 8Ω (53v.)
SENSITIVITY	High imped: better than 2v. Low imped: with TL600 transformer, better than 0.5 v	High imped: better than 2 v. Low imped: with TL600 transformer, better than 0.5 v	High imped: better than 2 v. Low imped: with TL600 transformer, better than 0.5 v	High imped: 0.15 v Low imped: with TL600 transformer, 0.04 v	High imped: 0.75 v Low imped: with TL600 transformer, 0.2 v	High imped: 1.4v. for 250 w. output; 1.8v. for 350 w. output. Low imped: 600 Ω with TL600 transformer, 0.3v. for 250 w. output, 0.35v. for 350 w. output
DIMENSIONS	16″ W, 11½″ D, 6″ H	8″ W, 13″ D, 6¾″ H	8″ W, 13″ D, 6¾″ H	8″ W, 13″ D, 6¼″ H	8″ W, 13″ D, 6″ H	17⅛″ W (19″ with furnished brackets), 11¾″ D, 9¼″ H
SHIP WEIGHT	65 lbs.	33 lbs.	23 lbs.	22 lbs.	31 lbs.	75 lbs.
NET EACH	$285.00 (Zone 2: $290.85)	$159.00 (Zone 2: $161.95)	$99.00 (Zone 2: $101.05)	$126.00 (Zone 2: $128.00)	$255.00 (Zone 2: $257.80)	$517.50 (Zone 2: $524.25)

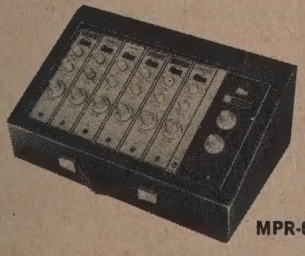
* @ 120 V. OUTPUT TAP, POWER CURVE IS 35 TO 5000 Hz.

MIXER-PREAMPLIFIERS


RTP-1

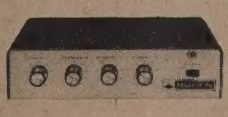
RTP-1 ALL-SILICON TRANSISTOR PREAMPLIFIER ▨

Designed for true broadcast quality, the RTP-1 will drive any number of booster amplifiers or packaged amplifiers over a 500/600 ohm line — even several miles away. Inputs include 2 Mic. (high or low impedance), 2 Aux. on fader control, 1 bridging. Two RTP-1's can be paralleled to provide 6 mixed inputs. Extremely low battery drain. Features include: Headphone monitor jack on front panel; built-in output meter calibrated in VU and db; 117 VAC or 12 VDC operation with internal batteries or external DC power supply; built-in battery tester. **Output:** at 0 db: 1.8 V. into 500 ohms (.1%); at + 12 db: 7 V. into 500 ohms (2.5%); output transformer is built-in; no high impedance output. **Freq. Response:** 20-20,000 Hz. ± 1 db. **Output Imped.:** (split output) 125/150 ohms & 125/150 ohms or 500/600 ohms balanced. **Input Imped.:** Mic.: high or low imped. (with T50, T200, T500 transformers); Aux.: 0.1 Meg. **Sensitivity:** low imped. (500 ohms) Mic. 0.5 MV; high imped. Mic. 5 MV.; Aux. .25 V. **Gain:** Mic. 72 db; Aux. 55 db; Bridging 60 db. **Bass Cut:** −12 db at 50 Hz. **Hum:** Mic.: −65 db; Aux. −70 db. **Power Consum.:** 5 watts at 117 VAC 50/60. Hz 0.3 amps at 12 VDC. **Transistors:** 9 silicon plus 3 silicon diodes. **Dimen.:** 9″ W, 9¼″ D, 3½″ H. **Ship. Wt.:** 7 lbs. **Net Each:** $133.50 (Zone 2: $134.15)


MPR-6

MPR-6 ALL-SILICON TRANSISTOR MIXER-PREAMPLIFIER ▨

All-silicon solid state, 6 channel vocal preamplifier with built-in selective reverb. Will mix six mics. and accept a signal from a phono, tape player, tuner, guitar or other electronic instrument. Two audio output jacks simplify connection to the proper booster amplifier, public address or musical instrument amplifier. Complete with leather carrying strap, mounting feet and provision for mounting on any standard microphone floor stand. **Inputs:** 6 mics. (high imped: 100 K Ω) 1 aux. (high: 100 K Ω). **Controls:** 6 volume, 6 bass, 6 treble, 6 reverb on/off, 1 master vol., 1 reverb intensity, 1 power switch (illuminated). **Connectors:** Mics. standard phone jacks for both high and low level output. Aux. phono jack. **Tone Controls:** Treble −10 db to +10 db at 10KHz. Base −10 db to +10 db at 50 Hz. **Outputs:** High level, 5 v. at 1% distortion (10,000 Ω) Low level, 0.07 v. at 1% distortion (2200 Ω). **Sensitivity:** For 2 v. output — Mic. 8 mv — Aux. 0.3 v. **Freq. Response:** ±2 db from 50 Hz to 20 KHz. **Hum and Noise:** −70 db. **Semiconductors:** 17 silicon transistors, 2 silicon diodes. **Power Requirements:** 105-125 v., 50-60 Hz, 3.6 watts. **Dimen.:** 18¾″ x 11¼″ x 7¼″. **Ship Wt.:** 19 lbs. **Net Each:** $195.00 (Zone 2: $196.70)


MX6A-T

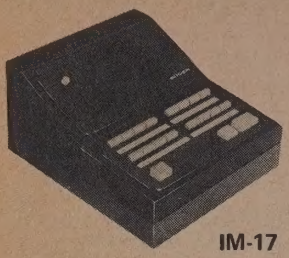
MX6A-T MIXER-PREAMPLIFIER ▨

Adds inputs to any amplifier. Ultra reliability is assured by use of all-silicon semiconductors and printed circuits. The MX6A-T has inputs for 4 high or low impedance microphones with individual volume controls. Two of the four channels will accept tuner or crystal cartridge signals. This mixer is excellent for electric guitars and other electronic musical instruments. The output of the MX6A-T is adequate to drive any packaged amplifier. Up to three MX6A-T units may be paralleled to provide 12 inputs with individual volume controls. **Freq. Response:** 50-20 KHz ±2 db. **Output:** 6 v. at 2%; 4 v. at 1%; 2 v. at 0.5%. **Inputs:** 4 mic. (hi-imp. 150 K) (low-imp. 200 ohms nominal; works well with 50 ohm or 500 ohm mics.) 2 aux. (250 K). **Gain:** mic, (hi-imp. −60 db) −4 mv. at 4 v. output, (low-imp. −80 db) −0.4 mv. at 4 v. output. Aux. −20 db −0.4 v. at 4 v. output. **Power Consump.:** 1.2 w. at 117 VAC 50-60 Hz. **Hum/Noise:** 68 db below 5 v. **Dimen.:** 9¼″ x 6″ x 2⅝″. **Ship. Wt.:** 6 lbs. **Net Each:** $48.75 (Zone 2: $49.30)

(▨ SOLID STATE) All prices and specifications subject to change without notice. Zone 2 includes the states of Ariz., Ark., Cal., Col., Ida., La., Miss., Mont., Nev., N.M., Okla., Oreg., Tex., Utah, Wash. and Wyo. Alaska and Hawaii run slightly higher.

BOGEN SOUND SYSTEMS

INTERCOMS

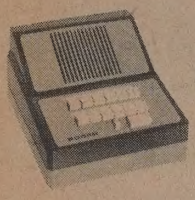


IM-17

Bogen intercoms include a wide variety of systems — each designed to answer a specific need.

▩ **SERIES IM INTERCOMS** — Solid-state, unmatched versatility, nine or seventeen master/remote stations in any combination, push-button instant station selectors, masters can page through existing PA system. 6 w. peak output. Masters reply hands-free. Choice of private and non-private, indoor or outdoor remotes. Simple installation, unique styling. Multiple simultaneous conversations. 120 VAC. Busy and privacy lights.

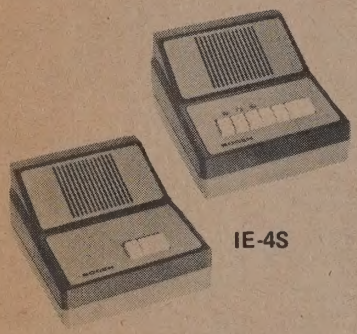
IM-9 MASTER STATION for systems up to 9 stations — all masters or one master and remotes or many masters and remotes. **IM-17 MASTER STATION** for up to 17 stations. **RIM-1 REMOTE** has a non-selective call-initiation switch (to one master), volume control, privacy switch. **RIM-3 REMOTE** similar to RIM-1 but with selective call-initiation switch to three masters. **TBS-45 OUTDOOR/INDOOR REMOTE** speaker functions as a remote in high noise level areas. With CS-1 or CS-3 switch, remote can initiate calls to one or three masters. **WX-6 WALL MOUNTING REMOTE** for office, hall or shop. With CS-1 or CS-3 switch, remote can initiate call to either one or three masters.



IE-13

▩ **SERIES IE INTERCOMS** — Versatile, solid-state intercoms suitable for factories, office buildings or homes. In an All-Master system, any station may call any other station, or several stations may be connected for a conference. In the Single Master-Multiple Remote system, the single master station may selectively call one or several remote stations. Remote can initiate calls and operates private or non-private as desired. The paging option permits page calls through existing PA equipment. Systems operate from standard 120 VAC or 12 VDC.

IE-7 MASTER STATION for systems up to 7 stations — all masters or single master/multiple remote. **IE-13 MASTER STATION** for up to 13 stations. **RIE-1 REMOTE** has a non-selective call initiation switch to master.



IE-4S

▩ **IE-4S ANNUNCIATOR INTERCOM SYSTEM** — Includes one master and one remote. Up to 2 RIE-1 remote stations may be added. Remote stations can originate calls to master by means of beep-tone and magnetic annunciator. Annunciator remains visible until cleared by master. Push-button selectors. 120 VAC or 12 VDC.

▩ **INTERNAL PHONE SYSTEMS** — Extremely flexible telephone systems that provide simultaneous conversations without a costly central exchange. No switching, no dialing, no switchboard delay.

TSL-16 TQ-12A

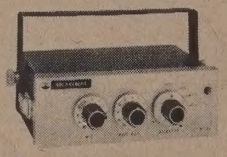
▩ **TSL-16.** 1 ring button and 15 station selector buttons. **TSL-8.** 1 ring button and 7 station selector buttons. **TRC** Phone Page Adapter allows paging from TSL phones. **TQ-1A** for 2 station systems. **TQ-6A** phone for up to 7 station system. **TQ-12A** phone for up to 13 station system. **TRA** Phone-Page Adapter allows paging from TQ phones.

Request Catalogs 431 and 432 for complete details and pricing of Bogen Intercom and Phone Systems.

MOBILE AMPLIFIERS

BT20A; 25w. TRANSISTOR MOBILE PA AMPLIFIER ▩

Power Output: 25 watts @ less than 10% (continuous). **Power Consumption:** Full power: 2.8 amps; Quiescent: .26 amps; 6-15 VDC (6 w. output on 6 VDC). **Inputs:** 1 mic. (low impedance); 1 aux. (tuner, tape, phono). **Gain:** mic., 110 db; aux., 90 db. **Hum and Noise:** mic. −90 db (below rated output); aux. −95 db (below rated output). **Sensitivity:** mic., 1 MV; aux., 0.4 volts. **Output Impedance:** 4, 8, 16 ohms. **Controls:** 1 mic.; 1 aux./power. **Transistors:** (5): 2—2N2926, 1—40234, 2—DTG-110. **Dimensions:** 4½" W, 4" D, 6½" H. **Shipping Weight:** 5 lbs. **Net Each: $66.00** (Zone 2: $66.35)



BT35A; 40w. COMPACT TRANSISTOR MOBILE PA AMPLIFIER ▩

55-watts when used as electronic siren

Excellent for police, fire, CD, and boats; radio receiver connects easily to aux. input. Splash-proof gasket seals chassis in cabinet. Temperature range −20°C. to +65°C. (149°F.). Polarity protection. Accessory siren tone — fog horn generator. Adjustable fixed-lock bracket. Built-in RF/line filters.

Power Output: 40 w. at less than 10% (continuous); 55 w. with siren generator. **Peak Power:** 55 w. **Power Consumption:** Full power: 3.6 amps; Quiescent: .42 amps 12-15 VDC. **Freq. Response:** 150-15,000 Hz ±3 db. **Inputs:** 1 mic. (low imped.); 1 aux. #1 (high level) tuner/tape/phono, 1 aux. #2 (high level) accessory (tone signal). **Gain:** mic. 110 db; aux. 90 db. **Hum and Noise:** (below rated output) mic. −90 db; aux. −95 db. **Sensitivity:** mic.: 1 MV; aux.: 0.4 V. **Output Imped.:** 4, 8, 16 ohms (output socket for accessory siren/fog horn generator). **Controls:** 1 mic.; 1 aux. volume; 1 selector switch/power (4 position); power off, mic., radio, aux. **Transistors:** 5 transistors, 1 silicon diode. **Dimen.:** 8" W, 6¼" D, 3" H. **Ship. Wt.:** 8 lbs. **Net Each: $90.00** (Zone 2: $90.72)

SF-1 SIREN/FOG HORN GENERATOR. All-silicon transistor, easily attaches to dashboard or bottom of BT35A. Furnished with 6 ft. cable and plug for attaching to BT35A. Provision for remote/accessory foot switch for generator activation. Siren may be operated automatically or manually. **Net Each: $57.75** (Zone 2: $58.00)

(▩ SOLID STATE)

LEAR SIEGLER, INC. / ISi / BOGEN DIVISION

Net

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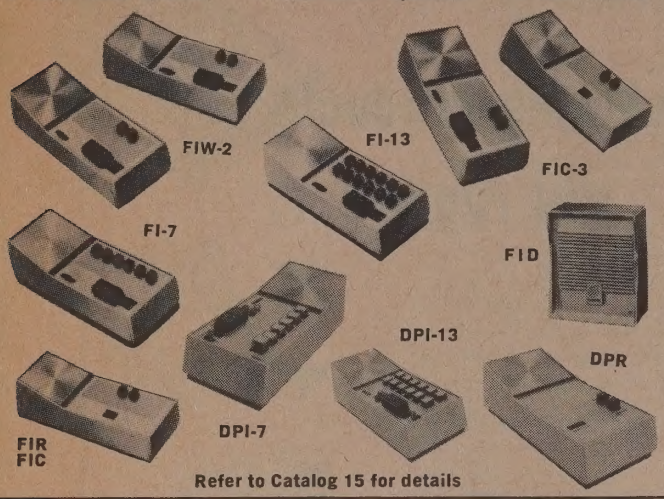
FANON

INTERCOMS FOR HOME AND BUSINESS

"FI" SERIES — DELUXE INTERCOM SYSTEM

• Solid state circuits • Push-button operation • New styling

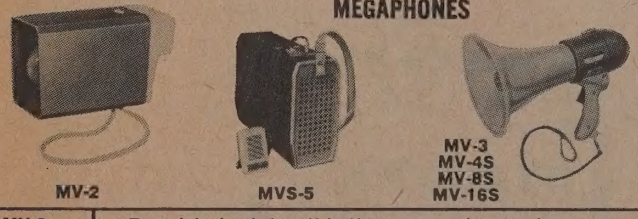


Refer to Catalog 15 for details

FIC-3	Trans. deluxe 2 station system with 50′ cable
FIS	Transistorized deluxe staff station for FIC-3
FIC	Additional indoor remote for FIC-3
FID-3	Transistorized deluxe 2 station door intercom system with 50′ cable
FID	Additional outdoor remote for "FI" series
FI-3	Transistorized deluxe master only
FI-7	Transistorized deluxe 7 station master for all-master or master to remote installation
FI-13	Transistorized deluxe 13 station master for all master or master to remote installation
FIR	Transistorized deluxe remote for FI-7, FI-13
FIW-2	Transistorized deluxe 2 station, 2 channel wireless intercom system
FIW-1	Additional wireless intercom station for FIW-2
TPA	Telephone amplifier accessory for "FI" masters
BM-3	Temperature fire-sensing device for FIC-3, FID-3, FI-3
BM-4	Temperature and rate of rise fire detector for FIC-3, FID-3, FI-3
PR-15	Paging and talkback relay accessory for FI-7, FI-13 master. Used with any PA system
DPI-7	Solid state, six station master used in all master, master-to-remote or intermix installation. 4 watts of audio power.
DPI-13	Solid state, twelve station master used in an all master, master-to-remote or intermix installation. 4 watts of audio power.
DPR	Remote station with Privacy Switch used with DPI-7 and DPI-13.
ACJ-2	Conversion kit for use with Model DPI-7 providing an "All Station Call" by depressing one button.
ACJ-4	"All Station Call" conversion kit for use with Model DPI-13.

Refer to Catalog for details.

MEGAPHONES



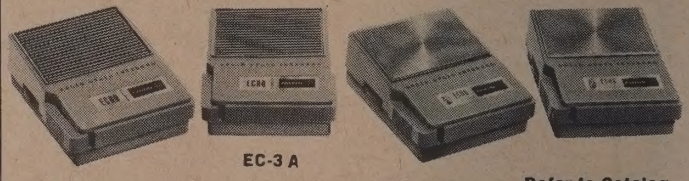
MV-2	Transistorized, 1 watt battery powered megaphone.
MV-3	Electric, battery powered megaphone.
MV-4S	Transistorized, 4 watt battery powered megaphone with built-in siren alarm.
MV-8S	Transistorized, 8 watt battery powered megaphone with built-in siren alarm.
MV-16S	Transistorized, 16 watt battery powered megaphone with built-in siren alarm.
MV-20S	Transistorized 20 watt battery-powered megaphone with built-in siren alarm and detachable microphone.
MVS-5	Transistorized, 8 watt portable P.A. system.
CL-16	Auto cigarette lighter adaptor cord for MV-16S.
MVR	Auto window rack holder for MVS-5.
STM-16	Mtg. bracket for MV-16S, MV-8S, MV-4, MV-3.

TWO-STATION "PACKAGED" INTERCOMS
1600 SERIES — SOLID STATE INTERCOMS

New economy series — Blister-packed for standard cartons

Refer to Catalog D202 for details

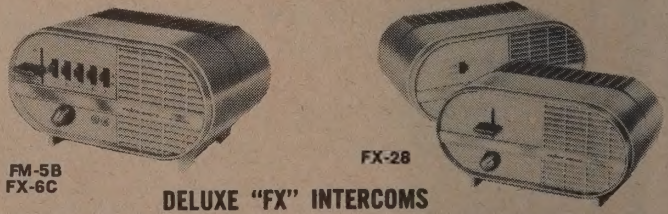
1600	Transistorized 2 'station system w/built-in AC power supply and 50′ cable
1600DC	Same as above less AC power supply
ES-16	Transistorized 2 station door intercom w/built-in AC power supply and 50′ cable
PS-16	AC power supply for 1600DC and ES-16DC
1605	Single 5 station master for master to remote instal.
(BL)16SY	"Starter system" — one 1605 master two 162 remotes and two 2WP cable
161	Additional outdoor remote for above systems
162	Additional indoor remote for above systems
2WP	50′ 2 conductor cable with plug terminations
2WP-100	100′ 2 conductor cable with plug terminations
1642	Transistorized 2 station wireless intercom
1643	Additional single wireless station for 1642



ECONOMY "ECHO" & SMALL TALK INTERCOMS

Refer to Catalog D203 for details

BLST-20	*Economy Two Station System with 50 Ft. Cable.
EC-2A	Transistorized battery operated two-station system with 50 ft. cable. Less battery ..... Net 9.95
EC-3A	Transistorized, AC operated 2-station system Net 11.95
EW-3A	Transistorized, AC, 2-station wireless system Net 19.95



DELUXE "FX" INTERCOMS

FM-5B	Five station master for master-to-remote installations with "remote-to-remote" talking feature.
FX-6C	Six station master for all master or master-to-remote.
FX-2B	Deluxe two-station system with 50 ft. cable
FSB	Additional remote with 50 ft. cable for FX-2B
FCB	Remote for FM-5 and FX-6C

Refer to Catalog 1 for details.

Net

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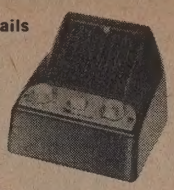
FANON INTERCOMS

Refer to Catalog 2 for details



IJM - CAM Series

INDUSTRIAL INTERCOMS

JMR	Two station system with 50 ft. cable.
IJM-5	Six station master for all master or master-to-remote installations.
IJM-10	Eleven station master for all master or master-to-remote installations.

AC Transformer Powered, Balanced Line Types:

CAM-5	MASCOFONE. Six station master for all master, master-to-remote or intermixed installations
CAM-10	MASCOFONE. Eleven station master for all master master-to-remote or intermixed installations
JR	Remote with call switch used with JMR, IJM-5, IJM-10.
JL	Remote less call switch (non-private). Used with all above industrial intercoms.
JS	Remote with call switch. Used with CAM-5, CAM-10
JS-6	Remote with call switch and six-station selector switch. Used with CAM-5, CAM-10

TELEPHONE INTERCOM SYSTEMS

8807

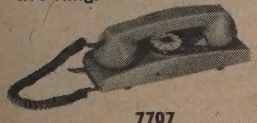
Selective Ring — Selective Talk
100% Trunkage — Pushbutton Operation

Refer to Catalog 5 for details

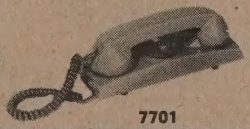
8811	An eleven station capacity phone with ten selector buttons
8807	A seven-station capacity phone with six selector buttons
8801	Single button telephone used with any multi-station telephone
PSA-88	Power supply used in conjunction with "88" Series
PR-12	Paging relay for "88" phones
PR-13	Paging and talkback relay for "88" phones
EB-881	Loud buzzer for optional use with any "88" phone.

SOLID STATE TELEPHONE INTERCOMS

"77 Series"— Completely new in circuit design, styling and application. Common Talk . . . Selective Ring.



7707



7701

7713

7713	13 station capacity phone for all-master, master-remote intermixed
7707	7 station capacity phone for all-master, master-remote and intermixed
7701	Remote phone used with 7713, 7707 or all remote systems
PS-77	AC power supply for 7713, 7707, 7701 telephones.
PR-7	Paging relay for 7713, 7707. Used with any p.a. system.

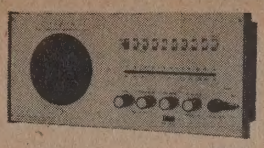
SOLID STATE PAGING TELEPHONE INTERCOMS

- Local Paging—Eliminates Annoying P.A. "Blast"
- Wide Area Coverage • Modern Styling

PT-7

PT-7	Paging telephone unit, use up to 20 per system.
APS-5	Solid state, 5 watt amplifier and power supply.

FANON BUILT-IN INTERCOMS



5509

56

4405

Specify copper or chrome finish.

Masters	
4405	Six station, transistorized master with plaster box.
5509	Ten station master with AM-FM radio and plaster box.

Remotes	
BC	Indoor remote. With plaster ring. Used with 4405.
BD	Outdoor remote. With plaster ring. Used with 4405, and 5509.
BDR	Outdoor remote with bell button. With plaster ring. Used with 4405, and 5509.
BJ	ndoor remote with phono jack. With plaster ring. Used with 4405.
56	Indoor remote. With plaster ring. Used with 5509.
WJT	Phono input assembly & wall box, used with 5509 master.

A system is made up of a "roughing-in" package and its respective "electronic" package.

"Roughing-In" Packages

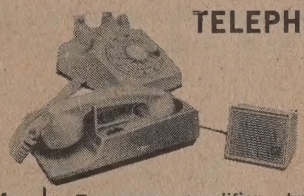
44-IK	Consists of all plaster boxes and wire required for 44-EK.
55-IK	Consists of all plaster boxes and wire required for 55-EK.

"Electronic Equipment" Packages

Specify copper or chrome

44-EK	Consists of 4405, three BC and one BD. Less plaster boxes and wire.
55-EK	Consists of 5509, three 56 and one BD. Less plaster boxes and wire.

TELEPHONE AMPLIFIER



Refer to Catalog 7 for details

FTA-4	Telephone amplifier, transistorized with extension speaker

POLICE, FIRE AND WEATHER AM & FM VHF MONITORS

APO-50 HL

APO-20H

APO-30L

Refer to Catalog 33 for details

APO-50 HL	Solid state, 12 channel crystal controlled FM-VHF reception in both high band (150 to 175 MHz) and low band (25-54 MHz). Adjustable squelch and tone control. Exclusive RF peaking control for better receiver sensitivity.
APO-20H	Exclusive 3 channel crystal controlled VHF reception in the high band (148 to 175 MHz). AM radio built-in. Solid state. Squelch control. Earphone and carrying strap included.
APO-30L	Exclusive 3 channel crystal controlled VHF reception in the low band (25 to 50 MHz). AM radio built-in. Solid state. Squelch control. Earphone and carrying strap included.
PEC-1	AC adaptor for models APO-20H and APO--30L. Plugs into any 117V AC outlet and connects to battery terminal connector.

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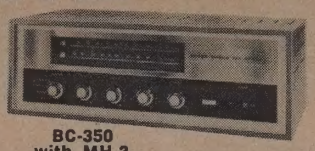
FANON — AMPLIFIERS, P.A. SYSTEMS; HORNS & SPEAKERS

Refer to Catalog 3D for details

FMA Series


BC-350 with MH-3

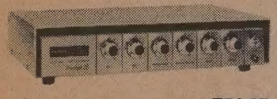
3512—3527

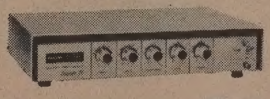
FMM-35AD

FMA-100	100 watt, POWER-FLEX P.A. amplifier.
FMA-65	65 watt, POWER-FLEX P.A. amplifier.
FMA-35	35 watt, POWER-FLEX P.A. amplifier.
FMA-20	20 watt, POWER-FLEX P.A. amplifier.
FMA-11	11 watt, POWER-FLEX P.A. amplifier
FMB-100	100 watt, POWER-FLEX booster amplifier.
FMB-65	65 watt, POWER-FLEX booster amplifier.
ARM	Above amplifiers mounted on 19" rack panel, add:
BC-350	35 watt FM/AM receiver and P.A. amplifier
MH-3	Metal cover for BC-350.
ASC-10	Speaker area selector control.
BMT	600 ohm balanced line transformer.
CCP-1	Control cover for 100, 65 and 35 w. amplifiers
LZT	Low impedance microphone transformer.
MP-2	Two channel microphone preamplifier.
PPC-1	Priority paging control.
RMC-2	Remote microphone volume control.
3600	Phono turntable, 117v AC.
S-2	Systems case with two 12" speakers, cables, plugs.
MM-4	4 channel microphone mixer.
3512	12 watt, transistorized P.A. for 12v DC.
3527	27 watt, transistorized P.A. for 12v DC.
FMM-35AD	35 watt, transistorized P.A. for 12v DC or 117v AC.
PS-27	117v AC power supply for 3512 and 3527.
3612	Phono turntable for 12v DC.

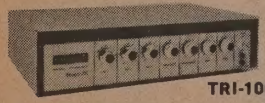
"TRIUMPH" SERIES — SOLID STATE AMPLIFIERS

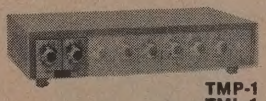
- Totally New Design
- Unmatched Flexibility
- Heavy Duty Performance
- Made in U.S.A.


TRI-35


TRI-25

Refer to Catalog 23 for details


TRI-100

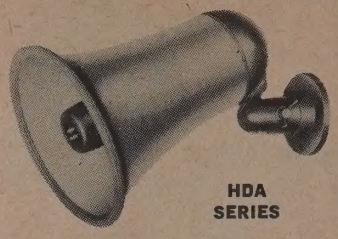

TMP-1
TML-1

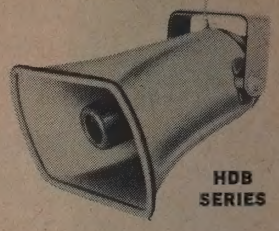
TRI-15	15 watt, P.A. Amplifier
TRI-25	25 watt, P.A. Amplifier
TRI-35	35 watt, P.A. Amplifier
TRI-50	50 watt, P.A. Amplifier
TRI-100	100 watt, P.A. Amplifier

OPTIONAL ADD-ON ACCESSORIES

ASC-10	Speaker Area Selector Control
3600	Phono Turntable, 117 V AC
S-2	Systems case with two 12" speakers, cables, plugs
TLX-1	Low Impedance Microphone Adaptor
TPP-1	Priority Paging Control
TML-1	2 Channel Mic. Preamplifier, Low Imp.
TMP-1	2 Channel Mic. Preamplifier, High Imp.
TWM-1	500/600 ohm Balanced Line Adaptor

Refer to Catalog 11 for details


HDA SERIES


HDB SERIES

FANON PAGING AND TALKBACK SPEAKERS

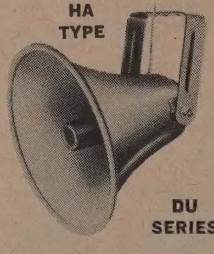
HDA-5B-8	7.5 watt—swivel base—5¼" bell, 8 ohms
HDA-5-8	7.5 watt—swivel base—6" bell, 8 ohms
HDA-5-45	7.5 watt—swivel base—6" bell, 45 ohms
HDA-6-8	15 watt—swivel base—6½" bell, 8 ohms
HDA-6-45	15 watt—swivel base—6½" bell, 45 ohms
HDA-10-8	30 watt—swivel base—10" bell, 8 ohms
HDA-10-45	30 watt—swivel base—10" bell, 45 ohms
HDB-8-8	25 watt—wide angle—8½x5½" bell, 8 ohms
HDB-8-45	25 watt—wide angle—8½x5½" bell, 45 ohms
HDB-12-8	30 watt—wide angle—11x6½" bell 8 ohms
HDB-12-45	30 watt—wide angle—11x6½" bell, 45 ohms

HFA SERIES

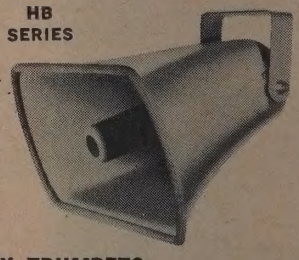
HS-9

FANON HI-FIDELITY AND SPECIAL PURPOSE

HFA-3	Economy 3" Reflex Speaker, 8 ohms
HFA-8	5 watt—swivel base—8" bell, 4 ohms
HFA-12	10 watt—co-axial—12" bell, 8 ohms
HS-9	10 watt—flush mount—6x9", 8 ohms


HA TYPE

DU SERIES


HB SERIES

FANON REFLEX TRUMPETS

HA-15	2½ ft. air column—15" bell
HA-20	3½ ft. air column—20" bell
HB-15	2½ ft. air column—15x 8" wide angle
HB-20	3½ ft. air column—20x10" wide angle

FANON HIGH POWER DRIVERS & STAND

DU-25	25 watt, deluxe weatherproof driver, 16 ohms.
DU-35	35 watt, deluxe weatherproof driver, 16 ohms.
DU-45	45 watt, deluxe weatherproof driver, 16 ohms.
DU-60	60 watt, deluxe weatherproof driver, 16 ohms.
DU-35T	35 watt with transformer, weatherproof 16 ohms.
DU-60T	60 watt with transformer, weatherproof, 16 ohms
ST-22	Heavy-duty chrome finish adjustable floor stand. Used with any speaker with "U" bracket.

Net

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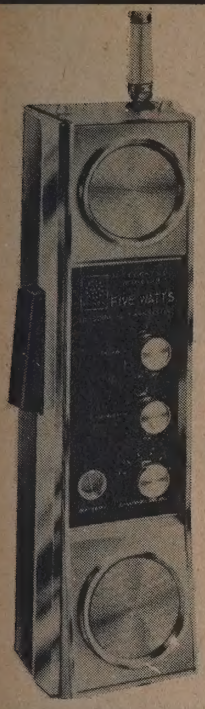
FANON — WALKIE-TALKIES MICROPHONES — FANON



3 SPACE AGE INTEGRATED* CIRCUITS

- Power Boost Antenna
- Range Booster
- Converts to Base Station
- P.A. Facility

5 WATTS

6 CHANNELS

WEATHER PROOF

One of the best hand-held CB-transceivers made. Features 5 full watts, 6 channel operation, 3 IC-Circuits, power-boost loading coil, separate mike and speaker, variable squelch, battery-indicator and RF-power meter, automatic noise limiter, strong-signal limiter, range booster, PA facility, external power jack, mike jack, antenna jack, and chargeable jack. IC-5000 rapidly converts for base station performance with an optional AC-power supply.

IC-5000	16 Transistors, 5 Watts, 6 Channel, 3 IC, Loaded Antenna, Earphone, Hand and Shoulder Strap
IC-3000	15 Transistors, 3 Watts, 6 Channel, 3 IC, Loaded Antenna, Earphone, Hand and Shoulder Strap
AUC-1	Cigarette Lighter Adaptor Cord
CHB-4	AC Supply and Recharger Combination
EAC-1	External Antenna Adaptor Cord
EBP-1	Portable Pack that Holds Eight "D" Cells (not included)
RB-12	Package of Twelve Rechargeable Nickel-Cadmium Batteries
VC-2	Rugged Carrying Case

All 23 CHANNELS— 5 Watts— Portable CB Transceiver

Model Fanfare 23 — Absolute tops in CB transmission and reception . . . a new standard of all-channel performance for hand-held 2-way radio. Long range (up to 10 miles and more under most conditions), clean signals and great flexibility. Solid state. Built-in range expander. Automatic noise limiter. All crystals supplied. Accessories:

- CHB-5 Transformer regulated AC power supply, permits Fanfare 23 to be used as base station. Can also recharge nicad batteries.
- EAC-2 External antenna adaptor cord.
- AUC-1 Cigarette-lighter adaptor cord—for car lighter use.
- RB-10 Pack of 10 rechargeable "AA" nicad batteries.
- EBP-1 Portable battery pack—for "D" cells or nicad batteries.

1 WATT OR LESS—3 CHANNELS I.C. CIRCUITS

IC-1000	12 Transistors, 1 Watt, 3 Channel, One IC, Metal Case, Earphone, Hand and Shoulder Strap
IC-500	11 Transistors, 500 mw, 3 Channel, One IC, Metal Case, Earphone, Hand and Shoulder Strap
IC-100	11 Transistors, 3 Channel, 100 mw, One IC, Earphones, Hand and Shoulder Straps
IC-10	11 Transistors, 100 mw, 3 Channel, One IC, Metal Case, Earphone. Hand and Shoulder Strap
AUC-1	Cigarette Lighter Adaptor Cord.
CHB-3	Heavy Duty AC Power Supply.
EAC-1	External Antenna Adaptor Cord. (for IC-1000 and IC-500 only)
PS-140	Economy AC Adaptor (IC-100 41C-10 only)
LA-1	Center Loaded 50" Ten-Section Antenna
NCA-1	Sealed, Nickel-Cadmium Rechargeable Battery Pack
VC-1	Carrying Case (for IC-1000 and IC-500 only)
VC-3	Carrying Case (IC-100 & IC-10 only)

LOWEST PRICED WALKIE-TALKIES

FCB-303

FCB-55A

FCB-606

BL-FCB-303	EXPLORER 11 — 3 Transistors, Batteries, Blister Packed.
FCB-303	Same as Above Styrofoam Box
BL-FCB-55A	ADVENTURER — 5 Transistors, Earphones, Batteries, Cases, Blister Packed
FCB-55A	Same As Above Gift Boxed
BL-FCB-606	MARINER 6 — 6 Transistors with Volume Control, Batteries, Blister Packed
FCB-606	Same As Above Styrofoam Box

CARDIOID (UNI-DIRECTIONAL) DYNAMIC MICROPHONES

- MKC-51 Dual impedance, 20 ft. cable, mike holder.
- MKC-52 Dual impedance, built-in volume control, 20 ft. cable, mike holder.
- MKC-53 Dual impedance, 20 ft. cable, mike holder.
- MKC-54 Dual impedance, 20 ft. cable, mike holder.
- MKC-55 Hi impedance, 20 ft. cable, mike holder.
- MKM-21 Base station with solid-state pre-amp.

OMNI-DIRECTIONAL DYNAMIC MICROPHONES

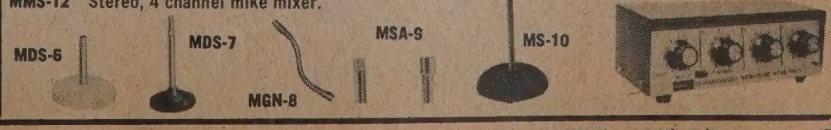
- MKO-41 Dual impedance, 20 ft. cable, mike holder.
- MKO-42 Dual impedance, 20 ft. cable.
- MKO-43 Dual impedance, 20 ft. cable, mike holder.
- MKO-44 Hi impedance, 20 ft. cable, mike holder.
- MKO-45 Hi impedance, 8 ft. cable, stand, neck cord.
- MKO-46 Hi impedance, 8 ft. cable, stand.
- MKO-47 Miniature, Hi impedance, 8 ft. cable, neck cord.

OMNI-DIRECTIONAL CRYSTAL MICROPHONES

- MKX-31 Hi impedance, 8 ft. cable, neck cord, stand.
- MKX-32 Hi impedance, 8 ft. cable, neck cord, mike holder.

MIKE MIXERS AND ACCESSORIES

- MDS-6 Non-Adjustable Desk Stand.
- MDS-7 Adjustable Desk Stand.
- MGN-8 Flexible Gooseneck.
- MSA-9 Snap-Apart Stand Adaptor.
- MS-10 Adjustable Floor Stand.
- MMM-11 Monaural, 4 channel mike mixer.
- MMS-12 Stereo, 4 channel mike mixer.



Take it from Mickey Mantle†

"ON LAND... AT SEA... there's a new wonderful, exciting world of sound... at your command!"

FEDTRO® POWERHOUSE MEGAPHONES

FEDTRO MEG-3600 DELUXE POWERHOUSE TRANSISTORIZED MEGAPHONE

• Waterproof • Impactproof • Rustproof

SPECIAL FEATURES

- Superior Power Range
- Tonal Quality and Clarity of the Highest Fidelity
- Perfectly Balanced Pistol Grip with Trigger Switch and Fingertip Volume Control
- All Aluminum Construction
- All Weather Durable Handy Carrying Strap
- Instant Battery Loading
- Special Blast Signal Stops and Starts the Action... Marine Signal... Boat Horn... Fog Horn..."Mayday" ...Designed to meet U.S. Coast Guard Distress Signalling Regulations

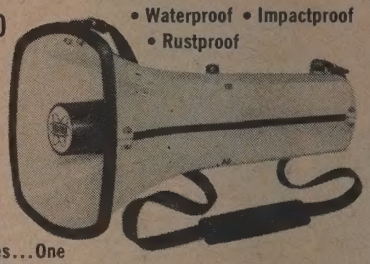
$79.95*

*Suggested selling price. Slightly higher in Western states.

magnificently finished in gleaming harmonious tones of brilliant red and lustrous ivory

FEDTRO MEG-3300 DELUXE POWERHOUSE TRANSISTORIZED MEGAPHONE

• Waterproof • Impactproof • Rustproof



SPECIAL FEATURES

- Two Dynamic Microphones... One Built-In and Additional "Plug-In" Detachable Microphone
- Use 4 Ways:
  Over Shoulder • Trumpet Grip
  • Thru Regular Mike
  • Thru Detachable Mike
- Super Power Range
- Superior Clarity
- Perfect Tonal Quality
- Hi-Impact PVC Construction
- Fingertip Volume Control
- Adjustable Carrying Strap & Shoulder Cushion
- Instant Battery Loading

$59.95*

*Suggested selling price. Slightly higher in Western states.

magnificently finished in gleaming harmonious tones of lustrous ivory and ebony black

FEDTRO MEG-1200 MICRO-MEG POWERHOUSE TRANSISTORIZED MEGAPHONE

the ultimate in transistorized miniaturization

• Waterproof • Impactproof • Rustproof

SPECIAL FEATURES

- Transistorized
- Miniaturized...only 8½ inches long
- Power Packed Amplification
- All Aluminum Construction
- Fingertip Volume Control
- Elegant Wrist-Strap Swivel Chain
- Noise-Cancelling Microphone

$39.95*

*Suggested selling price. Slightly higher in Western states.

magnificently finished in gleaming harmonious tones of iridescent Imperial silver smartly trimmed with ebony black.

FEDTRO MEG-1000B POWERHOUSE TRANSISTORIZED MEGAPHONE

• Waterproof • Impactproof • Rustproof

SPECIAL FEATURES

- All Aluminum Construction
- Superior Clarity and Tonal Quality
- Durable Handy Carrying Strap
- Instant Battery Loading
- Noise-Cancelling Microphone
- Fingertip Volume Control
- Power Packed Amplification

$39.95

*Suggested selling price. Slightly higher in Western states.

magnificently finished in gleaming harmonious tones of brilliant red and elegant ebony black

FEDTRO® POWERHOUSE OFFICIAL MEGAPHONE FOR THE MEXICAN 1968 OLYMPIC GAMES

FEDTRO

proven sound around the world®

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"FEDTRO...the proven sound of champions"

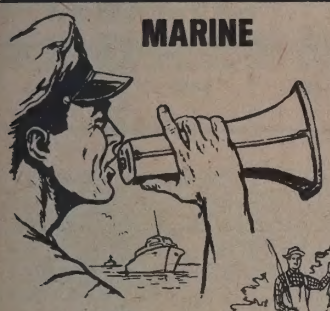
THE WORLD'S LEADING SUPPLIER OF TRANSISTORIZED MEGAPHONES

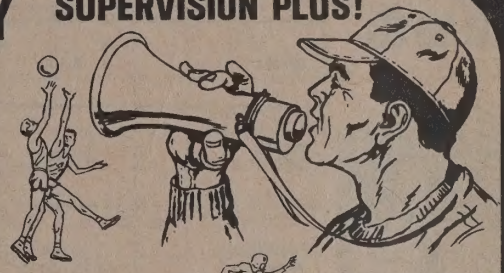
FEDTRO®

MARINE

INDUSTRY
SPORTS
MARINE

SUPERVISION PLUS!





RALLIES
ELECTIONS

FOR ALL SPORTS

ACTION SIGNAL FOR ALL SPORTS

HUNTING
CAMPING
FISHING

CHEERLEADING
SUPERVISION
INSTRUCTION

INDUSTRIAL

MUNICIPAL

FEDTRO POWERHOUSE MEGAPHONE SPECIFICATION GUIDE

MODEL NO.	FEDTRO MEG-5000	FEDTRO MEG-3600	FEDTRO MEG-3300	FEDTRO MEG-1200	FEDTRO MEG-1000B
ELECTRIC POWER SOURCE	9 Volts	6 Volts	6 Volts	6 Volts	6 Volts
OUTPUT	25 Watts	16 Watts	14 Watts	5 Watts	5 Watts
BATTERIES	6 Flashlight "C" cells*	4 Flashlight "D" cells**	4 Flashlight "D" cells**	4 Flashlight "C" cells*	4 Flashlight "D" cells**
DIMENSIONS	Diameter 8¾", Length 13½"	Diameter 7⅛", Length 12¾"	Diameter 7", Length 12¾"	Diameter 5¼", Length 8½"	Diameter 7¼", Length 12¼"
WEIGHT	5½ lbs.	3 lbs.	2¼ lbs.	1 lb. 10 ozs.	2.7 lbs.
POWER RANGE	Up to 5000 feet†	Up to 3600 feet†	Up to 3300 feet†	Up to 1200 feet†	Up to 1200 feet†
EXCLUSIVES	Built-in Blast-Signal	Built-in Blast-Signal	Two Dynamic Microphones	Ultra Miniaturization	Economy plus

*Eveready #1035 or equivalent.

**Eveready #950, Burgess #2 or equivalent.

†Depending on environment, climatic conditions and existing area noise levels.

The bell of Fedtro Powerhouse Megaphone model numbers 5000, 3600, 3300 and 1000B are protected and cushioned with a rubber bumper rim, and the bell of model number 1200 is protected and cushioned with a poly-vinylchloride bumper rim.

All Fedtro Powerhouse Megaphones are magnificently packaged in an attractive re-usable, multi-color, sturdy compartment... ideal for quick, easy storage of the unit.

FEDTRO MEG-5000 ULTRA DELUXE POWERHOUSE TRANSISTORIZED MEGAPHONE

the finest instrument of its kind in the world

• Waterproof • Rustproof
• Impactproof

SPECIAL FEATURES

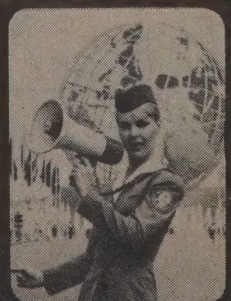
- Super Range & Power
- The Ultimate in Clarity and Tonal Quality
- Versatility • Detachable Mike
- All Aluminum Construction
- Fingertip Volume Control
- Adjustable Carrying Strap and Shoulder Cushion
- Instant Battery Loading
- Special Blast Signal Stops and Starts the Action... Boat Horn... Fog Horn..."Mayday"... Designed to meet U.S. Coast Guard Distress Signalling Regulations

magnificently finished in brilliant red and lustrous ivory

• Use 4 Ways:
Pistol Grip • Over Shoulder
• On its own legs • Tripod Mount

$119.95*

*Suggested selling price. Slightly higher in Western states.



THE OFFICIAL MEGAPHONE OF THE N.Y. WORLD'S FAIR

FEDTRO

Unisphere, presented by United States Steel

© 1961 New York World's Fair 1964-1965 Corporation

FEDTRO®

proven sound around the world®

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FOR FEDTRO POWERHOUSE TRUMPET SPEAKERS, SEE PAGE 90

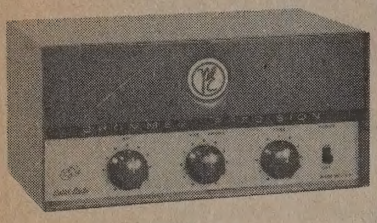
Grommes-Precision

PRECISION AMPLIFIERS BY PRECISION ELECTRONICS

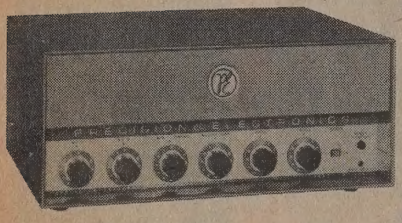
NEW SUPERIOR LINE

PUBLIC ADDRESS

S SERIES

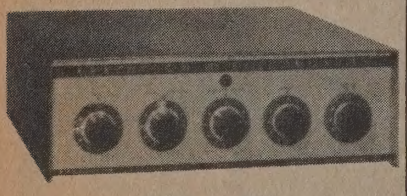


MODEL: S10



MODELS: S20; S35; S60; S100

ST20 w/Phone Top



MODEL S30 MAC

MODEL	S-10	S-20	S-35	S-60	S-100	S-30 MAC
POWER OUTPUT	10 Watts	20 Watts	35 Watts	60 Watts	100 Watts	30 Watts
FREQUENCY RESPONSE	±2 db 40-15,000 Hz	±2 db 30-15,000 Hz	±2 db 20-15,000 Hz	±2 db 20-15,000 Hz	±2 db 20-15,000 Hz	±2 db 40-15,000 Hz
INPUTS	1 Mic. 2 Aux. (Hi Imp.)	2 Mic. 2 Aux. (Hi Imp.)	2 Mic. 2 Aux. (Hi Imp.)	2 Mic. 2 Aux. (Hi Imp.)	2 Mic. 2 Aux. (Hi Imp.)	1 Mic. Lo Imp. 2 Aux. Hi Imp.
HUM & NOISE (Below rated output)	Mic. 55 db Aux. 65 db	Mic. 60 db Aux. 70 db	Mic. 60 db Aux. 70 db	Mic. 63 db Aux. 73 db	Mic. 65 db Aux. 75 db	Mic. 65 db Aux. 75 db
SENSITIVITY	Mic. 4 mv Aux. .3 v	Mic. 4 mv Aux. .3 v	Mic. 3 mv Aux. .25 v	Mic. 4 mv Aux. .3 v	Mic. 5 mv Aux. .4 v	Mic. 1 mv Aux. .25 v
OUTPUT IMPEDANCE	4, 8, 16 ohms 25 v (62 ohms) 70 v (500 ohms)	4, 8, 16 ohms 25 v (62 ohms) 70 v (250 ohms)	4, 8, 16 ohms 25 v (18 ohms) 70 v (143 ohms)	4, 8, 16 ohms 25 v (10.4 ohms) 70 v (84 ohms)	4, 8, 16 ohms 25 v (6.2 ohms) 70 v (50 ohms)	4, 8, 16 ohms
TONE CONTROL RANGE	Treble −10 db	Bass −15 db Treble −15 db	Bass ±10 db Treble±10 db	Bass ±10 db Treble ±10 db	Bass ±10 db Treble ±10 db	Bass −15 db Treble −15 db
TUBES SEMICONDUCTORS	6EU7, 2-6BQ5, 6V4	6EU7, 2-6BQ5, 6V4	2-6EU7, 6C4, 2-7868 5 Diodes	2-6EU7, 6C4, 2-6GT5, 0A2, 5 Diodes	2-6EU7, 6C4, 4-6GT5, 0A2, 5 Diodes	6 Transistors 3 Diodes
POWER SOURCE	110-125 volts AC 50-60 Cy.	110-125 volts AC 50-60 Cy.	110-125 volts AC 50-60 Cy.	110-125 volts AC 50-60 Cy.	110-125 volts AC 50-60 Cy.	110-125 volts AC 12 volts DC
DIMENSIONS	10½" W 5" H 6½" D	15¼" W 6" H 10" D	15¼" W 6" H 10" D	15¼" W 6" H 10" D	15¼" W 6" H 10" D	11" W 3½" H 9" D
SHIPPING WEIGHT	11 lbs.	19 lbs.	23 lbs.	26 lbs.	30 lbs.	14 lbs.
LIST PRICE	$72.50	$107.50	$129.95	$172.50	$225.00	$171.00
NET PRICE	$43.50	$64.50	$77.95	$103.50	$135.00	$102.50

Grommes-Precision

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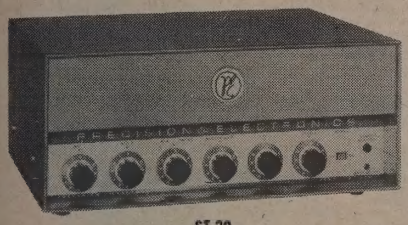
PRECISION AMPLIFIERS BY PRECISION ELECTRONICS

NEW SUPERIOR LINE SOLID-STATE

PUBLIC ADDRESS

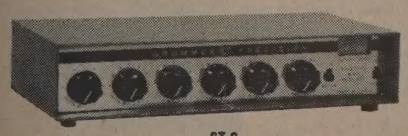
ST-10



ST-20

ST-35 ST-50 ST-100

ST-20 PHONO TOP



ST-6

ST SERIES

MODELS	ST-6	ST-10	ST-20	ST-35	ST-50	ST-100
POWER OUTPUT	Distortion 1%	10 watts Distortion 5%	20 watts Distorton 2%	35 watts Distortion 5%	50 watts Distortion 2%	100 watts Distortion 2%
FREQUENCY RESPONSE	± 1 db 20-20,000 Hz	± 1 db 20-20,000 Hz	± 1 db 20-20,000 Hz	± 1 db 20-20,000 Hz	± 1 db 20-20,000 Hz	± 1 db 20-20,000 Hz
INPUTS	4 Mic (low imp.) Aux. Hi Imp. Hi Level	1 Mic (low imp.) 2 Aux. Hi Imp. Hi Level	2 Mic (low imp.) Mag. Phono 2 Aux. Hi Imp. Hi Level	4 Mic (low imp.) Mag. Phono 2 Aux. Hi Imp. Hi Level	4 Mic (low imp.) Mag. Phono 2 Aux. Hi Imp. Hi Level	4 Mic (low imp.) Mag. Phono 2 Aux. Hi Imp. Hi Level
HUM & NOISE (Below rated output)	Mic—50 db Aux.—60 db	Mic—60 db Aux.—70 db	Mic—63 db Aux.—73 db	Mic—65 db Aux.—75 db	Mic—67 db Aux.—77 db	Mic—70 db Aux.—80 db
SENSITIVITY	Mic—0.5 mv Aux.—0.15 mv	Mic—0.5 mv Phono-Aux. 0.15 v	Mic—0.5 mv Phono-Aux. 0.15 v Mag. Phono 5 mv	Mic—0.5 mv Phono-Aux. 0.15 v Mag. Phono 5 mv	Mic—0.5 mv Phono-Aux. 0.15 v Mag. Phono 5 mv	Mic—0.5 mv Phono-Aux. 0.15 v Mag. Phono 5 mv
GAIN	Mic—70 db Aux.—15 db	Mic—110 db Aux.—55 db	Mic—113 db Aux.—58 db	Mic—115 db Aux.—60 db	Mic—117 db Aux.—62 db	Mic—120 db Aux.—65 db
OUTPUT IMPEDANCE	Hi Imp. Hi Level and Hi or Lo Imp. Mic	4.8-16 ohms 25 v Line (62.5 ohms) 70 volt (500 ohms)	4.8-16 ohms 25 v Line (31 ohms) 70 volt (250 ohms)	4.8-16 ohms 25 v Line (18 ohms) 70 volt (143 ohms)	4.8-16 ohms 25 v Line (12.5 ohms) 70 volt (100 ohms)	4.8-16 ohms 25 v Line (6.25 ohms) 70 volt (50 ohms)
TONE CONTROL RANGE		Treble (10 kc) —10 db	Bass ± 15 db 50 cps Treble ± 15 db 10,000 cps	Bass ± 15 db 50 cps Treble ± 15 db 10,000 cps	Bass ± 15 db 50 cps Treble ± 15 db 10,000 cps	Bass ± 15 db 50 cps Treble ± 15 db 10,000 cps
SEMI-CONDUCTORS	6 Transistors 2 Diodes	5 Transistors 2 Diodes	10 Transistors 2 Diodes	14 Transistors 2 Diodes	14 Transistors 4 Diodes	16 Transistors 4 Diodes
POWER SOURCE	105-125 volts AC 50-60 Cy.	105-125 volts AC 50-60 Cy.	105-125 volts AC 50-60 Cy.	105-125 volts AC 50-60 Cy.	105-125 volts AC 50-60 Cy.	105-125 volts AC 50-60 Cy.
DIMENSIONS	13¾" W 2½" H 6½" D	10½" W 5" H 6½" D	15¼" W 6" H 10" D	15¼" W 6" H 10" D	15¼" W 6" H 10" D	15¼" W 6" H 10" D
SHIPPING WEIGHT	6 lbs.	9 lbs.	18 lbs.	19 lbs.	25 lbs.	31 lbs.
LIST PRICE	$157.75	$108.75	$159.95	$187.50	$224.95	$274.59
NET PRICE	$94.65	$65.25	$95.95	$112.50	$134.05	$164.75

Grommes-Precision

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Trade Discount Applies To List Prices Only

TALK-A-PHONE WIRELESS AND HOME INTERCOM SYSTEMS

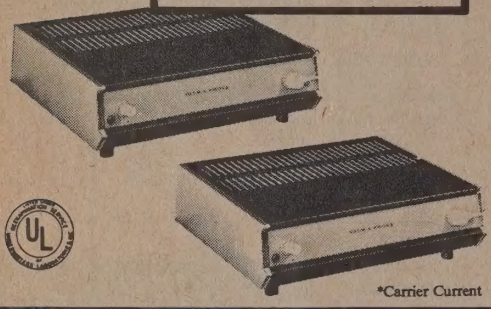
TWO WIRELESS SYSTEMS

Two high-quality wireless intercoms, featuring the exclusive TALK-A-PHONE "SONIC GATE" circuit. Provides communication where permanent or wired systems are not practical. For use in offices, factories, stores, homes, apartments, nurseries, farms, etc. Distinctively styled cabinets combine the look and feel of fine grained leather with the strength and rigidity of steel. Beautifully finished in charcoal gray with brushed chrome side panels. Each station has a translucent indicator which illuminates when "On." All stations must be connected to outlets on the **same electric company service transformer.** Built-in Ground Adapter provides greater sensitivity where electrical wiring is routed over long paths. U.L. Listed.

TALK-A-PHONE 12-STATION SELECTIVE WIRELESS* SYSTEM

- No Installation
- No Wiring
- No Cables
- Just Plug-in and Talk

The Sonic Gate circuit effectively suppresses line noises and hum by 30 db while system is in actual operation, as well as when in Stand-By position.



*Carrier Current

• 6 Separate 2-Way Conversations Simultaneously
• Selective Paging with Reply • Push-Button Channel Selector
• Start a System with any number of Masters and Staffs

Provides selective communication. Each Master is equipped with a 6 or 12-channel selector; can converse with any other station selectively; can receive calls on any channel Master elects to use. As many as 6 separate conversations may be held simultaneously, with 12 Masters. Masters can talk with any station in system; can also set up conferences.

Wireless Staff Stations are for use where calls need not be originated, but where reply must be made. They are available for operation on any single channel desired—to match that of Master. They also can be used to receive Paging Calls from any Selective Wireless Master in the system . . . use as many Wireless Staffs as needed (all Staffs must operate on same channel for this purpose). Two or more Wireless Staffs on the same channel will function as a 2-Station System (without Master); they can originate calls and reply to each other.

Start a system with any number of Masters and Staffs. Where up to 12 stations are used, each on a separate channel, Master can converse selectively with any channel. If more than 12 stations are used, channels must be *shared;* stations on same channel will receive all calls to that channel. To change location, merely pick up unit and move . . . no rewiring or new installation is necessary. All stations are equipped with the original TALK-A-PHONE UNI-TRANS feature, which permits continuous one-way transmission for periods when you wish to dictate or "listen-in."

TLCM-8912. 12-Station Selective Wireless Master. Complete with tubes and instructions, ready to use. Operates on 110-120 volts, AC or DC. Size 14"w x 8¾"d x 3⅛"h. Shipping weight, 12½ lbs.
List Price Per Station $198.00 ..... Net **116.00**

TLCM-8906. 6-Station Selective Wireless Master.
As above except for 6-Station Capacity. Shpg. Wt. 10 lbs.
List Price Per Station $176.00 ..... Net **103.00**

Wireless Staff Stations. Receive and reply on a single channel only.

T-LCS-901 Channel 1	T-LCS-903 Channel 3	T-LCS-905 Channel 5
T-LCS-902 Channel 2	T-LCS-904 Channel 4	T-LCS-906 Channel 6

Complete with tubes and instructions, ready to use. Operates on 110-120 volts, AC or DC. Size, 10⅛"w x 8¾"d x 3⅛"h. Shipping weight, 7 lbs.
List Price Per Station $101.00 ..... Net **59.20**

TALK-A-PHONE 2-STATION WIRELESS* SYSTEM

A complete system of 2 stations, ready to use. Simply place each unit where desired, plug each into nearest electrical outlet, and talk! Add more stations anytime. All stations will receive any messages transmitted from any point. Move units anywhere, plug into electrical outlet and use—no re-wiring or new installation necessary. The original TALK-A-PHONE UNI-TRANS is built in—provides continuous one-way transmission; ideal for dictation, or listening-in on baby. 110-120 V. AC-DC. Size, 10⅛"w x 8¾"d x 3⅛"h.

T-LC-33. Complete with tubes and instructions. Weight 16 lbs. List Price Per System $176.00 .... Net **103.00**

T-LC-17. Additional Single Station. Weight 8 lbs. List Price Each $88.00 ..... Net **51.50**

CRADLEPHONE—Optional for all units above. Add H to model No. when ordering.
List Price per Station add $65.00 ..... Net add **38.00**

TALK-A-PHONE All-Transistor HOME INTERCOM-RADIO SYSTEMS

HI-9 or HI-8

HI-9R or HI-29R

HI-SM
Housing Assembly with HI-17 or HI-16

HI-4

HI-1

K-LR-2R

This TALK-A-PHONE Intercom System saves the housewife and homeowner miles of tiresome steps, hours of time . . . Makes home life easier, more comfortable and more enjoyable . . .

LISTEN-IN ON BABY, CHILDREN OR SICK ROOM . . . from any room in the house, day or night • ANSWER OUTSIDE DOORS FROM ANY ROOM . . . in any part of the house—without opening doors to strangers • TALK FROM ROOM TO ROOM . . . back and forth, upstairs or downstairs, any time, day or night • YOUR FAVORITE RADIO PROGRAMS . . . follow you throughout the house with the flick of a switch.

TALK-A-PHONE All-Transistor Home Intercom units are beautifully finished in gold, polished and satin silver tones. All Masters and Staff Stations are designed for flush mounting; or with optional Housing Assembly, these stations can be mounted on walls, cabinets, or set on tables, shelves, etc. Plaster Ring included for 8 and 16-Station units require 14⅛"w, 4⅜"h, 3½"d wall opening. Front panel size: 15¼"w, 5¼"h. HI-4 requires 4½"w, 6½"h, 2"d wall opening. Front Panel size: 4⅛"w x 7⅜"h. Sub-Stations are designed for flush mounting only, do not need Plaster Ring. Requires 2" square wall opening, 2" deep. Front Panel size: 3⅝"w, 5⅝"h. Stations do not plug into electrical outlet. Operates from HI-PS Power Supply Unit or battery. Total capacity: up to 16 stations including Central Master. With full instructions.

CENTRAL MASTER STATIONS. Only one used per system. Contains the All-Transistor Amplifier (and radio when built-in). Place in any room. Master can call and converse with any other station (or stations) in system; can listen-in to any Station that user makes "non-private". If system has Model HI-9R Central Master (built-in radio), the Master and any Staff can listen to standard AM radio broadcasts. "Additional" Masters can be used in rooms where it is desired to listen to AM radio programs different from those tuned in at Central Master.

HI-9 Central Master Station. Without radio, less battery
List Price, Each, $105.00 ..... Net Each **61.50**

HI-9R Central Master Station. With built-in radio. Less battery.
List Price, Each, $163.00 ..... Net Each **95.50**

HI-17 Central Master Station. Same as HI-9 except has total 16 station capacity. Without built-in radio.
List Price, Each, $156.00 ..... Net Each **91.50**

HI-29R Additional Master Station. With built-in radio. Less battery.
List Price, Each, $163.00 ..... Net Each **95.50**

STAFF STATIONS. 4, 8 and 16-Station Capacity Staff Stations can be combined within the same system and used with choice of one 8-station capacity or one 16-station capacity Central Master Station. (When HI-9R is used, any HI-4, HI-8 and HI-16 staff, can listen to radio of HI-9R).

HI-4 Staff Station. Provides same operation as Master. Can call 3 other stations. Can listen to radio of HI-9R.
List Price, Each, $36.00 ..... Net Each **21.00**

HI-8 Staff Station. Provides same operation as Master. Can call 8 other stations. Can listen to radio of HI-9R.
List Price, Each, $59.95 ..... Net Each **35.00**

HI-16 Staff Station. Provides same operation as Master. Can call 16 other stations. Can listen to radio of HI-9R.
List Price, Each, $110.00 ..... Net Each **64.40**

HI-SM HOUSING ASSEMBLY. For enclosing any 8 or 16-Station Capacity Master or Staff, to permit mounting on walls or cabinets, or placing on tables, shelves, etc.
List Price Each $22.00 ..... Net Each **12.90**

HI-1 OUTDOOR SUB-STATION. For front and rear entrance applications. Complete with push-button for connection to regular house chime, bell or buzzer. Has illuminated nameplate. When caller rings bells, any Master or Staff may reply and converse with caller. Caller operates no controls.
List Price, Each, $31.00 ..... Net Each **18.20**

O-SM Surface Mounting Accessory for HI-1. Custom-styled metal casting of satin silver finish. Provides an attractive, coordinated base for mounting HI-1 on surface of wall. 3⅜" x 5⅛" x ⅝". List Price, Each, $6.30 ..... Net Each **3.70**

K-LR-2R ALTERNATE OUTDOOR SUB-STATION. For flush mounting. Requires wall opening 4⅛" square, 2" deep. Stainless steel front panel measures 4¹³⁄₁₆" square. Complete with plaster ring. Without push button or illuminated nameplate.
List Price, Each, $26.95 ..... Net Each **15.80**

Model K-SM Optional accessory for surface mounting K-LR-2R on wall.
List Price, Each, $7.95 ..... Net Each **4.65**

Model K-SM-L Optional accessory for Surface mounting HI-4 Staff on wall.
List Price, Each, $8.95 ..... Net Each **5.25**

HI-JB8 JUNCTION BOX for connecting Masters and Staffs up to a total of 8 stations. See #2 of "How to Determine Cable Needs."
List Price, Each, $9.40 ..... Net Each **5.50**

HI-JB16 JUNCTION BOX Same as above except for up to 16 stations.
List Price, Each, $16.50 ..... Net Each **9.70**

HI-PS POWER SUPPLY UNIT. One required per system (only when battery is not used). Plugs into any 120 volt, 60 cycle AC electrical outlet in basement, attic, etc.
List Price, Each, $31.00 ..... Net Each **18.20**

BATTERY. Use any 9-volt dry battery, such as ignition or telephone battery; or six standard #6 dry cells in series—available from local sources. *Note: When battery is used, power supply is not required.*

HOW TO DETERMINE CABLE NEEDS

Masters and Staff Stations. Use #6226 cable in one of 2 ways: (1) Measure from 1st unit to 2nd unit only; from 2nd unit to 3rd unit only, etc., until last unit is reached—then total. Cable between last and 1st unit not needed. (2) Place a Common Junction Box (Model HI-JB) in attic, basement, closet, etc. Measure from each Master and Staff to Junction Box and total. Double length #6226 required for 16-Station units. Connect HI-4 to nearest 8 or 16-Station unit or to HI-JB with #6214 cable.

Outdoor Sub-Stations: Connect to nearest Master or Staff only with #6202 cable.

Battery or Power Supply Unit: Connect with #6202 cable to Master Stations only.

CABLE. For indoor or outdoor use.

Type No.	No. Pairs	Approx. O.D.	LIST, Per Ft.	NET, Per Ft.
6226	13	⅝"	76c	**44c**
6214	7	7⁄16"	39c	**23c**
6202	1	3⁄16"	8c	**4¾c**

All prices slightly higher west of Rockies—All prices and specifications subject to change without notice. Manufactured under exclusive TALK-A-PHONE Patents.

TALK-A-PHONE CO.

Trade Discount Applies To List Prices Only

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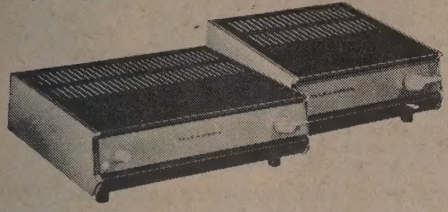
TALK-A-PHONE Deluxe Intercom Systems

Quality intercommunications systems designed for the Office, Business, Plant, House, Farm, Professional Man, or any other private or commercial application. A flick-of-a-finger gives you instant and direct two-way conversation between any two points—anywhere. Masters have translucent indicator which illuminates when system is "on." In cabinets that combine the look and feel of fine grained leather with the strength and rigidity of steel. Beautifully finished in charcoal gray and brushed chrome. Resists industrial liquids and atmospheres. Size: Masters, 10½"w x 8¾"d x 3⅛"h.; Subs, 7½"w x 8¾"d x 2⅛"h. U.L. Listed.

TALK-A-PHONE 2-STATION SYSTEM

2-way voice communication between any two points



K-LC-2 A complete, high-quality intercommunication system. Includes a Master Station, a Sub-Station and 50 feet of interconnecting cable. Additional cable available for distances up to 2000 feet. Easy to install and operate. Master and Sub-Station can originate calls to each other and carry on a 2-way conversation. Sub-Stations can be used "privately" or "non-privately". When "private", Master cannot listen-in on Sub-Station; yet Sub can answer and originate calls. When "non-private", persons at Sub-Station can answer calls at a distance without operating controls, as well as originate calls. Master is equipped with a translucent indicator, illuminated by permanent-type bulb, to show when system is "on". Rugged, high-gain transistorized amplifier is built to withstand continuous use and to require a minimum of maintenance. Adjustable Volume. Only Master plugs into electrical outlet, 110-120 volts, AC or DC. Master in deluxe cabinet finish, Sub-Station cabinet is of same style and color, but is in grained, baked enamel finish. U.L. Listed.

Model K-LC-2 2-Station System complete with easy-to-follow instructions, and 50 feet of cable. Wt. 13 lbs.
List Price complete $79.95.....Net complete **46.95**

No. 6303 (3 conductor)cable. 175°F. individually covered conductors with overall plastic jacket and milar shield. Provides noise-free cable lines in Industry, Office and Home. For indoor and outdoor use where additional lengths are required between the Master and Sub-Station.
List Price per foot 11c.....Net per foot **6½c**

No. 5303 (3 conductor) cable for indoor use.
List Price per foot 7c.....Net per foot **4c**

Optional Wall Mounting Brackets for Model K-LC-2 Sub-Station are available. See description below.

TALK-A-PHONE MASTER SELECTIVE SYSTEMS

A system of one Master Station which can communicate with from one to ten Sub-Stations. Subs can call Master, but not each other.

K-LR-3 or K-LR-3M

K-LR-3R

K-ML A system consisting of one Master Station and from one to ten Sub-Stations. Master Station can talk and listen to any one Sub-Station, several Sub-Stations or with all Subs simultaneously. Sub-Stations do not communicate with each other. Only the Master Station plugs into an electrical outlet. You may start with only one Master and one or two Sub-Stations and then add later when necessary. Installation of system has optional feature whereby Sub-Stations can be connected "privately," or "non-privately" and still originate calls to the Master under either application. Once a conversation has been initiated with a "non-private" system, persons at Sub-Stations need operate no controls and can reply from a distance. When the system is connected "privately," Master unit cannot "listen in" on Sub-Stations. However, they can reply when called, and also originate calls to the Master. Operates universally on 110-120 volts, AC-DC. U.L. Listed.

K-AC The K-AC-5406 and K-AC-5411 Master Stations operate as above with the added feature of 10 times volume output. A desirable feature for large or noisy areas and for paging. Operates on 120 volts, AC only. U.L. Listed.

Use only one Master in each System.

Optional Wall Mounting Brackets for Models K-LR-3 and K-LR-3M are available. See description below.

Model K-ML-5 Master for 5 Sub-Stations. Wt. 8 lbs.
List Price each $78.50.....Net each **46.00**

Model K-ML-10 Master for 10 Sub-Stations. Wt. 8 lbs.
List Price each, $96.00.....Net each **56.40**

Model K-AC-5406 Master Station. 5 Sub-Station capacity. High Volume Output. Wt. 8 lbs.
List Price each $96.00.....Net each **56.40**

Model K-AC-5411 Master Station. 10 Sub-Station capacity. High Volume Output. Wt. 8 lbs.
List Price each $116.00.....Net each **68.00**

Model K-LR-3 Sub-Station (in same deluxe finish as Masters) for use with any of above Masters. Wt. 6 lbs.
List Price each $34.80.....Net each **20.40**

Model K-LR-3M Sub-Station (in cabinet of same style, color and size as above, but in grained, baked enamel finish) for use with any of above Masters. Wt. 6 lbs.
List Price each $26.95.....Net each **15.80**

Model K-LR-3R Flush mounted Sub-Station for use with any of above Masters. Requires wall opening 4½" W. x 6½" H. Stainless steel front panel measures 4¹³⁄₁₆" W. x 7⅜" H. Complete with plaster ring.
List Price each $26.95.....Net each **15.80**

Model K-SM-L Optional accessory for surface mounting K-LR-3R on wall. List Price each $8.95.....Net each **5.25**

Model K-HP-3 Hi-Power Staff Station for wall mounting. Charcoal Gray metal case. Wt. 8 lbs.
List Price each $36.00.....Net each **21.00**

Model K-HP-3V Same as above, but with built-in volume control, adjustable to full output.
List Price each $44.95.....Net each **26.40**

Model K-C-20 Nine-inch weather proof re-entrant horn. Charcoal Gray color. Wt. 5 lbs.
List Price each $53.00.....Net each **31.00**

Model K-C-20V Same as above, but with built-in weather resistant volume control, adjustable to full output.
List Price each $69.95.....Net each **41.00**

K-S-100 Wall Switch for origination of call through K-C-20 or K-HP-3. List Price each $7.85.....Net each **4.60**

Model K-S-111 Wall Mounted Cradle Phone. (Optional accessory). For noisy areas and listening privacy. Use with K-HP-3, K-C-20 and K-S-100. Speaker disconnects when in use.
List Price each $79.00.....Net each **46.00**

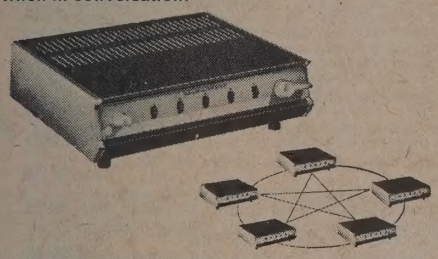
No. 6303 (3 conductor) cable. 175°F. individually covered conductors with overall plastic jacket and milar shield. Provides noise-free cable lines in Industry, Office and Home. For indoor and outdoor use to connect Sub-Station to Master.
List Price per foot 11c.....Net per foot **6½c**

No. 5303 (3 conductor) cable for indoor use.
List Price per foot 7c.....Net per foot **4c**

All systems above are transistorized and come complete with easy to follow instructions, ready to install.

TALK-A-PHONE SUPER SELECTIVE SYSTEMS

A system of up to ten Master-Stations. Each station can call and communicate with any other. Each station operates controls when in conversation.



K-LS A system of all Master Stations. Any Station can call any other Station in system. Several completely private 2-way conversations are possible at same time. A versatile, low cost intercom system offering extreme flexibility, meeting many requirements in industry, offices, homes, etc. Any Station can call and carry on a conversation with any other Station or Stations in the system with absolute "privacy." Have a visitor in your office and your mind is at ease that no one can eavesdrop on your conversation. Stations can be located even 1000 feet apart. Variable volume, adjustable at each unit, controls incoming voice. You can start with two or three masters, and then add later as required. Operates universally on 110-120 volts, AC-DC. U.L. Listed.

K-AC The K-AC-505 and K-AC-510 Master Stations operate as above but provides a system with the added feature of 10 times volume output. A desirable feature for large or noisy areas and for calling many stations at once. K-AC-505 and K-AC-510 Masters cannot be intermixed with any other master For 120 volts, AC only. U.L. Listed.

Model K-LS-5 Master for five Masters. Wt. 8 lbs. List Price each $78.50.....Net each **46.00**

Model K-LS-10 Master for ten Masters. Wt. 8 lbs. List Price each $96.00.....Net each **56.40**

Model K-AC-505 Master for 5 Masters. Hi-Volume Output. Wt. 8 lbs. List Price $96.00.....Net each **56.40**

Model K-AC-510 Same as K-AC-505 except for 10 Masters. List Price each $116.00.....Net each **68.00**

No. 5506 (6-conductor) Cable for connecting K-LS-5 or K-AC-505 Masters. List Price per foot 19c. Net per foot **11c**

No. 9911 (11-conductor) Cable for connecting K-LS-10 or K-AC-510 Masters. List Price per foot 36c. Net per foot **21c**

All systems above are transistorized and come complete with easy to follow instructions, ready to install.

TALK-A-PHONE COMBINATION SYSTEMS

A system combining one or more Master Stations with one or More Sub-Stations up to a combined total of ten. Masters call any station. Subs reply but Subs cannot originate calls.

K-LR-2 or K-LR-2M

K-LR-2R

A.

B.

K-CL For the more flexible type of communication system requiring the operation of more than one Master Station, along with Sub-Stations which need not originate calls. Personnel can answer incoming calls even though they are 25 to 40 feet from their unit. Master Stations may talk to each other and to all Sub-Stations in the system selectively; or you can have one or more Sub-Stations which are exclusive to only one Master Station (as illustrated in the diagram at left). Master Stations have the option of making themselves "private" or "non-private" at will. You can begin with two stations (at least one must be a Master) and add other units as required. Model K-CL-5 Master Station has a total inter-connecting capacity of five stations, including Masters and Sub-Stations: while Model K-CL-10 Master Station has a total capacity of ten stations. Sub-Stations are not plugged into electric current. U.L. Listed. 120 volts. AC-DC.

Optional Wall Mounting Brackets for Models K-LR-2 and K-LR-2M are available. See description below.

K-AC The K-AC-605 and K-AC-610 Master Stations operate as above but provides a system with the added feature of 10 times volume output. A desirable feature for large or noisy areas and for calling many stations at once. K-AC-605 and K-AC-610 Masters cannot be intermixed with any other master. For 120 volts, AC only. U.L. Listed.

Model K-CL-5 Master for five station use. Wt. 8 lbs.
List Price each $93.00.....Net each **54.95**

Model K-CL-10 Master for ten station use. Wt. 8 lbs.
List Price each $113.00.....Net each **66.20**

K-AC-605 Master for 5-Station use. Hi-Volume Output. Wt. 8 lbs. Complete with instructions.
List Price each $113.00.....Net each **66.20**

K-AC-610 Same as K-AC-605 except for 10-Station use.
List Price each $130.00.....Net each **76.20**

Model K-LR-2 Sub-Station (in same deluxe finish as Masters) for use with any of above Masters. Wt. 6 lbs.
List Price each $34.80.....Net each **20.40**

Model K-LR-2M Sub-Station (in cabinet of same style, color and size as above, but in grained, baked enamel finish) for use with any of above Masters. Wt. 6 lbs.
List Price each $26.95.....Net each **15.80**

Model K-LR-2R Flush mounted Sub-Station for use with any of above Masters. Requires wall opening 4⅛" square. Stainless steel front panel measures 4¹³⁄₁₆" square. Complete with plaster ring.
List Price each $26.95.....Net each **15.80**

Model K-SM Optional accessory for surface mounting K-LR-2R on wall. List price each $7.95.....Net each **4.65**

Model K-HP-3 Hi-Power Sub-Station for wall mounting in charcoal gray metal case. Wt. 8 lbs.
List Price each $36.00.....Net each **21.00**

Model K-HP-3V Same as above, but with built-in volume control, adjustable to full output.
List Price each $44.95.....Net each **26.40**

Model K-C-20 Nine-inch weather proof re-entrant horn. Charcoal gray color. List price ea. $53.00. Net each **31.00**

Model K-C-20V Same as above, but with built-in weather resistant volume control, adjustable to full output.
List Price each $69.95.....Net each **41.00**

Model K-S-111 Wall Mounted Cradle Phone. (Optional accessory). For noisy areas and listening privacy. Use with K-HP-3 and K-C-20. Speaker disconnects when in use. List Price each $79.00.....Net each **46.00**

No. 6210 (5 pair) Cable for interconnecting K-CL-5 or K-AC-605 Masters.
List Price per foot 34c.....Net per foot **20c**

No. 6226 (13 pair) Cable for interconnecting K-CL-10 or K-AC-610 Masters.
List Price per foot 76c.....Net per foot **44c**

No. 6902 (2-conductor) Cable for connecting Sub-Station to K-CL-5, K-CL-10, K-AC-605 or K-AC-610.
List Price per foot 4¾c.....Net per foot **2¾c**

All systems above are transistorized and come complete with easy to follow instructions, ready to install.

A. CRADLEPHONE—Optional for any unit above (except K-CL-5, K-CL-10, K-AC-605, K-AC-610, K-C-20(V), K-HP-3(V), K-LR-3R and K-LR-2R.) Add "H" to Model No. when ordering.
List Price Per Station, add $65.00 .....Net, add **38.00**

B. WALL MOUNTING BRACKETS—Optional accessory for use with TALK-A-PHONE Models K-LR-3, K-LR-3M, K-LR-2, K-LR-2M, K-C-41, K-C-41M, K-C-42, K-C-42M, and K-LC-2 Sub Station to enable mounting on wall, side of desk, etc. One pair required per station. Permits mounting with front panel upward, downward or sideward.
Model K-W1 Mounting Brackets, per pair. List Price $1.00 Net **60c**

HOW TO DETERMINE CABLE REQUIREMENTS

For Master Selective Systems measure from each Sub-Station to the Master and order total. For **Super Selective Systems**—measure from first Master to second Master only, from second Master to third Master only, etc., and total. Cable between first and last Master not necessary. For **Combination Systems**—Master cable; measure from first Master to second Master only, from second Master to third Master only, etc., and total; Sub-Station cable; measure from each Sub-Station to nearest Master only. Connect K-S-111 at any convenient point between remote speaker and Master Station.

TALK-A-PHONE CO.

All prices slightly higher west of the Rockies. All prices and specifications subject to change without notice. Manufactured under exclusive TALK-A-PHONE Patents.

THE ALL-TRANSISTOR TALK-A-PHONE "CHIEF" AND "CHIEF REDI-POWER" INTERCOMMUNICATION SYSTEMS

"Has Everything . . . Does Everything"

One Model Meets Every Requirement

Setting a high standard in quality, design and performance, the TALK-A-PHONE "CHIEF" and "CHIEF REDI-POWER" meets the intercom needs of office, factory, institution, or any other commercial or private application. "CHIEF" Master Stations of 6, 12, 20, 30, 40 or 50 station capacity can be intermixed with "CHIEF REDI-POWER" Masters of different capacities, together with Staff Stations and Horns within the same system in any desired combination. Masters can talk with any other Master or Staff . . . page . . . and can utilize other optional equipment shown as well. Staffs can answer any Master and can originate calls to one Master, or to two Masters selectively.

ONLY THE TALK-A-PHONE "CHIEF" AND "CHIEF REDI-POWER" GIVE YOU ALL THESE FEATURES

• **DISTINCTIVELY STYLED**—Less than 3-inches high. In cabinets that combine the look and feel of fine-grained leather with the strength and rigidity of steel. Attractively finished in charcoal gray and brushed chrome.

• **"PRIVATE" OR "NON-PRIVATE" MASTERS AND STAFFS**—Exclusive Dynasonic Design enables stations to perform "privately" (so no one can listen-in), or "non-privately" (for reply without use of controls). The same station can be "private" to one or more Masters and "non-private" to others.

• **INCOMING CALL CHIME**—A standard feature of Masters. Indicates that your station is being called. Caller talks, voice follows.

• **MONITORING SIGNAL**—A standard feature of Masters and Staffs. Visually indicates to a "non-private" station that it is being monitored.

• **BUSY SIGNAL**—A standard feature of Masters and Staffs. Visually indicates when station you call is "busy." All units have facility to override "busy signal" for important calls.

• **DYNASONIC SELECTOR**—An exclusive TALK-A-PHONE feature that permits intermixing of stations and variation of performance. Add to system at anytime without discarding original equipment.

• **MULTI-MAGIC STATION SELECTOR**—A patented, exclusive TALK-A-PHONE feature that enables selection of up to 30 stations with only 12 push buttons . . . 40 and 50 stations with 14 push buttons . . . in the same attractive cabinet style and size.

• **UNI-TRANS DICTATION CONTROL**—No need to operate or hold down controls when one-way transmission is desired or when Cradle Phone is used.

• **EXTERNAL RELAY CONTROL**—A standard feature of Masters. Enables Master to activate external relays for operating siren, gong, light, etc. Use in extremely high noise level areas to signal personnel, who can then communicate with caller from Master in quieter location or in sound booth. Operates simultaneously with chime within Master.

• **RECIPROCAL POWER SUPPLY**—Each Master operates on 120 volts, AC only, and should be plugged-in. Where no electrical outlet is available, up to 30% of the "Chief" Masters in the system can operate without being plugged-in.

• **NOISE-FREE VOICE RANGE POWER**—The rugged, all-transistor high-gain amplifier provides unsurpassed clarity and naturalness of tone. The exclusive, patented TALK-A-PHONE circuit enables performance without noise, hum or distortion when used with TALK-A-PHONE cable.

• **HI-POWER STAFF STATIONS AND HORNS**—For use with any TALK-A-PHONE Master where high volume at Staff locations is needed. Ideal for paging speakers. K-HP-3 provides more than twice the volume of universal Staff; K-C-20 provides about 4 times greater volume . . . more with REDI-POWER Masters.

• **WALL SWITCH**—Combine with TALK-A-PHONE Horn or Hi-Power Staff to add origination-of-call feature.

• **"LD" LONG DISTANCE**—(optional accessory on Masters). For use over cable lines of 2,000 ft., 5,000 ft., 10,000 ft. or more without loss of volume. Functions only between Masters with LD . . . not between an LD Master and Staff. Built-in at factory at additional cost.

• **CRADLE PHONE**—(optional accessory on Masters or Staffs). Has live microphone. Provides listening privacy and greater speaking convenience. Diminishes background noises in noisy areas. Eliminates use of controls in conversation between "private" Masters. Cuts off incoming voice from loudspeaker when in use.

• **WALL MOUNTED CRADLE PHONE**—(optional accessory). For noisy areas and listening privacy. Use with K-HP-3, K-C-20 and K-S-101 or K-S-102. Speaker disconnects when in use.

• **RIGHT-OF-WAY RELAY**—(optional accessory). Use with "CHIEF REDI-POWER" Masters to page any group of stations with a single button. Paged stations can also be used for intercommunication. K-RW-10 capacity, 10 stations, K-RW-20 capacity, 20 stations. Connects to one Master, other Masters also utilize facilities.

• **POWER PAGING BOOSTER**—(optional accessory). Use with "CHIEF" Masters to page a group of speakers with a single button. 50 watts output. Requires its own paging speakers (as K-C-20, K-HP-3). Provides paging facility only . . . paged stations cannot reply or originate calls through paging speakers. Connects to one Master, other Masters can also utilize facilities.

All "CHIEF" and "CHIEF REDI-POWER" Master Stations come complete with junction box and built-in power supply attached by 6′ flexible cable. Master size: 14″w, 3⅛″h, 8¾″d. For 120 volts, AC only. U.L. Listed.

K-C-4906 Master 6 station capacity. Wt. 13 lbs.
List Price Per Station $176.00 ..... Net **103.00**

K-C-4912 Master 12 station capacity. Wt. 14 lbs.
List Price Per Station $198.00 ..... Net **116.00**

K-C-4920 Master 20 station capacity. Wt. 17 lbs.
List Price Per Station $236.00 ..... Net **138.00**

K-C-4930 Master 30 station capacity. Wt. 20 lbs.
List Price Per Station $274.00 ..... Net **160.00**

K-C-4940 Master 40 station capacity. Wt. 23 lbs.
List Price Per Station $312.00 ..... Net **182.00**

K-C-4950 Master 50 station capacity. Wt. 26 lbs.
List Price Per Station $350.00 ..... Net **204.00**

How to Determine Cable Requirements. To inter-connect Master Stations, measure from first Master to second Master only, from second to third Master only, etc., until the last unit in the system is reached, and total. For K-C-4920 and K-CRP-5920, use two lengths of 6226 Cable; and for K-C-4930 and K-CRP-5930 use three lengths of 6226 Cable, etc. To connect K-C-41, K-C-42 or K-HP-3 Staff Stations, measure from Staff Station to the one Master to which Staff Station originates calls. To connect the K-C-42 Staff Station measure a separate length of cable from Staff Station to each Master Station to which Staff originates calls (for each K-C-41 or K-C-42, follow same procedure). Connect K-S-111 at any convenient point between remote speaker and Master Station.

TALK-A-PHONE Apartment House Intercom System. With 1 or 2 selective talking circuits; with 1 or 2 independent door opener buttons. Catalog available.

TALK-A-PHONE ALL-TRANSISTOR "CHIEF REDI-POWER" MASTERS These units have all the operational features of the "CHIEF," plus the additional feature of built-in extra power (up to 30 watts) for use when and as needed. Provides additional volume for calling many stations at once, or noisy locations singly. Needs no separate power booster, which would eliminate return speech. Return speech is received at normal room volume. REDI-POWER Masters have a self-compensating amount of volume, whether you call 2, 10 or 20 stations simultaneously. Each station receives its pre-determined volume with no division of output as you call more stations at once. Use REDI-POWER Masters with "CHIEF" Masters and Staffs in same system. Add K-RW-10 or K-RW-20 and REDI-POWER Masters can page any group of stations with a single selector button. Paged stations can also be used for intercommunication. Operates on 120 volts, AC only. U.L. Listed.

K-CRP-5912 Redi-Power Master station 12 station capacity. Wt. 18 lbs.
List Price Per Station $299.50 ..... Net **175.00**

K-CRP-5920 Redi-Power Master 20 station capacity. Wt. 21 lbs.
List Price Per Station $337.50 ..... Net **197.00**

K-CRP-5930. Redi-Power Master 30 station capacity. Wt. 23 lbs.
List Price Per Station $375.00 ..... Net **219.00**

K-C-42, K-C-42M

K-C-41, K-C-41M

K-C-41R

TALK-A-PHONE "CHIEF" UNIVERSAL STAFF STATIONS For use with any "CHIEF" or "CHIEF REDI-POWER" Master. Like Masters, Staff Stations can be connected "privately" or "non-privately", and can originate calls. When "non-private", calls can be answered at a distance from Staff without using controls. Persons at "non-private" Staffs may reply to all Masters in the system (whether directly connected to them or not). Connected "privately" no one can listen-in to Staff, but any Master can call. "Private" or "Non-Private" Staffs can originate calls to one or two "Private" Masters. Each Staff has "busy signal" and "monitoring signal" features. Staffs do not connect to an electrical outlet . . . are distinctively styled in modern cabinets that combine the look and feel of fine grained leather with the strength and rigidity of steel. Finished in charcoal gray and brushed chrome. Size: 7½″w x 8¾″d x 2⅛″h.

K-C-41. Staff Station for origination-of-call to one Master. Wt. 8 lbs.
List Price, Each $46.50 ..... Net **27.25**

K-C-41M. Same operation as K-C-41 and in cabinet of same style, color and size, but in grained baked enamel finish. Wt. 8 lbs. List Price, Each $38.00 .. Net **22.25**

K-C-42. Staff Station for origination-of-call to two Masters. Wt. 8 lbs.
List Price, Each $58.00 ..... Net **34.00**

K-C-42M. Same operation as K-C-42 and in cabinet of same style, color and size, but in grained baked enamel finish. Wt. 8 lbs. List Price, Each $49.95 .. Net **29.25**

K-C-42R. Same as K-C-42, but for flush wall mounting. Stainless Steel Front Panel, 4⅜″ x 7⅛″. Wall Opening: 4⅛″ w x 6½″ h x 2″ d. Wt., 5 lbs.
List Price, Each $49.95 ..... Net **29.25**

K-C-41R. Flush mounted Staff Station for use with any of above Masters. Requires wall opening 4⅛″ W. x 6½″ H. Stainless steel front panel measures 4⅜″ W. x 7⅛″ H. Complete with plaster ring. List Price, Each $38.00 ..... Net each **22.25**

K-SM-L Optional accessory for surface mounting K-C-41R and K-C-42R on wall. List price, each $8.95 ..... Net each **5.25**

K-HP-3. Hi-Power Sub-Station for wall mounting in charcoal gray metal case. Wt. 8 lbs.
List Price, Each $36.00 ..... Net **21.00**

K-HP-3V. Same as above, but with built-in volume control, adjustable to full output. List Price, Each $44.95 ..... Net **26.40**

K-C-20. Nine-inch weatherproof re-entrant horn. List Price, Each $53.00 .... Net **31.00**

K-C-20V. Same as above, but with built-in weather resistant volume control, adjustable to full output. List Price, Each $69.95 ..... Net **41.00**

Optional Wall Mounting Brackets for Models K-C-41, K-C-41M, K-C-42 and K-C-42M are available. See description on preceding page.

Optional Equipment

Cradle Phone Available on all Models except K-C-41R, K-C-42R, K-HP-3 (V) and K-C-20(V). Add "H" to Model No. when ordering.
List Price, Each—add $65.00 ..... Net add **38.00**

Model K-S-111 Wall Mounted Cradle Phone. List Price, Each $79.00 ..... Net **46.00**

LD Long Distance Feature Available on Master Stations. Add "LD" to Model No. when ordering. List Price, Each—$24.00 ..... Net add **13.95**

Model K-S-101 Wall Switch For origination of call to one Master through K-C-20, or K-HP-3, in Chief systems. List Price, Each $15.95 ..... Net **9.30**

K-S-102 WALL SWITCH. For origination of call to two Masters through K-C-20, or K-HP-3, in Chief systems. List Price, Each $25.95 ..... Net **15.25**

K-RW-10 Right-of-Way Relay. List Price, Each $84.00 ..... Net **49.00**

K-RW-20 Right-of-Way Relay. List Price, Each $155.00 ..... Net **91.00**

K-HP-50 Power Booster. List Price, Each $167.50 ..... Net **98.00**

CABLE. For indoor or outdoor use.

6206 Cable for connecting K-C-41, K-C-42, K-HP-3, K-C-20 with origination of call. List Price per Ft. 19c ..... Net per Ft. **11c**

6214 Cable for inter-connecting K-C-4906 Masters.
List Price per Ft. 39c ..... Net per Ft. **23c**

6226 Cable for inter-connecting K-C-4912, K-C-4920, K-C-4930, K-C-4940. K-C-4950, K-CRP-5912, K-CRP-5920 and K-CRP-5930 Masters.
List Price per Ft. 76c ..... Net per Ft. **44c**

6902 Cable for connecting K-HP-3, K-C-20 without origination of call.
List Price per Ft. 4¾c ..... Net per Ft. **2¾c**

All prices slightly higher west of the Rockies. All prices and specifications subject to change without notice. Manufactured under exclusive TALK-A-PHONE Patents.

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NEWCOMB

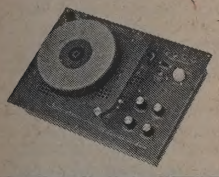
SCHOOL CLASSROOM PHONOGRAPHS AND TAPE RECORDERS

RT & R SERIES

MODEL RTS-40

transistorized
stereophonic phonograph
10 transistors, 40 watts

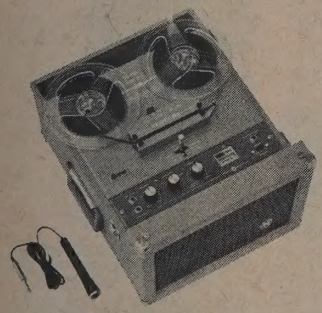
Compact and easily carried, the RTS-40 is an all-solid-state transformer-powered phonograph with a high compliance plug-in turnover type cartridge that reproduces stereophonic discs in full stereo and also plays monophonic. In the 20-20,000-cycle-response amplifiers, output transistors are specially heat sinked for low distortion and long life. Each of the two 6" x 9" dual-cone high fidelity loudspeakers is equipped with a 10' cord stowed on ball-point hooks. Controls are ganged and have numbered calibrations. It has separate bass and dual-range treble controls, balance, compensated volume control, glow-lighted Pausemaster, jacks for two stereo headphone sets, an output-to-tape-recorder jack that permits full use of the RTS-40's controls. 9⅜" x 10½" x 16¼", 20 pounds. **PROFESSIONAL NET $139.95**



MODEL RTS-40L

40-watt stereophonic library deck
supplied without speaker, headphones or case fits hole 10⅞" x 15⅝". Ventilated bottom cover extends 2⅝" below deck. It has jacks for 4 sets of stereo headphones.

PROFESSIONAL NET $129.95



MODEL RTM-73

transistorized
monophonic tape recorder
13 solid-state elements
25 watts, 3 speeds — 7½, 3¾, 1⅞ IPS

Ruggedly built for dependable daily service in school, church, recreation, and industry, the RTM-73 with up to twice as many transistors as ordinary recorders in this price range has recording ability and audio fidelity to rival far more complex and heavier machines. With its central joystick control, operation is virtually intuitive. 25 clean watts and a big 6" x 9" speaker supply excellent coverage in large classrooms. It has a quartz-gap laminated head, stainless steel tape guides, teflon pressure pad, lighted true meter, 3-digit button-reset counter. Speed selector automatically provides proper speed-frequency equalization. It records from mike and auxiliary inputs simultaneously. NAB record curve. Controls include compensated volume, wide-range dual acting tone control which adjusts for all program material from voice to full symphony, function switch, and an on-off-or-monitor switch for internal speaker. There is an output jack for headphones, speaker, or listening center; input jacks for mike and auxiliary source. Supplied with Newcomb DM-18H omnidirectional mike with lavalier and standard phone plug. 13⅞" x 17¼" x 8½", 25½ pounds.

PROFESSIONAL NET $199.50

MODEL RTM-73L

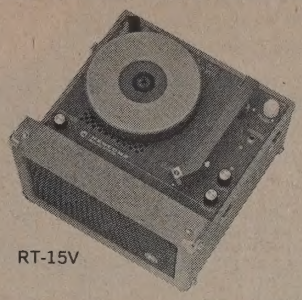
25 watt monophonic library tape deck
supplied without speaker, microphone, or case fits hole 11⅝" x 11¾". Ventilated bottom cover extends 6" below deck.

PROFESSIONAL NET $184.50

RUGGEDLY BUILT, Newcomb RT and R model cases are ⅜" plywood that is crackproof and warp-proof and covered with heavy gauge, warm gray, washable vinyl. Corners are protected with metal. Come-apart hinges eliminate one of the most vulnerable parts of cabinet construction. Die-formed grilles of perforated metal protect speakers. Phonographs and players rest on spring-floated non-scratch feet to prevent needle skipping due to bumping. Turntables have rubber mats; new cast metal tone arms have finger lift; and an advanced pickup-and-stylus guard stops needle from hitting deck or being put down on wrong side of record. Cases are generously ventilated and provide easy access for servicing.

ALL NEWCOMB RT & R MODELS ARE TRANSFORMER POWERED FOR SAFETY AND PERFORMANCE. ALL ARE UL APPROVED. ALL PRICES AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

ALL MONOPHONIC MODELS ARE STEREO COMPATIBLE



RT-15V

MODEL RT-15

transistorized
monophonic phonograph
6 solid-state elements,
20 watts

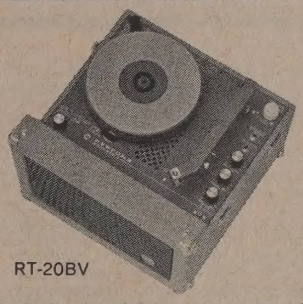
Operational simplicity with only the most basic necessary controls, combined with very good coverage and ruggedized construction make the RT-15 an outstanding value. 20 watt output is carefully matched to a big 6" x 9" oval speaker. Ceramic plug-in turnover cartridge safely plays stereo as well as mono records. Equipped with Newcomb's glow-lighted Pausemaster power-pause-pilot switch, highly effective dual-acting tone control, compensated volume control, headphone jack. 14" x 14" x 8", 17 pounds.
4-speed fixed-speed RT-15 **PROFESSIONAL NET $74.95**

MODEL RT-15V *variable speed* has number-calibrated control for reducing speed from normal to −20%. **PROFESSIONAL NET $84.95**

MODEL RT-15L

20-watt monophonic library deck
supplied without speaker, headphones, or case fits hole 11⅛" x 13¼". Ventilated bottom cover extends 2⅝" below deck. Jack accommodates magnetic headphone set with 8 ohms or more impedance.

PROFESSIONAL NET $69.95



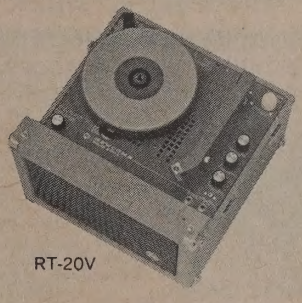
RT-20BV

MODEL RT-20B

transistorized
monophonic phonograph
7 solid-state elements,
25 watts

Deluxe features and excellent coverage are combined with economy in this 20-20,000 cycle response model. 6" x 9" oval speaker is driven by an all-transistorized amplifier. It is stereo compatible, has separate wide-range bass and treble tone controls, compensated volume control, numbered calibrations, glow-lighted Pausemaster, output jack for headphones or external speaker, auxiliary input jack, and output-to-tape jack that permits full use of tone and volume controls. 14" x 14" x 8", 17 pounds.
4-speed fixed-speed RT-20B **PROFESSIONAL NET $79.95**

MODEL RT-20BV *variable speed model* has +5% to −15% tempo control and neon-lighted strobe. **PROFESSIONAL NET $94.95**



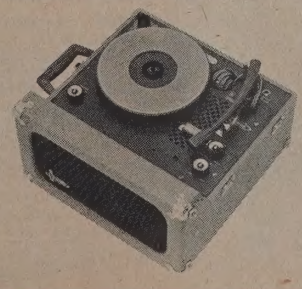
RT-20V

MODEL RT-20 *transistorized*

deluxe monophonic
phonograph, 7 solid-state
elements, 25 watts

A small additional premium procures sizable advances in audio realism and dynamic range which make the RT-20 an excellent choice for music study. Stereo compatible. Output transistors are super-cooled for long life, low distortion, and maximum performance. Controls include a Newcomb glow-lighted Pausemaster, separate wide-range bass and treble tone controls, compensated volume control. It has a headphone or external speaker jack, auxiliary input jack, output-to-tape recorder jack that permits full use of volume and tone controls. 14" x 14" x 8", 18 pounds.
4-speed fixed-speed RT-20 **PROFESSIONAL NET $84.95**

MODEL RT-20V *variable speed model* has +5% to −15% tempo control and neon-lighted strobe. **PROFESSIONAL NET $99.95**



MODEL R12-C4

vacuum-tube 10-watt
monophonic phonograph
4-speed fixed-speed

A transformer-powered utility model, the widely used R12-C4 offers safety, dependability, and high performance at low cost. It has a 6" x 9" oval speaker, wide-range dual-acting tone control, compensated volume control, output jack for headphones or external speaker. 14⅛" x 14⅛" x 8¼", 19 pounds.

PROFESSIONAL NET $67.95

NEWCOMB AUDIO PRODUCTS CO. **NEWCOMB**

NEWCOMB

SCHOOL PORTABLE COMBINATION RECORD PLAYER/P.A. SYSTEMS, HEADPHONES, MICROPHONES

RT & R SERIES

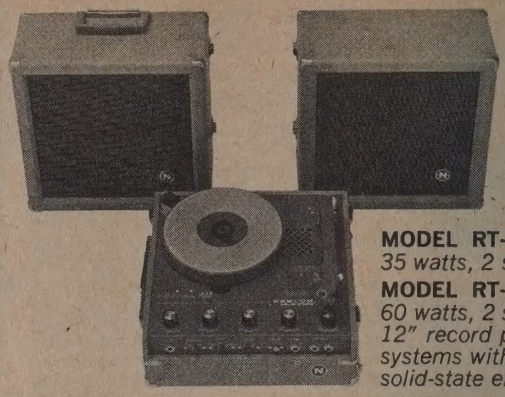
RT-1225V

MODEL RT-1225 *monophonic*
12" record player/p.a. system
9 solid-state elements, 25 watts

Newcomb introduces a new series of players so compact and light weight that they can be conveniently used instead of phonographs for daily classroom service as well as for special occasions that call for high power and extensive coverage. This new versatility is the result of Newcomb's ultra-modern solid-state circuitry and designing for 12" records instead of the waning 16" transcription. Carefully matched to the RT-1225's 25 watt amplifier is a fine 12" dual-cone speaker. Controls include the Newcomb glow-lighted Pausemaster, mike volume mixer, compensated phono volume mixer, treble tone, special bass tone that doesn't affect mike, switched voice filter that dosen't affect phono. There are jacks for a high impedance dynamic microphone, auxiliary input, 2 speaker jacks. 13¼" x 13¼" x 11⅛", 19 pounds. 4-speed fixed- speed RT-1225 **PROFESSIONAL NET $119.95**

MODEL RT-1225V *variable speed model* has +5% to −15% tempo control and neon-lighted strobe.
PROFESSIONAL NET $134.95

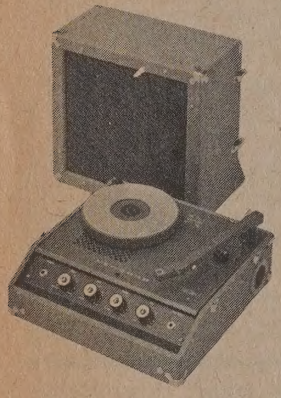
MODEL RT-112 *accessory loudspeaker* for use as a supplementary speaker with RT-1225 or RT-1225V is a 12" speaker in its own case with removable back, 25' cord. 13¼" x 13¼" x 7⅜", 9 pounds.
PROFESSIONAL NET $44.95



MODEL RT-1235V-2
35 watts, 2 speakers
MODEL RT-1260V-2
60 watts, 2 speakers
12" record player/p.a. systems with 13 solid-state elements.

Models in both power ratings have the same features, high performance, superior heat sinking. They have a +5% to −15% tempo control and neon-lighted strobe. Controls include Newcomb glow-lighted Pausemaster, mike volume mixer, compensated phono volume mixer, phono bass tone (doesn't affect mike), two-way treble phono tone, mike high or low impedance selector, 3-position mike control switch for "music," "voice," or "anti-feedback." There are jacks for mike input, auxiliary input, output-to-tape, 2 speakers. Offered only in two-case, two-speaker versions; both have same dimensions: player unit with cover — 13¼" x 13¼" x 7", 15 pounds; speakers snapped together back to back — 13¼" x 13¼" x 10¾", 15 pounds. Total weight 30 pounds.

MODEL RT-1235V-2 PROFESSIONAL NET $184.95
MODEL RT-1260V-2 PROFESSIONAL NET $214.95



MODEL R-164 *vacuum tube monophonic portable combination 16" transcription player/p.a. system*

This versatile 12 watt combination plays any size record up to 17¼" masters. It has a 12" dual-cone speaker mounted in case lid with 25' cord. Separate mike and phono volume mixing controls, separate treble and bass tone controls. Phono bass does not affect mike. Output jack for speaker or headphones; mike input jack. Separate power switch also retracts idler. Jeweled pilot light. 15½" x 15½" x 11", 25 pounds. 4-speed fixed-speed R-164 **PROF. NET $99.50**

MODEL R-164V *variable speed model* has a tempo control that varies standard speeds as much as 20%.
PROFESSIONAL NET $114.50

combination portable

MODEL RS-1620V-2
vacuum tube stereophonic

16" transcription player/p.a. system

The RS-1620V-2 plays any size record up to 17¼" masters in full stereo —or mono at the flip of a switch. Combined channels deliver 20 watts to a pair of 12" dual-cone speakers. It has a neon-lighted strobe and +5% to −15% tempo control. There are 2 mike inputs and left and right input jacks for radio or tape. On slanted panel are separate volume mixers for each mike and phono, voice filters, separate bass and treble ganged tone controls; bass does not affect mike channel. Player unit: 15½" x 16½" x 8", 26½ pounds. Speakers snapped together: 16¾" x 16¼" x 13⅛", 21 pounds. **PROFESSIONAL NET $225.00**

NEWCOMB HEADPHONES AND LISTENING CENTER ACCESSORIES

MODEL HP-2
monophonic headphones
Good sound, rugged construction, low cost, HP-2 headphones have plated metal parts, plastic covered spring headband, generous 6' cord designed for easy replacement, standard phone plug.
PROFESSIONAL NET $5.50

MODEL HDPS
stereophonic headphones
Economical general purpose stereo phones with good response, colored red and black, have plastic-covered cables, plated hardware, standard stereo phone plugs, soft neoprene ear cushions that are comfortable on ears, form sound-tight seal.
PROFESSIONAL NET $7.75

MODEL LC8BP *listening center*
Kit includes an 8BP adapter, 8 sets of HP-2 headphones, compartmented carrying case 14¼" x 8-15/16" x 7¾", 10 pounds. **PROFESSIONAL NET $74.95**

MODEL 8BP *circular adapter*
Convenient and space saving, the free-standing 8BP adapter has 10' cord and phone jack for source connection, 8 jacks for HP-2 headphones, an additional jack for another adapter.
PROFESSIONAL NET $17.50

MODEL R-HDB8C *listening center with controls.* Eight sets of HP-2 headphones in vinyl-covered compartmented case with 8 standard headphone jacks and 8 level controls in end panel, 10' source cord and output jack for additional adapter. 14¼" x 8-15/16" x 7¾", 11 pounds. **PROFESSIONAL NET $76.95**

MODEL R-HDB8 *listening center without controls.* This is the same kit as R-HDB8C but without individual volume controls in the end panel. Same dimensions. **PROFESSIONAL NET $66.95**

MODEL RHS-4C *stereophonic listening center.* This deluxe kit contains 4 sets of HDPS phones in compartmented case that has connector panel on one end. There are 4 standard stereo phone jacks on panel and 8 level controls providing volume adjustment for each ear. 10' source cord and plug. Output jack for additional RHS-4C kit. 14¼" x 8-15/16" x 7⅞", 10 pounds.
PROFESSIONAL NET $69.95

NEWCOMB MICROPHONES

MODEL UD-83
unidirectional dynamic
Its wide-range response makes the UD-83 useful for music as well as voice. Supplied with a stand adapter and standard shielded phone plug. Available with either high impedance (Model UD-83H) or low impedance (Model UD-83L).
PROFESSIONAL NET $24.50

MODEL DM-18
omnidirectional dynamic
Smooth response over wide frequency range makes the DM-18 ideal for general purpose use—music as well as voice. Supplied with lavalier and standard shielded phone plug. Offered in two impedances: high (Model DM-18H), low (Model DM-18L).
PROFESSIONAL NET $12.50

MODEL DM-1
microphone stand
An attractive desk stand of modern design in brushed silvery metal and black, the DM-1 accepts either DM-18 or UD-83 models. Mike holder unscrews to serve as stand adapter for DM-18 models.
PROFESSIONAL NET $5.00

NEWCOMB AUDIO PRODUCTS CO. NEWCOMB

Net

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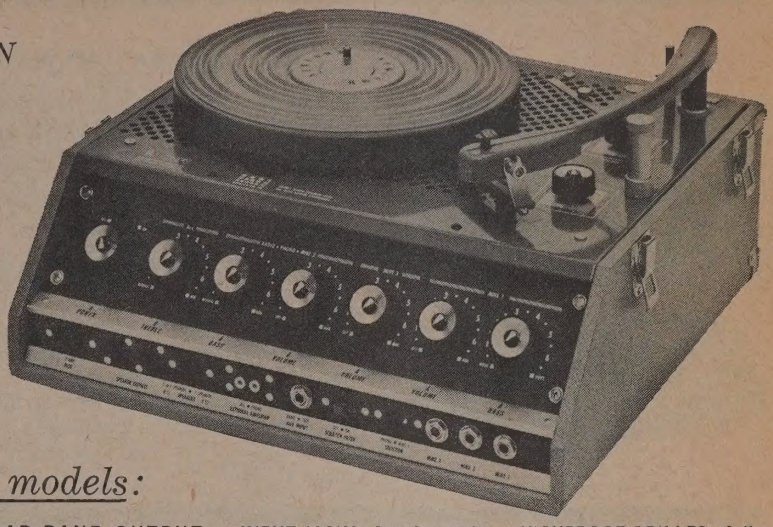
NEWCOMB

TR SERIES

HIGH POWER, PORTABLE, COMBINATION TRANSCRIPTION PLAYER PUBLIC ADDRESS SYSTEMS

...outstanding for their highest quality sound, intelligibility, portability, versatility, and simplicity of operation...



features common to all TR models:

FOUR SPEED, VARIABLE SPEED, play any size record up to 17¼" masters.

AMERICAN-MADE MOTOR delivers full starting torque at any speed setting, no warm-up required, stable under all conditions, requires no more attention than conventional fixed-speed motors.

INDEPENDENT MOTOR SWITCH automatically retracts idler.

TEMPO CONTROL, separate from speed selector, varies speed +5% to −15%. No flutter-producing friction discs or cone drives.

SPEED-O-SCOPE neon strobe.

BIG TURNTABLE—10", 2 lbs.

STA-KLEEN, deep-ribbed rubber mat, special groove for handling 45's.

LONG TONE ARM, one-piece, cast metal, raises upright for stylus inspection, mounted on resilient acoustical filter, has stylus pressure adjustment for 78's or LP's.

RUGGED STOP POST prevents putting arm in wrong position.

LOCK SCREW secures arm during transportation.

DROP PAD, rubber-covered, protects stylus and cartridge.

PHONO PICK-UPS: GE twist-needle with individually replaceable sapphire styli in "M" models. High fidelity ceramic in others.

STEREO CONVERSION: ceramic cartridge may be replaced with stereo cartridge. Then a patch cord is connected between stereo output jack to auxiliary input jack on second player for perfectly balanced, fully controllable stereo.

HIGH POWER AMPLIFIERS, low distortion, inverse feedback, some have ultra-linear circuits, all engineered for optimum performance with speakers used. Frequency response ±2 db 20—20,000 cycles.

TRANSFORMER-POWERED for safety and performance.

BROAD-BAND OUTPUT TRANSFORMERS humidity-protected with mylar or acetate. Impedance selector—4 or 8 ohms (16, 8, & 4 on TRS-1680).

FUSE POST accessible from front panel.

COMPLETE, FLEXIBLE CONTROLS: separate volume mixers for phono and mike; voice filter, scratch filter; phono bass control does not affect voice mike; bass controls electrically interlocked with phono volume to automatically protect against bass overload at high levels, greatly reducing operating experience required for perfect results.

OUTPUT JACKS: "ALL" used to feed entire program to external amplifier, amplified monitor, or tape recorder. "PHONO" delivers phono signal only; useful for caller or m.c. who wants to monitor music only without interference from own voice. "STEREO" on ceramic models.

INPUT JACKS: One for each mike; number depends on model. "AUXILIARY" for signal from radio, tape machine, or stereo channel.

ILLUMINATED, SLOPING OPERATING PANEL.

TWO JEWELED PILOT LIGHTS.

RUGGED CASE made of warp-proof, crack-proof ⅜" plywood, glue-blocked, covered with scratch-resistant, washable, gray vinyl.

METAL CORNER PROTECTORS.

COME APART HINGES.

SPRING-FLOATED FEET.

HEAVY #18 GAUGE STEEL MOTOR BOARD, reinforced.

THROUGH VENTILATION for long parts life.

EASY ACCESS. Hinged motor board raises to reach tubes and motor. Perforated bottom plate unscrews to check wiring.

KICKPROOF GRILLES of die formed metal and armored baskets protect speakers.

25' SPEAKER CORDS with stowage provisions. Straps for wall hanging.

HIDEAWAY COMPARTMENT for 8' power cord.

FULL-SIZE HANDLES on all cases and a hand-hold slot on player units for assistant carrier.

PERMANENT SERIAL NUMBER stamped in metal and riveted to motor board.

TRANSPARENT PLASTIC CARD HOLDER on each case.

PRINTED INSTRUCTION BOOK with each system.

CONDENSED INSTRUCTIONS sealed in plastic permanently attached inside lid.

BID SPECIFICATIONS AVAILABLE from factory to authorized personnel.

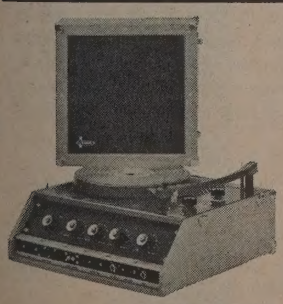
MADE IN U.S.A.

TR-1625 SERIES 25 WATT CERAMIC PICKUP STEREO JACK

TR-1625 Series player-amplifier units are carefully matched to the reproducers for great efficiency and better coverage than has heretofore been possible with a system in this class. It is equipped with a plug-in, "power point" type, high fidelity ceramic cartridge with separate jeweled standard and microgroove styli. It has a separate treble tone control, bass control that does not affect mike, phono volume mixer, mike volume mixer, scratch filter switch, voice filter switch. There are output jacks for 2 speakers, "Phono," "All," stereo; input jacks for one mike and another for auxiliary equipment.

	PROF. NET
MODEL TR-1625 in a single split case with one 12" dual-cone 30-watt speaker, 35 lbs.	$169.95
MODEL TR-1625-2, two cases, includes one S-212, 50 lbs.	208.95
MODEL TR-1625-NE2, three cases, two N-12ET, 63 lbs.	279.45
MODEL TR-1625-CS2, three cases, two CS-48, 73 lbs.	302.35
MODEL TR-1625-SCS2, three cases, two SCS-412, 124 lbs.	413.50

Stereo compatible pickup safely plays stereo records monophonically.



TR-1625M SERIES 25 WATT MAGNETIC PICKUP

When monophonic music reproduction is to be a player's primary function, a Newcomb TR model equipped with a magnetic cartridge is your best choice. The TR-1625M is equipped with a GE variable reluctance, twist-needle cartridge with sapphire styli and necessary preamplifier built in. Motor is a 4-pole deluxe unit. Player has a separate treble tone control, bass control that does not affect mike, phono volume mixer, mike volume mixer, scratch filter switch, voice filter switch. There are output jacks for 2 speakers, "Phono," and "All"; input jacks for mike and auxiliary.

	PROF. NET
MODEL TR-1625M in a single split case with one 12" dual-cone 30-watt speaker, 36 lbs.	$189.95
MODEL TR-1625M-2, two cases, includes one S-212, 51 lbs.	224.95
MODEL TR-1625M-NE2, three cases, two N12ET, 64 lbs.	295.45
MODEL TR-1625M-KN, two cases with one KN-200 speaker, 65 lbs.	293.20
MODEL TR-1625M-CS2, three cases, two CS48, 74 lbs.	328.35
MODEL TR-1625M-SCS2, three cases, two SCS-412, 125 lbs.	439.45

SPECIFICATIONS AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

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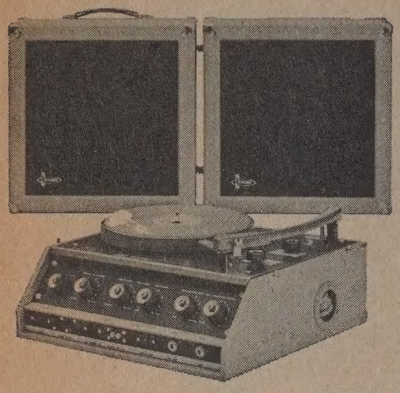
NEWCOMB

HIGH POWER PORTABLE TRANSCRIPTION PLAYER P.A. SYSTEMS

TR SERIES

TR-1640 SERIES 40 WATT CERAMIC PICKUP STEREO JACK

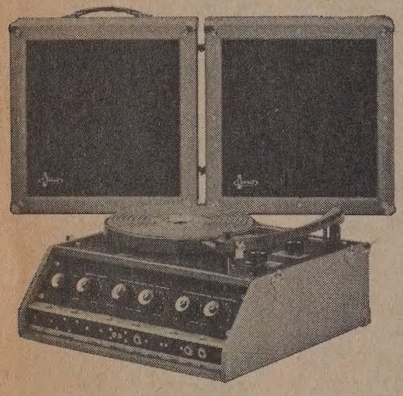


TR-1640 models provide impressive audience coverage at moderate cost. Motor is a heavy-duty, four-pole unit. Player is equipped with a plug-in, "power point" type, high fidelity ceramic cartridge with separate jeweled standard and microgroove styli, ultra-linear amplifier. It has a treble tone control for all channels, bass tone for phono, phono volume mixer, mike volume mixer, bass tone for mike, impedance switch for speakers, scratch filter switch. There are output jacks for 2 speakers, "Phono," "All" st eo. Inputs for one mike auxilia

	PROF. NET
MODEL TR-1640 in a single split case with one 12" 50-watt speaker, 36 lbs.	$209.95
MODEL TR-1640-E2, two cases, includes one S-212, 51 lbs.	239.95
MODEL TR-1640-E4, three cases, one S-212, One S-212E, 72 lbs.	304.45
MODEL TR-1640-2, two cases, one S-212H, 51½ lbs.	252.95
MODEL TR-1640-4, three cases, one S-212H, one S-212E, 72½ lbs.	317.45
MODEL TR-1640-NE2, three cases, two N12ET, 64 lbs.	310.45
MODEL TR-1640-NE4, five cases, four N12ET, 98 lbs.	445.45
MODEL TR-1640-NH2, three cases, two N12HT, 78 lbs.	374.45
MODEL TR-1640-NH4, five cases, four N12HT, 126 lbs.	573.45
MODEL TR-1640-CS2, three cases, two CS48, 74 lbs.	343.35
MODEL TR-1640-CS4, five cases, four CS48, 118 lbs.	511.25
MODEL TR-1640-SCS2, three cases, two SCS-412, 125 lbs.	454.45
MODEL TR-1640-SCS4, five cases, four SCS-412 220 lbs.	733.45

Stereo compatible pickup safely plays stereo records monophonically.

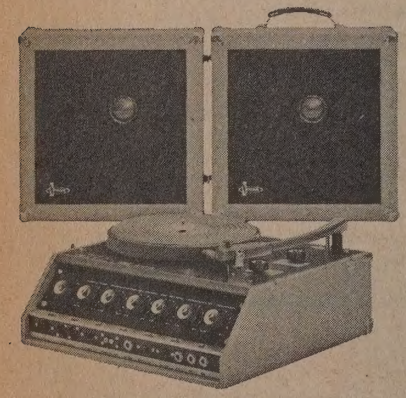
TR-1640M SERIES 40 WATT MAGNETIC PICKUP



A more powerful music room model which handles with ease four speakers, the TR-1640M player unit has an ultra-linear output system, two-way crossover-network loudspeaker systems, and the GE variable reluctance cartridge. The phono circuit is converted to a second mike channel by flipping a selector switch. It has a treble tone control for all channels, phono volume mixer, phono bass tone control, mike bass tone, mike volume mixer, impedance switch for speakers, scratch filter. There are output jacks for 2 speakers, "Phono," and "All"; input jacks for 2 mikes and auxiliary.

	PROF. NET
MODEL TR-1640M-HF in a single split case with 2-way speaker system including a 12" 50-watt woofer, crossover and separate 3½" tweeter, 36½ lbs.	$244.95
MODEL TR-1640M-E2, two cases, includes one S-212, 52 lbs.	259.95
MODEL TR-1640M-E4, three cases, one S-212, one S-212E, 73 lbs.	324.45
MODEL TR-1640M-HF2, two cases, one S-212HF, 54 lbs.	284.95
MODEL TR-1640M-HF4, three cases, one S-212HF, one S-212E, 75½ lbs.	373.45
MODEL TR-1640M-KN, two cases, one KN-200, 66 lbs.	328.20
MODEL TR-1640M-KN2, three cases, two KN-200, 101 lbs.	460.95
MODEL TR-1640M-NE2, three cases, two N12ET, 65 lbs.	330.45
MODEL TR-1640M-NE4, five cases, four N12ET, 99 lbs.	465.45
MODEL TR-1640M-NH2, three cases, two N12T, 79 lbs.	394.45
MODEL TR-1640M-NH4, five cases, four N12HT, 127 lbs.	583.45
MODEL TR-1640M-NN2, three cases, two N12NT, 86 lbs.	434.45
MODEL TR-1640M-NN4, five cases, four N12NT, 141 lbs.	673.45
MODEL TR-1640M-CS2, three cases, two CS48, 75 lbs.	363.35
MODEL TR-1640M-CS4, five cases, four CS48, 119 lbs.	511.25
MODEL TR-1640M-SCS2, three cases, two SCS-412, 126 lbs.	474.45
MODEL TR-1640M-SCS4, five cases, four SCS-412, 221 lbs.	753.45

TR-1656M SERIES 56 WATT MAGNETIC PICKUP



These fully integrated systems achieve phenomenal acoustic output. They include 56 watts peak output system, four-pole deluxe motor, GE variable reluctance cartridge. The phono channel converts to a *third* microphone channel by flipping a switch. First mike channel has separate bass attenuating control for voice clarity. Second mike is flat. Phono tone controls regulate third mike. There are a separate treble tone control for all channels, bass tone for phono, phono volume mixer, mike 2 mixer, mike 1 mixer, mike 1 bass tone, speaker impedance switch, scratch filter. Output jacks for 2 speakers, "Phono," and "All"; input jacks for 3 mikes and auxiliary.

	PROF. NET
MODEL TR-1656M-HF2, two cases, includes one S-212HF, 57 lbs.	$309.95
MODEL TR-1656M-HF4, three cases, one S-212HF, one S-212HFE, 80 lbs.	398.45
MODEL TR-1656M-NF2, two cases, one S-212NF, 63 lbs.	350.95
MODEL TR-1656M-NF4, three cases, one S-212NF, one S-212NFE, 92 lbs.	480.45
MODEL TR-1656M-KN2, three cases, two KN-200, 104 lbs.	486.95
MODEL TR-1656M-KN4, five cases, four KN200, 176 lbs.	752.45
MODEL TR-1656M-NE2, three cases, two N12ET, 68 lbs.	356.45
MODEL TR-1656M-NE4, five cases, four N12ET, 102 lbs.	491.45
MODEL TR-1656M-NH2, three cases, two N12HT, 82 lbs.	420.45
MODEL TR-1656M-NH4, five cases, four N12HT, 130 lbs.	619.45
MODEL TR-1656M-NN2, three cases, two N12NT, 89 lbs.	460.45
MODEL TR-1656M-NN4, five cases, four N12NT, 144 lbs.	699.45
MODEL TR-1656M-CS2, three cases, two CS48, 78 lbs.	389.35
MODEL TR-1656M-CS4, five cases, four CS48, 122 lbs.	557.25
MODEL TR-1656M-SCS2, three cases, two SCS-412, 129 lbs.	500.45
MODEL TR-1656M-SCS4, five cases, four SCS-412, 224 lbs.	779.45

DIMENSIONS OF NEWCOMB TR PLAYERS

Single speaker TR players form a single case with the speaker mounting used as the lid. They measure 16¾" x 16¼" x 13¼". In multiple-speaker models (except TRS-1680) the phono-amplifier unit closed measures 16¾" x 16¼" x 8½". Speaker dimensions are given on facing page. Accessory speakers may be added to one- or two-speaker models at any time.

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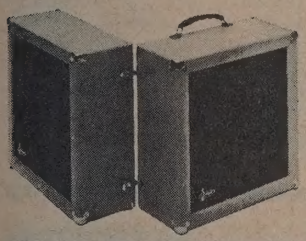
NEWCOMB

PORTABLE LOUDSPEAKERS

TR SERIES

Newcomb makes many types of portable loudspeakers for use with Newcomb Portable Combination Transcription Player/Public Address Systems. They vary in portability, directivity, efficiency, and frequency response. For example, the column speaker is highly directive, but not nearly as easy to carry as the compact S-212 Series models. The KN-200 reproducer combines widest frequency range with highest efficiency and exceptional intelligibility. The N-12 Series speakers are highly efficient, directive, intelligible and portable. All are excellent instruments, built to withstand rough treatment. Construction and finish matches player units.

ON THIS PAGE ARE SHOWN THE VARIOUS LOUDSPEAKER MODELS USED WITH NEWCOMB TR SERIES SYSTEMS

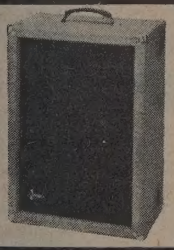


NEWCOMB S-212 SERIES

These open-back designs are the most popular of all square dance system reproducers because they provide a unique combination of light weight, high output per watt input, and low cost. Their wide-range response makes them ideal for general use. Each model includes two independent reproducers in a split case. Speakers snap together back-to-back for carrying. Case size: 16¾″ x 16¼″ x 13⅛″. 25′ cords stow on hooks inside case.

- **MODEL S-212** includes two 12″ dual-cone wide range 30 watts peak reproducers of good conversion efficiency. Impedance per speaker is 8 ohms. Weight: 21 lbs. **PROFESSIONAL NET: $64.50**
- **MODEL S-212E** is same as S-212 but has series extension jacks. **PROFESSIONAL NET: $64.50**
- **MODEL S-212H** includes two 50 watts peak 12″ reproducers of wide-range and excellent conversion efficiency. Impedance per speaker is 8 ohms. Weight 21½ lbs. **PROFESSIONAL NET: $77.50**
- **MODEL S-212HE** is same as S-212H but has series extension jacks. **PROFESSIONAL NET: $77.50**
- **MODEL S-212HF** includes two 50 watt speak 12″ woofers and two 3½″ tweeters with crossover. Impedance per reproducer is 8 ohms. Weight 23 lbs. **PROFESSIONAL NET: $88.50**
- **MODEL S-212HFE** is same as S-212HF but has series extension jacks. **PROFESSIONAL NET: $88.50**
- **MODEL S-212X** includes two 60 watts peak super-power, aluminum-dome 12″ dual-cone loudspeakers of superior efficiency and very wide range. Impedance per speaker is 8 ohms. Weight: 25 lbs. **PROFESSIONAL NET: $110.65**
- **MODEL S-212XE** is same as S-212X but has series extension jacks. **PROFESSIONAL NET: $110.65**
- **MODEL S-212NF** includes two 60 watts peak super-power woofers and two 3½″ tweeters with crossover. These systems combine exceptional response range with super efficiency. Impedance per reproducer is 8 ohms. Weight: 29 lbs. **PROFESSIONAL NET: $129.50**
- **MODEL S-212NFE** is same as S-212NF but has series extension jacks. **PROFESSIONAL NET: $129.50**

MODELS WITH "E" SUFFIX are only for use with other speakers and are not intended for use alone.



NEWCOMB KN-200 REPRODUCER

Designed to give you all the sound, all the quality, all the range, all the coverage inherent in your fine Newcomb sound system, the KN-200 is a fully-enclosed, ducted-port, two-way speaker system of advanced design. It is highly efficient, delivers the widest frequency response possible with a portable speaker...full music reproduction plus crisp high frequency intelligibility. The KN-200 includes a massive 12″ woofer, crossover, horn tweeter and treble control. It includes a parallel extension jack and impedance change switch for 8 or 16 ohms. 25 foot cord stows into "Hideaway" compartment. Size: 10¼″ x 16⅞″ x 23½″. Weight: 35 lbs. **PROFESSIONAL NET: $132.75**

NEWCOMB N-12 SERIES SPEAKERS

Most unusual for a portable speaker, Newcomb N-12 models are back-loaded, dual-labyrinth reproducers for those who want high directivity, firm bass, crisp and clean highs. They provide the advantages of a closed-back reproducer in problem halls and auditoriums. 25 foot cord stows in "Hideaway" compartment. Enclosure measures 7⅞″ x 18¼″ x 19½″. Offered in three models...

- **MODEL N12ET** is a 30 watts peak system using an efficient 12″ woofer and two 3½″ tweeters and crossover. Included is a series-type extension jack with shorting switch which permits using the N12ET as either a regular or extension speaker. Impedance is 8 ohms. Weight 17 pounds. **PROFESSIONAL NET: $67.50**
- **MODEL N12HT** is a 50 watts reproducer with a 12″ heavy duty woofer, a directional horn tweeter and crossover network. This reproducer provides highest sound output per watt input. Included are a parallel extension jack and impedance changing switch. Impedance: 8 and 16 ohms. Weight: 24 pounds. **PROFESSIONAL NET: $99.50**
- **MODEL N12NT** is a 60 watts peak reproducer with an extra heavy duty 12″ woofer, a directional horn tweeter and crossover network. This reproducer provides highest sound output per watt input. Included are a parallel extension jack and an impedance changing switch. Impedances: 8 and 16 ohms. Weight 27½ pounds. **PROFESSIONAL NET: $119.50**

NEWCOMB COLUMN SPEAKER, MODEL CS48

This is one of the most practical of all column speakers. It combines exceptional directivity with portability, has good efficiency and greater effective range than most columns. Power handling capacity is 60 watts peak. 25 foot cord and plug tuck into "Hideaway" cord compartment. It has an extension jack and switch for use with extension speakers. Size: 39⅞″ x 11¼″ x 6⅜″. Weight: 22 lbs. **PROFESSIONAL NET: $83.95**

NEWCOMB SUPER COLUMN, MODEL SCS-412

Here's the best column speaker you've ever heard. The Newcomb SCS-412 gives you super intelligibility, super efficiency, super power handling capacity. It contains four *twelve-inch* speakers specially developed for column use. Its peak power handling capacity of 120 watts makes for dependability and unusually low distortion when used with conventionally-powered systems. Each amplifier watt is converted into more sound than is available from any other column. The SCS-412 makes small amplifiers sound like big ones. It will project your voice clear as crystal, syllable-perfect over the noisiest big crowd. It takes a man-size system to produce these results. The SCS-412 stands 56″ high, is 15″ wide, 7½″ deep, weighs 42½ pounds. Impedance is 8 ohms. It has a 25 foot cord, "Hideaway" cord compartment, series type jack with shorting switch. **PROFESSIONAL NET: $139.50**

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NEWCOMB

STEREOPHONIC SYSTEMS
MICROPHONES, ACCESSORIES

TR SERIES

Built with a great reserve of power for most uses – 40 watts peak per channel – the Newcomb TRS-1680 is perhaps the most complete and flexible portable sound system ever built. It reproduces stereo or mono with the turn of a knob. Stereo or mono tape or radio can be fed to the system. Live music and speech are reproduced either stereo- or monophonically.

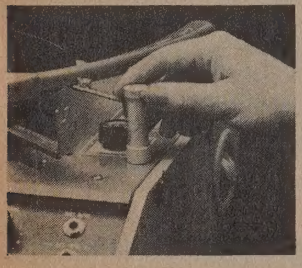
TRS-1680 SERIES 80 WATT

It has three mike channels. The central mike puts the speaker or square dance caller in the middle, midway between the reproducers. There are separate treble, bass, and volume controls for phono or other reproduced sound. Each mike channel has its own, individual tone and volume controls. Mike tone controls are rotated for treble adjustment, pushed or pulled for bass. There is a blend control to provide any degree of stereo you wish. There are "Left" and "Right" inputs for radio, tape, or auxiliary; a scratch filter; "All" or "Phono" monitor jacks; jacks for two or four speakers with an impedance-matching switch. Turntable-amplifier unit DIMENSIONS: 9¼" x 17⅞" x 18⅝"; 43 lbs. POWER CONSUMPTION: 180 watts, 117 volts, 60 cycles a.c. A wide choice of reproducers to meet specific assignments is offered...

	PROF. NET
MODEL TRS-1680-NF2, two cases, includes one S-212NF, 72 lbs.	$429.00
MODEL TRS-1680-NF4, three cases, two S212NF, 101 lbs.	$558.50
MODEL TRS-1680-KN2, three cases, two KN-200, 113 lbs.	$565.00
MODEL TRS-1680-KN4, five cases, four KN-200, 183 lbs.	$830.50
MODEL TRS-1680-NH2, three cases, two N12HT, 91 lbs.	$498.50
MODEL TRS-1680-NH4, five cases, four N12HT, 139 lbs.	$697.50
MODEL TRS-1680-NN2, three cases, two N12NT, 98 lbs.	$538.50
MODEL TRS-1680-NN4, five cases, four N12NT, 153 lbs.	$777.50
MODEL TRS-1680-CS2, three cases, two CS48, 87 lbs.	$467.40
MODEL TRS-1680-CS4, five cases, four CS48, 131 lbs.	$635.30
MODL TRS-1680-SCS2, three cases, two SCS-412, 138 lbs.	$578.50
MODEL TRS-1680-SCS4, five cases, four SCS-412, 233 lbs.	$857.50

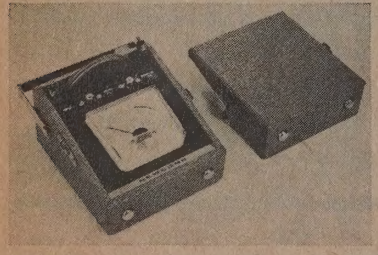
ACRA-SET TONE ARM LIFTER AND RECORD-CUEING DEVICE

MODEL A-1



Acra-Set is an accessory available at additional cost for repeating passages and protecting records. You simply twist the knob on top to gently lift or lower tone arm. Lifter has a 100-division scale and a traveling stop with a pointer. It is simply installed by drilling a 3/16" hole which is readily located with a template. Holes are predrilled at the factory on current transcription players. Specify your model number when ordering; correct template and C-1 cue sheets will be supplied. **PROF. NET: $12.50**

MODEL VU-1 PORTABLE VISUAL OUTPUT METER



Model VU-1 Output Meter permits you to see that your voice is being amplified to the proper level, helps you make the most of your fine Newcomb TR system. Meter is high quality instrument with jeweled d'Arsonval movement and a scale calibrated in both db and volume units from 0 to 100 over the working range of the system. Also indicates overloading. Simple internal adjustment matches meter to any TR player; instructions are permanently mounted in lid. One end of the supplied patch cord connects player to "All" monitor jack, other end to "Input" on meter. Supplementary "All" monitor jack on meter. **PROF. NET: $29.95**

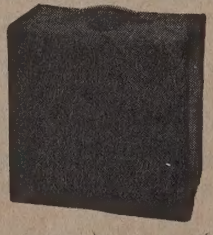
AMPLIFIED MUSIC MONITORS

With a Newcomb Amplified Monitor you can hear reproduced music without interference or feedback squeal from caller's or speaker's voice. Connected to "Phono" channel of transcription player, monitor reproduces music only, not mike channels. Or, it may be connected to "All" jack to reproduce voice and music. It can also be used as a stereo channel with a TR-1625 or TR-1640.

MODEL M-12: 12" speaker; 10 watt amplifier; 17⅞" x 13⅜" x 7½"; 17¼ lbs. **PROF. NET: $79.50**

MODEL M-9: 9" oval, dual-cone speaker; 10 watt amplifier; 13¼" x 10⅛" x 7"; 10 lbs. **PROF. NET: $69.50**

PROTECTIVE CANVAS COVERS



Made of tightly woven, fleece-lined, rubberized mackintosh covert, with stout zipper closure and flap that tucks under handle. Transparent slot for identification.

No. CA-102 for use with TR-1625, TR-1625M, TR-1640, TR-1640M amplifier sections only. **PROF. NET: $7.95**

No. CA-103 for use with S-212 type split case speaker assemblies and all TR series systems with single speaker in case lid. **PROF. NET: $7.95**

No. CA-104 for use with TRS-1680 amplifier section only. **PROF. NET: $8.95**

No. CA-110 for use with KN-200 or K-400 reproducers. **PROF. NET: $10.95**

No. CA-111 for use with C-100 or J-200 reproducers. **PROF. NET: $10.95**

No. CA-119 for use with M-12 monitor. **PROF. NET: $8.95**

No. CA-132 for use with M-9 monitor. **PROF. NET: $8.95**

No. CA-136 for use with all N-12 series reproducers. **PROF. NET: $10.95**

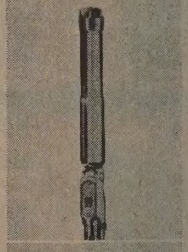
No. CA-137 for use with CS48 column speaker. **PROF. NET: $10.95**

No. SCS-412 for use with SCS-412 column speaker. **PROF. NET: $14.95**

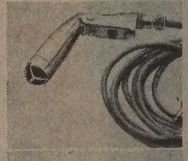
MICROPHONES

Model N-30 Crystal Microphone with lavaliere cord, stand adapter, switch, and shielded plug. **PRO. NET 13.95**

Model N-30D Desk Mounting for N-30 only. **PRO. NET 1.85**



Model N-36 Dynamic Professional Quality Microphone is the perfectionist's choice with any TR system, especially intended for use with TR-1640M, TR-1656M and TRS-1680 series models. Supplied with shielded cord and plug and on-off switch. **PRO. NET 50.00**



Model N-23 Dynamic Microphone of very high quality with switch and shielded plug, recommended for general purpose use with all TR series systems. **PRO. NET 39.50**

Model MS-23 Accessory Bag of heavy plastic, zippered, for microphones, etc., can be attached inside lid of speaker case. **PRO. NET 2.10**

Model PP-81 Stereo Conversion Pickup Cartridge, plug-in type, for any TR series player equipped with stereo output jack and plug-in ceramic cartridge. **PRO. NET 4.65**

Model WC-84 Connecting Cable, four feet long with plugs for connecting two TR ceramic models together for stereo. **PRO. NET 4.65**

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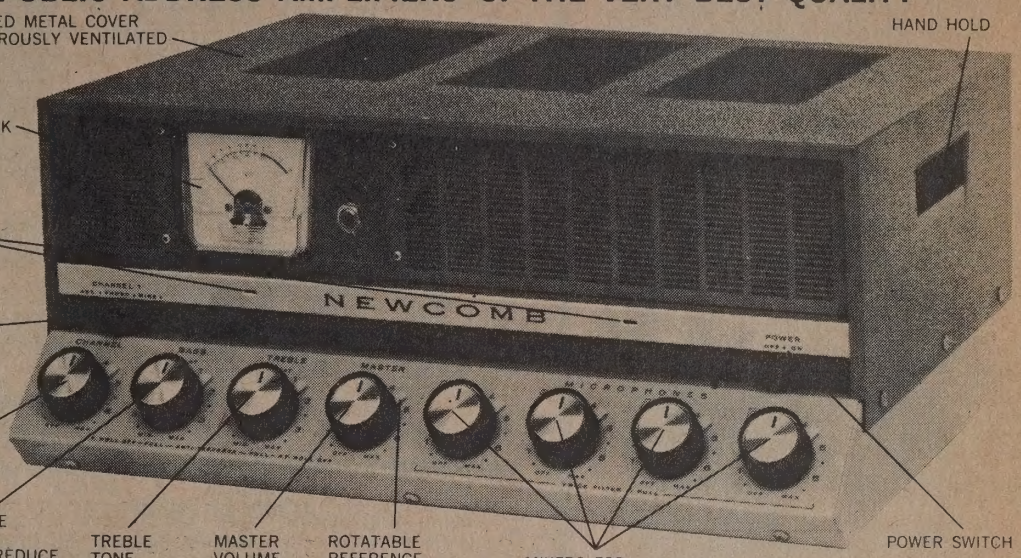
MODULAR PUBLIC ADDRESS AMPLIFIERS

CUSTOM SERIES K

MODULAR PUBLIC ADDRESS AMPLIFIERS OF THE VERY BEST QUALITY



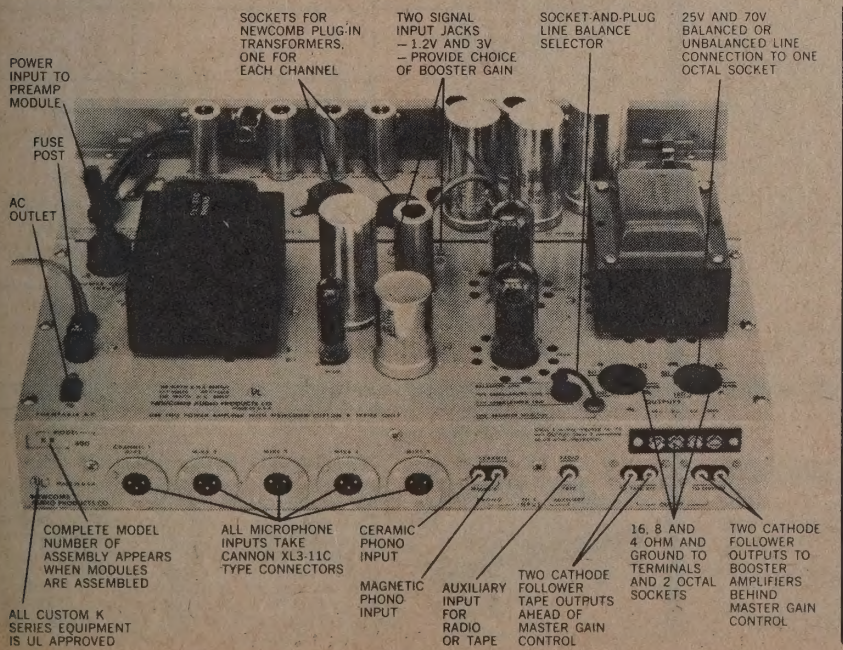
Flexibility and performance without equal are provided by Newcomb Custom K Series public address amplifiers. "Custom" has a very real meaning in this instance. Within minutes you can assemble exactly the right combination of channels, power and features to custom fit a particular situation. You are not faced with the hours of assembly labor and testing necessary with conventional modular designs. You simply select the Newcomb Custom K mixer/preamplifier with the number of channels — three, four, or five — you need. Then choose the power amplifier module — 40, 60, or 125 Watts — needed for the location. Drop the power amplifier into the preamplifier chassis. Two plug-in connections. No soldering. Drive a few sheet metal screws and you're in business. Take your choice of a well-ventilated cabinet cover or a rack panel mount. A VU meter accessory with a phone jack is available and can be quickly added to any front end. A remote control accessory is available for the four-channel module.

Any preamplifier may be used as a mixer by itself by inserting a Model P Power Supply instead of a power amplifier module. Any power output module becomes a straight power amplifier when it is mounted in the Newcomb Model KB Booster Chassis. The Newcomb Custom K modular system is so simple and straightforward that it's a wonder public address amplifiers weren't made this way to begin with.

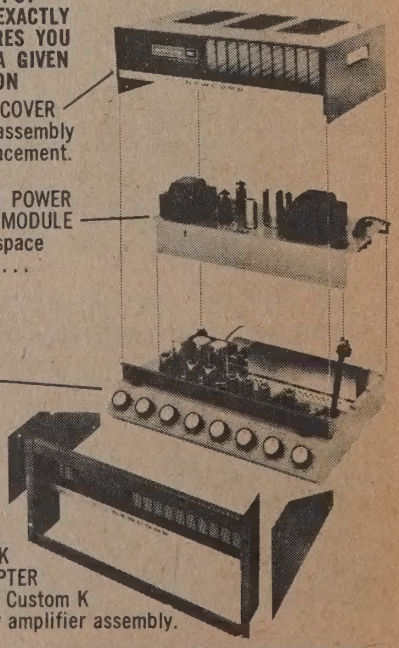
All modules are completely interchangeable.

The latest developments in vacuum tube technology and skilled hand craftsmanship are united to produce superb performance. Performance of Newcomb Custom K Series amplifiers has no equal. They operate with extremely low distortion at all power levels, supply unusually high useful power, run unbelievably cool. Vacuum tube design was chosen for the Custom K Series because no other method of amplification today provides the same combination of maximum performance, stability, reliability, extended life, and outright value. With vacuum tubes, repairs are easier and faster to make, cost less.

Visually, Custom K Series assemblies are exceedingly handsome, finished in soft, light shades of green. The control panel is slanted for convenient operation either seated or standing, and it is well illuminated. Custom K Series models abound with such refinements as movable reference markers on all knobs. To cut in a voice filter you simply pull the appropriate mixer knob. To kill feedback, pull tone control knobs. When you're out to prove what you can do, when you're putting in a model job, a job you'll be proud to put your nameplate on, that's the time to build with Newcomb Custom K.



INSTANTLY PUT TOGETHER EXACTLY THE FEATURES YOU NEED FOR A GIVEN INSTALLATION



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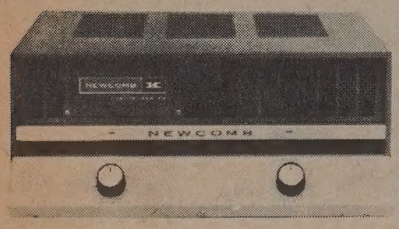
MODULAR PUBLIC ADDRESS AMPLIFIERS

CUSTOM SERIES K

70 COMBINATIONS FROM 14 UNITS

The modular concept makes it possible for you to get exactly the features you need without delay. Four chassis and four power units combine to form **15** basic assemblies. The VU meter may be added to **12** assemblies. **8** models (K4R assemblies with and without VU meter) become remote-control units with the addition of the RB4 accessory. All **35** may be rack panel mounted or covered for free-standing use. (UL requires that they be purchased with one or the other.)



MODEL KB BOOSTER CHASSIS WITH MODEL KCB COVER

AS SIMPLE TO SPECIFY AS THEY ARE TO ASSEMBLE

Model number of a basic assembly consists of a combination of preamp model number and power amplifier model number as follows:

Preamp Mixer ↓ / Power Amp →	Model 1250 125 watts	Model 600 60 watts	Model 400 40 watts	Model P Power Supply
Model K5 5 Channel	K5—1250 $519.00	K5—600 $459.00	K5—400 $419.00	K5—P $299.00
Model K4R 4 Channel	K4R—1250 $504.50	K4R—600 $444.50	K4R—400 $404.50	K4R—P $284.50
Model K3 3 Channel	K3—1250 $479.00	K3—600 $419.00	K3—400 $379.00	K3—P $259.00
Model KB Booster Chassis	KB—1250 $329.45	KB—600 $269.45	KB—400 $229.45	← Complete Power Amplifier Only / ↑ Complete Mixer-Preamp Only

Specifications For Complete Mixer-Preamplifier Power Amplifier Assemblies				
	Mike Gain	133 db	130 db	128 db
	Auxiliary Gain	85.4 db	82.4 db	80.4 db
	Hum, input shorted: Mike, —60 db below full output Magnetic pickup, —50 db below full output Auxiliary input, —60 db below full output All controls off, —80 db below full output			

List prices of combinations are shown without cover, rack mounting or VU meter.

SPECIFICATIONS — K3, K4R, K5 MIXER-PREAMPLIFIERS

All of the Newcomb Custom K mixer-preamplifier modules have space at the back of the chassis into which may be inserted either a Model 400, 600 or 1250 power amplifiers or the Model P power supply. Power is normally supplied to the front end by the power amplifier module; Model P is used when the preamp section is to be used as a separate mixer-control unit. Mixer models differ principally in the number of input channels. Each has one mike channel that is convertible by switch to use with a magnetic or ceramic phono pickup (preamp provides full RIAA response curve) or with a flat tuner or tape input. **Outputs:** 2 from each of two cathode followers, one before and one after the master control. Maximum output from followers: 10 volts into high impedance load. **Distortion:** less than ½%. D.C. on all filaments. **Frequency response:** ±1 db 20-20,000 cycles. **Bass tone control range:** 18 db to +18 db. **Low frequency roll off:** 3 db at 100 cycles, —12 db at 20 cycles. **Treble tone control range:** —18 db to +18 db. **High frequency roll off:** 3 db at 5,000 cycles, —12 db at 20,000 cycles. **Microphone impedance:** 2 megohms convertible to low impedance by Newcomb hum-free plug-in transformer. **Input volts required** for 1 volt output from cathode followers: **Mikes,** .0028 volts, gain 54* db, 2 megohms. **Magnetic,** .0022 volts, 100,000 ohms. Equalized to full RIAA curve. **Ceramic pickup,** .086 volts. Equalized to RIAA curve. **Tuner or Tape input** (Aux.), .34 volts, ½ meg., gain 6.4* db. *Gain stated is with 1 meg. output load. With 600 ohm output using TR-100 add 13 db. **Hum** below 10 volts output (inputs shorted): **Mikes,** —80 db. **Magnetic pickup,** —70 db. **Aux. input,** —80 db. **All controls off,** —100 db. Socket supplies power for VU-2T volume indicating meter. Note: K4R provides for remote control of all inputs. **Dimensions,** all models: 17" x 13⅜" x 7⅜" (height dimension includes KC cover). **Weight,** all models: 7 pounds. All microphone inputs require Cannon XL3-11C type connectors.

	Model K3	Model K4R	Model K5
Number of Channels and mixing controls	3	4	5
Number of Channels with voice filters	2	3	4
Tubes	two 6AB4 three 12AX7	three 6AB4 three 12AX7	four 6AB4 three 12AX7
LIST: (with tubes, without cover)	$199.50	$225.00	$239.50

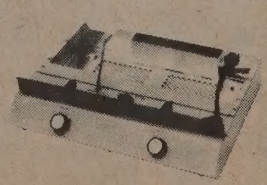
FOR SEPARATE MIXER-PREAMPLIFIER ONLY...

MODEL P POWER SUPPLY takes the place of the power amplifier in the space provided in the K3, K4R, and K5 preamp modules, and supplies power to them through an octal socket. (It is never needed when a Model 400, 600, or 1250 power amplifier is used.) Model P includes a socket for a plug-in output transformer and output terminals for a balanced or unbalanced 600 ohm line. **Maximum 600 ohm output** = 0 VU. **Input** power: 117 volts, 60 cycles, 22 watts. **Wt.** 4½ lbs. **List:** (with tubes) $59.50

SPECIFICATIONS — 400, 600, 1250 POWER AMPLIFIER MODULES

The power amplifier modules in Newcomb's Custom K Series are not usable alone; they must be installed in a K3, K4R, or K5 mixer-preamplifier chassis. If they are to be used simply as a booster amplifier, they can be mounted in a Model KB Booster Chassis. Circuits in all power amplifier modules are resistance-capacity coupled, screen-regulated, with fixed bias and inverse feedback. They include power supply for K3, K4R, and K5 preamps. All have an a.c. outlet and an external fuse post. All three models have some identical specifications: **Input impedance:** 1 megohm convertible to low impedance with hum-free plug-in line or bridging transformers. **Output impedances:** 4, 8, and 16 ohms to a terminal strip and two octal sockets; 25 and 70 volts balanced or unbalanced line to one octal socket. **Hum and noise:** 80 db below steady state power rating.

	Model 400	Model 600	Model 1250
POWER OUTPUT: steady state RMS at less than 5% T.H.D.	40 watts	60 watts	125 watts
POWER OUTPUT: at less than 1% T.H.D.	35 watts	50 watts	110 watts
PEAK POWER: (Note: Music power peak rating is higher)	80 watts	120 watts	250 watts
INPUT—1.2 V or 3 V required for maximum rated steady state power output			
GAIN: at 1 meg. 1.2 V input tap 3 V input tap	 74 db 70 db	 76 db 72 db	 79 db 75 db
GAIN: at 600 ohms input using TR-100 and 1.2 V input tap 3 V input tap	 61 db 57 db	 63 db 59 db	 66 db 62 db
FREQUENCY RESPONSE: ±2 db 25-15,000 cps at	35 watts	50 watts	110 watts
all ±0 db 20-20,000 cps at	1 watt	1 watt	1 watt
POWER CONSUMPTION: 117 volts, 60 cycles a.c.	110 watts	145 watts	185 watts
TUBES: All models include 5 silicon rectifiers	one 7199 two 6878 one 6CU5	one 7199 two 6L6GC one 6CU5	two 12AU7 two 6550 one 6CU5
WEIGHT:	16½ lbs.	21¼ lbs.	30½ lbs.
LIST: (with tubes)	$179.50	$219.50	$279.50



FOR COMPLETE POWER AMPLIFIER ONLY

MODEL KB CHASSIS is the same size as the K3, K4R, and K5 preamp modules and accommodates Model 400, 600, or 1250 power amplifier modules when they are to be used as boosters. Model KB includes volume control, low frequency roll-off switch, power switch, and pilot lights. It has a lighted, slanted operating panel and factory-wired socket for Newcomb plug-in, hum-free transformers. **Dim.:** 17" x 13⅜" x 7⅜". **Wt.:** 5 lbs. (without cover). **List:** $49.95

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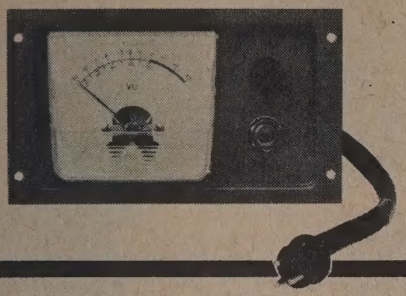
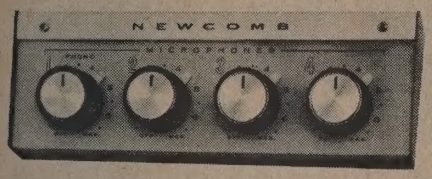
MODULAR PUBLIC ADDRESS AMPLIFIERS

CUSTOM SERIES K



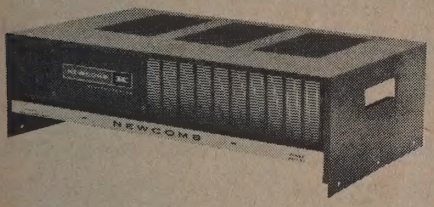
MODEL VU-2T ACCESSORY TRANSISTORIZED VU METER

for use with Newcomb Custom K Model K3, K4R or K5 mixer/preamp, the VU-2T has sensitivity control and a monitor headphone jack for wide-band crystal headphones only. The VU-2T obtains power from the preamp, is installed in place of the removable front plate, simply plugs into the socket provided. LIST: $59.50



MODEL RB4 ACCESSORY REMOTE CONTROL UNIT

for use with the K4R only. A four-channel unit, it may be placed up to 2,000 feet from the amplifier. A 5 wire unshielded cable is required. Cable extra. Dimensions: 3" x 9" x 1⅜". Weight: 1½ pounds. LIST: $19.50

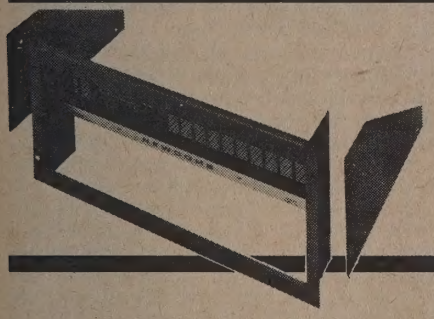


MODEL KC COVER

for assemblies incorporating Model K3, K4R, or K5 mixer-preamplifier modules. Size: 17⅞" x 12⅞" x 5⅞". Weight: 5 pounds. LIST: $25.00

MODEL KCB COVER

for booster amplifier assemblies incorporating Model KB Booster Chassis. Size: 17⅞" x 12⅞" x 5⅞". Weight: 5 pounds. LIST: $25.00



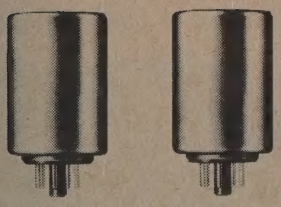
MODEL KR-875 RACK PANEL ADAPTER

for assemblies incorporating Model K3, K4R, or K5 mixer-preamplifier modules. Size: 19" x 8¾". Weight: 5 pounds. LIST: $25.00

MODEL KR-875B RACK PANEL ADAPTER

for assemblies incorporating Model KB Booster Chassis. Size: 19" x 8¾". Weight: 5 pounds. LIST: $25.00

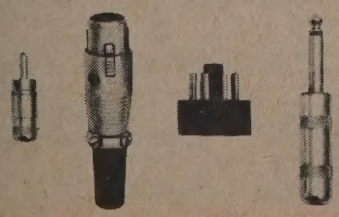
HUM-FREE PLUG-IN TRANSFORMERS



MODEL TR-91 input transformers are designed for all Newcomb amplifiers wired to accept them. They provide 30/50 ohms or 200/250 ohms input impedance depending on wiring of transformer socket. Normal Newcomb amplifier wiring connects the TR-91 for 30/50 ohms. Frequency response: 20 to 20,000 cycles. Wt. 1¼ lbs. LIST: $37.50

MODEL TR-100 input transformers are identical to TR-91 models. They provide 125/150 ohms or 500/600 ohms impedance depending upon wiring of socket with 125/150 ohms normal. Frequency response: 20 to 20,000 cycles. Weight: 1¼ pounds. LIST: $37.50

MODEL TR-92B is a bridging transformer, otherwise identical to above models. Weight: 1¼ pounds. LIST: $37.50



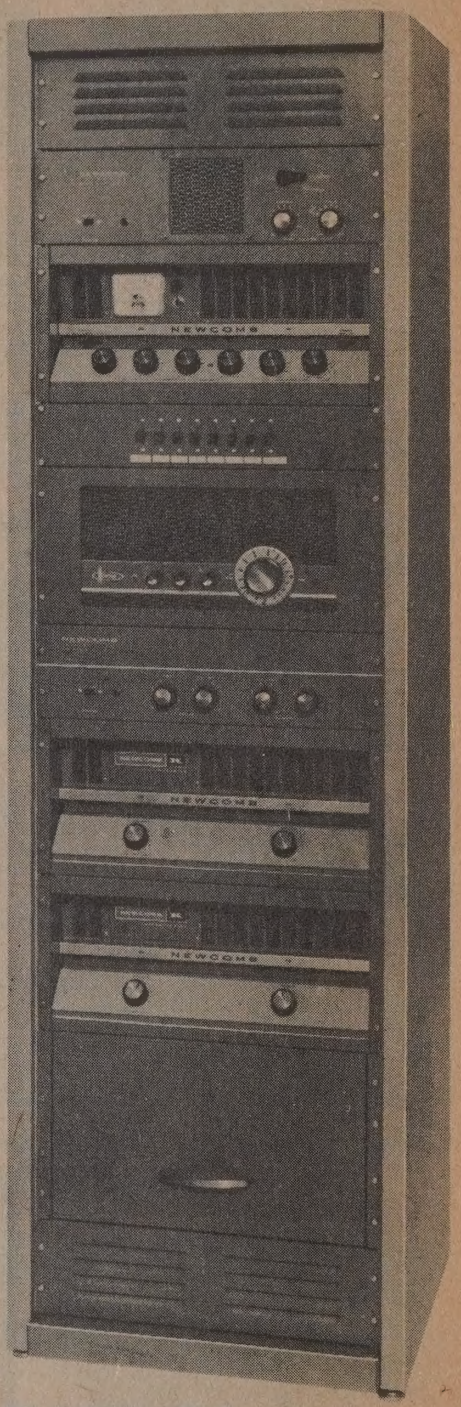
CONNECTORS

MODEL PW-157 is a phono, tape, or radio input plug for all Custom K mixer/preamplifiers. LIST: $.75

MODEL PW-139 is a Cannon XL3-11C type microphone connector. LIST: $2.50

MODEL PW-156 is an octal plug for speaker line outputs. LIST: $.45

MODEL PW-142 is a two-contact shielded phone plug for monitor phones. LIST: $1.50



THE RICHEST-LOOKING RACK PANEL INSTALLATIONS IMAGINEABLE

are provided by Newcomb Custom K amplifiers. The two-tone soft green tints of the finish, recessed panels, the stimulating design of the equipment combine to give an impression of professionalism and permanence. Mounted in the Model 70-19 Cabinet Rack illustrated above, top to bottom, are a Newcomb louvered panel, Newcomb TB2-525G Intercom, K3 Mixer-preamp, lever key panel, AFM-750-875G AM-FM Radio, E2-525G Industrial Preamplifier, two KB-1250 complete power amplifiers, 1050CG Phono Changer Drawer, louvered panel. All Newcomb rack panel equipment, except Custom K series, is listed in the last two Newcomb Pathfinder pages in this section.

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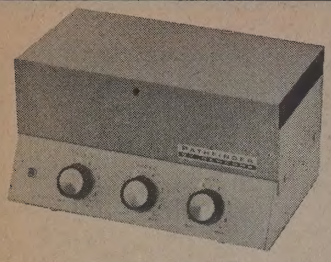
NEWCOMB PATHFINDER PUBLIC ADDRESS EQUIPMENT

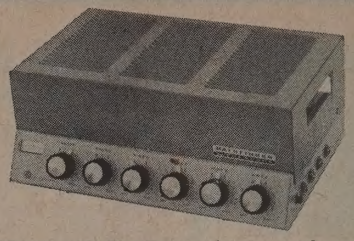


MODEL E-10B

10 watt amplifier
Low priced, deluxe, full push-pull output

The Newcomb E-10B offers a surprising number of deluxe features for so compact and economical an amplifier. It has the slanted operating panel and control markers which distinguish all Pathfinder models. The E-10B has separate mixers for microphone and ceramic phono pickup (or radio or tape). Mike input is a standard 3-contact phone jack suitable for high or low impedance mike. The E-10B is wired for plug-in transformers for instant conversion for use with low impedance mike. Output impedances to socket are 4, 8, 16 ohms, plus 25 and 70 volt line taps. Output jack for recorder or booster amplifier. Unit has a wide-range treble tone control, 25,000 hour pilot light. UL approved

SPECIFICATIONS: Power Output: 10 watts RMS, 20 watts peak at less than 5% distortion. **Frequency Response:** ±2 db 30 through 15,000 cycles. **Mike Gain:** 118 db at 2 meg. .0055 volts delivers full power. **Phono Gain:** 79 db at 1 meg.; 33 volts delivers full power. **Output To Tape Jack:** Delivers 4.4 volts max. or 1 volt at ½ watt output. **Hum:** Fundamental, 70 db below rated output. **Power Response:** ± 3 db, 70 through 13,000 cycles at 5% distortion. **Size:** 10¼" x 6½" x 5¾" high. **Weight:** 9 lbs. **Power Consumption:** 60 watts, 117 volts, 60 cycles. **Tubes:** 1-12AX7, 1-6AU6, 2-6V6, 1-6X4.
LIST: (with tubes) $84.95.



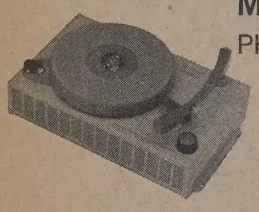
MODEL E-5P

5-channel mixer preamplifier

The Newcomb E-5P is a high performance, low-priced, multi-purpose mixer-preamplifier with 4 microphone channels (one convertible to magnetic phono), one high level channel with two inputs (chosen by selector switch) – one for ceramic phono pickup, the other for tape or radio. Master gain control. Each mike input jack is standard 3-contact phone jack. Each mike channel is wired for plug-in transformers for instant conversion to low impedance microphone usage. The E-5P has a VU meter with concealed sensitivity adjustment, outputs for tape, booster, and a.c., 25,000-hour pilot lamp. Operating panel is slanted for easy viewing and operating sitting or standing. Performance is excellent with individual mike input tubes for minimum crosstalk and d.c. on all filaments. UL approved.

SPECIFICATIONS: Cathode Follower Outputs: 6 volts at less than 2% into high impedance load. **Volume Indicating Meter:** Adjustable from 2 to 6 volts. **Frequency Response:** ±2 db 30 through 20,000 cycles. **Mike Inputs:** 2 meg.; .0025 volts for 2 volts out. **Ceramic Phono or Radio or Tape Input:** 1 meg. .32 volts for 2 volts output. **Magnetic Phono Input:** .011 volts for 2 volts output. **Hum:** Fundamental, 80 db below 6 volts output. **Size:** 14⅛"x8 5/16"x5" high. **Weight:** 11¾ lbs. **Power Consumption:** 31 watts 117 volts 60 cycles A.C. **Tubes:** 4-12AV6, 1-12AU6, 5-0C5, 1 power silicon rectifier.
LIST: (with tubes) $139.50.

HIGH QUALITY, LOW PRICE PUBLIC ADDRESS AMPLIFIERS WITH MANY DELUXE FEATURES



MODEL P-4

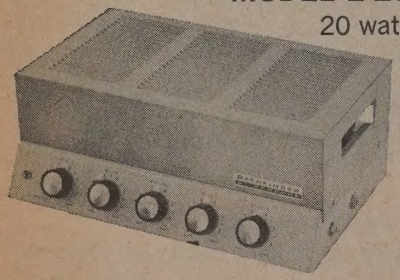
PHONO TOP

The Newcomb P-4 is a 4-speed record player that is designed to fit on top of the E-20, E-40 or E-75 Pathfinder amplifier. It includes an automatic idler release on the power switch to prevent flat spots, a plug-in turnover-type dual-sapphire-styli ceramic cartridge, pickup hold-down screw and drop pad. Dimensions: 8 5/16" x 14" x 5" high over all. Weight: 6 lbs. **LIST: $49.95.**

All Newcomb Pathfinder power amplifiers and the E-5P preamplifier have slanted operating panels for convenient control in either a sitting or standing position. This feature is important, too, with rack mounted installations where units may be mounted near the floor as well as at eye level. All control knobs have white, rotable reference markers for quick return to a pre-determined setting. All have a 25,000 hour pilot light. All are UL approved. Newcomb public address amplifiers Models E-20, E-40, and E-75 all have the following features: Each has two microphone channels with mixer controls and one high level channel with mixer for ceramic phono pickup, radio or tape. Mike channels are wired for Newcomb plug-in transformers for instant conversion to use with low impedance microphones. High level control is compensated; as volume is reduced, bass is proportionately sustained. Mike not affected by this control. There are separate bass and treble master tone controls. Output taps on terminal strip and two sockets are for 25 volt balanced or unbalanced line plus 70 ohms unbalanced, and 16, 8, and 4 ohms. There is an output jack for recorder or booster and an a.c. output receptacle. Pathfinder equipment has a distinctive two-tone finish in soft tints of olive-gray and spruce.

MODEL E-20

20 watt



SPECIFICATIONS: Power Output: 20 watts RMS, 40 watts peak at less than 5% distortion. **Frequency Response:** ±2 db 30 through 15,000 cycles. **Mike Gain:** 122 db at 2 meg.; .005 volts delivers full power. **Phono Gain:** 83 db at 1 meg. .315 volts delivers full power. **Output To Tape Jack:** Delivers 6 volts max. or 1 volt at ½ watt output. **Hum:** Fundamental, 70 db below rated output. **Power Response:** ±3 db 50 through 20,000 cycles at 5% distortion. **Size:** 14⅛" x 9½" x 5¾" high. **Weight:** 14¼ lbs. **Power Consumption:** 80 watts, 117 volts, 60 cycles A.C. **Tubes:** 1-12AX7, 1-6BR8, 2-EL-84, 1-5Y3.
LIST: (with tubes) $119.95

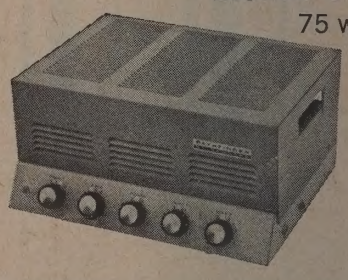
MODEL E-40

40 watt

SPECIFICATIONS: Power Output: 40 watts RMS, 80 watts peak at less than 5% distortion. **Frequency Response:** ±2 db 30 through 15,000 cycles. **Mike Gain:** 125 db at 2 meg.; .005 volts delivers full power. **Output To Tape Jack:** Delivers 6 volts max. or 1 volt at 1 watt output. **Hum:** Fundamental, 70 db below rated output. **Power Response:** ±2 db 40 through 20,000 cycles at 5% distortion. **Size:** 14⅛" x 9½" x 6¾" high. **Weight:** 19¼ lbs. **Power Consumption:** 160 watts, 117 volts, 60 cycles A.C. **Tubes:** 1-12AX7, 1-6BR8, 4-EL84, 1-5U4.
LIST: (with tubes) $159.95.

MODEL E-75

75 watt



SPECIFICATIONS: Power Output: 75 watts RMS, 150 watts peak at less than 5% distortion from a fixed bias, screen regulated, output system. **Frequency Response:** ±2 db 30 through 15,000 cycles. **Mike Gain:** 128 db at 2 meg.; .005 volts delivers full power. **Phono Gain:** 88 db at 1 meg.; 3 volts delivers full power. **Output To Tape Jack:** Delivers 6 volts max. or 1 volt at 1.87 watts output. **Hum:** Fundamental, 70 db below rated output. **Power Response:** ±2 db 50 through 20,000 cycles at 5% distortion. **Size:** 7" x 13½" x 14⅛". **Weight:** 26 lbs. **Power Consumption:** 185 watts, 117 volts 60 cycles. **Tubes:** 2-12AX7, 1-6C4, 2-7027A, 1-6V6GT, 3 power silicon rectifiers.
LIST: (with tubes) $199.50.

SPECIFICATIONS AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

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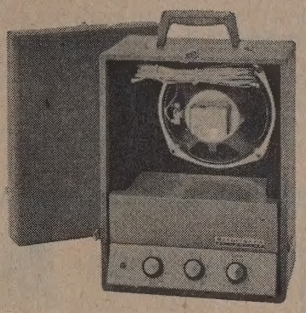
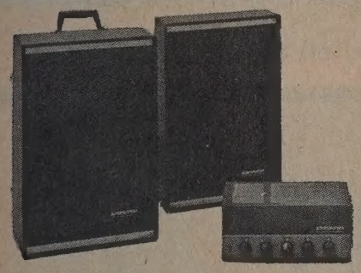
NEWCOMB PATHFINDER PUBLIC ADDRESS SYSTEMS

MODEL E-1008S

10 watt PORTABLE system



The Newcomb E-1008S System consists of one E-10B amplifier and one P-108 speaker assembly. The P-108 contains an efficient 8" loudspeaker protected by a kickproof, perforated metal grille, microphone carrying straps (but no mike), and space for carrying the E-10B amplifier. Size: 11¼" x 14¾" x 9" deep. System weight: 17½ lbs.
LIST: $124.95



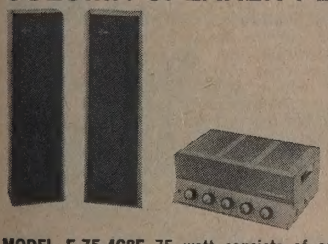
MODEL E-20-212R

20 watt PORTABLE system

This 20 watt system consists of one Newcomb E-20 amplifier and one P-212R dual speaker assembly which also acts as a carrying case for the amplifier. The P-212R includes two efficient 12" dual-cone loudspeakers, each with a 25 foot cord and plug. Speaker baffles snap together back to back. Inside are mike carrying straps but no microphone. Speakers are protected by kickproof perforated metal grilles. System closed measures 13½" x 15¼" x 23", weighs 37 lbs.
LIST: $219.95

MODEL E-40-212H 40 watt PORTABLE system. Included in the E-40-212H are one Newcomb E-40 amplifier and one P-212H dual speaker case assembly which also acts as a carrying case for the amplifier. There are two 12" heavy duty loudspeakers each with a 25 foot cord and plug, kick-proof perforated metal grilles and mike carrying straps but no microphone. Size 13½" x 15¼" x 23", weight 44 lbs.
LIST: $272.45

COLUMN SPEAKER PERMANENT SYSTEMS



MODEL E-20-2C8F 20 watt consists of one E-20 amplifier, two Model C-8 column speakers, and 100 feet of speaker cord. No microphone. Weight: 54¾ lbs.
LIST: $404.85

MODEL E-40-2C8F 40 watt consists of one E-40 amplifier, two Model C-8 column speakers, and 100 feet of speaker cord. No microphone. Weight: 60 lbs.
LIST: $444.85

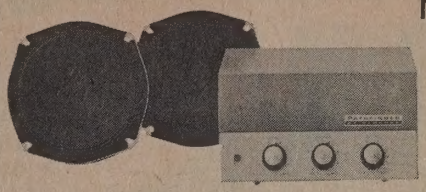
MODEL E-75-4C8F 75 watt consists of one E-75 amplifier, four Model C-8 column speakers, and 200 feet of speaker cord. No microphone. Weight: 107 lbs.
LIST: $769.30.

MODEL E-20-2C12F 20 watt consists of one E-20 amplifier, two model C-12 super column speakers, and 100 feet of speaker cord. No microphone. Weight: 93¼ lbs.
LIST: $589.95.

MODEL E-40-2C12F 40 watt consists of one E-40 amplifier, two model C-12 super column speakers, and 100 feet of speaker cord. No microphone. Weight: 98½ lbs.
LIST: $629.95.

MODEL E-75-2C12F consists of one E-75 amplifier, two model C-12 super column speakers, and 100 feet of speaker cord. No microphone. Weight: 105 lbs.
LIST: $669.50

MODEL E-75-4C12F 75 watt consists of one E-75 amplifier, four model C-12 super column speakers and 200 feet of speaker cord. No microphone. Weight: 184 lbs.
LIST: $1139.50



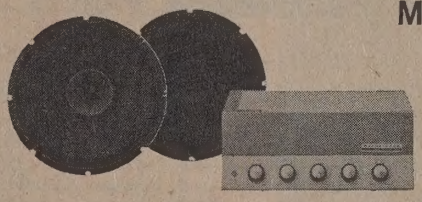
MODEL E-10-28F

10 watt PERMANENT system

This system includes one Newcomb Model E-10B amplifier, two eight-inch extended range loudspeakers, and 100 feet of speaker cord. No microphone included. System weight: 12 lbs.
LIST: $108.95

MODEL E-20-48F

This is a 20 watt sound system for permanent installation consisting of one Newcomb Model E-20 amplifier, four 8" extended range loudspeakers, and 200 feet of speaker cord. No microphone. System weight: 20¼ lbs.
LIST: $167.95



MODEL E-20-212F

20 watt PERMANENT system

This twenty watt system includes one Newcomb E-20 amplifier, two 12" dual-cone loudspeakers, and 100 feet of speaker cord. No microphone included. System weight: 20¾ lbs.
LIST: $163.95

MODEL E-40-212FH 40 watt PERMANENT system includes one Newcomb E-40 amplifier, two heavy duty 12" loudspeakers, and 100 feet of speaker cord. No microphone. System weight: 28 lbs.
LIST: $214.95

MODEL E-40-412F 40 watt PERMANENT system includes one Newcomb E-40 amplifier, four dual-cone loudspeakers, and 200 feet of speaker cord. No microphone. System weight: 32½ lbs.
LIST: $247.95

MODEL E-75-412FH 75 watt PERMANENT system includes one Newcomb E-75 amplifier, four heavy duty 12" loudspeakers, and 200 feet of speaker cord. No microphone. System weight: 43 lbs.
LIST: $309.50

SPEAKER ASSEMBLIES

MODEL P-108 is an 8" speaker in a portable case fitted for carrying the Newcomb E-10B amplifier. It has a kickproof, perforated metal grille, 25 foot cord with octal plug and microphone straps. Dimensions: 11¼" x 14¾" x 9" deep. Weight: 9 lbs.
LIST: $40.00.

MODEL P-212R consists of two efficient 12" dual-cone speakers, each with 25 foot cord and octal plug. in a split portable case designed to carry the E-20 amplifier with or without the P-4 phone top. Case is covered with gray vinyl, has kickproof, perforated metal grilles, and microphone-carrying straps. Dimensions: 13½" x 15¼" x 23". Weight: 22¼ lbs.
LIST: $100.00.

MODEL P-212H consists of two heavy duty 12" loudspeakers, each with 25 foot cord and octal plug, in a split portable case designed to carry the E-40 amplifier with or without the P-4 phono top. Case is covered with gray vinyl, has kickproof, perforated metal grilles, and microphone-carrying straps. Dimensions: 13½" x 15¼" x 23". Weight: 24½ lbs.
LIST: $112.50.

MODEL C-8 COLUMN SPEAKER combines exceptional vertical directivity with broad horizontal coverage. Enclosure tapered front to back for ganging. Contains four efficient 8" speakers. Dimensions: 6½"D x 11⅜"W 40" H. Weight: 20¼ lbs.
LIST: $139.95.

MODEL C-12 SUPER COLUMN SPEAKER with four 12" speakers provides super intelligibility, super efficiency, super power handling capacity — 120 watts peak. Dimensions: 7½" D x 15¼" W x 56" H. Weight: 39½ lbs.
LIST: $232.50.

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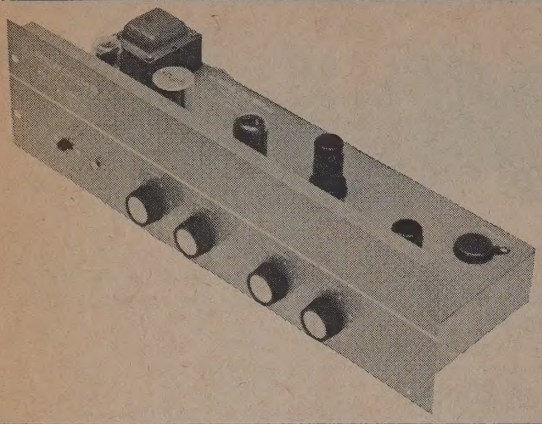


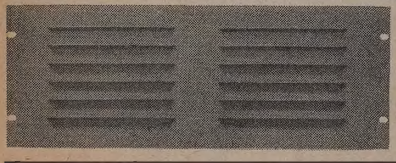
MODEL E2-525G INDUSTRIAL PREAMPLIFIER

Designed for industrial sound systems, the Newcomb E2-525G has 125 to 600 ohm balanced line output. Maximum output at 600 ohms = 10 volts line output. Inputs: one mike at 2 meg impedance, convertible to low impedance by means of Newcomb plug-in transformer (socket provided) · one high level crystal phono; one radio or tape. At 600 ohm line output: mike output of .0015 volts delivers 1 volt; phono input of .15 volts delivers 1 volt out. Frequency response: ±2 db 30 to 15,000 cycles. Electronic remote switching turns mike on and music off when paging. Remote switching line may be unshielded 3-conductor cable up to several thousand feet long. No relays required. There are separate tone controls for mike and phono. Mike input socket is a standard 3-contact phone jack usable with low or high impedance microphones. Tubes: 1-6SF5, 1-6SN7, 1-6J5, 1-6X5, 25 watts, 117 volts, 60 cycles a.c. Dimensions: 19" x 5¼" x 6⅛" deep. Weight: 9 lbs. **LIST: $129.50.**

PANELS FOR CABINET RACK

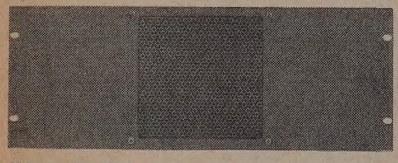
BLANK PANELS

Model Number	Dimensions	Weight lbs.	List
175G	1¾" x 19"	1¾	$3.00
350G	3½" x 19"	1¾	$3.50
525G	5¼" x 19"	2½	$4.00
700G	7" x 19"	3	$4.50
875G	8¾" x 19"	3½	$5.00
1050G	10½" x 19"	4¼	$5.50



LOUVERED PANELS

Model Number	Dimensions	Weight lbs.	List
L-525G	5¼" x 19"	2½	$5.00
L-700G	7" x 19"	3	$5.75
L-875G	8¾" x 19"	3½	$6.50
L-1050G	10½" 19"	4¼	$7.25



MONITOR PANEL

MODEL 700MPG measures 7" x 19", has perforated metal grille, requires 6" speaker, weight 3 lbs. (See also radio panels.) **LIST: $10.00.**

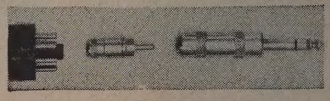
LEVER KEY PANELS

All lever key panels have 1" slots 1" apart wtih 1⅝" mounting holes. Each panel measures 3½" x 19". Weight of each panel is 1¾ lbs.

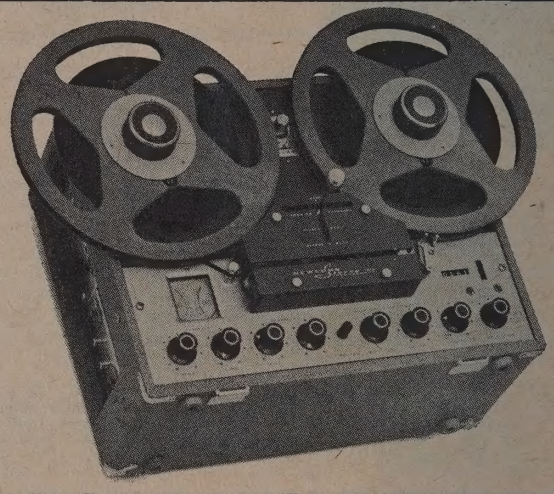
Model No.	No. of slots	LIST
LK-350-6G	6	$5.00
LK-350-8G	8	$5.50
LK-350-10G	10	$6.00
LK-350-12G	12	$6.50
LK-350-14G	14	$7.00
LK-350-16G	16	$7.50

Name strip Model No.	LIST
SR-6	$2.50
SR-8	$2.60
SR-10	$2.70
SR-12	$2.80
SR-14	$2.90
SR-16	$3.00

CONNECTORS



MODEL PW-156 is an octal speaker plug for all Pathfinder models. **LIST: $.45.**
MODEL PW-157 is a phono tap or radio input plug for all Pathfinder models. **LIST: $.75.**
MODEL PW-144 is a three contact, shielded mike plug for all Pathfinder models. **LIST: $1.75.**



TX-10 SERIES STEREO TAPE RECORDERS

Essentially a machine for the perfectionist, the TX-10 is probably the most foolproof and easiest-on-tape stereo recorder made. It takes any size reel — 3" to 10½". Cybernetically engineered, tape transport is controlled with a single central joystick. It permits sound-on-sound recording, can be monitored before or after recording, has three heads, four-digit counter, stainless steel tape guides, hysteresis motor, differential braking, pointer-to-pointer illuminated meters which show both recording and playback levels. The TX-10 is a two-speed machine — 7½ and 3¾ ips — selected by push button with speed-frequency correction. (15/7½ ips machines available on special order). Response is ±2 db 30-18,000 cps at 7½ ips. There are separate "mike" and "line" inputs and mixing controls for each channel, a balance control, a ganged volume control, pilot light. It accepts Cannon XLR-3-12C male connectors and has easily accessible sockets for Newcomb plug-in transformers to permit use of low impedance microphones.

PROFESSIONAL USERS NET: $750.00 unmounted.
CA-133 CARRYING CASE $25.00.
SR-85 MOUNTING FRAME FOR HI-FI CABINETS $10.00.
SR-86 FRAME FOR RACK MOUNTING in Newcomb Model 35-19 or 70-19 cabinet racks (cannot be used with door) $15.95
SR-97 PAIR OF RACK BRACKETS FOR MOUNTING IN STANDARD 19" RACKS $3.95.

MODEL SA-80B — 2 CHANNEL POWER AMPLIFIER WITH TONE, VOLUME AND BALANCE CONTROLS.
A stereo/mono amplifier designed especially for use with the TX-10, the Newcomb SA-80B amplifier puts out 40 peak watts per channel. Response: ±1 db 20-20,000 cps. Distortion per channel at 20 watts rms less than 1%. Hum below —65 db. It has a balance control and ganged bass, treble, and volume controls. Output impedances per channel — 16, 8, and 4 ohms. 8½" x 16¾" x 16⅜", 32 pounds. **PROFESSIONAL NET $199.50.**

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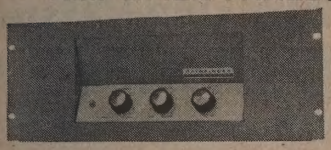
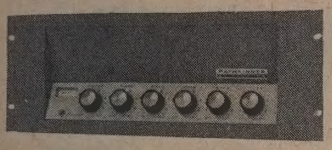
RACK AND PANEL EQUIPMENT

AMPLIFIER PANELS — MODEL E-10-700PG



Panel only for rack mounting a standard Newcomb E-10B amplifier. Dimensions: 19″ x 7″. Weight: 3 lbs.
LIST: $17.50.



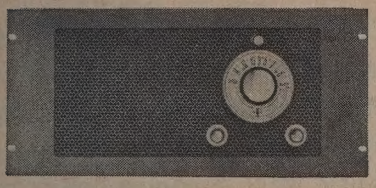
MODEL E-52040-700PG

Panel only for either the Newcomb E-5P preamplifier, the E-20 or E-40 amplifier. Dimensions: 19″ x 7″. Weight: 3½ lbs.
LIST: $18.50.

MODEL E75-875PG

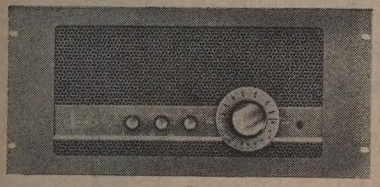
Panel only for rack mounting a standard Newcomb E-75 amplifier. Dimensions: 19″ x 8¾″. Weight: 4 lbs.
LIST :$19.50.

PANEL MOUNTED RADIOS—MODEL AM-500-875G AM RADIO

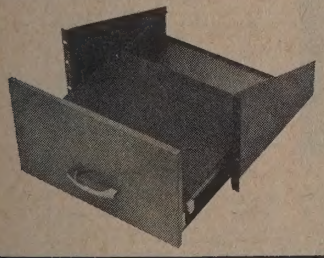


This is a complete, transformer-powered AM radio in which the output amplifier and 8″ oval speaker act as a monitor. The output to external amplifiers is taken off ahead of the volume control so adjustment of monitor volume has no affect on output to sound system or tape recorder. The AM-500-875G is a dependable, rugged, continuous duty receiver with a large, direct-driven tuning dial with conelrad markings, lighted index. 40 watts, 117 volts, 60 cycles a.c. Dimensions: 19″ x 8¾″ x 7½″ deep. Weight: 12¼ lbs.
LIST: $136.88

MODEL AFM-750-875G AM-FM RADIO

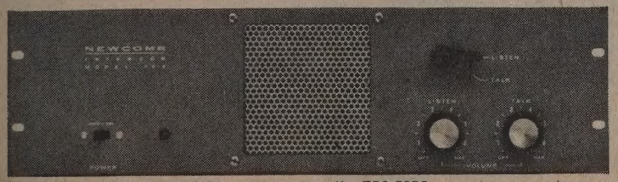


A complete, transformer-powered AM-FM radio in which the output amplifier and 8″ oval speaker act as a monitor, the AFM-750-875 has AFC (and defeat switch) and temperature-compensated oscillators for exceptionally stable performance. Output to external amplifier is taken off ahead of the volume control so adjustment of monitor volume has no affect on output to sound system or recorder. 54 watts, 117 volts, 60 cycles a.c. Dimensions: 19″ x 8¾″ x 7½″ deep. Weight 14½ lbs.
LIST: $249.00.



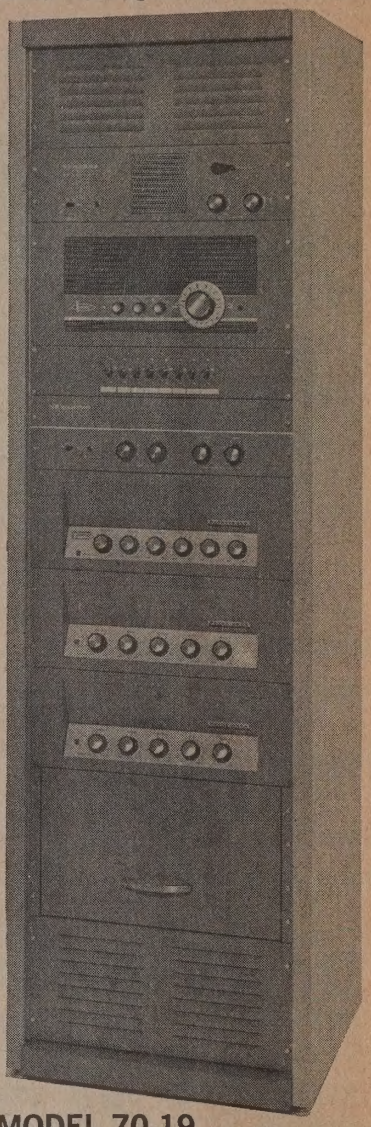
MODEL 1050CG
PHONO CHANGER DRAWER

The front panel dimensions of the 1050CG phonograph changer drawer is 19″ x 10½″. It has a 16½″ x 15″ removable motor board. Depth from the top of the motor is 3¾″. Clearance above top of motor board is 6⅛″. Weight 19¼ lbs. Finest double-extension, roller bearing glides provide a stable level platform for player.
LIST: $65.00.



MODEL TB2-525G
PANEL-MOUNTED INTERCOM

A complete intercom amplifier and speaker, the TB2-525G is designed for industrial installations wherein paging speakers are used for intercommunication. Input and outgoing impedances: 500 ohms. Separate incoming and outgoing volume controls. Talk-listen switch. Pilot light. Tubes: (3) 1-6SL7, 1-6v6, 1-6X5. 40 watts, 117 volts, 60 cycles a.c. Dimensions: 19″ x 5¼″ x 6⅛″ deep. Weight: 9¼ lbs. **LIST: $219.50.**



MODEL 70-19
CABINET RACK

Contemporarily styled, solidly built, beautifully finished in an olive-gray tint compatible with Newcomb Pathfinder equipment, the 70-19 has a ventilated back, provides 70″ of panel space. Panels are standard 19″ width. Last three digits of model number indicate panel depth. e.g. "875" stands for 8¾″ panel depth. Dimensions: 21⅞″ x 74″ x 18½″ deep. Weight 84 lbs. **LIST: $262.00.**

MODEL 70D Door with lock for front of 70-19 cabinet. Weight: 23 lbs. **LIST: $50.00.**

MODEL 35-19 CABINET RACK A short cabinet rack with ventilated back, 35″ of panel space. Dimensions: 21⅞″ x 39″ x 18½″ deep. Weight: 52 lbs. **LIST: $229.50.**

MODEL 35D Door with lock for front of 35-19 cabinet. Weight: 12 lbs. **LIST: $29.50.**

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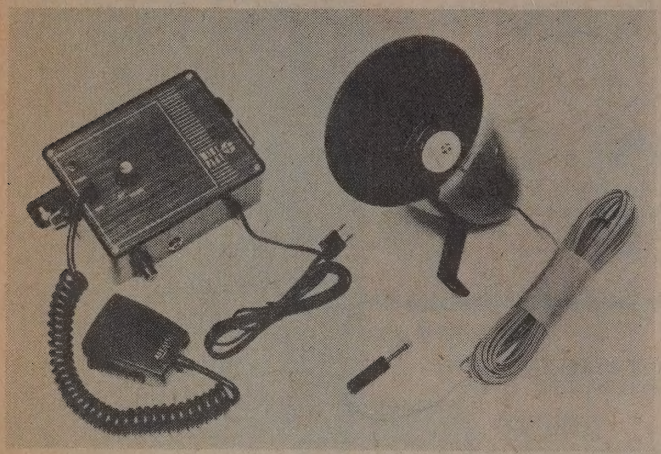
SPARKS COMMUNICATIONS

MINI*-PAGE



A VERSATILE, LOW-COST PAGING SYSTEM FOR INDOOR OR OUTDOOR INSTALLATION

A few MINI-PAGE APPLICATIONS

- OFFICES (TO MANUFACTURING, WAREHOUSE OR YARD)
- INDUSTRIAL PLANTS
- RETAIL STORES
- RESTAURANTS
- LOUNGES, BARS
- NIGHT CLUBS
- DRIVE-IN
- MARINAS
- BOAT DOCKS
- AUCTIONEERS
- CAMPERS
- SPORTING EVENTS
- AUTO DEALERS
- PARKING GARAGES AND LOTS
- BUSSES, CITY AND SCHOOL
- LAW ENFORCEMENT (TRAFFIC AND RIOT CONTROL)

SPECIFICATIONS

Power Output: 8W (115 VAC)
10W (12 VDC)

Frequency Response:
100 Hz to 15 KHz

Size: 7″ x 5½″ x 2½″

Shipping Weight: 6 Lbs.

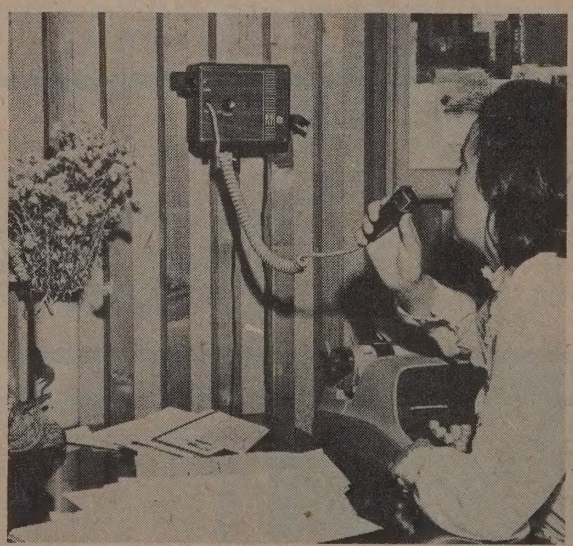
- COMPLETE PAGING SYSTEM WITH A CHOICE OF SPEAKERS AND HORNS FOR TYPE OF INSTALLATION AND NOISE LEVEL.
- RELIABLE ALL SOLID STATE DESIGN.
- RUGGED CONSTRUCTION.
- FAST EASY INSTALLATION.
- 115VAC AND 12VDC MODELS.
- FULL ONE YEAR WARRANTY.

MINI-PAGE is handsomely styled to be an attractive addition in any installation. Expertly engineered and thoroughly tested, the MINI-PAGE system has excellent music and voice fidelity and will give years of trouble-free service. Several speaker types are available for indoor or outdoor installation.

Everyone who has ever wanted a paging system can now have one of the finest with the new, low-cost MINI-PAGE. Available in two models, the MINI-PAGE can be used in the normal building installation or the 12 VDC model will operate from an automobile cigarette lighter receptacle.

The MINI-PAGE can also be used to provide background music with phono or tape deck. A unique mute-circuit allows voice-override-music when a paging call is necessary.

The handsome control unit includes separate music and microphone volume and a positive "on" indicator light.



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Nortronics COMPANY INC.

WORLD LEADER IN MAGNETIC TAPE HEADS

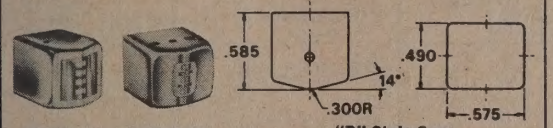
- High quality heads for every application.
- Widest selections of track styles, functions, and sizes.
- Professional, Premium, and Standard units.
- Used as original equipment by more than 90% of the nation's tape recorder manufacturers.

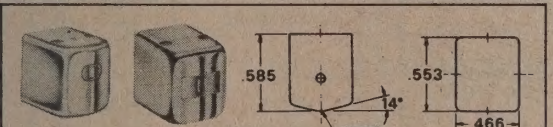
Partial Listings of Nortronics
RECORD/PLAY/RECORD-PLAY/ERASE/COMBO HEADS

See following pages for Professional and Broadcast Cartridge Heads, Special Purpose Heads, Accessories and Mounting Kits, Replacement and Conversion Data.

FREE REPLACEMENT GUIDE — Head replacement information on over 2,000 different tape recorder models by over 190 foreign and domestic manufacturers. Recommends heads electrically matched to the recorder circuits, and exclusive Nortronic "Quik-Kits" where needed for mechanical compatibility.

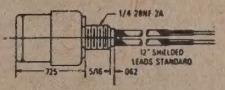
RECORD/PLAY AND RECORD-ONLY HEADS





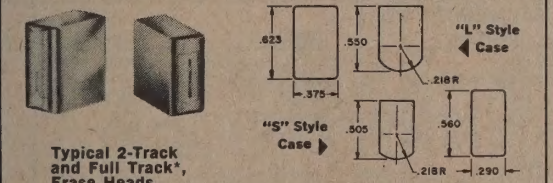
APPLICATION NOTES:
1. High-impedance general-purpose record/play or playback only head for vacuum-tube circuits. 2. Medium-impedance record/play head or vacuum-tube or transistor circuits. 3. Low-impedance record/play for transistor circuits. 4. Special low-impedance record-only for vacuum-tube or transistor circuits in duplicators and professional recorders. 5. Low-impedance record/only for vacuum-tube or transistor circuits. 6. For bias frequencies up to 750 KHz.

REAR MOUNT HEADS — All heads listed are No-Mount styles. Rear-Mount styles are also available, except on "Combos," and 3100 and 5800 Series, and may be offered by simply adding 50 to last two digits of No-Mount model number. (i.e.: 1203 No-Mount becomes 1253 to indicate same head with Rear-Mount.) For Rear-Mount prices, contact your local Nortronics distributor.



Head Description	Nortronics Model No. No Mount	Case Style	Head Function	Application (See Notes)	1 KHz Inductance MHY	1 KHz Impedance OHMS	DC Resistance OHMS	Net Each† (No Mount)
Standard 4-Track Stereo	1000	B	Record/Play	1	800	5000	700	$20.90
Hyperbolic Metal Face	1001	B	Record/Play	2	400	2500	390	20.90
Laminated Cores	1002	B	Record/Play	3	100	650	90	20.90
	1009	B	Record/Play	2	500	3300	700	20.90
Premium 4-Track Stereo	1200	B	Record/Play	1	800	5000	700	$25.10
Hyperbolic Metal Face	1201	B	Record/Play	2	400	2500	390	25.10
Laminated Cores	1202	B	Record/Play	3	100	650	90	25.10
	1203	B	Record Only	5	50	400	90	25.10
Standard 2-Track Stereo	1800	B	Record/Play	1	800	5000	720	$20.90
Hyperbolic Metal Face	1801	B	Record/Play	2	400	2500	410	20.90
Laminated Cores	1802	B	Record/Play	3	100	650	130	20.90
Premium 2-Track Stereo	2000	B	Record/Play	1	800	5000	720	$32.10
Hyperbolic Metal Face	2001	B	Record/Play	2	400	2500	410	32.10
Laminated Cores	2002	B	Record/Play	3	100	650	130	32.10
	2003	B	Record Only	5	50	320	130	32.10
Premium 2-Track Mono	2600	B	Record/Play	1	800	5000	400	$17.40
Hyperbolic Metal Face	2601	B	Record/Play	2	400	2500	165	17.40
Laminated Cores	2602	B	Record/Play	3	100	650	70	17.40
Track .040 Off Center								
Standard 2-Track Mono	3000	G	Record/Play	1	800	5000	400	$10.35
Hyperbolic Metal Face	3001	G	Record/Play	2	400	2500	165	10.35
Laminated Cores	3002	G	Record/Play	3	100	650	70	10.35
2-Track Mono (Center Tr.)	3100	G	Record/Play	1	1000	6300	625	$10.35
Cylindrical Metal Face	3101	G	Record/Play	2	400	2500	350	10.35
Solid Cores								
Premium 2-Track Mono	3200	G	Record/Play	1	800	5000	400	$17.40
Hyperbolic Metal Face	3201	G	Record/Play	2	400	2500	165	17.40
Laminated Cores	3202	G	Record/Play	3	100	650	70	17.40
Premium Full-Track	4100	B	Record/Play	2	250	1500	200	$46.20
Hyperbolic Metal Face	4101	B	Record Only	5	55	330	125	46.20
Laminated Cores								
Premium 4-Channel	5601	B	Record Only	5	50	320	150	$110.00
Hyperbolic Metal Face	5602	B	Record/Play	3	90	600	100	110.00
Laminated Cores	5603	B	Record/Play	2	370	2200	690	110.00
Premium 3-Channel	5701	B	Record/Play	2	340	2000	800	$110.00
Hyperbolic Metal Face	5702	B	Record/Play	3	100	650	260	110.00
Laminated Cores	5703	B	Record Only	5	50	400	260	110.00
Premium 8-Track Stereo	5800	B	Record/Play	2	400	2500	700	$10.55
Hyperbolic Metal Face	5810	B	Record Only	4	10	75	42	20.00
Laminated Cores	5813	B	Record Only	5	50	400	220	20.00
Premium 8-Track	5832	B	Record/Play	2	200	1400	500	$81.40
4-Channel	5833	B	Record/Play	3	100	700	250	81.40
for high speed duplicating or instrumentation	5834	B	Record Only	5, 6	50	400	250	81.40
	5835	B	Dup. Record	4, 6	10	80	60	81.40
	5836	B	Dup. Record	4, 6	2	20	16	81.40

ERASE HEADS



Typical 2-Track and Full Track*, Erase Heads

Head Description	Nortronics No Mount Model Nos. Stand. "S" Case	Large "L" Case	Imped.	1 KHz Induct. MHY	60 KHz Imped. OHMS	Oper. Erase Curr.* MA	DC Resist. OHMS	60 KHz Oper. Voltage VOLTS	Net Each†
4-Track Stereo Erase	1400	1400L	Hi	80	30,000	3-5	270	90-150	$9.25
Full Metal Face	1401	1401L	Med	10	2,800	10-15	40	28-42	9.25
	1402	—	Lo	0.13	40	80-140	2	3-6	9.25
2-Track Stereo Erase	2200	2200L	Hi	80	25,000	4.5-7.0	205	100-150	$12.75
Full Metal Face	2201	2201L	Med	8	2,000	16-24	35	32-48	12.75
2-Track Mono Erase	3600	3600L	Hi	80	25,000	4.5-7.0	205	100-150	$ 6.60
Full Metal Face	3601	3601L	Med	8	2,000	16-24	35	32-48	6.60
Full-Track Mono Erase	4400	4400L	Hi	40	12,000	10-15	88	100-150	13.65
Full Metal Face	4401	4401L	Med	3.6	1,000	32-48	25	32-48	13.65

* For 60 db erasure of saturated tape. Voltages shown are RMS.

COMBO HEADS

Typical Z-Combo and Stereo "Combos" "A" Style Case

* L = 400 MHY. GAP 100M-IN., PEAK BIAS CUR. 15 MA, BIAS VOLTS, RMS 40V., I .025 MA., ERASE L = 12 MHY.

Head Description	Nortronics No Mount Model No.	Head Function	Equiv. Head Specification Reference	Net Each
4-Track Stereo "Combo"	6000	Record/Play, Erase	1201, 1400	$28.60
Metal Face	6002	Record/Play, Erase	1201, 1401	28.60
	6003	Record/Play, Erase	1000, 1402	28.60
	6009	Record/Play, Erase	1009, 1401	28.60
8-Track Stereo Z-Combo	6800	Record/Play, Erase	*	$ 22.20
2-Track-Stereo "Combo"	6100	Record/Play, Erase	2001, 2201	$ 40.70
Metal Face				
2-Track Stereo "Combo"	6125	Record/Play, Erase	3000, 3600	$ 20.00
Metal Face, Center Track				

PROFESSIONAL HEADS

Description	Model No.	Head Func.	1 KHz Ind.	DC Resist. OHMS	Net Ea. (No-mount)
Full-track ¼"	9102	Play	650	275	$ 46.20
	9104	Record	4.0	3.35	47.10
	9125	Erase	—	—	46.20
2-Chan. Stereo ¼"	9202	Play	—	—	$43.55
	9204	Record	4.5	15	44.45
	9222	Erase	—	—	43.55
3-Channel ½"	9360*	Play	650	360	$164.00
	9361*	Record	4	9	164.00
	9370*	Erase	170 uHy	2	164.00
4-Channel ½"	9400*	Play	650	530	$235.00
	9461*	Record	4.0	8.3	235.00
	9470*	Erase	215 uHY	1.3	235.00
8-Channel 1"	9880*	Play	650	530	$520.00
	9881*	Record	4.0	8.3	520.00
	9890*	Erase	215 uHY	1.3	550.00

Note: For complete specifications, write Nortronics referencing head model number.
* With Scully Type Mount.

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WORLD LEADER IN MAGNETIC TAPE HEADS

REPLACEMENT HEAD LISTING FOR PROFESSIONAL MACHINES

AMPEX Model No.	Function	Head & QK	Prof. Net Price
PR-10	RPE 2-track stereo	R 9203 + 87 P 9202 + 87 E 9226 + 87	$44.45 43.55 43.55
	P 4-track stereo	P 8600 + 87	30.35
300	RPE full-track	R 8001 + 76 P 8000 + 76 E 8106 + 76	47.10 46.20 22.45
	RPE 2-track stereo	R 8201 + 76 P 8200 + 76 E 8304 + 76	33.00 43.55 27.00
	RPE 2-track mono	R 8401 + 76 P 8400 + 76 E 8504 + 76	18.25 19.80 15.40
	RPE 4-track stereo	R 8604 + 76 P 8600 + 76 E 8701 + 76	25.95 30.35 18.45
350	RPE full-track	R 9103 + 76 P 9102 + 76 E 9125 + 76	47.10 46.20 46.20
	RPE 2-track stereo	R 8201 + 76 P 8200 + 76 E 8309 + 76	33.00 43.55 22.00
	RPE 2-track mono	R 8401 + 76 P 8400 + 76 E 8509 + 76	18.25 19.80 15.40
	RPE 4-track stereo	R 8604 + 76 P 8600 + 76 E 8701 + 76	25.95 30.35 18.45
351	RPE full-track	R 9103 + 76 P 9102 + 76 E 9125 + 76	47.10 46.20 46.20
	*RPE 2-track stereo	R 9203 + 76 P 9202 + 76 E 9226 + 76	44.45 43.55 43.35
	RPE 2-track mono	R 8401 + 76 P 8400 + 76 E 8509 + 76	18.25 19.80 15.40
	RPE 4-track stereo	R 8604 + 76 P 8600 + 76 E 8701 + 76	25.95 30.35 18.45
354	RPE full-track	R 9103 + 76 P 9102 + 76 E 9125 + 76	47.10 46.20 46.20
	RPE 2-track stereo	R 8201 + 76 P 8200 + 76 E 8309 + 76	33.00 43.55 22.00
	RPE 2-track mono	R 8401 + 76 P 8400 + 76 E 8509 + 76	18.25 19.80 15.40
	RPE 4-track stereo	R 8604 + 76 P 8600 + 76 E 8701 + 76	25.95 30.35 18.45

AMPEX Model No.	Function	Head & QK	Prof. Net Price
AG350/355***	RPE full-track	R 9104 + 76 P 9102 + 76 E	$47.10 46.20
	RPE 2-track stereo	R 9204 + 76 P 9202 + 76 E 9222 + 76	44.45 43.55 43.55
	RPE 2-track mono	R 8414 + 76 P 8400 + 76 E	18.25 19.80
	RPE 4-track stereo	R 8614 + 76 P 8600 + 76 E	25.95 30.35
600*	RPE full-track	R 8001 + 66 P 8000 + 66 E 8109 + 66	47.10 46.20 22.45
	RPE 2-track stereo	R 8201 + 66 P 8200 + 66 E 8309 + 66	33.00 43.55 22.00
	RPE 2-track mono	R 8401 + 66 P 8400 + 66 E 8504 + 66	18.25 19.80 15.40
	RPE 4-track stereo	R 8604 + 66 P 8600 + 66 E 8701 + 66	25.95 30.35 18.45
900 Series* (950, 960, 970)	RPE full-track	R 8001 + 86 P 8000 + 86 E 8109 + 86	47.10 46.20 27.45
	RPE 2-track stereo	R 8201 + 86 P 8200 + 86 E 8304 + 86	33.00 43.55 22.00
	RPE 2-track mono	R 8401 + 86 P 8400 + 86 E 8504 + 86	18.25 19.80 15.40
	RPE 4-track stereo	R 8604 + 86 P 8600 + 86 E 8701 + 86	25.95 30.35 18.45
3200 Series 3300 Playback Only	Record full-track	8004 76	47.10
	Record 2-track stereo†	8214 76	33.00
	Record 2-track mono	8414 76	18.25
	Record 4-track stereo	8614 76	25.95
	Playback full-track	8008 76	46.20
	Playback 2-tr. stereo††	8210 76	43.55
	Playback 2-track mono	8402 76	19.80
	Playback 4-track stereo	8610 76	30.35

* Write for circuit modification details. Specify manufacturer and model number.
** Net price, less Quik-Kits.
*** On units equipped with 4 heads use QK-87 instead of QK-76.
† Alfenol Model 8215-76 $88.90. †† Alfenol Model 8211-76 $87.10.

CROWN Model No.	Function	Head & QK	Prof. Net Price
701, 801, BX801, 1001, 1401	Play only or record/play, full track Record, full track Erase, full track	8006 + 35 8001 + 35 8102 + 35	$46.20 47.10 22.45
712, 822, BX822, 1022, 1422/8	Play only or record/play stereo, 2-track Record stereo, 2-track Erase stereo, 2-track	8209 + 35 8201 + 35 8304 + 38	43.55 33.00 22.00
702, 802, BX802, 1002, 1402/8	Play only or record/play mono, 2-track Record mono, 2-track Erase mono, 2-track	8403 + 35 8404 + 35 8504 + 38	19.80 18.25 15.40
A51, A314	Play only mono, 2-track	8406 + 66	19.80
A54, A324, SP324	Play only stereo, 4-tr.	8601 + 66	30.35
714C, 824, BX824, BX1024, 1424	Play only or record/play stereo, 4-track Record stereo, 4-track Erase stereo, 4-track	8608 + 66 8603 + 66 8701 + 38	30.35 25.95 18.45

MAGNECORD Model No.	Function	Head & QK	Prof. Net Price
1021 *No QK required	Record, full track Play mono, 2-track (optional) Erase, full track Play, full track	8005 * 8408 * 8102 * 8006 *	$47.10 17.40 22.45 46.20
1022 *No QK required	Record stereo, 2-track Play stereo, 2-track Erase stereo, 2-track	8203 * 8202 * 8302 *	33.00 43.55 22.00
1020, 1024 *No QK required	Record stereo, 4-track Play stereo, 4-track Erase stereo, 4-track	8602 * 8607 * 8702 *	25.95 30.35 18.45
P60, P75, M90, M80	Record, full track Play, full track Erase, full track	8001 + 35 8000 + 35 8105 + 35	47.10 46.20 22.45

R.C.A. Model No.	Function	Head & QK	Prof. Net Price
RT21 *No QK required	Full record Full play Full erase	8002 * 8003 * 8110 *	$63.35 62.50 38.70

R.C.A. Model No.	Function	Head & QK	Prof. Net Price
RT21 *No QK required	2-track stereo record 2-track stereo play 2-track stereo erase	8206 * 8205 * 8307 *	$49.30 57.85 38.30

SCULLY Model No.	Function	Head	Prof. Net Price
270	Full-track play	9100	$66.00
270-2	2-track stereo play	9200	97.00
270-4	4-track stereo play	8620	82.00
275	Full-track play	9100	66.00
275-2	2-track stereo play	9200	97.00
280	Full-track record Full-track play Full-track erase	9101 9100 9130	66.00 66.00 66.00
280-2	2-track stereo record 2-track stereo play 2-track stereo erase	9201 9200 9221	97.00 97.00 97.00

SCULLY Model No.	Function	Head	Prof. Net Price
282-3	3-channel ½" record 3-channel ½" play 3-channel ½" erase	9361 9360 9370	$164.00 164.00 164.00
282-4	4 channel ½" record 4-channel ½" play 4-channel ½" erase	9461 9460 9470	235.00 235.00 235.00
284-8	8-channel 1" record 8-channel 1" play 8-channel 1" erase	9881 9880 9890	520.00 520.00 550.00

Note: All Scully replacements include mount. Head mounting brackets for professional machines shown on page 4.

Net

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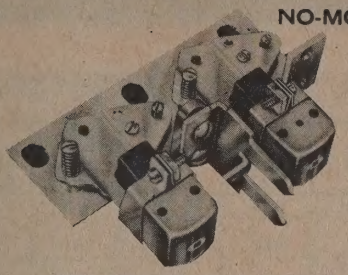
Nortronics COMPANY, INC.

DIRECT REPLACEMENT HEADS FOR:
BROADCAST CARTRIDGE MACHINES



NO-MOUNT HEAD BRACKET ASSEMBLY FOR CARTRIDGE MACHINES

Furnished with cartridge hold-down spring and cartridge guide rail. Completely assembled and semi-aligned.

QK-114 installs two no-mount dual channel heads for mono, or two no-mount three channel heads for stereo. Left head for recording; right head for playback. Requires heads similar to 2000 Series .....Net Each **$13.00**

QK-115 installs two no-mount mono 2-track heads (see monitor conversion information). Requires heads similar to 300 Series .....Net Each **$13.00**

QK-117 installs one no-mount mono head and one no-mount dual channel head, and provides the advantages of monitoring program material during recording (see monitor conversion information). Requires one head similar to 2000 Series, and one head similar to 3000 Series .....Net Each **$13.00**

NAB Conversion to Monitor — As all professional users of tape equipment know, superior results can be achieved by using a special record-only head plus a separate playback head. Professionals also appreciate the ability to be able to monitor a tape as it is being recorded. Nortronics offers a conversion to monitor operation to update cartridge machines as shown in the shaded (NAB Conversion) columns on the chart below.

REPLACEMENT HEAD LISTING FOR CARTRIDGE MACHINES — BY MANUFACTURER AND MODEL NUMBER

Name of Manufacturer	Manufacturer's Model No.	NO-MOUNT HEADS: Mfg. Head No.	NO-MOUNT HEADS: REPLACEMENT Function	NO-MOUNT HEADS: REPLACEMENT Nortronics Hd+Quik Kit	NO-MOUNT HEADS: NAB CONVERSION Function	NO-MOUNT HEADS: NAB CONVERSION Nortronics Hd+Quik Kit	REAR-MOUNT HEADS: Mfg. Head No.	REAR-MOUNT HEADS: REPLACEMENT Function	REAR-MOUNT HEADS: REPLACEMENT Nort. Head	REAR-MOUNT HEADS: NAB CONVERSION Function	REAR-MOUNT HEADS: NAB CONVERSION Nort. Head
ATC	CP11, CP12, CP13 Mono		Rec.—Prog. & Cue Play—Prog. & Cue	2003 2007 +114	Unit is NAB Std.		20-1014 20-1011	Rec.—Prog. & Cue Play—Prog. & Cue	2053 2057	Unit is NAB Std.	
	CP21, CP22, CP23, CPR23 STEREO (3 Channel)		Rec.—Prog. & Cue Play—Prog. & Cue	5703 5707 +114	Unit is NAB Std.		20-1016 20-1015	Rec.—Prog. & Cue Play—Prog. & Cue	5753 5757	Unit is NAB Std.	
	P150, P190, PB150, PB190, PC150, PC190		Rec./Play—Prog. Rec./Play—Cue Requires circuit modification, see Nortronics Form No. 7213	3201 3200 +115	Rec.—Prog. Play—Prog. R/P—Cue See Note*	3205 2000 +117	20-1001	Rec./Play—Prog. Rec./Play—Cue Requires circuit modification, see Nortronics Form No.7213	3251 3250	Rec.—Prog. Play—Prog., R/P Cue See Note*	3255 2050
COLLINS	P150, P190, PB150, PB190		Rec./Play—Prog. Rec./Play—Cue Requires circuit modification, see Nortronics Form No. 7213	3201 3200 +115	Rec.—Prog. Play—Prog. R/P—Cue See Note*	3205 2000 +117		Rec./Play—Prog. Rec./Play—Cue Requires circuit modification, see Nortronics Form No. 7213	3251 3250	Rec.—Prog. Play—Prog. & Cue See Note*	3255 2050
	642A-1, 642A-2		Rec./Play—Prog. Rec./Play—Cue A portion of the rear flange must be cut out of deck to mount QK-115 or QK-114. Bypass relay K101 — Wire heads direct with NAB Conversion	3201 3201 +115	Rec.—Prog. & Cue Play—Prog. & Cue	2005 2004 +114		Rec./Play—Prog. Rec./Play—Cue It may be necessary to remount tape guide adjacent to right hand Bypass relay K101-Wire heads direct with NAB Conversion.	3251 3251	Rec.—Prog. & Cue Play—Prog. & Cue	2055 2051
GATES Study actual head configuration on your deck, since model numbers were unchanged when Gates converted from Rear Mount to No Mount heads.	M5944		Rec./Play—Prog. Rec./Play—Cue	3201 3200 +115	Rec.—Prog. Play—Prog. R/P Cue	3205 2000 +117		Rec./Play—Prog. Rec./Play—Cue	3251 3250	Rec.—Prog. Play—Prog., R/P Cue	3255* 2050
	M5735 (Spot Tape)		Rec./Play Erase	2601 +35 8501 +35		none none		SEE LEFT SEE LEFT	none none		none none
	M6211 SERIES (Play Only)	730-0343 730-0423 730-0729	Play—Prog. & Cue Play—Prog. & Cue Play—Prog. & Cue	2002 +114 2002 + —	Unit is NAB Std.		730-0343 730-0423	Play—Prog. & Cue Play—Prog. & Cue	2052 2052	Unit is NAB Std.	
	M6212 SERIES (3-Channel) (Play Only)	730-0731	Play—Prog. & Cue	5701 +114	Unit is NAB Std.		730-0727	Play—Prog. & Cue	5751	Unit is NAB Std.	
	M6213C	730-0343 730-0423 730-0729 730-0729 Used with QK-114 to replace Gates Rear Mount 730-0343 and 730-0423 heads. Direct replacement for Gates No Mount 730-0729 heads.	Rec.—Prog. & Cue Play—Prog. & Cue Rec.—Prog. & Cue Play—Prog. & Cue	2002 2002 +114 2002 2002 + —	Unit is NAB Std.		730-0343 730-0423 Direct replacement for Gates Rear Mount 730 0343 & 730-0423 heads	Rec.—Prog. & Cue Play—Prog. & Cue	2052 2052	Unit is NAB Std.	
	M6214C (3 Channel)	730-0730 730-0731 Must be used if the original head was cylindrical or was a Nortronics No Mount head	Rec.—Prog. & Cue Play—Prog. & Cue	5703 5701 +114	Unit is NAB Std.		730-0727 Can be used if original head was a Nortronics Rear Mount head	Rec.—Prog. & Cue Play—Prog. & Cue	5753 5751	Unit is NAB Std.	
	CRITERION		Rec.—Prog. & Cue		Unit is NAB Std. Conversion to no-mount heads not recommended.			Rec.—Prog. & Cue Play—Prog. & Cue	2053 2057	Unit is NAB Std.	
KRS	REAR MOUNT HEADS MUST BE USED		Check original Nortronics' OEM head numbers and replace from this listing.	none		none	SLAH4L SLAH5L TLAH4L TLAH5L P-B2H4R P-B2H7K	Rec./Play—Mono Rec./Play—Mono Rec./Play—Stereo Rec./Play—Stereo Rec. Only—Stereo Plbck. Only—Stereo	3251 3252 2051 2052 2053 2051		none none none none none none
MACARTA (Moulic Specialties)	105, 108 PLAYBACK 2405, 2408 CAROUSELS	P-G1H7K P-G1H7K	Play—Prog. Play—Cue	3201 3201 +115		none	P-G1H7K-R P-G1H7K-R	Play—Prog. Play—Cue	3251 3251		none
	208 STEREO PLAYBACK (4 Track)	P-B2Q7K P-B2Q7K	Play—Prog. Play—Cue	1201 1201 +114	Unit is NAB Std.				none		none
	248 CAROUSEL (Transis.) 500 PLAYBACK (Transis.)	P-B2H2K P-B2H2K	Play—Prog. & Cue Play—Prog. & Cue	2000 2000 +114	Unit is NAB Std.				none		none
	560 RECORDER			none	Rec-Prog. & Cue Play-Prog. & Cue	2005 2000 +114			none	Rec.—Prog. & Cue Play—Prog. & Cue	2055 2050
	570 590 REC. PLAYBACK (Transistorized)	P-B2H4R P-B2H2K	Rec.—Prog. & Cue Play—Prog. & Cue	2003 2000 +114	Unit is NAB Std.						none
RCA	RT 7A Cue head is on left. Program head is next to capstan		Rec./Play—Prog. Rec./Play—Cue	3201 3201 +115	Rec-Prog. & Cue Play-Prog. & Cue	2005 2001 +114	223320 223320	Rec./Play—Prog. Rec./Play—Cue	3251 3251	Rec.—Prog. & Cue Play—Prog. & Cue	2055 2051
	RT 7B, RT 7C Cue head is on left. Program head is next to capstan		Rec./Play—Prog. Rec./Play—Cue	3202 3201 +115	Rec.—Prog. & Cue Play-Prog. & Cue Head No. 2047 is a special Dual Chan. head with 100 MHY top program channel and 400 MHY bottom cue channel.	2047† 2047 +114	226517 223320	Rec./Play—Prog. Rec./Play—Cue	3252 3251	Rec.—Prog. & Cue Play—Prog. & Cue Head No. 2097 is a special Dual Chan. head with 100 MHY top program chan. and 400 MHY bottom cue chan.	2097† 2097
	RT 17 MONO Quik Kit conversion to No Mount heads is not recommended			none		none		Rec.—Prog. & Cue Play—Prog. & Cue	2052 2052	Unit is NAB Std.	
	RT 37 STEREO (3-Chan.) Quik Kit conversion to No Mount heads is not recommended			none		none	626-143 626-143	Rec.—Prog. & Cue Play—Prog. & Cue	5752 5752	Unit is NAB Std.	
SPARTA	CD 15-2	P-A1HC47K	R/P/E (Combo Hd.)	6127 —		none			none		none
	PB211 (Play Only)	P-B2H7K	Play—Prog. & Cue	2001 + —	Unit is NAB Std.				none		none
	200P, 200RP, 300P		Rec./Play—Prog. Rec./Play—Cue	3201 3200 +115	Rec-Prog. & Cue Play-Prog. & Cue	2005 2000 +114		Rec./Play—Prog. Rec./Play—Cue	3251 3250	Rec.—Prog & Cue Play—Prog. & Cue	2055 2050
	300B, 400RP, 800RP	P-B2H4R P-B2H7K	Rec.—Prog. & Cue Play—Prog. & Cue	2003 2001 +114	Unit is NAB Std.				none		none
	400, 800P		Play—Prog. & Cue	2001 +114	Unit is NAB Std.				none		none
	600P, 600RP	P-B3Q7K P-B3Q7K	Rec.—Prog. & Cue Play—Prog. & Cue	5701 5701 +114	Unit is NAB Std.				none		none
TAPECASTER	600P, 600RP 600CP, 600CRP		Rec./Play—Prog. Rec./Play—Cue	3201 3200 +115	Rec.—Prog. & Cue Play—Prog. & Cue	2001 2000 +114	P-G1H7K-R G1H2K-R	Rec./Play—Prog. Rec./Play—Cue	3251 3250	Rec.—Prog. & Cue Play—Prog. & Cue	2051 2050
	700P, 700RP		Rec.—Prog. & Cue Play—Prog. & Cue	2001 2001 +114				Rec.—Prog. & Cue Play—Prog. & Cue	2051 2051		
	STEREO—700P, 700RP		R/P—Prog. & Cue	5701 +114		none	P-B3Q7K-R	R/P—Prog. & Cue	5751		none
	DELAY 700 RPD		Rec./E-Prog. & Cue Play—Prog. & Cue	6100 2001 +114	Unit is NAB Std.			Rec/E—Prog. & Cue Play—Prog. & Cue	6150 2051	Unit is NAB Std.	

* Complete NAB Conversion not possible. Converts program channel only, to monitor. No circuit changes required. † Write for circuit modification details.

Nortronics COMPANY, INC.

WORLD LEADER IN MAGNETIC TAPE HEADS

LISTING BY HEAD MANUFACTURER

ROBINS (MICH. MAG) Part Numbers	Nortronics Head + Q-Kit	Nett, Less Quik-Kit
08Q8, 5P17, 5Q08, 5Q8, 5Q17 (105, 300), 5QT17-(105, 300)	1009 + 38	$20.90
09QT17, 7B17	1008 + 38	20.90
2L35, 2M40G, 3L20-101, 3L20S, 3M20A, 2120, 4N300	3001 + 20	10.35
2FM20-500, 3FM20-502, 2MV17-301, 7HV17-102, 7HV40-101, 10NV17	6127 + 38	20.00
3A20-101, 3F20-101, 3F20L	1851 + —	23.55
3F20-(105, 106)	1801 + 66	20.90
3FM20-(104, 107, 108, 320), 10FM20	3051 + —	13.00
5AV17, 6AV17 (200, 203)	6009 + 38	28.60
5B20LS, 10B20LS, 2835741, 5FM20	1800 + 38	20.90
5L20, 5L20U, 7H17, 7H40, 7L17-(105, 108,), 7L17U, 9L20S, 10H25, 10L17-104, 10L17B, 10L17S, 10L20S, 10L70, 10M20A, 10M70A	3000 + 20	10.35
5S1-103, 7EM12A, 551-115, 5S1-321	3601 + 18	6.60
5SS1	2201 + 18	12.75
5TRB, HRE-1	RPE-23 + —	16.40
5AV17, 6AV17-200, 4NV2Q10B-1	6009 + 38	28.60
8BE30, 9EQ3-300, 9QE3, 9QTE3, 12EQ-200, 18HE6-201	1401 + 18	9.25
40EM12A, 50HE6-201	3600 + 18	6.60
40EQ3-101	1400 + 18	9.25
4NE-100, 300, 4NH2L (S-O, X-O)	5800 + —	10.55

NOTE: All heads with a 100 Series dash number are interchangeable with heads with a 300 Series dash number. For example: 3L20-101 and 3L20-301 are interchangeable.

SHURE Part Numbers	Nortronics Head + Q-Kit	Nett, Less Quik-Kit
815, TR5B, TR5B-J, TR5D, TR6H, TR5N	RPE-23 + —	$16.40
815H, 816, TR5C, TR5K, TR5L, TR5Z-2, TR5Z2-J	RPE-24 + —	16.40
817, TR16A, TR21A, TR21C	3101 + 20	10.35
TE2, TE2-J, TE11C, TE11C-J	3601 + 18	6.60
TE30	3600 + 19	6.60
TE35	3650 + —	9.25
TK418	RPE-20 + —	19.55
TR16, TR16J, TR21B, TR21C-J, TR26	3100 + 20	10.35
TR30	2601 + 66	17.40
TR40, TR40-J	2001 + 66	32.10
TR54, TR54-J	7601 + —	26.00

† For prices of Quik-Kits, see listing at right.

TAPE RECORDING ACCESSORIES

TAPE GUIDES

TG7, Tape Guide Post. Vertically adjustable with tapped mounting hole in base. Chrome-Plated brass for long life .....Net each **$1.55**

TG-8, Tape Guide Plate. For Slide-Mount heads and L-5, L-6 or L-7 bracket; gives additional guiding .....Net each **$ .90**

CONTACTOR HEAD

Used with metal foil cueing (has 2 contactor shoes) CH3N/B — includes base mount **$6.80**

CH3R — rear-mount style **$9.45**

ALIGNMENT TAPE

AT-100 Azimuth and Amplifier Alignment Tape. A 7.5 IPS full track, direct oscillator master recording of frequencies from 40 to 10,000 Hertz for checking azimuth and NAB equalization. 1000 hertz zero reference level tone included. instructions are included .....Net each **$9.90**

CONNECTOR ASSEMBLIES

CC-70 — 18" plug and shielded insulated cable assembly for Nortronics heads (Except Mono Combo) .....Net each **$2.20**

CC-77 — 18" plug and shielded insulated cable assembly for Nortronics Mono Combo heads .....Net each **$2.20**

CASSETTE HEADS

Model 5400
4 Track, 4 Channel Stereo

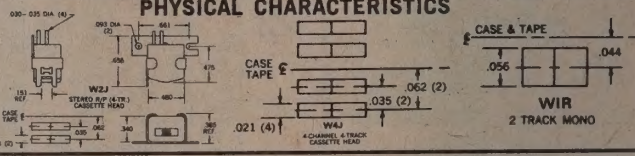
Model 5200
2 Track Dual Channel

The mounting bracket/tape guide (illustrated) is supplied pre-aligned. The tape guide for .150 is positioned for proper track height when gap is azimuth aligned.

Nortronics offers Cassette heads in all track formats as internationally defined. The following is merely a small sample of available styles.

Description	Distributor No.	OEM Model No.	Inductance 100 MV 1 khz (MHY)	D.C. Resistance (OHMS)	Net Each
2-Track Mono R/P	5130	W1R6F-A	200	200	$12.55
2-Track, Dual Channel R/P	5200	W2R6F-A	200	200	22.65
4 Track, 2 Channel Stereo R/P	5230	W2J4F-A	80	240	22.65
4 Track, 4 Channel R/P	5400	W4J4F-A	80	240	66.00

PHYSICAL CHARACTERISTICS



AUTOMOBILE STEREO TAPE PLAYERS

NORTRONICS #5800 replacement tape head is a direct replacement for 90% of all 8-track automobile stereo tape players, include: Buick, Chevrolet, Chrysler, Delco, Ford, Lincoln, Motorola, Muntz, Orrtronics Ranger, and many others. Nortronics #5800. Replacement tape head .....Net **$10.55**

FILM-STRIPING, MAGNETIC DRUMS AND DISCS

NORTRONICS #4950 Record/Playback head is miniature in size but big in performance. Measuring only .3125" x .3125" x .375", it incorporates the high performance feature of the standard size. Nortronics head. Rear mount only .....Net **$18.05**

NORTRONICS #5350 Erase head to complement the #4950 R/P head. Size and mounting is the same .....Net **$12.30**

Specifications	Inductance 1 KHz	Resistance DC	Track Width
#4950	40 mHy	125 ohms	0.024 in.
#5350	5 mHy	38 ohms	0.042 in.

HEAD MOUNTING BRACKETS FOR PROFESSIONAL MACHINES

QK-76 with Nortronics Head

QK-76 contains all hardware and illustrated instructions necessary to adapt a Nortronics head to the shield cup of an Ampex head nest. Includes: precision cast aluminum block; spacers; screws; connector plug—all other parts necessary are utilized from the original Ampex equipment .....Net Each **$12.00**

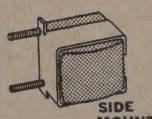
QK-35 is a special base-mount bracket kit for adapting Nortronics no-mount heads for replacement of Brush heads, or in any application requiring a large base-mounting stud. (Stud is ¼"—28 x 5/8") Net Each **$2.00**

QK-86 is a special clip and replacement aximuth plate for Ampex 1200 series **$4.00**

QK-87 is a precision spacer and clip for adaptation of no-mount heads to Ampex PR-10-Type-mount **$4.00**

QUIK-KIT MOUNTING HARDWARE

UNIVERSAL MOUNT



SIDE MOUNT

BASE MOUNT

Nortronics Quik-Kits consist of packaged hardware and complete instructions for installation of a Nortronics tape head on a recorder. Most Quik-Kits are universal in design to fit most recorders—special Quik-Kits are for use on recorders requiring a mount unique to that machine type only.

Quik-Kit	Description	Net	Quik-Kit	Description	Net
QK-18	Erase—Side Mount, "S" Cases	$1.25	QK-100	Pentron R/P Mount	$4.00
QK-19	Erase—Base Mount, "S" Cases	1.25	QK-102	Sony R/P Mount	1.75
QK-20	R/P—Side Mount, "G" Cases	1.25	QK-114	2—"B" Head Stereo Cart. Mt.	13.00
QK-21	R/P—Base Mount, "G" Cases	1.25	QK-115	2—"G" Head Mono Cart. Mt.	13.00
QK-35	Spec. Base Mt., "A" "B" Cases	2.00	QK-117	2—1 "B" Stereo, 1 "G" Mono Cart. Mt.	13.00
QK-38	Side Mount, "A", "B" Cases	1.25	QK-119	Sony R/P Strap Mount	1.25
QK-66	Base Mount, "A", "B" Cases	1.25	QK-300	Pentron Erase Mount	2.25
QK-76	Ampex Mounting Block	12.00	QK-305	Sony Erase Mount	3.00
QK-74	Adjustable Head Mt. "B" Case	2.35	L-5	L-Bracket Side Mts.	.50
QK-77	Adjustable Head Mt."G" Case	2.35	L-6	L-Bracket Side Mts.—R. Bend	.95
QK-78	Adjustable Head Mt. "S" Case	2.35	L-7	L-Bracket Side Mts.—L. Bend	.95

BIAS OSCILLATOR TRANSFORMERS To Drive Record & Erase Heads

T-60 SERIES
for chassis mounting

T-70 SERIES
for printed circuit board mounting

Model Number	Circuit Type and Mount	Application	Typical Operating Frequency (KHz)	Secondary Voltage (RMS)	Net Each
T70-T2	Transistor, PC Board	General Purpose	50-120	40, 80, 120	13.20
T60-T2	Transistor, Can & Lug	General Purpose	60-110	40, 80, 120	6.60
T70-T6	Transistor, PC Board	Duplicating	230-500	70	13.20
T60-T6	Transistor, Can & Lug	Duplicating	230-500	70	13.20
T70-T5	Transistor, PC Board	Professional	150-200	—	13.20
T60-E	Vacuum Tube, Can & Lug	General Purpose	40-70	7 & 120	7.05
T60-F	Vacuum Tube, Can & Lug	General Purpose	60-100	60 & 150	7.05

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HEADPHONES By C. F. CANNON CO.

BRANDES "SUPERIOR"
Matched Tone Headset

A rugged headset, millions of which are in use all over the world. Large size diaphragms of 2 1/8" diameter assure efficient performance. Outside terminals, with polished aluminum cases and bakelite caps. Double coils, two in each receiver. Chrome steel magnets. Steel headband with permanent adjusment. 4 1/2 ft. cotton covered cord.

BS-2—2000 ohms D.C.....Net $3.27

BRANDES "ADMIRAL"
Matched Tone Headset

The Brandes "Admiral" is of the same general construction as the Brandes Superior, but has terminals on the inside.

BA-2—2000 ohms D.C.....Net $3.27
BA-3—3000 ohms D.C.....Net 3.45
BA-5—5000 ohms D.C.....Net 3.99

THE "CHIEF"
Cannon-Ball Bakelite Headset

A high quality headset of durable molded black plastic. Attractive in appearance, it is a sensitive and practical phone for every headset use. Inside terminals. Diameter of diaphragm is 2 1/8". Double coils, two in each receiver. Alnico permanent magnets. Supplied with vinyl plastic covered headband with permanent adjustment and no removable parts. Cotton covered cord, 4 1/2 ft. long.

CC-2—2000 ohms D.C.....Net $3.18
CC-3—3000 ohms D.C.....Net 3.33
CC-5—5000 ohms D.C.....Net 3.84
CC-11—11 ohms D.C.....Net 3.18

CANNON-BALL ALNICO MAGNETIC No. 25

A New Headset of Unusual Quality, Efficiency and Durability, powered by Alnico V magnets.

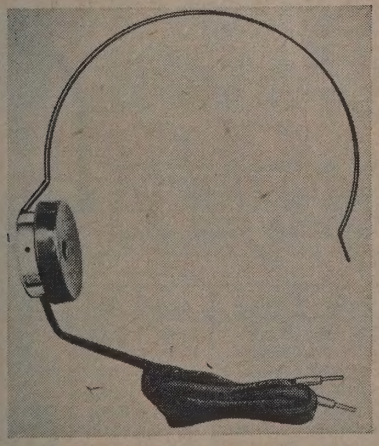
The headband is covered by attractive black extruded vinylite and provides utmost wearing comfort. Limits turn of phone to prevent twisting of cord. Cap and case of molded plastic. Large size diaphragm 2 1/8". Equipped with sanitary moisture-resistant plastic cord with riveted crotch piece.

AM-25-2 .....Net $4.14
AM-25-3 .....Net 4.44
AM-25-5 .....Net 5.10

ALNICO MAGNETIC No. 15

A new, small size, extra sensitive double headset, light in weight. Diameter of diaphragm 1 7/8". Molded cap and case. Steel adjustable headband. 4 1/2 ft. cord.

AM-15-2 .....Net $2.88
AM-15-3 .....Net 3.03



CANNON-BALL "ALNICO"
Single Headphone

Equal in clarity and volume to most double headsets, efficient and attractive. Permits listening while being addressed by others. Concealed terminals. Diaphragm 1 7/8". Bakelite case and caps. Alnico magnet, double coils. 4 1/2 ft. cord. Spring steel headband permanently attached.

AM-15-1—1000 ohms D.C.....Net $1.56

THE "MASTER"
Cannon-Ball Headset

Used extensively in hospitals and other institutions as well as for general purposes, and is especially recommended for institutions. Inside terminals Aluminum cases with black bakelite caps. Spring steel adjustable headband with no removable parts. Diaphragm 2 1/8" diameter. Double coils. Chrome steel magnets. 4 1/2 ft. cotton-covered cord.

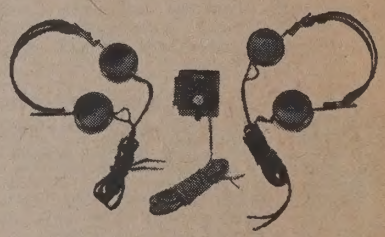
MC-2—2000 ohms D.C.....Net $3.27
MC-3—3000 ohms D.C.....Net 3.45
MC-5—5000 ohms D.C.....Net 3.99

CANNON-BALL "EMPIRE"
Lightweight Headset

A low-priced light-weight headset with large magnet and double coils. Reproduces with clarity and good volume. Diameter of diaphragm is 1 7/8". Polished aluminum cases with bakelite caps. Steel adjustable headband. 4 1/2 ft. cord. Inside terminal connections.

EC-2—2000 ohms D.C.....Net $2.97
EC-3—3000 ohms D.C.....Net 3.12

Phones can be supplied with any resistance required or with variations to meet special requirements. Sanitary plastic covered cords available for institutional use. Write for special quotation.



CANNON-BALL HEARING AID FOR TELEVISION

Provides private listening without disturbing others. Excellent for persons hard of hearing. Can be attached to any television set and permits listening to phones alone, speaker alone, or both together.

FOR TELEVISION

Kit complete with 15 foot cord and phone volume control.

With 2 headsets.....Net $10.50
With 1 headset.....Net 7.95

MOLDED RUBBER CUSHIONS

Fit standard size headsets. Molded-in air chamber provides maximum wearing comfort.

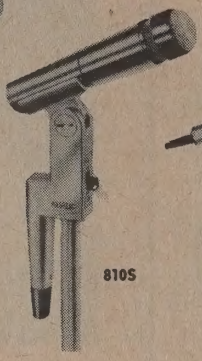
per pair .....Net $ .66

ASTATIC Microphones, Accessories

NEW!

SETTING A NEW STANDARD OF PERFORMANCE, APPEARANCE, AND DEPENDABILITY.

810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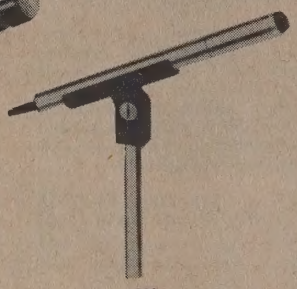
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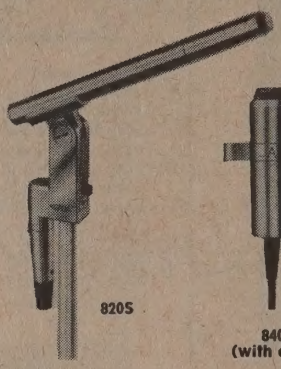

820S

840 (with clip)

840S (with Lavalier cord)

810 ULTRA CARDIOID

Exclusive Astatic "Sibrophase" system provides the greatest front-to-back ratio in the industry. Perfect cardioid polar pattern, wide range tailored response, multi impedance, modern styling, rugged construction. DuPont Mylar® diaphragms all serve to make these new microphones ideal for Public address, Broadcast and Recording, indoors or outdoors. Feedback, unwanted pickup, reverberation, "Pop" & "Blast" are problems of the past. **MODEL 810** for hand held or stand use has the new "Easy-On" swivel adaptor. **MODEL 810S** has an on-off switch built into the integral swivel mount. Both models are available in non-reflecting brushed satin chrome with **black chrome** trim, or in brushed satin gold to harmonize with entertainment or sacramental decor; come with broadcast type connector and 18 feet of shielded cable. **Front to Back Pickup:** 25db. **Output:** —50db at High Z, —54db at Low Z. **Frequency Response:** 40-15,000 Hz. **Impedance:** High Z, EIA 40,000 ohms; Low Z, EIA 150 ohms. **Size:** 5-9/16" x 1-5/16". **Weight:** (less cables) 810—9 ounces; 810S—18 ounces.

	List Price
Model 810—With "easy-on" adaptor	**$85.00**
Model 810 Gold—As above with gold finish	**$90.00**
Model 810S—With built-in on-off switch	**$89.00**
Model 810S Gold—As above with gold finish	**$94.00**

820 OMNIDIRECTIONAL PROBE

A dynamic, slim and modern probe with the ultimate versatility for all sound applications. Omnidirectional sensitivity allows sounds from all directions to come through with uniform volume and clarity. Ideal for choirs and vocal groups and other music or voice pickup where balanced sound is required. Grille screens and filters, and the Du Pont Mylar® "Pop" and "Blast" resistant diaphragm allow the 820 series to perform well indoors or outdoors. **MODEL 820** for hand held or stand use has the new "Easy-On" swivel adaptor, broadcast type connector. **MODEL 820S** has an on-off switch built into the integral swivel mount. Both models are available in non-reflecting brushed satin chrome with **black chrome** trim, or in brushed satin gold to harmonize with entertainment or sacramental decor, comes with 18 ft. of shielded cable. High or Low impedance can be selected by a simple, solderless, pin change. **Output:** —61db at High Z. —60db at Low Z. **Frequency Response:** 40-18,000 Hz. **Impedance:** High Z, EIA 40,000 ohms; Low Z, EIA 150 ohms. **Size:** 9" x ¾" **Weight:** 820: 27 ounces with cable, 820S: 14.5 ounces without cable.

	List Price
Model 820—With "easy-on" adaptor	**$79.50**
Model 820 Gold—As above with gold finish	**$84.50**
Model 820S—With on-off switch built in	**$85.00**
Model 820S Gold—As above with gold finish	**$90.00**

840 LAVALIER

A dramatic little microphone, outstanding in performance whether worn or hand held, that can't be matched for applications requiring the microphone to move with the performer. Complete with tie lapel clip and neck cord accessories — the 840 is engineered for maximum intelligibility despite chest cavity resonance. Response pattern can easily be converted for hand held use. DuPont Mylar® diaphragm provides long life, stable flexibility and "Pop" and "Blast" resistant features. Wide response range and uniform response pattern tailored for voice broadcasting, public address and lecturers. **MODEL 840S** has an on-off switch built into the microphone body. Both models come with 30 feet of super flexible ⅛" diameter cable and are available in non-reflecting brushed satin chrome, or in brushed satin gold. **Output** —59db. **Frequency Response:** 50-12,000 Hz as Lavalier, 50-16,000 Hz as Hand Held. **Impedance:** Low, 150 ohms. **Size:** 840: 2⅝" x ¾", 840S: 3¾" x ¾". **Weight:** (without cables) 840: 1¼ ounces, 840S: 1⅜ ounces. **Weight:** (with cables) 840: 5½ ounces, 840S: 6¼ ounces.

	List Price
Model 840—With clips and neck cord	**$85.00**
Model 840 Gold—As above with gold finish	**$90.00**
Model 840S—With built-in, on-off switch	**$90.00**
Model 840S Gold—As above with gold finish	**$95.00**

77-L

MODEL 77 DYNAMIC CARDIOID

A most positive anti-feed microphone. Also available in gold finish. Unidirectional design has suspended cartridge; eliminates external shock mounts. Built-in impedance selector. **Front-to-Back Pick-up:** 18 db differential. **Output:** —48 db. **Frequency Response:** 30-15,000 cps. **Impedance:** Low-Z, 30-50 ohms; medium, 150-250 ohms; high, 40,000 ohms. Shipping Weight: Approximately 2 lbs., 6 oz., less stand.

Model 77—With on-off switch and provisions for locking in "on" position. List Price	**$82.50**
Model 77 Gold Finish—List Price	**$92.50**
Model 77-L—Head only for mounting on G Stand. List Price.	**72.50**
Model 77-L Gold Finish—List Price	**82.50**
Model G-77—Includes G Stand and 8' cable. List Price	**97.45**

DN-50

MODEL DN-50 "THE COMMENTATOR"

General Purpose. Unitary moving coil system, carefully proportioned acoustic circuit. **Response:** 50-10,000 cps. **Output:** DN-50, —51 db; DN-HZ, —52 db. Semi or non-directional. Opalescent gray and bright chrome finish. With 10' cable. **Size:** 6⅞" h. 2⅝" grill dia., 4⅝" d. **Net Wt:** 1 lb. 12 oz. (mike only).

MODEL	DESCRIPTION	LIST
DN-50	50 OHM Impedance, 10 Foot Cable	$33.50
GDN-50	50 OHM Impedance, with Grip-To-Talk Stand and 6 FT. of Shielded Cable.	52.70
UG8-DN50	Same as above but Balanced	57.70
DN-HZ	25,000 or more Impedance, 10 Foot Cable	39.70
GDN-HZ	Same as above, with Grip-To-Talk Desk Stand and 6 FT. of Shielded Cable.	59.90

See next page for description of Grip-To-Talk Stand.

SERIES 330 AND GOOSENECK SERIES 330-GS

330 Series

330 Series
(See next page for matching stand)

Small, slim mikes with quality performance for various applications at real low price. Model 331 has momentary on, spring-return switch, furnished with hang-up bracket. Cable provides for audio and relay connections. All other models have slide switch with "lock-on" position complete with lavalier and stand adapter with ⅜"-27 thread. High impedance except Model 335L.

330-GS

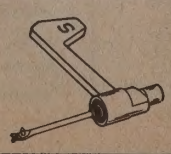
Professional performing, all purpose gooseneck microphones for intercommunications, tape recording, amateur language laboratories and many other applications. Gooseneck is permanently attached, 13" in length. Complete with 7' single conductor, shielded cable (335L-GS, 2-cond. for balanced line).

330-GS Series

Model	Type	Output	Freq.	Body	Grille	Cap	Goose Neck	List
331	Ceramic	—58db	300- 7000	Black	Black	Chrome	—	$17.90
332	Crystal	—54db	30-15000	Chrome	Black	Chrome	—	17.90
332GS	Crystal	—54db	30-15000	Chrome	Chrome	Chrome	Chrome	24.50
333	Ceramic	—58db	30-10000	Black	Black	Chrome	—	17.90
333GS	Ceramic	—58db	30-10000	Black	Black	Black	Chrome	24.50
335H	Dynamic	—56db	100-12000	T.V. Gray	Chrome	Chrome	—	26.50
335H-GS	Dynamic	—56db	100-12000	Chrome	Chrome	Chrome	Chrome	33.00
335L	Dynamic	—57db	100-12000	T.V. Gray	Chrome	Chrome	—	23.50
335L-GS	Dyanmic	—57db	100-12000	Chrome	Chrome	Chrome	Chrome	30.00

ASTATIC PHONOGRAPH NEEDLES AND CARTRIDGES

• For over 25 years Astatic has maintained its number one position as the world's leader in supplying the most complete line of phonograph cartridges for O.E.M.'s and Distributors.



• Needle for needle, Astatic always has the highest quality and the most complete line of needles. Regardless of the original manufacturer of the phonograph, Astatic has the replacement needle for the cartridge on hand and ready for immediate delivery.

Trade Discount Applies To List Prices Only
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ASTATIC Microphones, Accessories

D-104

SERIES D-104 "PREMIER"

The radio amateur's first choice. Balanced performance. Machined brass parts; heavy mesh grille; chrome finish. Standard ⅝"-27 thread mounting; adaptable to SC-11 lock-switch adapter or can be mounted on Model G (grip-to-talk) stand. Metal seal crystal offers protection against moisture and dryness. Ceramic immune to exessive heat and humidity. 3" dia., -⅛" deep. Weight, 14 oz. Complete with 5' single conductor shielded cable.

Model D-104 Crystal—Output, —46 db; impedance, 1-5 megs; response, 30-7,500 cps rising 500-4,000 cps. List..... **$31.00**

Model D104C Ceramic—Output, —49 db; all other characteristics similar to D-104. List Price..... **$31.00**

Model SC-11 Adapter—List Price..... **9.00**

Model G Stand—With grip-to-talk On-Off switch. List..... **24.95**

JT-30

SERIES JT-30 "SPOKESMAN"

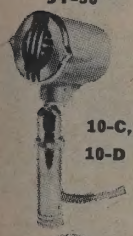
Streamline die-cast alloy housing; gray Hammerlin finish with chrome grille and fittings; including handle and interlocking base. Concentric cable connector. For general PA, recording and communication. 8" high, 2-5/16" grille dia., 5⅛" base die. Weight 21 oz.

Model JT-30 Crystal—Output, —49 db; Impedance, 1-5 megs; response 30-10,000 cps. Complete with 8' single-conductor shielded cable. List Price..... **$18.40**

Model JT-30-C Ceramic—Same as JT-30 except with —54 db output and 5' cable. List Price..... **$18.90**

Model JT-30-F Crystal (Head Only)—Same as Model JT-30, except less handle and desk stand. Threaded ⅝"-27 for mounting. List Price..... **$15.90**

Model JT-30-CF Ceramic (Head Only)—Same as Model JT-30-C, except less handle and desk stand. Threaded ⅝"-27 for mounting. List Price..... **$16.40**



10-C, 10-D

MODELS 10-C, 10-D "THE VOICE"

Ideal for SSB, AM transmitters, paging and industrial applications. High impedance. **Output:** —52 db, Model 10-D; —54 db, Model 10-C. **Range:** 300-3,000 cps. Plug-in ⅝"-27 thread mounting with 5' cable.

Model 10-C Ceramic—Gray chrome grille. List Price..... **$29.70**

Model G-10-C Ceramic—Same as above, but with "G" (grip-to-talk) stand. List Price..... **$49.90**

Model 10-D Dynamic—Chrome body and grille. List Price..... **39.70**

Model G-10-D Dynamic—Same as above, but with "G" (grip-to-talk) stand. List Price..... **$59.90**

T-3

MODEL T-3 CRYSTAL

For studios, intercom, amateur, PA, recording. **Response:** 30-10,000 cps. **Output Level:** —54 db. Semi- or non-directional. With connector, 10' cable. All chrome finish.

Model T-3 Crystal Microphone—List Price..... **$29.30**

513H, 511

MODEL 513H MOBILE MICROPHONE

Dynamic mike for Citizens' Band and other communications. Low background noise, feedback and hum. Semi-directional polar pattern. Wide temperature range; humidity-proof. **Frequency Response:** 200-9,000 cps. **Output Level:** —50 db at 1 v./microbar. **Impedance:** 40,000 ohms. With press-to-talk switch, snap-removal mounting bracket and three-conductor (one shielded) coiled cable 5½' long, extended. **Size:** 2¼" w. x 2½" d. x 6" h. **Weight:** 10 oz.

Model 513H Mobile Mike—List Price..... **$34.50**

MODEL 511 MOBILE MICROPHONE

Ceramic element mike for Citizens' Band and similar uses. Low background noise, feedback and hum. Semi-directional polar pattern. **Frequency Response:** 200-4,000 cps. **Output Level:** —50 db at 1 v./microbar. **Impedance:** 250,000 ohms (1,000 cps). With press-to-talk switch, snap-removal mounting bracket and three-conductor (one shielded) coiled cable extending to 5½' long. **Size:** 2¼" w. x 2½" d. x 6" h. **Weight:** 7 oz.

Model 511 Ceramic Mike—List Price..... **$19.95**

531

MODEL 531 MOBILE MICROPHONE

High performance ceramic mike for amateur and Citizens' Band applications. Carefully calculated response characteristic for maximum clarity and intelligibility. Semi-directional polar pattern. Fully shielded to minimize hum pickup. **Frequency Response:** 150-3,500 cps with 6 db rise in 2,000 cps range. **Output Level:** —50 db at 1 v./microbar. **Impedance:** 250,000 ohms, approx. at 1,000 cps (EIA, 100,000 ohms). With press-to-talk switch, molded high impact plastic housing and three-conductor (one-shielded) coiled vinyl cord, 5' long extended. **Size:** 2⅝" W. x 1-5/16" d. x 3⅜" h. **Weight:** 7¼ oz.

Model 531 Mobile Mike—List Price..... **$12.75**

539

NEW MODEL 539 NOISE CANCELLING MIKE

Super talk power, ceramic mike is highly recommended for CB or ham operations. High output for effective use in noisy locations. features 360° differential cancellation of background noise for sharp, clear speech. Lip bar maintains uniform, close spacing for high output modulation and maximum cancellation. **Frequency Response:** 100-3,500 cps with mike held for close talking using lip bar **Output Level:** —50 db at 1 v./microbar. **Impedance:** 250,000 ohms, approx. at 1 kc (EIA, 100,000 ohms). With press-to-talk DPDT switch; wired for relay or electronic switching. Coiled 3-cond. (one cond. shielded) cable extends to 5 ft. High impact plastic housing. **Size:** 2⅝" w. x 1-5/16" d. x 3⅜" h.

Model 539— Noise Cancelling Mike—List Price..... **$17.50**

10M5A

MODEL 10M5A "COMMUNICATOR"

For mobile, ship-shore, etc. Sensitive and rugged. **Response:** 100-4,000 cps. **Output Level:** —40 db at 1 v./microbar. Press-to-talk DPST switch. Retracting cable 12-in. coiled extends to 8'. Gray finish.

Model 10M5A Carbon Microphone—List Price..... **$29.50**

150, 151

SERIES 150 RECORDER MIKES

For tape recorder use. Low cost; high output; outstanding performance; compact in size. **Size:** 2-3/16" sq. x 1¼" d. Plastic housing with rigid metal grille. With 5' cable.

Model 150 Crystal Mike—Frequency response, 30-10,000 cps. **Output:** —48 db. List price..... **$6.50**

Model 151 Ceramic Mike—Frequency response, 30-8,000 cps. **Output:** —48 db. List price..... **$6.50**

551

MODEL 551 INDUSTRIAL MICROPHONE

Dynamic industrial mike provides high intelligibility in noisy areas. Housing and transformer shielded. Withstands temperatures to 200° F; 180° F indefinitely. Moisture-sealed. Semi-directional polar pattern. **Frequency Response:** 300-6,000 cps, high impedance; 300-6,500 cps, low impedance. **Output Level:** —50 db at 1 mw/10 dynes/cm², low impedance; —46 db at 1 v./microbar, high impedance; both open circuit, 1000 cps. **Impedance:** 150 or 40,000 ohms, adjustable. With press-to-talk switch, virtually unbreakable Delrin* housing, and four-conductor (shielded mike, two relay) coiled cord extends to 8' long. **Size:** 1⅞" x 2" x 6⅞". **Weight:** 23 oz.

Model 551 Industrial Mike—List Price..... **$69.50**

*DuPont trademark.

L-1

MODEL L-1 CRYSTAL LAPEL MIKE

Tiny dual diaphragm with spring clip and 15' of small diameter single conductor shielded cable. Machined brass housing with wire mesh front and rear grilles; black melamine finish. **Output:** —62 db. **Impedance:** 1-5 megohms. **Response:** 30-10,000 cps. 1½" dia., ¾" deep. **Weight:** 7 oz.

Model L-1 Crystal Lapel Microphone—List Price..... **$27.35**

200-S, 241-S

"VELVET VOICE" CRYSTAL MICROPHONES

For PA, home recording, ham, paging, radio. Use with floor or desk stand or in hand. Gold finished housing and handle; chrome grille; brown detachable base. ⅝"-27 mounting. 8" high, 2½" grille dia. 5⅛" base dia. Weight, 24 oz.

Model 200—Output. —50 db; impedance, 1-5 megs; response, 30-7,000 cps. With 8' cable. List Price..... **$19.50**

Model 200-S—With on-off switch in handle. List Price..... **$21.50**

Model 241-S—Same as 200-S, except response 30-10,000 cps with rising response from 1,500-5,500 cps. List Price..... **$21.50**

988

With A-8 Stand

MODELS 788, 888, 988 DYNAMICS

Precision "Futura" adjustable impedance, omnidirectional balanced microphones come complete with desk-floor stand adapter, lavalier cord and assembly, belt clip and 20' two wire shielded cable.

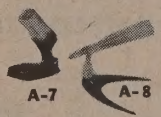
"Metro" 788 for indoor or outdoor P.A. or broadcast of music or voice. Built-in on-off switch, rugged construction. 8⅞". x 1⅜". Net Wt. 8 oz without cable.

"Tempo" 888 for sound stage, broadcast, Deluxe P.A. High Fidelity in modern, rugged design. 9⅛" x 1-9/32". Net Wt. 9 oz. without cable.

"Vogue" 988 for finest, most exacting requirements of T.V. and radio. Modern styling, built-in on-off switch, rugged construction. 9-11/32" x 1-9/32". New Wt. 8¾ oz. without cable.

Model	LO-Z Output	HI-Z Output	Response	Impedance	Finish	List
788	—58db	—56db	60-13K,cps	150,HI	Blk & Gold	$79.50
888	—58db	—56db	50-15K, cps	50,200,HI	Blk & Chr.	110.00
988	—58db	—	40-17K,cps	50,150, 250	Blk & Gold	150.00

STANDS, CARTRIDGES AND LINE TRANSFORMER



A-7 A-8

G, UG8 E-1 E-5-G E-5-B

Model A-7 Desk Stand—With adjustable swivel Use with 330 series. List Price..... **$2.45**

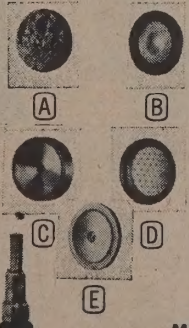
Model A-8 Desk Stand — Use with 788, 888, 988 Series. List Price..... **$8.25**

Model G Desk Stand—Has grip-to-talk SPST on-off switch, sliding bar for "lock-on". Use with DN-50, DN-HZ, T3, D-104, D-104-C, 10-C, 10-D and 77L. Finish: Bright chrome, gray Hammerlin base. List Price..... **$24.95**

Model UG8 Stand—Same as Model G, with DPDT switch for balanced or unbalanced line. Thread, 13/16" x 27; eight-terminal strip in base adapts to any circuit. List Price.... **$29.95**

Model E-5-G and E-5-B Desk Stands—Finish: Gray or brown Hammerlin base with bright chrome stem. Has ⅝"-27 thread. Overall height 8". List Price..... **$7.75**

Model E-1 Desk Stand—Finish: Gray Hammerlin base, bright chrome trim. Has ⅝"-27 thread. Overall height, 5½". List Price..... **$8.25**



A B C D E

REPLACEMENT MICROPHONE CARTRIDGES

Model	Fig.	Use With Astatic Mike Model	List
MC 151	D	CX, CX-1, 200, 241, JT-30, JT-30-F, JT-40, T-3	$7.00
MC 127	D	CC, CC-1, VC, VC-1, JT-30-C, JT-30-CF, JT-40-C, T-3C	7.00
MC 451	E	10M5, 10M5A, 11M5	8.75
MC 563	B	DN-50, DN-500, DN-HZ, DN-MZ, 10-D	16.50
MC 320	A	D-104	9.50
MC 321	A	D-104-C	7.00
MC 551	C	M301	7.00
MC 558*	....	332	7.00
MC 559-2*	....	331	7.00
MC 560*	....	335H, 335L	7.75

*Mikes without screw-fastened caps should be returned to factory for repairs.

LT-6

MODEL LT-6 LINE-MATCHING TRANSFORMER

Matches low impedance microphone to high impedance amplifier input; or high impedance dynamic microphone to low impedance amplifier input. Permits long length of cable on the low impedance side of the transformer. Eliminates high frequency loss and objectionable hum pickup. completely shielded. **Input:** 30-50 or 150-250 ohms. **Output:** 40,000 ohms or higher. **Response:** ±1 db, 20-20,000 cps. Supplied with Amphenol 91-852 and 75-MCIF end connectors. Opalescent gray body with chrome finish connectors. **Size:** ⅞" dia.

Model LT-6 Transformer—List Price..... **$17.50**

THE ASTATIC CORP.

MANUFACTURERS OF PHONOGRAPH CARTRIDGES • NEEDLES • PICKUPS • MICROPHONES • RECORDING TAPE • ELECTRONIC DEVICES

ATLAS SOUND

ATLAS SOUND PAGING AND TALK BACK SPEAKERS

HU and CJ models are equipped with the "Versalock" mounting bracket. Rigid, rugged, dependable bracket is completely adjustable on both a horizontal and vertical plane, affording "pin-point" directivity and simple secure mounting. HU horns are constructed of aluminum, while the CJ horns are molded of indestructible Fiberglass. Rugged diecastings and tough steel parts add strength. All are 100% weatherproof.

HU-12N

HU-12N Small in size, low in cost. Excellent for low power paging and talk-back systems where limited coverage is required.

HU-15N
HU-24N

HU-15N The most popular all-purpose, trouble-free speaker of its type and size.

HU-24N Similar to HU-15N. Larger horn improves low frequency response, increases over-all efficiency. For paging and talk-back systems that are also required to reproduce music.

CJ-14N Wide angle speaker with rectangular horn opening for broad sound dispersion in horizontal plane while maintaining good vertical coverage.

EC-10 Lowest priced American-made speaker designed specially for low power systems requiring limited coverage. Gives improved results and high efficiency for intercom and other applications formerly using cone speakers.

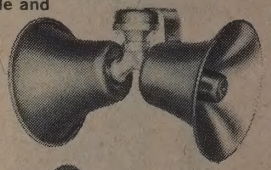
CJ-14N
CJ-30N

Horn sections molded of new tough, all-weather, acrylic plastic. Handsome beige-brown color combination blends with any decor. Tough steel bracket is adjustable and makes mounting simple and secure. Unmatched where size, weight, appearance and high efficiency combined with low cost are factors.

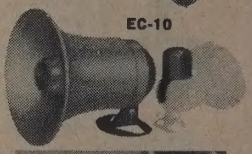
CJ-30N Similar to CJ-14N, except power handling capacity is increased. Larger, wide angle horn improves low frequency response.

TP-15N One high efficiency driver unit does the work of two for low cost bi-directional coverage in long corridors and outdoors. Universal bracket mounts dual horns at a 10° angle down or out from wall surface or pole.

TP-15N
TP-24N



TP-24N Same as TP-15N but equipped with oversized horns for improved low frequency response. Excellent for bi-directional paging locations required to reproduce music.



EC-10

MODEL	POWER	IMPEDANCE (specify)	FREQUENCY cps	SOUND LEVEL#	DISPERSION	DIMENSIONS	SHIPPING WEIGHT	NET PRICE
EC-10	6 Watts	8 or 45 ohms	400-13,000	112 db	125°	6¼" Bell dia. 6⅜" deep	2½ lbs.	8Ω $16.20 45Ω $17.70
HU-12N	7.5 Watts	8 or 45 ohms	350-13,000	115 db	120°	7½" Bell dia. 7¼" deep	3½ lbs.	8Ω $19.80 45Ω $21.30
HU-15N	25 Watts	8 or 45 ohms	250-13,000	123 db	100°	9¾" Bell dia. 8¾" deep	6 lbs.	8Ω $24.00 45Ω $25.50
HU-24N	25 Watts	8 ohms	200-13,000	124 db	95°	11¼" Bell dia. 12" deep	6 lbs.	8Ω $27.15
CJ-14N	7.5 Watts	8 or 45 ohms	350-13,000	115 db	120° x 60°	5½" high 9½" wide 8" deep	3½ lbs.	8Ω $22.35 45Ω $23.85
CJ-30N	25 Watts	8 ohms	250-13,000	121 db	120° x 60°	6" high 14" wide 11¼" deep	7 lbs.	8Ω $28.50
TP-15N	25 Watts	8 or 45 ohms	250-13,000	120 db Each horn	100° Each horn	9¾" Bell dia. 16½" long	7½ lbs.	8Ω $38.25 45Ω $39.75
TP-24N	25 Watts	8 ohms	200-13,000	121 db Each horn	95° Each horn	11¼" Bell dia. 23" long	8 lbs.	8Ω $42.75
DU-12N	7.5 Watts	8 ohms	350-13,000	115 db	110°	7" Bell dia. 14" long	4 lbs.	8Ω $26.10
DC-5	6 Watts	8 ohms	120-7,000	105 db	—	7" Bell dia. 14" long	3 lbs.	8Ω $16.80

Measured at 4 ft. on axis rated power.

REVOLUTIONARY NEW ATLAS SOUND MOUNTING BRACKET! For quick, convenient, durable strapping of paging, public address and new column speakers to I-Beams and pillars. Incorporates "Versalock" features for 3-way horizontal and vertical adjustment plus new strapping feature. Easy to use. You just insert the banding through the bracket, around the pillar or I-beam and snip off with a cutting tool. Banding tool and materials available for easy mounting.

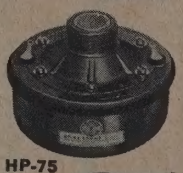
ATLAS SOUND HIGH POWER ELECTRONIC SIREN AND MOBILE SPEAKERS

HPC-75

HPC-75 For electronic siren applications and high power mobile power address use. Low silhouette public glass, cobra-flare horn gives widedispersion. Rigid, one-piece cast bracket for fail-safe mounting. Weatherproof. Power: 75 watts. Impedance: 16 ohms. Response: 225-8,000 Hz. Dispersion: 120° x 160°. Dimensions 6" high x 14" wide x 11¼" deep. Shipping wt: 8½ lbs. **Net Price $64.20**

HPR-75

HPR-75 Same as HPC-75 except with round horn and 100° dispersion. Dimensions: 9" bell diameter, 8¾" deep. Wt: 7 lbs. ..... **Net Price $56.70**



HP-75

HP-75 High power public address and electronic siren driver unit only. 1⅜"-18 driver threads for use on any industry-standard horn. Power: 75 watts. Impedance: 16 ohms. Response: 125-8,000 Hz Dimensions: 4⅜" diameter, 3⅜" deep including threads. Shipping wt: 4¾ lbs. ..... **Net Price $36.90**

ATLAS SOUND Columair SOUND COLUMNS

(with exclusive EASY-MOUNT Universal Bracket)

In-line array of 6 frequency adjusted cone speakers. Configuration produces a sound pattern having a broad horizontal and narrow vertical distribution. Uniform sound intensity even at varying distances from the sound column. EASY-MOUNT swivel bracket permits optimum adjustment of critical beam pattern.

C-66
C-46

SPECIFICATIONS	C-46	C-66	WR-7
Speaker Array	Six, Four-Inch	Six, Six-Inch	
Frequency Range	200-10,000 Hz	125-10,000 Hz	70-15,000 Hz
Power Capacity	20 Watts	40 Watts	15 Watts
Vert. Distribution Angle	26-36 Degrees	22-32 Degrees	
Hor. Distribution Angle	120-160 Degrees	120-160 Degrees	
Impedance (Total)	16 Ohms	16 ohms	8 ohms
Dimensions	28" x 5¼" x 5"	42" x 7¾" x 6"	18" x 8" x 5½"
Net Weight	8¼ Lbs.	18½ Lbs.	8 lbs.
Net Price	$44.10	$63.30	$24.60

Model MK-1 Columair stand attachment kit ..... **Net Price $ 1.70**
Model SS-4 Speaker stand for Columair ..... **Net Price $16.70**
Model TK-1 Transformer and Switch Assembly. Selectormatic kit for 25V-70V and variable impedance requirements. Transformer, switch and all hardware included. **Net Price $10.05**

New C-80
C-120
Playmate PL-150
Galaxy PL-250

SPECIFICATIONS		C-80	C-120
Column Size	Height	45½"	57½"
	Width	8¾"	11½"
	Depth	6⅜"	7½"
Speaker	Size	6"	8"
	Number	6	6
Power Rating		80 Watts	120 Watts
Dispersion —	Vertical	36°	30°
	Horizontal	120°	120°
Impedance		16 Ohms	16 Ohms
Frequency Range Hz		100-15,000	70-15,000
Weight		28 lbs.	34 lbs.
*Sound Pressure		121 db.	123 db.
Net Price		$90.00	$123.00

*4' on axis, re .0002 Dynes/CM², at rated power.

SPECIFICATIONS		PL-150	PL-250
Size —	Height	57½"	64"
	Width	11½"	14½" Max.**
	Depth	7½"	11" Max.**
Speaker	Size	8"*	8"*
	Number	6	6
Music Power		150 Watts	250 Watts
Impedance		16 Ohms	16 Ohms
Frequency Range		50-15,000 Hz	50-19,000 Hz
Weight		35 lbs.	43 lbs.
Net Price		$135.00	$204.00

*This is an 8" power range speaker.
**Basic column size 57½" x 11½" x 7½".

ATLAS SOUND,
Division of American Trading and Production Corporation,
In Canada: Atlas Radio Corp.
ATLAS SOUND . . . YOU CAN HEAR THE DIFFERENCE

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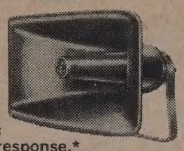
ATLAS SOUND

ATLAS SOUND COBRA-JECTOR

Model CJ-44 All Purpose Wide Angle Projector—FibreGlass Construction Complete with Super Power Driver—



All weather speaker with "Acousti-Matched" built in driver unit. The projector and reproducer are in single package, matched design resulting in maximum conversion efficiency. (Power input in watts versus sound pressure output.) The CJ-44 controlled response has been carefully restricted within frequency limits most useful in PA and high level music reproduction. Power: 40 watts continuous, 60 watts equalized response.* Impedance: 16 ohms. Response: 115-12,000 Hz. Dispersion: 120° x 60°. Dimensions: 23" wide, 13" high, 19" deep. Shipping wt. 19 lbs. **Net Price $57.30**

ATLAS SOUND DR PROJECTORS

NON-RESONANT—STURDY—WEATHERPROOF

Without acoustical or mechanical equal. All acoustical sound paths are clean and uniform without steps or pockets to disturb normal function of the horn. Critical design features eliminate conditions of turbulence, frequency cancellation and resultant signal distortion.

All are equipped with a heavy duty "U" bracket, securely fastened to a main body casting. Will not fail when subjected to extreme conditions of stress, strain, vibration.

SPECIFICATIONS	DR-54	DR-42	DR-32
Air Column	4½ ft.	3½ ft.	2½ ft.
Low Frequency	115 Hz	140 Hz	190 Hz
Bell Diameter	26 inches	21 inches	16½ inches
Length (less driver)	19 inches	16 inches	12½ inches
Shipping Weight	23 lbs.	14 lbs.	10 lbs.
Net Price	$36.60	$27.45	$23.40

ATLAS SOUND AP PROFESSIONAL SPEAKERS

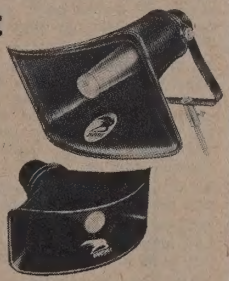
BUILT-IN TRANSFORMERS WATTS/IMPEDANCE SWITCH SCREW-TO-LINE TERMINALS

A screwdriver is the only tool required to mount, connect and adjust new AP-30 Series with exclusive ATLAS SOUND VARI-TAP CONTROL/CONNECT CENTER. Screw line terminals, built-in transformers and externally adjustable watts/impedance switch save time and costs of installation. Silver plated switch contacts, varnish impregnated transformers and AP-30 driver units are sealed in against water, dirt and corrosion. Terminal/switch cover plate is cable-strain relief and omni-directional mounting bracket adjusts in three planes.

New driver unit provides high efficiency needed with low wattage amplifiers, rugged 30 watt power handling when needed for noise penetration and distance coverage. Professional, metal construction with special corrosion-proofing and melamine enamel finish. Voice/coil diaphragm assembly field replaceable without soldering.

ATLAS SOUND BANSHEE

CJ-125 125-watt voice speaker. For vocals that cut right through crowd and instrument amplification noise. Ebony fiberglass horn is practically indestructible. Exclusive easy-off adapter mates it with any mike stand. Exclusive quick-connect receptacle fits standard phone plug—needs no splicing, slicing, soldering or tightening. Response: 100-12,000 Hz. Impedance: 16 ohms. **$74.40**



ATLAS SOUND BABY BANSHEE

CJ-40 40-watt voice speaker. Smaller version of BANSHEE. Response: 140-14,000 Hz. Impedance: 8 ohms. **$37.20**

SPECIFICATIONS	AP-15	AP-15T	AP-30		AP-30T
POWER—Continuous†	15 Watts		30 Watts		
POWER—Equalized††	20 Watts		40 Watts		
IMPEDANCE—Vari-Tap Selector Switch on Transformer Models	8 ohms	5000, 2500 1300, 666 333, 89, 45 ohms	8 ohms	45 ohms	4000, 2000 1000, 666, 333, 167 ohms
POWER TAPS—Vari-Tap Selector Switch on Transformer Models		70V Line Watts .9, 1.8, 3.8, 7.5, 15.0. 25V Line Watts .48, .94, 1.8, 7.0, 15.0			70V Line Watts 1.2, 2.5, 5, 7.5, 15, 30
FREQUENCY—Hz	275-14,000		225-14,000		
SOUND LEVEL	121 db measured 4' on axis at 15 watts input		125 db measured 4' on axis at 30 watts input		
DISPERSION	110°		100°		
DIMENSIONS	8" W x 8" H x 9" D		10" W x 9½" H x 10½" D		
SHIPPING WEIGHT	4½ lbs.	5 lbs.			6½ lbs.
NET PRICE	$21.00	$28.80	$25.50	$27.00	$33.30

SPECIFICATIONS	AP-30T-25	APC-30T	APT-34T	PD-30T
POWER—Continuous†	30 Watts			30 Watts
POWER—Equalized††	40 Watts			40 Watts
IMPEDANCE—Vari-Tap Selector Switch on Transformer Models	500, 250 125, 83, 42, 21 ohms	2500, 1300, 666, 333, 167, 89, 45 ohms		
POWER TAPS—Vari-Tap Selector Switch on Transformer Models	25V Line Watts 1.2, 2.5, 5, 7.5, 15, 30	70V Line Watts: 1.8, 3.7, 7.5, 15, 30 25V Line Watts: 1.8, 3.7, 7.5, 15		
FREQUENCY—Hz	225-14,000	250-14,000	225-14,000	120-14,000
SOUND LEVEL	125 db measured 4' on axis at 30 watts input	123 db	121 db each horn	126 db**
DISPERSION	100°	120° x 60°	100° Each Horn	Driver Only
DIMENSIONS	10" W x 9½" H x 10½" D	6"Hx14"W x12¾"D	16½"lg. x9¾" Bell Dia.	4¾" Dia. x4⅞"D
SHIPPING WEIGHT	6½ lbs.	8¾ lbs.	9 lbs.	4¾ lbs.
NET PRICE	$33.30	$36.00	$46.80	$26.55

†Integrated speech and music, full range. **Measured on axis at 30 watts input with DR-42 horn.
††Limited to frequencies above horn cutoff.

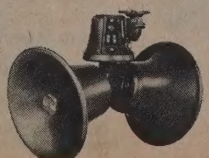
Series AP-30: FREQUENCY RESPONSE: 225-14,000 Hz. SOUND LEVEL 125 db. DISPERSION: 100°. DIMENSIONS: 10" wide, 9½" high, 10½" deep. APC-30T 25V LINE WATTS: 1.8, 3.7, 7.5, 15. FREQUENCY RESPONSE: 250-14,000 Hz. SOUND LEVEL: 126 db*. DISPERSION: 120° x 60°. DIMENSIONS: 6" high x 14" wide x 12¾" deep.

NEW ATLAS SOUND APT-34T TWIN-HORN SPEAKER

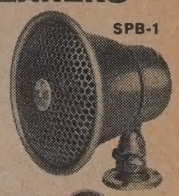
APT-34T Cobra Flare, fiberglass horn version of AP-30T for wide angle, 120° horizontal and 60° vertical dispersion. Includes all the exclusive, Professional Series design features and screwdriver adjustable watts/impedance switch. Built-in combination 70.7/25 volt line transformer has 45 ohm intercom tap.

BX-1 Armored cable adapter for AP-30
Net Price $1.70

BX-2 Armored cable adapter for AP-15
Net Price $1.70



ATLAS SOUND HEAVY DUTY SPEAKERS



SPB-1 Industrial duty speaker with heavy gauge bell, protective screen and fully adjustable Versalock bracket. Weatherproof. Power: 25 watts. Impedance: 8 ohms. Response: 300-13,000 Hz. Dispersion: 110°. Dimensions: 7¼" bell diameter, 6⅛" deep. Shipping wt. 5½ lbs.
Net Price $28.35

SPB-3C Ruggedized, weatherproof speaker with cast aluminum conduit/armored cable box for industrial service. Combination bulkhead mounting plate and adjustable U bracket adapts to any surface. Power: 25 watts. Impedance: 16 ohms. Response: 300-13,000 Hz. Dispersion: 130°. Dimensions: 6-11/16" wide, 9⅛" high, 4¾" deep. Shipping wt. 6½ lbs. ..... **Net Price $38.40**

ATLAS SOUND MOBILE SPEAKERS

MO-1 Weatherproof speaker with special, rigid, one-piece cast bracket for fail-safe use on vehicles. Concealed wiring and special, one-piece horn discourage tampering. High efficiency for use with mobile radio transceivers. Power: 25 watts. Impedance: 8 ohms. Response: 300-13,000 Hz. Dispersion: 120°. Dimensions: 7¼" bell diameter, 6⅜" deep. Shipping wt. 4½ lbs. ..... **Net Price $27.60**

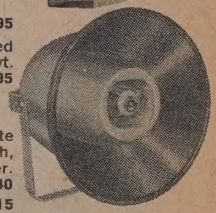
MO-2 Compact mobile communications speaker with welded steel, bracket for concealed, limited space use in vehicles. Power: 25 watts. Impedance: 8 ohms. Response: 300-13,000 Hz. Dispersion: 130°. Dimensions: 6⅝" wide, 8" high, 4⅜" deep. Shipping wt. 5 lbs. ..... **Net Price $27.60**

ATLAS SOUND ALL WEATHER HI-FI SPEAKERS

WT-6 Weatherproof, high fidelity type two-way system. Attractive beige color for indoor and outdoor use wherever wide range, clean music reproduction is important. Adjustable bracket. Power: 15 watts. Impedance: 8 ohms. Response: 100-15,000 Hz. Dispersion: 120°. Dimensions: 15" bell diameter, 12" deep. Shipping wt. 16 lbs.
Net price $40.95

Model W-6 identical to WT-6, but less tweeter. Extended range to 8,000 Hz with special cone speaker. Shipping wt. 14 lbs. ..... **Net Price $31.95**

ATLAS SOUND BI-DIRECTIONAL BAFFLES

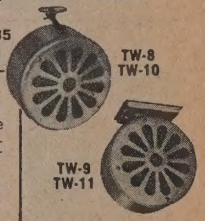


TW-8 Grill openings on both sides gives coverage in opposite directions with any 8" cone speaker. Decorative beige finish, 9" diameter and 5" thin, adjustable bracket. Less speaker. Shipping wt. 3½ lbs. ..... **Net Price $8.40**

TW-10 Same as TW-8, but with speaker ... **Net Price $12.15**

TW-9 with 5" x 6" bracket. Less speaker. Shipping wt. 4 lbs.
Net Price $10.35

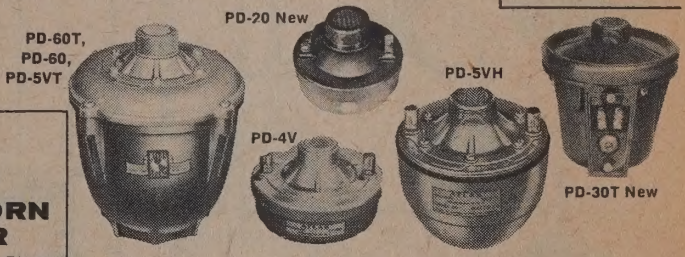
TW-11 Same as TW-9, but with speaker ... **Net Price $14.10**



ATLAS SOUND DRIVER UNITS

SUPER POWER—SUPER EFFICIENT

New designs, materials and double weather sealing give the ultimate in response, efficency and trouble-free, reliable service. Models PD-5VH, PD-5VT, PD-60 and PD-60T feature self-aligning, field replaceable diaphragm assemblies. Excellent for replacement in any trumpet with standard 1⅜" x 18" driver threads.



Specifications	PD-60T	PD-5VT	PD-5VH	PD-4V	PD-20	PD-30T
Power (continuous)*	60 watts	40 watts	40 watts	30 watts	20 watts	30 watts
Power (equalized response)†	100 watts	60 watts	60 watts	50 watts	25 watts	40 watts
Voice Coil Impedance	16 ohms	16 ohms	16 ohms	16 ohms	16 ohms	Built-in Transformer
Sound Intensity#	136 db	131 db	131 db	128 db	125 db	126 db
Frequency Response Hz	70-12,000	80-12,000	80-12,000	85-7,000	120-7,000	120-14,000
Transformer Imp. ohms	16, 85, 125, 250, 500, 1,000 2,000	16, 125, 250, 500, 1000, 2000				2500, 1300, 666, 333, 167, 89, 45
Trans. Power Taps. Watts 70 Volt Line	60, 40, 20, 10, 5, 2.5	40, 20, 10, 5, 2.5				1.8, 3.7, 7.5, 15, 30
Shipping Weight	8 lbs.	7 lbs.	5 lbs.	4 lbs.	2¾ lbs.	4¾ lbs.
Net Price	$43.80	$34.80	$25.50	$20.55	$16.35	$26.55

PD-60 Same as PD-60T Less Transformer $36.00 PD-30T 25V line watts: 1.8, 3.7, 7.5, 15.
*Integrated speech and music full range. †Input range limited to frequencies above horn cut off. #Measured 4 ft. on axis 6 ft. air column with integrated full power input.

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ATLAS SOUND

ATLAS SOUND MICROPHONE DESK STANDS AND ACCESSORIES

DS-4 Highly polished molded phenolic base is light beige in color with chrome upright tube. The smooth base will not scratch or mar table tops. Upright tube can be easily removed from base. Base diameter 5", height of tube 4", thread size 5/8"-27. Shipping weight ½ lb. ..... **Net Price $1.83**

DS-5 Non-Adjustable Desk Stand Base cast iron, finished in black wrinkle. Base diameter 6", tube height 4" chrome finish. Shipping Weight 2 lbs. **Net Price $2.67**

DS-7 Same as above but equipped with upright adjustable from 8 to 13 inches. Shipping Weight 3 lbs. ..... **Net Price $4.34**

DS-10 "Stream Liner" Desk Stand. Features "Rear Cable Exit". Bright chrome trim. Rubber bumpers. Shipping Weight 1½ lbs. ..... **Net Price $4.59**

TS-8 Adjustable Banquet Stand. Low silhouette base. Upright adjustable from 14½" to 26". In full super-chrome. Shipping Weight 5½ lbs. .. **Net Price $8.01**

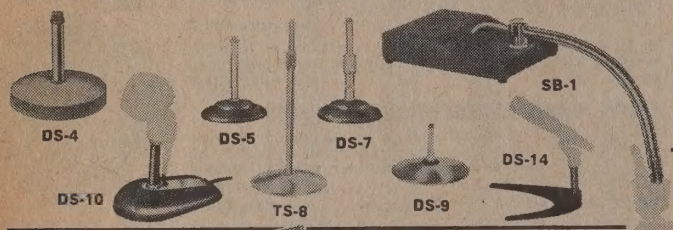
DS-9 Professional Desk Stand. Handsome appearance of modern, low silhouette base and tapered upright, both finished in satin chrome, complements the finest microphones. Stable 8" diameter base protects against accidental microphone damage. 4" upright tube. 5 felt base pads (4 lbs.) **Net Price $6.26**

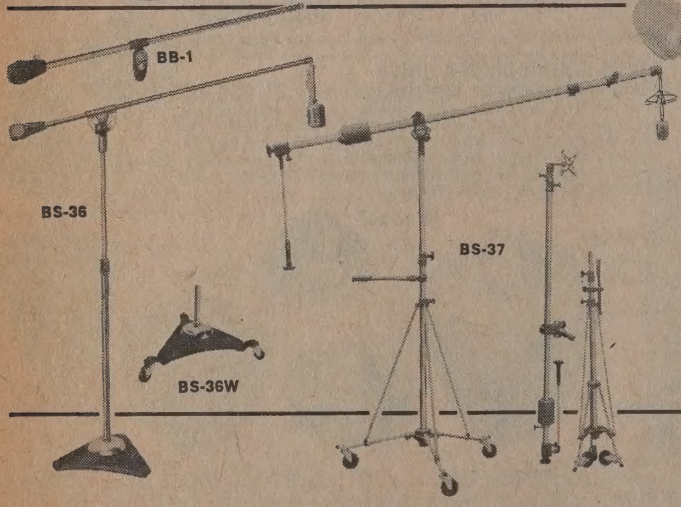
DS-14 Desk stand is functionally and aesthetically suited to slim, elongated microphones. Black wrinkle finished base with protective felt pads and 3" polished chrome upright tube with 5/8"-27 thread. (2 lbs.) .... **Net Price $3.33**

SB-1 Dispatcher and Switchboard Mike Support. 12 inch long, flexible, chrome plated "goose neck" arm mounted on spring loaded swivel, can be swung aside when not in use. Feed thru hole located at the mike end of the "goose neck" so that mike cable can be concealed within flexible arm. Base casting is rear loaded so the base will not tip forward. Finish—Black wrinkle. Shipping Weight 13 lbs. ..... **Net Price $13.17**

SW-1 Gyromatic Swivel permits microphone to be adjusted to any angle. Locks in any position. Die cast finished in chrome ..... **Net Price $4.01**

LO-2 "Lock-On" accessory for instantaneous microphone attachment or removal without threading on or off any stand or support. One half of LO-2 remains fastened to the microphone, the other half stays on the stand. Excellent where microphones must often be removed. Positive lock holds microphone safely in hanging positions on booms, ceiling supports, stage battens. Chrome finish ..... **Net Price $2.84**





SO-1 "Snap-On" accessory. Identical to LO-2 but less locking feature. Spring loaded, ball bearing design for secure, safe microphone attachment and quick disconnect on any upright floor stand ..... **Net Price $2.34**

FS-1 Foot Switch for press-to-talk paging applications using any microphone with a single ended input. May also be hand operated on desks and switchboards. Easily rewired for press-to-open circuit application. ... **Net Price $9.88**

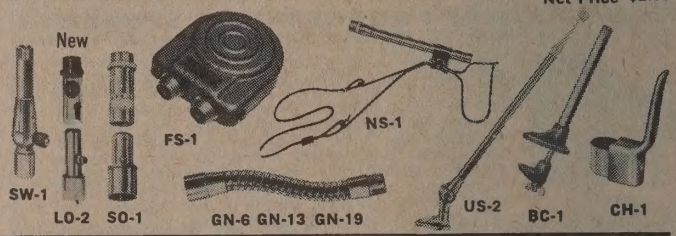
NS-1 "The Chesty" Neck Supported Mike Holder. Permits quick, simple "three way" adjustment. Mike is always in suitably "close talking" position reducing acoustic feedback problems. Wide comfortable chest support prevents rolling due to sud[illegible]n movement. Cool and lightweight. 6 oz. **Net Price $4.83**

GN "Goose Necks" can be attached to any microphone stand or fixture; ends have 5/8"-27 male and female threads—all finished in bright chrome, model numeral indicates overall length of "goose neck" in inches. **Net Price GN-6 $1.59, GN-13 $2.09, GN-19 $3.00**

US-2 Multi-Purpose microphone support. For use with language laboratories, dispatcher desks, telephone switchboards, pulpits, etc. Boom arm vertical adjustment and rotation motion is spring loaded and will "float" the mike in desired position without requiring a locking adjustment. Microphone cable may be concealed within boom arm and will feed thru swivel assembly and base flange. A small opening is provided at microphone end of the boom for cable entry. Finished in "super-chrome". Boom arm length 12¾"; vertical adjustment of boom 180°; rotation 360°; base length 2⅝" ... **Net Price $7.01**

BC-1 Bracket Clamp. Can be used with a boom arm, goose neck, etc. Chrome tube 6" long. Clamp can be removed and top flange screwed or bolted in position. 5/8"-27 thread ..... **Net Price $3.00**

CH-1 Cable Hanger. Fits all tubes 7/8" to 1¼" diameter. Mike cable can be quickly coiled and looped over the cable hanger when moving, storing or transporting the mike and stand. Finished in polished chromium. **Net Price $2.10**



ATLAS SOUND STANDS

BB-1 "Baby Boom" Attachment. Versatile device can be attached to any floor stand. All swivel parts are precision die castings for smooth operation and secure positioning. Boom 31"—Chrome plated 5/8"-27 thread. Shipping weight 3½ lbs ..... **Net Price $6.49**

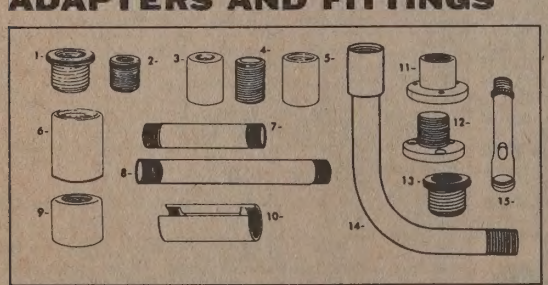
BS-36 Professional Boom Stand with "Safety Air Lock Cushion" offers all advantages of "Floating Action" plus secure and dependable locking adjustment. Air Lock built into vertical section prevents any accidental or sudden slippage of the upright section. A gyromatic swivel joint is provided at the microphone end. Base casting equipped with shock absorbent chrome plated, "domes of silence". Boom length 62" (extension may be added). Vertical extension from 48" to 72".

All tubular sections super-chrome plated. Base finished in polished chrome and black wrinkle. Shipping weight 36 lbs. ..... **Net Price $52.50**

BS-36W Mobile Model. Identical to BS-36 except that base is supplied with ball bearing swivel casters, permitting entire stand to be wheeled to various positions in the studio. Shipping weight 40 lbs. ..... **Net Price $59.16**

BS-37 Porto Boom. For most exacting TV studio, sound motion picture application, etc., ideal for portable service. Fully collapsible to fit automobiles. Air check prevents any accidental collapse of the upright. Upright retracted 5¼ ft., extended 9 ft. Boom retracted 7 ft., extended 18 ft. All tubular sections aluminum processed in "Alumilite". Counter weight cast iron with bronze locking mechanism. Base casters 4" swivel type. Base spread 42" on radius. Shipping weight 73 lbs. ..... **Net Price $549.99**

ATLAS SOUND MICROPHONE ADAPTERS AND FITTINGS



Model	Description	Net Price
AD- 1	5/8"-27 female to ½" pipe thread male (RCA Adapter)	$ .75
AD- 2	1/8" pipe female to 5/8"-27 male	.54
AD- 3	1/8" pipe female to 5/8"-27 female	.59
AD- 4	¾" long, 5/8"-27 male running thread	.44
AD- 5	5/8"-27 female to 5/8"-27 female, coupling	.59
AD- 6	7/8"-27 female to 7/8"-27 female, coupling	1.07
AD- 7	3" long tube 5/8"-27 male each end	.74
AD- 8	6" long tube 5/8"-27 male each end	.74
AD- 9	7/8"-27 female to 5/8"-27 female	.80
AD-10	5/8"-24 female to 5/8"-27 female (W. E. Adapter)	1.17
AD-11	Flange, 5/8"-27 female. Base Diameter 1¾"	.80
AD-12	Flange, 5/8"-27 male. Base holes on 1¼" mounting centers	.80
AD-13	7/8"-27 male to 5/8"-27 female	.80
AD-14	Right angle bent tube: 5/8"-27 male and female each end	1.25
AD-15	Cable "Feed-Thru" adapter: 5/8"-27 male and female each end	1.17
AD-16	Stand Adaptor: 7/8" clearance hole. 5/8"-27 female thread	3.00
AD-17	½" Pipe Thread Adaptor: Mates with ½" male pipe thread	1.65

Note: Thread sizes specified as 1/8" pipe is I.P.S. (Electrical fitting) Measures Approx. 3/8" dia. All adapters chrome plated.

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ATLAS SOUND MICROPHONE STANDS AND ACCESSORIES

New, low profile bases with modern, slim silhouettes are less conspicuous and more functional. Improved designs concentrate base weight at the outer edge for maximum stability. Additional anti-tip bumpers are located between self-leveling, shock-absorbing pads which protect desk, table and floor.

Superchrome plated finishes are lifetime wear and rust resistant. All models have standard 5/8"-27 threads for microphone attachment.

MS-10C Popular, budget-priced floor stand with sturdy, black wrinkle base with stability for average weight microphones.

LOW PROFILE BASES

MS-4 Three tubes with two clutches adjust from standard height for adults to the special low of 25" for children and seated performers. Low silhouette black base.

MS-11C All chrome design with low profile base and more weight for greater stability.

MS-14G Identical to MS-11C, but all gold finished.

MS-11S Automatic version of MS-11C with unique, automatic clutch for effortless, instantaneous changes in height. Adjusted by simply grasping the decorative black control sleeve and raising or lowering the microphone. Removing hand automatically locks the position.

MS-12C Same as MS-11C, with black base.

MS-12S Same as MS-11S with black base.

MS-20 Heavy duty stand for heavier microphones. Larger 12", low contour black wrinkle base has more anti-tip weight. Oversize 1 1/8" tube assembly includes adapter for 5/8"-27 threaded microphones. Will support small speakers.

MS-25 Professional floor stand. Integral air suspension system counter-balances microphone weight to prevent out of control crashdown. Heavy duty, black and chrome base contacts floor on large, 17" circle. Triangular shape and concave sides make it easy to handle. Oversize 1 1/8" tube combination includes 5/8"-27 thread adapter.

CS-1 Tripod base infinitely adjustable from 10" to 42" circle flat on floor. Reverse-collapses to compact 23" for storage. Useful for clustering microphones and supporting small speakers.

CS-52 Handsome, three-legged floor stand. Large, 15" black base stability. Packaged in one, reshippable carton.

CS-42 Similar to CS-52 in design, except that base is readily collapsible for portable use or convenient storage. Packaged in one, reshippable carton.

Model	Type	Height	Base	Tube	Weight	Net Price
MS-10C	Economy	35" to 63"	10" Gray	Chrome	10 lbs.	$8.16
MS-4	Wide range	25" to 65"	10" Gray	Chrome	10 lbs.	12.33
MS-11C	General use	34" to 62"	10" Chrome	Chrome	13 lbs.	10.67
MS-14G	Gold Special	34" to 62"	10" Gold	Gold	12 lbs.	13.50
MS-11S	Auto-locking	39" to 62"	10" Chrome	Chrome	13 lbs.	18.66
MS-12C	General use	34" to 62"	10" Gray	Chrome	12 lbs.	8.67
MS-12S	Auto-locking	39" to 62"	10" Gray	Chrome	12 lbs.	17.00
MS-20	Heavy duty	37" to 66"	12" Gray	Chrome	15 lbs.	13.34
MS-25	Professional	38" to 67"	17" Gray	Chrome	22 lbs.	21.66
CS-1A	Collapsible	23" to 62"	Cadmium	Chrome	5 lbs.	16.34
CS-52	Three-legged	34" to 62"	15" Gray	Chrome	9 lbs.	9.33
CS-42	Portable	34" to 62"	16" Gray	Chrome	9 lbs.	10.67

CS Type Demountable Microphone Floor Stands—quick and simple "Come Apart" base design. Stand within the amplifier or speaker carrying case. Legs are chrome plated, tipped with skid-proof rubber shock absorbent bumpers.

Model	Finish	Height Adj.	Shipping Weight	Net Price
CS-32	Full Chrome	36" to 64"	5 lbs.	$9.84
CS-33	Full Chrome	26" to 64"	4 lbs.	$11.51

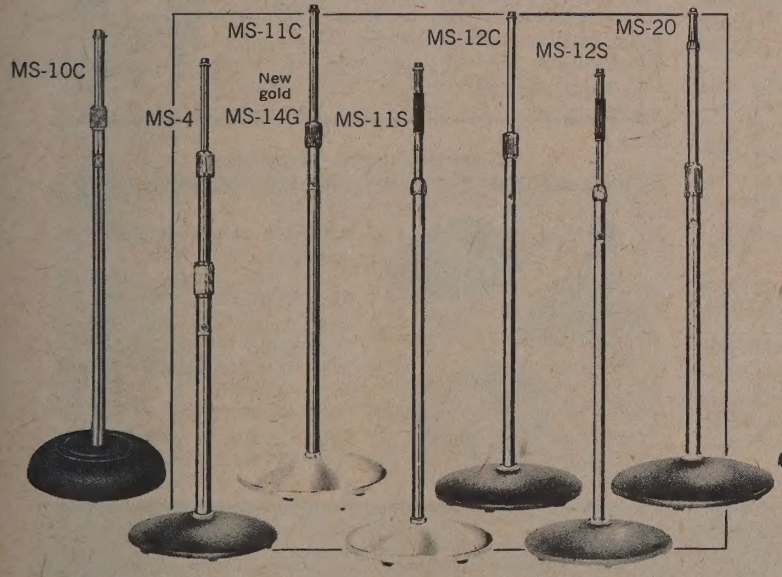
Each stand is individually packed complete in a single carton.
Model CS-33 can be collapsed to a total length of only 22½".

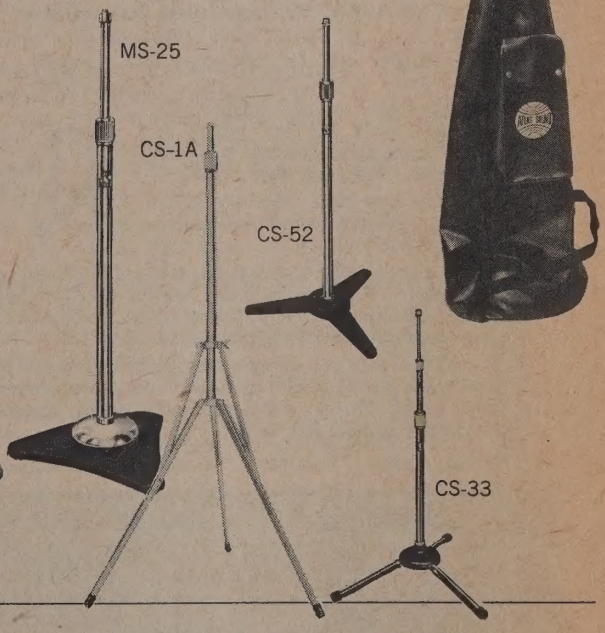
NEW! ATLAS SOUND PORTO-STAND

The first of its kind and only Atlas makes it. Porto-Stand is assembled only once, then connects and disconnects fast. The mike floor stand, baby boom, cable hanger and two lock-on attachments are easily packed and carried in a rugged vinyl case. Available with Model MS-11C or MS-12C stands.

Model PS11C ..... **Net Price $29.91**
Model PS12C ..... **Net Price $27.92**

NEW LOW PROFILE BASES





ATLAS SOUND HEAVY DUTY SPEAKERS

ATLAS SOUND EXPLOSION-PROOF HIGH EFFICIENCY SPEAKERS

Listed by Underwriters Laboratories for use in hazardous locations where explosive atmospheres exist
Highly efficient due to exclusive design of explosion barrier. CLASS 1 speakers for use in atmospheres containing ethyl ether, cyclopropane, gasoline, naphtha, benzine, butane, acetone, lacquer, natural gas, etc. CLASS 2 can be used in Class 1 conditions as well as in atmospheres containing dust of magnesium, coal, coke, flour, starch, grain, etc.
Complete specifications in ATLAS SOUND catalog.

Net Prices from $84.60 to $103.95

HLE-1-30
HLE-1-32

HLE-2-30
HLE-2-32

NEW! ATLAS SOUND SECTORAL HORNS

WCH-100 Extremely rugged cast aluminum sectoral horn for difficult environmental or atmospheric locations. Ideal for stadiums, factories, mills, industrial yards, etc. For use with any Atlas Sound driver or unit having 1 3/8"-18 thread. Unique mounting bracket permits adjustment in two planes. Dispersion: 120° x 50°. Dimensions: 18" high x 23" wide x 15" deep. Weight 17 lbs.

WCH-200 Same as WCH-100 except designed to accommodate flanged mounted drivers.

WCH-100 ..... **Net Price $69.00**
WCH-200 ..... **Net Price $70.80**

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Electro-Voice®

CARDIOID UNIDIRECTIONAL PROFESSIONAL BROADCAST, P.A., AND RECORDING MICROPHONES

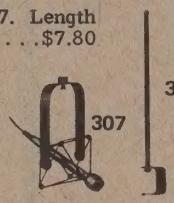
RE15: Super cardioid "Continuously Variable-D" (maximum off-axis rejection at 150° from front).† Most uniform polar pattern at all frequencies ever offered in a cardioid microphone. Integral bass compensation switch. Response: 80 to 15,000 Hz. Acceptance angle: 150°. Impedance: 150 ohms. Output level: −56 db. Finish: Matte Satin Nickel. Net Each $153.00

APPLICATIONS: On stand, hand-held, or portable boom use/Fishpoled for dialogue in motion picture recording/ Individual instrument (or section) pickup for orchestral recording/In professional public address controls effects of resonance and reverberation.

RE10: Similar in design and construction to RE15, but for applications with slightly less rigid performance tolerances. Matte satin nickel finish, black grill and "backbone." Response: 80 to 13,000 Hz. Impedance: Lo-Z. Output: −55 db. Net Each $90.00

306: Extension arm for use with 307. Length 13-7/16". Net $7.80

307: Suspension mount adapts any microphone with ¾" dia. shank to boom or shock-mounted use. Use with all RE series, 635A, etc. Net . .$20.70



314: Windscreen blast filter for RE10 and RE15. Acoustifoam™. Zippered for easy installation. Net $7.80

RE16: Similar to RE15 except has integral blast and pop filter around head. For close-up vocal use on stand or hand-held. Virtually eliminates pickup of breath noises. Strong metal screen prevents damage. Specifications same as RE15. Net . .$159.00

RE11: Similar to RE10 except with integral blast and pop filter around head. Virtually eliminates breath noises when used for close-up vocals. Strong metal protective screen around filter. Same specifications as RE10. Net $96.00

*U.S. Patent No. 3,095,084 †U.S. Patent No. 3,115,207

RE20: Wide-Range Cardioid—Rugged, high quality unit. Widest, most uniform response curve of any dynamic microphone, comparable to high quality condensers. Uniform cardioid polar pattern; off-axis response virtually identical to on-axis, maximum rejection. Built-in shock mounting and electrical shielding. Handles extremely high sound input. Stable characteristics. Built-in pop filter, bass tilt-down switch, mounting clamp. Finished in non-reflecting fawn beige Micomatte. Response: 40 to 20,000 Hz. Impedance: 50, 100, 150 ohms (selectable). Output: −57 db. Net $249.90

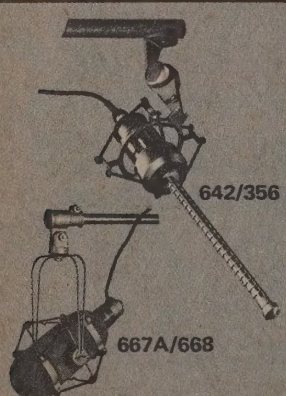
Microphone Stands

419: Desk stand for use with 665. Net $8.10

420: Die cast desk stand for microphones with 1" to 1-1/8" dia. shank including 666, 654A, 655C, Net $12.60

421: Small size, flat diecast desk stand for inconspicuous use. Interchangeable rubber shock mounts for 1" or ¾" stand clamps. Net . . .$10.50

422: Similar to 421 but for larger or heavier microphones. Net $10.50



BOOM MICROPHONES

642: Most used professional quality microphone for boom, floor stand, or special mounting where "on mike" sound at extended working distance is required*. Nominal acceptance angle (for speech and vocals) 80°. Two position low frequency compensation. Response: 40 to 10,000 Hz. Impedance: 50, 150, 250 ohms. Output level: −48 db. Finish: Non-reflecting gray. Net Each $234.00

APPLICATIONS: TV studio booms/Sound track recording/Dialogue and vocals/Multiple footlight mounting for theatrical productions/Educational classroom television.

668: "Continuously Variable−D"® cardioid for boom and fishpole use for broadcast and motion pictures.† Smooth cardioid pattern for reduction of ambient noise and reverberation. Built-in equalizer provides 36 response variations to tune microphone to environment. Acceptance angle: 150°. Frequency response: 40 to 10,000 Hz. Impedance: 50, 150, and 250 ohms selectable at computer panel. Output level: −51 db. Finish: TV gray. Net Each . $297.00

APPLICATIONS: Boom use in TV and on motion picture location/Fishpoled for dialogue in motion picture recording/ Professional public address to control effects of auditorium resonance and reverberation.

667A: Identical to 668, but with six response variations for less demanding applications. Net Each $207.00

368: Windscreen for 667A & 668 used outdoors. Net . .$56.70

324: Boom suspension mount for model 642, will accept windscreen. Net $40.80

356: Suspension shock mount for 642. Net $31.50

326: Windscreen blast filter for 642. Net $28.20

327: Kit includes 324 and 326. Net $63.00

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Electro-Voice®

OMNIDIRECTIONAL PROFESSIONAL BROADCAST, P. A., AND RECORDING MICROPHONES

RE55: Successor to 655C. Smooth, peak free wide range response combined with functional styling makes this the most versatile professional quality omnidirectional dynamic ever offered. Response: 40 to 20,000 Hz. Impedance: 150 ohms. Output level: —55 db. Finish: Matte Satin Nickel. Net Each $126.00
APPLICATIONS: Recording symphony orchestra/Close instrument miking/Hand held for audience participation and interview use/On-the-spot news coverage.

RE50: Noiseless Hand & Stand—For vocals, interviewing, instrumental broadcast, and recording. Extremely low susceptibility to mechanical shock, handling, and cord noise, or breath pops due to unique double case design separated by rubber isolation mounting. Non-reflecting fawn beige Micomatte finish. Same ruggedness and electrical characteristics of the 635A. Response: 80 to 13,000 Hz. Output: —55 db. Impedance: Lo-Z. Net $66.00

Special Long-Range Microphone

643: A highly directional dynamic microphone combining the best characteristics of cardioid and distributed front-opening principle for more specialized and extended long range pickup. Provides cardioid pickup pattern up to 100 Hz and is highly directional over balance of range. Impedance: 50, 150, and 250 ohms selected by changing internal connector pin. Light weight extruded and cast aluminum case with integral shock mount and removable wind filter. Output: —48 db. Response: 30 to 10,000 Hz. Net $982.80
APPLICATIONS: Sports broadcasts/Band pickups/Parades/Audience participation and interviewing.

635A: Most popular professional quality performers' microphone. Smooth, carefully shaped response yields "flat effect" when used close up. Built-in four-stage pop and breath blast filter. Response: 80 to 13,000 Hz. Impedance: 150 ohms. Output level: —55 db. Finish: Matte Satin Nickel. Net Each $49.20
APPLICATIONS: Stage performance/Wide dynamic range, freedom from proximity effect, assures consistent results regardless of working distance/No windscreen necessary.

654A: Slim-trim broadcast dynamic, can be used stand mounted, hand held, or as lavalier. Matches all low impedance inputs. Frequency response: 50 to 15,000 Hz. Output level: —57 db. Non-reflecting gray finish. Net Each $63.00

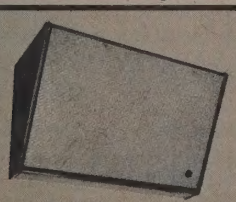
513: Filter for use with low impedance microphones has switch to match 50, 150, or 250 ohms. When used in line between microphone and preamp, rejects unwanted noise below 100 Hz. Terminals provided for cable connections. Net $59.70

380: Attenuator for use in microphone line, attenuates signal 10 db. Net $15.60

310: Detachable clamp, designed for ¾" diameter microphones. Net $3.90
310A: Same as above except gray, as furnished with professional microphones. Net $3.90
311: Detachable clamp cut back for easy snap-in, snap-out. Net $3.90
311A: Same as above except gray, as furnished with professional microphones. Net $3.90
305: Adapter for mounting 5/8"—27 threads on ½" stand. Net $1.50

310

649B: Smallest dynamic lavalier. Designed for the most demanding professional applications. Response is carefully tailored to compensate lavalier acoustic conditions so resulting signal perfectly matches signal from other microphones. Response: 70 to 10,000 Hz. Impedance: 150 ohms. Output level: —61 db. Finish: Non-reflecting gray. Net Each $66.00
APPLICATIONS: Live performances, allows artist greatest freedom of movement/Concealed on person or in set/Consistent "on mike" sound through accurately tailored response.



Sentry I

Sentry II

SENTRY I: Wall or ceiling mounted system designed specifically for monitor use in recording and broadcast studios. Extremely wide, very flat response. Walnut finished cabinet. Frequency response: 30 to 20,000 Hz. 16 ohms impedance. Permits precise monitoring and use as reference standard. Net Each $180.00
SENTRY II: Floor model, similar to Sentry I above. For free standing floor position. Net Each $180.00
APPLICATIONS: Studio and control room monitoring/Classroom use, music instruction and appreciation courses/Home hi fi

ELECTRO-VOICE, Inc. • *A Subsidiary of Gulton Industries, Inc.*

Electro-Voice® MICROPHONES FOR P.A., TAPE RECORDING,

Cardioid Dynamic

674: Radically new design brings truly professional quality to public address, recording, communications, and other general purpose microphone applications. An exclusive Continuously Variable-D® microphone† which assures uniform symmetrical cardioid pattern at all frequencies. Highest discrimination against feedback and unwanted sound. Exclusive three position switch offers controlled low-frequency attenuation to overcome rumble and feedback when microphone is used at a distance. Slim design permits full view of person speaking. Rugged high pressure die-cast construction. Dual Lo-Z and Hi-Z. E-V QC™-4M cable connector allows easy change of impedance without tools by moving a single pin. Frequency response: 60–15,000 Hz. Output: –27 db. Satin chrome finish. Net $53.40
APPLICATIONS: Public address/Base station communications/Quality tape recording in the home and in schools.

674A: Non-reflecting gray. Dual impedance, shipped Hi-Z. $53.40

674G: Gold finish. Net $56.70

674P: 674 with phone plug at end of cable. Net $55.20

676: Similar to 674, except less mounting stud and on/off switch. For use with stand mounting clamp (supplied) so microphone can easily be removed and used hand-held during performance. Very uniform polar pattern across audio spectrum. Three position bass tilt selector adjusts low frequency response to suit environment. Response: 60-15,000 Hz with low-frequency attenuation switch. Output: –57 db. Dual Lo-Z and Hi-Z. New E-V QC™-4M cable connector allows easy change of impedance without tools by moving a single pin. Satin chrome finish. Net $53.40

676A: Non-reflecting gray. Net . $53.40

676G: Gold finish. Net $56.70

676P: 676 with phone plug at end of cable. Net $55.20

†U.S. Patent No. 3,115,207

664: Designed for quality tape recording, communications, and public address applications. Cardioid pattern at all frequencies, with Variable–D® feature†. Permits close talking without "booming" or bass attenuation. Provides better discrimination against unwanted sound. Blast filter minimizes wind effect. Acoustalloy® diaphragm shielded from dust and magnetic particles. Response: 60–15,000 Hz. Output: –58 db. On/off switch. Dual Lo-Z and Hi-Z. E-V QC™-4M cable connector allows easy change of impedance without tools by moving a single pin. Satin chrome finish. Net $53.40

664A: Non-reflecting gray. Net . $53.40

664G: Gold finish. Net $56.70

664P: 664 with phone plug at end of cable. Net $55.20

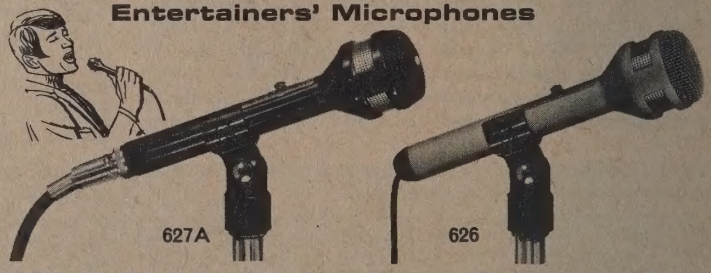
644: Combination cardioid and distributed front opening* instrument, making it the most directional PA microphone available. Better than 2½ times working distance of pressure types with virtually no change in response. Extremely high rejection of noise from sides and rear, reducing reverberation and feedback. Narrow front angle of acceptance for best isolation. Very low response to wind noise and shock. Response is smooth from 40 to 10,000 Hz. Output: –53 db. Dual Lo-Z and Hi-Z. E-V QC™-4M cable connector permits impedance change without tools by moving a single pin. High pressure die cast case, satin chrome finish. Acceptance angle: 90°. Net $69.30

Unidirectional Line Microphone

644

*U.S. Patent No. 3,095,084

"Single D" Cardioid Entertainers' Microphones



627A: Hand and Stand Entertainer's "Single-D" Microphone–Redesigned and improved in response and with increased output level when used close to mouth. Emphasizes low frequencies used "close-up." Lightweight, rugged construction with built-in pop and dust filter. Smooth, peak-free response shaped for voice presence. New model has greatly strengthened cable connector threads. On/off switch, black satin chrome finish. Response: 60 to 13,000 Hz. Output: –58 db. Hi-Z or Lo-Z, must be specified. With cable and 310 stand clamp. Net $37.80

627N: Similar to 627A with matte satin nickel finish. Response 80-11,000 Hz. Output: –58 db. Impedance: Hi-Z or Lo-Z must be specified. Net $37.80

627PN: 627N (Hi-Z) with phone plug at end of cable. Net . . $39.30

626: Modestly priced "Single-D" cardioid entertainer's hand-and-stand microphone. Similar to 627A but for less exacting applications. Cable integral with microphone. Impedance: Dual Hi-Z or Lo-Z (unbalanced to ground), selectable. Response: 70-12,000 Hz. Output: –58 db. Fawn beige Micomatte finish. Net $27.90

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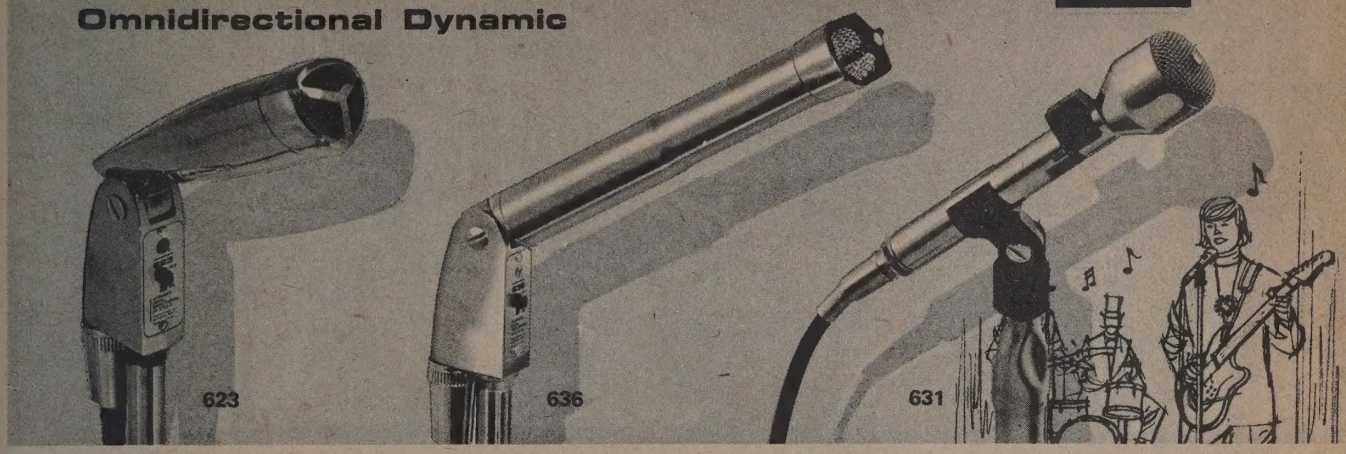
ENTERTAINMENT, EXPERIMENTERS

Omnidirectional Dynamic



623: Ideal for PA, recording, and general use. Use on stand or hand-held. On/off switch and tiltable head. Response: 60 to 12,000 Hz. Output: −56 db. E-V QC™ −4M cable connector allows easy change of impedance without tools by moving a single pin. Satin chrome finish. Acoustalloy® diaphragm. Net . . $36.00

636: Slim dynamic, exceptionally fine for PA, recording, and general use. Response: 60 to 13,000 Hz. Output: −58 db. Pop-proof head and wide pickup range. On/off switch and satin chrome finish. Dual Lo-Z and Hi-Z. E-V QC™ −4M cable connector allows easy change of impedance by moving a single pin. Net $45.60

636G: Gold finish. Net $48.90

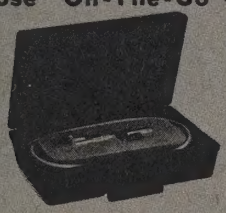
631: High quality hand or stand dynamic is lightweight, rugged, and shock-proof. Effective 4-stage filter allows close up use without blasting, pops, or distortion. Silent, magnetic on/off switch with removable actuator button. Satin chrome, one-piece case. Response: 80 − 13,000 Hz. Output: −55 db. Hi-Z or Lo-Z must be specified. Net . $37.80

631N: Same as 631 but with matte satin nickel finish. Net $37.80

631P: 631 with phone plug at end of cable. Net $39.30

631PN: 631N with phone plug at end of cable. Net $39.30

For those "On-The-Go"-Microphones in Handy Carrying Cases



Single Case: Sturdy plastic case holds single microphone and cable. Microphone nests in contoured foam plastic insert for complete protection from bumps and scrapes.

Deluxe Double Case: Strong and handsome black formed case with metal reinforcement trim. Same as high quality musical instrument cases. Holds two microphones in contoured foam plastic insert and cables for complete protection.

626PC: One 626 (Hi-Z) with phone plug in single carrying case. Net $32.10

627APC: One 627A (Hi-Z) with phone plug in single carrying case. Net $42.00

627PCN: One 627N (Hi-Z) with phone plug in single carrying case. Net $42.00

627PDN: Two 627N's with phone plugs in deluxe double case. Total Net . . . $91.20

631PC: One 631 (Hi-Z) with phone plug in single carrying case. Net $42.00

631PCN: One 631N (Hi-Z) with phone plug in single carrying case. Net $42.00

631PD: Two 631's with phone plugs in deluxe double case. Total Net $91.20

631PDN: Two 631N's with phone plugs in deluxe double case. Total Net . . . $91.20

664PC: One 664 with phone plug in single carrying case. Net $58.20

664PD: Two 664's with phone plugs in deluxe double case. Total Net $122.70

674PC: One 674 with phone plug in single carrying case. Net $58.20

674PD: Two 674's with phone plugs in deluxe double case. Total Net $122.70

676PC: One 676 with phone plug in single carrying case. Net $58.20

676PD: Two 676's with phone plugs in deluxe double case. Total Net $122.70

456: Single case only with foam insert. Specify for model 626, 627, 631, 664, 674, or 676. Net $5.40

457: Deluxe double case only with foam insert. Specify for 626, 627, 631, 664, 674, or 676. Net $15.00

Transformer and Attenuator

380: Attenuator for use in microphone line, attenuates signal 10 db. Net $15.60

502B: 150 ohm line transformer, matches Lo-Z microphones to high impedance inputs. Response: 30−20,000 Hz. Net $9.90

630: Famous for quality at low cost. Unaffected by heat or humidity. Acoustalloy® diaphragm and tiltable head. Dual Lo-Z or Hi-Z. E-V QC™-4M cable connector allows easy change of impedance by moving a single pin. Response: 60 to 11,000 Hz. Output: −55 db. On/off switch. Satin chrome finish. Net $33.00

611: Traditional styling, fine performance. Response: 50−9,000 Hz. Output level: −55 db. Omnidirectional. On/off switch, satin chrome finish. Dual Lo-Z and Hi-Z. Net $28.20

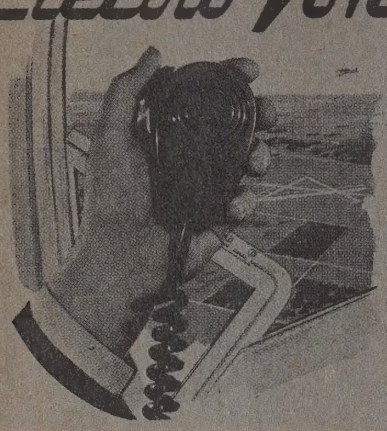
641: Modern dynamic. Integral on/off switch. Wide range response: 70 to 10,000 Hz. High output level: −57 db. 15' cable. Case is chrome plated die-cast zinc and gray high impact plastic. Hi-Z or Lo-Z must be specified. Net $24.90

634A: Similar to 641 less stud and on/off switch. Fits any stand, boom, or gooseneck with complete cable concealment. Ideal for electronic teaching aids, amateur and commercial communications, and paging systems. Hi-Z or Lo-Z must be specified. Net . . . $18.90

648: Extremely versatile paging, intercom, or talk-back microphone. Omnidirectional with Acoustalloy® diaphragm. Non-reflecting gray. Does not include cable. Hi-Z or Lo-Z must be specified. Net $35.40

Electro-Voice®

COMMUNICATIONS AND PAGING MICROPHONES



602FTR: Transistorized noise cancelling dynamic mobile with built-in transistor amplifier. Provides level for direct replacement of carbon units. Maximum output: —43 db with 250 ohm load and 27 V supply. Output adjustable from exterior. Response: 100 to 5,000 Hz. Press-to-talk switch and coiled cord with phone plug at terminal end. Lo-Z. Net $40.80

205STCKK

205STCKK: Noise cancelling, single button carbon for aircraft and emergency communications. FAA approved. Blast-proof, waterproof, and shock resistant. Output at ¼": —50 db. Lo-Z. Black phenolic case. Press-to-talk switch and coiled cord. Net $31.50

205STCKKP: With PJ-068 phone plug. Net $34.50

603TR

603TR: Transistorized noise cancelling mobile providing all dynamic advantages for direct replacement of carbon units. Built-in transistor amplifier matches level of carbon circuits. Output adjustable with internal potentiometer up to —44 db. Excellent for aircraft applications. Response: 200 to 4,000 Hz. Lo-Z. Press-to-talk switch and coiled cord. Magnetic hanger bracket furnished. Net $88.20

602TR

602TR: Similar to 603TR but different case design. Uses conventional hanger bracket. Fixed output level: —48 db (carbon equiv.) Response: 100 to 5,000 Hz. FAA approved. Net $58.50

600E: Dynamic mobile of rugged construction. Lo-Z has "open circuit" wiring for multiple paging installation. Hi-Z provides "straight-through" circuit for VOX operations. Output level: —55 db. Response: 100 to 7,000 Hz, matched to high intelligibility requirements. Gray. With hang-up bracket. Specify Hi-Z or Lo-Z. Net ...$24.60

600E

210E: Similar to 600E but single-button carbon. Output: —50 db. Lo-Z. Press-to-talk switch closes microphone and relay circuit. Coiled cord extends to 5'. Net $21.90

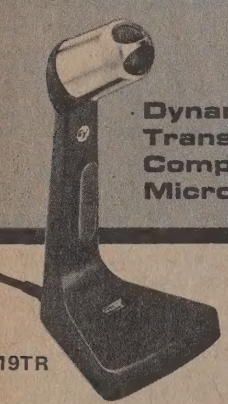
602F

602F: Similar to 602FTR, less transistor amplifier. For circuits designed for dynamic microphones. Output: —60 db. Hi-Z or balanced Lo-Z must be specified. Net $36.30

714

714: Ceramic hand-held unit for paging, ham radio, and CB. Cycolac case for long life and protection from shock. High impedance output: —55 db. Response tailored for high intelligibility: 100 to 7,000 Hz. DPDT switch. Coiled cord extends to 5'. Bracket included. Net $10.50

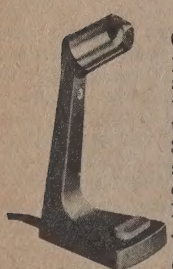
717: Similar to 714, except cardioid pickup. Aperture on either side of diaphragm provides attenuation of sound arriving from rear and sides. Output: —55 db. Response: 100 to 7,000 Hz. Net $12.30



Dynamic Transistorized Compressor Microphone

619TR

619TR: Unique base-station microphone with built-in transistor amplifier and speech compressor. Ideal for two-way communications where a high value of average modulation (P.E.P.) is important. Greatly increases chances of successful transmission under adverse long-range conditions. Eliminates need for special clipper or compressor equipment and can be used with any impedance or input level. Separate controls for level and degree of compression. Rugged die-cast stand in nonreflecting gray with chrome plated die-cast head. Grip-to-talk switch in stand riser, compression meter in base. Switch completes battery circuit in "on" position and provides for relay operation. Response: 150—10,000 Hz. Output (at compression threshold): Hi-Z —42 db; 3000 ohm —44 db; 150 ohm —58 db; (Maximum output with gain and compression controls at max. —40 db.) Coiled cord cable extends to 5'. Size: 4½" wide, 9¾" high. 4¾" deep. Net weight: 2 lbs. Net $42.00



619: Similar to 619TR less compressor and amplifier. For base station paging and two-way. Press-to-talk switch in base movable to upper stand for grip-to-talk use. Switch allows relay operation. Response: 70 — 10 kHz. Output: —57 db. Hi-Z or Lo-Z must be specified. Net $30.00

719: Similar to 619 with ceramic element. Response 70 to 7 kHz. Output: —57 db. Hi-Z. Net $17.40

620: Noise cancelling base station microphone, similar to 607 built into rugged die-cast stand. Push-to-talk switch in base may easily be moved to riser for grip-to-talk operation. Switch shorts microphone in "off" position and provides for relay operation. Hi-Z or Lo-Z must be specified. Non-reflecting gray stand, chrome finished Cycolac head. Net $39.90

607: Close talking microphone rejects sound originating more than ¼" from grille. Provides considerably more noise cancellation than its predecessor, the 606, and has frequency response designed to assure excellent intelligibility while providing high level. Response: 300 to 3,800 Hz. Output at ¼": —54 db. Acoustalloy diaphragm. Hi-Z or Lo-Z must be specified. Cycolac case with chrome finish. Stud mount. Net $33.00

625TRSKK: Transistorized noise cancelling handset. Phenolic case holds Lo-Z microphone and 150 ohm magnetic receiver. FAA approved. Response: 100 to 5,000 Hz. Output: —48 db (carbon equiv.). Five-conductor coiled cord. Net $77.10

625SKK: Same as 625TRSKK but without transistor amplifier. Output: —55 db. Net $53.40

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MICROPHONE ACCESSORIES

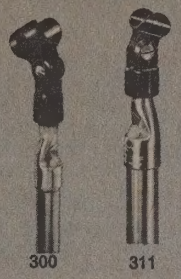
Stand Clamps

300: Allows removal of microphone while in use. Fits any 1" to 1-1/8" diameter cylindrical microphone.Provides positive mounting to 5/8"–27 desk or floor stand. Black Lexan. Net $4.80

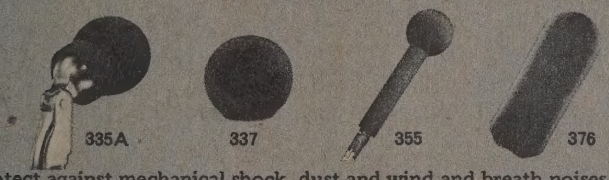
310: Similar to above but designed for ¾" diameter microphones. Net $3.90

311: Similar to 310 except cut back for easy snap-in, snap-out. Net $3.90

305: Adapter for mounting 5/8"–27 threads on ½" stand. Net $1.50



Acoustifoam® Windscreens



Protect against mechanical shock, dust and wind and breath noises.

335A: Acoustifoam. Use on 630, 641, 634A microphones. Net .$7.80

337: For use on 626 and 627 microphones. Net $4.80

355: Acoustifoam. Protects against mechanical shock and pickup of dust and magnetic particles. For use with models 655C, 654A, 636, and 623 microphones. Net $6.90

376: Acoustifoam sleeve for 676 and 674 microphones. Net ...$9.30

Microphone Stands

418: Desk stand for microphones with small type studs such as 611, 623, 630, 641, 636, 674, and new style (after early 1968) 644 and 664. Net $8.10

418S: With switch. Net $11.10

418G: Gold finish. Net $10.20

419: Desk stand for use with microphones having large type studs such as 665 and older style (before early 1968) 644 and 664. Net ...$8.10

419S: With switch. Net $11.10

419G: Gold finish. Net $10.20

420: Die-cast stand for use with 666, 654A, 655C, 652A, 676, or other models with 1" diameter. Clamp adapts 1" to 1-1/8" mikes without tools. Net $12.60

420G: Same as above except gold finish. Net $16.50

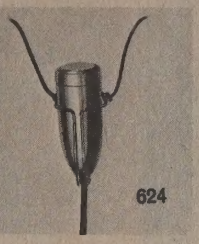
421: Small size. Interchangeable rubber shock mounts to accept ¾" or 1" stand clamps. Net $10.50

422: Similar to 421 but larger to accommodate heavier microphone. Net $10.50

423A: 5-1/8" base with 5" riser. 5/8"–27 thread. Rests firmly on rubber base buttons. Net $3.60

428: Touch to talk lever type DPDT switch. Closes or opens instantly or locks in "talk" position. Fits standard 5/8"–27 thread. Net .$18.90

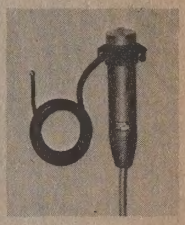
LAVALIER MICROPHONES



624: Most economical dynamic lavalier on the market. For chest or hand use. Response: 100 to 7,000 Hz. Output: –56 db. Wire mesh head acoustically treated for wind and moisture protection. Hi-Z or Lo-Z must be specified. Lo-Z not balanced to ground. Non-reflecting gray finish. Net $28.20

924: Crystal lavalier. Same in appearance as 624, except has chrome finish. Response: 60 to 8,000 Hz. Output: –60 db. Net $14.70

647A: Smallest high quality lavalier in PA field delivers big microphone performance. Extremely rugged construction assures long life. Frequency response: 70 to 10,000 Hz. Output: –60 db. Weighs on 2 oz. Non-reflecting gray finish. Hi-Z or balanced Lo-Z must be specified. Net $51.90



Crystal Microphones

920: Omnidirectional pickup. Strong wire-mesh head acoustically treated for wind and moisture protection. High capacity, moisture sealed crystal. Hi-Z. AC-DC insulated (case not grounded). Satin chrome finish. Frequency response: 60 to 10,000 Hz. Output: –50 db. Excellent for group or conference applications or use where wide angle pickup is desired. Net $17.40

805: For guitar, banjo, other stringed instruments. Hi-Z. Sealed crystal. Chrome finish. 15' cable. Net ..$12.60

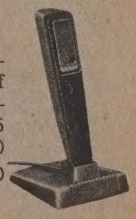
Low-Cost Ceramic Microphones

715: Omnidirectional. 60 – 7,000 Hz. Output: –55 db. Hi-Z. 5' cable. Non-reflecting gray finish. Rugged, lightweight. AC-DC insulated. With 5/8"–27 adapter. Net $9.30

721: Inexpensive ceramic features high output level and light weight for recording, experimenting, and general use. High impact gray plastic case. May be used handheld or with integral fold-out stand. Response: 100 to 5,000 Hz. Output: –52 db. Hi-Z. 5' cable included. Net $4.08

729: Ceramic cardioid reduces random noise. For PA, paging, home recording, and general communications. Tailored for single sideband. Output: –60 db. Response: 60 to 8,000 Hz. Hi-Z. 8½' cable. Net $15.30

729SR: With relay switch. Net $16.80



727: Omnidirectional, similar in appearance to 729. Withstands extremes of temperature and humidity. Hi-Z. Response: 60 to 8,000 Hz. Output: –55 db. Net $12.60

727SR: With relay switch. Net $14.70

ELECTRO-VOICE, Inc. • *A Subsidiary of Gulton Industries, Inc.*

Electro-Voice® PUBLIC ADDRESS HORNS AND DRIVERS

848A

Exclusive E-V Compound Horns permit widest range at lowest distortion, plus complete directional control of both highs and lows. Best wide-angle coverage with exclusive diffraction horns means better sound through entire coverage area. Natural voice and music reproduction result in higher intelligibility without annoying peaks.

848A: Combines FC100 Horn and 1828C driver for finest wide-angle sound, low distortion, and highest quality of any projector. Frequency response: 150 to 10,000 Hz. Impedance: 8 ohms. Dispersion: 90° x 120°. Power handling capacity: 30 watts. Sound pressure level: 120 db. 10½" x 20½" x 20". Net $54.60

CDP®

HC400: Wide-angle round reentrant horn. As used in 844A. Use with any E-V driver. High articulation. Rugged diecast body. Weatherproof. Nominal dispersion 90°. Low frequency cutoff 250 Hz. Taper 250 Hz. Air column length 16". Mesa tan baked enamel finish. 10" dia., 5¼" d. Net $9.60

AC100: Concentrating version of CDP®. Uses round horns for most concentrated coverage. Use with any E-V convertible driver. Low frequency horn cutoff: 100 Hz, taper: 100 Hz. Air column length: 56", sound distribution 80°. High frequency sound distribution: 30°. Crossover: 1,000 Hz. 21" diameter, 21" depth (less driver). Net $58.80

FC100: Provides two diffraction horns for uniform wide-angle coverage. Flexible coverage control by individual adjustment of each horn. Use any E-V convertible driver. Low frequency horn cutoff: 100 Hz, taper: 100Hz. Air column length: 58", sound distribution 90° x 120°, high frequency sound distribution, 90° x 120°. Crossover: 1000 Hz. 10½" x 20½", depth (less driver) 20". Net $33.90

REENTRANT HORNS

AR150: Round concentrating horn for maximum penetration. E-V ring reflector plus new exponential design contributes to wide range. High intelligibility and remarkably natural voice and music quality. High efficiency design. Low frequency horn cutoff: 150 Hz, taper 150 Hz. Air column length, 41". Sound distribution, 85°. Diameter 21", depth (less driver), 17". Net $27.54

FR150: Medium-angle, low-cost rectangular horn provides good coverage. Fiberglass horn has Mesa Tan color molded in. Adjustable mounting angle. Can be stacked for multiple speaker applications; ideal for car-top installation. Low frequency cutoff: 150 Hz, taper 150 Hz. Air column length, 45". Sound distribution, 70° x 100°. Mouth size 10½" x 20½", depth (less driver) 21". Net $32.10

ACCESSORY LINE TRANSFORMERS

For use in Constant-Voltage PA Systems

TR Series—70.7 V, 4 wattage taps. Secondary impedances 4,8,16 ohms.

TM Series—Dual 25 & 70.7 V, 4 wattage taps. Secondary impedances 8 & 16 ohms.

Watts	Model	Net	Model	Net
5	TR5	4.50	TM5	6.21
15	TR15	4.80	TM15	6.90
30	TR30	5.10	TM30	10.20
50	TR50	9.15	—	—
60	—	—	TM60	12.00

TH Transformer Housing: Weatherproof, eliminates soldering on E-V transformers. Wattage indicator dial. Size: 4" h. x 5" w. x 3½" d. Net $5.85

VERSATILE CONVERTIBLE DRIVERS

	1828R* (DC30R)	1828C (DC30C)	1828T DC30CT)	1829 (DC60)	1829T (DC60T)
Frequency Response—Hz	150-10,000	150-10,000	150-10,000	140-11,000	140-11,000
Program Power Capacity—Watts	30	30	30	60	60
Sound Pressure Level† FC100	—	120 db	120 db	127 db	127 db
AR150	127 db	127 db	127 db	133 db	133 db
Voice Coil Impedance—ohms	8	8	8	16	16
Transformer Impedance-ohms	—	—	167,333,667 1337	—	83,167 333,667
Transformer Power Taps-watts	—	—	30,15,8,4	—	60, 30, 15,8
Dimensions (overall)	4" dia. 2¾" d.	4" dia. 3¼" d.	5" h 4" w 5¼" d.	5-15/16" 4-1/16"d.	5-15/16" 6-3/8" d.
Net Price	$21.00	$21.00	$30.00	$36.00	$43.80

*Reentrant style only. †Measured at 4' on axis with full rated power from 750—1250 Hz. E-V Diaphragm replacement kits are available for all Electro-Voice public address drivers.

Designed for smooth, peak-free response with maximum efficiency, Electro-Voice public address drivers offer the greatest possible long term economy with a consistently high level of performance.

Reentrant Driver model 1828R will produce maximum intelligibility with E-V AR150, FR150, and HC400.

Versatile Convertible Drivers may be used with Reentrant Horns but are especially effective with the exclusive Electro-Voice Compound Diffraction Projectors (CDP®), FC100, and AC100.

For use in constant voltage systems, order 1828T or 1829T. All drivers have 1-3/8"-18 threads for attaching horn.

Net
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Electro-Voice®

HIGH POWER-CAPACITY LOUDSPEAKER SYSTEMS

Eliminator 1: A three-way, full-range loudspeaker system for extremely high audio level, high quality sound reinforcement and playback. 15" loudspeaker in folded horn cabinet. 8HD midrange Diffraction Horn and driver. Two special vhf drivers and horns, level controls for vhf and midrange drivers. Ruggedly built enclosures in black vinyl with metal corners, carrying handles, and trim. Response: 55-15,000 Hz. Power handling capacity: 100 watts RMS (white noise shaped to the stringent lead guitar frequency spectrum). Dispersion: 100°, sound pressure level: 122 db at 4'. Dimensions: 37½" h, 22½" w, 23-1/8" d. Net $399.50

Eliminator 2: Similar to Eliminator 1, for even higher power-handling capacity and sound pressure output. Ideal for the rigid requirements of Acid Rock groups, etc. Same cabinet and incorporates same components as Eliminator 1 with exception of vhf drivers. Response: 55 to 10,000 Hz. Power handling capacity: 125 watts RMS. Sound pressure level: 124 db. Net $319.50

ELIMINATOR 1

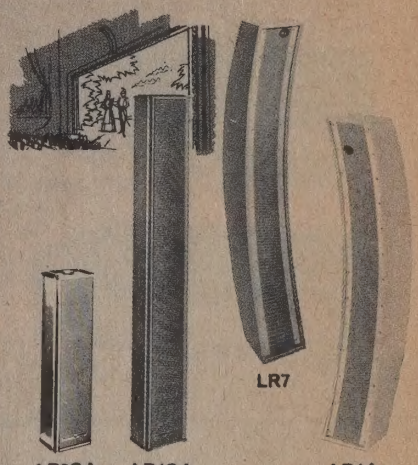
SOUND REINFORCEMENT LOUDSPEAKERS

LR7: E-V Line Radiator. Low- and high-freequency response extended. Uses nine 5" by 7" speakers and two T35 vhf drivers for frequency range of 200 to 17,000 Hz. Crossover at 3500 Hz. Horizontal coverage 160° vertical coverage 60°. Power handling capacity: 50 watts, impedance, 8 ohms. Non-resonant, curved* wood enclosure finished in Mesa Tan. Mounting brackets supplied. 60" h., 11" w., 14" d. Net $195.00

LR4A: Curved design* overcomes unwanted high frequency dispersion at ends, eliminates echo and feedback. Uses nine 3" x 5" and three 3½" cone speakers. 160° horizontal dispersion, 60° vertical dispersion. Frequency response: 200 to 10,000 Hz. Power handling capacity, 25 watts program. Nominal impedance, 8 ohms. 48" h., 7" w., 13" d. Mesa tan wooden enclosure. Net $126.00

LR4SA: Weatherproofed for outdoor or indoor installation. Extruded aluminum case is finished in Faun metallic. Electrical filters remove end speakers from circuit as frequencies increase, eliminating high frequency lobes at ends. Response: 200 to 10,000 Hz. Impedance, 8 ohms. Power handling capacity, 40 watts program. Dispersion, 30° vertical, 160° horizontal. Sound pressure level: 116 db. 48-3/8" l., 6-5/8" w., 4-7/8" d. Universal mounting bracket and one Model 460 bracket for heavy-duty stand mounting supplied. Net $99.90

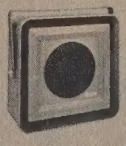
LR2SA: Short version of LR4SA. Greater vertical dispersion (45°). Response: 200 to 10,000 Hz. Impedance, 8 ohms. Power handling capacity, 20 watts program. 24½" l., 6-5/8" w., 4-7/8" d. Two Model 460 brackets supplied. Net $57.00



M253: Multicellular horn (less driver) weatherproof for indoor or outdoor use. Dispersion essentially uniform (60° vertical, 120° horizontal). Two rows of five cells are jig assembled and covered with special black damping compound. Accepts any E-V driver with 1-3/8"—18 thread. Low frequency cutoff, 300 Hz. Mounting hardware supplied. Driver-throat built in. 17½" h., 30½" w., 36½" d. Steel construction. Net $189.00

M253
MULTICELL

Musicaster IA: Provides high fidelity performance in a compact, portable, completely weatherproof system. Now with 12" Radax dual-cone, wide-range driver in extremely rugged, one-piece, compression-molded, glass-filled polyester housing. Bass reflex design. Fungus proofed. Acoustifoam between speaker and grille repels water without affecting sound dispersion. Tough, scruff-resistant olive finish. Response: 80 - 10,000 Hz. Nominal impedance 8 ohms. Dispersion: 120°. Power handling capacity, 60 watts peak. Sound pressure level, 111 db at 4'. Size: 21½" h., 21½" w., 8½" d. Net $69.90



MUSICASTER IA

Musicaster IIA: Same as Musicaster IA with addition of vhf tweeter for extended high-frequency response and wider, more uniform dispersion above 5000 Hz. Smooth response from 80 to 16,000 Hz. Net $88.50

*U.S. Patent No. 3,125,181

Paging Speakers

PA30AT-7: 30 watt projector with integral 70.7 V line transformer. Line power taps at 30, 15, 8, 4, and 2 watts. Rugged Implex horn. Smooth response for voice or music: 250 to 14,000 Hz. Universal swivel bracket. Dispersion: 120° x 90°. EIA sensitivity rating: 60 db. Sound pressure level: 127 db. 11½" h., 6½" w., 9¾" d. Net $30.00

PA30AT-2: Same but with 25-volt transformer. Net .. $30.00

PA30A: Same as PA30AT but no line transformer. Nominal impedance: 8 ohms. 11" h., 6½" w., 8½" d. Net $22.80

PA30A-45: 45 ohm for intercom systems. Net $24.00

PA30RT-7: 30 W reentrant projector with round spun-aluminum bell. 70.7 V transformer, power taps at 30, 15, 8, 4, and 2 watts. Response: 250 to 14,000 Hz. Impedance: 8 ohms. Dispersion: 105°. EIA sensitivity rating: 60 db. Sound pressure level: 127 db. 12-1/8" h., 10¼" d., diameter, 10". Net $30.60

PA30RT-2: Same except 25 volt transformer. Net ... $30.60

PA30R: Same as PA30RT but no line transformer. Nominal impedance 8 ohms. Horn diameter 10", 9¾" deep. Net $24.00

PA30R-45: Same but with 45 ohm voice coil. Net ... $25.20

PA7: Reentrant projector constructed completely of Implex—virtually indestructible. Diaphragm design eliminates loading problems, provides clean reproduction. Handles 7½ watts over range of 400 to 13,000 Hz. 120° dispersion. Bracket allows horn to be positioned at any angle. 6¾" diameter, 6" deep. Net $18.75

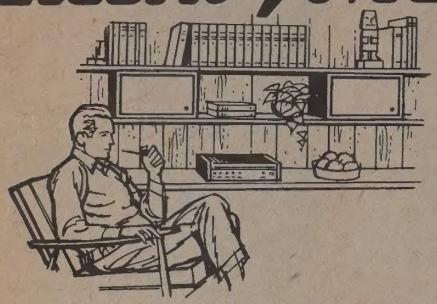
PA7-45: 45 ohm voice coil Net ... $19.50

844A: Smooth response with better lows to provide natural paging without feedback. Handles 30 watts. Rugged die-cast horn, field replaceable voice coil. Frequency response: 250 to 13,000 Hz. Impedance: 8 ohms, Dispersion: 90° EIA sensitivity rating: 54 db. Sound pressure level: 123 db. 9-7/8" diameter, 7-7/8" deep. Net .$24.00

847A: CDP® wide angle speaker provides high articulation over uniform 120° x 90° area. Uses TWO diffraction horns. Power handling capacity: 25 watts. Frequency response: 250 to 10,000 Hz. Sound pressure level: 114 db. Impedance: 8 ohms. Fiberglass Mesa Tan horn. 11¾" l.,7¾" w., 10¼" deep. Net $37.20

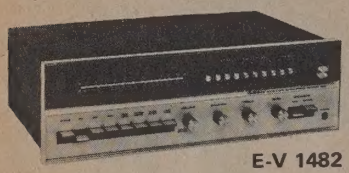
ELECTRO-VOICE, Inc. • *A Subsidiary of Gulton Industries, Inc.*

Electro-Voice® HIGH FIDELITY PRODUCTS



Since the earliest days of the high fidelity industry, Electro-Voice has been in the forefront of the field. The company's intensive engineering experience in all phases of electro-acoustics and solid-state research, coupled with excellent manufacturing facilities, produce the finest componentry at surprisingly modest cost. E-V high fidelity components will bring the thrilling, "you-are-there" performance of the concert hall into your living room. Whether your system is for a small dormitory room, modest family room, extra-large living room, even the office – E-V has the models for your taste and budget. Write for our complete high fidelity brochure to: Electro-Voice.

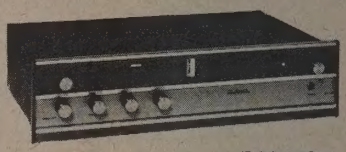
ELECTRONICS



E-V 1482

E-V 1282

Electro-Voice hi-fi electronic components are built with performance as the foremost consideration. In any price range, operating specifications are never sacrificed for gimmickry or appearance-only add ons. Extra control functions and increasingly fine performance characteristics are available in higher priced E-V equipment. A complete line of AM or AM/Stereo FM receivers, tuners, and amplifiers is available. From the top-of-the-line E-V 1482 Receiver (250 watts, dual-varactor tuning, FET transistors, nine station preset buttons, virtually distortionless) at $444.00 to the 80-watt stereo amplifier, E-V 1244, at $147.00, all E-V electronics are made to the same rigid quality standards and protected by a meaningful warranty.



E-V 1281

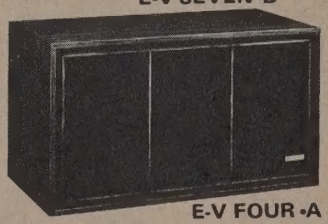
E-V 1244

SPEAKER SYSTEMS

E-V EIGHT •A

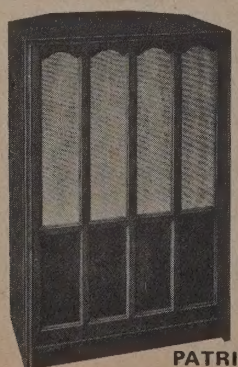
E-V SEVEN •B

E-V FIVE •C



E-V FOUR •A

E-V hi-fi speaker systems are available from the miniscule E-V EIGHT •A two-way, 6" acoustic suspension model, only 8¼" high by 15¼" wide at $49.95. to the superb and incomparable Patrician 800, incorporating four different speakers and including the exclusive E-V 30" woofer, long acknowledged the absolute standard of the industry, at $1,195.00. Every size and price category between these is represented, including bookshelf and console styles, and each is a value and performance leader in its price class.



PATRICIAN 800

ARIES Traditional

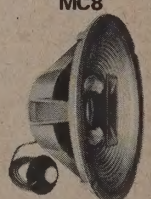
COMPONENT SPEAKERS

SP8

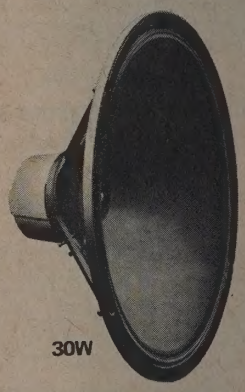
SP12B

15TRX

MC8



LT12



30W

Electro-Voice separate speakers allow the ultimate in versatility in a hi-fi system. Units are easily installed in walls, ceilings, your favorite furniture piece, or a custom hi-fi cabinet. Every room in your home can be wired for top-quality sound. A system can be built up over a period of time, in line with the budget, by adding midrange and high-frequency units to a basic speaker at any time. E-V speakers are available from 8" to 30" in size and in single, coaxial, and three-way types.

Net

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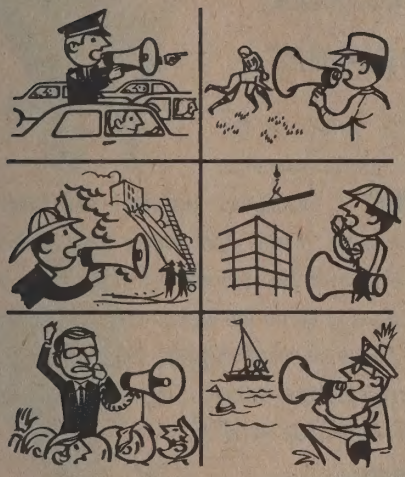
Electro-Voice®

Transistorized POWER MEGAPHONES



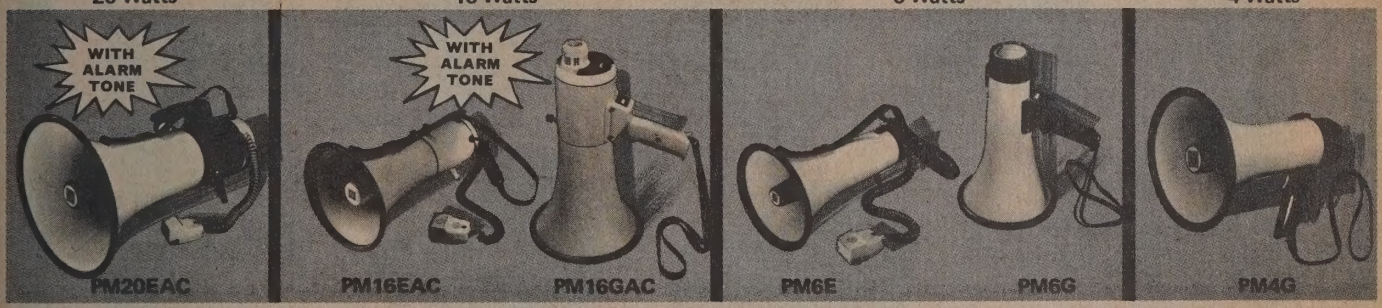
New Electro-Voice Power Megaphones are extremely rugged, waterproof, weatherproof, and salt spray proof for the most severe uses: safety services, construction, sports, tour guides, marine, all emergency applications, etc.

All units include low-distortion, all-transistor amplifiers for high intelligibility and long term, trouble free operation. Two styles are available: pistol-grip trigger with built-in microphone for instant readiness in any situation; and separate microphone with coil-cord for semi-permanent installation or for resting heavier models. Pistol grip models are well balanced for ease of holding and have volume control easily reached by thumb. Most models have noise cancelling microphone which reduces unwanted background sound and feedback for higher operating volume. All models have convenient carrying strap.

16 and 20 watt models incorporate an alarm tone signal, push-button operated, useful for attracting attention, as a distress signal, or boat fog horn. These models carry a bright International Yellow – recognized emergency color. These larger units also feature plug-in recharging (when using nickel-cadmium batteries), with no disassembly, for semi-permanent life.

All E-V Power Megaphones are protected from defect by warranty. Parts will be repaired or replaced within one year, and there is no charge for labor within 90 days of purchase. (Transportation prepaid to E-V or warranty station.) Parts and service are always available quickly.

20 Watts | 16 Watts | 6 Watts | 4 Watts



SPECIFICATIONS

	PM20EAC	PM16EAC	PM16GAC	PM6E	PM6G	PM4G
Type:	Ext. Mic.	Ext. Mic.	Pistol grip	Ext. Mic.	Pistol grip	Pistol grip
Output-peak:	20 watts	16 watts	16 watts	6 watts	6 watts	4 watts
Intelligibility Range:	1 mile	¾ mile	¾ mile	2000 ft.	2000 ft.	1200 ft.
Batteries*:	10 C size	8 C size	8 C size	6 C size	6 C size	3 D size
Color:	Int. Yellow & Cream	Int. Yellow	Int. Yellow	Red & Cream	Red & Cream	Red & Cream
Size:	11¾" dia. 18" long	8¼" dia. 13-5/8" L.	8¼" dia. 14½" long	7½" dia. 13" long	7-5/8" dia. 12¾" long	8¾" dia. 12-1/16" L.
Net Weight (Less Batteries)	6 lb.,10 oz.	4 lbs.	4 lbs.	3 lbs.,5 oz.	3 lbs.,5 oz.	2 lbs.,14 oz.
Special Features:	Alarm tone Rechargable Noise cancelling mic.	Alarm tone Rechargable Noise cancelling mic.	Alarm tone Rechargable Noise cancelling mic.	Noise cancelling Microphone		
Net Price:	$97.20	$78.90	$70.20	$54.00	$47.40	$34.20

*Not furnished

ELECTRO-VOICE, INC.

A Subsidiary of Gulton Industries, Inc.

POWERHOUSE TRUMPET SPEAKERS

proven sound around the world®

Take it from Mickey Mantle†

"FEDTRO...the proven sound of champions"

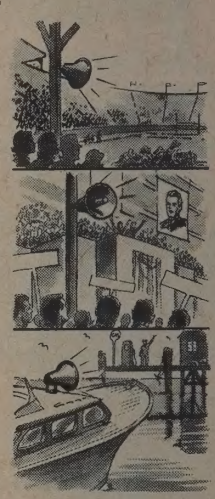
"proven sound around the world".® from the blistering humid depths of Equatorial Africa...to the frigid waters of the Arctic Seas, Fedtro Powerhouse Speakers are ruggedly constructed to guarantee optimum performance, even under the most brutal of climatic extremes. Shockproof, rustproof, and totally weatherized, the entire Fedtro series is ideally suited for the most trying applications of Marine and Mobile use...Public Address, Paging and Talkback Systems. The diaphragm is constructed with a special resinification process, which permits it to withstand higher than 30% power input overloads. Engineered and designed to afford the highest degree of clarity and intelligibility over the complete frequency spectrum, from the compact S-5RD to the mammoth S-16RD, there's a perfect Powerhouse available for your specific needs. Greater efficiency...increased power output...higher intelligibility ...and almost indestructable durability...all add up to why they are **"proven sound around the world".®**

MODEL S-5RD

MODEL S-6RD

MODEL S-8RD

MODEL S-8BX



Ruggedly Constructed for Outdoor, Indoor, Marine and Mobile Use

■ WATERPROOF ■ SHOCKPROOF
■ RUSTPROOF ■ CORROSIONPROOF

DYNAMIC 3-COLOR CUSTOM PACKAGING

MODEL S-12RD

MODEL S-16RD

FEDTRO POWERHOUSE TRUMPET SPEAKER SPECIFICATION CHART

Model No.	Power Rating		Voice Coil Impedance	Frequency Range	Bell Diameter (Horn Opening)	Overall Length	Net Weight
	Program	Peak					
S-5RD	8 watts	12 watts	8 ohms	200 to 13,000 cps.	5 inches	5 inches	approx. 1 lb.
S-6RD	10 watts	15 watts	8 ohms	200 to 13,000 cps.	6 inches	6½ inches	approx. 2 lbs.
S-8RD	15 watts	25 watts	8 ohms	200 to 13,000 cps.	8 inches	8½ inches	approx. 2½ lbs.
S-8BX	15 watts	25 watts	8 ohms	200 to 13,000 cps.	8 inches x 5 inches	8 inches	approx. 2.4 lbs.
S-12RD	30 watts	65 watts	8 ohms	150 to 13,000 cps.	12 inches	11¾ inches	approx. 4.2 lbs.
S-16RD	40 watts	75 watts	8 ohms	150 to 13,000 cps.	16 inches	13 inches	approx. 5.3 lbs.

GET MORE SOUND FOR YOUR DOLLAR WITH FEDTRO POWERHOUSE SPEAKERS!

SUPERIOR QUALITY...

. . . at the lowest prices in the industry

proven sound around the world®

POWERHOUSE OFFICIAL MEGAPHONE FOR THE MEXICAN 1968 OLYMPIC GAMES

THE OFFICIAL MEGAPHONE OF THE N.Y. WORLD'S FAIR

FEDTRO

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†MICKEY MANTLE ENDORSES ALL FEDTRO AUDIO PRODUCTS

FOR FEDTRO POWERHOUSE TRANSISTORIZED MEGAPHONES, SEE PAGES 48 & 49

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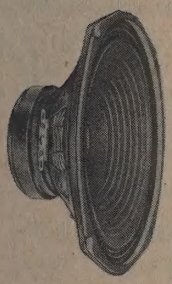
OAKTRON REPLACEMENT SPEAKERS

• ALUMINUM VOICE COILS • ALNICO 5 MAGNETS • SPECIALLY TREATED BLUE CONES • BLUE LUMINESCENT BAKED ENAMEL FINISH

4" SQUARE CUP HOUSING

5" PIN CUSHION



8" CERAMIC MAGNET

5" x 8" "FOOTBALL SHAPE"

6" x 9" FLAT CUP HOUSING

Size and Shape	Part No.	Magnet Weight Ounces	Dia. Inches	Voice Coil Impedance (Ohms)	Power in Watts	Max. Depth in Inches	Suggested Dealer Prices
2¼" Round	23A8C	.53 cup	5/16	8	1	1 1/16	$1.78
2¾" Round	28A8C	.53 cup	5/16	8	2	1	1.78
3" Square	3A3C	.53 cup	5/16	3.2	2	1 3/16	1.62
3" Square	3C3	1.00	5/16	3.2	3	1 1/16	1.85
3½" Square	35A3C	.53 cup	5/16	3.2	2	1 3/8	1.62
3½" Square	35C3C	1.00	3/4	3.2	4	1 1/16	1.85
4" Square	4A3C	.53 cup	5/16	3.2	2	1 1/16	1.49
4" Square	4B3	.68	5/16	3.2	2	1 7/8	1.67
4" Square	4C3C	1.00 cup	3/4	3.2	4	1 11/16	1.85
4" Square	4D3	1.47	5/16	3.2	3	2 3/16	2.07
4" Square	4C8C	1.00 cup	3/4	8	4	1 11/16	1.85
5" Pin Cushion	5A3C	.53 cup	5/16	3.2	2	1 11/16	1.66
5" Pin Cushion	5B3	.68	5/16	3.2	2	2	1.85
5" Pin Cushion	5C3C	1.00 cup	3/4	3.2	4	1 13/16	1.96
5" Pin Cushion	5D3	1.47	5/16	3.2	4	2 5/16	2.16
5" Pin Cushion	5D8S	1.47	5/16	8	5	2 3/16	2.32
5" Round	R5A3C	.53 cup	5/16	3.2	2	1 3/4	1.67
5" Round	R5B3	.68	5/16	3.2	2	2 1/16	1.85
•5" Round	R5C3C	1.00	3/4	3.2	4	1 7/8	1.96
5" Round	R5D3	1.47	5/16	3.2	4	2 3/8	2.16
5" Round	R5EU8	*3.00	3/4	8	5	1 3/4	2.79
5¼" Pin Cushion	53B3	.68	5/16	3.2	2	2 1/8	1.91
5¼" Pin Cushion	53C3C	1.00 cup	3/4		4	1 13/16	2.05
•5¼" Pin Cushion	53E8	2.18 cup	1	8	6	2 1/8	2.93
•5¼" Pin Cushion	53GU8	*6.00	1	8	8	2 1/8	4.23
‡5¼" Round	†RL53E8C	2.18 cup	1	8	6	2 1/4	3.47
‡5¼" Round	†RL53GU8	*6.00	1	8	8	2 1/4	4.76
6" Pin Cushion	6B3	.68	5/16		3	2 3/8	2.07
6" Pin Cushion	6C3C	1.00 cup	3/4	3.2	5	2 5/16	2.25
6" Pin Cushion	6D3	1.47	5/16	3.2	5	2 3/4	2.39
6" Pin Cushion	6E3C	2.18 cup	1	3.2	7	2 3/8	2.75
6" Pin Cushion	6E8C	2.18 cup	1	8	7	2 3/8	2.75
8" Pin Cushion	8C3C	1.00 cup	3/4	3.2	5	2 13/16	3.04
8" Pin Cushion	8E3C	2.18 cup	1	3.2	6	2 13/16	3.65
8" Pin Cushion	8F3	3.16	3/4	3.2	8	3 5/16	4.06
8" Pin Cushion	8H3	6.80	1	3.2	12	4 1/16	5.70
8" Pin Cushion	8C8C	1.00 cup	3/4	8	5	2 13/16	3.04
8" Pin Cushion	8E8	2.15	3/4	8	6	3 1/16	3.74
8" Pin Cushion	8E8C	2.18 cup	1	8	7	2 13/16	3.65
8" Round Flat	8E8CF	2.18 cup	1	8	7	2	3.65
8" Pin Cushion	8EU8	*3.00	3/4	8	6	2 5/8	3.72
8" Pin Cushion	8F8	3.16	3/4	8	8	3 5/16	4.06
8" Pin Cushion	8G8	4.64	1	8	10	4	5.36
8" Pin Cushion	8GU8	*6.00	1	8	10	2 7/8	5.17
8" Pin Cushion	‡8GU8D	*6.00	1	8	10	2 7/8	6.08
8" Pin Cushion	8H8	6.80	1	8	12	4	5.70
8" Pin Cushion	8HU8	*10.00	1	8	12	3	5.63
8" Round	8K8	10.10	1¼	8	20	4 3/16	8.40
10" Round	10F3	10.10	3/4	3.2	8	4 3/16	5.30
10" Round	10F8	3.16	3/4	8	8	4 3/16	5.30
10" Round	10H8	6.80	1	8	12	4 13/16	7.42
12" Round	12F3	3.16	3/4	3.2	8	4 7/8	5.85
12" Round	12H3	6.80	1	3.2	12	5 1/2	7.72
12" Round	12F8	3.16	3/4	8	8	4 7/8	5.85
12" Round	12H8	6.80	1	8	12	5 1/2	7.72
12" Round	12HU8	*10.00	1	8	12	4 1/2	7.65
12" Round	12K8	10.10	1¼	8	20	5 13/16	10.30
15" Round	15K8	10.10	1¼	8	20	7 1/4	15.34
2" x 6"	26A3C	.53 cup	5/16	3.2	2	1 11/16	1.85
3" x 5"	135A3C	.53 cup	5/16	3.2	2	1 5/8	1.75
3" x 5"	135C3C	1.00 cup	3/4	3.2	4	1 11/16	1.98
•3" x 5"	135C8C	1.00	3/4	8	4	1 11/16	2.14
•3" x 5"	135EU8	*3.00	3/4	8	6	1 11/16	2.84
2½" x 10"	210D3	1.47	5/16	3.2	5	2 3/8	3.65
4" x 6"	46A3C	.53 cup	5/16	3.2	2	1 1/2	1.87
4" x 6"	46B3	.68	5/16	3.2	3	1 7/8	2.02
4" x 6"	46C3C	1.00 cup	3/4	3.2	5	1 5/16	2.14
•4" x 6"	46C8C	1.00	3/4	8	5	1 5/16	2.14
4" x 8"	48E3C	2.18 cup	1	3.2	5	2 1/8	3.18
•4" x 8"	48E8C	2.18 cup	1	8	5	2 1/8	3.18
4" x 10"	410E3C	2.18 cup	1	3.2	6	3	3.36
4" x 10"	410E8C	2.18 cup	1	8	6	3	3.36
5" x 7"	57A3C	.53 cup	5/16	3.2	2	2 1/8	2.12
5" x 7"	57C3C	1.00 cup	3/4	3.2	5	2 5/16	2.50
5" x 7"	57D3	1.47	5/16	3.2	5	2 3/4	2.77
5" x 7"	57E3C	2.18 cup	1	3.2	7	2 3/8	3.00
5" x 7" Flat	57E3CF	2.18 cup	1	3.2	7	2 1/16	3.00
5" x 7"	57F3X	3.16	1	3.2	8	3 1/16	3.85
5" x 7"	57C8C	1.00 cup	3/4	8	5	2 5/16	2.50
•5" x 7"	57E8C	2.18	1	8	7	2 3/8	3.00
5" x 8"	†58C8C	1.00 cup	3/4	8	5	2 5/16	3.04
6" x 9"	69A3C	.53 cup	5/16	3.2	2	2 1/16	2.36
6" x 9"	69C3C	1.00 cup	3/4	3.2	5	2 13/16	2.68
6" x 9"	69D3	1.47	5/16	3.2	5	3 3/8	2.99
6" x 9"	69E3C	2.18 cup	1	3.2	7	2 7/8	3.31
6" x 9" Flat	69E3CF	2.18 cup	1	3.2	7	2 1/4	3.31
6" x 9"	69H3	6.80	1	3.2	10	4 1/4	5.58
6" x 9"	69C8C	1.00 cup	3/4	8	5	2 13/16	2.68
6" x 9"	69E8C	2.18 cup	1	8	7	2 7/8	3.31
6" x 10"	†F610E8C	2.18 cup	1	8	7	3 1/4	4.23

* Ceramic Magnet—All others Alnico 5. † Has two mounting holes—Crinoline dust screen, "Football Shape."
• Indicates New Item ‡ Use with SG53A and SG53C snap-on grills.

6" x 9" MULTI-IMPEDANCE

MULTI-IMPEDANCE SPEAKERS 10-20-40 OHM

Oaktron's new "three in one" multi-impedance series

- Specially developed heavy voice coil winding for maximum power handling.
- Dual solderless terminal strip arrangement with jumpers for simplified hook up.
- Complete wiring diagram accompanies each speaker.

6" x Pin Cushion	6EMC	2.18 cup	1	10-20-40	6	2 1/4	$3.24
4" x 6"	46CMC	1.00 cup	3/4	10-20-40	5	1 11/16	2.74
4" x 8"	48EMC	2.18 cup	1	10-20-40	5	2 1/16	3.73
4" x 10"	410EMC	2.18 cup	1	10-20-40	6	3	3.89
5" x 7"	57EMCF	2.18 cup	1	10-20-40	7	2 1/16	3.73
•5" x 7"	57GUMW	*6.00 cu	1	10-20-40	8	2 3/8"	5.62
6" x 9" Flat	69EMCF	2.18 cup	1	10-20-40	7	2 1/4	3.94
6" x 9" Free Edge Cone	FE69UMW	*10.00 oz.	1	10-20-40	10	3 1/16	7.49

4" WEATHERPROOF

NOTE—Transformer Mounting Boss on all 4", 5" Round, 8" and 12" Speakers.

EIA WARRANTY APPLIES TO ALL OAKTRON SPEAKERS.

WEATHERPROOF SPEAKERS

Specially Impregnated Cones, Gaskets and Dust Caps

3½" Square	35D8M	1.47	5/16	8	3	2	$2.47
4" Square	4A3M	.53 cup	5/16	3.2	2	1 5/16	1.87
4" Square	4D8M	1.47	5/16	8	3	2 3/16	2.43
5" Round	R5D8M	1.47	5/16	8	3	2 3/8	2.50
8" Pin Cushion	8F8M	3.16	3/4	8	8	3 5/16	4.45
8" Pin Cushion	8F45M	3.16	3/4	45	8	3 5/16	4.63
•4" x 8"	48GU8M	*6.00	1	8	9	2 1/16	5.92
6" x 9"	69H8M	6.80	1	8	12	4 1/4	6.44

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STEREO SPEAKER KITS

Easy to install—Complete instructions, wire aand hardware come with each kit.

Part No.	Kit Size	Speaker	Grill Finish	Sugg. Dealer Price
VS35CA	3″ x 5″	135C8C	Aluminum Paint	$3.85
VS35CC	3″ x 5″	135C8C	Chrome Plated	4.05
VS35EA	3″ x 5″	135EU8	Aluminum Paint	4.52
VS35EC	3″ x 5″	135EU8	Chrome Plated	4.74
VS53EA	5¼″ Round	RL53E8C	Aluminum Paint	5.92
VS53EC	5¼″ Round	RL53E8C	Chrome Plated	6.27
VS53GA	5¼″ Round	RL53GU8	Aluminum Paint	7.17
VS53GC	5¼″ Round	RL53GU8	Chrome Plated	7.66

NOTE: Each Kit contains one speaker, one grill, mounting hardware and instruction sheet. Use two kits for stereo. Aluminum painted grills may be repainted to match any decor.

ACCESSORIES/SPEAKERS

Part No.	Size	Magnet Weight Ounces	VOICE COIL Size	VOICE COIL Imped. Ohms	Over-All Depth	Power Watts	Sugg. Dealer Price
V135C8C	3″ x 5″	1.00	¾″	8	1 11/16	4	$2.33
V135EU8	3″ x 5″	*3.00	¾″	8	1 11/16	6	3.03
5D8S	5″ Pincushion	1.47	9/16″	8	2¾″	5	2.50
R5EU8	5″ Round	*3.00	¾″	8	1¾″	6	2.97
53E8C	5¼″ Pincushion	2.18 Cup	1″	8	2⅜″	6	3.15
53GU8	5¼″ Pincushion	*6.00	1″	8	2⅛″	8	4.45

* Ceramic Magnet — All others Alnico 5.

ACCESSORIES/GRILLS

Part No.	Size	Finish	Sugg. Dealer Price
VSG35A	3″ x 5″	Aluminum Paint	$1.06
VSG35C	3″ x 5″	Chrome Plated	1.24
VSG53A	5¼″	Aluminum Paint	1.88
VSG53C	5¼″	Chrome Plated	2.25

Grills can only be used with RL prefix speakers.

TWIN CONE SPEAKERS

Matched dual cones for true high fidelity sound reproduction.

6″ x 9″ TWIN CONE

12″ ROUND TWIN CONE

Size and Shape	Part Number	Magnet Weight Ounces	Dia. Inches	VOICE COIL Imped-ance (Ohms)	Power in Watts	Max. Depth in Inches	Sugg. Dealer Price
8″ Pin Cushion	8E8WC	2.18 cup	1	8	6	2 1/16	$4.07
8″ Pin Cushion	8F8W	3.16	¾	8	8	3 1/16	4.43
8″ Pin Cushion	8H8W	6.80	1	8	12	4	6.16
8″ Pin Cushion	8HU8W	*10.00	1	8	12	3	6.03
12″ Round	12H8W	6.80	1	8	12	5½	8.21
• 5″ x 7″	57GU8W	*6.00	1	8	8	2⅜	5.15
6″ x 9″	69E8WC	2.18 cup	1	8	6	2⅞	3.69
6″ x 9″	68HU8W	*10.00	1	8	10	3 1/16	5.92

* Ceramic Magnet — all others Alnico 5

INTERCOM SPEAKERS

Size and Shape	Part No.	Magnet Weight Ounces	Dia. Inches	VOICE COIL Imped-ance (Ohms)	Power in Watts	Max. Depth in Inches	Sugg. Dealer Price
3½″ Square	35A45C	.53 cup	5/16	45	2	1⅜	$1.82
4″ Square	4A45C	.53 cup	5/16	45	2	1 1/16	1.67
4″ Square	4D45	1.47	5/16	45	3	2 1/16	2.27
5″ Pin Cushion	5D45	1.47	5/16	45	3	2 1/16	2.36
8″ Pin Cushion	8F45	3.16	¾	45	8	3 1/16	4.27

TWEETER SPEAKERS

These speakers are true compression type, using totally enclosed baskets and molded curvilinear cones for maximum high frequency radiation, 8 ohm aluminum voice coils and Alnico 5 magnets—Blue luminescent enamel finish.

Size and Shape	Part Number	Imped-ance	Magnet Weight	V.C. Dia.	Power Watts	Frequency Response	Max. Depth in Inches	Sugg. Dealer Price
3″ Square	3C8T		1.00 oz.	9/16″	4	3000-16,000	1 1/16	$2.07
3½″ Square	35D8T		1.47 oz.	9/16″	5	3000-16,000	2	2.36
4″ Square	4D8T	8 Ohms	1.47 oz.	9/16″	5	3000-15,000	2⅜	2.36
5″ Round	5D8T		1.47 oz.	9/16″	5	2000-15,000	2⅜	2.47
4″ x 6″	46D8T		1.47 oz.	9/16″	6	2000-17,000	2⅜	2.75

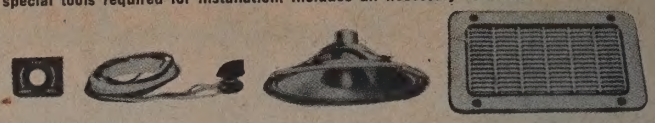
SYSTEMS — HIGH FIDELITY

Matched Trio for Multi-Speaker Application

Size in Inches	Part Number	Imped-ance	Magnet Weight	V.C. Dia.	Power Watts	Frequency Response	Max. Depth in Inches	Sugg. Dealer Price
12							5 5/8	
6x9			12″ Woofer 6.80 oz.	1″				
4x6	ST-124	8 Ohms	6″x9″ Mid Range 3.16 oz.	¾″	12	35-15,000	3 1/16	$17.91
Harness with Crossover			4″x6″ Tweeter 1.47 oz.	9/16″			2⅜	

REAR SEAT SPEAKER KITS & ACCESSORIES

Featuring Oaktron's High Energy cup housing speakers. Solderless hookup — No special tools required for installation. Includes all necessary hardware.



Model	Speaker	Grille	Control	Speaker	Max. Depth in Inches	Sugg. Dealer Price
RK57	5 x 7	Gray	3 Pos. Switch	57C3C	2⅜	$5.22
RK57C	5 x 7	Chrome	3 Pos. Switch	57C3C	2⅜	5.51
RK57F	5 x 7	Gray	Fader	57C3C	2⅜	5.44
RK57CF	5 x 7	Chrome	Fader	57C3C	2⅜	5.72
AK69	6 x 9	Gray	3 Pos. Switch	69A3C	2 1/16	5.08
AK69C	6 x 9	Chrome	3 Pos. Switch	69A3C	2 1/16	5.36
AK69F	6 x 9	Gray	Fader	69A3C	2 1/16	5.29
AK69CF	6 x 9	Chrome	Fader	69A3C	2 1/16	5.58
RK69	6 x 9	Gray	3 Pos. Switch	69C3C	2 3/16	5.38
RK69C	6 x 9	Chrome	3 Pos. Switch	69C3C	2 3/16	5.69
RK69F	6 x 9	Gray	Fader	69C3C	2 3/16	5.62
RK69CF	6 x 9	Chrome	Fader	69C3C	2 3/16	5.90
WK69	6 x 9	Gray	3 Pos. Switch	69E8WC	2⅞	6.41
WK69C	6 x 9 Twin Cone	Chrome	3 Pos. Switch	69E8WC	2⅞	6.70
WK69F	6 x 9 Twin Cone	Gray	Fader	69E8WC	2⅞	6.62
WK69CF	6 x 9 Twin Cone	Chrome	Fader	69E8WC	2⅞	6.91
MK69	6 x 9 Multi Imped-ance	Gray	3 Pos. Switch	69EMCF	2¼	6.66
MK69C	6 x 9 Multi Imped-ance	Chrome	3 Pos. Switch	69EMCF	2¼	6.95
MK69F	6 x 9 Multi Imped-ance	Gray	Fader	69EMCF	2¼	6.88
MK69CF	6 x 9 Multi Imped-ance	Chrome	Fader	69EMCF	2¼	7.16

ACCESSORIES:

Part No.	Description	
FA-1	Fader Control with Presoldered Wire and Hardware	$1.57
SW-1	Switch Control with Presoldered Wire and Hardware	1.35
CH57	5 x 7 Chrome Grill with Hardware	1.39
CH69	6 x 9 Chrome Grill with Hardware	1.39
GY57	5 x 7 Gray Grill with Hardware	1.10
GY69	6 x 9 Gray Grill with Hardware	1.10

Grills listed above supplied individually visual packed.

HIGH FIDELITY SPEAKERS

ALL OAKTRON HI-FIDELITY SPEAKERS ARE ENCLOSED IN A PLASTIC COVERING AND INDIVIDUALLY BOXED TO INSURE MAXIMUM PROTECTION.

COAXIAL SPEAKERS

Jaktron's coaxial type speakers are superbly engineered to produce a flat response over a wide range of frequencies. These speakers are finished in a glossy royal blue luminescent enamel and feature a unique cross over network, solid basket compression type tweeters, specially treated aluminum voice coils and Alnico 5 magnets. These features combined with Oaktron's superior workmanship offer the finest in coaxial speakers.

12″ COAXIAL

Size in Inches	Part Number	Imped-ance	Magnet Weight	V.C. Dia.	Power Watts	Frequency Response	Max. Speaker Depth in Inches	Sugg. Dealer Price
8	CA-8	8 Ohms	8″ Woofer 3.16 oz. 3″ Tweeter .53 oz.	¾″ 9/16″	8	60-14,000	4½	$ 8.55
8	‡CA-8-HD	8 Ohms	8″ Woofer 6.80 oz. 3″ Tweeter .53 oz.	1″ 9/16″	10	50-14,000	4½	11.25
12	CA-12	8 Ohms	12″ Woofer 6.80 oz. 3″ Tweeter 1.00 oz.	1″ 9/16″	12	35-14,000	6 13/16	12.51
12	‡CA-12-HD	8 Ohms	12″ Woofer 10.10 oz. 3½″ Tweeter 1.00 oz.	1¼″ 9/16″	20	25-14,000	6 13/16	16.65
15	CA-15	8 Ohms	15″ Woofer 6.80 oz. 5″ Tweeter 1.00 oz.	1″ 9/16″	14	30-13,000	7 13/16	17.28
15	‡CA-15-HD	8 Ohms	15″ Woofer 10.10 oz. 5″ Tweeter 1.00 oz.	1¼″ ¾″	20	20-13,000	7 13/16	22.41
6x9	CA-69	8 Ohms	6x9″ Woofer 2.15 oz. 3″ Tweeter .53 oz.	¾″ 9/16″	6	70-14,000	3 1/16	7.65
6x9	CA-69-HD	8 Ohms	6x9″ Woofer 6.80 oz. 3″ Tweeter .53 oz.	1″ 9/16″	10	60-14,000	4 5/16	10.26

CLASSIC SERIES

Twin cone speakers:

- Perfectly matched dual cones
- Smooth Response
- Heavy magnets
- Large voice coils

6″ TWIN CONE

SAME GENERAL APPEARANCE AS COAXIAL SPEAKERS

Excellent woofer characteristics combined with a perfectly matched twin cone to complete a truly exceptional full range high fidelity speaker.

8″ TWIN CONE

Size in Inches	Part Number	Imped-ance	Magnet Weight	V.C. Dia.	Power Watts	Frequency Response	Max. Speaker Depth in Inches	Sugg. Dealer Price
6	‡FE6W Free Edge Cone	8 Ohms	*6.00 oz.	1″	12	40-15,000	3 5/16	$ 8.46
8	‡FE8KW Free Edge	8 Ohms	10.10 oz.	1¼″	20	30-14,000	4¾	12.51
8	‡FE-8W Twin Cone	8 Ohms	6.80 oz.	1″	12	40-16,000	4½	9.98
12	‡12K8W	8 Ohms	10.10 oz.	1¼″	20	25-13,000	6¾	14.85
15	‡15K8W	8 Ohms	10.10 oz.	1¼″	20	20-13,000	7 13/16	20.52
6x9	FE-69UW Twin Cone	8 Ohms	*10.00 oz.	1″	10	35-16,000	3 1/16	7.65

‡Chrome Finished Dust Cover. *Ceramic Magnet.

OAKTRON INDUSTRIES, INC.

Net

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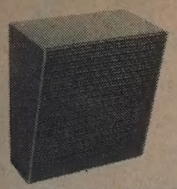
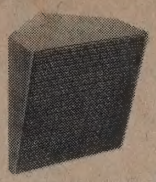
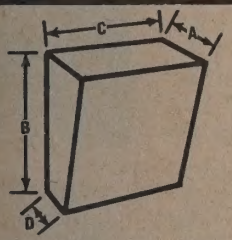
Oaktron Baffles are smartly designed to complement any decor. Rugged one half inch cabinet hardwood construction assures longer service even under the most severe conditions. Beautifully finished in a natural blonde or walnut these baffles represent the ultimate in appearance and sound reproduction. Speaker and baffle mounting hardware included.

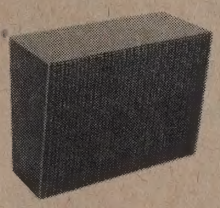


DELUXE WALL BAFFLE



DELUXE "KORNER" BAFFLE





CUSTOM WALL BAFFLE

DELUXE WALL BAFFLES

Speaker Size	Part No.	Furniture Finish	Material	DIMENSIONS A	B	C	D	Sugg. Dealer Price
4"&5"	WB4/5-B	Blonde	Cabinet Hardwood	4½"	6¼"	6½"	2½"	$3.92
4"&5"	WB4/5-W	Walnut	Cabinet Hardwood	4½"	6¼"	6½"	2½"	3.92
6"	WB6-B	Blonde	Cabinet Hardwood	4⅝"	8"	9⅜"	2⅝"	4.72
6"	WB6-W	Walnut	Cabinet Hardwood	4⅝"	8"	9⅜"	2⅝"	4.72
* 8"	WB8-B	Blonde	Cabinet Hardwood	6¼"	10⅝"	9½"	3½"	5.04
* 8"	WB8-W	Walnut	Cabinet Hardwood	6¼"	10⅝"	9½"	3½"	5.04
12"	WB12-B	Blonde	Cabinet Hardwood	9⅛"	14⅛"	13¾"	5⅜"	8.56
12"	WB12-W	Walnut	Cabinet Hardwood	9⅛"	14⅛"	13¾"	5⅜"	8.56

* Also available notched for use with B-8 baffle bracket. Add 15¢ per unit to baffle price. Specify notched when ordering.

NEW 'SQUARE' WALL BAFFLE

Speaker Size	Part No.	Furniture Finish	Material	DIMENSIONS A	B	C	D	Sugg. Dealer Price
8"	WBSB-W	Walnut	Hardwood	4⅛"	9⅜"	9⅜"	4⅛"	$4.40

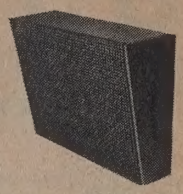
DELUXE "KORNER" BAFFLES

Speaker Size	Model	Furniture Finish	Material	DIMENSIONS A	B	C	D	E	F	Sugg. Dealer Price
8"	KB8-B	Blonde	Cabinet Hardwood	4"	10⅝"	9½"	1"	8¼"	5⅛"	$8.24
8"	KB8-W	Walnut	Cabinet Hardwood	4"	10⅝"	9½"	1"	8¼"	5⅛"	8.24
12"	KB12-B	Blonde	Cabinet Hardwood	5⅜"	14"	13½"	1¾"	11¾"	8⅛"	11.92
12"	KB12-W	Walnut	Cabinet Hardwood	5⅜"	14"	13½"	1¾"	11¾"	8⅛"	11.92

CUSTOM WALL BAFFLES

Speaker Size	Part No.	Furniture Finish	Material	DIMENSIONS A	B	C	D	Sugg. Dealer Price
‡ 8"	CWB8-B	Blonde	Cabinet Hardwood	6"	9⅝"	12"	4¼"	$6.96
‡ 8"	CWB8-W	Walnut	Cabinet Hardwood	6"	9⅝"	12"	4¼"	6.96

SLIMLINE WALL BAFFLES



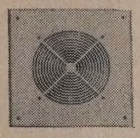
Speaker Size	Part No.	Furniture Finish	Material	DIMENSIONS A	B	C	D	Sugg. Dealer Price
‡ 8"	SWB8-B	Blonde	Cabinet Hardwood	4½"	9⅝"	12"	2⅞"	$6.16
‡ 8"	SWB8-W	Walnut	Cabinet Hardwood	4½"	9⅝"	12"	2⅞"	6.16

‡ Also available notched for use with B-8A baffle bracket. Add 15¢ per unit to baffle price. Specify notched when ordering.

REDUCER RINGS

Model	Speaker Size	Material	Sugg. Dealer Price
R12/8	Reduces 12" to 8"	Tempered Presdwood	$1.52
R12/10	Reduces 12" to 10"	Tempered Presdwood	1.52

CEILING BAFFLES



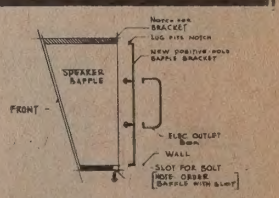
Oaktron's Ceiling Baffles possess qualities and design achieved only after years of engineering in this field. The extremely high efficiency and wide sound dispersion of these units result in superior acoustical sound reproduction. One piece construction eliminates vibration and rattle. Mount directly to the ceiling or to the convenient plaster ring. Available in satin aluminum and white baked enamel steel. Speaker mounting hardware included.

Speaker Size	Model	Finish	Shape	Material	Dimension A	Sugg. Dealer Price
8"	CR8-S	Satin	Round	Aluminum	12¾"	$3.06
8"	CR8-W	White	Round	Steel	12¾"	2.88
8"	CS8-S	Satin	Square	Aluminum	12⅛"	3.06
8"	CS8-W	White	Square	Steel	12⅛"	2.88

PLASTER RING

8"	PR8	Grey	—	Steel	—	$1.98

NEW, POSITIVE HOLD, BAFFLE BRACKET



Used To Mount Notched Deluxe Wall Baffle to Standard Electrical Outlet Box

Part No.	Material	Finish	Sugg. Dealer Price
B-8	3/32" Steel	Aluminum Painted	$ .57
†B-8A	3/32" Steel	Blue Painted	$ .57

† Used To Mount Notched Custom And Notched Slimline Wall Baffles To Standard Electrical Outlet Box.

Note — Baffles can be supplied with speaker and transformer installed at a total cost of the units supplied plus 60¢ for installation.

OAKTRON INDUSTRIES, INC.

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QUAM *Quality Line* SPEAKERS

Fig. R

REPLACEMENT SPEAKERS

Voice coil impedance 3.2 ohms ±10%

Model No.	Size	Magnet Weight (ounces) and Type	Power Handling Watts	Depth (inches)	Shipping Weight (pounds)	Dealer Net
46A07*	4″ x 6″	.65 oz. Alnico V	3.5	1 5/16	3/4	$3.00
46A1*	4″ x 6″	.65 oz. Q/8	3.5	1 5/16	3/4	3.12
46A15	4″ x 6″	1.47 oz. Alnico V	3.5	2 1/4	1	3.45
48A2*	4″ x 8″	1.2 oz. Q/8	4.5	2 1/16	1	4.50
410A2	4″ x 10″	1.2 oz. Q/8	6	2 11/16	1	5.16
5A05*	5″	.55 oz. Alnico V	3	1 11/16	1/2	2.01
5A1*	5″	.65 oz. Q/8	3.5	2	1	2.88
5A15	5″	1.47 oz. Alnico V	3.5	2 5/16	1	3.18
52A1*	5 1/4″	.65 oz. Q/8	4	1 7/8	1	3.06
52C10	5 1/4″	10.0 oz. Ceramic	10	2 1/4	2 1/8	6.15
57A1*	5″ x 7″	.65 oz. Q/8	5	2 3/8	1	3.21
57A15	5″ x 7″	1.47 oz. Alnico V	5	2 11/16	1	3.84
57A21	5″ x 7″	2.15 oz. Alnico V	5	2 61/64	1 1/4	4.26
6A1	6 1/2″	1.0 oz. Alnico V	5	2 5/8	1	3.36
6A15	6 1/2″	1.47 oz. Alnico V	5	2 5/8	1	3.63
6A31	6 1/2″	3.16 oz. Alnico V	6	3 11/64	1 3/4	4.77
69A1*	6″ x 9″	1.2 oz. Alnico V	6	2 3/4	1 1/4	3.45
69A2	6″ x 9″	1.2 oz. Q/8	8	2 3/4	1 1/4	4.29
69A3	6″ x 9″	3.2 oz. Alnico V	10	2 5/16	2	5.58
7A21	7″	1.4 oz. Alnico V	6	2 31/32	1	4.59
8A1*	8″	1.2 oz. Alnico V	6	2 11/16	1	4.02
8A21	8″	2.15 oz. Alnico V	7	3 13/32	1 1/2	4.65
8A31	8″	3.16 oz. Alnico V	9	3 21/32	2	5.49
10C5	10″	4.8 oz. Ceramic	9	3 17/32	2 1/4	7.47
12A31	12″	3.16 oz. Alnico V	10	4 19/32	3 3/4	7.59
12A6	12″	6.8 oz. Alnico V	14	5 1/4	4 1/2	9.96

Fig. A

Fig. B

MINIATURE SPEAKERS

Impedance in ohms, indicated by digit following "Z" in number. Model numbers without "Z" impedance is 3.2 ohms ±10%.

2A05	2″	.52 oz. Alnico V	.25	7/8	1/8	$3.18
23A05	2″ x 3″	.52 oz. Alnico V	.25	1 3/32	1/8	3.60
22A06Z8	2 1/4″	.45 oz. Alnico V	.1	1	1/4	3.00
22A06Z100	2 1/4″	.45 oz. Alnico V	.1	1	1/4	3.30
25A07	2 1/2″	.65 oz. Alnico V	1.5	1 1/4	1/4	2.28
25A07Z45	2 1/2″	.65 oz. Alnico V	1.5	1 1/4	1/4	2.70
27A06Z12	2 3/4″	.55 oz. Alnico V	.25	1 1/16	1/4	2.97

Fig. C

GENERAL PURPOSE SPEAKERS

Impedance in ohms, indicated by digit following "Z" in number. Model numbers without "Z" impedance is 3.2 ohms ±10%.

26A07*	2″ x 6″	.65 oz. Alnico V	2	1 19/32	1/2	$2.70
26A07Z8*	2″ x 6″	.65 oz. Alnico V	2	1 19/32	1/2	2.91
30A05*	3″	.55 oz. Alnico V	2	1 3/16	1/2	1.98
30A05Z8*	3″	.55 oz. Alnico V	2	1 3/16	1/4	2.16
30C25	3″	2.35 oz. Ceramic	2.5	1 3/16	3/4	3.63
3A05*	3 1/2″	.55 oz. Alnico V	2	1 9/32	1/4	1.98
3A05Z8*	3 1/2″	.55 oz. Alnico V	2	1 9/32	1/4	2.40
35A05*	3″ x 5″	.55 oz. Alnico V	2	1 1/2	1/2	2.40
35A05Z8*	3″ x 5″	.55 oz. Alnico V	2	1 1/2	1/2	2.82
4A05*	4″	.55 oz. Alnico V	2.5	1 1/2	1/4	1.74
4A1*	4″	.65 oz. Q/8	3	1 3/4	3/4	2.67
4A1Z8*	4″	.65 oz. Q/8	3	1 3/16	3/4	3.06
4A15	4″	1.47 oz. Alnico V	3	2 1/16	3/4	2.97
4C25	4″	2.35 oz. Ceramic	3	1 5/8	3/4	3.45
46A1Z10*	4″ x 6″	.65 oz. Q/8	3.5	1 3/4	1	3.69
46C3	4″ x 6″	3.0 oz. Ceramic	4	1 31/32	1	3.87
5A1Z8*	5″	.65 oz. Q/8	4	2 5/16	1/2	3.18
52A1Z8*	5 1/4″	.65 oz. Q/8	3.5	1 7/8	1	3.27
57C3	5″ x 7″	3.0 oz. Ceramic	5	2 13/32	1	4.50
69C5	6″ x 9″	4.8 oz. Ceramic	10	2 7/8	1 1/2	4.86

Fig. D

AUTOMOTIVE SPEAKERS

Model No.	Size	Magnet Weight (ounces) and Type	Power Handling (Watts)	Depth (inches)	Voice-Coil Impedance (Ohms)	Dealer Net
48A2Z20CT	4″ x 8″	1.2 oz. Q/8	4.5	2 1/16	20 CT	$5.19
410A2MT#	4″ x 10″	1.2 oz. Q/8	6	2 11/16	10-20-40	5.97
410A2Z10	4″ x 10″	1.2 oz. Q/8	6	2 11/16	8-10	5.94
5C3Z8	5″	3.0 oz. Ceramic	4.0	2 1/32	8-10	3.75
57A1Z8	5″ x 7″	.65 oz. Q/8	5	1 3/16	8-10	3.48
57A2MT#	5″ x 7″	1.2 oz. Q/8	5	2 5/16	10-20-40	4.11
58A15Z8	5″ x 8″	1.47 oz. Alnico V	5	2 3/4	8-10	4.47
6A1Z8	6″	.65 oz. Q/8	5	2 5/8	8-10	3.66
6A15MT#	6 1/2″	1.2 oz. Q/8	5	2 5/8	10-20-40	4.26
69A1S	6″ x 9″	1.2 oz. Alnico V	6	2 1/16	3.2	4.89
69A2MT#	6″ x 9″	1.2 oz. Q/8	8	2 15/16	10-20-40	5.31
69A2Z10	6″ x 9″	1.2 oz. Q/8	8	2 15/16	8-10	5.01
610A1Z8	6″ x 10″	1.2 oz. Alnico V	8	2 13/16	8-10	5.37

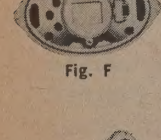
Fig. E

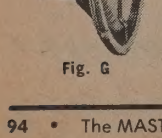
Fig. F

REAR SEAT AUTO SPEAKER KITS

These kits contain everything required for the installation of the speaker. They include a dash-mounting fader control, cable, flocked screen grill, baffle plate, all necessary hardware and complete installation instructions.

AS-1	6 1/2″	1.2 oz. Q/8	5	Shipping Wt. 2 lbs.	3.2	$5.70
AS1MT■	6 1/2″	1.2 oz. Q/8	5	Shipping Wt. 2 lbs.	10-20-40	6.90
AS-2‡	6″ x 9″	2.15 oz. Alnico V	9	Shipping Wt. 3 lbs.	3.2	8.01
AS-4	6″ x 9″	1.2 oz. Alnico V	6	Shipping Wt. 1 1/2 lbs.	8-10	4.35
AS5MT■	6″ x 9″	1.2 oz. Q/8	8	Shipping Wt. 3 lbs.	10-20-40	8.85

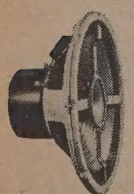
Fig. G

* Cup pot; very shallow construction. ‡ Illustrates magnet construction; see same size standard speaker or basket shape.
* Center Tapped. # Multi-Tap Speakers. ■ Multi-Tap Speaker. § Sponge rubber baffle plate gasket.

Net

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QUAM *Quality Line* SPEAKERS

Fig. H

These long-life speakers have the improved Humi-Gard Cone which utilizes a Mylar plastic film to provide maximum resistance to moisture and dirt and sand abrasion, yet does not interfere with response characteristics. Air gap surfaces cadmium plated and enameled. Quantity quotations on request.

All Quam speakers are available weather-proofed for an additional 70c list. When ordering weather-proofed speakers use part numbers appearing in this catalog and add suffix "OT" to part number. (Humi-Gard Cone available only on 3½", 4" 5", and 6½" speakers.)

OUTDOOR SPEAKERS

Voice coil impedance 3.2 ohms ±10%

Model No.	Size	Figure	Magnet Weight or Field	Power Handling (Watts)	Depth (inches)	Shipping Weight (pounds)	Dealer Net
3A07 OT*	3½"	A	.65 oz. Alnico V	2.5	1 33/64	½	$2.70
4A05 OT*	4"	I	.55 oz. Alnico V	2.5	1½	¼	2.52
5A05 OT*	5"	I	.55 oz. Alnico V	3	1 11/16	½	2.79
8A31PA OT	8"	C	3.16 oz. Alnico V	10	3 5/16	2	6.18

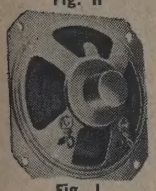
Fig. I

PUBLIC ADDRESS SPEAKERS

Voice coil impedance 8 ohms ±10%

8A1PA	8"	C	1.2 oz. Alnico V	6	2 1/16	1¼	$4.05
8A21PA	8"	C	2.15 oz. Alnico V	8	3 5/16	2	5.46
8A31PA	8"	C	3.16 oz. Alnico V	10	3 5/16	2	6.30
8A6PA	8"	B	6.8 oz. Alnico V	12	3 7/8	3¼	8.25
8C6PA	8"	O	6.0 oz. Ceramic	12	3	2½	6.75
8C10PA	8"	O	10.0 oz. Ceramic	12	3⅛	3	7.47
10C10PA	10"	L	10.0 oz. Ceramic	14	3 25/32	3¼	9.15
12A31PA	12"	B	3.16 oz. Alnico V	12	5	3¼	8.31
12A6PA	12"	B	6.8 oz. Alnico V	15	5¼	4	10.20
12C12PA	12"	O	12 oz. Ceramic	25	4½	4½	12.57

Fig. J

INTERCOM SPEAKERS

Voice coil impedance 45 ohms ±10%

25A07Z45	2½"	A	.65 oz. Alnico V	1.5	1¼	¼	$2.70
30A05Z45	3"	A	.55 oz. Alnico V	2	1 1/16	½	2.43
3A07Z45*	3½"	A	.65 oz. Alnico V	2.5	1 33/64	½	2.70
3A07Z450T§	3½"	A	.65 oz. Alnico V	2.5	1 33/64	½	3.00
4A1Z45*	4"	A	.65 oz. Q/8	3.0	1 5/16	¾	3.06
5A1Z45*	5"	C	.65 oz. Q/8	3.5	1 21/32	1	3.21
8A31Z45	8"	C	3.16 oz. Alnico V	10	3 5/16	2	6.21

Fig. K

COLOR TV SPEAKERS

Voice coil impedance 3.2 ohms ±10%

35A2C§	3" x 5"	R‡	1.2 oz. Alnico V	4	1 11/16	½	$3.15
4A2C§	4"	R‡	1.2 oz. Alnico V	4	1 5/8	½	3.00
46A2C§	4" x 6"	R‡	1.2 oz. Alnico V	4	1 11/16	1	3.33
52A2C§	5¼"	R‡	1.2 oz. Alnico V	5	1⅞	1	3.45

Fig. L

BACKGROUND MUSIC SPEAKERS

Voice coil impedance 8 ohms

Model No.	Size	Figure	Frequency Response Cps	Magnet Weight	Power Handling (Watts)	Depth (inches)	Shipping Weight (lbs.)	Dealer Net
8C5PAX#	8"	P	50-20000	4.8 oz.	10	2 25/32	2	$6.30
8C6PAX#•	8"	P	50-20000	6.0 oz.	12	3	2½	6.87
8C10PAX#•	8"	P	50-20000	10.0 oz.	15	3⅛	2¾	8.16
8C6PAS#	8"	Q	50-6000	6.0 oz.	10	2⅛	2½	6.87
12C6PAS#•	12"	Q	40-12000	6.0 oz.	15	3½	4	9.45
12C10PAX#•	12"	P	50-15000	10.0 oz.	15	4⅜	4¼	10.71

Fig. M

HIGH FIDELITY SPEAKERS

Model No.	Size	Figure	Speaker Type	Frequency Response Cps	Power Handling (Watts)	V.C. Impedance	Shipping Weight (lbs.)	Dealer Net
15C12CO#	15"	G	Coaxial, 2000 cps. Xover	25-18,000	25	8	8	$23.00
12C10CO	12"	G	Coaxial, 2000 cps. Xover	50-15,000	14	8	6½	21.75
8C6CO	8"	G	Coaxial, 2000 cps. Xover	50-15,000	10	8	2¾	14.40
12C12X#•	12"	H	Extended range dual cone	30-16,000	18	8	5½	14.40
8C12X#	8"	H	Extended range	50-14,000	15	8	3¼	10.71
69C6X#•	6" x 9"	D	Extended range dual cone	50-15,000	12	8	2½	8.76
15C12L#	15"	H	Low frequency woofer	20- 4,000	15	8	7	22.05
12C12L#	12"	H	Low frequency woofer	30- 3,000	15	8	5½	14.40
5A15T	5"	A	High frequency tweeter	2,000-15,000	10	8	1	4.11
3A15T	3½"	A	High frequency tweeter	2,000-15,000	10	8	¾	3.63
CO5-25			Crossover Unit for use with 5A15T&3A15T				⅛	.45

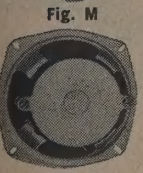
Fig. N

Fig. O

UNIVERSAL REPLACEMENT SPEAKERS

These ingenously designed speakers fit directly into original equipment without sheering or notching. This eliminates the creation of metallic particles which might otherwise lodge in the voice coil gap.

Model No.	Size	Figure	Magnet Weight	Power Handling (watts)	Shipping Weight (lbs.)	Depth (inches)	Dealer Net
26A07U	2" x 6"	K	.65 oz.	2	½	1 13/32	$2.85
3A05U	3½"	K	.55 oz.	2	¼	1 13/32	2.04
35A05U	3" x 5"	K	.55 oz.	2	½	1½	2.58
4A05U	4"	K	.55 oz.	2.5	¼	1½	1.83
4A05XR*	4"	K	.55 oz.	2.5	¼	1½	3.03
46A07U	4" x 6"	K	.65 oz.	3.5	¾	1 15/16	3.12

Fig. P

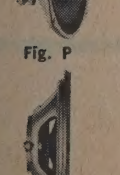
Fig. Q

Ceramic magnet. • Dual cone. § Cup pot; very shallow construction. * Includes premounted 2500 ohm transformer.
‡ Illustrates magnet construction; see same size standard speaker for basket shape.
Q/8 — New high energy magnet material.

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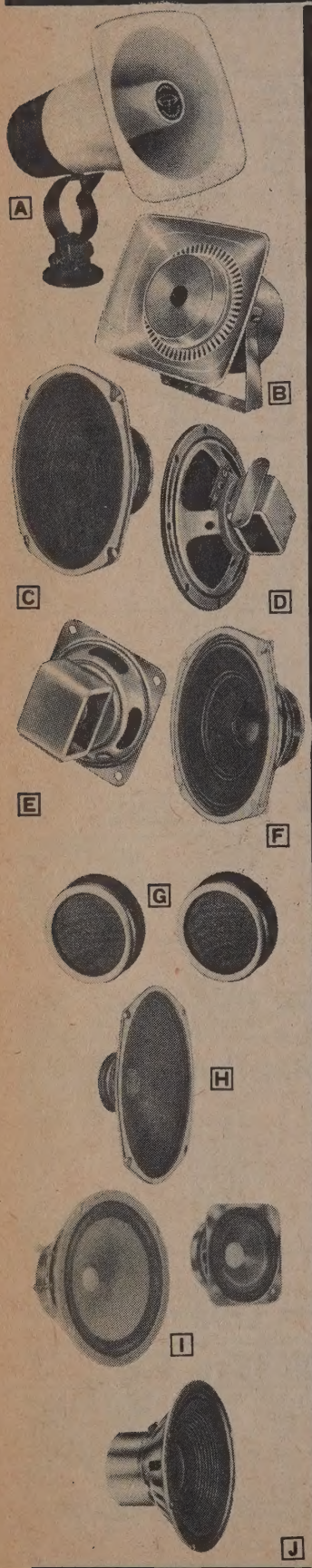
OXFORD TRANSDUCER COMPANY

Division of OXFORD ELECTRIC CORPORATION

Quality Speakers for Every Application



A OP SPECIALIST SERIES (OP4 - OP6 - OP8 - COP8)

These models represent the most advanced weatherproof paging and talkback speakers. They incorporate new design innovations with new materials to provide the highest efficiency with the lowest distortion factors of any competitive units available.

B OH-10 WEATHERPROOF DUAL SPEAKER SOUND SYSTEM

A high efficiency co-axial speaker that reproduces music and voice with the fidelity of an expensive indoor high-fidelity speaker system yet, the OH-10 is rugged and completely weatherproof. Components are housed in die-cast aluminum inclosure which is designed to compliment every setting from the shopping center to the patio. Bone White and Forest Green.

C SPEAKERS — COMMERCIAL SOUND

Oxford public address speakers are designed for higher output, with less power input. This maximum conversion efficiency in power and coverage permits a reduction in the number of speakers usually required in an installation. And, lower rated power amplifiers may be used with a substantial savings in cost.

D INTER-COM SPEAKERS

Oxford high efficency Inter-com speakers are designed to give round, full and clear reproduction in the voice frequency range and at the same time suppress unwanted background noises. Even whispers will be reproduced with great clarity in areas with high background noise levels . . . shouts are reproduced without distortion.

E ALL WEATHER SPEAKERS

Oxford offers a complete line of All Weather speakers specifically designed for maximum operating performance regardless of weather conditions. They feature exclusive Oxford HYDRO-PRUF cones for full environmental protection. Special moisture protected voice coils prevent humidity damage. Extra heavy cadmium plating, inside and out, resists corrosion.

F CERAMIC SPEAKERS

Featuring shallow construction, these speakers are ideal for in-wall, stereo wing, picture frame, and other installations where space is at a premium. In addition to the standard models, Oxford also offers ceramic units with exclusive Oxford Hidden Magnet design. The magnet is mounted between the basket and the cone, permitting use of the dual cone for extended range while retaining the thin silhouette.

G EXACT REPLACEMENT AUTOMOTIVE RADIO SPEAKERS

A complete line of automotive kits is available, including exact replacement speakers, universal speakers, special units for custom automobiles, and speakers specifically designed for transistorized automobile radios. Also surface mount and recess mount stereo.

H REPLACEMENT SPEAKERS

Oxford manufactures the most complete line of standard replacement speakers available for original equipment, including, phonographs, tape recorders, radios and television sets. The speaker sizes range from 2" through 15", in dimensions to insure a perfect installation.

I HIGH FIDELITY SPEAKERS

The Oxford acoustic-perfect high fidelity line offers a full range of woofers, tweeters, extended range and co-axial speakers. They are all designed to reproduce the entire audio spectrum with true high fidelity so necessary for fine stereo reproduction. For the price conscious hi-fi equipment buyer, Oxford offers the most outstanding value.

J PROFESSIONAL MUSICAL INSTRUMENT SPEAKERS

As a "full line" loudspeaker manufacturer, Oxford also produces speakers for many "special purposes." The most popular of these is a series designed for use with electric musical instruments, such as guitars and electronic organs. It is only with a speaker designed for this particular application that the full quality of the instrument and performance can be appreciated.

Manufacturers, Write for Quotes on OEM Quantities.

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RCA

MICROPHONES
AND ACCESSORIES

POLYDIRECTIONAL RIBBON — 77DX

The quality microphone standard of the broadcast industry, the RCA 77DX, is available in two models: one with a low-gloss finish for TV, the other a satin chrome finish for AM and FM. The 77DX offers a choice of unidirectional, bidirectional, or nondirectional pickup patterns which are easily changed by a selector switch. Three frequency-response variations on the basic pickup patterns may also be obtained, thus a total of nine different directional characteristics may be ultilized. The 30- to 20,000-Hz frequency response of the 77DX makes it suitable for every high-fidelity broadcasting and recording application. Output impedance is factory connected for 250 ohms; however, it may be easily reconnected for a 30- or 150-ohm output impedance. This 77DX mounts on a standard ½-inch pipe thread, and comes with 30 feet of three-conductor shielded cable, less plug.

77DX Satin Chrome Finish **$224.00***
77DX-G Low Luster Gray Finish **199.00***

NONDIRECTIONAL DYNAMIC — BK-1A

Ideal for outdoor use or wherever constant handling is required, the BK-1A offers smooth response for both voice and music. The BK-1A is also an excellent unit for sports, panel shows, interviews, and remotes. It provides uniform response from 50 to 15,000 Hz. The swivel mounting of the BK-1A can be used to control directional characteristics. The vertical position is nondirectional; the horizontal position is semidirectional. The output impedance is 250 ohms, but 30- and 150-ohm connections are included. The BK-1A may be mounted on any type stand having ½-inch pipe thread and is perfect for use with the MA-06 desk stand. Thirty feet of three-conductor cable is supplied, less connector.

BK-1A **$95.00***

UNIAXIAL RIBBON — BK-5B

The BK-5B is a high quality ribbon instrument designed especially for use in high noise areas, as well as being suitable for general studio purposes. Maximum sensitivity of the BK-5B is in the major mechanical axis, and this produces an extremely directional cardioid pattern. Frequency response from 30 to 20,000 Hz permits using the BK-5B for all types of high fidelity voice and music pickups. The output is connected for 250 ohms, but may easily be changed to 30 or 150 ohms. It is supplied with thirty feet of three-conductor cable, less connector. A wind-screen is available for outdoor use. The BK-5B is supported by a fork mounting which has ⅛-inch pipe thread.

BK-5B **$172.00***

LAVALIER — BK-6B

The BK-6B is a lightweight microphone with excellent speech balance, ideal for remotes, interviews, and other applications where an inconspicuous microphone is needed. The 2.3-ounce unit is only 2 9/16 by 15/16 inches. Wide-range frequency response (60-15,000 Hz) permits using the microphone for all speech applications. The 250-ohm output impedance may be changed to 30 or 150 ohms by a simple change of cable connections. The small size and lanyard mounting make the BK-6B extremely versatile. Thirty feet of three-conductor shielded cable is supplied, less connector.

BK16B with lanyard and fastener **$95.00***

SUBMINIATURE LAVALIER — BK-12A

The RCA BK-12A is a high-quality subminiature microphone weighing just 20 grams and measuring only ¾" x 1½". It has a wide-frequency response of 60 to 18,000 Hz, which has been tailored for proper speech balance. A line impedance voice coil permits use with 30- to 250-ohm unloaded inputs. The BK-12A is essentially nondirectional to 6,000 Hz, and as a result, ordinary errors in orientation have negligible effect upon response. It is supplied with lanyard, tie-clip holder, cable clip and 30 feet of two-conductor cable (less connector).

BK-12A **$95.00***

HIGH-OUTPUT UNIDIRECTIONAL RIBBON — KU-3A

The KU-3A is a high-quality microphone for TV, motion picture and recording studio line pickup or wherever boom operation is used. It provides uniform response from 30 to 15,000 Hz. Output impedance is factory connected for 250 ohms; however, it may be easily connected for a 30- or 150-ohm output impedance. It is supplied with voice/music switch, resilient mounting and 12 feet of pigtail cable, less connector.

KU-3A **$675.00***

UNIDIRECTIONAL DYNAMIC — HK-106

A dual-impedance (200/1500 ohms) dynamic microphone having a unidirectional ("super" cardioid) pickup characteristic with excellent off-axis rejection at 180°, and a gentle roll-off characteristic at low frequencies. Useful for broadcast-studio, outdoor broadcasting, stage, and video-sound-track recording applications. Frequency response from 150 to 10000 Hz. Features a rotatable 5-pin connector to select low- or high-impedance output. Includes metal desk stand, adjustable microphone holder, and attache-type carrying case. Housed in a die-cast metal case, the HK-106 has an attractive black- and satin-chrome finish.

HK-106 ..... **$44.00***

OMNIDIRECTIONAL DYNAMIC — HK-111

Professional microphone well suited for broadcast-studio, stage, and monaural-and-sterephonic-recording applications. Flat frequency response throughout its response range of 50 to 20000 Hz contributes to the excellent sound-reproduction capability. Supplied with removable wind screen, special 5-pin connector for changing low- to hi-impedance, and dual thread adjustable microphone holder. Die-cast metal case with an attractive black- and satin-chrome finish.

HK-111 ..... **$54.00***

OMNIDIRECTIONAL DYNAMIC — HK-115

Dual-impedance (15000/200 ohms) dynamic microphone having an omnidirectional pickup characteristic. Allows sounds originating from any direction to be picked up by the microphone. Designed for radio and TV broadcast studio, theatre and stage, and hi-quality music and voice recording applications. Frequency response from 70 to 16000 Hz. Features on-off switch, removable wind screen, adjustable microphone holder, special hi-low impedance 5-pin rotatable connector, and attache-type carrying case. Housed in die-cast metal case. Attractive black- and satin-chrome finish.

HK-115 ..... **$44.00***

* Professional net

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RCA

MICROPHONES AND ACCESSORIES

UNIDIRECTIONAL DYNAMIC — HK-96

An excellent microphone for use on stage, for recording, or in broadcast applications. Excellent frequency response (50 to 15,000 Hz) and features a 3-position bass roll-off switch to reduce rumble and unwanted background noise. The cardioid (unidirectional) pick-up pattern effectively reduces feedback and unwanted audience and off-stage sounds. The special 5-pin connector permits switching from low to high impedance (200 or 15,000 ohms) by merely rotating the connector. The unit has a black and chrome finish. Comes complete with wind-creen, slip-on swiven mount, 20 ft. of 2-conductor shielded balance line (less connector) and attractive black attache case.

HK-96 ..... **$50.00***

UNIDIRECTIONAL DYNAMIC — HK-97

Excellent unit for stage use by individual performers or by groups in which each individual has his own microphone. It has excellent frequency response (50 to 15,000 Hz), a good cardioid (unidirectional) pick-up pattern to reduce feedback and screen out unwanted off-stage sounds, and on-off muting switch. Special 5-pin connector for low and high impedance. Black and chrome finish. Comes complete with wind-screen, fixed slip-on mount, 20 ft. of 2-conductor shielded balance line (less connector) and attractive black attache case.

HK-97 ..... **$40.00***

OMNIDIRECTIONAL DYNAMIC — HK-98

This omnidirectional microphone is the perfect unit for on stage, recording, and broadcast use where two or more individuals are using the same microphone. Excellent frequency response (40 to 17,000 Hz) and features an on-off muting switch. Used in conjunction with several microphones, utmost flexibility is obtained when performers switch from group to solo. The special 5-pin connector permits switching from low to high impedance (200 to 15,000 ohms). Mounting with any 5/8"-27 fixture thread permits the use of low cost stands. Black and chrome finish unit. Comes complete with wind-screen, fixed slip-on mount, 20 ft. of 2-conductor shielded balance line (less connector) and attractive black attache case.

HK-98 ..... **$40.00***

UNIDIRECTIONAL DYNAMIC HK-99, HK-116, HK-117, & HK-118

Especially designed for the home recording enthusiast who needs a replacement, or who prefers a better quality microphone, these units are low impedance (500 ohms) microphones with good frequency response (20 to 10,000 Hz). The cardioid (unidirectional) pick-up pattern reduces feedback and unwanted background noises. They have an on-off switch; HK-116 & 117 have tape recorder remote-control capability. The 2.4 oz. (less cable) units have a black and chrome finish. Included is a desk stand and cable. These microphones have the same electrical characteristics but have different terminations and switching features.

HK-99 ..... **$8.00***

HK-116, HK-117, & HK-118 ..... each **$9.00***

OMNIDIRECTIONAL DYNAMIC — HK-100, HK-119, & HK-120

Designed for the home recording enthusiast who desires a good omnidirectional microphone as a replacement for the cardioid types which usually accompany tape recorders. Ideal microphones for recording groups of two or more persons simultaneously without passing the microphone around. The units are high impedance 50,000 ohms) microphones with good frequency response (100 to 8,000 Hz) for voice reproduction. They all have an on-off switch; HK-100 has tape recorder remote control capability. Finish is black and chrome, and weighs 6.3 oz., less cable. Comes complete with a desk stand and a 6-ft. cable. These microphones have the same electrical characteristics but different terminations and switching features.

HK-100 ..... **$8.00**

HK-119 & 120 ..... each **$9.00***

DYNAMIC — HK-101 & 109

Dependable performance and attractive styling (metallic silver and satin chrome finish) make these units ideal for use in ham, CB, base-station mobile communications, and paging applications. The HK-101 features an output impedance of 50,000 ohms and a frequency response of 70 to 9,000 Hz, the HK-109 — 400 ohms and 400-8,000 Hz. The cardioid pick-up pattern effectively reduces feedback and unwanted background noises. The base of the microphone has a press-to-talk switch, a press-to-lock and press-to-unlock switch and a lift switch (only on HK-101) which activates the microphone when it is picked up. Wiring changes can be made quickly and simply for use with various types of transmitters.

HK-101 ..... **$44.00***

HK-109 ..... **$49.00***

ACCESSORIES—10 No. 20

Wind-screen — **MA-25** — For use with BK-5B microphone **$16.50***

Boom Mount — **MA-24** — Shock mounting to isolate BK-5B microphone from vibration..... **$36.50***

Adaptor — **MA-08** — 5/8"-27 female fitting — 1/2" male pipe thread, to adapt a 5/8"-27 microphone to a 1/2" pipe thread stand ..... **$ .60***

Adoptor — **MA-09** — 1/2" female pipe thread, 5/8"-27 malme fitting, to adapt a 1/2" microphone to a 5/8"-27 stand **$3.75***

Desk Stand — **MA-06** — 1/2" pipe fit-male, 4 3/8" dia., 1 3/8" high. For use with BK-1A microphone..... **$7.75***

Desk Stand — **MAS-05** — 1/2" pipe fit-male, 4 1/2" wide, 6 5/8" long, 3/4" high or 1 3/4" (incl. Stem). Crinkle and chrome finish. 4 lbs. For use with 77DX and BK-5B microphones..... **$16.75***

Desk tSand — **MA-01** — 5/8"-27 male thread, 7" to 11" chrome tube, 8" dia. Crinkle base. About 2 1/2 lbs. Pse MA-08 Adaptor for 1/2" pipe thread microphone. **$5.20***

Banquet Stand — **MA-02** — 5/8"-27 male thread, 13" to 25" chrome tube, 8" dia. Crinkle base. About 6 lbs. Use MA-08 Adaptor for 1/2" pipe thread microphone. **$5.85***

Floor Stand — **MA-03** — 5/8"-27 male thread, 7/8" dia., 35" to 65" chrome tube, 12" dia. Crinkle base. Use MA-08 Adaptor for 1/2" pipe thread microphone. **$9.00***

Floor Stand (Deluxe)—**MA-04**—5/8"-27 male thread, 1 1/8" dia., 37" to 66" chrome tube. Triangular 17" dia. Crinkle base. Use MA-08 Adaptor for 1/2" pipe thread microphone **$16.50***

Swivel Adaptor — **MA-32** — Fits conventional 5/8"-27 thread floor and desk stands **$3.40***

Cable — **MA-27** — 20-ft. cable with special "Hi Z/Low Z" chrome connector..... **$4.10***

Cable — **MA-27V1** — 20-ft. cable with special "Hi Z/Low Z" gold connector..... **$5.25***

Connector — **MA-35** — 5-pin female..... **$1.50***

Connector — **MA-39** — 3-pin female..... **$1.15***

Transformer — **MA-41** — Impedance matching transformer with two connectors..... **$17.00***

Connector — **MA-44** — 5-pin male..... **$1.15***

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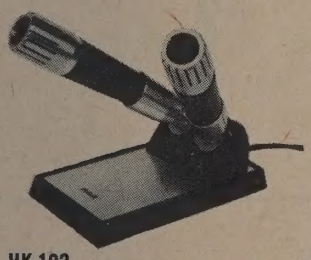
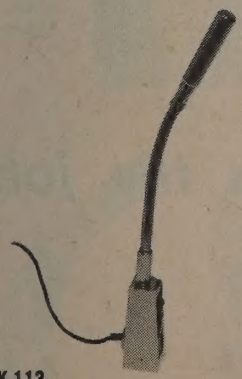
MICROPHONES
AND ACCESSORIES



HK-102

HK-104



HK-113

UNIDIRECTIONAL DYNAMIC — HK-103

The unidirectional (cardioid) HK-103 is designed for vocalists, very high-quality voice applications, and orchestral pickup, where high off-axis rejection is needed. Finished in gold. With a frequency response from 100 Hz to 15000 Hz, the HK-103 has excellent off-axis rejection between 135° and 180°. Supplied with a special 5-pin rotatable connector which permits changing from low-to-high impedance. Also supplied with the microphone is a dual-thread (⅝"-27 thread and 5/16"-18 thread) microphone holder, a gold-and-black weighted metal desk stand, and an attache-type carrying case.

HK-103 ..... **$64.00***

OMNIDIRECTIONAL DYNAMIC — HK-105

General-purpose microphone for use in applications such as public-address and ungrading of home tape recorders. Frequency response from 70 Hz to 12000 Hz. Supplied with 10 feet of permanently attached cable, a desk stand and a lanyard. The HK-105 is housed in a die-cast metal case having a smart black-and-chrome finish.

HK-105 ..... **$14.00***

OMNIDIRECTIONAL DYNAMIC — HK-112

Especially useful for general-purpose monaural and stereophonic high-fidelity home recording of voice, music or choral arrangements. Frequency response from 100 Hz to 13000 Hz. A special 5-pin connector supplied with the microphone permits switching from low- to high-impedance. Also supplied with a dual-thread (⅝"-27 thread and 5/16"-18 thread) adjustable microphone holder which makes the microphone suitable for use with a wide variety of microphone stands. Housed in a die-cast metal case and has an attractive satin-chrome finish.

HK-112 ..... **$34.00***

UNIDIRECTIONAL DYNAMIC — HK-110

The unidirectional (cardioid) HK-110 is designed for close vocal work, "rock" bands and combos, and high-fidelity home-recording applications. Finished in satin black and gold. Frequency response of 100 Hz to 12000 Hz, and features an on-off switch and an integral wind screen. Supplied with a special 5-pin connector which can be used to select low- or high-impedance output, a dual-thread (⅝"-27 thread and 5/16"-18 thread) gold-finished microphone holder, and an attache-type carrying case. Housed in a die-cast metal case.

HK-110 ..... **$54.00***

DYNAMIC — HK-107

This omnidirectional, hand-held, high-impedance microphone is designed for general voice and mobile communications applications. The special tapered high-and-low frequency response characteristic reduces background noise and rumble. The HK-107 has a switch for push-to-talk remote-control operation, and is housed in a high-impact black plastic case.

HK-107 ..... **$12.00***

DYNAMIC — HK-108

Especially designed for use in high-noise-level locations, the HK-108 is a unidirectional (cardioid), noise-cancelling microphone. This dual-cartridge, hand-held, microphone is intended for close-talk applications such as public address, paging, and mobile communications, and effectively reduces sound pickup from sources more than a few inches away. The HK-108 features a switch which can be used for push-to-talk remote-control operation, and is housed in a high-impact black plastic case.

HK-108 ..... **$17.00***

UNIDIRECTIONAL DYNAMIC — HK-102

Twin dynamic microphones especially designed for stereophonic home-recording, conference and panel discussions, and general-meeting recording applications. Output impedance of 10000 ohms and a frequency response from 200 Hz to 5000 Hz. Supplied with a desk stand, wired for two-channel output, and two swivel-type microphone holders which can be angled to provide the separation required for stereophonic recording. These versatile microphones can be removed from the stand and used as hand-held units. In addition to the desk stand and twin cables, the HK-102 microphones are also supplied with two lanyards and two slip-on desk stands. The HK-102 microphones have a die-cast metal case with an attractive black- and satin-chrome finish.

HK-102 ..... **$62.00***

UNIDIRECTIONAL DYNAMIC — HK-104

Dual-channel dynamic microphone especially useful in two-channel home-recording, conference and panel discussions, and general-meeting recording applications. Output impedance of 10000 ohms and a frequency response from 150 Hz to 10000 Hz. Features a unique, attractive design which incorporates two unidirectional microphones in a single die-cast metal housing having a satin-chrome finish. Supplied with a gray metal desk stand, and ten feet of two-conductor, shielded, ivory cable.

HK-104 ..... **$45.00***

DYNAMIC — HK-113

A very small, omnidirectional, high-impedance microphone, the HK-113 is especially useful in service counter, voice recording, public address and paging applications. The small flexible goose-neck base fits a standard microphone stand, and the push-to-talk/lock switch can also be used for remote control. Because of its high-style and unobtrusive appearance, the HK-113 is particularly well suited in public places where sound re-enforcement is needed.

HK-113 ..... **$29.00**

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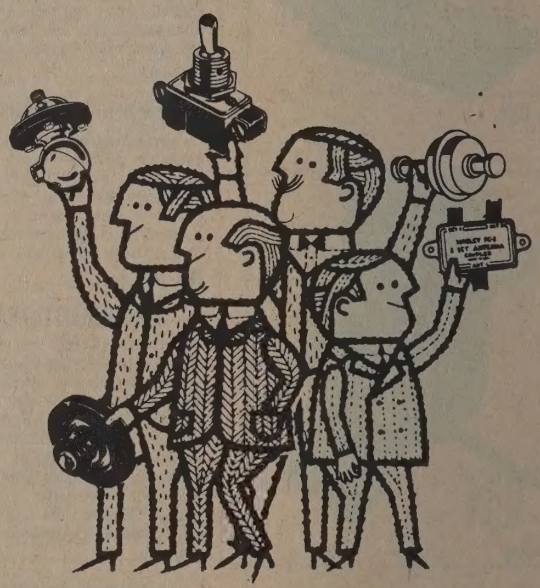

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SHURE FAMOUS UNIDYNE MICROPHONES

UNIDYNE IV Microphones

MODELS 548 • 548S • 549

The premier member of the world-famed Unidyne family of microphones. An ultra high quality, super-rugged microphone with an unusually effective cardioid pickup pattern. Unusually smooth, wide-range response for voice and music. Has all the superb feedback and "boom" suppressing characteristics of the Unidyne III (below), combined with exceptionally rugged construction. Easily serviced in the field. Specially cushioned, reinforced cartridge. Cannon type connectors.

Model 548 Unidyne IV: For stand or hand usage. Includes A25B swivel adapter. **List Price: $105.00**

Model 548S Unidyne IV: Mounted on a lifetime swivel that also contains On-Off switch. **List Price: $110.00**

Model 549 Unidyne IV: Professional, stage version of Unidyne IV. Special vibration-isolation shock-mount to insulate against vibration and mechanical shocks. Special "storage" packaging . . . ideal for performers who carry their own unit to clubs and auditoriums. Less cable. Combination impedance selection-on-off switch. **List Price: $158.00**

SPECIFICATIONS

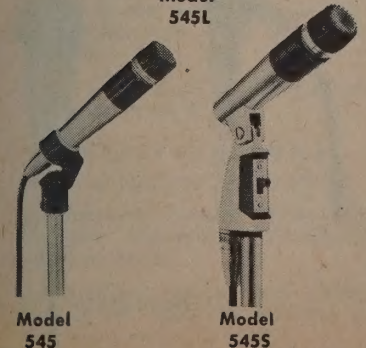
Frequency Response: 40 to 15,000 Hz.
Impedance and Output Levels: Models 548, 548S Dual. Low −57 db (0 db = 1 milliwatt per 10 microbars); .131 millivolts/microbar. High −55 db (0 db = 1 volt per microbar); 1.76 millivolts/microbar.
Model 549—dual (50 ohms) −56 db (0 db = 1 milliwatt per 10 microbars): .067 millivolts/microbar. M (250 ohms) −56 db (0 db = 1 milliwatt per 10 microbars); 149 millivolts/microbar.
Cable: Models 548, 548S: 15-foot, two conductor shielded with Cannon XLR-3-11C Connector on microphone end. Model 549: Less cable, but Cannon type XLR-3-11C cable connector included.

UNIDYNE III Microphones

MODELS 545 • 545S • 545L • 544 • 546 • 547

Recommended for use in any location where feedback prevents good sound reproduction.

Small and strikingly handsome, the acoustical design of the Unidyne III Microphones approaches the theoretical ideal of the uniform cardioid pickup pattern. Reproduces the human voice with remarkable fidelity. A favorite choice for singers and entertainers. Low frequency characteristics eliminate boominess, making them especially good for pickup of drums and bass instruments.



Model 545 Unidyne III: For hand or stand usage. Includes an A25B Swivel adapter. **List Price: $89.00**

Model 545S Unidyne III: Mounted on a lifetime swivel that also contains the On-Off switch. **List Price: $94.00**

Model 545L Unidyne III: Designed for lavalier use. Lavalier cord included. Can also be mounted on a flexible gooseneck. **List Price: $74.00**

Model 544 Unidyne III: The basic microphone for "gooseneck" mounting. **List Price: $84.00.** To obtain microphones complete with "goosenecks," order Models 544-G6 **($87.00)** or 544-G12 **($88.00)**, or 544-G18 **($89.00)** for 6-inch, 12-inch, or 18-inch goosenecks.

Model 546 Unidyne III: Features a special live-rubber, vibration-isolating shock mount. Recommended for high quality public address systems and tape recording—especially where floor or stage is "shaky." **List Price: $142.00**

Model 547 Unidyne III: Stage version of Model 546. Includes storage case. Less cable. **List Price: $142.00**

SPECIFICATIONS

Frequency Response: All models except 546 & 547 — 50 to 15,000 Hz. Model 546, 547 — 40 to 15,000 Hz.

Impedance and Output Level:

Models 545, 545S, 544: Dual. Model 545L: Low. Low −57db (0 db = 1 milliwatt per 10 microbars); .141 millivolts/microbar. High −55 db (0 db = 1 volt per microbar); 1.760 millivolts/microbar.

Model 546, 547 — Dual: L (50 ohms) −56 db (0 db = 1 milliwatt per 10 microbars); .067 millivolts/microbar. M (250 ohms) −56 db (0 db = 1 milliwatt per 10 microbars); .149 millivolts/microbar.

Cable:

Model 545, 545S: 15-foot, 3-conductor shielded with an Amphenol MC4M Type Plug connector. Model 545L: Attached 20-foot, 2-conductor shielded.

Model 544: Attached 7-foot, 3-conductor shielded. Model 546: 20-foot, 2 conductor shielded with a cannon XL-3-11 Type Connector.

Model 547: Less cable but Cannon type XLR-3-11C cable connector included.

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SHURE

UNISPHERE MICROPHONES

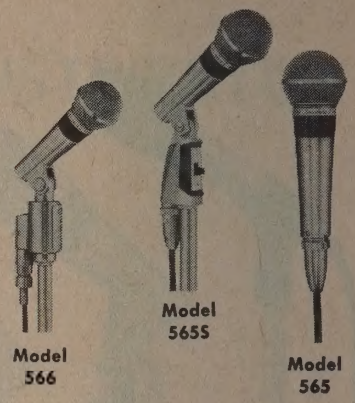
UNISPHERE I Microphones MODELS 565 • 565S • 566

Now! You can get all the superb feedback-control and uniform cardioid pickup pattern features that have made the Unidyne family of microphones world-renowned for solving difficult public-address problems—with the added problem-solving ability achieved through special filter assemblies that effectively control explosive breath sounds ("POP") and minimize wind noise in outdoor locations (eliminating the need for windscreens). The Unisphere I provides excellent reproduction of voice and music—can be effectively used outdoors and indoors.

Model 565 Unisphere I: For stand or hand usage. Includes an A25B swivel adapter. **List Price: $100.00**

Model 565S Unisphere I: On-Off switch included as part of the swivel connector assembly. **List Price: $105.00**

Model 566 Unisphere I: Features a built-in vibration-isolation shock mount. **List Price: $147.00**



SPECIFICATIONS

Frequency Response: 50 to 15,000 Hz. (Model 546 is 40 to 15,000 Hz.)

Impedance and Output Level:

Models 565 and 565S: Dual: Low —57 db (0 db = 1 milliwatt per 10 microbars); .141 millivolts/microbar. High —54.5 db (0 db = 1 volt per microbar); 1.88 millivolts/microbar.

Model 566 Dual: Low (30 to 50 ohms) —55 db (0 db = 1 milliwatt per 10 microbars); .075 millivolts/microbar. Medium (250 ohms) —55 db. (0 db = 1 milliwatt per 10 microbars); .158 millivolts/microbars.

Cable:

Model 565 and 565S: 15-foot, three-conductor shielded with Amphenol MC4M Type Connector. Model 566: 18-foot, two-conductor shielded with Cannon XL-3-11 Type Connector.

UNISPHERE A Microphones MODELS 585SA • 585SB • 585SAV • 585SBV

The Unisphere A Series of Microphones are economical undirectional dynamic microphones featuring special filters that provide protection from wind and "pop" (explosive breath sounds). They also eliminate annoying loudspeaker "squeal" caused by feedback. These models are particularly suitable for use in locations where omnidirectional microphones may not operate properly because of poor acoustics or where wind creates a problem. The Model 585 Series comes complete with shock-mounted cartridge, On-Off switch, detachable cable, and a Model A25B swivel adapter.

The Model 585SAV and 585SBV are two of the most ingenious microphones ever designed because the volume control on the microphone case enables the user to change the loudness of the P.A. system at the microphone location. Ideal for applications where the amplifier controls are inaccessible or where the speaker or singer wants to control his own volume for dramatic effects.

Model 585SA Unisphere A: High impedance. **List Price: $68.00**

Model 585SB Unisphere A: Low impedance. **List Price: $68.00**

Model 585SAV Unisphere A: With adjustable volume control; High impedance. **List Price: $76.00**

Model 585SBV Unisphere A: With adjustable volume control; Low impedance. **List Price: $76.00**

SPECIFICATIONS

Frequency Response: 50 to 13,000 Hz.

Impedance and Output Level:

Models 585SA and 585SAV: High —56.5 db (0 db = 1 volt per microbar); 1.48 millivolts/microbar. Model 585SB and 585SBV: Low —56.5 db (0 db = 1 milliwatt per 10 microbars); .105 millivolts/microbar.

Cable:

Models 585SA and 585SAV: 15-foot, one-conductor, shielded with an Amphenol MC1F Type Connector.

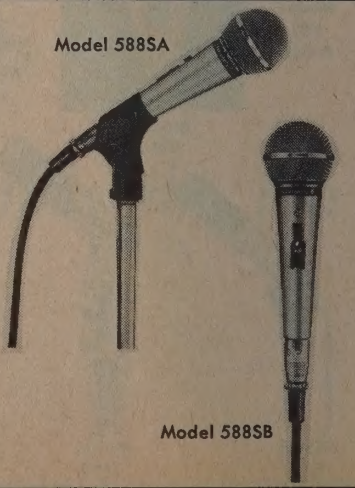
Models 585SB and 585SBV: 15-foot, two-conductor shielded with an Amphenol MC2M type Connector.

UNISPHERE B Microphones MODELS 588SA • 588SB

Maximum feature microphones at a minimum cost; true cardioid pickup pattern for feedback control; superior "pop" rejection; shock-mounted cartridge to reduce handling noises; On-Off switch; trouble-free Cannon connector. All for only $60! Includes Model A25B swivel adapter and long-life 15-foot cable.

Model 588SA Unisphere B: High impedance. **List Price: $60.00**

Model 588SB Unisphere B: Low impedance. **List Price: $60.00**



SPECIFICATIONS

Frequency Response: 80 to 13,000 Hz.

Impedance and Output Level: Model 588SA: High —59 db (0 db = 1 volt per microbar); 1.11 millivolts/microbar. Model 588SB: Low (25 to 200 ohm) —81.5 db (0 db = 1 milliwatt with 10 microbars); .085 millivolts/microbar.

Cable: Model 588SA: 15-foot, one-conductor shielded with Cannon XLR-3-11C connector on microphone end. Model 588SB: 15-foot, two-conductor shielded, rubber-jacketed with Cannon XLR-3-11C connector on microphone end.

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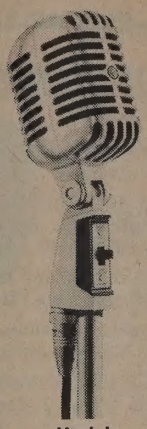
SHURE FAMOUS UNIDYNE MICROPHONES

UNIDYNE II Series MODELS 55S • 55SW • 556S

Model 556S


Model 55SW

The Unidynes are the largest selling microphones throughout the world. Model 55S Unidyne II is highly recommended for fine quality public-address, theater-stage sound systems, recording and remote broadcasting, and low-gain tape recording.

Model 556S Unidyne II is specially constructed and tested to meet the requirements of the broadcast and television studio, and is held within close tolerances in frequency response and directivity. The Model 556S is provided with vibration-isolation unit of live rubber construction in the stand connector. Includes multi-impedance switch for high, medium or low impedance.

Model 55S Unidyne II: Without On-Off Switch. **List Price: $87.00**
Model 55SW Unidyne II: With On-Off Switch. **List Price: $89.00**
Model 556S Unidyne II: Features a special live-rubber, vibration-isolating shock mount. **List Price: $142.00**

SPECIFICATIONS

Frequency Response: Models 55S and 55SW —50 to 15,000 Hz.
Model 556S —40 to 15,000 Hz.

Impedance and Output Level:
Models 55S and 55SW: Low (30 to 50 ohms) —55.5 db (0 db = 1 milliwatt per 10 microbars); .071 millivolts/microbar. Medium (150 to 250 ohms) —56.5 db (0 db = 1 milliwatt per 10 microbars); .141 millivolts/microbar. High —55.5 db (0 db = 1 volt per microbar); 1.68 millivolts/microbar.
Model 556S: Low (30 to 50 ohms) —56.5 db (0 db = 1 milliwatt per 10 microbars); .067 millivolts/microbar. Medium (150 to 250 ohms) —57.5 db (0 db = 1 milliwatt per 10 microbars); .130 millivolts/microbar. High —56 db (0 db = 1 volt per microbar); 1.58 millivolts/microbar.

Cable:
Models 55S and 55SW: 15-foot, 2 conductor shielded with an Amphenol MC3M Type Connector.

Model 556S: 20-foot, 2-conductor shielded with a Cannon XL-3-11 Type Connector.

UNIDYNE B Microphones MODELS • 515SA • 515SB

Model 515SA

Model 515SB

Lowest cost Unidyne, ever. Has the feedback suppression and uniform, symmetrical pick-up pattern features that have made Unidynes world famous. An excellent choice where budget is the prime consideration. Can be used on stand, or in hand. Built-in On-Off switch. Includes A25B swivel adapter.

Model 515SA Unidyne B: High impedance. **List Price: $42.00**
Model 515SB Unidyne B: Low impedance. **List Price: $42.00**

SPECIFICATIONS

Frequency Response: 80 to 13,000 Hz.

Impedance and Output Level: Model 515SA: High —58 db (0 db = 1 volt per microbar); 1.25 millivolts/microbar. Model 515SB: Low (25 to 200 ohm) —59 db (0 db = 1 milliwatt per 10 microbars); .089 millivolts/microbar.

Cable: Model 515SA: Non-detachable 15-foot, one-conductor shielded. Model 515SB: Non-detachable 15-foot, two conductor shield.

SHURE OMNIDIRECTIONAL MICROPHONES

Model 579SB

Vocal Sphere MODEL 579SB

A superb sounding omnidirectional microphone that delivers extremely natural, lifelike voice reproduction for vocalists or speakers. Effective built-in wind and "pop" filter, isolated cartridge mount reduce breath and handling noises. Built-in On-Off switch. Includes Model A57S swivel adapter and long-life 20-foot cable.

Model 579SB Vocal Sphere: Low impedance. **List Price: $75.00**

SPECIFICATIONS

Frequency Response: 50 to 15,000 Hz.

Impedance and Output Level: Low (25 to 200 ohm) —80.0 db (0 db = 1 milliwatt per 10 microbars).

Cable: 20-foot, two-conductor shielded with Cannon XLR-3-11C connector on microphone end.

Spher-O-Dyne MODELS 533SA • 533SB • 533SAV

Model 533SAV

Model 533SB

Unusual quality for such a moderate cost. Built-in wind, breath, and pop filters make it ideal for close-to-the-mouth applications, minimizing annoying, explosive breath sounds. Excellent reproduction of voice and music. Well-balanced "hand-ability". Response is uniform from 40 to 11,000 Hz. Built-in "On-Off" Switch, as well as an adjustable swivel adapter for stand use.

Model 533SAV has a volume control on the microphone case that enables the user to change the loudness of the P.A. system at the microphone location, ideal where amplifier controls are inaccessible, or where the speaker or singer wants to control his own volume for dramatic effects.

Model 533SA Spher-O-Dyne: High Impedance. **List Price: $53.00**

Model 533SB Spher-O-Dyne: Low Impedance. **List Price: $53.00**

Model 533SAV Spher-O-Dyne: With adjustable volume control, High Impedance. **List Price: $60.00**

SPECIFICATIONS

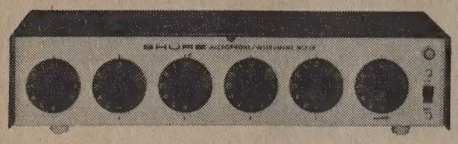
Frequency Response: 40 to 11,000 Hz.

Impedance and Output Level:
Models 533SA and 533SAV: High Impedance — 55.0 db (0 db = 1 volt per microbar) 1.76 millivolts/microbar.
Model 533SB: Low Impedance — 55.5 db (0 db = 1 milliwatt per 10 microbars) .149 millivolts/microbar.

Cable:
Models 533SA and 533SAV — 15-foot one-conductor shielded.
Model 533SB — 15-foot two-conductor shielded.

SHURE MICROPHONE MIXERS

SHURE M68 SERIES MICROPHONE MIXERS (TRANSISTORIZED—PORTABLE)



PRACTICAL—The Shure M68 Mixer is a practical, efficient and economical way of increasing the efficiency, usefulness and flexibility of public-address and paging systems, or tape recorders, by making it possible to use more than one microphone or other sound source. You can strategically place microphones so that everybody who should be heard will have a microphone close at hand. It is particularly useful where additional microphones are needed for panels or for audience Question-and-Answer sessions.

UNIQUE—This new mixer is unique in that it satisfies the needs of most public-address systems and serious tape recording enthusiasts, while being light enough to be portable, simple to operate and modest in cost. It is the **only** mixer which strikes a happy medium between the expensive heavy and complex permanent-installation type mixer and the extremely low-cost units of limited usefulness.

With the M68, each microphone (or other sound source) can be cut in or out of the system (and independently balanced for volume) with no loss in microphone output level. In addition to independent volume controls, a master volume control simultaneously controls the gain of all inputs. The M68 can, therefore, be used as a conveniently "at-hand" P.A. system volume control in situations where the regular amplifier is located some distance away.

VERSATILE—You can use high or low impedance microphones, in any mix, with any type amplifier without need for expensive line transformers.

You can tape record from multiple sound sources or record sound-on-sound with two recorders.

Frequency response is 30-20,000 Hz (cps). Underwriters Laboratory listed for use in commercial applications. Easily portable . . . 2⅝" x 11⅝" x 5¾", weighs only 4 lbs. 105-125 V. A.C. 50/60 cps.

Model M68 Mixer. Input connections are MALE Cannon XLR-3-14 type. (Uses XLR-3-11C type Mate.) **List Price: $131.00**

Model M68FC Mixer. Input connections are FEMALE Cannon XLR-3-13 type. (Uses XLR-3-12C type Mate.) **List Price: $142.00**

Model M68-2 Mixer. For 105-130 Volts AC 50/60 Cycle or 210-240 Volts AC 50/60 Cycle, 2 Core Cable. **List Price: $134.00**

Model M68-2E Mixer. Same as M68-2 except with 3 Core Cable. **List Price: $134.00**

Model M68FC-2E Mixer. For 240 Volts AC ± 10% 50/60 Cycle with 3 Core Cable. **List Price: $144.00**

Model M68P Mixer. Input connections are phone plug. **List Price: $105.00**

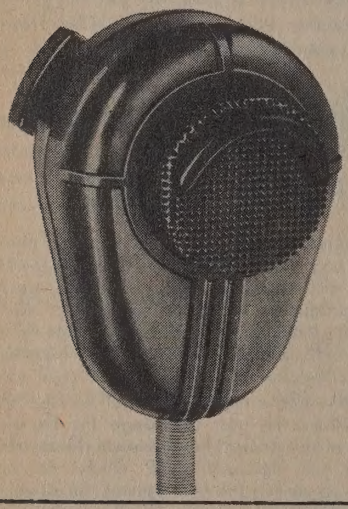
Model M68P-2E. For 240 Volts AC ± 10% 50/60 Cycle, with 3 Core Cable. **List Price: $108.00**

MICROPHONE MIXER ACCESSORIES

ATTACHE-TYPE CARRYING CASE — Makes M68 mixer, microphones and cables conveniently portable. **List Price: $39.00**

A68B BATTERY POWER SUPPLY — Eliminates need for 115 V. A.C. hookup. **List Price: $11.00**

SHURE PROFESSIONAL NOISE CANCELLING MICROPHONES



MODEL 488 "SONOBAR" . . . A MAJOR BREAKTHROUGH IN MICROPHONE DESIGN

Stated by users to outperform and obsolete all others . . . its quality confirmed by extensive laboratory and field comparison tests! Provides highly intelligible speech communication where high volume background noise is found, such as airplanes, helicopters, motorcycles, trucks, fire engines, power boats, sporting events, drop forges, press-rooms, factories, canneries, mills, printing plants, etc. Incorporates the patented Shure Controlled Reluctance cartridge into a distance-discriminating microphone that effectively cancels background noise . . . gets the message through *EVEN WHEN THE SPEAKER CAN'T HEAR HIMSELF!* Correct placement for close-talk assured by convenient lipguard. Rugged, impact-resistant "Armo-Dur" case. Four versions available: 488A—high impedance; 488B—low impedance; and 488C and 488T—transistorized for direct replacement of carbon microphones (488T FAA Certified for Aircraft applications). All models equipped with coiled-cord and "million-cycle" push-to-talk, blade-type switches. With mounting bracket.

SPECIFICATIONS

Model	488A High Impedance	488B Low Impedance	488C Transistorized	488T Transistorized Aircraft
Frequency Response	(SPECIALLY TAILORED FOR BEST INTELLIGIBILITY) 200 to 4,000 Hz.			
Output Level (0 db = 1 volt per 100 microbar field)	.141 volts (—17 db)	.014 volts (—37 db)	0.45 volts (—7 db) using 6 volts d.c. and 500 ohm load	0.71 volts (—3 db) using 12 volts and 500 ohm load
Impedance	High: Recommended Load 100,000 ohms or more	150-250 ohms	Recommended Load 100 to 500 ohms	Recommended AC Load 100 to 800 ohms
Cable, 5½' extended	Three-conductor (One-conductor shielded) cadmium copper coiled cord	Four-conductor (Two-conductor shielded) cadmium copper coiled cord	Four-conductor cadmium copper coiled cord	Three-conductor tinsel coiled cord with PJ 068 — plug attached
Switch Mic Circuit Relay Circuit	Normally closed* Normally open	Normally open** Normally open	Normally open Normally open	Normally open Normally open
Dimensions and Weight	3¾" HIGH x 2⅜" WIDE x 2½" DEEP; ¾ LB.			
List Price	$60.00	$60.00	$66.00	$76.00

*Provision for simple change to normally open
**Provision for simple change to normally closed

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SHURE NEW! COMPACT COMMUNICATIONS MICROPHONES

RANGER II
WITH HIGH-IMPACT ARMO-DUR CASE

Only about half the size and weight of conventional mobile communications microphones, yet performs as well as or better than the "big boys." Only 6¾ oz., less cable . . . 2 1/16" wide, 2⅛" deep, 2⅞" high. Ideal for miniaturized or portable communications. Neoprene-jacketed coil cord. Revolutionary molded-rubber Flex-Relief cable connection. Positive action single throw, double pole million-cycle switch. Controlled Magnetic cartridge. Frequency response from 400 to 4000 Hz, especially tailored for voice communication use. Model 414A is high impedance, 414E is low impedance and 414C is transistorized.

MODEL	OUTPUT LEVEL	IMPEDANCE	CABLE TYPE	SWITCH MIC. CIRC.	RELAY CIRC.	LIST PRICE
414A	—14.5 db (0 db = 1 volt per 100 microbars)	High—100,000 Ohms or more	3-cond., one shielded	Closed	Open	$35.00
414B	—52.5 db (0 db = 1 milliwatt with 10 microbars)	150-250 Ohms	4-cond., two shielded	Open	Open	$35.00
414C		100—1,000 Ohms	4-cond., coil cord	Open	Open	$51.00

RANGER II NOISE CANCELLING
FOR HIGH SPEECH INTELLIGIBILITY

Gets the message through even when the ambient noise is so loud the operator can't hear himself! Significantly superior speech intelligibility to any other brand of so-called "noise cancelling" microphone. Specially tailored response for highest intelligibility—200 to 4000 Hz. Same size, cable, cable relief, switch and case as Ranger II (at left) . . . only 7 oz., less cable.

MODEL	OUTPUT LEVEL	IMPEDANCE	CABLE TYPE	SWITCH MIC. CIRC.	RELAY CIRC.	LIST PRICE
419A	.12 volt (—18.5 db) (0 db = 1 volt per 100 microbars)	High—100,000 Ohms or more	3-cond., one shielded	Closed	Open	$66.00
419B	.014 volt (—37 db) (0 db = 1 volt per 100 microbars)	150-200 Ohms	4-cond., two shielded	Open	Open	$66.00

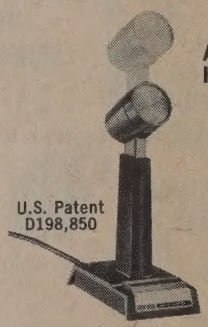
SHURE DISPATCHING . . GENERAL PURPOSE MICROPHONES

MODEL 450 "DISPATCHER" MICROPHONE*

Made of Rugged "ARMO-DUR"—Won't Crack—Peel—Rust—Dent.

New modern design fits every decor for paging use. Integrated case design, made of gray "Armo-Dur", features telescoping height adjustment for maximum convenience. Rugged Controlled Magnetic element with impedance switch for low or high impedance. Push-to-talk switch bar with optional features provide every desired switching option.

SPECIFICATIONS—ELEMENT TYPE: Controlled Magnetic. FREQUENCY RESPONSE: 100 to 10,000 Hz. CASE: Two-tone Gray "Armo-Dur." CABLE: 7 ft., four-conductor (two-conductor shielded). SWITCH: Push-to-talk switch button with optional locking feature to operate independent microphone and relay circuits. Relay portion of switch is normally open. Microphone portion of switch is normally open or normally closed as required. DIMENSIONS: 4" wide, 5 1/16" deep, 10 5/16" high (adjustable). NET WEIGHT: 1½ lbs.



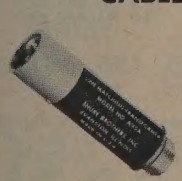
ADJUSTABLE HEIGHT

U.S. Patent D198,850

MODEL	IMPEDANCE	OUTPUT LEVEL	LIST PRICE
450	High	High —54 db (0 db = 1 volt per microbar); 2.00 millivolts/microbar	$52.00
	50-250	Low —53 db (0 db = 1 milliwatt per 10 microbars); .225 millivolts/microbar	

ACCESSORIES

CABLE TYPE TRANSFORMER



Model A95A is a high-quality, cable-type transformer which makes it possible to connect a low impedance microphone (35-50 ohm and 150-250 ohm) to a high impedance amplifier. It is housed in a compact, sturdy and magnetically-shielded case, 2½" long x ¾" diameter. Use of this transformer solves the problem of excessive high frequency loss and objectionable hum when long lengths of microphone cable are necessary. Model A95A may also be used in specialized applications requiring high impedance to low impedance circuit connections. Attractive gray and black case furnished with Cannon XL-3-11 input and Amphenol MC1F output plugs installed. Frequency response: 20 to 20,000 Hz, plus or minus 1 db.

List Price: $19.00

AMATEUR RADIO AND CB

MODEL 444T

Transistorized with Variable Output Level

For AM, FM, or single sideband units. Features built-in two-transistor preamplifier with volume control to give variable high output. Self-contained battery operates up to 300 hours before replacement. Enables you to maintain maximum modulation. Adjustable height design "Armo-Dur" case.

SPECIFICATIONS

FREQUENCY RESPONSE: 200 to 6,000 Hz. OUTPUT LEVEL: Adjustable from 2 mv to 45 mv for 1 microbar input. IMPEDANCE: Less than 1,000 ohms. BATTERY TYPE: Burgess 2U6 or equivalent included. CABLE: Four-conductor, plastic jacketed non-shielded coiled cord, 5-feet extended. SWITCH: Press-to-Talk switch. Locking or non-locking operation—to operate microphone circuit or external control circuit. Close circuit to talk and/or open circuit to talk. Relay or switching circuits can be selected by simply cutting designated wire on switch assembly. DIMENSIONS AND WEIGHT: 10⅜" high (adjustable), 4" wide, 5¾" deep, 1½ lbs. LIST PRICE: $52.00.

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TRIMM INC.

A SELECTED LISTING FROM OVER 2500 TRIMM-MANUFACTURED COMPONENTS.

HEADSETS: GENERAL PURPOSE, COMMERCIAL, MILITARY, AMATEUR, EDUCATIONAL, STEREO

Since 1922 TRIMM has manufactured a complete line of the finest electro-acoustic equipment and components. Engineered to fill the broadest applications; from the experimental crystal set to rugged field use, from industrial test equipment to home high-fidelity and stereo — these headsets are quality constructed and value priced.

ACME 24, 25, 27

A superior low-cost headset most suitable for Geiger counters, crystal sets, toys and radio systems. Black bakelite shell and cap. No. 24 has a black vinyl covered double headband and cotton tinsel conductor "Y" cord with pin tips. No. 25 headband is black enameled. No. 27 has a black enameled single headband and plastic covered stranded wire cord with pin tips.

REX 30, 32

Lowest cost BIPOLAR type headset. Increased sensitivity. A 6 oz. lightweight for code training and institutional radio systems. Black bakelite shell and cap. Black vinyl covered headband. No. 32 has a single headband and plastic covered stranded wire with pin tips.

DEPENDABLE 70, 71, 72

Combines the best qualities of Acme and Rex; simple, rugged, sensitive and low cost. Ideal for electronic organs, code training and language labs. Black bakelite shell and cap, black vinyl covered headband, mercerized cotton tinsel "Y" cord and pin tips. No. 70 has double headband; No. 71 has plastic covered stranded wire cord; and No. 72 has single headband and single cord with pin tips.

• STEREO

All models available for stereo use, ranging from the least expensive Acme to the top quality, extended range "L" headset. Stereo types have two different plug terminations. Those with "-14" in code number have single 3-circuit plug such as No. 513 or No. 516; and those with "-15" in code number have 2-circuit plugs, one red, other black.

Highest quality headset of conventional construction. Individually tuned acoustic cavities assures faithful sound reproduction. Top performance under all environmental conditions. Black bakelite shell and cap. No. 50 has black rubber covered double headband and waterproof nylon tinsel conductor, "Y" cord and No. 501 plug. No. 56 has a vinyl covered double headband with over-the-head molded neoprene cord and No. 501 plug.

STANDARD "L"

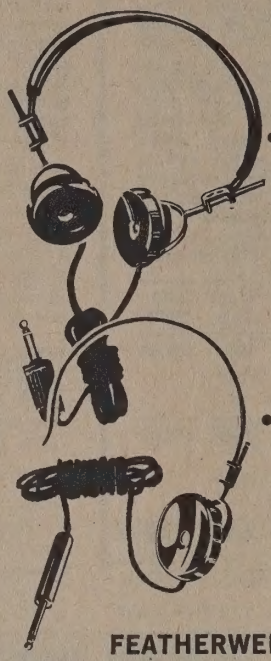
50-08	$23.00	56-2M	$27.65
56-08	27.65	50-5M	23.00
50-06	23.00	56-5M	27.65
56-06	27.65	50-12M	24.00
50-2M	23.00	56-12M	28.65

STEREO "L"

50-14-08	27.00	56-14-16	31.65
56-14-08	31.65	50-14-6M	28.00
50-14-16	27.00	56-14-6M	32.65
50-15-08	28.00	56-15-16	32.65
56-15-08	32.65	50-15-6M	29.00
50-15-16	28.00	56-15-6M	33.65

REPLACEMENT PARTS

For a nominal charge all TRIMM manufactured products can be restored to top working condition at the factory. Nearly any part that is required for manufacture is also available as a replacement part. In addition, worn or broken headset cords for almost any make can be made to order.



ACME

				With 511 plug	
24-03	$3.95	25-2K	$3.65	24-9-03	$5.15
25-03	3.50	24-4K	4.45	24-9-2K	5.20
27-03*	2.10	25-4K	4.00	25-9-2K	4.75
24-15	4.00	27-1K*	2.25	27-9-03	3.20
24-2K	4.10	27-2K*	2.45		

• STEREO

24-14-03	$6.50	24-15-03	$7.60

REX

				With 511 plug	
30-03	$5.05	30-3K	$5.55	30-9-03	$6.15
30-06	5.05	32-03*	2.80	30-9-06	6.15
30-2K	5.25	32-1K*	2.90	30-9-2K	6.35
				32-9-03*	3.90

DEPENDABLE

				With 511 plug	
70-03	$5 60	70-4K	$6.20		
70-06	5.60	71-2K	6.70		
70-08	5.60	72-03*	3.70	70-9-03	$6.70
70-15	5.80	72-1K*	3.80	70-9-06	6.70
70-2K	5.90	72-2K*	3.90	70-9-2K	7.00
70-3K	6.10			70-9-4K	7.30

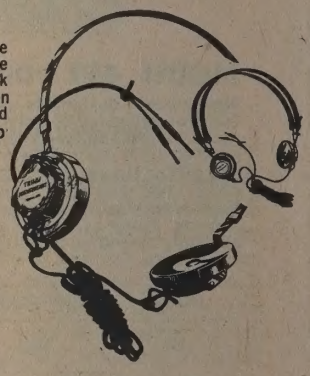
• STEREO

70-14-03	$7 60	70-14-2K	$7.90	70-15-08	$8.00
70-14-08	7.60	70-15-03	8.00	70-15-2K	8.30

Headsets are listed by their model number and by their impedance or D.C. resistance; 3.2 ohms (03); 8 ohms (08); 600 ohms (06); 1500 ohms (15); 2000 ohms D.C. (2K); 2000 ohms (2M); 3000 ohms D.C. (3K); 4000 ohms D.C. (4K); 5000 ohms (5M); 12000 ohms (12M); 1,000 ohms (17M); and 24000 ohms (24M). Single earphones (*). List prices included are for single purchases at retail. Consult your distributor for quantity discounts.

FEATHERWEIGHT 5 OZ.!
WORLD FAMOUS-PROVEN IN USE
100, 101, 102, 104, 106, 107

Highly recommended for amateur radio use, language training and electronic testing. Nos. 100 and 106 have a fully adjustable nickel plated single headband. Black bakelite shell and cap. Waterproof mercerized cotton tinsel conductor "Y" cord with pin tips. Nos. 104 and 107 have black vinyl covered double headband at no increase in price.



$12.00 List With Pin Tips		$14.00 List With 501 Plug	
100-03	100-2K	100-9-03	100-9-4
104-03	104-2K	104-9-03	104-9-4
100-06	100-4K	100-9-06	106-9
104-06	104-4K	104-9-06	107-9
100-15	106	100-9-2K	
104-15	107	104-9-2K	

With Pin Tips List $12.50		With 501 Plug List $14.50	
101-03	102-03	101-9-03	102-9-03
101-06	102-06	101-9-06	102-9-06
101-2K	102-2K	101-9-2K	102-9-2K

• STEREO

104-14-03	$15.00	104-15-08	$16.00
104-15-03	16.00	104-14-2K	15.00
104-14-08	15.00	104-15-2K	16.00

ARMY — NAVY 28, 29

Built for severe use. Satin chrome brass shell, black bakelite cap. Black rubber covered double headband with thumbscrew lock for yoke adjustment. Waterproof nylon tinsel conductor "Y" cord, pin tips or plug.

With Pin Tips		With 501 Plug	
28 (W) 600 ohm	$20.00	28-9 (W) 600 ohm	$21.65
29 (K) 20M ohm	20.00	29-9 (K) 20M ohm	21.65

COMMERCIAL 155, 156, 157, 158, AND 159

Very rugged TRIMM headset — yet very lightweight. Developed for marine and aircraft radio use. All types have black bakelite shell and cap; waterproof, tinsel conductor cord. No. 156 (600 ohm) and No. 157 (17M ohm) have rubber covered double headband with a "Y" cord and 501 plug. No. 158 (600 ohm) and No. 159 (17M ohm) same with pin tips on end of cord. No. 155 especially suited for educational use, has black vinyl covered headband, somewhat smaller than normal adult size and suitable for children. Complete with 501 plug.

155-03	$13.50	156	$15.75
155-06	13.50	157	15.75
155-2K	13.50	158	14.00
		159	14.00

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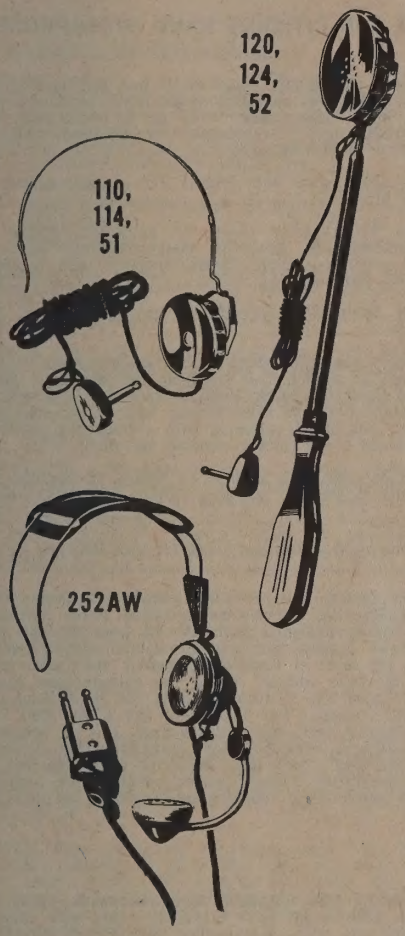
TRIMM INC.

A SELECTED LISTING FROM OVER 2500 TRIMM-MANUFACTURED COMPONENTS.

HEADSETS: GROUP AND INDIVIDUAL LISTENING, AUDIO KITS, STEREO



Telephone Operators Headset

A high quality transmitter/receiver unit commonly used in switchboard applications. Lightweight construction and complete adjustability assures wearing comfort and proper transmitter positioning.

RECEIVER	275 ohm impedance at 1000 cps.
TRANSMITTER	25 ohm impedance, carbon type. Frequency range—300 to 5000 cps.
PLUG	Standard twin 2 circuit plug, TRIMM No. 505

252AW List $77.75

"85" PILLOW PHONE

Sealed, waterproof ultra-thin disk for very local listening applications. Highly sensitive magnetic unit only 2" in diameter, 7/16" thick. Stainless steel face, pearl gray plastic shell. Replaceable vinyl tinsel cord with plug. Gray neoprene snap-on hanger ring, as shown: $0.50

With 514 plug		With 536 plug	
85-03 3.2 ohm	$11.30	**86-03** 3.2 ohm	$11.30
85-2M 2M ohm	11.30	**86-2M** 2M ohm	11.30

GROUP HEARING AID COMPONENTS—SINGLE EARPHONES

For installations where the listening requirements of many individuals must be served two basic types of earphones are used: the headband model for theatres and auditoriums and the hand held lorgnette for churches and mortuaries. Both Featherweight and "L" models are used. All have a 6 ft. waterproof mercerized cotton tinsel conductor cord. Standard impedances: 3.2, 8, 300, 1K and 2K ohms.

"L" Model (With 512 flat plug)

Headband		Lorgnette	
51-08	$12.00	**52-08**	$14.00
51-3	12.00	**52-3**	14.00
51-1K	12.50	**52-1K**	14.50

FEATHERWEIGHT (With pin tips)

Headband		Lorgnette	
110-03	$7.50	**120-03**	$10.50
110-3	7.50	**120-3**	10.50
110-1K	7.50	**120-1K**	10.50
110-2K	7.50	**120-2K**	10.50

FEATHERWEIGHT (With 512 flat plug)

114-03	$9.00	**124-03**	$12.00
114-3	9.00	**124-3**	12.00
114-1K	9.00	**124-1K**	12.00
114-2K	9.00	**124-2K**	12.00

VOLUME CONTROL AND OUTLET BOXES

Formed metal boxes measuring 3¾" x 2⅛" x 1¼". All edges and corners are rounded. Available in Brown or Gray Hammertone and in Gloss Ivory.

Single Control — Single Jack Outlet Boxes

Resistance	Brown	Ivory	Gray	
1K	**460-1K**	**461-1K**	**462-1K**	$6.00
10K	**460-10K**	**461-10K**	**462-10K**	6.00
25K, 50K, 100K, 500K	Any of the above three types, these ohmages			$6.50
				6.50

Dual Control — Dual Jack Outlet Boxes

1K	**467-1K**	**469-1K**	$9.75
10K	**467-10K**	**469-10K**	9.75
25K	**467-25K**	**469-25K**	11.00

Dual Jacks — No Control

477	Brown	$4.00
478	Ivory	4.00

(With load resistor)

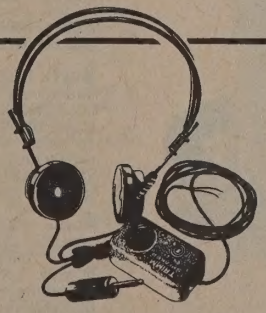
480	Brown	$5.00
481	Ivory	5.00
482	Gray	5.00

Single Jacks — No Control

484	Brown	$3.50
485	Ivory	3.50
486	Gray	3.50

Audio Junction Box — Four Jacks

490	Brown	$5.50
492	Gray	5.50



Headset Kits For TV and Radio

Provides a simple means of attaching headsets or extension speakers to TV or radio sets. Has remote on-off switch for loudspeaker, a volume control for the headset and two jacks for multiple listening. Complete kit includes headset or single earphone with plug, control box and 15 ft. of connecting cord.

Kit		
632	(Double ACME Headset)	$12.65
632-1	(Single ACME Headset)	10.70
632-2	(Two double ACME Headsets)	17.80
633	(Double DEPENDABLE Headset)	13.95
634	(Double FEATHERWEIGHT Headset)	21.50
635	(Single FEATHERWEIGHT Headset)	16.10
637	(Single PILLOW-PHONE)	18.80
631	(Control Box Only)	7.50
631-1	Control Box Only but with miniature jack	7.50
631-2	Control Box Only but with sub-miniature jack	7.50

STEREO CONTROL BOX

Designed for stereo headsets with No. 513/516 three circuit plugs. Has two volume controls of suitable value for independent volume adjustment of both channels.

464-1C Brown Hammertone $10.00

EAR CUSHIONS

For comfort, cleanliness and noise control. Formed of sponge rubber, solid rubber, sponge and solid rubber, or chamois. Prices, per pair, range from $1.60 to $16.95 list.

654	Sponge rubber, Military type MC-162. Fits all TRIMM headsets but Dependable and Army-Navy.	$1.60
660	Sponge rubber. Fits Dependable and Army-Navy.	$2.50

MICROPHONES BY TURNER

SUBSIDIARY OF CONRAC CORPORATION

CUSTOM INTERIORS

Turner has complete facilities for designing and manufacturing all kinds of special application microphone interiors, soft speakers for dictating machines, anything you need. Write for full information on this service.

COMMUNICATIONS AND CITIZENS BAND MICROPHONES BASE STATION

MODEL 254X — It features push-to-talk front touch bar and locking on-off lever switch. May be wired for relay operation or electronic switching. Deluxe light grey hammertone finish. Output level: −48 db for more clear signal strength. Response: 100-8000 cps. 7′ three-conductor (shielded) cable. Size is 7¾″ in height x 5½″ in depth. Net price.....**$17.40**

MODEL 254C — Same as 254X except with famous 21C ceramic interior. Output level: −54 db. Net price.....**$17.40**

MODEL 454X — Designed for the voice range, it's extra hot. Output level: −48 db. Response: 300-3000 cps. Attractive telephone black finish. Your choice of VOX or PTT switch operation. Comes complete with 3-conductor (one shielded) coiled cord. Net price.....**$19.20**

MODEL 454C — Same as Model 454X except has ceramic interior. Output level: −52 db. Net price.....**$19.20**

MODEL +2 — Revolutionary new microphone which allows manual control of output volume by a twist of a dial. Two transistor pre-amp built into the microphone for up to **50 times** the output level of conventional ceramic base station microphones. World's best and most popular base station microphone. Exclusive touch-to-talk or lock on-off switching with a frequency response of 300-3,500 cps. Self contained 9 volt battery included. Net price.....**$33.00**

MODEL M +2/U — Mobile companion to the +2 Model. 10 position output level control. Two transistor built-in pre-amp. Wired for relay switching. Net price.....**$23.70**

MODEL JM +2/U — Same as M +2 except wired for sets that use electronic switching. Net price.....**$23.70**

MODEL +3 — Bold new styling coupled with modern electronic circuitry stamps the Turner Plus Three as the professional base station microphone. The Plus Three has a newly designed transistorized pre-amp with volume control plus Modu-Gard — a new compression amplifier circuit. With the volume control set for the level of modulation desired, the user can then talk close or far from the mike without varying the output signal or transmitter modulation. It's a good way to avoid violating FCC regulations against interfering with adjacent channels. The Plus Three has a 300-3000 Hz frequency response for absolute best voice transmission. This is achieved by Turner's exclusive new ceramic interior design. Three-conductor (1 shielded) coiled cord; touch-to-talk front touch bar; switching with slide-lock when desired for extended transmitting. Comes complete with wiring instructions for more than 100 popular transceivers. Shipping weight: 3 lbs. Net price..**$45.00**

MOBILE

Model 360 is a small mobile type communications microphone, ceramic type designed to reduce size and weight to a minimum. Looks very good with the new small solid state sets. Also recommended for use with portable P.A. applications. Rugged cycolac case and heavy duty coiled cord. Response is 300-3000 cps; output level −54 db. Wired for relay switching. **Model J-360** is the same as Model 360 except wired for sets that use electronic switching.

MODEL 360, Net.....**$9.00**
MODEL J-360, Net.....**$9.00**

MODEL 360Lo — A new low impedance ceramic mike for the new solid state transistorized sets like III, 323 etc.....**$9.90**

MODEL 350C — Most used as original equipment. This low-cost ceramic microphone with on-off switch is familiar to most mobile radio operators. More 350C microphones are used as original equipment on citizens band and marine transceivers than any other microphone. Extra-tough cycolac case. Rugged ceramic interior allows you to use the 350C in any climate. Complete with hanger button and standard dash bracket for easy mounting. Ideal for citizens band, amateur use, mobile rigs and paging. Wired for relay operation. Response: 80-7000 cps. Output level: −54 db. Net price.....**$9.00**

Model +350 — Is a transistorized dynamic mobile microphone in a dark gray 350 style case. It's an ideal replacement microphone for many sets using carbon microphones and will improve the intelligibility of your signal and provide consistent modulation. Silicon transistors are used for maximum dependability. Complete instructions are included. Response: 300-5000 cps; Output level: −40 db at 12 v dc using 600 ohm load; Coiled cord: 3 conductor (1 shielded), Model +350. Net price.....**$20.58**

MODEL 355C — Inexpensive mobile microphone with grip-to-talk switch. More comfortable to hold — more comfortable to use. The 355C features an output level of −50 db. It's extra hot for a high gain signal. Response: 80-7000 cps. Net price.....**$9.00**

MODEL SR90D — The Model SR90D (pressure operated dynamic) features a slender die cast zinc alloy case with the Turner exclusive front hanger button. (Satin chrome finish.) Dynamic models are available in two impedances, hi or 200 ohms. Relay switching is standard. Three-conductor (one shielded) 11″ retracted, 5′ extended coiled cord on hi impedance models and 4-conductor (two shielded) on 200 ohm units. Output level: −52 db. at hi impedance. Response: 200-10,000 cps. Net price.....**$25.50**

MODEL SR90R — Is equipped with a high quality telephone type carbon interior to give you maximum voltage output and high intelligibility as well. Same general appearance and features as Model SR90D. Output level: −40 db. Response: 200-4000 cps. Choose the Model SR90R wherever maximum output with a minimum of distortion is specified . . . taxicabs, police, etc. Net price.....**$19.20**

Net

© U.C.P., Inc.

MICROPHONES BY TURNER

SUBSIDIARY OF CONRAC CORPORATION

CARDIOID MICROPHONES

MODEL 500 — An outstanding cardioid dynamic microphone featuring combination Hi or 50/250 ohms impedance, satin chrome finish with 20 ft. cable. Model 500 units are interchangeable in any system, with no testing for possible variations in frequency response or front-to-back ratio necessary. The 500 is a highly sensitive unit, with smooth, uniform response from 40 to 15,000 cps. and excellent front-to-back ratio of 20-25 db.

Model 500	Net price	**$54.00**
Model S-500 (with off-on switch)	Net price	**$56.40**
Model 500G	Net price	**$63.00**
Model S-500G	Net price	**$66.00**

MODEL 505 — Similar to Model 500, but with the acoustical advantages of a bass response control. In the "normal" position, response is 40-15,000 cps.; in the "less bass" position, 100-15,000 cps. Specifically recommended for auditorium work and recording. Net price..... **$66.00**

MODEL 600 — The econoline model which sets new quality standards for popularly priced cardioid units. Easy to hold or use, either by hand or with stand, and made from 100% American-made parts. 6" in length, with on-off switch, 12 ft. cable, and 50-15,000 frequency response. (For low impedance specify Model 602.)

Model 600 Net price..... **$35.70**

Model 700 — The style and sound standard, professionally reengineered at no increase in price! A four-pin female connector has been added to the tail of the microphone, thus a removable cable. Now in the top quality class. Hi-low impedance combination, unidirectional cardioid dynamic, pop-blast filter, quality "dynaflex" interior, 70-15,000 frequency response output level −55 db, typically 20 to 25 db discrimination over the entire frequency range, built-in broadcast wind screen, satin chrome finish, on-off switch, 20-foot cable.

Model 701 — Is high impedance only with a high quality P.A. or recording interior, on-off switch and removable cable. The response is 100-13,000 cps with output level of −56 db. Complete with built-in pop-blast filter. Ask for the 700 model which fits your needs best. They're rugged and dependable. You'll be proud to ow none.

Model 700 Net..... **$55.20**
Model 701 Net..... **$37.20**

MODEL 777 — Quality cardioid performance with maximum noise rejection. Rolled-off bass response permits very close-to-mouth use, and new rotary on-off switch can be clearly seen even in dim light. Rugged all metal die cast case, satin chrome plated, allows hand or stand use night after night, and full fidelity assures faithful voice or music reproduction. Low impedance only. Net price..... **$66.00**

MODEL 510 — Broadcast cardioid dynamic with 40-15,000 cps. frequency response. Combination 50 or 200 ohms impedance selected at the free end of the cable. Professional broadcast blue finish. 20 ft. cable supplied. Connector is cannon XLR-4-11C. Cardioid discrimination is typically 25 db over the entire range. Furnished complete with stand adapter and matching shock-mounted desk stand. Net price..... **$90.00**

GENERAL PURPOSE AND PUBLIC ADDRESS MICROPHONES

MODEL 33D — Dynamic type. Excellent for paging, communications, announcing, P.A. use, ham radio. Satin chrome finish, 90 degree swivel coupler, supplied with 20' cable. Response: 100-9000 cps. Output level: −54 db. Impedance: 200 ohms or high. Net price..... **$27.00**

Model 2800 — Hi impedance dynamic tape recorder mike with desk stand/Lavalier 12 foot cable with plug. 80-12,000, frequency response, output level: −63 db. Modern styling for console, desk and cassette recorders. Net price..... **$12.00**

Model 35 — One of the smallest Hi quality lavalier microphones in the public address field. Only ¾" dia x 3" in length. Combination Hi-Low Impedance. 25 foot cable. 70-10,000 Hz response, output level of −63 db. works with any amplifier. Beautiful champagne finish. Net price..... **$39.00**

Model 35A — Broadcast Lavalier. Only 2½" in length. 150 ohm only. 25 foot cable. 60-12,000 Hz response. Net price..... **$45.00**

MODEL 2300 — Very high quality omni-directional dynamic microphone. Excellent frequency response of 50-15,000 Hz. Hi impedance output level or −55 db. Also available in low impedance. (Please specify when ordering.) This is a superb recording and broadcast interview microphone because of its excellent "presence." May also be used for general purpose P.A. and entertainment functions. Lightweight yet very rugged. It features a satin chrome finish on a machined steel case. Professional 3 pin connector — detachable cable, on-off switch. Shipping weight 3 lbs. Net each **$45.00**

MODEL P9D — This handy dynamic hand-held or stand microphone is well suited for paging, P.A., amateur and mobile use. Extremely rugged, heavy case. Push-to-talk switch. High or 200 ohms (specify when ordering). 7' cable supplied. Amphenol MC1M (MC2M on 200 ohms) connector in microphone. Output level: −52 db. Dimensions: 2½" x 5" in length x 1¾" in depth. Shipping weight: 2 lbs. Net price..... **$29.40**

MODEL 250 — A dynamic microphone ideal for dispatch, paging, P.A., control tower and amateur use. Wired to operate both relay and mike circuits at a touch. Features on-off push-to-talk and lock switch. Also features Turner's "lift-switch." Response from 60 to 10,000 cps. Output level: −52 db. Complete with single unit satin chrome case and 20 ft. three-conductor (one shielded) cable. Net price..... **$36.00**

MODEL 251 — The Model 251 is the industrial and commercial sound contractors' favorite in the 250 family. Rugged-one piece die-cast case (no other accessories needed), gleaming satin chrome finish — three-way switching and 150 ohm impedance all add up to the paging microphone of the commercial sound industry. Why fuss with grip-to-talk devices when it's so easy to touch the 251's front bar or just simply pick it up? Convenient lock on-off switch, too. Airports, clubs, high schools, reception desks, dining rooms, are all favorite installations of 251 convenience. Comes wired for relay operation, too, with 20' four-conductor (two shielded) cable. Response: 70-10,000 cps. Output level: −52 db. Size is 7¾" high x 5½" in depth. Shipping weight: 4 lbs. Net Price **$36.00**

MODEL S2850 — Dynamic Cardioid Microphone — A new addition to the line and an outstanding value. May be used in the hand, or, utilizing the handy accessory included, as a lavalier, or place it on a table-top. Highly directional, it effectively cancels sounds arriving from the rear. Smooth, peak-free response to sounds arriving from the front. Range 70 to 12,000 Hz. Tough, durable Cycolac housing. High/Low impedance. 12 ft. cable. On-off line shorting switch. Output level: Hi imp. −60 db (0 = 1 volt/microbar). Net price **$24.00**

MODEL SR-585D — Dynamic microphone with push-to-talk switch. Designed for fixed mounted applications, ideal for grocery call stations, switchboards, paging, dispatching, etc. The switch is line-shorting and is designed to actuate a relay. Impedance is 150 ohms. The cable extends 4' from the base and is 4-conductor (two shielded). Response from 70 to 12,000 cps. Output level: −58 db. Overall length: 22". Shipping weight: 3 lbs. Net price **$26.10**

UNIVERSITY® SOUND

A DIVISION OF LTV LING ALTEC, INC

Drivers

MODEL ID-20 (20 watts) For speech and music systems requiring moderate sound power. Designed to deliver maximum output, the ID-20 is highly efficient, produces a clear, penetrating and distortion-free sound.

MODEL ID-30/ID-30T (30 watts) Exceptional for installations requiring single medium power units or multiple driver/horn combinations. These high quality drivers produce musical balance and speech penetration with a performance superior to higher cost competitive models. Tropicalized voice coil, completely weatherproof. Model ID-30T has a built-in line matching transformer tapped for impedances of 167/335/-500/1000/2000/4000 ohms and 25 and 70 volt power taps at 30/20/10/5/2.5 watts.

MODEL ID-40A/ID-40T(40 watts) Extended range, high quality and excellent efficiency produce an essentially uniform response and natural quality of speech and music reproduction. Moderately high power for penetrating through high ambient noise levels. Tropicalized voice coil and fully weatherproofed. Model ID-40T has a built-in line matching transformer tapped for impedances of 45/122/250/500/1000/2000 ohms and 25 and 70 volt power taps at 40/20/10/5/2.5 watts. ID-40T housing is rugged, die-cast aluminum with dural gland nut water tight cable entrance.

MODEL ID-60/ID-60T (60 watts) A premium high power compression driver. Wide range response, high efficiency and high quality construction for natural speech and music reproduction with maximum penetration in high noise areas. Rugged, weatherproof housing for trouble-free performance in any environmental application. Model ID-60T has high impact cycolac outer case and built-in line matching transformer tapped for impedances of 16/80/165/500/1000/2000 ohms and 25 and 70 volt power taps at 60/30/20/10/5/2.5 watts.

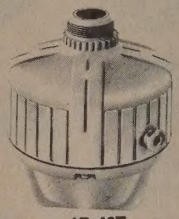
MODEL ID-75 (75 watts) New, higher power in a compact case. Ideal for both Public Address and electronic siren applications. Peak efficiency, super power for effective penetration into exceptionally high noise areas.

ID-20

ID-30

ID-30T

ID-40A


ID-40T

ID-60

ID-60T

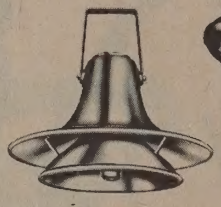
ID-75

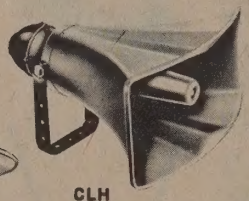
DRIVER MODEL	FREQUENCY RESPONSE	POWER RATING	VOICE COIL IMPEDANCE	DIMENSIONS (Overall)	SHIP. WT.	NET PRICE
ID-20	120-6500 Hz	20 watts	16 ohms	3½" dia. 3¾" d.	2½ lbs.	16.50
ID-30	85-7500 Hz	30 watts	16 ohms	4⅛" dia. 3¾" d.	3 lbs.	21.00
ID-30T	85-7500 Hz	30 watts	variable*	4⅛" dia. 6" d.	4 lbs.	30.32
ID-40A	80-12000 Hz	40 watts	16 ohms	4½" dia. 4⅞" d.	4¼ lbs.	25.20
ID-40T	80-12000 Hz	40 watts	variable*	5" dia. 6¼" d.	5¼ lbs.	34.50
ID-60	70-12000 Hz	60 watts	16 ohms	4-11/16" dia. 5" d.	5¾ lbs.	35.94
ID-60T	70-12000 Hz	60 watts	variable*	6¾" dia. 6¾" d.	6¾ lbs.	43.95
ID-75	150-7000 Hz	75 watts	16 ohms	4¼" dia. 3¾" d.	5 lbs.	36.50

*Also available in 8 ohms order as model ID-75-8.

Trumpets

GH, LH, PH, SMH


RLH, RPH, RSH


CLH

COBREFLEX©

2 WP

SH

DIRECTIONAL MODELS GH, LH, PH, SMH For maximum noise penetration and distance of projected sound. Reflex design for highest conversion efficiency. Fully weatherproof, baked finish.

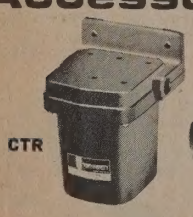
RADIAL MODELS RLH, RPH, RSH For uniform 360° overhead dispersion in high ceiling installations. Rugged construction, baked finish.

WIDE ANGLE COBREFLEX Patented twin folded exponential horns with two air columns in a single assembly. High efficiency and smooth radiation pattern. Can be used in cluster arrays. Rugged, fully weatherproof.

WIDE ANGLE MODEL CLH Patented design and construction. Wide angle bell and long air column for maximum low frequency response. Omni-directional bracket for vertical and horizontal rotation to eliminate feedback and overshoot "dead spots". Can be used in cluster arrays. Rugged fiberglass horn.

HORN MODEL	LOW FREQUENCY CUT-OFF	SOUND DISTRIBUTION	AIR COLUMN LENGTH	DIMENSIONS (Overall) LENGTH	BELL	SHIP. WT.	Net Price
GH	85 Hz	65°	6½ ft.	28"	31"	22 lbs.	58.50
LH	120 Hz	75°	4½ ft.	19"	25¾"	16½ lbs.	37.50
PH	150 Hz	85°	3½ ft.	15¾"	20⅜"	11¾ lbs.	27.57
SMH	200 Hz	95°	2½ ft.	12"	16¼"	8¼ lbs.	23.37
RLH	120 Hz	360°	5 ft.	18½"	28⅛"	25 lbs.	53.70
RPH	140 Hz	360°	4 ft.	13¾"	25⅛"	19 lbs.	40.77
RSH	180 Hz	360°	3 ft.	11"	19"	13 lbs.	37.50
COBREFLEX†	200 Hz	120°x60°	2½ ft.	10¼"	18½"x9¼"	10¼ lbs.	29.39
CLH	120 Hz	120°x60°	4½ ft.	20"	21½"x11½"	13¼ lbs.	34.50
SH	350 Hz	100°	1½ ft.	7"	8¾"	2¾ lbs.	22.77
2WP	350 Hz	120° each horn	1½ ft.	20½"	8½"	4½ lbs.	22.77

Accessories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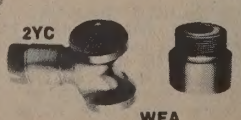

2YC

WEA

PMA

RTA

5433

PMA ADAPTER Fits standard ½' dia. threaded pipe to any University "U" mounting bracket—for special applications requiring pipe mounting. Net $2.97

RTA ADAPTER Fits University trumpets to Western Electric and RCA drivers having 1 7/16—16 threads. Shpg. wt., ½ lb. Net $2.97

WEA ADAPTER Fits University drivers to Western Electric and RCA trumpets having 1 7/16—16 threads, Shpg. wt., ½ lb. Net $2.37

MODEL 5433 TRANSFORMER 30 watt capacity. Use with ID-20, ID-30 or to feed a number of smaller paging speakers. Primary impedance: 45/165/200/250/500/1000/2000 ohms. Secondary impedance: 4/8/16 ohms. 70 v. line power taps: 30/25/20/10/5/2.5 watts. Dimensions: 1 15/16" x 2 5/16" x 1¾". Mtg. hole centers: 2⅜". Shpg wt., 1 lb. Net $5.97

MODEL CTR TRANSFORMER/JUNCTION HOUSING Die cast aluminum. Weatherproof. Houses models 5433, 5434, or other transformers up to 2⅜" x 2⅞" x 2⅞". Adjustable slotted adapter mounts transformer with centers 1½" to 2⅞". Junction box for speaker lines. Bar strap for mounting to "U" brackets. Screws to wall. Also holds University paging speakers. Shpg. wt., 1½ lbs. Net $6.57

2YC CONNECTOR Allows use of two driver units on a single radial, directional, or wide-angle trumpet. Shpg. wt., 1 lb. Net $9.45

PRICES SLIGHTLY HIGHER IN WEST

© United Technical Publications

UNIVERSITY® SOUND
A DIVISION OF LTV LING ALTEC, INC

Paging/Talk-Back Speakers

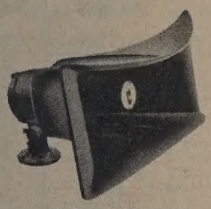
DLC

DLCT

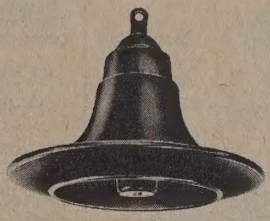
New
UH/UHT

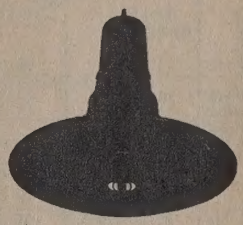
IB-A/MIL-A

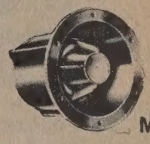
IB-T/MIL-T


CIB-A/ CMIL-A

CIB-T/CMIL-T


IBR-A


IBR-T


MIS

MODEL	FREQUENCY RESPONSE	POWER RATING (1)	IMPEDANCE (VOICE COIL)	DISPERSION	SOUND PRESSURE LEVEL (6)	SENSITIVITY AS MICRO (7)	DIMENSIONS (8)	SHIPPING WEIGHT	NET PRICE
DLC-8	400-10,000 Hz	7½ w.	8 ohms	120°	104 dB	-30 DBM	5⅞" dia. x 4" d. (A)	1¾ lbs.	11.97
DLC-45			45 ohms						11.97
DLC-T			8 ohms (2)				5⅞" dia. x 6⅛" d (A)	2⅔ lbs.	17.37
UH-8	220-16,000 Hz	32 w.	8 ohms	120° (9)	126 dB	-26 DBM	10½" dia. x 10⅞" d. (P) (10)	5 lbs.	26.97
UH-45			45 ohms					5 lbs.	28.17
UHT			8 ohms (3)					5¾ lbs.	35.37
IB-A4	250-13,000 Hz	30 w.	4 ohms	105°	126 dB	-20 DBM	10¼" dia. x 9" d. (A)	4½ lbs.	25.77
IB-A8			8 ohms						23.97
IB-A45			45 ohms						25.77
IB-T			8 ohms (4)				10¼" dia. x 11 7/16" d. (A)	5¼ lbs.	30.60
CIB-A4	250-13,000 Hz	30 w.	4 ohms	120°x60°	126 dB	-22 DBM	14" w. x 7⅜" h. x 12" d. (A)	6 lbs.	30.36
CIB-A8			8 ohms						28.17
CIB-A45			45 ohms						30.36
CIB-T			8 ohms (4)				14" w. x 7⅜" h. x 14½" d. (P)	6¾ lbs.	34.50
MIL-A4	350-13,000 Hz	10 w.	4 ohms	120°	119 dB	-23 DBM	7 13/16" dia. x 6⅞ d. (A)	3¼ lbs.	21.90
MIL-A8			8 ohms						19.77
MIL-A45			45 ohms						21.90
MIL-T			8 ohms (5)				7 13/16" dia. x 9 13/16" d. (A)	4 lbs.	28.77
CMIL-A4	350-13,000 Hz	10 w.	4 ohms	120°x60°	119 dB	-26 DBM	9½" w. x 6¼" h. x 8½" d. (P)	4 lbs.	23.41
CMIL-A8			8 ohms						22.77
CMIL-A45			45 ohms						23.41
CMIL-T			8 ohms (5)				9½" w. x 6¼" h. x 10 7/16" d. (P)	4¾ lbs.	30.90
IBR-A8	300-10,000 Hz	30 w.	8 ohms	360°	120 dB	-28 DBM	13" dia. x 10¼" d. (A)	5½ lbs.	32.10
IBR-T			8 ohms (4)				13" dia. x 12 11/16" d. (A)	6¼ lbs.	40.77
MIS-4	50-13,000 Hz	7½ w.	4 ohms	150°	115 dB	-22 DBM	5½" o.d., 4 7/16" d. (P) 6 Holds on 4⅞" mtg. dia.	2½ lbs.	23.97
MIS-8			8 ohms						22.50
MIS-45			45 ohms						23.97

1) Capacity in watts IPM (Music Power).

2) Voice coil impedance 8 ohms. Integral transformer terminals are labeled in wattage consumed and impedance on 70.7 and 25 volt constant voltage lines. Taps: 7.5/5/2.5/1.25/.65 watts.

3) Voice coil impedance 8 ohms. Integral switch selected transformer is labeled in wattage consumed and impedance on 70.7 and 25 V. "constant voltage" lines. Wattage taps: 32/15/10/5/-1.25 W. Transformer Impedances (70.7 V.): 161/335/500/1000/2000/-4000 ohms.

4) Voice coil impedance 8 hms. Integral transformer terminals are labeled in wattage consumed and impedance on 70.7 and 25 v. "constant voltage" lines. Wattage Taps: 30/15/10/5/2.5/1.25 w. Transformer Impedances: 167/335/500/1000/2000/4000 ohms.

5) Voice Coil impedance 8 ohms. Integral transformer terminals are labeled in wattage consumed and impedance on 70.7 and 25 v. "constant voltage" lines. Wattage Taps: 10/7.5/5/2.5/1.25/.65 Transformer Impedances: 500/667/1000/2000/4000/8000 ohms.

6) SPL reading taken 4 ft. on axis with "Full-Range" power input. Reduce by 6 dB each time distance is doubled. Reduce by 3 dB if power input is halved; increase by 3dB when power input is doubled.

7) DBM re 10 dynes/cm².

8) An (A) after a dimension indicates a horn of spun aluminum with baked-on acrylic paint. A (P) after a dimension indicates a horn of color-impregnated high-impact plastic.

9) Dispersion in all planes without unique Sound Deflector. With Adjustable Deflector, dispersion may be adjusted to suit environment.

10) Dimensions are without Sound Deflector. With Deflector, add ¼" to diameter and 4-1/16" to length.

PRICES SLIGHTLY HIGHER IN WEST

UNIVERSITY® SOUND
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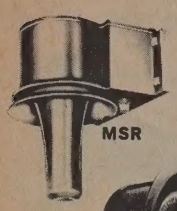
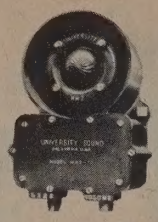
Special Purpose Loudspeakers


MSR

MM-2

MM-2F

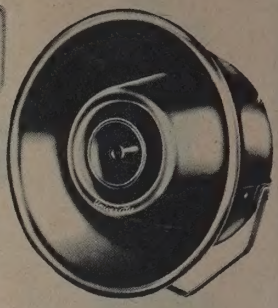
UW-30


MM-2TC

New ELC

MLC

CLC


WLC

	Frequency Response	Power Rating (1)	Impedance (2)	Dispersion	Sound Pressure Level (3)	Dimensions	Shipping Weight	Net Price
ES-75	400-7,000 Hz	75 watts	16 ohms	90°	126 dB	9½" h. x 8¾" w. x 10" l.	9 lb.	59.97
MSR	250-10,000 Hz	25 watts	16 ohms	360°	114 dB	10¾" h. x 6 7/16" w. x 8¼" d.	10¼ lb.	66.00
MSR-T			16 ohms (4)				11¼ lb.	71.40
MM-2	350-10,000 Hz	25 watts	16 ohms	150°	117 dB	6" dia. x 5" d.	5¼ lb.	37.29
MM-2F						7¼" dia. x 3¾" d.		38.48
MM-2TC	350-10,000 Hz	25 watts	16 ohms	120°	117 dB	10" h. x 6 7/16" w. x 4 7/16" d.	8¾ lb.	58.77
MM-2TC-T			16 ohms (4)				9¾ lbs.	64.26
UW-30	100-10,000 Hz	25 watts	16 ohms			7 3/16" dia. x 3⅝" d.	5¼ lb.	47.97
MLC	150-15,000 Hz	15 watts	8 ohms	120°	117 dB	12¾" x 9⅛" x 10⅝" d.	10 lb.	40.95
CLC	55-14,000 Hz	30 watts	8 ohms	120°	118 dB	22¾" dia. x 12¾" d.	23 lb.	69.90
WLC	50-15,000 Hz	30 watts	8 ohms	90°	120 dB	33½" dia. x 20" d.	68 lb.	197.97
ELC	150-11,500 Hz	15 watts	8 ohms	120°	114 dB	12¾" x 9⅛" x 10⅝"	9 lb.	34.77

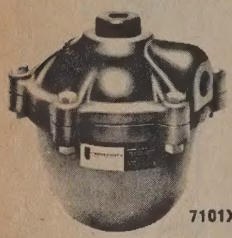
1) Capacity in watts IPM (Music Power).

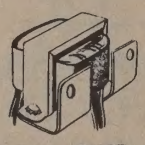
2) Voice coil impedance.

3) SPL reading taken 4 ft. on axis with "Full-Range" power input. Reduce by 6 dB each time distance is doubled. Reduce by 3dB if power input is halved; increase by 3dB when power input is doubled.

4) Matching transformer primary impedances: 45/165/200/250/500/1000/2000 ohms.

EXPLOSION PROOF DRIVERS


7101X


5436B

7101X, 7102X, 7105X are UL approved explosion-proof drivers, for use in 100%-safe systems where flammable liquids, gases, dust, etc., are present. The 7105X is approved for use in hydrogen-air atmospheres. In compliance with Government safety regulations, these units have provisions for mounting a line-matching transformer (optional*). 7101X is approved for Class I, Groups C & D. 7102X is approved for the same, plus Class II, Groups E, F & G. 7105X is approved for Class I, Groups B, C & D and Class II, Groups E, F & G. All units have 16 ohm voice coils. Frequency response is to 12,000 Hz and power capacity is 65 watts. Dimensions are 7⅞" in dia., 7⅜" long. Shipping weight is 14 lb.

These UNIVERSITY explosion-proof drivers may be used with any UNIVERSITY trumpet, but are most often used and recommended for use with the UNIVERSITY SOUND Models PH, SMH and Cobreflex.

* University Model 5436B 65 watt transformer kit is complete with transformer, mounting bracket and hardware for installation inside the explosion-proof driver housing. Prices:

Model 7101X $77.26; Model 7102X $84.15; Model 7105X $130.80; Model 5436 B $15.57

Slim profile 3-way high fidelity speaker

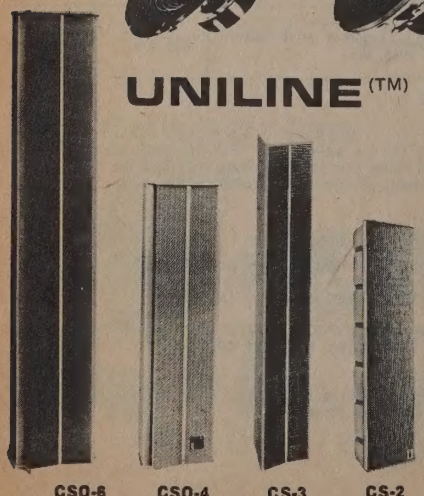
8M2C

8M2CT

MODEL 8M2C 3-WAY SPEAKER A slim profile multi-speaker for public address and commercial sound applications. High quality, high efficiency performance for background music. Response to 50-20,000 Hz. Handles 15 watts of IPM. Model 8M2CT has built-in line matching transformer for 25 and 70 volt lines, tapped for 15/10/5/2.5/-1.25/.65 watts. Only 3" deep. Net $13.77

MODEL 8M2CT Same as 8M2C with transformer Net $16.77

UNILINE(TM) SOUND COLUMNS


CSO-6 CSO-4 CS-3 CS-2

Model	CS-2	CS-3	CSO-4	CSO-6
Speakers	6 wide-range 5"	6-4"x6" Plus 2 Tweeters	2-8" plus 2-8" Dual Cone	4-8" plus 2-8" Dual Cone
Frequency Range	175-12,000 Hz	150-10,000 Hz	70-17,000 Hz	65-14,000 Hz
Power Capacity	30 watts IPM**	25 watts IPM	75 watts IMP	120 watts IPM
Impedance	8 ohms	16 ohms	8 ohms	16 ohms
S.P.L.*	102dB	107dB	114dB	117dB
Dispersion Vertical	25°	20°	18°	16°
Dispersion Horizontal	165°	120°	120°	120°
Dimensions	31"x5"x5½"	7½"x8¾"x47⅞"	11⅞"x7¾"x41⅜"	11⅞"x7¾"x60¼"
Shipping Weight	14 lb.	33 lb.	40 lb.	63 lb.
Net Price	59.70	104.50	149.40	207.00

*10 ft. on axis, re .0002 dynes/cm², at rated power.

PRICES SLIGHTLY HIGHER IN WEST

Net

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UNIVERSITY® SOUND
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High Fidelity Component Speakers

SERIES 200 Wide-Range High Compliance Models

Model	Frequency Response (Hz)	Power Capacity (Watts IPM**)	Imp. (Ohms)*	Dimensions (Dia.-Depth)	Shipping Wt. (Pounds)	Net Price
315-C	25-20,000	50	8-16	15¼"x12"	34½	$189.50
312	28-40,000	35	8-16	13"x6⅝"	10¼	$ 84.50
6201	28-18,500	35	8-16	13"x6⅝"	10¼	69.50
Diff-12	25-15,000	35	8-16	13"x6⅝"	9	42.50
Diff-8	30-15,000	35	8-16	9⅜"x4 5/16"	5	32.50
1212	35-30,000	30	8	13"x8 5/16"	10	59.95
M-15T	30-20,000	35	8	15½"x7"	17	69.95
M-12T	35-40,000	30	8-16	12 15/16"x3⅞"	9	39.50
M-12D	35-15,000	30	8-16	12 15/16"x3⅝"	7½	27.95
M-12	35-12,000	30	8-16	12 15/16"x3⅝"	7½	21.50
M-8D	50-15,000	30	8-16	8¼"x2½"	5½	21.50
M-8	50-12,000	30	8-16	8¼"x2½"	5½	17.00
MS	3000-40,000	30	8-16	3⅛"x3-1/16"	1½	19.95

*May be used with amplifiers with output impedance of 8 or 16 ohms.

**Integrated Program Material.

WOOFERS, MID-RANGE and TWEETERS

Dual Voice Coil Woofers — High Compliance Models

Model	Frequency Response (Hz)	Power Capacity (Watts IPM)*	Impedance (Ohms)**	Dimensions (Dia.-Depth)	Shipping Wt. (Pounds)	Net Price
C-15HC	15-800	60	4-20**	15"x8⅛"	24¾	97.50
C-12HC	20-3,000	50	4-20**	13"x6⅞"	13¾	57.00
High Efficiency Models						
C-15W	25-1,500	50	4-20**	15⅜"x10½"	27	109.50
C-12SW†	30-6,000	30	8-16	13"x6¾"	8¾	44.95

*Integrated Program Material

**Impedance Range Depending on Strapping of Voice Coils.

†Equipped with Built-in Crossover Network for 5,000, 2500, and 700 Hz Crossover

Mid-Range Speakers, Horns and Drivers

C-8M Cone Speaker	500-5,000	50	8	8¼" Dia. x 4" Depth	3	$ 18.20
Cobreflex Horn	200 Hz cutoff			10¼" L. x 18½" W. x 9¼" D.	10¼	29.39
H-600 Horn	600 Hz cutoff			7¾ L. x 8¾" W. x 4¾" D.	1¾	23.80
T-30 Driver*	350-18,000	50	8	3½" Dia. x 3¾" Depth	2¼	33.40
T-50 Driver*	350-20,000	50	8	4¼" Dia. x 4⅛" Depth	5¼	53.20

*For use with Cobreflex and H-600 horns.

Tweeters

Model	Frequency Response (Hz)	Power Capacity (Watts IPM)*	Impedance (Ohms)**	Dimensions (Dia.-Depth)	Shipping Wt. (Pounds)	Net Price
T-202 Sphericon	3,000-40,000	30	4-16	4⅝" Dia. x 4" D.	2½	$ 27.00
T-203 W†	3,000-40,000	30	4-16	6¾" L. x 5¼" W. x 2¾" D.	2¾	27.00
HF-206	3,500-22,000	50	8	6" L. x 3⅜" W. x 6⅝" D.	3½	39.50
4401	2,000-15,000	50	8	6" L. x 2¾" W. x 6⅜" D.	2¼	22.50
UXT-5	4,500-17,500	50	8	4¼" L. x 2½" W. x 4" D.	2¼	29.50

† Model T-203W equipped with case for use outside of enclosure. Equipped with built-in crossover network and brilliance control. For use with amplifiers having 4-8-16 ohm outputs.

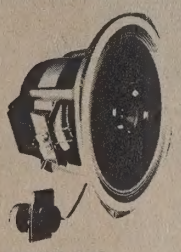
Crossover Network and Attenuaters

Model	Crossover Frequencies (Hz)	Impedance (Ohms)	Dimensions (L.xW.xD.)	Shipping Wt. (Pounds)	Net Price
N-1*	1250, 2500, 5000, 10000	4-8-16	3⅝"x3¼"x3"	2	$ 15.00
N-2A	350, 700	4-8-16	3⅝"x3¼"x3"	2½	22.95
N-2B	1250, 2500, 5000	4-8-16	3⅝"x3¼"x3"	2½	17.95
N-3*	350, 700, 5000	8	7"x5"x3"	5¼	37.95
AP-8	L pad for presence and brilliance controls.				7.50

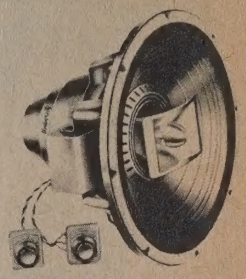
*Model N-1 equipped with built-in brilliance control. N-3 equipped with built-in brilliance and presence controls.

Wide-Range High Compliance Models

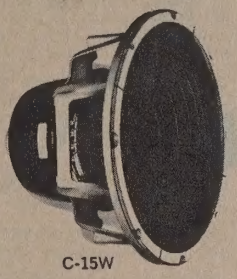
University Series 200 component speakers represent the ultimate in quality. Their high power-handling capacity and rugged die-cast baskets and molded seamless cones assures long-life adherance to original performance standards. These speakers are designed for use in any pre-finished or custom built enclosure. Where baffle mounting space is at a premium and high quality music reproduction is desired, Series 200 University component speakers are the logical choice for the discriminating music lover or audiophile.



MODEL 312
12" 3-Way Diffaxial Speaker

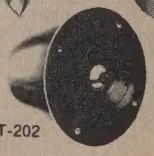


MODEL 315-C
Super 15" 3-Way Diffaxial Speaker

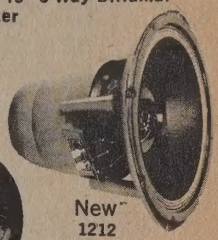


C-15W

HF-206



T-202



New 1212

University MUSTANG Series
Thin-Line High Fidelity Component Speakers

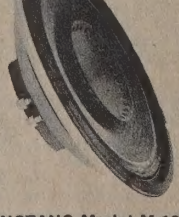
These speakers utilize the latest engineering developments. The Mustangs use strong die-cast baskets and molded seamless cones to assure long life and adherence to original performance. Mustangs are ideal for in-wall mounting for background music systems and home high fidelity installations. For quality sound at an economical price where space is at a premium, choose a Mustang.

MUSTANG MS
Sphericon Tweeter

MUSTANG Model M-8
8" Speaker

MUSTANG Model M-8D
8" 2-Way Dual-Cone Speaker

New
MUSTANG Model M-15T
15" 3-Way Wide-Range Speaker



MUSTANG Model M-12D
12" 2-Way Dual-Cone Speaker

MUSTANG Model M-12T
12" 3-Way Wide-Range Speaker

New
GS100

The exciting GS-100 is the world's first 100 Watt RMS power handling capacity musical instrument speaker. Utilizing a massive 8½ pound magnet structure, plus special construction materials and techniques, the 12" eight ohm GS-100 is capable of handling all of the power that today's instrumentalists are capable of putting out. Mounting from the front or rear of the baffle, the GS-100 is a direct replacement for any Standard 12" speaker. Net Price $59.70

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UNIVERSITY® SOUND
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Dynamic Microphones

Broadcasting, Recording, Home Entertainment and General Purpose Applications

UNIVERSITY'S new series of dynamic microphones embraces every possible need in *the audio field. Widely acclaimed in the industry, each* UNIVERSITY *microphone is designed and engineered to maintain the same exacting quality standards for which* UNIVERSITY *is famous the world over. Each and every* UNIVERSITY *microphone, from the economically priced Model 2000 to the top of the line 5000 Series, is covered by* UNIVERSITY'S *exclusive warranty to assure reliable trouble free operation for many years. To own the finest—choose* UNIVERSITY*!*

NEW Model 5000 Shock-Mounted Super-Cardioid Dynamic New spherical shaped 5000 Series has a wide-angle pickup pattern with a precise taper characteristic that rejects all unwanted sound at the rear hemisphere of the unit. Rugged die-cast housing. For all applications — soundcasting, broadcasting, recording. 200 and 20,000 ohms. Response from 25 to 18,000 Hz. Output at 200 ohms -54 dB/1 mw/10 microbar; at 20,000 ohms 13 mv/10 microbar. 2 3/16" max. diameter. 9⅝" max. length. 15' wired-in 2 cond. shielded cable and SA-10 Stand Adapter supplied. Net $53.97

Model 5020 Same as 5000 with detachable 15' cable and Amphenol Connector. Net $59.70

Model 5050 Same as 5000 with swivel stand adapter and 15' detachable cable. Net $59.95

Model 5100 Same as Model 5000 with switch. Net $59.70

Model 6000 Attache' Cardioid Lavalier The 6000 is the world's smallest cardioid microphone. Its wide-range cardioid pickup pattern and inconspicuous appearance make it ideal for churches, night club, studio and remote broadcasting applications. It can be used as a lavalier, hand-held, mounted on a desk or floor stand, a boom or gooseneck fixture. Response is 50-15,000 Hz. Low impedance 50-500 ohms. Output at 150 ohms is -57 dB/1 mw/10 microbar. 1 1/6" diameter, 3 11/16" long. Supplied with lavalier neck cord, cable. Net Price $39.75

Model 8000 Shock Mounted Cardioid Dynamic Highly directional wide angle pickup pattern. Shock mounted for on-the-move applications. Ideal for church sound systems, industrial and commercial p.a. systems, and home tape recording. Response is 70-15,000 Hz. Impedance 250 and 20,000 ohms. Output at 250 ohms is -60 dB/1 mw/10 microbar; at 20,000 ohms is 8.5 mv/10 microbar. 1¾" diameter, 6⅜" long. Equipped with 15', 3 cond. shielded cable and Cannon XLR-4-11-C connector. Supplied with stand adaptor. Net $35.97

Model 8100 Same as Model 8000 with switch. Net $38.47

Model 2000 Omni-directional Dynamic For general soundcasting and recording applications. Omni-directional pick-up pattern is ideal for groups and audience participation programs. Response is 50-14,000 Hz. Impedance 50 and 20,000 ohms. Output at 50 ohms is -50 dB/1 mw/10 microbar; at 20,000 ohms is 28 mv/10 microbar. 15' 3 cond. shielded cable is wired-in. 1 5/32" dia., 6" long. With SA-10 Stand Adaptor. Net $29.97

Model 2040 Same as Model 2000 with switch and detachable 15' cable. Cannon Connector. Net $35.97

Model 2050 Same as Model 2000 with switch and swivel stand adaptor, 15' detachable cable and Cannon Connector. Net $38.85

PRICES SLIGHTLY HIGHER IN WEST

MICROPHONE STANDS

Model DS-10 Desk Stand Heavy base sculptured stand may be used with any microphone. Standard ⅝-27 NPSM thread. 4½" high x 7⅞" wide x 4⅝" deep. Black wrinkle finish. Net $8.10

Model SA-10 Slide-on Stand Adaptor. Net $2.85

Model DS-1 Desk Stand Contemporary design, slim profile desk stand with extruded aluminum base in black oxide finish. Perfectly balanced, will hold large microphones. Standard ⅝-27 thread. 6"x4"x3¾". Knurled locking washer. Net $3.30

Model FS-7A Floor Stand A new concept in microphone stands. New fluted tubes are easy to adjust. Doesn't show hand marks, won't slip. Velvet action movement of upper tube, no twisting or turning. Positive lock clutch, jam-free one hand operation. Non-reflecting finish. Adjustable from 34" to 63". Black wrinkle base weighs 7 pounds and is 10" diameter. Natural satin fluted aluminum. Net $13.77

Model FS-7AB Blue Anodized. Net $14.37

Model FS-7AG Gold Anodized. Net $14.37

Model FS-10A Floor Stand Same as Model FS-7 except for 10 pound, 12" diameter base. Natural Fluted aluminum. Net $14.97

Model FS-10AB Blue Anodized. Net $15.57

Model FS-10AG Gold Anodized. Net $15.57

Net
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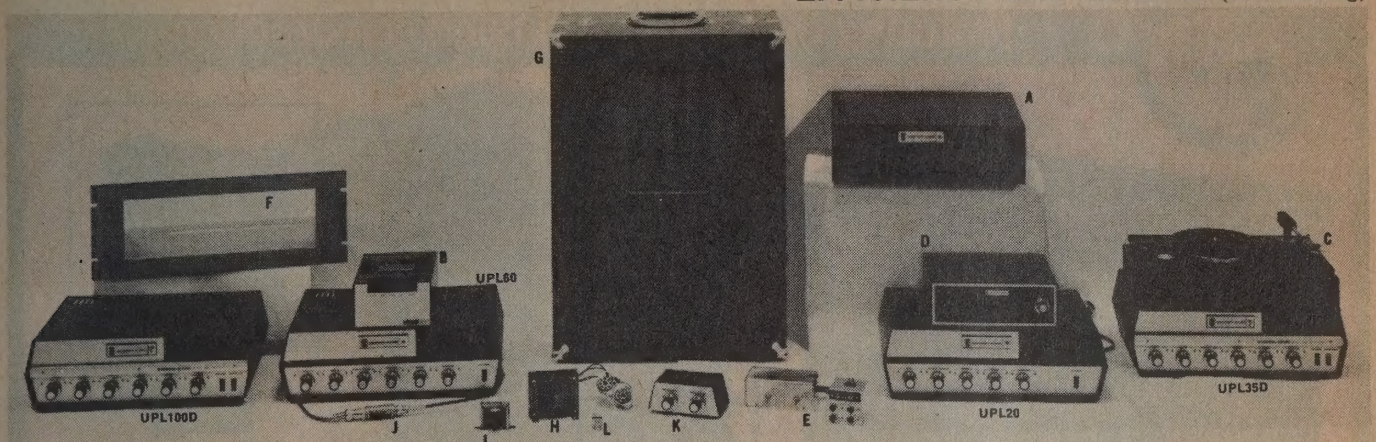
POWER-LINE
WIDE RANGE HIGH EFFICIENCY AMPLIFIERS (Pat. Pending)



A. MODELS UPB60T and 100T BOOSTER AMPLIFIERS. 60 and 100 watt RMS solid state booster amp designed for dependable operation. Ideal for use wherever undistorted high power is required. Built-in feedback suppression circuitry assure maximum protection. Computer Logic Circuit protection, prevents damage to amplifier under any adverse load condition. Response ± 1.5 dB. 50 to 15,000 Hz. Inputs: Hi Z 50,000 ohm. Optional plug-ins provide 10k ohms bridging, 600 ohm line. An additional optional plug-in capability provides low Z ohms for microphone, RIAA meg Phono, NAB Tape Head. Outputs: 25v and 70v Isolated, 8 ohms, and 2nd-16 ohms. 5" x 15½" x 10½". 117 VAC shpg. wt. 21 lbs. Prices on request.

B. MODEL CP-1. Top-mounting unit provides superb playback through the AUX input. Plays pre-recorded standard cassett tapes. Useful for background music as well as pre-recorded lectures. Monophonic 3 1/16" x 5½" x 8¼". Prices on request.

C. MODEL PT-210. Provides rugged dependable operation. 3 speed monophonic record player made for top mounting on Power-Line amps. Mounts in seconds. Equipped with dual stylus (stereo microgroove and 78 rpm) flip-over sapphire cartridge. 4¾" x 14⅜" x 8¾". List **$54.95.**

D. MODEL AFT-1. AM-FM tuner top mounts on Power-Line amps. Provides superb reception from both local and distant stations. AM-FM mode switch, AFC switching, plays through AUX input on Power-Line, back lighted tuning dial. Prices on request.

E. MODEL MPA-1 TWO CHANNEL MIKE PRE-AMP. Adds 2 additional mike inputs to UPL amplifier. Has full level controls, hi-lo impedance switch, facilities for remote or precedence controls. List **$69.95.**

F. MODEL RAC-1. Rack mounting adaptor for Power-Line. Simple screwdriver installation. Designed for use with standard 19" rack. List **$29.95.**

G. MODEL CAM-12 PORTABLE CARRY CASE. Doubles as portable P.A. system. Houses two M-12 extended range Mustang high fidelity speakers. Slide in rack for amplifier and storage strap for microphone. Price on request.

H. MODELS AXT-20, 35, 60, and 100. Output Autoformer kits for installation in transformerless Power-Line amplifiers. Easily installed to facilitate constant voltage speaker hook-up. List ATX20 **$16.80** 35 **$18.50** 60 **$19.50** 100 **$24.00.**

I. MODELS ULT 5 and 10. University exclusive line matching transformers. To be used at speakers when transformerless installation is made. List ULT5 **$3.95** 10 **$5.95.**

J. MODEL LOZ. Balanced-to-Ground Microphone Transformer. An "in-line" transformer allowing use of balanced-to-ground mikes with Power-Line amplifiers. List **$17.50.**

K. RCB-2 REMOTE VOLUME CONTROL. For use with LDR-1. Provides remote level control for 2 different input signals. List **$18.85.**

L. MODEL LDR-1 PRECEDENCE CONTROL. Plug in accessory permits user to provide source precedence from remote location. List **$8.75.**

SPECIFICATIONS COMMON TO ALL MODELS

SENSITIVITY	Mic (lo Z): 0.25 mv, Mic (hi Z): 4.0 mv, Aux: 250 mv, Bridging: 1V
SIGNAL TO NOISE RATIO	Power Amplifier: —80 dB Aux: —70 dB, Mic: —60 dB
OUTPUTS: XFMR Models (All models: Tape and Bridging outputs)	25V & isolated 70.7V line 4, 8 & 16 ohms on terminal strip 2 quick disconnect octal sockets
TONE CONTROLS (feedback type)	Bass: ±10 dB at 100 Hz Treble: ±10dB at 10kHz
POWER INPUT DIMENSIONS	95-130V AC 60 Hz 5" high x 15½" wide x 10½" deep

SPECIAL FEATURES	Hi or lo Z mic input selection by means of slide switch Switched AC outlet Spkr. protection circuit (Output current limited to rated poper to prevent overdriving the speakers.) Fused AC line Power consumption less than 5W when idling, resulting in low operating temperatures & long component life.

MODELS	**UPL20** (XFMR-LESS) $139.90 **UPL20T** (WITH/ XFMR $159.50 **UPL20D** (DELUXE XFMR-LESS) $199.50 **UPL20DT** (DELUXE W/ XFMR) $245.00	**UPL35** (XFMR-LESS) $153.95 **UPL35T** (WITH/XFMR) $174.95 **UPL35D** (DELUXE XFMR-LESS) $207.50 **UPL35DT** (DELUXE WITH XFMR) $265.00	**UPL60** (XFMR-LESS) $147.95 **UPL60T** (WITH/XFMR) $167.50 **UPL60D** (DELUXE XFMR-LESS) $207.50 **UPL60DT** (DELUXE WITH XFMR) $253.00	**UPL100** (XFMR-LESS) $161.95 **UPL100T** (WITH/XFMR $182.95 **UPL100D** (DELUXE XFMR-LESS) $223.00 **UPL100DT** (DELUXE W/ XFMR) $274.00
FREQUENCY RESPONSE	15-15kHz, ±1½ dB	15-15kHz, ±1½ dB	15-20kHz, ±1½ dB	15-20kHz, ±1½ dB
POWER GAIN/ PHONO GAIN	106.8dB/79.1dB	113.8dB/86.5dB	111.6dB/84.5dB	109.3dB/82.2dB
POWER OUTPUT	20W at less than 5% THD	35W at less than 5% THD	60W at less than 5% THD	100W at less than 5% THD
PEAK POWER	40w.	70w.	120w.	200w.
INPUTS (IMPEDANCE) All mike inputs specially suitable for guitar and music inputs.	1 Mic (hi or lo Z unbalanced) hi Z: 47k ohms, lo Z: 150 ohms Aux (2 inputs on fader) 300k ohms Bridging hi Z (5K)	2 Mic (hi or lo Z unbalanced) hi Z: 47k ohms, lo Z: 150 ohms Aux (2 inputs on fader) 300k ohms Bridging hi Z (5K)	2 Mic (hi or lo Z unbalanced) hi Z: 47k ohms, lo Z: 150 ohms Aux (2 inputs on fader) 300k ohms Bridging hi Z (5K)	2 Mic (hi or lo Z unbalanced) hi Z: 47k ohms, lo Z: 150 ohms Aux (2 inputs on fader) 300k ohms Bridging hi Z (5K)
CONTROLS	1 Mic 2 more mics available on optional pre-amp 1 Gain Control (fader) for Aux. 1 & Aux. 2	2 Indiv. Mic. 2 more mics available on optional pre-amp 1 Gain Control (fader) for Aux. 1 & Aux. 2	2 Indiv. Mic. 2 more mics available on optional pre-amp 1 Gain Control (fader) for Aux. 1 & Aux. 2	2 Indiv. Mic. 2 more mics available on optional pre-amp 1 Gain Control (fader) for Aux. 1 & Aux. 2
SEMI-CONDUCTORS	19 All-silicon	35 All silicon	31 All-silicon	32 All silicon

Due to the unusual capabilities of University Power-Line amplifiers, many features listed here-in have never been possible before. The circuitry is so advanced that patents have been applied for.

- Instantaneous electronic output transistor/short circuit protection
- Optional 2 Mic Pre-amp (Optional Remote Control and precedence controls may be used also)
- Optional Remote Control
- Optional Precedence Control
- †Short circuit protection (if output is shorter, amplifier shuts off for 3 sec. Computer logic circuit then measures output still shorted, amp remains off. If back to normal, amp turns back on.)
- ††Thermal protection (If temp. rises above 185° F. amplifier shuts off until temp. drops.)

†60 and 100 watt models
††100 watt models

*Deluxe Models: UPL20D, UPL20DT, UPL35D, UPL35DT, UPL60D, UPL60DT, UPL100D and UPL100DT feature built-in monitor speakers, monitor speaker switch, AC cord storage holder and convenient retractable carry handle.
Three wire AC power cord available on all models, on request, at slight additional cost.
All prices and specifications subject to change without notice.
TRADE DISCOUNT APPLIES TO LIST PRICES ONLY.

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Wharfedale ACHROMATIC SPEAKER SYSTEMS

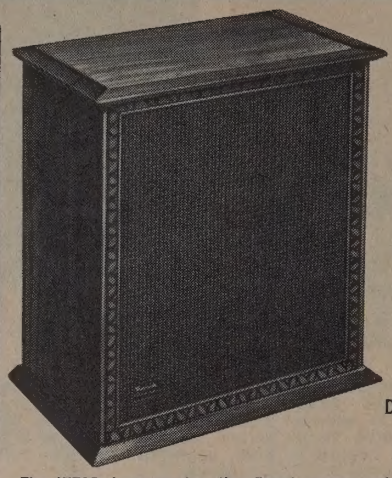
featuring exclusive sand-filled construction

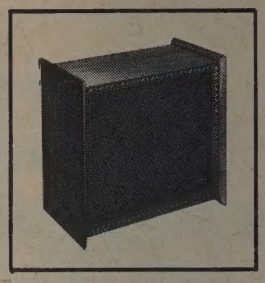
ACHROMATIC **W90D**

DELUXE SIX-SPEAKER, FOUR-WAY
CONSOLETTE SPEAKER SYSTEM
Exclusive Sand-Filled Enclosure

The truly remarkable sound of the W90D is due both to the particularly high quality of its components and to the design used in putting them to best use. The fine furniture quality of the W90D cabinet will enhance any room setting. The front grille assembly is removable for facilitating decorative changes, if desired.

• Speakers: Woofer — One 12½" with 75 sq. in. Polystyrene piston radiator; One 12½" with conical cone; Midrange: two 5" acoustically isolated; Treble: Two Super 3" omnidirectional, mylar dome • Controls: treble, continuously variable; midrange, continuously variable • Minimum Power Required: 10 watts (per channel) IHF • System impedance: 4 to 8 ohms. Dimensions: 23¾" x 30" x 13½" (includes table top) Ship. Wt.: 100 lbs. • Finish: Oiled Walnut, Price: $340.00.





ACHROMATIC **W70D**

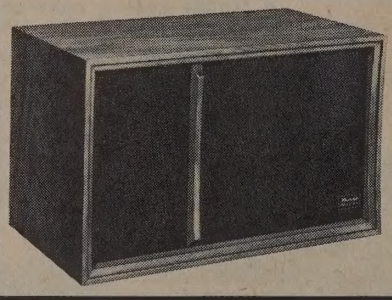
VERSATILE HI AND LOW BOY
DELUXE FOUR-WAY SPEAKER SYSTEM
Exclusive Sand-Filled Enclosure

The W70D incorporates the finest components available for multiple speaker systems. The versatile design permits use either as a "high boy" when placed on end, or as a "low boy" when placed on its side. The front grille is removable for decorative changes; nameplate is rotatable to accommodate different positions.

• Speakers: Woofer: 12½" extra heavy duty; Midrange: 8" upper bass/lower midrange: 5" upper midrange; Treble: Super 3" omnidirectional mylar dome tweeter • Controls: Individual continuously variable treble and midrange • Minimum Power Required: 10 watts (per channel) IHF • System Impedance: 4 to 8 ohms • Dimensions: 24" x 22¾" x 13⅝" (includes table top); Ship. Wt.: 73 lbs. • Finish: Oiled Walnut, Price $211.00.

ACHROMATIC **W60D**

BOOKSHELF AND FLOOR-STANDING
THREE-WAY SPEAKER SYSTEM
Exclusive Sand-Filled Enclosure



This latest version of the very popular W60 enjoys important benefits derived from its 3-way configuration and newly upgraded components. Removable grille.

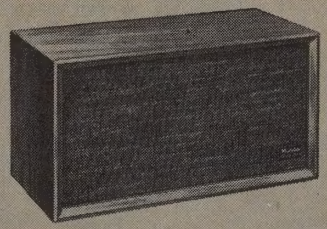
• Speakers: Woofer: 12½" heavy duty woofer with 9½ lbs. magnet assembly; Midrange: 5" acoustically isolated; Treble: Super 3" omnidirectional mylar dome tweeter • Controls: individual continuously variable treble and midrange • Min. Power Required: 8 watts (per channel) IHF • System impedance: 4 to 8 ohms. Dimensions: 14¼" x 24" x 13" deep. Ship. Wt. 56 lbs. • Finish: Oiled Walnut, Price $153.00.

ACHROMATIC **W40D**

THREE-WAY BOOKSHELF
SPEAKER SYSTEM
WITH ACOUSTIC SUSPENSION

The new W40D is a full three-way multiple speaker system yielding a carefully tailored, ultra-linear frequency response with minimum distortion. Using the acoustic suspension principle, the handsomely appointed cabinet is airtight and sturdily constructed. The front grille assembly is removable to facilitate decor changes, and the nameplate is rotatable to accommodate the speaker in either a vertical or horizontal position.

• Speakers: Woofer: Heavy duty 10"; Midrange: 5" acoustically isolated; Treble: Super 3" omnidirectional mylar dome tweeter • Controls: Individual continuously variable treble and midrange • Min. Power Required: 8 watts (per channel) IHF • System Impedance: 4 to 8 ohms • Dimensions: 12½" x 23½" x 10⅛" deep • Ship. Wt. 37 lbs. Finish: Oiled Walnut, Price $111.25.

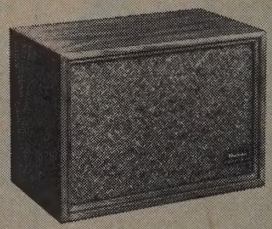


ACHROMATIC **W30D**

TWO-WAY COMPACT
SPEAKER SYSTEM
WITH ACOUSTIC SUSPENSION

The new Model W30D solves the problems encountered by modern speaker systems intended for use with either tube or transistor amplifiers and receivers. It is suitable for use with any amplifier having an output of 4 to 8 ohms. The cabinet uses the acoustic suspension principle, with heavy, airtight construction for maximum performance. The grille assembly is removable to facilitate changes in cloth; nameplate is rotatable either vertically or horizontally.

• Speakers: Woofer: Heavy duty, long-throw 8" treble; 3" omnidirectional mylar dome tweeter • Control: Continuously variable treble • Minimum Power Required: 10 watts (per channel) IHF • System Impedance 4 to 8 ohms • Dimensions: 10" x 19" x 9¼" deep. Ship. Wt.: 20 lbs. Oiled Walnut Finish, Price $69.95.



ACHROMATIC **W20D**

TWO-WAY MINORETTE
SPEAKER SYSTEM
WITH ACOUSTIC SUSPENSION

Enthusiastically acclaimed in magazine test reports, the W20D Minorette sets its sights on sound above all . . . with dimensions and cost a secondary consideration. It features a sturdily constructed, handsomely appointed cabinet (acoustic suspension principle) with easily removed front grille. Small overall dimensions make it suitable for either stand-up or horizontal positioning with the position of the nameplate changeable, too. Ideal also for placement inside the speaker compartment of stereo "consoles."

• Speakers: Woofer: high-compliance 8"; Treble: 3" omnidirectional mylar dome tweeter • Control: continuously variable treble • Minimum Power Required: 10 watts (per channel) IHF • System Impedance: 4 to 8 ohms • Dimensions 9¾" x 14" x 8½" deep. Ship. Wt.: 14 lbs. Oiled Walnut Finish, Price $52.95.

MODEL B67
UNIVERSAL MOUNTING BASE

Optional for the W60D and W90D Speaker Systems: Ship. Wt.: 2 lbs. Oiled Walnut, $10.50

WHARFEDALE Div., British Industries Co.

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Trade Discount Applies To List Prices Only

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Audiopak®
Cartridges & Cassettes

Description	Suggested Resale	Carton Contains
A-4 4-track blank cartridge	$1.95	10 & 30 pack
A-8 8-track blank cartridge, 80 minute	1.85	
A-8 8-track blank cartridge, 40 minute	1.65	10 & 30 pack
AC-30 30 min. cassette	1.87	
AC-60 60 min. cassette	1.95	30 & 100 pack
AC-90 90 min. cassette	2.85	

audiodiscs®

Today's Audiodisc — in keeping with high professional standards of the modern recording engineer — is the finest ever, produced by the most advanced facilities and techniques.

Audiodiscs provide a complete line of recording blanks, that feature: Consistent, Uniform Thickness; Superior Tracking Qualities; Extended Stylus Life; Brilliant H.F. Response; Freedom from Background Noise; Positive Thread Throw; No "Groove Tearing"; Unblemished Surface; No Advance Ball Score; Micro-Mirror Surface.

DESCRIPTION	Size Inches	Suggested Resale	Carton Contains
MASTER			
FOR MASTER RECORDINGS: The overwhelming choice of the recording engineer where pressings are to be made by the electroplating process. Aluminum base. Available in single face with center hole only.	10	$2.78	25
	12	3.16	25
	13¼	4.68	25
	14	5.00	25
RED LABEL			
FOR PROESSIONAL USE: Standard throughout the recording industry, Red Label Audiodiscs exceed the most exacting demands for optimum quality and dependability. Aluminum base. All double faced. Imprinted (except on 7").	7*	$1.46	25
	8	1.08	25
	10	1.39	25
	12	2.97	25
YELLOW LABEL			
FOR GENERAL USE: A popular choice for all general purpose recording which requires high, uniform quality. Aluminum base. Double sided. Imprinted or yellow paper labels available upon request.	7*	$1.33	25
	8	1.00	25
	10	1.20	25
	10**	1.90	25
	12	2.53	25
BLUE LABEL			
FOR AMATEUR USE: Ideal for schools, home, amateur and demonstration work. Same high quality for the very best in recording, but on a thinner aluminum base. Double sided. Blue paper labels available upon request.	6½	$ .51	50
	8	.76	50
	10	1.01	50

***Standard 45 rpm disc with 1½" diameter center hole. Also available with conventional center hole. To specify, indicate "Small Center Hole" on orders.**

All Prices and Items Subject to Change Without Notice.

****Supplied with extra heavy base.**

audiopoints®

Audiopoints meet the exacting requirements of the recording engineer for standard or microgroove recording.

RECORDING AUDIOPOINTS

SAPPHIRE No. 14 — long recognized as the finest recording stylus made. Short or long dural shank, 87° included angle.
Suggested Resale $5.34

SAPPHIRE No. 20 — especially designed for professional microgroove recording. Short or long dural shank. **Suggested Resale $5.34**

STELLITE No. 34 — a favorite with many professional and non-professional users. Short or long shank. 87° included angle.
Suggested Resale $1.74

Shipments: Freight will be paid anywhere in the U.S.A. on shipments of 100 lbs. or more. All other shipments are F.O.B. Stamford, Conn. or N.Y.C.

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THE COMPLETE LINE OF PROFESSIONAL QUALITY audiotape TRADE MARK

Description	Type No.	Length	Reel†	Suggested Resale
STANDARD RECORDING on 1½-mil Acetate	151MB	150 ft.	3″ Plastic Reel in Mailing Box	$0.42
	351	300 ft.	4″ Plastic Reel	0.81
	651	600 ft.	5″ Plastic "C-Slot" Reel	1.35
	1251	1200 ft.	7″ Plastic "C-Slot" Reel	2.10
	2551H	2500 ft.	NARTB Hub	4.71
	2551R	2500 ft.	10½″ Aluminum Reel	6.48
	‡2551FS	2500 ft.	10½″ Fiberglass Reel	6.48
	5051H	5000 ft.	NARTB Hub	8.64
	5051R	5000 ft.	14″ Aluminum Reel	12.81
Meets the most exacting requirements of the professional, educational and home recordist at minimum cost. Known the world over for its matchless performance and consistent uniform quality. **Formula 10, in the red box.**				
audiotape **LONGER RECORDING on 1 mil Mylar***	261	225 ft.	3″ Plastic in Self-Mailer Pkg.	0.60
	961	900 ft.	5″ Plastic "C-Slot" Reel	2.16
	1861	1800 ft.	7″ Plastic "C-Slot" Reel	3.72
	2461	2400 ft.	8¼″ Plastic Reel	5.65
	3661H	3600 ft.	NARTB Hub	6.84
	3661R	3600 ft.	10½″ Aluminum Reel	8.61
	‡3661FS	3600 ft.	10½″ Fiberglass Reel	8.61
	7261H	7200 ft.	NARTB Hub	14.40
	7261R	7200 ft.	14″ Aluminum Reel	18.00
50% more recording time per reel. The strong, super-durable polyester film base assures trouble-free operation even under severe conditions of heat and humidity. **Formula 10, in the orange box.**				
audiotape **LONGER RECORDING on 1 mil Acetate**	941	900 ft.	5″ Plastic "C-Slot" Reel	2.10
	1841	1800 ft.	7″ Plastic "C-Slot" Reel	3.30
	3641H	3600 ft.	NARTB Hub	5.91
	3641R	3600 ft.	10½″ Aluminum Reel	7.68
	‡3641FS	3600 ft.	10½″ Fiberglass Reel	7.68
50% more recording and playback time on low-cost 1-mil cellulose acetate base, affording maximum economy for applications where high strength is not required. **Formula 10, in the blue box.**				
audiotape **DOUBLE RECORDING on ½ mil Mylar***	331	300 ft.	3″ Plastic Reel	0.82
	1231	1200 ft.	5″ Plastic "C-Slot" Reel	2.10
	2431	2400 ft.	7″ Plastic "C-Slot" Reel	3.90
Twice as much recording time per reel as standard plastic-base tape. Suitable for extended-play applications where tape tension is not excessive. **Formula 10, in the tan box.**				
audiotape **DOUBLE RECORDING on "Tempered" Mylar***	331T	300 ft.	3″ Plastic in Self-Mailer Pkg.	0.96
	1231T	1200 ft.	5″ Plastic "C-Slot" Reel	3.27
	2431T	2400 ft.	7″ Plastic "C-Slot" Reel	5.70
	4831T-R	4800 ft.	10½″ Aluminum Reel	13.20
	‡4831T-FS	4800 ft.	10½″ Fiberglass Reel	13.20
Twice as much recording time per reel as standard plastic-base tape, and is twice as strong as other double-length tapes. Will not stretch or break on any tape recorder — will not dry out or embrittle with age. **Formula 10, in the maroon box.**				
audiotape **STANDARD RECORDING on 1½ mil Mylar***	671	600 ft.	5″ Plastic "C-Slot" Reel	1.59
	1271	1200 ft.	7″ Plastic "C-Slot" Reel	2.55
	2571H	2500 ft.	NARTB Hub	4.98
	2571R	2500 ft.	10½″ Aluminum Reel	6.72
	‡2571FS	2500 ft.	10½″ Fiberglass Reel	6.72
	5071H	5000 ft.	NARTB Hub	9.99
	5071R	5000 ft.	14″ Aluminum Reel	14.70
A premium-quality professional tape that provides the utmost in mechanical strength and immunity to temperature and humidity. Will not dry out or embrittle with age. **Formula 10, in the green box.**				
audiotape **MASTER RECORDING on 1½ mil Acetate**	651-M	600 ft.	5″ Plastic "C-Slot" Reel	1.65
	1251-M	1200 ft.	7″ Plastic "C-Slot" Reel	2.58
	2551H-M	2500 ft.	NARTB Hub	5.55
	2551R-M	2500 ft.	10½″ Aluminum Reel	7.32
	‡2551FS-M	2500 ft.	10½″ Fiberglass Reel	7.32
	5051H-M	5000 ft.	NARTB Hub	10.17
	5051R-M	5000 ft.	14″ Aluminum Reel	14.34
The finest, professional-quality recording tape. Base material 1½-mil acetate. Maximum fidelity, uniformity, frequency response and freedom from noise and distortion. . . . **Plus low print-through. Formula 14, in red and gold box.**				
audiotape **MASTER RECORDING on 1½ mil Mylar***	671-M	600 ft.	5″ Plastic "C-Slot" Reel	1.92
	1271-M	1200 ft.	7″ Plastic "C-Slot" Reel	3.06
	2571H-M	2500 ft.	NARTB Hub	6.60
	2571R-M	2500 ft.	10½″ Aluminum Reel	8.10
	‡2571FS-M	2500 ft.	10½″ Fiberglass Reel	8.10
Super-durable tape that meets highest standards of performance. Withstands extreme temperature and is virtually immune to humidity. . . . **Plus low print-through. Formula 14, in the green and gold box.**				

†COLORED PLASTIC REELS. Audiotape on 5″ and 7″ reels can be supplied on colored reels at no increase in price. To designate color (Red, Yellow, Green or Blue) add "RR" and "YR", and "GR" or "BR" to Type No. E.g. — Type 1251YR covers 1200 feet of plastic-base tape on Yellow Reel.

‡"FS" in Type No. indicates Fiberglass reel with solid hub and 5/16″ center hole.

*"Mylar" is the registered DuPont trade mark for its polyester film.

Net

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Description	Type No.	Length	Reel	Suggested Resale
audiotape TRIPLE RECORDING on "Tempered" Mylar* Three times as much recording time per reel as standard-plastic-base tape, plus the same extra strength as other "Tempered" Mylar Audiotapes. **Formula 11, in the olive box.**	633T	600′	3¼" Plastic in Self-Mailer Pkg.	$1.77
	1833T	1800′	5" Plastic "C-Slot" Reel	4.17
	3633T	3600′	7" Plastic "C-Slot" Reel	7.17
audiotape LOW NOISE on 1½ mil Acetate An excellent Low Noise tape providing high signal to noise ratio and drastically lowered hiss level without sacrificing other properties needed for critical professioanl recording. **On 1½-mil Plastic Base, Formula 15 in the Red Box.**	657	600′	5" Plasitc "C-Slot" Reel	$1.68
	1257	1200′	7" Plastic "C-Slot" Reel	2.58
	2557H	2500′	NARTB Hub	5.55
	2557R	2500′	10½" Aluminum Reel	7.32
LOW NOISE on 1½ mil Mylar* Maintains a high signal to noise ratio with immunity to temperature and humidity without sacrificing other properties. **Formula 15, in the green box.**	677	600′	5" Plasitc "C-Slot" Reel	$1.71
	1277	1200′	7" Plastic "C-Slot" Reel	3.06
	2577H	2500′	NARTB Hub	6.60
	2577R	2500′	10½" Aluminum Reel	8.10
LOW NOISE on 1 mil Mylar* **50% more** recoding time per reel; provides a strong durable base assuring trouble free operation. **Formula 15, in the orange box.**	967	900′	5" Plasitc "C-Slot" Reel	$2.55
	1867	1800′	7" Plastic "C-Slot" Reel	4.41
	3667H	3600′	NARTB Hub	8.52
	3667R	3600′	10½" Aluminum Reel	10.29

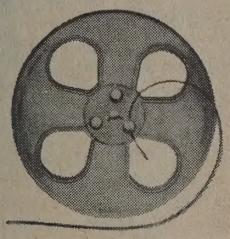
FORMULA 17 — LUBRICATED

LUBRCIATED TAPE on 1-mil polyester film Designed for use in Audiopak and other continuous loop cartridges. Offers high frequency response. Edges resist nicking Unaffected by humidity and temperature changes. **Formula 17, in the orange box.**	1761-LUBE	1700′	7" Plastic "C-Slot" Reel	$3.52

OTHER AUDIOTAPE ITEMS

EMPTY AUDIOTAPE REELS IN INDIVIDUAL BOXES

All Audiotape reels, the complete range of sizes and types, are available, individually packaged in standard Audio boxes. Five and seven-inch reels feature the popular C-slot design for fast, easy threading. In addition to the standard clear plastic, C-Slot reels are available in four attractive jeweltone colors, at no extra cost.



Item	Type No.	Reel	Sug. Resale
Standard Reels	3PMB	3" Plastic Reel in Mailing Box	$0.15
	3.25PNB	3¼" Plastic Reel in Mailing Box	0.24
	4PB	4" Plastic Reel in Box	0.33
	5PB	5" Plastic C-Slot Reel in Box	0.39
	7PB	7" Plastic C-Slot Reel in Box	0.45
	10RB	10½" Aluminum Reel in Box	2.70
	10FS	10½" Fiberglass Reel in Box	2.70
	10H	NARTB Metal Hub	0.45
	10S	Pr. 10½" Alum. Flanges (NAB) w. screws	2.28
	14RB	14" Aluminum Reel in Box	5.22
†Colored Plastic Reels	5PBR	Red — 5" Plastic C-Slot Reel in Box	0.39
	5PBY	Yellow — 5" Plastic C-Slot Reel in Box	
	5PBG	Green — 5" Plastic C-Slot Reel in Box	
	5PBB	Blue — 5" Plastic C-Slot Reel in Box	
	7PBR	Red — 7" Plastic C-Slot Reel in Box	0.45
	7PBY	Yellow — 7" Plastic C-Slot Reel in Box	
	7PBG	Green — 7" Plastic C-Slot Reel in Box	
	7PBB	Blue — 7" Plastic C-Slot Reel in Box	

* "Mylar" is the registered DuPont trade mark for its polyester film. † Minimum order—100.

Audiotape Accessories

Items	Type No.	Suggested Resale
EMPTY AUDIOTAPE BOXES Standard, durably-constructed, Audiotape boxes are available in all the popular sizes for filing and storing tapes.	3MB	$0.09
	3.25B	0.09
	4B	0.12
	5B	0.12
	7B	0.12
	10B	0.45
	14B	0.60
AUDIOTAPE CORRUGATED MAILING BOXES Strong, re-usable containers	5M	0.09
	7M	0.12
	10M	0.18
AUDIO SELF-TIMING LEADER TAPE A strong, durable leader tape of white Mylar* material with spaced markings to permit accurate timing of leader intervals.	3L	0.54
	7L	2.10
AUDIO SPLICING TAPE Unusually durable pressure-sensitive tape that provides a solid, noise-free splice. White thermosetting adhesive holds firmly and instantly, will not ooze to cause sticky splices. On superior-strength Mylar.*	ST-0.25-66	0.35
	ST-0.50-100	0.39
	ST-0.50-66	1.05
	ST-0.75-66	1.50

Items	Type No.	Suggested Resale
AUDIO HEAD CLEANER Especially formulated for use on magnetic recording heads. Contains silicone solvent for sharper sound.	2HC	$0.60
AUDIO ADHESIVE REEL LABELS Provide positive identification of your tapes, right on the reel. Simply press to apply, pull to remove.	30AL	0.12
AUDIO HEAD DEMAGNETIZER Removes all permanent magnetism from recording and reproducing heads in a matter of seconds.	400	6.00
AUDIO HEAD ALIGNING TAPE Pre-recorded at 2,000, 10,000 and 15,000 cps (15"/sec) with precisely correct head alignment. Individually boxed, with instructions. Base material, 1½-mil Mylar.*	200	6.00

audiotex

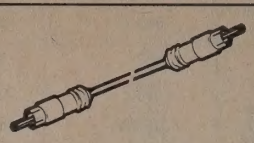
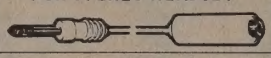
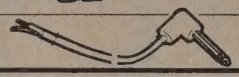
HI FI & STEREO ACCESSORIES FOR TAPE RECORDERS & PHONOGRAPHS, HOME & AUTO

CONNECTING CABLES

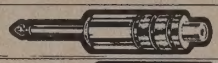
AMERICAN MADE

STANDARD AUDIO CABLES FOR HI-FI – STEREO

- *The Complete Line of Cables*
- *Durable Molded Assemblies*
- *Heavy-Duty, Low Resistance Wire*
- *Attractively Packaged*

PART NO.	ILLUSTRATION	DESCRIPTION	LENGTH	LIST
30-400-S		Shielded Cable, Phono Pin Plugs on both ends.	18" Cable	.77
30-402-S		Shielded Cable, Phono Pin Plugs on both ends.	36" Cable	.85
30-404-S		Shielded Cable, Phono Pin Plugs on both ends.	72" Cable	1.07
30-406-S		Shielded Cable, Phono Pin Plugs on both ends.	12' Cable	1.58
30-449-S	FOR STEREO HEADSET 	Molded On Three Conductor Phone Plug on one end of two conductor shielded cable, other end Molded On Three Conductor Phone Jack.	12' Cable	4.00
30-450-S		Shielded Cable, Phone Plug on one end, other end stripped and tinned.	72" Cable	1.39
30-451-S		Molded Shielded Cable with right angle Phone Plug on one end, other end stripped and tinned.	12' Cable	1.78

PLUGS, JACKS AND ADAPTORS

30-534		Combination clamp-type Phone Plug (solder connection) with removable shielded handle. Much easier to attach than the standard phono plug, and provides "finished appearance". Pkg. of 2.	2	.70
30-472		Adapter, Phono Pin Plug to Standard Phone Plug.	1	.98
30-484		Standard Phone Plug, 2 conductor. Black Plastic Handle	1	.60

NEW *Tape Cartridge Player* HEAD-DEMAG

(Extra Long Tip for Auto and Home 4 and 8 Track Players)

Demagnetizes player heads quickly and easily. Extra long tip will reach into tape cartridge players easily for demagnetizing tape player head, thus preserving full frequency response. Demagnetizer tip is coated with soft plastic to prevent damaging player head. Complete with momentary push-button switch and 6' cord. Nothing to wear out; will last a lifetime.

(Std. Ctn. 12 cards)

NO.30-112-2 ..... List 7.75

HEAD LUBRICANT HEAD CLEANER

(The Perfect Treatment for Maximum Efficiency

Use Audiotex safe, efficient head cleaner to remove dirt and grease. Audiotex Recorder Head lubricant with silicone may be applied liberally to recorder head, leaves a light protective film to reduce friction. Cuts wow, flutter and tape squeals.

(Std. Ctn. 12 cards)

No. 30-124-1 Cleaner ..... List .60
No. 30-124-2 Lubricant ..... List .60
No. 30-124-3 Cleaner and Lubricant.... List 1.17

Audiotex Dual Purose Bulk Tape Eraser

Catalog Number 30-140

List $18.30

Provides two convenient methods for completely erasing program material from magnetic tapes. Use either as a hand held o rtape model eraser. Rated at 117 V.A.C., 4 amperes, 60 Hz. May also be used with ½" width tapes.

DELUXE TAPE SPLICER

WITH BUILT-IN SPLICING TAPE DISPENSER

(Cuts and Splices Tape Automatically)

The New Deluxe Audiotex Tape Splicer handles all sizes of splicing tape. Unique splicing tape dispenser simplifies operation. For professionally repairing and editing, splicer cuts recording tape diagonally and trims splicing tape with indented cut to eliminate the danger of adhesive coming in contact with the recorder heads.

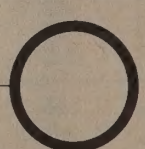
No. 30-106 ..... List 6.00

Walsco ELECTRONICS

Walsco Tape & Phono Drives & Belts

Part No.	I.D.	Inside Circum.		Used On	Net
1420-01	2-3/32	6-9/16	3/16	Wollensak T1600	.44

High-Quality, Abrasion-resistant Neoprene **RUBBER TIRES** 1420-01



FABRIC DRIVE BELTS

Part No.	I.D.	Inside Circum.	Width	Thickness	Used On	Net
1409-02	5-13/32	17	5/16	1/64	Pentron, Crescent Recorders	4.42
1409-03	3-29/32	12-1/4	5/16	1/64	Pentron, Crescent Recorders	3.43
1409-04	4-1/32	12-5/8	5/16	1/64	VM 700, 701, 710, 711, 714	3.43
1409-05	5-13/32	17	3/16	1/64	Webcor Recorders	3.43
1409-06	3-5/16	10-3/8	7/32	1/64	Telectro 880	2.29
1409-07	5-1/8	16-3/32	7/32	1/64	Telectro 880	2.29
1409-08	2-13/32	7-9/16	7/32	1/64	Telectro MR111, 556, 1960	2.20
1409-09	3-1/4	10-3/16	7/32	1/64	Telectro MR111, 556, 1960,	2.29
1409-10	3	9-13/32	7/32	1/64	Telectro and Knight	2.20
1409-11	3-19/32	11-5/16	7/32	1/64	Telectro and Knight	2.29
1409-12	2-1/2	7-13/16	7/32	1/64	Telectro	2.01
1409-13	4-31/32	15-11/16	5/32	1/64	Webcor	2.66
1499-16	3-5/16	10-3/8	3/16	1/64	Webcor	3.30

IDLER WHEEL – 2" O.D.
For use on G.E. model EA80X61. Shaft dia. .1253".
No. 1499-35. ..... Net 2.75

PRESSURE ROLLER 3/4" O.D.
For use with VM Model 700, 701, 710, 711, 714 tape recorders.
No. 1458. ..... Net 2.50

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Garrard®

WORLD'S FINEST

AUTOMATIC TRANSCRIPTION TURNTABLES

SYNCHRO-LAB™ MODELS THAT GUARANTEE ABSOLUTELY CONSTANT SPEED

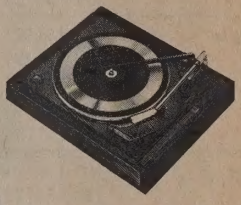
Garrard's revolutionary SYNCHRO-LAB™ Motor starts instantly at precise speed and maintains that speed regardless of voltage fluctuations. It powers all five Synchro-Lab Series turntables and incorporates the best features of both induction and synchronous motors: instant start...constant speed.

SL 95B

3-speed Automatic Transcription Turntable, $129.50. Synchro-Lab Motor for perfect synchronous speed, unwavering pitch • Ultra-gentle viscous damped tonearm descent in automatic play... first time ever in an automatic turntable • Low-mass, one-piece aluminum tonearm with Afromosia wood inset for low resonance • Gyrosocpically gimballed mounting in which arm floats on needle pivots • Vernier counterweight adjustment for ultra-fine balancing • Patented, permanently accurate anti-skating control... sliding weight design • Calibrated stylus pressure gauge with window scale • Slide-in cartridge clip • Safety platform for two-point record support in automatic play • Full size turntable, kinetically matched to synchronous motor • Simplified operating controls: one for automatic, one for manual, and one for viscous damped cueing/pause control • Matte ebony finish unit plate • Two interchangeable spindles.

SL 75B

3-speed Automatic Transcription Turntable, $109.50. Synchro-Lab Motor • Low-mass, twin braced rigid aluminum tonearm with counterweight locking screw • Slide-in cartridge clip • Needle pivots in tonearm bearings • Precision stylus pressure gauge • Patented anti-skating control • Exclusive viscous damped tonearm descent in automatic play • Full size turntable • Safe, two-point record support.



SL 65B

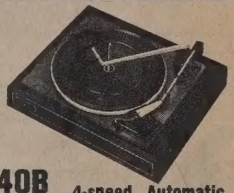
4-speed Automatic Turntable, $79.50. Synchro-Lab Motor • Low-mass, tubular aluminum tonearm with adjustable counterweight • Precision stylus pressure gauge with optical scale • Adjustable anti-skating control • Viscous damped cueing to prevent record and stylus damage • Slide-in cartridge clip • Meticulously balanced cast aluminum turntable • Swing-away overarm for convenient single record handling.

New SL 72B

3-speed Automatic Transcription Turntable, $89.50. Synchro-Lab Motor • Low-mass tubular aluminum tonearm • Gyroscopically gimballed tonearm mounting • Rubber-isolated adjustable counterweight • Patented anti-skating control • Calibrated stylus pressure gauge • Slide-in cartridge clip • Viscous damped tonearm descent in automatic play • Safe, two-point record support • Simplified controls: one for automatic, one for manual, and one for viscous damped cueing/pause control.

SL 55B

4-speed Automatic Turntable, $59.50. Synchro-Lab Motor • Rigid, lightweight, tubular aluminum tonearm with locking rest • Rubber-isolated counterweight to damp out resonance causing factors • Stylus pressure adjustment and scale • Viscous damped cueing for record/stylus protection • Fully adjustable anti-skating control • Slide-in cartridge clip • Oversized turntable • Swing-away overarm • Super-sensitive trip.



Model 40B

4-speed Automatic Turntable, $44.50. Lightweight tubular aluminum tonearm • Counterweight, resiliently isolated to damp out tonearm resonances • Easy-to-adjust stylus pressure control with visible scale • Viscous damped single-lever cueing/pause control • Oversized turntable • Swing-away overarm • Super-sensitive trip • Garrard 4-pole shaded "Induction Surge Motor."

Model 30

4-speed Automatic Turntable, $39.50. Includes pre-installed stereo ceramic cartridge with flip-over diamond stylus • Automatic record intermix.

SP 20B

4-speed Manual Record Playing Unit, $37.50. Efficient, low-priced compact manual player, ideal for basic stereo music systems and quality audio/visual applications.

Garrard Module Series

Fine automatic turntables with pre-installed cartridge, coordinated base and dust cover, packaged complete... ready to plug-in-and-play.

New Module SLX-3

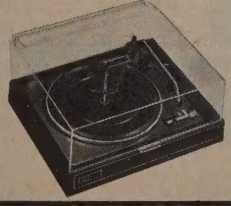
Synchronously powered, 3-speed Automatic Turntable, $99.50. Pre-installed fine magnetic cartridge with high compliance elliptical diamond stylus assembly. Garrard's most advanced features: Synchro-Lab Motor • Ultra low-mass dynamically balanced aluminum tonearm • Stylus pressure gauge • Adjustable anti-skating control • Single lever cueing/pause control • Damped tonearm descent • Two-point record support.

Module SLX-2

Synchronously powered, 3-speed Automatic Turntable, $69.50. Pre-installed magnetic cartridge with high compliance diamond stylus assembly. Synchro-Lab Motor • Sleek low-mass aluminum arm with ball-bearing pivotry; adjustable counter balance • Single lever cueing/pause control • Oversized turntable • Unique swing-away overarm • Simplified speed/size selector.

Module X-10

3-speed Automatic Turntable, $52.50. Pre-installed stereo ceramic cartridge with flip-over diamond stylus. Swing-away overarm • Single lever cueing/pause control • Low-mass aluminum tonearm • Automatic/manual simplified controls • Two interchangeable spindles: long for automatic, short for manual.



New Ultra Compact Module X-11

"Demi" 4-speed Automatic Turntable, $39.95. Pre-installed high quality stereo ceramic cartridge with flip-over diamond stylus. Swing-away overarm • Lightweight aluminum tonearm • Automatic shut off and tonearm lock • Plays stack of 8 records in automatic mode • Two interchangeable spindles.

Accessories: Coordinated bases including the new Power-Matic series, dust covers, mounting boards, automatic "45" spindles.

GARRARD, Div. British Industries Co.

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

IRISH MAGNETIC TAPE *Div. of MORHAN NATIONAL SALES*

Semi-Professional Recording Tape

Here is famous brand name quality at a popular price and guaranteed to outperform all other tapes in its price field. Quality performance at low cost.

	Number	Length (Ft.)	Reel Inches	Sugg'd. List Price
		190 SERIES		
Acetate	195-111121	150	3	$ .65
	195-121121	300	4	1.55
	195-131121	600	5	1.75
	195-141221	850	5¾	2.50
	195-151121	1200	7	2.95
Acetate	196-111121	225	3	.80
	196-121121	450	4	2.10
	196-131121	900	5	2.50
	196-141221	1150	5¾	3.75
	196-151121	1800	7	4.25
Polyester	197-111121	225	3	.95
	197-121121	450	4	2.55
	197-131121	900	5	2.85
	197-141221	1150	5¾	3.50
	197-151121	1800	7	4.95
Polyester	198-111121	300	3	1.40
	198-121121	600	4	3.75
	198-131121	1200	5	4.50
	198-141221	1650	5¾	6.80
	198-151121	2400	7	7.95

Professional Recording Tape

Professional sound fidelity with more advances in magnetic recording than any other tape at standard prices. Specifically designed for perfect response and long term use. Meets and exceeds recommended professional standards.

		200 SERIES		
Acetate	211-111121	150	3	.70
	211-131121	600	5	2.25
	211-141221	850	5¾	2.80
	211-151121	1200	7	3.50
	211-172111	2400	Nab Hub	8.00
	211-172111	2400	10½ Alum.	11.50
	211-174111	2400	10½ Fib. Gl.	10.20
	211-193111	4800	14″ Alum.	21.30
Acetate	221-111121	225	3	.90
	221-131121	900	5	3.25
	221-141221	1150	5¾	4.00
	221-151121	1800	7	5.25
	221-172111	3600	Nab Hub	9.50
	221-173111	3600	10½ Alum.	12.50
	221-174111	3600	10½ Fib. Gl.	11.00
	221-193111	7200	14″ Alum.	24.00
Polyester	231-131121	600	5	2.65
	231-151121	1200	7	4.25
Polyester	241-111121	225	3	1.00
	241-131121	900	5	3.40
	241-141221	1150	5¾	4.50
	241-151121	1800	7	5.80
	241-172111	3600	Nab Hub	12.00
	241-173111	3600	10½ Alum.	13.75
	241-174111	3600	10½ Fib. Gl.	13.25
	241-192111	7200	Nab Hub	23.00
	241-193111	7200	14″ Alum.	28.00

	Number	Length (Ft.)	Reel Inches	Sugg'd. List Price
		200 SERIES (Continued)		
Polyester	251-111121	300	3	$1.60
	251-131121	1200	5	5.45
	251-141221	1650	5¾	6.80
	251-151121	2400	7	9.50
	251-172111	4800	Hub	19.00
	251-173111	4800	10½ Alum.	22.00
	251-174111	4800	10½ Fib. Gl.	20.50
Polyester	261-131121	1800	5	6.95
	261-151121	3600	7	11.95
		LOW NOISE & MASTERING TAPE		
Acetate	271-151121	1200	7	4.40
	271-171111	2400	10½ Fib. Gl.	12.50
	271-174111	2400	10½ Fib. Gl.	12.50
	271-273111	2400	10½ x ½ Mtl. Nab	26.00
Polyester	273-151121	1200	7	5.50
	273-174111	2400	10½ Fib. Gl.	15.00
	273-174111	2400	10½ Fib. Gl.	15.00
	273-273111	2400	10½ x ½ Mtl. Nab	37.00
Polyester	274-151121	1800	7	7.35
	274-171111	3600	10½ Fib. Gl.	17.50
	274-174111	3600	10½ Fib. Gl.	17.50
	274-273111	3600	10½ x ½ Mtl. Nab	40.00

COMPACT CASSETTES

261-C30	30 minutes	2.25
261-C60	60 minutes	2.50
261-C90	90 minutes	3.75
261-C120	120 minutes	4.95

NOTE: New metal reversing strips plus 30″ leader and 30″ trailer for both 190 & 200 Series standard on 3″, 5″, 5¾″, 7″ reels. Individual "signature binding" supplied free with 5″, 5¾″, 7″ reels for both 190 & 200 Series, 10½″ Fiber Glass reels available with NAB or 5/16″ center. Other reel types and sizes available. Write for quotations. Full line of tape accessories also available.

TAPE-A-LETTER in plastic self mailer

4275	275	3	$1.25
4225M	225	3	1.50

LUBRICATED TAPES 1 Mil Polyester

9141002	1800′	7″ Reel
9141004	3600′	Plastic Hub
9141005	7200′	Plastic Hub

Also available: ½ mil cassette tape and complete line of OEM tapes. Prices on request.

½″ VIDEO TAPES

for all Helical Scan 2″ Recorders

182-60	2400 ft. (60 min.)	7″ reel	$39.95
182-45	1800 ft. (45 min.)	7″ reel	29.50
182-30	1200 ft. (30 min.)	7″ reel	21.95
182-15	600 ft. (15 min.)	7″ reel	11.50

1″ VIDEO TAPES

184-60	3000 ft. (for Ampex 1″ recorders)	9¾″	$59.95
183-30	2150 ft.	8″ Alum.	49.95
183-60	1100 ft. (for IVC, Bell & Howell, etc.)	8″ Alum.	34.95

Trade Discount Applies To List Prices Only

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MICHIGAN MAGNETICS

is ready to meet your needs for magnetic heads

DIGITAL · ANALOG · "SPOT CHECK" · FERRITES · AERO-SPACE · INSTRUMENTATION · AUDIO-VISUAL · MEDICAL · ELECTRONIC · "K-SET" · COMPUTER · STORAGE LABS · ORBITAL TELEMETERING · "SEMAPHORE" · BROADCASTING · "X-CITERS" · DRUMS · GEOPHYSICAL · VIDEO · SEIZMIC · DISCS

SEND YOUR APPLICATIONS OR CONFIGURATIONS TO

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AUDIO RECORDING TAPE AND ACCESSORIES

RED SEAL TAPE

A professional quality home recording tape from the same magnetic tape formulation used by RCA in recording the world's greatest artists. RCA has developed a special lubricant . . . an integral part of the tape coating . . . which aids in smooth tracking over the glides and magnetic head surfaces, resulting in a minimum of friction and wear. Red Seal Tape has exceptional signal-to-noise ratio and frequency response characteristics. Full frequency, high-fidelity tape for monophonic or stereophonic . . . 2-track or 4-track. Available in seven different lengths and on 5-inch and 7-inch reel sizes on acetate, polyester or tensilized polyester bases. All are supplied with colored leaders and sensing markers attached.

Type No.	Reel & Length	Description	Each*
		ACETATE BASE	
15A6LT	5″ - 600′	Premium - Standard Play - 1.5 mil	$1.50
15A12LT	7″ - 1200′	Premium - Standard Play - 1.5 mil	2.50
		POLYESTER BASE	
10M9LT	5″ - 900′	Premium - Long Play - 1.0 mil extra strength	$2.08
10M18LT	7″ - 1800′	Premium - Long Play - 1.0 mil extra strength	3.55
5TM12LT	5″ - 1200′	Premium - Double Play - .5 mil Tensilized	3.03
5TM24TL	7″ - 2400′	Premium - Double Play - .5 mil Tensilized	5.52
		LOW NOISE — LOW PRINT & MASTERING TAPE	
15ALN12LT	7″ - 1200′	Low Noise & Low Print - Acetate - 1.5 mil	$2.45
15MSM9LT	7″ - 900′	High Output Mastering Tape - Polyester - 1.5 mil super-strength	4.80
15MLN12LT	7″ - 1200′	Low Noise & Low Print - Polyester - 1.5 mil super-strength	3.05
10MLN18LT	7″ - 1800′	Low Noise & Low Print - Polyester - 1.0 mil extra-strength	4.10

RCA Red Seal Audio Tape in 5″ and 7″ manufactured especially for critical users who require maximum fidelity. Available in seven different lengths.

RCA RECORDING TAPE

Precision audio tape in the distinctive blue package for monophonic or stereophonic . . . 2-track or 4-track recording equipment. Available in 3″, 5″, and 7″ reels and in a wide variety of lengths. Also available in three types of base materials: **Acetate** — the least expensive and excellent for general recording; **Polyester** — highly durable and resistant to severe extremes of temperature and humidity; **Tensilized polyester 0.5 mil** — double or triple-play tape that is exceptionally rugged.

Type No.	Reel & Length	Description	Each*
		ACETATE BASE	
15A1	3″ - 150′	All Purpose - in Cardboard Mailer - 1.5 mil	$ .42
15A6	5″ - 600′	All purpose - Standard Play - 1.5 mil	1.35
15A12	7″ - 1200′	All purpose - Standard Play - 1.5 mil	1.95
10A9	5″ - 900′	All Purpose - Long Play - 1.0 mil	1.98
10A18	7″ - 1800′	All Purpose - Long Play - 1.0 mil	2.78
		POLYESTER BASE	
15M6	5″ - 600′	All Purpose - Standard Play - 1.5 mil super-strength	$1.62
15M12	7″ - 1200′	All Purpose - Standard Play - 1.5 mil super-strength	2.49
10M2	3″ - 225′	Long Play-in Cardboard Mailer-1.0 mil extra-strength	.60
10M9	5″ - 900′	All Purpose - Long Play - 1.0 mil extra-strength	1.90
10M18	7″ - 1800′	All Purpose - Long Play - 1.0 mil extra-strength	3.12
5TM3	3″ - 300′	All Purpose - Double Play - .5 mil Tensilized	.96
5TM12	5″ - 1200′	All Purpose - Double Play - .5 mil Tensilized	2.70
5TM24	7″ - 2400′	All Purpose - Double Play - .5 mil Tensilized	4.85
		TAPES IN PLASTIC MAILERS	
15A1PM	3″ - 150′	1.5 mil Acetate	$ .55
10M2PM	3″ - 225′	1.0 mil Polyester - extra-strength	.83
5TM3PM	3″ - 300′	.5 mil Polyester - Tensilized	1.10

RCA Recording Tape, in distinctive blue box, assures reel-to-reel and batch-to-batch uniformity for discriminating users.

CASSETTES

Type No.	Description	Each*
10R030	C-30 minutes	$1.20
10R060	C-60 minutes	1.55
10R090	C-90 minutes	2.13
10R120	C-120 minutes	2.50
10R121	Head Cleaner	1.55

RCA Cassettes available in 30, 60, 90 & 120 minute playing lengths plus tape head cleaner, with time-saving color-coded label in unbreakable, pliable plastic mailer.

CARTRIDGE

Type No.	Length	Description	Each*
10M5.6C	560′	Snap-Load - 1.0 mil Polyester	$3.30

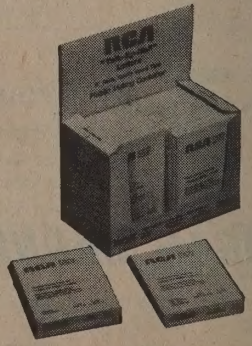
TAPE ACCESSORIES

Type No.	Description	Each*
	EMPTY RCA REELS & BOXES	
EB3PM	3″ Empty Plastic Mailer	$.28
EB5	5″ Empty White Box	.22
EB7	7″ Empty White Box	.24
EPR3	3″ Reel & Cardboard Mailer	.22
EPR3PM	3″ Reel & Plastic Mailer	.40
EPR5	5″ Reel & Box	.40
EPR7	7″ Reel & Box	.42

Type No.	Description	Each*
	LEADER TAPE — POLYESTER	
BLI	¼″x150′-Blue-3″ Reel	$ .75
GLI	¼″x150′-Green-3″ Reel	.75
RLI	¼″x150′-Red-3″ Reel	.75
WLI	¼″x150′-White-3″ Reel	.75
YLI	¼″x150′-Yellow-3″ Reel	.75
GL12	¼″x1200-Green-7″ Reel	3.30
RL12	¼″x1200′-Red-7″ Reel	3.30
WL12	¼″x1200′-White-7″ Reel	3.30

	SENSING TAPE	
SL150	1/32″ x 150′ Metallic	$1.30
	SPLICING TAPE	
ST66-1	1/32″ x 66′	$ .85
ST66-2	1/32″ x 66′	1.15
ST66-3	3/4″ x 66′	1.70
	MAILING LABELS FOR PLASTIC MAILERS	
LL12	Package of 12 Labels	$ .38

*Optional Distributor Resale Prices.



The popular 3-inch reels in plastic mailers are offered in three different playing lengths, one each of the three different bases.

Net

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THE PRO LINE

Rheem ROBERTS

TAPE RECORDERS & STEREO COMPONENTS
DIVISION OF RHEEM MANUFACTURING COMPANY

Model 530 The Desk Executive

Solid State • Compact Cassette Recorder

Executive desk model cassette tape recorder, complete with built-in AM/FM radio and telescoping antenna for FM reception. Ideal for business conferences, dictation, recording important events or speeches off-the-air. Convenient AC or battery operation. Handsome walnut cabinet designed to complement any office decor. Simple push-button operation for immediate use.

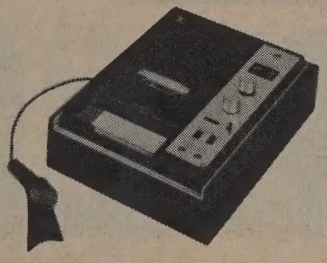
Includes batteries, blank cassette, earphone, stop/start microphone and telephone pickup. **$99.95**

Model 95

Solid State • Stereo

Cassette Tape Deck

Handsome walnut-encased companion piece for your stereo system



FEATURES:

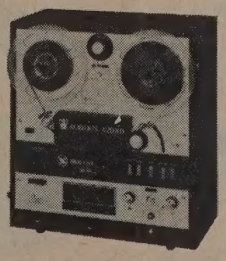
- Stereo Record and Play
- Push-Button Operation
- 2 VU Meters
- Stereo Microphone and Line Inputs
- Stereo Line Outputs
- 3-Digit Tape Counter
- Pause Switch
- Cassette Eject Button
- Walnut Case

This Roberts Cassette Tape Deck provides suprisingly life-like stereo sound when connected to your home stereo system. Plays back pre-recorded stereo cassette tape. Has built-in preamplifier which allows for up to two hours of recording stereo cassettes from your FM tuner, LP records, or "live" from microphones. Easiest way to handle magnetic tape. Just drop a cassette into the deck, and you are ready to record or play back. Eject cassette by pushing a button.

Complete with Patch Cords and Blank Cassette. **$99.95**

Model 420XD

Fully Automatic Professional Stereo Tape Deck with Cross Field in Walnut Cabinet



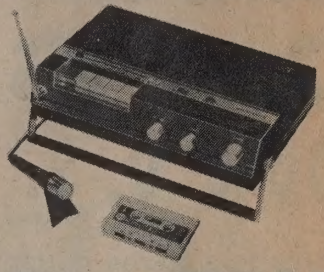
22,000 cycle Cross Field response • Automatic reversal of tape motion under timed sequential control • Automatic volume control provides adjusted sound level • Magnetic brakes with control brings tape to instant stop without tape pull • Four speeds — 1⅞, 3¾, 7½ & 15 IPS • 3 motors including hysteresis synchronous capstan • Automatic head sentry indicates oxide built-up on heads • Automatic shutoff • Remote control • Built-in tape cleaner • Feather-touch function controls • Sound-with-Sound • Sound-on-Sound • Sound mixing • Built-in instant reel retainers • Four heads (Erase, Record, Playback, Cross Field). **Ready for custom mount.** **$699.95**

Model 420X — Same as 420XD but Complete Recorder with Built-in Speakers and Power Amplifiers in Vinyl Case. **$799.95**

Model 525

Solid State • Portable Cassette Tape Recorder With AM/FM Radio

Enjoy . . . AM/FM
AM Record
FM Record
Tape Play
Voice or Auxiliary Record



FEATURES:

- AC/Battery Operation
- Direct off-the-air recording
- Push-Button Operation
- Level Indicator
- Large Speaker
- Cassette Eject Button
- Monaural Record
- Telescoping FM Antenna
- Tone Control
- Microphone and Line Inputs

A quality, portable music-maker, the Model 525 Cassette Recorder offers off-the-air music recording from its built-in AM/FM Radio. Plays back your choice of tapes by simply dropping in a cassette and pressing the "Play" key. No tape threading necessary. Cassette ejects by merely pushing a button. Operates on batteries or house current. A great convenience for taping your favorite programs anywhere, anytime, even while listening to them. Handle doubles as stand.

Complete with Batteries, Auxiliary Cable, Blank Cassette and Stop/Start Microphone. **$79.95**

Model 80

Solid State • Portable Cassette Tape Recorder

NOW . . . Roberts QUALITY at a BUDGET price in a Cassette Tape Recorder loaded with the following features:

- AC/Battery Operation
- Monaural Cassette Record
- Push-Button Operated
- Cassette Eject Button
- Large Speaker
- Switchable Automatic Level Control
- Microphone and Line Inputs
- 3-Digit Index Counter
- Tone Control
- Level Indicator

The trend-setter in portable cassette recorders. The Model 80 is recommended for recording interviews, lectures, business conferences, dictation, or your favorite music. Compact and simple to operate. Just drop in a cassette and push a button. No tape threading necessary. You're always set to play or record. Take it anywhere . . . it operates on batteries or AC — at home, in the office, or on the go. Convenient handle doubles as a stand.

Complete with Batteries, Auxiliary Cable, Blank Cassette and Stop/Start Microphone. **$69.95**

Model 30

Walnut Enclosed 30-Watt FM/AM Stereo Receiver

17,000 cycle audio • 46 solid state elements for instant-start cool long life reliability • Receives AM, FM and FM Stereo • Broad logging scale for precise vernier separation of stations • Outputs for recording on tape recorder • Automatic light signals FM stereo stations • Special jack for stereo headphone private listening • Switch to adjust amplifier for magnetic, ceramic or crystal phono cartridge • Tuning meter. **$179.95**

Also available: MODEL 50 — SAME AS MODEL 30 EXCEPT WITH 50 WATTS MUSIC POWER. **$199.95**

Model 778X

Cartridge & Reel Recorder with Cross Field Plus New One Micron Gap Cartridge Record Head

Cross Field recording for superior response on reels even at the new LP speeds • New One Micron Gap Record Head for super fidelity recording on cartridge • Two speeds for cartridge Record and Play, offering high speed duplicating and Fast Forward selection location • Built-in cartridge erase eliminating external bulk tape erasing • Records cartridge from reels, or from externally plugged-in record player, tuner, mikes, or another deck • Illuminated read-out indicators for track selection • 4-speed option or standard reel record play. Less than **$430.00**

ROBINS®

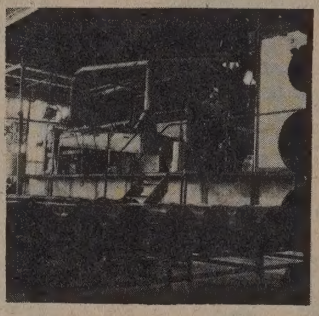
ROBINS ELECTRONICS CORP.

CASSETTES...

100% U. S. MANUFACTURE AND ASSEMBLY

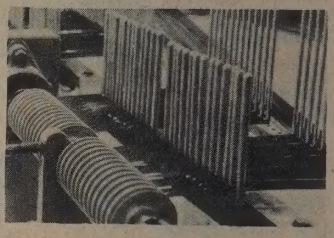
ROBINS IS A MAJOR SOURCE OF MAGNETIC RECORDING TAPE AND TAPE ACCESSORIES

Robins is one of a handful of manufacturers producing magnetic recording tape in the United States. Shown is part of Robins production facilities at Lodi, New Jersey, where tape is coated, calendered, and tested for quality and performance, and at College Point, New York, where magnetic tape is slit, wound into Cassettes, Cartridges, and onto Reels, Packaged, and Shipped to Distributors throughout the Free World. Robins also produces Tape Recording and Phono Accessories, Patch Cords, Adaptors, and Audio Connectors.



BRAND FIVE, THE FIFTH OLDEST BRAND OF RECORDING TAPE IN THE WORLD

The name "Brand Five" derives from the fact that it is the fifth oldest brand of recording tape in the world. This is the "best buy" in recording tape, the old familiar standard of better quality, now better than ever under the guidance of Robins High Quality materials and manufacturing control. Today "Brand Five" is the most complete and popular line of reel to reel, Cassette, and Cartridge Tapes.



"SONORAMIC BRAND" CASSETTES

Economical, quality tape for general recording, correspondence, and dictation. Packaged in convenient clear plastic boxes with built-in "stops" to prevent tape slack and unwinding.

Cat. No.	Recording Time
No. 2S30	30 minutes
No. 2S60	60 minutes
No. 2S90	90 minutes
No. 2S120	120 minutes

See latest Price Sheet for Prices.

"SONORAMIC BRAND" GIFT 6-PACKS

6 Recording Cassettes. Individually packaged in convenient self-mailers. Ideal for all recording requirements.

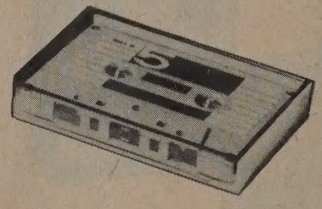
Cat. No.	Pkg. Qty.	Recording Time Each
No. 2S30-6	6	30 minutes
No. 2S60-6	6	60 minutes
No. 2S90-6	6	90 minutes
No. 2S120-6	6	120 minutes

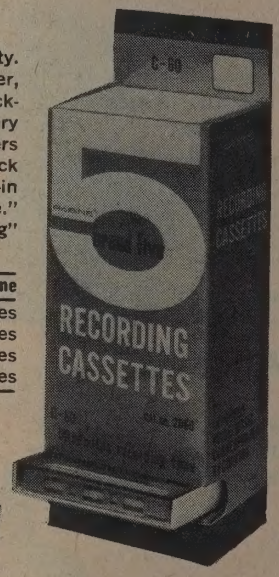
See latest Price Sheet for Prices.

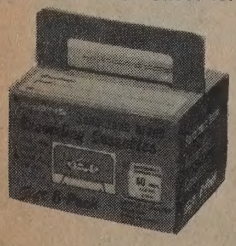
"BRAND FIVE" CASSETTES. High Qaulity. Super coated tape assures sharper, brighter recordings. Individually packaged in attractive and convenient library type permanent storage Plastic Canisters with transparent hinged cover for quick identification. Canisters have built-in "Stops" to protect tape. "'Brand Five." Cassettes are packaged in "Peg-Hang" Dispensers which contain 12.

Cat. No.	Recording Time
No. 2D30	30 minutes
No. 2D60	60 minutes
No. 2D90	90 minutes
No. 2D120	120 minutes

See latest Price Sheet for Prices.







"MAIL-A-CASSETTES". Quality tape in convenient storage and mailing impact-resistant plastic Canisters with self-stick address labels. Canisters have built-in "stops" to prevent tape slack and unwinding. Ready for correspondence and dictation.

Cat. No.	Recording Time
No. 2C30	30 minutes
No. 2C60	60 minutes

See latest Price Sheet for Prices.

ALL ROBINS RECORDING CASSETTES ARE FULLY GUARANTEED TO BE FREE OF ANY DEFECTS IN MATERIALS AND WORKMANSHIP.

Each Cassette is packaged with a Guarantee Card indicating the Cassette to be of 100% U. S. materials and assembly, and to be free of any defects in materials or workmanship. Should any Cassette prove to be defective in material or workmanship, it will be repaired, or replaced when returned to Robins Quality Control Engineer

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ROBINS ELECTRONICS CORP.

ROBINS

CASSETTE AND CARTRIDGE TAPE ACCESSORIES

No. TSA-1 CASSETTE STORAGE ALBUM. Recessed compartments for 12 Cassettes. Built-in stops prevent tape slack. **List $3.30**

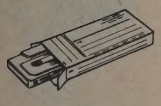
No. TCS-5 CASSETTE MODULAR STORAGE UNITS. Holds 12 tapes. Mount on wall, place on shelf. Walnut Grain decor. **List $3.30**

No. TCC-6 "CASSETTE SWINGER" CARRYING AND STORAGE CASE. For home or auto. Protects 12 Cassettes. With Log Book. **$6.15**

No. TC-3 DELUXE PLASTIC CASSETTE CANISTER. Impact resistant. Clear hinged cover. Built-in stops prevent tape slack and unwinding. Pkg. of 3. **$1.65**

No. TC-4 PLASTIC CASSETTE MAILERS. Impact resistant. Pkg. of 3. Built-in stops protect tape. With self-stick labels. **$1.30**

No. TML-20 REPLACEMENT CASSETTE LABELS. Pkg. of 20. Self-stick. For addressing TC-4 and other Canisters. **List $1.00**



No. TCB-18 CARDBOARD CASSETTE MAILERS. Pkg. of 18. Has stops to protect tape. **List $1.65**

No. TD-10 CASSETTE HEAD DEMAGNETIZER. Removes excessive magnetic build-up from recorder/player heads to improve fidelity. Has built-in pilot light. 110 V. A.C. **$8.30**

No. TSC-9 CASSETTE TEST STROBE. Tests recorder/player for correct speed. Built-in strobe tape and light. 110 V. A.C. **List $6.15**

No. THC-4 CASSETTE NON-ABRASIVE HEAD-KLEEN TAPE. Removes oxide, grime, etc. **List $3.00**

No. THC-6 3-WAY COMBINATION TEST-N-CLEAN CASSETTE. Cleans recorder/player heads. Tests head alignment. Tests stereo balance. Helps maintain optimum performance. **$2.80**

No. THC-7 CASSETTE MICRO-POLISHING HEAD-KLEEN TAPE. Cleans and polishes player/recorder heads. **$2.50**

No. TK-3 CASSETTE AND CARTRIDGE PLAYER/RECORDER HEAD-KLEEN KIT. 2 oz. bottles of Head Cleaner and Lubricant plus 25 extra long Audio Cleaners for hard to reach heads. **List $2.25**

No. THS-1 HEAD-KLEEN SPRAY. 4 oz. Aerosol formula Cleaner removes oxide, grime, etc. from Cassette and Cartridge Player heads. Includes extension nozzle. **List $2.10**

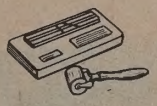
No. TJ-12 CASSETTE END-CAPS. Plastic Protects tape at Cassette openings from dust and grime. Pkg. of 10 **List $1.30**

No. TCJ-18 CASSETTE COVERS. Clear plastic. Protects Cassettes. Pkg. of 20. **List $1.15**

CASSETTE TAPE SPLICERS. Edit and repair. 150 Cassette tape.

No. TS-115 Economy Splicer. Cuts tape at 45° angle, 25 self-stick Patches included in built-in tray of Splicer. **List $5.00**

No. TS-215 POCKET SIZE PRECISION SPLICER BLOCK. Cuts tape at 45° or 90° angle. In pocket size plastic carry case with cutting blade and 25 self-stick Patches **$10.00**



No. TS-315 PROFESSIONAL STUDIO CASSETTE TAPE SPLICING BLOCK. Precision 45° or 90° cut. Heavy duty splicer block is mounted on sturdy cast base. Includes 100 self-stick Patches and burnishing roller. **List $25.00**

No. TT-15 CASSETTE TAPE SPLICING PATCHES. Pkg. of 100 Pre-cut, self-stick. Use with above Cassette Tape Splicers. **List $1.65**

No. TCW-2 CASSETTE TAPE TENSION WINDERS. Inserts in sprockets of Cassette to wind tape in either direction. Takes up slack. Pair. **List $1.50**

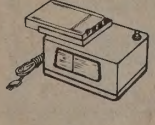
No. TRP-4 CASSETTE PLAYER-RECORDER PHONE PICK-UP For clear recording of phone conversations. Attaches to phone by suction cup. Plugs into recorder. **List $4.45**

No. TMC-1 PROFESSIONAL CASSETTE BULK TAPE ERASER. Erase recordings in seconds. Restores "permanetly recorded" cassettes to blank condition. 110 V. A.C. **List $20.00**

No. TCL-20 COLOR-CODING CASSETTE TITLE LABELS. Pkg. of 20 in 5 Colors. Self-stick, die cut for easy application. Replace worn labels. **List $1.00**

No. TCL-30 COLOR-CODING CASSETTE OWNER IDENTIFICATION END-LABELS. Pkg. of 30. Self-stick. 5 colors. Printed "Property Of—". **List $1.50**

PROFESSIONAL 4 AND 8 TRACK CARTRIDGE BULK TAPE ERASERS. Erase recordings in seconds. 110 V. 50-60 Hz A.C. **No. TMC-2** Deluxe, **List $30.00. No. TMC-3** Professional UL listed heavy duty model. **$55.00**



4 AND 8 TRACK CARTRIDGE HEAD DEMAGNETIZERS. Removes excessive magnetic build-up from recorder/player heads to improve fidelity. **No. TD-12** for Home Cartridge Players. 110 V. A.C. **List $13.35. No. TD-15** for Auto units. Direct current model. Plugs into cigarette lighter. **$16.65**

No. TSC-8 8-TRACK CARTRIDGE TEST STROBE. Tests speed accuracy of player/recorder. Built-in strobe tape and light. 110 V. A.C. **List $7.50**

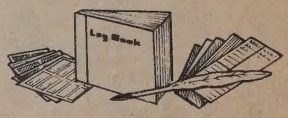
No. TCS-8 CARTRIDGE MODULAR STORAGE UNITS. Walnut grain decor. Holds 12 tapes. For wall mount or place on shelf. **$5.00**

No. TCC-8 CARTRIDGE CARRYING AND STORAGE CASE. For auto or home. Holds 18 tapes. FREE Log Book included. **LIST $13.35**

No. TCJ-20 CARTRIDGE COVERS. Pkg. of 20. Plastic. **List $1.15**

No. TJ-10 CARTRIDGE END-CAPS. Pkg. of 10. Plastic. Protects tape at Cartridge openings. **$1.30**

No. THC-8 8-TRACK 3-WAY TEST-N-CLEAN CARTRIDGE. Cleans player heads. Tests head alignment. Tests stereo balance equalization between channels. Assures optimum performance. **List $2.80**



No. TK-35 CASSETTE AND CARTRIDGE COLOR-CODE LOG KIT. Everything required to catalog and index your tape library. Kit contains: 120 page color-indexed Log Book, 240 numbered Index Spots in 2 sets, numbered 1 to 24 for tapes and matching canisters, 120 Title Labels, all self-stick, in 5 colors, and a simulated feather Writing Pen. **List $5.00**

BRAND FIVE 8-TRACK BLANK CARTRIDGES TAPES

Highest quality, super coated tape assures sharper, brighter recordings. Individually blister packaged on attractive 4-Color "Peg-Hang" cards.

Cat. No.	Recording Time	List
8D30	30 min.	$4.00
8D60	60 min.	4.35
8D80	80 min.	4.80

NEW SELF-MERCHANDISING DISPLAY DEALS!

Complete assortments of Recording Cassettes and Accessories, Recording 8-Track Cartridges and Accessories are available on no-screws, no-bolts, metal Peg and Shelf Displays.

Complete assortments of Recording and Tape Accessories, and Phono and Record Accessories are also available on these attractive Self-Merchandising Displays. Consult Robins latest Price List for details.

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ROBINS

REEL TO REEL RECORDING TAPE

ROBINS ELECTRONICS CORP.

"BRAND FIVE" QUADRUPLE-PLAY ¼ MIL SUPER-LONG RECORDING TAPE

Four times more recording and playing time than standard thicknesses on the same reel. Increases playing time of small recorders. Meets the needs of commercial users — broadcast studios, background music systems, conference, lectures, surveillance, and other long uninterrupted uses. Quality tensilized Mylar for greater strength.

Cat. No.	Reel Size	Length Ft.	Playing Time per track in minutes at 3¾ ips	List
3C25MT	2½″	500′	50 minutes	$2.50
3C32MT	3¼″	1100′	1 hr. 50 min.	4.95
3D5MT	5″	2400′	4 hours	9.80
3D7MT	7″	4800′	8 hours	18.75

"BRAND FIVE" RECORDING TAPE

The fifth oldest brand of recording tape in the world. Dependable quality. Features improved dry synthetic lubricant to eliminate squeal, stop gumming of heads, and reduce head wear. Offers increased output, reduced distortion at same recording level, better frequency response for sharper, brighter recordings, improved uniformity for lower modulation noise. Attractively boxed.

Cat. No.	Reel Size	Length Feet	Playing Time per track in minutes at 3¾ ips	Material	List
15D3	3″	150′	7½	1.5 mil Acetate	$ .75
15D5	5″	600′	30	1.5 mil Acetate	1.85
15D7	7″	1200′	60	1.5 mil Acetate	2.75
10D3	3″	225′	11	1. mil Acetate	.90
10D5	5″	900′	45	1. mil Acetate	2.30
10D7	7″	1800′	90	1. mil Acetate	3.65
10D3M	3″	225′	11	1. mil Polyester	1.00
10D5M	5″	900′	45	1. mil Polyester	2.90
10D7M	7″	1800′	90	1. mil Polyester	4.95
5D3M	3″	300′	15	.5 mil Polyester	1.15
5D5M	5″	1200′	60	Double Play	3.30
5D7M	7″	2400′	120	Double Play	6.00
5D3MT	3″	300′	15	.5 mil Tensilized	1.35
5D5MT	5″	1200′	60	Polyester	4.80
5D7MT	7″	2400′	120	Double Play	8.35
5D3MS	3″	450′	22½	.5 mil Polyester	1.50
5D32MS	3¼″	600′	30	Triple Play	2.00
5D5MS	5″	1800′	90	Triple Play	4.80
5D7MS	7″	3600′	180	Triple Play	8.35
5D3MTS	3″	450′	22½	.5 mil Tensilized	1.65
5D5MTS	5″	1800′	90	Polyester	6.15
5D7MTS	7″	3600′	180	Triple Play	10.65

"BRAND SEVEN"... ROBINS ENGINEERED TO PROFESSIONAL QUALITY RECORDING TAPE WITH EXCLUSIVE QUALITY FEATURES

Professional quality. Offers increased output, reduced distortion at same recording level, better frequency response for sharper, brighter recordings. Improved uniformity for lower modulation noise. Features improved dry synthetic lubricant. Calendered to achieve a smoother oxide surface for higher quality recording. Color-Coded Leader Tape and Aluminum Foil Sensing and Cueing Strips pre-spliced to beginning and end of tape on every reel. The Aluminum Foil Sensing material prepares the recording tape for use with automatic stop and reverse control recorders and other electronic sensing devices. Attractive 4-Color Library Box.

Cat. No.	Reel Size	Length Feet	Playing Time per track in minutes at 3¾ ips	Material	List
15E5	5″	600′	30	1.5 mil Acetate	$2.35
15E7	7″	1200′	60	1.5 mil Acetate	3.80
10E5	5″	900′	45	1. mil Acetate	3.75
10E7	7″	1800′	90	1. mil Acetate	5.95
10E5M	5″	900′	45	1. mil Polyester	3.90
10E7M	7″	1800′	90	1. mil Polyester	6.70
5E5M	5″	1200′	60	.5 mil Polyester	4.70
5E7M	7″	2400′	120	Double Play	8.10
5E5MT	5″	1200′	60	.5 mil Polyester	5.90
5E7MT	7″	2400′	120	Tensilized Double Play	10.30
5E5MS	5″	1200′	60	.5 mil Polyester	6.25
5E7MS	7″	2400′	120	Double Play	11.00
5E32MTS	3¼″	600′	30	.5 mil Polyester	3.30
5E5MTS	5″	1800′	90	Tensilized	7.70
5E7MTS	7″	3600′	180	Triple Play	13.00

ROBINS BRAND CORRESPONDENCE TAPE

Top quality recording tape in impact-resistant Plastic reusable Tape Mailing Canisters. Two-sided address cards included.

Cat. No.	Reel Size	Length Feet	Playing Time per track in minutes at 3¾ ips	Material	List
15H3	3″	150′	7½	1.5 mil Acetate	$1.00
10H3	3″	225′	11	1. mil Acetate	1.25
10H3M	3″	225′	11	1. mil Polyester	1.45
5H3MT	3″	300′	16	.5 mil Polyester Tensilized	1.75
5H3MTS	3″	450′	22½	.5 mil Polyester Tensilized Triple Play	2.65
5H32MTS	3¼″	600′	30	.5 mil Polyester Tensilized Triple Play	3.15

MAIL-A-TAPE ECONOMICAL CORRESPONDENCE TAPE

Quality Recording Tape in impact-resistant Plastic reusable Tape Mailing Canisters. Two-sided address cards included.

Cat. No.	Reel Size	Length Feet	Playing Time per track in minutes at 3¾ ips	Material	List
15C3	3″	150′	7½	1.5 mil Acetate	$ .93
10C3	3″	225′	11	1. mil Acetate	1.05
10C3M	3″	225′	11	1. mil Polyester	1.25
5C3M	3″	300′	15	.5 mil Polyester	1.50
5C3.2MS	3¼″	600′	30	.5 mil Polyester Triple Play	2.60

"SONORAMIC BRAND" RECORDING TAPE AND TAPE ACCESSORIES IN MULTI-PACKS

Wide selection of tapes and accessories for economy minded recordists. "Peg-Packaged" for easy display and handling-fast sales.

Cat. No.	Reels per Pkg.	Reel Size	Lgth. Ft. ea. Reel	Total Ft. of Tape	Material	List
15S3-P4	4	3″	150′	600′	1.5 mil Acetate	$1.65
15S2-P6	6	2″	75′	450′	1.5 mil Acetate	1.65
10S3-P3	3	3″	225′	675′	1. mil Acetate	1.65
10S2-P4	4	2″	110′	440′	1. mil Acetate	1.65
10S3M-P2	2	3″	250′	500′	1. mil Polyester	1.65
10S2.5M-P3	3	2½″	150′	450′	1. mil Polyester	1.65
5S3M-P2	2	3″	300′	600′	.5 mil Polyester Double Play	1.65
5S2.5M-P2	3	2½″	200′	600′	.5 mil Polyester Double Play	1.65
5S2.5MS-P2	2	2½″	350′	700′	.5 mil Polyester Triple Play	1.65
5S3.2MS-P2	2	3¼″	600′	1200′	.5 mil Polyester Triple Play	2.65
15S5-P2	2	5″	600′	1200′	1.5 mil Acetate	2.90
10S5-P2	2	5″	900′	1800′	1. mil Acetate	3.50
15S7-P2	2	7″	1200′	2400′	1.5 mil Acetate	4.75
10S7-P2	2	7″	1800′	3600′	1. mil Acetate	6.40

"SONORAMIC" TAPE ACCESSORIES IN MULTI-PAKS

No. RMC-6	Pkg. of 6 Reusable impact-resistant Plastic Tape Mailers	$1.80
No. TMC-30	Pkg. of 30 double-sided Address Cards for RMC-6 Mailers	1.25
No. TB-15	Pkg. of 15 Cardboard Tape Mailing Boxes	1.50

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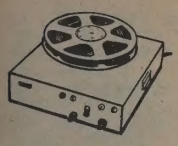
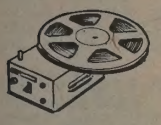
REEL TO REEL TAPE ACCESSORIES

ROBINS ELECTRONICS CORP.

ROBINS



MAGNETIC BULK TAPE ERASERS. For audio, video, computer, industrial tape to 1" wide. Erasure 50-90 db below saturation level. 115 V. 50-60 Hz A.C. Safety features: overheat indicator, individual fused circuits. **No. TM-120** for reels to 17". Duty cycle: 10 min. On/10 min. Off. Size: 3¾" x 12" x 14". With blower system. **List $210.00. No. TM-100** for reels to 10½". Duty cycle: 5 min. On/15 min. Off. Size: 3¾" x 6" x 8". **List $105.00**



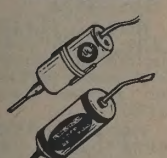
No. TM-99 PROFESSIONAL BULK ERASER. UL List. For tapes to ½" wide, reels to 10½". Erasures 3 to 6 db below normal erase head level. 110 V. 50-60 Hz A.C. Size: 5¼" x 6¾" x 3¾". **List $49.95**

No. TM-77 DELUXE. For ¼" tape, reels to 7". Erasure 2 to 4 db below erase head level. 110 V. 50-60 Hz A.C. Size: 2⅜" x 3¾" x 6¼". **$27.90**

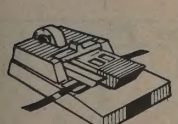
No. TM-88 HAND-HELD ERASER. For ¼" tape, any size reel. Handle has momentary contact switch. 4" x 2¼" x 4¼". Wt. 2 lb. 4 oz. 4 amps. 110 V. A.C. **List $18.30**

No. TM-44 ECONOMY MODEL. For ¼" tape, reels to 7". 5¼" x 2⅜" x 3⅛". 110 V. A.C. **List $19.15**

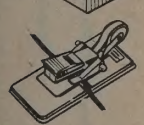
No. TM-2 MAGNETIC TAPE EDITING PEN. Removes single sounds, noise, etc. from recording. Fade in, fade out sounds. **List $2.50**



HEAD DEMAGNETIZERS. Removes excessive magnetic build-up from recorder heads to improve sound fidelity. 110 V. 50-60 Hz A.C. **No. TD-6 DELUXE, UL LIST MODEL.** 4⅝" x 1¼" dia. **List $12.15. No. TD-3 ECONOMY MODEL.** 3½" x 1¼". **List $6.65**



GIBSON GIRL® "STEREO" TAPE SPLICERS. "See-thru" windows show "Cut" and "Trim" positions. Tape guide and arms secure tape. Blade centering adjustment provided for lifetime accuracy. Replaceable cutter cartridge, pads. **No. TS8D DELUXE.** Easy threading integral dispenser has ½" x 100" splicing tape. Made of Cycolac®. **List $13.30**

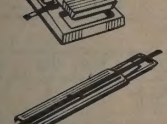


No. TS-7S STANDARD. Same as TS-8D. Metal and plastic. **$10.00**

No. TS-7J JUNIOR. Same as TS-7S, less dispenser and splicing tape. **List $8.30**

REPLACEMENT CUTTER KITS FOR ABOVE SPLICERS. No. TZ-2 for TS-4A Splicers. **No. TZ-3** for TS-4S, 4J, 7S and 7J models. **No. TZ-4** Cutter Pads for TS-4A, 4S, 4J, 7S, and 7J. **No. TZ-8** for TS-8D. **List each $1.75**

No. TS-6 DELUXE "CUT-N-SPLICE". Adjustable cutter cuts tape at 30°, 45°, and 90°. Includes 25 self-stick Patches. **List $5.00**

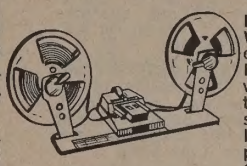


No. TS-5 SPLICER BLOCK. Metal tape guide has sliding tray with 25 Patches and blade. **List $3.35**

No. TS-3 "SEMI-PRO". Tape guide has adhesive back. Hand held blade for cut and trim operation has cover. **List $2.80**

No. TS-2 "HOBBYIST". Adhesive backed tape guide with cutting blades. **List $1.40**

No. TS-14 PROFESSIONAL STUDIO SPLICER BLOCK. Cuts tape at 45° or 90°. Precision, heavy-duty splicer block mounted on sturdy cast base. Burnishing plate, roller, cutting blade, and 100 self-stick Patches included. **List $25.00**



No. TK-9 TAPE EDITING WORKSHOP. Tape winders for reels to 7", and Deluxe Splicer on sturdy walnut grain base. Has tape timing/editing scale. 7" x 14" x 5½" ht. Includes tape editing pencil, Splicing Tape, and Editing Guide Book. **$24.95**

"GIBSON GIRL" AUDIO/VIDEO TAPE SPLICERS. Heavy duty. Precision cut and trim blades, and cutter pads are replaceable. **No. TS-250** for ¼" tapes. **No. TS-500** for ½" tapes. **No. TS-1000** for 1" tapes. Splicers with straight cut: **No. TS-250S, No. TS-500S, TS-1000S. List each $91.50**

AUDIO/VIDEO TAPE SPLICERS. Heavy duty. Has 25 Patches. **No. TSV-50** for ½" tapes. **No. TSV-100** for 1" tapes. **List each $21.60**

SPLICING TAPE. Special formula Mylar.

Cat. No.	Width	Length	List
TST-235	¼"	300"	$1.15
TST-376	⅜"	275"	1.15
TST-501	½"	250"	1.15
TST-751	¾"	150"	1.40
TT-234	¼"	100"	.48
TT-375	⅜"	100"	.55
TT-500	½"	100"	.60

SPLICING PATCHES. Precut, self-stick.

Cat. No.	Pkg. Qty.	Splicers to be used with	List
TST-233	75	TS-5, TS-6, and TS-14	$1.30
TT-247	60	TSV-50	1.65
TT-248	48	TSV-100	1.65

TAPE EDITING AND CARE KITS IN CARRYING CASES. No. SKA-1 Kit. Has 7" reel of 1200 ft. 1.5 mil Acetate "Brand Five" Recording Tape, Tape Splicer, Splicing Tape, 75 Tape Clips, Empty Reel, 6 - 7" Tape Storage Boxes, 2 oz. bottles of Head Cleaner and Head and Guide Lubricant, 180 Title Labels, 3 Editing Pencils, Tape Editing Guide Book, in Vinyl Attache Case. **List $21.65**

No. SKA-2 KIT. Has 3—7" reels of "Brand Five" Tape, each 1200 ft. 1.5 mil Acetate; TS-7J Splicer, Splicing Tape, Head Demagnetizer, 75 Tape Clips, 2 oz. Head Cleaner, Head and Guide Lubricant, 240 Color Title Labels, 7" Empty Reel, 4 - 7" Tape Storage Boxes, Tape Editing Guide Book, in Vinyl Attache Case. **List $36.00**

No. TK-8DLX KIT. Has TS-8D Splicer, Splicing Tape, Tape Threader, Tape Clips, Head Cleaner, Lubricant, Tape Cleaning Cloths, Reel Holders, 30 Title Labels, Guide Book. **$20.85**

No. TK-30 KIT. Has TS-6 Splicer, 25 Patches, Reel of White Leader Tape, 12 Tape Clips, Tape Cleaning Cloths, 3" reel of Tape-Clean, and 120 Color Title Labels. **$10.00**

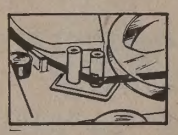
No. TK-21 KIT. Has TS-3 Splicer, Splicing Tape, and Tape Editing Pencil. **List $2.90**

No. TK-4H. Has TS-2 Splicer, Tape Cleaning Cloths, Splicing Tape, Tape Clips, and Tape Editing Book. **List $3.65**

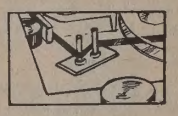
COMPLETE AUDIO/VISUAL TAPE ACCESSORY KITS. For language labs, A/V depts., Broadcast and Recording Studio. **TK-12 KIT.** Has TM-99 UL listed Bulk Tape Eraser, TS-8 Deluxe Splicer, 6 rolls ½" x 100" Splicing Tape, TK-6 Head and Guide Clean-Lube Kit. Tape Strobe and Light Kit, TD-6 UL listed Head Demagnetizer, Tape Threader, Tape Cleaning Cloths, 180 Title Labels, 75 Tape Clips, and 150 "Audio" Cleaners. **List $87.50**

No. TK-11 KIT. Has TM-77 ulk Eraser, TS-7S Splicer, ⅜" x 275" Splicing Tape, Head and Guide Clean-Lube Kit, Tape Strobe and Light Kit, TD-3 Head Demagnetizer, Tape Threader, Tape Cleaning Cloths, 180 Title Labels, and 75 Tape Clips. **List $53.00**

No. TK-14 RECORDER MAINTENANCE KIT. Head Demagnetizer, 3 Tape Cleaning Cloths, and 3" Reel of Tape-Clean. **List $7.30**



No. TLA-1 TAPE CLEAN-LUBE SYSTEM. Cleans and lubricates both sides of tape during play. Reduces tape drag. Eliminates squeal. Self-stick base mounts to recorder deck. Includes Silicone cleaner/lubricant and 2 replacement applicators. **$5.00**



No. TLA-2 TAPE LUBE SYSTEM. Lubricates both sides of tape during play. Reduces tape drag. Eliminates squeal. Self-stick for recorder mount. With spare lube sticks. **List $3.35**

No. THS-1 HEAD-KLEEN SPRAY. Aerosol formula Cleaner removes oxides and dirt, etc. from recorder heads. With extension nozzle for hard to reach heads. 4 oz. **List $2.10**

No. TK-6 HEAD CLEAN-LUBE KIT. 2 oz. bottles Head Cleaner, Head and Guide Lubricant. **List $2.15**

No. TK-2 TAPE CARE KIT. 2 oz. Head Cleaner and Tape Cleaning Cloth. **$2.15**

No. TK-7 COMPLETE TAPE CARE KIT. 2 oz. bottles of Head Cleaner, Head and Guide Lubricant, Tape Drive Oil, Non-Slip for drives, and 50 "Audio" Cleaners. **$4.15**

No. TX-20 HEAD CLEANER. Removes oxide, dirt, etc. from recorder heads. 2 oz. bottle. **List $1.15**

No. TX-22 HEAD AND GUIDE LUBRICANT. Silicone base liquid reduces head and tape wear. Provides friction-free tape path. 2 oz. **List $1.15**

No. TX-33 TAPE DRIVE OIL. Highly refined lubricant for rotating and moving drive parts. Inhibits rust and oxidation. 2 oz. **List $.85**

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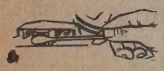
ROBINS

REEL TO REEL TAPE ACCESSORIES

ROBINS ELECTRONICS CORP.

No. TX-56 NON-SLIP FOR TAPE DRIVES. Stops slippage of idler, pulley belts, cords. Fast drying and pentrating. Dries to tack-free yet non-slip surface. 2 oz. bottle. **List $1.50**



No. MSW-125 "AUDIO-CLEAN SWABBIES" Pkg. of 125. Clean and lubricate heads and guides, etc. **List $1.25**

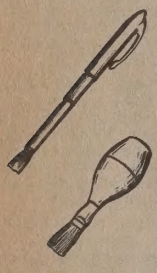
No. THC-12 PARK BRAND "QUICK-CLEAN" FELT PEN. Cleans recorder heads of oxide, grime, etc. Pen has pocket clip. Import. **List $1.65**

TAPE-CLEAN. Reusable Silicone treated cloth tape cleans and lubricates recorder heads and guides when played. **No. THC-5,** 5" reel, **List $3.65. No. THC-3,** 3" reel. **List $2.00. No. THC-50,** ½" wide tape on 7" reel for video recorders. **List $6.00**

No. THC-1 HEAD-KLEEN POLISHING TAPE. 3" reel. Removes oxide, grime, etc. and polishes heads. **List $2.15**

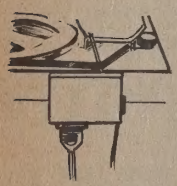
No. TG-18 DISPOSABLE TAPE-CLEAN CLOTHS. Pkg. of 18. Silicone treated. Clean and lubricate tapes to eliminate squeal and drag. **List $1.65**

No. TG-2 TAPE-CLEAN LUBE CLOTHS. Pkg. of 3. Silicone treated. Reusable. **List $1.15**



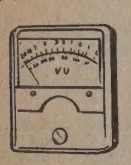
No. MRB-1 HANDY BRUSH. Soft camel's hair brush in telescoping case with cap and pocket clip. Dust heads, guides, etc. Ideal for lenses. **List $1.65**

No. TBB-1 BLOWER BRUSH. Squeezes blower and soft camel's hair brush. Ideal for dusting audio equipment, lenses. **$2.15**



No. TSO-1 AUTOMATIC TAPE SHUT-OFF. Control attaches to side of recorder. Recorder plugs into unit. Arm gently contacts tape. When tape plays through and ends, unit automatically shuts-off recorder or any other device. 110 V. A.C. 3 amp rating. **List $8.30**

No. TT6-5 "FRISCH" TONE GENERATOR-CUEING DEVICE. Mechanically prints continuous tone, any desired length on tape. Precision made. **$33.30**

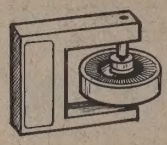


No. TVU-1 "VU" METER. Park brand. Prevents overloading or recording at too low a level. 2 color scale. Modulation: 0-100%. VU: −20 db to +3 db. 2700Ω impedance. 1.2 volts gives 0 "VU". Low and high imped. inputs. 500 μ. Size: 1 1/16" x 2". Threaded mounting screws. ¼" terminals. Imported. **List $6.65**

No. TRP-1 DELUXE PHONE PICK-UP. High efficiency ferrite core gives 3-5 db more gain, high signal to noise ratio. Fastens to phone by spring. 6 ft. cable has stripped ends. **List $7.15**

No. TB-3 SOLID-STATE BEEPER AND PHONE PICK-UP. Integrated circuit signal generator-timer and high efficiency ferrite induction coil. Injects 1 kc "Beeps" into phone lines and recorder at 15 second intervals to comply with law. Has on-off switch, 6 ft. cables to phone and recorder. Pick-up fastens to phone by spring. Signal generator-timer operates on 110 V. 50-60 Hz A.C. **List $33.00**

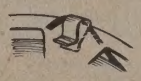
No. TRP-2 PHONE PICK-UP. Attaches to phone by suction cup. 5 ft. shielded cable, stripped ends for attaching connector. List $3.80



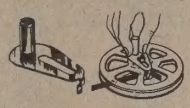
No. TW-1 PROFESSIONAL TAPE STROBE. Metal, chrome plated. Checks speed accuracy of 7½ and 3¾ ips recorders. Precision machined. Needle bearings. **List $11.65**

No. TK-5 TAPE STROBE AND LIGHT KIT. Tests speed accuracy of recorders at 15, 7½, 3¾ ips. Strobe tape, neon lamp. 110 V. A.C. **$3.00**

No. TAT-100 HEAD AZIMUTH ALIGNMENT TAPE. 100 ft. on 2½" reel. Has 6 kc steady tone. **List $2.00**



No. TC-75 TAPE CLIPS. Plastic, reusable. Stops tape unwinding on reels. Pkg. of 75 in plastic container. **List $1.50**



No. TG-4 TAPE THREADER. Eliminates awkward fumbling. **List $1.30**

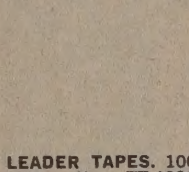
No. TG-1 REEL HOLDERS. Pair. Holds reels in place regardless of recorder position. **$1.15**

SENSING STRIPS AND PATCHES. Aluminum foil. Perpares tapes for use with recorders having automatic stop and reverse controls and other electronic sensing devices. **No. TSP-25,** ¼" x 4" strips. Pkg. of 25. **$2.00. No. TSP-50** Patches. ¼" x ¾" lengths. Pkg. of 50. **$1.75**

No. TT-16 SET OF COLOR-CODE LEADER TAPES. 2½" reels, 100 ft. each Red, Blue, Green, Red, Yellow, White. Reinforce tape ends. Index between recorded sections on reels. **List $4.50**

LEADER TAPES. 100 ft. x ¼" wide on 2½" reels. **No. TT-100C** Clean; **No. TT-100W** White; **No. TT-100G** Green; **No. TT-100R** Red. **List each $1.25**

No. TT-101 PROFESSIONAL WHITE LEADER TAPE. 1200 ft. 1.5 mil, on 7" reel. **List $5.00**



No. TK-1 COLOR CODING TAPE LOG KIT. 240 Title Labels, 72 Tape End Tabs, 48 Numbered Tape Index Spots, 30 Tape Box Ends, all self-stick, in 6 colors, 120 page Log Book, and Simulated Feather Writing Pen. Catalog your tape library. **List $8.85**

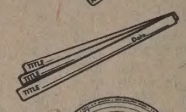
No. TT-245 COLOR-CODING TAPE END TABS. Self-stick. Reinforce tape ends, prevent tape unwinding, facilitate threading. Pkg. of 72 in 6 colors. **List $1.30**

No. TT-246 COLOR-CODE INDEX-CUEING SPOTS FOR TAPE. Numbered 1 to 8. Index selections throughout reel. Pkg. of 48. 6 colors. **List $1.65**

No. TT-240 COLOR-CODING TAPE SPLICING PATCHES. Self-stick, 12 each of 6 colors. Pkg. of 72. **$1.65**

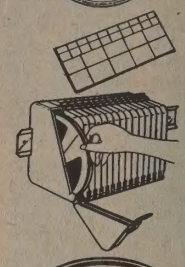
No. TL-5 COLOR-CODE TAPE BOX ENDS. 30 self-stick, textured binding strips. 6 colors. Reinforce and hinge lids, code boxes. **List $3.00**

SELF STICK TITLE LABELS. ½" x 2". Sheets of 10 labels. **No. TL-240 COLOR-CODE.** Pkg. of 240. 6 colors. **List $1.80. No. TL-180.** Pkg. of 180. White. **List $1.50**

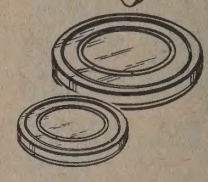


No. TL-9 LONG-LINE TITLE LABELS. Self-stick. 9½" x ⅜". Sheets of 10 labels. Pkg. of 50. **$1.25**

No. TLD-15 TAPE LOG DISCS. Index 7" tapes. Write titles on circular lines, information in center. Index scales at die-cut edges for marking off selections. Pkg. of 18. **List $1.50**



RECORDER PRESSURE PADS. Pkg. of 44. 2 thicknesses, precut to fit most recorders. "U-cut-it" pads provided for odd models. **No. TP-1, List $1.25. No. TTP-2** Self-Stick Pads. **List $1.30**



No. TCP-12 "TAPE-SAFES". Set of 12. Protects 7" tapes. Molded hi-impact plastic. Hinge cover. Dovetail groove fits metal wall mount bracket included. **$20.00**

"TAPE VAULTS". Metal, enamel finished canisters. Ribs nest for stacking. **No. TC7-2** Pkg. of 2 for 7" tapes. **List $2.00. No. TC5-2** Pkg. of 2 for 5" tapes. **$1.30**

No. TB-15 CARDBOARD MAILERS. Pkg. of 15 for 3¼" tapes. **$1.50**

No. RMC-6 PLASTIC MAILERS. Pkg. of 6. Reusable, impact resistant. For 3¼" tapes. Includes 2-sided address cards. **List $1.80**

No. TMC-30 2-SIDED ADDRESS CARDS. Pkg. of 30. For RMC-6 Canisters. **List $1.30**

EMPTY TAPE REELS

Cat. No.	Color	Size	Pkg. Qty.	List
TR20-6	Clear	2"	6	$1.15
TR25-6	Clear	2½"	6	1.15
TR30-6	Clear	3"	6	1.15
TR32-4	Clear	3¼"	4	1.15
TR36-6	*	3"	6	1.30
TR40-4	Clear	4"	4	1.30
TR50-2	Clear	5"	2	1.15
TR51-2B	Blue	5"	2	1.30
TR51-2G	Green	5"	2	1.30
TR51-2R	Red	5"	2	1.30
TR51-2Y	Yellow	5"	2	1.30
TR70-2	Clear	7"	2	1.25
TR71-2B	Blue	7"	2	1.65
TR71-2G	Green	7"	2	1.65
TR71-2R	Red	7"	2	1.65
TR71-2Y	Yellow	7"	2	1.65
TR53-2	Clear†	5"	2	1.75
TR74-2	Clear†	7"	2	2.15

*Assorted Colors. †Low Torque Reels.

EMPTY TAPE REELS IN BOXES. 1 reel to box.

Cat. No.	Size	List	Cat. No.	Size	List
TRB-2	2"	$.42	TR-50	5"	$.65
TRB-2.5	2½"	.45	TR-70	7"	.82
TRB-3	3"	.45	TRV-75	7" V	2.50
TRB-3.2	3¼"	.47			

V: VTR Reel for ½" tape.

EMPTY TAPE BOXES.

Cat. No.	Size	Qty.	List
TB-5	5"	1	$.35
TB-7	7"	1	.39

INFORMATIVE BOOKS FOR RECORDISTS

No. TE-24 "Tape Editing and Splicing Guide". **List $.55. No. TE-96** "What You Should Know About Your Recorder". **List $1.30. No. TE-127** "Tape Recording the Sounds of Your Life". **No. TE-129** "How To Get the Most Out of Your Recorder. **List $1.65.**

Trade Discount Applies To List Prices Only

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PHONO ACCESSORIES

ROBINS ELECTRONICS CORP.

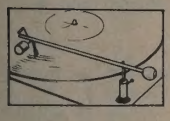
ROBINS

No. PK-11 PROFESSIONAL RECORD CARE KIT. PB-10 Record Sweep, Anti-Static Cleaner and Lubricant, Stylus inspection Microscope, PSG-3 Stylus Pressure Gauge, "Rob-O-Stat" Record Cleaning Kit. **List 11.90**

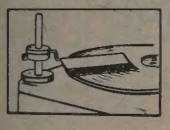
No. PK-3 RECORD CARE KIT. PSG-3 Stylus Gauge, Adjustable Stylus Brush, Combination Record Brush and Tone-Arm Lift, Turntable Level, Record Cleaning Cloths, and 18 Plastic Record Covers. **List $7.50**

No. PK-6 "ROB-O-STAT" RECORD CLEANING KIT. Soft velvet and foam applicator mitt, 1½ oz. Anti-Static Record Cleaner and Lubricant, and polyfoam pad. **List $2.50**

No. PC-6 AUTOMATIC END RECORD AND RECORD PROTECTOR. Covers records stacked on changer. Drops as last record to continue protection from dust and grime. Sign-off tells you when last record has played. Complete with jacket. **List $3.35**



No. PB-10 PROFESSIONAL RECORD SWEEP. Sweeps dirt from delicate sound grooves. Deposits Anti-Static Cleaner and Lubricant. Mounts to phono by suction cup. Anti-Static fluid included. **$5.00**

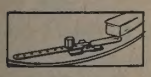


No. PB-88 CLEAN-SWEEP. Large soft brush on aluminum support, sweep entire tracking surface of records. Removes dust, etc. Self-stick base for mount to phono. **$7.50**

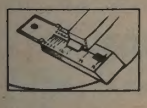
No. PB-2 COMBINATION TONE-ARM LIFT AND RECORD BRUSH. Clips to tone-arm. Protects records from dust and scratches. **List $1.15**

No. PB-75 CLIP-ON RECORD BRUSH. Clips to tone-arm. **$.80**

No. PB-3 ADJUSTABLE STYLUS BRUSH. For all U. S. and imported phonos. Adjusts ¾" to 2¼" height. Removes dust blob accumulation on stylus. Self-stick base mounts on phono. **$1.40**



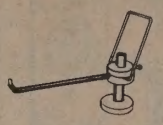
No. PSG-3 STYLUS GAUGE. Has counter balance weight. Measures pressure to ½ gram. **List $1.65**



No. PSG-2 STYLUS PRESSURE GAUGE. Measures pressure from ½ gram to 8 grams. **List $1.50**

No. PM-1 STYLUS MICROSCOPE. Precision ground lenses. 50X magnification. Knurled focusing adjustment, convenient slot holds needle for inspection, and pocket clip. 3¾" x ½" dia. Imported. **List $3.15**

TURNTABLE LEVELS. No. PL-2 Round Level, self-stick backing for mount to phono. **List $2.65. No. PL-1** Gold anodized aluminum case. **List $1.65**

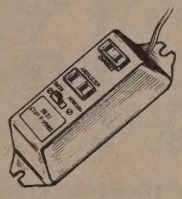


No. PCD1 PROFESSIONAL RECORD CUEING CONTROL. For manual turntables. Raise and lower tone-arm to desired track with pinpoint accuracy, without touching it and prevent scratching records. Self-stick base mounts to turntable deck. **List $11.60**

No. PNT-1 PHONO STYLUS TIMER. Calibrated 300 hour use gauge indicates elapsed time of phono operation and stylus wear to prevent needless record damage. Indicates time for cleaning and general maintenance of records and equipment. Self-stick base for mount to phono deck. Park brand. Imported **List $8.30**

No. MRB-1 HANDY BRUSH. Soft Camel's hair brush in telescopin gold finish case with pocket clip. Ideal for dusting phono, records, delicate parts, lenses, etc. **List $1.65**

No. PB-9 DISK-WHISK ANTI-STATIC RECORD CLEANER. Cleans, lubricates Lp and 45 rpm records, both sides in one operation by rotating record. Deposits anti-static Silicone. Includes record handling disc and 45 rpm daptor. **List $2.00**



No. PS-3 AUTOMATIC SOLID-STATE HI-FI/STEREO SHUT-OFF. For U. S. and imported equipment. Shuts off amplifier after last record plays. Prevents equipment "burn-up". Amplifier and phono plug in separately. Switch for manual operation. 6 ft. line cord. 110 V. A.C. Metal housing for wall or cabinet mount. 6½" x 2¼" x 1¾" ht. **List $11.50**

No. PK-5 PHONO STROBE AND LIGHT KIT. Checks phono speed accuracy. 110-120 V. 50-60 Hz A.C. **List $2.65**

METAL PHONO STROBE DISCS. No. PSD-4 4-speed, 5" dia., tests 16⅔, 33¼, 45, and 78 rpm speeds. **List $1.80. No. PSD-3** 3-Speed, 3¼" dia., tests 33⅓, 45, and 78 rmp speeds. **List $1.15**

POLYESTER PHONO CUSHIONS. No. PC-12 11¾" dia. mat cushions record drop. Reduces slippage. **List $1.25. No. PC10** 9¾" mat **List $1.15**

No. PC-33 RIM-REST PHONO CUSHIO. Supply Polyethylene. Has graduated ridges for 7", 10", and 12" records. Records rest on rims only. **List $2.50**

No. PX-8 ANTI-STATIC RECORD CLEAN-SPRAY. Silicone formula. 8 oz. Lubricates and cleans records. Prevents dust accumulation. Stops annoying pops and clicks. **List $2.00**

No. PK-12 PHONO CARE KIT. 2 oz. bottles of Phono Drive Oil and Non-Slip for Phono Drives. **List $2.15**

No. TX-33 PHONO DRIVE OIL. Highly refined lubricant for rotating and moving parts of phono drives. Inhibits rust and oxidation. 2 oz. **List $.85**

No. TX-56 NON-SLIP FOR PHONO DRIVES. Stops slippage of drive wheels, belts, etc. Fast drying, stable and penetrating material dies to tack-free, non-slip surface. **List $1.50**

RECORD CARE MULTI-PAKS
No. PC-2, 2 Record Cleaning Cloths and Clip-On Record Brush. **No. PC-3,** 3 Anti-Static Record Cleaning Cloths. **No. PC-4,** 2 Record Cleaning Cloths and a 45 rpm plastic Spindle Adaptor. **List each $1.30**

No. PRA-50 RECORD SPIDERS. 50 plastic 45 rpm record adaptors. Reusable. **List $1.30**

No. PK-4 PHONO LEVELING KIT. 4 adjustable rubber feet for mount under turntable base. Round level mounts to phono deck. **List $4.65**

No. PG-1 ANTI-STATIC RECORD CLEANING CLOTH. Silicone treated. Washable, reusable. **List $.80**

No. PG-20 DISPOSABLE DISC-KLEEN CLOTHS. Silicone impregnated. Cleans and lubricates records. Pkg. of 18. **List $1.65**

No. PJ-18 RECORD OVERS. Round bottom, Polyethylene. Protects 12" records. Pkg. of 18. **List $1.25**

No. PJ-25 ALBUM COVERS. Heavy duty, window clear plastic. Has convenient thumb notch for rapid insertion and removal of album. Pkg. of 12. **List $1.65**

No. PRS-12 POLY-LINED RECORD SLEEVES. Has window-clear poly windows to show title labels of records. For 12" records. Pkg. of 12. **List $2.15**

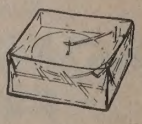
No. PRJ-4 DECORATIVE REPLACEMENT RECORD JACKETS. For 12" records. Pkg. of 4. Cover motiffs are Popular, Classical, and Psychedelic art. Titles and other information can be written on backs. **List $2.15**

No. PK-20 COLOR-CODE RECORD LOG KIT. Catalog your record collection. 120 Page Log Book, 80 self-stick identification Labels for LP and 45 rpm records, 240 Album and Record Index Spots, (all in 5 colors), and simulated feather Writing Pen. **$4.60**

No. PL-80 COLOR-CODE OWNER IDENTIFICATION LABELS FOR LP AND 45 RPM RECORDS. Self-Stick. Printed "This Record is the Property Of-". Curved to fit label area of records. 5 colors. Packge of 80. **List $1.50**

No. PL-5 COLOR-CODE ALBUM AND RECORD INDEX SPOTS. 2 sets numbered 1 to 24, in 5 colors. Self-stick. Package of 240. **List $1.30**

No. PT-5 COLOR-CODE ALBUM REINFORCEMENT TAPE. Repair, reinforce, color-code albums. 5 yards each of 5 colors, enough for 24 albums. **$1.65**



CHANGER AND TURNTABLE COVERS. Heavy gauge plastic. Fits most models.

Cat No.	Size (in.)	List
PJ-1	13x13½x8	$2.50
PJ-2	12½x15x8	2.50
PJ-3	22x16½x9	3.00
PJ-4	17¼x17½x9	3.00
PJ-5	17x15x8¾	3.00

COMPONENT SLIDES. Ball bearing action for smooth sliding. Heavy duty. (Not illustrated.)

Cat. No.	Material	Supports up to	Lgth.	Travel Lgth.	List Pair
MS-13	Alum.	30 lbs.	13"	14"	$5.80
MS-15	Steel	75 lbs.	13"	9"	4.15
MS-17	Steel	75 lbs.	13"	11"	4.15

No. PG-9 AOUSTIC FIBERGLASS INSULATION. Line speaker cabinets, tape decks, phonos, etc. Improves sound fidelity. Damps "boom" and distortion causing standing waves inside speaker enclsoures. 36" x 36" x 1" thick. (Not illustrated.) **List $2.50**

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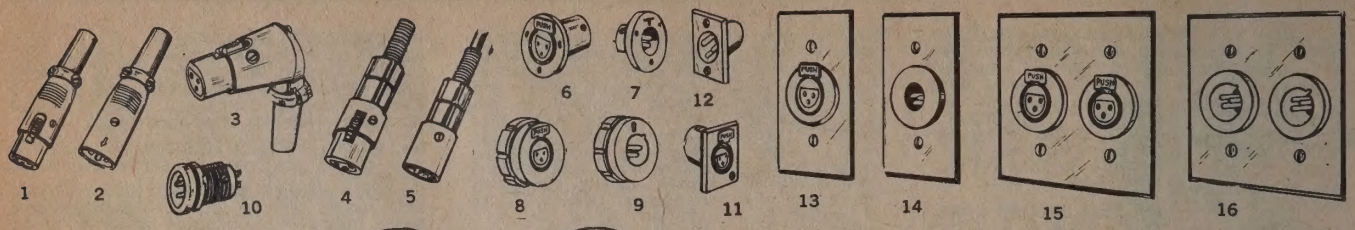
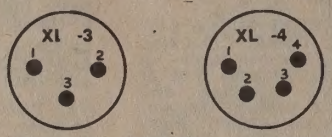
ROBINS — XL AND XLP AUDIO CONNECTORS

ROBINS ELECTRONICS CORP.



XLP and XL Audio Connectors meet requirements for low voltage electrical and electronic applications up to 15 amps, 200 V. A.C. Latch-Lock feature assures secure, rapid locking of mated connectors. Plugs cannot be accidently disengaged.



Contacts:	3-15 amp	4-10 amp
B & S Stranded Wire:	No. 14	No. 16
Voltage:	200 V.A.C.	200 V.A.C.

XLP PLUGS feature Neoprene strain relief and secure cable clamp. Zinc alloy shell. Satin nickel finish. Phenolic insulator. Latch-Lock.

XLP STRAIGHT CORD PLUGS.

Illustration 1 Female				Illustrated 2 Male			
XLP-3-11	3-Cond.	List	$2.50	XLP-3-12	3-Cond.	List	$2.40
XLP-4-11	4-Cond.	List	3.40	XLP-4-12	4-Cond.	List	3.20

XLP RIGHT ANGLE 90° CORD PLUGS. Illustration 3 Female

XLP-3-15	3-Cond.	List	$6.85	XLP-4-15	4-Cond.	List	$7.25

XL STRAIGHT CORD PLUGS. Spring, strain relief. Zinc alloy shell. Satin nickel finish. Phenolic insulator. Latch-Lock.

Illustration 4 Female				Illustration 5 Male			
XL-3-11	3-Cond.	List	$2.35	XL-3-12	3-Cond.	List	$2.20
XL-4-11	4-Cond.	List	3.10	XL-4-12	4-Cond.	List	2.90

XL RECEPTACLE, WALL AND PANEL MOUNT. With mounting holes.

Illustration 6 Female				Illustrated—7 Male			
XL-3-13	3-Cond.	List	$2.65	XL-3-14	3-Cond.	List	$1.80
XL-4-13	4-Cond.	List	3.25	XL-4-14	4-Cond.	List	2.50

XL RECEPTACLE, PANEL MOUNT. Mounting nut supplied, accommodates panels up to 5/16" thick.

Illustration 8 Female				Illustration 9 Female			
XL-3-13N	3-Cond.	List	$3.25	XL-3-14N	3-Cond.	List	$2.75
				XL-4-14N	4-Cond.	List	3.75

XL "COMPACT" PANEL ADAPTOR RECEPTACLE. Threaded. Supplied with hex mounting nut for mount in panels to 1/2" thick. Illustration 10 Male.

XL-3-52	3-Cond.	List	$2.55	XL-4-52	4-Cond.	List	$3.10

XL WALL RECEPTACLE. Compact rectangular flange saves mounting space.

Illustration 11 Female				Illustration 12 Male			
XL-3-31	3-Cond.	List	$2.95	XL-3-32	3-Cond.	List	$1.90
XL-4-31	4-Cond.	List	3.40	XL-4-32	4-Cond.	List	2.50

XL STAINLESS STEEL WALL PLATE MOUNT RECEPTACLE. Single mount. Mounting holes provided. Fits standard outlet boxes.

Illustrated 13 Female				Illustration 14 Male			
XL-3-35	3-Cond.	List	$5.80	XL-3-36	3-Cond.	List	$5.70
				XL-4-36	4-Cond.	List	7.00

XL TWO GANG STAINLESS STEEL WALL PLATE MOUNTING. Mounting holes provided. Fits standard outlet boxes.

Illustration 15 Female				Illustration 16 Male			
XL-3-35-2G	3-Cond.	List	$11.25	XL-3-36-2G	3-Cond.	List	$11.00
				XL-4-36-2G	4-Cond.	List	14.00

XL COMBINATION 3- AND 4-CONDUCTOR WALL PLATE ASSEMBLY RECEPTACLE. Mounting holes provided. Facilitates operation of 3-Cond. line and 4-Cond. lines. Circuits using less than 3 and 4 conductors can be utilized. Prevents confusion and cross-circuiting, as both outlets are not interchangeable. Fits standard wall boxes.
Illustration 17—XL-34-2G Male 3- and 4-Conductor **List**.....**$8.00**

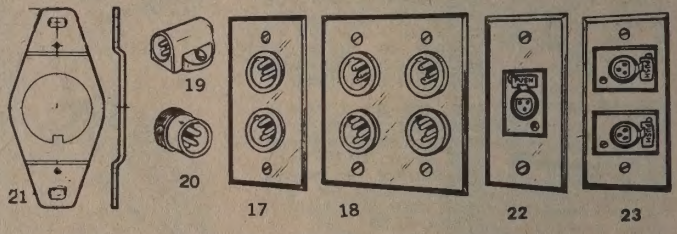
XL FOUR GANG COMBINATION 3- AND 4-CONDUCTOR WALL PLATE ASSEMBLY RECEPTACLE. Mounting hole provided. Facilities operation of 3-Cond. and 4-Cond. lines. Can be used for 2-Cond. lines. Prevents cross-circuiting. Fits standard wall boxes.
Illustration 18 —XL-34-4G Male 3- and 4-Conductor. **List**..... **$15.70**

XL MICROPHONE OR 90° MOUNTING RECEPTACLE. Two mounting holes provided. Removable insert permits soldering, inspection, etc. Illustration 19 Male.

XL-3-42	3-Cond.	List	$2.90	XL-4-42	4-Cond.	List	$3.35

XL ADAPTOR RECEPTACLE. Mounts directly in or on to microphone and other units or surfaces where they can be adequately supported. Threaded to mate into unit of equipment.
Illustration 20 -XL-3-50T Male 3-Conductor. **List**..... **$3.70**

XL MOUNTING BRACKET. XL-( )-13N and **XL-( )-14N** Receptacles can be installed in the floor or at other convenient locations through use of this bracket for mounting receptacles in a Russel and Stoll floor Box 2503 and other standard boxes.
Illustration 21 —XL-MB-1. List.....**$1.10**



XL STAINLESS STEEL WALL PLATE AUDIO OUTLETS. Available with 3 and 4 Conductor Male and Female Receptacles. Stainless Steel Wall Plates are complete with mounting holes. Fits standard outlet boxes. Same high quality as XL-3-35, XL-3-36 series, except without mounting strap. Offers advantage of greater compactness in 2- gang series.

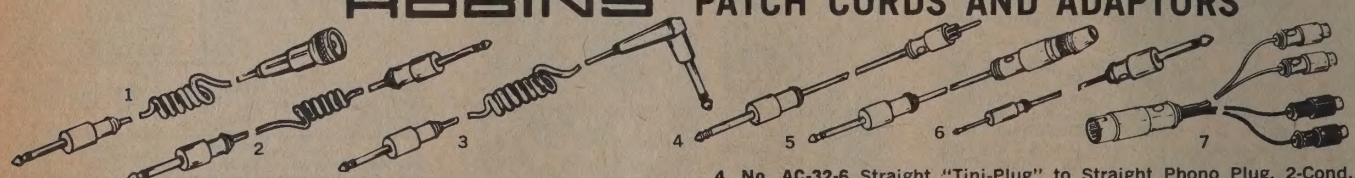
Illus.	Catalog No.	Cond.	Type	List
22	XL-3-25	3	Male	$5.15
23	XL-3-25-2G	3	Male 2-Gang	7.65
22	XL-3-26	3	Female	4.95
23	XL-3-26-2G	3	Female 2-Gang	7.15
22	XL-4-25	4	Male	5.65
23	XL-4-25-2G	4	Male 2-Gang	8.35
22	XL-4-26	4	Female	5.35
23	XL-4-26-2G	4	Female 2-Gang	7.80

XLP and **XL** Connectors are interchangeable with and Mate with Cannon **XLR** Connectors. Manufactured by Cannon Electric (Australia) Pty. Ltd.

"CANNON"® is a trade mark registered in the U. S. Patent Office and in other countries by Cannon Electric Co.

O.E.M. REQUIREMENTS CAN BE SUPPLIED IN BULK AT COMPETITIVE QUANTITY PRICES. SOCKET AND PIN INSERTS AVAILABLE ON SPECIAL ORDER. ROBINS ELECTRONICS CORP.

ROBINS PATCH CORDS AND ADAPTORS



1. No. BCT-144 Shielded. Coiled-Cord extends to 12 ft. length, retracts to 26" length. Straight 2-Cond. Phone Plug to (B-1) Female Mike Connector. **List**..... **$8.35**

2. No. TCT-144 Shielded. Coiled-Cord extends to 12 ft., retracts to 26" length. Straight 2-Cond. Phone Plug at both ends. **List**..... **$8.35**

3. No. XCT-240 Shielded. Coiled-Cord extends to 20 ft. Straight 2-Cond. Phone Plug to Right Angle Phone Plug. **List**..... **$11.65**

4. No. AC-32-6 Straight "Tini-Plug" to Straight Phono Plug, 2-Cond. 6' cable. **List**..... **$3.05**

5. No. AC-34-6 Straight "Tini-Plug" to "Tini-Extension Jax", 2-Cond. 6' cable. **List**..... **$3.35**

6. No. AC-36-6 Straight "Tini-Plug" to Straight Phone Plug. 2-Cond. 6' cable. **List**..... **$3.30**

7. No. AS-8 Stereo Adaptor Cable. 5-pin European type Plug to two 1 ft. lengths. Shielded Cable having 4 color-coded Phono Jacks. Converts imported equipment to use American made Accessories. **List** **$6.75**

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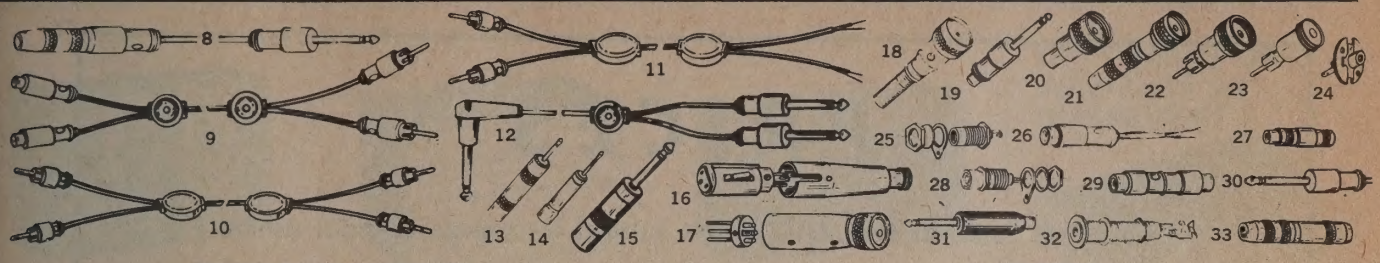
PATCH CORDS AND ADAPTORS

ROBINS ELECTRONICS CORP.

ROBINS



STEREO CABLE ASSEMBLIES

8. No. SJT-300. Phone Plug to Jack. 3-Cond. 25 ft. Shielded. Cable. **List** **$10.80**

9. No. SMF-36. 2 Phono Plugs to 2 Phono Jacks. 36" Shielded. Cable. **List** **$3.30**

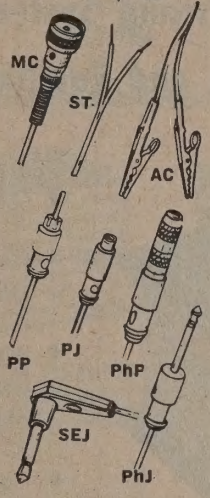
10. No. SMM-36 36" Cable length. **List**.....**$3.90. No. SMM-72** 72" Cable length. **List**.....**$4.50. No. SMM-120** 120" Cable length. **List**.....**$5.35.** 2 Phono Plugs at each end.

11. No. SMS-36 36" Cable length. **List**.....**$3.50. No. SMS-72** 72" Cable length. **List**.....**$3.85. No. SMS-120** 120" Cable length. **List**..... **$4.50** 2 Phono Plugs to Stripped and Tinned-Ends.

12. No. YXTT-144 Adaptor Cable, 2-Cond., 11 ft., 3-Cond. Right Angle Phone Plug to "Y" Junction. 2 Single Cond. 12" Cables from "Y" Junction to 2-Cond. Phone Plugs. Use to interconnect components where a 3-Cond. output is to be connected to 2 individual 2-Cond. inputs. **List** **$7.40**

MOLDED CABLE ASSEMBLIES

Cat. No.	Adaptor at One End Fig.	Adaptor at Other End Fig.	Cable Length in Inches	List
BS-120	MC	ST	120"	**$2.70**
FF-72	PJ	PJ	120"	**2.20**
MC-120	PP	AC	120"	**2.70**
MF-18	PP	PJ	18"	**1.45**
MF-36	PP	PJ	36"	**1.80**
MF-72	PP	PJ	72"	**2.15**
MF-120	PP	PJ	120"	**2.60**
MJ-72	PP	PhJ	72"	**3.25**
MM-18	PP	PP	18"	**1.30**
MM-36	PP	PP	36"	**1.45**
MM-72	PP	PP	72"	**1.85**
MM-120	PP	PP	120"	**2.40**
MS-18	PP	ST	18"	**1.00**
MS-36	PP	ST	36"	**1.20**
MS-72	PP	ST	72"	**1.55**
MS-120	PP	ST	120"	**2.10**
MT-72	PP	PJ	72"	**2.45**
MT-120	PP	PJ	120"	**3.00**
TC-72	PhP	AC	72"	**3.30**
TC-120	PhP	AC	120"	**2.90**
TF-72	PhP	PJ	72"	**2.65**
TJ-120	PhP	PhJ	120"	**4.30**
TS-72	PhP	ST	72"	**2.60**
TS-120	PhP	ST	120"	**2.70**
TT-72	PhP	PhP	72"	**3.20**
TT-120	PhP	PhP	120"	**4.00**
XJ-180	PP	SEJ	180"	**6.25**
XM-120	PhP	PP	120"	**4.75**



MC—Microphone Connector. **ST**—Stripped and Tinned Ends. **AC**—Alligator Clips. **PP**—Phono Plug. **PJ**—Phono Jack. **PhP**—Phone Plug. **PhJ**—Phone Jack. **SEJ**—Short Extension Jack.

ADAPTORS

13. No. AA-66 Adapts Standard Phono Plug to "Tini-Jax" Phone Jack. **List** **$2.15**

14. No. AA-68 Phono Jack Input to Micro Plug (.097 dia.) Output. **List** **$1.90**

15. No. AA-70 2-Cond. "Tini-Jax" Input to standard Phone Plug Output. **List** **$1.95**

16. No. AC-1 2-Cond. Input Connector **(No. D-2)**, Output Connector, with unsoldered internal wire permitting connection to terminal. **List** **$4.00**

17. No. AC-2 Female Microphone Connector to Input Connector. **List** **$4.00**

18. No. B-1 Microphone Connector Female. **List** **1.00**

19. No. BB-1 Microphone Connect. Double Female, connects 2 cables with male connectors. **List** **$1.65**

20. No. BF-1 Phono Jack input to Female Microphone Connect. Output. O.D. ½". **List** **$1.65**

21. No. BJ-1 2-Cond. Phone Jack input to Female Microphone Output. Removeable Coupler Ring converts connector to male type. Body O.D. ½". **List** **$2.30**

22. No. BP-1 Phono Plug to Female Microphone Connector. **List** **1.45**

23. No. DP-1 Phono Plug to Male Microphone Connector. **List**....**$1.35**

24. No. F-1 Phono Jack, 2-Conductor. Package of 5. **List**.....**$ .85**

25. No. F-2 Phono Jack for back of panel mount. 2-Cond. Package of 2. **List** **$1.10**

26. No. F-3 2-Cond. long handle, Phono Jack to 3" Shielded Cable. Converts screw or solder terminals to standard Phono Jack. Mates with **No. M-1** or **No. M-2** Phono Plug. Package of 2. **List**..... **$2.10**

27. No. F-4 Phono Extension Jack, removable handle, Cable Clamp. Package of 2. **List**..... **List $1.65**

28. No. F-5 RF Phono Jack, Nylon Insulated. 2-Cond. Front panel mount. Package of 2. **List** **$1.45**

29. No. FF-1 Phono Plug to Phono Plug, Shielded. **List**..... **1.30**

30. No. FT-1 Phone Plug Output - Phono Jack Input. Shielded. **List** **$1.55**

31. No. FTR-1 Phono Adapter Female Phono Jack end of handle. Internal resistor circuit for connection between crystal phono pick-up, radio or TV set and input of tape recorder. Use as adapter with magnetic phono by opening plug and twisting leads of resistor together. **List**..... **$2.30**

32. No. J-1 Phone Jack w/long bushing. Mounts in panels to 1¼" thick. 2-Cond. Jack mates with "Littel Plugs." Ideal for microphone connection. **List**..... **$1.80**

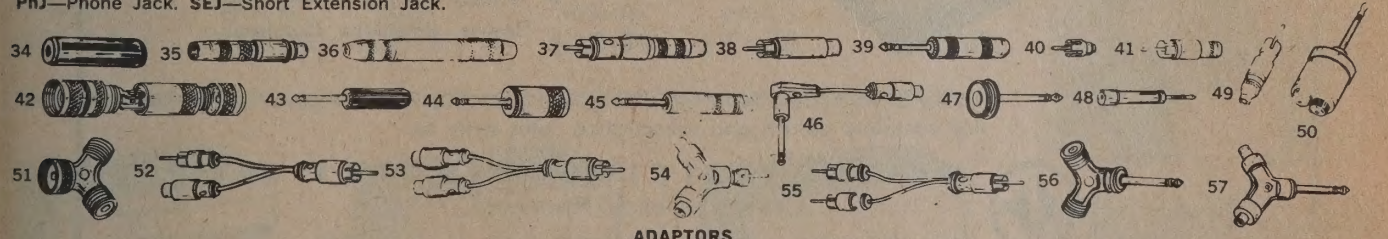
33. No. J-2 ¼" 2-Cond. Extension Phone Jack w/Solder Terminals. **List** **$2.20**

32. No. J-3 Phone Jack, same as No. J-1, except 3-Cond. **List**.. **$2.10**

34. No. J-4 Extension Jax, bakelite handle, 2-Cond. Screw terminals, Clamp. **List** **$1.53**

34. No. J-5 Extension Jax, bakelite handle, 3-Cond. Screw terminals, Clamp. **List Price** **$1.95**

35. No. JF-1 2-Cond. Phone Jack input to Phono Jack Output, Body O.D. ½". **List** **$2.10**



ADAPTORS

36. No. JJ-1 Coupler, 2-Cond. Phone Jack each end. **List**..... **$3.05**

No. JJ-3 same as JJ-1, 3-Cond. **List** **3.55**

37. No. JM-1 2-Cond. Phone Jack Input to Phono Plug Output. **List** **$2.10**

38. No. JM-2 Compact Adaptor. Phono Jack Input, Phono Plug Output, connects Ceramic Phono Cartridge to amplifier which was designed for magnetic cartridge. **List**..... **$3.75**

39. No. JR-1 Standard 2-Cond. Phone Plug to 2-Cond. Short Extension Jack. **List** **$2.65**

40. No. M-1 Phono Plug. Solder terminals. Package of 6. **List**.... **.70**

41. No. RF-1 RF Plug, 2-Cond. long handle, cable clamp, Nylon insulated. **List** ..... **$ .95**

42. No. SC-1 Microphone Connection w/2 Screw Terminals. Single Contact, Female. 2-piece handle w/built-in cable clamp. Connection cable, stripped ends. **List**..... **$3.20**

43. No. T-1 Phone Plug, 2-Cond. Solder terminals. **List**..... **$1.80**

44. No. T-1S Silent Phone Plug, 2-Cond. 1" length. Shielded handle. Circuit device, when plug is removed, shorts input of amplifier. prevents squeal. Ideal for use with musical instruments. **List**... **$2.70**

45. No. T-3 ¼" Phone Plug. 3-Cond. Solder terminals. Shielded metal handle. **List** **$2.20**

46. No. TAF-1 Phone Plug. Right Angle, 2-Cond. w/long handle molded to 2" Shielded Cable. Adapts Phone Jack to Phono Plugs. **List** **$2.15**

47. No. TD-1 Microphone input, male to Phone Plug Output. **List** **$1.50**

48. No. TJF-1 2-Cond. "Tini-Plug" (3/16") Output to Phono Jack Input. **List** **$1.60**

49. No. TJM-1 2-Cond. "Tini-Jack" Input to Phone Plug Output. O.D. 13/32". **List** **$1.80**

50. No. TJT-1 Tip Jack Inputs to Phone Plug Output. **List**..... **$3.20**

"Y" ADAPTORS. Convert Stereo Players to Mono. Use for Tap-in Meter Monitor connection and other applications. Requires on some tape recorders.

51. No. YBDD-1 Connects 2 cables (w/standard microphone connections) in parallel to one single connector. Light metal. **List**.. **$2.35**

52. No. YFMM-1 Phono Plug to One Phono Plug and one Phono Jack, 4" Cable. **List** **$2.60**

53. No. YMFF-1 Phono Plug connection in parallel to Phono Jacks. 4" Cable. **List** **$2.60**

54. No. YMFF-2 Two Phono Jacks connections in parallel to standard Phono Plug. **List** **$2.25**

55. No. YMMM-1 One Phono Plug connection in parallel to 2 Phono Plugs. 4" Cable. **List** **$2.65**

56. No. YTDD-1 Two male Microphone connections. Connected in parallel to standard 2-Cond. Phone Plug. Completely shielded. **List** **$2.50**

57. No. YTFF-1 Two Phono Jacks connections in parallel to 2-Cond. Phone Plug. **List** **$2.50**

FM INDOOR ANTENNA — Folded dipole. Eliminates need for outdoor antenna in most locations. Improves FM reception over "built-in" set antennas. Easily concealed under rug or behind the set. **No. MA-1. List** **$2.75**

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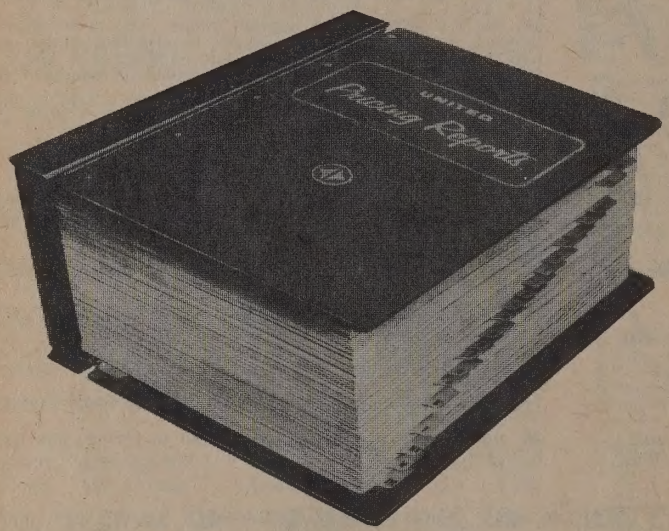

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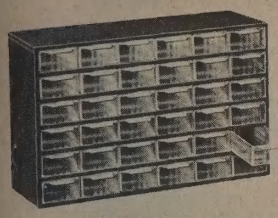


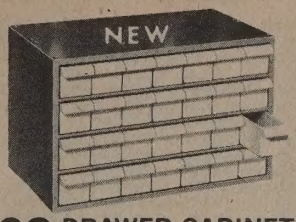
36 DRAWER CABINET
COMPACT DRAWERS

EACH: 2-3/4"W x 5-7/8"L x 1-7/16"H
FRAME: 18"W x 6"D x 11-1/8"H

Heavy-duty, all-steel frame with 36 drawers; each has 23 cubic inch capacity plus patented adjustable drawer dividers that permit crosswise, lengthwise & crisscross sub-compartments. Drawer-front index labels included.

Model 17-136 — transparent drawers

List Price	Industrial User
$18.98	$13.49



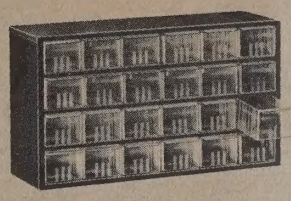
28 DRAWER CABINET
LONG-COMPACT DRAWERS

EACH: 2¼"W x11"L x 2⅛"H
FRAME: 18"W x 11"D x 11"H

Heavy-duty all-steel frame with 28 drawers, each has 44 cubic inch capacity, plus patented adjustable dividers permitting drawer sub-compartments. Drawer-front index labels included.

Model 18-228 — heavy-duty gray drawers

List Price	Industrial User
$32.98	$22.99



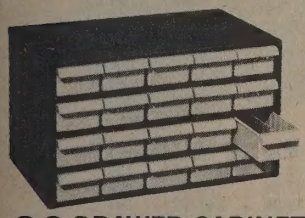
24 DRAWER CABINET
DEEP-COMPACT DRAWERS

EACH: 2¾"W x 5⅞"L x 2"H
FRAME: 18"W x 6"D x 9⅞"H

Heavy-duty, all-steel frame with 24 drawers; each has 31 cubic inch capacity, plus patented adjustable drawer dividers permitting drawer sub-compartments. Drawer-front index labels are included.

Model 17-024 — transparent drawers

List Price	Industrial User
$18.98	$13.49



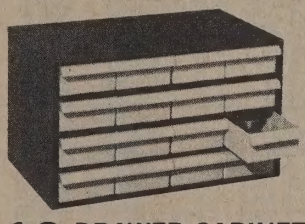
20 DRAWER CABINET
LARGE DRAWERS

EACH: 3⅛"W x 11"L x 2⅛"H
FRAME: 18"W x 11"D x 11"H

Heavy-duty, all-steel frame with 20 large drawers; each has 66 cubic inch capacity plus patented adjustable drawer dividers and drawer-front labels.

Model 17-320 — transparent drawers
Model 18-320 — heavy-duty gray drawers

List Price	Industrial User
$27.98	$19.99



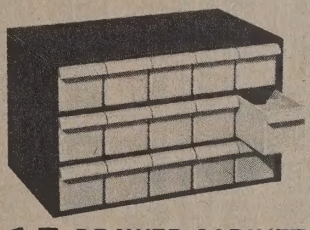
16 DRAWER CABINET
LARGE-WIDE DRAWERS

EACH: 4"W x 11"L x 2⅛"H
FRAME: 18"W x 11"D x 11"H

Heavy-duty, all-steel frame with 16 drawers; each has 88 cubic inch capacity, plus patented adjustable drawer dividers permitting drawer sub-compartments and drawer-front index labels.

Model 17-416 — transparent drawers
Model 18-416 — heavy-duty gray drawers

List Price	Industrial User
$27.98	$19.99



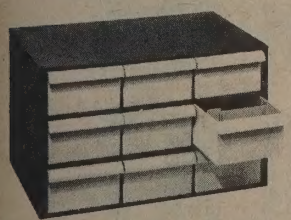
15 DRAWER CABINET
LARGE-DEEP DRAWERS

EACH: 3-1/8"W x 11"L x 3-1/32"H
FRAME: 18"W x 11"D x 11"H

Heavy-duty, all-steel frame with 15 drawers; each has 104 cubic inch capacity, plus patented adjustable drawer dividers permitting drawer sub-compartments and drawer-front indexing labels.

Model 17-715 — transparent drawers
Model 18-715 — heavy-duty gray drawers

List Price	Industrial User
$27.98	$19.99



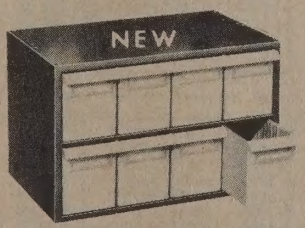
9 DRAWER CABINET
JUMBO DRAWERS

EACH: 5-1/4"W x 11"L x 3-1/32"H
FRAME: 18"W x 11"D x 11"H

Heavy-duty, all-steel frame with 9 jumbo drawers; each has 175 cubic inch capacity, plus patented adjustable drawer dividers permitting drawer sub-compartments and drawer-front indexing labels.

Model 17-909 — transparent drawers
Model 18-909 — heavy-duty gray drawers

List Price	Industrial User
$27.98	$19.99



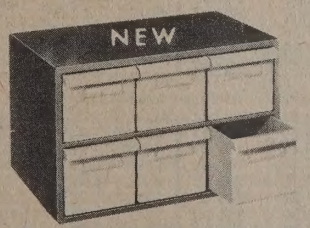
8 DRAWER CABINET
JUMBO-DEEP DRAWERS

EACH: 4"W x 11"L x 4¾"H
FRAME: 18"W x 11"D x 11"H

Heavy-duty, all-steel frame with 8 drawers; each has 209 cubic inch capacity plus patented adjustable drawer dividers permitting drawer sub-compartments, and drawer-front indexing labels.

Model 18-608 — heavy-duty gray drawers

List Price	Industrial User
$27.98	$19.99



6 DRAWER CABINET
SUPER-JUMBO DRAWERS

EACH: 5¼"W x 11"L x 4¾"H
FRAME: 18"W x 11"D x 11"H

Heavy-duty, all-steel frame with 6 super-jumbo drawers; each has 261 cubic inch capacity, plus patented adjustable drawer dividers permitting drawer sub-compartments and drawer-front indexing labels.

Model 18-956 — heavy-duty gray drawers

List Price	Industrial User
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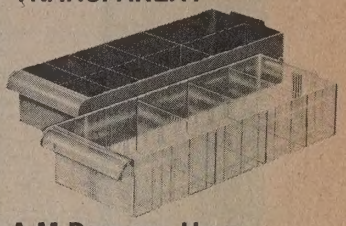
TWO TYPES OF DRAWERS HEAVY-DUTY OR TRANSPARENT



A-M Drawers Have Many Features:

- ☐ Rust & corrosion proof.
- ☐ Open & close smoothly.
- ☐ Safety features — no cuts or scratches from sharp metal.
- ☐ Non-toxic, non-conductive.
- ☐ 60% lighter than steel, yet will not warp or twist out of shape.
- ☐ Patented "lock-tight" dividers prevent drawers from spreading. May be moved to create different sub-compartments. Parts cannot creep from compartment to compartment.

A-M CABINETS ARE SYSTEMIZED & EXPANDABLE

Start with one — add 'n stack other models to create a miniature warehouse. 9 models to choose from. Stack securely — no bolting or shelving required.

All frames are 18" wide. Made of heavy-duty steel with chip-proof, baked-enamel, charcoal hammertone finish. Quality built to last. Cabinets may be stacked together, hung from walls or placed into shelving or on any level surface.

Form 19-25A
Job No. 68226

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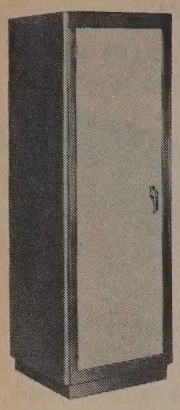
BUD Series "60" Cabinet Racks



Scientifically designed to meet all requirements for human needs as well as component physical specifications; the most practical cabinet rack developed for either a single piece of equipment or a large instrumentation system. Very economical to the user, units are shipped fully assembled and ready for immediate use.

Basic frame welded in a solid unit composed of 14-gauge cold-rolled steel channels. Sides have "U" braces with perforated channels for fastening vertical adjustable mounting rails. Rails also support other types of equipment such as brackets, shelves, slides, etc. Eliminates need of drilling holes in the rack. Sides and rear door made of 16 gauge steel. Door may be mounted to open left or right. Vertical channel, 6" wide, welded to door to prevent vibration or whip. Two pairs of panel mounting rails are supplied; fully adjustable. Panels may be mounted in front and rear at the same time. Front rails drilled and tapped 10-32 W.E. spacing. Rear rails are drilled according to universal spacing.

All Series Sixty enclosures may be quickly combined with each other to create units of any desired width as shown in the Add-A-Rack series. In addition, such accessories as desk tops, turrets, drawers, slides, sloping panel supports and front door are easily installed.

Standard finishes are smooth baked enamel over a primer. For two-tone gray, specify by adding suffix **SG.** For two-tone blue, add suffix **SB** to order number. Standard Bud relay rack panels are available for the Series Sixty racks in light gray and light blue; when ordering, add suffix **SG** for gray; **SB** for blue.

UPRIGHT CABINET RACKS

Completely assembled with sides, rear door and top. Standard units have plain sides and door; solid top. For greater ventilation, order units with louvered sides and/or rear door; both, with solid top. Width, 24 1/16", all units. Inside depth 20¼" clear on units with 22" outside depth; 23¾", all others. Top opening 18½" w. x 17" d. on units with 22" outside depth; 18½" w. x 20½" d., all others. **Specify Color When Ordering:** Add suffix **SG** to number for gray; suffix **SB,** for blue.

Series shown below includes welded framework, plain sides, plain rear door and solid top

For 24" Panel Space					Common Dimensions for Both 24" & 19" Panel Space			For 19" Panel Space					
Bud No. 60	Top Opening	Net Each Lots of 1-3	4-6	7-9	Height	Outside Depth	Panel Space	Bud No. 60	Top Opening	Net Each in Lots of 1-3	4-6	7-9	Wgt. Lbs.
2315	23½"x17"	$161.70	$145.60	$129.40	29⅝"	22"	21"	2300	18½"x17"	$122.80	$110.50	$ 98.30	118
2316	23½"x17"	200.10	180.10	160.10	40⅛"	22"	31½"	2301	18½"x17"	152.00	136.80	121.60	156
2317	23½"x17"	222.40	200.10	177.90	50⅝"	22"	42"	2302	18½"x17"	168.80	151.90	135.00	173
2318	23½"x17"	246.30	221.70	197.10	61⅛"	22"	52½"	2303	18½"x17"	187.50	168.70	150.00	197
2319	23½"x17"	274.20	246.80	219.40	69⅞"	22"	61¼"	2304	18½"x17"	208.30	187.50	166.70	220
2320	23½"x17"	305.40	274.80	244.30	78⅝"	22"	70"	2305	18½"x17"	231.50	208.30	185.20	235
2321	23½"x17"	333.00	299.70	266.40	87⅜"	22"	78¾"	2306	18½"x17"	252.70	227.40	202.10	265
2322	23½"x20½"	190.50	171.50	152.40	29⅝"	25½"	21"	2307	18½"x20½"	145.00	130.50	116.00	156
2323	23½"x20½"	221.30	199.10	177.00	40⅛"	25½"	31½"	2308	18½"x20½"	168.50	151.70	134.00	176
2324	23½"x20½"	246.60	221.90	197.30	50⅝"	25½"	42"	2309	18½"x20½"	187.20	168.50	149.80	185
2325	23½"x20½"	273.10	245.80	218.50	61⅛"	25½"	52½"	2310	18½"x20½"	207.80	187.00	166.30	211
2326	23½"x20½"	304.20	273.80	243.40	69⅞"	25½"	61¼"	2311	18½"x20½"	231.00	207.90	184.80	240
2327	23½"x20½"	337.60	303.80	270.10	78⅝"	25½"	70"	2312	18½"x20½"	256.60	230.90	205.30	256
2328	23½"x20½"	369.30	332.40	295.50	87⅜"	25½"	78¾"	2313	18½"x20½"	280.10	252.10	224.00	267

Series shown below includes welded framework, louvered sides, plain rear door and solid top.

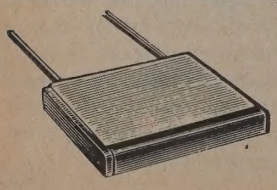
2615	23½"x17"	$164.70	$148.30	$131.80	29⅝"	22"	21"	2600	18½"x17"	$124.90	$112.40	$ 99.90	118
2616	23½"x17"	206.20	185.60	165.00	40⅛"	22"	31½"	2601	18½"x17"	156.20	140.60	125.00	156
2617	23½"x17"	229.90	206.90	183.90	50⅝"	22"	42"	2602	18½"x17"	174.70	157.20	139.70	173
2618	23½"x17"	263.90	237.50	211.10	61⅛"	22"	52½"	2603	18½"x17"	199.70	179.80	159.80	197
2619	23½"x17"	286.90	258.20	229.50	69⅞"	22"	61¼"	2604	18½"x17"	217.40	195.60	173.90	220
2620	23½"x17"	317.50	285.70	254.00	78⅝"	22"	70"	2605	18½"x17"	241.60	217.40	193.30	235
2621	23½"x17"	345.40	310.90	276.40	87⅜"	22"	78¾"	2606	18½"x17"	262.40	236.20	210.00	265
2622	23½"x20½"	194.70	175.20	155.80	29⅝"	25½"	21"	2607	18½"x20½"	147.70	132.90	118.20	156
2623	23½"x20½"	234.80	211.30	187.80	40⅛"	25½"	31½"	2608	18½"x20½"	178.40	160.50	142.70	176
2624	23½"x20½"	261.60	235.40	209.30	50⅝"	25½"	42"	2609	18½"x20½"	198.60	178.80	158.90	185
2625	23½"x20½"	298.40	268.60	238.70	61⅛"	25½"	52½"	2610	18½"x20½"	227.40	204.60	181.90	211
2626	23½"x20½"	313.50	282.10	250.80	69⅞"	25½"	61¼"	2611	18½"x20½"	238.40	214.60	190.70	240
2627	23½"x20½"	359.00	323.10	287.20	78⅝"	25½"	70"	2612	18½"x20½"	272.50	245.20	218.00	256
2628	23½"x20½"	391.80	352.60	313.40	87⅜"	25½"	78¾"	2613	18½"x20½"	297.10	267.40	237.70	267

Series shown below includes welded framework, louvered sides, louvered rear door and solid top.

2715	23½"x17"	$170.90	$153.80	$136.70	29⅝"	22"	21"	2700	18½"x17"	$127.60	$114.80	$102.10	118
2716	23½"x17"	211.30	190.10	169.00	40⅛"	22"	31½"	2701	18½"x17"	158.50	142.60	126.80	156
2717	23½"x17"	235.60	212.10	188.50	50⅝"	22"	42"	2702	18½"x17"	177.50	159.80	142.00	173
2718	23½"x17"	292.70	263.40	234.10	61⅛"	22"	52½"	2703	18½"x17"	202.90	182.60	162.30	197
2719	23½"x17"	328.40	295.60	262.70	69⅞"	22"	61¼"	2704	18½"x17"	220.90	198.80	176.70	220
2720	23½"x17"	351.50	316.30	281.20	78⅝"	22"	70"	2705	18½"x17"	245.30	220.80	196.30	235
2721	23½"x17"	200.50	180.40	160.40	87⅜"	22"	78¾"	2706	18½"x17"	266.40	239.80	213.20	265
2722	23½"x20½"	269.60	242.70	215.70	29⅝"	25½"	21"	2707	18½"x20½"	150.40	135.30	120.30	156
2723	23½"x20½"	240.80	216.70	192.70	40⅛"	25½"	31½"	2708	18½"x20½"	181.60	163.50	145.30	176
2724	23½"x20½"	267.40	240.60	213.90	50⅝"	25½"	42"	2709	18½"x20½"	202.20	182.00	161.80	185
2725	23½"x20½"	305.40	274.80	244.30	61⅛"	25½"	52½"	2710	18½"x20½"	224.90	202.40	179.90	211
2726	23½"x20½"	319.20	287.30	255.40	69⅞"	25½"	61¼"	2711	18½"x20½"	249.90	224.90	199.90	240
2727	23½"x20½"	364.70	328.30	291.80	75⅝"	25½"	70"	2712	18½"x20½"	277.60	249.80	222.00	256
2728	23½"x20½"	397.50	357.80	318.00	87⅜"	25½"	78¾"	2713	18½"x20½"	302.50	272.30	242.00	267

Series shown below includes welded framework, plain sides, louvered rear door and solid top.

2815	23½"x17"	$163.20	$146.90	$130.60	29⅝"	22"	21"	2800	18½"x17"	$121.10	$109.00	$ 96.90	118
2816	23½"x17"	203.60	183.20	162.90	40⅛"	22"	31½"	2801	18½"x17"	150.00	135.00	120.00	156
2817	23½"x17"	225.70	203.10	180.60	50⅝"	22"	42"	2802	18½"x17"	166.60	149.90	133.30	173
2818	23½"x17"	255.40	229.90	204.30	61⅛"	22"	52½"	2803	18½"x17"	189.30	170.40	151.40	197
2819	23½"x17"	282.90	254.60	226.30	69⅞"	22"	61¼"	2804	18½"x17"	205.30	184.80	164.30	220
2820	23½"x17"	311.10	280.00	248.90	78⅝"	22"	70"	2805	18½"x17"	228.00	205.20	182.40	235
2821	23½"x17"	341.80	307.70	273.50	87⅜"	22"	78¾"	2806	18½"x17"	249.20	224.30	199.40	265
2822	23½"x20½"	192.10	172.80	153.60	29⅝"	25½"	21"	2807	18½"x20½"	142.50	128.20	114.00	156
2823	23½"x20½"	229.50	206.60	183.60	40⅛"	25½"	31½"	2808	18½"x20½"	171.80	154.60	137.40	176
2824	23½"x20½"	254.10	228.70	203.30	50⅝"	25½"	42"	2809	18½"x20½"	191.00	171.90	152.80	185
2825	23½"x20½"	286.20	257.50	228.90	61⅛"	25½"	52½"	2810	18½"x20½"	212.00	190.80	179.60	211
2826	23½"x20½"	309.20	278.30	247.40	69⅞"	25½"	61¼"	2811	18½"x20½"	235.60	212.00	188.40	240
2827	23½"x20½"	347.60	312.80	278.10	78⅝"	25½"	70"	2812	18½"x20½"	261.80	235.60	209.40	256
2828	23½"x20½"	379.10	341.20	303.30	87⅜"	25½"	78¾"	2813	18½"x20½"	285.70	257.20	228.60	267



SERIES SIXTY DESK TOP

May be used in connection with any Series Sixty enclosure. Furnished completely assembled with wood-grained Formica surface. Fastens to panel mounting rails by two pre-drilled channels. Will support in excess of 200 lbs. Surface 24 1/16" wide, 19½" deep, 3 1/16" high. Available in two colors. **Specify Color:** Add suffix **SG** for gray; **SB** for blue.

Bud No.	Fits Series Sixty	Support Channel	Wt., Lbs.	Ea., 1-3	Ea., 4-6	Ea., 7-9
60-2360	With 22" depth	21 9/16" long	22	$39.70	$35.80	$31.80
60-2362	With 25½" depth	24¾" long	23	41.00	36.90	32.80

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Series "60" Cabinet Racks

ACCESSORIES LIST FOR UPRIGHT CABINET RACKS

DOORS

Doors are interchangeable; may be used for front or rear of rack; mount to open either left or right. Doors for racks with 24" panel space are 23 15/16" wide and for 19" panel space 18 15/16" wide.

For 24" Panel Space

Bud No. 60	Plain Type Net 1-3	Plain Type Net 4-6	Plain Type Net 7-9	Bud No. 60	Louvered Type Net 1-3	Louvered Type Net 4-6	Louvered Type Net 7-9	Wgt. Lbs.	Height	Fits Rack with Panel Space
2390	$27.60	$24.90	$22.10	4540	$27.60	$24.90	$22.10	10	21 7/16"	21"
2391	34.60	31.10	27.70	4541	34.60	31.10	27.70	14 1/2	31 15/16"	31 1/2"
2392	38.60	34.70	30.90	4542	38.60	34.70	30.90	19 1/2	42 7/16"	42"
2393	43.80	39.40	35.00	4543	43.80	39.40	35.00	24	52 15/16"	52 1/2"
2394	48.40	43.60	38.70	4544	48.40	43.60	38.70	28	61 11/16"	61 1/4"
2395	53.00	47.70	42.40	4545	53.00	47.70	42.40	32	70 7/16"	70"
2396	57.60	51.90	46.10	4546	57.60	51.90	46.10	36 1/4	79 3/16"	78 3/4"

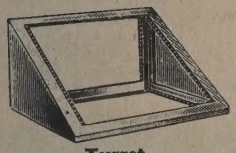
For 19" Panel Space

2340	$18.40	$16.50	$14.70	2540	$21.00	$18.90	$16.80	8	21 7/16"	21"
2341	22.70	20.40	18.20	2541	26.10	23.50	20.90	11 1/2	31 15/16"	31 1/2"
2342	25.10	22.60	20.10	2542	29.00	26.10	23.20	15 1/2	42 7/16"	42"
2343	28.00	25.20	22.40	2543	32.10	28.90	25.70	19	52 15/16"	52 1/2"
2344	31.00	27.90	24.80	2544	35.70	32.20	28.60	22 1/4	61 11/16"	61 1/4"
2345	36.20	32.60	29.00	2545	39.70	35.70	31.70	25 1/2	70 7/16"	70"
2346	37.50	33.70	30.00	2546	43.30	39.00	34.70	29	79 3/16"	78 3/4"

ACCESSORY SIDES

Fit Upright Racks with either 24" or 19" Panel Space

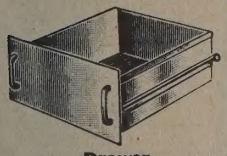
Bud No. 60	Plain Net per Pair in Lots of 1-3	Plain Net per Pair in Lots of 4-6	Plain Net per Pair in Lots of 7-9	Bud No. 60	Louvered Net per Pair in Lots of 1-3	Louvered Net per Pair in Lots of 4-6	Louvered Net per Pair in Lots of 7-9	Height	Width	Fits Upright Rack with Panel Space	Wgt. Lbs.
2560	$27.40	$24.60	$21.90	2580	$32.30	$29.10	$25.90	26 55/64"	22"	21"	12 1/2
2561	36.20	32.50	28.90	2581	42.70	38.40	34.10	37 23/64"	22"	31 1/2"	17 1/2
2562	42.10	37.90	33.70	2582	50.80	45.70	40.60	47 55/64"	22"	42"	21
2563	48.60	43.70	38.90	2583	59.70	53.70	47.80	58 23/64"	22"	52 1/2"	26 1/4
2564	53.60	48.20	42.90	2584	65.80	59.20	52.60	67 7/64"	22"	61 1/4"	30
2565	59.00	53.10	47.20	2585	73.10	65.80	58.50	75 55/64"	22"	70"	34
2566	67.60	60.90	54.10	2586	77.00	69.30	61.60	84 39/64"	22"	78 3/4"	38
2567	34.60	31.10	27.70	2587	37.90	34.10	30.30	26 55/64"	25 1/2"	21"	14 1/2
2568	45.20	40.70	36.10	2588	49.50	44.60	39.60	37 23/64"	25 1/2"	31 1/2"	20
2569	52.20	47.00	41.80	2589	57.70	51.90	46.20	47 55/64"	25 1/2"	42"	24
2570	60.60	54.60	48.50	2590	67.10	60.30	53.60	58 23/64"	25 1/2"	52 1/2"	29 1/2
2571	66.40	59.70	53.10	2591	73.30	66.00	58.70	67 7/64"	25 1/2"	61 1/4"	34 1/2
2572	73.90	66.50	59.10	2592	80.80	72.70	64.70	75 55/64"	25 1/2"	70"	39
2573	77.80	70.00	62.30	2593	85.20	76.70	68.10	84 39/64"	25 1/2"	78 3/4"	43 1/2



Turret

PERFORATED TOP

Bud No. 60	For 24" Panel Space Fits Inclined Panel Rack with Top Opening	Net each in lots of 1-3	Net each in lots of 4-6	Net each in lots of 7-9	Bud No. 60	For 19" Panel Space Fits Inclined Paned Rack with Top Opening	Net each in lots of 1-3	Net each in lots of 4-6	Net each in lots of 7-9	Wgt. Lbs.
2382	11 3/4" x 23 1/2"	$8.26	$7.44	$6.30	2372	11 3/4" x 18 1/2"	$5.80	$5.30	$4.70	4
2383	10" x 23 1/2"	7.34	6.65	6.00	2373	10" x 18 1/2"	5.60	5.00	4.50	3
2384	9 3/8" x 23 1/2"	7.34	6.65	6.00	2374	9 3/8" x 18 1/2"	5.60	5.00	4.50	3



Drawer

SERIES SIXTY TURRETS

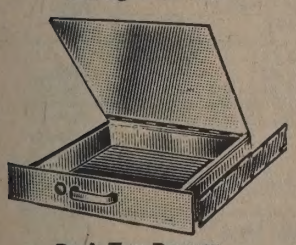
Made of 16 gauge steel; designed so that any one of three sides may be attached to a 19" Series 60 upright rack or any horizontal surface. Accommodate standard 19" panels. All mounting rails have universal spacing. Sides easily removed when a series of interconnecting turrets are desired. **Specify Color When Ordering:** Add suffix **SG** for dark gray; **SB** for dark blue. For panels, order standard Bud panels with suffix **SG** for light gray; **SB** for light blue.

Bud No.	Width	Depth	Height	Panel Space Sloping	Panel Space Bottom	Panel Space Rear	Wt., Lbs.	6 Net Each, Lots of 1-3	6 Net Each, Lots of 4-6	6 Net Each, Lots of 7-9
60-2364	22 1/16"	17 7/8"	12 5/16"	17 1/2"	14"	8 3/4"	17	$39.10	$35.20	$31.30
60-2365	22 1/16"	14 3/8"	10 3/16"	12 1/4"	10 1/2"	7"	14	32.60	29.40	26.10
60-2366	22 1/16"	20 13/16"	14 3/8"	21"	17 1/2"	10 1/2"	20	41.10	37.00	32.90

Sliding Desk Top

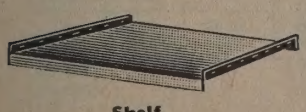
SERIES SIXTY DRAWER, DESK TOP AND SHELF ACCESSORIES

No. 60-2368 Drawer: Fits into any 19" Series 60 cabinet rack. Slides easily on nylon rollers. Will support heavy loads. Extends to full depth; stops prevent drawer from falling out. Slides easily attach to panel supporting rails. Silver anodized handles. Shipped completely assembled. **No. 60-2361 Sliding Desk Top:** Fits all 19" Series 60 racks. Has smooth Formica* surface for writing, servicing or inspection. Fits flush with front of unit. Usable area when fully extended, 11" x 16 7/8". Occupies only 1 3/4" of panel height. Will support 75 lbs. Ball-bearing slide mechanism mounts directly in 19" Series 60 racks; brackets included to fit other Bud cabinets and consoles. **No. 60-2363 Desk Top Drawer:** Fits 19" Series 60 racks. Has Formica surface. Fits flush with front of unit. Hinged desk top on drawer holds small tools or parts. Special front-panel latch both locks and releases drawer or top as desired. Mounts to cabinet U-braces; slides travel on nylon rollers. Hardware supplied. **No. 60-2380 and 60-2381 Shelves:** Ideal for support of chassis, power supplies or other equipment; also may be used as base plate for bottom support. Of one-piece 16 gauge steel with flanged front and rear for extra strength and rigidity. Easily bolt to cabinet U-braces. Will support 200 lbs. Hardware supplied.



Desk Top Drawer

Bud No.	Size, Inches	Wt., Lbs.	For 19" Racks Net Each, Lots of 1-3	For 19" Racks Net Each, Lots of 4-6	For 19" Racks Net Each, Lots of 7-9
60-2368†	16 5/8 x 6 3/4 x 19 1/4 inside	28	$35.70	$32.10	$28.50
60-2361‡	16 7/8 x 15 1/8 x 1 3/4 with std. 19" panel	8	22.00	19.80	17.60
60-2363†	16 5/8 x 3 1/4 x 15 inside; 19 x 3 1/2 front panel	19	61.30	55.20	49.00
60-2380†	17 31/32 w. x 19 9/32 d.	7 1/2	7.60	6.80	6.10
60-2381†	17 31/32 w. x 22 3/4 d.	8 3/4	7.90	7.10	6.30



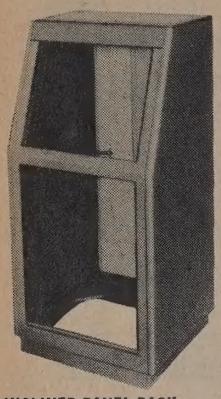
Shelf

*Synthane Corp. trademark. †Add suffix **SB** for smooth blue; **SG**, smooth gray. ‡Add suffix **B** for black wrinkle; **G**, gray wrinkle; **HG**, gray hammertone; **SB**, smooth blue; **SG**, smooth gray.

Series "60" Cabinet Racks

INCLINED PANEL CABINET RACKS

Completely assembled with Sides, Rear door and Solid Top. Racks for 24" Panels are 29 1/16" wide and Racks for 19" Panels are 24 1/16" wide. Both types are 50 5/8" high, have an outside Depth of 22" and a clear Inside Depth of 20 1/4".



INCLINED PANEL RACK

Series shown below includes Welded Framework, Plain Sides, Plain Rear Door and Solid Top.

For 24" Panel Space					Common Dims. for Both 24" and 19" Panel Space		For 19" Panel Space				
Bud No. 60-	Top Opening	Net each in lots of 1-3	4-6	7-9	Inclined Panel Sp.	Vertical Panel Sp.	Bud No. 60-	Top Opening	Net each in lots of 1-3	4-6	7-9
2337	11 3/4" x 23 1/2"	$254.10	$228.70	$203.30	10 1/2"	29 3/4"	2330	11 3/4" x 18 1/2"	$184.10	$165.70	$147.30
2338	10" x 23 1/2"	269.60	242.70	215.70	15 3/4"	24 1/2"	2331	10" x 18 1/2"	195.10	175.60	156.10
2339	9 3/8" x 23 1/2"	269.60	242.70	215.70	17 1/2"	22 3/4"	2332	9 3/8" x 18 1/2"	195.10	175.60	156.10

Series shown below includes Welded Framework, Louvred Sides, Plain Rear Door and Solid Top.

2637	11 3/4" x 23 1/2"	$267.40	$240.60	$213.90	10 1/2"	29 3/4"	2630	11 3/4" x 18 1/2"	$194.50	$175.00	$155.60
2638	10" x 23 1/2"	282.90	254.60	226.30	15 3/4"	24 1/2"	2631	10" x 18 1/2"	205.60	185.00	164.50
2639	9 3/8" x 23 1/2"	282.90	254.60	226.30	17 1/2"	22 3/4"	2632	9 3/8" x 18 1/2"	205.60	185.00	164.50

Series shown below includes Welded Framework, Louvred Sides, Louvred Rear Door and Solid Top.

2737	11 3/4" x 23 1/2"	$273.10	$245.80	$218.50	10 1/2"	29 3/4"	2730	11 3/4" x 18 1/2"	$197.80	$178.00	$158.20
2738	10" x 23 1/2"	288.70	259.80	230.90	15 3/4"	24 1/2"	2731	10" x 18 1/2"	209.40	188.50	167.50
2739	9 3/8" x 23 1/2"	288.70	259.80	230.90	17 1/2"	22 3/4"	2732	9 3/8" x 18 1/2"	209.40	188.50	167.50

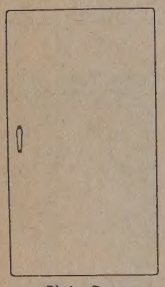
Series shown below includes Welded Framework, Plain Sides, Louvred Rear Door and Solid Top.

2837	11 3/4" x 23 1/2"	$259.90	$233.90	$207.90	10 1/2"	29 3/4"	2830	11 3/4" x 18 1/2"	$188.30	$169.50	$150.60
2838	10" x 23 1/2"	275.40	247.80	220.30	15 3/4"	24 1/2"	2831	10" x 18 1/2"	199.10	179.20	159.30
2839	9 3/8" x 23 1/2"	275.40	247.80	220.30	17 1/2"	22 3/4"	2832	9 3/8" x 18 1/2"	199.10	179.20	159.30

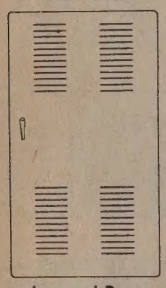
ACCESSORIES LIST FOR INCLINED PANEL RELAY RACKS

FRONT DOORS

Front doors for Racks with 24" Panel Space are 23 15/16" wide and for Racks with 19" Panel Space are 18 15/16" wide



Plain Door



Louvered Door

For 24" Panel Space								
Plain				Louvred				
Bud No. 60-	Net Each in Lots of 1-3	4-6	7-9	Bud No. 60-	Net Each in Lots of 1-3	4-6	7-9	Wgt. Lbs.	Fits Inclined Panel Rack with Top Opening
2353	$31.10	$28.00	$24.90	2553	$36.90	$33.20	$29.50		11 3/4" x 23 1/2"
2354	28.80	25.90	23.00	2554	32.80	29.50	26.30		10" x 23 1/2"
2355	28.00	25.20	22.40	2555	31.70	28.60	25.40		9 3/8" x 23 1/2"
For 19" Panel Space									
2350	$22.80	$20.50	$18.20	2556	$26.20	$23.60	$21.00	11	11 3/4" x 18 1/2"
2351	21.20	19.10	17.00	2551	24.50	22.10	19.60	9 1/2	10" x 18 1/2"
2352	20.70	18.60	16.60	2552	23.70	21.30	19.00	9	9 3/8" x 18 1/2"

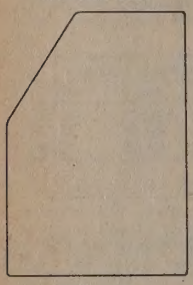
REAR DOOR

Rear Doors for Racks with 24" Panel Space are 23 15/16" wide and for Racks with 19" panel space are 18 15/16" wide. One size fits all models regardless of height.

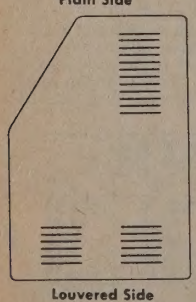
For 24" Panel Space								
Plain				Louvered				
Bud No. 60	Net Each in Lots of 1-3	4-6	7-9	Bud No. 60	Net Each in Lots of 1-3	4-6	7-9	Wgt. Lbs.
2392	$38.60	$34.70	$30.40	4542	$38.60	$34.70	$30.90	19 1/2
For 19" Panel Space								
2342	$25.10	$22.60	$20.10	2542	$23.70	$21.30	$19.00	15 1/2

SIDES

Fits all Inclined Panel Racks regardless of width



Plain Side



Louvered Side

Plain Type				Louvered Type				
Bud No. 60	Net Per Pair in Lots of 1-3	4-6	7-9	Bud No. 60	Net Per Pair in Lots of 1-3	4-6	7-9	Wgt. Lbs.
2574	$43.80	$39.40	$35.00	2594	$48.30	$43.40	$38.60	11
2575	44.90	40.40	35.90	2595	49.80	44.80	39.80	9 1/2
2576	45.40	40.90	36.30	2596	50.40	45.40	40.30	9

Specify "L" for left side or "R" for right side, determined when facing front of rack.

PERFORATED TOP

Top with 17" depth fits upright rack with overall depth of 22" and 20 1/2" deep top fits rack with 25 1/2" depth.

For 24" Panel Space					For 19" Panel Space					
Bud No. 60	Width	Net Each in Lots of 1-3	4-6	7-9	Bud No. 60	Width	Net Each in Lots of 1-3	4-6	7-9	Wgt. Lbs.
2376	26 15/16"	$10.40	$ 9.30	$8.30	2370	21 15/16"	$7.50	$6.80	$6.00	6
2377	26 15/16"	11.50	10.40	9.20	2371	21 15/16"	7.90	7.10	6.30	7

Net

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Series "60" Cabinet Racks

New SERIES SIXTY WEDGES

With Bud Series Sixty Wedges and Standard Series Sixty Cabinet Racks, it is possible to build custom enclosure systems efficiently and economically. A small or large configuration can quickly and easily be assembled to conform to your needs or space requirements.

There is a standard Wedge Unit that is compatible in style and size with every Series Sixty Rack. They are quickly attached to the adjacent framework by means of simple fasteners.

Features include all welded 16 gauge steel frame with removable rear panel for easy access. Choice of 15° or 45° wedges. Components may be attached to side braces, or uprights. Available with dark gray frame and light gray panel or dark blue frame with light blue panel.

15° WEDGES FOR SERIES 60 UPRIGHT RACKS

Catalog No.	For Use Where Panel Space Is	For Use Where Depth Is	Width of Wedge Section	Net Each in Lots of 1-3	4-6	7-9
60-8300	21″	22″	7 3/16″	$ 81.20	$ 73.00	$ 64.90
60-8301	31 1/2″	22″	7 3/16″	95.80	86.20	76.60
60-8302	42″	22″	7 3/16″	105.00	94.50	84.00
60-8303	52 1/2″	22″	7 3/16″	115.80	104.20	92.70
60-8304	61 1/4″	22″	7 3/16″	129.80	116.90	103.90
60-8305	70″	22″	7 3/16″	142.90	128.60	114.30
60-8306	78 3/4″	22″	7 3/16″	155.80	140.20	124.60
60-8307	21″	25 1/2″	8 3/32″	92.00	82.80	73.60
60-8308	31 1/2″	25 1/2″	8 3/32″	106.60	96.00	85.30
60-8309	42″	25 1/2″	8 3/32″	119.10	107.20	95.30
60-8310	52 1/2″	25 1/2″	8 3/32″	129.80	116.90	103.90
60-8311	61 1/4″	25 1/2″	8 3/32″	145.00	130.50	116.00
60-8312	70″	25 1/2″	8 3/32″	162.80	146.50	130.30
60-8313	78 3/4″	25 1/2″	8 3/32″	180.70	162.60	144.60

45° WEDGES FOR SERIES 60 UPRIGHT RACKS

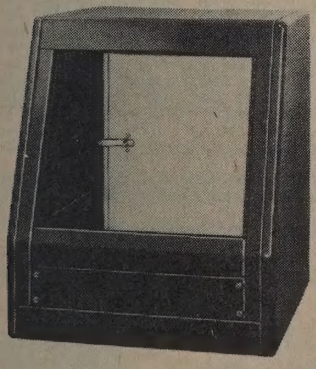
Catalog No.	For Use Where Panel Space Is	For Use Where Depth Is	Width of Wedge Section	Net Each in Lots of 1-3	4-6	7-9
60-8400	21″	22″	18 9/32″	$ 88.80	$ 79.90	$ 71.00
60-8401	31 1/2″	22″	18 9/32″	102.80	92.50	82.20
60-8402	42″	22″	18 9/32″	112.00	100.80	89.60
60-8403	52 1/2″	22″	18 9/32″	121.20	109.10	97.00
60-8404	61 1/4″	22″	18 9/32″	137.40	123.70	110.00
60-8405	70″	22″	18 9/32″	150.40	135.30	120.30
60-8406	78 3/4″	22″	18 9/32″	162.80	146.50	130.30
60-8407	21″	25 1/2″	20 61/64″	97.40	87.60	77.90
60-8408	31 1/2″	25 1/2″	20 61/64″	113.60	102.30	90.90
60-8409	42″	25 1/2″	20 61/64″	126.60	113.90	101.30
60-8410	52 1/2″	25 1/2″	20 61/64″	137.40	123.70	110.00
60-8411	61 1/4″	25 1/2″	20 61/64″	152.10	136.80	121.60
60-8412	70″	25 1/2″	20 61/64″	169.90	152.90	135.90
60-8413	78 3/4″	25 1/2″	20 61/64″	188.30	169.50	150.60

15° WEDGES FOR SERIES 60 INCLINED PANEL RACKS

Catalog No.	For Use Where Vertical Panel Space Is	Width of Wedge Section	Net Each in Lots of 1-3	4-6	7-9
60-8330	29 3/4″	7 3/16″	$124.40	$112.00	$ 99.50
60-8331	24 1/2″	7 3/16″	132.00	118.80	105.60
60-8332	22 3/4″	7 3/16″	132.00	118.80	105.60

45° WEDGES FOR SERIES 60 INCLINED PANEL RACKS

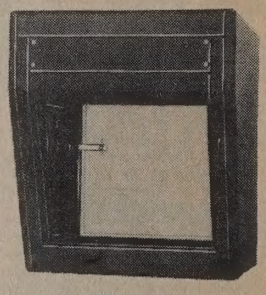
Catalog No.	For Use Where Vertical Panel Space Is	Width of Wedge Section	Net Each in Lots of 1-3	4-6	7-9
60-8430	29 3/4″	18 9/32″	$130.40	$117.40	$104.30
60-8431	24 1/2″	18 9/32″	139.60	125.70	111.70
60-8432	22 3/4″	18 9/32″	139.60	125.70	111.70



New SERIES SIXTY CONVERTIBLE

Provides the right angle for viewing comfort. Placed on a table or bench or perched on top of a Series Sixty Inclined Panel Rack, the new convertible affords the viewer optimum viewing angles. Built with the same careful attention to details as other Series Sixty cabinets, the Convertible is an exceptionally rugged enclosure for delicate instruments and systems.

Has all welded, 14 gauge steel frame with removable sides, top, bottom, rear and front panel. Adjustable front and rear mounting rails are drilled and tapped 10-32 with W.E. spacing. "U" shaped channel braces with 9/32″ perforations supply extra rigidity. Accepts 19″ panels. Available with dark gray body and light gray door or dark blue body and light blue door.



Series shown below includes welded framework, plain sides, plain rear door and solid top.

Catalog Number	Height (H)	Width	Outside Depth	Clear Inside Depth	Inclined (IP) Panel Space	Vertical Panel Space	Top Opening	Net Each in Lots of 1-3	4-6	7-9
60-4600	22 11/16″	24 1/16″	22″	20 1/4″	10 1/2″	3 1/2″	11 3/4″ x 18 1/2″	$192.50	$173.20	$154.00
60-4601	27 5/8″	24 1/16″	22″	20 1/4″	15 3/4″	3 1/2″	10″ x 18 1/2″	194.70	175.20	155.80
60-4602	29 3/8″	24 1/16″	22″	20 1/4″	17 1/2″	3 1/2″	9 3/8″ x 18 1/2″	197.10	177.40	157.60

Series shown below includes welded framework, louvered sides, plain rear door and solid top.

60-4700	22 11/16″	24 1/16″	22″	20 1/4″	10 1/2″	3 1/2″	11 3/4″ x 18 1/2″	$200.50	$180.40	$160.40
60-4701	27 5/8″	24 1/16″	22″	20 1/4″	15 3/4″	3 1/2″	10″ x 18 1/2″	204.00	183.60	163.20
60-4702	29 3/8″	24 1/16″	22″	20 1/4″	17 1/2″	3 1/2″	9 3/8″ x 18 1/2″	206.20	185.60	165.00

Series shown below includes welded framework, plain sides, louvered rear door and solid top.

60-4800	22 11/16″	24 1/16″	22″	20 1/4″	10 1/2″	3 1/2″	11 3/4″ x 18 1/2″	$197.10	$177.40	$157.60
60-4801	27 5/8″	24 1/16″	22″	20 1/4″	15 3/4″	3 1/2″	10″ x 18 1/2″	199.30	179.40	159.50
60-4802	29 3/8″	24 1/16″	22″	20 1/4″	17 1/2″	3 1/2″	9 3/8″ x 18 1/2″	201.70	181.50	161.30

Series shown below includes welded framework, louvered sides, louvered rear door and solid top.

60-4900	22 11/16″	24 1/16″	22″	20 1/4″	10 1/2″	3 1/2″	11 3/4″ x 18 1/2″	$202.20	$182.00	$161.80
60-4901	27 5/8″	24 1/16″	22″	20 1/4″	15 3/4″	3 1/2″	10″ x 18 1/2″	204.80	184.30	163.90
60-4902	29 3/8″	24 1/16″	22″	20 1/4″	17 1/2″	3 1/2″	9 3/8″ x 18 1/2″	207.20	186.40	165.70

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Add-a-Rack and Cabinets

SERIES SIXTY ADD-A-RACKS

Each assembly consists of frame, top, rear door and cowlings; used as an add-on unit to join any of the Series 60 enclosures into a bank of two or more. One standard rack plus several Add-a-Racks make any desired number of racks combined for optimum width. Colors are same as Racks.

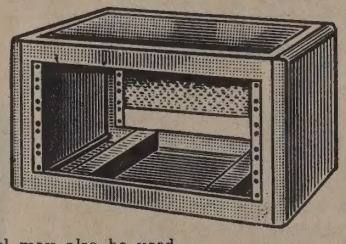
For 24″ Panel Space

Plain Sides					Louvered Sides					
Bud No. 60	For Add-onto Rack No. 60	Net Each in Lots of 1-3	4-6	7-9	Bud No. 60	For Add-onto Rack No. 60	Net Each in Lots of 1-3	4-6	7-9	Wgt. Lbs.
2515	2300, 2600	$136.50	$122.90	$109.20	2915	2715, 2815	$140.00	$126.00	$ 97.20	
2516	2301, 2601	160.70	144.70	128.60	2916	2716, 2816	164.70	128.70	114.40	
2517	2302, 2602	175.20	157.70	140.10	2917	2717, 2817	245.50	162.90	144.80	
2518	2303, 2603	191.30	172.20	153.00	2918	2718, 2818	180.90	177.40	157.60	
2519	2304, 2604	214.30	192.90	171.50	2919	2719, 2819	197.10	198.10	176.10	
2520	2305, 2605	238.60	214.70	190.80	2920	2720, 2820	220.10	220.90	196.40	
2521	2306, 2606	255.80	230.30	204.70	2921	2721, 2821	245.50	237.50	211.10	
2522	2307, 2607	153.20	137.90	122.60	2922	2722, 2822	263.90	139.50	124.00	
2523	2308, 2608	179.20	161.30	143.40	2923	2723, 2823	155.00	163.80	145.60	
2524	2309, 2609	196.50	176.80	157.20	2924	2724, 2824	182.00	181.00	160.90	
2525	2310, 2610	213.80	192.40	171.00	2925	2725, 2825	201.10	171.45	152.40	
2526	2311, 2611	238.60	214.70	190.80	2926	2726, 2826	213.00	191.70	170.40	
2527	2312, 2612	266.20	239.60	213.00	2927	2727, 2827	237.00	213.30	218.50	
2528	2313, 2613	295.60	266.00	236.50	2928	2728, 2828	262.00	235.80	241.50	
2537	2330, 2630	204.00	183.60	163.20	2937	2737, 2837	206.20	185.60	165.00	
2538	2331, 2631	217.80	196.00	174.20	2938	2738, 2838	223.50	201.20	178.80	
2539	2332, 2632	217.80	196.00	174.20	2939	2739, 2839	223.50	201.20	178.80	

For 19″ Panel

Plain Sides					Louvered Sides					
2500	2300, 2600	$104.50	$ 94.10	$ 83.60	2900	2700, 2800	$103.40	$ 93.00	$ 82.70	92
2501	2301, 2601	122.40	110.20	97.90	2901	2701, 2801	125.90	113.30	100.70	113
2502	2302, 2602	134.10	120.70	107.30	2902	2702, 2802	137.90	124.10	110.40	115
2503	2303, 2603	146.50	131.90	117.20	2903	2703, 2803	150.70	135.60	120.60	145
2504	2304, 2604	163.70	147.30	130.90	2904	2704, 2804	168.30	151.40	134.60	148
2505	2305, 2605	182.40	164.10	145.90	2905	2705, 2805	187.50	168.80	150.00	152
2506	2306, 2606	195.80	176.20	156.60	2906	2706, 2806	201.30	181.20	161.10	158
2507	2307, 2607	116.90	105.20	93.50	2907	2707, 2807	118.40	106.60	94.70	120
2508	2308, 2608	137.00	123.30	109.60	2908	2708, 2808	139.00	125.10	111.20	132
2509	2309, 2609	149.60	134.70	119.70	2909	2709, 2809	153.60	138.20	122.80	138
2510	2310, 2610	163.30	147.00	130.70	2910	2710, 2810	167.40	150.70	133.90	142
2511	2311, 2611	182.60	164.40	146.10	2911	2711, 2811	187.10	168.40	149.70	164
2512	2312, 2612	203.30	183.00	162.70	2912	2712, 2812	208.70	187.80	166.90	168
2513	2313, 2613	225.00	202.50	180.00	2913	2713, 2813	230.70	207.60	184.60	172
2530	2330, 2630	155.80	140.20	124.60	2930	2730, 2830	157.60	141.90	126.10	119
2531	2331, 2631	166.20	149.50	132.90	2931	2731, 2831	170.30	153.20	136.20	119
2532	2332, 2632	166.20	149.50	132.90	2932	2732, 2832	170.30	153.20	136.20	125

PRESTIGE BALL CORNERED VERSA-CABINETS



A standard Prestige Versa-Cabinet consists of the framework, two ball cornered sides, perforated metal back, solid bottom plate and two supporting channels.

The front, back, top, and bottom may be quickly removed for access to interior for easy servicing.

Standard 19″ panels may be attached to the top, bottom, front or back of cabinet to provide complete closure. Perforated top panel may also be used.

An opening is provided across bottom of back for cable leads, controls or knobs. Size of opening is 1¾″ x 19″. Bud Steel Panel PS 1250 or Aluminum Panel PA-1101 may be used to close opening if desired. Perforated back may be removed and a standard steel or aluminum panel may be used to close back opening entirely.

Sides are attached by means of holding flanges on the bottom of the frame and nut at top. Handles may be fastened to sides.

Cabinets may be fastened side-to-side in batteries of two or more or may be stacked one on another. Four rubber feet are regularly supplied.

Top may be closed by using PS-1256HG or PA-1107HG solid panels or by using PS-616HG or PS-815HG door panels or by PC-1710 perforated steel top panel.

Clear inside width—22¼″. Overall width—23$\frac{3}{16}$″.
Clear inside depth—15″. Overall depth—15$\frac{25}{32}$″.
Weight 28 to 35 lbs.

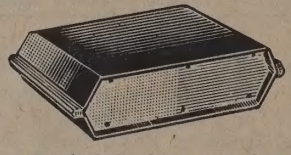
Finished in gray hammertone.

Bud No.	Height, Overall	Panel Space	Rear Panel	Net Each, Lots of 1-14	15-24	25-34
PC-1700	8¾″	5¼″	3½″	$35.20	$31.60	$28.10
PC-1701	10½″	7″	5¼″	37.20	33.40	29.70
PC-1702	12¼″	8¾″	7″	38.20	34.30	30.50
PC-1703	14″	10½″	8¾″	43.10	38.80	34.50
PC-1704	15¾″	12¼″	10½″	45.40	40.90	36.30

PERFORATED STEEL TOP PLATE

Bud No.	Size, In.	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
PC-1710	12¼ x 19	2½	$3.80	$3.50	$3.10

GRAND PRIX CABINETS



A concept in styling not elsewhere available in standard electronic cabinetry. Practical for audio equipment, also for medical and other electronic equipment and controls.

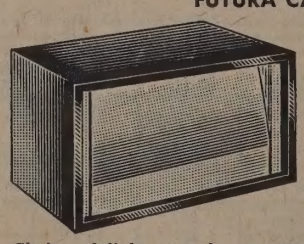
Engineered to make installation and servicing of contents easy. The upper and lower segments are held together by sturdy brushed aluminum extrusions.

Body and front and rear panels made of 20 gauge steel. Four rubber feet are furnished.

Choice of light gray hammertone body with matching panels or smooth dark gray body with smooth light gray panels. Please specify (HG) or (SG) when ordering.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
MD-1	4$\frac{3}{16}$ x 19⅛ x 10½	7¼	$16.70	$15.00	$13.40
MD-2	7$\frac{3}{16}$ x 19⅛ x 10½	7¾	17.50	15.80	14.00
MD-3	4$\frac{3}{16}$ x 12⅛ x 8¾	7	13.50	12.20	10.80

FUTURA CABINETS



Front panels are held in place by body flanges eliminating the use of panel mounting screws.

Top and sides are formed of one piece of steel to which is fastened the base. Thus, the two parts may be quickly disassembled to expose the entire contents. Body and rear panel are of 20 gauge steel while front panels are 18 gauge. Four rubber feet attached to base. Chassis may be affixed to base, front or rear panels.

Choice of light gray hammertone body with smooth light gray panel or smooth dark blue body with smooth light blue panel. Please specify (HG) or (SB) when ordering.

Bud No.	Overall Size, In. W. x H. x D.	Uses Bud Chassis No.	Net Each, Lots of 1-24	25-49	50-99
MD-1960†	13 x 7 x 8	CB-40	$ 9.00	$ 8.10	$7.20
MD-1961†	14 x 8 x 9	CB-997	9.70	8.70	7.70
MD-1962†	16 x 8 x 9	CB-998	10.00	9.00	8.00
MD-1963*	13 x 7 x 8	CB-40	10.50	9.50	8.40
MD-1964*	14 x 8 x 9	CB-997	11.30	10.10	9.00
MD-1965*	16 x 8 x 9	CB-998	12.00	10.80	9.60

Net
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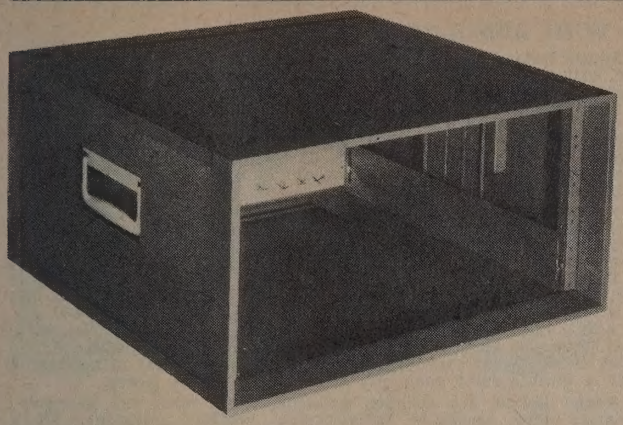
Cabinets, Special Fabrication



CLASSIC DOORS

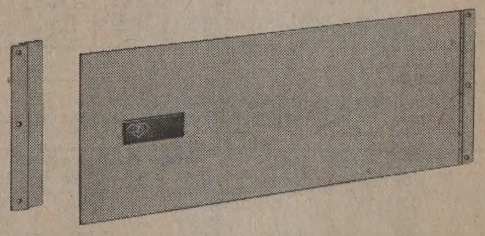
Intended for use on Classic Cabinets but will fit any rack or cabinet with 19" panel space by attaching to panel mounting rails. Made of ¼" 5005-H36 aluminum alloy. Stop fits on one panel mounting rail, hinged door attaches to other mounting rail. If an opening is required above and/or below door, select a door whose height is smaller than the opening it is intended to cover. Equipped with plated, flush type latch. **Color:** Choice of charcoal gray (CG) or Sand (S) Specify when ordering.

Bud No.	Height	Width	Wgt. Lbs.	Net each in lots of 1-4	5-9	10-14
AGD-366	3½	19	½	$ 7.30	$ 6.50	$ 5.80
AGD-367	5¼	19	¾	8.90	8.00	7.10
AGD-368	7	19	2	10.40	9.30	8.30
AGD-369	8¾	19	2¾	11.40	10.30	9.20
AGD-370	10½	19	3	12.50	11.30	10.00
AGD-371	12¼	19	3¼	13.40	12.10	10.80
AGD-372	14	19	3½	13.70	12.30	11.00
AGD-373	15¾	19	4	15.50	14.00	12.40
AGD-374	17½	19	4½	16.80	15.10	13.40
AGD-375	19¼	19	5¼	18.00	16.20	14.40
AGD-376	21	19	6¼	19.10	17.20	15.30
AGD-377	22¾	19	6½	20.00	18.00	16.00
AGD-378	24½	19	7	21.00	18.90	16.80
AGD-379	26¼	19	7½	22.20	20.00	17.80
AGD-380	28	19	8	23.70	21.30	19.00

New CLASSIC CABINETS

Truly functional beauty establishes the Classic Cabinet as a new concept in enclosures. It artfully blends inspired styling with practical efficiency. From the patterned aluminum panels to the smooth extruded aluminum structure, every detail of construction has been combined to establish an air of elegance and substance. The quality is unmistakable. .050 patterned aluminum panels on 4 sides. 6063-T5 aluminum extrusions comprise frame. 16 gauge steel vertically adjustable chassis supports. Front and rear mounting rails tapped 10-32 W.E. spacing. Accepts standard 19" panels. Furnished completely assembled including two heavy duty anodized aluminum handles, four rubber feet and two chassis supports. Clear inside depth, panel to panel — 17". Outside width 20-25/64". Outside depth 19¾". **Color:** Choice of charcoal gray (CG) or Sand (S) Specify when ordering.

Bud No.	Height In.	Panel Space In.	Wgt. Lbs.	Net each in lots of 1-4	5-9	10-14
AGC-266	4 57/64	3½	17	$ 94.70	$ 85.20	$ 75.80
AGC-267	6 41/64	5¼	19	97.00	87.30	77.60
AGC-268	8 25/64	7	20	102.30	92.10	81.80
AGC-269	10 9/64	8¾	22	104.80	94.30	83.80
AGC-270	11 57/64	10½	23	108.30	97.50	86.60
AGC-271	13 41/64	12¼	25	112.60	101.40	90.10
AGC-272	15 25/64	14	26	116.10	104.50	92.90
AGC-273	17 9/64	15¾	28	120.50	108.40	96.40
AGC-274	18 57/64	17½	29	124.00	111.60	99.20
AGC-275	20 41/64	19¼	31	126.80	114.10	101.40
AGC-276	22 25/64	21	32	130.90	117.80	104.70
AGC-277	24 9/64	23¾	34	134.40	121.00	107.50
AGC-278	25 57/64	24½	35	138.20	124.40	110.60
AGC-279	27 41/64	26¼	37	141.70	127.50	113.40
AGC-280	29 25/64	28	38	144.60	130.20	115.70

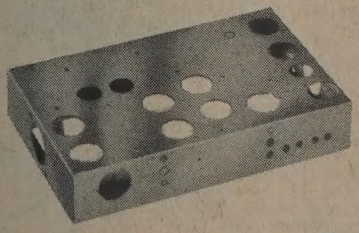


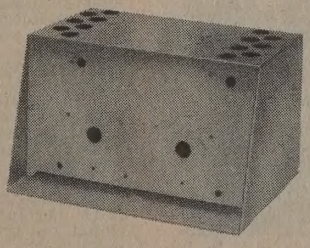
MODIFIED STANDARD PRODUCTS AND SPECIALLY FABRICATED PRODUCTS

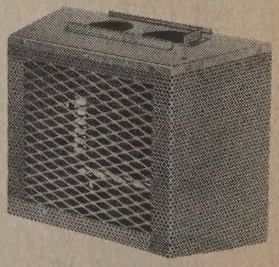
These are the services we perform:

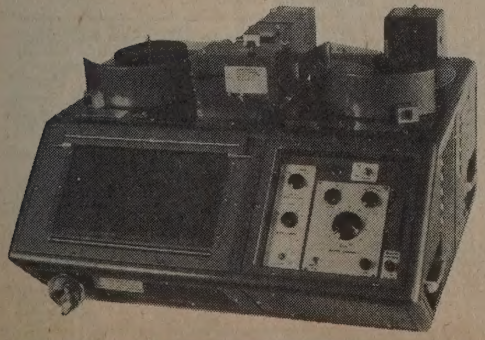
1. Modification of our standard products where an adaptation or change will prove economical for you and yet serve your purpose. This includes special punching of our standard panels, chassis and boxes to your specifications.
2. Construction employing our standard stock structured material such as channels, steel and aluminum panels, etc.
3. Special construction involving the Imlok system of aluminum extrusions, castings, and sheets as illustrated on pages 19 and 20. By this method, enclosures are unlimited in shape and style.
4. Original designs based upon your requirements. We design enclosures for you or quote based upon your blueprints and specifications.

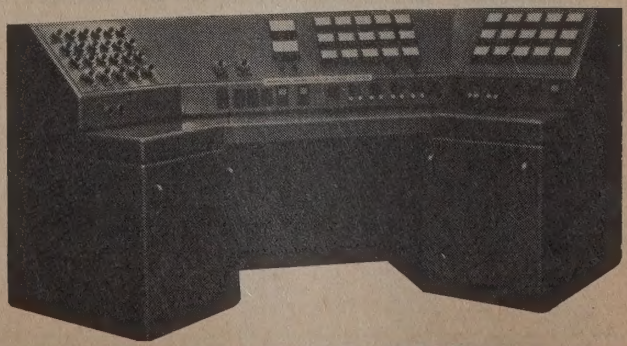
Whenever a special sheet-metal enclosure is required, call in your authorized Bud Distributor. He will give you the benefit of his vast knowledge.





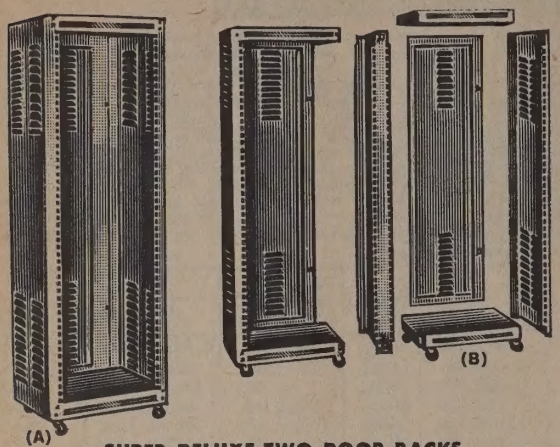






Cabinet Racks, Accessories

DELUXE RELAY RACKS WITH ADD-A-RACK



(A) Deluxe Relay Racks — High quality relay racks made of 16-gauge steel with 7/64" panel supports. Panel mounting supports are recessed so that no panel edges will be exposed. Both back and sides are fully louvered for best ventilation. Snap catches are positioned on the door. Rounded corners and red-lined chrome trim give streamlined appearance. Base constructed with four special supports so that casters may be applied directly to base for mobility. All standard panels fit these racks: 22" wide for 19" panels; 27" wide for 24" panels.

Super Deluxe Series Relay Racks are equipped with adjustable panel mounting supports permitting forward and backward adjustment of panels for more efficient use of space. Adjustable points are at 1" intervals for 9" to 15" clearance behind panels. Super Deluxe Racks are fitted with both front and rear doors, the rear to cover any equipment behind the panel while making it easily accessible. The front door, not louvered, conceals controls on the front panel.

(B) Add-A-Rack Series — Where relay racks are to be joined in series. Provides additional strength and improved appearance. Includes door, top, bottom and coupling unit, all that is needed to make a double relay rack out of a single Deluxe series.

All Racks Listed are shipped knocked-down with all necessary hardware and assembly instructions. Casters optional. When ordering specify finish. Add suffix **"HG"** for gray hammertone; suffix **"G"** for gray wrinkle; and suffix **"B"** for black wrinkle.

SUPER DELUXE TWO-DOOR RACKS WITH 19" WIDE PANEL SPACE

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-2174	42 1/16"	36 3/4"	102	$ 82.60	$ 74.30	$66.10
CR-2171	47 5/16"	42"	104	89.20	80.30	71.30
CR-2172	66 9/16"	61 1/4"	138	115.10	103.60	92.10
CR-2175	75 5/16"	70"	150	123.70	111.40	99.00
CR-2173	82 5/16"	77"	163	138.10	124.30	110.50
WITH 24" WIDE PANEL SPACE						
CR-2494	42 1/16"	36 3/4"	119	$111.60	$100.40	$89.20
CR-2491	47 5/16"	42"	122	125.00	112.50	100.00
CR-2492	66 9/16"	61 1/4"	160	162.80	146.50	130.30
CR-2495	75 5/16"	70"	175	173.40	156.10	138.70
CR-2493	82 5/16"	77"	190	195.00	175.50	156.00

ADD-A-RACK ASSEMBLIES

Includes door, top, bottom and coupling unit for add-on use with racks indicated.

Bud No.	For Use With Rack No.	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
AR-1778	CR-1774	70	$ 60.50	$ 54.40	$ 48.40
AR-1775	CR-1771	74	64.30	57.90	51.40
AR-1776	CR-1772	100	79.90	71.90	63.90
AR-1779	CR-1780	107	84.50	76.10	67.60
AR-1777	CR-1773	113	98.20	88.40	78.60
AR-4274	CR-2474	82	67.20	60.50	53.80
AR-4271	CR-2471	87	75.90	68.30	60.70
AR-4272	CR-2472	117	95.10	85.60	76.10
AR-4275	CR-2475	125	96.80	87.10	77.40
AR-4273	CR-2473	132	114.00	102.60	91.20
AR-2278*	CR-2074	102	68.50	61.60	54.80
AR-2275*	CR-2071	86	77.40	69.70	61.90
AR-2276*	CR-2072	110	96.90	87.20	77.50
AR-2279	CR-2075	120	98.90	89.00	79.10
AR-2277*	CR-2073	130	117.90	106.10	94.30
AR-3278	CR-2484	100	95.30	85.70	76.20
AR-3275	CR-2481	119	106.40	95.70	85.10
AR-3276	CR-2482	129	133.20	119.90	106.50
AR-3279	CR-2485	140	135.10	121.60	108.10
AR-3277	CR-2483	152	160.20	144.10	128.10

*Gray hammertone standard; for black or gray wrinkle add 10% to price.

"TEM-STAT" TEMPERATURE CONTROLS

Prevents costly damage to electronic components in enclosed cabinets, boxes, etc. Bimetal sensing element responds quickly to gradual or sudden temperature changes and actuates whatever warning device you use: Activates a light, bell, blower or other device; or, shuts off current. Activates snap-action, heavy-duty, normally open switch contacts. High electrical ratings up to 300° F; fully adjustable temperature ranges. Screw terminals for easy attachment. U/L Listed. Small size, 2 15/16" lg. x 1" w. x 1 1/2" d., suitable for limited space applications. **U/L Rating:** 8 amps, full load.

Bud Model TS-15—For 80°–170° F range. Net Each... **$5.60**
Bud Model TS-16—For 150°–240° F range. Net Each.. **$5.60**

CASTERS

Bud No.	Height	Weight (Set of 4)	Net Each, Lots of 1-49	50-99	100-149
RC-7756	2 5/8"	1 3/4 lbs.	$1.20	$1.10	$.95
RC-7757	2"	1 lb.	.70	.65	.55
RC-7758	3 1/4"	6 lbs.	2.90	2.60	2.30

DELUXE RELAY RACKS
17 1/8" Overall Depth
WITH 19" WIDE PANEL SPACE

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-1774	42 1/16"	36 3/4"	82	$61.50	$55.40	$49.20
CR-1771	47 5/16"	42"	92	69.70	62.80	55.80
CR-1772	66 9/16"	61 1/4"	115	87.20	78.50	69.70
CR-1780	75 5/16"	70"	125	89.40	80.50	71.50
CR-1773	82 5/16"	77"	135	100.40	90.30	80.30
WITH 24" WIDE PANEL SPACE						
CR-2474	42 1/16"	36 3/4"	96	$ 74.10	$ 66.70	$59.30
CR-2471	47 5/16"	42"	108	83.60	75.20	66.90
CR-2472	66 9/16"	61 1/4"	135	106.00	95.40	84.80
CR-2475	75 5/16"	70"	146	106.70	96.00	85.40
CR-2473	82 5/16"	77"	158	125.40	112.90	100.30

EXTRA DEEP DELUXE RACKS

Same as above, except 22 1/8" deep instead of 17 1/8" deep. Gray hammertone finish standard; for black or gray wrinkle add 10% to price.

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
WITH 19" WIDE PANEL SPACE						
CR-2074	42 1/16"	36 3/4"	98	$ 75.30	$ 67.80	$60.30
CR-2071	47 5/16"	42"	102	85.20	76.70	68.10
CR-2072	66 9/16"	61 1/4"	137	106.70	96.00	85.40
CR-2075	75 5/16"	70"	148	108.70	97.80	87.00
CR-2073	82 5/16"	77"	159	126.70	114.00	101.30
WITH 24" WIDE PANEL SPACE						
CR-2484	42 1/16"	36 3/4"	115	$108.90	$ 98.00	$87.10
CR-2481	47 5/16"	42"	119	122.20	110.00	97.80
CR-2482	66 9/16"	61 1/4"	160	153.20	137.90	122.60
CR-2485	75 5/16"	70"	173	156.00	140.40	124.80
CR-2483	82 5/16"	77"	186	182.90	164.60	146.30

TRANS-AIRE BLOWER

Ideal for use where excessive heat is generated by equipment in an enclosed rack, cabinet or console. Brings in fresh air or exhausts heated air, enabling use as an exhaust or intake blower, depending upon mounting position. Unit will operate in any position—vertical or horizontal. May be mounted to rails of standard cabinet or rack. Use of Bud Chassis Supporting Angles SA-1349, SA-1350 or CE-2219 is recommended when blower is mounted in rack or cabinet. Motor is rubber mounted to reduce vibration. Operating noise factor reduced to minimum. Thermal overload protection to prevent overheating. Automatic reset. Oil impregnated, fiberglas disposable filter can be changed without removing unit from cabinet. Three sizes provide air displacement from 100 c.f.m. to 750 c.f.m. at 0° static pressure. Complete with filter, chrome-plated grille and 18" three-wire cord. All dimensional and technical data in table below. **Weight:** B-23 17 1/4 lbs., B-25 33 lbs., B-27 35 1/4 lbs.; replacement filter 1 lb.

BLOWERS

Bud No.	Panel Space	Depth	Air c.f.m. High	Air c.f.m. Low	Mot. hp	Net Each, Lots of 1-9	10-14	15 Up
B23	3 1/2"x19"	12"	200	100	1/20	$74.20	$66.80	$59.30
B25	5 1/4"x19"	14 1/2"	500	250	1/6	84.80	76.30	67.90
B27	7" x19"	14 1/2"	750	350	1/4	95.30	85.80	76.30

FILTERS FOR ABOVE BLOWERS

Bud No.	Unit	Net Each, Lots of 1-24	25-49	50-99
BF-24	Filter for use with B-23	$1.80	$1.70	$1.50
BF-26	Filter for use with B-25	2.00	1.80	1.60
BF-28	Filter for use with B-27	2.30	2.00	1.80

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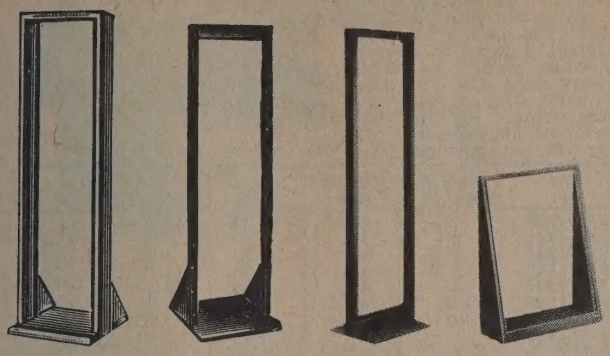
Racks, Cabinets, Consoles



A B C D

DELUXE TELEPHONE-TYPE RELAY RACKS (A)

Sturdy rack with extra strength and capacity. U-member is welded with ventilation at top. Panel-mounting rails, front and rear, tapped 10-32 with W.E. spacing. Made of 12 ga. steel. Chassis-type base drilled for RC-7756 casters. Brackets hold uprights to base; holes on both sides for bolting racks together. Add suffix HG for gray hammertone: B for black wrinkle; or G for gray wrinkle. Nos. RR-1367-RR-1369 have 20⅞" base width and take 19" panels. Nos. RR-2467-RR-2469 have 25⅞" base width and take 24" panels.

Bud No.	Height, Overall	Panel Space	Net Each, Lots of 1-9	10-14	15-19	Wt. Lbs.
RR-1367	64⅝"	61¼"x19"	$51.60	$46.40	$41.30	89
RR-1368	73⅜"	70" x19"	55.50	50.00	44.40	97
RR-1369	80⅛"	77" x19"	61.80	55.60	49.40	105
RR-2467	64⅝"	61¼"x24"	63.50	57.10	50.80	102
RR-2468	73⅜"	70" x24"	65.00	58.50	52.00	112
RR-2469	80⅜"	77" x24"	76.90	69.20	61.50	121

STANDARD TELEPHONE-TYPE RELAY RACK (B)

3" channels and crossbars of 7/64" steel. Base is chassis type with side angles. Base drilled for RC-7756 casters.
Black wrinkle (suffix "B") or gray hammertone (suffix "HG").

Bud No.	Height, Overall	Panel Space	Net Each, Lots of 1-9	10-14	15-19	Wt. Lbs.
RR-1263	35³⁹⁄₆₄"	31½"x19"	$27.10	$24.40	$21.70	35
RR-1363	40⁵⁵⁄₆₄"	36¾"x19"	26.20	23.60	21.00	37
RR-1264	70³⁹⁄₆₄"	66½"x19"	31.10	28.00	24.80	46
RR-1364	75⁵⁵⁄₆₄"	71¾"x19"	32.60	29.40	26.10	48
RR-1366	81⅞"	77" x19"	35.70	32.20	28.60	50
RR-1463	35³⁹⁄₆₄"	31½"x24"	35.90	32.30	28.70	40
RR-2463	40⁵⁵⁄₆₄"	36¾"x24"	39.00	35.10	31.20	43
RR-1464	70³⁹⁄₆₄"	66½"x24"	41.10	37.00	32.90	53
RR-2464	75⁵⁵⁄₆₄"	71¾"x24"	41.10	37.00	32.90	55
RR-2466	81⅞"	77" x24"	52.40	47.20	42.00	58

HEAVY-DUTY TELEPHONE-TYPE RELAY RACKS (C)

Two 3½" x 5" x ¼", 20⅜" long angles form base.
Steel channels are 3" x 1⅜", 72¼" long. Cross bars are ⅛" x 2-3/32" angles. Panel holes tapped 12-24 with W.E. space. Black wrinkle finish only. Usually bolted to floor.

RR-1265	72¼"	66½"x19"	$72.20	$65.00	$57.80	88
RR-1465	72¼"	66½"x24"	91.20	82.10	72.90	78

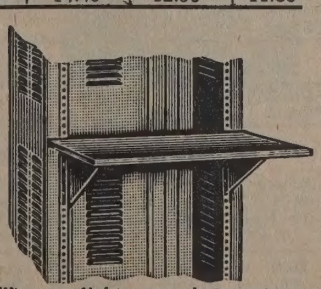
TABLE-MOUNT TELEPHONE RACK (D)

Sturdy rack with chassis type base mounts heavy components on table where enclosures are not required. Panel mount rails recessed for flush mount of 19" panels. Shipped knocked down. Specify black wrinkle (suffix "B") or gray hammertone ("HG").

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
RR-1248	24"	21"	15	$12.20	$11.00	$ 9.80
RR-1249	31"	28"	18	14.40	12.90	11.50

SHELF ASSEMBLY

Useful as a desk, work space, etc. Can't fall off or tilt; will support any reasonable weight. Shelf portion supported by two brackets, punched to fit standard panel mounting strips. No panel support needed. Sides welded to bottom of shelf; mounting brackets slip into sides and fasten with two screws. 16 gauge steel; ½" flange on all four sides; overall height, 7⅛". Brackets are 7" high. Specify black wrinkle (suffix "B"), gray wrinkle (suffix "G"), or light gray hammertone (suffix "HG") finish.



Bud No.	Size, Inches D. x W.	Weight, Lbs.	Net Each, Lots of 1-14	15-24	25-34
SA-1719	16 x 22	14	$13.10	$11.80	$10.50
SA-1720	20 x 22	15	13.30	11.90	10.60

PRESTIGE BALL CORNER RACKS

Attractive, practical housing for permanent or mobile instrumentation. Consists of framework, top, bottom, two ball cornered sides, and a ball corner door. Sides attach to frame by means of a tongue-and-slot arrangement and two screws. Sides easily removable. Drilled and tapped adjustable panel mounting rails on all four vertical members of frame. Doors mount from either left or right. Base takes side panels on any of the four sides. Door and side clearance permits covering of equipment without damage to knobs or controls. Provision made for recessed casters. Extra doors available. Knockout holes for attaching two or more units together. Bottom will support 500 lbs. Panel rails 200 lbs. suspended vertically between rails. Units take Bud SD-1717 sliding drawer assembly or CD-2210 console drawer. Shipped knocked-down, with necessary hardware. **Gray hammertone finish only.**

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-2280	66⁹⁄₁₆"	61¼"	179	$148.00	$133.20	$118.40
CR-2281	71¹³⁄₁₆"	66½"	186	151.70	136.50	121.40
CR-2282	82⁵⁄₁₆"	77"	213	170.40	153.40	136.30
DR-2290	Door for CR-2280		28	17.40	15.60	13.90
DR-2291	Door for CR-2281		33	20.40	18.30	16.30
DR-2292	Door for CR-2282		39	22.80	20.50	18.20

PRESTIGE ADD-A-RACKS

Where relay racks are to be joined in series this assembly is lower in cost yet provides additional strength and improved appearance. Consists of top, bottom, rear door and framework. 16 gauge steel. Extra ball corner doors will fit adjustable panel mounting rails which are recessed. Gray hammertone.

BUD NO.	Used to Add-A-Rack to	Wt. Lbs.	Net Each, Lots of 1-9	10-14	15-19
AR-2284	CR-2280	120	$111.90	$100.70	$ 89.50
AR-2286	CR-2281	125	120.90	108.80	96.70
AR-2287	CR-2282	136	135.80	122.20	108.60

IMPERIAL INCLINED PANEL CONSOLE

Smart looking all-aluminum console built for strength while keeping weight factor in mind. Assembly includes framework, top, bottom, two sides, and reinforced door with concealed hinges and flush mounted latch. Joints are ball-cornered aluminum castings. Inclined panel set at 22½° angle. Cast brass, heavy duty hinges designed to enable components, blowers, etc., to be mounted on rear door. Framework for top, inclined panel area and front are extrusions, drilled and tapped to accept standard rack panels. Casters may be attached. Standard Bud aluminum panels may be used to enclose the front and inclined panel spaces. Side, top, door are gray hammertone. Frame and bottom are smooth black.

Bud No.	Overall Size, Inches W. x D. x H.	Vertical Panel Size, Inches	Weight, Lbs.
BI-1828	20¹⁵⁄₁₆ x 18⅝ x 40¹¹⁄₁₆	19¹⁄₁₆ x 28¹⁄₁₆	41
BI-2228	20¹⁵⁄₁₆ x 22⅛ x 40¹¹⁄₁₆	19¹⁄₁₆ x 28¹⁄₁₆	47
BI-2419	20¹⁵⁄₁₆ x 19¹⁷⁄₃₂ x 43³¹⁄₃₂	19¹⁄₁₆ x 24⁹⁄₁₆	43
BI-2421	20¹⁵⁄₁₆ x 21⁹⁄₃₂ x 43³¹⁄₃₂	19¹⁄₁₆ x 24⁹⁄₁₆	46

Bud No.	Net Each, Lots of 1-9	10-14	15-19
BI-1828	$221.40	$199.30	$177.20
BI-2228	220.80	198.70	176.60
BI-2419	258.60	232.70	206.90
BI-2421	272.10	244.90	217.70

Relay Racks and Panels

STANDARD RELAY RACK PANELS

Choice of ⅛" steel or ⅛" and 3/16" aluminum panels in both 19" and 24" widths. Specify color when ordering, use suffix **B** for black wrinkle; **G** for gray wrinkle; **HG** for gray hammertone; **SB** for smooth blue; **SG** for smooth gray. Aluminum panels 5005 H-36 or 2024 T-3 alloy.

19" WIDE PANELS

Ht., In.	⅛" STEEL Bud No. PS-	Net Each, Lots of 1-49	50-99	100-149	⅛" ALUMINUM Bud No. PA-	Net Each, Lots of 1-49	50-99	100-149
1¾	1250	$1.30	$1.15	$1.05	1101	$1.40	$1.25	$1.10
3½	1251	1.40	1.25	1.10	1102	2.00	1.80	1.60
5¼	1252	1.90	1.70	1.50	1103	2.60	2.30	2.10
7	1253	2.00	1.80	1.60	1104	3.30	3.00	2.70
8¾	1254	2.70	2.40	2.10	1105	3.80	3.50	3.10
10½	1255	3.10	2.80	2.50	1106	4.80	4.40	3.90
12¼	1256	3.60	3.20	2.90	1107	5.70	5.10	4.50
14	1257	4.00	3.60	3.20	1108	6.40	5.80	5.10
15¾	1258	4.30	3.90	3.50	1109	7.20	6.50	5.70
17½	1259	4.80	4.40	3.90	1110	7.80	7.10	6.30
19¼	1260	5.30	4.80	4.30	1111	8.60	7.70	6.90
21	1261	6.10	5.50	4.90	1112	9.50	8.60	7.60

24" WIDE PANELS

Ht., In.	Bud No. PS-	Net Each, Lots of 1-49	50-99	100-149	Bud No. PA-	Net Each, Lots of 1-49	50-99	100-149
1¾	3420	$1.80	$1.70	$1.45	2401	$2.30	$2.10	$1.90
3½	3421	2.00	1.80	1.60	2402	3.00	2.70	2.40
5¼	3422	2.50	2.30	2.00	2403	4.10	3.70	3.30
7	3423	2.90	2.60	2.30	2404	4.80	4.30	3.80
8¾	3424	3.60	3.20	2.90	2405	5.90	5.30	4.70
10½	3425	4.10	3.70	3.30	2406	7.30	6.50	5.80
12¼	3426	5.10	4.60	4.10	2407	8.20	7.40	6.50
14	3427	5.90	5.30	4.70	2408	9.90	8.90	7.90
15¾	3428	6.70	6.00	5.30	2409	10.60	9.50	8.50
17½	3429	7.30	6.50	5.80	2410	11.10	10.00	8.90
19¼	3430	8.20	7.40	6.50	2411	12.20	11.00	9.80
21	3431	8.90	8.00	7.10	2412	13.40	12.10	10.80

3/16" 5005 H-36 ALUMINUM PANELS

Ht., In.	Standard 19" Wide Panels Bud No. PA-	Net Each, Lots of 1-49	50-99	100-149	Standard 24" Wide Panels Bud No. PA-	Net Each, Lots of 1-49	50-99	100-149
1¾	3101	$2.30	$2.00	$1.80	2431	$4.00	$3.60	$3.20
3½	3102	3.20	2.90	2.50	2432	5.20	4.70	4.10
5¼	3103	4.20	3.80	3.30	2433	7.20	6.50	5.70
7	3104	5.30	4.70	4.20	2434	8.40	7.50	6.70
8¾	3105	6.20	5.60	4.90	2435	9.80	8.80	7.80
10½	3106	7.70	6.90	6.10	2436	12.40	11.20	10.00
12¼	3107	8.90	8.00	7.10	2437	14.00	12.60	11.20
14	3108	9.90	8.90	7.90	2438	16.50	14.90	13.20
15¾	3109	11.50	10.40	9.20	2439	18.50	16.60	14.80
17½	3110	12.70	11.40	10.20	2440	20.00	18.00	16.00
19¼	3111	13.80	12.40	11.00	2441	22.20	20.00	17.80
21	3112	15.20	13.70	12.20	2442	24.50	22.00	19.60

1/8" HARD ALUMINUM PANELS

Ht., In.	19" Wide Panels Bud PA-	Net Each, Lots of 1-49	50-99	100-149	24" Wide Panels Bud PA-	Net Each, Lots of 1-49	50-99	100-149
1¾	1131	$1.80	$1.60	$1.45	4221	$2.80	$2.50	$2.20
3½	1132	2.30	2.00	1.80	4222	3.60	3.20	2.90
5¼	1133	3.00	2.70	2.40	4223	4.60	4.10	3.70
7	1134	3.90	3.50	3.10	4224	5.90	5.30	4.70
8¾	1135	4.30	3.90	3.50	4225	6.90	6.20	5.50
10½	1136	5.60	5.00	4.50	4226	8.50	7.70	6.80
12¼	1137	6.30	5.70	5.10	4227	9.80	8.80	7.80
14	1138	7.40	6.70	5.90	4228	11.30	10.10	9.00
15¾	1139	8.00	7.20	6.40	4229	12.40	11.10	9.90
17½	1140	8.70	7.80	6.90	4230	13.40	12.10	10.80
19¼	1141	9.40	8.40	7.50	4231	14.40	13.00	11.60
21	1142	10.70	9.60	8.60	4232	16.60	15.00	13.30

3/16" HARD ALUMINUM PANELS

Ht., In.	Bud PA-	Net Each, Lots of 1-49	50-99	100-149	Bud PA-	Net Each, Lots of 1-49	50-99	100-149
1¾	3121	$3.30	$2.90	$2.50	4280	$5.30	$4.80	$4.30
3½	3122	3.80	3.50	3.10	4281	6.50	5.90	5.20
5¼	3123	5.30	4.70	4.20	4282	8.40	7.50	6.70
7	3124	6.60	5.90	5.30	4283	10.70	9.60	8.60
8¾	3125	7.80	7.10	6.30	4284	12.40	11.20	10.00
10½	3126	9.50	8.60	7.60	4285	15.40	13.80	12.30
12¼	3127	11.20	10.10	9.00	4286	17.90	16.10	14.30
14	3128	13.00	11.70	10.40	4287	20.70	18.60	16.60
15¾	3129	13.90	12.50	11.10	4288	22.40	20.10	17.90
17½	3130	15.40	13.80	12.30	4289	24.30	21.90	19.40
19¼	3131	16.20	14.60	13.00	4290	26.30	23.70	21.00
21	3132	18.70	16.80	15.00	4291	30.20	27.20	24.20

FLANGED PANELS 19" WIDE

Made of 16 gauge steel with a ½" flange all around. Elongated hole is .250" x .500". Spacing of holes is same as standard panel notching. Specify color when ordering: add suffix **G**, gray wrinkle; **B**, black wrinkle; **H**, gray hammertone; **SG**, smooth light gray; **SB**, smooth light blue; **CG**, charcoal gray; **S**, sand.

Bud No.	Height Inches	Weight Lbs.	Net Each, Lots of 1-49	50-99	100-149
FPS-1230	1¾	1	$1.50	$1.35	$1.20
FPS-1231	3½	1½	1.60	1.45	1.30
FPS-1232	5¼	2	1.80	1.60	1.45
FPS-1233	7	2¾	1.90	1.70	1.50
FPS-1234	8¾	3¼	2.40	2.20	1.90
FPS-1235	10½	4	3.00	2.70	2.40
FPS-1236	12¼	4½	3.50	3.20	2.80
FPS-1237	14	5	3.90	3.50	3.10
FPS-1238	15¾	5¾	4.40	4.00	3.50
FPS-1239	17½	6¼	4.80	4.40	3.90
FPS-1240	19¼	6¾	5.30	4.80	4.30
FPS-1241	21	7½	5.80	5.20	4.60

SURFACE SHIELD PANELS

Bright aluminum alloy 5005 H-36 panels have blemish-free mill finish. Covered on both sides with sturdy, pressure-sensitive, white paper; protects against damage and useful for marking for drilling, positioning, etc. Standard notched sizes.

STANDARD 19" WIDE PANELS

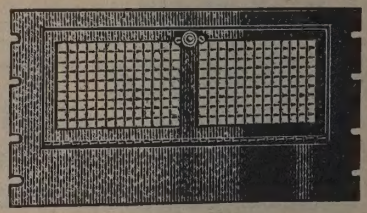
Ht., In.	⅛" ALUMINUM Bud SFA-	Net Each, Lots of 1-49	50-99	100-149	3/16" ALUMINUM Bud SFA-	Net Each, Lots of 1-49	50-99	100-149
1¾	1831	$1.30	$1.15	$1.05	3161	$2.30	$2.10	$1.90
3½	1832	2.00	1.80	1.60	3162	3.30	2.90	2.60
5¼	1833	2.60	2.30	2.10	3163	4.30	3.80	3.40
7	1834	3.20	2.90	2.50	3164	5.30	4.80	4.30
8¾	1835	3.80	3.40	3.00	3165	6.30	5.70	5.10
10½	1836	4.80	4.40	3.90	3166	7.30	6.60	5.90
12¼	1837	5.50	5.00	4.40	3167	9.30	8.30	7.40
14	1838	6.30	5.70	5.10	3168	10.60	9.50	8.50
15¾	1839	7.10	6.40	5.70	3169	11.90	10.70	9.50
17½	1840	7.80	7.10	6.30	3170	13.10	11.80	10.50
19¼	1841	8.70	7.80	6.90	3171	14.40	12.90	11.50
21	1842	9.40	8.50	7.50	3172	15.60	14.10	12.50

STANDARD 24" WIDE PANELS

Ht., In.	Bud SFA-	Net Each, Lots of 1-49	50-99	100-149	Bud SFA-	Net Each, Lots of 1-49	50-99	100-149
1¾	2451	$2.50	$2.30	$2.00	3401	$4.80	$4.30	$3.80
3½	2452	3.40	3.10	2.70	3402	6.30	5.70	5.10
5¼	2453	4.30	3.90	3.50	3403	8.50	7.70	6.80
7	2454	5.70	5.10	4.50	3404	10.40	9.40	8.40
8¾	2455	6.60	5.90	5.30	3405	12.50	11.30	10.00
10½	2456	8.40	7.50	6.70	3406	15.80	14.20	12.60
12¼	2457	9.40	8.50	7.50	3407	18.10	16.30	14.50
14	2458	10.90	9.80	8.80	3408	21.00	18.90	16.80
15¾	2459	12.40	11.20	10.00	3409	23.40	21.00	18.70
17½	2460	13.40	12.10	10.80	3410	25.80	23.20	20.60
19¼	2461	14.90	13.40	11.90	3411	28.20	25.40	22.60
21	2462	16.20	14.60	13.00	3412	30.60	27.60	24.50

VENTILATED DOOR RACK PANELS

Perforated area in door provides adequate ventilation. Features a plunger type latch for positive locking and easy opening. Distance from hinged side of opening to bottom, 3½"; from lock side of opening to top, 1". Available in black or gray wrinkle finish or gray hammertone finish (specify when ordering). ⅛" steel, 19" long.



Bud No.	Height Overall	Door Size, Inches	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
PS-814	10½"	15⅜ x 6	6	$10.90	$9.80	$8.80
PS-815	12¼"	15⅜ x 7½	7	11.60	10.40	9.30

NON-VENTILATED METAL DOOR PANELS

PS-615	10½"	15⅜ x 6	7¼	$8.90	$8.00	$7.10
PS-616	12¼"	15⅜ x 7½	8¼	11.00	9.90	8.80

VENTILATING GRILLE PANELS

Substitute for solid panels for extra ventilation. Made of ⅛" steel with die-cut grille 13 13/32" wide. Standard notching. 19" wide sizes. Specify black wrinkle (suffix **B**), gray wrinkle (suffix **G**), or gray hammertone (suffix **HG**).

Bud No.	Height, Overall	Grille Height	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
PS-808	5¼"	3⅜"	2½	$4.30	$3.90	$3.50
PS-809	7"	4⅞"	3½	4.80	4.40	3.90
PS-810	8¾"	3⅜"*	5	5.80	5.20	4.60
PS-811	10½"	5⅞"*	5¾	6.10	5.50	4.90
PS-812	12¼"	7⅜"*	6¼	6.60	5.90	5.30

* Allows 3½" space for chassis mounting.

Net

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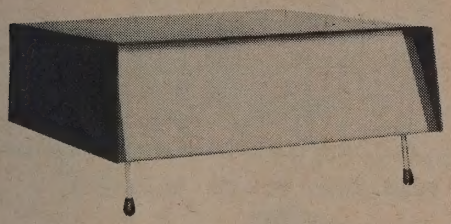
Cabinets and Accessories

New TILT-A-VIEW CABINETS

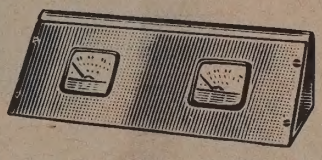


Affords selective vision to viewer who may be observing the action of meters or the position of dials and recorders. Employment of the detachable legs changes the position to any desired angle. Two piece construction permits immediate clear access to interior for installation and servicing.

Fabricated of 18 gauge steel. Lower segment slides into channels and flanges formed in top. Bottom is fastened by screws to the flanges on the lower edge of top. Hooded top shields sloping front panel from overhead glare. No screws appear in front or rear panels. Two 2" high plated legs with rubber feet. Legs screw into base on bottom section. Four rubber feet attached to bottom section. Vinyl texture finish. Charcoal gray body and light sand panels.

Catalog No.	Sizes, Inches H x W x D	Wgt. Lbs.	1-14	14-24	25-34
TV-2155	4½ x 15 x 10	8½	$ 8.10	$ 7.30	$ 6.50
TV-2156	6½ x 16 x 12	13	9.50	8.60	7.60
TV-2157	8½ x 17 x 14	17	13.80	12.40	11.00

DUAL-VIEW PANEL SUPPORT

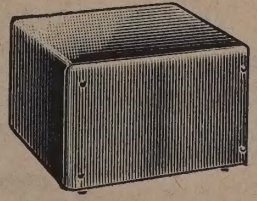


Designed for installation on a rack where an oblique view of instrument panel is desired. Engineered so that the entire assembly occupies no more space than size of supported panel. Panel support cover can be removed for easy servicing or installation of instruments. Made of heavy gauge steel with attractive contoured edges. Comes knocked-down with necessary assembly hardware, but without panels. Bud panels to fit these supports are PS-1253 (steel), and PA-1104 (aluminum) for Model IP-1120; PS-1255 (steel), and PA-1106 (aluminum) for IP-1121. Furnished in black wrinkle (add suffix **"B"**), gray hammertone (add suffix **"HG"**), gray wrinkle (add suffix **"G"**), smooth gray (suffix **"SG"**), or smooth blue (suffix **"SB"**).

Bud No. IP-1120 — Requires 19" x 7" panel space. Wt., 3½ lbs.
Net Each, Lots of 1-24 ..... **$5.60**
Lots of 25-49, Each..... **$5.00** Lots of 50-99, Each..... **$4.50**

Bud No. IP-1121 — Requires 19" x 10½" panel space. Wt., 6¾ lbs.
Net Each, Lots of 1-24 ..... **$7.90**
Lots of 25-49, Each..... **$7.10** Lots of 50-99, Each..... **$6.30**

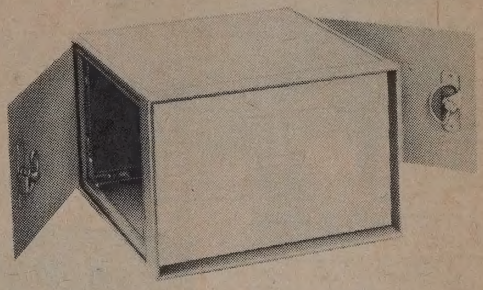
CONTOUR UTILITY CABINETS



Attractively designed utility housing with rounded contour corners. Flanged panels also have rounded corners to preserve the symmetry of design. Constructed of 20 gauge steel. Both front and rear panels are removable; the front panel is solid while the rear panel is louvered for proper ventilation. Four rubber feet, attached to base, prevent scratching surface the unit is placed on. Body is smooth, dark gray enamel; panel is smooth light gray enamel.

Bud No.	Overall Size, Inches H.	D.	W.	Net Each, Lots of 1-24	25-49	50 & Over
CU-463	4 7/32	6 7/32	3¾	$ 6.20	$5.60	$4.90
CU-465	4 7/32	6 7/32	5¾	7.10	6.40	5.70
CU-585	5 7/32	8 7/32	5¾	9.10	8.20	7.30
CU-587	5 7/32	8 7/32	7¾	10.00	9.00	8.00
				Lots of 1-49	50-99	100-149
CU-7125	7 7/32	12 7/32	5¾	$ 9.20	$ 8.30	$ 7.30
CU-7127	7 7/32	12 7/32	7¾	9.70	8.70	7.70

New TUDOR CABINETS

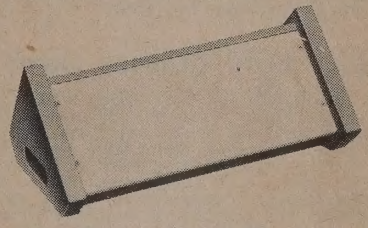


A top quality cabinet to compliment sophisticated equipment. Unique construction features and clean lines add to value and beauty.

Framework of Slimline Bud 901 aluminum extrusions and corner connectors. Side panels, top and bottom, are .030 aluminum; front panel is .090 aluminum; doors are 16 gauge steel. Recessing front panel affords protection to projecting knobs, dials, switches, etc. Cam action self adjusting spring latch holds doors securely against frame. Piano type hinge on doors. Four rubber feet furnished. Vinyl texture scratch resistant finish body and panel. Choice of charcoal gray (CG) or Sand (S). Specify when ordering.

Catalog No.	Size, In. HxWxD	Chassis No. Fits	Wt.	1-9	10-14	15-19
S-609	6x9½x8	AC-1413	4 lb. 4 oz.	$52.40	$47.10	$41.90
S-612	8x12x10	AC-1418	7 lb.	57.60	51.90	46.10
S-614	10x14x12	AC-413	9 lb. 8 oz.	62.40	56.10	49.90

New MARK-T CABINETS

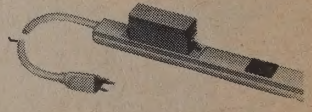


Designed particularly for a housing for controls, dials, meters, switches, lights, etc. Rear door swings open all the way for quick access to contents. Comfortable angle for easy viewing.

All welded construction. 16 gauge steel. Removable front panel held by decorative screws. Cam action self adjusting spring latch holds door securely against frame. Piano-type hinge on door. Recessed, safety shielded carrying handles. Four rubber feet included. Charcoal grey, vinyl texture, scratch resistant finish body. Light gray enamel panel and door.

Catalog No.	Width	Panel or Door Area	Wgt. Lbs.	1-14	15-24	25-34
MT-214	16"	5¾" x 14"	9	$30.40	$27.40	$24.30
MT-219	21"	5¾" x 19"	12	33.30	30.00	26.70
MT-224	26"	5¾" x 24"	14½	39.20	35.30	31.40

POWER OUTLET STRIPS



For more convenient, safer wiring in cabinets and racks or wherever multiple 110-125 volt outlets are required. Each strip is a complete unit ready for use; no field wiring is required. Strip is installed by snapping into mounting clips at convenient locations. When used in cabinets, racks or consoles there is no danger of accidental contact between power cord and contents.

Wire capacity is No. 12AWG Solid TW conductor. Cross section of steel race way is ¾" x 1 9/32" and recpetacles are spaced on 6" centers except POS-4. Double wipe contact receptacle terminals and grounding terminal are 15 amp, 125 volt. Each length of strip includes a 15 amp overload breaker with push-button reset and 6" rubber covered cord and grounding plug. Two sheet metal spring clips furnished with each section. All components are UL approved. Finished in light gray enamel.

Catalog No.	No. of Outlets	Length	Wgt. Lbs.	1-5	6-11	12-17
POS-4	4	17½"	1¾	$22.70	$20.50	$18.20
POS-7	7	48"	3¾	23.90	21.50	19.10
POS-9	9	60"	4¼	26.30	23.60	21.00
POS-11	11	72"	5	28.70	25.80	22.90

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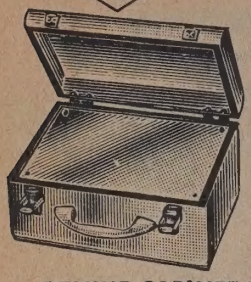
Cases, Racks, Chassis

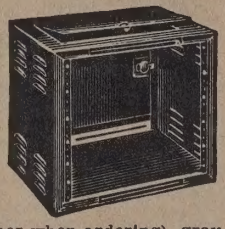
TRANSICASE PORTABLE INSTRUMENT CASES



Handsome, portable instrument case with unlimited applications. Contour design fabricated of .040" aluminum with flush-fitting aluminum panel. Foam-rubber lined lid protects instruments in case; mounted on two slide-off, bright nickel-plated hinges with toggle catches. Rubber feet at both base and back; metal plugs supplied to fill holes if rubber feet are not used. Bright nickel-plated handle. **Specify Color:** Add suffix SB for textured blue; SG, for textured gray enamel.

Bud No.	Inside Panel Size, Inches	Clear Internal Space Below Panel	Clear Internal Space Above Panel	Internal Aperture	Overall Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
TC-300	8 15/16 x 5 15/16	4 13/32"	1 15/32"	8" x 5 31/32"	10 1/16 x 7 x 6	3 3/4	$27.80	$25.00	$22.20
TC-301	10 3/8 x 7 1/4	4 13/32"	1 15/32"	9 7/16" x 7 9/32"	11 1/2 x 8 1/4 x 6	4 1/2	28.50	25.60	22.80
TC-302	11 7/8 x 7 15/16	5 29/32"	1 15/32"	10 15/16" x 7 31/32"	13 x 9 x 7 1/2	6	25.10	26.20	23.20
TC-303	15 3/8 x 7 15/16	5 29/32"	1 15/32"	14 7/16" x 7 31/32"	16 1/2 x 9 x 7 1/2	8	29.60	26.60	23.60
TC-304	19 x 7	7 11/32"	1 15/32"	18 1/16" x 7 1/32"	20 1/8 x 8 x 9	10	31.20	28.10	25.00

DELUXE CABINET RACKS



Rounded corners, red-lined chrome trim. There is a recessed, hinged door on the top with a snap catch. These racks are made of heavy gauge steel and are of sturdy construction. The five large sizes have a hinged rear door, while the small sizes have a welded panel in the rear. Adequate ventilation is assured by means of louvered sides and a 2½ inch opening in the bottom of the back extends the entire width. "NO-SCRATCH" EXTENDED METAL FEET ARE EMBOSSED ON THE BOTTOM. In black wrinkle (add suffix **"B"** to number when ordering), gray wrinkle (suffix **"G"**), and hammertone gray (suffix **"HG"**). **Size:** 14¾" x 22" w. Fits 19" panels. Full size 12 Ga. steel Relay Rack Panel supplied, at no extra cost.

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
CR-1726	8 25/32"	7"	24	$19.70	$17.70	$15.80
CR-1741	10 9/16"	8¾"	28	21.00	18.90	16.80
CR-1740	12 5/16"	10½"	31	24.60	22.20	19.70
CR-1742	14 1/16"	12¼"	32	25.40	22.80	20.30
CR-1739	15 13/16"	14"	35	34.40	31.00	27.50
CR-1743*	19 5/16"	17½"	40	33.70	30.40	27.00
CR-1727*	22 13/16"	21"	43	36.20	32.50	28.90
CR-1744*	28 1/16"	26¼"	51	38.90	35.00	31.10
CR-1728*	33 5/16"	31½"	58	41.30	37.20	33.10
CR-1745*	36 13/16"	35"	63	43.40	39.10	34.70

*These sizes have both top and rear doors.

HEAVY DUTY CABINET RACKS

Similar to our Deluxe Cabinet Rack except with greater depth and extra strength. These racks are shipped knocked down with all necessary assembly hardware. Panel mounting rails are an integral part of the sides. Removable rear door. Louvered sides and 2½" x 17⅞" opening in bottom or back assure adequate ventilation. Made of 16 gauge steel. Where it is advantageous to have a bank of these cabinet racks, an Add-a-Cab feature is provided. The method of assembly is the same as our Add-a-Rack series. Specify gray hammertone (**HG**), black wrinkle (**B**), or gray wrinkle (**G**). Size 17⅞" dia x 22" w.

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
CR-1736	24½"	19¼"	50	$33.80	$30.40	$27.10
CR-1737	31½"	26¼"	57	36.30	32.70	29.10
CR-1738	40¼"	35"	70	43.30	38.90	34.60
ACR-1936	Add-A-Cab for CR-1736		42	33.70	30.30	26.90
ACR-1937	Add-A-Cab for CR-1737		52	41.30	37.20	33.10
ACR-1938	Add-A-Cab for CR-1738		57	42.70	38.40	34.10

PORTACAB INSTRUMENT CABINETS

PORTACABS

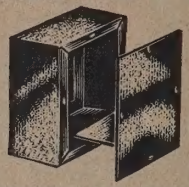
These attractive and versatile cabinets are desirable as housings for instrumentation requiring highly stylized appearance. The body is of one piece .050 aluminum with contoured corners. Panel is .062 aluminum.

Flexible recessed handle permits easy portability as well as vertical stacking. Well louvered for adequate ventilation. Since louveres point inward, side-to-side placement of cabinets is possible without space loss. Welded back has opening.

Front panel mounting flanges ½" wide. Aluminum front panel is recessed ½". The perimeter of the panel follows the contour of the body. Four detachable rubber feet furnished. Gray hammertone finish only.

Bud No.	Size, Inches W. x D. x H.	Wt., Lbs.	Bud Chassis	Net Each, Lots of 1-24	25-49	50-99
WA-1540	6⅛ x 8 x 8	2½	AC-402	$11.30	$10.10	$ 9.00
WA-1541	8⅛ x 12 x 9	3	AC-407	14.70	13.20	11.80
WA-1542	10⅛ x 8 x 8	3½	AC-406	13.10	11.80	10.50
WA-1543	11⅛ x 18 x 11	6½	AC-416	18.20	16.40	14.60
WA-1544	14⅛ x 18 x 12	7¾	AC-420	21.00	18.90	16.80

MINIATURE UTILITY CABINETS



Ideal housing for construction of electronic devices using miniature tubes and transistorized circuitry. Front panel has a built-on chassis. Both front and rear panels are removable; fastened by self-tapping screws. Black wrinkle enamel finish.

Bud No.	Size, In. H. x W. x D.	Chassis W. x D., In.	Net Each, Lots of 1-49	50-99	100-149
C-1793	4 x 4 x 2	3⅛ x 1⅛*	$1.70	$1.50	$1.35
C-1794	4 x 5 x 3	4⅛ x 2⅛*	1.90	1.70	1.50
C-1795	5 x 4 x 3	3⅛ x 2⅛†	2.10	1.90	1.70
C-1796	6 x 5 x 4	4⅛ x 3⅛‡	2.20	2.00	1.75
C-1797	5 x 6 x 4	5⅛ x 3⅛†	2.50	2.30	2.00
C-1798	6 x 6 x 6	4⅞ x 5⅛‡	3.00	2.70	2.40

*1" high. †1¼" high. ‡1¾" high.

STREAMLINED MULTI-PURPOSE CABINETS

Attractive cabinet with curved corners; uses chassis No. CB-1625. Back is entirely open for ventilation. Finished in light gray wrinkle only.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
C-1787	4½ x 5½ x 3½	1	$2.40	$2.20	$1.90
C-1788	6½ x 5½ x 3½	1½	2.40	2.20	1.90

MINIATURE SPEAKER CASES

Safe, convenient steel housing for 2" and 3" speakers. Black wrinkle finish only.

Bud No.	For Size Speaker	Net Each, Lots of 1-24	25-49	50-99
CS-1685	2"	$2.30	$2.00	$1.80
CS-1686	3"	2.30	2.00	1.80

UNIVERSAL SLOPING PANEL CABINETS

Fully enclosed and shielded housing with one-piece detachable back and sides fastened to body with four self-tapping screws. Components may be mounted on back, bottom, sides or front. Will accommodate Bud Miniature Aluminum Chassis. **Size:** 4" d. x 4¼" h. Gray hammertone finish only.

ALUMINUM MODELS

Aluminum alloy 5005 H-14.

Bud No.	Uses Chassis	Width	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
AC-1610	CB-1617	4"	½	$2.40	$2.20	$1.90
AC-1611	CB-1618	5"	½	2.30	2.10	1.90
AC-1612	CB-1619	6"	¾	2.50	2.30	2.00
AC-1613	CB-1620	7"	¾	2.80	2.60	2.30

STEEL MODELS

C-1606	CB-1617	4"	¾	$1.90	$1.70	$1.50
C-1607	CB-1618	5"	¾	2.00	1.80	1.60
C-1608	CB-1619	6"	1⅛	2.20	2.00	1.70
C-1609	CB-1620	7"	1⅛	2.50	2.30	2.00

Net
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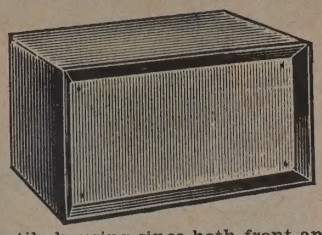
Cabinets, Foundations

SHADOW CABINETS



An extremely versatile housing since both front and rear panels as well as the bottom may be removed for installation or servicing purposes. Unusually attractive appearance is created by recessing the front panel one inch as well as by beveling the front edges of the body.

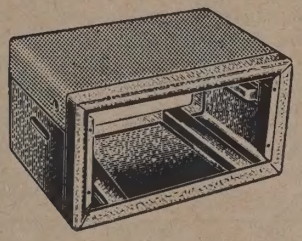
The recessed front panel prevents accidental movement of controls, knobs, and switches attached to it.

The two piece body of the shadow cabinet is made of 18 gauge steel and the panels of 16 gauge steel. Finish is light gray hammertone.

Four rubber feet attached to the bottom of the cabinet eliminate marring of the surface on which it may be placed.

Bud No.	Overall Size, In. W. x H. x D.	Uses Bud Chassis No.	Net Each, Lots of 1-24	25-49	50-99
SB-2140	14¼ x 8 x 10	AC-424, CB-704	$8.90	$8.00	$7.10
SB-2141	13¼ x 7½ x 9	AC-407, CB-1193	7.10	6.40	5.70
SB-2142	17 x 9½ x 11	AC-411, CB-666	11.90	10.70	9.60
SB-2143	15½ x 6 x 9	AC-409, CB-1194	6.80	6.10	5.40

STANDARD PRESTIGE CABINETS

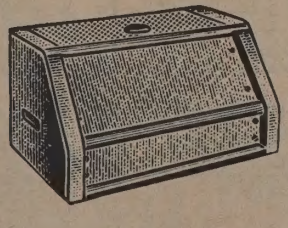


Has two supporting rails, laterally movable to fit any chassis width, and shielded handle slots. Finger holes in cover for easy lifting. Of 16 gauge steel. Takes 19" panels. With embossed feet **Size:** 21⅝" w. x 14¾" d. overall. Gray hammertone finish.

Bud No.	Height, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
C-1440	9 9/16"	7"	26	$36.40	$32.80	$29.10
C-1441	11 5/16"	8¾"	27	38.40	34.60	30.70
C-1442	13 1/16"	10½"	29	40.00	36.00	32.00
C-1550*	9 9/16"	7"	26	39.40	35.50	31.50
C-1551*	11 5/16"	8¾"	27	41.00	36.90	32.80
C-1552*	13 1/16"	10½"	29	43.30	39.00	34.70

*With perforated cover; others solid.

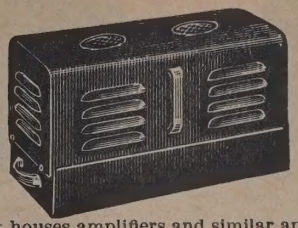
PRESTIGE SLOPING PANEL CABINETS



Ventilated top opens completely. Removable panel trim bar permits installation or removal of panels with chassis attached. Top panel is swept back for easy viewing. Takes standard 19" panels. Shielded lifting handles. Rear opening 2½" x 18" for controls, etc.; panel recess 1¼"; bottom panel 3½" high. **Size:** 22" w. x 9" top depth. Gray hammertone finish only. Weight, 26, 28 and 31 lbs.

Bud No.	Size, In. H. x D.	Slope Height	Net Each, Lots of 1-14	15-24	25-34
C-1555	11⅞ x 14⅜	7"	$43.80	$39.40	$35.00
C-1556	13¼ x 15⅛	8¾"	47.10	42.40	37.70
C-1557	14¾ x 16⅛	10½"	50.50	45.50	40.40

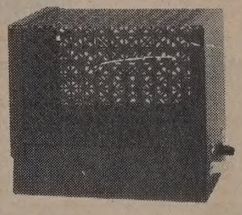
STREAMLINED FOUNDATIONS



Attractive unit houses amplifiers and similar apparatus. Standard chassis with removable top cover with chrome trim. Sides and ends louvered. Handles attached to chassis. Overall height, 9"; chassis 2 5/16" high. Specify black wrinkle (suffix **"B"**), or gray wrinkle (suffix **"G"**).

Bud No.	Size, In. W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-1750	10 1/16 x 5	4¾	$ 9.10	$ 8.20	$ 7.30
CA-1751	12 1/16 x 7	5	10.80	9.70	8.60
CA-1752	17 1/16 x 7	8	11.50	10.40	9.20
CA-1753	17 1/16 x 10	9	12.40	11.20	10.00

STANDARD FOUNDATIONS

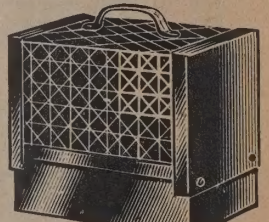


Standard chassis with perforated cover for maximum ventilation. Handles are attached to chassis. Chassis 2½" h., except CA-1128, 3" h. Overall height, 8 5/16", except CA-1128, 8 13/16". Black wrinkle finish only.

Bud No.	Size, Inches W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-699	9⅝ x 5⅛	3	$7.60	$6.80	$6.10
CA-1125	13⅝ x 5⅛	4¾	7.90	7.10	6.30
CA-1126	17⅛ x 7⅛	6	8.90	8.00	7.10
CA-1128	12⅛ x 10⅛	7	9.20	8.30	7.30

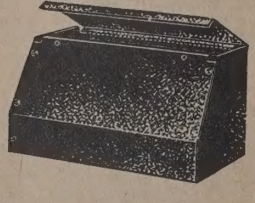
MINIATURE AMPLIFIER FOUNDATION

With the increased use of miniature tubes, smaller cabinets can be used when designing a compact amplifier. This amplifier foundation was designed expressly for this purpose. The chassis is 5" x 7" x 2". Height, 6". The cover is made of perforated metal. A streamlined handle makes this cabinet portable. Black wrinkle only. 1½ lbs.



Bud No.	Net Each, Lots of 1-24	25-49	50-99
CA-1754	$5.40	$4.90	$4.30

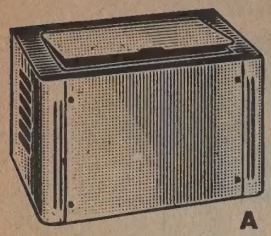
SLOPING PANEL CABINETS



Hinged top for easy access; front panel also removable. Specify black wrinkle (suffix **"B"**) or gray hammertone (suffix **"HG"**).

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
C-1584	6½ x 7 1/16 x 7 5/16	2½	$4.30	$3.80	$3.40
C-1587	8 x 8 1/16 x 8	2¾	5.70	5.10	4.50
C-1585	6½ x 9 1/16 x 7 5/16	3	4.70	4.20	3.70
C-1588	8 x 10 1/16 x 8	3¼	6.30	5.60	5.00
C-1586	6½ x 11 1/16 x 7 5/16	3½	5.40	4.90	4.30
C-1894	8 x 14 1/16 x 8	4	6.70	6.00	5.30
C-1892	8 x 13 1/16 x 8½	5¼	7.40	6.70	5.90
C-1896	9 x 18 1/16 x 8½	7	9.40	8.50	7.50
C-1893	10 x 18 1/16 x 10½	8½	9.80	8.80	7.80

BUD Cabinets, Cases, Boxes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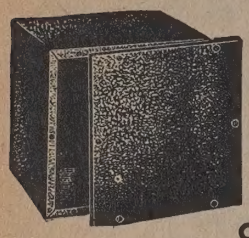
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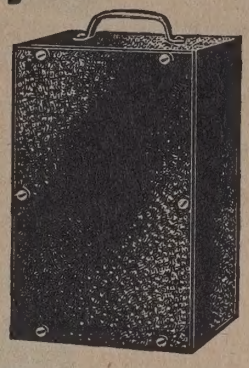
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STREAMLINED CABINETS (Fig. A)

Ideal for housing devices not requiring excessive depth. Recessed, hinged cover with convenient finger lift for access. Panels fit flush with embossed, rounded corner fronts. Recommended for use with Bud Open End Chassis. Back opening 3½" h. provides for cables or rear controls; louvered sides provide ample ventilation. **Size:** 8¼" d. x 8" h., overall. Specify black wrinkle (suffix **"B"**), gray wrinkle (suffix **"G"**) or gray hammertone (suffix **"HG"**) finish.

Bud No.	Width, Overall	Panel Space	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CD-1480	10½"	8" x 8"	5¾	$ 7.60	$ 6.80	$ 6.10
CD-1481	12½"	8" x 10"	6	7.70	6.90	6.10
CD-1482	14½"	8" x 12"	6½	8.20	7.40	6.50
CD-1483	16½"	8" x 14"	7	8.80	7.90	7.00
CD-1484	18½"	8" x 16"	7¾	9.40	8.50	7.50
CD-1485*	20⅝"	12" x 18"	15	19.20	17.30	15.40

*Depth is 12"; has ½" vertical chrome strip at corners.

INSTRUMENT AND RECEIVER CABINETS (Fig. B)

Economy version of the Streamlined Cabinet series. Recessed, hinged cover provides access to contents. Front panel is attached with self-tapping screws. Louvers provide ample ventilation. Bud Open End Chassis are suited for use with these units. Black wrinkle finish only.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
C-973	7 x 8 x 8	5	$ 5.70	$ 5.10	$ 4.50
C-993	7 x 10 x 8	5½	6.50	5.90	5.20
C-994	7 x 12 x 8	5¾	6.70	6.10	5.40
C-995	7 x 14 x 8	6	7.20	6.50	5.70
C-1190	8 x 16 x 8	7	10.20	9.20	8.10
C-975	9 x 15 x 11	8	12.40	11.10	9.90
C-999	12 x 18 x 12	15	13.40	12.10	10.80

METAL UTILITY CABINETS (Fig. C)

Highly useful housing for all types of electronic equipment such as mixers, monitors, frequency meters, etc. Both front and back panels are removable for easy accessibility.

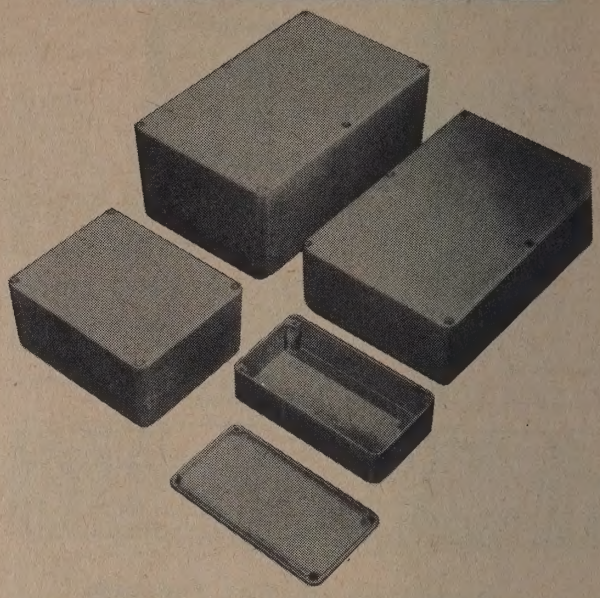
STEEL CABINETS

Specify black wrinkle (suffix **"B"**) or gray hammertone (suffix **"HG"**) finish.

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CU-883	2 x 4 x 4	¾	$1.40	$1.25	$1.10
CU-728	3 x 5 x 4	⅞	1.60	1.45	1.30
CU-729	4 x 5 x 6	1¼	1.80	1.60	1.45
CU-1098	6 x 6 x 6	2½	2.80	2.50	2.20
CU-1099	5 x 6 x 9	3	3.00	2.70	2.40
CU-879	7 x 8 x 10	5	4.30	3.90	3.50
CU-1124	6 x 7 x 12	4	4.20	3.80	3.30
CU-880	8 x 10 x 10	5½	5.20	4.70	4.10
CU-881	8 x 11 x 12	6	5.70	5.10	4.50
CU-882	7 x 9 x 15	7½	5.80	5.20	4.60
NATURAL FINISH ALUMINUM CABINETS*					
AU-1083	2 x 4 x 4	¼	$1.80	$1.60	$1.45
AU-1028	3 x 5 x 4	¼	1.80	1.60	1.45
AU-1029	4 x 5 x 6	½	2.00	1.80	1.60
AU-1039	6 x 6 x 6	¾	2.90	2.60	2.30
AU-1040	5 x 6 x 9	1	3.30	3.00	2.70
GRAY HAMMERTONE ALUMINUM CABINETS*					
AU-1083HG	2 x 4 x 4	¼	$2.00	$1.80	$1.60
AU-1028HG	3 x 5 x 4	¼	2.30	2.00	1.80
AU-1029HG	4 x 5 x 6	½	2.40	2.20	1.90
AU-1039HG	6 x 6 x 6	¾	3.20	2.90	2.50
AU-1040HG	5 x 6 x 9	1	4.00	3.60	3.20

*Aluminum alloy 5005 H-14.

New PRECISION DIE CAST BOXES



For applications requiring a sturdier structure than a sheet metal utility cabinet, Bud now offers this line of die-cast aluminum boxes. The close fitting flanged lids are fastened to bosses in the body by means of screws. This feature together with the thickness of the aluminum alloy combine to provide excellent screening properties. The boxes, cast of LM-380 aluminum, are light in weight and easy to machine. These enclosures are suitable for a number of uses including instrument and meter cases, filter networks, junction boxes, switching, audio and radio frequency distributors plus many other purposes where a small box is called for. Especially desired for concealed or other interior use where safety closure is required.

Bud. No.	Ext. Dim. In. L. x W. x D.	Clear Int. Dim. In. L. x W. x D.	Wt. Lbs.	Net each in lots of 1-24	25-49	50-99
CU-124	4⅜x2⅜x1 1/16	4x2x1	½	$1.40	$1.25	$1.10
CU-234	4 1/16x3 1/16x2 1/16	4 5/16x3 5/16x1 31/32	¾	2.30	2.00	1.80
CU-247	7⅜x4 1/16x2 1/16	7x4 5/16x1 31/32	1¼	3.70	3.30	2.90
CU-347	7⅜x4 1/16x3 1/16	7x4 5/16x2 31/32	1½	4.00	3.60	3.20

CARRYING CASES (Fig. D)

A versatile cabinet that accepts a variety of equipment. Removable front and back panels; handle may be attached to top. Available in sturdy steel or lightweight aluminum to suit your requirements.

STEEL CASES

Specify black wrinkle (suffix **"B"**) or gray hammertone (suffix **"HG"**) finish when ordering.

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CC-1095	5 x 6 x 9	3¼	$4.10	$3.70	$3.30
CC-1091	5 x 9 x 6	3¼	4.10	3.70	3.30
CC-1096	6 x 7 x 12	4	5.70	5.10	4.50
CC-1092	6 x 12 x 7	4	5.70	5.10	4.50
CC-1097	7 x 7¾ x 15	5	6.30	5.70	5.10
CC-1100	8 x 10 x 10	5	6.50	5.90	5.20
CC-1093	7 x 15 x 9	5	7.90	7.10	6.30

NATURAL FINISH ALUMINUM CASES*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
ACC-2095	5 x 6 x 9	1⅛	$4.20	$3.80	$3.30
ACC-2091	5 x 9 x 6	1⅛	4.20	3.80	3.30
ACC-2096	6 x 7 x 12	1⅓	6.30	5.70	5.10
ACC-2092	6 x 12 x 7	1⅓	6.30	5.70	5.10

GRAY HAMMERTONE ALUMINUM CASES*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
ACC-2095HG	5 x 6 x 9	1⅛	$4.80	$4.30	$3.80
ACC-2091HG	5 x 9 x 6	1⅛	4.80	4.30	3.80
ACC-2096HG	6 x 7 x 12	1⅓	7.30	6.50	5.80
ACC-2092HG	6 x 12 x 7	1⅓	7.30	6.50	5.80

*Aluminum alloy 5005 H-14.

Net

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Boxes, Baffles, Cases

MINI BOXES, HANDY BOXES

Design of this box permits installation of more components than would be possible in the conventionally designed boxes the same size. Two-piece construction. **Either snap-lock or screw type.** The flange type construction assures adequate shielding. Made from heavy .040 ga. aluminum. Available in natural aluminum finish and gray hammertone finish.

GRAY HAMMERTONE MINIBOXES

Bud No.	Size, Inches L. x H. x W.	Wt. Lbs.	Net Each, Lots of 1-49	50-99	100-149
CU-2100A	2¾ x 2⅛ x 1⅝	¼	$ .90	$ .80	$ .70
CU-2101A	3¼ x 2⅛ x 1⅝	¼	.90	.80	.70
CU-2102A	4 x 2⅛ x 1⅝	¼	1.00	.90	.80
CU-2103A	4 x 2¼ x 2¼	¼	1.10	1.00	.90
CU-2104A	5 x 2¼ x 2¼	¼	1.20	1.10	.95
CU-2105A	5 x 4 x 3	½	1.50	1.35	1.20
CU-2106A	5¼ x 3 x 2⅛	¼	1.30	1.15	1.05
CU-2107A	6 x 5 x 4	¾	1.90	1.70	1.50
CU-2108A*	7 x 5 x 3	¾	2.20	2.00	1.70
CU-2109A*	8 x 6 x 3½	1	2.80	2.60	2.30
CU-2110A*	10 x 6 x 3½	1¼	3.10	2.80	2.50
CU-2111A*	12 x 7 x 4	1¾	4.20	3.80	3.30
CU-2112A*	17 x 5 x 4	2¼	4.20	3.80	3.30
CU-2113A*	10 x 2 x 1⅝	½	1.60	1.45	1.30
CU-2114A*	12 x 2½ x 2¼	¾	2.10	1.90	1.70
CU-2115A	4 x 2 x 2¾	¼	1.10	1.00	.90
CU-2116A	4¼ x 2¼ x 1½	¼	1.10	1.00	.90
CU-2117A	3¼ x 2⅛ x 1⅛	¼	1.10	1.00	.90

*.050″ aluminum.

NATURAL FINISH MINIBOXES

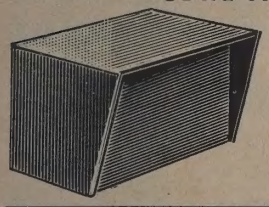
CU-3000A	2¾ x 2⅛ x 1⅝	¼	$ .80	$ .70	$ .65
CU-3001A	3¼ x 2⅛ x 1⅝	¼	.80	.70	.65
CU-3002A	4 x 2⅛ x 1⅝	¼	.80	.70	.65
CU-3003A	4 x 2¼ x 2¼	¼	1.10	1.00	.90
CU-3004A	5 x 2¼ x 2¼	¼	1.10	1.00	.90
CU-3005A	5 x 4 x 3	½	1.10	1.00	.90
CU-3006A	5¼ x 3 x 2⅛	¼	1.10	1.00	.90
CU-3007A	6 x 5 x 4	¾	1.40	1.25	1.10
CU-3008A	7 x 5 x 3	¾	1.80	1.60	1.45
CU-3009A	8 x 6 x 3½	1	2.30	2.10	1.90
CU-3010A	10 x 6 x 3½	1¼	2.50	2.30	2.00
CU-3011A	12 x 7 x 4	1¾	3.50	3.20	2.80
CU-3012A	17 x 5 x 4	2¼	3.50	3.20	2.80
CU-3013A	10 x 2 x 1⅝	½	1.30	1.15	1.05
CU-3014A	12 x 2½ x 2¼	¾	1.80	1.60	1.45
CU-3015A	4 x 2 x 2¾	¼	1.00	.90	.80
CU-3016A	4¼ x 2¼ x 1½	¼	1.00	.90	.80
CU-3017A	3¼ x 2⅛ x 1⅛	¼	.80	.70	.65

HANDY BOXES

Similar to Miniboxes in design and construction, except made of 22 gauge steel. Black wrinkle finish only. Screw type only.

HB-1621	4¼ x 2¼ x 1½	½	$1.70	$1.50	$1.35
HB-1622	4 x 2 x 2¾	½	1.70	1.50	1.35

COWL-TYPE MINIBOXES



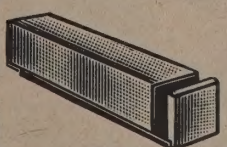
The cowl-type Minibox has a projecting cover to reduce glare on the panel from overhead lighting. It also provides protection for controls and dials. Cover has two box braces to which bottom is attached with sheet metal screws. When assembled, this type of construction results in a sturdy, rigid housing. Constructed of .040″ aluminum and available in natural or light hammertone gray finish.

Bud No.	Overall Size, Inches H.	W.	D.	Net Each, Lots of 1-49	50-99	100 & Over
SC-2130*	6	10	7	$7.30	$6.60	$5.90
SC-2131*	7	12	8	8.00	7.20	6.40
SC-2132*	3	8	5	4.30	3.80	3.40
SC-2133*	5	5	5	4.30	3.90	3.50
SC-3030†	6	10	7	5.30	4.80	4.30
SC-3031†	7	12	8	5.80	5.20	4.60
SC-3032†	3	8	5	3.00	2.70	2.40
SC-3033†	5	5	5	3.20	2.90	2.50

*Painted light gray hammertone. †Natural aluminum finish.

MINISLIDES

Ideal for housing components or assemblies where easy access to internally mounted parts is important. Can be mounted in a number of positions in a rack or cabinet. Accessibility achieved by removing sliding cover. Design of Minislide Box provides adequate shielding and protection from dust. Sturdily made of .050 aluminum. 4 self-tapping fastening screws included. Choice of gray hammertone (**GH**) or natural aluminum (**NA**).



Bud No.	Finish	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
MS-2150	(GH)	3⅛ x 13 x 2⅝	1	$4.70	$4.20	$3.70
MS-2151	(GH)	5⅛ x 13 x 2⅝	1½	5.30	4.80	4.30
MS-2152	(GH)	3⅛ x 17 x 2⅝	1¼	5.20	4.70	4.10
MS-3050	(NA)	3⅛ x 13 x 2⅝	1	3.50	3.20	2.80
MS-3051	(NA)	5⅛ x 13 x 2⅝	1½	4.30	3.80	3.40
MS-3052	(NA)	3⅛ x 17 x 2⅝	1¼	4.10	3.70	3.30

UNIVERSAL METER CASES

Center hole punched for 2″ meters, plus easily removed knock-out ring to provide fit for 3″ meters. Single piece detachable back and sides fastened to case with self-tapping screws for easy installation and servicing. Two ⅜″ knock-out holes in top provide for installation of feed-through insulators, switches, volume controls, etc. Gray hammertone finish only. **Size:** 4¼″ h. x 4″ w. x 4″ d.

Bud No.	Construction	Weight, Lbs.	Net Each, Lots of 1-49	50-99	100-149
CM-1935	Steel	1	$1.70	$1.50	$1.35
CMA-1936	Aluminum	¾	1.90	1.70	1.50

WIDE UNIVERSAL METER CASE

Same as above, except extra wide to permit installation of small components along with a meter or accommodate a 4″ meter. Made of 5005 H-14 aluminum. **Size:** 4¼″ h. x 6″ w. x 4″ d.

CMA-1930	Aluminum	¾	$3.30	$2.90	$2.60

HEAT RADIATING PLATE AND GRID TUBE CONNECTORS

Fit all sizes of industrial and transmitting vacuum tubes. Dual purpose design permits use in making connections to plate or grid terminals, plus provide large heat radiating surface for heat dissipation from glass seal and tube element. Eight sizes fit all grid and plate leads; provide sufficient heat radiation for any tube in 50–2000 watt range. Machined from special aluminum rods. Edges rounded to minimize corona.

Bud No. TC-	Lead Hole	For Tube Types	Size L. x O.D.	Net 1-24
488	.052″	3C24, 24, 24G, 25T, 27	.900″ x .615″	$1.10
487	.062″	UH50, HK24, 304B, 829B, 832A, 834	.900″ x .615″	1.10
489	.072″	35T, 35GB, 75TH, HK-257B, HK254, 484, 8001, 4E27	.900″ x .615″	1.10
1924	.125″	HK57, 152TH	1.0″ x .738″	1.30
1920	.375″	4-125A, 150TH, 2-150D, 240R, 250TH, 250TL, 420A, 802, 803, 804, 807, 808 grid, 814, 815, 828, 2E24, 2E26, 3E22, 4-65A, 4-250A, 816, 6146, 1625, 4D32, 807W, 1B3GT, 6BG6G, 6CD6G	1.0″ x .738″	1.10
1925	.125″	304TH, 304TL	1.0″ x .924″	1.30
1921	.570″	ZB60, HF60, HF100, 111H, 211H, 230H, HF175, HF300 grid, 100R, HK375C, 450TH, 454, 750TH, 805, 806, 808, 809, 810, 811, 812, 813, 828, 833, 866, 854, 1500T, 2000T, 1054, 5331, 5332, 8000, 8003, 2005	1.0″ x .924″	1.30
1926	.810″	WL468, WL463, WL460, HF200, HF201, MF300	1.0″ x 1.115″	1.70

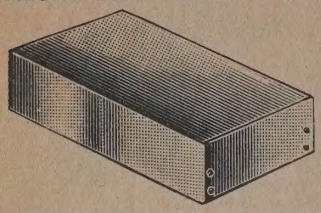
RACK SHELVES

Sturdily constructed of heavy-gauge steel. Have 1″ flange to add rigidity and strength. Rest on chassis supporting angles. Available in black enamel finish only.

Bud No.	Size, Inches W. x D.	Weight, Lbs.	Net Each, Lots of 1-24	25-49	50-99
CB-1976	19 x 15	6½	$4.50	$4.10	$3.60
CB-1977	19 x 12	5½	3.60	3.20	2.90

Chassis and Accessories

ALUMINUM CHASSIS BASES



Each chassis is made from a single sheet of aluminum. All bases are welded on the latest type of welders by experienced operators. All corners are reinforced. Natural finish aluminum alloy 5005 H14. All four sides are folded at bottom for extra strength and rigidity. Now 63 sizes.

Bud No.	Width, In.	Lgth., In.	Ht., In.	Gauge	Net Each, Lots of 1-24	25-49	50-99
AC-1401*	2½	4½	1	18	$1.30	$1.15	$1.05
AC-1402*	3½	4½	1	18	1.30	1.15	1.05
AC-1403*	3½	5½	1	18	1.30	1.15	1.05
AC-1404*	4	5	2	18	1.60	1.45	1.30
AC-1405*	4	6	1½	18	1.40	1.25	1.10
AC-430	4	6	3	18	1.80	1.60	1.40
AC-431	4	6	2	18	1.60	1.40	1.30
AC-1406*	4	8	2	18	1.80	1.60	1.45
AC-432	4	17	3	16	3.10	2.80	2.50
AC-1407*	4½	8	1½	18	1.60	1.45	1.30
AC-402	5	7	2	18	1.70	1.50	1.35
AC-429	5	7	3	18	1.90	1.70	1.50
AC-1408*	5	9	1½	18	1.60	1.45	1.30
AC-1409*	5	9½	1½	18	1.70	1.50	1.35
AC-403	5	9½	2	18	1.80	1.70	1.50
AC-401	5	9½	2½	18	2.10	1.90	1.70
AC-421	5	9½	3	18	2.20	2.00	1.70
AC-404	5	10	3	18	2.20	2.00	1.70
AC-422	5	13	3	18	2.50	2.30	2.00
AC-1410*	5	13½	2½	18	2.10	1.90	1.70
AC-1411*	5½	5½	1	18	1.50	1.35	1.20
AC-1412*	5½	9½	1½	18	1.70	1.50	1.35
AC-1413*	6	8	2	18	1.80	1.60	1.45
AC-1414*	6	14	3	16	3.30	2.90	2.60
AC-433	6	17	3	16	3.70	3.30	2.90
AC-405	7	7	2	18	1.80	1.65	1.45
AC-406	7	9	2	18	1.90	1.70	1.50
AC-407	7	11	2	18	2.20	2.00	1.70
AC-408	7	12	3	18	2.70	2.40	2.10
AC-409	7	13	2	18	2.30	2.00	1.80
AC-1415*	7	15	2	16	2.90	2.60	2.30
AC-411	7	15	3	16	3.70	3.30	2.90
AC-1416*	7	17	2	16	3.30	3.00	2.70
AC-1417*	7	17	2½	16	3.40	3.10	2.70
AC-423	7	17	3	16	3.70	3.30	2.90
AC-1418*	8	10	2½	18	2.80	2.50	2.20
AC-1419*	8	12	2½	16	3.30	2.90	2.60
AC-424	8	12	3	16	3.20	2.90	2.50
AC-425	8	17	2	16	3.30	3.00	2.70
AC-412	8	17	3	16	3.80	3.40	3.00
AC-1420*	8½	15	3	16	3.50	3.20	2.80
AC-1421*	9	15	3	16	4.00	3.60	3.20
AC-413	10	12	3	16	3.80	3.40	3.00
AC-414	10	14	3	16	3.80	3.40	3.00
AC-415	10	17	2	16	3.70	3.30	2.90
AC-416	10	17	3	16	4.30	3.80	3.40
AC-427	10	17	4	14	6.00	5.40	4.80
AC-1422*	10	17	5	16	8.70	7.80	6.90
AC-1423*	10	23	3	14	6.30	5.60	5.00
AC-426	11	17	2	14	4.60	4.10	3.70
AC-417	11	17	3	14	5.30	4.80	4.25
AC-1424*	12	12	3	16	3.80	3.50	3.10
AC-1425*	12	17	2	16	4.80	4.40	3.90
AC-418	12	17	3	14	5.40	4.90	4.30
AC-419	13	17	2	14	4.80	4.30	3.80
AC-420	13	17	3	14	5.70	5.10	4.50
AC-428	13	17	4	14	7.00	6.30	5.60
AC-1426*	13	17	5	14	9.50	8.60	7.60
AC-1427*	14	17	3	14	6.80	6.10	5.40
AC-1428*	15	17	4	14	9.50	8.60	7.60
AC-1429*	15	17	6	14	13.00	11.70	10.40
AC-1430*	17	17	3	14	8.00	7.20	6.40
AC-1431*	17	17	4	14	11.30	10.10	9.00

*Denotes new size

CHASSIS MOUNTING BRACKETS

Mounts chassis to panels, essential when panel supports entire chassis weight. Heavy gauge steel 6½" high, cut away at bottom to mount flush to panel. Black enamel finish.

Bud No.	Depth, In.	Net Per Pair, Lots of 1-49	50-99	100-149
MB-458	8	$1.60	$1.40	$1.30
MB-448	10	1.60	1.40	1.30
MB-459	11	1.80	1.70	1.50
MB-449	12	2.10	1.90	1.70
MB-460	13	2.00	1.80	1.60
MB-450*	10	2.30	2.10	1.90
MB-451*	13	2.50	2.30	2.00

*8½" high for chassis height of 4".

TRIANGULAR MOUNTING BRACKETS

Ideal for rigid support of shelves to take heavy loads. Heavy gauge steel with ¾" flange. Black enamel finish only.

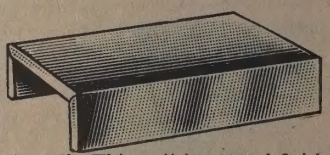
Bud No.	Height, In.	Depth, In.	Wt., Lbs.	Net Per Pair, Lots of 1-49	50-99	100-149
MB-1266	5	5	1	$1.30	$1.15	$1.05
MB-1267	7	7	1	1.40	1.25	1.10
MB-1268	9	9	1½	1.80	1.60	1.45

ALUMINUM BOTTOM PLATES

42 sizes to fit all Bud chassis. Made of 5005 H14 aluminum alloy. Natural finish. Plates have four embossed feet to prevent damage to surface on which they rest. Fit snuggly on bottom of chassis.

Bud No.	Fits Chassis Width In.	Length In.	1-49	50-99	100-149
BPA-1501*	2½	4½	$ .70	$ .65	$ .55
BPA-1502*	3½	4½	.80	.70	.65
BPA-1503*	3½	5½	.80	.70	.65
BPA-1504*	4	5	.80	.70	.65
BPA-1505*	4	6	.80	.70	.65
BPA-1506*	4	8	1.00	.90	.80
BPA-1532*	4	17	1.00	.90	.80
BPA-1507*	4½	8	1.10	1.00	.90
BPA-1589	5	7	.90	.80	.70
BPA-1508*	5	9	.90	.80	.70
BPA-1590	5	9½	.90	.80	.70
BPA-1591	5	10	.90	.80	.70
BPA-1509*	5	13	1.40	1.25	1.10
BPA-1510*	5	13½	1.40	1.25	1.10
BPA-1511*	5½	5½	.90	.80	.70
BPA-1512*	5½	9½	1.00	.90	.80
BPA-1513*	6	8	1.10	1.00	.90
BPA-1514*	6	14	1.40	1.25	1.10
BPA-1515*	6	17	1.80	1.60	1.45
BPA-1592	7	7	.90	.80	.70
BPA-1593	7	9	1.00	.90	.80
BPA-1594	7	11	1.10	1.00	.90
BPA-1595	7	12	1.30	1.15	1.05
BPA-1596	7	13	1.40	1.25	1.10
BPA-1516*	7	15	1.60	1.45	1.30
BPA-1517*	7	17	1.60	1.45	1.30
BPA-1518*	8	10	1.50	1.35	1.20
BPA-1519*	8	12	1.80	1.60	1.45
BPA-1520*	8	17	1.90	1.70	1.50
BPA-1521*	8½	15	2.20	2.00	1.70
BPA-1522*	9	15	2.30	2.00	1.80
BPA-1523*	10	12	1.80	1.60	1.45
BPA-1524*	10	14	1.80	1.60	1.45
BPA-1597	10	17	1.80	1.60	1.45
BPA-1525*	10	23	2.70	2.40	2.10
BPA-1526*	11	17	2.00	1.80	1.60
BPA-1527*	12	12	2.00	1.80	1.60
BPA-1528*	12	17	2.40	2.20	1.90
BPA-1598	13	17	2.60	2.30	2.10
BPA-1529*	14	17	2.60	2.30	2.10
BPA-1530*	15	17	3.50	3.20	2.80
BPA-1531*	17	17	3.60	3.20	2.90

OPEN-END CHASSIS



Primarily intended to be used with the various sizes and styles of Bud metal cabinets, these chassis are ideal for any type of small built-up unit such as a record amplifier, code oscillator, etc. U-shaped construction is used with ends folded over ⅜" for additional strength. This unit is natural finish aluminum alloy 5005 H-14.

Bud No.	Size, Inches D. x W. x H.	Fits Cabinet Number	Net Each, Lots of 1-24	25-49	50-99
CB-38	7 x 6 x 2	C-1584	$1.30	$1.20	$1.10
CB-30	5 x 7 x 1½	.....	1.30	1.20	1.10
CB-41	7 x 7 x 1½	C-973	1.60	1.40	1.30
CB-39	7 x 8 x 2	C-1585	1.60	1.40	1.30
CB-996	5½ x 9 x 1½	C-993	1.50	1.35	1.20
CB-976	7½ x 9 x 1½	C-999, CD-1481	1.80	1.70	1.50
CB-40	7 x 10 x 2	C-1586	1.80	1.60	1.40
CB-997	7 x 11 x 1½	C-994, CD-1482	1.80	1.60	1.45
CB-998	7 x 13 x 1½	C-995, CD-1483	2.20	2.00	1.70

MINIATURE ALUMINUM CHASSIS

Small versions of above with ¼" flange on bottom for bottom plate or fastening. Ideal for limited space uses. Natural finish.

CB-1623	2⅜ x 2¾ x 1¼	.....	$.50	$.45	$.40
CB-1624	1¾ x 3⅛ x 1	CU-883	.60	.55	.50
CB-1625	3¼ x 4½ x 2	C-1788	.70	.65	.55
CB-1626	2¾ x 4⅛ x 1	CU-728	.70	.65	.55
CB-1627	3¾ x 4⅛ x 1½	CU-729	.70	.65	.55
CB-1628	3 x 6⅛ x 1¼	C-1788	.80	.70	.65
CB-1629	5¾ x 4⅛ x 1½	CU-1098	.80	.70	.65
CB-1617	4 x 3⅛ x 1	C-1606, C-1610	.60	.55	.50
CB-1618	4 x 4⅛ x 1	C-1607, C-1611	.70	.65	.55
CB-1619	4 x 5⅛ x 1	C-1608, C-1612	.80	.70	.65
CB-1620	4 x 6⅛ x 1	C-1609, C-1613	.80	.70	.65

Net

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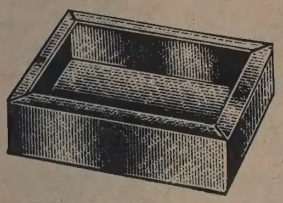
Chassis and Accessories

STEEL CHASSIS BASES



Chassis are fabricated from a single sheet of steel. 20 gauge is used unless otherwise indicated. All four sides are folded at bottom for additional rigidity and strength. Available in zinc plate or black wrinkle finish.

Size, Inches D. x W. x H.	Zinc Plated Finish Bud CB-	Net Each, Lots of 1-24	25-49	50-99	Black Wrinkle Finish Bud CB-	Net Each, Lots of 1-24	25-49	50-99
5½ x 5½ x 1	101*	$1.80	$1.70	$1.50	.....	.....	.....	.....
5 x 7 x 2	629*	1.80	1.60	1.45	628*	$1.40	$1.25	$1.10
4½ x 8 x 1½	102*	2.00	1.80	1.60	.....	.....	.....	.....
5 x 9 x 1½	103*	1.80	1.70	1.50	.....	.....	.....	.....
5 x 9½ x 2½	645*	2.30	2.00	1.80	644*	1.80	1.60	1.45
5 x 9½ x 1½	776*	2.30	2.00	1.80	788*	1.60	1.45	1.30
5 x 10 x 3	605*	2.40	2.20	1.90	604*	1.80	1.60	1.45
5 x 13 x 3	105	2.90	2.60	2.30	.....	.....	.....	.....
6 x 8 x 2	104	2.00	1.80	1.60	.....	.....	.....	.....
6 x 14 x 3	756	2.80	2.50	2.20	755	2.30	2.10	1.90
7 x 7 x 2	1191	2.10	1.90	1.70	789	1.80	1.60	1.45
7 x 9 x 2	1192	2.10	1.90	1.70	790	1.80	1.60	1.45
7 x 11 x 2	1193	2.30	2.10	1.90	791	1.90	1.70	1.50
7 x 12 x 3	793	2.80	2.60	2.30	792	2.10	1.90	1.70
7 x 13 x 2	1194	2.50	2.30	2.00	646	2.00	1.80	1.60
5 x 13½ x 2½	1198	2.90	2.60	2.30	647	2.30	2.10	1.90
7 x 15 x 3	1189	3.30	2.90	2.60	649	2.70	2.40	2.10
8½ x 15 x 3	666	3.70	3.30	2.90	665	2.90	2.60	2.30
4 x 17 x 3	1066	2.80	2.60	2.30	1068	2.40	2.20	1.90
7 x 17 x 2½	1199	3.10	2.80	2.50	648	2.70	2.40	2.10
7 x 17 x 3	758	3.40	3.10	2.70	757	2.90	2.60	2.30
8 x 10 x 2½	702	2.70	2.40	2.10	701	2.30	2.00	1.80
8 x 12 x 2½	704	2.90	2.60	2.30	703	2.30	2.10	1.90
8 x 12 x 3	760	3.10	2.80	2.50	759	2.40	2.20	1.90
8 x 17 x 2	774	3.10	2.80	2.50	650	2.30	2.05	1.85
8 x 17 x 3	775	3.40	3.10	2.70	651†	2.80	2.50	2.20
10 x 12 x 3	1195	3.20	2.90	2.50	652	2.50	2.30	2.00
12 x 12 x 3	106	4.20	3.80	3.30	.....	2.80	2.50	2.20
10 x 14 x 3	779	3.20	2.90	2.50	653	.....	.....	.....
10 x 17 x 2	769	3.20	2.90	2.50	654†	2.70	2.40	2.10
10 x 17 x 3	637	3.80	3.40	3.00	636†	2.70	2.40	2.10
10 x 17 x 3	1196‡	4.00	3.60	3.20	655†‡	3.30	3.00	2.70
10 x 23 x 3	1197‡	4.60	4.10	3.70	656‡	3.90	3.50	3.10
11 x 17 x 2	770‡	3.80	3.40	3.00	657†‡	3.10	2.80	2.50
11 x 17 x 3	771‡	4.70	4.20	3.70	658†‡	3.70	3.30	2.90
12 x 17 x 2	661‡	4.10	3.70	3.30	663†‡	3.40	3.10	2.70
12 x 17 x 3	662‡	4.80	4.40	3.90	664†‡	3.80	3.50	3.10
13 x 17 x 2	772‡	1.30	1.15	1.05	659†‡	3.80	3.50	3.10
13 x 17 x 3	773‡	1.70	1.50	1.45	660†‡	4.50	4.10	3.60
10 x 17 x 4	641‡	4.80	4.30	3.80	640†‡	4.30	3.80	3.40
13 x 17 x 4	643‡	6.30	5.60	5.00	642†‡	5.30	4.70	4.20
10 x 17 x 5	624‡	7.10	6.40	5.70	623‡	6.00	5.40	4.80
13 x 17 x 5	626‡	7.80	7.10	6.30	625‡	6.60	5.90	5.30

*22 gauge. †Punched to accommodate chassis mounting brackets. ‡18 gauge.

STEEL CHASSIS BOTTOM PLATES

Protect wiring and keep out dust from chassis bottom. Four embossed feet. Two finishes to match chassis finish.

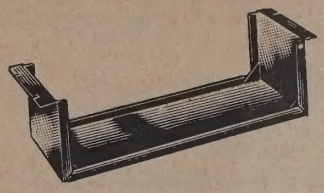
Fits Chassis Size, In. W. x L.	Zinc Plated Finish Bud BP-	Net Each, Lots of 1-49	50-99	100-149	Black Wrinkle Finish Bud BP-	Net Each, Lots of 1-49	50-99	100-149
5 x 7	706	$ .80	$ .80	$ .65	705	$ .80	$ .70	$ .65
5 x 9½	667	.90	.80	.70	680	.80	.70	.65
5 x 10	538	1.00	.90	.80	536	.90	.80	.70
7 x 7	668	1.30	1.15	1.05	681	1.30	1.15	1.05
7 x 9	669	1.30	1.15	1.05	682	1.30	1.15	1.05
7 x 11	670	1.30	1.15	1.05	683	1.30	1.15	1.05
7 x 12	539	1.60	1.40	1.30	537	1.40	1.25	1.10
7 x 13	671	1.50	1.35	1.20	684	1.30	1.15	1.05
5 x 13½	672	1.30	1.15	1.05	685	1.00	.90	.80
4 x 17	1067	1.50	1.35	1.20	1069	1.10	1.00	.90
7 x 17	673	1.70	1.50	1.35	686	1.10	1.00	.90
8 x 10	708	1.30	1.15	1.05	707	1.10	1.00	.90
8 x 12	710	1.60	1.45	1.30	709	1.30	1.15	1.05
8 x 17	674	1.80	1.60	1.45	687	1.30	1.15	1.05
10 x 12	675	1.90	1.70	1.50	688	1.30	1.15	1.05
10 x 14	514	1.80	1.70	1.50	517	1.80	1.60	1.40
10 x 17	676	1.90	1.70	1.50	689	1.50	1.35	1.20
11 x 17	677	1.90	1.70	1.50	690	1.60	1.45	1.30
12 x 17	678	2.30	2.10	1.90	691	1.80	1.60	1.45
13 x 17	679	2.70	2.40	2.10	692	1.80	1.60	1.45

HEAVY DUTY CHASSIS

Complete with 20 ga. bottom plate for uses requiring extra strength to hold heavy weights. Made of 16 ga. steel; 17" wide.

Size, In. D. x H.	Zinc Plated Finish Bud CB-	Net Each, Lots of 1-24	25-49	50-99	Black Wrinkle Finish Bud CB-	Net Each, Lots of 1-24	25-49	50-99
8 x 3	1765	$5.80	$5.30	$4.70	1758	$5.30	$4.70	$4.20
11 x 3	1767	6.00	5.40	4.80	1760	5.30	4.80	4.30
13 x 2	1768	6.50	5.90	5.20	1761	6.00	5.40	4.80
13 x 3	1769	6.60	5.90	5.30	1762	6.10	5.50	4.90
13 x 4	1770	7.20	6.50	5.70	1763	6.50	5.90	5.20

PANEL CHASSIS



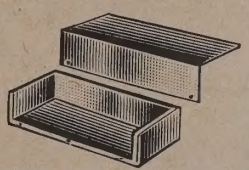
Panel mounting chassis for vertical installation where depth is limited or front service is desired. Made of .062" aluminum alloy 5005 H-14 in natural finish. Front flange has standard notching. Fits standard 19" panel space.

Bud No.	Height, Inches	Weight, Lbs.	Net Each, Lots of 1-24	25-49	50-99
CB-1370	1¾	¾	$3.00	$2.70	$2.40
CB-1371	3½	1¼	3.30	3.00	2.70
CB-1372	5¼	1½	3.80	3.40	3.00
CB-1373	7	2	4.30	3.80	3.40
CB-1374	8¾	2¼	5.10	4.60	4.10
CB-1375	10½	2¾	5.90	5.30	4.70
CB-1376	12¼	3	6.60	5.90	5.30
CB-1377	14	3¼	7.20	6.50	5.70

CHASSIS SUPPORTING ANGLES

Distribute weight to sides of the rack to relieve the panel. Angles are 3" x 1⅜" x 7/64" steel. Black enamel finish. **No. CE-2219** designed for attachment to rails of Console Pedestal or Prestige Relay Racks. Slotted for infinite vertical adjustment; extend to full cabinet depth; 21" x 3" x 2¾".

Bud No.	Length, Inches	Weight, Lbs.	Net Per Pair, Lots of 1-24	25-49	50-99
SA-1349	14½	4	$2.90	$2.60	$2.30
SA-1350	12	3	2.90	2.60	2.30
CE-2219	21	7½	3.70	3.30	2.90



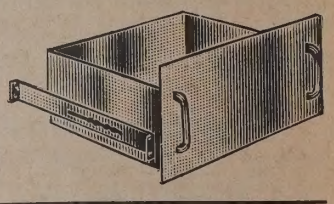
CONVERTA-BOXES

Versatile enclosure combines welded base and two-sided cover. Components or controls are easily mounted to any surface of the unit. All contents easily accessible. Cover and base are fastened by self-tapping screws. Rigid 20 ga. cadmium-plated steel.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CU-341	1½ x 4 x 3	½	$2.40	$2.20	$1.90
CU-452	2 x 5 x 4	1	2.30	2.10	1.90
CU-482	2 x 8 x 4	1¼	2.50	2.30	2.00
CU-592	2½ x 9½ x 5	1¾	2.70	2.40	2.10
CU-622	2½ x 12 x 6	2¾	2.90	2.60	2.30
CU-712	2½ x 15 x 7	3½	3.90	3.50	3.10

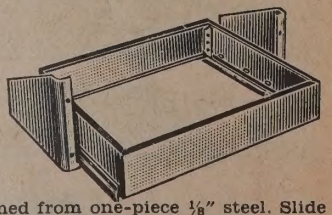
DRAWER WITH ADJUSTABLE SLIDES

Fits any cabinet or cabinet rack with 19" panel space. Slide bracket adjustable 16⅜" to 22⅞" to fit any cabinet with depth 17" to 23". Fastens by bracket to panel mounting rail in front and rear of cabinet. Nylon rollers for smooth movement. Hardware supplied. Specify color when ordering: Add suffix **HG** for gray hammertone; **B** for black wrinkle; or **G** for gray wrinkle.



Bud No.	Inside Size, Inches	Wt., Lbs.	Net Each, Lots of 1-9	15-24	15-19
D-1721	16⅜ x 6⅜ x 16¼	19½	$50.10	$45.10	$40.10

SLIDING DRAWER ASSEMBLY



Ideal for use as a record player mounting base, typewriter base, apparatus and instrument base, writing desk, etc. Installs quickly and simply in any standard rack. Can't fall out or tilt. Provides a completely safe mounting base for anything put on it. Ball bearing suspension for easy sliding. Chassis formed from one-piece 14 gauge aluminum; electro-welded. Support brackets formed from one-piece ⅛" steel. Slide rail fastens securely to chassis, slides in and out easily on channeled ball bearings. Stop screw on slide rail prevents drawer from falling out of channel. Support brackets and channel finished in grey enamel; chassis, slide and plate finished in light gray hammertone. Will support up to 50 lbs. Chassis Size: 16¾" x 14" x 3", with ½" flange top and bottom. *Fastens to top or bottom.

Bud No.	Description	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
SD-1717	Sliding drawer	5	$14.70	$13.20	$11.80
TP-1718	Drawer plate*	1½	3.60	3.20	2.90

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Cabinet Hardware

BUD HANDLES

Fabricated from steel, brass or cast aluminum. Durable finish provides long wear and attractive appearance. Skin packed in pairs or bulk packed (priced singly) with all necessary mounting hardware. Designed for rugged applications, they have unlimited use in electronic, electrical and other fields.

Bud No.	Fig.	Description	Net Per Pair, Lots of 1-49	50-99	100-149	Bulk Pack*: Net Each, Lots of 1-99	100-199	200-499
H-9100	A	1″ x ¼″ chrome-plated solid brass; 4″ x ½″ mtg. cntrs.; 1″ hand clearance; four ½″ x 6-32 threaded screws	$6.80	$6.10	$5.40	$2.90	$2.60	$2.30
H-9101	A	Same, but 8″ x ½″ mtg. centers	10.40	9.30	8.30	4.80	4.30	3.80
H-9102	A	⅜″ x ¼″ chrome-plated solid brass; 4″ mtg. centers; 1″ hand clearance; two ½″ x 6-32 threaded screws	5.30	4.80	4.30	2.60	2.30	2.10
H-9103	A	Same, but has 6″ mounting centers	6.20	5.60	4.90	2.90	2.60	2.30
H-9110	B	⅜″ steel rod angular formed, chrome-plated; 6″ mtg. ctrs.; 1¼″ hand clearance; two ½″ x 10-32 screws	4.60	4.10	3.70	1.80	1.60	1.45
H-9111	B	⅜″ steel rod, chrome plated, 4″ mtg. ctrs.; 1″ hand clearance; two ½″ x 10-32 threaded screws	2.40	2.20	1.90	1.20	1.10	.95
H-9112	B	6″ mtg. center version of H-9111	2.80	2.60	2.30	1.30	1.15	1.05
H-9113	B	8″ mtg. center version of H-9111	3.10	2.80	2.50	1.30	1.15	1.05
H-9114	B	½″ steel rod, chrome-plated; 8″ mtg. centers; 1½″ hand clearance; two ½″ x ¼-28 thd. screws	5.10	4.60	4.10	2.00	1.80	1.60
H-9115	C	⅜″ steel rod, chrome-plated; 4″ mtg. ctrs.; 15/16″ hand clearance; two ¼-28 thd. nuts	3.80	3.50	3.10	1.60	1.45	1.30
H-9116	C	Same, but has 6″ mtg. centers	4.30	3.90	3.50	1.80	1.60	1.45
H-9120	D	Silver-anodized die-cast aluminum; 4⅜″ inside, 5⅜″ outside mtg. centers; 1″ hand clearance; four ½″ x 6-32 threaded screws	6.00	5.40	4.80	2.80	2.50	2.20
H-9121	D	Same, except chrome plated alloy	7.40	6.70	5.90	3.50	3.20	2.80
H-9123	D	Similar to H-9120 but 4½″ mtg. centers; 1″ hand clearance; two ½″ x 10-32 thd. screws	3.90	3.50	3.10	1.80	1.60	1.45
H-9122	E	Silver-anodized die-cast aluminum; hinged on ¼″ steel pins with 2 hinge blocks; 6½″ inside, 7¼″ outside mtg. centers; 1½″ hand clearance; four ⅜″ x 10-32 threaded screws	10.10	9.10	8.10	4.80	4.30	3.80
H-9130	F	Silver-anodized die-cast aluminum; 3″ mtg. centers; two ⅜″ x 10-32 thd. screws; size 4 15/16″ x 3″	8.30	7.40	6.60	4.00	3.60	3.20
H-9131	G	Silver-anodized die-cast aluminum; size, 4″ x 2⅞″; 2¼″ mtg. centers; two ¾″ x ¼-28 thd. raised, counter-sunk screws and nuts	5.80	5.30	4.70	2.80	2.50	2.20
H-9140	H	Silver-anodized die-cast aluminum; 3½″ mtg. centers; ¾″ hand clearance; two ½″ x 10-32 threaded screws	3.50	3.20	2.80	1.60	1.45	1.30
H-9150	I	Silver-anodized die-cast aluminum; 4″ x ⅝″ mtg. centers; 1¼″ hand clearance; four ½″ x 10-32 threaded screws	4.90	4.40	3.90	2.30	2.10	1.90
H-9151	J	Silver-anodized die-cast aluminum; 5 5/16″ x ⅝″ mtg. centers; 1⅜″ hand clearance; four ½″ x 10-32 threaded screws	8.00	7.20	6.40	3.70	3.30	2.90
H-9152	J	Similar to above except 3⅞″ mtg. centers; 1⅛″ hand clearance; two ½″ x 10-32 threaded screws	6.50	5.90	5.20	3.00	2.70	2.40
H-9160	K	Chrome-plated ⅜″ steel rod; 3½″ mtg. centers; 1 11/16″ hand clearance; two ¼″-28 hex nuts	4.30	3.80	3.40	1.80	1.60	1.45
H-9161	K	Same, but with 5¼″ mounting centers	4.80	4.30	3.80	1.80	1.60	1.45
H-9162	K	Same, but with 7″ mounting centers	4.90	4.40	3.90	1.90	1.70	1.50
H-9163	K	Same, but with 8¾″ mounting centers	5.10	4.60	4.10	2.00	1.80	1.60
H-9164	K	Same, but with 10½″ mounting centers	5.80	5.20	4.60	2.10	1.90	1.70
H-9165	K	Same, but with 12¼″ mounting centers	6.30	5.60	5.00	2.30	2.10	1.90
H-9166	L	Chrome-plated ¼″ brass rod; 1 29/32″ mtg. centers; 1″ hand clearance; two ½″ x 6-32 thd. screws	2.00	1.80	1.60	.90	.80	.70
H-9168	L	Same, but 3″ mtg. centers; two ¼″ x 6-32 thd. screws	2.10	1.90	1.70	.90	.80	.70

*Number shown is for skin packed pairs. For bulk packed handles (priced singly), add suffix **B** to number (example: H-9100**B**).

SPEAKER ENCLOSURE HANDLES

Attach to any small housing or speaker enclosure to achieve portability. Made of aluminum tubing with etched finish.

Bud No.	Length, Inches	Mtg. Ctrs., Inches	Net Each, Lots of 1-49	50-99	100-149
UH-70A	5⅜	4⅝	$.60	$.55	$.50
UH-71A	3¾	3¼	.50	.45	.40

DOOR HANDLES, CATCH SETS

No. 9347: Fits flush with cabinet door; exposed parts chrome plated. **Nos. 9196 and 9223:** Lever-type handles are chrome plated with steel spindle and cam; fit Super Deluxe racks.

Bud No.	Description	Net Each, Lots of 1-49	50-99	100-149
H-9196	Non-locking handle	$3.60	$3.50	$3.10
HL-9223	9196 with lock and key	7.20	6.50	5.70
H-9347	Flush-mount catch set	1.40	1.25	1.10

RUBBER FEET

No. F-7264A: Has recessed head with mounting stud; rubber portion 15/16″ x 11/16″ thick. **No. F-8038:** May be applied to any surface when glue coating is moistened with benzol base solution; ¾″ dia. x ⅛″ thick. **No. F-9653:** Press-fit type for 7/16″ hole.

Bud No.	Description	Net per 100, Lots of 1-49	50-99	100-149
F-7264A	High grade black rubber	$11.00	$9.90	$8.80
F-8038**	Sponge rubber pad	2.70	2.40	2.10
F-9653	Top grade gray rubber	5.30	4.70	4.20

** Lots of 1-99, 100-199, 200-299

MOUNTING BRACKETS

Permit mounting of midget condensers, controls and other components in any position. Made of ¾″ wide, cadmium plated steel. Right-angle design with short side have two mounting holes; long side with 7/16″ slot. No. AB-549 has additional ½″ dia. hole centered on ¾″ slot.

Bud No.	Size	Wt. Per 100, Lbs.	Net Each, Lots of 1-99	100-199	200-299
AB-549	1 3/16″ x 2″	2¼	$12.30C	$11.00C	$9.80C
AB-550	1 3/16″ x 2″	2	12.30C	11.00C	9.80C

ANGLES AND BRACKETS

Similar to above; made of ¾″ wide, nickel-plated brass. Right-angle design; Type 1 has single hole at end of each angle; Type 2 has two holes on long side; single hole on short side.

Bud No.	Size, Inches	Type	Wt. Per 100. Lbs.	Net Per 100, Lots of 1-99	100-199	200-299
AB-444	½ x ½	1	½	$ 5.70	$ 5.10	$ 4.50
AB-445	¾ x ¾	1	1¼	6.40	5.80	5.10
AB-446	1 x 1	1	2	8.30	7.40	6.60
AB-447	1½ x 1½	1	2½	11.00	9.90	8.80
AB-631	1 x ½	1	1¼	7.00	6.30	5.60
AB-632	1½ x ⅝	1	1½	8.70	7.80	6.90
AB-633	2 x ⅝	2	1¾	11.40	10.20	9.10
AB-634	3 x ¾	2	2½	13.90	12.60	11.20
AB-635	4 x ¾	2	3¾	17.50	15.70	14.00

DIAL LOCK

Dual purpose design functions as both dial lock and position indicator. Completely eliminates problems of dial slippage and accidental movement. Nickel-plated brass construction.

Bud No. DL-1947 Dial Lock—Net Each

1-99	100-199	200-299
.30	.27	.24

Net

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BUD Slides

All BUD slides and Linear Motion Mechanisms are built from four basic components: the outer member, inner member, ball retainer and a number of ball bearings. These parts which are all steel, have been designed to enable us to fabricate an extensive variety of models. All models excel in their precision smooth, featherlight telescoping movement and are unsurpassed for their reliability and absence of wear after many hundreds of thousands of cycles.
Each main member is press formed to a constant and precise tolerance from high tensile cold rolled steel. Ball bearings of chrome carbon steel are set in special retainers which keep them evenly spaced to give an extremely smooth movement of the slide.

MATERIALS — Main members: high tensile cold rolled carbon steel. Ball retainers: cold rolled steel. Ball bearings: precision carbon steel. Mounting brackets, mounting plates, locks pivot wheels, etc.: mild steel.

FINISHES — Main members: Zinc and chromate. Ball retainers: Zinc. Ball bearings: Chromium plate. Mounting brackets, mounting plates, locks, pivot wheels, etc.: Zinc.

LUBRICANT — Special life-long lubricant specification DTD 825B (MIL. G. 23827) unless otherwise specified.

MOUNTING HOLES — All slide mounting holes are .180"x.210".

ASSEMBLY CARE — During assembly operations special care should be taken to prevent drill chippings and other foreign matter from entering the slide ball races. It is important that the slides are mounted parallel to each other and to chassis/drawer to achieve proper movement and fingertip ease of operation.

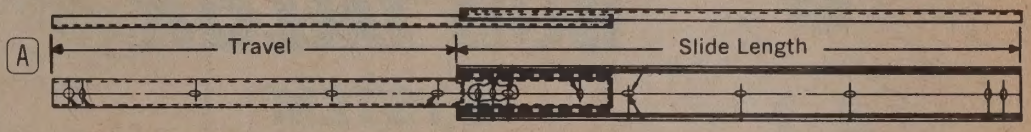
ADDITIONAL NOTES — Self-cleaning bridged ball retainer. Use only #8 pan or binding head screws for mounting. Long life, full ball bearing movement.

COMMERCIAL SPECIFICATIONS

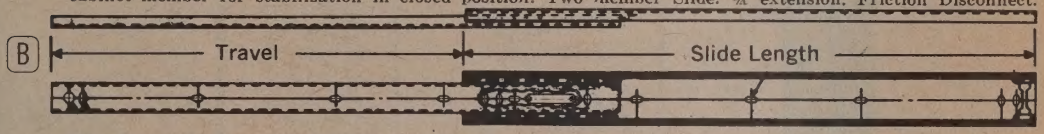
• Slide Members and Component Parts: Work Hardened Cold Rolled Steel • Ball Bearings: Carburized Steel, Nickel Plated • Finish: Bright Electro-Zinc Plate • Grease: High-Low Temperature.

MILITARY & FEDERAL SPECIFICATIONS

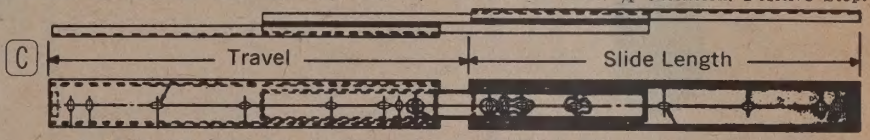
• Slide Members and Component Parts: Work Hardened Cold Rolled Steel Per QQ-S-636 • Ball Bearings: 440C Stainless Steel AMS-7445 or 300 Series Per MIL-S-5059A or MIL-S-7720 • Ball Retainer: Stainless Steel 430 per MIL-S-854 — Class 4, Condition A • Finish: Electro-zinc Plate per QQ-Z-325A, Class 2, Type II (With Chromate Treatment) • Grease: High-Low Temperature per MIL-G-18709.



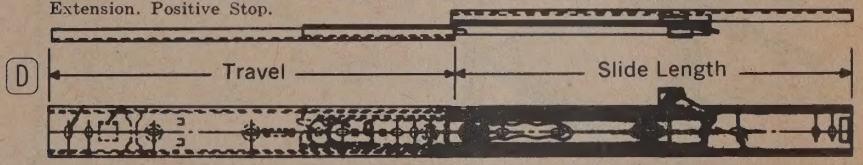
2 ea. BAS-5100 front mtg. brackets and 2 ea. BAS-5101 rear mtg. brackets required per pair to attach slides to EIA rails.
1 ea. NAS-5110 rail bar nut used with each mtg. bracket. Equipped with stationary delrin balls in front of cabinet member for stabilization in closed position. Two member Slide. ¾ extension. Friction Disconnect.



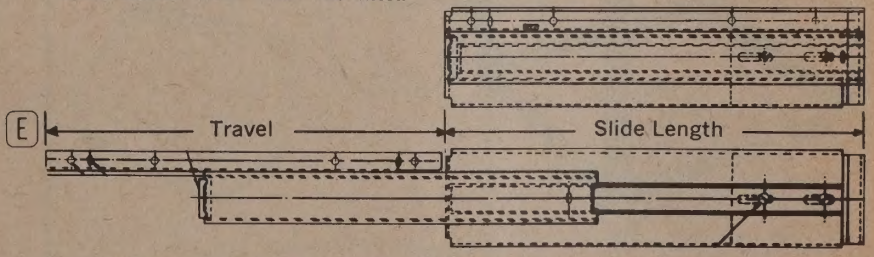
2 ea. BAS-5100 front mtg. brackets and 2 ea. BAS-5101 rear mtg. brackets required per pair to attach slides to EIA rails.
1 ea. NAS-5110 rail bar nut used with each mtg. bracket, Two Member Slide. ¾ extension. Positive Stop.



2 ea. BAS-5100 front mtg. brackets and 2 ea. BAS-5101 rear mtg. brackets required per pair to attach slides to EIA rails.
1 ea. NAS-5110 rail bar nut used with each mtg. bracket. Three Member Slide. Full Extension. Positive Stop.



2 ea. BAS-5102 front mtg. brackets and 2 ea. BAS-5103 rear mtg. brackets required per pair to attach slides to EIA rails.
1 ea. NAS-5110 rail bar nut used with each mtg. bracket. Positive stop at full extension. Three Member Slide. Front disconnect.



Has front (stationary) and rear (adjustable) mounting brackets for EIA rails. Chassis mounts to drawer section. Two Member Slide with drawer section equal to slide length. Lift-off Disconnect.

MOUNTING BRACKETS

Cat. No.	Net each in lots of 1-4	5-9	10-24
BAS-5100 (Front)	$1.30	$1.15	$1.05
BAS-5101 (Rear)	1.30	1.15	1.05
BAS-5102 (Front)	1.30	1.15	1.05
BAS-5103 (Rear)	1.30	1.15	1.05

BAR NUTS

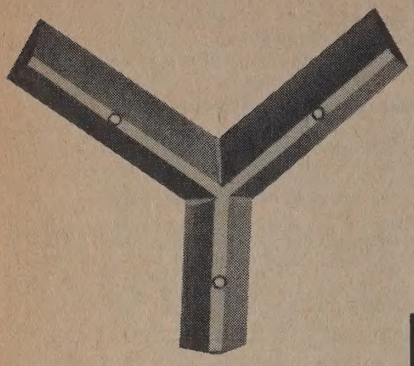
NAS-5110	1.30	1.15	1.05

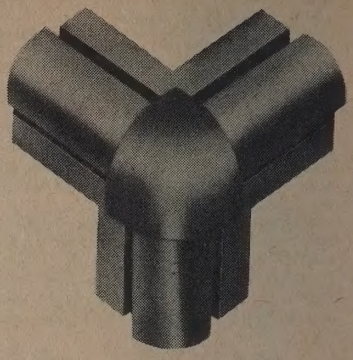
Use prefix "M" for military and "C" for commercial when ordering brackets and nuts.

	CAT. NO.	Net Each in Lots of 1-4	5-9	10-24	CAT NO.	Net Each in Lots of 1-4	5-9	10-24	Slide Lgth.	Travel	Load Rating	Shpg Wgt.
Fig. A	AS-5000	$ 9.50	$ 8.50	$ 7.60	AS-5010*	$13.10	$11.80	$10.50	12.00	9.00	135	1.75
	AS-5001	11.00	9.90	8.80	AS-5011*	14.80	13.30	11.80	16.00	12.00	104	2.00
	AS-5002	11.90	10.70	9.50	AS-5012*	15.60	14.00	12.50	20.00	15.00	73	2.50
Fig. B	AS-5060	8.70	7.80	7.00	AS-5070*	13.70	12.30	10.90	12.00	9.00	135	1.75
	AS-5061	9.30	8.40	7.40	AS-5071*	14.30	12.80	11.40	16.00	12.00	104	2.00
	AS-5062	9.80	8.80	7.90	AS-5072*	14.80	13.30	11.80	20.00	15.00	73	2.50
Fig. C	AS-5020	22.40	20.20	17.90	AS-5030*	29.40	26.50	23.50	12.00	12.88	175	3.25
	AS-5021	24.90	22.40	19.90	AS-5031*	30.00	27.00	24.00	16.00	16.88	160	4.25
	AS-5022	26.90	24.20	21.50	AS-5032*	32.30	29.00	25.80	20.00	20.00	140	5.25
Fig. D	AS-5040	29.80	26.80	23.80	AS-5050*	35.60	32.10	28.50	12.00	11.88	100	3.25
	AS-5041	32.30	29.00	25.80	AS-5051*	38.30	34.40	30.60	16.00	15.88	100	4.25
	AS-5042	34.40	31.00	27.50	AS-5052*	40.50	36.50	32.40	20.00	19.88	94	5.25
Fig. E	AS-5080	27.30	24.55	21.85	AS-5090*	40.65	36.60	32.50	12.00	12.00	100	3.50
	AS-5081	27.90	25.10	22.30	AS-5091*	41.25	37.15	33.00	16.00	16.00	93	4.50
	AS-5082	30.75	27.70	24.60	AS-5092*	44.10	39.70	35.30	20.00	20.00	87	5.40

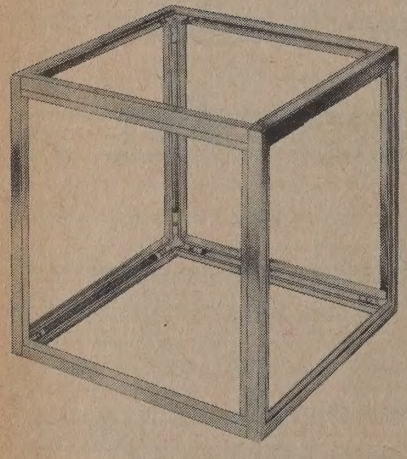
*Meets Military Specifications. All Prices Per Pair. Dimension in Inches.

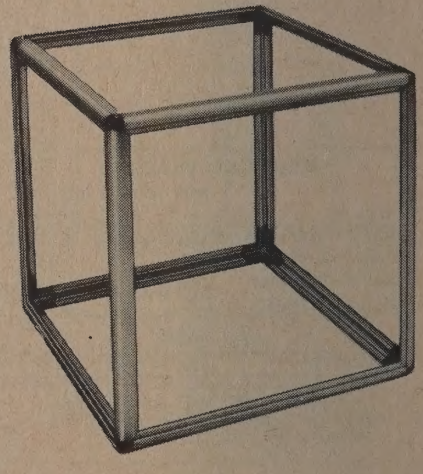
Imlok System





THE BASIC ELEMENTS OF THE BUD *IMLOK* SYSTEM





901 BUD IMLOK SYSTEM

STANDARD BUD IMLOK SYSTEM

The BUD IMLOK SYSTEM comprises a large variety of aluminum corner connectors which interlock with extrusions to make metal housings easily, quickly and economically. It is ideal for research, prototype and short run work. With the simplest of hand tools, precision cases, boxes, cabinets and consoles may be made. Simple or complex designs are achieved by the proper combination of the elements of the system. Examples are illustrated on the following page. Enclosures are completed by attaching steel or aluminum sheet to the framework by any convenient fastening method.

There are two different types of Imlok components and structures. The 901 Slimline components are more slender in appearance, and the corner connectors are completely covered by the extrusions in every completed structure. The Standard components are more rugged, and the ball surface of the connector is exposed. Ease of fabrication and assembly is common to both types.

Every Bud Imlok part is designed with an eye not only to its efficiency as an engineering component, but also to its appearance as a part of a completed housing. Special accessories such as hinges, catches, rubber feet and casters are available. Also a complete range of precision-made handles. Imlok components are available from authorized Bud Distributors in every major marketing area.
You may purchase BUD IMLOK in whichever stage of manufacture you prefer:

1. With connectors pre-drilled, ready for assembly with self-tapping screws and with extrusions.
2. With connectors pre-drilled, ready for assembly and with extrusions custom-cut by Bud to your lengths and mitered.
3. As a complete framework, ready for installation of your own panels.
4. As a complete housing with panels, but unpainted.
5. As a complete housing, fully finished.

If you have any queries relating to construction or design, please do not hesitate to contact our Imlok Advisory Service. Our extensive knowledge and experience is at your disposal — alternatively, we will always be pleased to arrange for one of our technical representatives to call on you to discuss any problems you may have.

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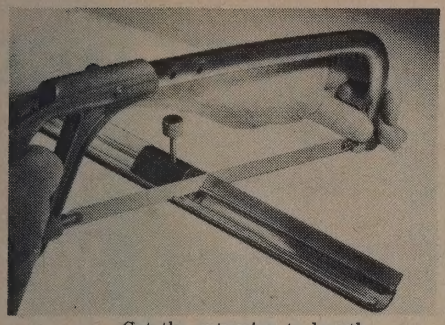
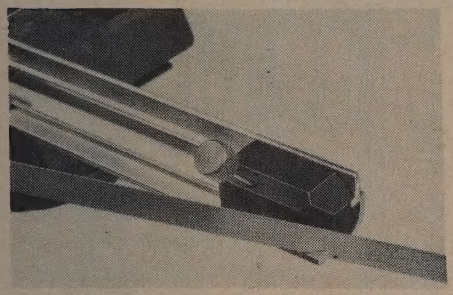
Imlok System

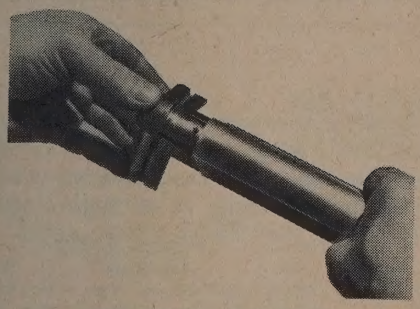
BUD IMLOK IS EASY TO USE



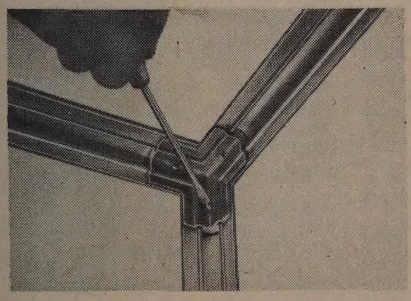
Cut the extrusion to length.



Mitre the ends of the flanges. Special Imlok jigs make this easy.



Slide extrusion onto the connector.

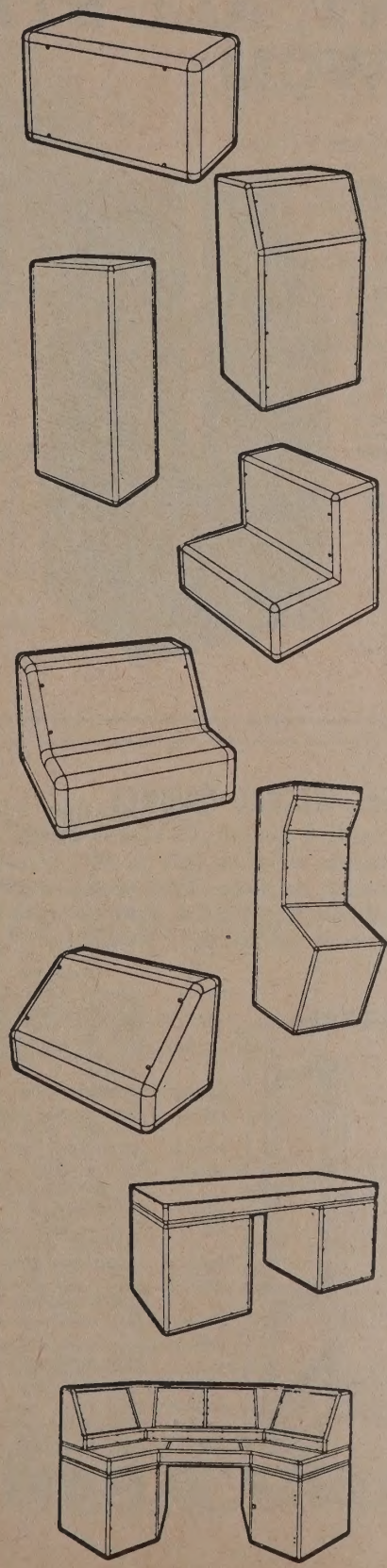


Tighten the self-tapping screws until the point bites into the extrusion.

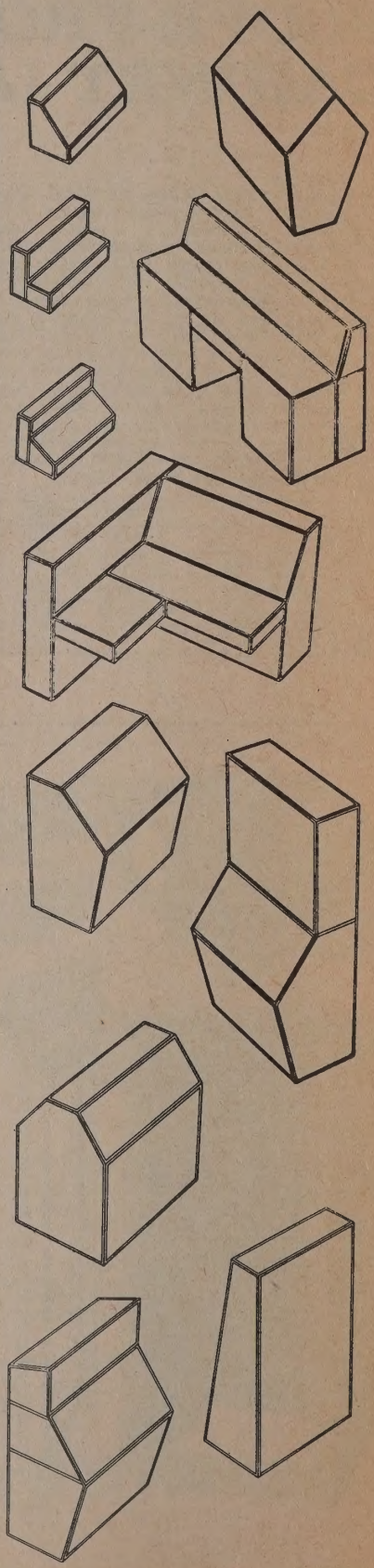
For additional details see your local Bud Distributor or write us for Imlok catalog.

Some typical structures that can be made with Imlok

Standard



901 Slimline



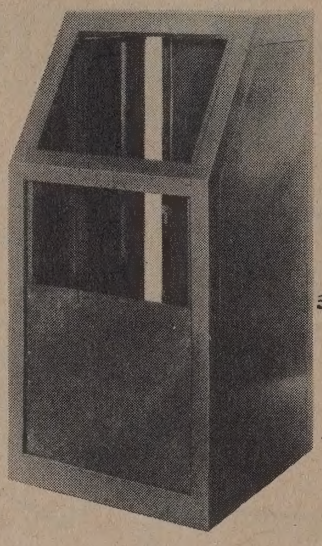
ds DESIGNER SERIES

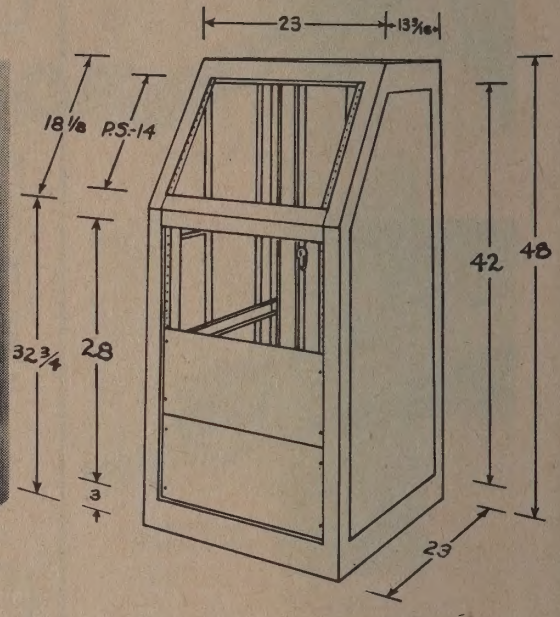
CALIFORNIA CHASSIS CO.

SLOPE-FRONT, ALL STEEL WELDED CABINET (AWCM)

The California Chassis AWCM-42 Slope-Front Cabinet offers the ultimate in clean, functional lines and versatility in construction. It is available as a finished "package" or with separate components to satisfy your specific requirements ■ The basic all-steel welded rack is open on all sides to simplify installation and permit adequate service access ■ Doors have chrome key locking handles and special spring-loaded hinge pins for rapid removal ■ Side panels are removable without use of tools ■ Panel slope is 34° and provides a full 14 x 19⅛ inch area for meters, dials and controls ■ Holes are provided in bottom for floor mounting ■ Panel mounting angles are drilled and tapped 10-32 with universal spacing to accept all standard panels ■ The AWCM-42 is attractively finished with our special low-maintenance, scratch resistant silver-grey hammertone formula. Other finishes optional. **The AWCM-42 is shipped complete with two side panels and locking rear door.**

	Width	Height	Depth
AWCM-42	23 in.	48 in.	23 in.
Slope panel opening	19⅛ in.	14 in.	—
Front panel opening	19⅛ in.	28 in.	—
Rear Door opening	19⅛ in.	42 in.	—
Front panel slope: 34°			

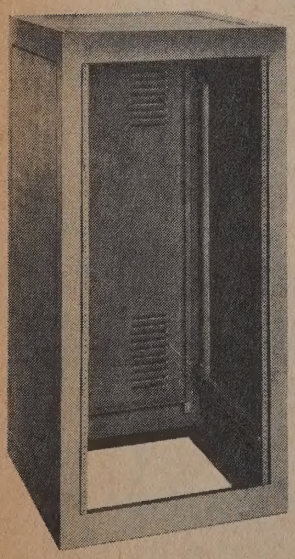


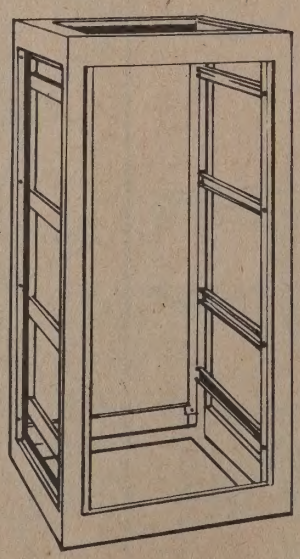


ds DESIGNER SERIES

ALL STEEL WELDED CABINET

This flexible series is available as a complete package or as separate components to satisfy individual requirements — designated as follows: Solid top (AWC); or open top (AWCO) in styles as shown below. Doors and sides are interchangeable. Doors have chrome handles — spring-loaded hinge pins provide rapid removal and servicing without use of tools. Panel mounting angles are tapped 10-32 with universal spacing for all standard panels. Louvers available on sides and doors. Standard finish — gray hammertone; other finishes optional.





No.	Description	Price
AWC-42	—Assembly consisting of 42 inch panel space frame, with solid top, two sides, one door, one pair panel mounting angles and all necessary hardware	$127.95
AWCO-42	(REMOVABLE TOP)	134.77
AWC-61	—Same as above except 61¼ inch panel space frame	156.50
AWCO-61	(REMOVABLE TOP)	163.32
AWC-70	—Same as above except 70 inch panel space frame	169.92
AWCO-70	(REMOVABLE TOP)	176.74
AWC-77	—Same as above except 77 inch panel space frame	196.53
AWCO-77	(REMOVABLE TOP)	203.35
AWCF-42	—Basic frame only—42 inch panel space—solid top	61.83
AWCOF-42	—Basic frame only—open top	64.33
AWCF-61	—Basic frame only—61¼ inch panel space—solid top	77.18
AWCOF-61	—Basic frame only—open top	79.68
AWCF-70	—Basic frame only—70 inch panel space—solid top	82.29
AWCOF-70	—Basic frame only—open top	84.79
AWCF-77	—Basic frame only—77 inch panel space—solid top	97.66
AWCOF-77	—Basic frame only—open top	100.16

No.	Description	Price
AWCS-42	—Side panel—42" high	each $15.10
AWCS-61	—Side panel—61¼" high	each 18.17
AWCS-70	—Side panel—70" high	each 20.22
AWCS-77	—Side panel—77" high	each 23.29
AWCD-42	—Door—42" high	18.38
AWCD-61	—Door—61¼" high	21.45
AWCD-70	—Door—70" high	24.52
AWCD-77	—Door—77" high	27.59
AWCT-42	—Top	7.22
AWCT-61	—Top	7.22
AWCT-70	—Top	7.22
AWCT-77	—Top	7.22
AWCP-42	—Panel mounting angles—42 long	pair 10.24
AWCP-61	—Panel mounting angles—61¼ long	pair 14.43
AWCP-70	—Panel mounting angles—70 long	pair 15.46
AWCP-77	—Panel mounting angles—77 long	pair 17.51
AWCZ-42	—Vertical supports for chassis brackets	set of four 14.64
AWCZ-61	—Vertical supports for chassis brackets	set of four 16.64
AWCZ-70	—Vertical supports for chassis brackets	set of four 17.71
AWCZ-77	—Vertical supports for chassis brackets	set of four 19.87

Net

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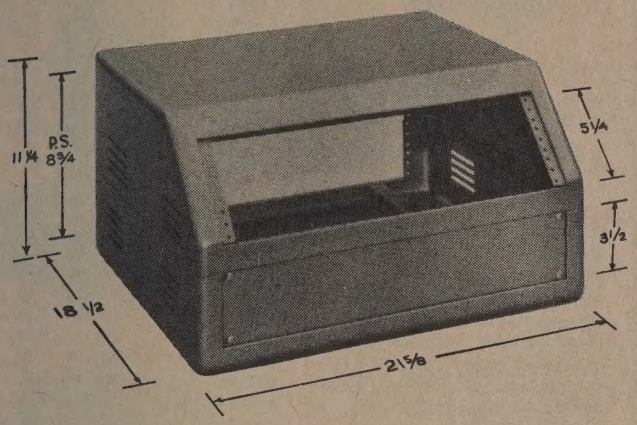
ds DESIGNER SERIES

CALIFORNIA CHASSIS CO.

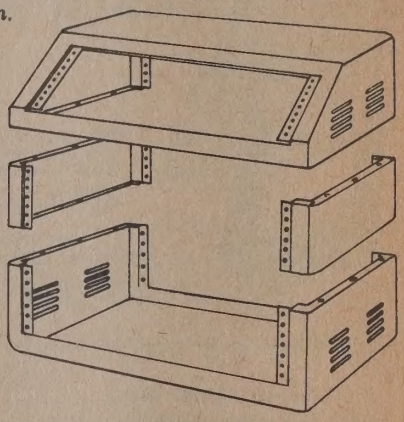
SLOPE-FRONT EXPANDABLE CABINET (MPXM)



	Width	Height	Depth
MPXM Cabinet without inserts	21⅝ in.	11¼ in.	18½ in.
Slope panel opening	19⅛ in.	5¼ in.	—
Front panel opening	19⅛ in.	3½ in.	—
Back panel opening	19⅛ in.	8¾ in.	—
Inserts (in increments of 1¾ to 28 inches.)	—	1¾ to 28 in.	18½ in. (side)

Recommended total panel height with inserts: 35 inches.

This cabinet accepts standard relay rack panels and is drilled and tapped for universal panel mountings. 16-Gauge cold rolled steel construction.



This latest addition to the popular California Chassis "Designer's Series" enclosures provide a functional 45° sloping front for convenience and easy viewing of meters, dials, control knobs and switches. The new slope front, combined with expandable inserts to meet the need of added circuitry and component requirements, enhances the functional design features of this attractive and rugged cabinet ■ Inserts are available to accommodate standard panel chassis sizes ■ Finished in silver-grey hammertone.

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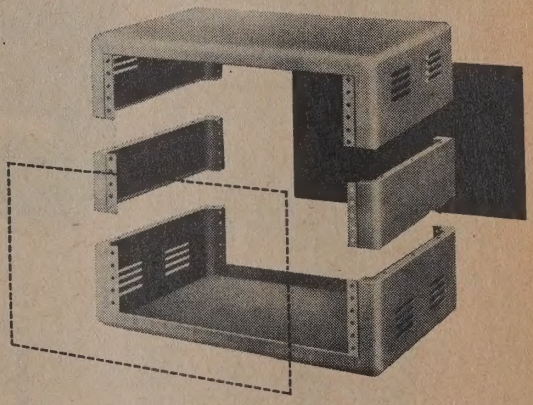
ds DESIGNER SERIES

MULTI-PURPOSE EXPANDABLE CABINET

The MPX enclosure combines clean design and attractive finish with utility, strength and versatility. Inserts permit vertical expansion of cabinet. Standard finish — gray hammertone; other finishes optional.



MPX CABINET — Consists of top, bottom, rear panel 5¼" high and assembly hardware. Basic cabinet provides 7" of panel space front and back.....$30.45

MPXF-10 1¾" FILLER — each filler group listed consists of two sides, rear panel same height as sides and hardware..... 9.45

MPXF-11	3½"	FILLER.....	$10.60	MPXF-18	15¾"	FILLER.....	$17.77
MPXF-12	5¼"	FILLER.....	11.70	MPXF-19	17½"	FILLER.....	18.95
MPXF-13	7"	FILLER.....	12.80	MPXF-20	19¼"	FILLER.....	19.97
MPXF-14	8¾"	FILLER.....	13.93	MPXF-21	21"	FILLER.....	21.10
MPXF-15	10½"	FILLER.....	15.05	MPXF-22	24½"	FILLER.....	22.33
MPXF-16	12¼"	FILLER.....	16.18	MPXF-23	26¼"	FILLER.....	23.51
MPXF-17	14"	FILLER.....	17.36	MPXF-24	28"	FILLER.....	24.68

MPX Cabinet without inserts	Width 21⅝ in.	Height 9½ in.	Depth 18½ in.
Font panel opening	19⅛ in.	7 in.	——
Back panel opening	19⅛ in.	7 in.	——
Inserts (in increments of 1¾ to 26¼ in.)	——	1¾ to 26¼ in.	18½ in. (side)

Recommended total panel height with inserts: 35 inches. This cabinet accepts standard relay rack panels and is drilled for universal panel mountings. 16 gauge cold rolled steel construction.

CALIFORNIA CHASSIS CO.

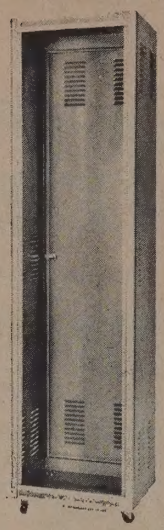
CALIFORNIA CHASSIS CO.

CABINET RACKS

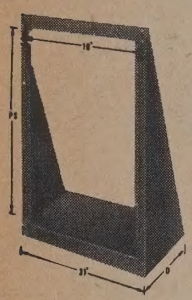
These racks are made entirely of 16 gauge steel except for the heavy steel panel supports. They have universal spacing, the holes being tapped for 10/32" screws. Panels fit into a recess so that the edges do not show. Mounting plate on bottom of rack permits casters to be fastened directly to base for easy mobility. Casters are not included in price of rack but may be ordered separately. No. TC-10.

All standard 19" panels RETMA, Western Electric or Amateur will fit these racks. Double rows of louvres side and rear give ample ventilation.

Gray hammertone finish.



NO. CAT.	PANEL SPACE	HEIGHT	WIDTH	DEPTH	DEPTH INSIDE CLEAR.	SHIP. WT. LBS.	NET PRICE
CR-36	36¾	42	22	17	15½	90	$55.33
CR-42	42	47¼	22	17	15½	96	63.50
CR-61	61¼	66½	22	17	15½	120	78.50
CR-77	77	82¼	22	17	15½	145	91.87
CRD-36	36¾	42	22	24	22½	99	91.09
CRD-42	42	47¼	22	24	22½	105	104.66
CRD-61	61¼	66½	22	24	22½	133	129.34
CRD-77	77	82¼	22	24	22½	160	155.17



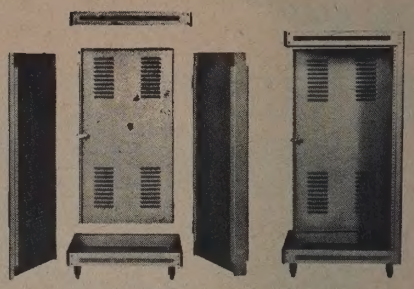
DOR SERIES

This open rack is made of 16 gauge steel. It is useful where the larger, heavier floor model is not necessary.

Mounting holes are on universal centers tapped 10/32" Gray hammertone finish.

Cat. No.	Panel Space	Overall Height	Width	Depth	Ship. Wt.	Net Price
DOR-21	21 x 19	25	21	12	18	$10.37
DOR-28	28 x 19	32	21	12	19	13.13

MULTI RACK SERIES



With this unit and a standard rack of the same size one can make a multiple rack or a series of connected racks. Each unit consists of a door, top, bottom, and a multi-rack connecting unit. This must have the same panel space as the unit it is to be used with. All hardware except casters is furnished. Colors to match mating units.

CATALOG NO.	PANEL SPACE	FITS RACK	SHPG. WT.	NET PRICE
MR-36	36¾	CR-36	75	$55.33
MR-42	42	CR-42	80	63.50
MR-61	61¼	CR-61	100	78.50
MR-77	77	CR-77	118	91.87
MRD-36	36¾	CRD-36	80	68.44
MRD-42	42	CRD-42	85	81.04
MRD-61	61¼	CRD-61	108	97.05
MRD-77	77	CRD-77	128	116.66

FRONT DOOR KIT

To convert CR, CRD, MR, MRD racks to Front Door type, formed of 16 gauge steel 1¾* deep to clear handles, knobs, etc. All corners seam welded and ground smooth. Supplied with locking handle with same keying as back door and all necessary hardware to mount on rack front. Finish grey hammertone

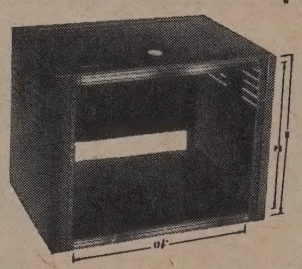
Cat. No.	Price	Cat. No.	Price
FD-36	$22.08	FD-61	$32.66
FD-42	26.70	FD-77	39.54

DESK CABINET RACKS

This solid welded, rounded front, deluxe desk cabinet has a professional look as well as being a sturdy utility unit. Embossed feet are on all sizes to reduce marring.

Cabinets have universal punching, accommodating W. E.; RETMA; or Amateur notched panels. Unit is made from 16 ga. steel, having a 2" opening on bottom rear for ventilation in addition to side louvers.

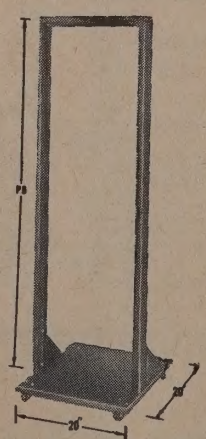
The five smaller models have solid welded backs. The five larger models have a removable hinged rear door.
All models clear 14½" inside depth — Outside width is 21½". Gray hammertone.



CATALOG NO.	PANEL SPACE	HEIGHT	SHPG. WT.	NET PRICE
DCR-7	7	8 15/16	25	$18.65
DCR-8	8¾	10 11/16	27	19.68
DCR-10	10½	12 7/16	29	23.00
DCR-12	12¼	14 3/16	31	23.50
DCR-14	14	15 15/16	33	30.93
DCR-17	17½	19 7/16	37	31.00
DCR-21	21	22 15/16	39	33.07
DCR-26	26¼	28 3/16	47	36.33
DCR-31	31½	33 7/16	51	38.50
DCR-35	35	36 15/16	58	39.83

OR SERIES

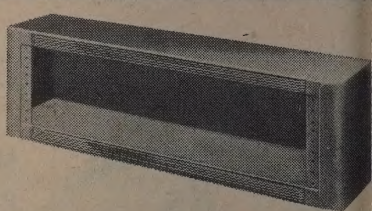
These open racks are constructed so the uppermost panel mounts at the top of the ⅛" steel upright. There is no loss of space at the top. Rack uprights are punched with universal spacing and tapped 10/32". Two brackets of ⅛" steel bind the uprights and a chassis like base into one solid unit. Gray hammertone.



CATALOG NO.	PANEL SPACE	OVERALL HEIGHT	SHPG. WT.	NET PRICE
OR-31	31½	32¾	27	$24.18
OR-36	36¾	38	28	24.32
OR-42	42	43¼	30	26.80
OR-61	61¼	62½	37	28.17
OR-66	66½	67¾	39	28.50
OR-71	71¾	73	41	29.83
OR-77	77	78¼	42	33.13

MINIATURE CABINET RACKS

The MCR combines stylized function and compactness for desktop use. Available in three sizes. Accepts standard relay rack panels and "PC" chassis units. Attractive grey hammertone with chrome trim.

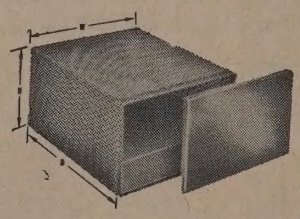


MCR-12 CABINET — Panel space 19" x 5¼" $14.61
MCR-13 CABINET — Panel space 19" x 7" 14.92
MCR-14 CABINET — Panel space 19" x 8¾" 15.22

All above items available in gray hammertone finish. Other finishes available on special order. Contact factory for special finish prices.

All MCR units have embossed feet to protect desk tops.

TYPE	WIDTH	PANEL SPACE	DEPTH	HEIGHT	WT.
MCR-12	21⅝	19 x 5¼	6⅜	7⅛	11½ lb.
MCR-13	21⅝	19 x 7	6⅜	8⅞	12½ lb.
MCR-14	21⅝	19 x 8¾	6⅜	10⅝	13½ lb.



LOW TEMPERATURE CABINETS

This cabinet-made of perforated metal with 3/32 holes on 5/32 centers, solves most thermal problems. It is a real space saver, the chassis being almost the size of the cabinet.

Chassis is .063 aluminum and bolts to the rear panel which is welded to the perforated screen. Rear steel panel has rectangular hole in it to allow access to connectors in chassis. Front panel has no screws but is held on by control knobs mounted in chassis. Gray hammertone.

Chassis and front are one piece when unit is complete and can be easily removed yet cabinet chassis and front panel are solidly held together.

Catalog Number	Cabinet Size H	W	D	Front Panel	Chassis Size	Hole in Rear Panel	Net Price
LTC-463	4½ x	7 3/16 x	9 3/16	4½x 7¼	6 15/16x 8 13/16x1½	⅞x 4	10.24
LTC-464	4½ x	9 3/16 x	7 3/16	4½x 9 3/16	8 15/16x 6 15/16x1½	⅞x 5	10.24
LTC-469	5 1/16x	8¾ x	11 3/16	5⅝ x 8¾	8 1/16 x10 13/16x2	1½x 5	11.92
LTC-470	5 1/16x	11 3/16 x	8 1/16	5⅝ x 11 3/16	10 3/16x 8 1/16 x2	1½x 6	11.92
LTC-472	9½ x	16¼ x	11 3/16	9½x16¼	11 x16 x3	2 x 8	19.04
LTC-474	12 x	17¼ x	12 3/16	12 x17¼	12 x17 x4	2½x12	22.21

CALIFORNIA CHASSIS COMPANY

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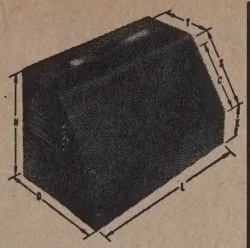
CALIFORNIA CHASSIS CO.

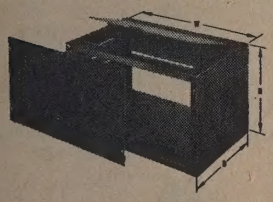
SLOPING FRONT CABINETS

These deluxe all purpose steel cabinets are designed for wide use in the electronic field. Front and top corners are rounded, sides have stainless steel ventilators. Embossed feet to prevent scratching. Gray wrinkle or gray hammertone, please specify.



Catalog No.	D	H	L	T	X	S	Use This Chassis C	Net Price
SFC-42	8	8	8	4¼	2¾	6	5¼ C-104	5.32
SFC-44	8	8	10	4¼	2¾	6	5¼ C-105	7.47
SFC-46	8	8	14	4¼	2¾	6	5¼ C-114	9.00
SFC-48	12	12	18	6	3⅛	10⅜	9½ C-110	12.06

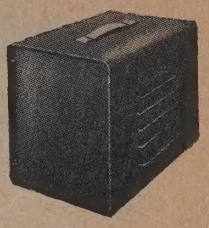
INSTRUMENT CABINETS — This cabinet has a hinged access door on top and removable front cover. The elimination of the rounded corner gives more inside room. The rear has a 3½" opening for ventilation plus louvers at each end. The open end chassis, E.C. series, is usually used with these cabinets. Gray Hammertone finish standard.



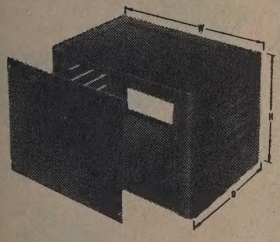
Cat. No.	H	W	D	Ship. Wt.	Net Price
HTC-342	7	8	8	5	4.93
HTC-343	7	10	8	5½	5.68
HTC-344	7	12	8	5¾	6.12
HTC-345	7	14	8	6	6.20
HTC-346	8	16	8	7	8.55
HTC-347	9	15	11	8	10.63
HTC-348	12	18	12	14½	12.51

LITE LINE SERIES

These all aluminum portable cabinets are found to be highly versatile for instrumentation housings. The "Lite Line" units are attractive and compact yet give proper ventilation with light weight. Panel is recessed ⅜". Finish: Gray hammertone.

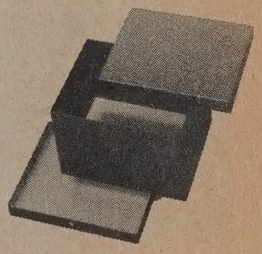


Catalog No.	Cabinet Size H	W	D	Wt.	Rear Opening ½ inch from base of cabinet
LLS-582	8	6⅛	8	2	2 x 4½
LLS-584	8	10⅛	8	2½	2 x 8½
LLS-586	9	8⅛	12	3½	2 x 6½



AMPLIFIER FOUNDATIONS

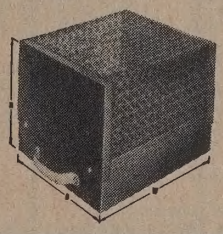
These consist of a chassis and perforated metal cover. They have ample ventilation. Handles are included in each package. Gray hammertone finish.



Catalog No.	Height	Width	Depth	Chassis Height	Shpg. Wt.	Net Price
AF-240*	8	7⅜	5⅛	2	2	4.83
AF-241	8 5/16	9⅝	5⅛	2½	2	6.72
AF-242	8 5/16	13⅝	5⅛	2½	4⅜	7.12
AF-243	8 5/16	17⅛	7⅛	2½	6	7.87
AF-244	8 13/16	17⅛	10⅛	3	8	10.25
AF-245	8 13/16	12⅛	10⅛	3	7	8.15

STREAMLINED INSTRUMENT CABINET

Gray Hammertone finish.



Catalog No.	Panel Space	Height	Width	Depth	Wt.	Net
SC-31	8x 8	8	10½	8¼	5¾	6.48
SC-32	8x10	8	12½	8¼	6	6.78
SC-33	8x12	8	14½	8¼	6½	7.28
SC-34	8x14	8	16½	8¼	7	7.75
SC-35	8x16	8	18½	8¼	7¾	8.53
SC-36	12x18	12	20½	12	15	16.46

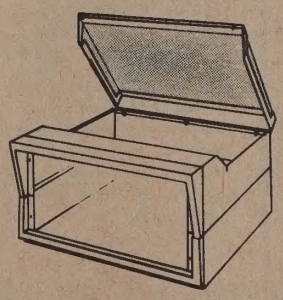
FF UTILITY CABINETS

Flange-free construction is the keynote of this series — allowing complete use of the internal cabinet surfaces. Unit consists of a basic shell, two cap-type covers and assembly screws. Fabricated in .040 aluminum and stocked in unpainted etched finish or gray hammertone baked enamel. Use suffix "UA" for unpainted or "GH" for gray hammertone.

CATALOG NO.	WEIGHT LBS.	DEPTH	WIDTH	LENGTH
F.F. CAB-1	⅜	2	4	4
F.F. CAB-2	½	3	5	4
F.F. CAB-3	¾	4	5	6
F.F. CAB-4	1	6	6	6
F.F. CAB-5	1¼	5	6	9

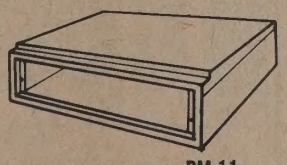
"SWING-TOP CABINET MODULE"

Developed for the discriminating user in response to a demand for servicing facility coupled with modern design and flexibility. Basic cabinet is 18" deep and accepts 19" wide panels in the shadow boxed front. The swing top offers convenient service access to installed equipment. Unit may be expanded vertically by addition of special center sections — available from the factory to meet your requirements. Standard units stocked in gray hammertone, other finishes available.



ST-14 Double Section
8¾" Panel Space.....$35.74

ST-12 Single Section
5¼" Panel Space.....$30.29



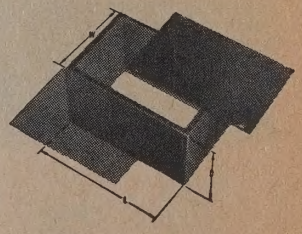
PM-11

PM-11 POWER ENCLOSURE

The base section of the Swing-Top Module is available as a separate item and is most often used as a power supply enclosure. It offers a 3½" x 19" front panel area coupled with 18 inches of depth. The removable cover section serves as either top or bottom at users discretion. Panel space maye be increasd vertically by addition of special center sections, please contact factory with your requirements. Stocked in gray hammertone, custom finishes. available $25.16

METAL UTILITY CABINETS

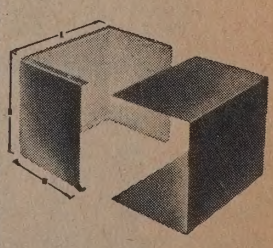
Catalog No.	Wt. Stl.	D	W	L	Wt. Alm.	Painted Alum.
CAB-1	¾	2"	4"	4"	⅜	1.72
CAB-2	1	3"	5"	4"	½	1.92
CAB-3	1½	4"	5"	6"	¾	2.20
CAB-4	2½	6"	6"	6"	1	2.63
CAB-5	3¼	5"	6"	9"	1¼	3.56
CAB-6	4¾	7"	8"	10"	2	5.22
CAB-7	5	6"	7"	12"	2	5.05
CAB-8	6	8"	10"	10"	2½	7.32
CAB-9	7	8"	11"	12"	2¾	8.79
CAB-10	7	7"	9"	15"	2¾	8.96



Considered the "work horse" in the small cabinet field. This series is one of the most widely used. Supplied with two removable covers for easy access to cabinet interior. Available in both aluminum use suffix "A" and steel use suffix "S", complete with mounting hardware. Finished in gray hammertone. Aluminum units also available in unfinished etched condition — use suffix "UA".

MINIATURE CABINETS

Aluminum Gray Hammertone Cat. No.	Net Price	Etched Aluminum Cat. No.	Net Price	L	H	W
M-51	.85	M-81	.63	2¾x	2⅛x	1⅝
M-52	1.14	M-82	1.03	2¾x	2⅛x	2¾
M-53	.91	M-83	.63	3¼x	2⅛x	1⅛
M-54	1.07	M-84	.68	3¼x	2⅛x	1⅝
M-55	.95	M-85	.67	4	x2⅛x	1⅝
M-56	1.03	M-86	.85	4	x2¼x	2¼
M-57	1.19	M-87	.85	4	x2	x2¾
M-58	1.20	M-88	.90	4¼x	2¼x	1½
M-59	1.24	M-89	.93	5	x2¼x	2¼
M-60	1.45	M-90	1.38	5	x4	x3
M-61	1.42	M-91	1.29	5¼x	3	x2⅛
M-62	1.90	M-92	1.31	6	x5	x4
M-63	1.94	M-93	1.65	7	x5	x3
M-64	2.34	M-94	2.07	8	x6	x3½
M-65	1.57	M-95	1.38	10	x2	x1⅝
M-66	3.75	M-96	3.31	10	x6	x3½
M-67	2.09	M-97	1.57	12	x2½	x2¼
M-68	3.65	M-98	2.96	12	x7	x4
M-69	4.18	M-99	3.48	17	x5	x4



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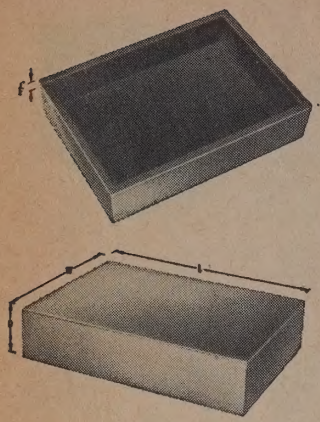
CALIFORNIA CHASSIS CO.



STANDARD ALUMINUM CHASSIS—All chassis are stamped and formed from one piece of material. All four corners welded and sides flanged to accommodate bottom plates.

Aluminum	W	L	D	Gauge	App. Wt.	Net Price
A-134	2½	4½	1	18	¼	1.15
A-135	3½	4½	1	18	¼	1.25
A-136	3½	5½	1	18	¼	1.25
A-137	4	6	1½	18	¼	1.38
A-155	4	6	2	18	¼	1.39
A-149	4	6	3	18	¼	1.57
A-138	4	5	2	18	⅜	1.42
A-121	5½	5½	1	18	¼	1.40
A-101	5	7	2	18	⅜	1.42
A-150	5	7	3	18	⅜	1.66
A-147	4	8	2	18	⅜	1.67
A-119	4½	8	1½	18	⅜	1.35
A-122	5	9	1½	18	⅜	1.43
A-102	5	9½	2½	18	⅜	1.92
A-120	6	8	2	18	¾	1.72
A-103	5	10	3	18	½	1.96
A-104	7	7	2	18	½	1.57
A-105	7	9	2	18	¾	1.67
A-113	7	11	2	18	¾	1.82
A-106	8	10	2½	18	1	2.43
A-151	6	14	3	18	1	2.82
A-114	7	13	2	18	¾	1.92
A-139	5	13	3	18	¾	2.25
A-107	8	12	2½	18	1	2.84
A-117	7	12	3	18	1	2.36
A-124	8	12	3	18	1	2.68
A-108	10	12	3	18	1¼	3.01
A-129	12	12	3	18	1½	3.36
A-115	10	14	3	18	1¼	3.16
A-130	7	15	3	18	1¼	3.15
A-125	9	15	3	18	1½	3.54
A-118	4	17	3	18	1	2.69
A-145	6	17	3	18	1¼	2.94
A-144	7	17	2	18	1	2.88
A-152	7	17	3	18	1½	3.16
A-109	8	17	2	18	1½	2.97
A-116	8	17	3	16	1½	3.46
A-140	10	17	2	16	2¼	3.46
A-110	10	17	3	16	2½	3.90
A-153	10	17	4	16	3	5.45
A-141	10	17	5	14	3¼	8.01
A-146	11	17	2	16	1½	4.08
A-128	11	17	3	14	2½	4.78
A-127	12	17	2	14	2¼	4.32
A-123	12	17	3	14	2½	5.03
A-126	13	17	2	14	2½	4.51
A-111	13	17	3	14	2¾	4.97
A-112	13	17	4	14	3¼	6.66
A-142	13	17	5	14	3½	8.70
A-156	15	17	3	14	3½	6.28
A-133	14	17	3	14	3¼	6.09
A-131	15	17	4	14	3¾	8.62
A-148	15	17	6	14	4	11.67
A-132	10	23	3	16	2½	5.40
A-154	17	17	3	16	2½	6.89
A-143	17	17	4	14	4¼	10.24

ENTIRE LINE OF CHASSIS DUPLICATED IN STEEL. USE PREFIX "C" INSTEAD OF "A" FOR ZINC STEEL CHASSIS

All aluminum chassis are etched finish. 1" and 1½" chassis are flanged on long side only and contain no mounting holes.

CHASSIS BOTTOM PLATES

CATALOG NO.	SIZE	ALUM. WEIGHT	STEEL WEIGHT	Net Price
BP-134	2½x 4½	1 oz.	2 oz.	.60
BP-135	3½x 4½	2 oz.	¼ lb.	.65
BP-136	3½x 5½	2 oz.	¼ lb.	.70
BP-137	4 x 6	2 oz.	¼ lb.	.73
BP-138	4 x 5	2 oz.	¼ lb.	.68
BP-147	4 x 8	¼ lb.	½ lb.	.87
BP-121	5½x 5½	2 oz.	½ lb.	.79
BP-101	5 x 7	2 oz.	¼ lb.	.79
BP-119	4½x 8	¼ lb.	½ lb.	.91
BP-122	5 x 9	¼ lb.	½ lb.	.95
BP-102	5 x 9½	¼ lb.	½ lb.	.93
BP-120	6 x 8	¼ lb.	½ lb.	.95
BP-151	6 x14	½ lb.	1¼ lb.	1.19
BP-103	5 x10	¼ lb.	½ lb.	.96
BP-104	7 x 7	¼ lb.	½ lb.	1.02

CATALOG NO.	SIZE	ALUM. WEIGHT	STEEL WEIGHT	Steel Net Price
BP-105	7 x 9	¼ lb.	¾ lb.	1.03
BP-113	7 x11	½ lb.	1 lb.	1.22
BP-106	8 x10	¼ lb.	¾ lb.	1.20
BP-139	5 x13	¼ lb.	½ lb.	1.19
BP-114	7 x13	½ lb.	1 lb.	1.38
BP-107	8 x12	¾ lb.	1¼ lb.	1.54
BP-117	7 x12	½ lb.	1 lb.	1.25
BP-108	10 x12	¾ lb.	1½ lb.	1.60
BP-129	12 x12	¾ lb.	1½ lb.	1.74
BP-115	10 x14	¾ lb.	2 lb.	1.67
BP-130	7 x15	½ lb.	1 lb	1.47
BP-125	9 x15	¾ lb.	1½ lb.	1.92
BP-118	4 x17	½ lb.	1 lb.	1.19
BP-145	6 x17	½ lb.	1 lb.	1.45
BP-144	7 x17	½ lb.	1 lb	1.40
BP-109	8 x17	½ lb.	1¾ lb.	1.57
BP-110	10 x17	¾ lb.	2½ lb.	1.64
BP-128	11 x17	1 lb.	2 lb.	1.72
BP-123	12 x17	1¼ l.b	3 lb.	2.09
BP-111	13 x17	1½ lb.	3¼ lb.	2.30
BP-133	14 x17	1½ lb.	3½ lb.	2.49
BP-131	15 x17	1½ lb.	3½ lb.	2.53
BP-143	17 x17	2 lb.	5 lb.	3.07
BP-132	10 x23	1½ lb.	3¼ lb.	2.30

Steel bottom plates supplied in zinc plate aluminum is caustic etched. Actual size of BP is ⅛" under chassis size which is shown. This allows 1/16" of set back when attached to bottom of chassis.

RELAY RACK PANELS

Regular panels are made from ⅛ aluminum or steel material. Aluminum is 3003 H 14. Notching is Western Electric (WE). Finish gray hammertone, or unpainted. 24" wide panels are available on special order in both aluminum and steel.

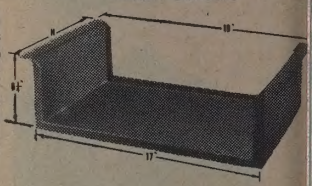
Notching Western Electric	Height	Width	Wt. Alum.	Wt. Steel	Net Price
PW-10	1¾	19	½	1¼	1.22
PW-11	3½	19	¾	2¼	1.84
PW-12	5¼	19	1¼	4	2.32
PW-13	7	19	1½	4¾	3.16
PW-14	8¾	19	2	6	4.01
PW-15	10½	19	2½	6¾	4.85
PW-16	12¼	19	3	8¾	5.12
PW-17	14	19	3½	9¾	5.78
PW-18	15¾	19	4	10¾	6.61
PW-19	17½	19	4½	12	7.48
PW-20	19¼	19	5	13	8.35
PW-21	21	19	5½	15¾	8.96
PW-22	24½	19	6	18½	10.55
PW-23	26¼	19	7	20¼	11.57

HARD ALUMINUM PANELS

Cat. No.	Height	Width	Wt.	Net Price
PWHA-10	1¾	19	½	1.67
PWHA-11	3½	19	¾	2.27
PWHA-12	5¼	19	1¼	2.87
PWHA-13	7	19	1½	3.57
PWHA-14	8¾	19	2½	4.18
PWHA-15	10½	19	2½	5.05
PWHA-16	12¼	19	3	5.92
PWHA-17	14	19	3½	6.79
PWHA-18	15¾	19	4	7.39
PWHA-19	17½	19	4½	8.01
PWHA-20	19¼	19	5	8.62
PWHA-21	21	19	5½	9.83
PWHA-22	24½	19	6	11.96
PWHA-23	26¼	19	7	12.18

PWHA series supplied in both ⅛ and 3/16 thickness in the 2024T3 alloy which is considered most suitable for drilling, machining or engraving. Panels are stocked in unpainted or gray hammertone. Other finishes available on request. All panels available in 24" width, on special order.

PANEL CHASSIS

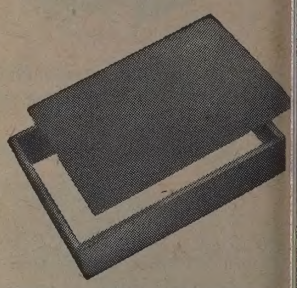


Cat. No. Steel	Alum.	Height	Wt. Lbs.	Net Price
PC-110	PCA-110	1¾	2	2.68
PC-111	PCA-111	3½	2¾	3.05
PC-112	PCA-112	5¼	4	3.38
PC-113	PCA-113	7	4½	3.97
PC-114	PCA-114	8¾	5¾	4.68
PC-115	PCA-115	10½	6¾	5.45
PC-116	PCA-116	12¼	7½	6.03
PC-117	PCA-117	14	8½	6.55

Larger Sizes on Request

These are constructed so the sharp rib corner is cut to a 45° angle protecting the user's wrist. Side flange is 9/16" O.D. Height is 1/32 under size to permit proper mounting in rack.
PC Series is 16 GA—Zinc Plated Steel
PCA Series is 14 GA—Etched Aluminum

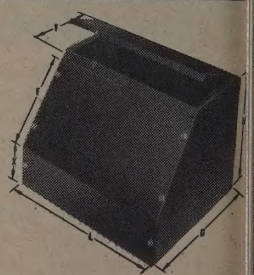
REMOVABLE TOP CHASSIS



Cat. No.	Weight	Dimensions	Net Price
RT-1	5¼#	10x17x3	3.64
RT-2	7	13x17x3	4.53
RT-3	6½	10x17x4	4.03
RT-4	9	13x17x4	5.02

Experimenters and the radio amateur when designing, will find it economical to use this type chassis, as the tops and bottoms may be easily replaced or discarded. Steel-Electro Zinc Only.

HINGED TOP SLOPING CABINET



This 20 gauge steel cabinet provides for a complete opening of top and front. Chassis may be attached to the face as there is no inside flange on the front. Bottom has embossed feet. Rear has opening for connectors. Gray hammertone finish.

Catalog No.	H	L	D	X	F	T	WT.	Use Chassis Size	Net Price
HC-250	6½	7 1/16	7 5/16	2 3/16	4 7/8	4 1/4	2½	7x 6x2	3.9
HC-251	8	8 1/16	8	2 3/16	6 5/8	3 7/8	2¾	7x 7x2	5.2
HC-252	6½	9 1/16	7 5/16	2 3/16	4 7/8	4 1/4	3	7x 8x2	4.3
HC-253	8	10 1/16	8	2 3/16	6 5/8	3 7/8	3	7x 9x2	5.8
HC-254	6½	11 1/16	7 5/16	2 3/16	4 7/8	4 1/4	3½	7x10x2	4.9
HC-255	8	14 1/16	8	2 3/16	6 5/8	3 7/8	4	7x13x2	6.1
HC-256	8	13 1/16	8½	2 5/8	5 7/8	4¾	5¼	8x12x2½	6.5
HC-257	9	18 1/16	8 1/8	3 5/8	6	4 1/4	7	7x17x3	8.5
HC-258	10	18 1/16	10½	3 5/8	7¼	5 7/8	8½	10x17x3	8.8

HEAVY DUTY ROLLER TRUCK

Formed of 12 gauge steel with seam welded corners. Supplied with heavy duty four inch swivel casters, mounting hardware, and drilled to fit the base of the "AWC" unit, offering ample stability to assemblies with a high center of gravity. Stocked in gray hammertone finish.
Cat. No. HDT **Price: $51.34**

CALIFORNIA CHASSIS COMPANY

"ALL PRICES SUBJECT TO CHANGE W/O NOTICE"

Net

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INVENTORY

While most distributors maintain a large and varied stock, they do not represent that they stock all manufacturers' products shown in this MASTER catalog.

ORDERING

It is important, when ordering, to mention specifically the edition and page number, also the catalog number of each item. This will avoid possible confusion and delay.

PRICES

INQUIRE ABOUT LATEST PRICES AND DELIVERY. Prices in this MASTER should not be considered as final.

DISCOUNTS

Trade discounts apply in most cases where LIST PRICES are shown.

LMB® Box Chassis

The Engineered Precision Line with Interlocking and Flangelocking Construction

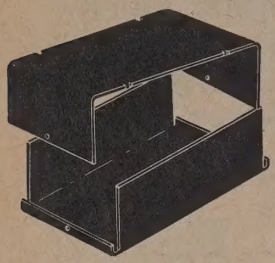
Here is the answer to box chassis needs, for the laboratory, manufacturer, experimenter, or builder. The following LMB® Boxes are available from stock in either interlocking (screw fastened) or snap latch. All screw fastenings are drilled and tapped. Self tapping screws are not used. Available colors include natural aluminum, gray or brown hammertone, and black crackle. When ordering specify style and color.

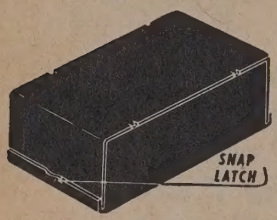
Aluminum used in all LMB® products is aircraft quality specifications type 3003-H 14.

All prices quoted are dealer net. Manufacturers Special Discounts on Application.

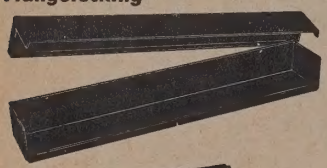
WRITE FOR COMPLETE CATALOGUE

Interlocking





Flangelocking



Endlock

SLIDE COVER

SHIELDED CHASSIS

INTERLOCKING (SCREW-FASTENED OR SNAP LATCH)

Model	Size	Price	Model	Size	Price
M00	2¼" x 1½" x 1⅜"	.57	850	8½" x 2⅛" x 1⅝"	1.35
00Z	2 5/16" x 2⅛" x 1¾"	.64	138	6¼" x 3½" x 2⅛"	1.32
000	3¼" x 2⅛" x 1⅝"	.68	139	5½" x 3" x 1¼"	1.01
00	4" x 2⅛" x 1⅝"	.71	140PL	3" x 4" x 5"	1.29
100	2¾" x 2⅛" x 2⅝"	.89	140	3" x 4" x 5"	1.61
101	4¼" x 2¼" x 1¼"	.87	141PL	6" x 4" x 3"	1.44
102	4" x 2" x 2¾"	1.02	141	6" x 4" x 3"	1.72
103	2¾" x 2⅛" x 2⅛"	.85	142PL	6" x 4" x 5"	1.68
107	4" x 2¼" x 2¼"	.96	142	6" x 4" x 5"	2.11
108	5" x 2¼" x 2¼"	1.03	143	4" x 4" x 2"	1.33
135	3¾" x 3" x 2⅛"	.97	144	10" x 4" x 2½"	2.19
136	5¼" x 3" x 2⅛"	1.08	145	7" x 5" x 3"	2.11
650	6½" x 2⅛" x 1⅝"	1.05	146	8" x 6" x 4½	2.99
137	8" x 3" x 2¾"	1.61	15	12" x 2" x 1¾"	1.61

SIDELOCK and ENDLOCK CONSTRUCTION

LMB® aluminum Box chassis with sidelock and endlock construction are dust proof, semi-water, and rain proof. Sturdy construction and 100% shielded. The following models are available in plain aluminum, or finished in black, gray, or brown. Endlock or sidelock construction:

Model	Size	Price	Model	Size	Price
221	2¾" x 3⅛" x 1⅝"	1.13	654	6" x 5" x 4"	2.51
321	3¼" x 2⅛" x 1⅝"	1.13	666	6" x 6" x 6"	3.39
421	4" x 2⅛" x 1⅝"	1.13	686	6" x 8" x 6"	4.27
422	4" x 2¼" x 2¼"	1.29	695	6" x 9" x 5"	3.84
424	4" x 2" x 4"	1.98	753	7" x 5" x 3"	2.60
435	4" x 3" x 5"	2.19	754	7" x 5" x 4"	2.76
444	4" x 4" x 4"	1.89	863	8" x 6" x 3½"	2.86
531	5¼" x 3" x 1½"	1.29	865	8" x 6" x 5"	3.57
532	5¼" x 3" x 2⅛"	1.47	1063	10" x 6" x 3½"	3.57
534	5⅝" x 3" x 4"	2.06	1085	10" x 8" x 5"	4.42
543	5" x 4" x 3"	1.87	1221	12" x 2" x 1¾"	1.87
546	5" x 4" x 6"	2.74	1274	12" x 7" x 4"	4.65
645	6" x 4" x 5"	2.60	1754	17" x 5" x 4"	5.27

SLIDE COVER (or dust cover) BOXES

Designed by BROADCAST ENGINEERS

No.	L	W	H	Ea.	No.	L	W	H	Ea.
16—Natural Aluminum	13"	3⅛"	2⅝"	$1.85	18—Natural Aluminum	13"	5¼"	2⅝"	3.50
16—Gray, Black, Brown	13"	3⅛"	2⅝"	2.52	18—Gray, Black, Brown	13"	5¼"	2⅝"	4.30
17—Natural Aluminum	13"	4⅛"	2⅝"	3.18	19—Natural Aluminum	17"	3⅛"	2⅝"	3.35
17—Gray, Black, Brown	13"	4⅛"	2⅝"	3.95	19—Gray, Black, Brown	17"	3⅛"	2⅝"	4.15

SHIELDED CHASSIS

	L	W	H	Ea		L	W	H	Ea.
No. 20 Plain	7½"	7"	2"	$1.67	No. 21 Anodized	13"	10"	3"	$5.81
No. 20 Anodized	7½"	7"	2"	2.06	No. 22 Plain	17"	10"	3"	5.13
No. 21 Plain	13"	10"	3"	4.34	No. 22 Anodized	17"	10"	3"	6.67

PRINTED CIRCUIT CHASSIS

Printed circuit chassis are made with a shallow base with a cap cover on the bottom so that it can be removed to work on the assembly without removing the printed circuit from the chassis. All printed circuit chassis are of plain aluminum.

STANDARD SIZES

Model No.	L	W	D	Mounting Lip	Price
PC 325	3	2	½	3/16"	ea. .70
PC 635	6	3	½	3/16"	ea. .80
PC 645	6	4	½	⅛"	ea. .91
PC 855	8	5	½	⅛"	ea. 1.04
PC 10875	10	8	¾	½"	ea. 1.52
PC 12975	12	9	¾	5/8"	ea. 1.76

Model No.	Size	Mounting Lip	Model No.	Size	Mounting Lip
D 7131	7 x 13 x 1	½"	D 541	5 x 4 x 1	½"
for use in building with the Danco model No. 14 printed amplifier circuit ... ea. 1.17			for use in building with the Danco model No. 21, 31, 41 printed preamplifier circuit ... ea. $ .63		

WRITE FOR COMPLETE CATALOG

PRICES SUBJECT TO CHANGE

LMB®

Net

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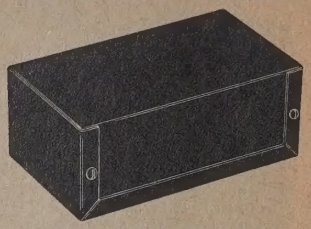
L M B® Box Chassis (Continued)

No advance in prices.
LMB has not advanced prices in 15 years.

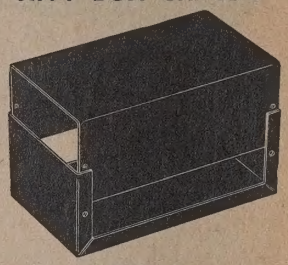
		DEALER NET Plain	Gray, Black, Brown
T-F 770	2¾x2⅛x1⅝	$ .62	$ .81
T-F 771	2¾x2⅛x2¾	.68	.95
T-F 772	3¼x2⅛x1⅛	.62	.84
T-F 773	3½x2⅛x1⅝	.62	.84
T-F 774	4 x2⅛x1⅝	.62	.95
T-F 775	4 x2¼x2¼	.75	.97
T-F 776	4 x2 x2¾	.75	1.00
T-F 777	4¼x2¼x1½	.72	1.00
T-F 778	5 x2¼x2¼	.78	1.03
T-F 779	5 x4 x3	.94	1.32
T-F 780	5¼x3 x2⅛	.82	$1.12
T-F 781	6 x5 x4	1.47	1.83
T-F 782	7 x5 x3	1.40	1.86
T-F 783	8 x6 x3½	1.72	2.25
T-F 784	10 x6 x3½	2.02	2.54
T-F 785	10 x2 x1⅝	1.15	1.57
T-F 786	12 x2½x2¼	1.37	1.67
T-F 787	12 x7 x4	2.71	3.43
T-F 788	17 x5 x4	2.92	3.44

TITE-FIT BOX CHASSIS



		PRICES Plain	Gray, Black, Brown
J-870	2¾x2⅛x1⅝	.62	$ .81
J-871	2¾x2⅛x2¾	.68	.95
J-872	3¼x2⅛x1⅛	.62	.84
J-873	3½x2⅛x1⅝	.62	.84
J-874	4 x2⅛x1⅝	.62	.95
J-875	4 x2¼x2¼	.75	.97
J-876	4 x2 x2¾	.75	1.00
J-877	4¼x2¼x1½	.72	1.00
J-878	5 x2¼x2¼	.78	1.03
J-879	5 x4 x3	.94	1.32
J-880	5¼x3 x2⅛	$ .82	$1.12
J-881	6 x5 x4	1.47	1.83
J-882	7 x5 x3	1.40	1.86
J-883	8 x6 x3½	1.72	2.25
J-884	10 x6 x3½	2.02	2.54
J-885	10 x2 x1⅝	1.15	1.57
J-886	12 x2½x2¼	1.37	1.67
J-887	12 x7 x4	2.71	3.43
J-888	17 x5 x4	2.92	3.44

JIFFY BOX CHASSIS



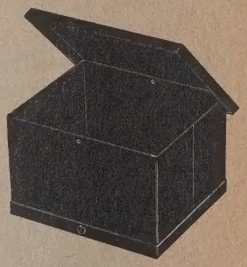
NO SCREWS

Just push together to close and the Catches snap into place—just a slight pressure of the fingers to open.

		ALUM. GAUGE	PRICES Plain	Gray, Black, or Brown
U-C 970	4x 4x2	.040	$1.57	$1.82
U-C 971	5x 4x3	.040	1.69	1.98
U-C 972	6x 5x4	.040	2.18	2.52
U-C 973	6x 6x6	.040	2.55	3.02
U-C 974	7x 5x3	.040	2.98	3.48
U-C 975	9x 6x5	.051	3.38	3.89
U-C 976	10x 8x7	.051	$4.63	$5.35
U-C 977	12x 7x6	.051	4.46	5.30
U-C 978	10x10x8	.051	5.90	6.85
U-C 979	12x11x8	.051	7.06	8.02
U-C 980	15x 9x7	.051	7.15	8.11

UTILITY BOXES

Give approximately 25% more usable space for building.



LMB Miniature Boxes are made in the following sizes and are carried in stock in the warehouse for prompt shipment.

ANY QUANTITY

	L	W	D	each	LIDS
M-01	1⅛"	x 1"	x 15/16"	$.42	$.12
M-10	1¾"	x 1¼"	x ⅞"	.42	.12
M-11	2"	x 1¼"	x ¾"	.42	.12
M-12	2"	x 1¼"	x 1"	.42	.12
M-15	2"	x 1¾"	x ½"	$.42	$.12
M-16	2"	x 1¾"	x ¾"	.42	.12
M-17	2"	x 1¾"	x 1"	.42	.12
M-018	2"	x 2"	x 1¼"	.42	.12

Following three numbers on special order only and in quantities of 500 each minimum.

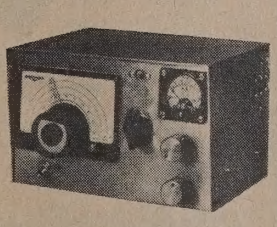
	L	W	D	each	LIDS
M-06	1½"	x 1⅛"	x ¾"	$.48	$.16
M-21	2½"	x 2"	x 1¼"	.52	.18
M-23	3⅞"	x 2⅜"	x ⅞"	$1.10	$.36

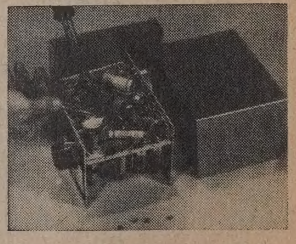
MINIATURE BOX CHASSIS

Precision made in steel only, cadmium plated. Made with or without mounting ears. Covers solder in when used in assembly.

UTILITY ENCLOSURES

No.	L	W	H		Plain	Gray
W-1A	7"	x 5"	x 4½"	with built in chassis	$3.97	$4.84
W-1B	10"	x 4"	x 3½"	with built in chassis	3.97	4.84
W-1C	8½"	x 6⅛"	x 5"	with built in chassis	4.43	5.33
W-1D	18"	x 9"	x 11"	will accommodate an 11" x 17" 2", 3" or 4" chassis	9.75	13.13

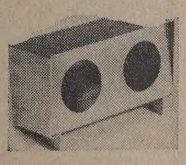


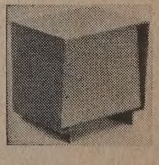


"AL-CAB" CABINETS for meter cases or any application where outstanding appearance is needed

No.	L	W	H		Plain	Gray
W-2AP	3½"	x 4"	x 3"	with holes	$1.88	$2.18
W-2A	3½"	x 4"	x 3½"	without holes	1.98	2.28
W-2B	3"	x 7"	x 3½"	with and without holes	2.25	2.67
W-2C	3⅜"	x 7"	x 3½"	without holes	2.93	3.36
W-2E	4½"	x 4½"	x 3½"	without holes	2.30	2.60

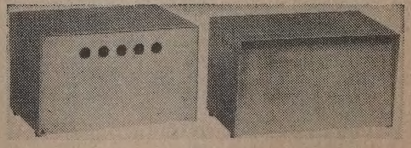
Holes in W-2AP, 2B are 2¼", 2 13/16". For 4" Meter holes and knockout, add 10% to above prices.





W.M. "AL-CAB" Deluxe Series All with Built-in Chassis

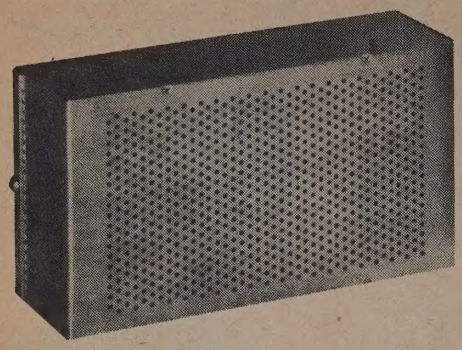
No.	L	W	H	Plain	Gray
W-2F	7½"	x 5"	x 4½"	$4.40	$5.18
W-2G	13"	x 10"	x 5¾"	9.36	11.06
W-2H	7"	x 11"	x 6¼"	7.38	8.63
W-2J	8"	x 11½"	x 7½"	8.10	9.35

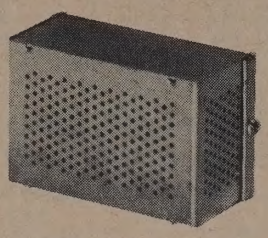


WRITE FOR COMPLETE CATALOG PRICES SUBJECT TO CHANGE

LMB® (Continued)

No advance in prices.
LMB has not advanced prices in 15 years.





LMB® PERFORATED BOX CHASSIS

LMB® Perforated Boxes are adaptable wherever heat dissipation is required as they are spaced in perforations that are set by laboratory research to give utmost heat dissipation and also give utmost shielding. They are die perforated on three sides and top of the box.

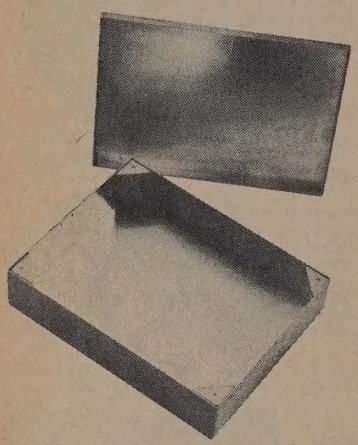
NO.	FINISH	SIZE	NET EA.
00Z	Plain or Gray	2 5/16 x 2 1/8 x 1 3/4	$ .83
000	" "	3 1/4 x 2 1/8 x 1 5/8	.95
00	" "	4 x 2 1/8 x 1 5/8	1.02
100	" "	2 3/4 x 2 1/8 x 2 5/8	1.20
101	" "	4 1/4 x 2 1/4 x 1 1/4	1.12
102	" "	4 x 2 x 2 3/4	1.41
107	" "	4 x 2 1/4 x 2 1/4	1.09
108	" "	5 x 2 1/4 x 2 1/4	1.50
135	" "	3 3/4 x 3 x 2 1/8	1.36
136	" "	5 1/4 x 3 x 2 1/8	1.50
137	" "	8 x 3 x 2 3/4	2.14
138	Plain or Gray	6 1/4 x 3 1/2 x 2 1/8	$1.82
139	" "	5 1/2 x 3 x 1 1/4	1.36
140	" "	3 x 4 x 5	1.75
141	" "	6 x 4 x 3	1.88
142	" "	6 x 4 x 5	2.18
143	" "	4 x 4 x 2	1.40
144	" "	10 x 4 x 2 1/2	2.19
650	" "	6 1/2 x 2 1/8 x 1 5/8	1.41
850	" "	8 1/2 x 2 1/8 x 1 5/8	1.59
15	" "	12 x 2 x 1 3/4	1.79

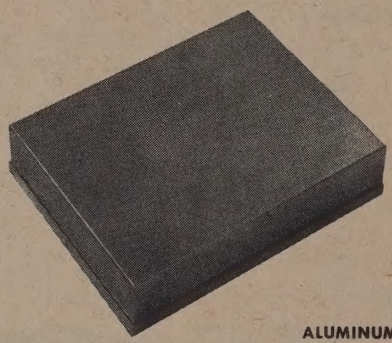
LMB® PRESENTS SOMETHING NEW IN CHASSIS —

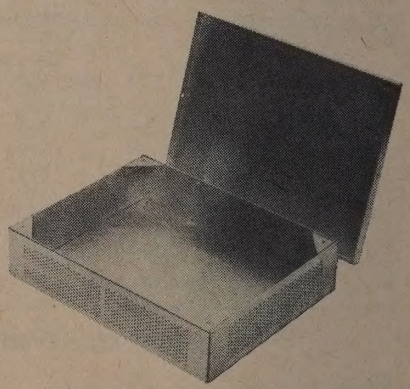
THE CHASSIS WITH THE CAP COVERS AS ORIGINATED BY LMB®

Built with the new original LMB® popular cap cover construction. This construction enables the builder to use either the top or the bottom of the chassis for construction. The Chassis can also be mounted on its side and construction can be on both top and bottom at the same time. Sturdily built from Aircraft quality aluminum, Type 3003, H-14, the same material as is used in the construction of all LMB® precision box chassis. Special technique in welding the corners makes for a stronger chassis than the orthodox type. Cap construction allows for using all the space inside the chassis without being hindered by the mounting flange, which takes from 10% to 20% of the mounting space out of the average chassis.

The P Series are perforated on all four sides and are ideal where heat dissipation is a factor. LMB® chassis — the better chassis, with the year's ahead advanced construction for your better project application. An advanced quality product competitively priced.







ALUMINUM

WITHOUT COVER				WITH CAP COVER			PERFORATED		
NO.	SIZE L W H	GAUGE	NET	NO.	L W H	NET	NO.	L W H	NET
553	5x 5x3	18	$1.35	553C	5x 5x3	$1.95	553P	5x 5x3	$2.30
572	5x 7x2	18	1.17	572C	5x 7x2	1.75	572P	5x 7x2	2.05
573	5x 7x3	18	1.42	573C	5x 7x3	1.95	573P	5x 7x3	2.25
5952	5x9½x2	18	1.25	5952C	5x9½x2	1.85	5952P	5x9½x2	2.15
5103	5x10x3	18	1.65	5103C	5x10x3	2.25	5103P	5x10x3	2.55
5133	5x13x3	18	1.85	5133C	5x13x3	2.50	5133P	5x13x3	2.80
642	6x 4x2	18	1.48	642C	6x 4x2	1.85	642P	6x 4x2	2.20
643	6x 4x3	18	1.55	643C	6x 4x3	2.45	643P	6x 4x3	2.45
6173	6x17x3	18	2.67	6173C	6x17x3	3.40	6173P	6x17x3	3.70
772	7x 7x2	18	1.35	772C	7x 7x2	1.90	772P	7x 7x2	2.20
792	7x 9x2	18	1.46	792C	7x 9x2	1.95	792P	7x 9x2	2.25
7103	7x10x3	18	1.53	7103C	7x10x3	2.50	7103P	7x10x3	2.80
7112	7x11x2	18	1.58	7112C	7x11x2	2.30	7112P	7x11x2	2.60
7123	7x12x3	18	2.03	7123C	7x12x3	2.75	7123P	7x12x3	3.05
7153	7x15x3	18	2.67	7153C	7x15x3	3.60	7153P	7x15x3	3.90
7173	7x17x3	18	2.75	7173C	7x17x3	3.70	7173P	7x17x3	4.00
8103	8x10x3	18	2.65	8103C	8x10x3	3.60	8103P	8x10x3	3.90
8123	8x12x3	18	2.42	8123C	8x12x3	3.23	8123P	8x12x3	3.53
8172	8x17x2	18	2.52	8172C	8x17x2	3.50	8172P	8x17x2	3.80
8173	8x17x3	16	2.95	8173C	8x17x3	4.50	8173P	8x17x3	4.80
10123	10x12x3	18	2.70	10123C	10x12x3	3.60	10123P	10x12x3	4.30
10143	10x14x3	18	2.95	10143C	10x14x3	4.30	10143P	10x14x3	4.70
10172	10x17x2	16	2.85	10172C	10x17x2	4.37	10172P	10x17x2	4.77
10173	10x17x3	16	3.40	10173C	10x17x3	5.18	10173P	10x17x3	5.98
10174	10x17x4	16	4.85	10174C	10x17x4	6.37	10174P	10x17x4	7.17
11173	11x17x3	14	4.20	11173C	11x17x3	6.60	11173P	11x17x3	7.10
12172	12x17x2	14	4.50	12172C	11x17x2	6.60	12172P	12x17x2	7.20
12173	12x17x3	14	4.60	12173C	12x17x3	6.90	12173P	12x17x3	7.50
13172	13x17x2	14	4.50	13172C	13x17x2	6.60	13172P	13x17x2	7.30
13173	13x17x3	14	4.80	13173C	13x17x3	6.90	13173P	13x17x3	7.50
13174	13x17x4	14	5.95	13174C	13x17x4	7.95	13174P	13x17x4	8.55

WRITE FOR COMPLETE CATALOG

Net

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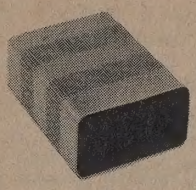
QUALITY CABINETS by LMB®

Original designs in cabinets for the electronic industry, for quality products. Use an original by LMB® to dress up your product.

Perforated, removable top, 3 tone, body gray, trim ivory, recessed front panel blue gray.

	Net Ea. Plain	Net Ea. Gray
CO-1 14½"x13"x6½"	$17.95	$19.95
Chassis for CO-1 11"x13"x2" or 1½"		2.75
CO-2 12"x10"x6½"	15.75	17.95
Chassis for CO-2 11"x8"x2" or 1½"		2.65



Perforated 3 sides, built in chassis, recessed front panel. Color, body gray, panel dark gray.

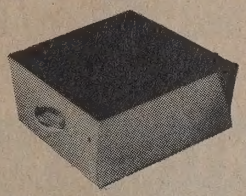
	Net Ea. Plain	Net Ea. Gray
CO-3 7¼"x5½"x3⅛"	$4.48	$5.40
CO-4 8"x10"x5"	6.95	8.55

Slotted ventilation, front panel recessed. Colors — Gray, Bronze Hammertone, Black Crackle, Plain — with chassis.

	Net Ea. Plain	Net Ea. Colors
CB-1 8"x10"x4½"	$4.47	$5.35
CB-2 6"x8"x4½"	4.27	4.97

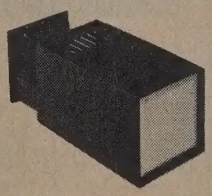
Aluminum with chassis contoured, hooded front recessed panel, slotted ventilation on bottom, louvers on side. Colors — Gold, Gray, Bronze Hammertone, Black Crackle, Plain — with chassis.

	Net Ea. Plain	Net Ea. Colors
B-1 10"x8"x6"	$11.15	$12.83
B-2 9"x6"x5"	10.02	11.48



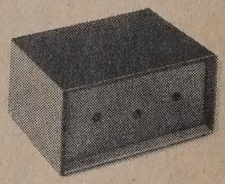
Hooded front, hinged door in rear, front panel removable by removing three screws. Chrome carrying handle. Colors blue, gray, bronze hammertone, black crackle, plain. Steel or aluminum.

	Net Ea. Plain	Net Ea. Colors
HA-1 (ALUM.) 11½"x10½"x5"	$8.85	$ 9.75



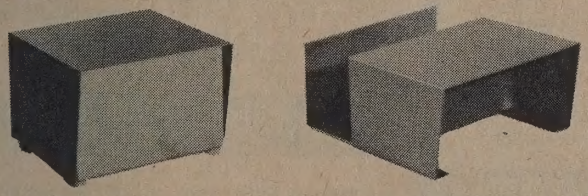
Slot ventilated, ventilation from underneath and sides, built in chassis, recessed panel. Chassis attached to back plate and is removable. Colors — Gray, Bronze Hammertone, Black Crackle, Plain.

	Net Ea. Plain	Net Ea. Colors
SQ-1 8½"x4½"x4½"	$4.65	$5.35



Double cabinet, inside cabinet fully shielded. Double recessed panel. Colors, Gray, Bronze Hammertone, Black crackle, Plain.

	Net Ea. Plain	Net Ea. Colors
CM-1 6"x8"x3⅞"	$4.50	$5.72



NEW SERIES. Original Construction. Cover slides off at bottom by removing 4 screws. Made of .040 aluminum. Finish: Plain or gray aluminum. Sensibly priced.

No.	D		W		H	Plain	Gray
275	2¾"	x	3"	x	4"	$1.58	$1.65
2754	2¾"	x	2¾"	x	4"	1.64	1.76
342	3"	x	4¼"	x	2⅜"	1.59	1.79
442	4"	x	4½"	x	2⅝"	1.71	1.95
444	4"	x	4"	x	4"	1.79	2.03
453	4"	x	5"	x	3"	1.85	2.06
463	4"	x	6"	x	3"	1.88	2.25
555	5"	x	5"	x	5"	2.40	2.75
564	5"	x	6"	x	4"	2.22	2.60
685	6"	x	8"	x	5"	3.33	3.75

STANDARD RELAY RACK PANELS

⅛" Aluminum material. Aluminum 1100 H 14. Notching is Western Electric. Finish — BLACK WRINKLE, GRAY WRINKLE OR HAMMERTONE. ALL PANELS 19" WIDE

No.	Height	Width	Net Price
#175	1¾"	x 19"	$1.09
#350	3½"	x 19"	1.42
#525	5¼"	x 19"	1.92
#7	7"	x 19"	2.42
#875	8¾"	x 19"	2.84
#1050	10½"	x 19"	3.59
#1225	12¼"	x 19"	4.09
#14	14"	x 19"	$4.76
#1575	15¾"	x 19"	5.34
#1750	17½"	x 19"	5.85
#1925	19¼"	x 19"	6.43
#21	21"	x 19"	7.01
#2425	24¼"	x 19"	9.00
#2625	26¼"	x 19"	10.50

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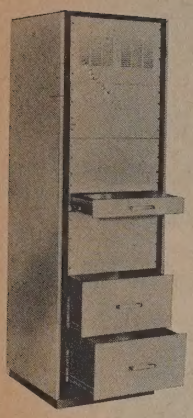
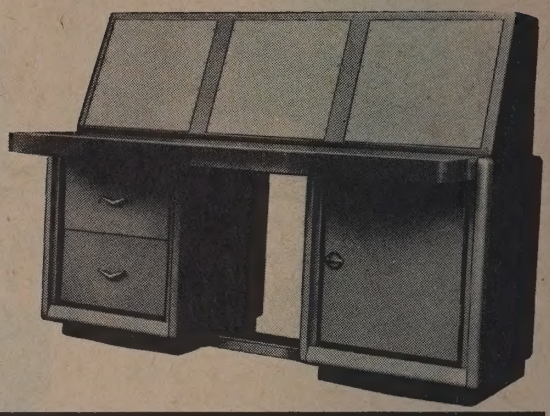
Par-Metal® PRESENTS
PAR-EXCELLENT EQUIPMENT



FEATURING
A CONTEMPO-RAMA
OF MODERN DESIGNED —
CONTEMPO-RACKS,
CONTEMPO-CONSOLES,
CONTEMPO ACCESSORIES
and HARDWARE.



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Steel Utility Cases	MC	35
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ASK YOUR DISTRIBUTOR FOR PAR-METAL PRODUCTS CATALOG

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MODULAR CABINET RACKS

Par-Metal

CONSTRUCTION DETAILS OF ASSEMBLED FULLY WELDED RACKS

To create a clear understanding of typical PAR-METAL PRODUCTS rack construction, the cut-away illustration below of a Series PL/FL cabinet details the features. From this simplified drawing and the enlargement of critical support areas, the quality of construction is evident. These versatile racks are planned to accept many accessories that complement the widest uses of your electronic equipment.

EACH PAR-METAL MODULAR RACK FRAME is welded into a completely assembled unit. Doors, Top Panels, Panel Mounting Angles and ALL necessary trims and mouldings are included. When set in rows of any quantity, necessary joining trims are also included. Details and dimensions are on Par-Metal Pages 6 thru 12. Full check lists of optional accessories on Par-Metal Pages 9, 10 and 12. CONTEMPO-RACKS are heavily welded and ground smooth in all 8 corners for added support.

REMOVABLE TOP PANELS: Blank formed steel panels are standard. For louvered, fan opening or ventilating top panels, see Par-Metal Page 23.

DETACHABLE SIDE PANELS Are easily removed from the outside. (Not used on Models PX/FX).

FRONT MOULDINGS are designed to match the decor of each model. (Not used on Models PC/FC).

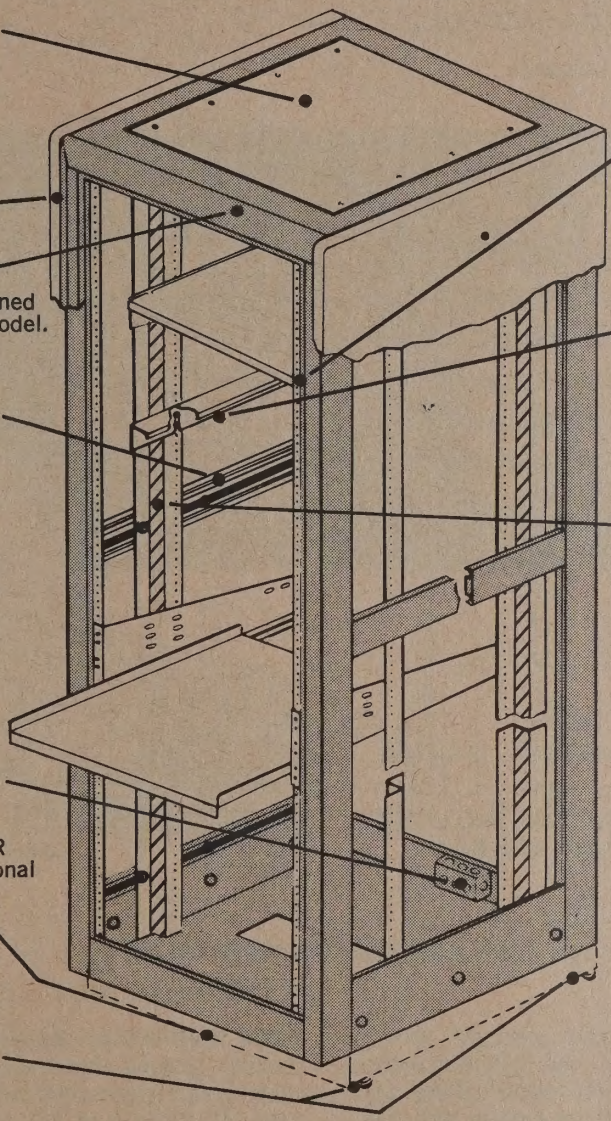
BOLT RETAINER RAILS: These tracks permit you to locate and lock both Panel Mounting Angles and Vertical Side Supports at your choice of forward or back position. Mounting bolts, hex nuts and lock washers are supplied.

A wide variety of Slides, Drawers and Extension Shelves are itemized on Par-Metal Page 17.

ELECTRICAL OUTLETS: A duplex outlet and utility box are installed under the rear door. Knockout holes for cable connections generously provided in all Professional Models.

RECESSED BASES OR ROLLER TRUCKS are available as optional accessories.

FLOOR LEVELERS: Four are supplied for each rack. Predrilled holes for floor levelers may also be used to bolt rack bottom to base or roller truck.



PANEL MOUNTING ANGLES are "L" Shaped structural steel, fully adjustable to your selection of front to back position. One pair is supplied with each rack. They are drilled to meet E.I.A.* and W.E.* hole spacing specifications. Full details are on Par-Metal Page 14.

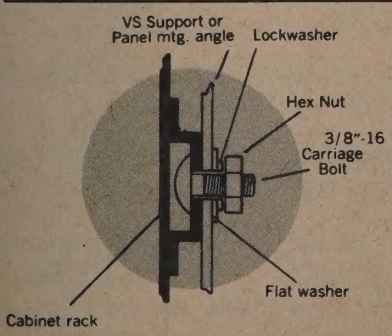
SIDE MOUNTING BRACKETS: May be used separately or with shelves, as shown. Slots allow for vertical adjustment. Zinc plated.

VERTICAL SIDE SUPPORTS: For attaching Side Mounting Brackets, Equipment Shelves, Slides, Extension Tables, etc. Made from #12 Gauge (.104") steel tapped 10-32 on standard EIA* and WE* hole spacing specifications. Mounting bolts, hex nuts and lock washers are provided. For details see Par-Metal Page 14.

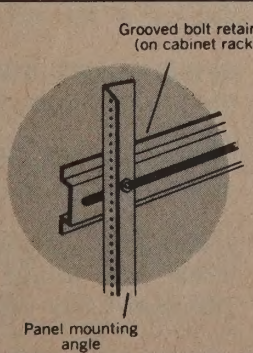
DOORS: (Not illustrated) Cut from a single sheet of 1/16" cold rolled steel and "dutch formed" on all sides to provide smooth, double thick edges. Available solid or with various modifications. (See Par-Metal Page 23). Lock handles are furnished on racks with front and rear doors. Racks with rear doors only have non-lock handles but lock handles are available. CONTEMPO front doors are "Pan Shaped." ALL CONTEMPO-Rack doors have "D" shaped, Flush Mounted handles.

*Alternate hole spacing of 5/8"-5/8"-1/2" center to center.

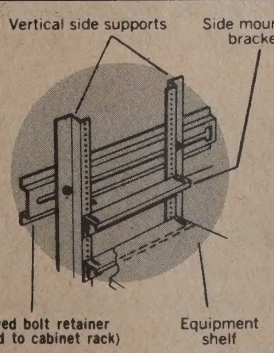
BOLT RETAINER RAILS



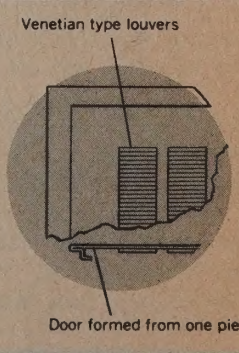
PANEL MOUNTING ANGLES



VERTICAL SIDE SUPPORTS



DOORS



PAR-METAL PRODUCTS • ENGINEERING ASSISTANCE AVAILABLE

Par-Metal® MODULAR CABINET RACKS

GENERAL DESCRIPTION

MODULAR CABINET RACKS are made in four (4) styles:

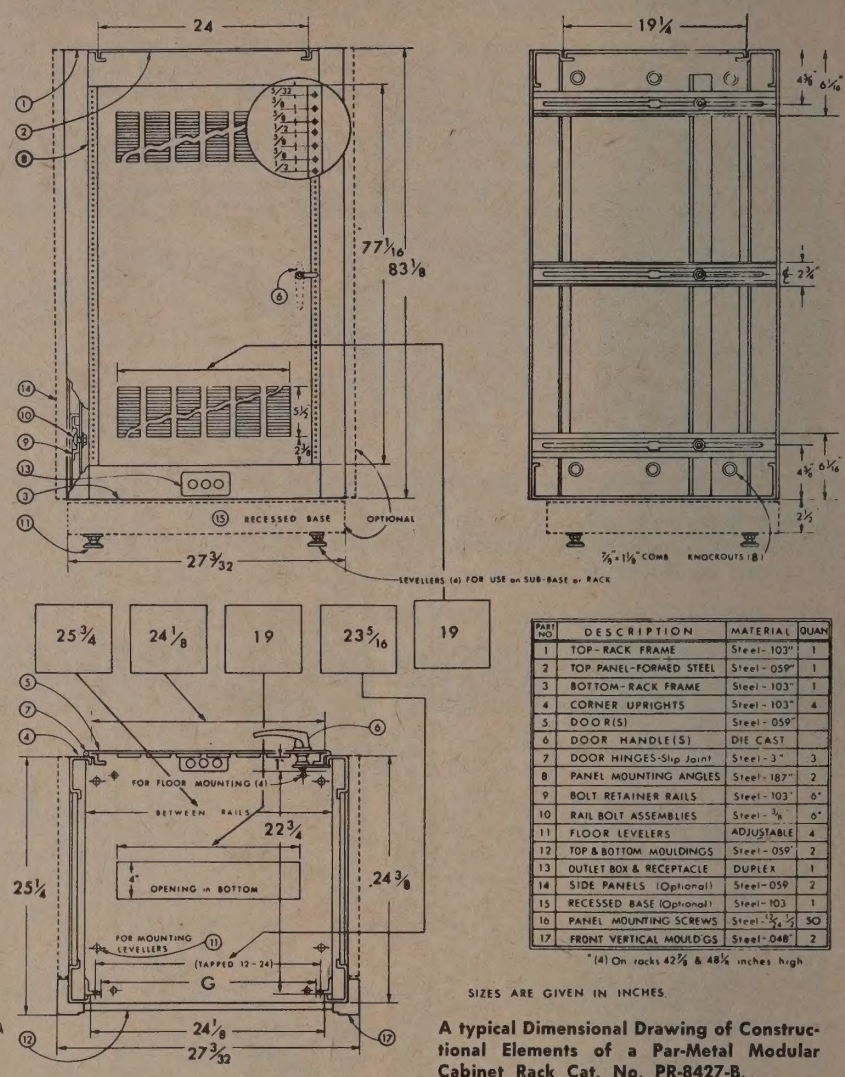
1. Racks built to accommodate removable Ball Cornered Side Panels (Series **PL** with Rear Door Only and Series **FL** with Front and Rear Doors). See Par-Metal Page 6.

2. Racks built for removable Square Cornered — Flush Mounted Side Panels (Series **PR** with Rear Door Only and Series **FR** with Front and Rear Doors). See Par-Metal Page 7.

3. Racks with Solid Side Walls (Series **PX** with Rear Door Only and Series **FX** with Front and Rear Doors). See Par-Metal Page 8.

4. **Contempo-Racks** in Modern design with **"Pan-Shaped"** Removable Side Panels. Series **PC** with "Dutch Formed" Rear Door only and with Flush-mounted Handle. Series **FC** with "Pan Shaped" Front Door added and with Flush mounted lock handles on both doors (see Par-Metal Page 11).

Each of these four (4) Series of Modular Cabinet Racks are made in about 50 different standard sizes and a wide variety of finishes. Special work must be quoted.



PART NO	DESCRIPTION	MATERIAL	QUAN
1	TOP-RACK FRAME	Steel-.103"	1
2	TOP PANEL-FORMED STEEL	Steel-.059"	1
3	BOTTOM-RACK FRAME	Steel-.103"	1
4	CORNER UPRIGHTS	Steel-.103"	4
5	DOOR(S)	Steel-.059"	
6	DOOR HANDLE(S)	DIE CAST	
7	DOOR HINGES-Slip Joint	Steel-3"	3
8	PANEL MOUNTING ANGLES	Steel-.187"	2
9	BOLT RETAINER RAILS	Steel-.103"	6*
10	RAIL BOLT ASSEMBLIES	Steel-⅜"	6*
11	FLOOR LEVELERS	ADJUSTABLE	4
12	TOP & BOTTOM MOULDINGS	Steel-.059"	2
13	OUTLET BOX & RECEPTACLE	DUPLEX	1
14	SIDE PANELS (Optional)	Steel-059	2
15	RECESSED BASE (Optional)	Steel-103	1
16	PANEL MOUNTING SCREWS	Steel-12-24 x ½	50
17	FRONT VERTICAL MOULDGS	Steel-.048"	2

*(4) On racks 42⅞ & 48¼ inches high

SIZES ARE GIVEN IN INCHES.

A typical Dimensional Drawing of Constructional Elements of a Par-Metal Modular Cabinet Rack Cat. No. PR-8427-B.

RACK FRAMES are #12 Gauge Steel (.104") are fully welded with modern, functional design.

A pair of **PANEL MOUNTING ANGLES** is included with each Rack. Hole spacing will meet both W.E. and E.I.A. Standards. Steel 3/8" diameter bolts travel these angles along prewelded on tracks in the rack frames to provide selective front to rear positioning. Professional Rack Panel Angles are 1-1/2" x 1-1/2" x 3/16" and are tapped 12-24 (10-32 tap optional). CONTEMPO-RACK Angles are 1-1/2" x 1" x 7/64" and are 10-32 tap ONLY.

DOORS: Except for Contempo Front Door (Series FC, see #4 above), all doors are "Dutch Formed" (one piece out of #16 gauge steel (.059"). On Racks with front doors, a solid door is standard. Louvered Rear Door is standard on all racks. However other door modifications are optional at no charge (see Part-Metal Page 23). To save aisle space, racks 30" wide or more have double doors with three-point latches.

HINGES for ALL doors are of the slip-joint type for simple removal.

DOOR HANDLES are die cast, chrome plated and are non-locking. Locking Handles are optional at $1.00 extra per door. Lock Handles are provided on both doors on Racks with "F" Prefixes at NO extra charge. CONTEMPO-RACKS have "D" shaped Flush Mounted Handles. Automobile handles are on ALL other racks.

RECESSED RACK BASES are listed on Par-Metal Pages 6-8 and 11. Do not use rack base with roller trucks.

REMOVABLE TOP PANELS are standard. For ventilating modifications see Par-Metal Page 23.

HARDWARE is provided as needed at no charge. This includes bolts, washers, nuts, panel mounting screws and a grounding duplex electric outlet (below rear door).

PAR-METAL PRODUCTS • CONVENIENT FACTORY WAREHOUSE

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MODULAR CABINET RACKS

Par-Metal

RACKS for 30" WIDE PANELS

RACKS for 24" WIDE PANELS

30° FRAME

RACKS for 30" WIDE PANELS

45° FRAME

RACKS for 19" WIDE PANELS

SEMI-CUSTOM DESIGNS

The Assembly illustrated is a typical combination of Standard Par-Metal Cabinet Racks. Any Grouping to fit your "specs" is available. Par-Metal Racks are made for 19", 24" and 30" wide panels in 18", 24", 26" and 31" depths, and in panel heights from 36¾" to 84".

UNLIMITED LAYOUT SELECTION

For Racks With

- ANY HEIGHT
- ANY WIDTH
- ANY DEPTH
- ANY CONFIGURATION
- ANY QUANTITY
- ANY FINISH

Let our Engineering Dept. Assist You!

Naturally, No Cost to you is Involved and No Obligation is Intended!

ORDERING INSTRUCTIONS!

1. **ORDER RACKS BY CATALOG NUMBER!**
2. **SEE ACCESSORY CHECK LISTS** (Par-Metal Pages 9, 10, and 12). Order accessories (Side Panels, Roller Trucks, Rack Bases, Slides, Drawers, Panels, etc.) at same time as racks to get best Industrial Discounts and guarantee perfect MATCHING FINISH. **ORDER BY CATALOG NUMBERS.**
3. Advise us of the number of racks to be set in each row so that the proper trims can be included at NO COST to you.
4. **YOU MUST SPECIFY FINISH!** Choose ANY of these:

Light Grey Hammertone Enamel....Mark Order **LH**
Dark Grey Hammertone Enamel....Mark Order **DH**
Light/Dark Gray Hammertone.....Mark Order **LD**
(Light Doors & Panels—Dark Frame & Trim)
Dark Grey Metallic Enamel....Mark Order **GM**
Blue Grey Wrinkle Enamel.....Mark Order **BG**
Black Wrinkle Enamel.....Mark Order **BW**
Primer Coat Only.....Mark Order **PC**

On **CONTEMPO-RACKS,** Standard Finish **(CGV):** Combines Dawn Gray **(DGV)** Textured Vinyl Doors and Panels with Charcoal Gray **(CHV)** Textured Vinyl Frame and Base.

SPECIAL ENAMEL, LACQUER, VINYL OR OTHER FINISHES AVAILABLE

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Par-Metal® RACK CATALOG NUMBER IDENTITY CHARTS

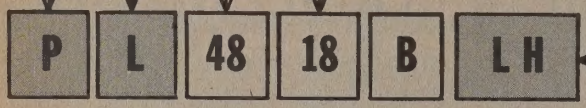
MODELS - PL/FL - PR/FR - PX/FX RACKS

P — HERE MEANS Racks with Rear Door ONLY and non-locking Automobile Handle.
F — HERE MEANS Racks with Both Front and Rear Doors and Lock Handles.

L—HERE MEANS Racks for OPTIONAL Detachable, Ball Cornered Side Panels
R—HERE MEANS Racks for OPTIONAL Detachable, Flush Mounted Side Panels
X—HERE MEANS Racks with Welded-on Solid Side Walls

37—HERE MEANS 42⅞" High Racks with 36¾" Panel Height
48—HERE MEANS 48⅛" High Racks with 42" Panel Height
58—HERE MEANS 58⅝" High Racks with 52½" Panel Height
67—HERE MEANS 67⅜" High Racks with 61¼" Panel Height
77—HERE MEANS 76⅛" High Racks with 70" Panel Height
84—HERE MEANS 83⅛" High Racks with 77" Panel Height
90—HERE MEANS 90⅛" High Racks with 84" Panel Height

18—HERE IDENTIFIES 18" Deep and 22" Wide Rack for 19" Panels
24—HERE IDENTIFIES 24" Deep and 22" Wide Rack for 19" Panels
27—HERE IDENTIFIES 24" Deep and 27" Wide Rack for 24" Panels
33—HERE IDENTIFIES 24" Deep and 33" Wide Rack for 30" Panels & Double Doors



PLACE FINISHING CODE LETTERS HERE.....
See Par-Metal Page 4

Typical Catalog Number

CONTEMPO-RACKS: MODELS PC/FC

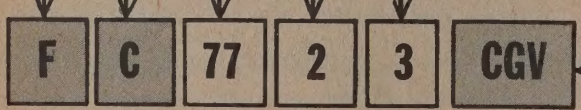
P — HERE MEANS Racks with Rear Door ONLY, with Flush Mounted, non-locking Handle.
F — HERE MEANS Racks with Both Front and Rear Doors and Flush Mounted Lock Handles.

C — HERE MEANS CONTEMPO RACKS

42 — HERE MEANS 46 1/16" High Racks with 42" Panel Height
52 — HERE MEANS 56 1/16" High Racks with 52½" Panel Height
61 — HERE MEANS 65 1/16" High Racks with 61¼" Panel Height
70 — HERE MEANS 74 1/16" High Racks with 70" Panel Height
77 — HERE MEANS 81 1/16" High Racks with 77" Panel Height
84 — HERE MEANS 88 1/16" High Racks with 84" Panel Height

1 — HERE IDENTIFIES 19" Panel Width
2 — HERE IDENTIFIES 24" Panel Width
3 — HERE IDENTIFIES 30" Panel Width and double "French" doors.

2 — HERE SHOWS 26" Rack Depth
3 — HERE SHOWS 31" Rack Depth



PLACE FINISHING CODE LETTERS HERE.....
See Par-Metal Page 4

Typical Catalog Number

PAR-METAL PRODUCTS • ENGINEERING ASSISTANCE AVAILABLE

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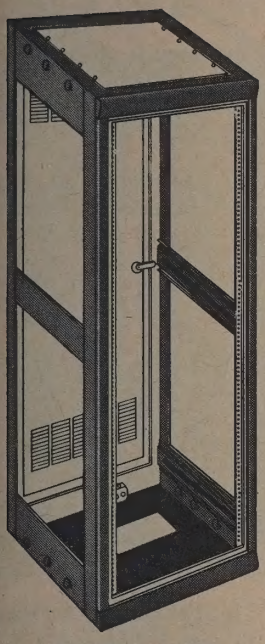
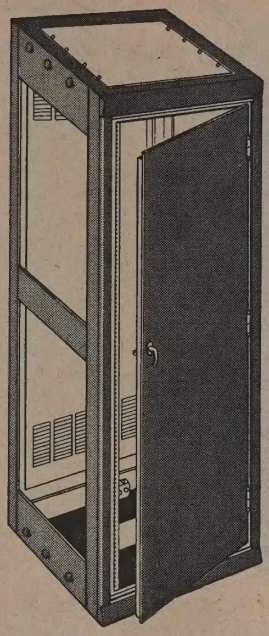
MODULAR CABINET RACKS

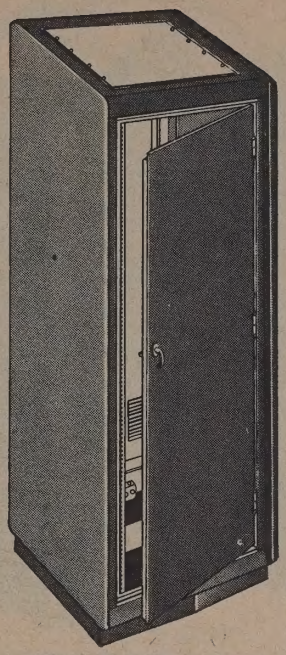
Par-Metal®



SERIES PL RACKS
With Rear Door Only



SERIES FL RACKS
With Front and Rear Doors



SERIES FL RACK equipped with ball cornered side panels and recessed base attached.

MAJOR ACCESSORIES for Use with Series "PL" and "FL" Racks

(For full accessory check list, please turn to Par-Metal Pages 9 and 10).

BALL CORNERED SIDE PANELS: Side panels constructed from #16 gauge steel, formed edges, welded at all 4 corners. Supplied with coinciding brackets at bottom for easy alignment with rack sides. Top secured with cowl fastener, readily removable from the outside. 1-1/4" thick panels, finished to match racks.

Cat. No.	To Fit PL or FL Rack Nos.	Net Price (Per Pair)
RL-418-B	4818	$45.15
RL-518-B	5818	49.90
RL-618-B	6718	55.90
RL-718-B	7718	62.60
RL-818-B	8418	70.10
RL-424-B	4824, 4827, 4833	53.25
RL-524-B	5824, 5827, 5833	57.60
RL-624-B	6724, 6727, 6733	63.00
RL-724-B	7724, 7727, 7733	67.10
RL-824-B	8424, 8427, 8433	70.70
RL-924-B	9024, 9027, 9033	74.60

RECESSED RACK BASES: Heavy duty bases made from #12 gauge (7/64") steel, rigidly formed and welded. Tapped holes on top match holes in bottom of racks; 4 adjustable floor levelers mounted on bottom. Not required with roller trucks. Bases 2-1/2" high.

Cat. No.	To Fit All Racks	Net Price
RB-2217	22" wide, 18" deep	$17.75
RB-2223	22" wide, 24" deep	18.30
RB-2723	27" wide, 24" deep	19.90
RB-3323	33" wide, 24" deep	21.50

RACKS FOR BALL CORNERED SIDE PANELS (SERIES PL and FL)

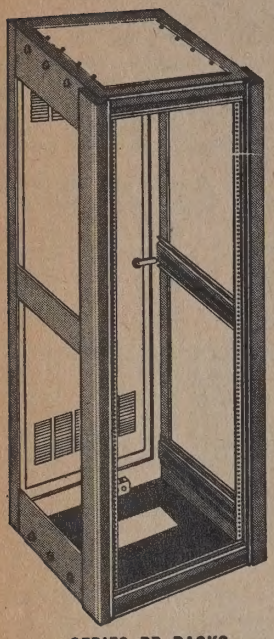
PL SERIES REAR DOOR ONLY		FL SERIES FRONT & REAR DOORS		RACK DIMENSIONS							
				OVERALL SIZE			PANEL SPACE	*CLEAR INSIDE DEPTH	**CLEAR INSIDE WIDTH (FRONT)	REMOVABLE TOP PANEL	
Cat. No.	Net Price	Cat. No.	Net Price	Height	††Width	††Depth	Height x Width			Width	Depth
FOR 19" WIDE PANELS AND 18⅜" DEEP RACKS											
PL-4818-B	$104.20	FL-4818-B	$123.30	48⅛"	22⅛"	18⅜"	42" x 19"	16¾"	17¾"	19"	12¼"
PL-5818-B	118.25	FL-5818-B	135.25	58⅝"			52½" x 19"				
PL-6718-B	122.90	FL-6718-B	144.55	67⅜"			61¼" x 19"				
PL-7718-B	136.10	FL-7718-B	163.95	76⅛"			70" x 19"				
PL-8418-B	145.15	FL-8418-B	177.20	83⅛"			77" x 19"				
FOR 19" WIDE PANELS AND 24⅜" DEEP RACKS											
PL-4824-B	124.75	FL-4824-B	147.60	48⅛"	22⅛"	24⅜"	42" x 19"	22¾"	17¾"	19"	19¼"
PL-5824-B	133.20	FL-5824-B	158.55	58⅝"			52½" x 19"				
PL-6724-B	143.10	FL-6724-B	168.20	67⅜"			61¼" x 19"				
PL-7724-B	161.75	FL-7724-B	188.25	76⅛"			70" x 19"				
PL-8424-B	172.50	FL-8424-B	204.60	83⅛"			77" x 19"				
PL-9024-B	202.45	FL-9024-B	220.10	90⅛"			84" x 19"				
FOR 24" WIDE PANELS AND 24⅜" DEEP RACKS											
PL-4827-B	157.75	FL-4827-B	180.60	48⅛"	27⅛"	24⅜"	42" x 24"	22¾"	22¾"	24"	19¼"
PL-5827-B	168.25	FL-5827-B	194.15	58⅝"			52½" x 24"				
PL-6727-B	179.20	FL-6727-B	212.30	67⅜"			61¼" x 24"				
PL-7727-B	192.45	FL-7727-B	224.60	76⅛"			70" x 24"				
PL-8427-B	211.95	FL-8427-B	251.70	83⅛"			77" x 24"				
PL-9027-B	231.40	FL-9027-B	276.55	90⅛"			84" x 24"				
†FOR 30" WIDE PANELS AND 24⅜" DEEP RACKS											
†PL-4833-B	180.60	†FL-4833-B	208.80	48⅛"	33⅛"	24⅜"	42" x 30"	22¾"	28¾"	30"	19¼"
†PL-5833-B	197.60	†FL-5833-B	237.05	58⅝"			52½" x 30"				
†PL-6733-B	213.95	†FL-6733-B	261.35	67⅜"			61¼" x 30"				
†PL-7733-B	232.00	†FL-7733-B	285.30	76⅛"			10" x 30"				
†PL-8433-B	253.15	†FL-8433-B	309.30	83⅛"			77" x 30"				
†PL-9033-B	274.30	†FL-9033-B	330.75	90⅛"			84" x 30"				

*ALLOW FOR LATCH HANDLE † Racks for 30" wide Panels have TWO FRENCH DOORS—to save aisle space.
**FOR CLEAR INSIDE WIDTH AT REAR, ADD 1⅜" †† For Racks with SIDE PANELS attached, add 2½" to width and ⅞" to depth.

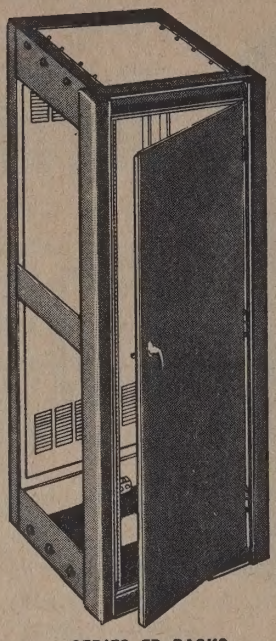
COLOR/FINISH MUST BE SPECIFIED. SEE PAR-METAL PAGE 4.

PAR-METAL PRODUCTS • ENGINEERING ASSISTANCE AVAILABLE

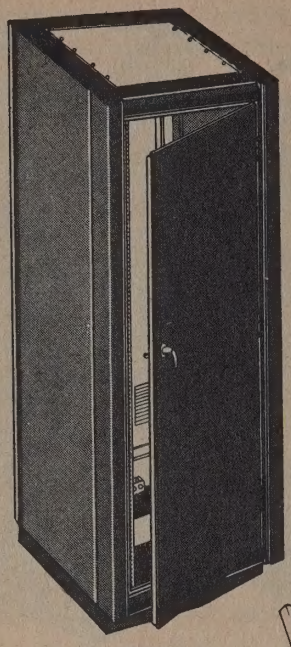
Par-Metal® MODULAR CABINET RACKS



SERIES PR RACKS
With Rear Doors Only



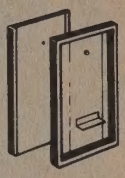
SERIES FR RACKS
With Front and Rear Doors



SERIES FR RACK
equipped with flush side panels and recessed base.

MAJOR ACCESSORIES for Use with Series "PR" and "FR" Racks

FLUSH MOUNTED SIDE PANELS: Sturdily constructed from #16 gauge steel, formed edges, welded at all 4 corners. Coinciding brackets at bottom allow for easy alignment with rack sides. Readily removable from the outside. 1-1/4" thick panels. Finished to match racks.



Cat. No.	To Fit PR, FR Racks	Net Price (Per Pair)
RS-418-B	4818	$ 43.40
RS-518-B	5818	47.40
RS-618-B	6718	51.95
RS-718-B	7718	58.25
RS-818-B	8418	65.25
RS-424-B	4824, 4827, 4833	49.15
RS-524-B	5824, 5827, 5833	56.80
RS-624-B	6724, 6727, 6733	61.45
RS-724-B	7724, 7727, 7733	64.50
RS-824-B	8424, 8427, 8433	67.20
RS-924-B	9024, 9027, 9033	73.75

RECESSED RACK BASES: Heavy duty base made from #12 gauge (7-64") steel, rigidly formed and welded. Tapped holes on top match holes in bottom of racks; 4 adjustable floor levelers mounted on bottom. Not required with roller trucks. Bases are 2-1/2" high.

Cat. No.	To Fit All Racks	Net Price
RB-2217	22" wide, 18" deep	$17.75
RB-2223	22" wide, 24" deep	18.30
RB-2723	27" wide, 24" deep	19.90
RB-3323	33" wide, 24" deep	21.50

(For full accessory check list, please turn to Par-Metal Pages 9 and 10).

RACKS FOR FLUSH MOUNTED SIDE PANELS (SERIES PR and FR)

PR SERIES REAR DOOR ONLY		FR SERIES FRONT & REAR DOORS		RACK DIMENSIONS							
				OVERALL SIZE			PANEL SPACE	*CLEAR INSIDE DEPTH	**CLEAR INSIDE WIDTH (FRONT)	REMOVABLE TOP PANEL	
Cat. No.	Net Price	Cat. No.	Net Price	Height	††Width	††Depth	Height x Width			Width	Depth
FOR 19" WIDE PANELS AND 18⅜" DEEP RACKS											
PR-4818-B	$104.20	FR-4818-B	$123.30	48⅛"	22⅛"	18⅜"	42" x 19"	16¾"	17¾"	19"	12¼"
PR-5818-B	118.25	FR-5818-B	135.25	58⅝"			52½" x 19"				
PR-6718-B	122.90	FR-6718-B	144.55	67⅜"			61¼" x 19"				
PR-7718-B	136.10	PR-7718-B	163.95	76⅛"			70" x 19"				
PR-8418-B	145.15	PR-8418-B	177.20	83⅛"			77" x 19"				
FOR 19" WIDE PANELS AND 24⅜" DEEP RACKS											
PR-4824-B	124.75	FR-4824-B	147.60	48⅛"	22⅛"	24⅜"	42" x 19"	22¾"	17¾"	19"	19¼"
PR-5824-B	133.20	FR-5824-B	158.55	58⅝"			52½" x 19"				
PR-6724-B	143.10	FR-6724-B	168.20	67⅜"			61¼" x 19"				
PR-7724-B	161.75	FR-7724-B	188.25	76⅛"			70" x 19"				
PR-8424-B	172.50	FR-8424-B	204.60	83⅛"			77" x 19"				
PR-9024-B	202.45	FR-9024-B	220.10	90⅛"			84" x 19"				
FOR 24" WIDE PANELS AND 24⅜" DEEP RACKS											
PR-4827-B	157.75	FR-4827-B	180.60	48⅛"	27⅛"	24⅜"	42" x 24"	22¾"	22¾"	24"	19¼"
PR-5827-B	168.25	FR-5827-B	194.15	58⅝"			52½" x 24"				
PR-6727-B	179.20	FR-6727-B	212.30	67⅜"			61¼" x 24"				
PR-7727-B	192.45	FR-7727-B	224.60	76⅛"			70" x 24"				
PR-8427-B	211.95	FR-8427-B	251.70	83⅛"			77" x 24"				
PR-9027-B	231.40	FR-9027-B	276.55	90⅛"			84" x 24"				
†FOR 30" WIDE PANELS AND 24⅜" DEEP RACKS											
†PR-4833-B	180.60	†FR-4833-B	208.80	48⅛"	33⅛"	24⅜"	42" x 30"	22¾"	28¾"	30"	19¼"
†PR-5833-B	197.60	†FR-5833-B	237.05	58⅝"			52½" x 30"				
†PR-6733-B	213.95	†FR-6733-B	261.35	67⅜"			61¼" x 30"				
†PR-7733-B	232.00	†FR-7733-B	285.30	76⅛"			10" x 30"				
†PR-8433-B	253.15	†FR-8433-B	309.30	83⅛"			77" x 30"				
†PR-9033-B	274.30	†FR-9033-B	330.75	90⅛"			84" x 30"				

*ALLOW FOR LATCH HANDLE † Racks for 30" wide Panels have TWO FRENCH DOORS—to save aisle space.
**FOR CLEAR INSIDE WIDTH AT REAR, ADD 1⅜" †† For Racks with SIDE PANELS attached, add 2½" to width and ⅞" to depth.

COLOR/FINISH MUST BE SPECIFIED. SEE PAR-METAL PAGE 4.

ASK YOUR DISTRIBUTOR FOR PAR-METAL PRODUCTS CATALOG

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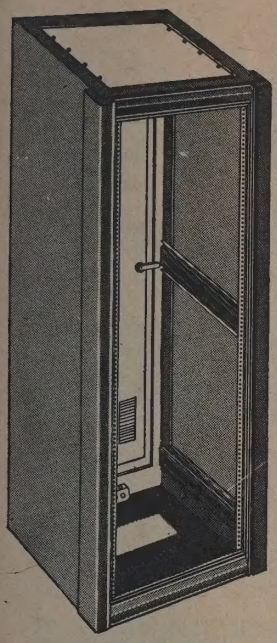
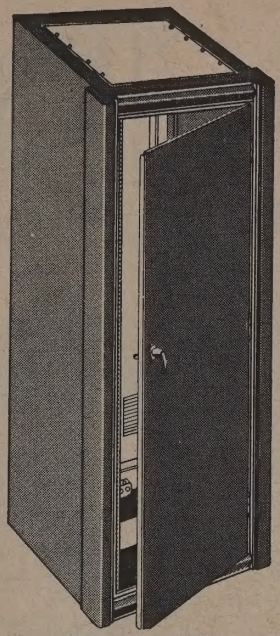
MODULAR CABINET RACKS

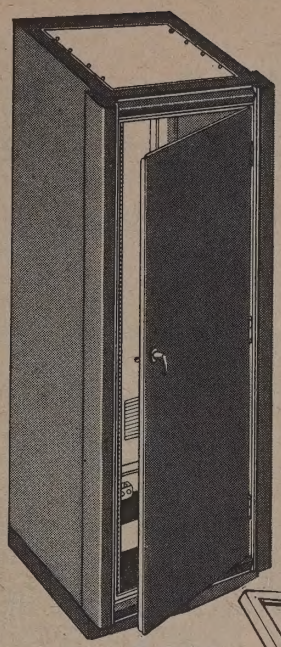
Par-Metal®



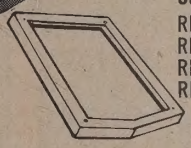
SERIES PX RACKS
With Rear Door Only



SERIES FX RACKS
With Front and Rear Doors

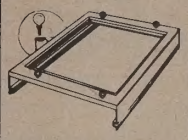


SERIES FX RACKS
equipped with
recessed base



MAJOR ACCESSORIES for Use with Series "PX" and "FX" Racks

(For full accessory check list, please turn to Par-Metal Pages 9 and 10).



LIFT BOLT ASSEMBLY can be supplied on any rack listed on Par-Metal Pages 6, 7, 8 and 11. Eyebolts have ½" diam. threaded stud; eye opening 1 3/16" diam. Top of rack reinforced. Specify **"with IB Assembly"** when ordering.

PRICES ON REQUEST

RECESSED RACK BASES: Heavy duty bases made from #12 gauge (7/64") steel, rigidly formed and welded. Tapped holes on top match holes in bottom of racks; 4 adjustable floor levelers mounted on bottom. Not required with roller trucks. Bases 2-1/2" high.

Cat. No.	To Fit All Racks	Net Price
RB-2217	22" wide, 18" deep	$17.75
RB-2223	22" wide, 24" deep	18.30
RB-2723	27" wide, 24" deep	19.90
RB-3323	33" wide, 24" deep	21.50

RACKS WITH SOLID WELDED-ON SIDE WALLS (SERIES PX and FX)

PX SERIES REAR DOOR ONLY		FX SERIES FRONT & REAR DOORS		RACK DIMENSIONS							
				OVERALL SIZE			PANEL SPACE	*CLEAR INSIDE DEPTH	**CLEAR INSIDE WIDTH (FRONT)	REMOVABLE TOP PANEL	
Cat. No.	Net Price	Cat. No.	Net Price	Height	††Width	††Depth	Height x Width			Width	Depth
FOR 19" WIDE PANELS AND 18¼" DEEP RACKS											
PX-3718-B	$ 92.15	FX-3718-B	$107.60	42⅞"	22"	18¼"	36¾" x 19"	16¾"	17¾"	19"	12¼"
PX-4818-B	96.75	FX-4818-B	116.70	48⅛"			42" x 19"				
PX-5818-B	110.25	FX-5818-B	134.70	58⅝"			52½" x 19"				
PX-6718-B	115.50	FX-6718-B	137.70	67⅜"			61¼" x 19"				
PX-7718-B	128.25	FX-7718-B	150.65	76⅛"			70" x 19"				
PX-8418-B	140.00	FX-8418-B	164.60	83⅛"			77" x 19"				
FOR 19" WIDE PANELS AND 24¼" DEEP RACKS											
PX-4824-B	112.00	FX-4824-B	133.20	48⅛"	22"	24¼"	42" x 19"	22¾"	17¾"	19"	19¼"
PX-5824-B	118.50	FX-5824-B	145.10	58⅝"			52½" x 19"				
PX-6724-B	137.10	FX-6724-B	163.80	67⅜"			61¼" x 19"				
PX-7724-B	151.70	FX-7724-B	178.55	76⅛"			70" x 19"				
PX-8424-B	164.10	FX-8424-B	194.30	83⅛"			77" x 19"				
PX-9024-B	184.55	FX-9024-B	216.75	90⅛"			84" x 19"				
FOR 24" WIDE PANELS AND 24¼" DEEP RACKS											
PX-4827-B	142.45	FX-4827-B	175.95	48⅛"	27"	24¼"	42" x 24"	22¾"	22¾"	24"	19¼"
PX-5827-B	154.40	FX-5827-B	183.20	58⅝"			52½" x 24"				
PX-6727-B	162.35	FX-6727-B	206.35	67⅜"			61¼" x 24"				
PX-7727-B	179.55	FX-7727-B	207.50	76⅛"			70" x 24"				
PX-8427-B	194.50	FX-8427-B	226.35	83⅛"			77" x 24"				
PX-9027-B	214.50	FX-9027-B	245.80	90⅛"			84" x 24"				
†FOR 30" WIDE PANELS AND 24¼" DEEP RACKS											
†PX-4833-B	166.50	†FX-4833-B	202.75	48⅛"	33"	24"	42" x 30"	22¾"	28¾"	30"	19¼"
†PX-5833-B	180.60	†FX-5833-B	222.95	58⅝"			52½" x 30"				
†PX-6733-B	195.50	†FX-6733-B	242.90	67⅜"			61¼" x 30"				
†PX-7733-B	213.40	†FX-7733-B	266.60	76⅛"			10" x 30"				
†PX-8433-B	234.15	†FX-8433-B	290.30	83⅛"			77" x 30"				
†PX-9033-B	254.00	†FX-9033-B	310.40	90⅛"			84" x 30"				

*ALLOW FOR LATCH HANDLE

**FOR CLEAR INSIDE WIDTH AT REAR, ADD 1⅜"

†Racks for 30" wide Panels have TWO FRENCH DOORS—to save aisle space.

††For Racks with Vertical Corner Trims, add 1½" to width and ⅞" to depth.

COLOR/FINISH MUST BE SPECIFIED. SEE PAR-METAL PAGE 4.

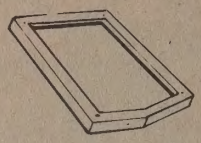
PAR-METAL PRODUCTS • CONVENIENT FACTORY WAREHOUSE

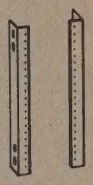
Par-Metal® MODULAR CABINET RACK ACCESSORY CHECK LIST

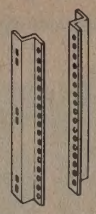
For CONTEMPO-RACK Accessory Check List, please turn to Par-Metal Page 12.

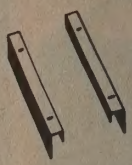
DETACHABLE SIDE PANELS (RS Type)

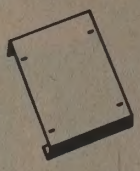
DETACHABLE SIDE PANELS (RL Type)


RECESSED RACK BASE


PANEL MOUNTING ANGLES


VERTICAL SIDE SUPPORTS


MOUNTING BRACKETS


EQUIPMENT SHELF

PAR-METAL PAGE RACK *Cat. No.	6 and 7 DETACHABLE SIDE PANELS	6-7-8 RECESSED RACK BASES	14 PANEL MOUNTING ANGLES	14 VERTICAL SIDE SUPPORTS	14 MOUNTING BRACKETS	14 EQUIPMENT SHELVES	13 EXTERIOR TABLES
FOR 19" WIDE PANELS AND 18⅜" OR 18¼" DEEP RACKS							
*-3718-B		RB-2217	PA-36	VS-36	BR-118	SS-1918	RX-119
*-4818-B	**—418-B		PA-42	VS-42			
*-5818-B	**—518-B		PA-52	VS-52			
*-6718-B	**—618-B		PA-61	VS-61			
*-7718-B	**—718-B		PA-70	VS-70			
*-8418-B	**—818-B		PA-77	VS-77			
FOR 19" WIDE PANELS AND 24⅜" OR 24¼" DEEP RACKS							
*-4824-B	**—424-B	RB-2223	PA-42	VS-42	BR-124	SS-1924	RX-119
*-5824-B	**—524-B		PA-52	VS-52			
*-6724-B	**—624-B		PA-61	VS-61			
*-7724-B	**—724-B		PA-70	VS-70			
*-8424-B	**—824-B		PA-77	VS-77			
*-9024-B	**—924-B		PA-84	VS-84			
FOR 24" WIDE PANELS AND 24⅜" OR 24¼" DEEP RACKS							
*-4827-B	**—424-B	RB-2723	PA-42	VS-42	BR-124	SS-2724	RX-124
*-5827-B	**—524-B		PA-52	VS-52			
*-6727-8	**—624-B		PA-61	VS-61			
*-7727-B	**—724-B		PA-70	VS-70			
*-8427-B	**—824-B		PA-77	VS-77			
*-9027-B	**—924-B		PA-84	VS-84			
FOR 30" WIDE PANELS AND 24⅜" OR 24¼" DEEP RACKS							
*-4833-B	**—424-B	RB-3323	PA-42	VS-42	BR-124	SS-3324	RX-130
*-5833-B	**—524-B		PA-52	VS-52			
*-6733-B	**—624-B		PA-61	VS-61			
*-7733-B	**—724-B		PA-70	VS-70			
*-8433-B	**—824-B		PA-77	VS-77			
*-9033-B	**—924-B		PA-84	VS-84			

** For FLUSH MOUNTED SIDE PANELS, use Prefix RS.
** For BALL CORNERED SIDE PANELS, use Prefix RL.

KNOCKDOWN CABINET RELAY RACKS — FOR 19" WIDE PANELS AND 18" DEEP RACKS				Par-Metal Pages 19, 20
ER-213-A				ER-2212
ER-215-A				ER-2212
FD-215-A				R-2225
ER-217-A				ER-2212
FD-217-A				R-2225
ER-223-A				ER-2212
FD-223-A	PA-23	VS-23	■BR-118	■SS-1918
ER-225-A				ER-2212
FD-225-A	PA-25	VS-25	■BR-118	■SS-1918
ER-227-A				ER-2212
FD-227-A	PA-27	VS-27	■BR-118	■SS-1918

■ For use with VS Supports. Without VS Supports, use Shelf R-2225 only.

The accessory charts shown on these 2 pages give you a complete listing of standard accessories which may be used with Par-Metal **Modular Cabinet Racks** listed on Par-Metal Pages 6, 7, 8. **Relay Racks** (see Par-Metal Pages 19-20) and **Open Channel Type Racks** (see Par-Metal Page 18).

COLOR/FINISH MUST BE SPECIFIED. SEE PAR-METAL PAGE 4.

PAR-METAL PRODUCTS • ENGINEERING ASSISTANCE AVAILABLE

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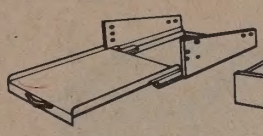
MODULAR CABINET RACK ACCESSORY CHECK LIST

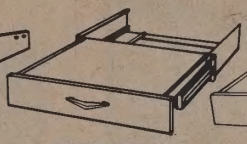
Par-Metal

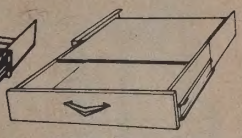
For CONTEMPO-RACK Accessory Check List, please turn to Par-Metal Page 12.

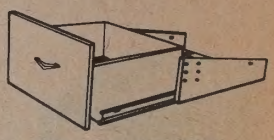
EXTERIOR DESK TABLE

SINGLE ROLLER TRUCK


BASIC SLIDE ASSEMBLY


DESK SHELF ASSEMBLY


DESK DRAWER ASSEMBLY


STORAGE DRAWER ASSEMBLY

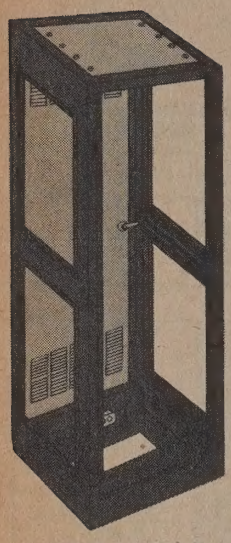
ROLLER TRUCKS (See Par-Metal Pages 15 & 16)					SLIDE ASSEMBLIES (See Par-Metal Page 17)		
Rack *Catalog Number	STANDARD	HEAVY DUTY UNITS			BASIC SLIDE	STORAGE DRAWER	DESK SHELF
	Single Unit	Single Unit	Double Unit	Triple Unit			
FOR 19" WIDE PANELS AND 18⅜" OR 18¼" DEEP RACKS							
*-3718-B *-4818-B *-5818-B *-6718-B *-7718-B *-8418-B	RT-412	HD-412 or **HD-425	HD-412-2 or **HD-425-2	HD-412-3 or **HD-425-3	BS-1980†	DD-1980†	SD-1935† or SK-1970 or SK-2419†
FOR 19" WIDE PANELS AND 24⅜" OR 24¼" DEEP RACKS							
*-4824-B *-5824-B *-6724-B *-7724-B *-8424-B *-9024-B		HD-420 or **HD-426	HD-420-2 or **HD-426-2	HD-420-3 or **HD-426-3	BS-1940 or BS-2419†	DD-1980† or DD-1940 or DD-2419†	SD-1935† or SK-1970 or SK-2419†
FOR 24" WIDE PANELS AND 24⅜" OR 24¼" DEEP RACKS							
*-4827-B *-5827-B *-6727-B *-7727-B *-8427-B *-9027-B		HD-427 or **HD-432	HD-427-2 or **HD-432-2	HD-427-3 or **HD-432-3	BS-2424†	DD-2424† or SD-2435†	SK-2424† or SD-2435†
FOR 30" WIDE PANELS AND 24⅜" OR 24¼" DEEP RACKS							
*-4833-B *-5833-B *-6733-B *-7733-B *-8433-B *-9033-B		HD-434 or **HD-438	HD-434-2 or **HD-438-2	HD-434-3 or **HD-438-3			
KNOCKDOWN CABINET RELAY RACKS — FOR 19" WIDE PANELS AND 18" DEEP RACKS							
ER-213-A ER-215-A FD-215-A ER-217-A FD-217-A ER-223-A FD-223-A ER-225-A FD-225-A ER-227-A FD-227-A	RT-412	HD-412	HD-412-2	HD-412-3	BS-1980†	DD-1980†	SD-1935† or SK-1970† or SK-2419†
KNOCKDOWN CHANNEL RELAY RACKS — FOR 19" WIDE PANELS AND 21" DEEP RACKS							
RX-193 RX-195					BS-1980†	DD-1980†	SD-1935† SK-1970 SK-2419†
KNOCKDOWN CHANNEL RELAY RACKS — FOR 19" WIDE PANELS AND 26" DEEP RACKS							
RR-194 RR-196 RR-197					BS-1940, BS-2419†	DD-1980†, DD-1940 or DD-2419†	SD-1935 SK-1970 SK-2419†
KNOCKDOWN CHANNEL RELAY RACKS — FOR 24" WIDE PANELS AND 26" DEEP RACKS							
RR-1922 RR-1923 RR-1924					BS-2424†	DD-2424† or SD-2435†	SK-2424 or SD-2435†

*For prefix letters see chart on Par-Metal Page 5. **For use with Racks with Removable Side Panels.

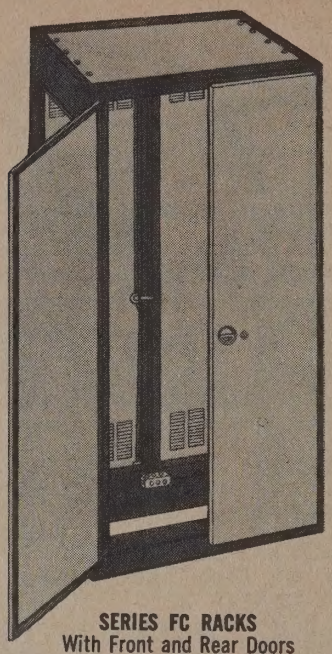
†Indicates these slides are designed for heavy duty use. COLOR/FINISH MUST BE SPECIFIED. SEE PAR-METAL PAGE 4.

ASK YOUR DISTRIBUTOR FOR PAR-METAL PRODUCTS CATALOG

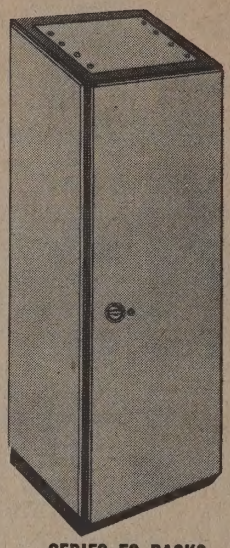
Par-Metal® CONTEMPO-UNIT WELDED CABINET RACKS



SERIES PC RACKS
With Rear Door Only
(Rack Frame)



SERIES FC RACKS
With Front and Rear Doors
(Racks for 30" Wide Panels Have Two French Doors to Save Aisle Space)

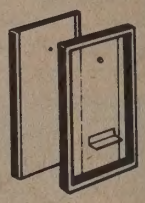


SERIES FC RACKS
With Pan Shaped Side Panels and Recessed Base Added

MAJOR ACCESSORIES for Use With CONTEMPO-RACKS Series "PC" and "FC"

(For full accessory check list, see facing page.)

PAN SHAPED SIDE PANELS: Side panels constructed from #16 gauge steel, formed edges, welded at all 4 corners. Supplied with coinciding brackets at bottom for easy alignment with rack sides. Secured with cowl fastener. SIDE PANELS are 3/4" thick and are readily removable from the outside. Finished to match the Rack.



Cat. No.	To Fit Rack Nos.	Net Price (Per Pair)
CS-422	4212, 4222, 4232	$49.55
CS-522	5212, 5222, 5232	53.55
CS-612	6112, 6122, 6132	58.60
CS-702	7012, 7022, 7032	62.40
CS-772	7712, 7722, 7732	65.75
CS-842	8412, 8422, 8432	69.40
CS-423	4213, 4223, 4233	57.00
CS-523	5213, 5223, 5233	61.60
CS-613	6113, 6123, 6133	67.50
CS-703	7013, 7023, 7033	71.00
CS-773	7713, 7723, 7733	75.65
CS-843	8413, 8423, 8433	79.80

RECESSED RACK BASES: Heavy duty bases made from #12 gauge (7/64") steel, rigidly formed and welded. Tapped holes on top match holes in bottom of racks; 4 adjustable floor levelers mounted on bottom. Not required with roller trucks. Bases 2½" high.

Cat. No.	To Fit All Racks	Net Price
CB-1926	21" wide, 26" deep	$17.85
CB-1931	21" wide, 31" deep	20.55
CB-2426	26" wide, 26" deep	19.45
CB-2431	26" wide, 31" deep	22.35
CB-3026	32" wide, 26" deep	21.00
CB-3031	32" wide, 31" deep	24.15

CONTEMPO-RACKS FOR PAN SHAPED SIDE PANELS (SERIES PC and FC)

CONTEMPO-RACKS FOR PAN SHAPED SIDE PANELS (SERIES PC and FC)

PC SERIES REAR DOOR ONLY		FC SERIES FRONT & REAR DOORS		RACK DIMENSIONS						
				OVERALL SIZE			PANEL SPACE	*CLEAR INSIDE DEPTH	**CLEAR INSIDE WIDTH (FRONT)	REMOVABLE TOP PANEL
Cat. No.	Net Price	Cat. No.	Net Price	Height	■Width	■■Depth	Height x Width			Width	Depth
FOR 19" WIDE PANELS AND 26" DEEP RACKS											
PC-4212	$130.60	FC-4212	$152.00	46¼"	21⅛"	26⅛"	42" x 19"	25"	17¾"	19"	21"
PC-5212	139.40	FC-5212	163.30	56⅝"			52½" x 19"				
PC-6112	149.75	FC-6112	174.40	65¾"			61¼" x 19"				
PC-7012	169.25	FC-7012	194.25	74⅛"			70" x 19"				
PC-7712	180.51	FC-7712	210.50	81⅛"			77" x 19"				
PC-8412	211.85	FC-8412	243.30	88⅛"			84" x 19"				
FOR 19" WIDE PANELS AND 31" DEEP RACKS											
PC-4213	150.15	FC-4213	171.60	46¼"	21⅛"	31⅛"	42" x 19"	30"	17¾"	19"	24½"
PC-5213	160.03	FC-5213	184.25	56⅝"			52½" x 19"				
PC-6113	172.20	FC-6113	196.85	65¾"			61¼" x 19"				
PC-7013	194.65	FC-7013	219.65	74⅛"			70" x 19"				
PC-7713	207.60	FC-7713	237.60	81⅛"			77" x 19"				
PC-8413	243.60	FC-8413	275.05	88⅛"			84" x 19"				
FOR 24" WIDE PANELS AND 26" DEEP RACKS											
PC-4222	161.45	FC-4222	185.00	46¼"	26⅛"	26⅛"	42" x 24"	25"	22¾"	24"	21"
PC-5222	172.15	FC-5222	198.50	56⅝"			52½" x 24"				
PC-6122	183.40	FC-6122	210.50	65⅝"			61¼" x 24"				
PC-7022	196.90	FC-7022	224.40	74⅛"			70" x 24"				
PC-7722	216.85	FC-7722	249.85	81⅛"			77" x 24"				
PC-8422	236.80	FC-8422	271.35	88⅛"			84" x 24"				
FOR 24" WIDE PANELS AND 31" DEEP RACKS											
PC-4223	185.65	FC-4223	209.20	46¼"	26⅛"	31⅛"	42" x 24"	30"	22¾"	24"	24½"
PC-5223	198.00	FC-5223	224.30	56⅝"			52½" x 24"				
PC-6123	210.90	FC-6123	238.00	65⅝"			61¼" x 24"				
PC-7023	226.45	FC-7023	255.36	74⅛"			70" x 24"				
PC-7723	248.10	FC-7723	281.10	81⅛"			77" x 24"				
PC-8423	260.50	FC-8423	295.05	88⅛"			84" x 24"				
FOR 30" WIDE PANELS AND 26" DEEP RACKS											
†PC-4232	181.45	†FC-4232	210.00	46¼"	32⅛"	26⅛"	42" x 30"	25"	28¾"	30"	21"
†PC-5232	198.50	†FC-5232	238.50	56⅝"			52½" x 30"				
†PC-6132	214.90	†FC-6132	260.65	65¾"			61¼" x 30"				
†PC-7032	233.05	†FC-7032	284.50	74⅛"			70" x 30"				
†PC-7732	254.35	†FC-7732	310.05	81⅛"			77" x 30"				
†PC-8432	275.55	†FC-8432	332.70	88⅛"			84" x 30"				
FOR 30" WIDE PANELS AND 31" DEEP RACKS											
†PC-4233	208.65	†FC-4233	237.25	46¼"	32⅛"	31⅛"	42" x 30"	30"	28¾"	30"	24½"
†PC-5233	228.30	†FC-5233	268.30	56⅝"			52½" x 30"				
†PC-6133	247.15	†FC-6133	292.85	65¾"			61¼" x 30"				
†PC-7033	268.00	†FC-7033	319.45	74⅛"			70" x 30"				
†PC-7733	292.50	†FC-7733	348.20	81⅛"			77" x 30"				
†PC-8433	316.90	†FC-8433	374.05	88⅛"			84" x 30"				

* ALLOW FOR LATCH HANDLE. ** FOR CLEAR INSIDE WIDTH AT REAR, ADD 1⅜". † Racks for 30" wide Panels have TWO FRENCH DOORS (with 3 point latching) to save aisle space. ■ ADD ¾" for each side panel used. ■■ ADD ¾" for front door. Handles are Flush Mounted. COLOR/FINISH MUST BE SPECIFIED. SEE PAR-METAL PAGE 4.

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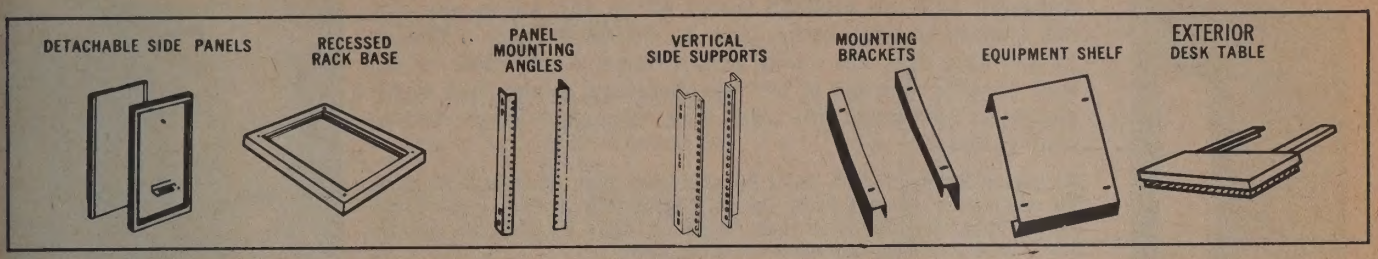
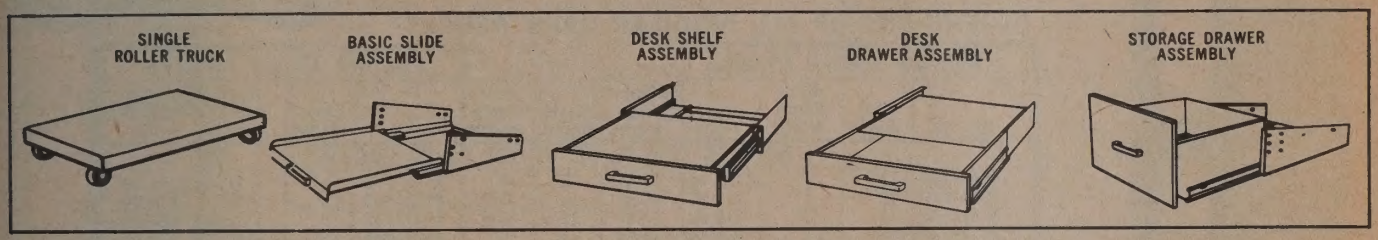
CONTEMPO-RACK ACCESSORY CHECK LIST

Par-Metal





This Accessory Check List is for CONTEMPO-RACKS ONLY.

For ALL other racks, please turn to Par-Metal Pages 9 and 10. Panels are listed on Par-Metal Pages 21 and 22.

For *Rack Cat. No.	Side Panels (Pair)	Recessed Rack Base	# Roller Trucks	Panel Angles (Pair)	Side Supports (Set/4)	# Exterior Desk Table (20" Deep)	Mounting Brackets (Pair)	Equipment Shelves	SLIDE ASSEMBLIES			
									Basic Slide	Desk Shelf	Desk/Drw. Comb.	Storage Drawer
SEE PAR-METAL PAGE NUMBER												
11	11	11	15 & 16	14	14	13	14	14	17	17	17	17
FOR 19" WIDE PANEL RACKS — 26" DEEP												
-4212 -5212 -6112 -7012 -7712 -8412	CS-422 CS-522 CS-612 CS-702 CS-772 CS-842	CB-1926	CR-192-1 or CRB-192-1	CPA-42 CPA-52 CPA-61 CPA-70 CPA-77 CPA-84	CVS-42 CVS-52 CVS-61 CVS-70 CVS-77 CVS-84	CRX-19-1	BR-126	SS-1926	BS-2419	SK-2419	SD-1935	DD-1940 or DD-2419
FOR 19" WIDE PANEL RACKS — 31" DEEP												
-4213 -5213 -6113 -7013 -7713 -8413	CS-423 CS-523 CS-613 CS-703 CS-773 CS-843	CB-1931	CR-193-1 or CRB-193-1	CPA-42 CPA-52 CPA-61 CPA-70 CPA-77 CPA-84	CVS-42 CVS-52 CVS-61 CVS-70 CVS-77 CVS-84	CRX-19-1	BR-131	SS-1931	BS-2419	SK-2419	SD-1935	DD-1940 or DD-2419
FOR 24" WIDE PANEL RACKS — 26" DEEP												
-4222 -5222 -6122 -7022 -7722 -8422	CS-422 CS-522 CS-612 CS-702 CS-772 CS-842	CB-2426	CR-242-1 or CRB-242-1	CPA-42 CPA-52 CPA-61 CPA-70 CPA-77 CPA-84	CVS-42 CVS-52 CVS-61 CVS-70 CVS-77 CVS-84	CRX-24-1	BR-126	SS-2426	BS-2424	SK-2424	SD-2435	DD-2424
FOR 24" WIDE PANEL RACKS — 31" DEEP												
-4223 -5223 -6123 -7023 -7723 -8423	CS-423 CS-523 CS-613 CS-703 CS-773 CS-843	CB-2431	CR-243-1 or CRB-243-1	CPA-42 CPA-52 CPA-61 CPA-70 CPA-77 CPA-84	CVS-42 CVS-52 CVS-61 CVS-70 CVS-77 CVS-84	CRX-24-1	BR-131	SS-2431	BS-2424	SK-2424	SD-2435	DD-2424
FOR 30" WIDE PANEL RACKS — 26" DEEP												
-4232 -5232 -6132 -7032 -7732 -8432	CS-422 CS-522 CS-612 CS-702 CS-772 CS-842	CB-3026	CR-302-1 or CRB-302-1	CPA-42 CPA-52 CPA-61 CPA-70 CPA-77 CPA-84	CVS-42 CVS-52 CVS-61 CVS-70 CVS-77 CVS-84	CRX-30-1	BR-126	SS-3026				
FOR 30" WIDE PANEL RACKS — 31" DEEP												
-4233 -5233 -6133 -7033 -7733 -8433	CS-423 CS-523 CS-613 CS-703 CS-773 CS-843	CB-3031	CR-303-1 or CRB-303-1	CPA-42 CPA-52 CPA-61 CPA-70 CPA-77 CPA-84	CVS-42 CVS-52 CVS-61 CVS-70 CVS-77 CVS-84	CRX-30-1	BR-131	SS-3031				

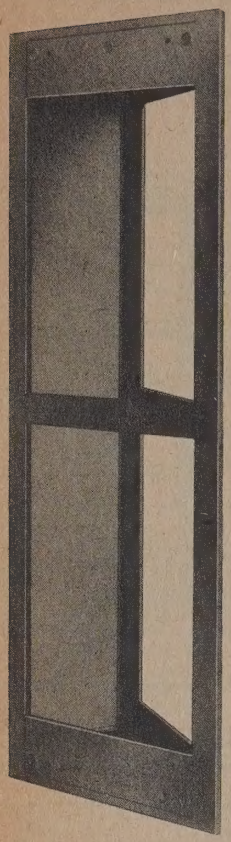
* Use Prefix Letters PC for Racks with Rear Door ONLY.
* Use Prefix Letters FC for Racks with Front & Rear Door.

For Double or Triple Units, change last Figure to 2 or 3.

COLOR/FINISH MUST BE SPECIFIED. SEE PAR-METAL PAGE 4.

PAR-METAL PRODUCTS • CONVENIENT FACTORY WAREHOUSE

Par-Metal® CABINET RACK ACCESSORIES



Cat. No. AF-6718-30
(with front vertical joining trim removed)

ANGULAR SECTION FRAMES (either 30° or 45°) are for use with ALL Modular Cabinet Racks listed on Par-Metal Pages 6 through 11 and have the same sturdy welded frame. A removable formed steel panel is supplied at the rear. Necessary joining trim is furnished (at no charge with order). Only Contempo Racks need no joining trims.

To match Racks: Finish must be specified, (see Par-Metal Page 4). To supply the correct trims (at no charge with order), Rack prefix letters must be identified (see Par-Metal Page 5). Angular Wedges are bolted to racks and need no other base.

DIMENSIONS OF ALL ANGULAR RACK WEDGES

FOR 30° ANGLE FRAMES							FOR 45° ANGLE FRAMES			
Cat. No.	Rear Width	Rear Panel Width	Net Price	To Match Rack Height	Rack Depth	Panel Height	Cat. No.	Rear Width	Rear Panel Width	Net Price
WEDGES FOR PL/FL, PR/FR, PX/FX RACKS										
AF-4818-30	10″	7″	$106.10	48⅛″	18″	42″	AF-4818-45	15″	11⅞″	$111.30
AF-5818-30	10″	7″	112.90	58⅜″	18″	52½″	AF-5818-45	15″	11⅞″	118.00
AF-6718-30	10″	7″	118.50	67⅜″	18″	61¼″	AF-6718-45	15″	11⅞″	124.50
AF-7718-30	10″	7″	131.80	76⅛″	18″	70″	AF-7718-45	15″	11⅞″	138.40
AF-8418-30	10″	7″	145.10	83⅛″	18″	77″	AF-8418-45	15″	11⅞″	152.30
AF-4824-30	13¼″	10⅛″	129.25	48⅛″	24″	42″	AF-4824-45	19½″	16½″	135.45
AF-5824-30	13¼″	10⅛″	131.50	58⅜″	24″	52½″	AF-5824-45	19½″	16½″	142.25
AF-6724-30	13¼″	10⅛″	142.25	67⅜″	24″	61¼″	AF-6724-45	19½″	16½″	149.30
AF-7724-30	13¼″	10⅛″	155.45	76⅛″	24″	70″	AF-7724-45	19½″	16½″	163.25
AF-8424-30	13¼″	10⅛″	168.80	83⅛″	24″	77″	AF-8424-45	19½″	16½″	178.80
AF-9024-30	13¼″	10⅛″	180.20	90⅛″	24″	84″	AF-9024-45	19½″	16½″	194.15
WEDGES FOR CONTEMPO-RACKS										
CW-422-30	13½″	10⅜″	123.20	46¼″	26″	42″	CW-422-45	19⅞″	16¾″	129.35
CW-522-30	13½″	10⅜″	125.35	56⅜″	26″	52½″	CW-522-45	19⅞″	16¾″	131.60
CW-612-30	13½″	10⅜″	135.60	65⅜″	26″	61¼″	CW-612-45	19⅞″	16¾″	142.40
CW-702-30	13½″	10⅜″	148.20	74¼″	26″	70″	CW-702-45	19⅞″	16¾″	155.63
CW-772-30	13½″	10⅜″	160.90	81⅛″	26″	77″	CW-772-45	19⅞″	16¾″	169.00
CW-842-30	13½″	10⅜″	171.80	88⅛″	26″	84″	CW-842-45	19⅞″	16¾″	180.35
CW-423-30	16″	12⅞″	144.75	46¼″	31″	42″	CW-423-45	23¾″	20⅝″	152.00
CW-523-30	16″	12⅞″	147.30	56⅜″	31″	52½″	CW-523-45	23¾″	20⅝″	154.65
CW-613-30	16″	12⅞″	159.35	65⅜″	31″	61¼″	CW-613-45	23¾″	20⅝″	167.30
CW-703-30	16″	12⅞″	174.15	74⅛″	31″	70″	CW-703-45	23¾″	20⅝″	182.85
CW-773-30	16″	12⅞″	189.10	81⅛″	31″	77″	CW-773-45	23¾″	20⅝″	198.55
CW-843-30	16″	12⅞″	201.85	88⅛″	31″	84″	CW-843-45	23¾″	20⅝″	211.90

EXTERIOR RACK TABLES

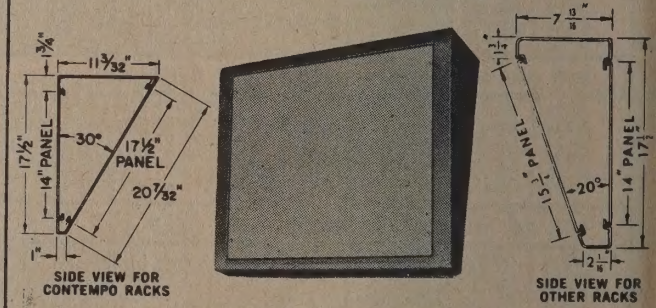
Table top is ¾″ plywood which is covered with formica across the full length of the top and on 3 sides. Sturdy battens underneath, plus 7/64″ steel girders bolted to internal steel side supports, reinforce the assembly mounting. Tables are adjustable to any height and use 3½″ of panel height. They can be custom built to your specifications.

TABLE FOR CONTEMPO RACKS

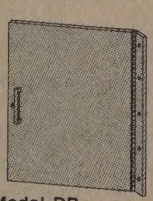
TABLE FOR OTHER RACKS

SINGLE UNIT			DOUBLE UNIT			TRIPLE UNIT		
Catalog Number	Table Width	Net Price	Catalog Number	Table Width	Net Price	Catalog Number	Table Width	Net Price
USE WITH RACKS FOR 19″ WIDE PANELS								
■RX-119 •CRX-19-1	21¼″ 21⅛″	$43.60 40.50	■RX-219 •CRX-19-2	42⅛″ 42¼″	$90.00 83.50	■RX-319 •CRX-19-3	64¼″ 63⅜″	$120.95 112.50
USE WITH RACKS FOR 24″ WIDE PANELS								
■RX-124 •CRX-24-1	26¼″ 26⅛″	49.50 46.00	■RX-224 •CRX-24-2	52⅛″ 52¼″	97.85 91.00	■RX-324 •CRX-24-3	79¼″ 78⅜″	139.75 130.00
USE WITH RACKS FOR 30″ WIDE PANELS								
■RX-130 •CRX-30-1	32¼″ 32⅛″	57.00 53.00	■RX-230 •CRX-30-2	64⅛″ 64¼″	105.90 98.50			
PRICES FOR LARGER UNIT TABLES ON REQUEST ■ For use with PL/FL, PR/FR, and PX/FX Racks. • For use with CONTEMPO-RACKS								

SLOPING PANEL TURRETS



Turrets extend across full rack width and are fastened to panel mounting angles by means of adjustable brackets which are included. They may be used with the slope **up** or **down**. Complete with removable front panel. Matched to rack finishes. *Front width corresponds to rack dimensions. Overall height is 17½″



Model DR

For CONTEMPO-RACKS		*Fits Racks with Panel Width	For PL/FL, PR/FR and PX/FX Racks	
Catalog Number	Net Price		Catalog Number	Net Price
CSP-19	$46.00	19″	SP-1719	$47.40
CSP-24	55.00	24″	SP-1724	56.45
CSP-30	71.00	30″	SP-1730	73.35

For all information on **Hinged Doors**, Model DR, please turn to Par-Metal Page 33.

PAR-METAL PRODUCTS • ENGINEERING ASSISTANCE AVAILABLE

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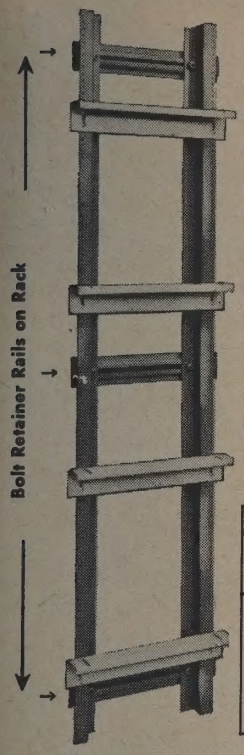
CABINET RACK ACCESSORIES

Par-Metal®



VERTICAL SIDE SUPPORTS (Set of 4)

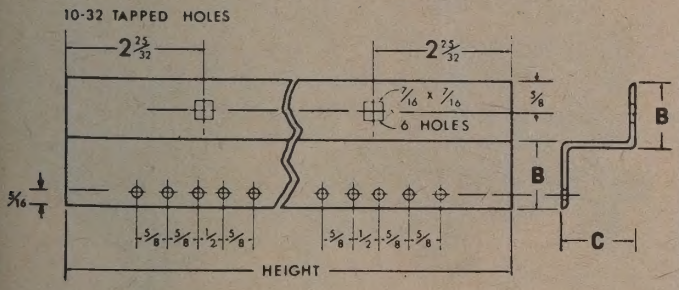
Vertical Side Supports mount brackets, shelves and sliding devices, and are attached to tracks for rapid adjustment from front to rear of cabinet.

Holes are tapped 10-32 the length of the support, with Standard EIA hole spacing, to provide selective height levels.

Construction: 7/64" steel. Supplied with 3/8" diameter bolts, lock washers and nuts for rack mounting. (For **PL/FL, PR/FR** and **PX/FX** Racks the **"B"** Dimension is 1 11/32" and **"C"** Dimension is 1½"). (For **Contempo-Racks** the **"B"** Dimension is 1 15/32" and **"C"** Dimension is 1"). See sketch below.

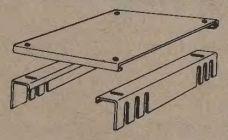
Finish: Baked Aluminum Enamel.

CONTEMPO RACKS				OTHER RACKS	
Catalog No.	Length of Side Support	Fit Cabinet Panel Height	Net Price (Set of 4)	Catalog No.	Length of Side Support
—	—	36¾"	$17.00	VS-36	40⅞"
CVS-42	45"	42"	18.75	VS-42	46⅛"
CVS-52	55½"	52½"	21.75	VS-52	56⅝"
CVS-61	64¼"	61¼"	24.60	VS-61	65⅜"
CVS-70	73"	70"	28.90	VS-70	74⅛"
CVS-77	80"	77"	32.00	VS-77	81⅛"
CVS-84	87"	84"	35.10	VS-84	88⅛"



SIDE MOUNTING BRACKETS (Pairs)

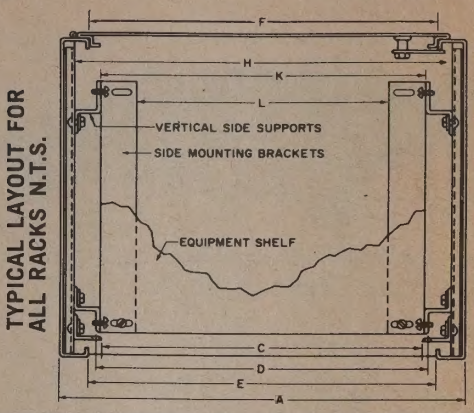
EQUIPMENT SHELVES



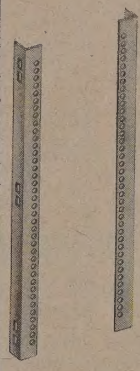
Brackets attach to Side Supports to mount shelves. Slots on the 2" vertical side provide height adjustment. Slots on the 1 13/16" horizontal side align with holes in shelves. Mounted shelf and brackets form complete assembly across rack. Shelf height — 7/8"

Construction: Brackets — 7/64" steel, zinc plated. Necessary hardware supplied. Shelf — 1/16" steel, zinc plated.

FOR SIDE MOUNTING BRACKETS (PAIRS)			TO FIT RACKS With		FOR EQUIPMENT SHELVES			
Catalog No.	Length	Net Price (Per Pr.)	Panel Width	Rack Depth	No.	Length	Width	Net Price
BR-118	14"	$3.55	19"	18"	SS-1918	14¼"	17⅝"	$4.00
BR-124	20"	4.80	19"	24"	SS-1924	20¼"	17⅝"	4.75
BR-126	24"	5.00	19"	26"	SS-1926	24¼"	17⅝"	5.25
BR-131	29"	5.50	19"	31"	SS-1931	29¼"	17⅝"	6.00
BR-124	20"	4.80	24"	24"	SS-2724	20¼"	22⅝"	5.60
BR-126	24"	5.00	24"	26"	SS-2426	24¼"	22⅝"	6.15
BR-131	29"	5.50	24"	31"	SS-2431	29¼"	22⅝"	7.00
BR-124	20"	4.80	30"	24"	SS-3324	20¼"	28⅝"	8.20
BR-126	24"	5.00	30"	26"	SS-3026	24¼"	28⅝"	9.15
BR-131	29"	5.50	30"	31"	SS-3031	29¼"	28⅝"	10.20



RACK ASSEMBLY DIMENSIONS		FOR 19" WIDE PANELS		FOR 24" WIDE PANELS		FOR 30" WIDE PANELS	
Dim.	Explanation	Contempo	Others	Contempo	Others	Contempo	Others
"A"	Width of rack	21⅛"	22"	26⅛"	27"	32⅛"	33"
"C"	Clearance between panel mtg. strips	17¾"	17¾"	22¾"	22¾"	28¾"	28¾"
"D"	To centers of panel mounting holes	18 5/16"	18 5/16"	23 5/16"	23 5/16"	29 5/16"	29 5/16"
"E"	Panel space (plus clearace)	19⅛"	19⅛"	24⅛"	24⅛"	30⅛"	30⅛"
"F"	Clear ins. width (rear)	19⅛"	19⅛"	24⅛"	24⅛"	30⅛"	30⅛"
"H"	Clearance between bolt retainer rails	19¾"	20¼"	24¾"	25¾"	30¾"	31¾"
"K"	Clearance between vert. side supports	17¾"	17¾"	22¾"	22¾"	28¾"	28¾"
"L"	Clearance between side mtg. brackets	13¾"	13¾"	18¾"	18¾"	24¾"	24¾"



PANEL MOUNTING ANGLES (Pairs)

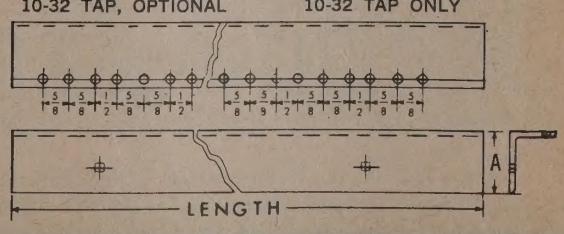
Cabinet Racks are delivered with a pair of panel mounting angles. An additional pair may be required for special mounting. Angles are delivered with necessary bolts, nuts and lock washers for rack mounting and locking with rapid front to back adjustment.

Construction: Hole Spacing meets EIA specs. For **PL/FL, PR/FR** and **PX/FX** Racks, 3/16" Angle Iron is used and Holes are tapped 12-24. (10-32 Tap is optional). **"A"** dimension is 1½".

For Contempo Racks, formed angles are 1½" x 1" x 3/16". **"A"** Dimension is 1½". See sketch below.

Finish: Angles finished to match racks.

CONTEMPO RACKS				FOR OTHER RACKS	
Catalog Number	Length of Panel Angle	Fit Cabinet Panel Height	Net Price (Per Pr.)	Catalog Number	Length of Panel Angle
—	—	36¾"	$10.75	PA-36	40⅞"
CPA-42	45"	42"	13.00	PA-42	46⅛"
CPA-52	55½"	52½"	15.60	PA-52	56⅝"
CPA-61	64¼"	61¼"	18.00	PA-61	65⅜"
CPA-70	73"	70"	20.50	PA-70	74⅛"
CPA-77	80"	77"	21.95	PA-77	81⅛"
CPA-84	87"	84"	24.30	PA-84	88⅛"



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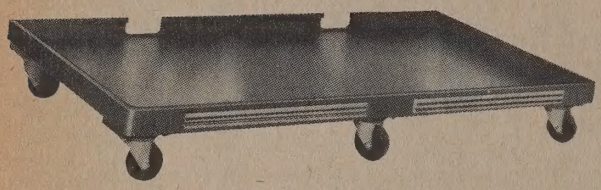
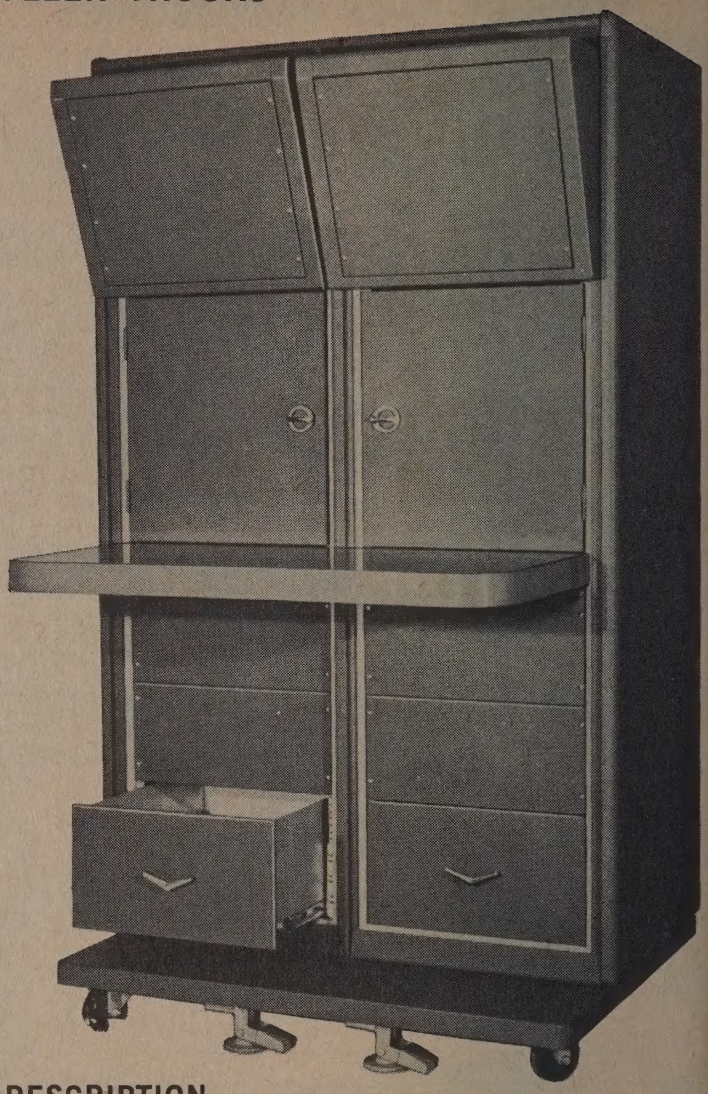
Par-Metal® ROLLER TRUCKS

A Single Unit Contempo Roller Truck, Model No. CR-192-1.



A Double Professional Roller Truck, Model No. HD-426-2.



2 PL-6718-B Racks with 1 RX-219 Exterior Table and a double EB-502 Extended Base Roller Truck with 2 EBL-501 Floor Locks.

GENERAL DESCRIPTION

ROLLER TRUCKS are engineered to fit and complement **all** PAR-METAL cabinet racks. All professional Roller Trucks are designated for PL/FL, PR/FR, and PX/FX Racks listed on Par-Metal Pages 6 through 8. ER, FD and DL racks are listed on Par-Metal Pages 18 through 20. Roller Trucks for these racks are **Dish Shaped.**

The inside dimensions are slightly larger than cabinet sizes, as a safety factor, and to provide better weight distribution. These models have rounded front corners and chrome plated moulding.

HEAVY DUTY TRUCKS: Construction: 1/16" welded steel plus 7/64" steel reinforcing braces. Casters: 3" diameter, swivel type, ball bearing, Rockite Composition. Non-marking wheels. Load Capacity 225 lbs. per wheel. Single Units have four casters, Double Units have six casters and Triple Units have eight.

CONTEMPO-ROLLER TRUCKS (Models CR, CRB and CEB) are **Pan Shaped** — flat across the top with aprons which partially cover the casters. They are sized to match the rack they support. Mating holes allow rapid bolting to the rack. They are available for one, two, or three racks. Single rack trucks have four casters . . . double rack and triple rack trucks have six casters.

Unless specified, **ALL** Roller Trucks except CONTEMPO, are finished in blue-gray wrinkle enamel. For PC/FC Racks, (Models CR, CRB and CEB) the **standard** finish is Charcoal Gray Vinyl. When included in the order, Roller Trucks are matched to the Rack. For full finishing color guide, turn to PAR-METAL Page 4.

BRAKE CASTERS: Toe-Touch Brake casters are optional; they replace the 2 Front corner casters of any Heavy Duty or Contempo Roller Truck. When Brake Casters are used as CRB Trucks, the 2" apron is reduced to 1/2" for easier access to the brake mechanism.

EXTENDED BASE ROLLER TRUCKS: Extended Base Roller Trucks offer extra depth in front and are strongly recommended when racks are equipped with slide, tables or drawers which may bear extra weight or pressure when extended. The added depth in front of the rack provids stability and safety. For easier movement of the racks 4" diameter wheel casters are supplied. Provision is made for adding Heavy Duty Floor Locks (optional). Construction: .104" welded steel — plus 7/64" steel reinforcing braces. Casters: 4" diameter, swivel type, ball bearing, hard Rockite non-marking wheel with grease fittings. Load Capacity 450 lbs. per wheel.

STANDARD TRUCKS Construction: 1/16" welded steel. Casters. 2" diameter, swivel-type, ball bearing, Rockite Composition wheels. Load capacity — 125 lbs. per wheel.

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ROLLER TRUCKS—EASY SELECTION CHART

Par-Metal

†HEAVY DUTY ROLLER TRUCKS

MODEL NUMBERS AND NET PRICES	Rack Panel Width	Rack Depth	SINGLE UNIT Cat. No.	SINGLE UNIT Net Price	DOUBLE UNIT Cat. No.	DOUBLE UNIT Net Price	TRIPLE UNIT Cat. No.	TRIPLE UNIT Net Price
FOR PL/FL & PR/FR RACKS with Detachable Side Panels See Par-Metal Pages 6 & 7.	19″	18″	HD-425	$29.00	HD-425-2	$57.50	HD-425-3	$110.10
	19″	24″	HD-426	31.50	HD-426-2	64.00	HD-426-6	118.50
	24″	24″	HD-432	34.40	HD-432-2	70.20	HD-432-3	135.50
	30″	24″	HD-438	44.10	HD-438-2	88.05	HD-438-3	*
FOR PX/FX RACKS** with Welded-On Side Walls See Par-Metal Page 8.	19″	18″	HD-412	$26.90	HD-412-2	$49.65	HD-412-3	$ 95.95
	19″	24″	HD-420	28.50	HD-420-2	57.35	HD-420-3	110.10
	24″	24″	HD-427	32.25	HD-427-2	64.60	HD-427-3	126.50
	30″	24″	HD-434	41.95	HD-434-2	80.20	HD-434-3	*
FOR CONTEMPO RACKS MODELS PC/FC with Detachable Side Panels See Par-Metal Page 11.	19″	26″	CR-192-1	$30.35	CR-192-2	$60.70	CR-192-3	$90.20
	19″	31″	CR-193-1	34.95	CR-193-2	69.80	CR-193-3	103.75
	24″	26″	CR-242-1	33.30	CR-242-2	66.00	CR-242-3	99.00
	24″	31″	CR-243-1	38.30	CR-243-2	76.00	CR-243-3	115.00
	30″	26″	CR-302-1	44.05	CR-302-2	87.40	CR-302-3	132.25
	30″	31″	CR-303-1	48.75	CR-303-2	97.25	CR-303-3	144.80

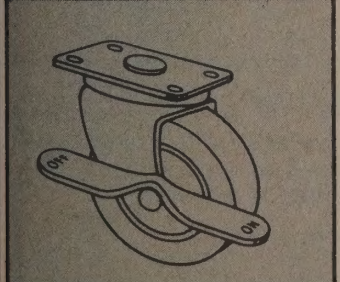
‡EXTENDED BASE ROLLER TRUCKS

MODEL NUMBERS AND NET PRICES	Rack Panel Width	Rack Depth	SINGLE UNIT Cat. No.	SINGLE UNIT Net Price	DOUBLE UNIT Cat. No.	DOUBLE UNIT Net Price	TRIPLE UNIT Cat. No.	TRIPLE UNIT Net Price
FOR PL/FL & PR/FR RACKS with Detachable Side Panels See Par-Metal Pages 6 & 7.	19″	18″	EB-501	$123.75	EB-502	$176.65	EB-503	$250.10
	19″	24″	EB-601	134.90	EB-602	190.30	EB-603	270.60
	24″	24″	EB-701	148.45	EB-702	235.00	EB-703	289.40
	30″	24″	EB-801	158.55	EB-802	256.25	EB-803	*
FOR PX/FX RACKS** with Welded-On Side Walls See Par-Metal Page 8.	19″	18″	EB-501	$123.75	EB-502	$176.65	EB-503	$250.10
	19″	24″	EB-601	134.90	EB-602	190.30	EB-603	270.60
	24″	24″	EB-701	148.45	EB-702	235.00	EB-703	289.40
	30″	24″	EB-801	158.55	EB-802	256.25	EB-803	*
FOR CONTEMPO RACKS MODELS PC/FC with Detachable Side Panels See Par-Metal Page 11.	19″	26″	CEB-192-1	$134.90	CEB-192-2	190.30	CEB-192-3	$270.50
	19″	31″	CEB-193-1	137.50	CEB-193-2	194.00	CEB-193-3	281.50
	24″	26″	CEB-242-1	138.05	CEB-242-2	194.70	CEB-242-3	276.70
	24″	31″	CEB-243-1	151.85	CEB-243-2	214.15	CEB-243-3	304.35
	30″	26″	CEB-302-1	158.75	CEB-302-2	223.90	CEB-302-3	318.20
	30″	31″	CEB-303-1	178.60	CEB-303-2	251.90	CEB-303-3	358.00

*ON SPECIAL ORDER ONLY.

**STANDARD ROLLER TRUCKS (Cat. No. RT-412 at $15.30 Each) are limited for use with PX/FX Racks for 19″ panel space, 18″ deep and up to 67″ high, as well as with ER/FD Racks (Par-Metal Pages 19 and 20) and DL Cabinets ONLY (Par-Metal Page 18).

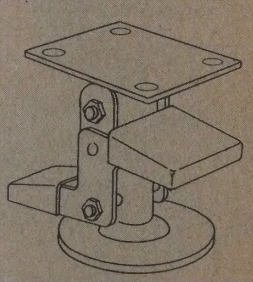
ALL ROLLER TRUCKS HAVE BALL BEARING SWIVEL CASTERS AND ROCKITE NON-MARKING COMPOSITION WHEELS.



BRAKE CASTER — Model CS-127-3B

†On **HEAVY DUTY** and **CONTEMPO** Roller Trucks, BRAKE CASTERS are available to replace the TWO Front Corner Casters at an additional cost of $9.50 per Roller Truck; Add Letter **"B"** to Prefix such as CRB. When Brake Casters are used on CRB Trucks, the 2″ Apron is reduced to ½″ for easier access to the brake mechanisms.

‡Either ONE or MORE FLOOR LOCKS may be added to the **EXTENDED BASE** Roller Trucks at an additional cost of $19.20 each.



FLOOR LOCK — Model EBL-501

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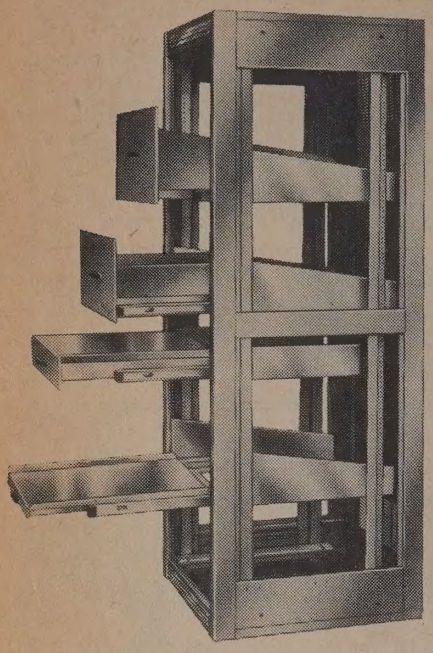
Par-Metal® SLIDE ASSEMBLIES



GENERAL DESCRIPTION

SIMPLICITY: Just a cradle and a shelf, table or drawer are all that is required. No time consuming assembly of slides and no alignment problem.

EASE OF INSTALLATION: Cradle is mounted to panel angles of the rack with screws and drawer, table or shelf drops into place. This manner of installing the sliding unit permits fast removal for service of equipment.

MOUNTING METHODS: Brackets are attached to Panel Angles and may be attached to Vertical Side Supports for additional stability. Either method will provide rigid support. Both may be used simultaneously.

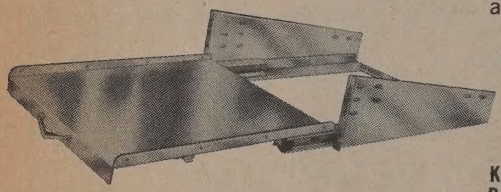
FULL EXTENSION of the equipment from the rack is engineered in. Most of the adjustments may be made without removal.

RUGGED CONSTRUCTION: Parts welded or fastened with stainless steel rivets and machine screws... supporting parts made from 12 gauge (.104") Prime Steel.

MINIMAL DEFLECTION is produced when the listed load capacities are measured with the slides fully extended.

HANDLES: A Chrome Plated Pull Handle Model H-506 (listed on Par-Metal Page 38) with necessary hardware is standard equipment on all Slide Assemblies.

All load capacities are conservatively rated to carry the full load with the sliding shelf completely extended.

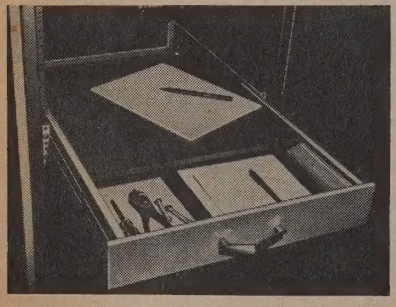


BASIC SLIDE ASSEMBLIES: Consist of a readily removable shelf, a pair of slides, and a mounting cradle. Each part is ready for installation. All movable parts are mounted on ball bearing wheels. Mounting or removal of slide is extremely simple and require no tools.

Installation may be made to rack (or console) panel mounting angles or to standard vertical side supports through holes pre-drilled in the side brackets. Four Sizes are listed for using either 19" or 24" wide panels. ALL parts are zinc plated.

Catalog No.	Usable Space Width	Usable Space Depth	Panel Width	Rack Depth	Load Capacity	Net Price	Shipping Weight
BS-1980	17⅛"	14"	19"	18" or 24"	50 lbs.	$22.30	24 lbs.
BS-1940	17⅛"	20"	19"	24"	36 lbs.	28.45	32 lbs.
BS-2419	17⅛"	20"	19"	24"	60 lbs.	36.25	32 lbs.
BS-2424	22⅛"	20"	24"	24"	55 lbs.	39.00	35 lbs.

Kits containing Side Brackets and Front Panels to fit on Basic Slide Assemblies are listed on Par-Metal Page 36.

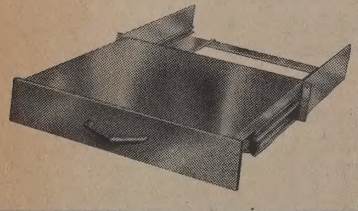


NEW SLIDE TOP STORAGE DRAWER/DESK SHELF ASSEMBLIES

EXCLUSIVE PAR-METAL DESIGN (Patent Pending) presents the **FIRST** combination of a slide-back Formica retractable writing table and a 2½" deep storage drawer. All units are 17" deep with 3½" of panel height and have a 50 lb. load capacity in fully extended position. Keep your tools and notes in the **MOST** convenient place. Drawer has finger touch disconnect feature.

IMPORTANT: When ordering, please specify finish on front panels.

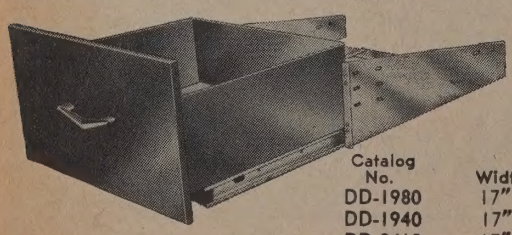
Cat. No.	Drawer Width	Panel Width	Net Price	Shpg. Wt.
SD-1935	16½"	19"	$52.55	32
SD-2435	21½"	24"	61.30	35



DESK SHELF ASSEMBLIES

Designed as a retractable writing desk or as a support for test equipment, etc. Front requires only 3½" of panel space, and is provided with a chrome plated drawer pull. FINISH: Writing surface is Gray Formica. Front panel matches Rack. **IMPORTANT:** When ordering, please specify finish on front panels.

Catalog No.	Shelf Size Width	Shelf Size Depth	Pulls Out	Panel Width	Rack Depth	Load Capacity	Net Price	Shipping Weight
SK-1970	17"	17"	16⅜"	19"	18" or 24"	36 lbs.	$40.70	32 lbs.
SK-2419	17"	17"	16⅜"	19"	18" or 24"	60 lbs.	47.00	32 lbs.
SK-2424	22"	17"	16⅜"	24"	24"	60 lbs.	54.70	35 lbs.



STORAGE DRAWER ASSEMBLIES

Drawers are mounted on racks or consoles and are available in **7"** or **10½"** panel heights; finished to match the equipment into which they are installed. Please mention **finish** in your order. Chrome plated door pull is furnished.

Catalog No.	Usable Space Width	Usable Space Length	Usable Space Depth	Panel Height	Panel Width	Rack Depth	Load Capacity	Net Price	Shipping Weight
DD-1980	17"	14"	5"	7"	19"	18" or 24"	40 lbs.	$29.95	33 lbs.
DD-1940	17"	20"	5"	7"	19"	24"	25 lbs.	39.50	42 lbs.
DD-2419	17"	20"	8"	10½"	19"	24"	45 lbs.	47.45	50 lbs.
DD-2424	22"	20"	8"	10½"	24"	24"	45 lbs.	52.70	50 lbs.

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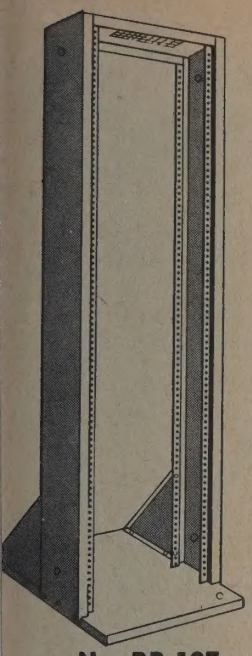
KNOCKDOWN CHANNEL RELAY RACKS

Par-Metal®



No. RR-197

DELUXE RACKS
for 19" and 24" wide panels

Deluxe Channel Relay Racks are 7/64" steel.

Panel spaces are: 61¼", 70", and 77" high and either 19" or 24" wide.

Upright channels are 8" deep with a formed recess for panels. This greatly increases rigidity of rack. Edges of panels are not exposed.

Rack is drilled and tapped 10-32 at both front and back on 5/8" - 5/8" - ½" centers permitting use of either panels or dish type chassis. Full panel space is available on both back and front.

When chassis are mounted at the back, the addition of standard or hinged panels make a rack enclosure with a depth of 6⅞".

Top is provided with a grille for ventilation and is trimmed with a chrome moulding at front. Holes are located on sides for bolting racks in rows; no projecting screw heads. Top brace and vertical channel members are welded together. Base and rear braces are shipped knocked down, with all necessary bolts for simple assembly. Panel mounting screws supplied.

FINISH: Standard finish is black wrinkle enamel. Blue grey wrinkle or grey hammertone are available without charge if specified. **OTHER FINISHES ALSO AVAILABLE.**

No. RX-195

STANDARD RACKS
for 19" wide panels

are constructed from 7/64" steel, and are braced at back to withstand abuse. They have a formed recess for panels; edges of panels are not exposed.

Top brace and vertical channels are welded together. Base and rear braces are shipped knocked down, with necessary bolts for rapid assembly.

Panel mounting holes are drilled for standard rack panel spacing, tapped 10-32 at front only. Ample mounting screws supplied.

Upright channels are 3 3/16" deep with flanges. Clearance between uprights is 17 15/16". Base is 20⅞" deep and 21 1/16" wide.

FINISH: Standard finish is black wrinkle. For blue grey wrinkle or grey hammertone enamel add 10%.

CAT. NO.	OVERALL HEIGHT	PANEL HEIGHT	SHIP. WT LBS.	NET PRICE
RX-193	39 7/16"	36¾"	45	$24.75
RX-195	74 7/16"	71¾"	55	32.75

Catalog Number	Overall Dimensions Height	Width	Depth	Panel Space	Clearance between Uprights	Shipping Weight	Net Price
RR-194	64⅝"	21 1/16"	26"	61¼"x19"	17 15/16"	88 lbs.	$43.50
RR-196	73⅜"	21 1/16"		70" x19"	17 15/16"	95 lbs.	46.30
RR-197	80⅜"	21 1/16"		77" x19"	17 15/16"	102 lbs.	49.00
RR-1922	64⅝"	26 1/16"		61¼"x24"	22 15/16"	100 lbs.	55.35
RR-1923	73⅜"	26 1/16"		70" x24"	22 15/16"	105 lbs.	59.25
RR-1924	80⅜"	26 1/16"		77" x24"	22 15/16"	112 lbs.	62.10

DESK PANEL CABINET RACKS for Standard 19" Rack Panels

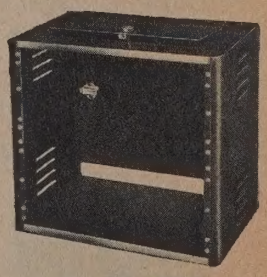
Vertical front corners are rounded and top and bottom are trimmed with chrome mouldings. Panels fit into a recess, edges are not exposed. Panel mounting holes are drilled on E.I.A. & W.E. centers. Holes are tapped 10-32.

Cabinet may be used with any chassis up to 13" x 17". Cabinets rigidly constructed of 1/16" cold rolled sheet steel, with all joints electrically welded. Louvers at sides and back. Piano type hinges on top doors, with chrome handles. A push-button spring catch with chrome handle on rear doors. Panel mounting screws are furnished.

FINISH: BLACK WRINKLE ENAMEL is standard. Blue grey wrinkle or light gray hammertone is available without charge if specified.

PANELS: Rack panels to fit these racks are listed on **Par-Metal Pages 21 and 22.**

RACK SHELF: Rack Shelf No. R-2128 is listed on **Par-Metal Page 36** fits these racks.



No. DL-1713

(With door in top only — not illustrated)

Catalog No.	Cabinet Size	Available Panel Space	Shp. Wt. Lbs.	Net Price
DL-128	10½"x21½"x15"	8¾"x19"	28	$21.80
DL-1210	12¼"x21½"x15"	10½"x19"	29	24.35
DL-1225	14" x21½"x15"	12¼"x19"	30	24.95
DL-1413	15¾"x21½"x15"	14" x19"	32	28.20

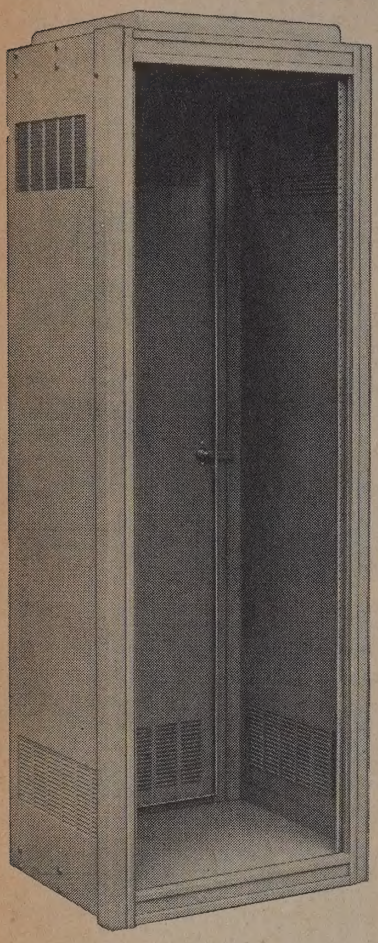
(With door in top and on rear)

Catalog No.	Cabinet Size	Available Panel Space	Shp. Wt. Lbs.	Net Price
DL-1713	19¼"x21½"x15"	17½"x19"	38	$31.30
DL-2613	28" x21½"x15"	26¼"x19"	48	36.45
DL-3513	36¾"x21½"x15"	35" x19"	58	42.75

PAR-METAL PRODUCTS • ENGINEERING ASSISTANCE AVAILABLE

Par-Metal® KNOCKDOWN CABINET RELAY RACKS

DELUXE CABINETS — FOR 19″ WIDE PANELS



"ER" SERIES
WITH REAR DOOR ONLY

CABINET is 1/16″ sheet steel. Sides are ventilated with "venetian" louvres. Vertical corner trims and formed mouldings are at top and bottom. Racks are shipped **"knocked down"** for easy assembly.

CORNER TRIMS: Front vertical corner and joining trims are engineered to permit rapid installation of sliding shelves, drawers, table, etc.

PANEL MOUNTING: Angle irons are 7/64″ thick steel, holes are drilled and tapped 10-32 on EIA hole spacing.

HARDWARE: Doors are the same as our Modular Racks. **"Series ER"** Racks are equipped with automobile non-locking handles while **"Series FD"** Racks have handles with key locks. Hinges are "Slipjoint" type so doors may be easily removed.

FINISH: Blue grey wrinkle finish is standard. Black wrinkle enamel or grey hammertone enamel are available without extra charge.

ROLLER TRUCK: Use either No. RT-412 or HD-412 for all racks. They are listed on **Par-Metal Page 16.**

PANELS: Panels 19″ wide to fit these racks are listed on **Par-Metal Pages 21 and 22.**

SHELVES: For Series ER Racks use shelf No. ER-2212 listed on **Par-Metal Page 36.**

SERIES "FD" RACKS have bolt retainer rails to adjust the front to back position of the panel mounting angles. Optional Vertical Side Supports for Brackets and Shelves (listed on Par-Metal Page 14) fit in these racks.

"FD" SERIES
WITH FRONT AND
REAR DOOR

SPECIFICATIONS

Catalog No.	Doors	Overall Dimensions	Panel Space	Clear Inside Width (Front)	Clear Inside Width (Rear)	Clear Inside Depth	Shipping Wt. Lbs.	Net Price
ER-223-A	Rear only	43¼x22x18″	36¾x19″	**17⅝″	19″	16¾″	90	$ 64.50
ER-225-A	Rear only	67¾x22x18″	61¼x19″	**17⅝″	19″	16¾″	120	78.65
ER-227-A	Rear only	83½x22x18″	77 x19″	**17⅝″	19″	16¾″	140	96.00
FD-223-A	Front & Rear	43¼x22x18″	36¾x19″	19⅛″	19″	*16″	110	82.80
FD-225-A	Front & Rear	67¾x22x18″	61¼x19″	19⅛″	19″	*16″	150	100.50
FD-227-A	Front & Rear	83½x22x18″	77 x19″	19⅛″	19″	*16″	175	125.75

*clearance between front and rear doors. **between panel mounting angles.

MULTI-RACK CABINET ASSEMBLIES

MULTI-RACK ASSEMBLIES: Both **"ER"** and **"FD"** racks may be set up in rows. The use of venetian louvers provides a flat surface on the sides; separate side plates, with welded screw studs inserted at top and bottom simplify the assembly — no tools are needed. Vertical joining trims overlap the joint between racks (supplied at no cost if noted on original order).

PAR-METAL PRODUCTS • CONVENIENT FACTORY WAREHOUSE

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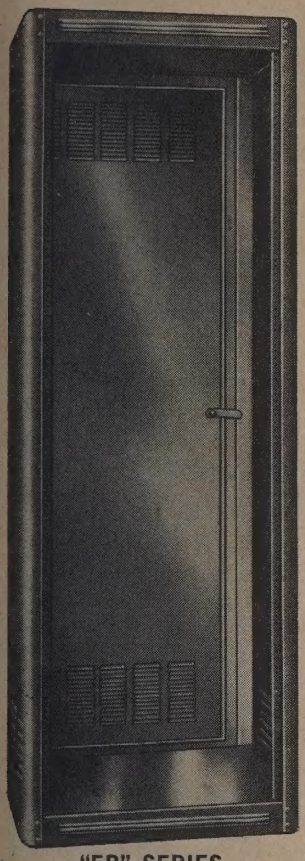
KNOCKDOWN CABINET RELAY RACKS

Par-Metal®



"ER" SERIES
WITH REAR DOOR ONLY

ROUNDED CORNER CABINETS FOR 19" WIDE PANELS

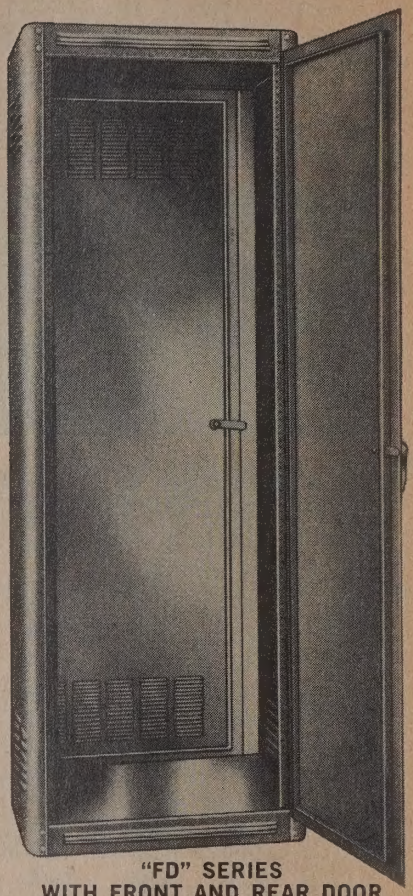
Modest pricing is maintained in **Par-Metal's Rounded Corner Cabinet Racks** at no loss in either functional design or rugged construction. Wide chrome mouldings trim the top and bottom of the recessed panel space.

Constructed of 1/16" cold-rolled steel. Racks are shipped "knocked-down" with necessary hardware for easy and time saving assembly. A generous supply of panel mounting screws are included.

PANEL MOUNTING: Angle irons are 7/64" steel, holes are drilled and tapped 10-32 on standard EIA hole spacing.

HARDWARE: Doors are the same as our Modular racks. **"SERIES ER"** racks are equipped with automobile non-locking handles. **"SERIES FD"** racks have handles with key locks. Hinges are "slip-joint" so doors may be easily removed.

FRONT DOOR RACKS: On **"SERIES FD"** racks, front panel mounting angles are recessed 2" to allow clearance for dials, etc. Clear inside depth behind panel is 15".



"FD" SERIES
WITH FRONT AND REAR DOOR

SPECIFICATIONS

Catalog No.	Doors	Overall Dimensions	Panel Space	Clear Inside Depth	Clear Inside Width (Rear)	Clear Inside Width (Front)	Shipping Wt. Lbs.	Net Price
ER-213-A	Rear only	42 x22x18"	36¾x19"	16¾"	19"	**17⅝"	85	$ 49.80
ER-215-A	Rear only	66½x22x18"	61¼x19"	16¾"	19"	**17⅝"	110	72.00
ER-217-A	Rear only	82¼x22x18"	77 x19"	16¾"	19"	**17⅝"	130	86.20
FD-215-A	Front & Rear	66½x22x18"	61¼x19"	*15"	19"	19⅛"	130	98.00
FD-217-A	Front & Rear	82¼x22x18"	77 x19"	*15"	19"	19⅛"	155	118.00

*clearance behind panel. **between panel mounting angles.

FINISH: Blue grey wrinkle finish is standard. Black wrinkle or grey hammertone enamel is available without extra charge.

PANELS: Panels 19" wide to fit these racks are listed on **Par-Metal Pages 21 and 22.**

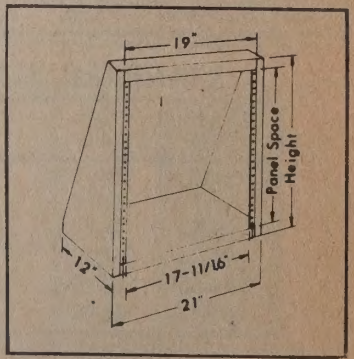
ROLLER TRUCK: No. RT-412 will fit these racks. **See Par-Metal Page 16.**

SHELVES: ER racks, use shelf #ER-2212. FD racks, use shelf #R-2225. **See Par-Metal Page 36.**

OPEN TABLE RACKS: Designed for table top use, and built on one piece chassis base. Uses standard EIA and WE hole spacings, tapped 10/32. Shipped "knocked down" with all necessary hardware included.

FINISH: Black wrinkle enamel.

Cat. No.	Overall Dimensions H	W	D	Panel Space H	W	Ship. Wt. Lbs.	Net Price
TR-2520	24"	21"	12"	21"	19"	17	$10.50
TR-3220	31"	21"	12"	28"	19"	20	12.75



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Par-Metal®

BLANK, FLAT PANELS 19" - 24" - 30" WIDE

PAR-METAL PANELS are divided into three types, flat blank panels, formed blank panels and panels for special uses.

ALL PAR-METAL PANELS are cut to fit any Electronic Housing Equipment that also meets EIA hole specifications.

TO DESIGNATE COLOR/FINISH PREFIXES **MUST BE ADDED** TO CATALOG NUMBERS.		
FINISH	USE PREFIX	USE **NET PRICE** COLUMN
Black Wrinkle Enamel	P	A
Blue-Gray Wrinkle Enamel	G	A
Oil Finish (No Paint)	NP	A
Light Gray Hammertone	LH	B
Dark Gray Hammertone	DH	B
Combination Light/Dark Gray Hammertone	LD	B
Dark Gray Metallic Enamel	GM	B
Beige Enamel	MT	B
Light Gray Equipment Enamel	LEGE	C
Primer Coat Only	PC	B
Dawn Gray Vinyl	DGV	C

STANDARD FLAT STEEL BLANK PANELS - #11 Gauge - 1/8" (.119") STEEL

PANEL HEIGHT	FOR 19" WIDE PANELS Cat. No.	NET PRICES A	B	C	FOR 24" WIDE PANELS Cat. No.	NET PRICES A	B	C	FOR 30" WIDE PANELS Cat. No.	NET PRICES A	B	C
1¾"	-6600	$ .95	$1.05	$1.15								
3½"	-6601	1.20	1.30	1.37	-6201	$1.55	$1.70	$1.79	-6301	$2.25	$2.50	$2.63
5¼"	-6602	1.55	1.70	1.79	-6202	2.00	2.20	2.31	-6302	2.75	3.00	3.15
7"	-6603	1.85	2.05	2.15	-6203	2.45	2.70	2.84	-6303	3.25	3.55	3.73
8¾"	-6604	2.25	2.50	2.63	-6204	3.10	3.40	3.57	-6304	3.90	4.25	4.46
10½"	-6605	2.50	2.75	2.89	-6205	3.55	3.90	4.10	-6305	4.30	4.70	4.94
12¼"	-6606	3.10	3.40	3.57	-6206	4.05	4.45	4.67	-6306	5.05	5.55	5.83
14"	-6607	3.42	3.75	3.94	-6207	4.70	5.15	5.41	-6307	5.80	6.35	6.67
15¾"	-6608	3.85	4.20	4.41	-6208	5.30	5.85	6.15	-6308	6.45	7.10	7.46
17½"	-6609	4.25	4.70	4.94	-6209	5.80	6.40	6.72	-6309	7.20	7.95	8.35
19¼"	-6610	4.95	5.45	5.72	-6210	6.55	7.20	7.56	-6310	8.00	8.10	9.24
21"	-6611	5.25	5.75	6.04	-6211	7.10	7.80	8.17	-6311	8.78	9.65	10.13

STANDARD ALUMINUM BLANK PANELS - 1/8" No. 3003—H 14

PANEL HEIGHT	FOR 19" WIDE PANELS Cat. No.	NET PRICES A	B	C	FOR 24" WIDE PANELS Cat. No.	NET PRICES A	B	C	FOR 30" WIDE PANELS Cat. No.	NET PRICES A	B	C
1¾"	-6675	$1.15	$1.25	$1.31	-6275	$1.95	$2.15	$2.26				
3½"	-6676	1.60	1.80	1.89	-6276	2.45	2.70	2.84	-6376	$2.95	$3.25	$3.41
5¼"	-6677	2.20	2.40	2.52	-6277	3.25	3.55	3.73	-6377	4.25	4.70	4.94
7"	-6678	2.80	3.10	3.26	-6278	4.10	4.50	4.73	-6378	5.60	6.15	6.46
8¾"	-6679	3.40	3.70	3.89	-6279	5.10	5.60	5.88	-6379	6.90	7.70	8.09
10½"	-6680	4.10	4.50	4.73	-6280	6.15	6.80	7.14	-6380	8.25	9.05	9.50
12¼"	-6681	4.55	5.05	5.30	-6281	7.15	7.90	8.30	-6381	9.55	10.50	11.03
14"	-6682	5.40	5.90	6.20	-6282	8.20	9.00	9.45	-6382	10.85	11.95	12.55
15¾"	-6683	6.10	6.70	7.04	-6283	9.25	10.15	10.66	-6383	12.20	13.40	14.07
17½"	-6684	6.60	7.25	7.61	-6284	10.25	11.30	11.87	-6384	13.50	14.85	15.09
19¼"	-6685	7.20	7.95	8.35	-6285	11.25	12.40	13.02	-6385	14.82	16.30	17.12
21"	-6686	7.85	8.65	9.08	-6286	12.25	13.50	14.18	-6386	16.15	17.75	18.65

STANDARD ALUMINUM BLANK PANELS 19" WIDE - 3/16" No. 3003—H 14

PANEL HEIGHT	Cat. No.	NET PRICES A	B	C	PANEL HEIGHT	Cat. No.	NET PRICES A	B	C
1¾"	-6675-3	$1.80	$1.90	$1.95	12¼"	-6681-3	$7.75	$8.20	$8.43
3½"	-6676-3	2.45	2.60	2.70	14"	-6682-3	8.85	9.40	9.68
5¼"	-6677-3	3.60	3.85	3.98	15¾"	-6683-3	10.00	10.60	10.90
7"	-6678-3	4.45	4.75	4.90	17½"	-6684-3	11.15	11.80	12.13
8¾"	-6679-3	5.50	5.90	6.10	19¼"	-6685-3	12.25	13.00	13.38
10½"	-6680-3	6.65	7.05	7.25	21"	-6686-3	13.55	14.35	14.75

COLOR FINISHES MUST BE SPECIFIED ON YOUR ORDER.

We will be pleased to estimate your requirements for any other sizes or finishes.

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FORMED — VENTILATING AND HINGED PANELS

Par-Metal®

FORMED BLANK PANELS

FORMED EDGES, (turned back to create rigidity) give these #16 gauge (.059") cold rolled steel panels an overall thickness of 7/16". Formed Edge Panels present a fine finished appearance to ANY equipment. Standard sizes are charted here.

COLOR FINISHES MUST BE SPECIFIED ON YOUR ORDER.

FORMED BLANK PANELS — 1/16" STEEL — Overall Thickness 7/16"

PANEL HEIGHT	FOR 19" WIDE PANELS Cat. No.	NET PRICES A	B	C	FOR 24" WIDE PANELS Cat. No.	NET PRICES A	B	C
1¾"	-600	$1.40	$1.50	$1.58				
3½"	-601	1.50	1.65	1.73	-641	$2.10	$2.30	$2.42
5¼"	-602	1.70	1.85	1.94	-642	2.55	2.80	2.94
7"	-603	2.00	2.20	2.32	-643	3.10	3.40	3.57
8¾"	-604	2.35	2.60	2.73	-644	3.70	4.05	4.25
10½"	-605	2.65	2.90	3.05	-645	4.05	4.50	4.73
12¼"	-606	3.10	3.40	3.57	-646	4.45	4.90	5.15
14"	-607	3.50	3.85	4.04	-647	5.00	5.45	5.72
15¾"	-608	4.00	4.40	4.62	-648	5.60	6.20	6.51
17½"	-609	4.40	4.85	5.09	-649	6.25	6.90	7.25
19¼"	-610	4.90	5.35	5.62	-650	6.95	7.65	8.03
21"	-611	5.35	5.90	6.20	-651	7.55	8.30	8.72
22¾"	-612	6.35	6.35	6.67	-652	8.70	8.70	9.14
24½"	-613	6.85	6.85	7.19	-653	9.35	9.35	9.84
28"	-615	7.80	7.80	8.19	-655	10.65	10.65	11.18
35"	-619	10.65	10.65	11.18	-659	13.25	13.25	13.91
42"	-623	13.75	13.75	14.44	-668	15.80	15.80	16.59
52½"	-629	15.80	15.80	16.59	-669	18.40	18.40	19.32
61¼"	-634	17.40	17.40	18.27	-674	21.20	21.20	22.26
70"	-635	20.10	20.10	22.10	-675	24.50	24.50	25.73
77"	-637	22.90	22.90	24.05	-677	26.45	26.45	27.77
84"	-639	25.50	25.50	26.78	-679	28.70	28.70	29.24

GRILLE PANELS 19" WIDE — 1/8" STEEL

One piece construction. Square 3/8" Ventilation holes are punched through the Panel.

*Cat. No.	Panel Height	Grille Size Height	Width
-661	5¼"	3⅜"	14⅜"
-662	7"	4⅞"	14⅜"
-663	8¾"	6⅞"	14⅜"
-664	8¾"	†3⅞"	14⅜"
-665	10½"	8⅜"	14⅜"
-666	10½"	†5⅞"	14⅜"
-667	12¼"	†7⅜"	14⅜"

† Allows 3½" space at bottom for chassis mounting.

***ADD** Color Finish Prefix to Catalog No. **SEE** Detailed Chart at **top** of **facing page.**

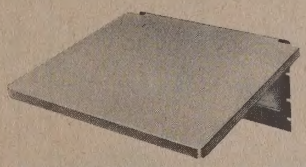
*Cat. No.	NET PRICES A	B	C
-661	$3.35	$3.65	$3.80
-662	3.65	4.05	4.25
-663	4.40	4.80	5.00
-664	4.00	4.40	4.60
-665	4.85	5.35	5.60
-666	4.55	5.00	5.23
-667	4.90	5.40	5.65

VENTILATED FORMED PANELS

19" & 24" Wide—1/16" Steel Overall Thickness 7/16"

***ADD** Color Finish Prefix to Catalog No. **SEE** Detailed Chart at **top** of **facing page.**

*Cat. No.	Panel Height	NET PRICE A	B	C
FOR 19" WIDE PANELS				
-603-V	7"	$3.70	$4.10	$4.30
-604-V	8¾"	4.20	4.60	4.80
-605-V	10½"	4.60	5.10	5.35
-606-V	12¼"	5.25	5.75	6.00
-608-V	15¾"	6.15	6.75	7.05
-610-V	19¼"	7.55	8.30	8.68
-611-V	21"	8.15	8.95	9.35
FOR 24" WIDE PANELS				
-643-V	7"	$5.50	6.05	6.33
-644-V	8¾"	6.40	7.05	7.38
-645-V	10½"	7.00	7.65	7.98
-646-V	12¼"	7.50	8.30	8.70
-648-V	15¾"	9.00	9.90	10.35
-650-V	19¼"	10.80	11.90	12.35
-651-V	21"	11.60	12.75	13.33



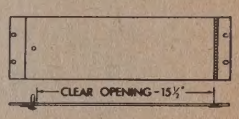
STANDARD DESK — TABLE PANELS

For 19" Wide Panel Racks Desk/Tables have Rounded Front Corners, seamless construction and turned-in edge flanges for smoothness underneath. They are fastened to a 10½" x 19" x 1/8" steel panel.

CAT. NO.	TABLE SIZE WIDTH	DEPTH	SHIPPING WEIGHT
-2216	22"	16"	18 lbs.
-2220	22"	20"	22 lbs.

***ADD** Color Finish Prefix to Cat. No. Desk Panel. **Finish** is **smooth** enamel for a superior writing surface.

Color Finish	*Use Prefix	CAT NO. -2216	-2220
Black Enamel	*BT	$18.40	$20.00
Blue Gray Enamel	*GT	18.40	20.00
Gray Hammertone	*HT	18.40	20.00
Primer Coat	*PCT	18.40	20.00
Dawn Gray	*VT	19.32	21.00



SIDE HINGED BLANK PANELS

19" Wide — 1/8" Steel

Piano Hinged at one side and a quarter turn "Fingertip Knurled Head" closing fastener at the other.

***ADD** Color Finish Prefix to Catalog No. as follows.

*Use Prefix	Use Price
"HP" for Black Wrinkle	A
"GP" for Blue Gray Wrinkle	A
"HA" for Gray Hammertone	B
"PC" for Primer Coat	B
"VP" for Dawn Gray Vinyl	C

*Cat. No	Panel Height	NET PRICES A	B	C
-350	3½"	$3.90	$4.25	$4.43
-525	5¼"	4.10	4.50	4.70
-700	7"	4.50	5.00	5.25
-875	8¾"	5.00	5.50	5.75
-1050	10½"	5.65	6.20	6.48
-1225	12¼"	5.95	6.55	6.85
-1400	14"	6.90	7.55	7.88
-1750	17½"	8.70	9.60	10.05
-2100	21"	10.10	11.10	11.60

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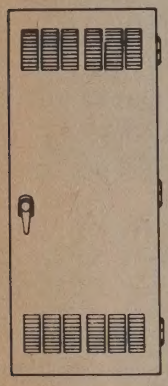
DOOR AND TOP PANEL MODIFICATIONS

DOOR MODIFICATIONS

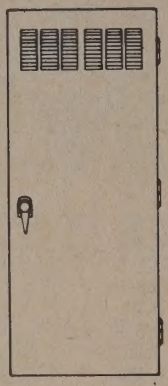
FRONT AND REAR DOORS FOR RACKS

Doors are mounted on slip-joint hinges for easy removal. On CONTEMPO-RACKS, front doors are PAN shaped, ¾" thick and have flush mounted door handles. Rear doors are "Dutch Formed."

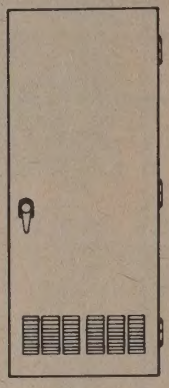
On other Racks all doors are "Dutch Formed." Right hand hinges are standard. Left Hand hinges are optional. Door modifications marked * are optional at NO additional cost. All others must be estimated. Doors are finished racks.



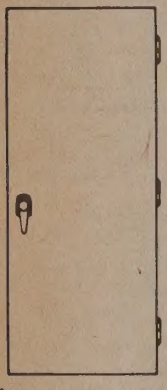
*MODIFICATION LS VENETIAN LOUVERS at TOP and BOTTOM . . . (Standard Rear Door)



*MODIFICATION LT VENETIAN LOUVERS at TOP ONLY . . .

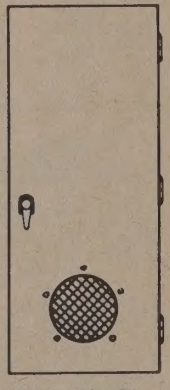


*MODIFICATION LB VENETIAN LOUVERS at BOTTOM ONLY . . .

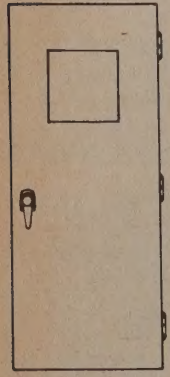


*MODIFICATION SS NO LOUVERS SOLID DOOR . . . (Standard Front Door.)

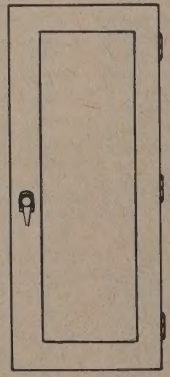
MODIFICATION FD 10" x 10" Opening for filter (Filter included).



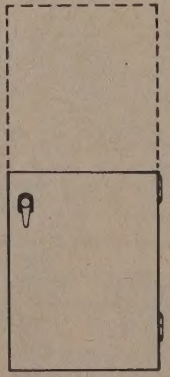
MODIFICATION FN ROUND OPENING for FAN with Mounting Holes. See Hardware Section Par-Metal Page 37.



MODIFICATION SW Square Opening for Window (Without Glass) Give Full Specifications . . .



MODIFICATION RW Rectangular Window Opening (Without Glass) Give Full Specifications...



MODIFICATION HD HALF OR SHORT DOOR (On Estimate Only). Give Full Specifications...

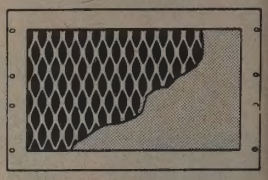
TOP PANEL MODIFICATIONS

FOR PANEL RACKS

Blank, #16 gauge Removable Formed steel top panels are standard in all welded racks. For the cost of Ventilating or other modifications, see chart below. Please use identity prefix letters.

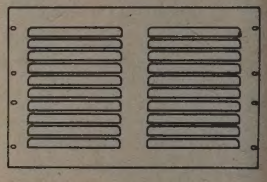
EXPANDED METAL MESH
Modification *TA*

Mesh is spot welded under the frame. .055" steel — Diamond shaped openings — 5/16" x 7/8".



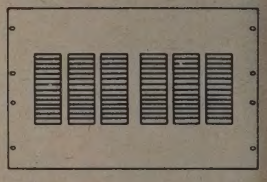
PRESSED LOUVERS
Modification *TB*

Hooded Openings are 7" wide and formed into the steel with the louvers opening to the outside.



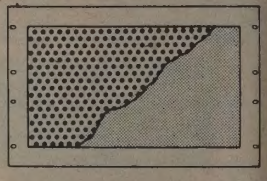
VENETIAN LOUVERS
Modification *TC*

Vent openings are formed into the steel top with the louvers opening to the inside.



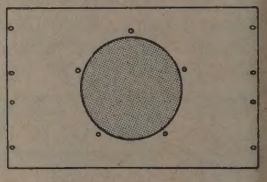
PERFORATED HOLES
Modification *TH*

Mesh is spot welded under the frame. .055" steel. The holes are staggered — 3/16" diameter on 5/16" centers.



FAN OPENING
Modification *FAN*

Circular opening and mounting holes provided. When ordering: give complete dimensional specifications and mounting hole requirements, (see Par-Metal Page 37.)



Prices on Request

STANDARD TOP PANEL SUPPLIED UNLESS OTHERWISE SPECIFIED

TOP MODIFICATIONS ••• DIMENSIONS AND COSTS							
TO FIT RACK SIZE		Modification TA & TH		Modification TB Louvers		Modification TC Louvers	
Panel Width	Panel Depth	Mesh Size	Net Price	# of Rows	Net Price	No. of Sets	Net Price
19"	18"	16¾" x 10¼"	$3.50	2	$2.50	Single	$2.00
19"	24"	16¾" x 17¼"	4.00	2	3.00	Double	2.00
19"	26"	16¾" x 19¼"	4.25	2	3.25	Double	2.75
19"	31"	16¾" x 22½"	4.75	2	3.75	Double	2.75
24"	24"	21¾" x 17¼"	4.50	2	3.00	Double	2.50
24"	26"	21¾" x 19¼"	4.75	2	3.25	Double	2.75
24"	31"	21¾" x 22½"	5.25	2	4.25	Double	3.25
30"	24"	27¾" x 17¼"	5.25	3	4.00	Double	3.00
30"	26"	27¾" x 19¼"	5.50	3	4.25	Double	3.25
30"	31"	27¾" x 22½"	6.00	3	5.00	Double	4.00

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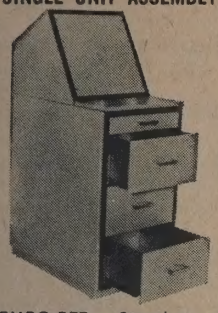
CONSOLE ASSEMBLIES

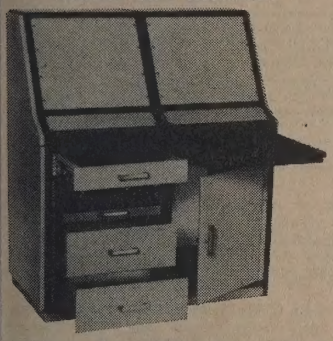
Par-Metal®

SINGLE UNIT ASSEMBLY



CONTEMPO-PED: Stand-up Model #CPS-34 with Model #PT-19 Top Cabinet, End Panels and Accessories.

DOUBLE UNIT ASSEMBLY



WITH 2 CONTEMPO-PEDS, Model #CPD-24. 2 Top Cabinets Model #CF-19 and Exterior Table, Model #CCT-16 with End Panels and Accessories.

GENERAL DESCRIPTION

Console Assemblies house Electronic Equipment at desk level. This combination of equipment enclosures with control cabinets, all 19" panel widths, supplies enough variety to satisfy most needs, often eliminating custom construction.

PAR-METAL'S 6 different pedestals in 2 depths and in both desk and stand-up heights, along with 14 different Desk Panel Cabinets — **PLUS** the industry's **ONLY** line of both Pedestal and Top Cabinet Angular Wedges, offers the widest choice of electronic housing assemblies. PAR-METAL'S Consoles are made in 2 basic design categories. **Professional Pedestals** (Traditional Design — use prefix PD) are desk height, 24¼" and 34¼" deep. Four Desk Top Cabinets in Single, Double, Triple or Quad lengths, complete these assemblies.

CONTEMPO-PEDS (Modern Design — use prefixes CPD or CPS) add a new dimension to the 24¼" and 34¾" deep desk height models. PAR-METAL proudly offers the trade, its **exclusive** line of CONTEMPO-PEDS in Stand-up Height, with Table Tops 40" from the floor. Ten new CONTEMPO Top Cabinets with matching pedestal and top cabinet Angular Wedges (at both 30° and 45° angles) give the engineer unlimited scope in designing a satisfactory configuration. Top Cabinets as well as pedestals are made with removable end panels. This permits ready addition (or removal) of a section when future use dictates.

Standard finish on the **CONTEMPO** line is a combination of Dawn Gray and Charcoal Gray Vinyl. Any color or combination of finishes in enamels, lacquers, suedes or acrylics is available.

To fit these Consoles, **PAR-METAL** manufactures complete accessories including Basic Slides, Drawers, Doors, Formica Table Tops, Side Panels, End Pedestals, Panel Mounting Angles, Vertical Side Supports, Brackets, Shelves, Casters and Panels.

ORDERING INSTRUCTIONS and COLOR GUIDE!

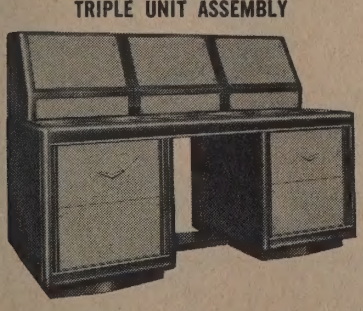
1. ORDER ALL CONSOLE PARTS and ACCESSORIES by CATALOG NUMBER! (see following Par-Metal Pages): Pedestal Frames (Par-Metal Page 25); Desk Top Cabinets (Par-Metal Pages 26, 27 and 28); Component Check Lists (Par-Metal Pages 29/30 & 31/32); Wedges (Par-Metal Page 32) and Accessories (Par-Metal Pages 26 —— 34).
2. Advise us of the configuration to be used so that proper hardware is included at NO COST to you.
3. Place accessories on Console order for best Industrial Discounts and guarantee of perfect matching finish.
4. **YOU MUST SPECIFY FINISH!** Select from this list.

Light Grey Hammertone Enamel .... Mark Order..LH	Dark Grey Metallic Enamel ..... Mark Order..GM
Dark Grey Hammertone Enamel .... Mark Order..DH	Blue Grey Wrinkle Enamel ..... Mark Order..BG
Light/Dark Grey Hammertone Enamel-Standard Finish	Black Wrinkle Enamel ..... Mark Order..BW
(Light Panels with Dark Pedestal Trim) Mark Order..LD	Primer Coat Only ..... Mark Order..PC

Standard Finish for **CONTEMPO** Line ONLY — Dawn/Charcoal Grey Vinyl .....Mark Order..CGV

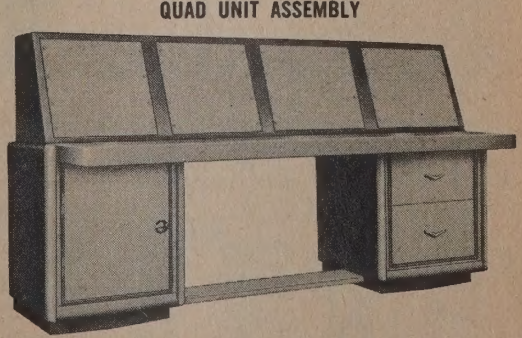
SPECIAL ENAMEL, LACQUER, VINYL OR OTHER FINISHES AVAILABLE.

TRIPLE UNIT ASSEMBLY



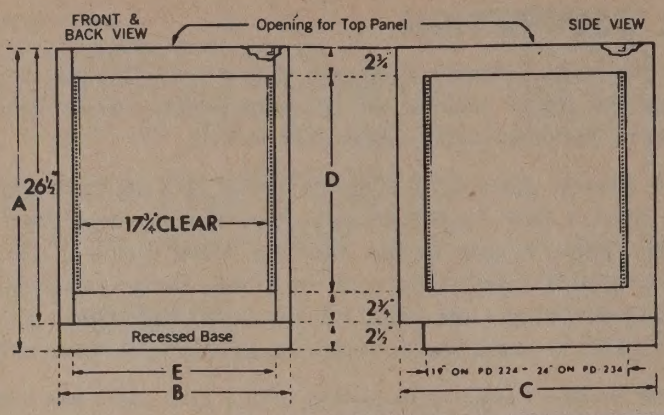
Standard Triple Unit Assembly with two Pedestal Frames and Center Desk Assembly. See following pages for additional arrangements.

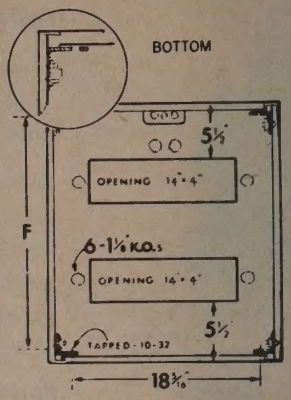
QUAD UNIT ASSEMBLY



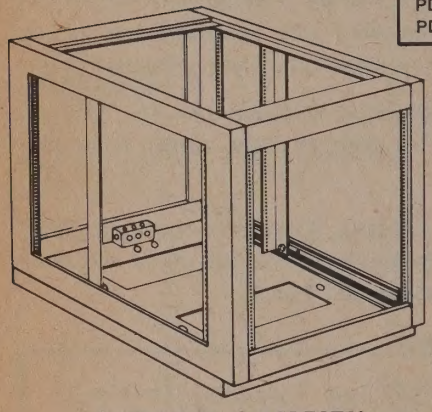
Standard Quad Unit Assembly with Two Pedestal Frames, Extension Desk Table, Quad High Slope Cabinet. See following pages for additional arrangements.

Par-Metal® PROFESSIONAL PEDESTAL FRAMES





Catalog Number	Dimensions Hgt. A	Width B	Depth C	Panel Space Front & Back Hgt. D	Width E	Clear Inside Depth Front to Back F	Opening For Top Panel Width	Depth	Overall Dimensions with Side Panels and Front Mouldings Hgt.	Width	Depth	Shipping Wt. Lbs	Net Price
PD-224	29″	22″	24¼″	21″	19″	23⅛″	19″	19¼″	30″	24½″	25⅜″	80	$ 90.85
PD-234	29″	22″	34¼″	21″	19″	33⅛″	19″	28″	30″	24½″	35⅜″	90	109.25



PROFESSIONAL PEDESTAL

PEDESTAL FRAMES: The Pedestal Frame forms the base of all equipment to be mounted below desk table level. It is solidly welded for rigorous use. It mounts 19″ wide panel equipment. A reinforced base and two pairs of Panel Mounting Angles are included. Angles are readily adjustable to any forward or back position. Each Frame has a fitted #12 gauge (.104″) steel removable bottom plate, some with knockouts and access areas (see diagrams). Holes for mounting casters (optional) are pre-drilled in this plate.

PAR-METAL makes 2 basic design models, **PROFESSIONAL** and **CONTEMPO.** Professional Pedestals, illustrated above, (Prefix — PD) are trimmed to match and complement our "PL" Cabinet Racks. #PD-224 Frames have 19″ x 19¼″ Top and Bottom openings. On #PD-234, this opening is 19″ x 28″. See Component Check List on PAR-METAL Pages 29/30 and Top Cabinets on facing page.

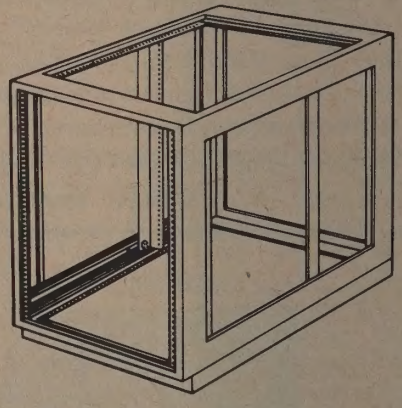
CONTEMPO-PEDS, illustrated below, (Prefixs CPD & CPS) are designed to mate with CONTEMPO RACKS. See Component Group List on PAR-METAL Pages 31/32. CONTEMPO-Top Cabinets are on PAR-METAL Pages 27, 28. 30° and 45° Angular Wedges for these are shown on PAR-METAL Page 32. A 3½″ x 19″ panel, Model #6601-R or Model 601-R (see Par-Metal Page 33) with mounted Electric Dual Receptacle is available. **Casters:** 3″ diameter Rockite composition non-marking ball bearing wheels — heavy duty. (Available at extra cost, see Par-Metal Page 16)

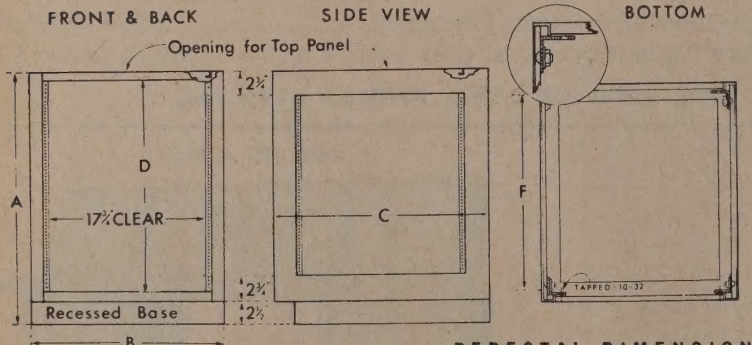
FINISHES: Unless specified, "PD" Peds are finished in a combination of Light and Dark Gray Hammertone Enamel (LD) while CONTEMPO-PEDS are finished in Dawn and Charcoal Gray Textured Vinyl (CGV). For your choice of others, please turn to PAR-METAL Page 24. To fit these frames, Panel Angles and Vertical Side Supports for Professional and Contempo are shown in chart below.

EXTRA PANEL ANGLES & VERTICAL SIDE SUPPORTS

PANEL ANGLES Catalog Number	PANEL ANGLES Net Prices Per Pair	TO FIT PEDESTALS	VERTICAL SIDE SUPPORTS Catalog Number	VERTICAL SIDE SUPPORTS Net Prices Per Set of 4
PA-21	$ 8.35	PD-224/234	VS-21	$14.00
CPA-26	10.50	CPD-24/34	CVS-26	16.50
CPA-35	11.50	CPS-24/34	CVS-35	16.50

CONTEMPO-PEDS





PEDESTAL DIMENSIONS

CATALOG NUMBER	OVERALL DIMENSIONS Height A	*Width B	Depth C	#PANEL HEIGHT Front/Back D	Top E	SIDE OPENING Height	Width	CLEAR INSIDE Depth F	NET PRICE
CPD-24	29 1/16″	21⅛″	24¼″	24½″	19¼″	21″	19″	23¼″	$ 79.00
CPD-34	29 1/16″	21⅛″	34¾″	24½″	29¾″	21″	30″	33¾″	96.00
CPS-24	39 1/16″	21⅛″	24¼″	35″	19¼″	31½″	19″	23¼″	95.00
CPS-34	39 1/16″	21⅛″	34¾″	35″	29¾″	31½″	30″	33¾″	113.25

*** ADD ¾″ for each SIDE PANEL Used. #Panel widths are 19″.**

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DESK PANEL CABINETS
FOR PROFESSIONAL PEDESTAL FRAMES

Par-Metal®

DESK PANEL CABINETS For 19" Wide Panels

"Top of the Desk" Panel Cabinets often house the meters, scopes, controls and switches, etc., necessary to operate the pedestal mounted equipment... thus completing the Console Assembly.

Construction: 1/16" cold rolled steel, fully welded. No fastening deveics are needed as cabinets are shipped completely assembled, ready for use.

Front: Steel formed blank panels are supplied. A 1/8" flat aluminum or steel panel may be substituted, without extra cost, if so ordered.

Rear: All cabinets except Series LS are equipped with removable louvered rear drop door. Doors are hinged at the bottom with full length piano hinges, and closed with a pushbutton spring catch. For multiple assemblies, each cabinet section has its own individual rear door. Formed 19" steel panels, either plain or louvered, may be substituted for these doors without additional cost.

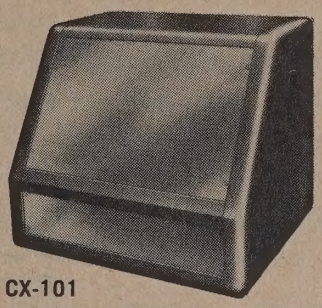
Bottom: Removable blank formed steel panel is furnished.

Finishes: Unless specified otherwise, Desk Panel Cabinets are finished in a combination of dark and light gray hammertone enamel (LD). For color and optional finishes, see **Par-Metal Page 24.**

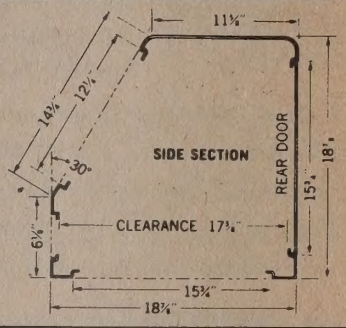
DUAL PANEL CONTROL CABINET
Front Panel Angle: 30°

Catalog No.	Description	H	W	D	Sh.Wt. Lbs.	Net Price
CX-101	Single Unit	18⅞"	22"	18⅞"	50	$ 79.00
CX-102	Double Unit	18⅞"	44"	18⅞"	85	133.00
CX-103	Triple Unit	18⅞"	66"	18⅞"	125	198.75
CX-104	Quad Unit	18⅞"	88"	18⅞"	175	263.50

Front Vertical Panel Height: 3½"

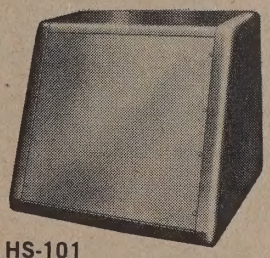


CX-101

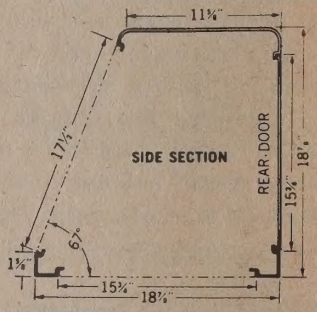


HIGH SLOPE PANEL CABINET
Front Panel Angle: 67°

Catalog No.	Description	H	W	D	Sh.Wt. Lbs.	Net Price
HS-101	Single Unit	18⅞"	22"	18⅞"	45	$ 75.00
HS-102	Double Unit	18⅞"	44"	18⅞"	82	124.25
HS-103	Triple Unit	18⅞"	66"	18⅞"	120	169.50
HS-104	Quad Unit	18⅞"	88"	18⅞"	170	214.50

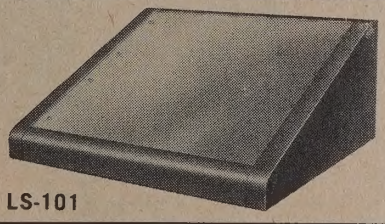


HS-101

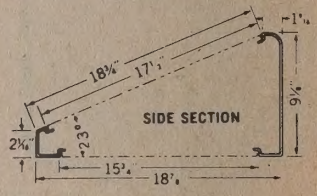


LOW SLOPE PANEL CABINETS Front Panel Angle: 23°

Catalog No.	Description	H	W	D	Sh.Wt. Lbs.	Net Price
LS-101	Single Unit	9⅛"	22"	18⅞"	34	$ 53.75
LS-102	Double Unit	9⅛"	44"	18⅞"	60	103.25
LS-103	Triple Unit	9⅛"	66"	18⅞"	80	129.00
LS-104	Quad Unit	9⅛"	88"	18⅞"	110	150.50

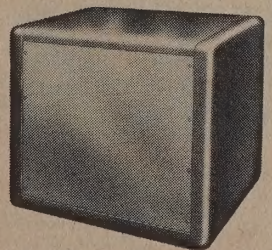


LS-101

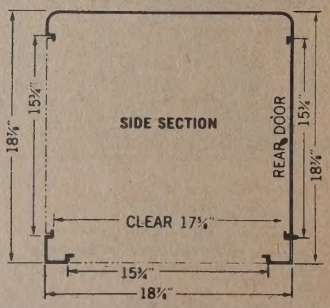


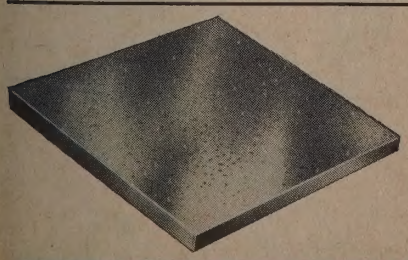
VERTICAL PANEL CABINETS
Front Panel Angle: 90°

Catalog No.	Description	H	W	D	Sh.Wt. Lbs.	Net Price
VF-101	Single Unit	18⅞"	22"	18⅞"	54	$ 64.50
VF-102	Double Unit	18⅞"	44"	18⅞"	84	127.00
VF-103	Triple Unit	18⅞"	66"	18⅞"	130	188.25
VF-104	Quad Unit	18⅞"	88"	18⅞"	180	220.50



VF-101





FORMICA TOP TABLES. ¾" plywood with gray Formica bonded to top and ends. The absence of metal spacers between units provides a clear unobstructed writing surface. To identify required top see pedestal check list on **Par-Metal Pages 27/28.**

	TO FIT ON PEDESTAL FRAME PD-224 (24¼" Deep)				TO FIT ON PEDESTAL FRAME PD-234 (34¼" Deep)			
	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price
SINGLE	WT-241	$18.52	NT-241	$18.25	WT-341	$26.45	HT-341	$15.80
DOUBLE	WT-242	31.20	NT-242	31.20	WT-342	51.95	HT-342	24.75
TRIPLE	WT-243	48.40	NT-243	48.40	WT-343	68.80	HT-343	36.00
QUAD	WT-244	63.25	NT-244	63.25	WT-344	91.25	HT-344	47.85

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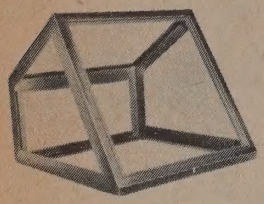
Par.Metal®

CONTEMPO-RAMA OF DESK PANEL CABINETS

For 19" Wide Panels

10 NEW CONTEMPO MODELS • NEW FEATURES • NEW USES

The SAME FULLY WELDED Sturdy Construction



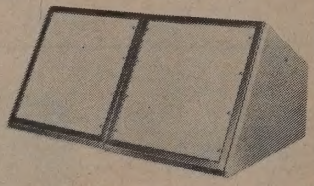
Desk Top Cabinet #PT-19 is shown without End Panels or Formed Panels. It is typical of ALL Models.

PAR-METAL's **CONTEMPO Top Cabinets** are made in single units with detachable End Panels, thus permitting the addition and/or removal of a unit at any time. Mating hardware is supplied. End Panels fit into brackets and lock in place with a ¼ turn cowl fastener, and are set-in ⅜" off the edges.

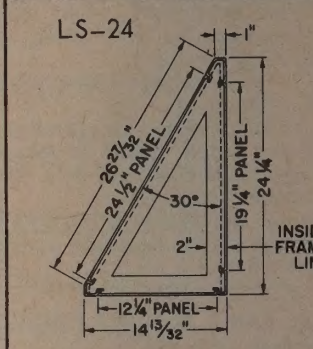
To meet the exacting demands of modern electronics, our engineers have designed many new models. Your choice of layout configuration is further extended by PAR-METAL's new and exclusive line of **ANGULAR WEDGES** for both CONTEMPO-PEDS and DESK TOP CABINETS. (Details are on PAR-METAL Page 32). They satisfy a long overdue need in the industry.

All models except LS-24 fit exactly and use no table tops on the 24¼" deep **CONTEMPO-PEDS.** For Model LS-24 and to use **any** model on a 34¾" deep pedestal, Formica Table Tops are listed on PAR-METAL Page 34. All CONTEMPO-PEDS may use exterior tables (see PAR-METAL Page 33). To decorate the CONTEMPO-LINE, we **add** a New Look! For the entire CONTEMPO-RAMA, **standard finish** is a combination of Dawn Gray and Charcoal Gray Textured Vinyl. Your choice of other available finishes are shown on PAR-METAL Page 24.

Construction: CONTEMPO Desk Top Cabinets are 21⅛" wide. A full complement of 19" wide blank formed panels are supplied. They are listed with each cabinet's description. A flat **⅛" steel** or **aluminum** panel may may be substituted for these formed panels without extra charge, if so ordered. A formed **Rear Drop Door** with full length continuous hinge (Model DRD) may be substituted for the rear panel at an extra cost of 5% of the top cabinet. Ventilating formed **Rear Drop Door** (Model VRD) may be substituted at an extra cost of 7½% of the top cabinet.



2 Peaked Desk Top Cabinets #PT-19 with one pair of PTP-19 End Panels and two 610 Front Panels.

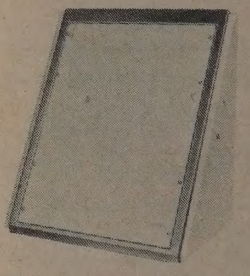


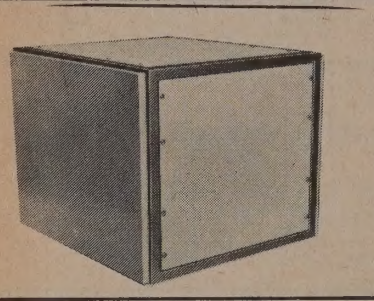
*Uses End Panel LSP–24

LS-24 LOW SLOPE (Upright)

CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
LS-24	$59.75	*LSP-24	$18.50

3 PANELS FURNISHED: 606, 610 AND 613.



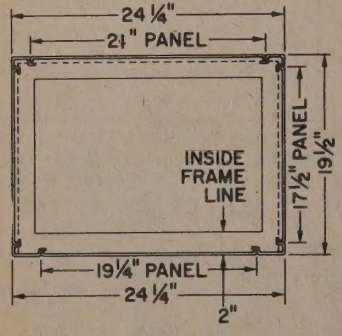


VF-19 VERTICAL FRONT

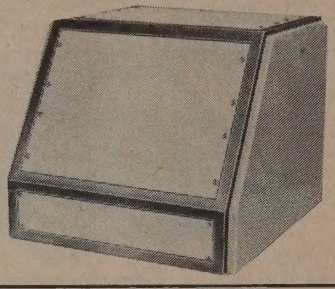
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
VF-19	$73.00	*VFP-19	$21.50

4 PANELS FURNISHED: (2) 609 and (2) 610.

VF-19



*Uses End Panel VFP-19

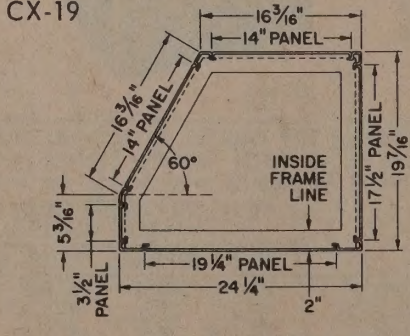


CX-19 DUAL FRONT

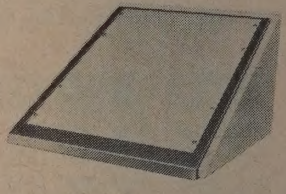
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
CX-19	$78.10	*CXP-19	$23.00

5 PANELS FURNISHED: 601, (2) 607, 609, 610.

CX-19



*Uses End Panel CXP-19

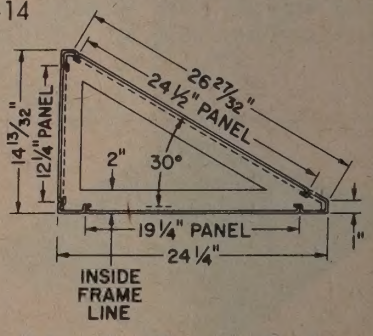


LS-14 LOW SLOPE (Flat)

CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
LS-14	$60.00	*LSP-19	$18.50

3 PANELS FURNISHED: 606, 610 and 613.

LS-14



*Uses End Panel LSP-14

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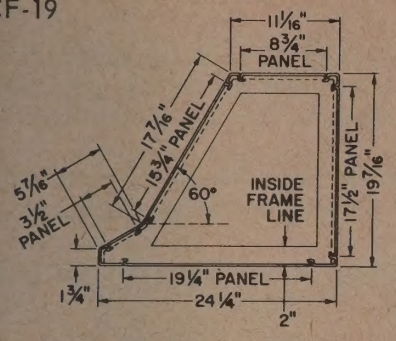
CONTEMPO-RAMA OF DESK PANEL CABINETS

For 19" Wide Panels

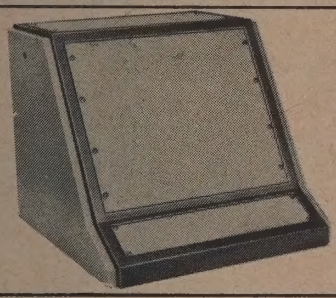
Par-Metal

CF-19

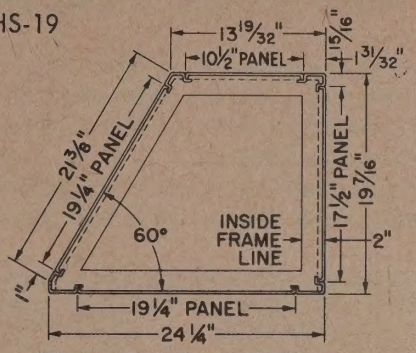


*Uses End Panel CFP-19

CF-19 COMBINATION FRONT			
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
CF-19	$97.75	*CFP-19	$31.50
5 PANELS FURNISHED: 601, 604, 608, 609 and 610.			

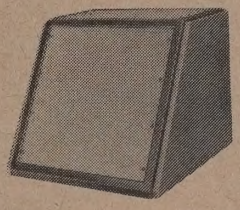


HS-19

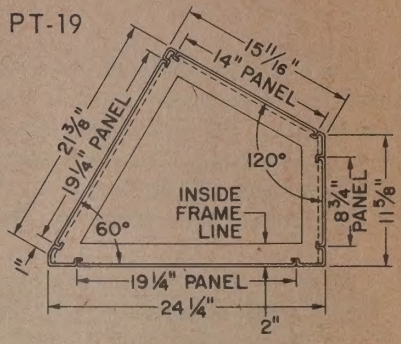


*Uses End Panel HSP-19

HS-19 HIGH SLOPE			
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
HS-19	$74.00	*HSP-19	$23.00
4 PANELS FURNISHED: 605, 609 and (2) 610.			

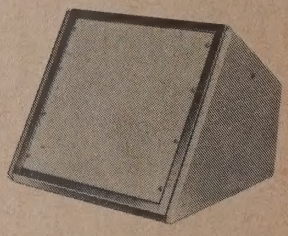


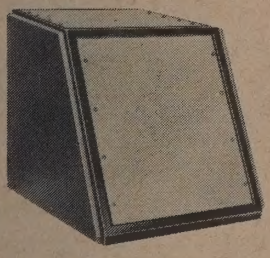
PT-19



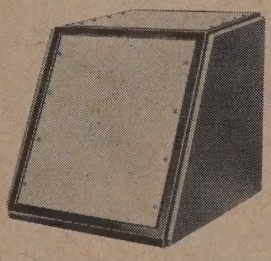
*Uses End Panel PTP-19

PT-19 PEAKED TOP			
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
PT-19	$75.90	*PTP-19	$23.00
4 PANELS FURNISHED: 604, 607 and (2) 610.			

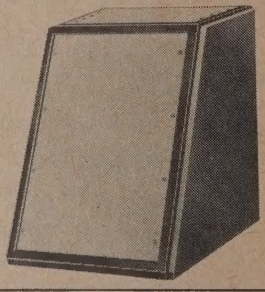




HS-25 HIGH SLOPE			
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
HS-25	$83.00	*HSP-25	$25.50
4 PANELS FURNISHED: 608, 610 and (2) 612.			

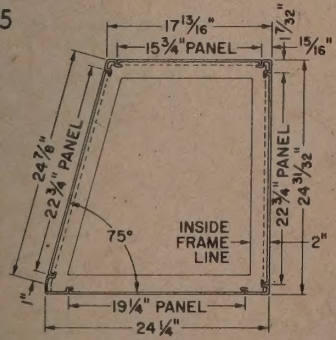


HS-26 HIGH SLOPE			
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
HS-26	$91.00	*HSP-26	$26.75
4 PANELS FURNISHED: 607, 610 and (2) 613.			



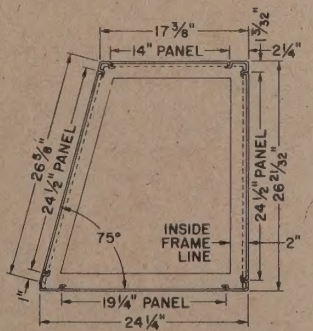
HS-28 HIGH SLOPE			
CABINET CATALOG NUMBER	NET PRICE	Uses END PANEL CATALOG NUMBER	NET PRICE (pair)
HS-28	$101.20	*HSP-28	$29.50
4 PANELS FURNISHED: 607, 610 and (2) 614.			

HS-25



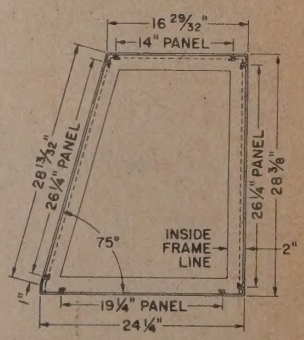
*Uses End Panel HSP-25

HS-26



*Uses End Panel HSP-26

HS-28



*Uses End Panel HSP-28

PAR-METAL PRODUCTS • CONVENIENT FACTORY WAREHOUSE

Par-Metal® COMPONENT CHECK LIST

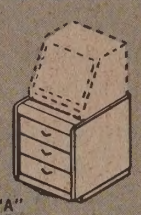
PROFESSIONAL CONSOLES

There are four models of Desk Panel Cabinets, designed to complement and fit on top of the Consoles detailed here. For simplicity, they are omitted from these check lists. Complete information on Desk Panel Cabinets will be found on Par-Metal Page 26. Color/Finishes are listed on Par-Metal Page 24.

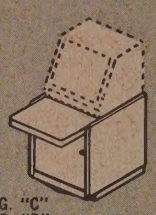
■ When Desk Panel Cabinet is to be **added,** follow this Key letter horizontally on facing page. Desk Panel Cabinet details are on Par-Metal Page 26.

‡ When Desk Panel Cabinets will **not** be used, follow this key letter horizontally on facing page.

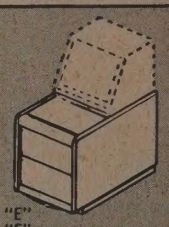
SINGLE UNIT ASSEMBLIES



■FIG. "A"
‡FIG. "B"

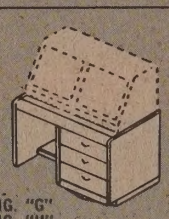


■FIG. "C"
‡FIG. "D"

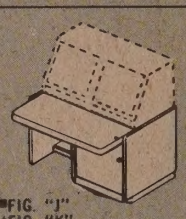


■FIG. "E"
‡FIG. "F"

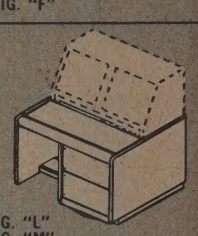
DOUBLE UNIT ASSEMBLIES



■FIG. "G"
‡FIG. "H"

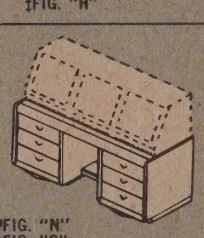


■FIG. "I"
‡FIG. "K"

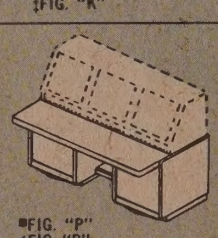


■FIG. "L"
‡FIG. "M"

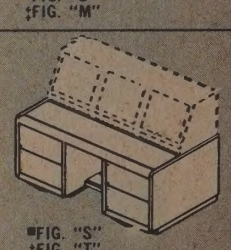
TRIPLE UNIT ASSEMBLIES



■FIG. "N"
‡FIG. "O"

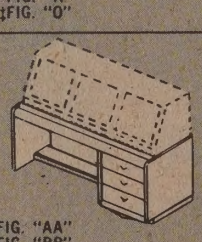


■FIG. "P"
‡FIG. "R"

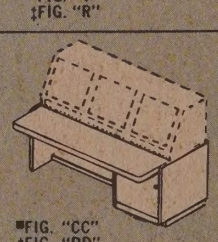


■FIG. "S"
‡FIG. "T"

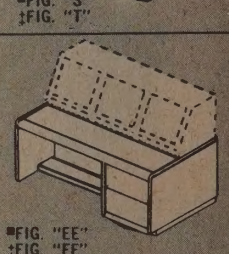
TRIPLE UNIT ASSEMBLIES



■FIG. "AA"
‡FIG. "BB"

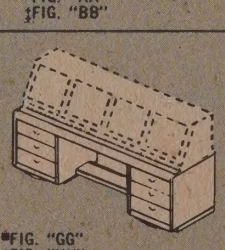


■FIG. "CC"
‡FIG. "DD"

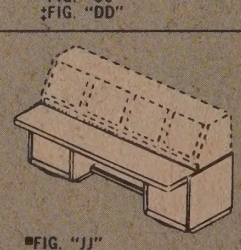


■FIG. "EE"
‡FIG. "FF"

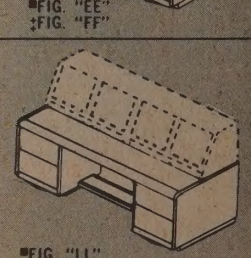
QUAD UNIT ASSEMBLIES



■FIG. "GG"
‡FIG. "HH"

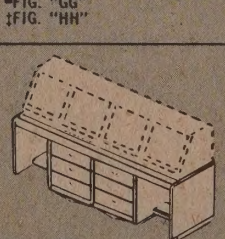


■FIG. "JJ"
‡FIG. "KK"

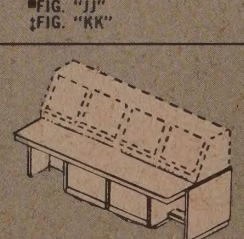


■FIG. "LL"
‡FIG. "MM"

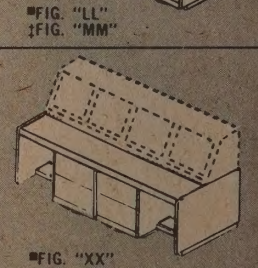
QUAD UNIT ASSEMBLIES



■FIG. "PP"
‡FIG. "RR"



■FIG. "SS"
‡FIG. "TT"



■FIG. "XX"
‡FIG. "ZZ"

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COMPONENT CHECK LIST

Par-Metal®

PROFESSIONAL CONSOLES

The group charts, shown on these two pages, provide a convenient check list to assist the engineer in preparing the Bill of Material necessary for his exact requirements. In addition to these component parts, he may select from the following optional accessories: 19″ wide panels; see Par-Metal Pages 21/22; Sliding drawers and shelves; see Par-Metal Page 17: Hinged doors; see Par-Metal Page 33. Color/Finishes are listed on Par-Metal Page 24.

ASSEMBLIES	FIGURE	PEDESTAL FRAME	EXTERIOR SIDE PANEL	INTERIOR SIDE PANEL	FORMICA TABLE TOP	END PEDESTAL	EXTERIOR DESK TABLE	CENTER DESK SECTION
		Par-Metal Page 25	Par-Metal Page 29	Par-Metal Page 29	Par-Metal Page 26	Par-Metal Page 29	Par-Metal Page 29	Par-Metal Page 29
	A	PD-224	EP-24(2)		*		*	
	B	PD-224	EP-24(2)		WT-241		*	
SINGLE	C	PD-224	EP-24(2)		*		CT-119	
UNIT	D	PD-224	EP-24(2)		NT-241		CT-119	
	E	PD-234	EP-34(2)		HT-341		*	
	F	PD-234	EP-34(2)		WT-341		*	
	G	PD-224	EP-24	KP-24	*	DU-24	*	
	H	PD-224	EP-24	KP-24	WT-242	DU-24	*	
DOUBLE	J	PD-224	EP-24	KP-24	*	DU-24	CT-219	
UNIT	K	PD-224	EP-24	KP-24	NT-242	DU-24	CT-219	
	L	PD-234	EP-34	KP-34	HT-342	DU-34	*	
	M	PD-234	EP-34	KP-34	WT-342	DU-34	*	
	N	PD-224(2)	EP-24(2)	KP-24(2)	*		*	CD-24
	O	PD-224(2)	EP-24(2)	KP-24(2)	WT-243		*	CD-24
TRIPLE	P	PD-224(2)	EP-24(2)	KP-24(2)	*		CT-319	CD-24
UNIT	R	PD-224(2)	EP-24(2)	KP-24(2)	NT-243		CT-319	CD-24
	S	PD-234(2)	EP-34(2)	KP-34(2)	HT-343		*	CD-34
	T	PD-234(2)	EP-34(2)	KP-34(2)	WT-343		*	CD-34
	AA	PD-224	EP-24	KP-24	*	DU-242	*	
	BB	PD-224	EP-24	KP-24	WT-243	DU-242	*	
TRIPLE	CC	PD-224	EP-24	KP-24	*	DU-242	CT-319	
UNIT	DD	PD-224	EP-24	KP-24	NT-243	DU-242	CT-319	
	EE	PD-234	EP-34	KP-34	HT-343	DU-342	*	
	FF	PD-234	EP-34	KP-34	WT-343	DU-342	*	
	GG	PD-224(2)	EP-24(2)	KP-24(2)	*		*	CD-242
	HH	PD-224(2)	EP-24(2)	KP-24(2)	WT-244		*	CD-242
QUAD	JJ	PD-224(2)	EP-24(2)	KP-24(2)	*		CT-419	CD-242
UNIT	KK	PD-224(2)	EP-24(2)	KP-24(2)	NT-244		CT-419	CD-242
	LL	PD-234(2)	EP-34(2)	KP-34(2)	HT-344		*	CD-342
	MM	PD-234(2)	EP-34(2)	KP-34(2)	WT-344		*	CD-342
	PP	PD-224(2)		KP-24(2)	*	DU-24(2)	*	
	RR	PD-224(2)		KP-24(2)	WT-244	DU-24(2)	*	
QUAD	SS	PD-224(2)		KP-24(2)	*	DU-24(2)	CT-419	
UNIT	TT	PD-224(2)		KP-24(2)	NT-244	DU-24(2)	CT-419	
	XX	PD-234(2)		KP-34(2)	HT-344	DU-34(2)	*	
	ZZ	PD-234(2)		KP-34(2)	WT-344	DU-34(2)	*	

QUANTITY IS ONE UNLESS OTHERWISE INDICATED. *NOT REQUIRED

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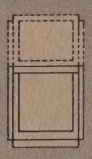
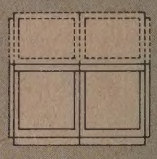
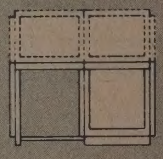
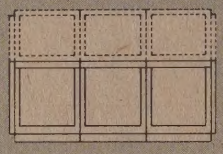
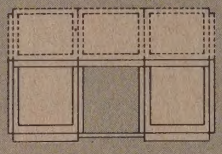
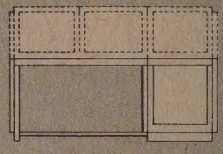
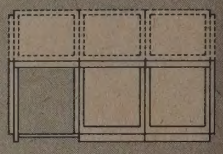
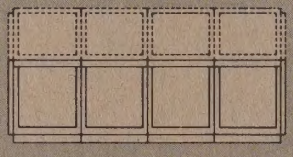
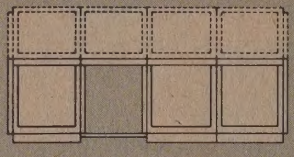
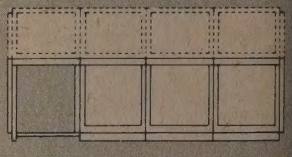
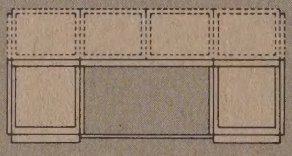
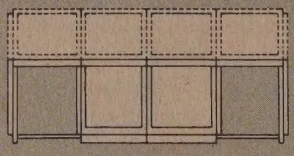
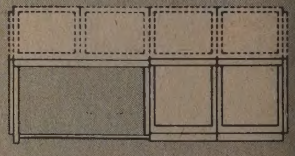
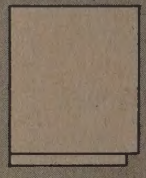
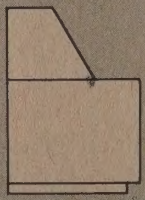
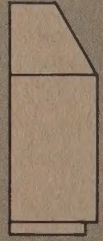
Par-Metal® CONTEMPO-CONSOLES / PEDS

COMPONENT CHECK LIST

Select Desired Configuration from Drawings below — Follow up with Component Charts on Facing Page.

TOP CABINET, Model HS — 19 is used to illustrate sketches. ANY TOP CABINET listed on Par-Metal Pages 27/28 may be substituted.

FRONT VIEW (Either Desk or Standing Height)	USE KEY LETTERS
SINGLE AND DOUBLE UNIT ASSEMBLIES	 A  B  C
TRIPLE UNIT ASSEMBLIES	 D  E  F  G
QUAD UNIT ASSEMBLIES	 H  J  K
Any number of pedestals may be assembled into a single unit console . . .	 L  M  N

(SIDE VIEW) USE KEY NUMBERS	DESK HEIGHT		STANDING HEIGHT	
	24" DEEP	34" DEEP	24" DEEP	34" DEEP
When Pedestals are used with NO TOP CABINET.	#1	#2	#5	#6 
When Pedestals are used with TOP CABINETS (see Par-Metal Pages 27/28)	#3	#4 	#7 	#8

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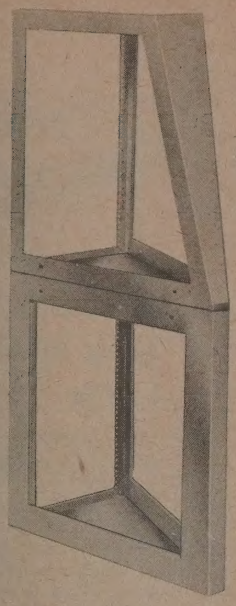
CONTEMPO-WEDGES

Par-Metal



TYPICAL WEDGE ASSEMBLY

•

INCLUDES PEDESTAL WEDGE PDW-24-30 WITH TOP CABINET WEDGE HS-219-30

SOMETHING NEW HAS BEEN ADDED!

To fit these Consoles, Par-Metal offers the industry's only line of Angular Wedges for Contempo-Pedestals and Top Cabinets, with fully welded construction. They fit the equipment. Color/Finishes are listed on Par-Metal Page 24.

WEDGES FOR PEDESTALS	FOR 30° ANGLE FRAMES				FOR 45° ANGLE FRAMES			
	24¼" DEEP		34¾" DEEP		24¼" DEEP		34¾" DEEP	
	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price
Desk Height	PDW-24-30	$87.00	PDW-34-30	$105.60	PDW-24-45	$ 91.00	PDW-34-45	$124.50
Stand. Hght.	PSW-24-30	104.50	PSW-34-30	124.50	PSW-24-45	109.00	PSW-34-45	130.25

Wedges for Top Cabinets Use with Top Cabinet No.	FOR USE WITH 24" DEEP PEDS.				FOR USE WITH 34" DEEP PEDS.			
	Cat. No. for 30° Wedges	Net Price	Cat. No. for 45° Wedges	Net Price	Cat. No. for 30° Wedges	Net Price	Cat. No. for 45° Wedges	Net Price
LS-14	LS-214-30	$ 72.00	LS-214-45	$ 75.50	•LS-314-30	$ 79.25	•LS-314-45	$ 83.00
CF-19	CF-219-30	122.00	CF-219-45	128.00	•CF-319-30	134.25	•CF-319-45	141.00
CX-19	CX-219-30	94.00	CX-219-45	98.75	•CX-319-30	103.50	•CX-319-45	108.75
HS-19	HS-219-30	94.00	HS-219-45	98.75	•HS-319-30	103.50	•HS-319-45	108.75
PT-19	PT-219-30	95.00	PT-219-45	99.75	•PT-319-30	104.50	•PT-319-45	109.75
VF-19	VF-219-30	87.50	VF-219-45	92.00	•VF-319-30	96.25	•VF-319-45	101.25
•LS-24	•LS-224-30	72.00	•LS-224-45	75.50	•LS-324-30	79.25	•LS-324-45	83.00
HS-25	HS-225-30	99.50	HS-225-45	104.50	•HS-325-30	109.25	•HS-325-45	115.00
HS-26	HS-226-30	109.00	HS-226-45	114.50	•HS-326-30	120.00	•HS-326-45	126.00
HS-28	HS-228-30	121.50	HS-228-45	127.50	•HS-328-30	133.75	•HS-328-45	140.25

• Formica Table Top Required — See Par-Metal Page 34.

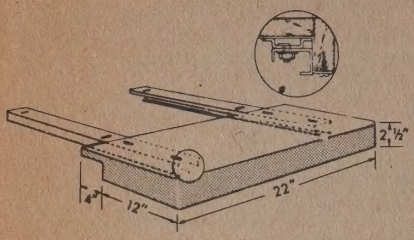
DESK HEIGHT PEDESTALS — CONTEMPO-PEDS — *STAND UP HEIGHT PEDESTALS

Figure	Pedestal Frame Par-Metal Page 25	Exterior Side Panel Par-Metal Page 33	Interior Side Panel Par-Metal Page 33	Formica Table Top Par-Metal Page 34	End Pedestal Par-Metal Page 33	Center Desk Par-Metal Page 33		Figure	Pedestal Frame Par-Metal Page 25	Exterior Side Panel Par-Metal Page 33	Interior Side Panel Par-Metal Page 33	Formica Table Top Par-Metal Page 34	End Pedestal Par-Metal Page 33	Center Desk Par-Metal Page 33
A-1	CPD-24	EPD-24 (2)		WT-124			SINGLE UNIT Assembly	A-5	CPS-24	EPS-24 (2)		WT-124		
A-2	CPD-34	EPD-34 (2)		WT-134				A-6	CPS-34	EPS-34 (2)		WT-134		
A-3	CPD-24	EPD-24 (2)		*LHT-124				A-7	CPS-24	EPS-24 (2)		*LHT-124		
A-4	CPD-34	EPD-34 (2)		HT/*LHT-134				A-8	CPS-34	EPS-34 (2)		HT/*LHT-134		
B-1	CPD-24 (2)	EPD-24 (2)		WT-224			DOUBLE UNIT Assembly	B-5	CPS-24 (2)	EPS-24 (2)		WT-224		
B-2	CPD-34 (2)	EPD-34 (2)		WT-234				B-6	CPS-34 (2)	EPS-34 (2)		WT-234		
B-3	CPD-24 (2)	EPD-24 (2)		*LHT-224				B-7	CPS-24 (2)	EPS-24 (2)		*LHT-224		
B-4	CPD-34 (2)	EPD-34 (2)		HT/*LHT-234				B-8	CPS-34 (2)	EPS-34 (2)		HT/*LHT-234		
C-1	CPD-24	EPD-24	KPD-24	WT-224	DUD-24			C-5	CPS-24	EPS-24	KPS-24	WT-224	DUS-24	
C-2	CPD-34	EPD-34	KPD-34	WT-234	DUD-34			C-6	CPS-34	EPS-34	KPS-34	WT-234	DUS-34	
C-3	CPD-24	EPD-24	KPD-24	*LHT-224	DUD-24			C-7	CPS-24	EPS-24	KPS-24	*LHT-224	DUS-24	
C-4	CPD-34	EPD-34	KPD-34	HT/*LHT-234	DUD-34			C-8	CPS-34	EPS-34	KPS-34	HT/*LHT-234	DUS-34	
D-1	CPD-23 (3)	EPD-24 (2)		WT-324			TRIPLE UNIT Assembly	D-5	CPS-24 (3)	EPS-24 (2)		WT-324		
D-2	CPD-34 (3)	EPD-34 (2)		WT-334				D-6	CPS-34 (3)	EPS-34 (2)		WT-334		
D-3	CPD-24 (3)	EPD-24 (2)		*LHT-324				D-7	CPS-24 (3)	EPS-24 (2)		*LHT-324		
D-4	CPD-34 (3)	EPD-34 (2)		HT/*LHT-334				D-8	CPS-34 (3)	EPS-34 (2)		HT/*LHT-334		
E-1	CPD-24 (2)	EPD-24 (2)	KPD-24 (2)	WT-324		CCD-24		E-5	CPS-24 (2)	EPS-24 (2)	KPS-24 (2)	WT-324		CCD-24
E-2	CPD-34 (2)	EPD-34 (2)	KPD-34 (2)	WT-334		CCD-34		E-6	CPS-34 (2)	EPS-34 (2)	KPS-34 (2)	WT-334		CCD-34
E-3	CPD-24 (2)	EPD-24 (2)	KPD-24 (2)	*LHT-324		CCD-24		E-7	CPS-24 (2)	EPS-24 (2)	KPS-24 (2)	*LHT-324		CCD-24
E-4	CPD-34 (2)	EPD-34 (2)	KPD-34 (2)	HT/*LHT-334		CCD-34		E-8	CPS-34 (2)	EPS-34 (2)	KPS-34 (2)	HT/*LHT-334		CCD-34
F-1	CPD-24	EPD-24	KPD-24	WT-324	DUD-242			F-5	CPS-24	EPS-24	KPS-24	WT-324	DUS-242	
F-2	CPD-34	EPD-34	KPD-34	WT-334	DUD-342			F-6	CPS-34	EPS-34	KPS-34	WT-334	DUS-342	
F-3	CPD-24	EPD-24	KPD-24	*LHT-324	DUD-242			F-7	CPS-24	EPS-24	KPS-24	*LHT-324	DUS-242	
F-4	CPD-34	EPD-34	KPD-34	HT/*LHT-334	DUD-342			F-8	CPS-34	EPS-34	KPS-34	HT/*LHT-334	DUS-342	
G-1	CPD-24 (2)	EPD-24	KPD-24	WT-324	DUD-24			G-5	CPS-24 (2)	EPS-24	KPS-24	WT-324	DUS-24	
G-2	CPD-34 (2)	EPD-34	KPD-34	WT-334	DUD-34			G-6	CPS-34 (2)	EPS-34	KPS-34	WT-334	DUS-34	
G-3	CPD-24 (2)	EPD-24	KPD-24	*LHT-324	DUD-24			G-7	CPS-24 (2)	EPS-24	KPS-24	*LHT-324	DUS-24	
G-4	CPD-34 (2)	EPD-34	KPD-34	HT/*LHT-334	DUD-34			G-8	CPS-34 (2)	EPS-34	KPS-34	HT/*LHT-334	DUS-34	
H-1	CPD-24 (4)	EPD-24 (2)		WT-424			QUAD UNIT Assembly	H-5	CPS-24 (4)	EPS-24 (2)		WT-424		
H-2	CPD-34 (4)	EPD-34 (2)		WT-434				H-6	CPS-34 (4)	EPS-34 (2)		WT-434		
H-3	CPD-24 (4)	EPD-24 (2)		*LHT-424				H-7	CPS-24 (4)	EPS-24 (2)		*LHT-424		
H-4	CPD-34 (4)	EPD-34 (2)		HT/*LHT-434				H-8	CPS-34 (4)	EPS-34 (2)		HT/*LHT-434		
J-1	CPD-24 (3)	EPD-24 (2)	KPD-24 (2)	WT-424		CCD-24		J-5	CPS-24 (3)	EPS-24 (2)	KPS-24 (2)	WT-424		CCD-24
J-2	CPD-34 (3)	EPD-34 (2)	KPD-34 (2)	WT-434		CCD-34		J-6	CPS-34 (3)	EPS-34 (2)	KPS-34 (2)	WT-434		CCD-34
J-3	CPD-24 (3)	EPD-24 (2)	KPD-24 (2)	*LHT-424		CCD-24		J-7	CPS-24 (3)	EPS-24 (2)	KPS-24 (2)	*LHT-424		CCD-24
J-4	CPD-34 (3)	EPD-34 (2)	KPD-34 (2)	HT/*LHT-434		CCD-34		J-8	CPS-34 (3)	EPS-34 (2)	KPS-34 (2)	HT/*LHT-434		CCD-34
K-1	CPD-24 (3)	EPD-24	KPD-24	WT-424	DUD-24			K-5	CPS-24 (3)	EPS-24	KPS-24	WT-424	DUS-24	
K-2	CPD-34 (3)	EPD-34	KPD-34	WT-434	DUD-34			K-6	CPS-34 (3)	EPS-34	KPS-34	WT-434	DUS-34	
K-3	CPD-24 (3)	EPD-24	KPD-24	*LHT-424	DUD-24			K-7	CPS-24 (3)	EPS-24	KPS-24	*LHT-424	DUS-24	
K-4	CPD-34 (3)	EPD-34	KPD-34	HT/*LHT-424	DUD-34			K-8	CPS-34 (3)	EPS-34	KPS-34	HT/*LHT-424	DUS-34	
L-1	CPD-24 (2)	EPD-24 (2)	KPD-24 (2)	WT-424		CCD-242		L-5	CPS-24 (2)	EPS-24 (2)	KPS-24 (2)	WT-424		CCD-242
L-2	CPD-34 (2)	EPD-34 (2)	KPD-34 (2)	WT-434		CCD-342		L-6	CPS-34 (2)	EPS-34 (2)	KPS-34 (2)	WT-434		CCD-342
L-3	CPD-24 (2)	EPD-24 (2)	KPD-24 (2)	*LHT-424		CCD-242		L-7	CPS-24 (2)	EPS-24 (2)	KPS-24 (2)	*LHT-424		CCD-242
L-4	CPD-34 (2)	EPD-34 (2)	KPD-34 (2)	HT/*LHT-434		CCD-342		L-8	CPS-34 (2)	EPS-34 (2)	KPS-34 (2)	HT/*LHT-434		CCD-342
M-1	CPD-24 (2)		KDP-24 (2)	WT-424	DUD-24 (2)			M-5	CPS-24 (2)		KPS-24 (2)	WT-424	DUS-24 (2)	
M-2	CPD-34 (2)		KPD-34 (2)	WT-434	DUD-34 (2)			M-6	CPS-34 (2)		KPS-34 (2)	WT-434	DUS-34 (2)	
M-3	CPD-24 (2)		KPD-24 (2)	*LHT-424	DUD-24 (2)			M-7	CPS-24 (2)		KPS-24 (2)	*LHT-424	DUS-24 (2)	
M-4	CPD-34 (2)		KPD-34 (2)	HT/*LHT-434	DUD-34 (2)			M-8	CPS-34 (2)		KPS-34 (2)	HT/*LHT-434	DUS-34 (2)	
N-1	CPD-24 (2)	EPD-24	KPD-24	WT-424	DUD-242			N-5	CPS-24 (2)	EPS-24	KPS-24	WT-424	DUS-242	
N-2	CPD-34 (2)	EPD-34	KPD-34	WT-434	DUD-342			N-6	CPS-34 (2)	EPS-34	KPS-34	WT-434	DUS-342	
N-3	CPD-24 (2)	EPD-24	KPD-24	*LHT-424	DUD-242			N-7	CPS-24 (2)	EPS-24	KPS-24	*LHT-424	DUS-242	
N-4	CPD-34 (2)	EPD-34	KPD-34	HT/*LHT-434	DUD-342			N-8	CPS-34 (2)	EPS-34	KPS-34	HT/*LHT-434	DUS-342	

*USE WITH LS-24 TOP CABINET ONLY. FOR INFORMATION ON DESK PANEL CABINETS, PLEASE TURN TO PAR-METAL PAGES 27/28. INFORMATION ON EXTERIOR (EXTENSION) TABLES, IS LISTED ON PAR-METAL PAGE 33.

PAR-METAL PRODUCTS • ENGINEERING ASSISTANCE AVAILABLE

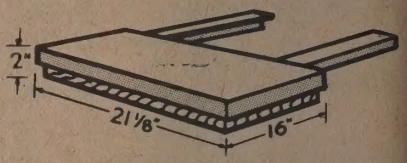
Par-Metal® CONSOLE ACCESSORIES



"PROFESSIONAL"

EXTERIOR DESK TABLES for CONSOLES listed on Par-Metal Pages 27/28 and 31/32 are made from ¾" plywood with gray Formica on top and aprons. This provides a smooth writing surface across entire top. Tables have 7/64" steel horizontal channel supports, but no metal parts are exposed. Request estimate for custom work.

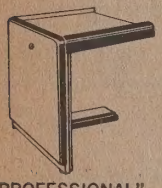
"Professional" Consoles			Contempo-Consoles	
Catalog No.	Net Price		Catalog No.	Net Price
CT-119	$29.40	SINGLE	CCT-116	$31.55
CT-219	49.75	DOUBLE	CCT-216	63.05
CT-319	71.00	TRIPLE	CCT-316	97.10
CT-419	86.95	QUAD	CCT-416	117.60



CONTEMPO

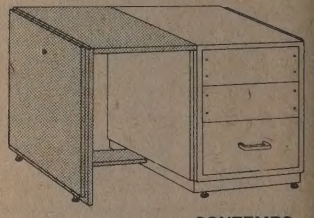
DETACHABLE SIDE PANELS for CONSOLES are shaped to match their pedestals. Made of #16 gauge steel with all formed edges; coinciding brackets with ¼ turn cowl fasteners assure fast and accurate mounting. **"Professional"** Side Panels are 1¼" thick, while **Contempo** Side Panels are ¾" thick. Finished same as Pedestals. **EP** models are for exterior use; **KP** models are for interior use. Model numbers indicate depth of console.

FOR 24" DEEP PEDESTALS			FOR 34" DEEP PEDESTALS		
Cat. No.	To Fit Pedestal	Net Price	Cat. No.	To Fit Pedestal	Net Price
EP-24	PD-224	$21.50	EP-34	PD-234	$26.90
EPD-24	CPD-24	17.50	EPD-34	CPD-34	22.50
EPS-24	CPS-24	21.00	EPS-34	CPS-34	26.60
KP-24	PD-224	18.85	KP-34	PD-234	21.50
KPD-24	CPD-24	17.50	KPD-34	CPD-34	20.00
KPS-24	CPS-24	21.00	KPS-34	CPS-34	23.60


"PROFESSIONAL"

END PEDESTALS for CONSOLES or kneehole spaces for use at ends of Console Assemblies are equipped with a foot rest as well as a vertical member, end panel and top section. They are made in single and double widths. (Formica table top is extra). Left side installation is standard; right side installation optional. See Component check lists on Par-Metal Pages 29/30 and 31/32 for correct model numbers. Finished same as pedestals.

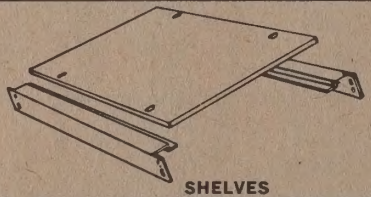
FOR 24" DEEP PEDESTALS			FOR 34" DEEP PEDESTALS		
Cat. No.	To Fit Pedestal	Net Price	Cat. No.	To Fit Pedestal	Net Price
DU-24	PD-224	$51.10	DU-34	PD-234	$63.50
DU-34	PD-224	66.75	DU-342	PD-234	82.80
DUD-24	CPD-24	45.00	DUD-34	CPD-34	56.50
DUS-24	CPS-24	54.00	DUS-34	CPS-34	66.70
DUD-242	CPD-24	66.75	DUD-342	CPD-34	73.75
DUS-242	CPS-24	70.50	DUS-342	CPS-34	91.75


CONTEMPO

MOUNTING BRACKETS AND SHELVES

For "Professional" Pedestals Only

Brackets are mounted at desired height to side of pedestal, and slotted to match pedestal holes. Shelves are 17½" Wide and ⅝" High and drilled for assembly with bracket.



MOUNTING BRACKETS

Cat. No. (For Pair)	To Fit Pedestal	Overall Size	Ship. Wt. Lbs.	Net Price Per Pr.
CB-24	PD-224	2½x3x18¾"	10	$4.20
CB-34	PD-234	2½x3x28¾"	15	5.80

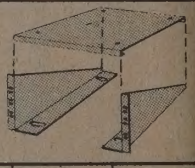
SHELVES

Cat. No.	To Fit Brackets	For Pedestal	Depth	Ship. Wt. Lbs.	Net Price Per Pr.
SS-24	CB-24	PD-234	22¾"	7	$5.25
SS-34	CB-34	PD-234	32¾"	10	6.75

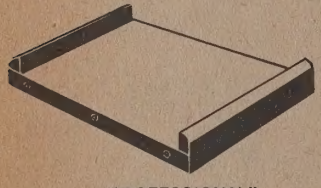
BRACKET AND SHELF ASSEMBLY

For Contempo Peds Only

Mounts to front Panel Angles and is zinc plated. Uses 7" or larger formed cover panels.

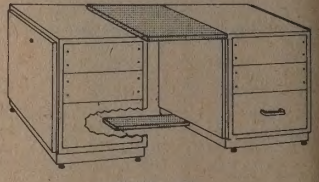


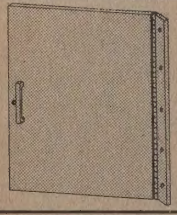
Cat. No.	Bracket Height	Use With Panel Width	Shelf Depth	Shelf Width	Net Price
BRA-1914	6½"	19"	14¼"	17⅝"	$ 8.20
BRA-1920	6½"	19"	20¼"	17⅝"	8.75
BRA-2420	6½"	24"	20¼"	22⅝"	10.60
BRA-3020	6½"	30"	20¼"	28⅝"	13.20


"PROFESSIONAL"

CENTER DESK SECTIONS for CONSOLES are kneehole spaces in single or double widths, for use in center of console assembly. They include a Foot Rest and a Bridge Section Top Support for Multiple Units. (Formica table top is extra). See Check Lists on Par-Metal Pages 29/30 and 31/32 for correct catalog numbers. Finished to match pedestal.

FOR 24" DEEP PEDESTALS			FOR 34" DEEP PEDESTALS		
Cat. No.	To Fit Pedestal	Net Price	Cat. No.	To Fit Pedestal	Net Price
CD-24	PD-224	$17.75	CD-34	PD-234	$22.80
CD-242	PD-224	38.00	CD-342	PD-234	44.75
CCD-24	CPD/CPS-24	17.75	CCD-34	CPD/CPS-34	20.80
CCD-242	CPD/CPS-24	38.00	CCD-342	CPD/CPS-34	41.60

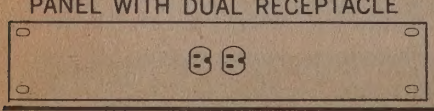

CONTEMPO



HINGED DOOR PANELS: They are of double wall construction. 7/16" thick, 19" wide, push button spring catch. FULL length Piano Hinge for strong left or right mounting. Finished on both sides to match equipment.

Cat. No.	Height	Net Price	Cat. No.	Height	Net Price
DR-7019	7"	$12.65	DR-2119	21"	$17.75
DR-1019	10½"	14.50	DR-2419	24½"	20.65
DR-1219	12¼"	15.05	DR-2619	26¼"	23.90
DR-1419	14"	15.60	DR-2819	28"	25.65
DR-1519	15¾"	16.35	DR-3119	31½"	26.55
DR-1719	17½"	16.95	DR-3519	35"	27.80
DR-1919	19¼"	17.40			

PANEL WITH DUAL RECEPTACLE



A Dual Receptacle (in a UL Approved metal box) is mounted on a 3½" x 19" standard steel panel.

Cat. No. 601-R Formed Steel Panel 2.80

or Cat. No. 6601-R Flat Steel Panel 2.50

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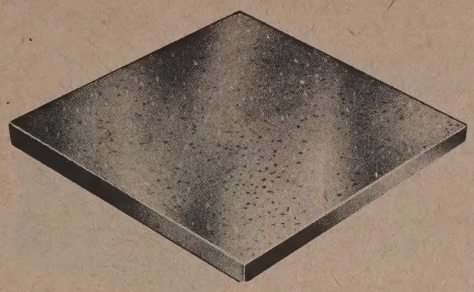
FORMICA TOP TABLES FOR CONTEMPO-PEDS

Par-Metal

Construction: ¾" plywood with gray bonded Formica top. The absence of metal spacers between units provides a clear unobstructed writing surface.



To identify required table top, please turn to Par-Metal Pages 31/32 for CONTEMPO-PED Component Check List.

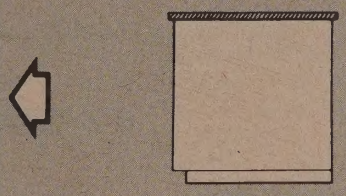
DRAWINGS BELOW SHOW SIDE VIEWS

FOR 24¼" DEEP CONTEMPO — PEDS

Required on Pedestals when No Top Cabinet is used.

CATALOG NUMBER	UNIT SIZE	OVERALL SIZE Width x Depth	NET PRICE
WT-124	Single	23⅜" x 25"	$27.25
WT-224	Double	44½" x 25"	51.78
WT-324	Triple	65⅝" x 25"	68.80
WT-424	Quad	86¾" x 25"	91.75

FULL TABLE

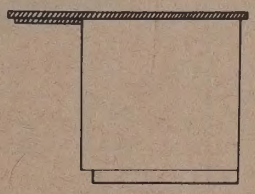


SIDE VIEW

Used on PEDESTALS when No Top Cabinet is needed.

CATALOG NUMBER	UNIT SIZE	OVERALL SIZE Width x Depth	NET PRICE
WTX-124	Single	23⅜" x 40⅝"	$52.50
WTX-224	Double	44½" x 40⅝"	99.75
WTX-324	Triple	65⅝" x 40⅝"	145.68
WTX-424	Quad	86¾" x 40⅝"	189.00

FULL TABLE WITH 16" EXTENSION

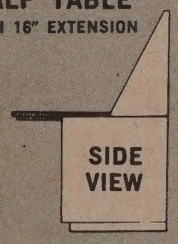


SIDE VIEW

Used on 24¼" deep PEDS with Top Cabinet LS-24 ONLY.

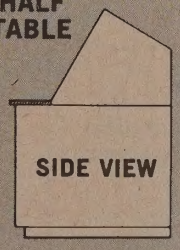
CATALOG NUMBER	UNIT SIZE	OVERALL SIZE Width x Depth	NET PRICE
HTX-124	Single	21⅛" x 20¾"	$30.53
HTX-224	Double	42¼" x 20¾"	58.00
HTX-324	Triple	63⅜" x 20¾"	84.72
HTX-424	Quad	84½" x 20¾"	109.91

HALF TABLE WITH 16" EXTENSION



SIDE VIEW

HALF TABLE

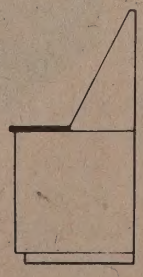


SIDE VIEW

Used on PEDESTALS with Top Cabinet LS-24 ONLY.

CATALOG NUMBER	UNIT SIZE	OVERALL SIZE Width x Depth	NET PRICE
LHT-124	Single	21⅛" x 10¼"	$15.80
LHT-224	Double	42¼" x 10¼"	30.00
LHT-324	Triple	63⅜" x 10¼"	43.85
LHT-424	Quad	84½" x 10¼"	60.05

HALF TABLE



SIDE VIEW

FOR 34¾" DEEP CONTEMPO — PEDS

Required on Pedestals when No Top Cabinet is used.

CATALOG NUMBER	UNIT SIZE	OVERALL SIZE Width x Depth	NET PRICE
WT-134	Single	23⅜" x 35½"	$ 31.60
WT-234	Double	44½" x 35½"	63.10
WT-334	Triple	65⅝" x 35½"	94.60
WT-434	Quad	86¾" x 35½"	126.10

NOTES: EXTERIOR (Extension) TABLE TOPS with the same "step-down" design and with gray FORMICA bonded to ¾" plywood, are available for ALL CONTEMPO-PEDS. They are listed with their construction details on Par-Metal Page 33.

Special CONTEMPO Table Tops can be made to fit your specification or configuration requirements. Design assistance or pricing information is available without obligation.

Used on 34¾" deep PEDS with ALL cabinets except LS-24.

CATALOG NUMBER	UNIT SIZE	OVERALL SIZE Width x Depth	NET PRICE
HT-134	Single	21⅛" x 10⅞"	$16.60
HT-234	Double	42¼" x 10⅞"	31.54
HT-334	Triple	63⅜" x 10⅞"	46.05
HT-434	Quad	84½" x 10⅞"	62.10

Used on PEDESTALS with Top Cabinet LS-24 ONLY.

CATALOG NUMBER	UNIT SIZE	OVERALL SIZE Width x Depth	NET PRICE
LHT-134	Single	21⅛" x 20¾"	$22.50
LHT-234	Double	42¼" x 20¾"	42.75
LHT-334	Triple	63⅜" x 20¾"	62.43
LHT-434	Quad	84½" x 20¾"	81.00

ASK YOUR DISTRIBUTOR FOR PAR-METAL PRODUCTS CATALOG

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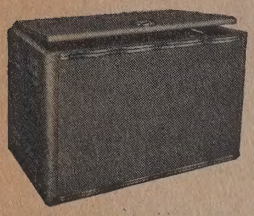
Par-Metal® DESK CABINETS - AMPLIFIER CHASSIS

DELUXE CABINETS



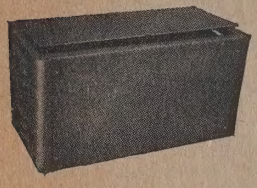
With formed door and modern handle, **hinged at back** for full access.

Chrome mouldings are mounted on front at top and bottom. Cabinet has ventilating louvres **on each side,** and full width opening at back for leads, etc.

Standard finish is blue grey wrinkle enamel. Prices do not include chassis which are lisned on **PAR-METAL Page 36.**

Catalog No.	Overall Dimensions	Panel Size	Uses Chassis	Shp. Wt. Lbs.	Net Price
CA-300	9x12⅛x 8"	7 15/32"x10 1/16"	7x 9x2"	6	$11.50
CA-301	9x16⅛x 8"	7 15/32"x14 1/16"	7x13x2"	7	12.65
CA-302	10x17⅛x11"	8 15/32"x15 1/16"	10x14x3"	8	16.00
CA-303	10x20⅛x 9"	8 15/32"x18 1/16"	8x17x3"	11	17.00
CA-304	13x20⅛x12"	11 15/32"x18 1/16"	10x17x3"	15	19.90

ROUNDED CORNER CABINETS



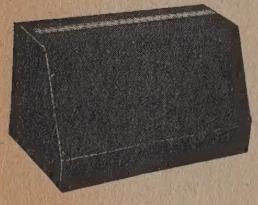
Similar in design to those listed above. **Flat doors,** hinged at back to permit full access. Vertical front corners are rounded.

Ventilating louvres are stamped in both sides, and full width opening is provided at back for leads.

Standard finish is blue grey wrinkle enamel. Prices do not include chassis, which are listed on **PAR-METAL Page 36.**

Catalog No.	Overall Dimensions	Panel Size	Uses Chassis	Shp. Wt. Lbs.	Net Price
CA-200	8½x10⅛x 8"	7 15/32"x 8 1/16"	7x 7x2"	6	$ 6.60
CA-201	8½x12⅛x 8"	7 15/32"x10 1/16"	7x 9x2"	7	7.05
CA-202	8½x16⅛x 8"	7 15/32"x14 1/16"	7x13x2"	8	8.75
CA-203	9½x17⅛x11"	8 15/32"x15 1/16"	10x14x3"	11	12.35
CA-204	12½x20⅛x12"	11 15/32"x18 1/16"	10x17x3"	15	14.40

SLOPING FRONT CABINETS



Also used as instrument cases or for use in studios, laboratories, etc.

- Top corner is rounded and trimmed with chrome moulding. Blue grey wrinkle finish.
- A chassis may be mounted to a front panel and removed as a unit.
- Rear of case is ventilated, with an opening for connections. Prices do not include chassis, which are listed on **PAR-METAL Page 36.**

Catalog No.	Overall Dimensions	Uses Chassis	Shp. Wt. Lbs.	Net Price
SF-500	8x 8x 8"	7x 7x2"	6	$ 7.00
SF-501	8x10x 8"	7x 9x2"	7	7.75
SF-502	8x14x 8"	7x13x2"	8	8.40
SF-503	9x18x 8"	7x17x3"	10	10.50
SF-504	12x18x12"	10x17x3"	14	13.25

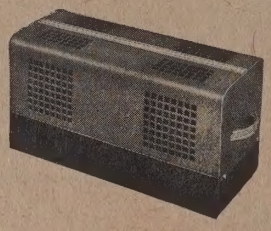
AMPLIFIER FOUNDATION CHASSIS WITH SLOPING FRONT

For mounting meters, switches, etc., panel is removable and protrudes 3" from face of the screen cover. All parts are finished in blue grey wrinkle.

Trimmed with a chrome moulding with handles at each end. **Chassis are supplied WITH bottom plates.**

Cat. No.	Chassis Size	Screen Cover	Shp. Wt. Lbs.	Net Price
F-10120	10x12x3"		11	$13.05
F-10170	10x17x3"	**6½" height**	13	15.80
F-13170	13x17x3"		15	17.10

ROUNDED CORNER DESIGN

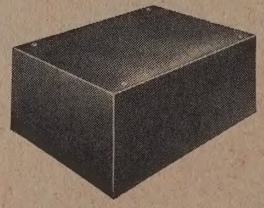


Streamlines the chassis screen covers. Ventilation is through rectangular openings. The moulding and handles are chrome plated with red striping.

Screen cover finish is blue grey wrinkle enamel to contrast with black chassis. Chassis are drilled for bottom plate. See **PAR-METAL Page 36.**

Cat. No.	Chassis Size	Depth of Cover	Shp. Wt. Lbs.	Net Price
DF-510	5x10x3"		7	$ 7.25
DF-615	6x14x3"		8	8.10
DF-717	7x17x3"	6"	9	9.35
DF-1012	10x12x3"		9	9.55
DF-1017	10x17x3"		10	10.55
DF-1317	13x17x3"		12	11.30

STEEL UTILITY CASES



Removable flat tops and bottoms. 20 gauge sheet steel, with flanged edges and spot-welded corners. Finish is black wrinkle enamel.

Cat. No.	Overall Size	Shp. Wt. Lbs.	Net Price	Cat. No.	Overall Size	Shp. Wt. Lbs.	Net Price
MC-442	4x 4x 2"	1	$1.50	MC-666	6x 6x 6"	3	$2.75
MC-453	4x 5x 3"	2	1.80	MC-8101	8x10x10"	7	5.10
MC-596	5x 9x 6"	4	3.65	MC-8107	8x10x 7"	6	5.20
MC-654	6x 5x 4"	3	2.75	MC-1128	11x12x 8"	9	6.55

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BLANK CHASSIS BASES

Par-Metal

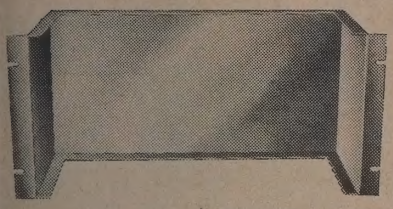
VERTICAL RACK MOUNTING CHASSIS TO FIT 19" RACKS

Either 1/16" **aluminum** with natural finish, or 1/16" **steel, zinc plated.** Overall length including mounting flanges is 18¾". Mounts under 19" wide formed panels listed on PAR-METAL Page 22. 4 15/16" height is for use with 5¼" panels, 6 11/16" height is for use with 7" panels, etc.

ALU-MINUM Cat. No.	Price	Chassis Dimensions	STEEL Cat. No.	Net Price
AC-402	$4.30	4 15/16"x17"x3"	SC-402	$3.70
AC-403	4.90	6 11/16"x17"x3"	SC-403	3.90
AC-404	5.50	8 7/16"x17"x3"	SC-404	4.85
AC-405	6.10	10 3/16"x17"x3"	SC-405	5.20
AC-406	6.80	11 15/16"x17"x3"	SC-406	5.65

Slots are provided in chassis side flanges to clear panel mounting screws. Chassis will fit on any 19" panel rack.

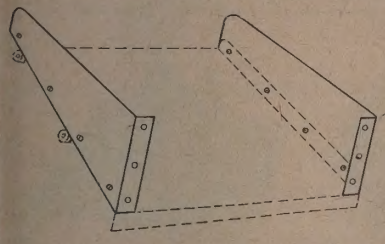
VERTICAL RACK MOUNTING CHASSIS TO FIT 19" RACKS



For installation in **ALL** cabinet racks. Material is 1/16" aluminum, with corners welded for rigidity. Natural finish on inside and outside. All chassis are 5¼" deep; overall width is 19"; chassis width is 16⅞".

Cat. No.	Height	Ship. Wt. Lbs.	Net Price	Cat. No.	Height	Ship. Wt. Lbs.	Net Price
AC-430	1¾"	2	$3.00	AC-434	8¾"	5	$5.35
AC-431	3½"	3	3.70	AC-435	10½"	5	5.95
AC-432	5¼"	3	4.20	AC-436	12¼"	6	6.95
AC-433	7"	4	4.95	AC-437	14"	7	7.45

PANEL MOUNTING BRACKETS (Pairs)* For Basic Slide Assemblies



For adding Rack Panels to Basic Slide; 1/16" zinc plated steel, 6½" high. Use with 7" (or larger) panels. For correct sliding, special bolts are supplied.

Cat. No.	Length	To Fit Assembly	Net Price Per Pair
*BR-14	14¼"	BS-1980	$2.90
*BR-20	14¼"	BS-1940, 2419, 2424	3.90

BASIC SLIDE PANEL AND BRACKET KIT

This kit includes two (a pair of) Brackets, a "Double Wall" Panel and ALL Hardware. Order by Catalog No., and state FINISH. See Par-Metal Pages 5 and 24, for choice of finishes.

Cat. No.	Panel Size	To Fit Assembly	Net Price
BK-603-14	7"x19"	BS-1980	$ 6.70
BK-605-14	10½"x19"	BS-1980	9.10
BK-603-20	7"x19"	BS-1940, 2419	9.40
BK-605-20	10½"x19"	BS-1940, 2419	9.80
BK-645-20	10½"x24"	BS-2424	11.75
BK-646-20	12¼"x24"	BS-2424	12.30

SHELVES FOR CABINET RACKS

Fit into Relay racks. They mount inside the rack, with side bolts. All shelves are 1" high and finished in black enamel. Shipping weight of all shelves is 10 lbs.

Catalog No.	Will Fit Rack No.	Par Metal Rack Page No.	Shelf Size	Net Price
ER-2212	ER-213, ER-215, ER-217-A	20	15"x21 15/16"	$4.50
ER-2212	ER-223, ER-225, ER-227-A	19	15"x21 15/16"	4.50
R-2225	FD-215, FD-217-A	20	12"x21 15/16"	4.05
R-2128	DL-1713, 2613, 3513	18	12"x21 3/16"	3.55

CHASSIS

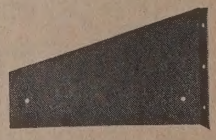
Each Chassis is formed from a single piece of cold rolled steel, with four solid sides and welded corners. Chassis 11" x 17" or over are #16 gauge (.059"). Smaller ones are #20 gauge (.036").

All bottom edges are reinforced by flanging and are drilled to mate with Bottom Plates. Bottom Plates have pressed bumpers at each corner. Each piece is heavily zinc plated.

Chassis Cat. No.	Size	Ship. Wt. Lbs.	Net Price	Mating Bottom Plate Cat. No.	Ship. Wt. Lbs.	Net Price
C-4508	5x10x3"	3	$2.40	CP-4508	1	$ .80
	6x14"			CP-4509	2	1.25
	10x12"			CP-4525	2	1.55
C-4510	7x 7x2"	2	1.65	CP-4510	1	.95
C-4511	7x 9x2"	2	2.10	CP-4511	1	1.00
C-4513	7x13x2"	3	2.35	CP-4513	2	1.25
C-4515	7x17x3"	4	2.75	CP-4515	2	1.25
C-4532	8x17x3"	5	3.40	CP-4531	2	1.30
C-4524	10x14x3"	5	3.35	CP-4524	2	1.30
C-4526	10x17x3"	7	3.10	CP-4528	2	1.55
C-4533*	11x17x2"	7	3.80	CP-4533	2	1.55
C-4534*	11x17x3"	9	5.00	CP-4533	2	1.55
C-4535*	13x17x2"	8	4.10	CP-4535	3	1.80
C-4536*	13x17x3"	9	5.00	CP-4535	3	1.80
C-4537*	13x17x4"	10	5.45	CP-4535	3	1.80
C45-50*	17x17x4"	13	5.80	CP-4540	4	2.05

*Made from 1/16" steel for heavy duty use.

CHASSIS MOUNTING BRACKETS (Pairs)*



Brackets are 1/16" steel, for assembly with our standard or heavy duty chassis listed above. Panels must be at least 7" high.

FINISH: Black enamel only.

Cat. No.	Base Dimensions	Ship. Wt. Lbs.	Net Price Per Pair*
*SB-78	For 8"	2	$1.45
*SB-710	For 10"	2	1.65
*SB-711	For 11"	2	1.75
*SB-713	For 13"	3	2.00
*SB-717	For 17"	4	2.50

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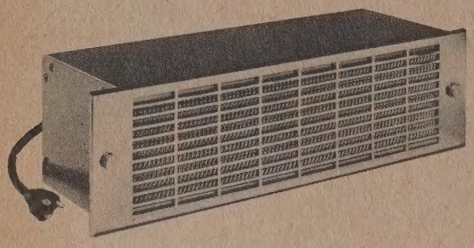
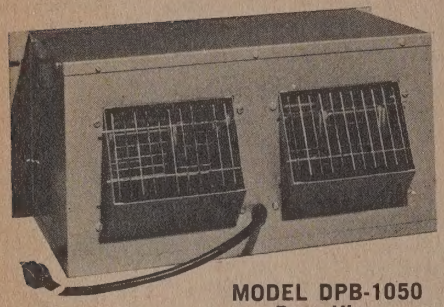
Par-Metal® BLOWERS – FANS

PACKAGED TWIN BLOWERS FOR 19" WIDE PANEL SPACE



MODEL DPB-525
Front View



MODEL DPB-1050
Rear View

HIGH EFFICIENCY – SMALL SPACE

Packaged Electronic Cooling units have simple twin blowers powered by a permanently lubricated double-shielded ball-bearing motor, forced air cooled by a portion of the intake air.

Rotating components are suspended on six-way Neoprene shock mounts. AC hum is virtually impossible.

Grilles are engineered for low air resistance and are Chrome Plated cold-rolled steel. They are positioned by 2 captive screws. Wire exhaust guards are mounted on diagonal discharge ports. Each unit has a removable permanent washable aluminum mesh filter. Unit is panel mounted with EIA hole centering.

Adaptors available for mounting in 24" panel space.

CATALOG NUMBER	PANEL HEIGHT	cfm at "O" static pressure	DEPTH of ENCLOSURE	MOTOR 115V - 50/60 Cycles RPM	MOTOR 115V - 50/60 Cycles AMPS	NET PRICE
DPB-525	5¼"	150	7"	3000	1.5	$133.90
DPB-530	5¼"	300	7"	3200	1.0	141.65
DPB-700	7"	360	10"	1500	.8	160.10
DPB-730	7"	475	10"	3250	1.9	170.40
DPB-875	8¾"	525	11⅝"	1500	1.2	194.00
DPB-1050	10½"	820	13"	1500	2.2	236.85

"THIN" MODEL FANS

Engineered specially for electronic cabinet cooling, these highly compact fans ensure a quick and broad distribution of cooling air.

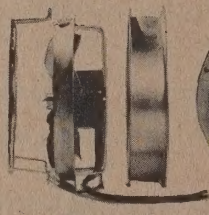
Fans are made in a whole range of sizes from 220 cfm to 750 cfm. Fans are accompanied by a full line of accessories including guards, grilles, mounting sleeves, filters and filter holders.

EXHAUST FANS blow air out of the cabinet and when mounted on the Top Panel for efficiency, filters are usually not used.

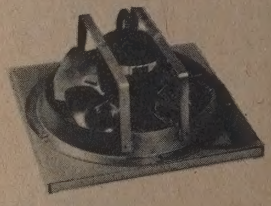
INTAKE FANS suck air into the cabinet. They are designed for greatest efficiency when door or base mounted.

PAR-METAL PERMANENT FILTERS are washable and are of the reusable impingement type and are ½" thick.

Exhaust Fan Cat. No. / Intake Fan Cat. No.	PE-220 / PI-220	PE-300 / PI-300	PE-400 / PI-400	PE-550 / PI-550	PE-750 / PI-750
Net Prices	$48.50	$53.50	$63.50	$69.75	$72.75
CFM at "O" static pressure	220	300	400	550	750
Blade Diameter	6½"	6½"	8"	9"	10"
RPM	1550	3000	1460	1600	1560
Overall Diameter	8½"	8½"	10"	11½"	12½"
Overall Depth	3¼"	3⅝"	3⅛"	4⅜"	4⅜"
Hole Size Required	7⅜"	7⅜"	9"	10⅜"	11⅜"



EXHAUST MODEL PE-300



INTAKE MODEL PI-300

MOTORS are 50/60 cycle, 115 volt, single phase AC with 18" lead. They are permanently oiled, ball bearing, shaded pole type with low rise. Noise and vibration are minimized by shock mounting Fan and Motor Assemblies. To provide fan cut-out and mounting holes (at slight additional cost) please specify Modification "TF".

ACCESSORY CHECK LIST FOR THIN MODEL FAN

For Exhaust Fans	PE-220		PE-300		PE-400		PE-550		PE-750	
Accessory	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price
Guards	GU-650	$3.00	GU-650	$3.00	GU-800	$3.00	GU-900	$3.60	GU-1000	$4.15
Mounting Sleeve	MS-650	3.60	MS-650	3.60	MS-800	3.60	MS-900	4.15	MS-1000	4.75
Grille	GR-650	2.40	GR-650	2.40	GR-800	2.40	GR-900	3.00	GR-1000	3.60
For Intake Fans	**PI-220**		**PI-300**		**PI-400**		**PI-550**		**PI-750**	
Accessory	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price	Cat. No.	Net Price
Filters	FF-650	$3.00	FF-650	$3.00	FF-800	$3.00	FF-900	$3.60	FF-1000	$3.60
Filter Holders	FH-650	5.95	FH-650	5.95	FH-800	5.95	FH-900	6.55	FH-1000	7.75
Mounting Sleeve	MS-650	3.60	*		*		*		*	

* not needed

PAR-METAL PRODUCTS • CONVENIENT FACTORY WAREHOUSE

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SLIDES – CASTERS – HARDWARE

Par-Metal

SOLID BEARING SLIDES (SOLD IN PAIRS)

SB-16-NT

ALL SLIDES LOCK OPEN with QUICK DISCONNECT FEATURE

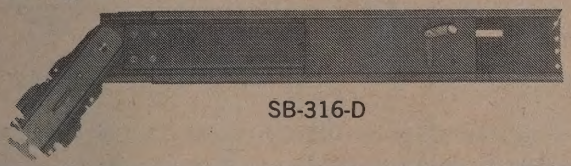
SOLID BEARING SURFACES with MOLYBDENUM DISULPHIDE COATING and EPOXY BASE (MIL-L-22273)

MOUNTING BRACKETS and HARDWARE INCLUDED

SB-316-NT

Catalog Number	Rack Depth	Slide Length	Travel Length	*Load Capacity	Net Price Per Pair
SB-16-NT	18″	16″	17½″	75 lbs.	$19.80
SB-22-NT	24″	22″	23½″	75 lbs.	21.50
SB-316-NT	18″	16″	19″	175 lbs.	41.50
SB-322-NT	24″	22″	25″	175 lbs.	43.80

The following Slides Pivot 90° and Lock in Pivot position



SB-316-D

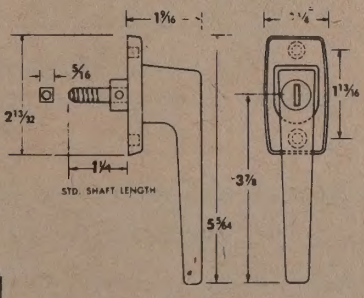
SB-316-D	18″	16″	18″	175 lbs.	$64.50
SB-322-D	24″	22″	24″	175 lbs.	67.80

***Based on 18″ long and 17″ travel.**

HANDLES CABINET LOCKS

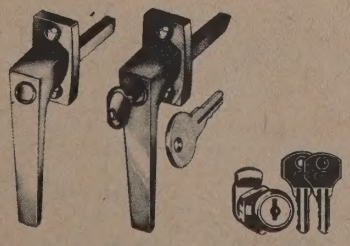
TRIPLE CHROME PLATED DIE CAST

With or without pin tumbler lock, the automobile quarter turn handle is mounted vertically.



Catalog Number	Description	Net Price
FX-410	Locking (2-Keys)	$5.90 ea.
PX-411	Non-Locking	2.95 ea.
VM-5	Cabinet Lock	4.85 ea.

Sold singly
LOCKING MODELS HAVE TWO KEYS



PX-411 FX-410 VM-5

DUAL RECEPTACLE POWER PLUG-IN STRIPS

- Circuit Breaker with Reset Button included.
- Supplied with 3 wire, 6′ Neoprene Cord set with Moulded Plug. UL Approved.
- Completely Wired Soldered Connections. "U" Ground Outlets.
- Rated at 15 Amperes, 130 Volts, continuous duty.

MOUNTS TO RACK BOLT TRACKS

Catalog Number	Panel Height	Number of OUTLETS	Overall Length	Net Price
PS-36	36¾″	6	32¼″	$21.50
PS-42	42″	8	37½″	25.70
PS-52	52″	10	47″	27.70
PS-61	61¼″	10	56¾″	29.30
PS-70	70″	10	65½″	30.90
PS-77	77″	12	72½″	32.25
PS-84	84″	12	79½″	33.90

SWIVEL CASTERS

ROCKITE (Non-mark composition) wheels with BALL BEARING SWIVEL PLATE. Sold singly.

Catalog Number	Wheel Size	Overall Height	Capacity Per Wheel	Net Price
CS-2	2″ x 1″	2⅞″	125 lbs.	$1.08 ea.
CS-127-3	3″ x 1¼″	3 13/16″	225 lbs.	2.15 ea.
*CS-127-3B	3″ x 1¼″	3 13/16″	225 lbs.	7.45 ea.

* With touch toe brakes

PULL HANDLES – TRIPLE CHROME PLATED

V-24

For Hinged Doors No. H-505
For Slides & Drawers No. H-506

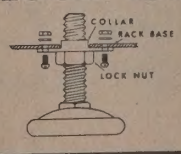
Cat. No.	Description	Centers	Net Price
H-505	Satin Finish Round Corners	4″	$1.20 ea.
H-506	Satin Finish Square Corners	4″	.90 ea.
V-24	"V" Shaped Polished Chrome	3⅞″	.75 ea.

NICKEL PLATED SCREWS

TRUSS HEAD MACHINE SCREWS

Catalog Number	* Thread	Length	Price Per 100	Catalog Number	* Thread	Length	Price Per 100
SC-10-5	10-32	5/8″	$1.72	SC-12-5	12-24	5/8″	$1.95
SC-10-1	10-32	1″	1.72	SC-12-1	12-24	1″	1.95

FLOOR LEVELERS – ALL STEEL

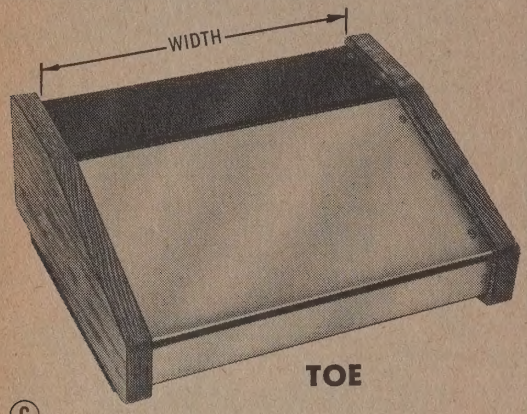


Catalog Number Net Price
LF-10 .45 each
1-1/4″ Easy Adjustment

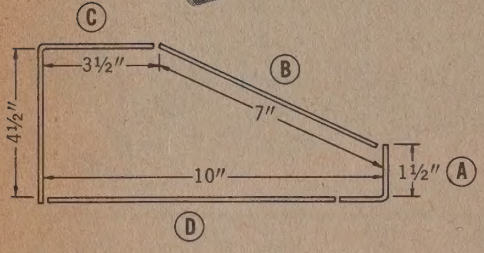
ASK YOUR DISTRIBUTOR FOR PAR-METAL PRODUCTS CATALOG

Design Classics by TOLEDO GRAND CO.

SOLID OAK AND ANODIZED ALUMINUM COMBINED TO GIVE THE ULTIMATE IN QUALITY AND APPEARANCE



TOE



PANEL DIMENSIONS

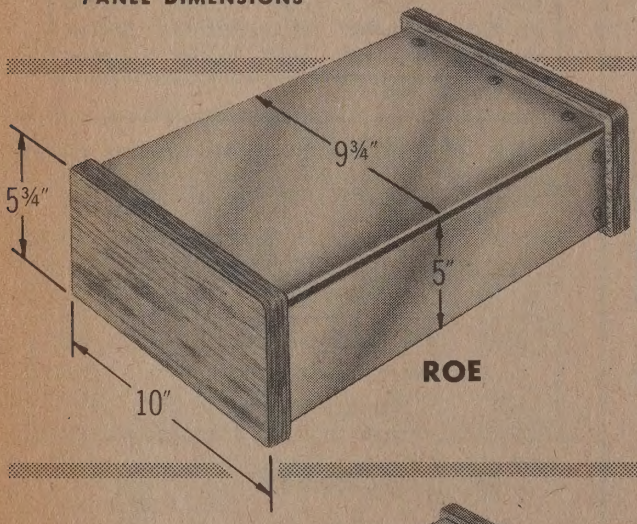
Why expend precious labor and assemble expensive high quality components into an enclosure which in no way reflects either the quality of the design or the over-all cost of your equipment?

"Design Classics" employs a unique combination of aluminum and solid **natural woods** which provides the ultimate in appearance and flexibility for all instrument applications.

FURNISHED COMPLETE WITH ALL PANELS Panels A & B Finished Clear Anodize* Panels C & D Finished Black Anodize*					
Part No.	Panel Width	Overall Width	Net Each — Lot Size		
			1-14	15-24	25-50
TOE-8	8"	9½"	$22.50	$20.25	$18.25
TOE-12	12"	13½"	24.80	22.30	20.10
TOE-16	16"	17½"	27.20	24.50	22.05

5052 H-32 ALUMINUM

ALL PANELS COVERED WITH PROTECTIVE PAPER TO FACILITATE LAYOUT



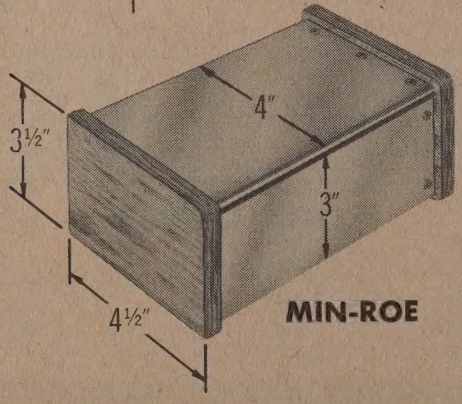
ROE

CAN BE USED HORIZONTALLY OR VERTICALLY

Part No.	Panel Width	Overall Width	Net Each — Lot Size		
			1-14	15-24	25-50
ROE-8	8"	9½"	$25.60	$23.00	$20.70
ROE-12	12"	13½"	28.00	25.20	22.70

ALL PANELS CLEAR ANODIZED

ALL PANELS COVERED WITH PROTECTIVE PAPER TO FACILITATE LAYOUT



MIN-ROE

CAN BE USED HORIZONTALLY OR VERTICALLY

Part No.	Panel Width	Overall Width	Net Each — Lot Size		
			1-14	15-24	25-50
MROE-4	4"	4¾"	$4.80	$4.30	$3.90
MROE-6	6"	6¾"	5.90	5.30	4.90
MROE-8	8"	8¾"	7.40	6.65	6.00

ALL PANELS CLEAR ANODIZED

TGI **TOLEDO GRAND CO.**
DIVISION OF VIDEO INSTRUMENT CORP.

Net

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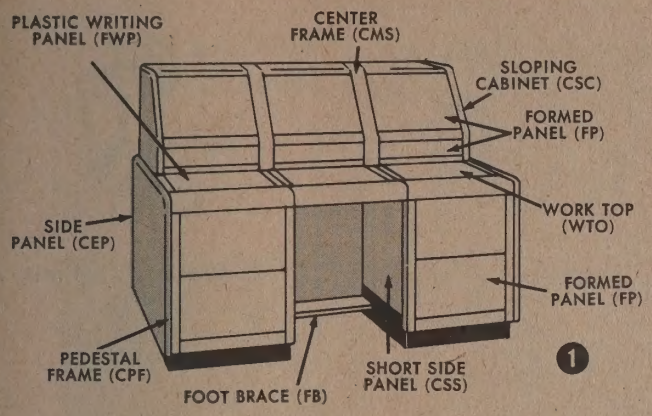
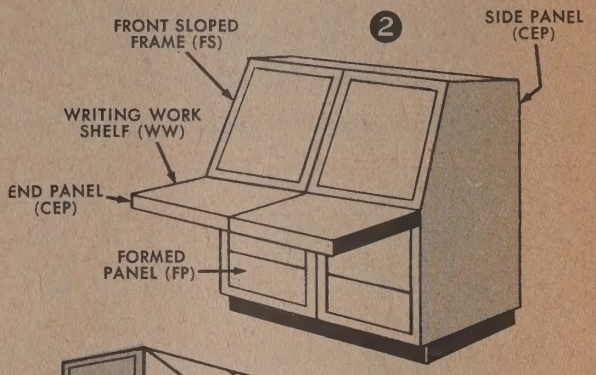
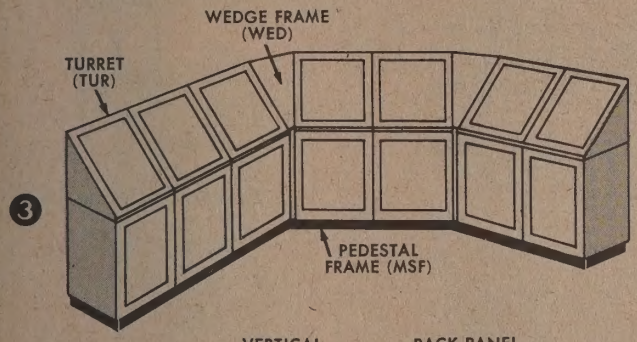
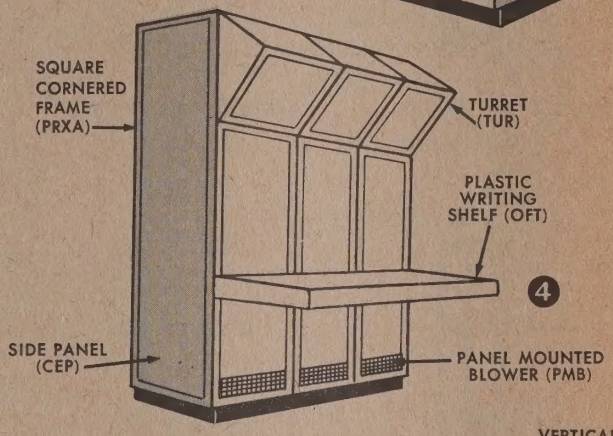
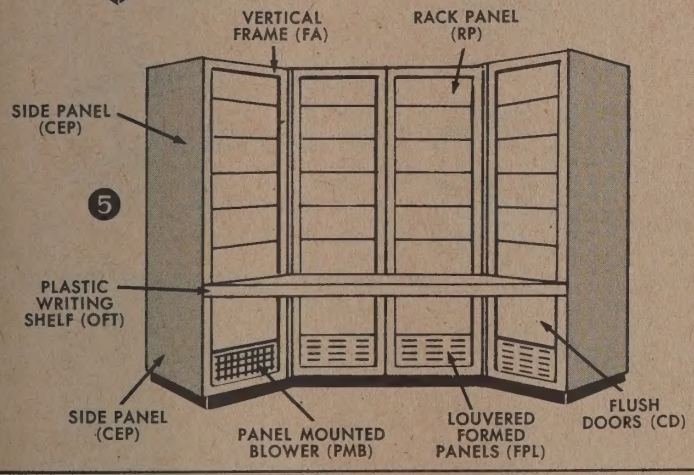
PREMIER MODULAR ENCLOSURE SYSTEMS

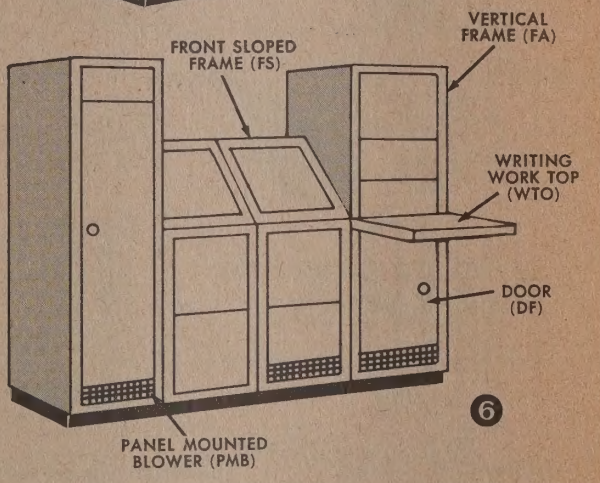












Premier Modular Enclosure Systems offer maximum flexibility, adaptability and esthetic value requirements in the electronic, electrical and electro-mechanical fields. The range of standard units of various widths, depths, heights and shapes available offers a full variety of combinations and configurations necessary to meet the space and human engineering customized requirements for enclosure systems used in modern packaging. There are distinct advantages in using the Premier Modular Systems: "In house" costs for development and design requirements are drastically reduced, standardized production economies are realized, and delivery schedules are considerably faster.

Modifiications available for Premier Modular units offer additional adaptability for "special" requirements. Our Distributors and Sales Representatives can furnish all the information necessary to enable you to meet your metal housing needs with better delivery, design and economy.

The following pages contain the general specifications and prices of Premier's line of standard cabinets, racks, cases, chassis, blowers, slides, fans, panels, hardware and other accessory items. Detailed prints and information are available.

INDUSTRIAL DISCOUNT SCHEDULES FOR QUANTITY PURCHASES

SCHEDULE "A" ITEMS

$25 (minimum) to $250	Net
250.01 to 500	5%
500.01 to 1000	10%
1000.01 to 2500	15%
over 2500.01 on quotation	

SCHEDULE "B" ITEMS

$25 (minimum) to $200	Net
200.01 to 400	10%
400.01 to 550	15%
550.01 to 700	20%
700.01 to 1000	25%
1000.01 to 2500	30%
over 2500.01 on quotation	

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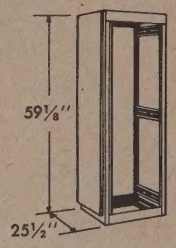
PREMIER MODULAR ASSEMBLIES

ASSEMBLIES INCLUDE FRAME, 2 SIDE PANELS AND 1 DOOR

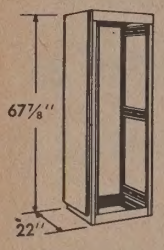
POPULAR SIZES AND ASSEMBLIES GROUPED FOR EASY ORDERING ALL 19" PANEL SPACE

See Pages 4 through 9 for Specifications and Details

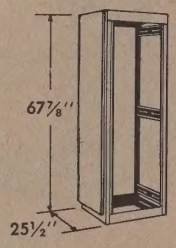
ASSEMBLY NO. FA-A-1
1 FA-52-22
2 CEP-52-22
1 DF-52
$152.48*



ASSEMBLY NO. FA-A-5
1 FA-52-255
2 CEP-52-255
1 DF-52
$161.45*

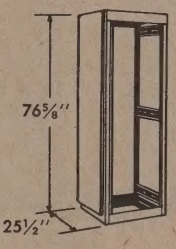


ASSEMBLY NO. FA-A-2
1 FA-61-22
2 CEP-61-22
1 DF-61
$167.65*



ASSEMBLY NO. FA-A-6
1 FA-61-255
2 CEP-61-255
1 DF-61
$178.00*

ASSEMBLY NO. FA-A-3
1 FA-70-22
2 CEP-70-22
1 DF-70
$181.13*



ASSEMBLY NO. FA-A-7
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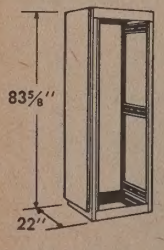
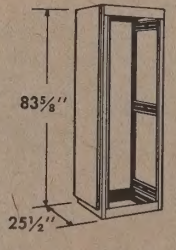
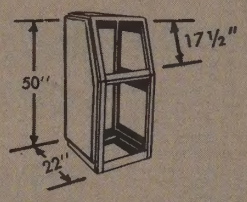
2 CEP-70-255
1 DF-70
$192.49*



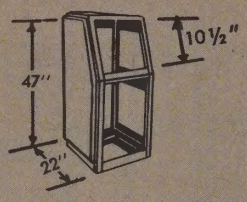
ASSEMBLY NO. FA-A-4
1 FA-77-22
2 CEP-77-22
1 DF-77
$191.03*



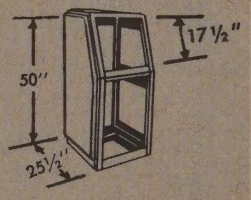
ASSEMBLY NO. FA-A-8
1 FA-77-255
2 CEP-77-255
1 DF-77
$203.08*



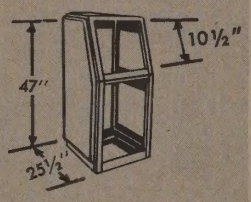
ASSEMBLY NO. FS-A-1
1 FS-1001
1 CEP-1201-LH
1 CEP-1201-RH
1 DF-42
$134.63*



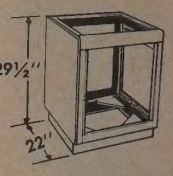
ASSEMBLY NO. FS-A-2
1 FS-1002
1 CEP-1202-LH
1 CEP-1202-RH
1 DF-42-1002
$133.11*



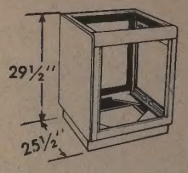
ASSEMBLY NO. FS-A-3
1 FS-1001-255
1 CEP-1201-255-LH
1 CEP-1201-255-RH
1 DF-42
$143.91*



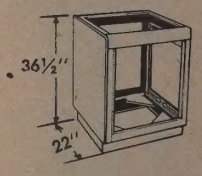
ASSEMBLY NO. FS-A-4
1 FS-1002-255
1 CEP-1202-255-LH
1 CEP-1202-255-RH
1 DF-42-1002
$141.25*



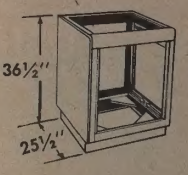
ASSEMBLY NO. CPF-A-1
1 CPF-101
2 CEP-401
1 CD-21
$94.92*



ASSEMBLY NO. CPF-A-2
1 CPF-101-255
2 CEP-401-255
1 CD-21
$107.16*



ASSEMBLY NO. CPF-A-3
1 CPF-102
2 CEP-402
1 CD-28
$111.32*



ASSEMBLY NO. CPF-A-4
1 CPF-102-255
2 CEP-402-255
1 CD-28
$125.16*

*Net Prices (A)
See quantity discount schedule on page 1.

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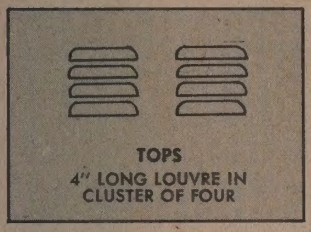
PREMIER

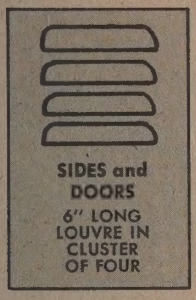
CUSTOMIZED MODIFICATIONS Available for all STANDARD UNITS

VENTILATION PROVISIONS

LOUVRES

for cabinet tops, sides, doors, etc. in various sizes and patterns.

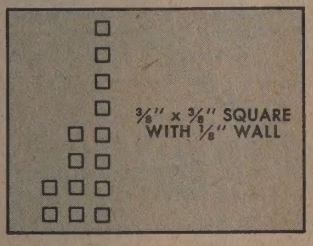




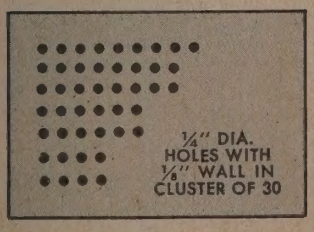
3" Long Louvre also available in cluster of three. 6" and 4" Louvre also available as single.

PERFORATIONS

for cabinet tops, sides, bases, doors, etc. in various configurations.



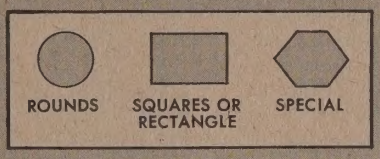
VERTICAL ROWS OF 2, 4 AND 8 IN ANY PATTERN



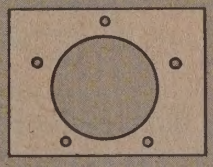
Perforated screening weldments:
- 1/16" dia. staggered centers
- ⅛" dia. staggered centers
- ½" diamond expanded metal

HOLES AND CUT-OUTS

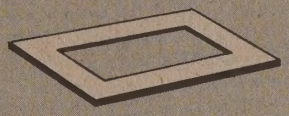
VARIOUS



MOUNTING FOR FANS



OPENING IN TOP — RECESSED FOR LOUVRES (FPL) OR BLANK (FP) FORMED PANELS



PREMIER COLOR FINISHES

Standard Finish on Schedule "B" items are as listed in catalog.

Standard Finish on Schedule "A" items are as listed in catalog or finished in any choice of other Premier Standard colors at no extra charge. Specify when ordering. When color is not specified, standard finish will be furnished. Premier color chips are available.

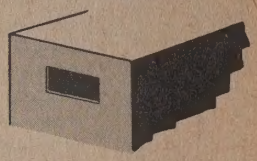
Premier Color	Federal Standard No. 595
LIGHT GRAY	26440
BEIGE TAN	26521
SMOKE BLUE	25189
WHITE	27875
CHARCOAL BROWN	24091
CHARCOAL GRAY	26152
GREEN	24148
BLACK	27038
BRIGHT BLUE	25102

OTHER SPECIAL FINISHES ARE AVAILABLE AT ADDITIONAL COST.
Prices quoted upon application.

HANDLES — LOCKS

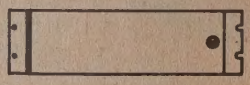
RECESSED

WELDED FLUSH for POR, DCR, CSC, MDK



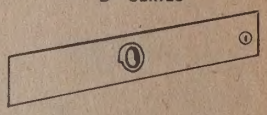
CYLINDER LOCKS

(HW-6) ON SHP PANELS



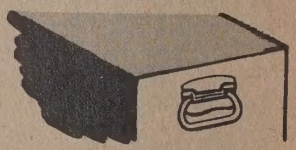
ON DRAWER FRONTS

"D" SERIES



DROP HANDLE (HW-5)

WELDED on sides of DCR, POR, MDK



LOCKING HANDLE (HW-3)

ON REAR DOOR OF R, FXR, DR, RMX, FDX and FD-300 Series DOORS

MISCELLANEOUS

- **SPECIAL SIZES**
  Height, depth and width of standard units altered. Prices quoted on specific requests.
- **SOLID BLANK PANELS**
  Available to fill top and rear openings on POR and MOR.
- **INVERTED BASES or SOLID BASES**
  (no cut-outs) for all large racks and cabinets.

PREMIER STANDARD CHASSIS AND CASES, ETC. MAY BE MODIFIED FOR DIFFERENT DIMENSIONS, VARIOUS HOLE PATTERNS, CUT-OUTS, ETC. PRICES QUOTED UPON APPLICATION.

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MODULAR CABINET RACKS ROUNDED CORNER

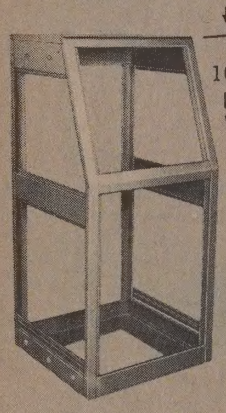
FINISHED IN ALL PREMIER STANDARD COLORS. PLEASE SPECIFY.

VERTICAL FRAMES

Completely welded 14 ga. steel frame. Top and bottom are of one piece construction with rectangular opening in bottom for leads. Supplied with two pairs of 12 ga. steel panel mounting angles, fully adjustable front to rear. Angles have E.I.A. spaced clearance holes. 10-32 screws and captive nuts are furnished. Frames have provisions for ganging, cabling between frames, mounting doors front or rear (left or right handed), mounting casters in base, and mounting writing work frames.

19" and 24" PANELS • 22" and 25½"

Cat. No.	Height	Panel Space	Depth	Width	Shpg. Wt. Lbs.	Net Price (A)†
FA-42-22	48⅝"	42 x 19"	22"	22"	50	$ 79.14
FA-52-22	59⅛"	52½ x 19"	22"	22"	65	82.08
FA-61-22	67⅞"	61¼ x 19"	22"	22"	80	89.34
FA-70-22	76⅝"	70 x 19"	22"	22"	100	96.74
FA-77-22	83⅝"	77 x 19"	22"	22"	110	101.92
FA-42-255	48⅝"	42 x 19"	25½"	22"	58	83.22
FA-52-255	59⅛"	52½ x 19"	25½"	22"	75	85.13
FA-61-255	67⅞"	61¼ x 19"	25½"	22"	92	94.65
FA-70-255	76⅝"	70 x 19"	25½"	22"	115	102.18
FA-77-255	83⅝"	77 x 19"	25½"	22"	127	107.01
FA-2761-22	67⅞"	61¼ x 24"	22"	27"	90	100.78
FA-2770-22	76⅝"	70 x 24"	22"	27"	110	114.08
FA-2777-22	83⅝"	77 x 24"	22"	27"	120	119.78
FA-2761-255	67⅞"	61¼ x 24"	25½"	27"	98	112.32
FA-2770-255	76⅝"	70 x 24"	25½"	27"	123	120.86
FA-2777-255	83⅝"	77 x 24"	25½"	27"	135	123.72



SLOPED FRONT FRAMES

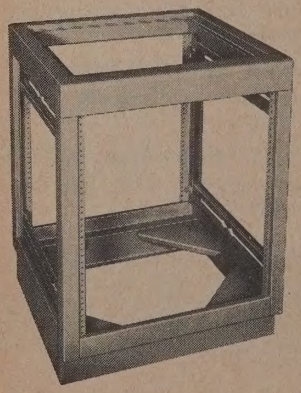
Completely welded 14 ga. steel frame. Front slopes 19° from vertical. Top and bottom are of one piece construction. Frame bottom has rectangular opening for leads and provision for mounting casters. Supplied with two pairs of adjustable panel mounting angles for vertical openings with E.I.A. spaced clearance holes. 10-32 screws and captive nuts are furnished. Sloped front panel space has fixed mounting angles recessed ½" and has tapped 10-32 holes on E.I.A. spacing. Front has removable crosspiece. Frame has provisions for ganging, cabling between frames, mounting left or right handed doors on rear, and mounting writing work frames.

19" & 24" PANEL WIDTHS—10½" & 17½" HEIGHTS
22" and 25½" DEPTHS
18½" and 34¼" DEPTHS FOR SPECIAL CONSOLE SYSTEMS

Cat. No.	Width	Height	Depth	Sloped Front Panel Space	Front Vertical Space	Rear Vertical Space	Shpg. Wt. Lbs.	Net Price (A)†
FS-1001	22"	50"	22"	17½ x 19"	26¼ x 19"	42 x 19"	66	$75.20
FS-1002	22"	47"	22"	10½ x 19"	29¾ x 19"	42 x 19"	64	72.96
FS-1003	27"	50"	22"	17½ x 24"	26¼ x 24"	42 x 24"	76	86.48
FS-1004	27"	47"	22"	10½ x 24"	29¾ x 24"	42 x 24"	74	84.72
FS-1001-255	22"	50"	25½"	17½ x 19"	26¼ x 19"	42 x 19"	75	79.04
FS-1002-255	22"	47"	25½"	10½ x 19"	29¾ x 19"	42 x 19"	73	77.20
FS-1003-255	27"	50"	25½"	17½ x 24"	26¼ x 24"	42 x 24"	85	91.76
FS-1004-225	27"	47"	25½"	10½ x 24"	29¾ x 24"	42 x 24"	83	89.84

PEDESTAL FRAMES

Frame is completely welded 16 ga. steel. Supplied with two pairs of 12 ga. steel panel mounting angles fully adjustable front to rear with E.I.A. spaced clearance holes. 10-32 screws and captive nuts furnished. Top panel space is recessed ½" and furnished with 10-32 tapped holes on E.I.A. spacing. Frame has provisions for ganging, mounting casters in base and mounting writing work frames. Frame accommodates flush type doors.



19" and 24" PANELS • 22" and 25½" DEPTHS

Cat. No.	Width	Depth	Height without Casters	Front & Rear Panel Space	Top Panel Space	Shpg. Wt. Lbs.	Net Price (A)†
CPF-101	22"	22"	29½"	21 x 19"	17½ x 19"	45	$53.64
CPF-102	22"	22"	36½"	28 x 19"	17½ x 19"	48	61.72
CPF-103	27"	22"	29½"	21 x 24"	17½ x 24"	50	59.44
CPF-104	27"	22"	36½"	28 x 24"	17½ x 24"	53	69.24
CPF-101-34	22"	34¼"	29½"	21 x 19"	29¾ x 19"	54	75.00
CPF-101-255	22"	25½"	29½"	21 x 19"	21 x 19"	53	62.52
CPF-102-255	22"	25½"	36½"	28 x 19"	21 x 19"	55	75.48
CPF-103-255	27"	25½"	29½"	21 x 24"	21 x 24"	58	65.88
CPF-104-255	27"	25½"	36½"	28 x 24"	21 x 24"	59	79.80
CPF-101-18	22"	18½"	29½"	21 x 19"	14 x 19"	44	51.92
CPF-102-18	22"	18½"	36½"	28 x 19"	14 x 19"	47	59.60
CPF-103-18	27"	18½"	29½"	21 x 24"	14 x 24"	49	58.68
CPF-104-18	27"	18½"	36½"	28 x 19"	14 x 24"	52	67.32

†See quantity discount schedule on page 1.

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PREMIER MODULAR CABINET RACKS ROUNDED CORNER

WEDGE FRAMES

30° and 45° wedge shaped frames are designed for curved or wing type modular systems with vertical, sloping and pedestal frame assemblies. Completely welded steel with one piece top and bottom construction. Full sized removable rear panel is included. Note: One piece work and writing tops are available for all console assemblies utilizing wedge frames. Finished in all Premier standard colors. Please specify.

30° WEDGE FRAMES

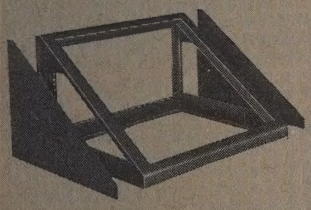
Cat. No.	Height	Depth	For Use With	Net Price (A)†
WED-30-42-22	48⅝"	22"	FA-42-22	$119.72
WED-30-52-22	59⅛"	22"	FA-52-22	129.32
WED-30-61-22	67⅞"	22"	FA-61-22	135.76
WED-30-70-22	76⅝"	22"	FA-70-22	145.49
WED-30-77-22	83¾"	22"	FA-77-22	151.92
WED-30-42-255	48⅝"	25½"	FA-42-255	143.52
WED-30-52-255	59⅛"	25½"	FA-52-255	152.12
WED-30-61-255	67⅞"	25½"	FA-61-255	155.17
WED-30-70-255	76⅝"	25½"	FA-70-255	168.12
WED-30-77-255	83⅜"	25½"	FA-77-255	174.64
WED-30-101	29¼"	22"	CPF-101, 103	100.28
WED-30-102	36½"	22"	CPF-102, 104	106.72
WED-30-101-18	29½"	18½"	CPF-101-18, 103-18	98.00
WED-30-101-255	29½"	25½"	CPF-101-255, 103-255	102.92
WED-30-1001	50"	22"	FS-1001 1003	129.54
WED-30-1002	47"	22"	FS-1002 1004	138.09
WED-30-1001-255	50"	25½"	FS-1001-255, 1003-255	138.28
WED-30-1002-255	47"	25½"	FS-1002-255, 1004-255	156.12

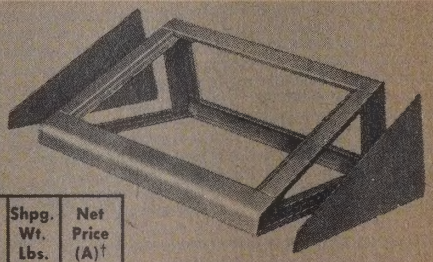
45° WEDGE FRAMES

Cat. No.	Height	Depth	For Use With	Net Price (A)†
WED-45-42-22	48⅝"	22"	FA-42-22	$122.92
WED-45-52-22	59⅛"	22"	FA-52-22	132.60
WED-45-61-22	67⅞"	22"	FA-61-22	139.08
WED-45-70-22	76⅝"	22"	FA-70-22	148.76
WED-45-77-22	83¾"	22"	FA-77-22	155.12
WED-45-42-255	48⅝"	25½"	FA-42-255	147.41
WED-45-52-255	59⅛"	25½"	FA-52-255	154.16
WED-45-61-255	67⅞"	25½"	FA-61-255	158.44
WED-45-70-255	76⅝"	25½"	FA-70-255	171.44
WED-45-77-255	83⅜"	25½"	FA-77-255	177.80
WED-45-101	29¼"	22"	CPF-101, 103	103.00
WED-45-102	36½"	22"	CPF-102, 104	109.96
WED-45-101-18	29½"	18½"	CPF-101-18, 103-18	101.80
WED-45-101-255	29½"	25½"	CPF-101-255, 103-255	105.76
WED-45-1001	50"	22"	FS-1001 1003	144.77
WED-45-1002	47"	22"	FS-1002 1004	157.68
WED-45-1001-255	50"	25½"	FS-1001-255, 1003-255	154.50
WED-45-1002-255	47"	25½"	FS-1002-255, 1004-255	172.53

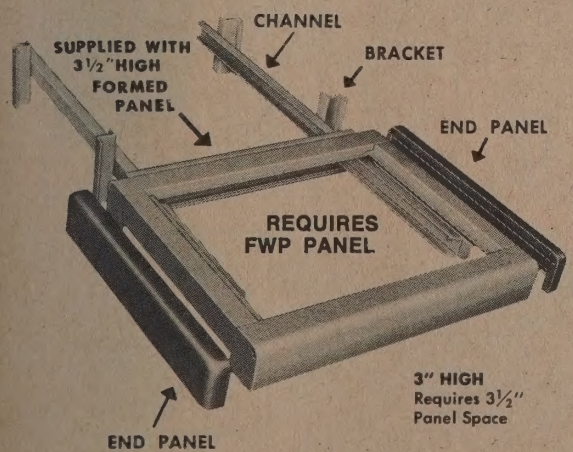
TURRETS
FOR 19" & 24" PANELS

All turrets may be mounted on any of their 3 panel openings to vertical and pedestal frames for optimum viewing angles in sitting or standing positions. Frames are 16 ga. steel, completely welded. All panel openings are drilled and tapped for 10-32 screws on standard E.I.A. spacing in ½" recess. Turrets may be ganged for console assemblies. Furnished with flat steel side panels. Finished in all Premier standard colors. Please specify.





Cat. No.	Width	Height	Depth	Sloped Front Panel Space	Rear Panel Space	Bottom Panel Space	Shpg. Wt. Lbs.	Net Price (A)†
TUR-1-19	22"	9¾"	21"	14" x 19"	7" x 19"	17½" x 19"	25	$37.40
TUR-1-24	27"	9¾"	21"	14" x 24"	7" x 24"	17½" x 24"	27	42.40
TUR-3-19	22"	12¼"	17½"	17½" x 19"	8¾" x 19"	14" x 19"	20	32.52
TUR-3-24	27"	12¼"	17½"	17½" x 24"	8¾" x 24"	14" x 24"	22	37.52



WRITING-WORK SHELF FRAMES

Completely welded 16 ga. steel. Supplied with channels and brackets for mounting into 3½" of panel space on all modular frames. Unit is supported internally and is furnished with 3½" high formed panel filler. May be used in multiple installations. Finished in all Premier standard colors. Please specify.

22" WIDE

To Fit 22" DEEP FRAMES					To Fit 25½" DEEP FRAMES		
Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†	Top Panel Space	Depth	Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†
WW-15-22	11	$35.44	10½" x 19"	15"	WW-15-255	12	$36.12
WW-18-22	12	37.20	14" x 19"	18½"	WW-18-255	13	37.96
WW-22-22	13	38.92	17½" x 19"	22"	WW-22-255	14	39.68
WW-255-22	14	45.80	21" x 19"	25½"	WW-255-255	15	44.04

27" WIDE

WW-2715-22	14	$48.96	10½" x 24"	15"	WW-2715-255	15	$41.40
WW-2718-22	15	41.88	14" x 24"	18½"	WW-2718-255	16	42.56
WW-2722-22	16	43.08	17½" x 24"	22"	WW-2722-255	17	43.84
WW-27-255-22	17	44.96	21" x 24"	25½"	WW-27-255-255	18	34.35

END PANELS FOR WRITING-WORK SHELF

Ball cornered panel made of welded 18 ga. steel; attaches to shelf with 2 captive screws. Finished in all Premier standard colors. Please specify.

Cat. No.	Lbs.	Used With	Net Price (A)
CEP-15	1½	WW-15-22, 15-255; 2715-22, 2715-255	$4.68
CEP-18	2	WW-18-22, 18-255; 2718-22, 2718-255	4.80
CEP-22	2½	WW-22-22, 22-255; 2722-22, 2722-255, 255-22, 255-255, 27-255-22, 27-255-255	4.96

†See quantity discount schedule on page 1.

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PREMIER MODULAR CABINET RACKS ROUNDED CORNER

ORDERING GUIDES

Select the basic frame type and size in accordance with equipment space and panel space requirements, operating personnel "human engineering" needs and the general design factor desired. The final frame selections may then be used to order the proper doors, side panels and other required accessories, using the guides below.

General accessory items such as fans, blowers, slides, panels, drawers, shelves, chassis, hardware, etc. may be found on pages 19 through 30.

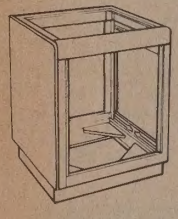
VERTICAL FRAMES

Cat. No.	Side Panels Plain Cat. No.	Side Panels Outside Removable Cat. No.	*Side Panels Hinged Cat. No.	Face Mounted Doors Cat. No.	Chassis Support Angles Cat. No.	Equipment Shelves Cat. No.	Sliding Work Shelves Cat. No.
FA-42-22	CEP-42-22	CEP-OR-42-22	CEP-H-42-22	DF-42	CSA-22	S-22-22	RDS-319-22
FA-52-22	CEP-52-22	CEP-OR-52-22	CEP-H-52-22	DF-52	CSA-22	S-22-22	RDS-319-22
FA-61-22	CEP-61-22	CEP-OR-61-22	CEP-H-61-22	DF-61	CSA-22	S-22-22	RDS-319-22
FA-70-22	CEP-70-22	CEP-OR-70-22	CEP-H-70-22	DF-70	CSA-22	S-22-22	RDS-319-22
FA-77-22	CEP-77-22	CEP-OR-77-22	CEP-H-77-22	DF-77	CSA-22	S-22-22	RDS-319-22
FA-42-255	CEP-42-255	CEP-OR-42-255	CEP-H-42-255	DF-42	CSA-255	S-22-255	RDS-319-22
FA-52-255	CEP-52-255	CEP-OR-52-255	CEP-H-52-255	DF-52	CSA-255	S-22-255	RDS-319-22
FA-61-255	CEP-61-255	CEP-OR-61-255	CEP-H-61-255	DF-61	CSA-255	S-22-255	RDS-319-22
FA-70-255	CEP-70-255	CEP-OR-70-255	CEP-H-70-255	DF-70	CSA-255	S-27-255	RDS-319-22
FA-77-255	CEP-77-255	CEP-OR-77-255	CEP-H-77-255	DF-77	CSA-255	S-22-255	RDS-319-22
FA-2761-22	CEP-61-22	CEP-OR-61-22	CEP-H-61-22	DF-2761	CSA-22	S-27-22	RDS-324-22
FA-2770-22	CEP-70-22	CEP-OR-70-22	CEP-H-70-22	DF-2770	CSA-22	S-27-22	RDS-324-22
FA-2777-22	CEP-77-22	CEP-OR-77-22	CEP-H-77-22	DF-2777	CSA-22	S-27-22	RDS-324-22
FA-2761-255	CEP-61-255	CEP-OR-61-255	CEP-H-61-255	DF-2761	CSA-255	S-27-255	RDS-324-22
FA-2770-255	CEP-70-255	CEP-OR-70-255	CEP-H-70-255	DF-2770	CSA-255	S-27-255	RDS-324-22
FA-2777-255	CEP-77-255	CEP-OR-77-255	CEP-H-77-255	DF-2777	CSA-255	S-22-255	RDS-324-22

SLOPED FRONT FRAMES

Cat. No.	*Side Panels Plain Cat. No.	*Side Panels Outside Removable Cat. No.	*Side Panels Hinged Cat. No.	Face Mounted Rear Door Cat. No.	Equip-ment Shelf Cat. No.	Chassis Support Angle Cat. No.	Sliding Work Shelf Cat. No.
FS-1001	CEP-1201	CEP-OR-1201	CEP-H-1201	DF-42	S-22-22	CSA-22	RDS-319-22
FS-1002	CEP-1202	CEP-OR-1202	CEP-H-1202	DF-42-1002	S-22-22	CSA-22	RDS-319-22
FS-1003	CEP-1201	CEP-OR-1201	CEP-H-1201	DF-2742	S-27-22	CSA-22	RDS-324-22
FS-1004	CEP-1202	CEP-OR-1202	CEP-H-1202	DF-2742-1002	S-27-22	CSA-22	RDS-324-22
FS-1001-255	CEP-1201-255	CEP-OR-1201-255	CEP-H-1201-255	DF-42	S-22-255	CSA-255	RDS-319-22
FS-1002-255	CEP-1202-255	CEP-OR-1202-255	CEP-H-1202-255	DF-42-1002	S-22-255	CSA-255	RDS-319-22
FS-1003-255	CEP-1201-255	CEP-OR-1201-255	CEP-H-1201-255	DF-2742	S-27-255	CSA-255	RDS-324-22
FS-1004-255	CEP-1202-255	CEP-OR-1202-255	CEP-H-1202-255	DF-2742-1002	S-27-255	CSA-255	RDS-324-22

PEDESTAL FRAMES



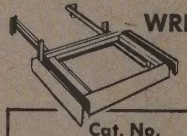
Cat. No.	Side Panel Plain Cat. No.	Side Panel Outside Removable Cat. No.	Front or Rear Flush Door Cat. No.	Equipment Shelf Cat. No.	Chassis Support Angles Cat. No.	Top Panel Cat. No.
CPF-101	CEP-401	CEP-OR-401	CD-21	S-22-22	CSA-22	FP-1719
CPF-102	CEP-402	CEP-OR-402	CD-28	S-22-22	CSA-22	FP-1719
CPF-103	CEP-401	CEP-OR-401	CD-2124	S-27-22	CSA-22	FP-1724
CPF-104	CEP-402	CEP-OR-402	CD-2824	S-27-22	CSA-22	FP-1724
CPF-101-34	CEP-401-34	CEP-OR-401-34	CD-21	—	—	FP-2919
CPF-101-255	CEP-401-255	CEP-OR-401-255	CD-21	S-22-255	CSA-255	FP-2119
CPF-102-255	CEP-402-255	CEP-OR-402-255	CD-28	S-22-255	CSA-255	FP-2119
CPF-103-255	CEP-401-255	CEP-OR-401-255	CD-2124	S-27-255	CSA-255	FP-2124
CPF-104-255	CEP-402-255	CEP-OR-402-255	CD-2824	S-27-255	CSA-255	FP-2124
CPF-101-18	CEP-401-18	CEP-OR-401-18	CD-21	S-22-18	CSA-18	FP-1419
CPF-102-18	CEP-402-18	CEP-OR-402-18	CD-28	S-22-18	CSA-18	FP-1419
CPF-103-18	CEP-401-18	CEP-OR-401-18	CD-2124	S-27-18	CSA-18	FP-1424
CPF-104-18	CEP-402-18	CEP-OR-402-18	CD-2824	S-27-18	CSA-18	FP-1424

TURRET FRAMES

Cat. No.	Sloped Front Panel Cat. No.	Rear Panel Cat. No.	Bottom Panel Cat. No.
TUR-1-19	**-1419	**-719	**-1719
TUR-3-19	**-1719	**-819	**-1419
TUR-1-24	**-1424	**-724	**-1724
TUR-3-24	**-1724	**-824	**-1424

**Use (Prefix) MAP for Masked Aluminum Panel
ARP for Painted Aluminum Panel
RP for Painted Steel Panel
FP for Formed Blank Panel
FPL for Formed Louvred Panel
PFP for Perforated Formed Steel Panel

WRITING WORK FRAMES



Cat. No.	Laminated Plastic Top Panel Cat. No.	Rounded End Panels Cat. No.
WW-15-22, WW-15-255	FWP-1019	CEP-15
WW-18-22, WW-18-255	FWP-1419	CEP-18
WW-22-22, WW-22-255	FWP-1719	CEP-22
WW-255-22, WW-255-255	FWP-2119	CEP-22
WW-2715-22, WW-2715-255	FWP-1024	CEP-15
WW-2718-22, WW-2718-255	FWP-1424	CEP-18
WW-2722-22, WW-2722-255	FWP-1724	CEP-22
WW-27-255-22, WW-27-255-255	FWP-2124	CEP-22

*SPECIFY LH or RH

For WEDGE ORDERING GUIDE see PAGE 5

For WORK WRITING SURFACES see PAGE 9

For BLOWERS and FANS see PAGES 27-28

For SLIDING DRAWERS see PAGE 21

For CHASSIS SLIDES see PAGE 26

For VARIOUS PANELS to fill panel openings see PAGES 19-20

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PREMIER MODULAR CABINET RACK ACCESSORIES

ROUNDED CORNERS

FINISHED IN ALL PREMIER STANDARD COLORS. PLEASE SPECIFY.

SIDE PANELS FOR VERTICAL FRAMES — 1 11/32" DEEP

Ball cornered panels made of 1 piece 16 ga. steel, welded and reinforced for rigidity. Supplied blank, louvred available at additional cost.

		STANDARD PANELS Internally fastened with knurled screws		OUTSIDE REMOVABLE Externally mounted with ¼ turn captive fasteners		HINGED LH or RH Closed externally with ¼ turn captive fasteners	
Height	Width	Cat. No.	Net Price (A)†	Cat. No.	Net Price (A)†	Cat. No.	Net Price (A)†
45¼"	22"	CEP-42-22	$17.72	CEP-OR-42-22	$26.60	CEP-H-42-22	$31.00
55¾"	22"	CEP-52-22	21.20	CEP-OR-52-22	31.80	CEP-H-52-22	37.11
64½"	22"	CEP-61-22	23.44	CEP-OR-61-22	35.16	CEP-H-61-22	41.04
73¼"	22"	CEP-70-22	25.32	CEP-OR-70-22	38.00	CEP-H-70-22	44.32
80¼"	22"	CEP-77-22	26.60	CEP-OR-77-22	39.92	CEP-H-77-22	46.56
45¼"	25½"	CEP-42-255	20.64	CEP-OR-42-255	30.96	CEP-H-42-255	36.12
55¾"	25½"	CEP-52-255	24.16	CEP-OR-52-255	36.24	CEP-H-52-255	42.28
64½"	25½"	CEP-61-255	25.96	CEP-OR-61-255	38.96	CEP-H-61-255	45.44
73¼"	25½"	CEP-70-255	28.28	CEP-OR-70-255	42.44	CEP-H-70-255	49.48
80¼"	25½"	CEP-77-255	30.08	CEP-OR-77-255	45.12	CEP-H-77-255	52.64

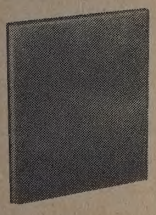
SIDE PANELS FOR SLOPED FRONT FRAMES— 1 11/32" DEEP

Ball cornered panels made of 1 piece 16 ga. steel, welded and reinforced for rigidity. Supplied blank, louvred available at additional cost.

		STANDARD PANELS Internally fastened with knurled screws		OUTSIDE REMOVABLE Externally mounted with ¼ turn captive fasteners		HINGED LH or RH Closed externally with ¼ turn captive fasteners	
Height	Width	Cat. No.	Net Price (A)†	Cat. No.	Net Price (A)†	Cat. No.	Net Price (A)†
46⅝"	22"	CEP-1201 LH	$17.36	CEP-OR-1201 LH	$26.04	CEP-H-1201 LH	$30.40
46⅝"	22"	CEP-1201 RH	17.36	CEP-OR-1201 RH	26.04	CEP-H-1201 RH	30.40
43⅝"	22"	CEP-1202 LH	17.72	CEP-OR-1202 LH	26.60	CEP-H-1202 LH	31.00
43⅝"	22"	CEP-1202 RH	17.72	CEP-OR-1202 RH	26.60	CEP-H-1202 RH	31.00
46⅝"	25½"	CEP-1201-255 LH	20.08	CEP-OR-1201-255 LH	30.12	CEP-H-1201-255 LH	35.16
46⅝"	25½"	CEP-1201-255 RH	20.08	CEP-OR-1201-255 RH	30.12	CEP-H-1201-255 RH	35.16
43⅝"	25½"	CEP-1202-255 LH	19.67	CEP-OR-1202-255 LH	29.52	CEP-H-1202-255 LH	34.44
43⅝"	25½"	CEP-1202-255 RH	19.67	CEP-OR-1202-255 RH	29.52	CEP-H-1202-255 RH	34.44

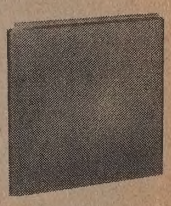
SIDE PANELS FOR PEDESTAL FRAMES — 1 11/32" DEEP

One piece 16 ga. steel, completely welded and reinforced. Supplied blank, louvred at additional cost. 400 Series is ball cornered.



		STANDARD PANELS Internally fastened with knurled screws		OUTSIDE REMOVABLE Externally mounted with ¼ turn captive fasteners	
Height	Width	Cat. No.	Net Price (A)†	Cat. No.	Net Price (A)†
26"	22"	CEP-401	$14.68	CEP-OR-401	$22.04
33"	22"	CEP-402	17.72	CEP-OR-402	26.60
26"	34½"	CEP-401-34	19.44	CEP-OR-401-255	24.56
26"	25½"	CEP-401-255	16.36	CEP-OR-402-255	26.64
33"	25½"	CEP-402-255	17.76		
26"	18½"	CEP-401-18	14.08		
23"	18½"	CEP-402-18	16.80		

Used only when work top is mounted between 2 pedestal frames. Externally fastened.			
H.	W.	Cat. No.	Net Price (A)†
23"	22"	CSS-701	$10.72
23"	34½"	CSS-701-34	14.16
23"	25½"	CSS-701-255	12.80
23"	18½"	CSS-701-18	9.60



SURFACE MOUNTED DOORS 13/16" DEEP for vertical and sloped front frames 16 ga. steel. 1 piece construction mounted with slip jointed hinges supplied with locking handle, 2 keys and latch bracket. May be mounted left or right handed. Supplied blank; louvred at additional charge. Specify hinged side when ordering louvred.

21½" WIDE				26½" WIDE		
Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†	Height (A)	Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†
DF-36	17	$23.39	40⅜"	DF-2736	23	$27.20
DF-42*	20	24.71	45⅜"	DF-2742	26	30.31
DF-52	25	28.00	56⅛"	DF-2752	31	33.11
DF-61	28	31.43	64 13/16"	DF-2761	34	36.27
DF-70	31	33.75	73⅜"	DF-2770	38	40.67
DF-77	34	35.91	80⅜"	DF-2777	41	42.15

32½" WIDE (DOUBLE DOORS with 3 Point Locking Device)

Cat. No.	Shpg. Wt. Lbs.	Height	Net Price (A)†
DF-3361	40	64 13/16"	$46.72
DF-3370	45	73⅜"	50.60
DF-3377	48	80⅜"	53.88

*Add suffix -1002 when used with FS-1002, 1002-255, 1004, 1004-255

FLUSH MOUNTED DOOR ½" DEEP for use with CPF, FS, FA, POR and CSC frames. 16 ga. steel, 1 piece construction. May be mounted left or right supplied with chrome plated handle and snap catch.

Cat. No.	Net Price (A)†	Height	Width	Shpg. Wt. Lbs.
CD-17	$11.12	17½"	19"	7
CD-21	11.92	21"	19"	8
CD-26	13.44	26¼"	19"	9
CD-28	14.16	28"	19"	10
CD-29	14.72	29¾"	19"	11
CD-42	23.88	42"	19"	16
CD-1724	13.44	17½"	24"	8
CD-2124	14.44	21"	24"	9
CD-2624	16.40	26¼"	24"	11
CD-2824	17.00	28"	24"	12
CD-2924	17.72	29¾"	24"	13
CD-4224	24.48	42"	24"	17

†See quantity discount schedule on page 1.

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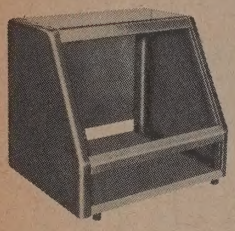
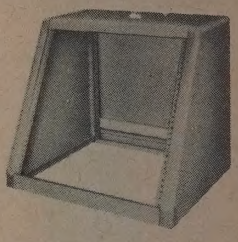
PREMIER DESK CABINET RACKS and ACCESSORIES

ROUNDED CORNERS

SLOPING INSTRUMENT CABINETS



Ball corner modular sloping desk top instrument cabinets constructed of 16 ga. steel. Front and rear panel openings recessed ½" and tapped for 10/32 screws on EIA spacing. Interlocking removable, perforated rear panel fastens with captive screws and furnished with 1¾" opening at bottom for leads. Assembly screws not visible externally. Shipped knocked down. Provisions are made for mounting to tops of Pedestal Frames. Designed to utilize CMS units below for multiple installations. Top, cross-piece and base finished in Light Gray enamel; Rear and side panels finished in Blue. Also available in all Premier standard colors. Please specify.



Cat. No.	W.	H.	D.	Slopped Panel Space	Front Vertical Panel Space	Rear Panel Space	Slope from Vertical	Bottom Panel Space	Shpg. Wt. Lbs.	Price Net (A)†
CSC-201	21¾"	18⅛"	18"	12¼x19"	3½x9"	15¾x19"	30°	—	35	$55.44
CSC-202	21¾"	18⅞"	18⅜"	17½x19"	—	15¾x19"	25°	15¾x19"	40	60.44

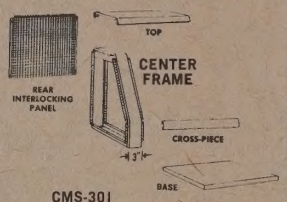
DESIGNED FOR MULTIPLE INSTALLATION

SLOPING INSTRUMENT CABINETS can be joined together to make multiple units by means of a center frame section which is bolted to the top, cross-piece and base. When ordering multiple units specify number of units, such as Double, Triple, etc.

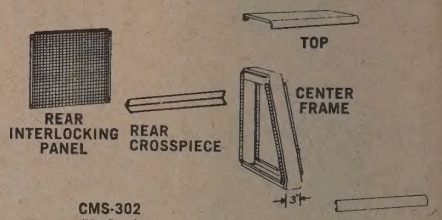
One Triple CSC-201 consists of one CSC-201 and two CMS-301

MULTIPLE SECTION for SLOPING CABINET

Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†
CMS-301	26	$36.28
CMS-302	28	40.32



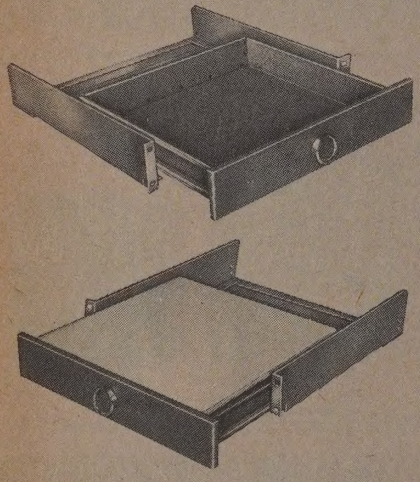
CMS-301



CMS-302
(No Base)

EACH MULTIPLE SECTION comprises 5 pieces as shown:

EXAMPLE: One Double CSC-201 consists of one CSC-201 and one CMS-301
One Triple CSC-201 consists of one CSC-201 and two CMS-301



SLIDING DRAWERS and SHELVES

Constructed of welded 16 ga. steel and suspended on roller bearing slides. Units are designed for use with all modular enclosures (CPF, FS, MSF, POR, RMX, FDX Series). Units are furnished with drawer pull and complete hardware for easy installation. Sliding shelf supplied with Gray Linen Weave laminated plastic top surface. Cylinder lock (HW-6) available at additional cost. Finished in light gray enamel. Also available in all Premier standard colors. Please specify.

SLIDING DRAWERS

Cat. No.	Formed Panel Size	Drawer Size W. D. H.	Shpg. Wt. Lbs.	Net Price (A)†
	FOR 19" WIDE PANEL SPACE			
D-1916	10⅜x18⅞x½"	16⅛x16x6"	23	$25.28
D-2016	6⅞x18⅞x½"	16⅛x16x6"	22	24.24
D-2316	3⅜x18⅞x½"	16⅛x16x2 11/16"	16	22.88
	FOR 24" WIDE PANEL SPACE			
D-2116	10⅜x23⅞x½"	21⅛x16x6"	25	30.32
D-2216	6⅞x23⅞x½"	21⅛x16x6"	24	29.04
D-2416	3⅜x23⅞x½"	21⅛x16x2 11/16"	17	25.28

SLIDING SHELVES

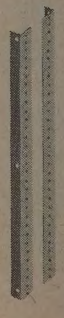
Cat. No.	Formed Panel Size	Shelf Size	Shpg. Wt. Lbs.	Net Price (A)†
	FOR 19" WIDE PANEL SPACE			
RDS-319-22	3⅜x18⅞x½"	16 3/16x15 15/16"	20	$32.40
	FOR 24" WIDE PANEL SPACE			
RDS-324-22	3⅜x23⅞x½"	21 3/16x15 15/16"	22	41.24

PANEL MOUNTING ANGLES 1¼" x 1¼"

For use where equipment of varied sizes require additional vertical supports in a modular enclosure.

Standard Panel Mounting Angles are constructed of 12 ga. (.104") steel and furnished with 9/32" clearance holes in both legs on E.I.A. spacing. Angles with 10-32 tapped holes in both legs on E.I.A. spacing are also available. Supplied in pairs with hardware for mounting in standard modular frames. Finished in Light Gray enamel.

STANDARD			TAPPED	
Catalog No.	Net Price Pair (A)†	Height	Catalog No.	Net Price Pair (A)†
PMA-212	$ 7.12 pr.	21"	PMA-T-212	$ 7.83 pr.
PMA-282	9.32 pr.	28"	PMA-T-282	10.25 pr.
PMA-362	10.80 pr.	36¾"	PMA-T-362	11.88 pr.
PMA-422	12.36 pr.	42"	PMA-T-422	13.60 pr.
PMA-522	14.24 pr.	52½"	PMA-T-522	15.66 pr.
PMA-612	15.44 pr.	61¼"	PMA-T-612	16.98 pr.
PMA-702	17.36 pr.	70"	PMA-T-702	19.10 pr.
PMA-772	18.68 pr.	77"	PMA-T-772	20.55 pr.
PMA-802	19.64 pr.	80½"	PMA-T-802	21.60 pr.



†See quantity discount schedule on page 1.

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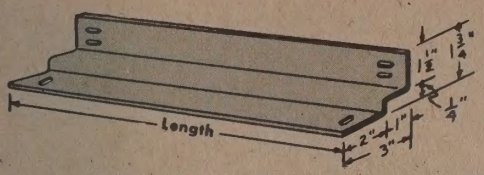
PREMIER ACCESSORIES ROUNDED CORNER

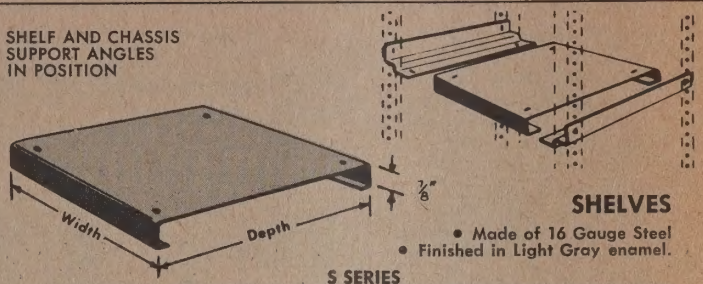


CHASSIS SUPPORT ANGLES

- Made of 12 ga. steel
- Accommodates Shelf (S Series)
- Finished in Light Gray enamel
- Mounts to clearance holes on side legs of Panel Mounting Angles of FA & PRXA series

Cat. No.	Length	To Fit Frames	Net Price (A)†
CSA-16	14⅛"	18" deep FDX, RMX	$4.16
CSA-18	16⅛"	18" deep PRXA	4.40
CSA-22	20⅛"	22" deep FA, CPF, MSF, FS & 24" deep FDX & RMX	4.92
CSA-24	22⅛"	24" deep PRXA	5.16
CSA-255	23⅝"	25½" deep FA, CPF, FS & MSF	5.40

SHELF AND CHASSIS SUPPORT ANGLES IN POSITION

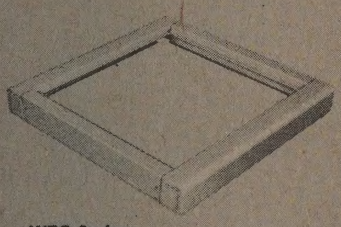


SHELVES

- Made of 16 Gauge Steel
- Finished in Light Gray enamel.

S SERIES

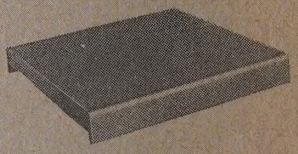
Cat No.	Depth	Width	To Fit Frames	Net Price (A)†
S-18-22	14¼"	17½"	22"Wx18"D 18" FDX, RMX	$3.20
S-22-22	20⅜"	17½"	22"Wx22"D FA, FS, CPF, MSF	4.04
S-27-22	20⅜"	22½"	27"Wx22"D FA, FS, CPF, MSF	5.24
S-22-255	23⅞"	17½"	22"Wx25½"D FA, FS, CPF, MSF	4.76
S-27-255	23⅞"	22½"	27"Wx25½"D FA, FS, CPF, MSF	5.60
S-22-18	16⅜"	17½"	22"Wx18"D PRXA	3.48
S-27-18	16⅜"	22½"	27"Wx18"D PRXA	4.28
S-33-18	16⅜"	28½"	33"Wx18"D PRXA	5.64
S-22-24	22⅜"	17½"	22"Wx24"D PRXA	4.48
S-27-24	22⅜"	22½"	27"Wx24"D PRXA	5.64
S-33-24	22⅜"	28½"	33"Wx24"D PRXA	7.00
S-33-22	20⅜"	28½"	33"Wx24"D RMX-7030	6.52



WTO Series
Open Type

WORK TOPS FOR MULTIPLE ASSEMBLY
3" High

- Designed for mounting between two Pedestal Frames or when used with End Pedestal (PE Series).
- WTO accommodates formed or laminated plastic panels.
- USE SHORT END PANELS (CSS Series) FOR THIS INSTALLATION.
- Made of welded 16 gauge steel.
- Finished in Light Gray enamel. Also available in all Premier standard colors. Please specify.



CWT Series
Solid Type

OPEN TYPE

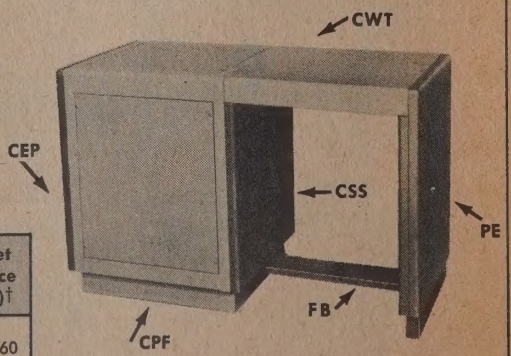
Cat. No.	Width	Depth	Panel Space	Shpg. Wt. Lbs.	Net Price (A)†
WTO-22-22	22"	22"	17½x19"	9½	$27.76
WTO-27-22	27"	22"	17½x24"	11	33.36
WTO-22-34	22"	34¼"	29¾x19"	12	43.20
WTO-22-255	22"	25½"	21 x19"	12	37.24
WTO-27-255	27"	25½"	21 x24"	13	39.20
WTO-22-18	22"	18½"	14 x19"	9	26.48

SOLID TYPE

Cat. No.	Width	Depth	Shpg. Wt. Lbs.	Net Price (A)†
CWT-601	22"	22"	14	$16.24
CWT-603	27"	22"	18	19.08
CWT-601-34	22"	34¼"	20	24.08
CWT-601-18	22"	18½"	12	15.08
CWT-601-255	22"	25½"	16	17.36

END PEDESTAL and FOOT BRACE FOR DOUBLE UNIT ASSEMBLY

- Made of welded, double walled 16 gauge steel.
- Ball cornered.
- End Pedestal mounts to Work Top CWT Series or WTO Series. Foot Brace mounts to Pedestal Frame CPF Series and End Pedestal PE-901.
- Foot Brace can be mounted between two Pedestal Frames (CPF or MSF Series).
- End Pedestal finished in Blue enamel; Also available in all Premier standard colors. Please specify.



END PEDESTAL

Cat. No.	Depth	Height	Shpg. Wt. Lbs.	Net Price (A)†
PE-901	22"	29½"	25	$30.32
PE-901-34	34¼"	29½"	30	45.48
PE-901-255	25½"	29½"	28	37.04
PE-901-18	18½"	29½"	22	28.84

FOOT BRACE

Cat. No.	Shpg. Wt. Lbs.	Used With	Net Price (A)†
FB-801	3	22" Wide Work Tops	$8.60
FB-802	3½	27" Wide Work Tops	9.28

†See quantity discount schedule on page 1.

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PREMIER MODULAR CABINET RACKS SQUARED CORNERED

Completely welded 14 ga. steel frame. Top and bottom are of one piece construction with rectangular opening in bottom for leads. Supplied with two pairs of 12 ga. steel panel mounting angles, fully adjustable front to rear. Angles have E.I.A. spaced clearance holes. 10-32 screws and captive nuts are furnished. Frames have provisions for ganging, cabling between frames, mounting doors front or rear (left or right handed), mounting casters in base, and mounting writing work frames. Finished in Light Gray enamel. Also available in all Premier standard colors. Please specify.

VERTICAL FRAMES 18" and 24" DEEP for 19", 24" and 30" PANEL WIDTHS

18" DEEP						24" DEEP		
Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†	Height	Width	Panel Space	Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†
PRXA-36	40	$ 66.44	42⅞"	22"	36¾x19"	PRXA-36-24	50	$ 71.42
PRXA-42	48	69.92	48⅛"	22"	42 x19"	PRXA-42-24	58	75.18
PRXA-52	60	72.50	58⅝"	22"	52½x19"	PRXA-52-24	72	78.00
PRXA-61	70	78.92	67⅜"	22"	61¼x19"	PRXA-61-24	85	84.86
PRXA-70	88	85.46	76⅛"	22"	70 x19"	PRXA-70-24	108	91.92
PRXA-77	100	90.04	83⅛"	22"	77 x19"	PRXA-77-24	120	96.84
PRXA-2761	100	89.04	67⅜"	22"	61¼x24"	PRXA-2761-24	134	95.76
PRXA-2770	104	100.78	76⅛"	27"	70 x24"	PRXA-2770-24	140	108.40
PRXA-2777	116	105.84	83⅛"	27"	77 x24"	PRXA-2777-24	156	113.80
PRXA-3361	122	106.88	67⅜"	33"	61¼x30"	PRXA-3361-24	162	114.92
PRXA-3370	126	120.96	76⅛"	33"	70 x30"	PRXA-3370-24	169	130.08
PRXA-3377	142	127.08	83⅛"	33"	77 x30"	PRXA-3377-24	190	136.56

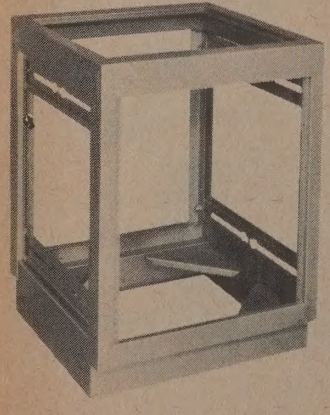
ORDERING GUIDE

Vertical Frame Cat. No.	Flush Side Panel Cat. No.	Rounded Side Panel Cat. No.	Use Door Cat. No.	Use Chassis Support Angle	Use Shelf	Use Chassis Slides
PRXA-36	FL-36	SP-36	DF-36	CSA-18	S-2218	16"
PRXA-42	FL-42	SP-42	DF-42	CSA-18	S-2218	16"
PRXA-52	FL-52	SP-52	DF-52	CSA-18	S-2218	16"
PRXA-61	FL-61	SP-61	DF-61	CSA-18	S-2218	16"
PRXA-70	FL-70	SP-70	DF-70	CSA-18	S-2218	16"
PRXA-77	FL-77	SP-77	DF-77	CSA-18	S-2218	16"
PRXA-42-24	FL-36-24	SP-36-24	DF-36	CSA-24	S-2224	22"
PRXA-36-24	FL-42-24	SP-42-24	DF-42	CSA-24	S-2224	22"
PRXA-52-24	FL-52-24	SP-52-24	DF-52	CSA-24	S-2224	22"
PRXA-61-24	FL-61-24	SP-61-24	DF-61	CSA-24	S-2224	22"
PRXA-70-24	FL-70-24	SP-70-24	DF-70	CSA-24	S-2224	22"
PRXA-77-24	FL-77-24	SP-77-24	DF-77	CSA-24	S-2224	22"
PRXA-2761	FL-61	SP-61	DF-2761	CSA-18	S-2718	16"
PRXA-2770	FL-70	SP-70	DF-2770	CSA-18	S-2718	16"
PRXA-2777	FL-77	SP-77	DF-2777	CSA-18	S-2718	16"
PRXA-2761-24	FL-61-24	SP-61-24	DF-2761	CSA-24	S-2724	22"
PRXA-2770-24	FL-70-24	SP-70-24	DF-2770	CSA-24	S-2724	22"
PRXA-2777-24	FL-77-24	SP-77-24	DF-2777	CSA-24	S-2724	22"
PRXA-3361	FL-61	SP-61	DF-3361	CSA-18	S-3318	16"
PRXA-3370	FL-70	SP-70	DF-3370	CSA-18	S-3318	16"
PRXA-3377	FL-77	SP-77	DF-3377	CSA-18	S-3318	16"
PRXA-3361-24	FL-61-24	SP-61-24	DF-3361	CSA-24	S-3324	22"
PRXA-3370-24	FL-70-24	SP-70-24	DF-3370	CSA-24	S-3324	22"
PRXA-3377-24	FL-77-24	SP-77-24	DF-3377	CSA-24	S-3324	22"

Use Either Or

PEDESTAL FRAMES

- Frame made of 16 gauge steel completely welded.
- Supplied with two pair of No. 12 gauge steel Panel Mounting Angles on E.I.A. spacings.
- Screws and captive nuts supplied.
- Panel fits into ½" recess.
- Finished in Light Gray enamel. Also available in all Premier standard colors. Please specify.
- Frame accommodates square cornered end panels and flush doors.
- Units designed for multiple installation.
- Brackets welded in base and punched to accommodate casters.



PEDESTAL FRAME			Height with Casters	Height without Casters	Front & Rear Panel Space	Top Panel Space	Shpg. Wt. Lbs.	Net Price (A)†
Cat. No.	Width	Depth						
MSF-21-22	22"	22"	30"	29½"	21x19"	17½x19"	45	$54.80
MSF-28-22	22"	22"	37"	36½"	28x19"	17½x19"	50	63.52
MSF-21-255	22"	25½"	30"	29½"	21x19"	21 x19"	50	57.72
MSF-28-255	22"	25½"	37"	36½"	28x19"	21 x19"	55	66.36

ORDERING GUIDE

Pedestal Frame Cat. No.	Side Panel Cat. No.	Flush Door Cat. No.	Top Panel (Formed) Cat. No.	Top Panel Plastic Laminated Cat. No.	Shelf Cat. No.	Chassis Support Angle Cat. No.	Slide Length
MSF-21-22	MSP-21-22	CD-21	FP-1719	FWP-1719	S-22-22	CSA-22	20"
MFS-28-22	MSP-28-22	CD-28	FP-1719	FWP-1719	S-22-22	CSA-22	20"
MSF-21-255	MSP-21-255	CD-21	FP-2119	FWP-2119	S-22-255	CSA-255	24"
MSF-28-255	MSP-28-255	CD-28	FP-2119	FWP-2119	S-22-255	CSA-255	24"

†See quantity discount schedule on page 1.

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PREMIER MODULAR CABINET RACK ACCESSORIES

SQUARE CORNERED

½" DEEP SIDE PANELS

- Fits into side recess of frames 18" and 24" deep.
- Made of one piece of 16 gauge steel and reinforced.
- Clips on to horizontal side section of frame.
- Finished in Blue enamel. Also available in all Premier standard colors. Please specify.

SIDE PANELS (Rounded)

Cat. No.	Height	Width	Shpg. Wt. Lbs.	Net Price (A)†
SP-36	42¾"	15"	19	$15.84
SP-42	48"	15"	20	16.72
SP-52	58½"	15"	21	18.80
SP-61	67¼"	15"	23	21.76
SP-70	76"	15"	26	23.40
SP-77	83"	15"	28	25.16
SP-36-24	42¾"	21"	21	20.68
SP-42-24	48"	21"	22	21.56
SP-52-24	58½"	21"	25	23.64
SP-61-24	67¼"	21"	28	26.12
SP-70-24	76"	21"	31	28.04
SP-77-24	83"	21"	34	30.32

SIDE PANELS (Flush)

Cat. No.	Height	Width	Shpg. Wt. Lbs.	Net Price (A)†
FL-36	42¾"	15"	18	$14.20
FL-42	48"	15"	19	15.04
FL-52	58½"	15"	21	17.04
FL-61	67¼"	15"	22	19.84
FL-70	76"	15"	25	21.40
FL-77	83"	15"	27	23.08
FL-36-24	42¾"	21"	20	18.76
FL-42-24	48"	21"	21	19.64
FL-52-24	58½"	21"	24	21.64
FL-61-24	67¼"	21"	27	23.92
FL-70-24	76"	21"	30	25.84
FL-77-24	83"	21"	33	27.88

SQUARE SIDE PANELS FOR PEDESTAL FRAMES—13/16" DEEP

- Made of one piece of 16 gauge steel and reinforced.
- End panels attach to frame by a bracket on bottom and two captive screws.
- Finished in Blue enamel. Also available in all Premier standard colors. Please specify.

22" Wide for 22" Deep Frames				25½" Wide for 25½" Deep Frames		
Cat. No.	To Fit Frame No.	Net Price (A)†	Height (A)	Cat. No.	To Fit Frame No.	Net Price (A)†
MSP-21-22	MSF-21-22	$13.24	26"	MSP-21-255	MSF-21-255	$15.20
MSP-28-22	MSF-28-22	15.20	33"	MSP-28-255	MSF-28-255	17.16

FLUSH DOORS FOR PEDESTAL FRAMES—½" DEEP

For Frames MSF Series.

- Made of 16 gauge steel
- Finished in Blue enamel. Also available in all Premier standard colors. Please specify.
- Doors can be mounted either left or right hand by rotating door 180°
- Hinge brackets are punched to accommodate panel mounting angles on cabinets
- Furnished with attractive round chrome plated handle and snap catch.

Cat. No.	Height	Width	Shpg. Wt. Lbs.	Net Price (A)†
CD-21	21"	19"	8	$11.92
CD-28	28"	19"	10	14.16

SURFACE MOUNTED DOORS 13/16" DEEP

For vertical frames 16 ga. steel. 1 piece construction mounted with slip jointed hinges supplied with locking handle and 2 keys and latch bracket. May be mounted left or right handed. Supplied blank; louvred at additional charge. Specify hinged side when ordering louvred. Finished in Blue enamel. Also available in all Premier standard colors. Please specify.

DOORS FOR VERTICAL FRAMES

21½" WIDE			Height (A)	26½" WIDE		
Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†		Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†
DF-36	17	$23.39	40⅝"	DF-2736	23	$27.20
DF-42*	20	24.71	45⅝"	DF-2742	26	30.31
DF-52	25	28.00	56⅛"	DF-2752	31	33.11
DF-61	28	31.43	64¹³⁄₁₆"	DF-2761	34	36.27
DF-70	31	33.75	73⅝"	DF-2770	38	40.67
DF-77	34	35.91	80⅝"	DF-2777	41	42.15

32½" WIDE (DOUBLE DOORS with 3 Point Locking Device)	Cat. No	Shpg. Wt. Lbs.	Height	Net Price (A)†
	DF-3361	40	64¹³⁄₁₆"	$46.72
	DF-3370	45	73⅝"	50.60
	DF-3377	48	80⅝"	53.88

*Add suffix -1002 when used with FS-1002, 1002-255, 1004, 1004-255

†See quantity discount schedule on page 1.

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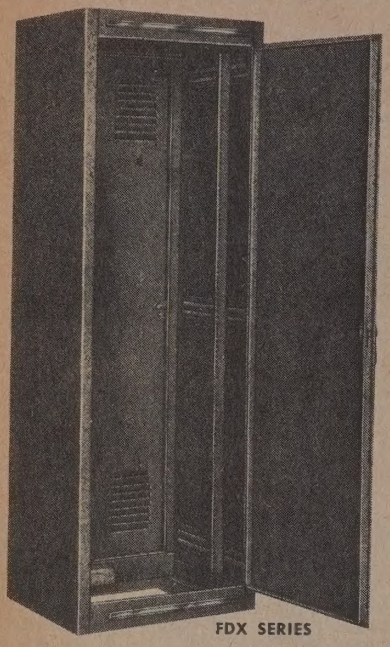
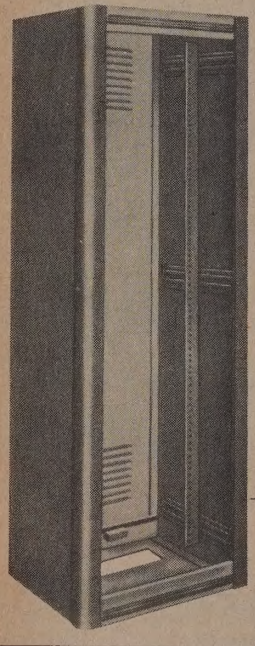
PREMIER HEAVY DUTY RACKS



FDX SERIES



RMX SERIES

FOR 19", 24" AND 30" RACK PANELS — 18" AND 24" DEEP

FINISHED IN ALL PREMIER STANDARD COLORS. PLEASE SPECIFY.

Rigidly constructed of 16 ga. steel with a 12 ga. steel bottom and welded throughout. Supplied with two pair of 12 ga. steel panel mounting angles fully adjustable front to rear with clearance holes on E.I.A. spacing to accommodate panels, chassis support angles and shelves. 10-32 x 1" screws and captive nuts are furnished.

- Rear doors are hung on sturdy slip-jointed hinges and closed with a chrome handle. Locking handle with 2 keys available at additional cost.
- Round hole and 5 mounting holes on top of frame to accommodate Exhaust (EF Series) and Intake (IF Series) Fans available at additional cost.
- A rectangular cut-out is made in the bottom for leads, etc.
- RMX-7030 Rack supplied with double rear doors and with a 3-point locking device.
- FDX Series are furnished with locking handle and 2 keys on Front Door.
- ALL RACKS ARE SUPPLIED WITHOUT LOUVRES ON SIDES UNLESS SPECIFIED.
- Vertical rounded corner "J" type moldings are supplied with RMX series.
- When joining RMX racks for multiple installation, specify amount of center "U" type moldings (supplied at no additional cost). EXAMPLE: Three RMX-3619 requires two "J" and two "U" moldings.
- A heavy duty duplex "U" ground receptacle and outlet box are furnished in the rear under the door.
- Accommodates accessories, fans, blowers, slides, etc.

18" DEEP RACKS					18" DEEP RACKS WITH FRONT AND REAR DOORS		
Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†	H & W	Panel Space	Cat. No.	Shpg. Wt. Lbs.	Net Price (A)†
RMX-3619	100	$ 88.68	42⅞x22"	36¾x19"	FDX-3619	115	$ 99.84
RMX-4219	130	93.48	48⅛x22"	42 x19"	FDX-4219	120	105.24
RMX-6119	150	108.88	67⅜x22"	61¼x19"	FDX-6119	175	123.84
RMX-7618	170	117.70	76⅛x22"	70 x19"	FDX-7019	200	133.68
RMX-7719	190	124.24	83⅛x22"	77 x19"	FDX-7719	220	141.32
24" DEEP RACKS					**24" DEEP RACKS WITH FRONT AND REAR DOORS**		
RMX-3619-24	110	93.72	42⅞x22"	36¾x19"	FDX-3619-24	125	104.84
RMX-4219-24	130	98.72	48⅛x22"	42 x19"	FDX-4219-24	150	110.48
RMX-6119-24	175	114.84	67⅜x22"	61¼x19"	FDX-6119-24	200	129.76
RMX-7618-24	200	124.08	76⅛x22"	70 x19"	FDX-7019-24	255	140.12
RMX-7719-24	225	131.10	83⅛x22"	77 x19"	FDX-7719-24	270	148.12
RMX-2742	170	118.28	48⅛x27"	42 x24"	FDX-2742	180	132.72
RMX-2761	210	130.32	67⅜x27"	61¼x24"	FDX-2761	230	147.60
RMX-2770	240	147.12	76⅛x27"	70 x24"	FDX-2770	260	166.48
RMX-2777	270	153.96	83⅛x27"	77 x24"	FDX-2777	290	174.04
RMX-7030	240	183.88	76⅛x33"	70 x30"			

ORDERING GUIDE

Frame Cat. No.		Frame Cat. No.	Chassis Support Angle (Page 00) Cat. No.	Shelves (Page 00) Cat. No.	Use Chassis Slides (length) (Page 00)	Use Roller Truck (Page 00) Cat. No.
RMX-3619		FDX-3619	CSA-16	S-18-22	14"	RT-1101 or RT-1101-3*
RMX-4219		FDX-4219	CSA-16	S-18-22	14"	RT-1101 or RT-1101-3*
RMX-6119		FDX-6119	CSA-16	S-18-22	14"	RT-1101 or RT-1101-3*
RMX-7618		FDX-7019	CSA-16	S-18-22	14"	RT-1101 or RT-1101-3*
RMX-7719		FDX-7719	CSA-16	S-18-22	14"	RT-1101 or RT-1101-3*
RMX-3619-24		FDX-3619-24	CSA-22	S-22-22	20"	RT-1103 or RT-1103-3*
RMX-4219-24		FDX-4219-24	CSA-22	S-22-22	20"	RT-1103 or RT-1103-3*
RMX-6119-24	OR	FDX-6119-24	CSA-22	S-22-22	20"	RT-1103 or RT-1103-3*
RMX-7019-24		FDX-7019-24	CSA-22	S-22-22	20"	RT-1103 or RT-1103-3*
RMX-7719-24		FDX-7719-24	CSA-22	S-22-22	20"	RT-1103 or RT-1103-3*
RMX-2742		FDX-2742	CSA-22	S-27-22	20"	RT-1110 or RT-1110-3*
RMX-2761		FDX-2761	CSA-22	S-27-22	20"	RT-1110 or RT-1110-3*
RMX-2770		FDX-2770	CSA-22	S-27-22	20"	RT-1110 or RT-1110-3*
RMX-2777		FDX-2777	CSA-22	S-27-22	20"	RT-1110 or RT-1110-3*
RMX-7030		FDX-7030	CSA-22	S-33-22	20"	FT-1111 or RT-1111-3*

†See quantity discount schedule on page 1.

*3"dia. caster

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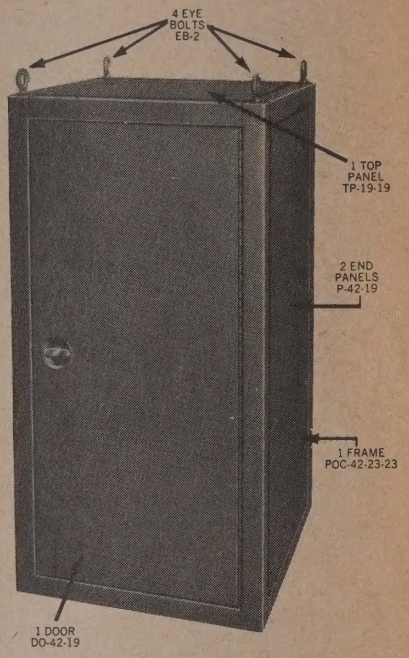
PREMIER HEAVY DUTY CUBICLES

FOR STANDARD 19, 24 and 30" WIDE PANELS

- Rugged seam welded 12 ga. steel frame with exclusive corner construction.
- Supplied with 10-32 tapped holes on EIA spacings (¾-¾-½") on both legs of all vertical uprights.
- Top of frame supplied with knock-out in each corner to accommodate eye bolts for lifting.
- Top and side panels and doors made of No. 14 gauge steel and supplied with a return flange on all sides for easy gasketing.
- Doors and/or side panels can be mounted to any openings of frame.
- Additional adjustable panel mounting angles accommodated by installing horizontal cross pieces (HCP Series).
- Finished in all Premier standard colors. Please specify.



FRAMES 23" WIDE for 19" PANELS

Overall Height	Panel Height	23" Deep Cat. No.	Net Price (A)†	28" Deep Cat. No.	Net Price (A)†	34" Deep Cat. No.	Net Price (A)†
40¾"	36¾"	POC-36-23-23	$ 88.66	POC-36-23-28	$ 91.88	POC-36-23-34	$ 97.88
46"	42"	POC-42-23-23	91.86	POC-42-23-28	96.84	POC-42-23-34	102.85
65¼"	61¼"	POC-61-23-23	109.69	POC-61-23-28	114.65	POC-61-23-34	120.58
74"	70"	POC-70-23-23	117.50	POC-70-23-28	122.48	POC-70-23-34	128.27
81"	77"	POC-77-23-23	124.36	POC-77-23-28	129.26	POC-77-23-34	135.21
84½"	80½"	POC-80-23-23	128.27	POC-80-23-28	133.18	POC-80-23-34	138.91

FRAMES 28" WIDE for 24" PANELS

40¾"	36¾"	—	—	POC-36-28-28	96.84	POC-36-28-34	102.85
46"	42"	—	—	POC-42-28-28	101.77	POC-42-28-34	107.85
65¼"	61¼"	—	—	POC-61-28-28	119.46	POC-61-28-34	125.34
74"	70"	—	—	POC-70-28-28	127.30	POC-70-28-34	133.18
81"	77"	—	—	POC-77-28-28	134.15	POC-77-28-34	140.03
84½"	80½"	—	—	POC-80-28-28	138.07	POC-80-28-34	143.95

FRAMES 34" WIDE for 30" PANELS

40¾"	36¾"	—	—	—	—	POC-36-34-34	108.77
46"	42"	—	—	—	—	POC-42-34-34	113.74
65¼"	61¼"	—	—	—	—	POC-61-34-34	131.22
74"	70"	—	—	—	—	POC-70-34-34	138.91
81"	77"	—	—	—	—	POC-77-34-34	145.91
84½"	80½"	—	—	—	—	POC-80-34-34	149.91

†See quantity discount schedule on page 1.

ACCESSORIES FOR HEAVY DUTY CUBICLES

END PANELS

Blank and Louvred—¾" DEEP. Made of No. 14 gauge steel with return bend for easy gasketing. Fit flush with frame.

19" WIDE

Blank Cat. No.	Net Price (A)†	Height	Louvred Cat. No.	Net Price (A)†
P-36-19	$21.96	36¾"	PL-36-19	$29.76
P-42-19	23.96	42"	PL-42-19	31.72
P-61-19	31.76	61¼"	PL-61-19	39.56
P-70-19	34.92	70"	PL-70-19	42.72
P-77-19	40.16	77"	PL-77-19	45.00
P-80-19	39.20	80½"	PL-80-19	47.00

24" WIDE

Blank Cat. No.	Net Price (A)†	Height	Louvred Cat. No.	Net Price (A)†
P-36-24	$24.32	36¾"	PL-36-24	$31.32
P-42-24	25.52	42"	PL-42-24	33.32
P-61-24	23.40	61¼"	PL-61-24	41.96
P-70-24	36.44	70"	PL-70-24	44.32
P-77-24	39.20	77"	PL-77-24	47.00
P-80-24	40.80	80½"	PL-80-24	48.64

30" WIDE

Blank Cat. No,	Net Price (A)†	Height	Louvred Cat. No.	Net Price (A)†
P-36-30	$26.28	36¾"	PL-36-30	$34.16
P-42-30	28.24	42"	PL-42-30	36.04
P-61-30	36.10	61¼"	PL-61-30	43.92
P-70-30	39.20	70"	PL-70-30	47.00
P-77-30	41.92	77"	PL-77-30	49.76
P-80-30	43.52	80½"	PL-80-30	51.36

DOORS

Black and Louvered

- Made of No. 14 gauge steel
- Continuous hinge flush fitting
- Supplied with 3 point latching device and round flush handle

19" WIDE

Blank	Net Price (A)†	Height	Width	Louvred	Net Price (A)†
DO-36-19	$39.24	36¾"	19"	DOL-36-19	$45.16
DO-36-24	40.00	36¾"	24"	DOL-36-24	47.80
DO-36-30	44.64	36¾"	30"	DOL-36-30	52.52
DO-42-19	40.64	42"	19"	DOL-42-19	48.52
DO-42-24	43.28	42"	24"	DOL-42-24	51.16
DO-42-30	47.20	42"	30"	DOL-42-30	54.80
DO-61-19	53.48	61¼"	19"	DOL-61-19	61.76
DO-61-24	56.64	61¼"	24"	DOL-61-24	65.28
DO-61-30	61.32	61¼"	30"	DOL-61-30	69.76
DO-70-19	59.28	70"	19"	DOL-70-19	67.76
DO-70-24	61.96	70"	24"	DOL-70-24	69.84
DO-70-30	66.00	70"	30"	DOL-70-30	74.48
DO-77-19	63.96	77"	19"	DOL-77-19	71.76
DO-77-24	66.60	77"	24"	DOL-77-24	74.48
DO-77-30	71.28	77"	30"	DOL-77-30	79.12
DO-80-19	66.60	80½"	19"	DOL-80-19	74.48
DO-80-24	69.32	80½"	24"	DOL-80-24	77.12
DO-80-30	73.92	80½"	30"	DOL-80-30	81.76

TOP & BOTTOM PANELS

Size	Blank Cat. No.	Net Price (A)†	Louvred Cat. No.	Net Price (A)†
19 x 19"	TP-19-19	$14.92	TPL-19-19	$19.80
19 x 24"	TP-19-24	16.88	TPL-19-24	21.00
19 x 30"	TP-19-30	19.20	TPL-19-30	24.00
24 x 24"	TP-24-24	18.80	TPL-24-24	23.48
24 x 30"	TP-24-30	21.16	TPL-24-30	26.08
30 x 30"	TP-30-30	23.56	TPL-30-30	28.44

PANEL MOUNTING ANGLES

12 gauge steel; tapped 10-32 on E.I.A. spacings

Length	Cat. No.	Net Price (A)†
36¾"	PMA 362	$10.80
42"	PMA 422	12.36
61¼"	PMA 612	15.44
70"	PMA 702	17.36
77"	PMA 772	18.68
80½"	PMA 802	19.64

HORIZONTAL CROSS PIECES

4 required for 36¾" and 42" vertical panel space.
6 required for 61¼"—80½" vertical panel space.

Fits Frame Depth	Cat. No.	Net Price (A)†
23"	HCP-23	$2.60
28"	HCP-28	3.08
34"	HCP-34	3.60

ROLLER TRUCKS

with 4" Diameter Rockite Casters
Fits into recess in bottom of frame

Size	Cat. No.	Net Price (A)†
19 x 19"	CRT 19-19	$50.36
19 x 24"	CRT 19-24	52.40
19 x 30"	CRT 19-30	54.80
24 x 24"	CRT 24-24	54.40
24 x 30"	CRT 24-30	56.80
30 x 30"	CRT 30-30	59.24

EYE BOLTS

2" Dia. — Cat. No. EB-2 — Net Price (A)† $5.80 set/4

†See quantity discount schedule on page 1.

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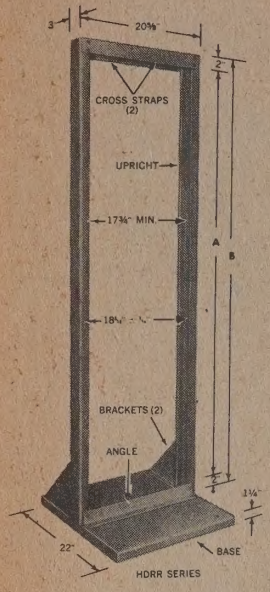
PREMIER CHANNEL RELAY RACKS



HDRR SERIES

HEAVY DUTY RELAY RACK *Meets MIL-STD-189*

- Uprights and top cross strips made of 3/16" sheet steel.
- Base and Brackets made of No. 12 gauge sheet steel.
- Base angle made of 2 x 2 x 3/16" steel.
- Panel mounting holes are tapped 10-32 on E.I.A. spacings (1¼"-½").
- Finished in Zinc Chromate Primer (MIL SPEC. 6889A) or all Premier standard colors. (Specify finish when ordering).
- Shipped knocked down and assembled with ¼-20 x ¾" long hex head cap screws and nuts.

Catalog No.	Panel Space (A)	Frame Height (B)	Net Price (A)†
HDRR-6619	66 21/32"	71 29/32"	$62.52
HDRR-7319	73 21/32"	78 29/32"	68.08
HDRR-7719	77 5/32"	82 13/32"	71.88

RR-2100 Series

DELUXE UTILITY RACKS

- Made of No. 12 gauge (.104) steel tapped 10-32 on EIA spacings (⅝—⅝—½) both front and rear.
- Uprights 8⅛" deep.
- Panels fit into ½" Recess. Either flat or Formed Panels may be used.
- Top perforated for ventilation when closed front and rear.
- Racks can be bolted side by side.
- There are no screw heads projecting.
- Vertical members and top cross piece are welded together.
- The base and rear supports are shipped knocked down.
- Finished in Gray Hammertone.

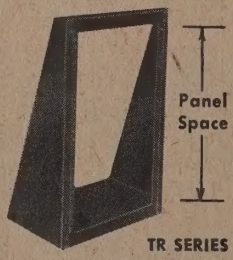
FOR 19" WIDE PANELS						FOR 24" WIDE PANELS				
Cat. No.	Width	Panel Space	Shpg. Wt. Lbs.	Net Price (B)†	Height	Cat. No.	Width	Panel Space	Shpg. Wt. Lbs.	Net Price (B)†
RR-2164	21 1/16"	61¼x19"	85	$49.15	64½"	RR-2664	26 1/16"	61¼x24"	100	$63.35
RR-2173	21 1/16"	70 x19"	90	53.00	73¼"	RR-2673	26 1/16"	70 x24"	105	67.20
RR-2180	21 1/16"	77 x19"	95	58.10	80¼"	RR-2680	26 1/16"	77 x24"	105	72.35

RR SERIES

CHANNEL RELAY RACKS

- Rigidly constructed of #12 gauge cold rolled sheet steel and finished in Gray Hammertone.
- Vertical members and top crossbrace are welded together.
- Panel mounting holes are tapped for 10/32 machine screws on E.I.A. spacings (⅝-⅝-½).
- Racks are shipped knocked down with all necessary bolts for easy assembly.
- Base punched to accommodate CA-4 (2") and CA-5 (3") casters.

Cat. No.	H.	W.	D.	Panel Space	Shpg. Wt. Lbs.	Net Price (B)†
RR-800	39¼"	20"	18⅜"	36¾"x19"	40	$26.20
RR-801	74¼"	20"	20⅞"	71¾"x19"	55	31.15
RR-802	79½"	20"	20⅞"	77" x19"	60	36.10
RR-803	69"	20"	20⅞"	66½"x19"	50	29.95



TR SERIES

TABLE TYPE RELAY RACKS

TR SERIES

- Rigidly constructed of #16 gauge cold rolled sheet steel and finished in Gray Hammertone
- Base constructed of one piece, similar to a chassis.
- Panel mounting holes are tapped for 10/32 machine screws on E.I.A. spacings (⅝-⅝-½").
- Racks are shipped knocked down with all necessary bolts for easy assembly.

Cat. No.	H.	W.	D.	Panel Space	Shpg. Wt. Lbs.	Net Price (B)†
TR-2119	25"	21"	12"	21x19"	17	$11.65
TR-2819	32"	21"	12"	28x19"	20	14.15

†See quantity discount schedule on page 1.

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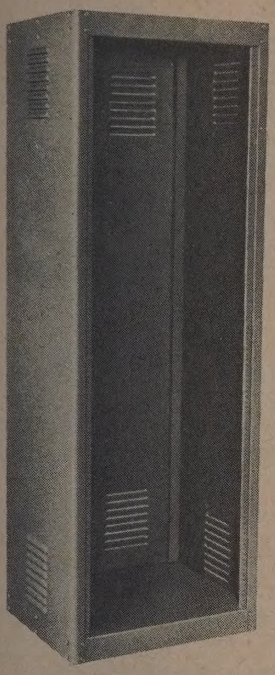
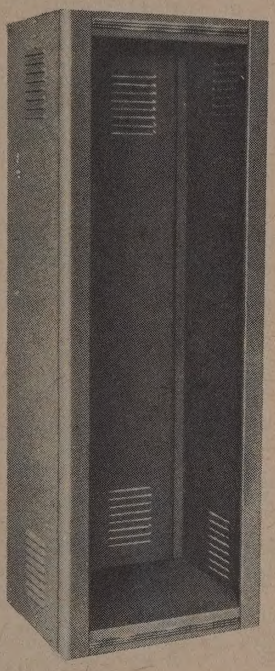
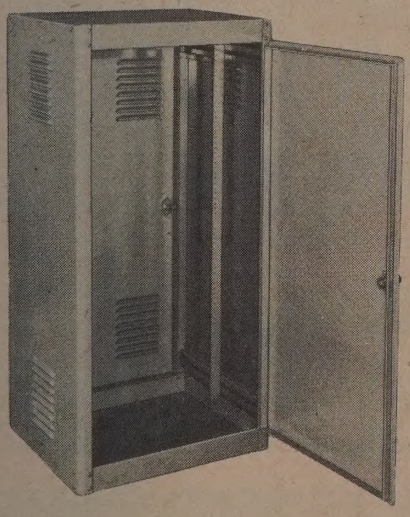
PREMIER CABINET RELAY RACKS



R SERIES

DR SERIES





FXR SERIES

R SERIES—has front vertical rounded corners.

DR SERIES—has removable rounded front corner mouldings to conceal panel edges and mounting screws. Tops and bottoms are trimmed with chrome mouldings. Top rear has 2 rows of perforations for additional ventilation.

FXR SERIES—front vertical corners are rounded. Front door supplied with locking chrome handle and two keys.

All units supplied with rear doors hung on sturdy slip-jointed hinges, and closed by a chrome handle. Locking handle with 2 keys is available at additional cost.

Panel mounting angles for the R and DR Series are of 12 ga. steel, welded at front of cabinet to form a 5/16" panel recess. Holes are drilled and tapped for 10-32 screws on E.I.A. spacing. FXR Series is supplied with 2 pairs of 12 ga. panel mounting angles fully adjustable front to rear with clearance holes on E.I.A. spacing for additional flexibility to mount accessories. 10-32 screws and captive nuts are furnished.

Rigidly constructed of 16 gauge steel.

Racks are shipped knocked down with all necessary bolts for assembly.

Holes provided in bottom to accommodate casters. Modifications and accessories are available.

Finished in Blue enamel. Also available in all Premier standard colors. Please specify.

RACKS ARE 22" WIDE x 18" DEEP

	Cat. No.	Overall Height	Panel Space	Use Slide Length*	Shpg. Wt.-Lbs.	Net Price (B)†
R SERIES	R-3619	41 7/8"	36 3/4"	16"	80	$ 57.70
	R-4219	47 1/8"	42"	16"	90	67.10
	R-6119	66 3/8"	61 1/4"	16"	120	85.90
	R-7719	82 1/8"	77"	16"	140	102.00
DR SERIES	DR-3619	43 1/8"	36 3/4"	16"	85	72.70
	DR-4219	48 3/8"	42"	16"	100	79.60
	DR-6119	67 5/8"	61 1/4"	16"	135	89.95
	DR-7719	83 3/8"	77"	16"	160	107.65
FXR SERIES	FXR-3619	41 7/8"	36 3/4"	16"	93	81.35
	FXR-4219	47 1/8"	42"	16"	105	88.20
	FXR-6119	66 3/8"	61 1/4"	16"	140	121.45
	FXR-7719	82 1/8"	77"	16"	164	133.50

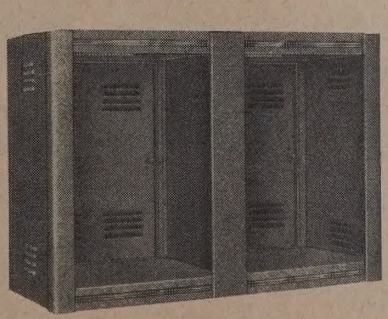
	Cat. No.	Overall Height	Panel Space	Use Slide Length*	Used With	Net Price (B)†
MULTIPLE RACK SERIES	MR-3619	41 7/8"	36 3/4"	16"	R-3619	$ 53.25
	MR-4219	47 1/8"	42"	16"	R-4219	62.20
	MR-6119	66 3/8"	61 1/4"	16"	R-6119	80.25
	MR-7719	82 1/8"	77"	16"	R-7719	95.55
	DMR-3619	43 1/8"	36 3/4"	16"	DR-3619	69.80
	DMR-4219	48 3/8"	42"	16"	DR-4219	74.80
	DMR-6119	67 5/8"	61 1/4"	16"	DR-6119	83.30
	DMR-7719	83 3/8"	77"	16"	DR-7719	99.40
	MXR-3619	41 7/8"	36 3/4"	16"	FXR-3619	74.70
	MXR-4219	47 1/8"	42"	16"	FXR-4219	86.35
	MXR-6119	66 3/8"	61 1/4"	16"	FXR-6119	108.35
	MXR-7719	82 1/8"	77"	16"	FXR-7719	131.65

*Use Slide Adapter Kit (Cat. No. SAK-35) for rear mounting.

†See quantity discount schedule on page 1.

MULTIPLE RACK UNITS

These racks can be joined together to make multiple units by a solid center partition which is bolted to the top and bottom. Each multiple section comprises a top, bottom, rear door and center partition. On MXR Models, front door is also supplied. When ordering multiple units, specify number of units, such as double, triple, quad, etc.



ONE DOUBLE DR3619 EXAMPLE:

One Double DR-3619 consists of one DR-3619 and one DMR-3619. One Triple FXR-3619 consists of one FXR-3619 and two MXR-3619. One Quad R-3619 consists of one R-3619 and three MR-3619.

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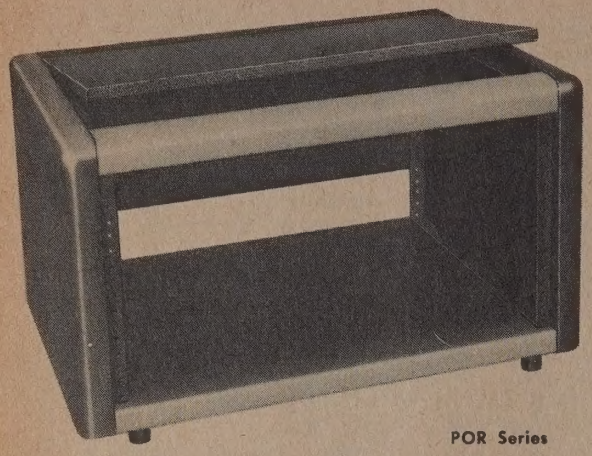
PREMIER DESK INSTRUMENT CABINETS



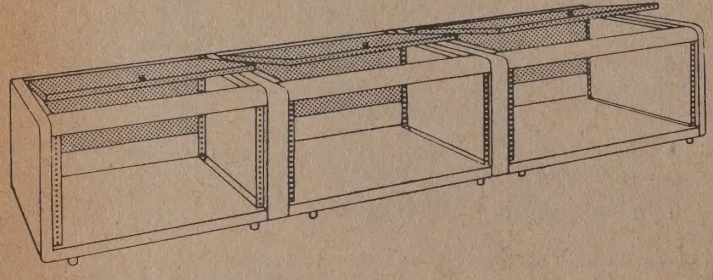
POR Series

15¼" and 18" DEEP FOR STANDARD 19" WIDE PANELS

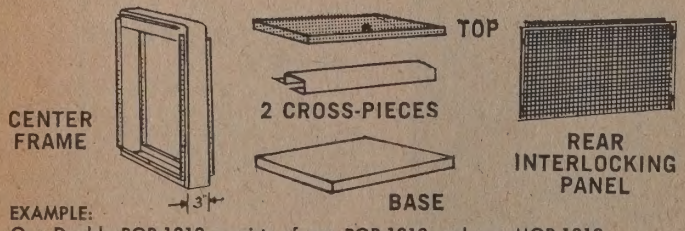
- Sides are attractively ball cornered.
- All screws for assembling cabinets are not visible from the outside.
- Both front and rear verticals are tapped for 10/32 machine screws on E.I.A. spacings so that panels may be mounted on both front and rear if desired.
- Interlocking removable top made of perforated metal and held in place by only one captive screw.
- Interlocking removable rear panel made of perforated metal and held in place by two captive screws.
- Rigidly constructed of 16 ga. steel.
- Rear Panel has 3½" opening on bottom for leads, etc., except on POR-3, 318, 5, 518.
- Panels fit into ½" recess.
- Base supplied with four rubber feet.
- Components may be mounted on base before assembly of rack into a complete unit.
- Shipped knocked down with all necessary hardware for easy assembly.

- HANDSOMELY FINISHED IN TWO-TONE BLUE AND GRAY
  Top cross braces and base are Gray.
  Top & rear panel & side panels are Blue.
  Also available all Gray Hammertone. Specify color when ordering.

15¼" DEEP				ALL CABINETS ARE 21¾" WIDE		18" DEEP			
Catalog No.	Shpg. Wt. Lbs.	Use Slide Length	Net Price (B)†	Overall Height	Panel Space	Catalog No.	Shpg. Wt. Lbs.	Use Slide Length	Net Price (B)†
POR-3	18	14"	$31.85	5⅞"	3½"	POR-318	20	16"	$34.40
POR-5	20	14"	34.35	7⅝"	5¼"	POR-518	22	16"	38.85
POR-7	22	14"	36.45	9⅜"	7"	POR-718	24	16"	39.00
POR-8	24	14"	38.80	11⅛"	8¾"	POR-818	26	16"	40.65
POR-10	26	14"	42.30	12⅞"	10½"	POR-1018	29	16"	46.30
POR-12	28	14"	45.45	14⅝"	12¼"	POR-1218	31	16"	50.40
POR-14	32	14"	50.50	16⅜"	14"	POR-1418	35	16"	56.00
POR-17	40	14"	60.30	19⅛"	17½"	POR-1718	44	16"	66.35
POR-21	44	14"	65.50	23⅝"	21"	POR-2118	48	16"	74.25
POR-26	45	14"	70.45	28⅝"	26¼"	POR-2618	49	16"	77.90
POR-31	50	14"	74.25	33⅞"	31½"	POR-3118	55	16"	82.65
POR-35	55	14"	78.55	37⅜"	35"	POR-3518	60	16"	87.45



EACH MULTIPLE SECTION (MOR Series) comprises 6 pieces as shown.



EXAMPLE:
One Double POR-1218 consists of one POR-1218 and one MOR-1218.
One Triple POR-8 consists of one POR-8 and two MOR-8.

MULTIPLE SECTION FOR DESK INSTRUMENT CABINETS

Cabinets can be joined together to make multiple units by means of a center frame section which is bolted to the top cross pieces and base. Rigidly constructed of 16 ga. steel and finished to match POR units. When ordering multiple units specify number of units, such as Double, Triple, etc.

15¼" DEEP					18" DEEP		
Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	Overall Height	Panel Space	Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
MOR-3	16	$22.20	5⅞"	3½"	MOR-318	18	$23.30
MOR-5	17	23.25	7⅝"	5¼"	MOR-518	19	25.70
MOR-7	18	24.45	9⅜"	7"	MOR-718	20	27.20
MOR-8	19	25.70	11⅛"	8¾"	MOR-818	21	28.60
MOR-10	20	29.50	12⅞"	10½"	MOR-1018	23	32.60
MOR-12	21	31.85	14⅝"	12¼"	MOR-1218	24	35.00
MOR-14	23	35.50	16⅜"	14"	MOR-1418	26	39.15
MOR-17	31	42.30	19⅞"	17½"	MOR-1718	34	46.65
MOR-21	33	45.90	23⅜"	21"	MOR-2118	37	50.85
MOR-26	34	49.65	28⅝"	26¼"	MOR-2618	38	55.00
MOR-31	36	51.95	33⅞"	31½"	MOR-3118	40	57.95
MOR-35	40	55.00	37⅜"	35"	MOR-3518	44	60.70

†See quantity discount schedule on page 1.

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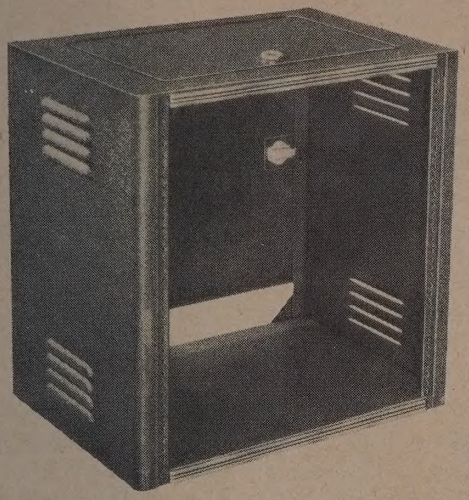
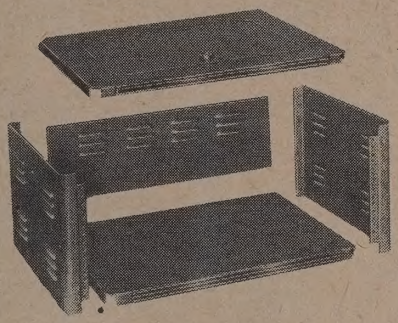
PREMIER DESK CABINET RACKS



DCR SERIES
(Welded)

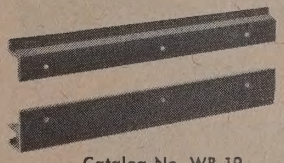


DRK SERIES
(Knocked Down)

15¼" and 18" DEEP FOR STANDARD 19" WIDE PANEL

- Piano type hinges are used on the top doors, which are provided with snap catches.
- Front vertical corners are rounded and the top and bottom are trimmed with chrome finished moulding.
- Rigidly constructed of #16 gauge cold rolled sheet steel.
- Panels fit into a ¼" recess so that the edges are not exposed.
- Panel mounting holes are tapped for 10-32 machine screws on E.I.A. spacings (⅝-⅝-½).
- DRK is identical to DCR except shipped knocked down with all necessary hardware for easy assembly. On these models the bolts are not visible from the outside and have the same appearance as the welded models.
- Gussets welded at bottom of rear on Models 170-350 for additional strength.
- Finished in Gray Hammertone.

WALL MOUNTING BRACKETS



Catalog No. WB-19

FOR MOUNTING DESK CABINET RACKS ON WALL—REMOVE REAR DOOR AND USE WALL MOUNTING BRACKETS.

Sold in sets only.
Finished in Gray Hammertone.
Shipping Weight 2½ lbs.

NOT APPLICABLE ON DCR-70 THROUGH DCR-140

21¾" WIDE x 15¼" DEEP

	Catalog No.	Net Price (B)†	Catalog No.	Net Price (B)†	Overall Height	Panel Space	Shpg. Wt. Lbs.	Use Slide Length*
WITH DOOR ON TOP ONLY	DCR-70	$17.75	DRK-70	$19.45	8¾"	7"	22	14"
	DCR-80	18.90	DRK-80	20.60	10½"	8¾"	24	14"
	DCR-100	20.70	DRK-100	22.40	12¼"	10½"	26	14"
	DCR-120	23.05	DRK-120	24.75	14"	12¼"	28	14"
	DCR-140	24.80	DRK-140	26.50	15¾"	14"	32	14"
WITH DOOR ON TOP AND REAR	DCR-170	30.10	DRK-170	31.80	19¼"	17½"	40	14"
	DCR-190	31.90	DRK-190	33.60	21"	19¼"	42	14"
	DCR-210	33.05	DRK-210	34.75	22¾"	21"	44	14"
	DCR-260	35.45	DRK-260	37.15	28"	26¼"	45	14"
	DCR-310	37.80	DRK-310	39.50	33¼"	31½"	50	14"
	DCR-350	40.20	DRK-350	41.90	36¾"	35"	55	14"

21¾" WIDE x 18" DEEP

	Catalog No.	Net Price (B)†	Overall Height	Panel Space	Shpg. Wt. Lbs.	Use Slide Length*
WITH DOOR ON TOP ONLY	DCR-1880	$21.75	10½"	8¾"	26	16"
	DCR-18100	23.80	12¼"	10½"	29	16"
	DCR-18120	26.50	14"	12¼"	31	16"
	DCR-18140	28.50	15¾"	14"	35	16"
WITH DOOR ON TOP AND REAR	DCR-18170	34.60	19¼"	17½"	44	16"
	DCR-18190	36.70	21"	19¼"	46	16"
	DCR-18210	38.00	22¾"	21"	48	16"
	DCR-18260	40.75	28"	26¼"	49	16'
	DCR-18310	43.50	33¼"	31½"	55	16"
	DCR-18350	46.25	36¾"	35"	60	16"

†See quantity discount schedule on page 1.

*Use Slide Adapter Kit (Cat. No. SAK-35) for rear mounting. (See Page 26)

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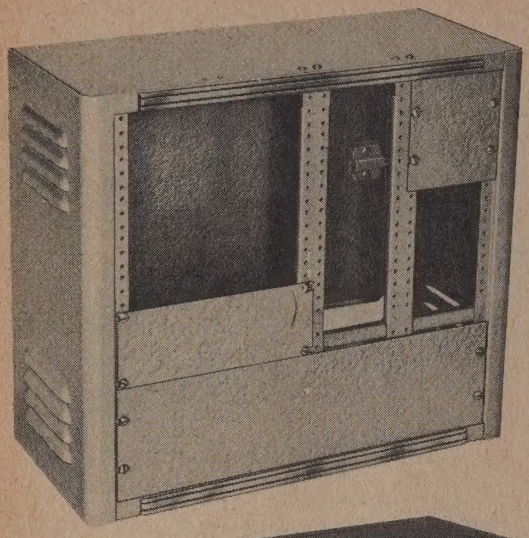
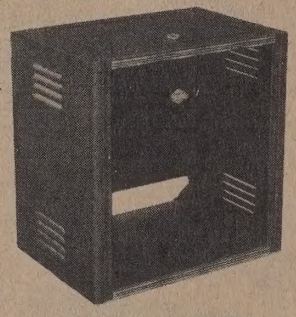
PREMIER 12" DEEP MINIATURE DESK CABINET RACKS





MDK SERIES
Shown with panels, horizontal (DH Series) and vertical (DV Series) dividers assembled.

MODU-RAK®

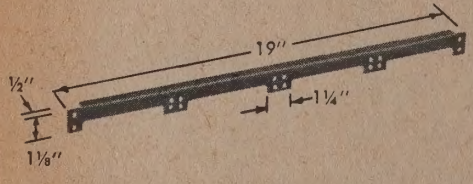
FOR STANDARD 19" RACK PANELS

- Front vertical corners are rounded and the top and bottom are trimmed with red striped chrome moulding.
- Rigidly constructed of #16 gauge cold rolled sheet steel.
- Panels fit into a recess so that the edges are not exposed.
- Panel mounting holes are tapped for 10-32 machine screws on E.I.A. Spacings (⅝-⅝-½").
- Rear doors have snap catches.
- Assembly hardware is not visible from the outside.
- FINISHED IN GRAY HAMMERTONE. Available in other finishes at additional cost.
- SHIPPED KNOCKED DOWN WITH ALL NECESSARY HARDWARE FOR EASY ASSEMBLY.

21¾" WIDE x 12" DEEP

	Catalog No.	Overall Height	Available Panel-Space	Shpg. Wt. Lbs.	Net Price (B)†
WITH REMOVABLE REAR PANEL	MDK-50	7"	5¼ x 19"	16	$14.90
	MDK-70	8¾"	7 x 19"	20	16.05
	MDK-80	10½"	8¾ x 19"	21	17.00
	MDK-100	12¼"	10½ x 19"	23	19.00
	MDK-120	14"	12¼ x 19"	25	21.35
	MDK-140	15¾"	14 x 19"	29	23.10
WITH REAR DOOR	MDK-170	19¼"	17½ x 19"	36	28.40
	MDK-210	22¾"	21 x 19"	39	31.35
	MDK-260	28"	26¼ x 19"	40	33.75
	MDK-280	29¾"	28 x 19"	41	35.00

ACCESSORIES FOR SUBDIVIDING ANY 19" WIDE PANEL SPACE INTO MODULAR UNITS

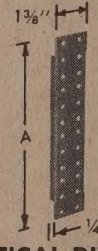


HORIZONTAL DIVIDERS

- Holes punched to accommodate vertical dividers (DV Series) which subdivides the panel space into 9½" and 4¾" widths.
- Made of #16 gauge steel.
- Finished in Gray Hammertone.

Catalog No.	Dimensions	Net Price (B)†
DH-19	19 x 1⅛"	$4.80
DH-95	9½ x 1⅛"	3.90

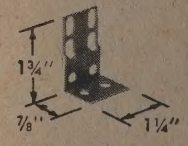
†See quantity discount schedule on page 1.



VERTICAL DIVIDERS

- Two rows of 10-32 tapped holes punched on E.I.A. Spacings.
- Made of No. 16 gauge steel.
- Finished in gray Hammertone.

Cat. No.	"A" Available Panel Mtg. Space	Net Price (B)†
DV-5	5¼"	$1.35
DV-7	7"	1.80
DV-8	8¾"	2.25
DV-10	10½"	2.75
DV-12	12¼"	2.90
DV-14	14"	3.20
DV-17	17½"	4.20
DV-21	21"	5.05
DV-26	26¼"	6.35
DV-28	28"	6.55



ANGLE BRACKETS

- Punched to accommodate vertical dividers.
- Made of No. 16 gauge steel.
- Finished in gray hammertone.

Cat. No.	Net Price (B)†	sold in pairs only
AB-2	$1.60	

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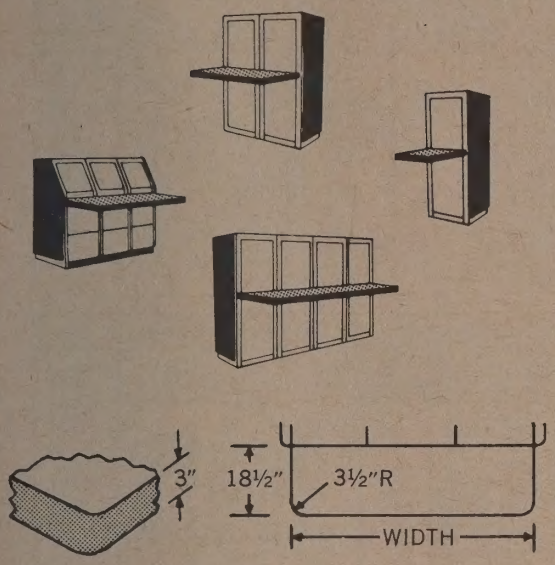
PREMIER ACCESSORIES



ONE PIECE LAMINATED PLASTIC TOP WORK WRITING SHELVES

For ALL MODULAR FRAMES

- Gray linen weave laminated plastic bonded to ¾" plywood
- Other standard laminated plastic colors or patterns available
- 3" self edged laminated plastic skirt on 3 sides
- Supplied with 3½ x 19" formed panel, channels and brackets

TO FIT 22" DEEP FRAMES		Depth	Width	TO FIT 25½" DEEP FRAMES	
Cat. No.	Net Price (A)†			Cat. No.	Net Price (A)†
For 1 Frame (FA MSF, or PRXA Series) or 1 Sloped Front Frame (FS Series)					
OFT-2218-22	$ 82.38	18½"	22"	OFT-2218-255	$ 83.21
For 2 Frames (FA MSF, or PRXA Series) or 2 Sloped Front Frames (FS Series) Side By Side					
OFT-4418-22	102.44	18½"	44"	OFT-4418-255	103.48
For 3 Frames (FA MSF, or PRXA Series) or 3 Sloped Front Frames (FS Series) Side By Side					
OFT-6618-22	120.28	18½"	66"	OFT-6618-255	121.48
For 4 Frames (FA MSF, or PRXA Series) or 4 Sloped Front Frames (FS Series) Side By Side					
OFT-8818-22	151.41	18½"	88"	OFT-8818-255	152.93

SIZES OTHER THAN SHOWN AVAILABLE ON REQUEST

NOTE: ONE PIECE laminated plastic shelves available for use with semi-circular arrangements when used with Wedge Frames.

FORMICA WRITING PANELS

19" and 24" WIDE —½" THICK

Gray Linen Weave Pattern laminated plastic bonded to plywood as top surface; Unfinished laminated plastic bonded to bottom surface.

19" WIDE

Cat. No.	Panel Space	Fits into	Net Price (A)†
FWP-1019	10½ x 19"	WW-15-22 & WW-15-255	$ 7.93
FWP-1419	14 x 19"	WW-18-22 & WW-18-255	8.87
FWP-1719	17½ x 19"	WW-22-22 & WW-22-255, WTO-22-22 & Top Panel Space of CPF-101, CPF-102, MSF-21-22, MSF-28-22	10.27
FWP-2119	21 x 19"	WTO-22-255, WW-255-22, WW-255-255, MSF-21-255, MSF-28-255	12.13
FWP-2919	29¾ x 19"	CPF-101-34, WTO-22-34	16.80

24" WIDE

Cat. No.	Panel Space	Fits into	Net Price (A)†
FWP-1024	10½ x 24"	WW-2715-22, WW-2715-255	$ 9.33
FWP-1424	14 x 24"	WW-2718-22, WW-2718-255	11.20
FWP-1724	17½ x 24"	WW-2722-22, WW-2722-255, WTO-27-22 & Top Panel Space of CPF-103 & CPF-104	12.13
FWP-2124	21 x 24"	WTO-27-255, WW-27-255, WW-27-255-255	15.87

FORMED PANELS—½" DEEP 19" and 24" WIDE

BLANK

LOUVRED

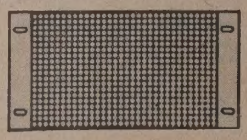
- Made of one piece of No. 16 gauge steel, with edges formed for overall depth of ½"
- Each panel has only 2 mounting holes on each side.
- Finished in Gray Hammertone.

BLANK

19" WIDE Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	Height	24" WIDE Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
FP-119	1½	$ 1.45	1¾"	FP-124	2	$ 1.70
FP-319	2	1.55	3½"	FP-324	3	1.85
FP-519	2½	1.75	5¼"	FP-524	3½	2.15
FP-719	3	2.00	7"	FP-724	4	2.50
FP-819	4	2.50	8¾"	FP-824	5	3.05
FP-1019	5	3.10	10½"	FP-1024	6	3.70
FP-1219	6	3.55	12¼"	FP-1224	7	4.25
FP-1419	6½	4.20	14"	FP-1424	7½	4.80
FP-1519	7	4.65	15¾"	FP-1524	8	5.40
FP-1719	7½	5.15	17½"	FP-1724	8½	6.05
FP-1919	8	5.65	19¼"	FP-1924	9	6.55
FP-2119	9	6.05	21"	FP-2124	10	7.25
FP-2219	10	6.70	22¾"	FP-2224	11	8.10
FP-2619	11	7.50	26¼"	FP-2624	12	9.20
FP-2819	12	8.25	28"	FP-2824	13	9.75
FP-4219	18	13.60	42"	FP-4224	20	16 35

LOUVRED

FPL-719	3	$ 4.20	7"	FPL-724	4	$ 5.10
FPL-819	4	4.85	8¾"	FPL-824	5	5.85
FPL-1019	5	5.45	10½"	FPL-1024	6	6.40
FPL-1219	6	6.00	12¼"	FPL-1224	7	7.20
FPL-1419	6½	6.45	14"	FPL-1424	7½	7.75
FPL-1719	7½	7.60	17½"	FPL-1724	8½	9.15
FPL-2119	9	9.40	21"	FPL-2124	10	11.30
FPL-2219	10	10.20	22¾"	FPL-2224	11	11.55
FPL-2619	11	10.55	26¼"	FPL-2624	12	12.70
FPL-2819	12	11.20	28"	FPL-2824	13	13.40
FPL-4219	18	19.05	42"	FP-4224	20	23.00



PERFORATED

- Made of 20 ga. steel with 1/16" diameter holes on 3/16" staggered centers.
- Edges formed on 4 sides.
- Overall depth ½".
- Each panel has mounting holes on each side.
- Finished in Gray Hammertone.

PERFORATED

19" WIDE Cat. No.	Shpg. Wt. Lbs.	Net Price (B)	Height	24" WIDE Cat. No.	Shpg. Wt. Lbs.	Net Price (B)
PFP-119	1¼	$ 3.10	1¾"	PFP-124	2¼	$ 4.00
PFP-319	1¾	3.40	3½"	PFP-324	2¾	4.35
PFP-519	2¼	3.70	5¼"	PFP-524	3¼	4.85
PFP-719	2¾	4.60	7"	PFP-724	3¾	6.20
PFP-819	3¾	5.30	8¾"	PFP-824	4¾	7.15
PFP-1019	4¾	6.15	10½"	PFP-1024	5¾	7.75
PFP-1219	5¾	6.95	12¼"	PFP-1224	6¾	9.15
PFP-1419	6¼	7.65	14"	PFP-1424	7¼	9.90
PFP-1519	6¾	8.25	15¾"	PFP-1524	7¾	10.95
PFP-1719	7¼	8.85	17½"	PFP-1724	8¼	11.75
PFP-1919	7¾	9.80	19¼"	PFP-1924	8¾	13.00
PFP-2119	8¾	10.50	21"	PFP-2124	9¾	13.90
PFP-2619	10¾	13.50	26¼"	PFP-2624	11¾	16.05
PFP-2819	11¾	14.30	28"	PFP-2824	12¾	17.65

†See quantity discount schedule on page 1.

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PREMIER STEEL & ALUMINUM RACK PANELS

BLANK RACK PANELS
9½" - 19" - 24" - 30" WIDTHS

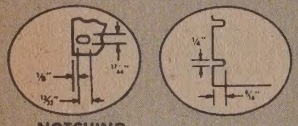
MATERIAL

Steel ..... #12 Ga. (.104) Cold Rolled
Aluminum ..... ⅛" thick—5005-H36 Alloy
Aluminum ..... 3/16" thick—6061-T6 Alloy

FINISHED IN GRAY HAMMERTONE
Available in other finishes at additional cost.

MASKED ALUMINUM PANELS

Made of bright natural aluminum covered on both sides with special self-adhesive paper. Drilling or milling can be done on paper in place, affording complete damage protection. Paper is removed simply by peeling.



NOTCHING

All panels are notched according to E.I.A. Standards.

All panels have open slots except the 1¾" and 3½" high, which have closed slots for rigidity.

*NOTE: All panels are cut 1/32" less than nominal height.

MODIFICATIONS AVAILABLE

- ¼" thick Aluminum Panels available in 6061T6 alloy.
- Special finishes, including unfinished.
- Special Heights.

19" WIDE

*Nominal Height	Masked Aluminum—⅛" Thick Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	Masked Aluminum—3/16" Thick Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
1¾"	MAP-119	½	$ 1.25	MAP-119-36	¾	$ 2.50
3½"	MAP-319	1	1.90	MAP-319-36	1½	3.35
5¼"	MAP-519	1½	2.60	MAP-519-36	2½	4.50
7"	MAP-719	2	3.10	MAP-719-36	3	5.85
8¾"	MAP-819	2½	3.75	MAP-819-36	3¾	6.60
10½"	MAP-1019	3	4.70	MAP-1019-36	4½	7.60
12¼"	MAP-1219	3½	5.35	MAP-1219-36	5	9.50
14"	MAP-1419	4	6.15	MAP-1419-36	6	11.25
15¾"	MAP-1519	4	6.90	MAP-1519-36	6	12.50
17½"	MAP-1719	4¾	7.70	MAP-1719-36	7	13.90
19¼"	MAP-1919	5	8.50	MAP-1919-36	7½	15.15
21"	MAP-2119	6	9.25	MAP-2119-36	9	16.60
26¼"	MAP-2619	7½	11.85	MAP-2619-36	11½	21.40
31½"	MAP-3119	8½	13.60	MAP-3119-36	13½	24.50
35"	MAP-3519	10	16.10	MAP-3519-36	15	30.25

*Nominal Height	Painted Aluminum—⅛" Thick Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	Painted Aluminum—3/16" Thick Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	Painted Steel—No. 12 Gauge Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
1¾"	ARP-119	½	$ 1.40	APR-119-36	¾	$ 2.35	RP-119	1	$ 1.35
3½"	ARP-319	1	1.90	ARP-319-36	1½	3.35	RP-319	2	1.60
5¼"	ARP-519	1½	2.65	ARP-519-36	2½	4.35	RP-519	3	1.90
7"	ARP-719	2	3.25	ARP-719-36	3	5.40	RP-719	4	2.25
8¾"	ARP-819	2½	3.75	ARP-819-36	3¾	6.50	RP-819	5¼	2.70
10½"	ARP-1019	3	4.75	ARP-1019-36	4½	8.10	RP-1019	6¼	3.15
12¼"	ARP-1219	3½	5.60	ARP-1219-36	5	9.40	RP-1219	7¼	3.70
14"	ARP-1419	4	6.35	ARP-1419-36	6	10.50	RP-1419	8¼	4.15
15¾"	ARP-1519	4	7.10	ARP-1519-36	6	12.10	RP-1519	9	4.70
17½"	ARP-1719	4¾	7.75	ARP-1719-36	7	13.40	RP-1719	10½	5.15
19¼"	ARP-1919	5	8.50	ARP-1919-36	7½	14.60	RP-1919	12	5.70
21"	ARP-2119	6	9.40	ARP-2119-36	9	16.10	RP-2119	12½	6.15
26¼"	ARP-2619	7½	12.65	ARP-2619-36	11½	19.25	RP-2619	15½	8.10
31½"	ARP-3119	8½	16.50	ARP-3119-36	13½	22.70	RP-3119	19	9.90
35"	ARP-3519	10	18.35	ARP-3519-36	15	25.20	RP-3519	22	11.25

24" WIDE

Aluminum—⅛" Thick Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	*Nominal Height	Steel—No. 12 Gauge Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
ARP-324	1¼	$ 3.00	3½"	RP-324	2¼	$ 2.25
ARP-524	2	4.20	5¼"	RP-524	3½	2.70
ARP-724	2½	5.20	7"	RP-724	4½	3.00
ARP-824	3	6.05	8¾"	RP-824	6	3.50
ARP-1024	3½	7.60	10½"	RP-1024	7	4.15
ARP-1224	4	8.80	12¼"	RP-1224	8	5.00
ARP-1424	4½	10.15	14"	RP-1424	9	5.85
ARP-1524	5	11.55	15¾"	RP-1524	10	6.65
ARP-1724	5½	12.35	17½"	RP-1724	11	7.50
ARP-1924	6	13.45	19¼"	RP-1924	12	8.35
ARP-2124	6½	14.95	21"	RP-2124	13	9.15

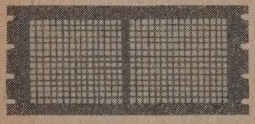
30" WIDE

Aluminum—⅛" Thick Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	*Nominal Height	Steel—No. 12 Gauge Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
ARP-330	1½	$ 4.05	3½"	RP-330	3	$ 2.80
ARP-530	2¼	5.70	5¼"	RP-530	4½	3.40
ARP-730	3	7.00	7"	RP-730	6	3.75
ARP-830	3¼	8.15	8¾"	RP-830	8	4.40
ARP-1030	4½	10.25	10½"	RP-1030	9¼	5.20
ARP-1230	5	11.90	12¼"	RP-1230	10¼	6.25
ARP-1430	6	13 70	14"	RP-1430	12	7.30
ARP-1530	6½	15.60	15¾"	RP-1530	13½	8.30
ARP-1730	7	16 70	17½"	RP-1730	15	9.40
ARP-1930	7½	18.15	19¼"	RP-1930	18	10.45
ARP-2130	9	20 05	21"	RP-2130	19	11.45

ALUMINUM 9½" Wide
Made of ⅛" Thick Aluminum

Cat. No.	*Nominal Height	Shpg. Wt.	Net Price (B)†
ARP-195	1¾"	¼	$1.20
ARP-395	3½"	½	1.70
ARP-595	5¼"	¾	2.20
ARP-795	7"	1	2.75
ARP-895	8¾"	1¼	3.25
ARP-1095	10½"	1½	4.05
ARP-1295	12¼"	1¾	4.20
ARP-1495	14"	2	5.25

PANELS—19" WIDE
FINISHED IN GRAY HAMMERTONE
Made of 12 Gauge Steel

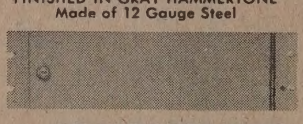


3/8" Sq. Perforations

GRILLE PANELS

Cat. No.	Grille Size	*Nom. Hgt.	Shpg. Wt. Lbs.	Net Price (B)†
GRP-601	3⅞x13⅜"	5¼"	2	$4.35
GRP-602	3⅞x13⅜"	7"	2	4.55
GRP-603	5⅞x13⅜"	8¾"	2½	5.40
GRP-604	*3⅞x13⅜"	8¾"	2½	5.50
GRP-605	7⅞x13⅜"	10½"	2½	5.95
GRP-606	*5⅞x13⅜"	10½"	2½	5.95
GRP-607	*7⅞x13⅜"	12¼"	3	6.40

*Allows 3½" space at bottom for chassis mounting.



SIDE HINGED DOOR PANELS

Can be used for left or right hand opening. Supplied with a quick turn fastener. Full height piano hinge welded to panel. Cylinder lock (HW-6) available at additional cost.

Cat. No.	Hgt.	Net Price (B)†
SHP-319	3½"	$ 4.60
SHP-519	5¼"	4.80
SHP-719	7"	5.30
SHP-819	8¾"	5.70
SHP-1019	10½"	6.10
SHP-1219	12¼"	6.60
SHP-1419	14"	7.15
SHP-2119	21"	11.30

SPEAKER PANELS
Perforated metal is spot-welded behind the opening.

Cat. No.	Hgt.	Spkr. Size	Hole Size	Shpg. Wt. Lbs.	Net Price (B)†
SRP-819	8¾"	6"	4⅜"	6	$4.15
SRP-1019	10¼"	8"	6½"	8	5.15
SRP-1219	12¼"	10"	8½"	9	6.15
SRP-1419	14"	12"	11"	10	7.15

†See quantity discount schedule on page 1.

PREMIER PAGE 20

PREMIER METAL PRODUCTS COMPANY / A Division of Sunshine Mining Company

Net

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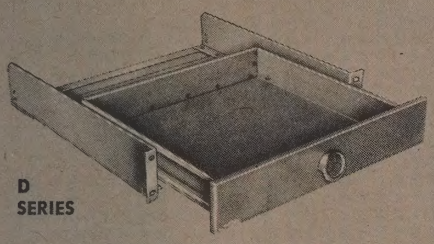
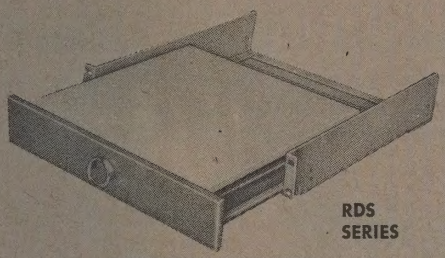
PREMIER ACCESSORIES



D SERIES

SLIDING DRAWERS



RDS SERIES

SLIDING SHELVES

SLIDING DRAWERS and SHELVES

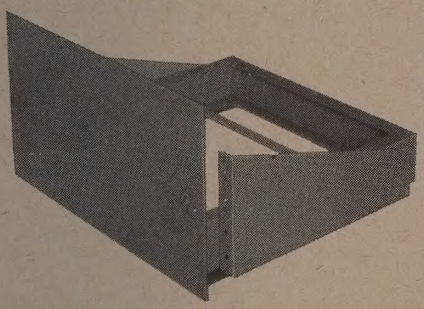
Constructed of welded 16 ga. steel and suspended on roller bearing slides. Units are designed for use with all modular enclosures (CPF, FS, MSF, POR, RMX, FDX Series). Units are furnished with drawer pull and complete hardware for easy installation. Sliding shelf supplied with Gray Linen Weave laminated plastic top surface. Cylinder lock (HW-6) available at additional cost. Finished in all Premier standard colors. Please specify.

SLIDING DRAWERS

Cat. No.	Formed Panel Size	Drawer Size W D H	Shpg. Wt. Lbs.	Net Price (A)†
	FOR 19" WIDE PANEL SPACE			
D-1916	10⅜x18⅞x½"	16⅛x16x6"	23	$25.28
D-2016	6⅞x18⅞x½"	16⅛x16x6"	22	24.24
D-2316	3⅜x18⅞x½"	16⅛x16x2 11/16"	16	22.88
	FOR 24" WIDE PANEL SPACE			
D-2116	10⅜x23⅞x½"	21⅛x16x6"	25	30.32
D-2216	6⅞x23⅞x½"	21⅛x16x6"	24	29.04
D-2416	3⅜x23⅞x½"	21⅛x16x2 11/16"	17	25.28

SLIDING SHELVES

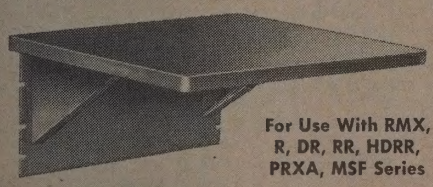
Cat. No.	Formed Panel Size	Shelf Size	Shpg. Wt. Lbs.	Net Price (A)†
	FOR 19" WIDE PANEL SPACE			
RDS-319-22	3⅜x18⅞x½"	16 3/16x15 15/16"	20	$32.40
	FOR 24" WIDE PANEL SPACE			
RDS-324-22	3⅜x23⅞x½"	21 3/16x15 15/16"	22	41.24



SLIDING DRAWERS TO FIT STANDARD 19" RACKS 15¼" AND 18" DEEP FOR RECORD TURNTABLES

Panel made of #12 gauge steel; chassis of 16 ga. steel and has a 1" flange on top and bottom to accommodate plywood for the record turntable. The chassis is mounted on ball-bearing suspension slides which can sustain 40 lbs. Drawer extends 11" from front of cabinet. Entire unit mounts on angle brackets which can be bolted on to the cabinet. Supplied knocked down with all necessary bolts for easy assembly. Locks in place by means of 2 latches. Finished in Light Gray enamel.

Cat. No.	Will Fit Rack No.	Panel Size	Chassis Size W D H	Shpg. Wt. Lbs.	Net Price (B)†
RD-10	R, DCR-18, RMX & FDX	10⅜x18⅞"	17x16x3"	15	$21.75
RD-12	R, DCR-18, RMX & FDX	12⅛x18⅞"	17x16x4"	18	24.10
RD-10-14	DCR, DRK, RMX & FDX, R, DCR-18	10⅜x18⅞"	17x14x3"	14½	21.55
RD-12-14	DCR, DRK, RMX & FDX, R, DCR-18	12⅛x18⅞"	17x14x4"	17	23.90



For Use With RMX, R, DR, RR, HDRR, PRXA, MSF Series

DESK PANELS TO FIT STANDARD 19" WIDE PANEL RACKS

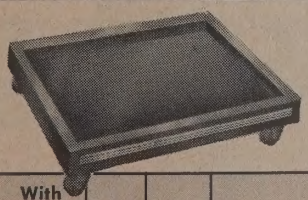
- Made of 16 gauge steel and bolted to a standard steel panel 10½"x19"
- Front corners are rounded.
- Finished in Light Gray enamel.
- SHIPPED KNOCKED DOWN WITH ALL NECESSARY HARDWARE FOR EASY ASSEMBLY.

Cat. No.	Width	Depth	Shpg. Wt. Lbs.	Net Price (B)†
DP-1016	22"	16"	20	$22.55
DP-1020	22"	20"	22	23.05

SHELVES TO FIT 19" WIDE PANEL RACKS

Made of one piece of 16 ga. Cold Rolled Steel, 1" high. Holes are punched on sides for mounting to rack. Finished in Light Gray enamel.

Cat. No.	Will Fit Rack No.	Shelf Size	Shpg. Wt. Lbs.	Net Price (B)†
RS-1106	All 15¼" DCR & DRK Racks	12x21 5/16	7	$3.90
RS-1107	R & DR Racks	15x21 13/16	7	4.85
RS-1108	FXR	13x21 13/16	7	4.35
RS-1111	MDK Series—21¾" wide	10x21 5/16	6	3.80
RS-1113	18" deep DCR & SDR Racks	16x21 5/16	7	5.00



ROLLER TRUCKS FOR RACKS

Made from 1 piece of 16 ga. Cold Rolled Steel. Supplied with either 2" or 3" diameter casters and bolts for easy assembly. Finished in Light Gray enamel with a red striped chrome molding. One piece roller trucks for multiple racks available upon request.

With 2" Dia. Casters Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	Will Fit Rack No.	Inside Dimensions	With 3" Dia. Casters Cat No.	Shpg. Wt. Lbs.	Net Price (B)†
RT-1100	22	$14.65	All 15¼" Racks	15¾x22¼"	RT-1100-3	24	$21.35
RT-1101	22	18.55	R, DR, FXR, 18" deep; RMX, FDX, DCR Racks	18¾x22¾"	RT-1101-3	24	25.25
RT-1103	23	22.75	24" deep FDX & RMX Racks	22½x24½"	RT-1103-3	25	29.45
RT-1110	25	34.25	RMX-27 & FDX-27 Series	27½x24½"	RT-1110-3	27	40.95
RT-1111	30	44.10	RMX-7030	33½x24½"	RT-1111-3	32	50.80

†See quantity discount schedule on page 1.

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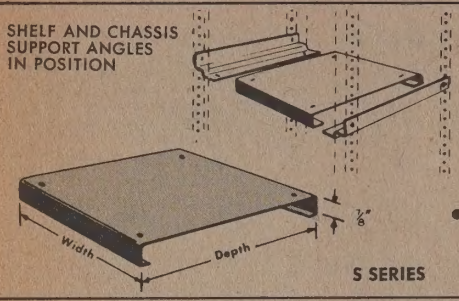
PREMIER ACCESSORIES



S SERIES

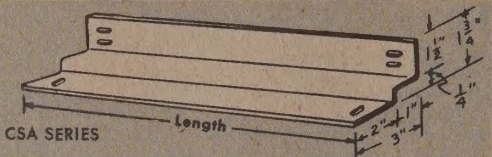
SHELVES

- Made of 16 gauge steel.
- Finished in Light Gray enamel.

Cat No.	Depth	Width	To Fit Frames		Net Price (A)†
S-18-22	14¼"	17½"	22W x 18"D	18" FDX, RMX	$3.20
S-22-22	20⅜"	17½"	22W x 22"D		4.04
S-27-22	20⅜"	22½"	27W x 22"D	FA, FS	5.24
S-22-255	23⅞"	17½"	22W x 25½"D	CPF, MSF	4.76
S-27-255	23⅞"	22½"	27W x 25½"D		5.60
S-22-18	16⅜"	17½"	22W x 18"D	PRXA	3.48
S-27-18	16⅜"	22½"	27W x 18"D	PRXA	4.28
S-33-18	16⅜"	28½"	33W x 18"D	PRXA	5.64
S-22-24	22⅜"	17½"	22W x 24"D	PRXA	4.48
S-27-24	22⅜"	22½"	27W x 24"D	PRXA	5.64
S-33-24	22⅜"	28½"	33W x 24"D	PRXA	7.00
S-33-22	20⅜"	28½"	33W x 24"D	RMX-7030	6.52

CHASSIS SUPPORT ANGLES

- Made of No. 12 ga. steel
- Accommodates Shelf (S Series)
- Finished in Light Grey enamel
- Mounts to side legs of Panel Mounting Angles



CSA SERIES

Cat. No.	Length	To Fit Frames	Net Price (A)†
CSA-16	14⅛"	18" deep FDX, RMX	$4.16
CSA-18	16⅛"	18" deep PRXA, CPF	4.40
CSA-22	20⅛"	22" deep FA, CPF, MSF, FS & 24" deep FDX & RMX	4.92
CSA-24	22⅛"	24" deep PRXA	5.16
CSA-255	23⅝"	25½" deep FA, CPF, FS & MSF	5.40

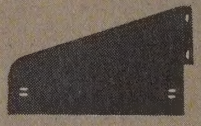
PANEL MOUNTING ANGLES—1¼" x 1¼"

Made of #12 Ga. (.104) thick steel punched on E.I.A. spacings (¾-⅜-½) on both legs. 10-32 screws and captive nuts supplied. Angles with tapped holes available. Light Gray enamel.

Panel Mounting Angles			
Cat. No.	Height	Net Price (A)†	To Fit Racks
PMA-212	21"	$ 7.12	CPF-101, 103, MSF-21-22 & MSF-21-255
PMA-282	28"	9.32	CPF-102, 104, MSF-28-22 & MSF-28-255
PMA-362	36¾"	10.80	PRXA, FDX, RMX
PMA-422	42"	12.36	FA, PRXA, FS, FDX, RMX
PMA-522	52½"	14.24	FA, PRXA
PMA-612	61¼"	15.44	FA, PRXA, FDX, RMX
PMA-702	70"	17.36	FA, PRXA, FDX, RMX
PMA-772	77"	18.68	FA, PRXA, FDX, RMX
PMA-802	80½"	19.64	POC

CHASSIS MOUNTING BRACKETS

- Constructed of 16 gauge steel
- Finished in Light Gray enamel
- Sold in pairs only



STANDARD TYPE

	Cat. No.	H.	D.	Shpg. Wt. Lbs.	Net Price (B)†
Notched for 3" Chassis	CB-78	6½"	8"	1½	$1.40 pr.
	CB-710	6½"	10"	1¾	1.75 pr.
	CB-711	6½"	11"	2	1.85 pr.
	CB-712	6½"	12"	2⅛	2.00 pr.
	CB-713	6½"	13"	2¼	3.10 pr.
	CB-717	6½"	17"	3	3.40 pr.
Notched for 4"Chassis	CB-810	8½"	10"	2⅜	2.55 pr.
	CB-813	8½"	13"	3	2.70 pr.

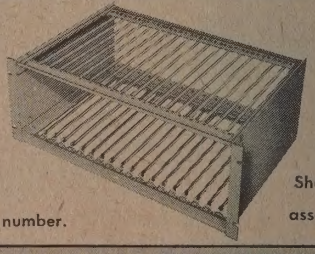
TRIANGULAR TYPE

Cat. No.	H.	D.	Ship. Wt. Lbs.	Net Price (B)†
TCB-55	5"	5"	1	$1.25 pr.
TCB-77	7"	7"	1	1.50 pr.
TCB-99	9"	9"	1½	1.80 pr.

PRINTED CIRCUIT CARD HOLDERS

Fit Standard 19" and 24" Wide Racks for 5¼" — 7" — 8¾" Panel Heights

- To accommodate Printed Circuit Cards from 4½" to 14½" deep.
- 19" wide holder accommodates up to 32 cards, 24" wide holder up to 42 cards.
- Frames made of 16 gauge steel and finished in light gray enamel.
- Supplied with two rear connector panels made of ⅛" aluminum with natural finish.
- Holes tapped 4-40 on .200" centers.
- Unit shipped unassembled with all necessary hardware.
- Guide (G Series) sold in pairs and ordered as a separate item.
- Guides are supplied with push rivets for easy positioning.
- Guides made of 14 gauge caustic etched and iridited aluminum as per MIL-C-5541.
- Vinyl coated guides for insulation available at additional cost. If required, specify letter V after number.



PCH Series Shown with Guides (G Series) assembled in position

FOR 19" WIDE PANEL SPACE						FOR 24" WIDE PANEL SPACE		
	Frame — 19" Wide			Frame — 24" Wide		Guides		
Panel Height	Rear Connector Panels 1½"x16¹¹⁄₁₆" Cat. No.	Net Price (A)†	Overall Depth	Rear Connector Panels 1½"x21¹¹⁄₁₆" Cat. No.	Net Price (A)†	Cat. No.	Length	Net Price (A)†
5¼"	PCH-519-6	$11.75	6¼"	PCH-524-6	$14.20	G-6	4⅛"	$ .32
	PCH-519-8	12.75	8¼"	PCH-524-8	15.20	G-8	6⅛"	.36
	PCH-519-10	13.70	10"	PCH-524-10	16.15	G-10	7⅞"	.44
	PCH-519-12	14.70	12"	PCH-524-12	17.20	G-12	9⅞"	.52
	PCH-519-14	15.70	14"	PCH-524-14	18.10	G-14	11⅞"	.56
	PCH-519-16	16.70	16"	PCH-524-16	19.10	G-16	13⅞"	.60
7"	PCH-719-6	12.75	6¼"	PCH-724-6	15.20	G-6	4⅛"	.32
	PCH-719-8	13.70	8¼"	PCH-724-8	16.15	G-8	6⅛"	.36
	PCH-719-10	14.70	10"	PCH-724-10	17.15	G-10	7⅞"	.44
	PCH-719-12	15.70	12"	PCH-724-12	18.10	G-12	9⅞"	.52
	PCH-719-14	16.70	14"	PCH-724-14	18.60	G-14	11⅞"	.56
	PCH-719-16	17.65	16"	PCH-724-16	20.10	G-16	13⅞"	.60
8¾"	PCH-819-6	13.70	6¼"	PCH-824-6	16.15	G-6	4⅛"	.32
	PCH-819-8	14.70	8¼"	PCH-824-8	17.20	G-8	6⅛"	.36
	PCH-819-10	15.70	10"	PCH-824-10	18.10	G-10	7⅞"	.44
	PCH-819-12	16.70	12"	PCH-824-12	19.10	G-12	9⅞"	.52
	PCH-819-14	17.65	14"	PCH-824-14	20.10	G-14	11⅞"	.56
	PCH-819-16	18.60	16"	PCH-824-16	21.05	G-16	13⅞"	.60

†See quantity discount schedule on page 1.

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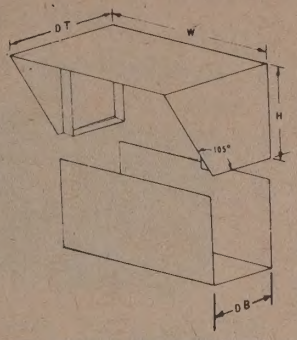
PREMIER CASES

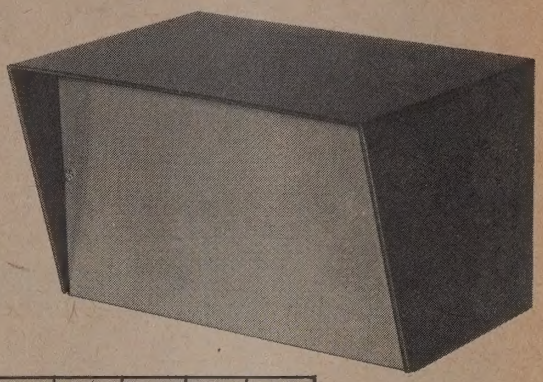
SLOPING COMPACT CASES

Give your equipment a new look with the new DESIGNER SERIES!

In addition to the standard two-tone metallic gray enamelled finish, the DESIGNER SERIES is now available with a black outer shell and a choice of Blue or Gold inserts. Other color combinations are optional. Specify insert color when ordering.

- Two piece case made of 20 gauge cold rolled steel
- Top of unit extends beyond the front panel
- Supplied with necessary screws for assembly





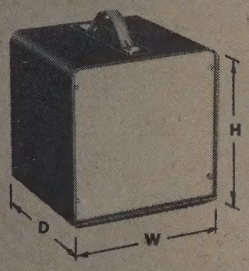
DSCC — Designer Series
SCC — Standard Series

*For BLUE, or GOLD INSERTS ADD B or G after Designer Series Number.

OVERALL DIMENSIONS

Standard Cat. No.	Net Price (B)†	Designer Cat. No.*	Net Price (B)†	Height (H)	Width (W)	Depth Top (DT)	Depth Bottom (DB)
SCC-3000	$6.90	DSCC-3000	$7.50	6″	10″	7″	5¾″
SCC-3001	7.55	DSCC-3001	8.20	7″	12″	8″	5⅛″
SCC-3002	3.90	DSCC-3002	4.30	3″	8″	5″	3⅞″
SCC-3003	4.20	DSCC-3003	4.70	5″	5″	5″	3⅜″

COMPACT CASES
with ROUNDED CORNERS ON BOTH FRONT AND REAR OF TOP

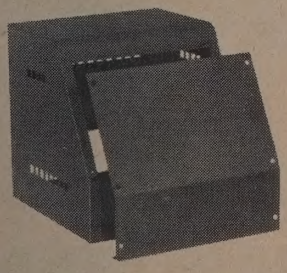


DDC—Designer Series
CC—Standard Series

In addition to the standard two-tone metallic gray enamelled finish, the DESIGNER SERIES is now available with a black outer shell and a choice of Blue or Gold inserts. Other color combinations are optional. Specify insert color when ordering.

- Body made of 20 gauge steel
- Front panel made of .064 aluminum
- Recessed handle supplied on top
- Perforated sides for ventilation
- Base supplied with four rubber feet
- Panel fits into ½″ recess
- Two-inch opening in rear for leads
- Supplied with necessary screws for assembly
- Welded construction

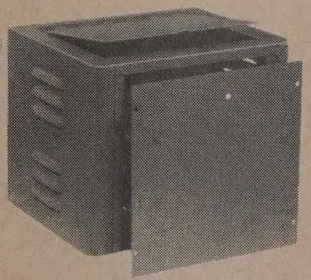
Standard Cat. No.	Net Price (B)†	Designer Cat. No.*	Net Price (B)†	OVERALL DIMENSIONS Depth	Width	Height	Use Chassis	Wt. in Lbs.
CC-2000	$11.00	DCC-2000	$12.00	8″	6⅛″	8″	ACH 426 5x7x2	4
CC-2001	12.05	DCC-2001	13.10	8″	8⅛″	8″	ACH 403 7x7x2	5
CC-2002	12.85	DCC-2002	14.05	8″	10⅛″	8″	ACH 404 7x9x2	6
CC-2003	14.00	DCC-2003	15.25	12″	8⅛″	9″	ACH 405 7x11x2	7
CC-2004	16.95	DCC-2004	18.45	18″	11⅛″	11″	ACH 415 10x17x3	10
CC-2005	19.25	DCC-2005	21.00	18″	14⅛″	12″	ACH 423 13x17x3	11



SLOPING FRONT

Cabinet has rounded top corners and a removable front panel. Back of cabinet is perforated and has opening for leads. Constructed of 20 gauge steel. Finished in Gray Hammertone.

Catalog No.	H. W. D.	Use Chassis No.	Shpg. Wt. Lbs.	Net Price (B)†
SFC-500	8x 8⅛x 8″	CH-403	6	$ 6.80
SFC-501	8x10⅛x 8″	CH-404	7	7.65
SFC-502	8x14⅛x 8″	CH-406	8	8.15
SFC-503	9x18⅛x 8″	CH-409	10	10.75
SFC-504	12x18⅛x12″	CH-415	14	13.75



HINGED TOP ROUNDED CORNER TYPE

Cabinet has front vertical rounded corners and a removable front panel. Back of cabinet is louvred and has opening for leads. Constructed of 20 gauge steel. Finished in Gray Hammertone.

Catalog No.	H. W. D.	Panel Size	Use Chassis No.	Shpg. Wt. Lbs.	Net Price (B)†
HTC-200	8x10 3/16x 8″	8x 8″	CH-403	6	$ 7.15
HTC-201	8x12 3/16x 8″	8x10″	CH-404	6½	7.65
HTC-202	8x16 3/16x 8″	8x14″	CH-406	11	8.65
HTC-203	9x17 3/16x11″	9x15″	CH-413	6½	16.25
HTC-204	12x20 3/16x12″	12x18″	CH-415	13½	18.25
HTC-205	8x14 3/16x 8″	8x12″	CH-405	7¼	8.15

†See quantity discount schedule on page 1.

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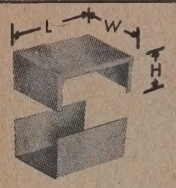
PREMIER CASES



A two piece case made of 16 Ga. (.051) aluminum. Supplied with screws. Natural Aluminum Finish or Gray Hammertone.

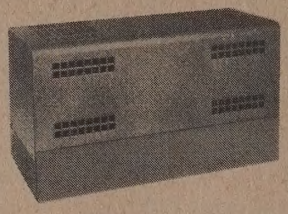
ALUMINUM MINIATURE UTILITY CASES

Natural Aluminum Cat. No.	Net Price (B)†	L.	W.	H.	Shpg. Wt. Lbs.	Gray Hammertone Cat. No.	Net Price (B)†
AMC-1000*	$ .75	2¾"	2⅛"	1⅝"	¼	PMC-1000*	$ .90
AMC-1001*	.85	3¼"	2⅛"	1⅝"	¼	PMC-1001*	1.00
AMC-1002*	.85	4"	2⅛"	1⅝"	¼	PMC-1002*	1.00
AMC-1003	1.00	4"	2¼"	2¼"	⅜	PMC-1003	1.15
AMC-1004	1.10	5"	2¼"	2¼"	½	PMC-1004	1.25
AMC-1005	1.25	5"	4"	3"	½	PMC-1005	1.40
AMC-1006	1.15	5¼"	3"	2⅛"	1	PMC-1006	1.35
AMC-1007	1.50	6"	5"	4"	¾	PMC-1007	1.75
AMC-1008	1.65	7"	5"	3"	1⅛	PMC-1008	1.90
AMC-1009	2.50	8"	6"	3½"	1½	PMC-1009	2.75
AMC-1010	3.10	10"	6"	3½"	1¾	PMC-1010	3.35
AMC-1011	3.40	12"	7"	4"	2	PMC-1011	3.85
AMC-1012	4.10	17"	5"	4"	½	PMC-1012	4.60
AMC-1013	1.25	10"	2"	1⅝"	¼	PMC-1013	1.40
AMC-1014	1.65	12"	2½"	2¼"	¼	PMC-1014	1.90
AMC-1015	1.10	4"	2"	2¾"	⅝	PMC-1015	1.25
AMC-1016	1.10	4¼"	2¼"	1½"	¼	PMC-1016	1.25

*18 Gauge (.040)

AMPLIFIER FOUNDATIONS

STANDARD TYPE



TOP COVER has perforations, rounded corners and is 6" high. Finished in Gray Hammertone.

CHASSIS constructed of one piece with corners spot-welded. Finished in Gray Hammertone.

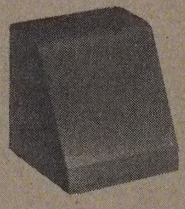
Cat. No.	Chassis Size	Shpg. Wt. Lbs.	Net Price (B)†
AF-510	5x10x3"	5	$ 7.70
AF-615	6x14x3"	7	8.55
AF-1017	10x17x3"	11	10.75
AF-1317	13x17x3"	13	12.10

PERFORATED TYPE COVERS

TOP COVER made of perforated steel and has rounded corners with solid ends. 6" high except PC-57* Finished in Gray Hammertone.

Cat. No.	W.	D.	Use Chassis No.	Shpg. Wt. Lbs.	Net Price (B)†
*PC-57	7"	5"	ACH or CH-426	1	$4.35
PC-510	10"	5"	ACH or CH-401	1¾	4.45
PC-615	14"	6"	ACH or CH-402	2⅜	5.15
PC-717	17"	7"	ACH or CH-409	3	5.65
PC-1012	12"	10"	ACH or CH-412	3	5.80
PC-1017	17"	10"	ACH or CH-415	3¼	7.00

*4" high.

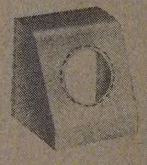


STEEL AND ALUMINUM SLOPING PANEL CASES

ROUND TOP CORNERS WITH SLOPING FRONT

20 gauge Steel Gray Hammertone Finish. 18 gauge (.040) Aluminum—Natural Aluminum finish.

Steel Cat. No.	W. D. H.	Shpg. Wt. Lbs.	Net Price (B)†	Aluminum Cat. No.	Net Price (B)†
SPC-1200	4 3/16x4 1/16x4 5/16	¾	$1.85	ASPC-1200	$2.35
SPC-1201	5 3/16x4 1/16x4 5/16	1	2.00	ASPC-1201	2.50
SPC-1202	6 3/16x4 1/16x4 5/16	1	2.15	ASPC-1202	2.65
SPC-1203	7 3/16x4 1/16x4 5/16	1½	2.35	ASPC-1203	2.85

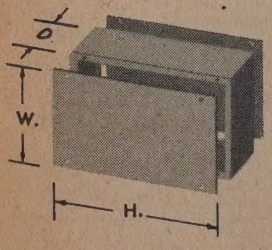


2 in 1 STEEL & ALUMINUM METER CASES

Center Hole for 2" meter (2 3/16" dia.) increases to 3" (2 13/16" dia). meter hole by simply removing a knock-out. Size: 4 3/16x4 5/16x4 1/16". Supplied with two ½" dia. knockouts. 20 gauge steel—Gray Hammertone Finish, 18 gauge (.040) Aluminum—Natural Aluminum Finish.

	Cat. No.	Shpg. Wt.	Net Price (B)†
ALUMINUM	ASPC-23	¾	$2.15
STEEL	SPC-23	¾	1.65

UTILITY CASES



ALUMINUM

Constructed of 16 ga. (.051) aluminum with ½" flanged edges, spot welded corners and two removable flat covers. Natural Aluminum finish or Gray Hammertone.

Natural Aluminum Cat. No.	Net Price (B)†	Size H.	W.	D.	Shpg. Wt. Lbs.	Gray Hammertone Cat. No.	Net Price (B)†
AC-442	$1.65	4"	4"	2"	½	PAC-442	$2.00
AC-453	1.75	4"	5"	3"	¾	PAC-453	2.10
AC-564	2.00	5"	6"	4"	1	PAC-564	2.50
AC-596	3.40	5"	9"	6"	1½	PAC-596	3.90
AC-666	2.65	6"	6"	6"	1½	PAC-666	3.10
AC-1276	4.65	12"	7"	6"	2¼	PAC-1276	5.35
AC-1597	6.40	15"	9"	7"	3½	PAC-1597	7.25
AC-695	3.25	6"	9"	5"	1½	PAC-695	3.75

STEEL

Constructed of 20 ga. sheet with ½" flanged edges, spot welded corners, and two removable flat covers. Finished in Gray Hammertone.

Cat. No.	H.	W.	D.	Shpg. Wt. Lbs.	Net Price (B)†
C-442	4"	4"	2"	⅞	$1.60
C-453	4"	5"	3"	1¼	1.65
C-564	5"	6"	4"	1¾	1.85
C-596	5"	9"	6"	3	2.85
C-666	6"	6"	6"	2¼	2.50
C-695	6"	9"	5"	3	2.90
C-754	7"	5"	4"	2	2.40
C-8101	10"	10"	8"	6	5.15
C-1276	12"	7"	6"	4½	4.00

†See quantity discount schedule on page 1.

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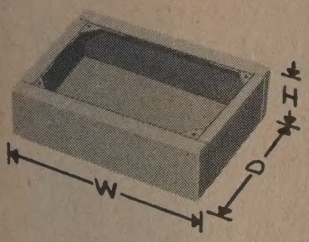
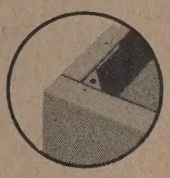
PREMIER STEEL and ALUMINUM CHASSIS





EXCLUSIVE PREMIER FEATURE!

View of Chassis Showing Gusset Spot-Welded in Corner.

STEEL AND ALUMINUM BLANK

Chassis are of one piece construction with gussets spot-welded to the bottom flanges for additional strength with prefabricated hole for mounting a bottom plate. Corners have rounded effect and single inside thickness for mounting components. Bottom edges are flanged in on four sides. Steel chassis are zinc plated and made of 20 gauge cold rolled steel, except those marked * which are of 16 gauge. Aluminum chassis are made of 18 gauge (.040) aluminum, except those marked * which are of 14 gauge (.064).

Natural Aluminum Finish.

ALUMINUM						STEEL		
Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†	Size D.	W.	H.	Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
ACH-400	½	$1.65	5½"	9½"	1½"	CH-400	1	$2.15
ACH-401	¾	2.10	5"	10"	3"	CH-401	1½	2.35
ACH-402	1	3.15	6"	14"	3"	CH-402	2½	2.65
ACH-403	½	1.90	7"	7"	2"	CH-403	1¼	2.15
ACH-404	½	2.00	7"	9"	2"	CH-404	1½	2.25
ACH-405	¾	2.15	7"	11"	2"	CH-405	1⅞	2.40
ACH-406	¾	2.25	7"	13"	2"	CH-406	2	2.60
ACH-407	1	3.60	7"	15"	3"	CH-407	2¾	3.10
ACH-408	1	3.15	4"	17"	3"	CH-408	2¼	2.85
ACH-409	1½	3.65	7"	17"	3"	CH-409	3⅛	3.35
ACH-410	1⅛	3.50	8"	17"	2"	CH-410	2¾	3.10
ACH-411	1½	3.85	8"	17"	3"	CH-411	5¼	3.40
ACH-412	1¼	3.65	10"	12"	3"	CH-412	2¾	3.10
ACH-413	1¼	3.90	10"	14"	3"	CH-413	3¼	3.15
ACH-414	1¼	3.85	10"	17"	2"	CH-414	3¼	3.15
ACH-415*	1⅞	4.35	10"	17"	3"	CH-415*	6	3.75
ACH-416*	2	5.85	10"	17"	4"	CH-416*	7½	4.75
ACH-417*	1¾	4.50	11"	17"	2"	CH-417*	5¼	4.15
ACH-418*	2	5.25	11"	17"	3"	CH-418*	6¼	4.65
ACH-419*	1⅞	4.65	12"	17"	2"	CH-419*	5	4.00
ACH-420*	2⅛	5.50	12"	17"	3"	CH-420*	7	4.75
ACH-421*	2⅞	6.35	12"	17"	4"	CH-421*	8½	5.10
ACH-422*	1⅞	4.75	13"	17"	2"	CH-422*	6	4.75
ACH-423*	2⅛	5.65	13"	17"	3"	CH-423*	7	5.35
ACH-424*	2½	6.90	13"	17"	4"	CH-424*	10	6.25
ACH-425	⅞	2.65	7"	11"	3"	CH-425	2¼	3.00
ACH-426	¼	1.65	5"	7"	2"	CH-426	1	1.85
ACH-427	1¼	3.75	8½"	15"	3"	CH-427	3	3.50
ACH-428	¼	1.90	5"	7"	3"	CH-428	1¼	2.35
ACH-429	¾	2.40	5"	13"	3"	CH-429	2	2.90
ACH-430	1	3.10	8"	12"	3"	CH-430	2½	3.00
ACH-431	¼	1.60	4"	6"	2"	CH-431	1	1.90
ACH-432	¼	1.85	4"	6"	3"	CH-432	1	2.50
ACH-433	⅞	2.65	7"	12"	3"	CH-433	2½	2.85
ACH-434	1	3.50	6"	17"	3"	CH-434	4	3.10
ACH-435*	2½	6.60	10"	23"	3"	CH-435*	10	5.00
ACH-436	¼	1.50	4"	6"	1½"	CH-436	¾	1.90
ACH-437	⅜	1.75	4"	8"	2"	CH-437	1	1.90
ACH-438*	3	11.60	17"	17"	4"	CH-438*	13	8.90
—	—	—	10"	17"	5"	CH-439*	8½	7.00
—	—	—	13"	17"	5"	CH-440*	11	7.75
ACH-441	1	2.65	8"	10"	2½"	CH-441	2½	2.60

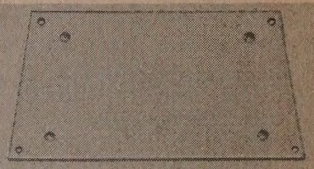
*Made of 14 gauge (.064) aluminum.

Chassis Mounting Brackets Available

*Made of 16 gauge steel.

†See quantity discount schedule on page 1.

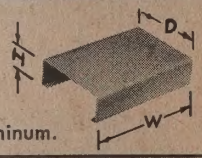
ALUMINUM AND STEEL BOTTOM PLATES



The bottom plates have holes to match the chassis and have 4 pressed dimples. Steel plates are zinc plated and made of 20 gauge steel. Aluminum plates made of 18 gauge (.040). Natural aluminum finish.

ALUMINUM			STEEL		
Cat. No.	Net Price (B)†	Size	Cat. No.	Shpg. Wt. Lbs.	Net Price (B)†
ABP-400	$1.00	5½x 9½"	BP-400	1	$1.00
ABP-401	1.00	5 x10"	BP-401	1	1.00
ABP-402	1.50	6 x14"	BP-402	1	1.50
ABP-403	1.00	7 x 7"	BP-403	1	1.00
ABP-404	1.00	7 x 9"	BP-404	1	1.00
ABP-405	1.15	7 x11"	BP-405	1	1.15
ABP-406	1.40	7 x13"	BP-406	2	1.40
ABP-407	1.50	7 x15"	BP-407	2	1.50
ABP-408	1.15	4 x17"	BP-408	2	1.15
ABP-409	1.60	7 x17"	BP-409	2	1.60
ABP-410	1.75	8 x17"	BP-410	2	1.75
ABP-412	1.65	10 x12"	BP-412	2	1.65
ABP-413	1.75	10 x14"	BP-413	2	1.75
ABP-414	1.90	10 x17"	BP-414	2	1.90
ABP-418	2.00	11 x17"	BP-418	3	2.00
ABP-419	2.40	12 x17"	BP-419	3	2.40
ABP-422	2.65	13 x17"	BP-422	3	2.65
ABP-423	1.00	5 x 7"	BP-423	1	1.00
ABP-424	1.15	5 x13"	BP-424	1	1.15
ABP-425	1.50	8 x12"	BP-425	2	1.50
ABP-426	1.00	4 x 6"	BP-426	1	1.00
ABP-427	1.35	7 x12"	BP-427	2	1.35
ABP-428	1.50	6 x17"	BP-428	2	1.50
ABP-429	2.90	10 x23"	BP-429	2	2.90
ABP-430	1.10	4 x 8"	BP-430	1	1.10
ABP-431	3.25	17 x17"	BP-431	4	3.25
ABP-432	2.15	8½x15"	BP-432	1½	2.15
ABP-433	1.25	8 x10"	BP-433	1	1.25

ALUMINUM OPEN END CHASSIS

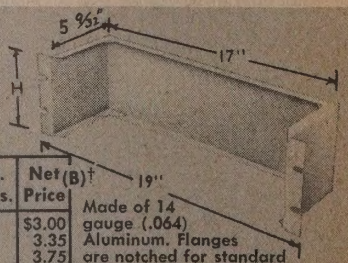


Made of 18 ga. (.040) Aluminum.

Cat. No.	D.	W.	H.	Shpg. Wt. Lbs.	Net Price (B)†
ACH-1350	2⅝"	2¾"	1¼"	¼	$.55
ACH-1351	1¾"	3⅛"	1 "	¼	.55
ACH-1352	3¼"	4½"	2"	¼	.65
ACH-1353	2¾"	4⅛"	1"	¼	.65
ACH-1354	3¾"	4⅛"	1½"	¼	.65
ACH-1355	3"	6⅛"	1¼"	¼	.75
ACH-1356	5¾"	4⅛"	1½"	¼	.80
ACH-1357	4"	3⅛"	1"	½	.65
ACH-1358	4"	4⅛"	1"	½	.75
ACH-1359	4"	5⅛"	1"	½	.75
ACH-1360	4"	6⅛"	1"	½	.80

ALUMINUM VERTICAL PANEL CHASSIS

To FIT 19" STANDARD RACKS



Cat. No.	H.	Shpg. Wt. Lbs.	Net (B)† Price
ACH-1200	1¾"	¾	$3.00
ACH-1201	3½"	1¾	3.35
ACH-1202	5¼"	1½	3.75
ACH-1203	7"	2	4.25
ACH-1204	8¾"	2¼	5.10
ACH-1205	10½"	2¾	5.90
ACH-1206	12¼"	3	6.60
ACH-1207	14"	3¼	7.15

Made of 14 gauge (.064) Aluminum. Flanges are notched for standard rack mounting. All chassis depths are 5 9/32". Gussets are spot welded in each corner for greater strength. Etched finish.

FOR SIDE HINGED PANELS (SHP SERIES)

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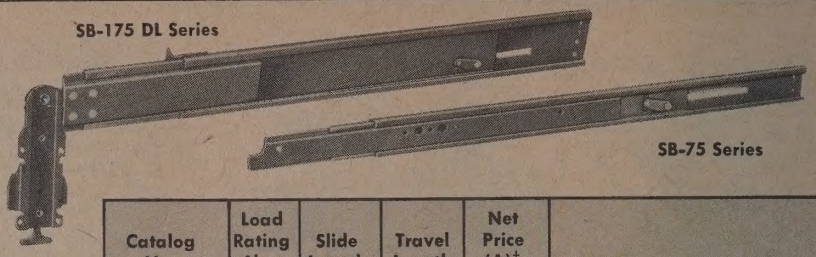
PREMIER CHASSIS SLIDES

SOLID BEARING SLIDES

RATED 75 lb. and 175 lb. LOADS

- TILT and NON-TILT MODELS.
- EXCLUSIVE "QUICK DISCONNECT" allows for immediate removal of chassis.
- SB-75 Series carry 75 lbs. fully extended. SB-175 Series carry 175 lbs. fully extended.
- Made of high strength cold rolled steel.
- Withstands 100 hours salt spray.
- Slide mounts standard 17" wide chassis.
- 3 telescoping members allow full accessibility for instant servicing.
- SB-75 Series—.386 horizontal side space adjustable ±1/32. SB-175 Series—.398 horizontal side space adjustable ±1/32.
- Finish: Electro zinc plated, chromate treated and completely coated with Molybdenum Disulphide lubricant.
- SB-175-DL Series have detent locks which allow chassis to be tilted either up or down and locked at 90° for easy servicing.



Catalog No.	Load Rating Lbs.	Slide Length	Travel Length	Net Price (A)†
SB-75-14	75	14"	14½"	$18.36
SB-75-16	75	16"	14½"	18.64
SB-75-20	75	20"	18½"	18.97
SB-75-22	75	22"	22½"	19.93
SB-75-24	75	24"	22½"	20.96
SB-175-14	175	14"	14½"	37.45
SB-175-16	175	16"	18½"	38.04
SB-175-20	175	20"	22½"	38.41
SB-175-22	175	22"	24"	39.55
SB-175-24	175	24"	26½"	40.24
SB-75-DL-14	75	14"	15"	36.72
SB-75-DL-16	75	16"	17"	37.37
SB-75-DL-20	75	20"	21"	38.95
SB-75-DL-22	75	22"	23"	39.71
SB-75-DL-24	75	24"	25"	40.51
SB-175-DL-14	175	14"	14½"	55.80
SB-175-DL-16	175	16"	18¼"	56.39
SB-175-DL-20	175	20"	22¼"	57.96
SB-175-DL-22	175	22"	26¼"	59.08
SB-175-DL-24	175	24"	26¼"	59.99

14" length slides fit 15¼" deep POR (DCR, DRK, FXR)*, RMX, FDX

16" length slides fit 18" deep PRXA, POR (R, DCR)*

20" length slides fit FS, 22" deep CPF & FA, MSF, RMX, FDX

22" length slides fit 24" deep PRXA

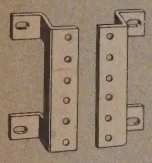
24" length slides fit 25½" deep FA & FS, MSF, CPF

*Slide Adapter Kit (Cat. No. SAK-35) required for rear mounting on all models in parenthesis.

SLIDE TILT CONVERSION KIT

Converts straight slides to tilting type on SB Series.

	Net Price (A)†
STK-75 (For SB-75 Series)	$4.44
STK-175 (For SB-175 Series)	5.56



SLIDE ADAPTER KIT

For BB and SB SERIES

Required for rear mounting on DR, R, DCR, DRK and FXR models.

- Mounts to inside rear flange by drilling 4 holes.
- Made of No. 12 gauge steel and tapped 10-32 on E.I.A. spacings (5/8-5/8-1/2).
- Finished in Gray Hammertone.

Kit includes 2 brackets, four 10-32 screws and keps.

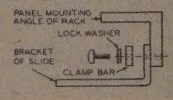
Cat. No. SAK-35
Net Price (A)† $4.00

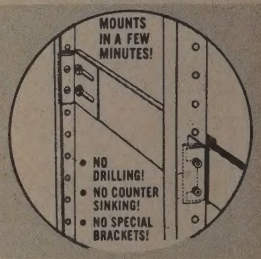
RAPID INSTALLATION

For BB and SB SERIES SLIDES

- MOUNTS TO TAPPED HOLES OF FRONT AND REAR PANEL MOUNTING ANGLES
- SIMPLE ADJUSTMENT OF CHASSIS SLIDE ASSEMBLY FROM OUTSIDE OF FRAME

Head of Screw on Inside of Rack. Screw Flush with Front Edge of Angles when Assembled



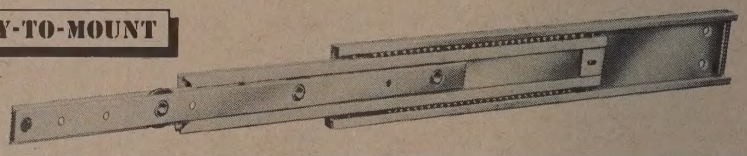


ALUMINUM BALL BEARING SLIDES

READY-TO-MOUNT

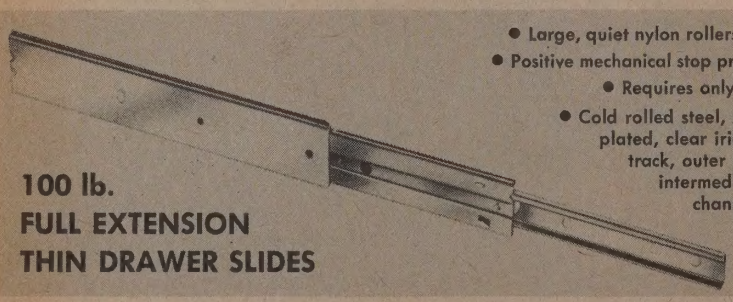
HIGH STRENGTH ANODIZED ALUMINUM

- EXCLUSIVE "QUICK DISCONNECT" allows for immediate removal of chassis.
- Carries load of 100 lbs. when fully extended.
- Glides smoothly on stainless steel ball bearings.
- 5/16" horizontal side space adjustable ±1/16.
- 1 5/8" vertical side space.
- 3 telescoping members.
- Allows full accessibility for instantaneous servicing.
- Slide mounts standard 17" wide chassis.
- Slide locks in open position.
- Supplied with all necessary hardware for immediate installation.



Catalog No.	Load Rating Lbs.	Slide Length	Travel Length	Will Fit Racks	Net Price (A)†
BB-100-14	100	14"	13"	15¼" deep POR (DCR, DRK, FXR)*, RMX, FDX	$57.60
BB-100-16	100	16"	15"	18" deep PRXA, POR (R, DCR)*	59.48
BB-100-20	100	20"	19"	FS, 22" deep CPF & FA, MSF, RMX, FDX	63.12
BB-100-22	100	22"	21"	24" deep PRXA	64.96
BB-100-24	100	24"	23"	25½" deep FA & FS, MSF, CPF	66.84

*Slide adapter kit (Cat. No. SAK-35) required for rear mounting on all models in parenthesis.



100 lb. FULL EXTENSION THIN DRAWER SLIDES

- Large, quiet nylon rollers and steel balls glide to full extension
- Positive mechanical stop prevents slide from being over-extended
- Requires only ½ inch mounting space on each side
- Cold rolled steel, zinc plated, clear iridite track, outer and intermediate channels

Catalog No.	Load Rating Lbs.	Slide Length	Travel Length	Net Price (A)†
SFE-100-14	100	14"	14"	$ 8.68
SFE-100-16	100	16"	16"	9.20
SFE-100-20	100	20"	20"	10.28
SFE-100-22	100	22"	22"	10.80

†See quantity discount schedule on page 1.

PREMIER PAGE 26

PREMIER METAL PRODUCTS COMPANY / A Division of Sunshine Mining Company

Net

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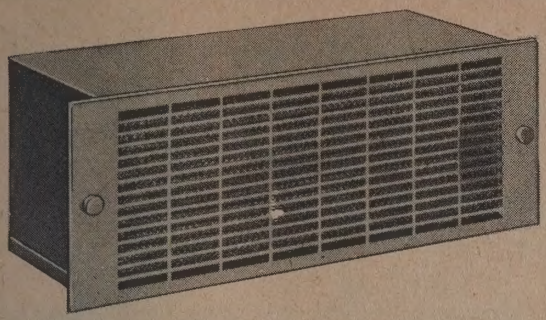
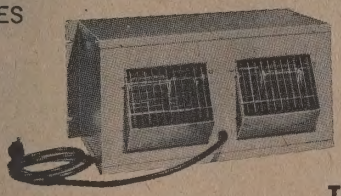
PREMIER PANEL MOUNTED BLOWERS



PMB SERIES



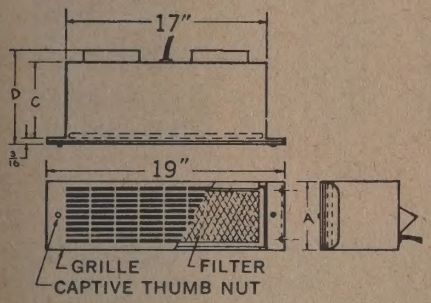
REAR VIEW

PREM-O-KOOL

MAXIMUM COOLING with MINIMUM SPACE

- Permanently lubricated motors with lubricant temperature range from −29°C to +148°C.
- Permanent type washable filter—easily removable from front.
- Low noise level with minimum of vibration.
- Standard E.I.A. notching.
- Grille supplied with 2 captive thumb nuts.
- Units furnished with 3'6" lead with molded male plug.
- Performance data prepared by impartial, independent testing laboratory.
- Motors are 115 Volt 50/60 cycle, single phase AC.
- Housing and grille made of cold rolled steel and finished in gray hammertone.

BASE RECESSED BLOWERS utilizing "dead space" in base are available. Units use less panel space. Unit performance ratings are the same as PMB Series.



Units available to fit Standard 24" wide panel space. Prices upon request.

Grille finished to match color of Premier cabinets or frames at no additional cost.

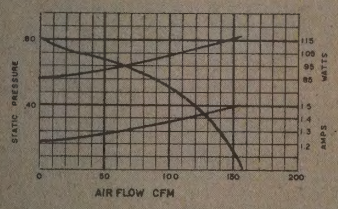
†See quantity discount schedule on page 1.

TO FIT STANDARD 19" WIDE PANEL SPACE

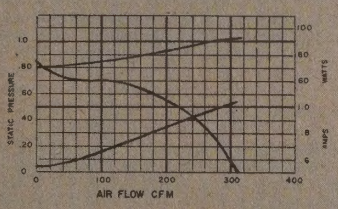
CATALOG NO.	PMB-5-150	PMB-5-300	PMB-7-360	PMB-7-475	PMB-8-525	PMB-10-820
CFM at 0" S.P.	150	300	360	475	525	820
PANEL HEIGHT (A)	5¼"	5¼"	7"	7"	8¾"	10½"
FILTER, Permanent	16⅝x4⅞ x½"	16⅝x4⅞ x½"	16⅝x6¾ x½"	16⅝x6¾ x½"	16⅝x8⅜ x½"	16⅝x10⅛ x½"
DEPTH OF ENCLOSURE ONLY (C)	6¼"	6¼"	8¼"	8¼"	10"	11½"
OVERALL DEPTH including outlets (D)	7"	7"	10"	10"	11⅝"	13"
MOTOR						
RPM	3000	3200	1500	3250	1500	1500
WATTS	120	86	82	180	180	275
VOLTS	115	115	115	115	115	115
CYCLES	50/60	50/60	50/60	50/60	50/60	50/60
AMPS	1.5	.9	1.1	1.7	1.9	2.8
TYPE	Ball bearing shaded pole	Ball bearing permanent split capacitor	Ball bearing shaded pole	Ball bearing permanent split capacitor	Ball bearing permanent split capacitor	Ball bearing permanent split capacitor
SHIPPING WT. LBS.	14	15	24	25	26	35
NET PRICE (A)†	$116.80	$134.96	$155.20	$164.80	$184.00	$205.87

PERFORMANCE

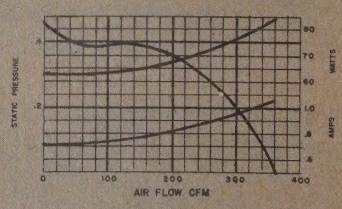
PMB-5-150



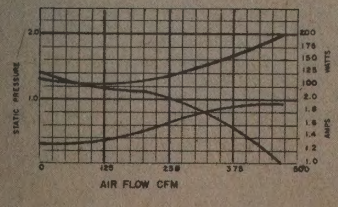
PMB-5-300



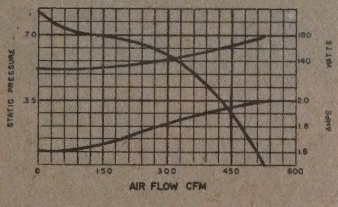
PMB-7-360



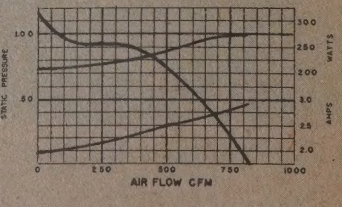
PMB-7-475



PMB-8-525



PMB-10-820



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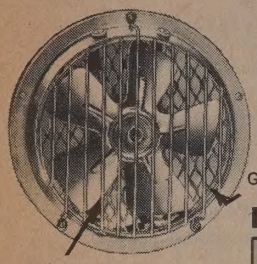
PREMIER FANS AND BLOWERS

PREM-O-KOOL EXHAUST AND INTAKE FANS

Patent No. 3,019,965. Other Patents Pending.

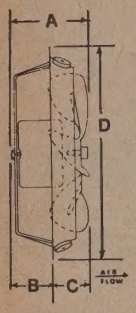


PREM-O-KOOL fans are available for exhausting air from cabinets (EF Series) and for drawing air into cabinets (IF Series).

- Motors are 115 volts 50/60 cycle single phase AC.
- Minimum space required.
- Supplied with 18" lead.
- Fan and motor assembly shock mounted for minimum noise and vibration.
- Permanently lubricated ball bearing, shaded pole motors with low temperature rise.
- Easily interchangeable accessories for flexibility of mounting in cabinets.
- Cut-out and mounting holes for fans can be provided on any Premier rack or cabinet at slight additional cost.

EXHAUST FANS

EF Series



Cat. No.	Net Price (A)†	CFM	Motor Watts	RMP	Fan Blade Dia.	A	B	C	D	Hole Dia. Required
EF-165	$51.76	165	20	1650	6½"	2⅞"	1⅝"	1¼"	8½"	7⅜"
EF-220	46.20	220	25	1550	6½"	3¼"	1⅝"	1⅝"	8½"	7⅜"
EF-300	49.00	300	65	3000	6½"	4⅛"	2⅝"	1½"	8½"	7⅜"
EF-400	56.24	400	46	1460	8"	3⅝"	1⅞"	1¾"	10½"	9¼"
EF-550	60.68	550	90	1600	9"	4⅜"	2⅛"	2¼"	11½"	10⅝"
EF-750	65.12	750	105	1560	10"	4⅜"	2⅛"	2¼"	12½"	11⅝"

ACCESSORIES FOR EXHAUST FANS

GUARDS

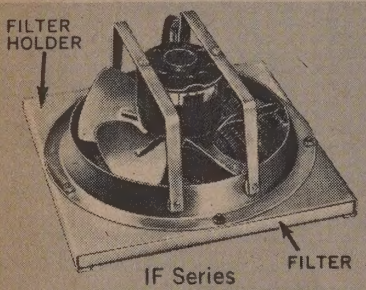
Cat. No.	Used with Fan	Dia.	Depth	Net Price (A)†
GU-6	EF165, 220, 300	6¾"	1⅞"	$3.00
GU-8	EF400	8¼"	2⅜"	3.00
GU-9	EF 550	9¼"	2⅜"	3.68
GU-10	EF 750	10¼"	2⅜"	4.24

GRILLES

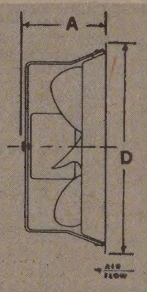
Cat. No.	Used with Fan	Dia.	Net Price (A)†
GR-6	EF165, 220, 300	8½"	$2.44
GR-8	EF400	10½"	2.44
GR-9	EF550	11½"	3.00
GR-10	EF750	12½"	3.68

SLEEVES

Cat. No.	Used with Fan	Dia.	Depth	Net Price (A)†
SL-6	EF165, 220, 300	8½"	1¾"	$3.68
SL-8	EF400	10½"	2"	3.68
SL-9	EF550	11½"	2⅜"	4.24
SL-10	EF 750	12½"	2⅜"	4.80



IF Series



INTAKE FANS

Cat. No.	Net Price (A)†	CFM	Motor Watts	RPM	Fan Blade Dia.	Dimensions A	Dimensions D	Hole Diam. Required
IF-160	$51.80	160	20	1650	6½"	2⅞"	8½"	7⅜"
IF-180	46.24	180	25	1550	6½"	3¼"	8½"	7⅜"
IF-300	48.99	300	65	3000	6½"	4⅛"	8½"	7⅜"
IF-360	56.23	400	46	1460	8"	3¾"	10½"	9¼"
IF-540	60.68	540	90	1600	9"	4⅜"	11½"	10⅝"
IF-740	64.76	740	105	1560	10"	4⅜"	12½"	11⅝"

ACCESSORIES FOR INTAKE FANS

FILTERS Permanent washable type ½" thick

Cat. No.	Used with Fan	Size	Net Price (A)†
FL-6	IF160, 180, 300	8⅜" Sq.	$3.01
FL-8	IF360	10⅜" Sq.	3.01
FL-9	IF540	11⅜" Sq.	3.68
FL-10	IF740	12⅜" Sq.	3.68

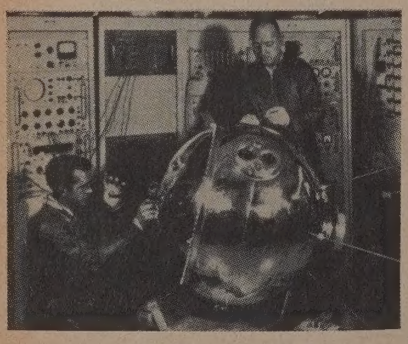
FILTER HOLDERS

Cat. No.	Used with Fan	Size	Depth	Net Price (A)†
FH-6	IF160, 180, 300	8⅜" Sq.	⅝"	$4.80
FH-8	IF360	10⅜" Sq.	⅝"	4.80
FH-9	IF540	11⅜" Sq.	⅝"	6.13
FH-10	IF740	12⅜" Sq.	⅝"	7.24

PREMIER CABINETS AND RACKS

FA, PRXA, FS, RMX, FDX, R, DR, DCR, DRK, SDR, POR and FXR models may be supplied with one round and 5 mounting holes to accommodate Exhaust and Intake Fans, at additional cost.

†See quantity discount schedule on page 1.



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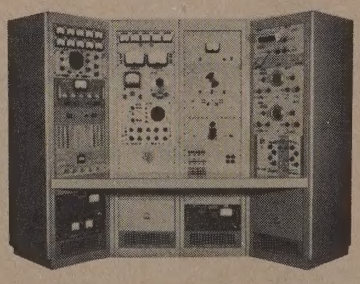

Photo Courtesy Texas Instruments Incorporated

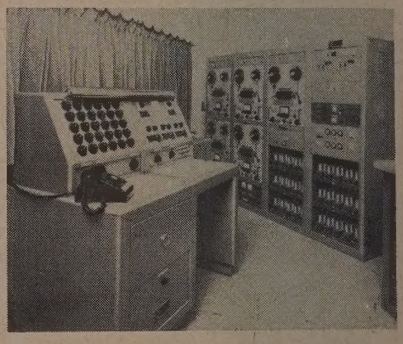

Photo Courtesy Armed Forces Staff College

TYPICAL INSTALLATIONS OF PREMIER MODULAR SYSTEMS

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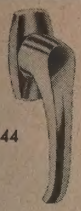
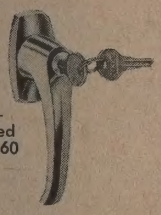
PREMIER HARDWARE

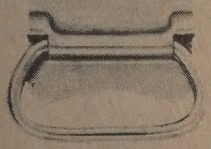
HW-1
NON-LOCKING HANDLE
Chrome plated
Net Price $2.44
(A)†



HW-2
ROUND CHROME PLATED HANDLE
Net Price $1.08
(A)†

HW-3
LOCKING HANDLE with 2 keys—Chrome plated
Net Price $4.60
(A)†





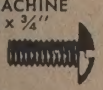
HW-5
DROP HANDLE
Finished in Gray Hammertone. Also available in Black Wrinkle or Brown Hammertone.
Net Price $1.40
(A)†

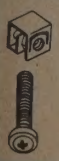
HW-6
CYLINDER LOCK with 2 keys
Nickel plated
Net Price $2.92
(A)†

HW-7
BLACK NYLON HANDLE with 2 screws
Net Price $.96
(A)†

HW-8
QUICK TURN FASTENER
Nickel plated
Net Price $1.44
(A)†

HW-13
TRUSS HEAD MACHINE SCREWS 10/32 x ¾"
Nickel plated
Net Price (A)† .40 bag of 40





HW-14
10/32 x 1" PHILLIPS WASHER HEAD SCREWS and CAPTIVE NUTS.
Packaged 20 ea./bag
Net Price $1.48
bag of 20
(A)†

HEAVY DUTY OUTLET BOXES
For Internal Rack Mounting

- Completely wired with circuit breaker. Ready for use
- Supplied with 6' Neoprene cord set with molded plug
- Rated at 15 Amperes. 130 Volts continuous duty
- "U" ground outlets—soldered connections
- Mounting centers 6"
- 1½" wide x 1⅛" deep
- Mounts to crosspiece on PRXA, FA, FDX & RMX frames
- Steel case finished in Gray Hammertone

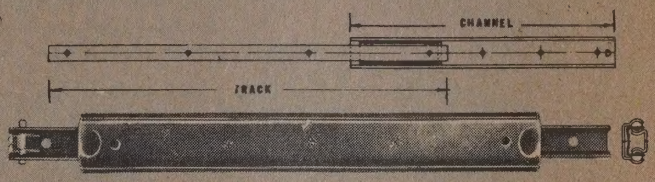
Model No.	Length	No. of Outlets	Rack Panel Space	Price Net (A)†
OB-161	56¾"	9	61¼"†	$20.04
OB-170	65½"	10	70"†	23.40
OB-177	72½"	11	77"†	25.84

SPRAY CAN LACQUER

Available in 2 Colors 12 oz. CAN

Cat. No.	To Match	Net Price (B)†
GHL-102	Premier Gray Hammertone	$2.65
BHL-103	Premier Brown Hammertone	3.35

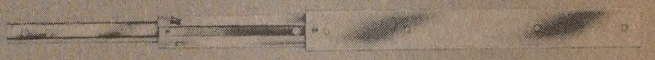
ECONOMY SLIDES



"A" SERIES

- May be mounted on side or underneath.
- Ball bearing spacer and patented silencer spring eliminates slide noise and vibration.
- All members made of 16 gauge cold rolled steel.
- Black oxidized finish.

Catalog No.	Slide Travel	Channel Length	Track Length	Load Cap.	Net Price (B)†
A-50-13	9"	11"	13"	50	$4.20
A-40-15	11"	11"	15"	40	4.30
A-30-165	12½"	11"	16½"	30	4.65
A-30-185	14½"	11"	18½"	30	4.95



50 LB. — FULL EXTENSION 3 PC. DRAWER SLIDE

- 50 lb. load rating • 3 piece full extension
- Ball bearings and nylon rollers
- Positive mechanical stop • Instant disconnect
- Side mounted — only ½" width required
- CR steel, zinc plated and clear iridite

Cat. No.	Slide Length And Extension	Net Price (B)†
LFE-50-14	14"	$7.60 pair
LFE-50-16	16"	8.13 pair
LFE-50-20	20"	8.90 pair
LFE-50-22	22"	9.57 pair

*Foot operated friction brake for positive locking wheel.
**With roller bearing wheel.

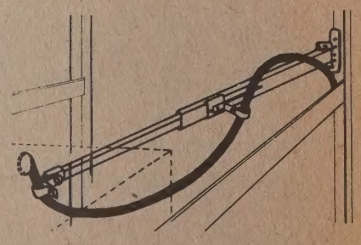
2" - 3" - 4" DIA. CASTERS

Made of non-marking composition wheel with Ball Bearing Swivel Plate. Packed one set of 4 in box with screws for assembly.

Cat. No.	Kind of Wheel	Wheel Size	Overall Height	Cap. per Caster—Lbs.	Net Price (B)†
CA-4	Plaskite	2" dia. x 13/16"	2 7/16"	80	$ 4.20
CA-5	Rockite	3" dia. x 1¼"	3 13/16"	225	11.05
CA-6	Soft Rubber	Double 2" dia. x 1 5/16"	2 13/16"	125	11.60
CA-7*	Rockite	3" dia. x 1¼"	3 13/16"	225	15.10
CA-8**	Rockite	4" dia. x 1 5/16"	5¼"	450	50.70

BALL BEARING ACTION CABLE RETRACTOR
FOR CONTROL OF POWER SUPPLY CABLES

The PREMIER CABLE RETRACTOR is designed for easy and fast installation in both new and existing equipment. It is attached to rear of cabinet and controls power supply cables most efficiently. As the chassis is extended, the retractor pivots and the inner ball bearing actuated member glides out as necessary. Spring tension keeps cable "jam-proof"



Cat. No. PCR-3-16
Net Price (A)† $17.80

†See quantity discount schedule on page 1.

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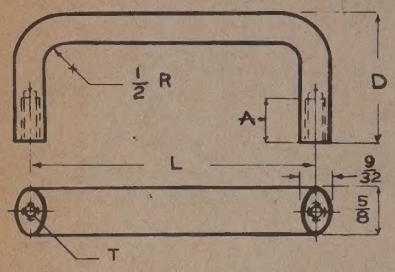
PREMIER HANDLES for INSTRUMENTS and EQUIPMENT



5/8" OVAL HW-16 SERIES

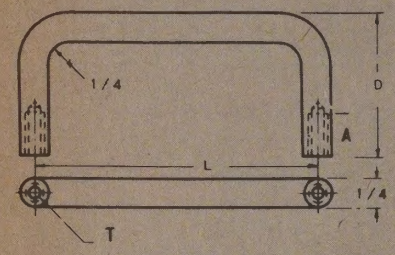
MATERIAL: Aluminum per QQ-A-325-A.
FINISH: Black Anodize per MIL-A-8625 Type II.

Cat. No.	L	D	A	T	Net Price (A)†
HW-16A1	3	1 3/32	3/32	10-24	$2.08
HW-16A4	4 3/16	1 1/2	1/2	10-24	2.20
HW-16A6	6 1/16	1 3/4	1/2	10-24	2.52

5/8" OVAL HW-17 SERIES

MATERIAL: Brass per QQ-B-626 Comp 22½ Hard.
FINISH: Nickel Plate and Polish per MIL-QQ-N-290 Type VI.

Cat. No.	L	D	A	T	Net Price (A)†
HW-17B1	3	1 3/32	3/32	10-32	$2.76
HW-17B4	4 3/16	1 1/2	1/2	10-32	2.92
HW-17B6	6 1/16	1 3/4	1/2	10-32	3.44



1/4" ROUND HW-19 SERIES

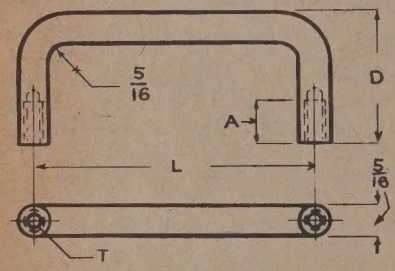
MATERIAL: Brass per QQ-B-626 Comp 22½ Hard.
FINISH: Nickel Plate and Polish per MIL-QQ-N-290 Type VI.

Cat. No.	L	D	A	T	Net Price (A)†
HW-19B1	2	1½	3/16	8-32	$1.40
HW-19B2	3	1½	3/16	8-32	1.40
HW-19B3	4	1½	3/16	8-32	1.52
HW-19B4	6	1½	3/16	8-32	1.56

1/4" ROUND HW-20 SERIES

MATERIAL: Aluminum per QQ-A-325A.
FINISH: Black Anodize per MIL-A-8625 Type II.

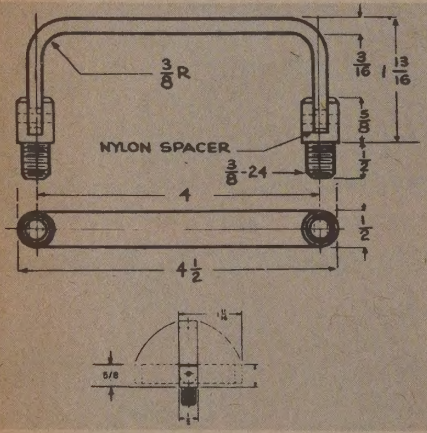
Cat. No.	L	D	A	T	Net Price (A)†
HW-20A1	2	1½	3/16	8-32	$1.36
HW-20A2	3	1½	3/16	8-32	1.36
HW-20A3	4	1½	3/16	8-32	1.48
HW-20A4	6	1½	3/16	8-32	1.56



5/16" ROUND HW-18 SERIES

MATERIAL: Brass per QQ-B-626 Comp 22½ Hard.
FINISH: Nickel Plate and Polish per MIL-QQ-N-290 Type VI.

Cat. No.	L	D	A	T	Net Price (A)†
HW-18B3	3	1 5/16	7/16	8-32	$1.52
HW-18B13	4 3/16	1½	3/16	10-32	1.64
HW-18B14	6	1½	3/16	10-32	1.64
HW-18B16	6 1/16	1 3/4	3/16	10-32	1.80



DROP HANDLES—HW-21 and HW-22 SERIES

HW-21A

MATERIAL: Bow-Aluminum MIL Spec QQ-A-274. Ferrules MIL Spec QQ-A-325A.

FINISH: Semi-Frost Per MIL-A-8625 Type II.

HW-22B

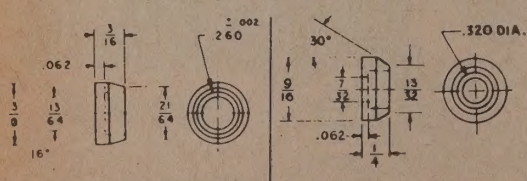
MATERIAL: Bow-Brass MIL Spec QQ-B-626 Comp 22½ Hard. Ferrules MIL Spec QQ-B-626 Comp 22½ Hard.

FINISH: Nickel Plate and Polish MIL-QQ-N-290 Type VI.

NOTE: Handle and Ferrules are furnished with nylon spacer and roll-pin 1/8 dia. to hold bow in any given position. Swings 180° to either plane.

Cat. No.	Material	Net Price (A)†
HW-21A	Aluminum	$3.72
HW-22B	Brass	4.00

FERRULES FOR ABOVE HANDLES



†See quantity discount schedule on page 1.

FOR 1/4" DIAMETER HANDLES

HW-23AF (ALUMINUM) Made of Aluminum per QQ-A-325A, anodized black per MIL-A-8625 Type II.

Net Price (A)† .16

HW-24BF (BRASS) Made of Brass per QQ-B-626 comp. 22½ hard, nickel plated and polished per MIL-QQ-N-290 Type VI.

Net Price (A)† .16

FOR 5/16" DIAMETER HANDLES

HW-25BF (BRASS) Made of Brass per QQ-B-626 comp. 22½ hard, nickel plated and polished per MIL-QQ-N-290 Type VI.

Net Price (A)† .20

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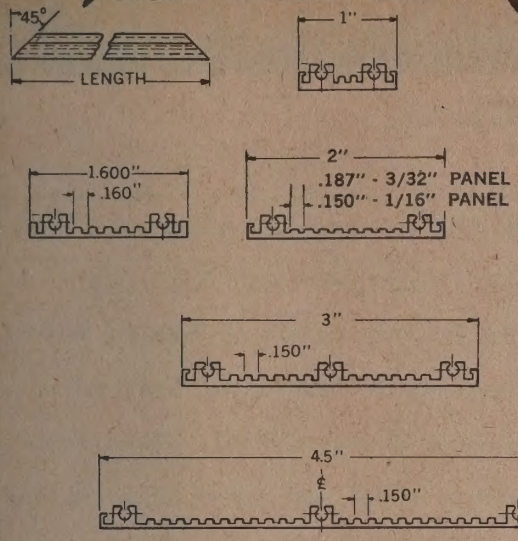
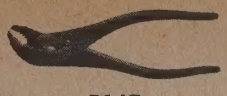
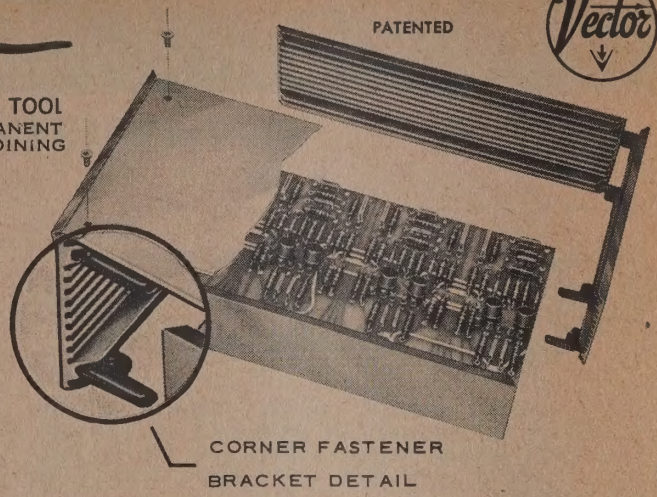
Vector FRAME-LOC RAILS





P147
CRIMPING TOOL
FOR PERMANENT
CORNER JOINING



Make handsome, sleek aluminum cases for circuit boards in seconds with these new extruded aluminum rails. Each rail has extruded grooves running lengthwise so boards may be "stacked" if desired or shielded between with aluminum plates. Unique corner brackets, lockwashers and screws furnished with all mitred rails fasten corners together for chassis or complete boxes, or furnish your own covers. 24" unmitred pieces supplied for making required lengths. P147 Tool crimps corner joints permanently on inside of case.

FRAME-LOC CASE AND CHASSIS RAILS FOR 1/16" AND 3/32" BOARDS — PRICES ARE PER PAIR

Overall Length	End Type	1" Wide for 1/16" Boards	Price 1-49 Pr.	1.6" Wide for 1/16" Boards	Price 1-49 Pr.	2" Wide for 1/16" Boards	Price 1-49 Pr.	2" Wide for 3/32" Boards	Price 1-49 Pr.	3" Wide for 1/16" Boards	Price 1-49 Pr.	4.5" Wide for 1/16" Boards	Price 1-49 Pr.
2.87"	Mitred	SR1-29-062	$1.05	SR16-29-062	$1.18	SR2-29-062	$1.21			SR3-29-062	$1.28	SR45-29-062	$1.55
3.11"	Mitred	SR1-31-062	1.07	SR16-31-062	1.21	SR2-31-062	1.23	SR2-30-093	$1.23	SR3-31-062	1.31	SR45-31-062	1.59
4.61"	Mitred	SR1-46-062	1.18	SR16-46-062	1.39	SR2-46-062	1.44	SR2-46-093	1.44	SR3-46-062	1.52	SR45-46-062	1.91
4.91"	Mitred	SR1-49-062	1.19	SR16-49-062	1.40	SR2-49-062	1.46	SR2-48-093	1.46	SR3-49-062	1.53	SR45-49-062	1.95
6.61"	Mitred	SR1-66-062	1.40	SR16-66-062	1.68	SR2-66-062	1.72	SR2-66-093	1.72	SR3-66-062	1.85	SR45-66-062	2.40
8.0"	Mitred	SR1-80-062	1.51	SR16-80-062	1.83	SR2-80-062	1.86	SR2-80-093	1.86	SR3-80-062	2.02	SR45-80-062	2.67
8.61"	Mitred	SR1-86-062	1.53	SR16-86-062	1.87	SR2-86-062	1.92	SR2-85-093	1.92	SR3-86-062	2.06	SR45-86-062	2.76
10.0"	Mitred	SR1-100-062	1.71	SR16-100-062	2.10	SR2-100-062	2.21	SR2-100-093	2.21	SR3-100-062	2.32	SR45-100-062	3.10
14.0"	Mitred	SR1-140-062	2.12	SR16-140-062	2.67	SR2-140-062	2.79	SR2-140-093	2.79	SR3-140-062	2.96	SR45-140-062	4.10
17.1"	Mitred	SR1-171-062	2.44	SR16-171-062	3.13	SR2-171-062	3.20	SR2-170-093	3.20	SR3-171-062	3.49	SR45-171-062	4.93
24.0"	*Square	SR1-240-062	2.93	SR16-240-062	3.76	SR2-240-062	3.84	SR2-240-093	3.84	SR3-240-062	4.19	SR45-240-062	5.92

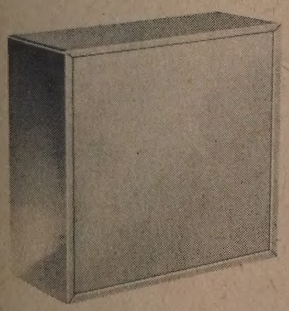
P147 Corner Crimping Tool — Any Quantity $6.59 each.

*24" Lengths supplied square cut and no fasteners — all others 45° mitred with corner brackets, lockwashers and screws. (Supplied in pairs.) Other square cut lengths available — see Vector General Catalog.

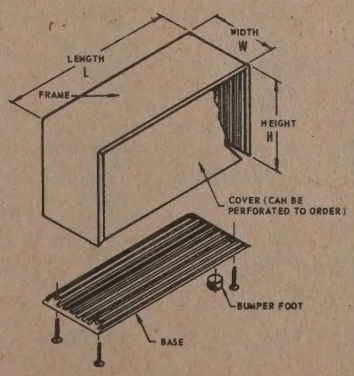
COVER PLATES (.064" Thick Aluminum)

Catalog No.	Length	Width	Price 1 - 49	Catalog No.	Length	Width	Price 1 - 49
PL2746	4.5	2.750	$ .48 each	PL4597	9.7	4.500	$1.22 each
PL4546	4.5	4.500	.63 each	PL8097	9.7	8.000	1.71 each
PL8046	4.5	8.000	1.01 each	PL27140	14.0	2.750	1.19 each
PL2766	6.5	2.750	.52 each	PL45140	14.0	4.500	1.31 each
PL4566	6.5	4.500	.69 each	PL80140	14.0	8.000	2.45 each
PL8066	6.5	8.000	1.25 each	PL48-170-Pkg 2	17.0	4.800	4.14 pair
PL48-85-Pkg 2	8.5	4.800	2.74 pair	PL85-170-Pkg 2	17.0	8.500	6.29 pair
PL2797	9.7	2.750	.70 each				

MULTI-MOD CASES



W20-46-46



PATENTED FEATURES

These quietly handsome and strong aluminum cases with internally grooved surfaces for 1/16" panels can rest on any face and provide table top housings for instruments, circuitry, controls, miscellaneous small equipment. Bases remove quickly for ready access; good R.F.I. shielding is provided by overlapping cover joints. 14 standard sizes from 1.6" x 3.1" x 3.1" to 4.5" x 14" x 8" are available.

CAT. No.	WIDTH	LENGTH	HEIGHT	FOR CIRCUIT CARD SIZE	PRICE 1 - 49
W16-31-31	1.6"	3.10"	3.10"	2.98 x 2.97	$ 3.41
W20-46-31	2.0"	4.61"	3.10"	4.49 x 2.97	3.93
W20-46-46	2.0"	4.61"	4.61"	4.50 x 4.49	4.34
W20-66-46	2.0"	6.61"	4.61"	4.50 x 6.49	5.15
W30-66-46	3.0"	6.61"	4.61"	4.50 x 6.49	5.95
W30-86-46	3.0"	8.61"	4.61"	8.49 x 4.00	6.50
W30-100-46	3.0"	10.00"	4.61"	9.88 x 4.00	7.00
W30-100-66	3.0"	10.00"	6.61"	9.88 x 6.00	7.80
W30-100-80	3.0"	10.00"	8.00"	9.88 x 7.25	8.35
W30-140-80	3.0"	14.00"	8.00"	13.88 x 7.25	10.10
W45-66-46	4.5"	6.61"	4.61"	4.50 x 6.49	6.15
W45 86-46	4.5"	8.61"	4.61"	8.49 x 4.00	6.95
W45-100-46	4.5"	10.00"	4.61"	9.88 x 4.00	7.60
W45-140-80	4.5"	14.00"	8.00"	13.88 x 7.25	11.78
FT-3-Pkg 8			Rubber Bump Feet		.40 Pkg

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Net

AEROVOX Hi-Q

CAPACITORS

ELECTROLYTICS

TYPE AFH TWIST-PRONG ELECTROLYTICS

Twist-prong mounting electrolytic capacitors constructed of high-purity aluminum foil throughout and designed for 85°C operation. All units feature improved moisture resistant seals and are manufactured especially for high ripple current circuits and selenium rectifier applications.

Primarily used for audio filter bypass applications in radio-TV and audio equipments, they are also finding many applications in industrial electronic equipment. They meet all requirements of EIA Specification RS-154.

Units for printed wiring applications (PWH) are indicated as such.

TOLERANCES 0-50 volts, —10% +250%; 51-350 volts, —10% +100%; 351 volts and higher, —10% +50%.

The AFH capacitors listed here include only those ratings which might find usage in industrial applications. A complete line of ratings may be found in the latest Aerovox Industrial Catalog, IDC 567, or Servicemen's Catalog, SE-567, and may be requested from Aerovox Corporation, Distributor Sales, or through your nearest authorized Aerovox Industrial Distributor.

SINGLES

Catalog Number	Capacity	Voltage	Dia. x Length	Net
AFH 1-00-50	2000	6	1-3/8 x 2	$1.83
AFH 1-02	1000	15	1 x 1½	1.53
AFH 1-03	2000	15	1-3/8 x 2	2.07
AFH 1-04	3000	15	1-3/8 x 2	2.55
AFH 1-08	500	25	1 x 2	1.53
AFH 1-10	1000	25	1-3/8 x 2	2.13
AFH 1-13	500	50	1-3/8 x 2	1.59
AFH 1-13-05	500	50	1 x 1½	1.59
AFH 1-14	1000	50	1-3/8 x 2	2.25
AFH 1-14-50	1500	50	1-3/8 x 2	2.64
AFH 1-18	50	150	1 x 1½	.99
AFH 1-21	100	150	1 x 1½	1.20
AFHS 1-22	120	150	1 x 1½	1.23
AFHS 1-22-05	120	150	1-3/8 x 2	1.29
AFHS 1-23	140	150	1 x 1¾	1.26
AFH 1-24	150	150	1 x 2	1.29
AFH 1-24-01	150	150	1-3/8 x 2	1.29
AFHS 1-24-25	200	150	1-3/8 x 2	1.47
AFHS 1-24-75	300	150	1-3/8 x 2	1.68
PWH 1-25-75	160	200	1-3/8 x 2	1.74
AFH 1-29	40	250	1 x 1½	1.08
AFH 1-31-25	100	250	1 x 2	1.62
AFH 1-31-75	150	250	1-3/8 x 2	1.86
AFHS 1-31-85	200	250	1-3/8 x 2	2.19
AFH 1-35	80	300	1 x 1¾	1.53
AFH 1-36	100	300	1 x 2½	1.74
AFHS 1-37-25	150	300	1-3/8 x 2	2.10
AFH 1-37-35	250	300	1-3/8 x 2½	3.33
AFH 1-41	50	350	1 x 2	1.26
AFH 1-42	80	350	1-3/8 x 2	1.71
AFHS 1-43	125	350	1-3/8 x 2	2.19
AFH 1-43-20	150	350	1-3/8 x 2	2.37

*Request O.E.M. Prices in the following quantities: 25-49, 50-99, 100-249

SINGLES (Continued)

Catalog Number	Capacity	Voltage	Dia. x Length	*Net
AFH 1-50	20	450	1 x 1½	1.08
AFH 1-52	40	450	1 x 1¾	1.23
AFH 1-53	50	450	1 x 2½	1.41
AFH 1-55	80	450	1-3/8 x 2	1.83
AFH 1-55-20	100	450	1-3/8 x 2½	2.07
AFH 1-55-25	125	450	1-3/8 x 3	2.37
AFH 1-59	20	500	1 x 1½	1.11
AFH 1-61	40	500	1 x 2½	1.50
AFH 1-62	80	500	1-3/8 x 2½	2.16

DUALS

AFH 2-14	40-40	150	1 x 1½	1.14
AFH 2-15	50-30	150	1 x 1½	1.20
AFH 2-16	50-50	150	1 x 1½	1.29
PWH 2-17-50	70-30	150	1 x 1½	1.32
AFH 2-19-25	80-50	150	1 x 1½	1.44
AFH 2-20	80-80	150	1-3/8 x 2	1.59
AFHS 2-21	200-5	150	1-3/8 x 2	1.62
AFH 2-23	200-200	150	1-3/8 x 2	2.40
AFHS 2-24-75	200-5	200	1-3/8 x 2	1.83
AFH 2-26	20-20	250	1 x 1½	1.14
AFH 2-29	40-40	250	1 x 1½	1.50
AFHS 2-30	150-150	250	1-3/8 x 2½	3.09
AFHS 2-30-75	200-200	250	1-3/8 x 4	3.66
AFH 2-34*	80-80	300	1-3/8 x 2	2.43
AFH 2-35	120-20	300	1-3/8 x 2	2.40
AFH 2-39	30-30	350	1 x 2	1.74
AFH 2-40-40	60-30	350	1-3/8 x 2	1.89
AFH 2-41-10	90-40	350	1-3/8 x 2½	2.58
AFH 2-41-40	100-60	350	1-3/8 x 3	2.88

Net

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AEROVOX Hi-Q

CAPACITORS

ELECTROLYTICS – (Continued)

DUALS (Continued)

Catalog Number	Capacity	Voltage	Dia. x Length	*Net
AFHS 2-41-50	100-100	350	1-3/8 x 3	3.69
AFHS 2-41-80	160-10	350	1-3/8 x 3	2.58
AFH 2-45-10	80-20	400	1-3/8 x 2	2.73
AFH 2-45-60	120-40	400	1-3/8 x 3	3.15
AFH 2-46	5-5	450	1 x 1½	1.05
AFH 2-47	10-10	450	1 x 1½	1.14
AFH 2-50	20-10	450	1 x 1¾	1.35
AFH 2-51	20-20	450	1 x 2	1.53
AFH 2-52	30-10	450	1 x 2	1.50
AFH 2-54	30-30	450	1-3/8 x 2	1.83
AFH 2-55	40-10	450	1 x 2	1.59
AFH 2-56	40-20	450	1-3/8 x 2	1.80
AFH 2-57	40-40	450	1-3/8 x 2	2.07
AFH 2-59	50-50	450	1-3/8 x 2½	2.31
AFH 2-61	60-40	450	1-3/8 x 2½	2.37
AFH 2-61-50	60-60	450	1-3/8 x 3	3.36
AFH 2-62	80-10	450	1-3/8 x 2	2.16
AFH 2-63	80-20	450	1-3/8 x 2¼	2.34
AFH 2-64	80-40	450	1-3/8 x 2¼	2.61
AFH 2-64-25	100-40	450	1-3/8 x 3	2.91
AFH 2-66-60	80-50	475	1-3/8 x 3	3.12
AFH 2-67	10-10	500	1 x 1¾	1.23
AFH 2-69	20-20	500	1-3/8 x 2	1.71
AFH 2-72	40-40	500	1-3/8 x 2½	2.64
AFH 2-73	60-40	500	1-3/8 x 3	2.76
AFH 2-86-70	100/30	400/50	1-3/8 x 2½	2.34
AFH 2-86-72	80/80	400/200	1-3/8 x 2½	2.37

TRIPLES

AFH 3-09	40-30-20	150	1 x 2	1.50
AFH 3-10	40-40-40	150	1 x 1½	1.56
AFH 3-11-50	50-50-50	150	1 x 1¾	1.80
AFH 3-12	60-40-20	150	1 x 1½	1.65
AFH 3-13	80-40-20	150	1-3/8 x 2	1.74
AFH 3-13-30	120-120-40	150	1-3/8 x 2	2.43
AFH 3-13-50	200-100-60	150	1-3/8 x 2	2.73
AFH 3-13-75	200-150-150	200	1-3/8 x 3	4.50
AFH 3-17-10	20-20-20	250	1 x 1½	1.56
AFH 3-20	40-20-20	250	1 x 1¾	1.74
AFH 3-25-50	80-40-40	300	1-3/8 x 2	2.85
AFH 3-26	120-50-40	300	1-3/8 x 2½	3.39
AFH 3-28-30	30-20-10	350	1 x 2½	1.95
AFH 3-29	60-40-20	350	1-3/8 x 2	2.55
AFH 3-29-25	60-50-50	350	1-3/8 x 2¼	2.94
AFH 3-29-50	80-60-60	350	1-3/8 x 2½	3.33
AFH 3-29-75	90-40-20	350	1-3/8 x 2½	3.15
AFH 3-30	10-10-10-	400	1 x 1½	1.44
AFH 3-30-75	90-10-5	400	1-3/8 x 2	2.64
AFH 3-31	10-10-10	450	1 x 1¾	1.56

TRIPLES (Continued)

Catalog Number	Capacity	Voltage	Dia. x Length	*Net
AFH 3-34	15-15-15	450	1 x 2½	1.86
AFH 3-35	20-10-10	450	1 x 2	1.77
AFH 3-36	20-20-20	450	1-3/8 x 2	2.16
AFH 3-41	40-10-10	450	1-3/8 x 2	2.01
AFH 3-42	40-30-20	450	1-3/8 x 2	2.58
AFH 3-43	40-40-10	450	1-3/8 x 2	2.52
AFH 3-43-50	40-40-20	450	1-3/8 x 2½	2.67
AFH 3-44	40-40-40	450	1-3/8 x 2½	2.94
AFH 3-44-50	50-40-30	450	1-3/8 x 4	2.94
AFH 3-45	60-20-20	450	1-3/8 x 2½	2.76
AFH 3-45-25	60-40-20	450	1-3/8 x 2½	3.00
AFH 3-46	80-40-20	450	1-3/8 x 3	3.24
AFH 3-49-10	30-30-20	475	1-3/8 x 2	2.85
AFH 3-50-07	40-30-10	475	1-3/8 x 2½	2.70
AFH 3-50-10	40-30-30	475	1-3/8 x 3	3.09
AFH 3-51	10-10-19	500	1 x 2½	1.62
AFH 3-52	30-20-20	500	1-3/8 x 2¼	2.52
AFH 3-54	40-40-10	500	1-3/8 x 2½	3.03
AFH 3-82	80-40-20	150-25	1 x 1½	1.68
AFH 3-120	20-20-20	400-25	1 x 2	1.71
AFH 3-125	10-10-20	450-25	1 x 1½	1.44
AFH 3-132	40-20-20	450-25	1-3/8 x 2	2.10

QUADS

AFH 4-01	40-40-40-30	150	1-3/8 x 2	2.01
AFHS 4-01-55	200-200-60-30	175	1-3/8 x 2¾	3.33
AFH 4-01-80	40-20-10-10	300	1-3/8 x 2	2.37
AFH 4-04	40-40-20-10	350	1-3/8 x 2	2.61
AFH 4-04-50	40-40-40-40	350	1-3/8 x 2¼	3.60
AFH 4-05-55	80-60-40-20	350	1-3/8 x 3	3.84
AFH 4-07	80-20-10-10	400	1-3/8 x 3½	3.03
AFH 4-10	10-10-10-10	450	1-3/8 x 2	2.01
AFH 4-14	20-20-20-20	450	1-3/8 x 2	2.82
AFH 4-15-30	30-30-20-20	450	1-3/8 x 3	3.12
AFH 4-18-10	45-35-10-10	450	1-3/8 x 2	2.88
AFH 4-18-30	40-40-20-20	450	1-3/8 x 3	3.33
AFH 4-18-40	40-40-30-30	450	1-3/8 x 3	3.63
AFH 4-18-45	40-40-40-40	450	1-3/8 x 3½	3.87
AFH 4-18-50	60-20-20-20	450	1-3/8 x 3	3.39
AFH 4-18-60	60-30-10-2	450	1-3/8 x 3	3.06
AFH 4-18-80	80-10-10-10	450	1-3/8 x 3	3.03
AFH 4-19-10	20-20-10-10	475	1-3/8 x 2¼	2.61
AFH 4-19-20	20-20-20-20	475	1-3/8 x 2½	3.12
AFH 4-19-50	40-20-10-10	475	1-3/8 x 2½	3.06
AFH 4-20	10-10-10-10	500	1-3/8 x 2	2.10
AFH 4-58-75	80-40-40-20	400-350	1-3/8 x 4	3.87
AFH 4-59	10-10-10-20	450-25	1-3/8 x 2	1.89

*Request O.E.M. Prices in the following quantities: 25-49, 50-99, 100-249

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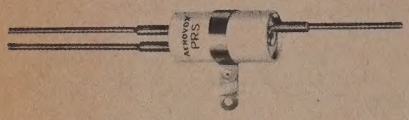
AEROVOX Hi-Q

CAPACITORS

ELECTROLYTICS — (Continued)



TYPE PRS "DANDEE" TUBULAR METAL-CASED ELECTROLYTICS

These electrolytic tubular capacitors are furnished in aluminum cans with insulating sleeves, and are designed for 85°C operation in TV, radio and industrial applications.

Single-section units are supplied with bare, tinned-copper leads 3" long, negative lead grounded to case. Multiple-section units are supplied with insulated, stranded copper leads 5" long. Negative is common and grounded to case, and all units feature a common cathode. Surge voltage specifications are per EIA RS-154. AC units are indicated as PRS-AC, non-polarized units are indicated as PRS-NP, and are for replacement use in cross-over networks and color TV.

Mutliple-section units are furnished with mounting strap. If a mounting strap is desired on single-section units, specify when ordering. Sizes shown are actual can sizes; for size over cardboard sleeves, add 1/16" to the diameter and 1/4" to the length. As present stocks are depleted units will be supplied with PVC sleeves.

Units with capacities up to 1,000 Mfd at 0-50 VDCW will have tolerances of —10% +150%; Units of 1,001 Mfd and higher at 0-50 VDCW have tolerances of —20%+150%. Units of all capacities but with voltage ratings between 51 and 350 VDCW will have tolerances of —10% +100%, while those with voltage ratings from 351 VDCW and higher are rated —10% +50%.

TYPE PRS – SINGLES

Prs No.	Cap. Mfd.	Size	Net Price*
		6V	
1075	5	7/16 x 1¼	.48
1080	25	7/16 x 1¼	.51
1100	100	7/16 x 1¼	.72
1110	250	9/16 x 1-3/8	.81
1120	500	11/16 x 1½	.93
1130	1000	11/16 x 2-1/8	1.14
1140	1500	13/16 x 2	1.26
1145	2000	13/16 x 2-3/8	1.38
		12V	
1150	100	7/16 x 1-3/8	.72
1155	200	9/16 x 1-7/8	.81
1170	500	11/16 x 1-7/8	1.02
1180	1000	13/16 x 2-1/8	1.35
		15V	
1200	100	9/16 x 1-3/8	.75
1210	250	11/16 x 1-5/8	.93
1220	500	13/16 x 1¾	1.05
1230	1000	15/16 x 1-7/8	1.38
1240	2000	15/16 x 2¼	1.92
		20V	
1243	2000	1 x 2-5/16	2.32
		25V	
1245	5	7/16 x 1¼	.60
1250	10	7/16 x 1¼	.60
1255	16	7/16 x 1¼	.60
1257	20	7/16 x 1¼	.60
1260	25	7/16 x 1¼	.60
1265	50	7/16 x 1-3/8	.66
1270	100	9/16 x 1-5/8	.81
1280	250	13/16 x 1¾	1.02
1290	500	13/16 x 2¼	1.38
1295	1000	1-1/16 x 2-1/8	1.98
		50V	
1297	1	7/16 x 1¼	.54
1300	2	7/16 x 1¼	.54
1310	5	7/16 x 1¼	.60
1320	10	7/16 x 1¼	.60
1325	15	7/16 x 1-3/8	.60
1330	20	7/16 x 1¼	.60
1340	25	7/16 x 1¼	.63
1350	50	11/16 x 1½	.72
1360	100	11/16 x 1¾	.84
1370	150	13/16 x 1¾	.93
1380	250	15/16 x 1¾	1.05
1390	500	1-1/16 x 2¼	1.44
1395	1000	1 x 3	1.88
		150V	
1400	4	7/16 x 1¼	.60
1401	5	7/16 x 1¼	.60
1405	8	9/16 x 1¼	.63
1410	10	9/16 x 1-3/8	.63
1420	12	9/16 x 1-3/8	.66
1430	16	9/16 x 1½	.69
1440	20	9/16 x 1-5/8	.72
1450	24	9/16 x 1-7/8	.75
1451	25	9/16 x 1-7/8	.75
1460	30	11/16 x 1½	.78
1470	40	11/16 x 1¾	.81
1480	50	13/16 x 1¾	.84

TYPE PRS–SINGLES (Cont)

Prs No.	Cap. Mfd.	Size	Net Price*
1490	60	13/16 x 1¾	.90
1500	80	13/16 x 2	.96
1510	100	13/16 x 2¼	1.05
1520	150	15/16 x 2-3/8	1.14
1530	200	15/16 x 2-7/8	1.32
1540	300	1-1/16 x 3	1.53
		250V	
1550	4	7/16 x 1¼	.60
1555	8	9/16 x 1-3/8	.69
1560	12	9/16 x 1-5/8	.75
1565	16	11/16 x 1-3/8	.78
1570	20	11/16 x 1-5/8	.81
1575	30	11/16 x 2	.87
1580	40	13/16 x 1¾	.93
1585	50	13/16 x 2	1.02
1590	60	13/16 x 2-1/8	1.08
1595	100	15/16 x 2½	1.47
		350V	
1600	4	9/16 x 1¼	.63
1610	8	9/16 x 1-7/8	.72
1620	10	11/16 x 1½	.75
1640	16	11/16 x 1¾	.84
1650	24	13/16 x 1-5/8	.93
1660	30	13/16 x 1¾	.99
1670	40	13/16 x 2-1/8	1.05
1680	50	15/16 x 2-1/8	1.11
1690	60	15/16 x 2-3/8	1.17
		450V	
1700	1	7/16 x 1¼	.66
1705	2	9/16 x 1¼	.69
1710	4	9/16 x 1½	.69
1715	8	11/16 x 1-5/8	.75
1720	10	11/16 x 1-7/8	.78
1725	12	13/16 x 1½	.81
1730	16	13/16 x 1¾	.84
1735	20	13/16 x 2	.93
1740	30	15/16 x 2-1/8	1.02
1750	40	15/16 x 2½	1.08
1760	50	15/16 x 3¼	1.26
1770	60	1-1/16 x 3	1.41
1780	80	1-1/16 x 3¼	1.68
1790	100	1-1/16 x 3¼	1.92
		500V	
1795	1	½ x 1	.60
1800	4	9/16 x 1¾	.72
1805	8	13/16 x 1½	.78
1810	10	13/16 x 1-5/8	.81
1815	12	13/16 x 1¾	.84
1820	16	13/16 x 2-1/8	.90
1840	30	15/16 x 2-5/8	1.05
		600V	
1845	4	11/16 x 2½	1.44
1850	8	13/16 x 2¼	1.71
1860	10	15/16 x 2¼	1.77
1880	16	15/16 x 3¼	2.07
1890	20	1-1/16 x 3	2.13
		700V	
1900	8	15/16 x 2¼	1.74
1905	10	15/16 x 3	1.83
1910	12	15/16 x 3¼	1.95
1915	16	1-1/16 x 3-3/8	2.10

TYPE PRS–DUALS (Cont)

Prs No.	Cap. Mfd.	Size	Net Price*
		TYPE PRS – DUALS	
		25V	
2050	10-10	11/16 x 1¼	.84
		150V	
2165	20-20	13/16 x 1¾	.99
2175	30-30	13/16 x 1-5/8	1.08
2180	40-20	13/16 x 1-5/8	1.05
2195	40-40	13/16 x 2	1.08
2200	50-30	13/16 x 2	1.17
2210	50-50	13/16 x 2¼	1.26
2220	80-20	13/16 x 2¼	1.29
2230	80-40	13/16 x 2	1.32
2240	80-50	15/16 x 2-1/8	1.41
2245	100-100	15/16 x 2¾	1.92
		200V	
2290	30-30	13/16 x 1-7/8	1.29
		250V	
2320	16-16	13/16 x 2-1/8	1.02
2330	20-20	13/16 x 1¾	1.11
		350V	
2348	30-5	15/16 x 2¼	1.29
		450V	
2350	8-8	13/16 x 1¾	1.02
2360	10-10	13/16 x 2	1.11
2390	20-20	15/16 x 2½	1.50
2400	30-30	1-1/16 x 2¾	1.80
2420	40-40	1-1/16 x 3¼	2.01
2430	50-30	1-1/16 x 3¼	2.04

TYPE PRS – TRIPLES

		15V	
3200	500-100-100	15/16 x 1-13/16	1.80
		150V	
3500	20-20-20	15/16 x 1¾	1.51
3550	30-20-10	15/16 x 1¾	1.51
3555	30-25-20	15/16 x 1¾	1.51
3560	30-30-20	15/16 x 1¾	1.58
3570	30-30-30	15/16 x 1¾	1.58
3600	40-20-20	15/16 x 1¾	1.58
3625	40-30-20	15/16 x 1¾	1.58
3650	40-40-20	15/16 x 1-7/8	1.63
3675	40-40-40	15/16 x 2	1.67
3750	50-30-20	15/16 x 1-7/8	1.63
3800	80-40-20	15/16 x 2¼	1.74
3825	80-50-20	15/16 x 2-3/8	1.74
		450V	
3900	10-10-10	15-16 x 2-1/8	1.67

TYPE PRS - MULTIPLE VOLTAGES (Cont)

Prs No.	Cap Mfd.	VDCW	Size	Net Price*
*4800	20/100	475/50	15/16 x 2-7/8	1.56
4805	20/100	500/25	15/16 x 2-5/8	1.56

*No Tube

TYPE PRS – AC Rated

Prs No.	Cap. Mfd.	Size	Net Price*
		10VAC	
6200	8	11/16 x 1½	$ .75
		50VAC	
6500	30	15/16 x 1¾	.84

NP-PRS–NON-POLARIZED

		3 VNP	
7050	1000	13/16 x 2	1.29
		6 VNP	
7100	500	11/16 x 1-1/2	1.17
		10 VNP	
7200	25	7/16 x 1¼	.69
7220	50	7/16 x 1-3/8	.72
7230	170	11/16 x 1-5/8	.96
7240	450	1-1/16 x 2¼	1.20
7245	500	15/16 x 1¾	1.20
		12 VNP	
**7247	200	11/16 x 1¾	1.08

**with bracket

		15 VNP	
7250	500	15/16 x 1-7/8	1.31
7275	1000	1-1/16 x 2¼	1.74
		25 VNP	
7300	2	7/16 x 1¼	.69
7315	10	7/16 x 1¼	.75
7330	50	11/16 x 1½	.84
7340	100	11/16 x 1-5/8	1.02
		30 VNP	
7350	20	9/16 x 1¼	.75
		50 VNP	
7400	2	7/16 x 1-1/8	.69
7405	4	7/16 x 1¼	.75
		150 VNP	
7450	40	1-1/16 x 2	1.02
		200 VNP	
7500	2	11/16 x 1¼	.75
		300 VNP	
7525	1	7/16 x 1¼	.75
		350 VNP	
7550	5	15/16 x 1¾	.78
7555	10	13/16 x 2	.93
7560	20	1-1/16 x 2¼	1.09
		400 VNP	
7650	10	13/16 x 2	.93
		450 VNP	
7750	4	11/16 x 1-5/8	.84

*Request O.E.M. Prices in the following quantities: 25-49, 50-99, 100-249, 250-499.

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CAPACITORS

TYPE CRE MINIATURE ALUMINUM CASED ELECTROLYTICS

Miniature, metal can units that are ideal for bypass, filter and coupling applications in low voltage, compact, miniaturized electronic assemblies such as transistor radios, hearing aids, tape recorders, etc.

All-welded construction and high purity ingredients throughout eliminates corrosion, variable or high resistance connections and units feature extremely low leakage characteristics.

Temperature range: −20°C to +85°C capacity tolerance: −10% +100% nominal lead length: 1½". Units are furnished with tinned copper leads and insulating sleeves of heat shrinkable Mylar tubing which adds only 1/32" to can diameter and 1/16" to length.

These units furnished in "Parent Case" sizes. Non shaded part numbers are the Parent Units for all lower voltages of the came capacitance. Units will be marked with voltage range and capacitance and any part number shown in the shaded area will no longer be available when present stocks are depleted, but will be replaced by the Parent Unit.

CAP. UF	VDCW	CAT. NO.	SIZE
1	3-50	CRE 750A	.250x .500
1	100-150	CRE 950A	.250x .500
2	3-50	CRE 751A	.250x .500
2	100-150	CRE 951A	.250x .687
3	3-50	CRE 752A	.250x .500
3	100-150	CRE 952A	.312x .687
4	3-50	CRE 753A	.250x .500
4	100	CRE 903A	.312x .687
4	150	CRE 953A	.312x .812
5	3-25	CRE 604A	.250x .500
5	50	CRE 754A	.250x .687
5	100-150	CRE 954A	.312x .812
6	3-25	CRE 605A	.250x .500
6	50	CRE 755A	.250x .687
6	100	CRE 905A	.312x .812
6	150	CRE 955A	.375x .812
8	3-25	CRE 606A	.250x .500
8	50	CRE 756A	.250x .687
8	100-150	CRE 956A	.375x .812
10	3-15	CRE 457A	.250x .500
10	25	CRE 607A	.250x .687
10	50	CRE 757A	.312x .687
10	100	CRE 907A	.375x .812
10	150	CRE 957A	.375x .937
15	3-12	CRE 409A	.250x .500
15	15-25	CRE 609A	.250x .687
15	50	CRE 759A	.312x .687
15	100	CRE 909A	.375x .937
15	150	CRE 959A	.375x1.250
20	3-6	CRE 311A	.250x .500
20	12-15	CRE 461A	.250x .687
20	25-50	CRE 761A	.312x .812
20	100	CRE 911A	.375x1.250
20	150	CRE 961A	.375x1.500
25	3	CRE 212A	.250x .500
25	6-15	CRE 462A	.250x .687
25	25	CRE 612A	.312x .687
25	50	CRE 762A	.312x .812
25	100	CRE 912A	.375x1.500
30	3	CRE 213A	.250x .500
30	6-12	CRE 413A	.250x .687
30	15-25	CRE 613A	.250x .687
30	50	CRE 763A	.375x .812
35	3-6	CRE 314A	.250x .687
35	12-25	CRE 614A	.312x .687
35	50	CRE 764A	.375x .812
40	3-6	CRE 315A	.250x .687
40	12-25	CRE 615A	.312x .812
40	50	CRE 765A	.375x .937
50	3	CRE 217A	.250x .687
50	6-15	CRE 467A	.312x .687
50	25	CRE 617A	.312x .812
50	50	CRE 767A	.375x .937
60	3	CRE 218A	.250x .687
60	6-12	CRE 418A	.312x .687
60	15	CRE 468A	.312x .812
60	25	CRE 618A	.375x .812
75	3-6	CRE 320A	.312x .687
75	12-15	CRE 470A	.312x .812
75	25	CRE 620A	.375x .812
100	3	CRE 223A	.312x .687
100	6-12	CRE 423A	.312x .812
100	15	CRE 473A	.375x .812
100	25	CRE 623A	.375x .937
150	3	CRE 228A	.312x .812
150	6	CRE 328A	.375x .812
150	12-15	CRE 478A	.375x .937
200	3	CRE 231A	.312x .812
200	6	CRE 331A	.375x .812
200	12-15	CRE 481A	.375x1.250
250	3	CRE 233A	.375x .812
250	6	CRE 333A	.375x .937
250	12	CRE 433A	.375x1.250
300	3	CRE 235A	.375x .812
300	6	CRE 335A	.375x .937
350	3	CRE 237A	.375x .937
350	6	CRE 337A	.250x .500
400	3	CRE 239A	.375x .937
500	3	CRE 243A	.375x1.250

PARENT CASE SIZES

CAP. UF	3V	6V	12V	15V	25V	50V	100V	150V
1	200A	300A	400A	450A	600A	750A	900A	950A
2	201A	301A	401A	451A	601A	751A	901A	951A
3	202A	302A	402A	452A	602A	752A	902A	952A
4	203A	303A	403A	453A	603A	753A	903A	953A
5	204A	304A	404A	454A	604A	754A	904A	954A
6	205A	305A	405A	455A	605A	755A	905A	955A
8	206A	306A	406A	456A	606A	756A	906A	956A
10	207A	307A	407A	457A	607A	757A	907A	957A
15	209A	309A	409A	459A	609A	759A	909A	959A
20	211A	311A	411A	461A	611A	761A	911A	961A
25	212A	312A	412A	462A	612A	762A	912A	
30	213A	313A	413A	463A	613A	763A		
35	214A	314A	414A	464A	614A	764A		
40	215A	315A	415A	465A	615A	765A		
50	217A	317A	417A	467A	617A	767A		
60	218A	318A	418A	468A	618A			
75	220A	320A	420A	470A	620A			
100	223A	323A	423A	473A	623A			
150	228A	328A	428A	478A				
200	231A	331A	431A	481A				
250	233A	333A	433A					
300	235A	335A						
350	237A	337A						
400	239A							
500	243A							

TYPE PTT AXIAL LEAD, PLASTIC CASED ELECTROLYTICS

Small in size big in performance, designed especially for wide applications in transistorized circuitry and cramped electronic assemblies, here is a truly MINIATURE electrolytic tubular that will handle full size loads. Aerovox Type PTT units feature "Polycap" cases that are the next best thing to metal cans for maximum protection against humidity. Advanced construction techniques assure long capacitor life. Units are rated for operation at temperatures from −30° to +65°C.

These units furnished in "Parent Case" sizes. Non shaded part numbers are the Parent Units for all lower voltages of the same capacitance. Units will be marked with voltage range and capacitance and any part number shown in the shaded area will no longer be available when present stocks are depleted, but will be replaced by the Parent Unit.

CAP. UF	VDCW	CAT. NO.	SIZE
1	3-50	PTT 87	1/4 x 5/8
2	3-50	PTT 88	1/4 x 5/8
3	3-35	PTT 127	1/4 x 5/8
3	50	PTT 89	1/4 x 3/4
5	3-20	PTT 112	1/4 x 5/8
5	25	PTT 77	1/4 x 3/4
5	35	PTT 128	5/16 x 5/8
5	50	PTT 90	1/4 x 7/8
8	3-12	PTT 52	1/4 x 5/8
8	15-25	PTT 78	1/4 x 3/4
8	35-50	PTT 91	5/16 x 3/4
10	3-10	PTT 39	1/4 x 5/8
10	12-20	PTT 114	1/4 x 3/4
10	25-35	PTT 130	5/16 x 3/4
10	50	PTT 92	3/8 x 3/4
15	3	PTT 7	1/4 x 5/8
15	6-15	PTT 67	1/4 x 3/4
15	20-25	PTT 80	5/16 x 3/4
15	35-50	PTT 93	3/8 x 3/4
20	3-10	PTT 41	1/4 x 3/4
20	12-20	PTT 116	5/16 x 3/4
20	25-35	PTT 132	5/8 x 3/4
20	50	PTT 94	3/8 x 7/8
25	3-6	PTT 26	1/4 x 3/4
25	10-20	PTT 117	5/16 x 3/4
25	25	PTT 82	3/8 x 3/4
25	35	PTT 133	3/8 x 7/8
25	50	PTT 95	3/8 x 1-1/8
30	3	PTT 10	1/4 x 3/4
30	6	PTT 27	1/4 x 7/8
30	10-15	PTT 70	5/16 x 3/4
30	20-25	PTT 83	3/8 x 3/4
30	35	PTT 134	3/8 x 7/8
30	50	PTT 96	3/8 x 1-1/8
40	3	PTT 11	1/4 x 3/4
40	6	PTT 28	1/4 x 7/8
40	10	PTT 44	5/16 x 3/4
40	12-20	PTT 119	3/8 x 3/4
40	25	PTT 84	3/8 x 7/8
40	35	PTT 135	7/16 x 7/8
40	50	PTT 97	3/8 x 1-1/4
50	3	PTT 12	5/16 x 5/8
50	6	PTT 29	5/16 x 3/4
50	10	PTT 45	5/16 x 7/8
50	12-15	PTT 72	3/8 x 3/4
50	20	PTT 120	3/8 x 7/8
50	25	PTT 85	3/8 x 1-1/8
50	35	PTT 136	7/16 x 1
50	50	PTT 98	3/8 x 1-3/8
100	3	PTT 13	3/8 x 3/4
100	6	PTT 30	5/16 x 1
100	10	PTT 46	3/8 x 7/8
100	12-15	PTT 73	3/8 x 1-1/8
100	20-25	PTT 86	3/8 x 1-3/8
100	35	PTT 137	7/16 x 1-1/2
150	3-6	PTT 101	3/8 x 7/8
150	10	PTT 102	3/8 x 1-1/8
150	12-15	PTT 107	3/8 x 1-1/8
150	20	PTT 122	7/16 x 1-1/4
150	25	PTT 124	7/16 x 1-1/2
200	3-6	PTT 31	3/8 x 1-1/8
200	10	PTT 47	3/8 x 1-1/8
200	12	PTT 106	3/8 x 1-3/8
200	15	PTT 108	3/8 x 1-1/2
200	20	PTT 123	1/2 x 1-1/4
250	3	PTT 15	3/8 x 1-3/8
250	6	PTT 32	3/8 x 1-1/4
250	10	PTT 103	3/8 x 1-3/8
300	3	PTT 16	3/8 x 1-1/8
300	6	PTT 33	3/8 x 1-3/8
300	10	PTT 104	3/8 x 1-1/2
500	3	PTT 17	3/8 x 1-1/2
800	3	PTT 138	1/2 x 1-3/8

TYPE PTT PARENT CASE SIZES

CAP. UF	3V	6V	10V	12V	15V	20V	25V	35V	50V
1	1	18	34	48	61	109	74	129	87
2	2	19	35	49	62	110	75	126	88
3	3	20	36	50	63	111	76	127	89
5	4	21	37	51	64	112	77	128	90
8	5	22	38	52	65	113	78	129	91
10	6	23	39	53	66	114	79	130	92
15	7	24	40	54	67	115	80	131	93
20	8	25	41	55	68	116	81	132	94
25	9	26	42	56	69	117	82	133	95
30	10	27	43	57	70	118	83	134	96
40	11	28	44	58	71	119	84	135	97
50	12	29	45	59	72	120	85	136	98
100	13	30	46	60	73	121	86	137	
150	100	101	102	105	107	122	124		
200	14	31	47	106	108	123			
250	15	32	103						
300	16	33	104						
500	17								
800	138								

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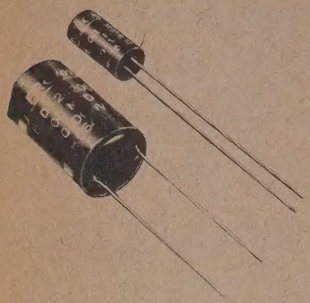
CAPACITORS



TYPE BCD UPRIGHT MOUNTING BAKELITE CASED ELECTROLYTICS

Low-priced electrolytic tubulars for industrial applications in transistorized assemblies and tightly cramped electronic assemblies. Upright mounting BCD units perfect for replacement in printed wiring circuits. Plastic cases and epoxy end seals offer excellent protection against moisture and prevent drying out or leakage of electrolyte. High purity foil construction throughout for longer life and low leakage. Lead lengths of 1" minimum. Positive lead is identified by a "+" mark on case and lead is also smaller wire gage. Operating temperatures from —30°C to +65°C.

These units furnished in "Parent Case" sizes. Non shaded part numbers are the Parent Units for all lower voltages of the same capacitance. Units will be marked with voltage range and capacitance and any part number shown in the shaded area will no longer be available when present stocks are depleted, but will be replaced by the Parent Unit.

TYPE BCD
SINGLE RATINGS

CAP. UF	VDCW	CAT. NO.	SIZE
1	3-50	BCD 50001	5/16 × 5/8
2	3-50	BCD 50002	5/16 × 5/8
3	3-50	BCD 50003	5/16 × 5/8
4	3-50	BCD 50004	5/16 × 5/8
5	3-25	BCD 25005	5/16 × 5/8
5	50	BCD 50005	3/8 × 5/8
6	3-25	BCD 25006	5/16 × 5/8
6	50	BCD 50006	3/8 × 5/8
8	3-25	BCD 25008	5/16 × 5/8
8	50	BCD 50008	3/8 × 5/8
10	3-25	BCD 25010	5/16 × 5/8
10	50	BCD 50010	3/8 × 5/8
15	3	BCD 3015	5/16 × 5/8
15	6-25	BCD 25015	3/8 × 5/8
15	50	BCD 50015	3/8 × 1/4
20	3	BCD 3020	5/16 × 5/8
20	6-15	BCD 15020	3/8 × 5/8
20	25	BCD 25020	3/8 × 3/4
20	50	BCD 50020	7/16 × 3/4
25	3	BCD 3025	5/16 × 5/8
25	6-15	BCD 15025	3/8 × 5/8
25	25	BCD 25025	3/8 × 3/4
25	50	BCD 50025	1/2 × 3/4
35	3-12	BCD 12035	3/8 × 5/8
35	15	BCD 15035	3/8 × 3/4
35	25	BCD 25035	7/16 × 3/4
50	3-6	BCD 6050	3/8 × 5/8
50	10-15	BCD 15050	3/8 × 3/4
50	25	BCD 25050	1/2 × 3/4
75	3	BCD 3075	3/8 × 5/8
75	6	BCD 6075	3/8 × 3/4
75	12	BCD 12075	7/16 × 3/4
75	15	BCD 15075	1/2 × 3/4
75	25	BCD 25075	7/16 × 1
100	3	BCD 3100	3/8 × 3/4
100	6-10	BCD 10100	7/16 × 3/4

TYPE BCD
SINGLE RATINGS

CAP. UF	VDCW	CAT. NO.	SIZE
100	12-15	BCD 15100	1/2 × 3/4
150	3	BCD 3150	7/16 × 3/4
150	6	BCD 6150	1/2 × 3/4
150	12	BCD 12150	1/2 × 7/8
200	3	BCD 3200	7/16 × 3/4
200	6	BCD 6200	1/2 × 3/4
250	3	BCD 3250	1/2 × 3/4
250	12	BCD 12250	1/2 × 1 1/8
300	3	BCD 3300	1/2 × 3/4
300	15	BCD 15300	5/8 × 1
500	12-15	BCD 15500	5/8 × 1 1/4

MULTIPLE RATINGS

CAP. UF	VDCW	CAT. NO.	SIZE
50-30	10	BCD 10x5030	1/2 × 3/4
50-50	10	BCD 10x5050	1/2 × 3/4
80-50	10	BCD 10x8050	1/2 × 3/4
80-80	10	BCD 10x8080	1/2 × 3/4
100-30	6	BCD 6x10030	1/2 × 3/4
100-100	4	BCD 4x100100	1/2 × 3/4
100-100	15	BCD 15x100100	1/2 × 1 1/4
100-100	20	BCD 20x100100	5/8 × 1 7/8
300-100	15	BCD 15x300100	1/2 × 1 1/2
500-50	3	BCD 3x50050	5/8 × 1
1000-50	3	BCD 3x100050	5/8 × 1 1/2

MISCELLANEOUS RATINGS

CAP. UF	VOLTS	CAT. NO.	SIZE
5	5-10 VNP	BCD 10005	5/16 × 5/8
80	10 VDC	BCD 10080	7/16 × 3/4
100	18 VDC	BCD 18100	5/8 × 3/4
190	10 VDC	BCD 10190	1/2 × 7/8
200	20 VDC	BCD 20200	5/8 × 1
800	8 VDC	BCD 8800	5/8 × 1 1/4

PARENT CASE SIZES

SINGLE RATINGS

CAP. UF	3VDC	6VDC	10VDC	12VDC	15VDC	25VDC	50VDC
1	3001	6001		12001	15001	25001	50001
2	3002	6002		12002	15002	25002	50002
3	3003	6003		12003	15003	25003	50003
4	3004	6004		12004	15004	25004	50004
5	3005	6005		12005	15005	25005	50005
6	3006	6006		12006	15006	25006	50006
8	3008	6008		12008	15008	25008	50008
10	3010	6010	10010	12010	15010	25010	50010
15	3015	6015		12015	15015	25015	50015
20	3020	6020		12020	15020	25020	50020
25	3025	6025	10025	12025	15025	25025	50025
35	3035	6035		12035	15035	25035	
50	3050	6050	10050	12050	15050	25050	
75	3075	6075		12075	15075	25075	
100	3100	6100	10100	12100	15100		
150	3150	6150		12150			
200	3200	6200					
250	3250			12250			
300	3300				15300		
500				12500	15500		

MULTIPLE RATINGS

CAP. UF	3VDC	4VDC	6VDC	10VDC	15VDC	20VDC
50-30				10x5030		
50-50				10x5050		
80-50				10x8050		
80-80				10x8080		
100-30			6x10030			
100-100		4x100100			15x100100	20x100100
300-100					15x300100	
500-50	3x50050					
1000-50	3x100050					

MISC. RATINGS

CAP. UF	5VNP	8VDC	10VNP	10VDC	18VDC	20VDC
5	5005		10005			
80				10080		
100					18100	
190				10190		
200						20200
800		8800				

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CAPACITORS

ELECTROLYTICS — (Continued)

TYPES HCB AND NPB HIGH CAPACITY-LOW VOLTAGE ELECTROLYTICS

HCB units are polarized for industrial applications such as battery eliminators, sound projectors, power supplies, etc. NPB units are non-polarized for welding and control equipment applications.

All units feature heavy duty bakelite cases eliminating the need for outer cardboard sleeves. Operating temperature range from —40°C to +85°C. Capacity tolerance up to 150 VDCW is —10% +100%; over 150 VDCW —10% +50%. High capacity, etched plate construction provides long-life. Units are supplied with wrap-around, footed brackets for vertical mounting. Brackets for horizontal mounting available on special order. Complete technical information is contained in Bulletin NPJ-117.

TYPE HCB

Cap. uf	Size
6 VDC—8V Surge	
•1200	1 13/16 × 4 3/8
12 VDCW—18V Surge	
500	1 7/16 × 2 3/4
1000	1 7/16 × 2 3/4
•2000	1 7/16 × 2 3/4
•3000	1 7/16 × 3 3/8
•4000	1 7/16 × 3 3/8
6000	1 13/16 × 3 3/8
10000	1 13/16 × 4 3/8

TYPE HCB

Cap. uf	Size
18 VDCW—25V Surge	
• 500	1 7/16 × 2 3/4
1000	1 7/16 × 2 3/4
•1500	1 7/16 × 2 3/4
2000	1 7/16 × 2 3/4
•4000	1 13/16 × 3 3/8
6000	1 13/16 × 3 3/8
25 VDCW—40V Surge	
• 500	1 7/16 × 2 3/4
1000	1 7/16 × 2 3/4
1250	1 7/16 × 3 3/8
2000	1 7/16 × 3 3/8

TYPE HCB

Cap. uf	Size
25 VDCW—40V Surge	
•3000	1 13/16 × 3 3/8
4000	1 13/16 × 3 3/8
6000	1 13/16 × 4 3/8
50 VDCW—75V Surge	
• 500	1 7/16 × 3 3/8
1000	1 7/16 × 3 3/8
2000	1 13/16 × 3 3/8
3000	1 13/16 × 4 3/8
4000	2 1/16 × 4 3/8
150 VDCW—185V Surge	
•1000	1 13/16 × 4 3/8

TYPE NPB

Cap. uf	Size
125 VNP—175V Surge	
•200	1 7/16 × 3 3/8
•300	1 13/16 × 3 3/8
•500	1 13/16 × 4 3/8
300 VNP—375V Surge	
• 15	1 7/16 × 2 3/4
•100	1 13/16 × 3 3/8
200	2 1/16 × 4 3/8
450 VNP—525V Surge	
• 50	1 13/16 × 3 3/8
•100	2 1/16 × 4 3/8

TYPE QE COMPUTER GRADE ELECTROLYTICS

Aluminum cased electrolytics designed for those applications requiring a greater degree of reliability and longer life than more conventional commercial construction units. Widely used in computers, power supplies, telephone networks and high grade lab instrumentation.

Manufactured with high purity materials exclusively and under controlled process conditions. Aluminum container is hermetically-sealed and a pressure type safety vent is incorporated into the cover. Operating temperatures for QE61 are —20°C to +65°C. This unit is furnished with a heat shrinkable Mylar tubing which adds .010" to the diameter and .020" to the length.

Complete technical information is contained in Bulletin NPJ-125 REV.

Cat. No.	Size	Cap. uf
10 VDCW		
61QE2048M	A1	1800
61QE2049M	A2	3600
61QE2051M	A3	7300
61QE2052M	A4	11000
61QE2058M	C2	25000
15 VDCW		
61QE2072M	A1	1500
61QE2073M	A2	3100
61QE2075M	A3	6100
61QE2076M	A4	9200
61QE2079M	C1	14000
61QE2083M	C2	21000
61QE2086M	C4	28000
61QE2088M	D2	35000
25 VDCW		
61QE2120M	A1	950
61QE2121M	A2	1900
61QE2123M	A3	3800
61QE2124M	A4	5800
61QE2127M	C1	8900

Cat. No.	Size	Cap. uf
25 VDCW (Cont.)		
61QE2131M	C2	13000
61QE2134M	C4	17000
•61QE2136M	D2	22000
•61QE2140M	E1	33000
35 VDCW		
61QE2164M	E1	23000
•61QE2165M	E2	27000
40 VDCW		
61QE2171M	A3	2400
•61QE2175M	C1	5600
•61QE2178M	C2	8300
61QE2184M	D2	14000
•61QE2185M	D3	16300
50 VDCW		
61QE2192M	A1	470
61QE2193M	A2	940
61QE2195M	A3	1850
61QE2196M	A4	2830
61QE2199M	C1	4300
61QE2202M	C2	6500

Cat. No.	Size	Cap. uf
61QE2206M	C4	8700
•61QE2208M	D2	10900
75VDCW		
•61QE2243M	A3	950
61QE2247M	C1	2300
•61QE2256M	D2	5800
100 VDCW		
61QE2268M	A4	1000
•61QE2271M	C1	1600
61QE2274M	C2	2400
•61QE2278M	C4	3200
61QE2280M	D2	4000
150 VDCW		
61QE2291M	A3	520
•61QE2292M	A4	785
61QE2295M	C1	1200
•61QE2298M	C2	1800
•61QE2304M	D2	3100
•61QE2308M	E1	4700
•61QE2309M	E2	5400

Cat. No.	Size	Cap. uf
200 VDCW		
61QE2315M	A3	400
•61QE2319M	C1	960
•61QE2323M	C2	1450
61QE2325M	D1	1600
250 VDCW		
•61QE2340M	A4	460
61QE2343M	C1	750
•61QE2346M	C2	1100
300 VDCW		
61QE2363M	A3	250
350 VDCW		
•61QE2387M	A3	185
•61QE2400M	D2	1100
450 VDCW		
61QE2430M	C2	340
61QE2436M	D2	570
61QE2437M	E1	850

Subject to factory delivery Cycles.

AVAILABLE CAN SIZES AND DESIGNATION

Can Size	Designation	Can Size	Designation	Can Size	Designation	Can Size	Designation	Can Size	Designation
1 3/8 × 1 3/8	A1	1 3/4 × 2 1/8	B1	2 × 3 1/8	C1	2 1/2 × 3 1/8	D1	3 × 4 1/8	E1
1 3/8 × 2 1/8	A2	1 3/4 × 3 1/8	B2	2 × 4 1/8	C2	2 1/2 × 4 1/8	D2	3 × 4 5/8	E2
1 3/8 × 3 1/8	A3	1 3/4 × 4 1/8	B3	2 × 4 5/8	C3	2 1/2 × 4 5/8	D3	3 × 5 1/8	E3
1 3/8 × 4 1/8	A4	1 3/4 × 4 5/8	B4	2 × 5 1/8	C4	2 1/2 × 5 1/8	D4	3 × 5 5/8	E4
1 3/8 × 4 5/8	A5	1 3/4 × 5 1/8	B5	2 × 5 5/8	C5	2 1/2 × 5 5/8	D5		

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AEROVOX Hi-Q CAPACITORS

TYPE B161Y — High Voltage Capacitor

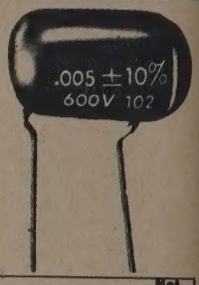
Now a dual purpose high voltage capacitor for use on standard DC applications or low frequency AC use. These units incorporate a dual dielectric of film and Kraft paper with a special impregnant which allows these units to be used as replacements for the higher priced glass tube capacitors. Standard tolerance is ±20%. Operating temperature is –45°C to +100°C. All units are furnished with #18 AWG wire leads. Also available on special order are units with studs for mounting in place of the glass capacitors.

Higher voltages and capacities available on request. For full technical information request bulletin NPJ-135.

Cap.	3000 VDCW	Net* Price	5000 VDCW	Net* Price	8000 VDCW	Net* Price	10,000 VDCW	Net* Price	15,000 VDCW	Net* Price
.0005			1/2 x 1-5/8	$1.05	9/16 x 11/16	$1.20	5/8 x 1-13/16	$1.32	5/8 x 2-13/16	$1.44
.001	1/2 x 1-3/8	$ .96	5/8 x 1-5/8	1.08	5/8 x 11/16	1.29	3/4 x 13/16	1.38	3/4 x 2-13/16	1.62
.002	5/8 x 1-3/8	.99	5/8 x 2	1.11	3/4 x 1-13/16	1.35	3/4 x 2	1.50	7/8 x 3	1.92
.005	5/8 x 1-9/16	1.05	11/16 x 2	1.14	7/8 x 1-15/16	1.44	15/16 x 2 1/4	1.62	1 x 9/16	2.43
.01	11/16 x 1-3/4	1.08	13/16 x 2	1.29	15/16 x 2-5/16	1.62	1 x 2-11/16	2.01	1 x 5-1/4	2.94
.02	3/4 x 1-13/16	1.26	7/8 x 2-3/8	1.44	1 x 2-15/16	2.04	1 x 3-3/4	2.67		
.03	3/4 x 2-1/8	1.32	1 x 2-3/8	1.77	1 x 2-3/8	2.55	1 x 5-1/8	2.94		
.05	7/8 x 2-1/8	1.38	1 x 2-15/16	2.04	1 x 5-3/8	2.79				
.1	1 x 2-7/16	1.74	1 x 4-3/8	2.67						
.15	1 x 3-1/16	2.19								
.25	1 x 4-1/4	2.64								

Request O.E.M. Prices in the following quantities: 25-49, 50-99, 100-499

TYPE DBE DIPPED BI-ELECTRIC® AND TYPE BE POLYCAP® CAPACITORS ±10% TOLERANCE MYLAR† PAPER BYPASS TUBULARS



Type DBE is a dipped radial-lead style with all the advantages of a combination dielectric. Mylar and high quality kraft tissue with a solid impregnant for superior moisture protection and mechanical strength. Solid thermo-setting impregnant will not crack, soften or flow, assuring high stability. Low power factor, high insulation resistance, operating temperature to 125°C. All units with crimped-style leads.

Type BE is made of quality kraft tissue and Mylar film combined with Aerolene® impregnant and exclusive Polycap® plastic case.

Controlled end-fills provide sealed protection. Leads will not crack or pull out when extended for axial mounting.

Standard capacitance tolerance ±10%, operating temperature range is –30°C to +100°C.

Complete technical information contained in Bulletins NPJ-130 Rev. and NPJ-118 Rev.

Cat. No.	Size	Net Price**	Cat. No.	Size	Net Price**	Cat. No.	Size	Net Price**	Cat. No.	Size	Net Price**
	200 VDCW		DBE6D6	.415 x .690	.15	DBE6S68	.540 x 1.300	.27	BE10S27	.530 x 1.160	.36
DBE2P1	.470 x 1.180	$.27	DBE6D68	.430 x .690	.18	DBE6S75	.570 x 1.300	.27	BE10S33	.625 x 1.310	.36
DBE2P47	.730 x 1.600	.48	DBE6D7	.430 x .690	.18	DBE6S82	.590 x 1.300	.27	BE10S39	.625 x 1.310	.39
	400 VDCW		DBE6D75	.370 x .870	.18	DBE6P1	.640 x 1.300	.27	BE10S47	.625 x 1.310	.39
DBE4S68	.440 x 1.180	$.27	DBE6D8	.370 x .870	.18	DBE6P15	.650 x 1.560	.33	BE10S56	.690 x 1.560	.42
DBE4P1	.520 x 1.180	.27	DBE6D82	.370 x .870	.18	DBE6P22	.750 x 1.560	.42	BE10S68	.690 x 1.560	.42
	600 VDCW		DBE6S1	.390 x .870	.18		1000 VDCW		BE10S75	.690 x 1.560	.45
DBE6D1	.340 x .690	$.15	DBE6S12	.400 x .870	.18	BE10D1	.340 x .690	$.33	BE10P1	.750 x 1.560	.45
DBE6D12	.340 x .690	.15	DBE6S15	.415 x .870	.18	BE10D12	.340 x .690	.33	BE10P15	.940 x 1.00	.60
DBE6D15	.340 x .690	.15	DBE6S18	.470 x .870	.18	BE10D15	.340 x .690	.33		1600 VDCW	
DBE6D18	.340 x .690	.15	DBW6S2	.470 x .870	.18	BE10D18	.340 x .690	.33	DBE16D1	.350 x .870	$.21
DBE6D2	.340 x .690	.15	DBE6S22	.470 x .870	.18	BE10D2	.375 x .690	.33	DBE16D15	.375 x .870	.21
DBE6D22	.340 x .690	.15	DBE6S25	.415 x 1.150	.21	BE10D22	.375 x .690	.33	DBE16D18	.400 x .870	.21
DBE6D25	.370 x .690	.15	DBE6S27	.415 x 1.150	.21	BE10D33	.406 x .844	.33	DBE16D22	.420 x .870	.21
DBE6D27	.370 x .690	.15	DBE6S3	.430 x 1.150	.21	BE10D39	.406 x .844	.33	DBE16D33	.480 x .870	.24
DBE6D3	.370 x .690	.15	DBE6S33	.430 x 1.150	.21	BE10D47	.406 x .844	.33	DBE16D47	.540 x .870	.24
DBE6D33	.370 x .690	.15	DBE6S39	.470 x 1.150	.21	BE10D68	.470 x .813	.33	DBE16D68	.485 x 1.180	.27
DBE6D39	.370 x .690	.15	DBE6S4	.470 x 1.150	.21	BE10S1	.530 x .875	.33	DBE16S1	.525 x 1.180	.30
DBE6D4	.370 x .690	.15	DBE6S47	.490 x 1.150	.21	BE10S15	.470 x 1.160	.33	DBE16S15	.560 x 1.300	.33
DBE6D47	.400 x .690	.15	DBE6S5	.520 x 1.180	.21	BE10S18	.470 x 1.160	.36	DBE16S22	.585 x 1.600	.42
DBE6D5	.415 x .690	.15	DBE6S56	.520 x 1.180	.24	BE10S22	.530 x 1.160	.36	DBE16S33	.695 x 1.600	.45
DBE6D56	.415 x .690	.15	DBE6S6	.520 x 1.180	.24	BE10S25	.530 x 1.160	.36	DBE16S47	.785 x 1.600	.51

**Request O.E.M. Prices in the following quantities: 25-49, 50-99, 100-499

*Dupont Registered Trademark

TYPE V161 AEROFILM® (MYLAR*) CAPACITORS

V161 Aerofilm Tubular Capacitors are high quality units in Polycap® cases. These units have exceptionally high insulation resistance and low dielectric absorption and power factor. They are extremely stable having a relatively small capacitance change with temperature variations over a range of 0 to 85 C. Their excellent resistance to humidity and moisture are due to the use of Aerofilm (Aerovox's trade name for Mylar* polyester film), finest quality casing material, and an epoxy end fill which will not flow, soften or melt at any operating temperature. Standard tolerance is ±20% but also available in ±5% and ±10%

Cap. Mfd.	Size	Net Price*	Cap. Mfd.	Size	Net Price*	Cap. Mfd.	Size	Net Price*	Cap. Mfd.	Size	Net Price*
	200 VDCW		.0047	9/32 x 15/16	$.15	.003	9/32 x 15/16	$.15		1000 VDCW	
.0047	9/32 x 15/16	$.15	.0068	9/32 x 15/16	.15	.0033	9/32 x 15/16	.15	.001	9/32 x 15/16	.30
.0068	9/32 x 15/16	.15	.01	5/16 x 1	.15	.004	5/16 x 1	.15	.0039	5/16 x 1	.30
.01	9/32 x 15/16	.15	.02	5/16 x 1-1/16	.15	.0047	5/16 x 1	.15	.01	3/8 x 1-1/16	.30
.015	9/32 x 15/16	.15	.022	11/32 x 1-1/16	.15	.005	5/16 x 1	.15	.018	7/16 x 1-1/4	.36
.022	5/16 x 1	.15	.03	3/8 x 1-1/16	.18	.0068	5/16 x 1	.18	.022	7/16 x 1-1/4	.36
.033	5/16 x 1	.15	.033	3/8 x 1-1/16	.18	.01	11/32 x 1-1/16	.18	.047	1/2 x 1-1/2	.42
.047	5/16 x 1-1/16	.15	.047	3/8 x 1⅛	.18	.015	3/8 x 1-3/16	.18	.1	11/16 x 1-7/8	.54
.05	5/16 x 1-1/16	.15	.05	3/8 x 1¼	.18	.02	3/8 x 1-3/16	.18			
.068	11/32 x 1-1/16	.18	.1	½ x 1¼	.21	.022	13/32 x 1-3/16	.18			
.1	3/8 x 1¼	.21	.15	9/16 x 1½	.36	.03	7/16 x 1-3/16	.21			
.15	13/32 x 1¼	.24	.22	9/16 x 1½	.39	.033	7/16 x 1-3/16	.21			
.22	½ x 1¼	.24	.25	9/16 x 1¾	.39	.04	½ x 1¼	.24			
.25	½ x 1¼	.27	.33	5/8 x 1¾	.51	.047	½ x 1¼	.24			
.33	½ x 1½	.33	.47	11/16 x 2	.66	.05	½ x 1¼	.24			
.47	9/16 x 1½	.39	.5	11/16 x 2	.69	.068	½ x 1½	.27			
.68	19/32 x 1¾	.51	1.0	7/8 x 2-1/8	1.05	.1	9/16 x 1½	.30			
1.0	13/16 x 1-7/8	.57				.15	5/8 x 1-5/8	.39			
				600 VDCW		.2	23/32 x 1-5/8	.48			
	400 VDCW		.001	9/32 x 15/16	.15	.22	¾ x 1-5/8	.51			
.0022	9/32 x 15/16	.15	.0015	9/32 x 15/16	.15	.25	¾ x 1¾	.54			
			.002	9/32 x 15/16	.15	.33	13/16 x 1-7/8	.78			
			.0022	9/32 x 15/16	.15	.47	7/8 x 2-1/8	.84			
						.5	7/8 x 2-1/8	.87			

*Dupont trademark

*Request O.E.M. Prices in the following quantities: 25 49, 50-99, 100-249

Net

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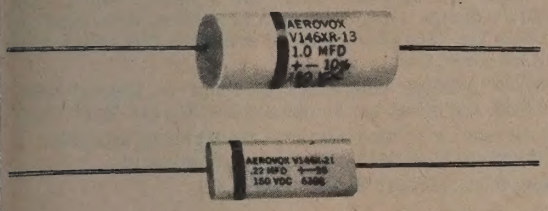
AEROVOX Hi-Q

CAPACITORS

TYPE V146X and V146XR AEROFILM® "WRAP AND FILL" CAPACITORS



Miniature, Mylar tubular (type XR) and flat (type X) units with extended foil construction wrapped in synthetic film and end sealed with plastic resin.

Capacitors have high insulation resistance, low power factor, high operating temperature and superior moisture resistance.

Ideal for miniaturized circuit applications where size and weight are important factors. Operating temperature range of −55°C to +85°C at full voltage. For 125°C operation derate by 55%. Standard Tolerance ±10%.

Leads are solder coated Copperweld, 2" minimum length. Case sizes over .375 diameter furnished with #20AWG, case of .375 or smaller supplied with #22AWG.

For full technical information request Bulletin NPJ-121 Rev.

V146X			V146XR		
Cap. uf	**Part No.**	**t x w x l**	**Cap. uf**	**Part No.**	**d x l**
		100 VDC			
.01			.01	V146XR-1	.156x 1/2
.015			.015	V146XR-2	.187x 1/2
.022			.022	V146XR-3	.203x 5/8
.033	V146X-15	3/16x 11/32x 15/16	.033	V146XR-4	.218x 5/8
.047	V146X-16	3/16x 3/8x 15/16	.047	V146XR-5	.234x 3/4
.068	V146X-17	7/32x 3/8x 15/16	.068	V146XR-6	.265x 3/4
.1	V146X-19	1/4x 15/32x 15/16	.1	V146XR-7	.281x 7/8
.15	V146X-20	1/4x 7/16x1-1/16	.15	V146XR-8	.328x 7/8
.22	V146X-21	1/4x 17/32x1-1/4	.22	V146XR-9	.385x1
.33	V146X-22	5/16x 19/32x1-1/4	.33	V146XR-10	.375x1-1/8
.47	V146X-23	7/16x 23/32x1-7/16	.47	V146XR-11	.468x1-1/4
.68	V146X-24	13/32x 23/32x1-11/16	.68	V146XR-12	.562x1-1/4
1.0	V146X-26	13/32x 3/4x1-7/8	1.0	V146XR-13	.593x1-1/2
1.5			1.5	V146XR-14	.718x1-3/4
2.0			2.0	V146XR-15	.812x1-3/4
		200 VDC			
.001			.001	V146XR-16	.156x 1/2
.0015			.0015	V146XR-17	.156X 1/2
.0022			.0022	V146XR-18	.156x 1/2
.0033			.0033	V146XR-19	.156x 1/2
.0047			.0047	V146XR-20	.156x 1/2
.0068			.0068	V146XR-21	.156x 1/2
.01			.01	V146XR-22	.171x 1/2
.015			.015	V146XR-23	.203x 1/2
.022			.022	V146XR-24	.250x 5/8
.033	V146X-217	7/32x 3/8x 15/16	.033	V146XR-25	.250x 3/4
.047	V146X-218	7/32x 13/32x 15/16	.047	V146XR-26	.296x 3/4
.068	V146X-219	9/32x 7/16x 15/16	.068	V146XR-27	.343x 3/4
.1	V146X-220	5/16x 15/32x1-1/8	.1	V146XR-28	.375x 7/8
.15	V146X-221	3/8x 9/16x1-1/8	.15	V146XR-29	.453x 7/8
.22	V146X-222	13/32x 9/16x1-1/4	.22	V146XR-30	.438x1-1/8
.33	V146X-223	3/8x 9/16x1-11/16	.33	V146XR-31	.484x1-1/8
.47	V146X-224	7/16x 21/32x1-11/16	.47	V146XR-32	.546x1-1/4
.68	V146X-225	1/2x 3/4x1-7/8	.68	V146XR-33	.609x1-5/8
1.0	V146X-226	9/16x 13/16x2-1/8	1.0	V146XR-34	.671x1-3/4
1.5			1.5	V146XR-35	.828x1-3/4
2.0			2.0	V146XR-36	.875x1-7/8
		400 VDC			
.001			.001	V146XR-37	.156x 5/8
.0015			.0015	V146XR-38	.156X 5/8
.0022			.0022	V146XR-39	.156x 5/8
.0033	V146X-27	3/16x 5/16x 13/16	.0033	V146XR-40	.156x 5/8
.0047	V146X-28	3/16x 5/16x 13/16	.0047	V146XR-41	.187x 5/8
.0068	V146X-29	3/16x 5/16x 13/16	.0068	V146XR-42	.218x 5/8
.01	V146X-31	3/16x 5/16x 13/16	.01	V146XR-43	.250x 5/8
.015	V146X-32	7/32x 3/8x 13/16	.015	V146XR-44	.296x 5/8
.022	V146X-33	7/32x 7/16x 13/16	.022	V146XR-45	.312x 3/4
.033	V146X-34	7/32x 7/16x 15/16	.033	V146XR-46	.312x 7/8
.047	V146X-35	1/4x 15/32x 15/16	.047	V146XR-47	.343x 7/8
.068	V146X-36	9/32x 1/2x1-1/8	.068	V146XR-48	.375x1
.1	V146X-38	9/32x 17/32x1-1/4	.1	V146XR-49	.421x1
.15	V146X-39	5/16x 19/32x1-11/16	.15	V146XR-50	.468x1-1/4
.22	V146X-40	3/8x 21/32x1-7/8	.22	V146XR-51	.546x1-3/8
.33	V146X-41	7/16x 3/4x1-7/8	.33	V146XR-52	.593x1-5/8
.47	V146X-42	1/2x 7/8x1-7/8	.47	V146XR-53	.671x1-5/8
.68	V146X-43	17/32x 15/16x2-1/8	.68	V146XR-54	.796x1-3/4
1.0	V146X-45	9/16x1.0 x2-5/16	1.0	V146XR-55	.812x2
1.5			1.5	V146XR-56	.921x2-1/4
2.0			2.0	V146XR-57	1.093x2-1/4
		600 VDC			
.001	V146X-46	3/16x 5/16x 13/16	.001	V146XR-58	.156x 3/4
.0015	V146X-47	3/16x 5/16x 13/16	.0015	V146XR-59	.171x 3/4
.0022	V146X-48	3/16x 5/16x 13/16	.0022	V146XR-60	.187x 3/4
.0033	V146X-49	3/16x 3/8x 7/8	.0033	V146XR-61	.203x 3/4
.0047	V146X-50	3/16x 13/32x 7/8	.0047	V146XR-62	.234x 3/4
.0068	V146X-51	7/32x 13/32x 7/8	.0068	V146XR-63	.265x 3/4
.01	V146X-53	1/4x 7/16x 7/8	.01	V146XR-64	.312x 3/4
.015	V146X-54	5/16x 1/2x 7/8	.015	V146XR-65	.312x 7/8
.022	V146X-55	5/16x 1/2x1-1/16	.022	V146XR-66	.375x 7/8
.033	V146X-56	9/32x 1/2x1-1/8	.033	V146XR-67	.406x1
.047	V146X-57	5/16x 17/32x1-1/8	.047	V146XR-68	.453x1
.068	V146X-58	5/16x 19/32x1-1/4	.068	V146XR-69	.531x1
.1	V146X-60	13/32x 21/32x1-9/16	.1	V146XR-70	.562x1-3/8
.15	V146X-61	3/8x 23/32x1-7/8	.15	V146XR-71	.671x1-3/8
.22	V146X-62	1/2x 27/32x1-7/8	.22	V146XR-72	.718x1-5/8
.33	V146X-63	1/2x 29/32x2-1/8	.33	V146XR-73	.765x2
.47	V146X-64	5/8x1-1/16 x2-1/8	.47	V146XR-74	.859x2
.68	V146X-65	11/16x1-3/32 x2-7/16	.68	V146XR-75	1.016x2
1.0			1.0	V146XR-76	1.125x2½
1.5			1.5	V146XR-77	1.234x3
2.0			2.0	V146XR-78	1.421x3

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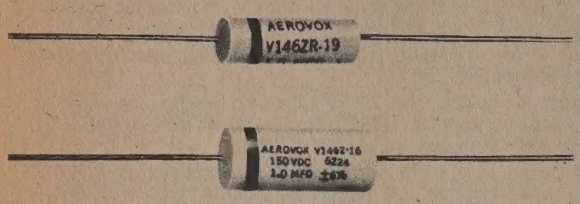
CAPACITORS

TYPE V146Z and V146ZR METALLIZED MYLAR FILM CAPACITORS



Flat 'Mylar Wrap and Fill' units (V146Z) and round case styles (V146ZR) offer light weight and ultra-miniature design along with high insulation resistance and long, stable life. These units are instrument quality and have the self-healing characteristic of all metallized dielectrics.

Standard tolerance is ±10%, with closer tolerances available on special order. Power factor will not exceed 1% and leads are solder coated "Copper-Weld" wire.

This series is engineered for use in printed circuits and airborne equipment of all types. Flat style permits mounting in banks for space conservation.

For complete technical information, request Bulletin NPJ-132.

TYPE V146Z			TYPE V146ZR		
Cap. uf	Part No.	t x w x l	Cap. uf	Part No.	d x l
		100 VDCW			
.1	V146Z-160	.125x .234x 9/16	.1	V146ZR-111	.170x 11/16
.15	V146Z-161	.156x .265x 9/16	.15	V146ZR-112	.190x 11/16
.22	V146Z-162	.156x .250x 11/16	.22	V146ZR-113	.215x 11/16
.33	V146Z-163	.203x .312x 11/16	.33	V146ZR-114	.265x 11/16
.47	V146Z-164	.250x .359x 11/16	.47	V146ZR-115	.315x 11/16
.68	V146Z-165	.218x .218x 15/16	.68	V146ZR-116	.280x1
1.0	V146Z-166	.265x .375x 15/16	1.0	V146ZR-117	.325x1
1.5	V146Z-167	.250x .250x1-1/4	1.5	V146ZR-118	.340x1-1/4
2.0	V146Z-168	.312x .468x1-1/4	2.0	V146ZR-119	.405x1-1/4
3.0	V146Z-169	.406x .562x1-1/4	3.0	V146ZR-120	.500x1-1/4
4.0	V146Z-170	.406x .562x1-3/8	4.0	V146ZR-121	.510x1-3/8
5.0	V146Z-171	.375x .593x1-3/4	5.0	V146ZR-122	.510x1-3/4
		200 VDCW			
.01	V146Z-127	.156x .203x 7/16	.01		
.015	V146Z-128	.156x .234x 7/16	.015		
.022	V146Z-129	.203x .265x 7/16	.022		
.033	V146Z-130	.218x .281x 7/16	.033		
.047	V146Z-131	.171x .265x 9/16	.047	V146ZR-123	.200x 9/16
.068	V146Z-60	.125x .250x 11/16	.068	V146ZR-25	.200x 11/16
.1	V146Z-6	.187x .281x 11/16	.1	V146ZR-26	.234x 11/16
.15	V146Z-61	.187x .312x 11/16	.15	V146ZR-27	.265x 11/16
.22	V146Z-132	.265x .375x 11/16	.22	V146ZR-124	.340x 11/16
.33	V146Z-133	.296x .484x 11/16	.33	V146ZR-125	.390x 11/16
.47	V146Z-134	.359x .546x 11/16	.47	V146ZR-16	.328x1
.68	V146Z-135	.343x .515x 11/16	.68	V146ZR-30	.390x1
1.0	V146Z-64	.312x .468x1-3/16	1.0	V146ZR-126	.500x1
1.5	V146Z-65	.406x .593x1-3/16	1.5	V146ZR-32	.515x1-3/16
2.0	V146Z-8	.343x .563x1-11/16	2.0	V146ZR-127	.620x1-1/4
3.0			3.0	V146ZR-128	.650x1-1/2
4.0	V146Z-55	.562x .687x1-11/16	4.0	V146ZR-34	.656x1-11/16
5.0	V146Z-136	.484x .843x1-3/4	5.0	V146ZR-129	.800x1-3/4
		400 VDCW			
.01	V146Z-137	.140x .265x 11/16	.01	V146ZR-132	.180x 9/16
.015	V146Z-138	.131x .296x 11/16	.015	V146ZR-133	.180x 11/16
.022	V146Z-139	.203x .312x 11/16	.022	V146ZR-134	.210x 11/16
.033	V146Z-140	.250x .375x 11/16	.033	V146ZR-135	.250x 11/16
.047	V146Z-81	.187x .281x 7/8	.047	V146ZR-136	.300x 11/16
.068	V146Z-141	.234x .421x 15/16	.068	V146ZR-137	.350x 11/16
.1	V146Z-142	.296x .484x 15/16	.1	V146ZR-138	.325x1
.15	V146Z-143	.343x .562x 15/16	.15	V146ZR-139	.375x1
.22	V146Z-84	.281x .281x1-1/4	.22	V146ZR-55	.400x1-1/4
.33	V146Z-85	.375x .375x1-1/4	.33	V146ZR-140	.450x1-1/2

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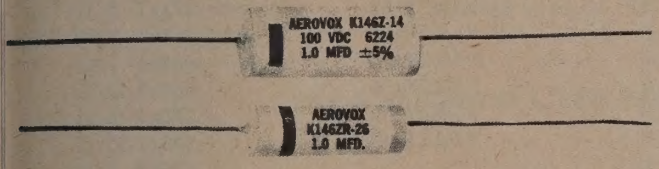
CAPACITORS

TYPE V146Z and V146ZR METALLIZED MYLAR FILM CAPACITORS (Continued)

TYPE V146Z			TYPE V146ZR		
Capacity	Catalog No.	t x w x l	Capacity	Catalog No.	d x l
		400 VDCW (Cont.)			
.33	V146Z-85	.375x .367x1 1/4	.33	V146ZR-140	.480x1 1/2
.47	V146Z-144	.406x .406x1 1/2	.47	V146ZR-141	.520x1 1/2
.68	V146Z-145	.421x .890x1 1/2	.68	V146ZR-142	.625x1 1/2
1.0	V146Z-87	.531x .718x1 3/4	1.0	V146ZR-59	.656x1 3/4
1.5	V146Z-88	.500x1.093x1 3/4	1.5	V146ZR-60	.825x1 3/4
2.0	V-146Z-146	.812x1.125x1 3/4	2.0	V146ZR-143	.950x1 3/4
4.0	V146Z-89	1.00x1.093x2 1/4	4.0	V146ZR-62	1.093x2 1/4
		600 VDCW			
.01	V146Z-147		.01	V146ZR-63	.171x 3/4
.01	V146Z-147	.187x .246x 11/16	.015	V146ZR-64	.203x 3/4
.015	V146Z-148	.218x .343x 11/16	.022	V146ZR-145	.300x 3/4
.022	V146Z-149	.250x .453x 11/16	.033	V146ZR-146	.370x 3/4
.033	V146Z-150	.296x .500x 11/16	.047	V146ZR-67	.250x1 1/16
.047	V146Z-151	.234x .437x 11/16	.068	V146ZR-68	.296x1 1/16
.068	V146Z-152	.312x .531x 15/16	.1	V146ZR-69	.359x1 1/16
.1	V146Z-153	.375x 593x 15/16	.15	V146ZR-70	.375x1 1/4
.15	V146Z-153	.375x .593x 1/4	.22	V146ZR-71	.468x1 1/4
.22	V146Z-96	.343x 531x 1/4	.33	V146ZR-72	.453x1 3/4
.33	V146Z-154	.515x 890.x1 1/2	.47	V146ZR-73	.531x1 3/4
.47	V146Z-155	.515x .890x1 1/2	.68	V146ZR-147	.800x1 3/4
.68	V146Z-156	.671x1.031x1 1/2	1.0	V146ZR-148	.950x1 3/4
1.0	V146Z-157	.671x1.187x1 3/4	1.5	V146ZR-76	.859x2 1/4
1.5	V146Z-158	.859x1.375x 3/4	2.0	V146ZR-17	.890x2 1/4
2.0	V146Z-159	1.032x1.515x 3/4			

TYPE K146Z and K146ZR METALLIZED POLYCARBONATE CAPACITORS



Metallized polycarbonate film capacitors with many advantages over other film dielectric types. Units have high capacitance stability, low dissipation factor, low dielectric absorption and high insulation resistance. Metallized polycarbonate construction assures a self-healing unit should rare dielectric breakdown occur.

Operating temperature range is −65° to ±125°C at full rating.

Standard tolerance is ±10%, with closer tolerances available on special request.

K146Z			K146ZR		
Cap. uf	Part No.	t x w x l	Cap. uf	Part No.	d x l
		100 VDC			
.01			.01		USE 200V
.012			.012		USE 200V
.015			.015		USE 200V
.018			.018		USE 200V
.022			.022	K146ZR-6	.140x 1/2
.027			.027	K146ZR-7	.140x 1/2
.033			.033	K146ZR-8	.156x 1/2
.039			.039	K146ZR-9	.156x 1/2
.047			.047	K146ZR-10	.171x 1/2
.056			.056	K146ZR-11	.171x 1/2
.068			.068	K146ZR-12	.171x 9/16
.082	K146Z-1	.125x .218x 9/16	.082	K146ZR-13	.187x 9/16
.10	K146Z-2	.140x .250x 9/16	.10	K146ZR-14	.203x 9/16
.12	K146Z-3	.156x .265x 9/16	.12	K146ZR-15	.218x 9/16
.15	K146Z-4	.140x .250x 11/16	.15	K146ZR-16	.203x 11/16
.18	K146Z-5	.156x .265x 11/16	.18	K146ZR-17	.218x 11/16
.22	K146Z-6	.171x .281x 11/16	.22	K146ZR-18	.234x 11/16
.27	K146Z-7	.203x .312x 11/16	.27	K146ZR-19	.265x 11/16
.33	K146Z-8	.218x .328x 11/16	.33	K146ZR-20	.281x 11/16
.39	K146Z-9	.250x .359x 11/16	.39	K146ZR-21	.281x 11/16
.47	K146Z-10	.234x .343x 13/16	.47	K146ZR-22	.296x 13/16
.56	K146Z-11	.234x .390x1	.56	K146ZR-23	.343x1
.68	K146Z-12	.250x .406x1	.68	K146ZR-24	.343x1
.82	K146Z-13	.281x .429x1	.82	K146ZR-25	.375x1
1.0	K146Z-14	.312x .468x1	1.0	K146ZR-26	.406x1
1.5	K146Z-15	.295x .423x1-3/16	1.5	K146ZR-27	.390x1- 3/16
2.0	K146Z-16	.343x .500x1-13/16	2.0	K146ZR-28	.437x1- 3/16
3.0	K146Z-17	.296x .493x1-13/16	3.0	K146ZR-29	.421x1-13/16
4.0	K146Z-18	.343x .546x1-13/16	4.0	K146ZR-30	.468x1-13/16
5.0	K146Z-19	.375x .578x1-15/16	5.0	K146ZR-31	.500x1-15/16

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CAPACITORS

TYPE K146Z and K146ZR METALLIZED POLYCARBONATE CAPACITORS (Continued)

K146Z			K146ZR		
Cap. uf	Part No.	t x w x l	Cap. uf	Part No.	d x l
		200 VDC			
.01			.01	K146ZR-32	.140x 1/2
.012			.012	K146ZR-33	.140x 1/2
.015			.015	K146ZR-34	.156x 1/2
.018			.018	K146ZR-35	.156x 1/2
.022			.022	K146ZR-36	.171x 1/2
.027	K146Z-20	.125x .234x 1/2	.027	K146ZR-37	.187x 1/2
.033	K146Z-21	.125x .234x 1/2	.033	K146ZR-38	.187x 9/16
.039	K146Z-22	.125x .234x 1/2	.039	K146ZR-39	.187x 9/16
.047	K146Z-23	.109x .218x 11/16	.047	K146ZR-40	.187x 9/16
.056	K146Z-24	.125x .234x 11/16	.056	K146ZR-41	.187x 11/16
.068	K146Z-25	.140x .250x 11/16	.068	K146ZR-42	.203x 11/16
.082	K146Z-26	.156x .265x 11/16	.082	K146ZR-47	.218x 11/16
.10	K146Z-27	.171x .281x 11/16	.10	K146ZR-43	.234x 11/16
.12	K146Z-27	.187x .296x 11/16	.12	K146ZR-44	.502x 11/16
.15	K146Z-29	.218x .328x 11/16	.15	K146ZR-45	.281x 11/16
.18	K146Z-30	.250x .359x 11/16	.18	K146ZR-46	.312x 11/16
.22	K146Z-31	.265x .375x 11/16	.22	K146ZR-48	.328x 11/16
.27	K146Z-32	.250x .239x 13/16	.27	K146ZR-49	.312x1 13/16
.33	K146Z-33	.218x .375x1	.33	K146ZR-50	.312x1
.39	K146Z-34	.234x .390x1	.39	K146ZR-51	.328x1
.47	K146Z-35	.234x .390x1- 3/16	.47	K146ZR-52	.328x1- 3/16
.56	K146Z-36	.250x .406x1- 3/16	.56	K146ZR-53	.343x1- 3/16
.68	K146Z-37	.281x .437x1- 3/16	.68	K146ZR-54	.375x1- 3/16
.82	K146Z-38	.328x .484x1- 3/16	.82	K146ZR-55	.421x1- 3/16
1.0	K146Z-39	.359x .515x1- 3/16	1.0	K146ZR-56	.453x1- 3/16
1.5	K146Z-40	.359x .556x1- 7/16	1.5	K146ZR-57	.484x1- 7/16
2.0	K146Z-41	.359x .556x1-13/16	2.0	K146ZR-58	.484x1-13/16
3.0	K146Z-42	.468x .671x1-13/16	3.0	K146ZR-59	.593x1-13/16
4.0	K146Z-43	.515x .718x1-15/16	4.0	K146ZR-60	.643x1-15/16
5.0	K146Z-44	.546x .750x2- 3/16	5.0		.670x2- 3/16
		400 VDC			
.01	K146Z-71	.140x .259x 9/16	.01	K146ZR-88	.203x 9/16
.012	K146Z-72	.140x .250x 9/16	.012	K146ZR-89	.203x 9/16
.015	K146Z-73	.171x .281x 9/16	.015	K146ZR-90	.234x 9/16
.018	K146Z-74	.187x .296x 9/16	.018	K146ZR-91	.250x 9/16
.022	K146Z-75	.203x .312x 9/16	.022	K146ZR-92	.265x 9/16
.027	K146Z-76	.187x .296x 11/16	.027	K146ZR-93	.250x 11/16
.033	K146Z-77	.203x .312x 11/16	.033	K146ZR-94	.265x 11/16
.039	K146Z-78	.234x .343 11/16	.39	K146ZR-95	.296x 11/16
.047	K146Z-79	.250x .359x 11/16	.047	K146ZR-96	.312x 11/16
.056	K146Z-80	.281x .390x 11/16	.056	K146ZR-97	.343x 11/16
.068	K146Z-81	.265x .375x 13/16	.068	K146ZR-98	.328x 13/16
.10	K146Z-83	.250x .406x1	.10	K146ZR-100	.343x1
.12	K146Z-84	.281x .437x1	.12	K146ZR-101	.375x1
.15	K146Z-85	.296x .453x1	.15	K146ZR-102	.390x1
.18	K146Z-86	.343x .500x1	.18	K146ZR-103	.437x1
.22	K146Z-87	.390x .546x1	.22	K146ZR-104	.484x1
.27	K146Z-88	.375x .531x1- 3/16	.27	K146ZR-105	.468x1- 3/16
.33	K146Z-89	.343x .546x1- 7/16	.33	K146ZR-106	.468x1- 7/16
.39	K146Z-90	.375x .578x1- 7/16	.39	K146ZR-107	.500x1- 7/16
.47	K146Z-91	.421x .625x1- 7/16	.47	K146ZR-108	.546x1- 7/16
.56	K146Z-92	.453x .656x1- 7/16	.56	K146ZR-109	.578x1- 7/16
.68	K146Z-93	.515x .718x1- 7/16	.68	K146ZR-110	.643x1- 7/16
.82	K146Z-94	.578x .781x1- 7/16	.82	K146ZR-111	.703x1- 7/16
1.0	K146Z-95	.640x .837x1- 7/16	1.0	K146ZR-112	.765x1- 7/16
1.5	K146Z-96	.812x1.015x1- 7/16	1.5	K146ZR-113	.937x1- 7/16
2.0	K146Z-97	.781x1.00x1 1-15/16	2.0	K146ZR-114	.906x1-15/16

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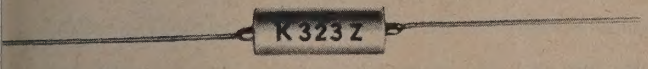
CAPACITORS

TYPE K146Z and K146ZR METALLIZED POLYCARBONATE CAPACITORS (Continued)

K146Z			K146ZR		
Cap. uf	Part No.	t x w x l	Cap. uf	Part No.	d x l
		600 VDC			
.01	K146Z-98	.125x .281x 11/16	.01	K146ZR-115	.218x 11/16
.012	K146Z-99	.140x .296x 11/16	.012	K146ZR-116	.234x 11/16
.015	K146Z-100	.156x .312x 11/16	.015	K146ZR-117	.250x 11/16
.018	K146Z-101	.187x .343x 11/16	.018	K146ZR-118	.281x 11/16
.022	K146Z-102	.203x .359x 11/16	.022	K146ZR-119	.296x 11/16
.027	K146Z-103	.187x .343x 11/16	.027	K146ZR-120	.281x 13/16
.033	K146Z-104	.218x .375x 13/16	.033	K146ZR-121	.312x 13/16
.039	K146Z-105	.187x .390x1	.039	K146ZR-122	.312x1
.047	K146Z-106	.203x .406x1	.047	K146ZR-123	.328x1
.056	K146Z-107	.218x .421x1	.056	K146ZR-124	.343x1
.068	K146Z-108	.250x .359x1	.068	K146ZR-125	.375x1
.082	K146Z-109	.281x .484x1	.082	K146ZR-126	.406x1
.10	K146Z-110	.312x .515x1	.10	K146ZR-127	.437x1
.12	K146Z-111	.312x .515x 13/16	.12	K146ZR-128	.437x1- 3/16
.15	K146Z-112	.359x .562x 13/16	.15	K146ZR-129	.484x1- 3/16
.18	K146Z-113	.390x .593x1- 7/16	.18	K146ZR-130	.515x1- 7/16
.22	K146Z-114	.453x .656x1- 7/16	.22	K146ZR-131	.478x1- 7/16
.27	K146Z-115	.500x .703x1- 7/16	.27	K146ZR-132	.625x1- 7/16
.33	K146Z-116	.406x .609x1-13/16	.33	K146ZR-133	.531x1-13/16
.39	K146Z-117	.453x .659x1-13/16	.39	K146ZR-134	.573x1-13/16
.47	K146Z-118	.500x .703x1-13/16	.47	K146ZR-135	.625x1-13/16
.56	K146Z-119	.562x .765x1-13/16	.56	K146ZR-136	.687x1-13/16
.68	K146Z-120	.609x .812x1-13/16	.68	K146ZR-137	.734x1-13/16
.82	K146Z-121	.687x .890x1-13/16	.82	K146ZR-138	.812x1-13/16
1.0	K146Z-122	.734x .937x1-15/16	1.0	K146ZR-139	.859x1-15/16

TYPE K323Z METALLIZED POLYCARBONATE CAPACITORS



Metallized polycarbonate film capacitors with many advantages over other film dielectric types. Units have high capacitance stability, low dissipation factor, low dielectric absorption and high insulation resistance. Metallized polycarbonate construction assures a self-healing unit should rare dielectric breakdown occur.

Operating temperature range is −65° to +125°C at full rating. Standard tolerance is ±20%, with closer tolerance available on special request.

If plastic sleeve is desired add suffix "P" to type number and specify when ordering. Add 1/16" to the diameter and length.

For full technical information request Bulletin NPJ-136.

Cap. uf	D x L	Cap. uf	D x L	Cap. uf	D x L	Cap. uf	D x L
	K323Z – 100 VDCW				K323Z – 200 VDCW		
.015	.175x 5/8	.47	.400x 13/16	.01	.175x 5/8	.33	.400x1- 1/8
.022	.175x 5/8	.68	.400x1- 1/8	.015	.195x 5/8	.47	.400x1- 5/16
.033	.195x 11/16	1.0	.400x1- 9/16	.022	.195x 11/16	.68	.562x 15/16
.047	.235 5/8	1.5	.562x1- 1/8	.033	.235x 11/16	1.0	.562x1- 5/16
.068	.235x 11/16	2.0	.562x1- 5/16	.047	.235x 13/16	1.5	.562x1- 9/16
.1	.235x 13/16	3.0	.562x1-13/16	.068	.235x 13/16	2.0	.562x1-13/16
.15	.312x 13/16	4.0	.670x1-13/16	.1	.312x 13/16	3.0	.750x1-13/16
.22	.312x 13/16	5.0	.670x2- 1/16	.15	.312x 15/16	4.0	.750x2- 1/16
.33	.400x 13/16			.22	.400x 13/16	5.0	.750x2- 5/16
	K323Z – 400 VDCW				K323Z – 600 VDCW		
.01	.235x 11/16	.22	.562x1- 5/16	.01	.312x 13/16	.15	.562x1- 5/16
.015	.235x 13/16	.33	.562x1- 9/16	.015	.400x 13/16	.22	.562x1-13/16
.022	.312x 11/16	.47	.562x1-13/16	.022	.400x 13/16	.33	.670x1-13/16
.033	.312x 13/16	.68	.670x1-13/16	.033	.400x 15/16	.47	.750x1-13/16
.047	.400x 13/16	1.0	.750x2- 1/16	.047	.400x1- 1/8	.68	.750x2- 5/16
.068	.400x 15/16	1.5	1.0 x1-13/16	.068	.400x1- 5/16	1.0	1.0 x2- 1/16
.1	.400x1 1/8	2.0	1.0 x2- 1/16	.1	.562x1- 1/8		
.15	.400x1 5/16						

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AEROVOX

CAPACITORS

TYPES P323S AND P323SX

Tubular, metal-cased units with hermetically sealed construction and glass terminal end seals. Engineered to meet high temperature, minimum space requirements, Types P323S & P323SX are designed for long life at elevated temperatures. Impregnated with HYVOL "S", a special high temperature liquid impregnant. These units are capable of withstanding twice rated voltage between terminals or between terminal and case for a 2-minute period. Ambient temperature shall be +25°C, –10°C for this test. Power factor is less than 1% when measured or referred to a frequency of 1,000 cps at 25°C. Type P323S and P323SX are rigidly processed to assure operation between –65°C and +100°C. Type P323S uses an inserted-tab construction to obtain minimum size, while type P323SX has extended-foil construction for applications at very-low AC voltages.

For equivalent types rated -65°C to +100°C in the same case size as shown, order as P123S, SX etc., and request prices. Styles available from stock include units bearing suffixes S-SX which are as listed; G types, with one end grounded which are 1/16" shorter; GP types, grounded, with plastic insulating sleeve and 1/16" larger diameter and P types, with both ends insulated and a plastic sleeve, which are 1/16" larger in both length and diameter.

Grounded units to be discontinued when present stocks are depleted.

STYLE VARIATIONS

Suffix	Description	Can size change
S-SX	AS LISTED	AS LISTED
G	ONE END GROUNDED	DEDUCT 1/16" FROM LENGTH
GP	GROUNDED WITH PLASTIC INSULATING SLEEVE	ADD 1/16" TO DIAMETER
P	BOTH ENDS INSULATED WITH PLASTIC SLEEVE	ADD 1/16" TO DIAMETER AND LENGTH
GT	ONE END GROUNDED WITH THREADED NECK MOUNTING	DEDUCT 1/16" FROM LENGTH

Cap. uf	P323S	P323SX	Cap. uf	P323S	P323SX	Cap. uf	P323S	P323SX	Cap. uf	P323S	P323SX
	100 VOLTS			200 VOLTS (Cont.)			300 VOLTS (Cont.)			600 VOLTS	
.001	.175 x 3/4		.0068	.235 x 3/4	.235 x 3/4	.01	.235 x 3/4	.312 x 7/8	.001	.235 x 3/4	.235 x 3/4
.01	.175 x 3/4	.235 x 3/4	.01	.235 x 3/4	.312 x 7/8	.015	.235 x 3/4	.312 x 7/8	.0015	.235 x 3/4	.235 x 3/4
.015		.235 x 3/4	.012	.235 x 3/4		.022	.312 x 7/8	.312 x 7/8	.0022	.235 x 3/4	.235 x 3/4
.022	.195 x 3/4	.312 x 7/8	.015		.312 x 7/8	.033	.312 x 7/8	.400 x 7/8	.0033	.235 x 3/4	
.027	.235 x 3/4		.022	.235 x 3/4	.312 x 7/8	.047	.312 x 7/8	.400 x 7/8	.0047	.235 x 3/4	
.033	.235 x 3/4	.312 x 7/8	.033	.312 x 7/8	.312 x 7/8		400 VOLTS		.0068	.235 x 3/4	
.047	.312 x 7/8	.312 x 7/8	.039	.312 x 7/8		.001	.235 x 3/4		.01	.312 x 7/8	.312 x 7/8
.068	.312 x 7/8	.400 x 7/8	.047		.400 x 7/8	.0015	.235 x 3/4	.235 x 3/4	.015	.312 x 7/8	
.1	.312 x 7/8	.400 x 7/8	.068	.312 x 7/8	.400 x 7/8	.0022		.235 x 3/4	.022	.312 x 7/8	
.15	.400 x 7/8	.400 x 1-1/8	.1	.400 x 7/8	.400 x 1-1/8	.0033	.235 x 3/4	.235 x 3/4			.400 x 1-3/8
.22	.400 x 1-1/8	.400 x 1-3/8	.15	.400 x 1-1/8		.0047	.235 x 3/4		.1		.562 x 1-3/8
.27	.400 x 1-3/8		.22	.400 x 1-3/8		.0068	.235 x 3/4		.22	.562 x 1-7/8	.670 x 1-5/8
.33		.562 x 1-1/8	.47		.562 x 1-5/8	.01	.235 x 3/4	.312 x 7/8	.47		.750 x 2-3/8
.47	.562 x 1-1/8		1.00	.670 x 1-7/8	.750 x 2-1/8	.015	.312 x 7/8	.312 x 7/8	1.00		1.000 x 2-5/8
.00	562 x 1-7/8	.670 x 1-5/8		300 VOLTS		.022	.312 x 7/8			1000 VOLTS	
	200 VOLTS		.001	.235 x 3/4	.235 x 3/4	.033		.400 x 7/8	.01		.400 x 7/8
.001	.235 x 3/4	.235 x 3/4	.0015	.235 x 3/4	.235 x 3/4	.047	.400 x 7/8	.400 x 1-1/8	.022	.400 x 1-1/8	.400 x 1-3/8
.0015	.235 x 3/4	.235 x 3/4	.0022	.235 x 3/4	.235 x 3/4	.1	.400 x 1-3/8	.562 x 1-1/8	.047		.562 x 1-3/8
.0022	.235 x 3/4	.235 x 3/4	.0033	.235 x 3/4	.235 x 3/4	.22		.562 x 1-5/8	.1	.562 x 1-5/8	.670 x 1-5/8
.0033	.235 x 3/4	.235 x 3/4	.0047	.235 x 3/4	.235 x 3/4	.47		.750 x 2-1/8	.22	.750 x 2-1/8	
.0047	.235 x 3/4	.235 x 3/4	.0068	.235 x 3/4		1.00	1.000 x 1-7/8	1.000 x 2-5/8	.47	1.000 x 2-1/8	

TYPE P09 PAPER CAPACITORS

Immersion-proof units in sturdy, rectangular metal cans featuring high-voltage screw-type pillar terminals fitted with solder lugs.

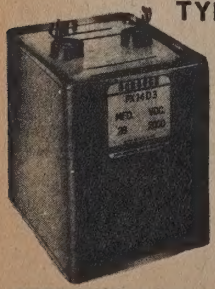
Use of HYVOL M or J permits very compact size for capacity, working voltage and safety factor.

Intended for heavy-duty continuous service in transmitters, amplifiers, etc. Operating temperature –55 to + 85°C.

Type MB, a one piece wrap-around bracket is supplied with each unit unless otherwise specified. For capacitors with with 3¾ x 3-3/16 or 3¾ x 4-9/16 base sizes. Type MS, a 2 piece, L-shaped hang-on bracket is supplied.

Type MSB, a 2-piece, hang-on type with spade bolts is available for all sizes on request.

Cap. Uf	Size	Cap. uf	Size	Cap. uf	Size	Cap. uf	Size
	600 V		1000 V	1.0	1-1/16 x 1-13/16 x 3-7/8		2500 V
.5	1-1/16 x 1-13/16 x 2-1/4	1.	1-1/16 x 1-13/16 x 1-5/8	2.0	1-3/16 x 2-1/2 x 4-4-1/4	4.0	3-3/4 x 4-9/16 x 4
1.0	1-1/16 x 1-13/16 x 2-1/4	.5	1-1/16 x 1-13/16 x 2-1/4	3.0	1-3/16 x 2-1/2 x 4-3/4		3000 V
2.0	1-1/16 x 1-13/16 x 2-7/8	1.0	1-1/16 x 1-13/16 x 2-1/4		2000 V	.1	1-1/16 x 2-1/2 x 2
3.0	1-1/16 x 1-13/16 x 3-7/8	2.0	1-1/16 x 1-13/16 x 3-7/8	.1	1-1/16 x 1-13/16 x 2-1/8	.25	1-3/16 x 2-1/2 x 2-1/2
4.0	1-3/16 x 2-1/2 x 3-1/2	4.0	1-1/16 x 2-1/2 x 4-3/4	.25	1-1/16 x 1-13/16 x 2-1/8	4.0	3-3/4 x 4-9/16 x 4-3/4
6.0	1-3/16 x 2-1/2 x 4-3/4	8.0	1-1/4 x 3-3/4 x 4-3/4	.5	1-1/16 x 1-13/16 x 2-7/8		4000 V
8.0	1-1/4 x 3-3/4 x 3-7/8	10.0	1-3/4 x 3-3/4 x 4-3/4	1.0	1-3/16 x 2-1/2 x 3-1/2	2.0	3-3/4 x 4-9/16 x 5-1/8
10.0	1-1/4 x 3-3/4 x 4-3/4	15.0	2-1/2 x 3-3/4 x 4-3/4	2.0	1-1/4 x 3-3/4 x 4-1/4	4.0	3-3/4 x 4-9/16 x 8-1/2
12.0	1-1/2 x 3-3/4 x 4-3/4		1500 V	4.0	2-1/4 x 3-3/4 x 3-7/8		7500 V
15.0	1-3/4 x 3-3/4 x 4-3/4	.5	1-1/16 x 1-13/16 x 2-7/8	10.0	3-3/4 x 4-9/16 x 4-3/4	.1	2-1/4 x 3-3/4 x 3-7/8
				15.0	3-3/4 x 4-9/16 x 6-1/2		



TYPE PX – Energy Storage Capacitors

Metal-cased units specifically designed for high-speed flash photographic applications and for signaling equipment, pulsing and other energy storage requirements.

VDC Peak	Nominal Cap. uf		Type No.
		22.5 Watt Seconds	
1500	20		PX10D1
		50.0 Watt Seconds	
2000	28		PX14D3
2500	24	75.0 Watt Seconds	PX14D2
3000	16		PX18D1
2500	30	100.0 Watt Seconds	PX15D1
4000	12.5		PX20D1

Size: Depth x Width x Height	
PX10D1	2-1/2" x 3¾" x 4-5/8"
PX15D1	4-9/16" x 3¾" x 6-1/2"
ALL OTHERS	4-9/16" x 3¾" x 4-5/8"

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CAPACITORS

TYPE P8292ZN PLASTIC CASED METALLIZED-PAPER TUBULARS

Featuring the exclusive "polycap"® plastic case, these capacitors have outstanding humidity resistance and improved insulation resistance. High-temperature impregnant permits operation between —30°C and +100°C at working voltage.

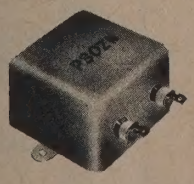
Wax-free case material facilitates handling by automatic insertion and assembly equipment.
Standard tolerance ±20%. Closer tolerance units available on special order at additional cost. Mechanical tolerance ±1/16", length and diameter.

For full technical data, request Bulletin NPJ-113 Rev.

Cap. uf	D x L	Catalog Number
200 VDCW		
.01	1/4 x 19/32	P8292ZN6
.02	1/4 x 21/32	P8292ZN7
.03	5/16 x 23/32	P8292ZN8
.05	5/16 x 23/32	P8292ZN9
.1	3/8 x 23/32	P8292ZN10
.25	1/2 x 23/32	P8292ZN11
.5	7/16 x 1 5/32	P8292ZN12
1.0	9/16 x 1 5/32	P8292ZN13
2.0	5/8 x 1 21/32	P8292ZN14
3.0	11/16 x 1 31/32	P8292ZN206
4.0	13/16 x 1 15/16	P8292ZN207
5.0	7/8 x 1 15/16	P8292ZN208
6.0	15/16 x 1 15/16	P8292ZN209
8.0	15/16 x 2 3/8	P8292ZN210
10.0	1 x 2 3/8	P8292ZN211
400 VDCW		
.01	5/16 x 23/32	P8292ZN15
.02	3/8 x 23/32	P8292ZN16
.03	3/8 x 23/32	P8292ZN17
.05	7/16 x 23/32	P8292ZN18
.1	7/16 x 1 5/32	P8292ZN19
.25	9/16 x 1 5/32	P8292ZN20
.5	5/8 x 1 15/32	P8292ZN21
1.0	11/16 x 1 31/32	P8292ZN22
2.0	7/8 x 2 3/8	P8292ZN23
3.0	1 x 2 7/8	P8292ZN212
4.0	1 x 3 5/8	P8292ZN213
600 VDCW		
.01	3/8 x 23/32	P8292ZN24
.02	3/8 x 23/32	P8292ZN25
.03	7/16 x 23/32	P8292ZN26
.05	1/2 x 23/32	P8292ZN27
.1	7/16 x 1 5/32	P8292ZN28
.25	5/8 x 1 5/32	P8292ZN29
.5	11/16 x 1 19/32	P8292ZN30
1.0	13/16 x 2	P8292ZN31
2.0	1 x 2 3/8	P8292ZN32
3.0	1 x 3 3/8	P8292ZN214

TYPE P30ZN
High Temperature Bathtub Case

Hermetically-sealed, Aerolene impregnated, metal cased units for operation at temperatures from —65°C to +125°C, at full ratings. Standard tolerance is ±20%.



Cap. uf	150 V	200 V	400 V	600 V
.1		1 3/4 x 1 x 3/4	1 3/4 x 1 x 3/4	*1 3/4 x 1 x 3/4
.25		1 3/4 x 1 x 3/4	*1 3/4 x 1 x 3/4	*1 3/4 x 1 x 3/4
.5		*1 3/4 x 1 x 3/4	*1 3/4 x 1 x 3/4	*1 3/4 x 1 x 3/4
1.0		*1 3/4 x 1 x 3/4	*1 3/4 x 1 x 7/8	*1 3/4 x 1 1/4 x 7/8
2.0		*1 3/4 x 1 x 3/4	*2 x 1 3/4 x 13/16	*2 x 2 x 7/8
3.0	1 3/4 x 1 x 3/4		2 x 1 3/4 x 15/16	2 x 2 x 1 1/8
4.0	* 1 3/4 x 1 x 3/4		*2 x 2 x 1	*2 x 2 x 1 1/4
5.0	1 3/4 x 1 x 3/4		2 x 2 x 1 1/4	
6.0	1 3/4 x 1 1/4 x 7/8			
8.0	* 2 x 1 3/4 x 3/4			
10.0	* 2 x 1 3/4 x 3/4			
12.0	2 x 2 x 7/8			
15.0	* 2 x 2 x 1			

*CH53 Per MIL-C-1831Z/4

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CAPACITORS

M18312/01-0302

MIL TYPES CH08 and CH09 METALLIZED TUBULAR CAPACITORS

Listed are the case floating style (diagram 1) only. Case grounded (diagram 3) are available on special order.
In accordance with directions in MIL-C-18312 Rev. C units will be marked with the MIL part number rather than MIL type designation. CH08 types will be marked M18312/01 plus the dash number listed below. CH09 types will be marked M18312/02 plus the dash number listed below. Dash number will change with tolerance and case style. Tolerances shown are standard, available at closer tolerance on special order.

Capacity uf	MIL Type Designation	Dash Number	Capacity uf	MIL Type Designation	Dash Number	Capacity uf	MIL Type Designation	Dash Number
	50 VDCW			50 VDCW			200V	
.018	CH-*-AIRA183K	0302	1.5	CH-*-A1RA155K	0382	10.0	CH-*-A1NC106K	0457
.022	CH-*-AIRA223K	0306	2.2	CH-*-A1RA225K	0386	12.0	CH-*-A1NC126K	0461
.027	CH-*-A1RA273K	0310	2.7	CH-*-A1RA275K	0390		400V	
.033	CH-*-A1RA333K	0314	3.3	CH-*-A1RA335K	0394	.047	CH-*-A1NE473K	0465
.039	CH-*-A1RA393K	0318	3.9	CH-*-A1RA395K	0398	.1	CH-*-A1NE104K	0469
.047	CH-*-A1RA473K	0322	4.7	CH-*-A1RA475K	0402	.22	CH-*-A1NE224K	0473
.056	CH-*-A1RA563K	0326	5.6	CH-*-A1RA565K	0406	.47	CH-*-A1NE474K	0477
.068	CH-*-A1RA683K	0330	6.8	CH-*-A1RA685K	0410	1.0	CH-*-A1NE105K	0481
.082	CH-*-A1RA823K	0334	10.0	CH-*-A1RA106K	0414	2.2	CH-*-A1NE225K	0485
.1	CH-*-A1RA104K	0338	12.0	CH-*-A1RA126K	0418	3.3	CH-*-A1NE335K	0489
.18	CH-*-A1RA184K	0342		200V			600V	
.22	CH-*-A1RA224K	0346	.1	CH-*-A1NC104K	0421	.01	CH-*-A1NF103K	0493
.27	CH-*-A1RA274K	0350	.22	CH-*-A1NC224K	0425	.022	CH-*-A1NF223K	0497
.33	CH-*-A1RA334K	0354	.47	CH-*-A1NC474K	0429	.047	CH-*-A1NF473K	0501
.39	CH-*-A1RA394K	0358	1.0	CH-*-A1NC105K	0433	.1	CH-*-A1NF104K	0505
.47	CH-*-A1RA474K	0362	1.5	CH-*-A1NC155K	0437	.22	CH-*-A1NF224K	0509
.56	CH-*-A1RA564K	0366	2.2	CH-*-A1NC225K	0441	.47	CH-*-A1NF474K	0513
.68	CH-*-A1RA684K	0370	3.3	CH-*-A1NC335K	0445	1.0	CH-*-A1NF105K	0517
.82	CH-*-A1RA824K	0374	4.7	CH-*-A1NC475K	0449	1.5	CH-*-A1NF155K	0521
1.0	CH-*-A1RA105K	0378	6.8	CH-*-A1NC685K	0453	2.2	CH-*-A1NF225K	0525

* Insert "08" for uninsulated case, "09" for insulated case.

P123ZN

TYPES P123ZN, P123ZNG and TYPES P323ZN and P323ZNG

Metallized, hermetically-sealed paper tubulars with glass ends seals soldered for moisture seal. P123ZN operates between −55 and +100°C at full voltage ratings, and 125°C to 75% maximum voltage. Type P323ZN has similar construction, but operates without voltage derating between −55 and +125°. Standard tolerance is ±25% for P123ZN in capacities below .01 mfd, ±20% from .012 mfd and up. All values of type P323ZN have a tolerance of ±20%.
Sizes shown are for uninsulated styles. For insulated cases, add the suffix "P" designation and 1/16" to length and diameter.

Cap. uf	P123ZN	P323ZN
	50 VOLTS	
.047	.195x 13/16	
.068	.195x 13/16	
.1	.195x 15/16	
.22	.312x 13/16	
.47	.312x 3/16	
.68	.400x1 1/8	
1.0	.400x1 5/16	
2.0	.562x1 5/16	
3.0	.562x1 7/16	
4.0	.670x1 7/16	
	200 VOLTS	
.001	.175x 1/2	
.002	.175x 1/2	
.003	.175x 1/2	
.005	.175x 1/2	
.01	.175x 1/2	.175x 1/2
.012	.195x 5/8	.195x 5/8
.015	.195x 5/8	.195x 5/8
.02	.195x 5/8	
.033	.235x 5/8	
.04	.235x 11/16	
.047	.235x 11/16	
.05	.235x 11/16	
.068	.312x 13/16	.312x 13/16
.1	.312x 13/16	.312x 13/16
.12	.312x1 1/8	
.15	.312x1 1/8	
.2	.312x1 1/8	
.22	.312x1 1/8	.400x 7/8
.25	.312x1 1/8	
.33	.400x1 1/8	.400x1 1/8
.47	.400x1 1/8	.500x1 1/8
.5	.400x1 1/8	
.68	.500x1 1/8	.500x1 1/8
.82		.562x1 1/8
1.0	.562x1 1/8	.562x1 1/8
1.5	.562x1 5/8	.562x1 5/8
2.0	.562x1 7/8	.670x1 5/8
3.0	.670x1 7/8	.670x1 7/8
4.0	.750x1 7/8	.750x1 7/8
5.0		1.000x1 7/8

Cap. uf	P123ZN	P323ZN
	200 VOLTS	
8.0		1.000x1 7/8
10.0		1.000x2 3/8
12.0		1.000x2 5/8
	400 VOLTS	
.002	.235x 1/2	
.003	.235x 5/8	
.005	.235x 5/8	
.01	.235x 5/8	
.012	.235x 13/16	
.047	.312x1 1/8	.312x1 1/8
.05	.312x1 1/8	
.1	.400x1 1/8	.400x1 1/8
.22	.500x1 1/8	.562x1 1/8
.25	.500x1 1/8	
.33	.562x1 3/8	
.47	.562x1 5/8	
.5	.562x1 5/8	
1.0	.670x2 1/8	.750x1 7/8
2.0	1.000x1 7/8	1.000x1 7/8
	600 VOLTS	
.003	.235x 5/8	
.01		.312x 13/16
.02	.312x 13/16	
.022	.312x 13/16	.312x 13/16
.047	.400x 13/16	
.05	.400x 13/16	
.082		.500x1 1/8
.1	.400x1 1/8	.500x1 1/8
.18		.562x1 1/8
.22	.562x1 3/8	
.25	.562x1 3/8	
.27	.670x1 5/8	.562x1 5/8
.33	.562x1 5/8	
.47	.670x1 5/8	
.5	.670x1 7/8	
.82		1.000x1 7/8
1.0	.750x2 3/8	
1.5		1.000x2 3/8
2.0	1.000x2 3/8	1.000x2 3/8

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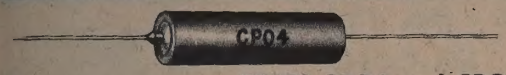
CAPACITORS

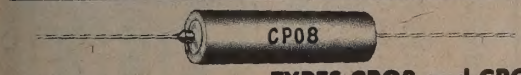


MIL TYPES — MIL-C-25C

TYPES CP04 and CP05 — Characteristics K Vibration Grades 1 and 3

Hermetically sealed tubular capacitors with glass terminal seal and axial wire leads. CP04 and CP05 are inserted tab construction; CP08 and CP09 are extended foil construction. Standard tolerance is ±10% (K). Specify Vibration Grade when ordering.

CAPACITY	VOLTAGE	CP04, CHAR. K P323S NO TUBE Case Floating	CP05, CHAR. K P323SP PLASTIC TUBE Case Floating
.027	100V	CP04A1KB273K—	CP05A1KB273K—
.033	100V	CP04A1KB333K—	CP05A1KB333K—
.1	100V	CP04A1KB104K—	CP05A1KB104K—
.15	100V	CP04A1KB154K—	CP05A1KB154K—
.22	100V	CP04A1KB224K—	CP05A1KB224K—
.27	100V	CP04A1KB274K—	CP05A1KB274K—
.47	100V	CP04A1KB474K—	CP05A1KB474K—
1.0	100V	CP04A1KB105K—	CP05A1KB105K—
.012	200V	CP04A1KC123K—	CP05A1KC123K—
.015	200V	CP04A1KC153K—	CP05A1KC153K—
.022	200V	CP04A1KC223K—	CP05A1KC223K—
.047	200V	CP04A1KC473K—	CP05A1KC473K—
.068	200V	CP04A1KC683K—	CP05A1KC683K—
.1	200V	CP04A1KC104K—	CP05A1KC104K—
.22	200V	CP04A1KC224K—	CP05A1KC224K—
.47	200V	CP04A1KC474K—	CP05A1KC474K—
1.0	200V	CP04A1KC105K—	CP05A1KC105K—
.01	400V	CP04A1KE103K—	CP05A1KE103K—
.033	400V	CP04A1KE333K—	CP05A1KE333K—
.047	400V	CP04A1KE473K—	CP05A1KE473K—
.1	400V	CP04A1KE104K—	CP05A1KE104K—
.27	400V	CP04A1KE274K—	CP05A1KE274K—
1.0	400V	CP04A1KE105K—	CP05A1KE105K—
.001	600V	CP04A1KF102K—	CP05A1KF102K—
.0015	600V	CP04A1KF152K—	CP05A1KF152K—
.0022	600V	CP04A1KF222K—	CP05A1KF222K—
.0033	600V	CP04A1KF332K—	CP05A1KF332K—
.0047	600V	CP04A1KF472K—	CP05A1KF472K—
.0068	600V	CP04A1KF682K—	CP05A1KF682K—
.01	600V	CP04A1KF103K—	CP05A1KF103K—
.015	600V	CP04A1KF153K—	CP05A1KF153K—
.022	600V	CP04A1KF223K—	CP05A1KF223K—
.047	600V	CP04A1KF473K—	CP05A1KF473K—
.1	600V	CP04A1KF104K—	CP05A1KF104K—
.22	600V	CP04A1KF224K—	CP05A1KF224K—
.022	1000V	CP04A1KG223K—	CP05A1KG223K—
.1	1000V	CP04A1KG104K—	CP05A1KG104K—
.22	1000V	CP04A1KG224K—	CP05A1KG224K—
.47	1000V	CP04A1KG474K—	CP05A1KG474K—



MIL TYPES — MIL-C-25C

TYPES CP08 and CP09—Characteristics K Vibration Grades 1 and 3

Hermetically sealed tubular capacitors with glass terminal seal and axial wire leads. CP04 and CP05 are inserted tab construction; CP08 and CP09 are extended foil construction. Standard tolerance is ±10% (K). Specify Vibration Grade when ordering.

CAPACITY	VOLTAGE	CP08, CHAR. K P323SX NO TUBE Case Floating	CP09, CHAR. K P323SXP PLASTIC TUBE Case Floating
.01	100V	CP08A1KB103K—	CP09A1KB103K—
.015	100V	CP08A1KB153K—	CP09A1KB153K—
.047	100V	CP08A1KB473K—	CP09A1KB473K—
.1	100V	CP08A1KB104K—	CP09A1KB104K—
.15	100V	CP08A1KB154K—	CP09A1KB154K—
.22	100V	CP08A1KB224K—	CP09A1KB224K—
.33	100V	CP08A1KB334K—	CP09A1KB334K—
1.0	100V	CP08A1KB105K—	CP09A1KB105K—
.0047	200V	CP08A1KC472K—	CP09A1KC472K—
.0068	200V	CP08A1KC682K—	CP09A1KC682K—
.033	200V	CP08A1KC333K—	CP09A1KC333K—
.047	200V	CP08A1KC473K—	CP09A1KC473K—
.068	200V	CP08A1KC683K—	CP09A1KC683K—
.1	200V	CP08A1KC104K—	CP09A1KC104K—
.47	200V	CP08A1KC474K—	CP09A1KC474K—
1.0	200V	CP08A1KC105K—	CP09A1KC105K—
.0033	400V	CP08A1KE332K—	CP09A1KE332K—
.015	400V	CP08A1KE153K—	CP09A1KE153K—
.033	400V	CP08A1KE333K—	CP09A1KE333K—
.047	400V	CP08A1KE473K—	CP09A1KE473K—
.1	400V	CP08A1KE104K—	CP09A1KE104K—
.22	400V	CP08A1KE224K—	CP09A1KE224K—
.47	400V	CP08A1KE474K—	CP09A1KE474K—
.001	600V	CP08A1KF102K—	CP09A1KF102K—
.0015	600V	CP08A1KF152K—	CP09A1KF152K—
.0022	600V	CP08A1KF222K—	CP09A1KF222K—
.01	600V	CP08A1KF103K—	CP09A1KF103K—
.047	600V	CP08A1KF473K—	CP09A1KF473K—
.1	600V	CP08A1KF104K—	CP09A1KF104K—
.22	600V	CP08A1KF224K—	CP09A1KF224K—
.47	600V	CP08A1KF474K—	CP09A1KF474K—
.01	1000V	CP08A1KG103K—	CP09A1KG103K—
.022	1000V	CP08A1KG223K—	CP09A1KG223K—
.047	1000V	CP08A1KG473K—	CP09A1KG473K—
.1	1000V	CP08A1KG104K—	CP09A1KG104K—

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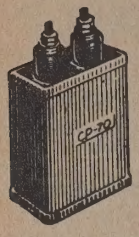
CAPACITORS



INDUSTRIAL SECTION — MIL TYPES

TYPE CP70 MIL-C-25C

Characteristics E and F • Porcelain and Riveted Terminals

Hyvol M or J oil impregnated and filled, large, rectangular, metal-cased capacitor for heavy-duty, continuous-service applications such as power supplied for transmitters, amplifiers, etc. immersion proof and hermetically sealed. Available with either high-voltage screw-type porcelain-pillar terminals or the space-saving riveted terminal. Pillar terminals have soldering lugs.

Standard tolerance ±10% (K). MIL-C-25C mounting brackets are also available for all units.

Units meet Vibration Grade 1 of MIL-C-25C—Designated by addition of numeral 1 to part number.

Capacity	Voltage	CHAR. E P09 Porc. Term	Case Size and Brkt. Desig.	Net Price*	CHAR. F P09 Porc. Term	Case Size and Brkt. Desig.	Net Price*	CHAR. E P09-R Rivet Term	Case Size and Brkt. Desig.	Net Price*	CHAR. F P09-R Rivet Term	Case Size and Brkt. Desig.	Net Price*
1.0	600V	CP70E1EF105K	A2	3.96				CP70B1EF105K	A2	3.60			
2.0	600V	CP70E1EF205K	A4	4.74	CP70E1FF205K	A3	4.89	CP70B1EF205K	A4	4.38	CP70B1FF205K	A3	4.71
4.0	600V	CP70E1EF405K	B4	6.30	CP70E1FF405K	B3	6.45	CP70B1EF405K	B4	5.94	CP70B1FF405K	B3	6.21
6.0	600V	CP70E1EF605K	C2	7.80	CP70E1FF605K	B6	7.05						
8.0	600V	CP70E1EF805K	C3	9.30	CP70E1FF805K	C2	7.50	CP70B1EF805K	C3	8.94			
10.0	600V	CP70E1EF106K	D3	10.80	CP70E1FF106K	C4	9.00				CP70B1FF106K	C4	7.89
.1	1000V	CP70E1EG104K	A1	4.14									
.25	1000V												
.5	1000V	CP70E1EG504K	A2	4.68									
1.0	1000V	CP70E1EG105K	A3	5.19	CP70E1FG105K	A2	4.74						
2.0	1000V				CP70E1FG205K	A5	5.25	CP70B1EG205K	A6	5.70			
4.0	1000V				CP70E1FG405K	B6	6.30	CP70B1EG405K	C2	7.74			
6.0	1000V												
8.0	1000V												
10.0	1000V				CP70E1FG106K	D5	11.40						
12.0	1000V												
15.0	1000V	CP70E1EG156K	G2	16.65	CP70E1FG156K	F1	15.75						
.5	1500V	CP70E1EH504K	A3	5.25									
1.0	1500V				CP70E1FH105K	A5	5.10						
2.0	1500V	CP70E1EH205K	E6	7.26	CP70E1FH205K	B5	6.30						
4.0	1500V												
6.0	1500V												
8.0	1500V	CP70E1EH805K	F2	15.60									
10.0	1500V												
12.0	1500V				CP70E1FH126K	G2	20.70						
15.0	1500V												
.25	2000V	CP70E1EJ254K	B1	5.22									
.5	2000V	CP70E1EJ504K	B2	5.55									
1.0	2000V	CP70E1EJ105K	B6	6.45	CP70E1FJ105K	B3	5.55						
2.0	2000V	CP70E1EJ205K	C4	7.95	CP70E1FJ205K	C3	6.90						
4.0	2000V				CP70E1FJ405K	E3	9.60						
6.0	2000V												
10.0	2000V				CP70E1FJ106K	J3	19.50						
12.0	2000V												
15.0	2000V				CP70E1FJ156K	J7	26.40						
.1	2500V	CP70E1EK104K	B1	5.10									
.5	2500V	CP70E1EK504K	B4	6.30									
1.0	2500V												
2.0	2500V												
4.0	2500V												
10.0	2500V												
.1	3000V	CP70E1EL104K	B2	5.70									
.25	3000V	CP70E1EL254K	B3	6.30									
.5	3000V												
1.0	3000V												
2.0	3000V												
4.0	3000V				CP70E1FL405K	J3	18.00						
.1	4000V												
.25	4000V												
.5	4000V												
1.0	4000V												
2.0	4000V												
4.0	4000V	CP70E1EM405K	J11	36.00									
.1	5000V	CP70E1EN104K	E1	15.15									
.25	5000V												
.5	5000V												
1.0	5000V												
2.0	5000V												
.1	6000V												
.25	6000V												
.5	6000V												
1.0	6000V												
.1	7500V				CP70D1FR104K	E3	18.15						
.25	7500V												
.5	7500V												

A1	1 13/16 x 1 1/16 x 1 5/8		E2	3 3/4 x 2 1/4 x 3 3/8	
A2	1 13/16 x 1 1/16 x 2 1/4		E3	3 3/4 x 2 1/4 x 3 7/8	
A3	1 13/16 x 1 1/16 x 2 7/8		E4	3 3/4 x 2 1/4 x 4 1/2	
A4	1 13/16 x 1 1/16 x 3 1/4		E5	3 3/4 x 2 1/4 x 4 3/4	
A5	1 13/16 x 1 1/16 x 3 7/8		E6	3 3/4 x 2 1/4 x 5 1/8	
A6	1 13/16 x 1 1/16 x 4 3/4		F1	3 3/4 x 2 1/2 x 4 3/4	
B1	2 1/2 x 1 3/16 x 2 1/2		F2	3 3/4 x 2 1/2 x 5 3/4	
B2	2 1/2 x 1 3/16 x 2 7/8		G1	3 3/4 x 3 3/16 x 4 1/2	
B3	2 1/2 x 1 3/16 x 3 1/2		G2	3 3/4 x 3 3/16 x 4 3/4	
B4	2 1/2 x 1 3/16 x 3 7/8		G4	3 3/4 x 3 3/16 x 5 1/2	
B5	2 1/2 x 1 3/16 x 4 1/4		J1	4 1/16 x 3 3/4 x 3 7/8	
B6	2 1/2 x 1 3/16 x 4 3/4		J2	4 1/16 x 3 3/4 x 4 3/8	
C2	3 3/4 x 1 1/4 x 3 7/8		J3	4 1/16 x 3 3/4 x 4 3/4	
C3	3 3/4 x 1 1/4 x 4 1/4		J4	4 1/16 x 3 3/4 x 5 1/8	
C4	3 3/4 x 1 1/4 x 4 3/4		J5	4 1/16 x 3 3/4 x 5 1/2	
D1	3 3/4 x 1 3/4 x 3 1/4		J6	4 1/16 x 3 3/4 x 6	
D2	3 3/4 x 1 3/4 x 3 7/8		J7	4 1/16 x 3 3/4 x 6 1/2	
D3	3 3/4 x 1 3/4 x 4		J9	4 1/16 x 3 3/4 x 7 1/2	
D4	3 3/4 x 1 3/4 x 4 1/4		J10	4 1/16 x 3 3/4 x 8 1/2	
D5	3 3/4 x 1 3/4 x 4 3/4		J11	4 1/16 x 3 3/4 x 9 3/8	
E1	3 3/4 x 2 1/4 x 2 3/4				

If MIL brackets are required with units, specify CP07S (spade) or CP07F (footed) and add the bracket designation listed beside the unit.

Example: CP70E1EF504K with CP07SA2 brackets.

*Request O.E.M. Prices in the following quantities: 10-24, 25-49, 50-99

TYPE CP41 — Characteristics E and F

Cylindrical, hermetically sealed can with screwbase molded cover for vertical mounting. Operating temperature range —55 +85°C. Solder lug, nonremovable terminals MIL designation B). Supplied with mounting nut and lockwasher. Standard tolerance ±10% (K).

Units meet Vibration Grade 1 of MIL-C-25C Designated by addition of numeral 1 to part number.

Capacity	Voltage	Char. E P10M	Net Price*
2.0	600V	CP41B1EF205K	5.51
4.0	600V	CP41B1EF405K	7.46
1.0	1000V	CP41B1EG105K	5.51
2.0	1000V	CP41B1EG205K	6.59
.5	1500V		6.26
1.0	1500V		7.07

*Request O.E.M. Prices in the following quantities: 25-49, 50-99

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CAPACITORS

MIL-C-25C
TYPES CP53, CP54, CP55

Hyvol J or H oil impregnated and filled, drawn-metal cased capacitors, immersion proof and hermetically sealed. This unusually compact "bathtub" type capacitor is the most popular of the small units for severe operating conditions. Available with terminals on side (CP53), top (CP54), or bottom (CP55). The standard tolerance on single section units is ±10% (K), on multiple section units +20 −10% (V).

Cap. uf	VOLT.	P30 SIDE TERM.	P30-T TOP TERM.	P30-B BOTTOM TERM.
2.0	100V	CP53B1EB205K		
4.0	100V	CP53B1EB405K		
2.0	200V	CP53B1EC205K		
.5	400V	CP53B1KE504K	CP54B1KE504K	
1.0	400V	CP53B1KE105K		
3X.5	400V	CP53B5EE504V		
.25	600V	CP53B1EF254K	CP54B1EF254K	
.5	600V	CP53B1EF504K	CP54B1EF504K	CP55B1EF504K
1.0	600V	CP53B1EF105K	CP54B1EF105K	CP55B1EF105K
2.0	600V	CP53B1EF205K	CP54B1EF205K	CP55B1EF205K
2X.05	600V	CP53B4EF503V		
2X.1	600V	CP53B4EF104V	CP54B4EF104V	
2X.25	600V	CP53B4EF254V	CP54B4EF254V	CP55B4EF254V
2X.5	600V	CP53B4EF504V	CP54B4EF504V	
2X1.0	600V	CP53B4EF105V	CP54B4EF105V	

Cap. uf	VOLT.	P30 SIDE TERM.	P30-T TOP TERM.	P30-B BOTTOM TERM.
3X.1	600V		CP54B5EF104V	
3X.5	600V	CP53B5EF504V		CP55B5EF504V
.05	1000V	CP53B1EG503K		
.1	1000V	CP53B1EG104K		
.25	1000V	CP53B1EG254K		
.5	1000V	CP53B1EG504K		
1.0	1000V	CP53B1EG105K		
2X.1	1000V	CP53B4EG104V		
2X.25	1000V	CP53B4EG254V		
2X.5	1000V	CP53B4EG504V		

CHARACTERISTIC F

P30J

CAP.	VOLT.	SIDE TERM.
8.0	100V	CP53B1FB805K
10.0	100V	CP53B1FB106K

MIL-C-25C
CP63, CP65 – Characteristics E & K

Compact, Hyvol M or J oil impregnated and filled, rectangular units. Immersion proof and hermetically sealed. Dual section has case grounded. Channel brackets attached. Standard tolerance on single section units, ±10% (K), on multiple section units +20 −10% (V).

Cap. uf	VOLT	P16-CT TOP TERM.	P16-CB BOTTOM TERM.
.25	600V	CP63B1EF254K	
.5	600V		CP65B1EF504K
1.0	600V	CP63B1EF105K	CP65B1EF105K
2X.1	600V	CP63B6EF104V	CP65B6EF104V
.02	1000V		CP65B1EG203K
.05	1000V		CP65B1EG503K

MIL-C-25C
CP91 – Characteristics E & K

Former issues of MIL-C-25 listed variations of this item as CP61 and CP90. CP91 base size 1-5/16 x 5/8. Brackets must be ordered separately. Specify CP091F (footed) or CP091S (spade).

Cap. uf	VOLT.	P16 NO. BRACKETS
.1	400V	CP91B1KE104K
1.0	400V	CP91B1EE105K
.5	600V	CP91B1EF504K
1.0	600V	CP91B1EF105K
2X.5	600V	CP91B6EF504V
.1	1000V	CP91B1EG104K
.25	1000V	CP91B1EG254K

MIL-C-25C
Types CP67, CP69 – Characteristics E

Hyvol M or J oil impregnated and filled unit, rectangular cased. Similar to CP91 except additional length in base size of 1¾ x 9/16 permits 2 or 3 sections, case floating. Single units also can be used for special applications where type CP91 does not fit. Both CP67 and CP69 supplied with channel brackets attached. Standard tolerance on single section units ±10% (K), on multiple section units +20 −10% (V)

Cap. uf	VOLT.	P18-CT TOP TERM.	P18-CB BOTTOM TERM.
.05	600V	CP67B1EF503K	CP69B1EF503K
.1	600V		CP69B1EF104K
.25	600V	CP67B1EF254K	
.5	600V	CP67B1EF504K	
1.0	600V	CP67B1EF105K	CP69B1EF105K
2X.05	600V	CP67B4EF503V	

Cap. uf	VOLT.	P18-CT TOP TERM.	P18-CB BOTTOM TERM.
2X.1	600V	CP67B4EF104V	CP69B4EF104V
2X.25	600V	CP67B4EF254V	CP69B4EF254V
2X.5	600V	CP67B4EF504V	CP69B4EF504V
.01	1000V		CP69B1EG103K
.05	1000V	CP67B1EG503K	
.5	1000V		CP69B1EG504K

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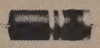
CAPACITORS



CERAFIL® TYPE MC80V CERAMICS

Ultra-miniature type MC80V units are engineered for air and space-borne equipments where size and weight parameters are critical. They are also ideal for printed-circuit applications in hearing aids and other devices where space is at an absolute premium.

Units in this series are designed to attain extremely high capacities per unit volume in line with growing miniaturization in electronic circuitry.

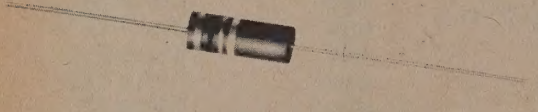
When tested using Cerafil® ratings, capacitors will meet or exceed the requirements of MIL-C-11015C. Units are available in 100 VDC ratings with ±10% and ±20% tolerances as indicated. They have a power factor of 2.5% maximum and operate between —55 and +85°C at 100 volts and —55 and +125°C at 50 volts. Type MC80V units have tinned copper leads of #26 wire at 0.005 mfd and below and #22 wire above 0.0051 mfd.

MIL-C-11015C capacitance values will be supplied with MIL color code markings, whether ordered as CK units or MC80V's.

Durez Coated C80V units are available on special order and MOQ of C80V units is **MOQ 500**

Capacity uf	MIL-C-11015C Number†	Dimensions D x L +.003 —.005		Molded Axial Leads Part No.
.00001	CK12AX100—	.087	.315	MC80V100A*
.000012		.087	.315	MC80V120A*
.000015		.087	.315	MC80V150A*
.000018		.087	.315	MC80V180A*
.000022	CK12AX220—	.087	.315	MC80V220A*
.000027		.087	.315	MC80V270A*
.000033	CK12AX330—	.087	.315	MC80V330A*
.000039		.087	.315	MC80V390A*
.000047	CK12AX470—	.087	.315	MC80V470A*
.000056		.087	.315	MC80V560A*
.000068		.087	.315	MC80V680A*
.000082		.087	.315	MC80V820A*
.0001	CK12AX101—	.087	.315	MC80V101A*
.00012		.087	.315	MC80V121A*
.00015		.087	.315	MC80V151A*
.00018		.087	.315	MC80V181A*
.00022	CK12AX221—	.087	.315	MC80V221A*
.00027		.087	.315	MC80V271A*
.00033	CK12AX331—	.087	.315	MC80V331A*
.00039		.087	.315	MC80V391A*
.00047	CK12AX471—	.087	.315	MC80V471A*
.00056		.087	.315	MC80V561A*
.00068		.087	.315	MC80V681A*
.00082		.087	.315	MC80V821A*
.001	CK12AX102—	.087	.315	MC80V102A*
.0012		.117	.495	MC80V122A*
.0015		.117	.495	MC80V152A*
.0018		.117	.495	MC80V182A*
.002		.117	.495	MC80V202A*
.0022	CK13AX222—	.117	.495	MC80V222A*
.0027		.117	.495	MC80V272A*
.0033	CK13AX332—	.117	.495	MC80V332A*
.0039		.117	.495	MC80V392A*
.0047	CK13AX472—	.117	.495	MC80V472A*
.005		.117	.495	MC80V502A*
.0056		.157	.495	MC80V562A*
.0068		.157	.495	MC80V682A*
.0082		.157	.495	MC80V822A*
.01	CK14AX103—	.157	.495	MC80V103A*
.012		.197	.495	MC80V123A*
.015		.197	.495	MC80V153A*
.018		.197	.495	MC80V183A*
.02		.197	.495	MC80V203A*
.022	CK15AX223—	.197	.495	MC80V223A*
.027		.237	.645	MC80V273A*
.033		.237	.645	MC80V333A*
.039		.237	.645	MC80V393A*
.047	CK16AX473—	.237	.645	MC80V473A*
.05		.237	.645	MC80V503A*
.056		.277	.745	MC80V563A*
.068		.277	.745	MC80V683A*
.082		.277	.745	MC80V823A*
.1	CK17AX104—	.277	.745	MC80V104A*

*ADD M ±20% ADD K ±10% TO PART NUMBER.



TYPES MC70, MC71, MC705 and MC702

10 pf to 100,000 pf in Cordwood Size Case

These molded capacitors are manufactured in the same size case of .250 lon x .090 diameter.

Type MC70 is used to designate those items manufactured in the original cerofi construction and are stocked from 10 pf to 1800 pf.

Type MC71, 705 and MC702 are all manufactured in ceralam® construction. All unit are ideally suited for automatic insertion into printed circuit boards.

MC70 and MC71 are 100 VDCW, MC705 is 50 VDCW, and MC702 is 25 VDCW.

All units are supplied with gold plated dumet leads and are #26 gauge.

For electrical characteristics see Chart on page 47.

Cap. pf.	Cat. Number	Cat. Number	Cap. pf.	Cat. Number	Cat. Number	Cap. pf.	Cat. Number
10	MC70A100AK	MC71A100AK	120	MC70B121AK	MC71A121AK	3300	MC71C332AK
12	MC70A120AK	MC71A120AK	150	MC70B151AK	MC71A151AK	3900	MC71C392AK
15	MC70A150AK	MC71A150AK	180	MC70B181AK	MC71A181AK	4700	MC71C472AK
18	MC70A180AK	MC71A180AK	220	MC70B221AK	MC71A221AK	5600	MC71C562AM
22	MC70A220AK	MC71A220AK	270	MC70B270AK	MC71A271AK	6800	MC71C682AM
27	MC70A270AK	MC71A270AK	330	MC70C331AK	MC71B331AK	8200	MC71C822AM
33	MC70A330AK	MC71A330AK	390	MC70C391AK	MC71B391AK	10000	MC71C103AK
39	MC70B390AK	MC71A390AK	470	MC70C471AK	MC71B471AK	10000	MC71C103AM
47	MC70B470AK	MC71A470AK	560	MC70C561AK	MC71B561AK	15000	MC705C153AM
51	MC70B510AK	MC71A510AK	680	MC70C681AK	MC71B681AK	20000	MC705C203AM
56	MC70B560AK	MC71A560AK	820	MC70C821AK	MC71B821AK	22000	MC702C223AM
62	MC70B620AK	MC71A620AK	1000	MC70C102AK	MC71B102AK	33000	MC702C333AM
68	MC70B680AK	MC71A680AK	1200	MC70C122AK	MC71B122AK	47000	MC702C473AM
75	MC70B750AK	MC71A750AK	1500	MC70C152AK	MC71B152AK	56000	MC702C563AM
82	MC70B820AK	MC71A820AK	1800	MC70C182AK	MC71B182AK	68000	MC702C683AM
91	MC70B910AK	MC71A910AK	2200		MC71C222AK	100000	MC702C104AM
100	MC70B101AK	MC71A101AK	2700		MC71C272AK		

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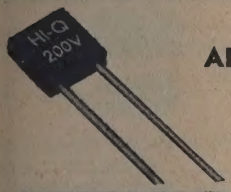
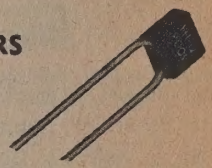
CAPACITORS



AEROVOX CK05 — CK06 EXTENDED RANGE CERAMIC CAPACITORS
Per MIL-C-11015

STOCK LISTING



STYLE CK05

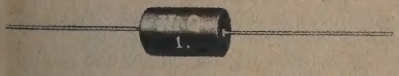
Capacitance pf	Type designation*	Rated voltage volts, dc	Aerovox Commercial Equivalent*	Capacitance tolerance
10	CK05BX100-	200		K, M
12	CK05BX120K	200		K
15	CK05BX150-	200		K, M
18	CK05BX180K	200		K
22	CK05BX220-	200		K, M
27	CK05BX270K	200		K
33	CK05BX330-	200		K, M
39	CK05BX390K	200		K
47	CK05BX470-	200		K, M
56	CK05BX560K	200		K
68	CK05BX680-	200		K, M
82	CK05BX820K	200		K
100	CK05BX101-	200		K, M
120	CK05BX121K	200		K
150	CK05BX151-	200		K, M
180	CK05BX181K	200		K
220	CK05BX221-	200		K, M
270	CK05BX271K	200		K
330	CK05BX331-	200		K, M
390	CK05BX391K	200		K
470	CK05BX471-	200		K, M
560	CK05BX561K	200		K
680	CK05BX681-	200		K, M
820	CK05BX821K	200		K
1,000	CK05BX102-	200		K, M
1,200	CK05BX122K	100		K
1,500	CK05BX152-	100	MC51C152R-	K, M
1,800	CK05BX182K	100		K
2,200	CK05BX222-	100	MC51C222R-	K, M
2,700	CK05BX272K	100		K
3,300	CK05BX332-	100	MC51C332R-	K, M
3,900	CK05BX392K	100		K
4,700	CK05BX472-	100	MC51C472R	K, M
5,600	CK05BX562K	100		K
6,800	CK05BX682-	100	MC51C682R-	K, M
8,200	CK05BX822K	100		K
10,000	CK05BX103-	100	MC51C103R-	K, M
12,000	CK05BX123K	50		K
15,000	CK05BX153-	50		K, M
18,000	CK05BX183K	50		K
22,000	CK05BX223-	50		K, M
27,000	CK05BX273K	50		K
33,000	CK05BX333-	50	MC505C333R-	K, M
39,000	CK05BX393K	50		K
47,000	CK05BX473-	50		K, M
56,000	CK05BX563K	50		K
68,000	CK05BX683-	50		K, M
82,000	CK05BX823K	50		K
100,000	CK05BX104-	50		K, M

STYLE CK06

Capacitance pf	Type designation*	Rated voltage volts, dc	Aerovox Commercial Equivalent*	Capacitance tolerance
1,200	CK06BX122K	200		K
1,500	CK06BX152-	200		K, M
1,800	CK06BX182K	200		K
2,200	CK06BX222-	200		K, M
2,700	CK06BX272K	200		K
3,300	CK06BX332-	200		K, M
3,900	CK06BX392K	200		K
4,700	CK06BX472-	200		K, M
5,600	CK06BX562K	200		K
6,800	CK06BX682-	200		K, M
8,200	CK06BX822K	200		K
10,000	CK106BX103-	200		K, M
12,000	CK06BX123K	100		K
15,000	CK06BX153-	100	MC61C153R	K, M
18,000	CK06BX183K	100		K
22,000	CK06BX223-	100	MC61C223R	K, M
27,000	CK06BX273K	100		K
33,000	CK06BX333-	100	MC61C333R-	K, M
39,000	CK06BX393K	100		K
47,000	CK06BX473-	100	MC61C473R-	K, M
56,000	CK06BX563K	100		K
68,000	CK06BX683-	100	MC61C683R-	K, M
82,000	CK06BX823K	100		K
100,000	CK06BX104-	100	MC61C104R	K, M
120,000	CK06BX124K	50		K
150,000	CK06BX154-	50		K, M
180,000	CK06BX184K	50		K
220,000	CK06BX224-	50		K, M
270,000	CK06BX274K	50		K
330,000	CK06BX334-	50		K, M
390,000	CK06BX394K	50		K
470,000	CK06BX474-	50		K, M
560,000	CK06BX564K	50		K
680,000	CK06BX684-	50		K, M
820,000	CK06BX824K	50		K
1,000,000	CK06BX105-	50		K, M

* Where applicable, the complete type designation will include an additional symbol to indicate capacitance tolerance.

CERALAM® MOLDED MINIATURE CERAMIC TUBULARS



Aerovox "second generation" tubular ceramic capacitors represent the industry's first significant advance in volumetric efficiency. This type of construction permits 60 to 70 times as much capacitance per unit of volume as compared to conventional style hollow-core tubulars.
A combination of our previous listing of MC89, 91 and 905, combined because of new factory nomenclature. These units will meet the environmental requirements of MIL-C-11015 and 39014. All units English marked with tin copper leads. For electrical characteristics see Chart below.

Cap.	Working Volts	±10% Old Number	±10% New Number	±20% Old Number	±20% New Number	Size D x L
.015	100	MC91C153K	MC91C153K*	MC91C153M	MC91C153M*	.200 x .500
.022	100	MC91C223K	MC91C223K*	MC91C223M	MC91C223M*	.200 x .500
.033	100	MC91C333K	MC91C333K*	MC91C333M	MC91C333M*	.200 x .500
.047	100	MC91C473K	MC91C473K*	MC91C473M	MC91C473M	.200 x .500
.068	100	MC91C683K	MC91C683K*	MC91C683M	MC91C683M*	.200 x .500
.1	100	MC91C104K	MC91C104K*	MC91C104M	MC91C104M*	.200 x .500
.1	50	MC89C104AK	MC205C104K	MC89C104AM	MC205C104M	.140 x .390
.15	50	MC905C154K	MC905C154K*	MC905C154M	MC905C154M*	.200 x .500
.22	50	MC905C224K	MC905C224K*	MC905C224M	MC905C224M*	.200 x .500
.25	50	MC89C254AK	MC905C254K*	MC89C254AM	MC905C254M*	.190 x .500
.5	50	MC89C504AK	MC855C504K	MC89C504AM	MC855C504M	.250 x .500
1.0	50	MC89C105AK	MC865C105K	MC89C105AM	MC865C105M	.250 x .690
2.0	50	MC89C205AK	MC875C205K	MC89C205AM	MC875C205M	.350 x .690

*Will be furnished with gold dumet leads until present stocks are depleted. The standard will then beccome tin copper leads.

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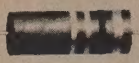
CAPACITORS



AEROVOX CK12, CK13, CK14, CK15 AND CK16 CERAMIC DIELECTRIC (GENERAL PURPOSE) CAPACITORS Per MIL-C-11015D

Non-conductive material shall not extend beyond .010 from end of capacitor body.

Style	Dimensions Length Inches	Diameter Inches	Lead Diam. Inches	Aerovox Equivalent Type
CK12	.160±.010	.090±.010	.016+.004 −.001	ML 10
CK13	.250±.010	.090±.010	.016+.004 −.001	MC 70
CK14	.390±.010	.140±.010	.025+.004 −.001	MC 20
CK15	.500±.020	.250±.015	.025+.004 −.001	MC 85
CK16	.690±.030	.350±.020	.025+.004 −.001	MC 87

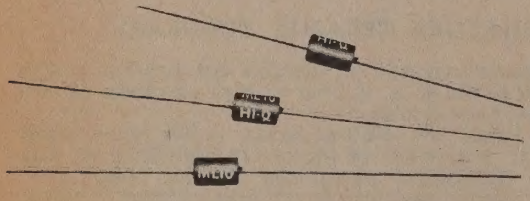
Cross-reference of substitute items: MIL-C-11015/20A to MIL-C-11015/20B

Superseded Item PER MIL-C-11015/20A	Substitute Item PER MIL-C-11015/20B
CK12AX100K - - -	CK12BX100K
CK12AX100M - - -	CK12BX100M
CK12AX220K - - -	CK12BX220K
CK12AX220M - - -	CK12BX220M
CK12AX330K - - -	CK12BX330K
CK12AX330M - - -	CK12BX330M
CK12AX470K - - -	CK12BX470K
CK12AX470M - - -	CK12BX470M
CK12AX101K - - -	CK12BX101K
CK12AX101M - - -	CK12BX101M
CK12AX221K - - -	CK12BX221K
CK12AX221M - - -	CK12BX221M
CK12AX331K - - -	CK12BX331K
CK12AX331M - - -	CK12BX331M
CK12AX471K - - -	CK12BX471K
CK12AX471M - - -	CK12BX471M
CK12AX102K - - -	CK12BX102K
CK12AX102M - - -	CK12BX102M
CK13AX222K - - -	CK12BX222K
CK13AX222M - - -	CK12BX222M
CK13AX332K - - -	CK12BX332K
CK13AX332M - - -	CK12BX332M
CK13AX472K - - -	CK12BX472K
CK13AX472M - - -	CK12BX472M
CK14AX103K - - -	CK13BX103K
CK14AX103M - - -	CK13BX103M
CK15AX223K - - -	CK14BX223K
CK15AX223M - - -	CK14BX223M
CK16AX473K - - -	CK14BX473K
CK16AX473M - - -	CK14BX473M
CK17AX104K - - -	CK14BR104K
CK17AX104M - - -	CK14BR104M

STOCK LISTING

Capacitance pf	Type designation*	Rated volts, dc	Capacitance tolerance	Capacitance pf	Type designation*	Rated volts, dc	Capacitance tolerance
10	CK12BX100-	100	K, M	12,000	CK13BX123K	50	K
12	CK12BX120K	100	K	15,000	CK13BX153-	50	K, M
15	CK12BX150-	100	K, M	18,000	CK13BX183K	50	K
18	CK12BX180K	100	K	22,000	CK13BX223	50	K, M
22	CK12BX220-	100	K, M	27,000	CK13BR273K	50	K
27	CK12BX270K	100	K	33,000	CK13BR333-	50	K, M
33	CK12BX330-	100	K	39,000	CK13BR393K	50	K
39	CK12BX390K	100	K	47,000	CK13BR473	50	K, M
47	CK12BX470	100	K, M	12,000	CK14BX123K	100	K
56	CK12BX560K	100	K	15,000	CK14BX153-	100	K, M
68	CK12BX680	100	K, M	18,000	CK14BX183K	100	K
82	CK12BX820K	100	K	22,000	CK14BX223-	100	K, M
100	CK12BX101-	100	K, M	27,000	CK14BX273K	100	K
120	CK12BX121K	100	K	33,000	CK14BX333-	100	K, M
150	CK12BX151	100	K, M	39,000	CK14BX393K	100	K
180	CK12BX181K	100	K	47,000	CK14BX473	100	K, M
220	CK12BX221-	100	K, M	56,000	CK14BR563K	100	K
270	CK12BX271K	100	K	68,000	CK14BR683-	100	K, M
330	CK12BX331-	100	K, M	82,000	CK14BR823K	100	K
390	CK12BX391K	100	K	100,000	CK14BR104-	100	K, M
470	CK12BX471-	100	K, M	120,000	CK14BR124K	50	K
560	CK12BX561K	100	K	150,000	CK14BR154-	50	K, M
680	CK12BX681-	100	K, M	180,000	CK14BR184K	50	K
820	CK12BX821K	100	K	220,000	CK14BR224-	50	K, M
1,000	CK12BX102-	100	K, M	270,000	CK14BR274K	50	K
1,200	CK12BX122K	100	K	100,000	CK15BX104-	100	K, M
1,500	CK12BX152-	100	K, M	120,000	CK15BR124K	100	K
1,800	CK12BX182K	100	K	150,000	CK15BR154-	100	K, M
2,200	CK12BX222-	100	K, M	180,000	CK15BR184K	100	K
2,700	CK12BX272K	100	K	220,000	CK15BR224-	100	K, M
3,300	CK12BX332-	100	K, M	270,000	CK15BR274K	100	K
3,900	CK12BX392K	100	K	330,000	CK15BR334-	100	K, M
4,700	CK12BX472-	100	K, M	470,000	CK15BR474	50	K, M
5,600	CK12BX562K	50	K	1,000,000	CK15BR105-	50	K, M
6,800	CK12BX682-	50	K, M	470,000	CK16BR474-	100	K, M
8,200	CK12BX822K	50	K	1,000,000	CK16BR105-	100	K, M
10,000	CK12BX103	50	K, M	2,200,000	CK16BR225-	50	K, M
5,600	CK13BX562K	100	K	3,300,000	CK16BR335-	50	K, M
6,800	CK13BX682-	100	K, M				
8,200	CK13BX822K	100	K				
10,000	CK13BX103-	100	K, M				

*Where applicable, the complete type designation will include an additional symbol to indicate capacitance tolerance.



ML 10 MICRO MINIATURE MOLDED CERAMIC CAPACITORS

New Micro Miniature Ceralam Capacitor, only .160" long x .090" diameter. This unit of proven reliability conforms to the configuration of the new MIL type CK12BX. ML 10 designation is a type designation only. Units rated for 100 VDCW are designated ML 11, 50 VDCW - ML105, 25 VDCW - ML102. Standard lead size is #26 gauge Tinned Copper. Units will be English marked.

Capacity	Voltage	Part Number	Capacity	Voltage	Part Number
10	100	ML11A100AM*	820	25	ML102A821AM
15	100	ML11A150AM*	1000	25	ML102A102AM
22	100	ML11A220AM*	1500	50	ML105B152AM
33	100	ML11A330AM	2200	50	ML105B222AM
47	100	ML11A470AM	3300	50	ML105B332AM
56	100	ML11A560AM	4700	25	ML102B472AM
68	100	ML11A680AM	5600	25	ML102B562AM
82	100	ML11A820AM	6800	25	ML102B682AM
100	100	ML11A101AM	8200	50	ML105C822AM*
150	50	ML105A151AM	10000	50	ML105C103AM*
220	50	ML105A221AM	15000	50	ML105C153AM
330	50	ML105A331AM	22000	50	ML105C223AM
470	50	ML105A471AM	33000	25	ML102C333AM
560	25	ML102A561AM	47000	25	ML102C473AM
680	25	ML102A681AM			

*AS present stock is depleted these values will be replaced by the Mil equivalent CK12BX. Unit per Mil C 11015D.

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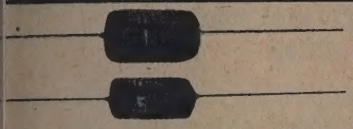
CAPACITORS



CEROL HIGH CAPACITY, HIGH RELIABILITY ROLLED CERAMICS

Cerol capacitors are supplied in the higher capacitance range of paper and film units, but are much smaller physically, and have superior electrical characteristics.

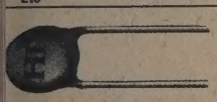
Designed for general applications in bypass-coupling, as well as filtering and blocking circuits, these units are also engineered for critical decoupling and pulse applications where low series resistance at gh frequencies along with small size is required. In addition, Cerol capacitors are ideal for computer applications where low series re-istance is a must.

perating temperature range at rated voltage is –55 to +85°C. At rated 50% voltage this range becomes –55 to +85°C. All units will meet or urpass the requirements of MIL-C-11015B.

erol capacitors are available in types CR89 and CR90, rated at 50 and 100 volts respectively, at 85°C and derated by 50% at 125°C. Units e stamped with rated voltage for type identification. For full technical information, request Bulletin NPJ-112 Rev.

xial gold plated dumet leads are standard. Tinned copper leads also available on special order. All values -#22 gauge except CR89W104AM as 26 gauge leads.

	TYPE CR89 – 50 VDCW				TYPE CR90 – 100 VDCW		
Cap. uf	Part No. ± 10%	Part No. ± 20%	D. Max. In.	L. Max. In.	Part No. ± 20%	D. Max. In.	L. Max. In.
.1	CR89W104AK	CR89W104AM	.140	.400	CR90V104AM	.210	.690
.25	CR89W254AK	CR89W254AM	.210	.495	CR90V254AM	.260	.690
.5	CR89W504AK	CR89W504AM	.260	.495	CR90V504AM	.350	.690
1.0	CR89W105AK	CR89W105AM	.260	.690	CR90V105AM	.480	.690
2.0	CR89W205AK	CR89W205AM	.350	.690	CR90V205AM	.400	1.440



MIL GENERAL PURPOSE CK60 – CK67 CERAMIC DISKS – PER MIL-C-11015C

Mil General Purpose Ceramic Disks are available in a full complement of voltage and capacitance ratings conforming to MIL-C-11015D. "K" Suffix indicates 10% tolerance units; "M" Suffix 20% tolerance and "X" Suffix +80% –20% tolerance. See bottom of page 49 for sizes.

Cap. pf.	VDCW	Tol.	Mil Number	Cap. pf.	VDCW	Tol.	Mil Number
2.2	1000	10%	CK60BX2R2K	47	1500	20%	CK62AY470M
3.3	1000	10%	CK60BX3R3K	100	1500	20%	CK62AY101M
4.7	1000	10%	CK60BX4R7K	220	1500	20%	CK62AY221M
6.8	1000	10%	CK60BX6R8K	470	1500	20%	CK62AY471M
10	1000	10%	CK60BX100K	820	500	10%	CK62BX821K
15	1000	10%	CK60BX150K	820	500	20%	CK62BX821M
22	1000	10%	CK60BX220K	1000	500	10%	CK62BX102K
33	1000	10%	CK60BX330K	1000	500	20%	CK62BX102M
33	1000	20%	CK60BX330M	1500	500	10%	CK62BX152K
47	1000	10%	CK60BX470K	1500	500	20%	CK62BX152M
47	1000	20%	CK60BX470M	2200	500	10%	CK62AX222K
68	1000	10%	CK60BX680K	2200	500	20%	CK62AX222M
68	1000	20%	CK60BX680M	3300	500	20%	CK62AW332M
100	1000	10%	CK60BX101K	4700	500	20%	CK62AW472M
100	1000	20%	CK60BX101M	6800	500	20%	CK62AW682M
150	500	10%	CK60BX151K	8200	500	20%	CK62AW822M
150	500	20%	CK60BX151M	2200	500	10%	CK63BX222K
220	1000	10%	CK60AX221K	2200	500	20%	CK63BX222M
220	1000	20%	CK60AX221M	3300	500	10%	CK63BX332K
330	500	10%	CK60AX331K	3300	500	20%	CK63BX332M
330	500	20%	CK60AX331M	4700	1000	20%	CK63AW472M
470	500	10%	CK60AX471K	10,000	1000	+80% –20%	CK63AY103X
470	500	20%	CK60AX471M	10,000	500	20%	CK63AW103M
470	1000	20%	CK60AW471M	510	1600	20%	CK64AW511M
680	1000	20%	CK60AW681M	680	1600	20%	CK64AW681M
820	1000	20%	CK60AW821M	820	1600	20%	CK64AW821M
1000	1000	20%	CK60AM102M	1000	1600	20%	CK64AW102M
1500	500	20%	CK60AW152M	1500	1600	20%	CK64AW152M
220	500	10%	CK61BX221K	2200	1600	20%	CK64AW222M
220	500	20%	CK61BX221M	3300	1600	20%	CK64AW332M
330	500	10%	CK61BX331K	3900	1600	20%	CK64AW392M
330	500	20%	CK61BX331M	4700	1600	20%	CK65AW472M
470	500	10%	CK61BX471K	5600	1600	20%	CK66AW562M
470	500	20%	CK61BX471M	6800	1600	20%	CK67AW682M
680	500	10%	CK61BX681K	7500	1600	20%	CK67AW752M
680	500	20%	CK61BX681M				
2200	500	20%	CK61AW222M				
22	1500	20%	CK61AY220M				

*CK21 – 26

*CK22 – 27

Mil General Purpose Ceramics Tubular Capacitors are also available in a full range of voltages and capacities and conform to the requirements of MIL-C-11015C. "K" Suffix indicates 10% tolerance; "M" Suffix 20% tolerance and "X" Suffix x80% –20% tolerance.

Cap. uf	±10%	±20%	Cap. uf	±10%	±20%
12	CK21AX120K		12	CK22AX120K	
15	CK21AX150K		15	CK22AX150K	
18	CK21AX180K		18	CK22AX180K	
22	CK21AX220K		22	CK22AX220K	
27	CK21AX270K		27	CK22AX270K	
33	CK21AX330K		33	CK22AX330K	
39	CK21AX390K		39	CK22AX390K	
47	CK21AX470K		47	CK22AX470K	
56	CK21AX560K		56	CK22AX560K	
68	CK21AX680K	CK21AX680M	68	CK22AX680K	CK22AX680M
82	CK21AX820K		82	CK22AX820K	
100	CK21AX101K	CK21AX101M	100	CK22AX101K	CK22AX101M
120	CK21AX121K		120	CK22AX121K	
150	CK21AX151K	CK21AX151M	150	CK22AX151K	CK22AX151M
180	CK21AX181K		180	CK22AX181K	
200	CK21AX221K	CK21AX221M	200	CK22AX221K	CK22AX221M
270	CK21AX271K		270	CK22AX271K	
330	CK21AX331K	CK21AX331M	330	CK22AX331K	CK22AX331M
390			390	CK22AX391K	
470	CK21AX471K	CK21AX471M	470	CK22AX471K	CK22AX471M
560			560	CK22AX561K	
680	CK21AX681K	CK21AX681M	680	CK22AX681K	CK22AX681M
820	CK26AX821K	CK26AX821M	820	CK27AX821K	
1000	CK26AX102K	CK26AX102M	1000	CK27AX102K	CK27AX102M
1200			1200	CK27AX122K	
1500	CK26AX152K	CK26AX152M	1500	CK27AX152K	CK27AX152M

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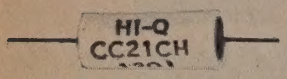
CAPACITORS

TEMPERATURE COMPENSATING TUBULARS
CC20, CC21, CC25, CC26, CC32, CC35, CC36



Popular values in accordance with the latest revisions of specification MIL-C-20 and EIA specification RS-198. Uninsulated units are furnished color coded, packaged in bulk. Insulated units—stamped with part number. Voltage rating 500 VDCW.

Cap. pf	UNINSULATED TYPE CN MIL No.	INSULATED TYPE CI MIL No.
.3	CC20CKOR3C	
.5	CC20CKOR5C	CC21CKOR5C
.68	CC20CKR68C	
.75	CC20CKR75C	
1.0	CC20CK010C	CC21CK010C
1.2	CC20CK1R2C	
1.5	CC20CK1R5C	
2.0	CC20CK020C	CC21CK020C
2.2	CC20CK2R2C	CC21CK2R2C
3.0	CC20CJ030C	CC21CJ030C
4.0	CC20CH040C	CC21CH040C
5.0	CC20CH050C	CC21CH050C
6.0	CC20CH060C	CC21CH060C
7.0	CC20CH070C	CC21CH070C
8.0	CC20CH080C	CC21CH080C
10.0	CC20CH100C	CC21CH100C
12.0	CC20CH120G	
15.0	CC20CH150G	CC21CH150G
18.0	CC20CH180G	CC21CH180G
20.0	CC20CH200G	CC21CH200G
22.0	CC20CH220G	CC21CH220G
24	CC25CH240G	
27	CC25CH270G	
36	CC25CH360J	
51	CC25CH510J	
75	CC32CG750J	
82	CC32CG820J	
91	CC32CG910J	
100		CC36CG101J
110	CC32CG111G	

Cap. pf	UNINSULATED TYPE CN MIL No.	INSULATED TYPE CI MIL No.
.5	CC20UKOR5C	
2.0	CC20UK020C	
5.0	CC20UJ050C	CC21UJ050C
10.0	CC20UJ100C	
12.0	CC20UJ120G	
15.0	CC20UJ150G	CC21UJ150G
18.0	CC20UJ180G	CC21UJ180G
22.0	CC20UJ220G	
24.0		CC21UJ240G
27.0	CC20UJ270G	CC21UJ270G
30.0	CC20UJ300G	CC21UJ300G
33.0	CC20UJ330G	CC21UJ330G
36.0	CC20UJ360J	
39.0	CC20UJ390J	
47.0	CC20UJ470J	CC21UJ470J
51.0	CC20UJ510J	CC21UJ510J
62.0	CC20UJ620J	
68.0	CC25UJ680J	
75.0	CC25UJ750J	
82.0	CC25UJ820J	
100.0		CC26UJ101J
120	CC25UJ121G	CC26UJ121J
130	CC25UJ131G	
150	CC25UJ151G	
220		CC36UJ221J
360	CC35UJ361F	

MIL SIZE CHART

Type Designation MIL	Max. Size D x L	Type Designation MIL	Max. Size Dia.	Type Designation MIL	Max. Size D x L
CC20	.200 x .400	CK60	.310	CK21	.250 x .562
CC21	.200 x .562	CK61	.385	CK26	.250 x .812
CC25	.250 x .655	CK62	.590	CK22	.250 x .460
CC26	.250 x .812	CK63	.690	CK27	.250 x .750
CC32	.250 x .860	CK64	.760		
CC35	.255 x 1 090	CK65	.830		
CC36	.340 x 1.328	CK66	.906		
		CK67	.990		

TYPE HP POWER AND TRANSMITTING CAPACITORS AVAILABLE

Aerovox Type HP ceramic power and transmitting capacitors are available in a wide range of capacities and voltages and make excellent replacements for higher-priced transmitting micas.

Type HPA ceramics are supplied in capacities from 8 mmf to 500 mmf rated at DC and HF peak working voltages of 5,000 volts and high frequency only ratings of 4 or 5,000 volts. Test voltage is 7,500 for all units.

Type HPB capacitors are available in capacities between 5 mmf and 500 mmf with DC and HF peak rating of 3,500 volts. HF only rating varies from 1,000 to 3,500 volts.

Both TYPE HPA and HPB are supplied ±5, ±10 and ±5% tolerance, and feature silver-plated terminals for effective connections. Insulation resistance exceeds 10,000 megohms for all units.

Capacitors may be operated to 105°C without derating and safely stored at temperatures between —80°C and +185°C. Dielectric employed retains its properties to frequencies above 1,000 Mc, and effective upper frequency limit depends, in most cases, on mounting scheme used.

HI-REL CERAMICS

Aerovox holds approval to Level R of MIL-C-39014 for established reliability ceramic capacitors. However, please note that we can only ship Hi-Rel units thru DESC Approved Distributers. Customers who wish to obtain these units should contact the factory for the name of their nearest DESC distributor.

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CAPACITORS

CERAMIC CHIP CAPACITORS

TYPE ULA CERALAM® CHIPS FOR HYBRID CIRCUITS

igh ratio of capacity to volume inherent in Ceralam® monolithic capacitors allows unusually small sizes especially suited to hybird circuitry. Units upplied unencapsulated, ready-to-solder into circuit. Sold in multiples of 25 pieces only.

omplete range of popular capacitances in three temperature coefficient ratings for widest possible applications.

ee chart page 47 for temperature characteristic specifications.

STOCK LISTING

Part No.	Cap. pf	Tol.	Volts Working
LA11A1R0D	1	±½ pf.	100
LA11A1R2D	1.2	±½ pf.	100
LA11A1R5D	1.5	±½ pf.	100
LA11A1R8D	1.8	±½ pf.	100
LA11A2R2D	2.2	±½ pf.	100
LA11A2R7D	2.7	±½ pf.	100
LA11A3R3D	3.3	±½ pf.	100
LA11A3R9D	3.9	±½ pf.	100
LA11A4R7D	4.7	±½ pf.	100
LA11A5R6D	5.6	±½ pf.	100
LA11A6R8D	6.8	±½ pf.	100
LA11A8R2D	8.2	±½ pf.	100
LA11A100J	10.0	±5%	100
LA11A120J	12.0	±5%	100
LA11A150J	15.0	±5%	100
LA11A180J	18.0	±5%	100
LA11A220J	22.0	±5%	100
LA11A270J	27.0	±5%	100
LA11A330J	33.0	±5%	100
LA11A390J	39.0	±5%	100
LA11A470J	47.0	±5%	100
LA105A560J	56.0	±5%	50
LA105A680J	68.0	±5%	50
LA105A820J	82.0	±5%	50
LA105A101J	100.0	±5%	50
LA105A121J	120.0	±5%	50
LA105A151J	150.0	±5%	50
LA105A181J	180.0	±5%	50
LA105A221J	220	±5%	50
LA11B271J	270	±5%	100
LA11B331J	330	±5%	100
LA11B391J	390	±5%	100
LA105B471J	470	±5%	50
LA105B561J	560	±5%	50
LA105B681J	680	±5%	50
LA105B821J	820	±5%	50

Part No.	Cap. pf	Tol.	Volts Working
ULA105B102J	1000	±5%	50
ULA105B122K	1200	±10%	50
ULA105B152K	1500	±10%	50
ULA11C182K	1800	±10%	100
ULA11C222K	2200	±10%	100
ULA11C272K0	2700	±10%	100
ULA105C332K	3300	±10%	50
ULA105C392K	3900	±10%	50
ULA105C472K	4700	±10%	50
ULA105C562K	5600	±10%	50
ULA105C682K	6800	±10%	50
ULA105C822K	8200	±10%	50
ULA105C103K	10000	±10%	50
ULA105C123K	12000	±10%	50
ULA305C153K	15000	±10%	50
ULA305C183K	18000	±10%	50
ULA305C223K	22000	±10%	50
ULA305C273K	27000	±10%	50
ULA305C333K	33000	±10%	50
ULA755C393K	39000	±10%	50
ULA755C473K	47000	±10%	50
ULA555C563K	56000	±10%	50
ULA555C683K	68000	±10%	50
ULA555C823K	82000	±10%	50
ULA555C104K	100000	±10%	50

SIZE CHART

Type	L	x	W	x	T
ULA11	.075"		.050"		.050"
ULA105	.075"		.050"		.050"
ULA305	.105"		.075"		.060"
ULA555	.175"		.125"		.060"
ULA755	.150"		.060"		.060"

ENGINEERING CHIP KITS

To facilitate prototype development of hybrid circuits Aerovox offers Chip Capacitor Engineering Kits containing a selection of chip capacitors in a large capacitance range. Chips are silver terminated and may be attached either by soldering or welding methods. For complete information on kits request Bulletin NPJ - 142.

AKC-801 ..... Low Range ..... All Stock values from 1 pf to 82 pf
AKC-802 ..... Mid Range ..... All Stock values from 100 pf to 8200 pf.
AKC-803 ..... High Range ..... All Stock values from 1200 pf to 100,000 pf.

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CAPACITORS

INDUSTRIAL CERAMIC CAPACITORS

NEW GENERAL PURPOSE BYPASS AND COUPLING DISKS – TYPE GPD

NOW . . . a consolidated and comprehensive line of ceramic disk capacitors for all bypass, coupling and filtering applications. All units offer maximum protection against humidity, voltage breakdown and vibration.

Rated at 1000 VDCW unless otherwise specified.

All units marked for capacity and tolerance.

This new and consolidated line replaces Types IDI, BPD-GMV and DI line listed in previous catalogs.

New Cat. No.	Cap.uf	Tolerance	Volts	T. C.	Size Dia.	Old Cat. No.
GPD COJ2R2K	2.2	10%	1000	NPO	.310	D1-3.3mf
GPD COJ3R3K	3.3	10%	1000	NPO	.310	D1-3.3mf
GPD COH4R7K	4.7	10%	1000	NPO	.310	D1-5.0mf
GPD COH6R8K	6.8	10%	1000	NPO	.310	D1-6.8mf
GPD COH8R2K	8.2	10%	1000	NPO	.310	D1-8.2mf
GPD COH100K	10.0	10%	1000	NPO	.310	D1-10mf
GPD U2J102K	12.0	10%	1000	N750	.310	D1-12mf
GPD U2J150K	15.0	10%	1000	N750	.310	D1-15mf
GPD U2J180K	18.0	10%	1000	N750	.310	D1-18mf
GPD U2J200K	20.0	10%	1000	N750	.310	D1-20mf
GPD U2J220K	22.0	10%	1000	N750	.310	D1-22mf
GPD U2J250K	25.0	10%	1000	N750	.310	D1-25mf
GPD U2J270K	27.0	10%	1000	N750	.310	D1-27mf
GPD P3K300K	30	10%	1000	N1500	.310	D1-30mf
GPD P3K330K	33	10%	1000	N1500	.310	D1-33mf
GPD P3K390K	39	10%	1000	N1500	.310	D1-39mf
GPD X5F470K	47	10%	1000	X5F	.310	D1-47mf
GPD X5F500K	50	10%	1000	X5F	.310	D1-50mf
GPD X5F560K	56	10%	1000	X5F	.310	D1-56
GPD X5F680K	68	10%	1000	X5F	.310	D1-68
GPD X5F820K	82	10%	1000	X5F	.310	D1-82
GPD X5F910K	91	10%	1000	X5F	.310	–
GPD X5F101K	100	10%	1000	X5F	.310	D1-100
GPD X5F121K	120	10%	1000	X5F	.310	D1-120
GPD X5F151K	150	10%	1000	X5F	.310	D1-150
GPD X5F181K	180	10%	1000	X5F	.310	D1-180
GPD X5F201K	200	10%	1000	X5F	.310	D1-200
GPD X5F221K	220	10%	1000	X5F	.310	D1-220
GPD X5F251K	250	10%	1000	X5F	.310	D1-250

New Cat. No.	Cap pf	Tolerance	Volts	T. C.	Size Dia.	Old Cat. No.
GPD X5F271K	270	10%	1000	X5F	.310	D1-270
GPD X5F301K	300	10%	1000	X5F	.310	D1-300
GPD X5F331K	330	10%	1000	X5F	.310	D1-330
GPD X5F391K	390	10%	1000	X5F	.310	D1-390
GPD X5F471	470	10%	1000	X5F	.310	D1-470
GPD X5U471P5	470	±100 –0	500V	X5U	.310	1D1-CK60Y471Z
GPD X5F501K	500	±10%	1000	X5F	.310	D1-500
GPD X5F561K	560	±10%	1000	X5F	.385	D1-560
GPD X5F681K	680	±10%	1000	X5F	.385	D1-680
GPD X5U681P5	680	±100 –0	500	X5U	.310	1D1-CK60Y681Z
GPD X5F751K	750	±10	1000	X5F	.385	D1-750
GPD X5F821K	820	±10	1000	X5F	.385	D1-820
GPD X5U821P5	820	+100 –0	500	X5U	.310	1D1-CK60Y821Z
GPD X5F911K	910	±10	1000	X5F	.385	–
GPD X5F102K	1000	±10	1000	X5F	.385	D1-1000
GPD Z5U102P	1000	+100 –0	1000	Z5U	.310	BPD-001
GPD X5U102P5	1000	+100 –0	500	X5U	.385	1D1-CK61Y102Z
GPD X5F122K	1200	±10	1000	X5F	.437	D1-1200
GPD X5F152K	1500	+	1000	X5F	.437	D1-1500
GPD X5U152P5	1500	+100 –0	500	X5U	.385	1D1-CK61Y152Z
GPD X5F182K	1800	±10	1000	X5F	.590	D1-1800
GPD X5F202K	2000	±10	1000	X5F	.590	D1-2000
GPD X5F222K	2200	±10	1000	X5F	.590	D1-2200
GPD X5U222P5	2200	+100 –0	500	X5U	.590	1D1-CK62Y222Z
GPD X5F252K	2500	±10	1000	X5F	.590	D1-2500
GPD X5F272	2700	±10	1000	X5F	.590	D1-2700
GPD X5R302	3000	±10	1000	X5R	.590	D1-3000
GPD X5R332K	3300	±10	1000	X5R	.690	D1-3300
GPD X5U332P5	3300	+100 –0	500	X5U	.590	1D1-CK62Y332Z
GPD X5R392K	3900	±10	1000	X5R	.690	–
GPD X5R402K	4000	±10	1000	X5R	.690	D1-4000
GPD X5R472K	4700	±10	1000	X5R	.690	D1-4700
GPD X5U472P5	4700	+100 –0	500	X5U	.590	1D1-CK62Y472Z
GPD X5R502K	5000	±10	1000	X5R	.690	D1-5000
GPD Z5U502P	5000	+100 –0	1000	Z5U	.590	BPD-5000
GPD X5R562K	5600	±10	1000	X5R	.760	D1-5600
GPD X5R682K	6800	±10	1000	X5R	.760	D1-6800
GPD X5R752K	7500	±10	1000	X5R	.760	D1-7500
GPD X5R822K	8200	±10	1000	X5R	.906	D1-8200
GPD X5R912K	9100	±10	1000	X5R	.906	–
GPD X5S103K	10000	±10	1000	X5S	.906	D1-10000
GPD Z5U103P	10000	+100 –10	1000	Z5U	.760	BPD-.01
GPD X5U103P5	10000	+100 –0	500	X5U	.690	1D1-CK63Y103Z
GPD Z5U153P	15000	+100 –0	1000	Z5U	.906	BPD-015
GPD Z5U203P	20000	+100 –0	1000	Z5U	.906	BPD-.02
GPD Z5V303P	30000	+100 –0	1000	Z5V	.760	BPD-.03
GPD Z5V503P	50000	+100 –0	1000	Z5V	.906	BPD-.05
GPD Z5V2X102P	2X.001	+100 –0	1000	Z5V	.437	BPD2X.001
GPD Z5V2X152P	2X.0051	+100 –0	1000	Z5V	.590	BPD2X.0015
GPD Z5V2X202P	2X.002	+100 –0	1000	Z5V	.590	BPD2X.002
GPD Z5V2X222P	2X.0022	+100 –0	1000	Z5V	.590	BPD2X.0022
GPD Z5V2X302P	2X.003	+100 –0	1000	Z5V	.690	BPD2X.003
GPD Z5V2X402P	2X.004	+100 –0	1000	Z5V	.760	BPD2X.004
GPD Z5V2X472P	2X.0047	+100 –0	1000	Z5V	.760	BPD2X.0047
GPD Z5V2X103P	2X.01	+100 –0	1000	Z5V	.760	BPD2X.01
GPD Z5V2X203P	2X.02	+100 –0	1000	Z5V	.906	BPD2X.02
GPD Z5V3X152P	3X.0015	+100 –0	1000	Z5V	.760	BPD3X.0015
GPD Z5V3X202P	3X.002	+100 –0	1000	Z5V	.760	BPD3X.002

Contact your local Aerovox Industrial Distributor for Prices.

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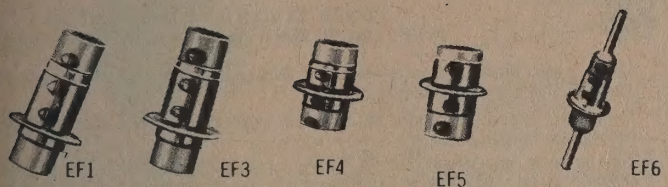
CAPACITORS



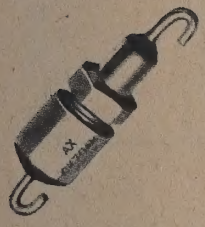
Eyelet Feed-Thru Capacitors

Aerovox eyelet's are the ultimate in miniaturization because of unique design. Capacitors can be soldered directly to a chassis for superior by-pass performance in critical space areas.

Style	Capacity in pf						D.C. Working Voltage	Size
EF-1	50	100	200	500	1000	1500	500	.375
EF-3	50	100	200	500	1000	1500	500	.375
EF-4	50	100	200	500			250	.250
EF-5	50	100	200	500	1000		250	.250
EF-6	50	100	200	500	1000	1500	500	.875

Tolerance ±20% up to and including 500 pf-GMV above 500pf.

Type BLF-ICC Heavy Duty Feed-Thru Capacitors



These heavy-duty feed-thru's are the same as listed in MIL-C-11015. Units through 100 pf rated at 1,000 VDCW, values above 100 pf rated at 500 VDCW.

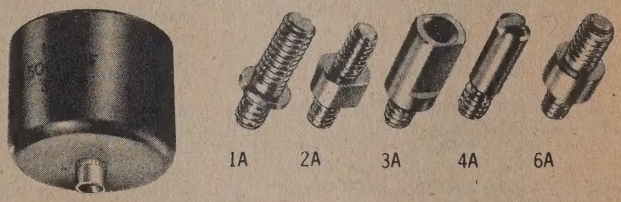
Tolerance ±10%, except on 1,000 pf and 1,500 pf where tolerance is ±20%.

Cap. uf	Part Number	Cap. uf	Part Number
10	AXCK70AX100K	470	AXCK70AX471K
33	AXCK70AX330K	680	AXCK70AX681K
47	AXCK70AX470K	1000	CK70AW102M
68	AXCK70AX680K	1500	CK70AW152M
100	AXCK70AX101K		

Type UV High Voltage "Cartwheels"

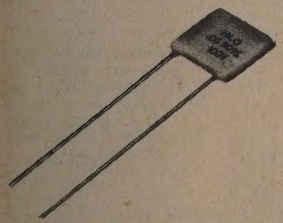
Universal type high voltage "cartwheels" are engineered for filter and by-pass applications in television power supplies. All units are thoroughly tested to assure long life under high voltage stresses.

Five different mounting styles are available with quickly replaceable terminals. Supplied in a value of 500 pf at 10, 20 and 30 kv ratings.



Type	STOCK ITEMS Voltage	Cap. pf	STOCK ITEMS—TERMINAL HARDWARE Type	Type
UV-501	10,000 VDCW	500	UV-1A	
UV-502	20,000 VDCW	500	UV-2A	UV-4A
UV-503	30,000 VDCW	500	UV-3A	UV-6A

Type TTP (Formerly Type TTD) Transistor Disks



These square miniature disks are ideally suited for all applications where size is a factor such as transistorized radios and industrial applications having critical space requirements.

Units are rated at 100 VDCW ±20% standard tolerance.

Capacity uf	Length & Width	Thickness	Capacity uf	Length & Width	Thickness
.005	.280	.125	.025	.465	.125
.01	.340	.125	.03	.465	.125
.02	.430	.125	.05	.535	.125
			.1	.700	.125

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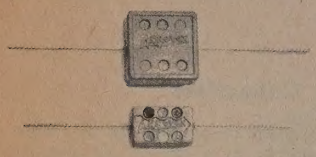
CAPACITORS



MIL TYPES CM15, CM20 AND CM30 RECEIVING MICAS

Compact mica-dielectric molded capacitors made in accordance with MIL-C-5B. Furnished tested and color coded to meet all requirements for "N" temperature rating and all vibration grades of this specification. All units silver-mica molded in red Bakelite.

Types CM15, 20 and 30 bear Aerovox Part No. 1459, 1469 and 1464 respectively. In addition, items bearing Aerovox Part No. 1469-HV and 1464-HV have been designed specifically for television, low-power transmission and power amplifier applications.

Standard tolerance of all units is ±5%. Closer tolerances available on special order.

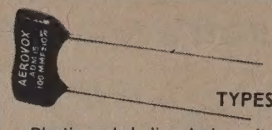
Type CM-15 (500VDCW) 1459		Type CM-20 (500VDCW) 1469		Type CM-30 (500VDCW) 1464		Type 1469-HV		Type 1464-HV	
Cap. pf	Type Designation	Cap. pf	Type Designation	Cap. pf	Type Designation	Cap. pf	CAT. NO.*	Cap. pf	CAT. NO.*
10	CM-15C-100	5	CM-20C-050	680	CM-30D-681	5	15HVRM050	430	15HVRM431
20	CM-15C-200	10	CM-20C-100	750	CM-30D-751	10	15HVRM100	470	15HVRM471
22	CM-15C-220	20	CM-20C-200	820	CM-30D-821	12	15HVRM120	500	15HVRM501
24	CM-15E-240	25	CM-20C-250	1000	CM-30D-102	15	15HVRM150	510	15HVRM511
27	CM-15E-270	33	CM-20C-330	1200	CM-30D-122	18	15HVRM180	560	15HVRM561
39	CM-15E-390	40	CM-20C-400	1500	CM-30D-152	20	15HVRM200	620	15HVRM621
47	CM-15E-470	47	CM-20C-470	1600	CM-30D-162	22	15HVRM220	680	15HVRM681
56	CM-15E-560	50	CM-20C-500	1800	CM-30D-182	24	15HVRM240	750	15HVRM751
68	CM-15E-680	68	CM-20C-680	2000	CM-30D-202	25	15HVRM250	820	15HVRM821
75	CM-15E-750	100	CM-20C-101	2200	CM-30D-222	27	15HVRM270	910	15HVRM911
100	CM-15E-101	130	CM-20C-131	2500	CM-30D-252	30	15HVRM300	1000	15HVRM102
120	CM-15E-121	150	CM-20C-151	2700	CM-30D-272	33	15HVRM330	1100	15HVRM112
150	CM-15E-151	160	CM-20C-161	3000	CM-30D-302	36	15HVRM360	1200	15HVRM122
200	CM-15E-201	180	CM-20C-181	3300	CM-30D-332	39	15HVRM390	1300	15HVRM132
220	CM-15E-221	200	CM-20D-201	3900	CM-30D-392	43	15HVRM430	1500	15HVRM152
250	CM-15E-251	220	CM-20D-221	4000	CM-30D-402	47	15HVRM470	1600	15HVRM162
270	CM-15E-271	250	CM-20D-251	4700	CM-30D-472	50	15HVRM500	1800	15HVRM182
300	CM-15E-301	270	CM-20D-271	5000	CM-30D-502	51	15HVRM510	2000	15HVRM202
390	CM-15E-391	330	CM-20D-331	5100	CM-30D-512	56	15HVRM560	2200	15HVRM222
470	CM-15E-471	390	CM-20D-391	5600	CM-30D-562	62	15HVRM620	2400	15HVRM242
500	CM-15E-501	400	CM-20D-401	6200	CM-30D-622	68	15HVRM680	2500	10HVRM252
510	CM-15E-511	470	CM-20D-471	6800	CM-30D-682	75	15HVRM750	2700	10HVRM272
		500	CM-20D-501	7500	CM-30D-752	82	15HVRM820	3000	10HVRM302
		510	CM-20D-511	8200	CM-30D-822	91	15HVRM910	3300	10HVRM332
		560	CM-20D-561	9100	CM-30D-912	100	15HVRM101	3600	10HVRM362
		620	CM-20D-621	10000	CM-30D-103	110	15HVRM111	3900	10HVRM392
		680	CM-20D-681			120	15HVRM121	4000	10HVRM402
		750	CM-20D-751			130	15HVRM131	4300	10HVRM432
		820	CM-20D-821			150	15HVRM151	4700	10HVRM472
		910	CM-20D-911			160	15HVRM161	5000	10HVRM502
		1000	CM-20D-102			180	15HVRM181	5100	10HVRM512
						200	15HVRM201		
						220	15HVRM221		
						240	15HVRM241		
						250	15HVRM251		
						270	15HVRM271		
						300	15HVRM301		
						330	15HVRM331		
						350	15HVRM351		
						360	15HVRM361		
						390	15HVRM391		
						400	15HVRM401		

*Capacities of 5 pf to 400 pf are furnished in CM20 case balance furnished in CM30 case size. Prefix 15 designates 1500 VDCW. Prefix 10 designates 1000 VDCW. Standard tolerance.

NOTES

Nominal Size All CM30 Units – 53/64 x 53/64 x 9/32
Nominal Size All CM20 Units – 45/64 x 29/64 x 3/16
Nominal Size All CM15 Units – 1/2 x 9/32 x 9/16

In silver mica the standard tolerance is ±5%. Also available in ±2% and ±1%. Closest available tolerance up to 10 pf is ±1/2 pf; 10 pf and up ±1% or ±1 pf, whichever is greater.



DIPPED SILVERED MICA CAPACITORS
TYPES ADM-10, ADM-15, ADM-19, ADM-20 AND ADM-30

Plastic coated, dipped mica units are in many ways superior to molded mica capacitors, yet are smaller than conventional units.

These types meet all applicable MIL-C-5B test standards for molded mica capacitors and offer the following features:

High operating temperatures, –55 to +125°C. Long-life characteristics • Improved temperature coefficient range • Radial leads for automatic insertion and printed-wiring assemblies • Unsurpassed performance and stability. Smaller physical size.

These capacitors have an insulation resistance of not less than 2,000 megohms after being subjected to the Humidity Resistance Test outlined in MIL-C-5B. Minimum insulation resistance is 25,000 megohms at 125°C; 1,000 megohms at 125°C.

Units are clearly marked with catalogue number which includes capacity and tolerance.

Cap. pf	Type Designation	Cap. pf	Type Designation	Cap. pf	Type Designation	Cap. pf	Type Designation	Cap. pf	Type Designation
	300 VT.		500 VT.		500 VT		500 VT.		500 VT.
10	ADM-10-100	5	ADM-15-050	100	*ADM-19-101	680	*ADM-20-681	4700	*ADM-30-472
12	ADM-10-120	10	ADM-15-100	130	*ADM-19-131	1000	*ADM-20-102	5600	ADM-30-562
15	ADM-10-150	12	ADM-15-120	200	*ADM-19-201	1200	*ADM-20-122	10000	ADM-30-103
18	ADM-10-180	15	ADM-15-150	300	*ADM-19-301	3000	*ADM-20-302		
20	ADM-10-200	18	ADM-15-180	470	*ADM-19-471	3300	ADM-20-332		
22	ADM-10-220	20	ADM-15-200	560	ADM-19-561	3900	ADM-20-392		
24	ADM-10-240	22	ADM-15-220	620	ADM-19-621	5000	ADM-20-502		
25	ADM-10-250	24	ADM-15-240	680	ADM-19-681				
27	ADM-10-270	27	ADM-15-270	750	ADM-19-751				
30	ADM-10-330	30	ADM-15-300	820	ADM-19-821				
33	ADM-10-330	33	ADM-15-330	910	ADM-19-911				
36	ADM-10-360	39	ADM-15-390	1000	ADM-19-102				
39	ADM-10-390	43	ADM-15-430	1500	ADM-19-152				
43	ADM-10-430	47	ADM-15-470	1800	ADM-19-182				
47	ADM-10-470	50	ADM-15-500	2000	ADM-19-202				
50	ADM-10-500	51	ADM-15-510	2200	ADM-19-222				
51	ADM-10-500	56	ADM-15-560	2700	ADM-19-272				
56	ADM-10-560	68	ADM-15-680						
62	ADM-10-620	82	ADM-15-820						
68	ADM-10-680	91	ADM-15-910						
75	ADM-10-750	100	ADM-15-101						
82	ADM-10-820	110	ADM-15-111						
91	ADM-10-910	120	ADM-15-121						
100	ADM-10-101	150	ADM-15-151						
110	ADM-10-111	160	ADM-15-161						
120	ADM-10-121	180	ADM-15-181						
130	ADM-10-131	200	ADM-15-201						
150	ADM-10-151	220	ADM-15-221						
160	ADM-10-161	240	ADM-15-241						
180	ADM-10-181	250	ADM-15-251						
200	ADM-10-201	270	ADM-15-271						
220	ADM-10-221	300	ADM-15-301						
240	ADM-10-241	330	ADM-15-331						
250	ADM-10-251	360	ADM-15-361						
		390	ADM-15-391						
		430	ADM-15-431						
		470	ADM-15-471						
		500	ADM-15-501						
		510	ADM-15-511						

Standard Tolerance ±5% Minimum tolerance for capacitances up to and including 10 pf is ±1/2 pf, for all other capacitances ±1% or 1 pf whichever is greater.

CHARACTERISTICS

ADM-10–from 10pf to 30 pf Characteristic "C"
from 31 pf to 100 pf Characteristic "D"
from 100 pf to 390 pf Characteristic "E"
ADM-15–from 5 to 20 pf Characteristic "C"
from 22 to 150 pf Characteristic "E"
from 160 pf and up Characteristic "F"

ADM-19–All capacities listed "F" Characteristics.
ADM-20–All capacities listed "F" Characteristic.
ADM-30–All capacities listed "F" Characteristic.

Case Size	L	W	T
ADM-10	.390	.380	.220
-15	.490	.420	.240
-19	.710	.590	.370
-20	.820	.630	.450
-30	.840	.930	.480

Above are max. dimensions for maximum capacitance in each case size.

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AEROVOX Hi-Q

CAPACITORS

TYPES 1650L, 1651L, 1652L, 1653L AND 1654L
TRANSMITTING MICAS

Heavy duty Bakelite-molded capacitors with threaded mounting holes for roundhead screw terminals or plain holes. Add Suffix "A" for plain hole units.

TYPE 1650L 600 VDCW — 1000 VDCT 350 VACW — 700 VACT	TYPE 1651L 1200 VDCW — 2500 VDCT 875 VACW — 1750 VACT	TYPE 1652L 2500 VDCW — 5000 VDCT 1750 VACW — 3500 VACT	TYPE 1653L 3750 VDCW — 7500 VDCT 2625 VACW — 5250 VACT	TYPE 1654L 5000 VDCW — 10,000 VDCT 3500 VACW — 7000 VACT
.00005	.00005	.00005	.00005	.00005
.0001	.0001	.000075	.000075	.000075
.00025	.00025	.0001	.0001	.0001
.0003	.0003	.00015	.00015	.00015
.00035	.00035	.0002	.0002	.0002
.0004	.0004	.00025	.00025	.00025
.0005	.0005	.0003	.0003	.0003
.001	.001	.00035	.00035	.00035
.0015	.0015	.0004	.0004	.0004
.002	.002	.0005	.0005	.0005
.0025	.0025	.001	.001	.001*
.003	.003	.0015	.0015	
.004	.004	.002	.002*	
.005	.005	.0025	.0025*	
.006	.006	.003	.003*	
.008	.008	.004		
.01	.01	.005		
.015	.015	.006		
.02	.02*	.008*		
.025	.025*	.01*		
.03	.03*			
.04*				
.05*				
.06*				

These units are equivalent to case styles CM55, CM56, CM60, and CM61 of specification MIL-C-5B.
Standard tolerance ±5%.
±2% Tolerance available on special order.
Nominal Size: 1¾" x 1⅜" x 7/16"
*Thickness ¾"

TYPES 1445, 1446 and 1447
TRANSMITTING MICA CAPACITORS

Used for meter winding shunts and general RF applications, these capacitors are available in a wide range of capacities with tolerance of ±2, ±5 and ±10%.

Designed with insulated mounting holes 1¾" apart, independent of solder lugs. Size: 1⅛" x 1⅝" x 1/32". Meter mounting bracket "E" available. Specify when ordering. Units equivalent to case styles CM45 and CM50 of MIL-C-5B.

TYPE 1445 600 VDCW 1000 VDCT Cap. uf	TYPE 1446 1200 VDCW 2500 VDCT Cap. uf	TYPE 1447 2500 VDCW 5000 VDCT Cap. uf
.00005	.00005	.00005
.0001	.0001	.000075
.00015	.00015	.0001
.0002	.0002	.00015
.00025	.00025	.0002
.0003	.0003	.00025
.00035	.00035	.0003
.0004	.0004	.00035
.0005	.0005	.0004
.001	.001	.0005
.0015	.0015	.001
.002	.002	.0015
.0025	.0025	.002*
.003	.003	.0025*
.004	.004*	.003*
.005	.005*	.004*
.006	.006*	.005*
.008	.008*	
.01	.01*	
.015*	.015*	
.02*		
.025*		
.03*		
.04*		

* Thickness 1/16"

TYPES 1991 thru 1996
PORCELAIN CASED CAPACITORS

Glazed, porcelain-cased high-temperature wax-sealed units designed for high frequency use.

Units feature heavy-duty terminals and have minimum power loss due to dielectric absorption. No heating at full load.

Size 4" x 3" with 2½" between mounting holes. Tolerance ±10%.

Cap. uf	DC Voltage Rating	Type	Cap. uf	DC Voltage Rating	Type
.00005	12,500	1996		10,000	1995
.0001	12,500	1996		7,000	1994
.00025	12,500	1996		5,000	1993
.0005	12,500	1996		3,500	1992
	7,000	1994		2,000	1991
.001	12,500	1996	.005	10,000	1995
	7,000	1994		7,000	1994
	3,500	1992		5,000	1993
.0015	12,500	1996		3,500	1992
	7,000	1994		2,000	1991
	5,000	1993	.01	7,000	1994
	3,500	1992		5,000	1993
	2,000	1991		3,500	1992
.002	12,500	1996		2,000	1991
	10,000	1995	.02	3,500	1992
	7,000	1994		2,000	1991
	5,000	1993	.05	3,500	1992
	3,500	1992		2,000	1991
	2,000	1991	.1	2,000	1991
.003	12,500	1996			

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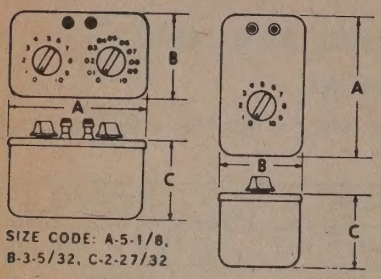
AEROVOX Hi-Q

CAPACITORS

FIGURE A

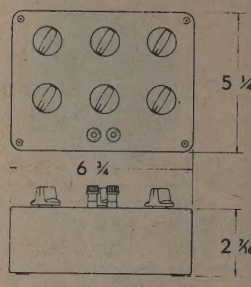


SIZE CODE: A-5-1/8, B-3-5/32, C-2-27/32

AEROVOX DECADE BOXES

RESISTANCE CAPACITANCE INDUCTANCE

FIGURE B



Aerovox now makes available to the electronic industry laboratory quality standards in capacitance, resistance and inductance decades. From one of the outstanding manufacturers of precision resistors, capacitors and inductors, Aerovox is making available decade boxes of the highest quality in the ranges most needed for electronic and electrical laboratories at a price far below that of equivalent quality standards. Aerovox decade boxes are available in 11 units; 4 resistance decades, 3 capacitance decades and 4 inductance decades. Ten of the decades are housed in seamless, drawn steel cases coated with gray enamel. They are capable of taking the beating of bench use without impairment of accuracy. The 11th decade box, a new resistance model ARD-41, is housed in a special high impact plastic case which will also withstand rugged handling.

This new decade box has a range of 0 to 1.1 megohms in 1 ohm steps, combining all the three other resistance decades into one compact box. Outline drawings of both sizes are shown. All panels are black with the marking engraved in white.

For full technical information request bulletin NPJ-109 Rev. 2.

RESISTANCE

PART NO.	FIGURE	TYPE	DIELECTRIC	DIELS	RANGE	STEPS	ACCURACY ± 1st Dial	ACCURACY ± 2nd Dial	RATING 1st Dial	RATING 2nd Dial	Net Price
ARD-15	A	R	Wire-Wound	2	0 to 110 ohms	1.0 ohm	5%	3%	1.0 Amp.	.5 Amp.	15.15
ARD-23	A	R	Wire-Wound	2	0 to 11 K	100 ohm	3%	3%	100 Ma.	50 Ma.	15.15
ARD-31	A	R	Carbon Deposited	2	0 to 1.1 meg.	10.K ohms	1%	1%	5 Ma.	2 Ma.	15.15
ARD-41	B	R	Wire-Wound & Metal Film	6	0 to 1.1 meg.	1.0 ohm	1%		1st Dial 2 Ma. 2nd Dial 5 Ma. 3rd Dial 15 Ma.	4th Dial 50 Ma. 5th Dial 150 Ma. 6th Dial 500 Ma.	44.95

CAPACITANCE

ACD-13	A	C	Mica	2	0 to .011 mfd.	.0001 mfd.	3%	3%	600 VDC 220 VAC	600 VDC 220 VAC	14.50
ACD-23	A	C	Oil Paper	2	0 to 1.1 mfd.	.01 mfd.	3%	3%	600 VDC 220 VAC	600 VDC 220 VAC	16.50
ACD-33	A	C	Oil Paper	1	0 to 10.0 mfd.	1.0 mfd.	3%	–	600 VDC 220 VAC	–	27.25

INDUCTANCE

ALD-12	A	L	Toroidal	1	0 to 10 mh	1.0 mh	2%	–	250 MaDC	–	29.90
ALD 22	A	L	Toroidal	1	0 to 100 mh	10.0 mh	2%	–	79 MaDC	–	29.90
ALD ?	A	L	Toroidal	1	0 to 1.0 hy.	100.0 mh	2%	–	25 MaDC	–	29.90
ALD-	A	L	Toroidal	1	0 to 10.0 hy.	1.0 hy	2%	–	8 MaDC	–	32.90

SCREEN ROOM FILTERS

Screen room filters comply with the most advance requirements for r-f tight enclosures. All have attenuation equal to or exceeding that of the screen room.

High attenuation and ease of mounting make these filters ideal for critical applications. They are hermetically sealed and feature shielded end terminals using knockouts for 3/4" and 1" conduit.

All cases have 1¼" countersunk hole to permit flush mounting on the screen room.

For full technical data, request Bulletin NPJ-127.

Part No.	Curr. (Amps.)	Circuits	CPS	Attenuation vs. Frequency	Size L x W x D
*S-1076-1	50	1	0-60	100 db from 14 kc to 1000 mc	20" x 3 5/8" x 3 5/8"
*S-1076-2	50	2	0-60	100 db from 14 kc to 1000 mc	20" x 7 3/16" x 3 5/8"
*S-1076-3	50	3	0-60	100 db from 14 kc to 1000 mc	20 1/8" x 10 7/8" x 3 11/16"
S-1142-1	30	1	0-400	100 db from 150 kc to 1000 mc	10 1/8" x 2 7/8" x 2 7/16"
S-1142-2	30	2	0-400	100 db from 150 kc to 1000 mc	10 1/8" x 4 3/4" x 2 7/16"
S-1142-3	30	3	0-400	100 db from 150 kc to 1000 mc	10 1/8" x 7" x 2 7/16
S-1302-1	100	1	0-60	100 db from 200 kc to 1000 mc	14" x 4 3/8" x 4 3/8"
*S-1303-1	60	1	0-1000	100 db from 100 kc to 1000 mc	20" x 3 5/8" x 3 5/8"
S-1304-1	80	1	0-60	100 db from 14 kc to 1000 mc	22" x 4 3/8" x 4 3/8"
S-1305-1	100	1	0-1000	100 db from 100 kc to 1000 mc	22" x 4 3/8" x 4 3/8"
S-1361-1	100	1	0-60	100 db from 14 kc to 1000 mc	22" x 4 3/8" x 4 3/8"
S-1432-1	100	1	0-60	100 db from 100 kc to 1000 mc	22" x 4 3/8" x 4 3/8"
S-1455-1	100	1	0-60	100 db from 150 kc to 1000 mc	22" x 4 3/8" x 4 3/8"
					Overall L. / Overall D.
S-1468-A	50	1	0-1000	60 db 1000 mc to 10000 mc	10¾" / ⅞"
S-1468-B	100	1	0-1000	60 db 1000 mc to 10000 mc	10¾" / ⅞"

*250VAC/DC. All others 500VAC/DC.

-Net

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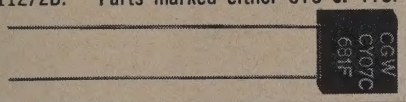
We make capacitors for guys who can't stand failures.

For coupling, decoupling, filtering, timing, switching or computer circuits, CORNING Capacitors provide ultra-stable electrical performance. This stability is inherent in their fused glass and aluminum foil capacitive elements. These inorganic materials and continuous process and quality monitoring are responsible for the well-known CORNING CYFR capacitor made for the Minuteman. Many of the basic advantages of the CYFR have found their way into standard CORNING Capacitors. The properties of these capacitors are entirely those of the closely controlled dielectric, and can't be changed by assembly methods or subsequent treatment. At 1 Kc and 25°C, dissipation factor is less than 0.001; at any given temperature, TC will not deviate from the curve by more than 5 ppm on CYFR, CYFM and CYO units.

Corning manufactures highly stable fixed glass capacitors to meet your demanding circuit requirements. Their performance and economic advantages will add value to your equipment.

	TYPE AND MIL SPEC	MODEL	CAPACITANCE RANGE (pf)	VOLTAGE	NOMINAL DIMENSIONS Size in inches	WEIGHT IN GRAMS
CYFM	Fusion-sealed environment-proof performance at cost savings. Electrically and environmentally interchangeable with CYFR. MIL-C-11272B.	CYFM10	0.5 to 200 220 to 300	500 300	11/32 x 11/64 x 5/64	0.25 - 0.50
		CYFM15	220 to 510 560 to 1200	500 300	15/32 x 17/64 x 7/64	0.75 - 1.25
		CYFM20	560 to 3300 3600 to 5100	500 300	47/64 x 27/64 x 9/64	2.50 - 4.00
		CYFM30	3600 to 6200 6800 to 10,000	500 300	49/64 x 3/4 x 9/64	5.00 - 7.00
CYO (TYO)	New printed circuit capacitor provides glass stability in a uniformly symmetric case. Eliminates shorting. Lead spacing: CYO-6—0.2", CYO-7—0.2", CYO-8—0.4". MIL-C-11272B. Parts marked either CYO or TYO. 	CYO-6 (TYO-6)	1 to 560	300	.300 x .200 x .115	.3 - .4
		CYO-7 (TYO-7)	561 to 1000	300	.300 x .300 x .115	.4 - .5
		CYO-8 (TYO-8)	1001 to 2400	300	.500 x .300 x .115	.7 - .8
GLASS-K	New miniature stable capacitor exhibits high capacitance-to-volume ratio. Offers size advantages of ceramic types, and consistent performance associated with glass dielectrics. 10% and 20% tolerances. Solderable and weldable gold plated dumet leads. MIL-C-11015D.	CYK01	270 to 51,000	50	0.250 x 0.100	0.2
		CYK02	12,000 to 100,000	50	0.250 x 0.140	0.3

STANDARD CAPACITOR VALUES, CYFM, CYO (TYO)

CAP. (pf)	MIL EQUIV.	CAP. (pf)	MIL EQUIV.	CAP. (pf)	MIL EQUIV.	CAP. (pf)	MIL EQUIV.	CAP. (pf)	MIL EQUIV.	CAP. (pf)	MIL EQUIV.
0.5	0R5C	7.5	7R5J	33	330J	130	131J	560	561J	2400	242J
1.0	1R0C	8.2	8R2J	36	360J	150	151J	620	621J	2700	272J
1.5	1R5C	9.1	9R1J	39	390J	160	161J	680	681J	3000	302J
2.2	2R2C	10	100J	43	430J	180	181J	750	751J	3300	332J
2.7	2R7C	11	110J	47	470J	200	201J	820	821J	3600	362J
3.0	3R0C	12	120J	51	510J	220	221J	910	911J	3900	392J
3.3	3R3C	13	130J	56	560J	240	241J	1000	102J	4300	432J
3.6	3R6C	15	150J	62	620J	270	271J	1100	112J	4700	472J
3.9	3R9C	16	160J	68	680J	300	301J	1200	122J	5100	512J
4.3	4R3C	18	180J	75	750J	330	331J	1300	132J	5600	562J
4.7	4R7C	20	200J	82	820J	360	361J	1500	152J	6200	622J
5.1	5R1C	22	220J	91	910J	390	391J	1600	162J	6800	682J
5.6	5R6C	24	240J	100	101J	430	431J	1800	182J	7500	752J
6.2	6R2C	27	270J	110	111J	470	471J	2000	202J	8200	822J
6.8	6R8C	30	300J	120	121J	510	511J	2200	222J	9100	912J
										10000	103J

*Standard Tolerances As Shown: C = ±25 pf J = ±5%.
*Other Tolerances Available On Request: D = ±.50 pf F = ±1% G = ±2% K = ±10%
†Values Do Not Apply To CYO (TYO) Capacitors.

CORNING ELECTRONICS

CORNING GLASS WORKS
ELECTRONIC PRODUCTS DIVISION

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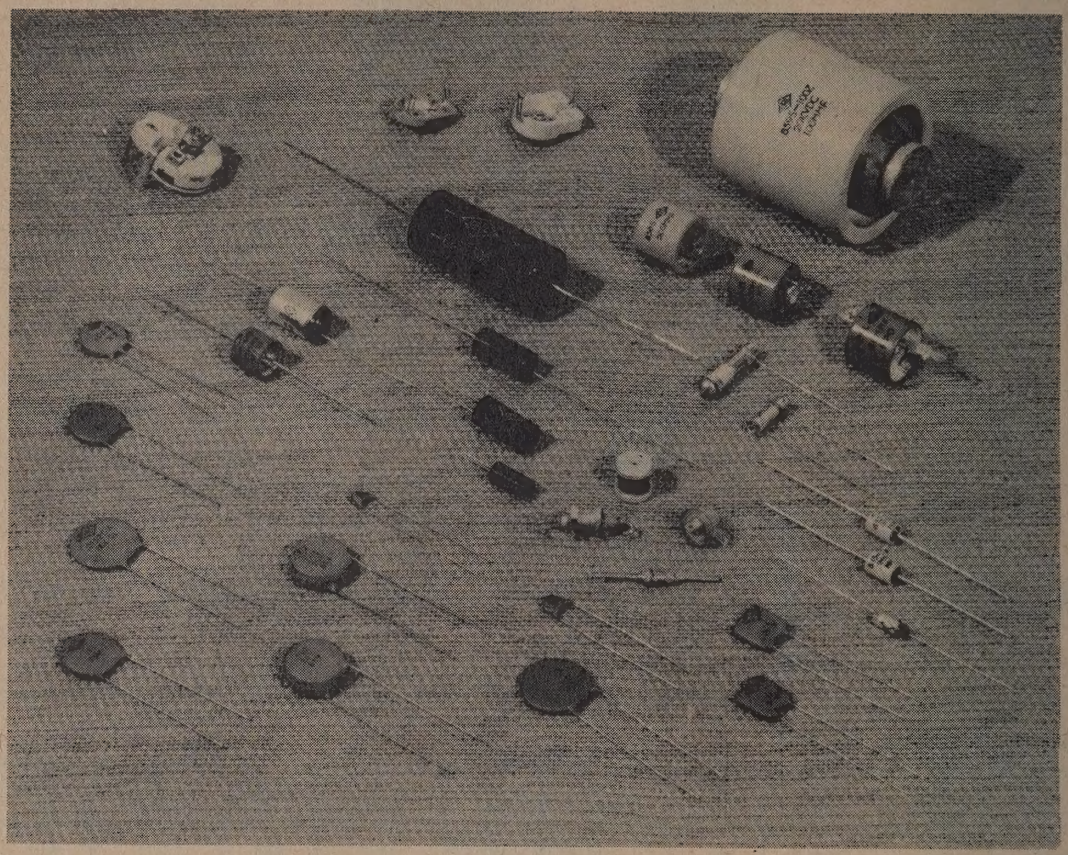

CENTRALAB CAPACITORS

Centralab capacitors present a particularly adaptable array of quality components for use in your most demanding applications.

This product line is made up of a broad spread of ceramic, polystyrene and electrolytic dielectric capacitors in working voltages from 3 volts to 20,000 volts, capacitances from .5 pF to 1000 mfd tolerances and temperature compensating characteristics for every practical purpose.

The physical configurations include discs, plates and tubular types in miniaturized and standard sizes for convenient applications.

Ceramic trimmer capacitors are available for a wide range of military and commercial applications.

NEW PRODUCTS	PAGE	SERIES
	267	UK16, UK25, UK50 — ULTRA-KAPS

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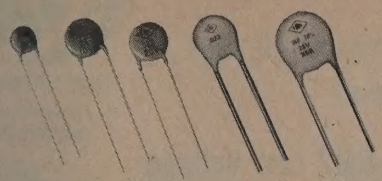
SEMI-CONDUCTOR TYPE, LOW VOLTAGE CERAMIC DISC CAPACITORS

TYPE UK, UK10, UK16, UK20, UK25, UK50 ULTRA-KAPS®



The "Ultra-Kap" is a device which provides capacitances as much as 100 times greater than those attainable in conventional ceramic dielectrics. These semi-conductor units have been used by the millions for bypass and audio coupling in transistorized circuits.

SPECIFICATIONS

OPERATING TEMPERATURE: −55° to +85°C.

MAXIMUM WORKING VOLTAGE: 3, 10, 16, 20, 25, and 50 VDC.

INSULATION: Durez coated and wax impregnated.

LEADS: #22 tinned wire leads 1½" minimum length.

MARKING: CRL diamond, capacity, voltage, Tolerance (Z for +80 −20%, M for ±20%) EIA code.

TESTING: All capacitance and dissipation factor measurements taken at 0.1 volt RMS at 1 KHz @ 25°C ±5°C and 70% maximum Relative Humidity.

PACKAGED: 5 pieces per clear plastic box or 100 pieces bulk per carton or 1,000 pieces pulk per warehouse pack.

TYPE UK; 3 VOLT ULTRA-KAPS®

Cap. (μF)	Cat. No.	Tolerance	Max. Dia.	Thickness	Lead Spacing	Max. Dissipation Factor @ 1KHz	Min. Insulation Resist. Rated Volts
.1	UK-104	GMV	.220"	.156"	.187"	5%	40K
.22	UK-224	GMV	.290"	.156"	.250"	5%	20K
.47	UK-474	GMV	.405"	.156"	.250"	5%	8K
1.0	UK-105	GMV	.590"	.156"	.375"	5%	4K
2.2	UK-225	GMV	.820"	.156"	.375"	5%	2K

TYPE UK10; 10 VOLT ULTRA-KAPS®

.05	UK10-503	+80 −20%	.290"	.156"	.250"	10%	50K
.1	UK10-104	+80 −20%	.405"	.156"	.250"	10%	50K
.2	UK10-204	+80 −20%	.590"	.156"	.375"	10%	50K
.47	UK10-474	+80 −20%	.820"	.156"	.375"	10%	50K

TYPE UK16; 16 VOLT ULTRA-KAPS®

.01	UK16-103	+80 −20%	.290"	.156"	.250"	5%	5Meg
.022	UK16-223	+80 −20%	.390"	.156"	.250"	5%	3Meg
.033	UK16-333	+80 −20%	.390"	.156"	.250"	5%	3Meg
.05	UK16-503	+80 −20%	.406"	.156"	.250"	5%	2Meg
.068	UK16-683	+80 −20%	.515"	.156"	.375"	5%	1.5Meg
.1	UK16-104	+80 −20%	.590"	.156"	.375"	5%	1Meg
.15	UK16-154	+80 −20%	.690"	.156"	.375"	5%	.65Meg
.2	UK16-204	+80 −20%	.820"	.156"	.375"	5%	.5Meg
.3	UK16-304	+80 −20%	.920"	.156"	.375"	5%	.33Meg

TYPE UK20; 20 VOLT ULTRA-KAPS®

.05	UK20-503	+80 −20%	.405"	.156"	.250"	10%	400K
.1	UK20-104	+80 −20%	.590"	.156"	.375"	10%	200K
.2	UK20-204	+80 −20%	.820"	.156"	.375"	10%	100K

TYPE UK25; 25 VOLT ULTRA-KAPS®

.01	UK25-103	±20%	.290"	.156"	.250"	5%	65Meg
.022	UK25-223	±20%	.390"	.156"	.250"	5%	45Meg
.033	UK25-333	±20%	.405"	.156"	.250"	5%	30Meg
.05	UK25-503	±20%	.485"	.156"	.250"	5%	20Meg
.068	UK25-683	±20%	.590"	.156"	.375"	5%	15Meg
.1	UK25-104	±20%	.690"	.156"	.375"	5%	10Meg
.15	UK25-154	±20%	.820"	.156"	.375"	5%	6.5Meg
.2	UK25-204	±20%	.920"	.156"	.375"	5%	5Meg

TYPE UK50; 50 VOLT ULTRA-KAPS®

.01	UK50-103	±20%	.290"	.156"	.250"	3%	1000Meg
.015	UK50-153	±20%	.390"	.156"	.250"	3%	1000Meg
.022	UK50-223	±20%	.485"	.156"	.250"	3%	1000Meg
.033	UK50-333	±20%	.515"	.156"	.375"	3%	1000Meg
.047	UK50-473	±20%	.590"	.156"	.375"	3%	1000Meg
.05	UK50-503	±20%	.690"	.156"	.375"	3%	1000Meg
.068	UK50-683	±20%	.760"	.156"	.375"	3%	1000Meg
.1	UK50-104	±20%	.920"	.156"	.375"	3%	1000Meg

Type DA; 30 Volt DCW

Type DA is designed for the high capacity, low voltage demands for transistor circuitry. Durez coated and high temperature wax impregnated.

SPECIFICATIONS

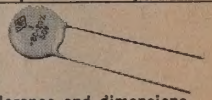
OPERATING TEMPERATURE: −55°C to +85°C.
CAPACITY AND TOLERANCE: See Listing.
LEADS: #22 tinned wire 1½" minimum length.
TEMPERATURE VS. CAPACITANCE: EIA Z5V (+22 − 82% maximum change from 25°C reading over temperature range of +10°C to +85°C).
DISSIPATION FACTOR: 2% maximum @ 1KC.
LEAKAGE RESISTANCE: Initial 7500 Megohms minimum, after humidity over 1000 magohms.
MARKING: Stamped with capacity, voltage and CRL in Diamod.
PACKAGED: 5 pieces per plastic box or 100 pieces bulk per carton.—Warehouse Pak.

"TRANSISTOR CIRCUIT" PLATE CAPACITORS

30 VDCW (50 VDC TEST)

Cap. (μF)	Cat. No.	Tolerance	Max. Square	Max. Thickness	Lead Spacing
.02	DA-203	+100 − 20%	½"	.140"	.250"
.05	DA-503	+100 − 20%	5/16"	.160"	.250"
.1	DA-104	+100 − 20%	7/16"	.218"	.250"

Type CK & HK 50 Volt DCW



SPECIFICATIONS

Same as listed for Type DA except for voltage, tolerance and dimensions.

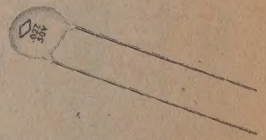
"TRANSISTOR CIRCUIT" DISC CAPACITORS

50 VDCW (100 VDC TEST)

Cap. (μF)	Cat. No.	Tolerance	Max. Diam.	Max. Thickness	Lead Spacing
.005	CK-502	+80 −20%	.390"	.156"	.250"
.01	CK-103	+80 −20%	.390"	.156"	.250"
.02	CK-203	+80 −20%	.590"	.156"	.375"
.025	CK-253	+80 −20%	.590"	.156"	.375"
.03	CK-303	+80 −20%	.590"	.156"	.375"
.05	CK-503	+80 −20%	.690"	.156"	.375"
.1	CK-104	+80 −20%	.719"	.171"	.375"

LOW VOLTAGE HK-SERIES

Thrifty, high capacity, low voltage, disc capacitors for production or replacement applications. Designed and manufactured by Centralab to exacting standards in Hong Kong. Ideal for transistor circuitry.



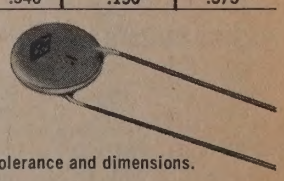
SPECIFICATIONS

INSULATION: Durez coated and wax impregnated
OPERATING TEMPERATURE: −55°C to +85°C
LEAKAGE RESISTANCE: 5000 megohms minimum
DISSIPATION FACTOR: 3% maximum @ 1 KHZ
MARKING: CRL diamond, capacity, voltage, tolerance (Z for + 80-20%)
LEADS: #22 tinned wire, 1" minimum length
PACKAGED: 100 pieces bulk per carton or 1000 pieces bulk per warehouse pak

TYPE HK −; 50 VOLT DCW (100V TEST)

Cap. (μF)	Cat. No.	Tolerance	Max. Diam.	Max. Thickness	Lead Spacing
.01	HK-103	+80 −20%	.320"	.156"	.250"
.02	HK-203	+80 −20%	.400"	.156"	.250"
.05	HK-503	+80 −20%	.540"	.156"	.375"

Type DDA; 75 Volt DCW



SPECIFICATIONS

Same as listed for Type DA except for voltage tolerance and dimensions.

"TRANSISTOR CIRCUIT" DISC CAPACITORS

75 VDCW (150 VDC) TEST)

Cap. (μF)	Cat. No.	Tolerance	Max. Diam.	Max. Thickness	Lead Spacing
.05	DDA-503	+80 −30%	.690"	.156"	.375"
.1	DDA-104	+80 −30%	.719"	.156"	.375"

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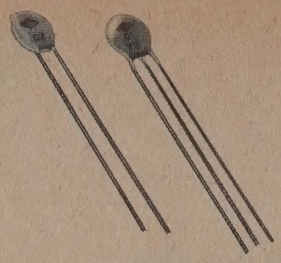
DISTRIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.

Type DDM, DDM2 Low Voltage Discs

150 VDCW (300 VDC TEST)



Designed for applications where voltages are higher and proper safety factors will not permit the use of lower voltage units.
Durez* coated and high temperature wax impregnated.

SPECIFICATIONS

OPERATING TEMPERATURE: —55°C to +85°C.

CAPACITY AND TOLERANCE: See Listing.

LEADS: #22 tinned wire 1½" minimum length.

TEMPERATURE VS. CAPACITANCE: EIA Z5V or better (+22 —82% maximum capacity change from 25°C reading over temperature range of +10°C to +85°C).

DISSIPATION FACTOR: 2% maximum @ 1KC.

LEAKAGE RESISTANCE: Initial 7500 megohms min.; after humidity over 1000 megohms.

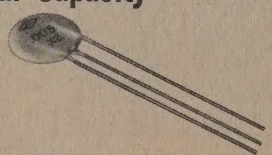
MARKING: Stamped with capacity, voltage and CRL diamond.

PACKAGED: 5 pieces per plastic box or 100 pieces bulk per carton.—Warehouse Pak.

Cap. (μF)	Cat. No.	Max. Dia.	Max. Thickness	Lead Spacing	Tolerance
.005	DDM-502	.390"	.156"	.250"	+60 —40%
.01	DDM-103	.390"	.156"	.250"	+60 —40%
.02	DDM-203	.406"	.166"	.250"	+60 —40%
2 x .01	DDM2-103	.406"	.186"	.094"	+60 —40%

Type DD2, DD3 Dual Capacity

600 VDCW—1200 VDC TEST



Type DD2—single disc dual capacity. Double "Durez" insulation. Stamped with capacity. Packaged 5 pieces per clear plastic box or 100 pieces bulk per carton.

Cap. Mfd. (μF)	Cat. No.	Max. Dia.	Max. Thick.	Lead Spacing	Tolerance
2 x .001	DD2-152	.408"	.156"	.125"	GMV
2 x .0015	DD2-152	.594"	.156"	.125"	GMV
2 x .005	DD2-502	.719"	.156"	.125"	+80 —20%

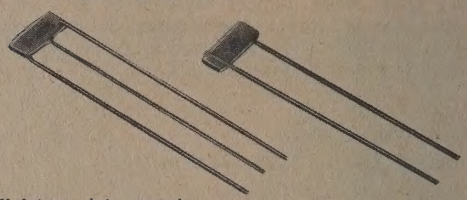
Type DD3—dual disc—two capacitors in the space required for one standard unit and shielded to minimize stray capacities between discs. Double "Durez" insulation. Stamped with capacity. Packaged 5 pieces per clear plastic box or 100 pieces bulk per carton.

PATENTED SHIELDED CONSTRUCTION

Cap. Mfd. (μF)	Cat. No.	Max. Dia.	Max. Thick.	Lead Spacing	Tolerance
2 x .001	DD3-102	.391"	.186"	.125"	GMV
2 x .0015	DD3-152	.391"	.186"	.125"	GMV
2 x .002	DD3-202	.593"	.225"	.125"	GMV
2 x .005	DD3-502	.593"	.225"	.125"	GMV
2 x .01	DD3-103	.719"	.225"	.125"	GMV

Type DM, DM2 Low Voltage

150 VOLTS DCW (300 VDC TEST)



Miniature plate capacitors.
Durez coated and high temperature wax impregnated.

SPECIFICATIONS

OPERATING TEMPERATURE: —55°C to +85°C.

CAPACITY AND TOLERANCE: See Listing.

LEADS: Tinned wire 1¾" minimum lengths. DM-101, DM-201, DM-301, DM-501 and DM-102 have #24 wire leads. All others #26.

TEMPERATURE VS. CAPACITANCE: EIA Z5V or better (+22 —82% maximum capacity change from 25°C reading over temperature range of +10°C to +85°C).

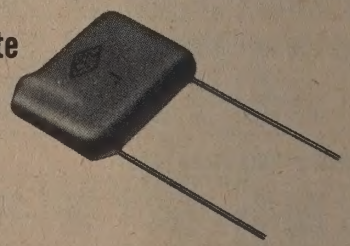
MARKING: Stamped with capacity and CRL and PEC in individual diamonds.

PACKAGED: 5 pieces per plastic box of 100 pieces bulk per carton.

Cap. (pF)	Cat. No.	Tolerance	Length	SIZE Width	Thickness
100	DM-101	+50 —20%	17/32"	7/32"	7/64"
200	DM-201	+50 —20%	17/32"	7/32"	7/64"
300	DM-301	+50 —20%	17/32"	7/32"	7/64"
500	DM-501	+30 —20%	17/32"	7/32"	7/64"
Cap. (μF)	**Cat. No.**	**Tolerance**	**Length**	**SIZE Width**	**Thickness**
.001	DM-102	+50 —30%	17/32"	7/32"	7/64"
.002	DM-202	+80 —20%	17/32"	7/32"	7/64"
.003	DM-302	+80 —20%	17/32"	7/32"	7/64"
.005	DM-502	+80 —20%	17/32"	7/32"	7/64"
.01	DM-103	+80 —20%	17/32"	15/64"	7/64"
2 x .005	DM2-502	+80 —20%	17/32"	15/64"	7/64"

Type DF Flat Plate

600 VDCW—1200 VDC TEST



High capacity, low mass weight, unusual thin design plus inherent Centralab ceramic stability and permanence have made these units extremely popular as by-pass and filter capacitors and are excellent for audio coupling applications. No. 20 tinned wire leads. Packaged 2 pieces per clear plastic box or 50 pieces bulk per carton.

Cap. Mfd. (μF)	Cat. No.	Max. Dimensions	Lead Spacing	Tolerance
.05	DF-503	1 3/16" x 1 1/16" x 7/32"	7/8"	GMV
.1	DF-104	1 3/16" x 1 1/16" x 13/64"	7/8"	+80 —20%

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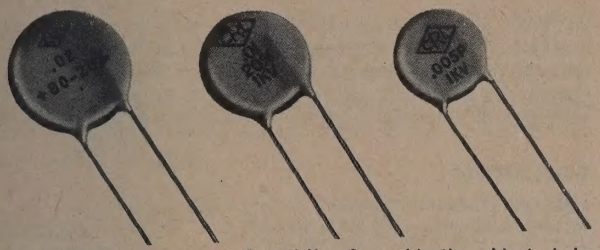
DISTRIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.

Type DD General Purpose Ceramic Discs



Centralab "DD" Series ceramic disc Hi-Kaps® provide the widest choice of general purpose capacitors available off-the-shelf. These capacitors are primarily designed for by-pass and non-critical coupling applications in electronic equipment having operating temperatures ranging from —55°C to +85°C. Specifications are based on EIA Standard RS-198.

SPECIFICATIONS

OPERATING TEMPERATURE RANGE: —55°C to +85°C

VOLTAGE: 1000 VDCW (Except DD-153 thru DD-503 and DD6-103 which are 600 VDCW).

LIFE TEST: 1000 hours at 1000 VDC at 85°C.

FLASH TEST: 1800 VDC

SIZE: See listing

CAPACITY: 3.3 pF thru 200 pF (Test at 1MC)
200 pF thru .05 μF (Test at 1KC)

TOLERANCE: See listing (GMV—Guaranteed Minimum Value)

LEAKAGE RESISTANCE: Initial, 10,000 megohms minimum; after humidity, over 1000 megohms.

LEADS: #22 tinned copper, minimum length 1½"

DISSIPATION FACTOR: EIA codes S2L and S3N 0.6% max. at 1MC. All other 2% max. at 1KC.

INSULATION: "Durez" coated and high temperature vacuum wax impregnated.

TEMPERATURE VS. CAPACITANCE: See EIA temperature characteristic chart vs. listing.

MARKING: Stamped with capacity, tolerance and voltage except tolerance omitted on GMV values and voltage omitted on DD-153 thru DD-503 and DD6-103.

PACKAGED: 5 pieces per plastic box or 100 pieces bulk per carton.

SIZE CHART TYPE DD

CRL Size	Max. Diameter	Max. Thickness	Lead Spacing
60	.290"	.156"	.250"
61	.385"	.156"	.250"
62	.590"	.156"	.375"
63	.690"	.156"	.375"
*	.718"	.250"	.375"
**	.875"	.250"	.375"

EIA TEMPERATURE CHARACTERISTIC CODE CHARTS

TC MATERIAL CODE

EIA Code	TC Nom.	TC Tol. PPM/°C	Temperature Range
S2L	N330	±500	+25°C to +85°C
S3N	N3300	±2500	+25°C to +85°C

HIGH-K MATERIAL CODE

EIA Code	Temperature Range	Max. Cap. Change from +25°C Value Over the Specified Temperature Range
Z5F	+10°C to +85°C	±7.5%
Z5R	+10°C to +85°C	±15%
Z5U	+10°C to +85°C	+22% to −56%

Cap. Mmf. (pF)	Cat. No.	EIA Code Char.	Tolerance	CRL Size
3.3	DD-3R3	S2L	±.5 Mmf.	60
5	DD-050	S2L	±10%	60
6	DD-060	S2L	±10%	60
6.8	DD-6R8	S2L	±10%	60
7.5	DD-7R5	S2L	±10%	60
8	DD-080	S2L	±10%	60
10	DD-100	S2L	±10%	60
12	DD-120	S2L	±10%	60
15	DD-150	S2L	±10%	60
18	DD-180	S2L	±10%	60
20	DD-220	S2L	±10%	60
22	DD-220	S2L	±10%	60
24	DD-240	S2L	±10%	60
25	DD-250	S2L	±10%	60
27	DD-270	S2L	±10%	60
30	DD-300	S2L	±10%	60
33	DD-330	S2L	±10%	60
39	DD-390	S2L	±10%	60
47	DD-470	S2L	±10%	60
50	DD-500	S3N	±10%	60
51	DD-510	S3N	±10%	60
56	DD-560	S3N	±10%	60
68	DD-680	S3N	±10%	60
75	DD-750	S3N	±10%	60
82	DD-820	S3N	±10%	60
91	DD-910	S3N	±10%	60
100	DD-101	S3N	±10%	60
120	DD-121	S3N	±10%	60
130	DD-131	S3N	±10%	60
150	DD-151	S3N	±10%	60
180	DD-181	S3N	±10%	60
200	DD-201	S3N	±10%	60
220	DD-221	Z5F	±10%	60
240	DD-241	Z5F	±10%	60
250	DD-251	Z5F	±10%	60
270	DD-271	Z5F	±10%	60
300	DD-301	Z5F	±10%	60
330	DD-331	Z5F	±10%	60
350	DD-351	Z5F	±10%	60
360	DD-361	Z5F	±10%	60
390	DD-391	Z5F	±10%	60
400	DD-401	Z5F	±10%	60
470	DD-471	Z5F	±10%	60
470	DD-471G	Z5R	GMV	60
500	DD-501	Z5R	±10%	60
510	DD-511	Z5R	±10%	60
560	DD-561	Z5R	±10%	60
600	DD-601	Z5R	±10%	60
680	DD-681	Z5R	±10%	60
750	DD-751	Z5R	±10%	60
800	DD-801	Z5U	GMV	60
820	DD-821	Z5R	±10%	60
910	DD-911	Z5R	±10%	60

Cap. Mfd. (μF)				
.001	DD-102	Z5R	±10%	61
.001	DD-102G	Z5U	GMV	60
.0012	DD-122	Z5R	±10%	61
.0012	DD-122G	Z5U	GMV	60
.0013	DD-132	Z5R	±10%	61
.0015	DD-152	Z5R	±10%	61
.0015	DD-152G	Z5U	GMV	60
.0016	DD-162	Z5R	±10%	61
.0018	DD-182	Z5R	±10%	61
.002	DD-202	Z5U	GMV	61
.0022	DD-222	Z5U	GMV	61
.0025	DD-252	Z5U	GMV	61
.0027	DD-272	Z5U	GMV	61
.003	DD-302	Z5U	GMV	61
.0033	DD-332	Z5U	GMV	62
.0039	DD-392	Z5U	GMV	62
.004	DD-402	Z5U	GMV	62
.0043	DD-432	Z5U	GMV	62
.0047	DD-472	Z5U	±20%	62
.0047	DD-472G	Z5U	GMV	62
.005	DD-5022	Z5U	±20%	62
.005	DD-502	Z5U	GMV	62
.0056	DD-562	Z5U	GMV	62
.0068	DD-682	Z5U	GMV	62
.0075	DD-752	Z5U	GMV	62
.0082	DD-822	Z5U	GMV	63
.01	DD6-103	Z5U	GMV	62
.01	DD-1032	Z5U	±20%	63
.01	DD-103	Z5U	GMV	63
.015	DD-153	Z5U	+80 −20%	63
.02	DD-203	Z5U	+80 −20%	63
.03	DD-303	Z5U	+80 −20%	*
.04	DD-403	Z5U	+80 −20%	*
.05	DD-503	Z5U	+80 −20%	**

CAUTION: Do not use for AC Line by-pass or antenna chassis isolation. For these applications see Centralab type "CI" AC line disc Hi-Kaps®

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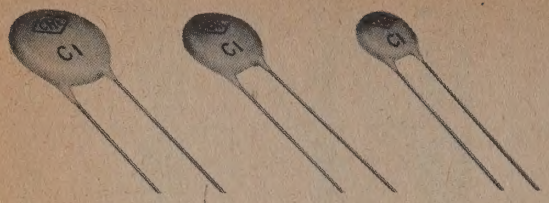
Type CI AC Line



Type CI capacitors are recommended for AC line by-pass application or where a steady or intermittent higher voltage may occur. (U/L approved per Underwriters Laboratories Examination Service #E32296, dated 12-6-60.)

SPECIFICATIONS

VOLTAGE: 1.4 K.V. except CI-103 1 K.V. VDC minimum (suitable for continuous operation at 150 VAC RMS, 60 cycles)

SIZE: See listing

CAPACITY: 470 pF to 10,000 pF

TOLERANCE: ±20%

LEAKAGE RESISTANCE: Initial, over 10,000 megohms; after humidity, over 1000 megohms

LEADS: #22 tinned copper — 1½" minimum length

DISSIPATION FACTOR: 2% maximum at 1 KC

INSULATION: Phenolic, vacuum impregnated with high temperature wax

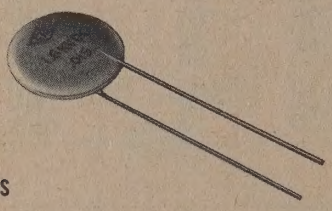
TEMPERATURE VS. CAPACITANCE: Will meet EIA Z5U (+22% −56% from +10°C to +85°C)

MARKING: Stamped with capacity, tolerance, voltage, Type designation "CI" and CRL diamond.

PACKAGED: 5 pieces per plastic box or 25 pieces bulk per carton.

Cap. (pF)	Catalog No.	Max. Diameter	Max. Thickness	Lead Spacing
470	CI-471	.440"	.240"	.250"
680	CI-681	.440"	.240"	.250"
1000	CI-102	.640"	.240"	.375"
2200	CI-222	.640"	.240"	.375"
5000	CI-502	.730"	.240"	.375"
10,000	CI-103	.840"	.180"	.375"

Type DD16



SPECIFICATIONS

VOLTAGE: 1600 VDCW, 3200 VDC test

SIZE: See listing

CAPACITY: .003 mfd. (μF thru) .015 mfd. (μF)

TOLERANCE: GMV, except DD16-153 which is +80 −20%

LEADS: #22 tinned copper wire

INSULATION: Double coating of "Durez" and high temperature wax impregnation

TEMPERATURE VS. CAPACITANCE: Will meet EIA Z5U (+22% to −56% from +10°C to +85°C)

MARKING: Stamped with capacity and voltage. Tolerance also stamped on DD16-153.

PACKAGED: 5 pieces per plastic box or 100 pieces bulk per carton

TYPE DD16—HI-KAP BUFFERS

Cap. Mfd. (μF)	Cat. No.	Tolerance	Max. Dia.	Max. Thick-ness	Lead Spacing
.003	DD16-302	GMV	.605"	.172"	.375"
.004	DD16-402	GMV	.605"	.172"	.375"
.005	DD16-502	GMV	.605"	.172"	.375"
.006	DD16-602	GMV	.705"	.172"	.375"
.007	DD16-702	GMV	.705"	.172"	.375"
.0075	DD16-752	GMV	.835"	.172"	.375"
.008	DD16-802	GMV	.835"	.172"	.375"
.01	DD16-103	GMV	.835"	.172"	.375"
.015	DD16-153	+80 −20%	.935"	.172"	.375"

Type DD30 and DD60

Centralab Hi-Vo Disc capacitors are designed to guarantee superior quality and extra performance. These Hi-Vo-Kaps® are tested at twice working voltage before shipment and exceed EIA-RS-165 life test. These ceramic capacitors are highly efficient for by-pass coupling in high frequency circuits under conditions of extreme humidity or temperature.

SPECIFICATIONS

OPERATING TEMPERATURE RANGE: −55°C to +85°C

VOLTAGE: DD30 series: 3000 VDCW, 6000 VDCT
DD60 series: 6000 VDCW—12,000 VDC Test

LIFE TEST: Per EIA-RS-165

SIZE: See Listing

CAPACITY: See listing

CAPACITY TEST: Test DD30-4R7 thru DD30-820 and DD60-4R7 thru DD60-151 at 1MC. Test all other DD30- and DD60-values at 1KC.

TOLERANCE: DD30 series and DD60 series all units ±20%

LEAKAGE RESISTANCE: Initial, over 10,000 megohms; after humidity, over 1000 megohms

LEADS: #22 tinned copper wire, 1½" minimum length

DISSIPATION FACTOR: 2% maximum @ 1KC

INSULATION: Double coating of "Durez" and high temperature wax impregnation

TEMPERATURE VS. CAPACITANCE: EIA "Z5U" or better (+22% to −56% maximum capacity change from +25°C reading over temperature range of +10°C to +85°C).

MARKING: Stamped with capacity, tolerance and voltage

PACKAGED: 5 pieces per clear plastic box or 50 pieces bulk per carton.

TYPES DD30 AND DD60 HI-KAPS

CRL Size Code	60	61	62	63	67
Maximum Diameter					
DD30 Series	.330"	.430"	.630"	.730"	.800"
DD60 Series	.....	.....	.660"	.760"	.830"
Maximum Thickness					
DD30 Series	.203"	.203"	.203"	.203"	.203"
DD60 Series	.313"	.313"	.313"	.313"	.313"
Lead Spacing (±.060)	.250"	.250"	.375"	.375"	.375"

Cap. (pF)	Cat. No. 3000 V.D.C.W.	CRL Size	Cat. No. 6000 V.D.C.W.	CRL Size
4.7	DD30-4R7	60	DD60-4R7	62
10	DD30-100	60	DD60-100	62
15	DD30-150	60	DD60-150	62
22	DD30-220	60	.....	....
25	DD30-250	60	.....	....
30	DD30-300	60	DD60-300	62
33	DD30-330	60	DD60-330	62
39	DD30-390	60	DD60-390	62
47	DD30-470	60	DD60-470	62
50	DD30-500	60	DD60-500	62
56	DD30-560	60	DD60-560	62
68	DD30-680	60	DD60-680	62
75	DD30-750	60	DD60-750	62
82	DD30-820	60	DD60-820	62
100	DD30-101	60	DD60-101	62
120	DD30-121	60	DD60-121	62
150	DD30-151	60	DD60-151	62
180	DD30-181	60	DD60-181	62
200	DD30-201	60	DD60-201	62
220	DD30-221	60	DD60-221	62
250	DD30-251	60	DD60-251	62
270	DD30-271	60	DD60-271	62
300	DD30-301	60	DD60-301	62
330	DD30-331	60	DD60-331	62
390	DD30-391	60	DD60-391	62
400	DD30-401	60	.....	....
470	DD30-471	60	DD60-471	62
500	DD30-501	60	DD60-501	62
560	DD30-561	60	DD60-561	62
680	DD30-681	60	DD60-681	62
750	DD30-751	60	DD60-751	62
820	DD30-821	61	DD60-821	62
Cap. (μF)				
.001	DD30-102	61	DD60-102	62
.0012	DD30-122	61	DD60-122	62
.0015	DD30-152	62	DD60-152	62
.002	DD30-202	62	DD60-202	63
.0022	DD30-222	62	DD60-222	63
.0025	DD30-252	62	.....	....
.0027	DD30-272	62	.....	....
.003	DD30-302	62	.....	....
.0033	DD30-332	62	.....	....
.0039	DD30-392	63	.....	....
.0047	DD30-472	63	.....	....
.005	DD30-502	67	.....	....

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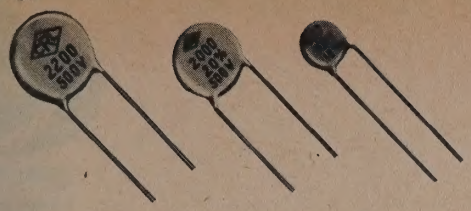
Type CE and CF



Type CE and CF Hi-Kaps® afford extra stability through a temperature range of +10°C to +85°C. Type CE STABLE "K" have ±7.5% maximum capacity change from the 25°C reading over a temperature range of +10°C to +85°C. Under these same conditions Type CF semi-stable "K" will not vary more than ±15%. These capacitors are for use in by-pass, filter and non-critical coupling circuits where operating temperatures range from −55°C to +85°C.

SPECIFICATIONS

OPERATING TEMPERATURE: −55°C to +85°C

VOLTAGE: 500 VDCW

LIFE TEST: 1000 hours at 1000 VDC @ + 85°C

SIZE: See listing

CAPACITY: See listing

TOLERANCE: ±10%

LEAKAGE RESISTANCE: Initial, 10,000 Megohms minimum; after humidity over 1000 Megohms

LEADS: No. 22 tinned copper, 1½" minimum length

DISSIPATION FACTOR: 2% max. at 1KC and +25°C

INSULATION: Double coating of phenolic, impregnated with high temperature wax.

MARKING: Stamped with capacity, tolerance and catalog number

PACKAGED: 100 pieces bulk per carton only

SIZE CHART

CRL Size	60	61	62	63	65
Diameter Max. in	.290	.390	.590	.690	.920
Thickness Max. in.	.156	.156	.156	.156	.156
Lead Spacing in.	.250	.250	.375	.375	.375

TYPE CE
TEMPERATURE STABLE "K"

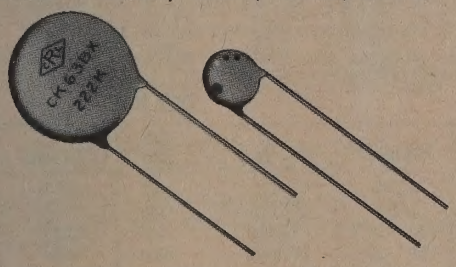
Cap. Mmf. (pF)	Cat. No.	CRL Size
150	CE-151	60
220	CE-221	60
330	CE-331	60
470	CE-471	60
500	CE-501	61
560	CE-561	61
680	CE-681	61
750	CE-751	61
800	CE-801	61
1000	CE-102	62

TYPE CF
TEMPERATURE SEMI-STABLE "K"

Cap. Mfd. (μF)	Cat. No.	CRL Size
.0012	CF-122	61
.0015	CF-152	61
.0018	CF-182	61
.002	CF-202	62
.0022	CF-222	62
.0033	CF-332	62
.0039	CF-392	62
.0047	CF-472	63
.005	CF-502	63
.0062	CF-622	63
.0082	CF-822	65
.01	CF-103	65

NOTE: If more STABLE and closer tolerance capacitors are desired and wherein space available is not critical use Centralab Type "CPR" Polystyrene capacitors.

MIL Type Discs CK60, CK61, CK62, CK63



Types CK60, CK61, CK62, and CK63 ceramic disc capacitors are manufactured to meet specifications of MIL-C-11015, revisions "B" and "C". Types with * meet rev. B, all others meet rev. C. By-Pass, coupling or filter applications are the primary uses of these capacitors. Exclusive phenolic insulation impregnated with high melting point wax, provides maximum protection against humidity, voltage breakdown and vibration.

SPECIFICATIONS

OPERATING TEMPERATURE RANGE: See listing

VOLTAGE: 500 VDCW, 1,800 VDC test

LIFE TEST: 1000 hours at 1000 volts at maximum operating temperature

SIZE: Type CK60—Diam. .280" ±.030", thickness—.120" ± .040", lead spacing —.250" ± .060"
Type CK61—Diam. .350" ± .035", thickness—.120" ± .040", lead spacing —.250" ± .060"
Type CK62—Diam. .550" ± .040" thickness—.120" ± .040", lead spacing —.375" ± .060"
Type CK63—Diam. .660" ± .030", thickness—.120" ± .040", lead spacing —.375" ± .060"

TOLERANCE: ±10% and ±20%; see listing

LEAKAGE RESISTANCE: 20,000 Megohms minimum initial; 5000 Megohms minimum after life test

LEADS: Types CK60, CK61 and CK62—#22 (.025" + .004" − .001") tinned copper, 1¼" minimum length. Type CK63—#20 (.032" + .004" − .001") tinned copper, 1¼" minimum length

DISSIPATION FACTOR: 1.5% maximum

INSULATION: Phenolic, vacuum impregnated with high temperature wax

TEMPERATURE VS. CAPACITANCE: See listing

MARKING: Type CK60—color coded per MIL-C-11015. Types CK61, CK62 and CK63 stamped with MIL-C-11015 designation numbers and Centralab trademark.

PACKAGED: 100 pieces bulk per carton only

TYPES CK60, CK61, CK62 AND CK63 DISC HI-KAPS®

Cap. MMF(pF)	CRL Cat. No. & MIL-C-11015 Designation	Tol. %	Temperature vs. Capacitance	
			Temp. Range	Capacitance Change Limits
* 2.2	CK60BV2R2K	±10	−55°C to +125°C	±10% @ 25°C
* 3.3	CK60BV3R3K	±10	−55°C to +125°C	±10% @ 25°C
* 4.7	CK60BV4R7K	±10	−55°C to +125°C	±10% @ 25°C
* 6.8	CK60BV6R8K	±10	−55°C to +125°C	±10% @ 25°C
* 10	CK60BV100K	±10	−55°C to +125°C	±10% @ 25°C
* 15	CK60BV150K	±10	−55°C to +125°C	±10% @ 25°C
* 22	CK60BV220K	±10	−55°C to +125°C	±10% @ 25°C
* 33	CK60BX330K	±10	−55°C to +125°C	±15% @ 25°C
* 33	CK60BX330M	±20	−55°C to +125°C	±15% @ 25°C
* 47	CK60BX470K	±10	−55°C to +125°C	±15% @ 25°C
* 47	CK60BX470M	±20	−55°C to +125°C	±15% @ 25°C
150	CK60BX151K	±10	−55°C to +125°C	±15% @ 25°C
150	CK60BX151M	±20	−55°C to +125°C	±15% @ 25°C
*220	CK60AX221K	±10	−55°C to + 85°C	±15% @ 25°C
*220	CK60AX221M	±20	−55°C to + 85°C	±15% @ 25°C
*330	CK60AX331K	±10	−55°C to + 85°C	±15% @ 25°C
*330	CK60AX331M	±20	−55°C to + 85°C	±15% @ 25°C
*330	CK61BX331K	±10	−55°C to +125°C	±15% @ 25°C
*330	CK61BX331M	±20	−55°C to +125°C	±15% @ 25°C
*470	CK60AX471K	±10	−55°C to + 85°C	±15% @ 25°C
*470	CK60AX471M	±20	−55°C to + 85°C	±15% @ 25°C
*470	CK61BX471K	±10	−55°C to +125°C	±15% @ 25°C
*470	CK61BX471M	±20	−55°C to +125°C	±15% @ 25°C
*680	CK61BX681K	±10	−55°C to +125°C	±15% @ 25°C
*680	CK61BX681M	±20	−55°C to +125°C	±15% @ 25°C
*820	CK62BX821K	±10	−55°C to +125°C	±15% @ 25°C
*820	CK62BX821M	±20	−55°C to +125°C	±15% @ 25°C
*1000	CK62BX102K	±10	−55°C to +125°C	±15% @ 25°C
*1000	CK62BX102M	±20	−55°C to +125°C	±15% @ 25°C
*1500	CK62BX152K	±10	−55°C to +125°C	±15% @ 25°C
1500	CK62BX152M	±20	−55°C to +125°C	±15% @ 25°C
2200	CK62AX222K	±10	−55°C to + 85°C	±15% @ 25°C
2200	CK62AX222M	±20	−55°C to + 85°C	±15% @ 25°C
2200	CK63BX222K	±10	−55°C to +125°C	±15% @ 25°C
2200	CK63BX222M	±20	−55°C to +125°C	±15% @ 25°C
3300	CK63BX332K	±10	−55°C to +125°C	±15% @ 25°C
3300	CK63BX332M	±20	−55°C to +125°C	±15% @ 25°C

*Meets Rev. B. others meet Rev. C.

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Type FT, MFT, ZA, ZB CERAMIC Feed-Thru CAPACITORS

DISTRIBUTOR PRODUCTS

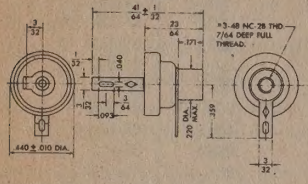
CENTRALAB
Electronics Division
GLOBE-UNION INC.

TYPE ZA AND ZB
DISCOIDAL HI-KAPS

Type ZA and ZB, solder-sealed ceramic capacitors provide accurate, dependable, long life replacements for old style mica typs. The shell is effectively at ground potential in all styles.

ZA

ZB



CAPACITY: 15 thru 1000 pF
TOLERANCE: See listing
VOLTAGE: 500 VDCW—1000 VDCTEST
SIZE: See illustration
INSULATION: Exceeds 5000 megohms initially.
MOUNTING: ZA—Stand-off Type No. 3-48 thread tapped base and ground terminal. ZB—Feed-thru style with 3 solder lugs.
MARKING: Per EIA specifications (color coded)
PACKAGED: Singly, or 50 pieces bulk per carton

TYPE ZA—TAPPED GROUND TERMINAL

Cap. (pF)	Tolerance	Cat. No.
15	±10%	ZA-150
50	±10%	ZA-500
500	±20%	ZA-501
1000	GMV	ZA-102

TYPE ZB—RIM TYPE FEED-THRU

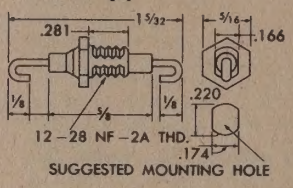
Cap. (pF)	Tolerance	Cat. No.
15	±10%	ZB-150
50	±10%	ZB-500
500	±20%	ZB-501
1000	GMV	ZB-102

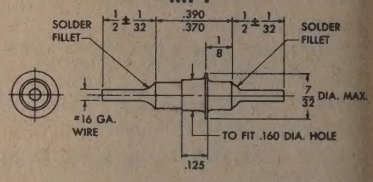
TYPE FT AND MFT

Type FT Feed-Thru or bushing mounted capacitors have been specifically designed and widely used in high frequency circuits where, in addition to feed-thru, a capacity ground to either chassis or shield is desired. Lead inductance is virtually eliminated. Type MFT MINIATURE Eyelet Feed-Thru is a condensed version of the above units required in many new high frequency applications where space is at a premium.

FT

MFT





CAPACITY: FT—500 thru 2300 pF
MFT—50 thru 1000 pF
TOLERANCE: See listing
VOLTAGE: 500 VDCW—1000 VDCTEST
SIZE: See illustration
INSULATION: Uninsulated
LEADS: FT—#16 tinned copper wire both ends hooked to facilitate soldering. MFT—No. 16 tinned copper wire.
MOUNTING: FT—Brass cadmium plated double-flatted mounting bushing .281" long with 12-28 thread bushing and mounting nut. MFT—7/32" max. flange diameter eyelet to be inserted in .160" dia. hole and soldered directly to chassis.
MARKING: Color coded to capacitance value per EIA specs.
PACKAGED: 2 pieces per clear plastic box or 100 pieces bulk per carton. Mounting nut included with each FT., unassembled.

TYPE FT

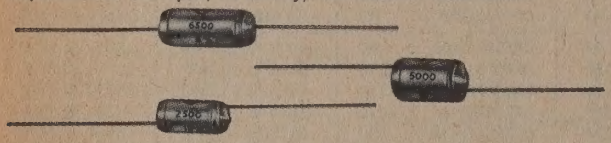
Cap. (pF)	Tolerance	Cat. No.
500	±20%	FT-500
1000	±20%	FT-1000
1500	+50 −20%	FT-1500
1800	+50 −20%	FT-1800
2300	+50 −20%	FT-2300

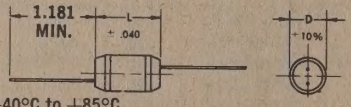
TYPE MFT

Cap. (pF)	Tolerance	Cat. No.
50	±10%	MFT-50
100	±10%	MFT-100
500	±20%	MFT-500
1000	GMV	MFT-1000

Type CPR POLYSTYRENE

Centralab high "Q" Polystyrene Film Capacitors have a leakage resistance greater than 100,000 megohms. They exceed other foil capacitors in life span, reliability, and freedom from drift. Ideal for applications wherein high reliability and long life is required. They also have many applications in TV, radio, and stereo where they substitute for and out-perform micas and mylars.





SPECIFICATIONS

OPERATING TEMPERATURE: −40°C to +85°C
VOLTAGE: 500 VDCW (1500 VDC Test)
LIFE TEST: 1000 hours at 500 VDC @ +85°C
SIZE: See listing
CAPACITY: See listing. (Test 20 pF to 1000 pF at 1MC and 1000 pF and over at 1KC.)
TOLERANCE: ±5%
LEAKAGE RESISTANCE: Over 100,000 megohms
NATURAL INDUCTANCE: 10 to 30 Nanohenries
DIELECTRIC: Polystyrene film
DISSIPATION FACTOR: .05% maximum @ +25°C and 0.1 to 5 volts RMS (Based on frequency of 1MC for values under 1000 pF and 1KC for values 1000 pF and over).
INSULATION: Fused polystyrene encased
TEMPERATURE COEFFICIENT: N150 nominal
SHIELDING: Inner foil completely shielded by outer foil
LEADS: Tinned copper wire. See listing for wire diameters. Leads are doubled-welded to foil.
MARKING: Stamped with capacity, tolerance, and CRL in Diamond or plain diamond. Black coded end indicated 500 VDCW and this is the outer foil terminal.
PACKAGED: 5 pieces per plastic box or 50 pieces bulk per carton.—Warehouse Pak.

Cap. (pF)	Cat. Number	Body Length	Body Dia.	Lead Dia.	Cap. (pF)	Cat. Number	Body Length	Body Dia.	Lead Dia.
20	CPR-20J	.434"	.165"	.016"	560	CPR-560J	.631"	.228"	.020"
22	CPR-22J	.434"	.165"	.016"	620	CPR-620J	.631"	.205"	.020"
24	CPR-24J	.434"	.165"	.016"	680	CPR-680J	.631"	.205"	.020"
27	CPR-27J	.434"	.165"	.016"	750	CPR-750J	.631"	.217"	.020"
30	CPR-30J	.434"	.165"	.016"	820	CPR-820J	.631"	.224"	.020"
33	CPR-33J	.434"	.165"	.016"	910	CPR-910J	.631"	.232"	.020"
36	CPR-36J	.434"	.165"	.016"	1000	CPR-1000J	.631"	.240"	.020"
39	CPR-39J	.434"	.165"	.016"	1100	CPR-1100J	.631"	.240"	.020"
43	CPR-43J	.434"	.165"	.016"	1200	CPR-1200J	.631"	.240"	.020"
47	CPR-47J	.434"	.165"	.016"	1300	CPR-1300J	.631"	.256"	.020"
56	CPR-56J	.434"	.173"	.016"	1500	CPR-1500J	.631"	.272"	.020"
62	CPR-62J	.434"	.173"	.016"	1600	CPR-1600J	.631"	.272"	.020"
68	CPR-68J	.434"	.173"	.016"	1800	CPR-1800J	.631"	.272"	.020"
75	CPR-75J	.434"	.173"	.016"	2000	CPR-2000J	.631"	.303"	.020"
82	CPR-82J	.434"	.173"	.016"	2200	CPR-2200J	.631"	.303"	.020"
91	CPR-91J	.434"	.173"	.016"	2400	CPR-2400J	.631"	.303"	.020"
100	CPR-100J	.434"	.181"	.016"	2500	CPR-2500J	.631"	.327"	.020"
110	CPR-110J	.434"	.181"	.016"	2700	CPR-2700J	.631"	.327"	.020"
120	CPR-120J	.434"	.181"	.016"	3000	CPR-3000J	.631"	.346"	.020"
130	CPR-130J	.434"	.181"	.016"	3300	CPR-3300J	.827"	.346"	.020"
150	CPR-150J	.434"	.181"	.016"	3600	CPR-3600J	.827"	.346"	.020"
160	CPR-160J	.434"	.181"	.016"	3900	CPR-3900J	.827"	.346"	.020"
180	CPR-180J	.434"	.181"	.016"	4300	CPR-4300J	.827"	.335"	.020"
200	CPR-200J	.434"	.197"	.016"	4700	CPR-4700J	.827"	.335"	.020"
220	CPR-220J	.434"	.197"	.016"	5000	CPR-5000J	.827"	.374"	.020"
240	CPR-240J	.434"	.197"	.016"	5100	CPR-5100J	.827"	.374"	.020"
270	CPR-270J	.434"	.197"	.016"	5600	CPR-5600J	.827"	.374"	.020"
300	CPR-300J	.434"	.205"	.016"	6200	CPR-6200J	.827"	.402"	.020"
330	CPR-330J	.434"	.205"	.016"	6800	CPR-6800J	.827"	.402"	.020"
360	CPR-360J	.434"	.205"	.016"	7500	CPR-7500J	.827"	.402"	.020"
390	CPR-390J	.434"	.205"	.016"	8200	CPR-8200J	.827"	.465"	.020"
430	CPR-430J	.434"	.217"	.016"	9100	CPR-9100J	.827"	.465"	.020"
470	CPR-470J	.434"	.217"	.016"	10,000	CPR-10000J	.827"	.504"	.020"
510	CPR-510J	.631"	.228"	.020"					

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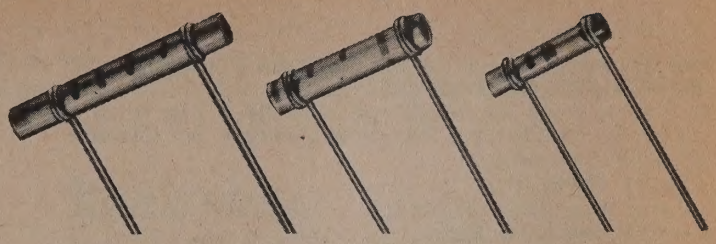
DISTRIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.

Type TCZ, TCN, TCA, TCL Temperature Compensating Tubular



Centralab T.C. (temperature compensating) ceramic tubular and disc capacitors are available in zero and negative temperature coefficients to compensate for changes in other components due to temperature changes. Special lacquer coating only on the tubular series reduces to a minimum the time lag between temperature change and corrective capacity compensation.

SPECIFICATIONS

OPERATING TEMPERATURE RANGE: −55°C to +85°C
VOLTAGE: 600 VDCW, 1500 VDC Flash Test
LIFE TEST: 1000 VDC @ 1000 hours @ 85°C.
SIZE: See listings
CAPACITIES: Tubulars — NPO, 0.5 pF thru 300 pF; N750, 3.3 pF thru 750 pF; N330, 10 pF thru 100 pF; N1500, 10 pF thru 100 pF.
Discs — NPO, 1.5 pF thru 270 pF; N750, 5 pF thru 330 pF.
TOLERANCES: See listings.
LEAKAGE RESISTANCE: Initial, 10,000 megohms minimum; after humidity, 1000 megohms minimum.
DISSIPATION FACTOR: Per EIA RS-198 Class 1.
TEMPERATURE VS. CAPACITANCE: T.C. tolerances per listings apply over a temperature range of +25°C to +85°C.
INSULATION: Tubulars, special lacquer coating; discs, durez coated and high temperature vacuum wax impregnated.
LEADS: #22 tinned copper, 1½" minimum length.
MARKING: Tubulars, color coded per 5 and 6 dot color code chart; (Per EIA RS-198 Class 1). Discs, stamped with capacity, tolerance and nominal T.C. value.
CAPACITY TESTS: Capacitance shall be within limits specified at +25°C with 0.5 to 5 volts RMS at a frequency of 1MC.
PACKAGED: 2 pieces per clear plastic box or 50 pieces bulk per carton.

TYPE TCA—N330 T.C. TUBULAR

A new group of intermediate stock values allow additional T.C. values without combining NPO and N750 capacitors. This group changes negatively capacity-wise with temperature increases at the rate of 330 parts per million per degree C. Left end coded green, with leads away from you in the up position. See 5-Dot Color Code Chart.

Cap. Mmf.	Tolerance	Cat. No.	Size Type	Temp. Coeff.	T.C. Tol. PPM/°C
10	±.5 pF	TCA-10	CC20	N330	±60
15	±2%	TCA-15	CC20	N330	±60
22	±2%	TCA-22	CC20	N330	±60
33	±2%	TCA-33	CC20	N330	±60
47	±2%	TCA-47	CC30	N330	±60
68	±2%	TCA-68	CC25	N330	±60
100	±2%	TCA-100	CC25	N330	±60

TYPE TCL—N1500 T.C. TUBULAR

Show negative capacity change of minus 1500 parts per million per degree C. rise in temperature. Left end coded orange plus an orange stripe. (See 6-Dot Color Coding Chart.)

Cap. Mmf.	Tolerance	Cat. No.	Size Type	Temp. Coeff.	T.C. Tol. PPM/°C
10	±.5 pF	TCL-10	CC20	N1500	±250
15	±2%	TCL-15	CC20	N1500	±250
22	±2%	TCL-22	CC20	N1500	±250
33	±2%	TCL-33	CC20	N1500	±250
47	±2%	TCL-47	CC20	N1500	±250
68	±2%	TCL-68	CC20	N1500	±250
100	±2%	TCL-100	CC30	N1500	±250

See opposite page for other specifications and also T.C. discs.

TYPE TCZ—NPO OR ZERO T.C.

NOTE: Zero T.C. units (Type TCZ) are superior to micas for all applications and recommended as replacements for mica capacitors in any circuit.

Show zero capacitance changeover temperature range −20° to +85°C. Left end coded black, with leads away from you in the up position. (See 5-Dot Color Code Chart.)

Cap. (pF)	Tolerance	Cat. No.	Size Type	Temp. Coeff.	T.C. Tol. PPM/°C
.5	±.25 pF	TCZ-R5	CC20	NPO	±250
.68	±.25 pF	TCZ-R68	CC20	NPO	±250
1.0	±.25 pF	TCZ-1	CC20	NPO	±250
1.5	±.25 pF	TCZ-1R5	CC20	NPO	±250
2.2	±.25 pF	TCZ-2R2	CC20	NPO	±120
3.3	±.25 pF	TCZ-3R3	CC20	NPO	±120
4.7	±.5 pF	TCZ-4R7	CC20	NPO	±60
6.8	±.5 pF	TCZ-6R8	CC20	NPO	±60
10	±.5 pF	TCZ-10	CC20	NPO	±30
12	±2%	TCZ-12	CC20	NPO	±30
15	±2%	TCZ-15	CC20	NPO	±30
18	±2%	TCZ-18	CC20	NPO	±30
20	±2%	TCZ-20	CC20	NPO	±30
22	±2%	TCZ-22	CC20	NPO	±30
24	±2%	TCZ-24	CC20	NPO	±30
25	±2%	TCZ-25	CC30	NPO	±30
27	±2%	TCZ-27	CC30	NPO	±30
30	±2%	TCZ-30	CC30	NPO	±30
33	±2%	TCZ-33	CC30	NPO	±30
36	±2%	TCZ-36	CC30	NPO	±30
39	±2%	TCZ-39	CC25	NPO	±30
43	±2%	TCZ-43	CC25	NPO	±30
47	±2%	TCZ-47	CC25	NPO	±30
50	±2%	TCZ-50	CC25	NPO	±30
51	±2%	TCZ-51	CC25	NPO	±30
56	±2%	TCZ-56	CC25	NPO	±30
62	±2%	TCZ-62	CC32	NPO	±30
68	±2%	TCZ-68	CC32	NPO	±30
75	±2%	TCZ-75	CC32	NPO	±30
82	±2%	TCZ-82	CC32	NPO	±30
91	±2%	TCZ-91	CC32	NPO	±30
100	±2%	TCZ-100	CC32	NPO	±30
110	±5%	TCZ-110	CC35	NPO	±30
120	±5%	TCZ-120	CC35	NPO	±30
130	±5%	TCZ-130	CC35	NPO	±30
150	±5%	TCZ-150	CC35	NPO	±30
160	±5%	TCZ-160	CC35	NPO	±30
180	±5%	TCZ-180	CC35	NPO	±30
200	±5%	TCZ-200	CC35	NPO	±30
220	±5%	TCZ-220	CC45	NPO	±30
240	±5%	TCZ-240	CC45	NPO	±30
270	±5%	TCZ-270	CC45	NPO	±30
300	±5%	TCZ-300	CC45	NPO	±30

TYPE TCN—N750 T.C.

Show negative capacity of minus 750 parts per million per degree C. rise in temperature. Left end coded violet, with leads away from you in the up position. See 5-Dot Color Code Chart.

Cap. (pF)	Tolerance	Cat. No.	Size Type	Temp. Coeff.	T.C. Tol. PPM/°C
3.3	±.5 pF	TCN-3R3	CC20	N750	±120
5	±.5 pF	TCN-5	CC20	N750	±120
10	±.5 pF	TCN-10	CC20	N750	±120
12	±2%	TCN-12	CC20	N750	±120
15	±2%	TCN-15	CC20	N750	±120
18	±2%	TCN-18	CC20	N750	±120
20	±2%	TCN-20	CC20	N750	±120
22	±2%	TCN-22	CC20	N750	±120
24	±2%	TCN-24	CC20	N750	±120
25	±2%	TCN-25	CC20	N750	±120
27	±2%	TCN-27	CC20	N750	±120
30	±2%	TCN-30	CC20	N750	±120
33	±2%	TCN-33	CC20	N750	±120
36	±2%	TCN-36	CC20	N750	±120
39	±2%	TCN-39	CC20	N750	±120
43	±2%	TCN-43	CC20	N750	±120
47	±2%	TCN-47	CC20	N750	±120
50	±2%	TCN-50	CC20	N750	±120
51	±2%	TCN-51	CC20	N750	±120
56	±2%	TCN-56	CC20	N750	±120
62	±2%	TCN-62	CC30	N750	±120
68	±2%	TCN-68	CC30	N750	±120
75	±2%	TCN-75	CC30	N750	±120
82	±2%	TCN-82	CC30	N750	±120
91	±2%	TCN-91	CC25	N750	±120
100	±2%	TCN-100	CC25	N750	±120
110	±5%	TCN-110	CC25	N750	±120
120	±5%	TCN-120	CC25	N750	±120
130	±5%	TCN-130	CC25	N750	±120
150	±5%	TCN-150	CC25	N750	±120
160	±5%	TCN-160	CC32	N750	±120
180	±5%	TCN-180	CC32	N750	±120
200	±5%	TCN-200	CC32	N750	±120
220	±5%	TCN-220	CC32	N750	±120
240	±5%	TCN-240	CC32	N750	±120
270	±5%	TCN-270	CC35	N750	±120
300	±5%	TCN-300	CC35	N750	±120
330	±5%	TCN-330	CC35	N750	±120
360	±5%	TCN-360	CC35	N750	±120
390	±5%	TCN-390	CC35	N750	±120
430	±5%	TCN-430	CC35	N750	±120
470	±5%	TCN-470	CC35	N750	±120
510	±5%	TCN-510	CC35	N750	±120
560	±5%	TCN-560	CC45	N750	±120
620	±5%	TCN-620	CC45	N750	±120
680	±5%	TCN-680	CC45	N750	±120
750	±5%	TCN-750	CC45	N750	±120

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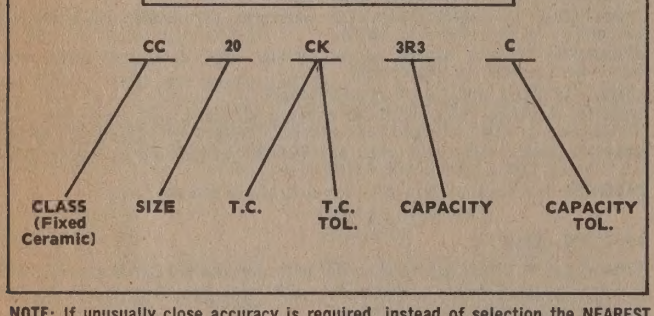
HOW TO PARALLEL TCZ AND TCN UNITS TO OBTAIN A DESIRED CAPACITY AND TEMPERATURE COEFFICIENT VALUE

By using the proper TCZ and TCN units in parallel, a great variety of intermediate capacities and temperature coefficients are obtainable. Follow this simple formula:

1. Desired capacity is .....(pf).
2. Desired temperature coefficient is.....
   Example: enter 330 for N330.
3. Multiply figure of line 1 by figure of line 2.
4. Divide the answer obtained (line 3) by 750. This gives you the value in (pf), of the TCN capacitor required. (For practical purposes, choose a standard unit of the nearest capacitance.)
5. Subtract your result obtained in line 4, in mmf. (using the standard capacitance value you have selected) from line 1. The result will be the required TCZ capacitor, in (pf). Select nearest TCZ value.
   Typical example: 560pF, N470TC:
   a. 560 (pF) × 470(N470) = 263,200.
   b. 263,200 ÷ 750(N750) = 351 (Use TCN-360) 360pF, N750 as one unit.
   c. Subtract 360pF from desired value of 560pF = 200pF (Use TCZ 200) 200pF, NPO as the other parallel unit.
   d. Paralleling TCN-360 and TCZ-200 = 560pF, N470.

THE JAN-C-20 DESIGNATIONS



NOTE: If unusually close accuracy is required, instead of selection the NEAREST STANDARD capacities as suggested in lines 4 and 5, exact capacities can be built up by first paralleling units of the SAME TYPE (capacities are added) and then combining TCZ and TCN per formula.

5 AND 6 DOT COLOR CODE CHART

	CAPACITY				
	Temperature Coefficient	Significant Figures	Multiplier	TOLERANCE pF	TOLERANCE Percent
Black	ZERO (TCZ)	0	1	±2.0	±20%
Brown	.....	1	10	.....	± 1%
Red	.....	2	100	.....	± 2%
Orange	.....	3	1,000	.....	.....
Yellow	.....	4	10,800	.....	.....
Green	N330 (TCA)	5	.....	± .5	± 5%
Blue	.....	6	.....	.....	.....
Violet	N750 (TCN)	7	.....	.....	.....
Grey	.....	8	.01	±.25	
White	.....	9	.1	±1.0	±10%
Orange-Orange	N1500 (TCL)	....	.....	.....	.....

SIZE

CC20 — Radial leads. Body Dimensions .200″ Dia. x .400″ length
CC25 — Radial leads. Body Dimensions .200″ Dia. x .690″ length
CC30 — Radial leads. Body Dimensions .225″ Dia. x .460″ length
CC32 — Radial leads. Body Dimensions .225″ Dia. x .860″ length
CC35 — Radial leads. Body Dimensions .285″ Dia. x 1.165″ length
CC45 — Radial leads. Body Dimensions .285″ Dia. x 1.625″ length

TC & TC TOLERANCE

CG — Zero (NPO) ± 30 ppm
CH — Zero (NPO) ± 60 ppm
CJ — Zero (NPO) ±120 ppm
CK — Zero (NPO) ±250 ppm
SH — N330 ± 60 ppm
SJ — N330 +120 ppm
SK — N330 ±250 ppm
SL — N330 ±500 ppm
UJ — N750 ±120 ppm
UK — N750 ±250 ppm

CAPACITY TOLERANCE

C — ±.25 mmf. (pF)
D — ±.5 mmf. (pF)
F — ±1%
G — ±2%
J — ±5% — .5 mmf. min.
K — ±10% — 1 mmf. min.
M — ±20% — 2 mmf. min.

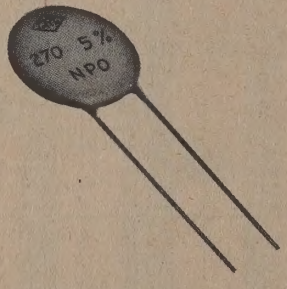
CAPACITY

Capacity code is expressed in three digits. First two digits are the significant figures of capacity in mmf., third digit is the number of zeros.

EXAMPLE

103 — 10 followed by 3 zeros — 10,000 mmf. (pF)
225 — 25 followed by 2 zeros — 2,500 mmf. (pF)
121 — 12 followed by 1 zero — 120 mmf. (pF)
500 — 50 followed by 0 zeros — 50 mmf. (pF)
050 — 5 followed by 0 zeros — 5 mmf. (pF)
3R3 — R = decimal or 3.3 mmf. (pF)
0R5 — Zero, decimal, 5 or .5 mmf. (pF)

Type DTN, DTZ



Because of the inherent stability of T.C. ceramic dielectric material and smaller size, Centralab DTN and DTZ find many applications in frequency determining and resonant circuits—BETTER THAN MICA FOR ALL APPLICATIONS.

TYPE DTN—N750 T.C. DISC

Cap. (pF)	Cat. No.	Cap. Tolerance	T.C.	T.C. Tol. PPM/°C	Max. Diameter	Max. Thickness	Lead Spacing
.5	DTN-5	±.5 pF	N750	±120	.320″	.180″	.250″
10	DTN-10	±.5 pF	N750	±120	.290″	.156″	.250″
15	DTN-15	±5%	N750	±120	.290″	.156″	.250″
20	DTN-20	±5%	N750	±120	.290″	.156″	.250″
22	DTN-22	±5%	N750	±120	.290″	.156″	.250″
25	DTN-25	±5%	N750	±120	.290″	.156″	.250″
33	DTN-33	±5%	N750	±120	.290″	.156″	.250″
47	DTN-47	±5%	N750	±120	.290″	.156″	.250″
68	DTN-68	±5%	N750	±120	.390″	.156″	.250″
75	DTN-75	±5%	N750	±120	.390″	.156″	.250″
100	DTN-100	±5%	N750	±120	.390″	.156″	.250″
150	DTN-150	±5%	N750	±120	.590″	.156″	.375″
200	DTN-200	±5%	N750	±120	.590″	.156″	.375″
220	DTN-220	±5%	N750	±120	.590″	.156″	.375″
330	DTN-330	±5%	N750	±120	.690″	.156″	.375″

TYPE DTZ—NPO OR ZERO T.C. DISC

Cap. (pF)	Cat. No.	Cap. Tol.	T.C.	T.C. Tol. PPM/°C	Max. Diameter	Max. Thickness	Lead Spacing
1.5	DTZ-1R5	±.5 pF	NPO	±250	.320″	.180″	.250″
2.2	DTZ-2R2	±.5 pF	NPO	±250	.290″	.156″	.250″
3.3	DTZ-3R3	±.5 pF	NPO	±120	.290″	.156″	.250″
4.7	DTZ-4R7	±.5 pF	NPO	±60	.290″	.156″	.250″
6.8	DTZ-6R8	±.5 pF	NPO	±60	.290″	.156″	.250″
10	DTZ-10	±5%	NPO	±30	.290″	.156″	.250″
15	DTZ-15	±5%	NPO	±30	.290″	.156″	.250″
20	DTZ-20	±5%	NPO	±30	.290″	.156″	.250″
22	DTZ-22	±5%	NPO	±30	.390″	.156″	.250″
25	DTZ-25	±5%	NPO	±30	.390″	.156″	.250″
33	DTZ-33	±5%	NPO	±30	.390″	.156″	.250″
47	DTZ-47	±5%	NPO	±30	.590″	.156″	.375″
50	DTZ-50	±5%	NPO	±30	.590″	.156″	.375″
68	DTZ-68	±5%	NPO	±30	.590″	.156″	.375″
75	DTZ-75	±5%	NPO	±30	.590″	.156″	.375″
82	DTZ-82	±5%	NPO	±30	.590″	.156″	.375″
100	DTZ-100	±5%	NPO	±30	.590″	.156″	.375″
120	DTZ-120	±5%	NPO	±30	.690″	.156″	.375″
150	DTZ-150	±5%	NPO	±30	.760″	.156″	.375″
180	DTZ-180	±5%	NPO	±30	.594″	.235″	.375″
200	DTZ-200	±5%	NPO	±30	.594″	.235″	.375″
220	DTZ-220	±5%	NPO	±30	.719″	.250″	.375″
270	DTZ-270	±5%	NPO	±30	.719″	.250″	.375″

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DISTRIBUTOR PRODUCTS

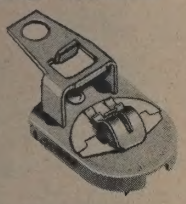
CENTRALAB
Electronics Division
GLOBE-UNION INC.

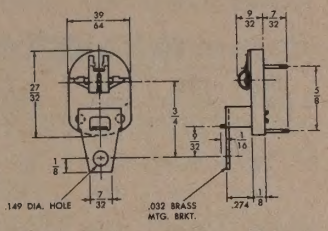
CERAMIC TRIMMER CAPACITORS

Centralab Ceramic Trimmers are small in size, light in weight and are easily mounted. Equal stability over 180° rotation is maintained even under adverse environmental conditions.

To eliminate any air film on the contact surfaces, mating surfaces of rotor and stator are ground optically flat and lubricated with silicone oil.

Type 820 Trimmer



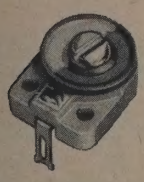


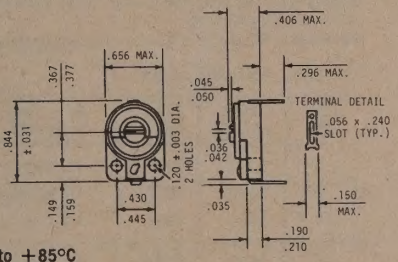
VOLTAGE RATING: 500 VDCW, 1500 VDCT
POWER FACTOR: Less than .2% @ 1 MC
TERMINALS: Brass, silver-plated, bent down 90° from plane of stator.
INSULATION RESISTANCE: 10,000 megohms min.
MOUNTING: Holes clear No. 4 machine screws (without bracket) spaced .375 centers. Bracket used for single hole mounting.
PACKAGED: Singly, or 5 pcs. bulk per carton.

Cap. pF	Cat. No.	Cap. pF	Cat. No.
1.0 to 3.5	820D	35.0 to 55.0	820E
2.5 to 6.0	820A	55.0 to 75.0	820F
5.0 to 20.0	820B	70.0 to 90.0	820G
7.0 to 35.0	820C		

All with bracket except 820E, 820F and 820G.

Type 822 Trimmer

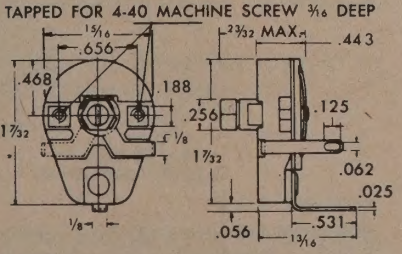




OPERATING TEMPERATURE: −55° to +85°C
VOLTAGE RATING: 500 VDCW, 1100 VDCT
POWER FACTOR: Less than .2% @ 1 MHz ±100 KHz
TERMINALS: Brass, silver-plated, bent at 90° angle.
INSULATION RESISTANCE: 10,000 megohms min.
MOUNTING: Holes clear No. 4 machine screws
PACKAGED: Singly, or 5 pcs. bulk per carton.

NPO or Zero TC		N650 or Negative TC	
Cap. (pF)	Cat. No.	Cap. (pF)	Cat. No.
1.5 to 3	822-DZ	2.0 to 6.0	822-DN
1.5 to 7	822-EZ	4.0 to 30.0	822-EN
2.0 to 7.5	822-CZ	4.5 to 25.0	822-CN
2.5 to 13.0	822-BZ	7.0 to 45.0	822-BN
3.0 to 12.0	822-FZ	8.0 to 50.0	822-AN
4.5 to 25.0	822-AZ		

Type 823 Trimmer

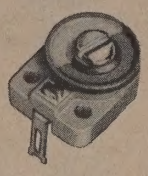


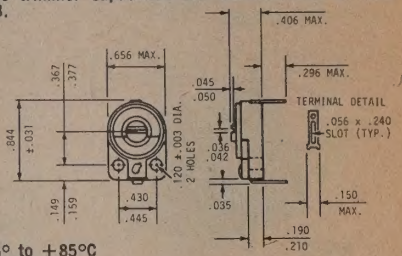
VOLTAGE RATING: 500 VDCW, 1500 VDCT
POWER FACTOR: Less than .2% @ 1 MC
TERMINALS: Brass, silver-plated, bent down 90° from plane of stator.
INSULATION RESISTANCE: 10,000 megohms min.
MOUNTING: Studs are set in base.
PACKAGED: Singly, or 5 pcs. bulk per carton.

NPO or Zero TC		N650 or Negative TC	
Cap. pF	Cat. No.	Cap. pF	Cat. No.
5.0 to 12	823-EZ	5.0 to 15	823-FN
6 to 25	823-DZ	8 to 25	823-EN
10 to 50	823-BZ	8 to 50	823-DN
12 to 62	823-AZ	10 to 100	823-BN
		20 to 125	823-AN

Type 825 Trimmer

The new 825 series of ceramic trimmer capacitors are manufactured to meet the specifications of MIL-C-81B.



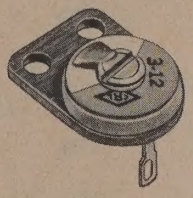


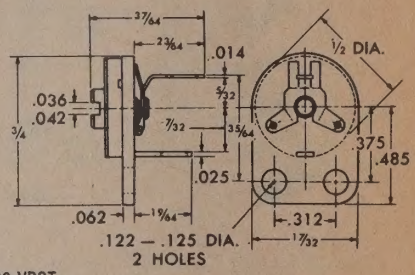
OPERATING TEMPERATURE: −55° to +85°C
VOLTAGE RATING: 500 VDCW, 1100 VDCT
POWER FACTOR: Less than .2% @ 1 MHz ±100 KHz
CAPACITANCE DRIFT: ±.75% or ±.5 mmf, whichever is greater.
TERMINALS: Brass, silver-plated, bent at 90° angle.
INSULATION RESISTANCE: 10,000 megohms min.
PACKAGED: Singly, or 5 pcs. bulk per carton.

NPO or Zero TC			N650 or Negative TC		
Cap. pF	CRL Cat. No.	MIL-C-81B Number	Cap. pF	CRL Cat. No.	MIL-C-81B Number
1.5 to 7	825-EZ	CV11A070	2.0 to 6	825-DN	CV11D060
3.0 to 12	825-FZ	CV11A120	4.0 to 30	825-EN	CV11D300
4.5 to 25	825-AZ	CV11A250	7.0 to 45	825-BN	CV11D450

Capacitance Range	CRL Cat. No.	Military Designation	Temperature Characteristic
3.0 to 13.0	825-AN	CV11B130	N300
5.0 to 20.0	825-FN	CV11B200	N300
4.0 to 30.0	825-CN	CV11C300	N500
7.0 to 45.0	825-GN	CV11C450	N500

Type 827 Trimmer

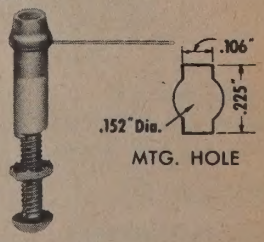




VOLTAGE RATING: 500 VDCW, 1000 VDCT
POWER FACTOR: Less than .2% @ 1 MC
SIZE: 17/32" wide, ¾" long
TERMINALS: Brass, silver-plated, bent down 90° from plane of stator.
INSULATION RESISTANCE: Greater than 10,000 megohms.
MOUNTING: High grade phenolic mounting plate. Two .122"-.125" mounting holes spaced 5/16" apart. Can be mounted on chassis through 5/16" diameter hole.
PACKAGED: Singly, or 5 pcs. bulk per carton.

Cap. pF	Cat. No.	Cap. pF	Cat. No.
2.5 to 7	827A	6.0 to 30	827C
3.5 to 12	827B	7.0 to 35	827D

Type 829 Tubular Trimmer



VOLTAGE RATING: 500 VDCW, 1000 VDCT
POWER FACTOR: Less than .25% @ 1 MC
SIZE: See listing
LEADS: AWG No. 22 tinned wire
INSULATION RESISTANCE: Greater than 10,000 megohms.
MOUNTING: Perpendicular to panel by means of special locknut.
PACKAGED: 2 pcs. per pkg., or 25 bulk per carton, including locknuts.

Cap. Range pF	Body Length	Cat. No.
0.5 to 3.0	½"	829–3
1.0 to 4.0	½"	829–4
1.0 to 6.0	5/8"	829–6
1.0 to 7.5	¾"	829–7
1.5 to 10.0	¾"	829–10

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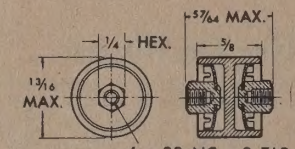
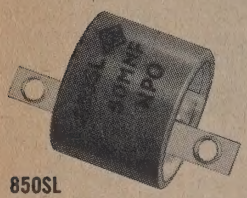
CERAMIC TRANSMITTING CAPACITORS

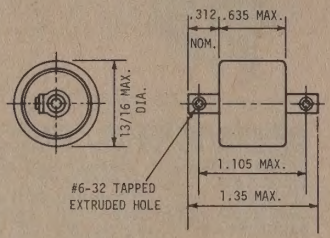
Centralab's transmitting capacitors are designed primarily for transmitters, induction heaters, electronic welding equipment, x-ray, diathermy and other high voltage, high frequency circuits. These capacitors have extremely low power factor and stable retrace characteristics. Long leakage paths and rugged mechanical construction are afforded by the "double cup" design. Current ratings are listed for each unit.

850 & 858S





850SL



TOLERANCE: 850 type ±10%; 858 type ±20%

DIMENSIONS: 1³⁄₁₆" diameter, ⅝" long

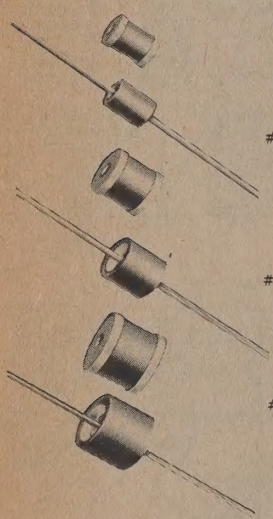
MOUNTING: S Series: ⅛" long hex studs tapped 6-32 thread. SL Series: ⅝" long lugs with 6-32 tapped hole.

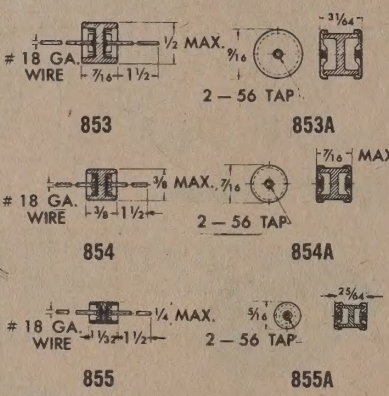
PACKAGED: Singly, or 5 pieces bulk per carton.

TYPE 850 AND 858—5 KV AND 7.5 KV

Cap. (pF)	Volts D.C.W.	Temp. Coeff.	R. F. Load at 30 MC‡	Cat. No. Stud Type	Cat. No. Lug Type
25	7500	NPO	7 amps.	850S-25Z	850SL-25Z
50	7500	NPO	10 amps.	850S-50Z	850SL-50Z
50	7500	N750	8.8 amps.	850S-50N	850SL-50N
75	7500	N750	10 amps.	850S-75N	850SL-75N
100	5000	N750	9.8 amps.	850S-100N	850SL-100N
500	5000	HI-K	.....	858S-500	.....
1000	5000	HI-K	.....	858S-1000	.....

‡Typical R.F. Characteristics





TOLERANCE: ±10%

DIMENSIONS:
853—½" dia. x 7⁄16" long
854—⅜" dia. x ⅜" long
855—¼" dia. x 1³⁄₃₂" long
853A—⅜" dia. x 3¹⁄₆₄" long
854A—7⁄16" dia. x 7⁄16" long
855A—5⁄16" dia. x 2⁵⁄₆₄" long

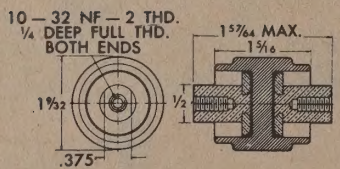
MOUNTING: 853, 854, 855: 1½" axial wire leads. 853A, 854A, 855A: axial screw terminals tapped 2-56.

PACKAGED: Singly, or 5 pieces bulk per carton.

TYPE 853, 854, 855—5 KV

Cap. (pF)	Volts D.C.W.	Temp. Coeff.	R. F. Load at 30 MC‡	Cat. No. Lead Type	Cat. No. Tap Type
3	5000	NPO	1.8 amps.	855-3Z	855A-3Z
5	5000	NPO	1.8 amps.	855-5Z	855A-5Z
10	5000	NPO	1.8 amps.	854-10Z	854A-10Z
10	5000	N750	3.2 amps.	855-10N	855A-10N
20	5000	NPO	2.8 amps.	853-20Z	853A-20Z
20	5000	N750	3.2 amps.	854-20N	854A-20N
40	5000	N750	5.6 amps.	853-40N	853A-40N

857



TOLERANCE: ±10%

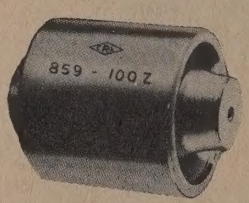
DIMENSIONS: Diameter 1³⁄₃₂", 1⁵⁷⁄₆₄" long

MOUNTING: Axial screw terminals, 10-32 NF-2 thread. ¼" deep full thread, both ends.

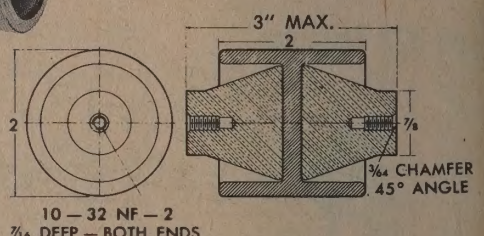
PACKAGED: Singly

TYPE 857—7.5 KV AND 15 KV

Cap. (pF)	Volts D. C. W.	Temp. Coeff.	R. F. Load at 30 MC.‡	Catalog Number
25	15000	NPO	12 amps.	857-25Z
50	15000	NPO	12 amps.	857-50Z
100	15000	N750	14.4 amps.	857-100N
200	7500	N750	18.2 amps.	857-200N



859S



TOLERANCE: ±10%

DIMENSIONS: Overall length 2⅞" max., diameter 2" nom.

MOUNTING: Terminal ends tapped 10-32—7⁄16" deep both ends.

PACKAGED: Singly

TYPE 859—15 AND 20 KV

Cap. (pF)	Volts D. C. W.	Tolerance	Temp. Coeff.	R. F. Load at 30 MC.‡	Catalog Number
50	20000	±10%	NPO	30 amps.	859S-50Z
100	20000	±10%	NPO	30 amps.	859S-100Z
250	20000	±10%	N750	30 amps.	859S-250N
500	15000	±10%	N3300	30 amps.	859S-500N

‡Typical RF characteristics. These are not specific ratings.

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DISTRIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.

AXIAL LEAD ELECTROLYTICS

Centralab miniaturized electrolytics were developed for direct replacement of other plastic-cased as well as the more costly aluminum-cased units. Sturdy phenolic cases and epoxy resin end-seals protect the accurately manufactured internal assembly.

Centralab Electrolytics are chassis-ground proof...insulating sleeves are not required as with aluminum "can" units.

SPECIFICATIONS

OPERATING TEMPERATURE RANGE: −40°C to +85°C

TOLERANCE: +100 to −0%

D.C. LEAKAGE CURRENT: Not to exceed 0.02 ua per MFD-Volt or 4 ua whichever is greater, measured after application of rated D.C. Voltage at 25°C

OTHER ELECTRICAL SPECS: EIA Std. RS-154-B

LEADS: Length 2.000" +½" −0"; tinned copper for ready solderability

INSULATION: Phenolic plastic molded case and epoxy resin end closures

MARKING: Centralab diamond, catalog number, capacity, voltage and polarity. (Red Seal also designates positive polarity)

PACKAGING: Packed 2 per clear plastic box. Available in cartons of 25 and 50 pieces.—Warehouse Pak.

6 VOLTS DCW

Cat. No.	Mfd.	Dia., In.	Lgth., In.
EA6-2	2	.215	.687
EA6-5	5	.215	.687
EA6-10	10	.215	.687
EA6-15	15	.215	.687
EA6-25	25	.250	.750
EA6-50	50	.312	.875
EA6-100	100	.375	.875
EA6-150	150	.375	1.000
EA6-250	250	.375	1.375
EA6-500	500	.500	1.125
EA6-1000	1000	.500	1.750

15 VOLTS DCW

Cat. No.	Mfd.	Dia., In.	Lgth., In.
EA15-2	2	.215	.687
EA15-5	5	.215	.687
EA15-10	10	.250	.750
EA15-15	15	.250	.750
EA15-25	25	.312	.875
EA15-50	50	.375	.875
EA15-100	100	.437	1.125
EA15-150	150	.437	1.125
EA15-250	250	.500	1.125
EA15-500	500	.625	1.500
EA15-1000	1000	.750	2.000
EA15-2000	2000	.875	2.250

30 VOLTS DCW

Cat. No.	Mfd.	Dia., In.	Lgth., In.
EA30-2	2	.215	.687
EA30-5	5	.250	.750
EA30-10	10	.312	.875
EA30-15	15	.312	.875
EA30-25	25	.375	.875
EA30-50	50	.375	1.125
EA30-100	100	.500	1.125
EA30-150	150	.500	1.625
EA30-250	250	.625	1.625
EA30-500	500	.750	2.000
EA30-1000	1000	.875	2.000

50 VOLTS DCW

Cat. No.	Mfd.	Dia., In.	Lgth., In.
EA50-2	2	.250	.750
EA50-5	5	.312	.875
EA50-10	10	.375	.875
EA50-15	15	.375	1.000
EA50-25	25	.375	1.125
EA50-50	50	.437	1.375
EA50-100	100	.625	1.375
EA50-150	150	.625	1.625
EA50-250	250	.750	1.875
EA50-500	500	.875	2.000
EA50-1000	1000	1.000	2.500

PRINTED CIRCUIT ELECTROLYTICS

Centralab Printed Circuit Electrolytics are exact replacements for original equipment in entertainment semi-conductor equipment.

The wide operating temperature characteristic assures dependable performance in mobile equipment.

Standard PC leads furnished on these units make them practical for use in prototype styling as well as in replacement service.

SPECIFICATIONS

OPERATING TEMPERATURE RANGE: −40°C to +85°C

TOLERANCE: +100 to −0%

D.C. LEAKAGE CURRENT: Not to exceed 0.02 ua per MFD-Volt or 4 ua whichever is greater, measured after application of rated D.C. Voltage at 25°C

OTHER ELECTRICAL SPECS: EIA Std. RS-154-B

LEADS: Length .500" +⅛" −0"; tinned copper for ready solderability

INSULATION: Phenolic plastic molded case and red colored epoxy resin end closure

MARKING: Centralab diamond, catalog number, capacity, voltage and polarity.

PACKAGING: Packed 2 per clear plastic box. Available in cartons of 50.—Warehouse Pak.

6 VOLTS DCW

Cat. No.	Mfd.	Dia. In.	Lgth. In.	Lead Spacing
EP6-2	2	.250	.500	.125
EP6-5	5	.250	.500	.125
EP6-10	10	.250	.500	.125
EP6-25	25	.250	.500	.125
EP6-50	50	.312	.625	.125
EP6-100	100	.375	.625	.150

15 VOLTS DCW

Cat. No.	Mfd.	Dia. In.	Lgth. In.	Lead Spacing
EP15-2	2	.250	.500	.125
EP15-5	5	.250	.500	.125
EP15-10	10	.250	.500	.125
EP15-25	25	.312	.625	.125
EP15-50	50	.375	.750	.150
EP15-100	100	.437	.875	.200

30 VOLTS DCW

Cat. No.	Mfd.	Dia. In.	Lgth. In.	Lead Spacing
EP30-2	2	.250	.500	.125
EP30-5	5	.250	.750	.125
EP30-10	10	.312	.625	.125
EP30-25	25	.375	.750	.150
EP30-50	50	.437	.875	.200

50 VOLTS DCW

Cat. No.	Mfd.	Dia. In.	Lgth. In.	Lead Spacing
EP50-2	2	.250	.500	.125
EP50-5	5	.312	.500	.125
EP50-10	10	.312	.750	.125
EP50-25	25	.437	.750	.200
EP50-50	50	.500	1.000	.250

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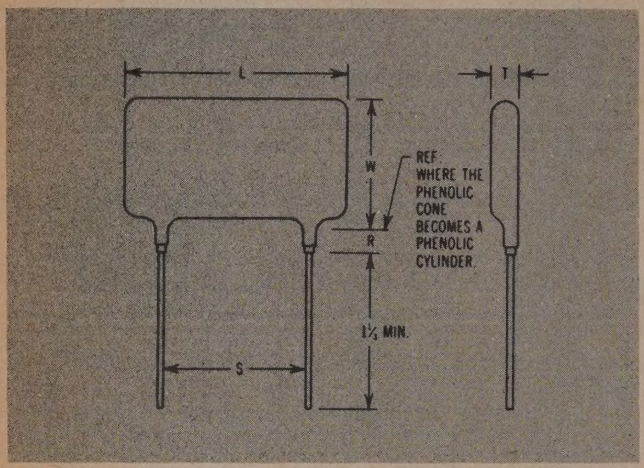
ELMENCO CAPACITORS

DIMENSIONAL DATA

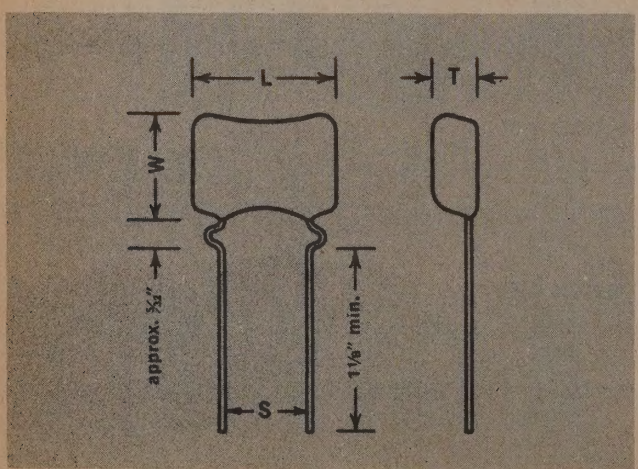


	DM-5	DM-10	DM-15	DM-16	DM-19	DM-20	DM-30	DM-42
R. MAX.	5/64	1/8	1/8	1/8	3/64	3/64	11/64	11/64
S ±1/32	1/8	3/64	13/64	1/2	11/32	7/16	7/16	1 1/16
LEAD WIRE GAGE	#26	#26	#22	#22	#20	#20	#18	#18

Dipped mica leads may be tinned copper-clad steel, 30% minimum conductivity, or tinned brass except for DM-5 and DM-10 case sizes which are copper-clad steel only.

Crimped Leads

In addition to the straight lead design, DM capacitors (except DM-5) are also available with crimped leads for printed circuit application. The crimp provides a positive stop when capacitors are mounted. This prevents interference of resin coat on the leads with dip-solder operation, provides greater mounting uniformity, and elevates the components slightly above the surface of the board. Crimped leads are normally copper-clad steel. Lead wire gage for crimped lead units is the same as for straight lead capacitors for types DM-19 through DM-42. For type DM-10 #24 gage is used, types DM-15 and DM-16 use #20 gage. Crimped lead units are not regularly stocked but are available to special order at nominal extra charge.



Maximum Dimensions

Maximum dimensions of the various DM case sizes have been specified to anticipate variations in coat thickness and minor protrusions on the surface. Average dimensions of a given lot may be appreciably smaller than those listed.

Note that the leads are not centered in the thickness dimension. This can be seen on the end view dimensional drawing. Construction of Elmenco Dur-Mica capacitors provides for leads to project from one surface of the mica stack, causing them in turn to extend from one edge of the capacitor. Regardless of case size and overall thickness, leads will always be within 1/16 to 3/32 from one of the capacitor surfaces except for SCDM types.

Not all dimensions of every capacitance value are listed since size varies almost linearly with capacitance value. Dimensions of values between those specified below should be determined by interpolation.

CASE SIZE	Cap. mmf.	Volt. VDCW	L. max.	W. max.	T max.
DM-5	10	300	.270	.190	.110
	39	300	.270	.210	.130
	68	300	.270	.220	.150
	100	300	.270	.250	.190
	150	100	.270	.230	.170
	180	100	.270	.240	.180
	200	100	.270	.250	.190
	68	50	.270	.200	.120
	100	50	.270	.200	.130
	180	50	.270	.210	.140
	240	50	.270	.220	.160
	330	50	.270	.240	.180
	390	50	.270	.250	.190
DM-10 (CM04) (CM09)	10	500	.360	.330	.190
	50	500	.370	.340	.190
	100	500	.370	.350	.200
	150	500	.380	.360	.210
	250	500	.390	.380	.220
	300	300	.390	.380	.220
	390	100	.390	.380	.220
DM-15 (CM05) (CM10)	10	500	.450	.360	.170
	100	500	.460	.360	.180
	200	500	.460	.380	.190
	300	500	.470	.390	.210
	500	500	.490	.420	.240
	560	300	.470	.390	.210
	680	300	.470	.390	.210
	820	300	.470	.400	.230
	1000	100	.490	.420	.240
DM-16	430	500	.730	.380	.200
	600	500	.750	.390	.220
	720	500	.750	.400	.230
	720	300	.730	.380	.200
	900	300	.740	.390	.210
	1300	300	.740	.390	.230
DM-19 (CM06) (CM11)	100	500	.640	.500	.190
	500	500	.650	.510	.200
	1000	500	.650	.520	.220
	2000	500	.670	.530	.240
	3000	500	.680	.550	.280
	5000	500	.710	.590	.360
	6200	300	.690	.570	.320
	8200	100	.700	.580	.350
DM-20	680	500	.750	.510	.200
	1000	500	.750	.510	.200
	2000	500	.760	.520	.220
	3900	500	.780	.560	.300
	5600	500	.790	.570	.340
	6800	300	.790	.560	.320
	7500	100	.780	.560	.300
	10000	100	.790	.570	.340
DM-30 (CM07) (CM12)	4300	500	.780	.860	.270
	6800	500	.780	.870	.300
	10000	500	.800	.890	.340
	15000	500	.810	.900	.390
	20000	500	.830	.920	.450
	20000	300	.810	.890	.370
	25000	300	.820	.910	.420
	30000	300	.830	.920	.460
	36000	100	.830	.920	.450
DM-42 (CM08) (CM13)	20000	500	1.420	.870	.300
	30000	500	1.440	.890	.350
	50000	500	1.480	.920	.460
	62000	300	1.470	.920	.450
	82000	100	1.480	.920	.460
DM-43	50000	500	2.060	.900	.380
	68000	500	2.070	.910	.440
	75000	300	2.060	.900	.380
	100000	300	2.070	.910	.440
	130000	100	2.090	.930	.490

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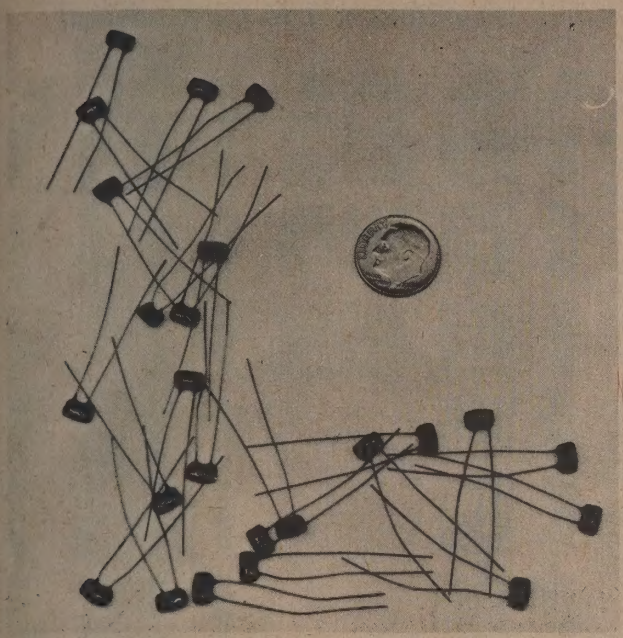
ELMENCO CAPACITORS

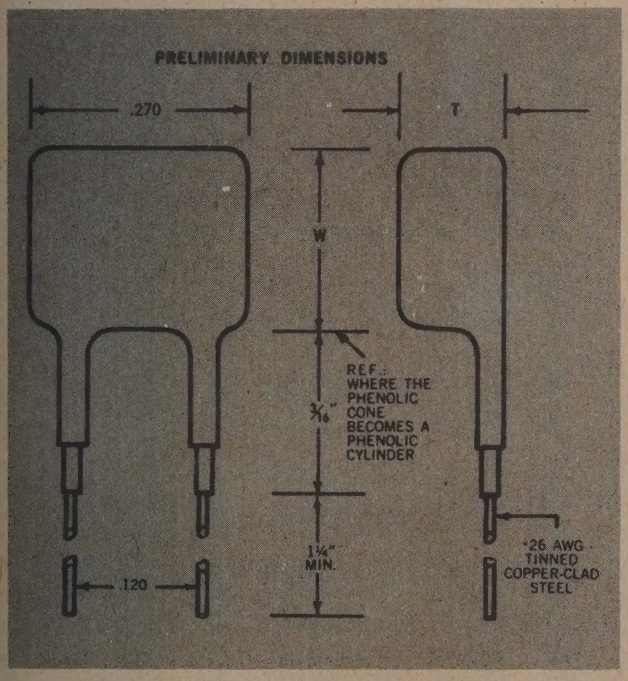
DM5 MINIATURE DIPPED MICA



Capacitance Range 1pF-390pF

The new ELMENCO DM5 dipped silvered mica capacitor has been designed to keep pace with the ever-shrinking world of electronic circuitry.

DM5 capacitors are supplied in standard voltage rating of 300 VDCW, 100V and 50V ratings as indicated in the tabulation below. Electrical and environmental specifications are basically the same as for the other ELMENCO dipped mica capacitor styles. The capacitors are stamped with working voltage and with capacitance value in pf. followed by a letter signifying capacitance tolerance. For example 27K would be 27 pF. ±10%, 150G would be 150 pF. ±2%.



Cap. pF.	Part Number	TOLERANCE ±1 pF. "A"	±0.5 pF. "D"	±10% "K"	±5% "J"	±2% "G"	±1% "F"
		Net Price (1-24)					
50 VDCW							
68	DM5-EY680			.28	.31	.54	.92
75	DM5-EY750			.29	.32	.56	.95
82	DM5-EY820			.29	.33	.57	.97
91	DM5-FY910			.31	.34	.60	1.03
100	DM5-FY101			.33	.36	.63	.73
110	DM5-FY111			.34	.38	.67	.76
120	DM5-FY121			.36	.40	.70	.80
130	DM5-FY131			.38	.42	.73	.84
150	DM5-FY151			.41	.46	.80	.91
160	DM5-FY161			.43	.48	.83	.95
180	DM5-FY181			.46	.51	.90	1.03
200	DM5-FY201			.51	.57	1.00	1.14
220	DM5-FY221			.55	.61	1.06	1.22
240	DM5-FY241			.58	.65	1.13	1.29
250	DM5-FY251			.60	.67	1.16	1.33
270	DM5-FY271			.63	.70	1.23	1.40
300	DM5-FY301			.70	.78	1.36	1.55
330	DM5-FY331			.75	.83	1.46	1.67
360	DM5-FY361			.80	.89	1.56	1.78
390	DM5-FY391			.87	.97	1.69	1.93
300 VDCW							
1	DM5-CC010	$0.21	$0.37				
2	DM5-CC020	.21	.37				
3	DM5-CC030	.21	.37				
4	DM5-CC040	.21	.37				
5	DM5-CC050	.21	.37	$0.37			
6	DM5-CC060	.21	.38	.38			
7	DM5-CC070	.21	.38	.38			
8	DM5-CC080	.21	.38	.38			
10	DM5-CC100		.38	.23	$0.38		
12	DM5-CC120		.46	.24	.39		
15	DM5-CC150		.46	.24	.39		
18	DM5-CC180		.48	.25	.41		
20	DM5-CC200		.56	.25	.27		
22	DM5-CC220		.56	.25	.28		
24	DM5-CC240		.56	.25	.28		
27	DM5-EC270			.26	.29	$0.58	
30	DM5-EC300			.26	.29	.58	
33	DM5-EC330			.27	.30	.60	
36	DM5-EC360			.27	.31	.62	
39	DM5-EC390			.27	.31	.62	
43	DM5-EC430			.28	.31	.62	
47	DM5-EC470			.29	.32	.64	
50	DM5-EC500			.29	.32	.64	$0.96
51	DM5-EC510			.31	.34	.62	1.02
56	DM5-EC560			.32	.36	.64	1.08
62	DM5-EC620			.34	.38	.68	1.14
68	DM5-EC680			.36	.39	.72	1.17
75	DM5-EC750			.37	.41	.74	1.23
82	DM5-EC820			.41	.45	.82	1.35
91	DM5-FC910			.44	.49	.88	1.47
100	DM5-FC101			.46	.51	.92	1.02
110	DM5-FC111			.49	.54	.98	1.08
120	DM5-FC121			.42	.47	.84	.94
130	DM5-FA131*			.44	.49	.88	.98
150	DM5-FA151*			.49	.54	.98	1.08
160	DM5-FA161*			.42	.47	.84	.94
180	DM5-FA181*			.46	.51	.92	1.02
200	DM5-FA201*			.62	.69	1.20	1.37

*100 VDCW

300V pF	L	W	T
10	.270	.190	.110
39	.270	.210	.130
68	.270	.220	.150
100	.270	.250	.190
100V			
150	.270	.230	.170
180	.270	.240	.180
200	.270	.250	.190
50V			
68	.270	.200	.120
100	.270	.200	.130
180	.270	.210	.140
240	.270	.220	.160
330	.270	.240	.180
390	.270	.250	.190

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Net

ELMENCO CAPACITORS — DIPPED MICA

TYPE DM-10 (CM04) (CM09)● 500VDCW

(SCMD10 values and prices the same)

CAP. pF.	PART NUMBER	MIL-C-5 TYPE DESIGNATION	Net Price (1-24) Tolerance ±1 pF. "A"	±0.5 pF. "D"	±10% "K"	±5% "J"	±2% "G"	±1% "F"
1	DM-10-010	CM-04-CD-010D03	$0.18	$0.31				
2	DM-10-020		.18	.31				
3	DM-10-030		.18	.31				
5	DM-10-050	CM-04-CD-050D03	.18	.31				
10	DM-10-100	CM-04-CD-100‡03		.31	$0.18	$0.31		
12	DM-10-120	CM-04-CD-120‡03		.37	.19	.32		
15	DM-10-150	CM-04-CD-150‡03		.37	.19	.32		
18	DM-10-180	CM-04-CD-180‡03		.37	.19	.32		
20	DM-10-200	CM-04-ED-200‡03		.42	.19	.21		
22	DM-10-220	CM-04-ED-220‡03		.42	.19	.21		
24	DM-10-240	CM-04-ED-240‡03		.43	.20	.22		
27	DM-10-270	CM-04-ED-270‡03			.20	.22	$0.43	
30	DM-10-300	CM-04-ED-300‡03			.20	.22	.43	
33	DM-10-330	CM-04-ED-330‡03			.20	.22	.43	
36	DM-10-360	CM-04-ED-360‡03			.20	.22	.45	
39	DM-10-390	CM-04-ED-390‡03			.20	.22	.45	
43	DM-10-430	CM-04-ED-430‡03			.20	.22	.45	
47	DM-10-470	CM-04-ED-470‡03			.20	.23	.46	
50	DM-10-500				.20	.23	.40	$0.69
51	DM-10-510	CM-04-ED-510‡03			.20	.23	.40	.69
56	DM-10-560	CM-04-ED-560‡03			.21	.23	.41	.70
62	DM-10-620	CM-04-ED-620‡03			.21	.23	.41	.70
68	DM-10-680	CM-04-ED-680‡03			.22	.24	.42	.72
75	DM-10-750	CM-04-ED-750‡03			.22	.24	.42	.72
82	DM-10-820	CM-04-ED-820‡03			.22	.25	.43	.74
91	DM-10-910	CM-04-FD-910‡03			.23	.25	.44	.76
100	DM-10-101	CM-04-FD-101‡03			.23	.26	.50	.51
110	DM-10-111	CM-04-FD-111‡03			.23	.26	.50	.51
120	DM-10-121	CM-04-FD-121‡03			.25	.27	.47	.54
130	DM-10-131	CM-04-FD-131‡03			.26	.29	.50	.57
150	DM-10-151	CM-04-FD-151‡03			.29	.31	.55	.63
160	DM-10-161	CM-04-FD-161‡03			.30	.33	.58	.66
180	DM-10-181	CM-04-FD-181‡03			.32	.36	.63	.72
200	DM-10-201	CM-04-FD-201‡03			.35	.39	.68	.78
220	DM-10-221	CM-04-FD-221‡03			.36	.40	.70	.80
240	DM-10-241	CM-04-FD-241‡03			.39	.43	.76	.86
250	DM-10-251				.40	.45	.76	.89
270*	DM-10-271	CM-04-FC-271‡03			.38	.42	.73	.83
300*	DM-10-301	CM-04-FC-301‡03			.42	.46	.80	.92
330**	DM-10-331	CM-04-FA-331‡03			.39	.43	.76	.86
360**	DM-10-361	CM-04-FA-361‡03			.42	.46	.80	.92
390**	DM-10-391	CM-04-FA-391‡03			.44	.49	.86	.98

TYPE DM-15 (CM05) (CM10)● 500VDCW

(SCDM15 values and prices the same)

CAP. pF.	PART NUMBER	MIL-C-5 TYPE DESIGNATION	Net Price (1-24) Tolerance ±0.5 pF. "D"	±10% "K"	±5% "J"	±2% "G"	±1% "F"
1	DM-15-010†	CM-05-CD-010D03	$0.22				
2	DM-15-020†		.22				
3	DM-15-030†		.22				
5	DM-15-050†	CM-05-CD-050D03	.22				
6	DM-15-060	CM-05-CD-060‡03	.22	$0.22			
7	DM-15-070	CM-05-CD-070‡03	.22	.22			
8	DM-15-080	CM-05-CD-080‡03	.22	.22			
10	DM-15-100	CM-05-CD-100‡03	.22	.16	$0.22		
12	DM-15-120	CM-05-CD-120‡03	.22	.16	.22		
15	DM-15-150	CM-05-CD-150‡03	.23	.16	.22		
18	DM-15-180	CM-05-CD-180‡03	.23	.16	.22		
20	DM-15-200	CM-05-ED-200‡03	.25	.16	.18		
22	DM-15-220	CM-05-ED-220‡03	.25	.16	.18		
24	DM-15-240	CM-05-ED-240‡03	.25	.16	.18		
27	DM-15-270	CM-05-ED-270‡03		.16	.18	$0.25	
30	DM-15-300	CM-05-ED-300‡03		.16	.18	.25	
33	DM-15-330	CM-05-ED-330‡03		.16	.18	.25	
36	DM-15-360	CM-05-ED-360‡03		.16	.18	.25	
39	DM-15-390	CM-05-ED-390‡03		.16	.18	.25	
43	DM-15-430	CM-05-ED-430‡03		.16	.18	.25	
47	DM-15-470	CM-05-ED-470‡03		.16	.18	.25	
50	DM-15-500			.16	.18	.21	$0.36
51	DM-15-510	CM-05-ED-510‡03		.16	.18	.21	.36
56	DM-15-560	CM-05-ED-560‡03		.16	.18	.21	.36
62	DM-15-620	CM-05-ED-620‡03		.16	.18	.22	.36
68	DM-15-680	CM-05-ED-680‡03		.16	.18	.22	.36
75	DM-15-750	CM-05-ED-750‡03		.16	.18	.22	.36
82	DM-15-820	CM-05-ED-820‡03		.16	.18	.22	.36
91	DM-15-910	CM-05-FD-910‡03		.16	.18	.22	.36
100	DM-15-101	CM-05-FD-101‡03		.16	.18	.22	.25

DM-15 (CM05) (CM10)● (Continued)

CAP. pF.	PART NUMBER	MIL-C-5 TYPE DESIGNATION	Net Price (1-24) Tolerance ±10% "K"	±5% "J"	±2% "G"	±1% "F"
110	DM-15-111	CM-05-FD-111‡03	$0.18	$0.19	$0.23	$0.28
120	DM-15-121	CM-05-FD-121‡03	.18	.19	.23	.28
130	DM-15-131	CM-05-FD-131‡03	.19	.21	.25	.30
150	DM-15-151	CM-05-FD-151‡03	.19	.21	.25	.30
160	DM-15-161	CM-05-FD-161‡03	.20	.23	.27	.32
180	DM-15-181	CM-05-FD-181‡03	.22	.24	.29	.35
200	DM-15-201	CM-05-FD-201‡03	.22	.24	.29	.35
220	DM-15-221	CM-05-FD-221‡03	.23	.26	.31	.37
240	DM-15-241	CM-05-FD-241‡03	.25	.27	.33	.39
250	DM-15-251		.25	.27	.33	.39
270	DM-15-271	CM-05-FD-271‡03	.26	.29	.35	.42
300	DM-15-301	CM-05-FD-301‡03	.28	.31	.37	.44
330	DM-15-331	CM-05-FD-331‡03	.31	.34	.41	.49
360	DM-15-361	CM-05-FD-361‡03	.32	.36	.43	.51
390	DM-15-391	CM-05-FD-391‡03	.34	.37	.45	.53
430	DM-15-431		.36	.40	.48	.58
470	DM-15-471		.38	.42	.50	.60
500	DM-15-501		.39	.43	.52	.62
510	DM-15-511		.41	.45	.54	.65
560*	DM-15-561		.41	.45	.54	.65
620*	DM-15-621		.44	.48	.58	.69
680*	DM-15-681		.48	.53	.64	.76
750*	DM-15-751		.51	.56	.66	.81
820*	DM-15-821		.55	.61	.73	.88
910**	DM-15-911		.48	.53	.64	.76
1000**	DM-15-102		.52	.58	.69	.83
1100**	DM-15-112		.63	.69	.81	.96
1200**	DM-15-122		.67	.73	.87	1.03

TYPE DM-16 available on request

TYPE DM-19 (CM06) (CM11)● 500VDCW

(SCDM-19 prices on request)

CAP. pF.	PART NUMBER	MIL-C-5 TYPE DESIGNATION	Net Price (1-24) Tolerance ±10% "K"	±5% "J"	±2% "G"	±1% "F"
100	DM-19-101		$0.18	$0.20	$0.21	$0.27
110	DM-19-111		.18	.20	.21	.27
120	DM-19-121		.18	.20	.21	.27
130	DM-19-131		.20	.21	.22	.28
150	DM-19-151		.20	.21	.22	.28
160	DM-19-161		.20	.21	.22	.28
180	DM-19-181		.20	.21	.22	.28
200	DM-19-201		.20	.21	.22	.28
220	DM-19-221		.20	.21	.22	.28
240	DM-19-241		.20	.21	.22	.28
250	DM-19-251		.20	.21	.22	.28
270	DM-19-271		.21	.23	.25	.31
300	DM-19-301		.21	.23	.25	.31
330	DM-19-331		.21	.23	.25	.31
360	DM-19-361		.23	.26	.28	.35
390	DM-19-391		.23	.26	.28	.35
430	DM-19-431	CM-06-FD-431‡03	.23	.26	.28	.35
470	DM-19-471	CM-06-FD-471‡03	.26	.29	.31	.39
500	DM-19-501		.26	.29	.31	.39
510	DM-19-511	CM-06-FD-511‡03	.26	.29	.31	.39
560	DM-19-561	CM-06-FD-561‡03	.26	.29	.31	.39
620	DM-19-621	CM-06-FD-621‡03	.29	.32	.34	.43
680	DM-19-681	CM-06-FD-681‡03	.29	.32	.34	.43
750	DM-19-751	CM-06-FD-751‡03	.31	.35	.37	.47
820	DM-19-821	CM-06-FD-821‡03	.34	.38	.40	.51
910	DM-19-911	CM-06-FD-911‡03	.34	.38	.40	.51
1000	DM-19-102	CM-06-FD-102‡03	.37	.41	.44	.56
1100	DM-19-112	CM-06-FD-112‡03	.40	.44	.47	.60
1200	DM-19-122	CM-06-FD-122‡03	.42	.47	.50	.64
1300	DM-19-132	CM-06-FD-132‡03	.45	.50	.53	.68
1500	DM-19-152	CM-06-FD-152‡03	.51	.56	.60	.76
1600	DM-19-162	CM-06-FD-162‡03	.51	.56	.60	.76
1800	DM-19-182	CM-06-FD-182‡03	.56	.62	.66	.84
2000	DM-19-202	CM-06-FD-202‡03	.62	.67	.73	.92
2200	DM-19-222	CM-06-FD-222‡03	.67	.73	.79	1.00
2400	DM-19-242	CM-06-FD-242‡03	.70	.77	.83	1.05
2500	DM-19-252		.73	.81	.87	1.10
2700	DM-19-272	CM-06-FD-272‡03	.80	.87	.94	1.19
3000	DM-19-302	CM-06-FD-302‡03	.87	.98	1.05	1.33
3300	DM-19-332	CM-06-FD-332‡03	.96	1.05	1.13	1.43
3600	DM-19-362	CM-06-FD-362‡03	1.05	1.16	1.24	1.57
3900	DM-19-392	CM-06-FD-392‡03	1.11	1.22	1.31	1.67
4300	DM-19-432	CM-06-FD-432‡03	1.24	1.36	1.47	1.86
4700	DM-19-472	CM-06-FD-472‡03	1.34	1.47	1.58	2.00
5000	DM-19-502		1.43	1.57	1.69	2.14
5100	DM-19-512		1.46	1.61	1.73	2.15
5600*	DM-19-562		1.36	1.50	1.61	2.05
6200*	DM-19-622		1.49	1.64	1.76	2.24
6800**	DM-19-682		1.30	1.43	1.54	1.95
7500**	DM-19-752		1.46	1.61	1.73	2.19
8200**	DM-19-822		1.59	1.75	1.88	2.38

● MIL-C-5 crimped lead type. Use this nomenclature when ordering.

See page 281 for notes on marking and pricing; capacitance and voltage symbols.

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ELMENCO CAPACITORS

DIPPED MICA

TYPE DM-20 500VDCW

CAP. pF.	PART NUMBER	MIL-C-5 TYPE DESIGNATION	Tolerance Net Price (1-24) ±10% "K"	±5% "J"	±2% "G"	±1% "F"
680	DM-20-681		$0.26	$0.29	$0.31	$0.39
750	DM-20-751		.29	.32	.34	.43
820	DM-20-821		.29	.32	.34	.43
910	DM-20-911		.31	.35	.37	.47
1000	DM-20-102		.34	.38	.40	.51
1100	DM-20-112		.37	.41	.44	.56
1200	DM-20-122		.37	.41	.44	.56
1300	DM-20-132		.40	.44	.47	.60
1500	DM-20-152		.45	.50	.53	.68
1600	DM-20-162		.45	.50	.53	.68
1800	DM-20-182		.51	.56	.60	.76
2000	DM-20-202		.53	.59	.63	.80
2200	DM-20-222		.59	.65	.69	.88
2400	DM-20-242		.62	.67	.73	.92
2500	DM-20-252		.64	.71	.76	.96
2700	DM-20-272		.70	.73	.70	1.00
3000	DM-20-302		.76	.84	.90	1.15
3300	DM-20-332		.83	.91	.98	1.24
3600	DM-20-362		.89	.98	1.05	1.33
3900	DM-20-392		.96	1.05	1.13	1.43
4300	DM-20-432		1.05	1.16	1.24	1.57
4700	DM-20-472		1.14	1.26	1.35	1.74
5000	DM-20-502		1.24	1.36	1.47	1.86
5100	DM-20-512		1.24	1.36	1.47	1.86
5600	DM-20-562		1.36	1.50	1.61	2.05
6200*	DM-20-622		1.27	1.40	1.50	1.91
6800*	DM-20-682		1.40	1.59	1.65	2.09
7500**	DM-20-752		1.24	1.36	1.47	1.87
8200**	DM-20-822		1.33	1.47	1.58	2.00
9100**	DM-20-912		1.49	1.64	1.76	2.24
10000**	DM-20-103		1.62	1.78	1.91	2.43

Type DM-30 (CM07) (CM12)● 500VDCW

CAP. pF.	PART NUMBER	MIL-C-5 TYPE DESIGNATION	Tolerance Net Price (1-24) ±10% "K"	±5% "J"	±2% "G"	±1% "F"
4300	DM-30-432			$1.00	$1.09	$1.18
4700	DM-30-472			1.10	1.20	1.30
5000	DM-30-502			1.15	1.25	1.38
5100	DM-30-512	CM-07-FD-512‡03		1.15	1.25	1.38
5600	DM-30-562	CM-07-FD-562‡03		1.25	1.36	1.48
6200	DM-30-622	CM-07-FD-622‡03	$1.20	1.35	1.47	1.60
6800	DM-30-682	CM-07-FD-682‡03	1.32	1.51	1.46	1.78
7500	DM-30-752	CM-07-FD-752‡03	1.45	1.61	1.75	1.90
8200	DM-30-822	CM-07-FD-822‡03	1.58	1.76	1.92	2.08
9100	DM-30-912	CM-07-FD-912‡03	1.70	1.91	2.09	2.26
10000	DM-30-103	CM-07-FD-103‡03	1.89	2.11	2.31	2.50
11000	DM-30-113	CM-07-FD-113‡03	2.05	2.27	2.47	2.68
12000	DM-30-123	CM-07-FD-123‡03	2.21	2.45	2.70	2.92
13000	DM-30-133	CM-07-FD-133‡03	2.36	2.67	2.92	3.16
15000	DM-30-153	CM-07-FD-153‡03	2.68	3.03	3.31	3.58
16000	DM-30-163	CM-07-FD-163‡03	2.84	3.24	3.53	3.82
18000	DM-30-183	CM-07-FD-183‡03	3.15	3.59	3.92	4.24
20000	DM-30-203	CM-07-FD-203‡03	3.47	4.00	4.37	4.73
22000*	DM-30-223		3.42	3.69	4.03	4.37
24000*	DM-30-243		3.69	4.00	4.57	4.73
25000*	DM-30-253		3.84	4.20	4.57	4.98
27000*	DM-30-273		4.11	4.40	4.90	
30000*	DM-30-303		4.50	4.98	5.14	5.88
33000**	DM-30-333		4.95	4.41	4.81	5.22
36000**	DM-30-363		5.40	4.77	5.18	5.63

TYPE DM-42 (CM08) (CM13)● 500VDCW

CAP. pF.	PART NUMBER	MIL-C-5 TYPE DESIGNATION	Tolerance Net Price (1-24) ±5% "J"
20000	DM-42-203		$6.12
22000	DM-42-223	CM-08-FD-223‡03	6.57
24000	DM-42-243	CM-08-FD-243‡03	7.18
25000	DM-42-253		7.47
27000	DM-42-273	CM-08-FD-273‡03	12.57
30000	DM-42-303	CM-08-FD-303‡03	8.69
33000	DM-42-333	CM-08-FD-333‡03	9.43
36000	DM-42-363	CM-08-FD-363‡03	10.77
39000	DM-42-393	CM-08-FD-393‡03	11.10
43000	DM-42-433	CM-08-FD-433‡03	12.12
47000	DM-42-473	CM-08-FD-473‡03	13.18
50000	DM-42-503		13.91
51000	DM-42-513	CM-08-FD-513‡03	14.20
56000*	DM-42-563	CM-08-FC-563‡03	11.59
62000*	DM-42-623	CM-08-FC-623‡03	12.85
68000*	DM-42-683	CM-08-FC-683‡03	10.49
75000**	DM-42-753	CM-08-FA-753‡03	11.51
82000**	DM-42-823	CM-08-FA-823‡03	8.00

±2% AND ±1% PRICES ON REQUEST

TYPE DM-43 available on request

TYPE VDM HIGH VOLTAGE DIPPED MICAS

A complete listing of these units which are available in voltage ratings to 2500 VDCW will be found in the Elmenco-Arcolytic Service Dealer catalog which is available from your distributor or Loral Distributor Products.

NOTES ON DIPPED MICA CAPACITORS

All capacitances marked * are 300VDCW.
All capacitances marked ** are 100 VDCW.
‡ Insert tolerance letter designation in part number.
All values available in ±½% tolerance. Prices upon request.

For capacitance values within the ranges specified for each case size but not listed, there is a $1.00 set-up charge per item. For the base price, use the next higher standard listed capacitance value.

● MIL-C-5 crimped lead type. Use this nomenclature when ordering. For all crimped lead types a $2.00 set-up charge per item applies to all values ordered in less than 500 pc. quantities.

MARKING NOTES

DM5: Marked with capacitance in pF, tolerance letter, working voltage, and EM§.

DM10: Values with no military equivalent are marked with capacitance in pF, tolerance letter and EM§.

Values with military equivalent (CM04 Style) are marked as above on one side, but with working voltage added. The other side will show abbreviated Mil nomenclature. Example: CM4ED101JO

DM15: Values with no military equivalent are marked with capacitance in pF, tolerance in percent and EM§.

Values with military equivalent (CM05 Style) are marked as above on one side, but with working voltage added. The other side will show complete Mil nomenclature.

DM19:
DM20: Values with no military equivalent are marked with capacitance in pF, tolerance in percent, and EM§. (The DM20 Series has no military equivalent.)

DM30:
DM42: Values with military equivalent (CM06, CM07, CM08) are marked as above (working voltage added) and with full Mil nomenclature; all on one side of unit.

EM§: Symbol for Elmenco

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ELMENCO CAPACITORS

SPACE SAVER DIPPED MICA

SCDM

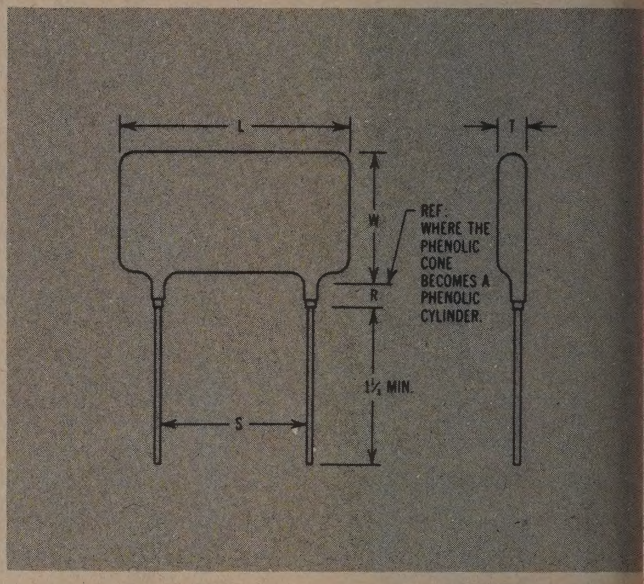
UNIQUE, SINGLE DIP, SPACE SAVING CAPACITORS FOR ULTRA MINIATURE CIRCUITRY

In applications requiring the high performance characteristics of dipped mica capacitors where space is at a premium, the Type SCDM reduced coat ELMENCO capacitors may often be used to advantage. A single protective resin coat is applied instead of the full series of dips incorporated in the standard unit. The amount of coat material is thereby reduced to a minimum consistent with good design, and a significant reduction of all dimensions is achieved.

All electrical and environmental requirements of MIL-C-5 are retained with the exception of case insulation (3.5.3) and moisture resistance (3.14). A maximum voltage stress of 100VDC through the case insulation is recommended for SCDM units. Although some lots of this type capacitor will not meet stringent MIL moisture resistance specifications, all will meet the humidity requirements of Paragraph 2.3.6 of EIA Standard RS-153. Therefore, the SCDM capacitors will operate with satisfaction where they will not be exposed to extensive periods of high humidity. It is recommended that if these capacitors are destined for operation under extreme environmental conditions, they should be given additional moisture protection such as encapsulation or hermetic sealing of the assembly.

Representative dimensions of the SCDM style capacitors are given below. The dimensions of intermediate values may be closely approximated by interpolation.

Pricing for Types SCDM10, SCDM15 and SCDM19 will be found on Page 280.



	SCDM10	SCDM15
R. MAX.	1/8	1/8
S ±1/32	9/64	15/64
LEAD WIRE GAGE	#26	#22

SCDM10

Cap. pF.	Volt. VDCW	L max.	W max.	T max.
10	500	.310	.230	.120
100	500	.320	.230	.130
180	500	.330	.240	.150
250	500	.340	.250	.160
300	300	.340	.250	.160
390	100	.340	.250	.160

SCDM15

Cap. pF.	Volt. VDCW	L max.	W max.	T max.
10	500	.430	.280	.140
100	500	.430	.280	.150
270	500	.440	.300	.160
510	500	.450	.310	.190
560	300	.450	.310	.160
820	300	.450	.310	.170
1000	100	.450	.320	.170

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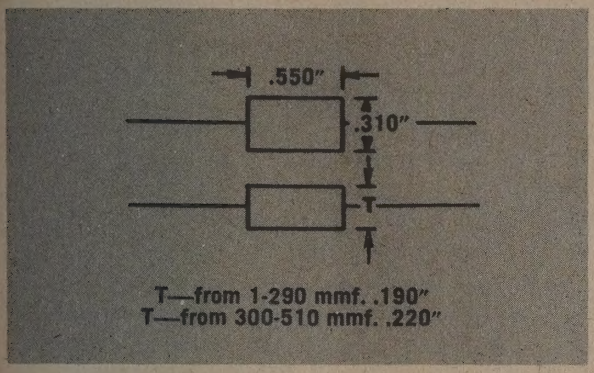
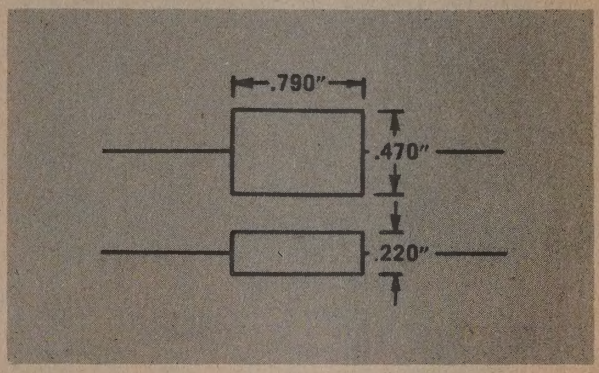
ELMENCO CAPACITORS

MOLDED SILVERED MICA





TYPE CM-15

500VDCW

CAP. pF.	TYPE DESIGNATION	Net Price (1-24) Tolerance "J" ±5%	"G" ±2%	"F" ±1%
1	CM-15-C-010†	$0.22		
2	CM-15-C-020†	.22		
3	CM-15-C-030†	.22		
5	CM-15-C-050†	.22		
10	CM-15-C-100	.22		
12	CM-15-C-120	.22		
15	CM-15-C-150	.22		
18	CM-15-C-180	.22		
20	CM-15-C-200	.18		
22	CM-15-C-220	.18		
24	CM-15-E-240	.18		
27	CM-15-E-270	.18		
30	CM-15-E-300	.18		
33	CM-15-E-330	.18		
36	CM-15-E-360	.18		
39	CM-15-E-390	.18	$0.25	
43	CM-15-E-430	.18	.25	
47	CM-15-E-470	.18	.25	
50	CM-15-E-500	.18	.21	$0.36
51	CM-15-E-510	.18	.21	.36
56	CM-15-E-560	.18	.21	.36
62	CM-15-E-620	.16	.22	.36
68	CM-15-E-680	.16	.22	.36
75	CM-15-E-750	.16	.22	.36
82	CM-15-E-820	.16	.22	.36
91	CM-15-E-910	.16	.22	.36
100	CM-15-E-101	.16	.22	.25
110	CM-15-E-111	.18	.23	.28
120	CM-15-E-121	.18	.23	.28
130	CM-15-E-131	.19	.25	.30
150	CM-15-E-151	.19	.25	.30
160	CM-15-E-161	.20	.27	.32
180	CM-15-E-181	.22	.29	.35
200	CM-15-E-201	.22	.29	.35
220	CM-15-E-221	.23	.31	.37
240	CM-15-E-241	.25	.33	.39
250	CM-15-E-251	.25	.33	.39
270	CM-15-E-271	.26	.35	.42
300	CM-15-E-301	.28	.37	.44
330	CM-15-E-331	.31	.41	.49
360	CM-15-E-361	.32	.42	.51
390	CM-15-E-391	.45	.53	.45
430	CM-15-E-431	.48	.58	.73
470	CM-15-E-471	.50	.60	.50
500	CM-15-E-501	.52	.62	.52
510	CM-15-E-511	.54	.65	.53
560**	CM-15-E-561	.37	.45	.53
620**	CM-15-E-621	.40	.48	.58
680**	CM-15-E-681	.43	.52	.62
750**	CM-15-E-751	.47	.56	.67
820**	CM-15-E-821	.50	.60	.72

† Capacities marked with † denote that closest tolerance is ±0.5 mmf.

** Voltage rating 100 VDCW.

TYPE CM-20

500VDCW

CAP. pF.	TYPE DESIGNATION	Net Price (1-24) Tolerance "J" ±5%	"G" ±2%	"F" ±1%
100	CM-20-C-101	$0.20	$0.21	$0.27
110	CM-20-C-111	.20	.21	.27
120	CM-20-C-121	.20	.21	.27
130	CM-20-C-131	.20	.21	.27
150	CM-20-C-151	.20	.21	.27
160	CM-20-C-161	.21	.23	.28
180	CM-20-C-181	.21	.23	.28
200	CM-20-D-201	.21	.23	.28
220	CM-20-D-221	.21	.23	.28
240	CM-20-D-241	.21	.23	.28
250	CM-20-D-251	.21	.23	.28
270	CM-20-D-271	.21	.23	.28
300	CM-20-D-301	.23	.25	.32
330	CM-20-D-331	.23	.25	.32
360	CM-20-D-361	.23	.25	.32
390	CM-20-D-391	.23	.25	.32
430	CM-20-D-431	.26	.28	.35
470	CM-20-D-471	.26	.28	.35
500	CM-20-D-501	.26	.28	.35
510	CM-20-D-511	.26	.28	.35
560	CM-20-D-561	.29	.31	.39
620	CM-20-D-621	.29	.31	.39
680	CM-20-D-681	.29	.31	.39
750	CM-20-D-751	.32	.34	.43
820	CM-20-D-821	.32	.34	.43
910	CM-20-D-911	.35	.37	.47
1000	CM-20-E-102	.38	.40	.51
1100	CM-20-E-112	.42	.44	.56
1200	CM-20-E-122	.42	.44	.56
1300	CM-20-E-132	.44	.47	.60
1500	CM-20-E-152	.50	.53	.68
1600	CM-20-E-162	.50	.53	.68
1800	CM-20-E-182	.56	.60	.76
2000	CM-20-E-202	.59	.63	.80
2200	CM-20-E-222	.65	.69	.88
2400	CM-20-E-242	.67	.73	.92
2500	CM-20-E-252	.71	.76	.96
2700	CM-20-E-272	.73	.79	1.00
3000	CM-20-E-302	.84	.90	1.15
3300	CM-20-E-332	.91	.98	1.24
3600*	CM-20-E-362	.84	.90	1.15
3900*	CM-20-E-392	.91	.98	1.24
4300*	CM-20-E-432	.98	1.05	1.33
4700*	CM-20-E-472	1.08	1.16	1.48
5000*	CM-20-E-502	1.16	1.28	1.57
5100*	CM-20-E-512	1.16	1.28	1.57

* Voltage rating 300 VDCW.

SPECIFICATION NOTES:

±½% tolerance available above 100 pF., pricing upon request.

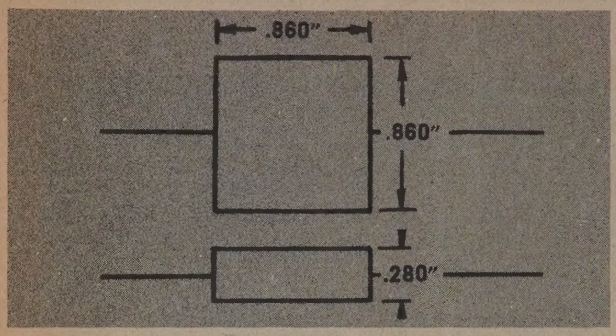
CM-15, available "F" characteristic above 30 pF.

CM-20, available "E" characteristic above 110 pF.

CM-20, available "F" characteristic above 200 pF.

NET (For quantities of 25 or more, please contact your local Elmenco-Arcolytic Distributor)

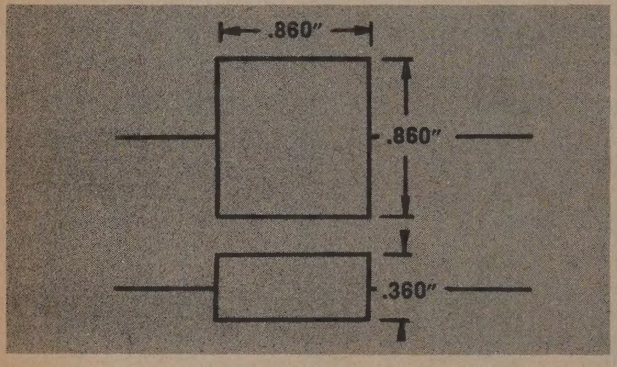
ELMENCO CAPACITORS MOLDED SILVERED MICA



TYPE CM-30

500VDCW

CAP. pF.	TYPE DESIGNATION	Net Price (1-24) Tolerance "J" ±5%	"G" ±2%	"F" ±1%
510	CM-30-E-511	$0.31	$0.33	$0.36
560	CM-30-E-561	.35	.36	.40
620	CM-30-E-621	.35	.36	.40
680	CM-30-E-681	.35	.36	.40
750	CM-30-E-751	.35	.36	.40
820	CM-30-E-821	.38	.42	.45
910	CM-30-E-911	.38	.42	.45
1000	CM-30-E-102	.38	.42	.45
1100	CM-30-E-112	.44	.48	.51
1200	CM-30-E-122	.44	.48	.51
1300	CM-30-E-132	.44	.48	.51
1500	CM-30-E-152	.49	.53	.58
1600	CM-30-E-162	.49	.53	.58
1800	CM-30-E-182	.54	.59	.64
2000	CM-30-E-202	.59	.64	.69
2200	CM-30-E-222	.64	.70	.76
2400	CM-30-E-242	.64	.70	.76
2500	CM-30-E-252	.69	.76	.82
2700	CM-30-E-272	.69	.76	1.06
3000	CM-30-E-302	.79	.87	.93
3300	CM-30-E-332	.85	.92	1.00
3600	CM-30-E-362	.89	.98	1.06
3900	CM-30-E-392	.94	1.03	1.12
4300	CM-30-E-432	1.00	1.09	1.16
4700	CM-30-E-472	1.10	1.20	1.30
5000	CM-30-E-502	1.15	1.25	1.38
5100	CM-30-E-512	1.15	1.25	1.38
5600	CM-30-E-562	1.25	1.36	1.48
6200	CM-30-E-622	1.35	1.47	1.60



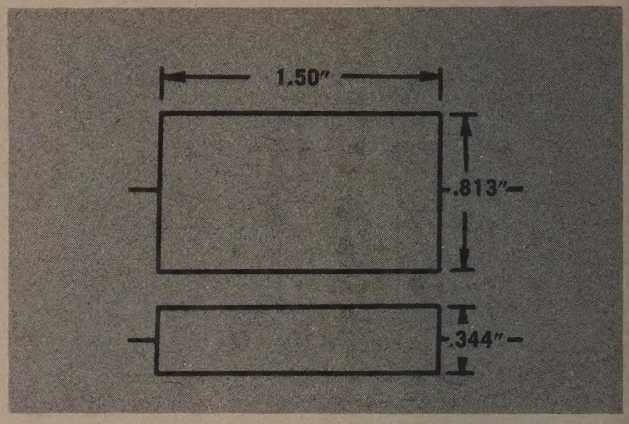
TYPE CM-35

500VDCW

CAP. pF.	TYPE DESIGNATION	Net Price (1-24) Tolerance "J" ±5%	"G" ±2%	"F" ±1%
6800*	CM-35-E-682	$1.30	$1.42	$1.54
7500*	CM-35-E-752	1.40	1.53	1.66
8200*	CM-35-E-822	1.51	1.64	1.78
9100*	CM-35-E-912	1.66	1.81	1.96
10000*	CM-35-E-103	1.81	1.98	2.14
12000*	CM-35-E-123	2.11	2.31	2.50
15000*	CM-35-E-153	2.57	2.81	3.04
6800	VCM-35-E-682	1.51	1.64	1.78
7500	VCM-35-E-752	1.61	1.75	1.90
8200	VCM-35-E-822	1.76	1.92	2.08
9100	VCM-35-E-912	1.91	2.09	2.26
10000	VCM-35-E-103	2.11	2.31	2.50

All capacities marked with * are 300WV.

NOTE:—All above "SILVERED MICA" units can be supplied in "F" Characteristic at no extra cost.



TYPE CM-42

Type CM42 is available to special order in the capacitance range 12000 to 39000 pf. Price and delivery information on request.

TYPE VCM HIGH VOLTAGE MOLDED MICA

ELMENCO molded mica capacitors are available in voltage ratings up to 2500VDCW. These capacitors meet all electrical and environmental requirements met by the standard units with the exception that they are designed to operate reliably at higher voltage stress levels. The following is a tabulation of case sizes, voltage ratings, and capacitance ranges available:

VCM-20

Voltage Rating (D.C.)	Capacitance Range (pf.)
2000VT, 1000VW	5 - 1300
3000VT, 1500VW	5 - 560
5000VT, 2500VW	5 - 220

VCM-35

Voltage Rating (D.C.)	Capacitance Range (pf.)
2000VT, 1000VW	1500 - 5600
3000VT, 1500VW	620 - 3300
5000VT, 2500VW	240 - 2000

VCM-42

Voltage Rating (D.C.)	Capacitance Range (pf.)
2000VT, 1000VW	6200 - 16000
3000VT, 1500VW	3600 - 9100
5000VT, 2500VW	2200 - 3900

Standard tolerance is ±5%. Closer tolerances are available. Price and delivery information upon request.

PLEASE INDICATE WORKING VOLTAGE RATING IN ADDITION TO THE VCM PART NUMBER WHEN SPECIFYING.

NOTES ON MOLDED MICAS

Temperature Range

Types CM15 and CM20 are available for Temperature Ranges O and P upon request, and at no extra charge.

Types CM30 and CM35 are available for Temperature Range O on special order. Price and delivery on request.

Marking

When bought to commercial requirements, all molded types are stamped with the tolerance letter added to the part numbers shown in the catalog listings.

NET (For quantities of 25 or more, please contact your local Elmenco-Arcolytic Distributor)

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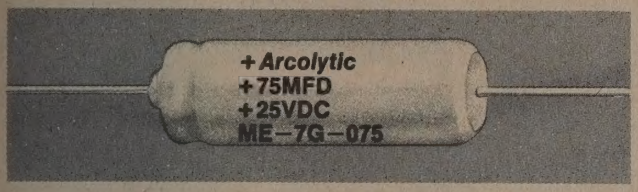
ARCOLYTIC CAPACITORS

MINIATURE ALUMINUM ELECTROLYTICS

TYPE ME



Type ME Miniature Aluminum-cased Electrolytics use the same high purity (99.99%) etched aluminum foil as the standard size Arcolytics. The design of the Type ME is particularly adapted to the latest transistorized circuitry which features low voltages and compactness of structure.

Type ME capacitors have an all-welded construction which provides increased ruggedness and resistance to environmental extremes. Corrosion and electrolyte leakage are eliminated. Electrically, they exhibit extremely low leakage current and maintain extended shelf life without deterioration. All units are insulated with a transparent plastic sleeve permanently bonded to the aluminum body.

SPECIFICATIONS:

CAPACITANCE AND TOLERANCE:

Capacitance measurements are made at 120 cycles per second and 25°C. Capacitance tolerance is —10%, +100%.

OPERATING TEMPERATURE RANGE: —30 to 85°C.

D.C. LEAKAGE CURRENT: Maximum leakage current is 5 microamperes or .03VC, whichever is greater, where V is D.C. voltage applied and C is capacitance in microfarads.

LEADS: Axial 1½" length minimum, #20 tinned copper.

NOMENCLATURE: The part numbers for each Type ME incorporate case size, voltage, and capacitance value:

ME	4	D	100
Type Designation	Case Size	Voltage Rating (VDCW)	Capacitance Value (Mfd.)

The example specifies a 100 mfd. 12V capacitor, case size ⅜" x ¾".

VOLTAGE RATINGS: The following table indicates letter designations assigned to the various voltages in which Type ME capacitors are supplied:

Letter Designation	A	B	D	E	G	J	M	N	R	T
VDCW	3	6	12	15	25	50	100	150	250	350

CASE SIZE: Type ME capacitors are made in 8 different case sizes.

CASE SIZE	DIMENSION	CASE SIZE	DIMENSION
1	3/16" D x ⅜" L	5	⅜" D x ⅝" L
2	¼" D x ⅝" L	6	⅜" D x 1" L
3	⅜" D x ½" L	7	⅜" D x 1⅛" L
4	⅜" D x ¾" L	8	⅜" D x 1⅜" L

The insulating plastic sleeve adds 1/32" x 1/16" to case dimensions.

STANDARD PACKAGING is in units of 5 in a custom-designed box which protects straight leads and shows quantity through a clear plastic window.

CAP. MFD.	PART NUMBER	LIST PRICE	NET PRICE (1-24)
3VDCW			
1	ME-1-A-001	$1.25	$0.75
2	ME-1-A-002	1.25	.75
3	ME-1-A-003	1.25	.75
4	ME-1-A-004	1.25	.75
5	ME-1-A-005	1.25	.75
6	ME-1-A-006	1.25	.75
8	ME-1-A-008	1.25	.75
10	ME-1-A-010	1.25	.75
15	ME-2-A-015	1.25	.75
20	ME-2-A-020	1.25	.75
25	ME-2-A-025	1.25	.75
30	ME-2-A-030	1.25	.75
35	ME-2-A-035	1.25	.75
40	ME-2-A-040	1.25	.75
50	ME-2-A-050	1.25	.75
75	ME-3-A-075	1.40	.84
100	ME-3-A-100	1.40	.84
125	ME-4-A-125	1.45	.87
150	ME-4-A-150	1.45	.87
175	ME-4-A-175	1.50	.90
200	ME-4-A-200	1.50	.90
250	ME-4-A-250	1.60	.96
300	ME-7-A-300	1.65	.99
350	ME-7-A-350	1.70	1.02
400	ME-7-A-400	1.70	1.02
450	ME-7-A-450	1.75	1.05
500	ME-7-A-500	1.75	1.05
6VDCW			
1	ME-1-B-001	1.25	.75
2	ME-1-B-002	1.25	.75
3	ME-1-B-003	1.25	.75
4	ME-1-B-004	1.25	.75
5	ME-1-B-005	1.25	.75
6	ME-1-B-006	1.25	.75
8	ME-1-B-008	1.35	.81
10	ME-1-B-010	1.35	.81
15	ME-2-B-015	1.35	.81
20	ME-2-B-020	1.35	.81
25	ME-2-B-025	1.35	.81
30	ME-2-B-030	1.40	.84
35	ME-2-B-035	1.40	.84
40	ME-2-B-040	1.40	.84
50	ME-2-B-050	1.40	.84
60	ME-2-B-060	1.40	.84
75	ME-3-B-075	1.45	.87
100	ME-3-B-100	1.50	.90
125	ME-6-B-125	1.55	.93
150	ME-6-B-150	1.55	.93
175	ME-6-B-175	1.60	.96
200	ME-6-B-200	1.60	.96
250	ME-6-B-250	1.70	1.02
300	ME-8-B-300	1.80	1.08
400	ME-8-B-400	1.85	1.11
500	ME-8-B-500	1.90	1.14
12VDCW			
1	ME-1-D-001	1.25	.75
2	ME-1-D-002	1.25	.75
3	ME-1-D-003	1.25	.75
4	ME-1-D-004	1.25	.75
5	ME-1-D-005	1.35	.81
6	ME-1-D-006	1.35	.81
8	ME-1-D-008	1.35	.81
10	ME-1-D-010	1.35	.81
15	ME-2-D-015	1.40	.84
20	ME-2-D-020	1.40	.84
25	ME-2-D-025	1.40	.84
30	ME-3-D-030	1.45	.87
35	ME-3-D-035	1.45	.87
40	ME-3-D-040	1.50	.90
50	ME-3-D-050	1.55	.93
75	ME-4-D-075	1.65	.99
100	ME-4-D-100	1.65	.99
150	ME-6-D-150	1.75	1.05
200	ME-6-D-200	1.90	1.14
250	ME-8-D-250	2.00	1.20
15VDCW			
1	ME-1-E-001	1.25	.75
2	ME-1-E-002	1.25	.75
3	ME-1-E-003	1.25	.75
4	ME-1-E-004	1.30	.78
5	ME-1-E-005	1.40	.84

CAP. MFD.	PART NUMBER	LIST PRICE	NET PRICE (1-24)
15VDCW			
6	ME-1-E-006	$1.40	$0.84
8	ME-1-E-008	1.40	.84
10	ME-1-E-010	1.40	.84
15	ME-2-E-015	1.45	.87
20	ME-2-E-020	1.45	.87
25	ME-2-E-025	1.45	.87
30	ME-3-E-030	1.50	.90
35	ME-3-E-035	1.55	.93
40	ME-3-E-040	1.60	.96
50	ME-3-E-050	1.60	.96
75	ME-4-E-075	1.60	.96
100	ME-4-E-100	1.65	.99
150	ME-6-E-150	1.75	1.05
200	ME-6-E-200	1.95	1.17
250	ME-8-E-250	2.05	1.23
25VDCW			
1	ME-1-G-001	1.25	.75
2	ME-1-G-002	1.30	.78
3	ME-1-G-003	1.30	.78
4	ME-1-G-004	1.30	.78
5	ME-1-G-005	1.40	.84
6	ME-2-G-006	1.40	.84
8	ME-2-G-008	1.45	.87
10	ME-2-G-010	1.45	.87
15	ME-3-G-015	1.45	.87
20	ME-3-G-020	1.50	.90
25	ME-3-G-025	1.55	.93
30	ME-3-G-030	1.60	.96
35	ME-4-G-035	1.65	.99
40	ME-4-G-040	1.65	.99
50	ME-4-G-050	1.65	.99
75	ME-7-G-075	1.70	1.02
100	ME-7-G-100	1.70	1.05
50VDCW			
1	ME-1-J-001	1.30	.78
2	ME-1-J-002	1.35	.81
3	ME-2-J-003	1.35	.81
4	ME-2-J-004	1.35	.81
5	ME-2-J-005	1.45	.87
6	ME-2-J-006	1.45	.87
8	ME-3-J-008	1.50	.90
10	ME-3-J-010	1.50	.90
15	ME-4-J-015	1.50	.90
20	ME-4-J-020	1.50	.90
25	ME-4-J-025	1.55	.93
30	ME-4-J-030	1.60	.96
35	ME-7-J-035	1.70	1.02
40	ME-7-J-040	1.75	1.05
50	ME-7-J-050	1.75	1.05
100VDCW			
1	ME-2-M-001	1.35	.81
2	ME-2-M-002	1.40	.84
3	ME-2-M-003	1.40	.84
4	ME-3-M-004	1.40	.84
5	ME-3-M-005	1.50	.90
6	ME-4-M-006	1.50	.90
8	ME-4-M-008	1.55	.93
10	ME-4-M-010	1.55	.93
15	ME-7-M-015	1.55	.93
20	ME-7-M-020	1.60	.96
25	ME-7-M-025	1.60	.96
150VDCW			
1	ME-3-N-001	1.40	.84
2	ME-3-N-002	1.45	.87
3	ME-3-N-003	1.45	.87
4	ME-3-N-004	1.45	.87
5	ME-3-N-005	1.55	.93
6	ME-3-N-006	1.55	.93
8	ME-4-N-008	1.60	.96
10	ME-4-N-010	1.60	.96
12	ME-4-N-012	1.60	.96
15	ME-7-N-015	1.60	.96
20	ME-8-N-020	1.60	.96
250VDCW			
1	ME-3-R-001	1.70	1.02
2	ME-3-R-002	1.70	1.02
5	ME-6-R-005	1.80	1.08
350VDCW			
1	ME-3-T-001	1.75	1.05
2	ME-5-T-002	1.75	1.05

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ELMENCO CAPACITORS — DIPPED TUBULARS

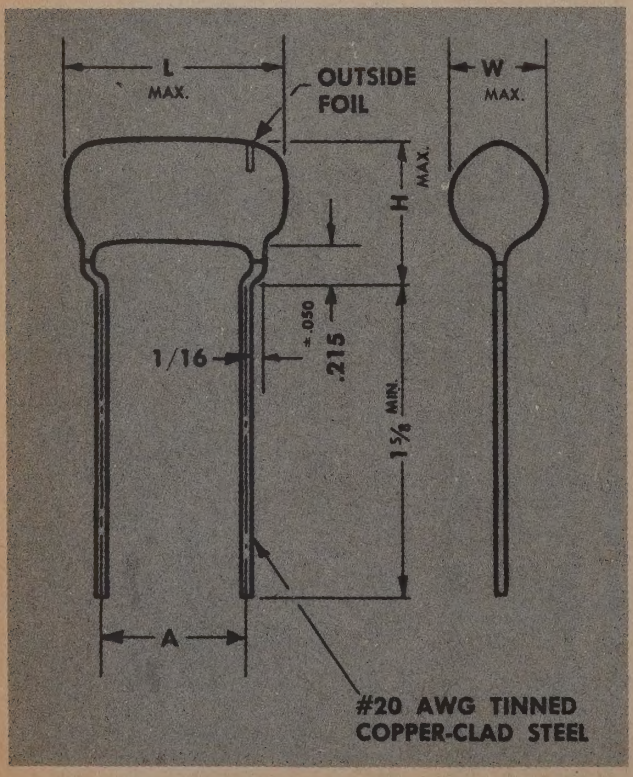
MYLAR* and MYLAR-PAPER

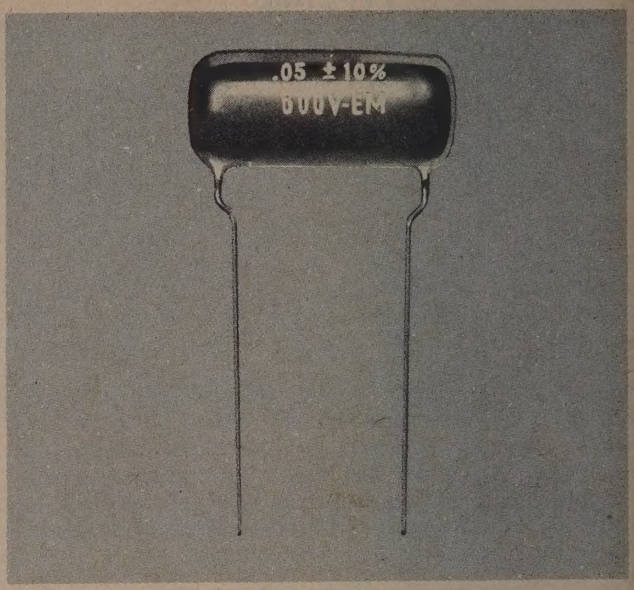
* Reg. DuPont Trademark

ELMENCO dipped mylar* and mylar-paper capacitors represent a double break-through in capacitor design. They combine missile and computer quality with commercial radio-TV cost. A recent development is the addition of precision dipped tubular capacitors in tolerances as low as ±1% in addition to the popular ±10% general purpose unit. The only difference between the general purpose "dp" series and the industrial precision capacitors lies in the extra stabilizing processes applied to close tolerance capacitors to insure retention of accuracy in the field under operating extremes. (See Elmenco-Arcolytic Industrial Catalog)

Elmenco Type DP capacitors are non-inductively wound and vacuum dipped to obtain solid impregnation and a rugged, moisture-proof coat. New fabricating techniques realize the full potential of the dielectric materials utilizing most of the low-cost procedures of the exclusive Elmenco dip-coat process. The result is a product of electrical excellence with high reliability in operation at 125°C. without derating. The specifications listed on this and following pages well-illustrate the inherent quality of these capacitors.

NOTE: The 100VDCW rated dp units are pure mylar* dielectric capacitors.





SPECIFICATIONS

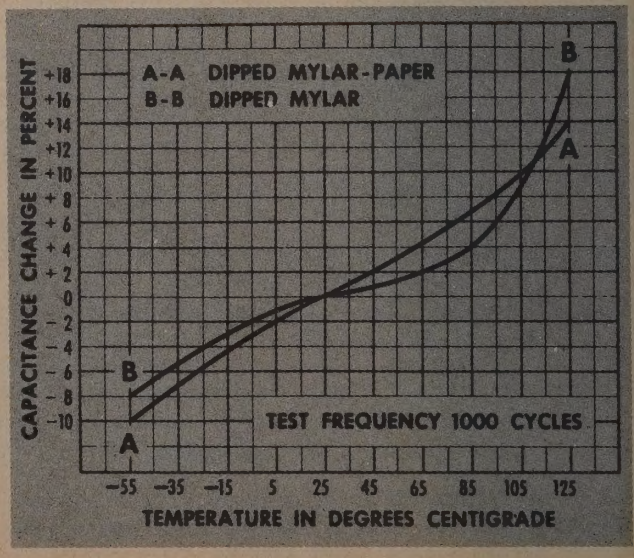
TOLERANCE:	±10%, ±5%, ±2%, ±1%.
VOLTAGE RATINGS:	Mylar-Paper—200, 400, 600, 1600VDCW (no derating) Mylar—100VDCW (derate 1% per °C. over 85°C.)
TEMPERATURE RANGE:	—55 to 125°C.

		MYLAR-PAPER		MYLAR	
INSULATION RESISTANCE:	Temperature	Megohm-Microfarads Whichever is the lesser	Or Megohms	Megohm-Microfarads Whichever is the lesser	Or Megohms
	25°C.	10,000	50,000	20,000	100,000
	85°C.	200	1,000	300	1,500
	105°C.	50	250	80	400
	125°C.	15	75	20	100

POWER FACTOR:	1% maximum at 1 kc.

CASE SIZE	1	2	3	4	5	6	7	8
DIM. "A" ±	¼	7/16	23/32	27/32	1 3/32	1 11/32	1 23/32	1 27/32

MAXIMUM CAPACITANCE CHANGE VS. TEMPERATURE.



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ELMENCO CAPACITORS — DIPPED TUBULARS

TYPE DP

GENERAL PURPOSE ±10%

MYLAR* and MYLAR-PAPER

Part Numbers:

6 DP - 2 - 103

- 6 — Voltage Rating (in 100's of volts DCW)
- DP — Type Designation
- 2 — Case Size
- 103 — Cap. Value (2 sig. figs. & dec. mult.)

100VDCW

CAP. MFD.	PART NUMBER	L	W	H	LIST PRICE	NET PRICE (1-24)
.005	1DP-1-502	11/16	5/16	17/32	$0.30	$0.18
.006	1DP-1-602	11/16	5/16	17/32	.30	.18
.0068	1DP-1-682	11/16	5/16	17/32	.30	.18
.0075	1DP-1-752	11/16	5/16	17/32	.30	.18
.01	1DP-1-103	11/16	5/16	17/32	.30	.18
.015	1DP-1-153	23/32	11/32	19/32	.30	.18
.02	1DP-1-203	23/32	11/32	19/32	.30	.18
.022	1DP-1-223	23/32	11/32	19/32	.30	.18
.025	1DP-1-253	23/32	11/32	19/32	.30	.18
.03	1DP-1-303	23/32	3/8	5/8	.30	.18
.033	1DP-1-333	23/32	3/8	5/8	.30	.18
.04	1DP-1-403	23/32	3/8	5/8	.30	.18
.047	1DP-2-473	7/8	11/32	19/32	.35	.21
.05	1DP-2-503	7/8	11/32	19/32	.35	.21
.056	1DP-2-563	7/8	3/8	5/8	.35	.21
.068	1DP-2-683	7/8	13/32	5/8	.35	.21
.075	1DP-2-753	7/8	13/32	5/8	.35	.21
.1	1DP-2-104	29/32	7/16	11/16	.35	.21
.15	1DP-3-154	1 1/4	7/16	11/16	.40	.24
.2	1DP-3-204	1 9/32	1/2	23/32	.45	.27
.22	1DP-3-224	1 9/32	1/2	23/32	.45	.27
.25	1DP-3-254	1 9/32	17/32	3/4	.50	.30
.33	1DP-4-334	1 3/8	9/16	13/16	.60	.36
.47	1DP-4-474	1 3/8	21/32	29/32	.75	.45
.5	1DP-4-504	1 3/8	21/32	29/32	.75	.45
.68	1DP-5-684	1 9/16	11/16	15/16	.95	.57
1.0	1DP-5-105	1 9/16	3/4	1	1.20	.72

200VDCW

CAP. MFD.	PART NUMBER	L	W	H	LIST PRICE	NET PRICE (1-24)
.1	2DP-3-104	1 15/64	1/2	47/64	$0.35	$0.21
.15	2DP-3-154	1 15/64	37/64	25/32	.40	.24
.2	2DP-4-204	1 21/64	37/64	27/32	.45	.27
.22	2DP-4-224	1 21/64	37/64	27/32	.45	.27
.25	2DP-4-254	1 21/64	5/8	7/8	.50	.30
.33	2DP-5-334	1 3/8	5/8	13/16	.60	.36
.47	2DP-5-474	1 3/8	49/64	61/64	.75	.45
.5	2DP-5-504	1 3/8	49/64	61/64	.75	.45

TYPES MD AND MPD

Precision Dipped Tubulars Capacitors

Available in 100, 200, 400 & 600 VDCW

TOLERANCES OF

±1%, ±2%, ±5%, ±10%

600VDCW

CAP. MFD.	PART NUMBER	L	W	H	LIST PRICE	NET PRICE (1-24)
.001	6DP-1-102	23/32	25/64	5/8	$0.25	$0.15
.0012	6DP-1-122	23/32	25/64	5/8	.25	.15
.0015	6DP-1-152	23/32	25/64	5/8	.25	.15
.002	6DP-1-202	23/32	25/64	5/8	.25	.15
.0022	6DP-1-222	23/32	25/64	5/8	.25	.15
.0025	6DP-1-252	23/32	25/64	5/8	.25	.15
.0027	6DP-1-272	23/32	25/64	5/8	.25	.15
.003	6DP-1-302	23/32	25/64	5/8	.25	.15
.0033	6DP-1-332	23/32	25/64	5/8	.25	.15
.0039	6DP-1-392	23/32	25/64	5/8	.25	.15
.004	6DP-1-402	23/32	27/64	41/64	.25	.15
.0047	6DP-1-472	23/32	27/64	41/64	.25	.15
.005	6DP-1-502	23/32	7/16	41/64	.25	.15
.0056	6DP-1-562	23/32	7/16	41/64	.25	.15
.006	6DP-1-602	23/32	3/8	5/8	.25	.15
.0068	6DP-1-682	23/32	29/64	11/16	.30	.18
.0075	6DP-2-752	57/64	7/16	43/64	.30	.18
.008	6DP-2-802	57/64	7/16	43/64	.30	.18
.0082	6DP-2-822	57/64	7/16	43/64	.30	.18
.01	6DP-2-103	57/64	7/16	43/64	.30	.18
.012	6DP-2-123	57/64	7/16	11/16	.30	.18
.015	6DP-2-153	57/64	29/64	45/64	.30	.18
.018	6DP-2-183	57/64	15/32	23/32	.30	.18
.02	6DP-2-203	57/64	1/2	3/4	.30	.18
.022	6DP-2-223	57/64	1/2	3/4	.30	.18
.025	6DP-2-253	57/64	33/64	47/64	.35	.21
.027	6DP-3-273	1 7/32	33/64	47/64	.35	.21
.03	6DP-3-303	1 7/32	33/64	47/64	.35	.21
.033	6DP-3-333	1 7/32	33/64	47/64	.35	.21
.036	6DP-3-363	1 7/32	17/32	49/64	.35	.21
.039	6DP-3-393	1 7/32	17/32	49/64	.35	.21
.04	6DP-3-403	1 7/32	17/32	49/64	.35	.21
.047	6DP-3-473	1 7/32	17/32	49/64	.40	.24
.05	6DP-3-503	1 7/32	35/64	49/64	.40	.24
.056	6DP-3-563	1 7/32	35/64	49/64	.40	.24
.06	6DP-3-603	1 7/32	35/64	49/64	.45	.27
.068	6DP-4-683	1 11/32	9/16	51/64	.45	.27
.075	6DP-4-753	1 11/32	39/64	27/32	.45	.27
.082	6DP-4-823	1 11/32	39/64	27/32	.45	.27
.1	6DP-4-104	1 11/32	11/16	29/32	.45	.27
.15	6DP-5-154	1 9/16	47/64	15/16	.60	.36
.2	6DP-5-204	1 9/16	55/64	1 1/32	.70	.42
.22	6DP-5-224	1 9/16	55/64	1 1/32	.70	.42
.25	6DP-5-254	1 9/16	57/64	17/64	.75	.45
.33	6DP-6-334	1 3/8	7/8	1 1/16	1.05	.63
.47	6DP-8-474	2 3/8	29/32	17/32	1.50	.90
.5	6DP-8-504	2 3/8	15/16	1 3/16	1.50	.90

1600VDCW

CAP. MFD.	PART NUMBER	L	W	H	LIST PRICE	NET PRICE (1-24)
.001	16DP-2-102	7/8	11/32	9/16	$0.40	$0.24
.0015	16DP-2-152	7/8	11/32	9/16	.40	.24
.0018	16DP-2-182	7/8	3/8	19/32	.40	.24
.002	16DP-2-202	7/8	3/8	19/32	.40	.24
.0022	16DP-2-222	7/8	3/8	19/32	.40	.24
.0025	16DP-2-252	7/8	13/32	5/8	.45	.27
.0027	16DP-2-272	7/8	7/16	5/8	.45	.27
.003	16DP-2-302	7/8	7/16	21/32	.45	.27
.0033	16DP-2-332	7/8	7/16	21/32	.45	.27
.004	16DP-2-402	7/8	15/32	23/32	.45	.27
.0047	16DP-2-472	7/8	1/2	23/32	.45	.27
.005	16DP-2-502	7/8	17/32	3/4	.45	.27
.006	16DP-3-602	1 3/16	7/16	21/32	.50	.30
.0068	16DP-3-682	1 3/16	15/32	11/16	.50	.30
.007	16DP-3-702	1 3/16	15/32	11/16	.50	.30
.0075	16DP-3-752	1 3/16	1/2	23/32	.50	.30
.008	16DP-3-802	1 3/16	17/32	3/4	.50	.30
.0082	16DP-3-822	1 3/16	17/32	3/4	.50	.30
.01	16DP-3-103	1 3/16	17/32	3/4	.50	.30
.015	16DP-4-153	1 11/32	9/16	27/32	.55	.33
.018	16DP-4-183	1 11/32	5/8	7/8	.60	.36
.02	16DP-4-203	1 11/32	21/32	7/8	.60	.36
.022	16DP-5-223	1 9/16	5/8	7/8	.70	.42
.025	16DP-5-253	1 9/16	21/32	7/8	.70	.42
.03	16DP-5-303	1 9/16	11/16	15/16	.70	.42
.033	16DP-5-333	1 9/16	23/32	15/16	.70	.42
.04	16DP-5-403	1 9/16	3/4	1	.75	.45
.047	16DP-5-473	1 9/16	13/16	1 1/16	.80	.48
.05	16DP-5-503	1 9/16	13/16	1 1/16	.80	.48

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ELMENCO CAPACITORS

VARIABLE COMPRESSION MICA

TRIMMERS

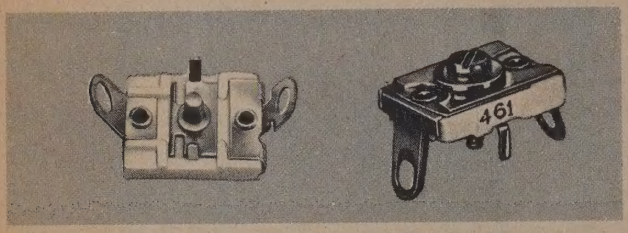
Elmenco trimming capacitors are treated for resistance to humidity and for permanence of capacity setting.

The base is made of the lowest dielectric loss ceramic material available and the mica is clear India Ruby.

The soldering lugs may be bent in any position without affecting capacity setting due to the rigid construction of adjusting plates.

Trimmers shown here are standard sizes and capacities.

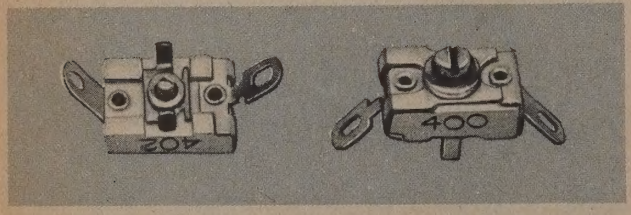
Voltage 350 VDCT — 175 VDCW.



TYPE 46 STANDARD TRIMMER ¾" x ⅝"

TYPE 46 — STANDARD TRIMMER

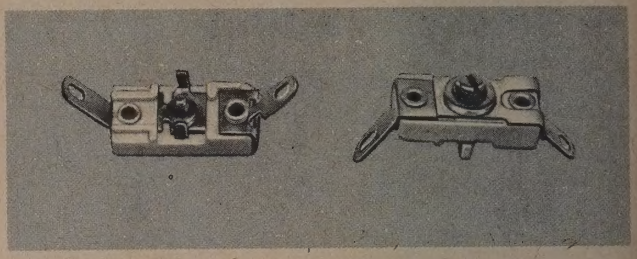
TYPE 46W		GUARANTEED RANGE			
PART NUMBER	NUMBER OF PLATES	At Tight Cap. Will Be More Than pF.	At 3 Turns Open Cap. Will Be Less Than pF.	LIST PRICE	NET PRICE (1-24)
460	1¼ Pl.	15	1.5	$0.60	$0.36
461	1¾ Pl.	40	2.7	.60	.36
462	2 Pl.	80	5	.60	.36
463	3 Pl.	180	10	.70	.42
464	4 Pl.	280	25	.80	.48
465	5 Pl.	380	50	.95	.57
466	6 Pl.	480	75	1.05	.63
467	7 Pl.	580	105	1.15	.69
468	8 Pl.	680	135	1.25	.75
469	9 Pl.	780	170	1.40	.84
4610	10 Pl.	900	210	1.55	.93
4611	11 Pl.	1000	250	1.70	1.02
4612	12 Pl.	1100	290	1.80	1.08
4613	13 Pl.	1200	330	1.95	1.17
4614	14 Pl.	1300	360	2.15	1.29
4615	15 Pl.	1400	390	2.35	1.41



TYPE 40 MINIATURE TRIMMER ⅜" x ⅜"

TYPE 40 — MINIATURE TRIMMER

TYPE 40		GUARANTEED RANGE			
PART NUMBER	NUMBER OF PLATES	At Tight Cap. Will Be More Than pF.	At 3 Turns Open Cap. Will Be Less Than pF.	LIST PRICE	NET PRICE (1-24)
400	1⅛ Pl.	7	0.9	$0.60	$0.36
402	2 Pl.	20	1.5	.60	.36
403	3 Pl.	40	4	.75	.45
404	4 Pl.	60	4	.85	.51
405	5 Pl.	80	10	1.00	.60
406	6 Pl.	115	15	1.10	.66

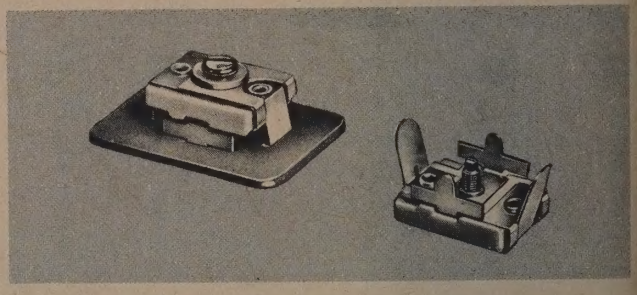


TYPE 42 MIDGET TRIMMER ⅜" x ¾"

TYPE 42 — MIDGET TRIMMER

TYPE 42		GUARANTEED RANGE			
PART NUMBER	NUMBER OF PLATES	At Tight Cap. Will Be More Than pF.	At 3 Turns Open Cap. Will Be Less Than pF.	LIST PRICE	NET PRICE (1-24)
420	1⅛ Pl.	12	1	$0.60	$0.36
421	1¾ Pl.	25	2	.60	.36
422	2 Pl.	40	4	.60	.36
423	3 Pl.	100	7	.70	.42
424	4 Pl.	150	16	.80	.48
425	5 Pl.	200	24	.95	.57
426	6 Pl.	250	37	1.05	.63
427	7 Pl.	300	55	1.15	.69
428	8 Pl.	350	70	1.25	.75
429	9 Pl.	400	90	1.35	.81
4210	10 Pl.	450	110	1.60	.96
4211	11 Pl.	500	130	1.70	1.02
4212	12 Pl.	550	150	1.85	1.11
4213	13 Pl.	600	170	2.00	1.20
4214	14 Pl.	650	190	2.20	1.32
4215	15 Pl.	700	210	2.45	1.53

TYPE PC — PRINTED CIRCUIT TRIMMERS



The Elmenco trimmer capacitors, Types 40, 42, and 46, have been adapted for printed circuit techniques through alteration of terminals and mounting configuration. The holes in the terminal lugs are removed since necessity for hook-up is eliminated. The resulting solid terminals have greatly increased spring action, allowing the trimmer to be "snapped in" the printed circuit board and firmly held until soldered. The mounting lug portion of the trimmer has also been modified to facilitate positioning and support of the unit. Drawings of the trimmers and mounting layout are available upon request at no charge.

This printed circuit style is identified by the prefix letters "PC" preceding the regular part number. All listed values are available in the PC style.

For list price add $0.05, for net price add $0.03, to the respective prices of the standard trimmer.

NET (For quantities of 25 or more, please contact your local Elmenco-Arcolytic distributor)

Trade Discount Applies To List Prices Only

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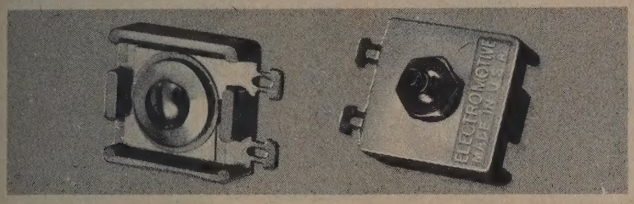
ELMENCO CAPACITORS

VARIABLE COMPRESSION MICA

PADDERS

Elmenco padders use phosphor bronze adjusting plates which assure permanent resilience and freedom from mechanical fatigue. All parts are heavily plated to resist corrosion.



TYPE 30 & TYPE 30M PADDERS, 7/8" x 15/16"

TYPE 30
500 Volts DC Flash-Test — 250 WVDC

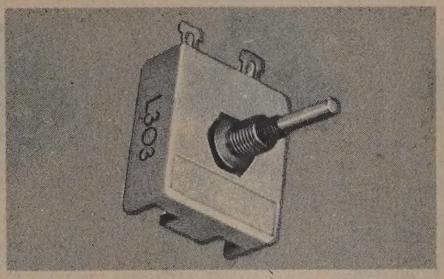
PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE: At 1¾ Inch Pounds Cap. Will Be More Than pF.	GUARANTEED RANGE: At 3 Turns Open Cap. Will Be Less Than pF.	LIST PRICE	NET PRICE (1-24)
302	2 Pl.	130	15	$1.15	$0.69
303	3 Pl.	340	65	1.25	.75
304	4 Pl.	550	115	1.35	.81
305	5 Pl.	760	190	1.45	.87
306	6 Pl.	970	275	1.55	.93
307	7 Pl.	1180	350	1.65	.99
308	8 Pl.	1390	450	1.75	1.05
309	9 Pl.	1600	550	1.90	1.14
310	10 Pl.	1890	650	2.00	1.20
311	11 Pl.	2110	780	2.15	1.29
312	12 Pl.	2330	880	2.25	1.35
313	13 Pl.	2605	1150	2.40	1.44
314	14 Pl.	2830	1300	2.55	1.53
315	15 Pl.	3055	1400	2.70	1.62

Screw is insulated from top plate by mica washer. Above maximum capacity values are based on using 1½ to 1¾ Mil Mica films.

TYPE 30-M
1000 Volts DC Flash-Test — 500 WVDC

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE: At 1¾ Inch Pounds Cap. Will Be More Than pF.	GUARANTEED RANGE: At 3 Turns Open Cap. Will Be Less Than pF.	LIST PRICE	NET PRICE (1-24)
302-M	2 Pl.	120	15	$1.20	$0.72
303-M	3 Pl.	320	65	1.30	.78
304-M	4 Pl.	500	100	1.40	.84
305-M	5 Pl.	690	180	1.50	.90
306-M	6 Pl.	880	265	1.70	1.02
307-M	7 Pl.	1070	340	1.75	1.05
308-M	8 Pl.	1260	425	1.90	1.14
309-M	9 Pl.	1415	525	2.10	1.26
310-M	10 Pl.	1600	615	2.20	1.32
311-M	11 Pl.	1785	730	2.35	1.41
312-M	12 Pl.	1970	800	2.45	1.47
313-M	13 Pl.	2155	1000	2.60	1.56
314-M	14 Pl.	2340	1100	2.75	1.65
315-M	15 Pl.	2525	1200	3.00	1.80

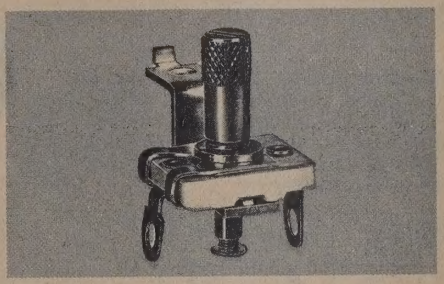
Screw is insulated from top plate by mica washer. Above maximum capacity values are based on using 2 to 2¼ Mil Mica.



TYPE L30

For List Price add $0.10, For Net Price add $0.06 to the respective prices of padder alone.

The Type 30 or Type 30M padder can now be obtained with a special adjusting screw which has been lengthened to accommodate a tuning knob. To obtain a padder with the special screw, precede the regular padder part number with the letter "L". For example, a 302 padder with the special screw would be specified as "L-302".



TYPE S46

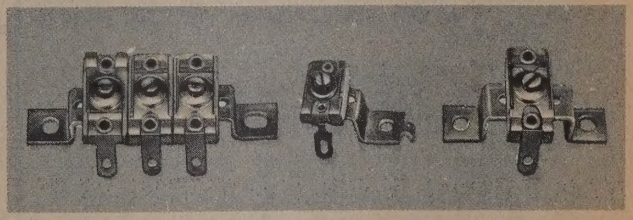
For List Price add $0.55, For Net Price add $0.33 to the respective prices of trimmer alone.

A complete Type 46 trimmer assembly with mounting bracket and adjusting shaft for ease of tuning can be supplied as pictured from stock or with construction variations to order.

To specify precede trimmer part number with the letter "S".

For example:

Type 460 trimmer will be ordered as S-460.



Mounting brackets as illustrated above can be supplied for all types of trimmers in flat "Z" (single mounting hole with or without non-rotational stop), and "U" (dual mounting hole) configurations.

	List Price	Net Price (1-24)
Bracket for mounting 1 Trimmer	$0.15	$0.09
Bracket for mounting 2 Trimmers	.18	.11
Bracket for mounting 3 Trimmers	.21	.13
Bracket for mounting 4 Trimmers	.24	.14
Bracket for mounting 5 Trimmers	.27	.16
Bracket for mounting 6 Trimmers	.30	.18

NET (For quantities of 25 or more, please contact your local Elmenco-Arcolytic distributor)

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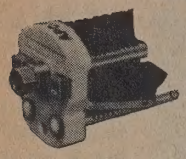
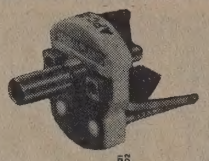
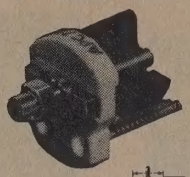
THE HAMMARLUND MANUFACTURING COMPANY INCORPORATED

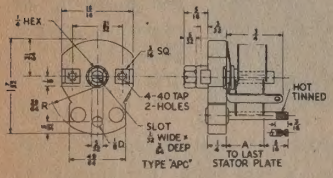
A Subsidiary of Electronic Assistance Corporation

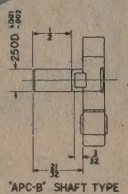
88 STANDARD TYPES OF VARIABLE AIR CAPACITORS

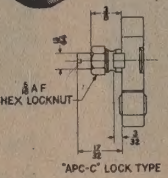












APC capacitors are available in three basic groups. The original APC group is furnished with a hex collar on a slotted shaft as indicated in the drawing. The APC-"B" group is furnished with ¼" diameter shafts to permit adjustment of the capacitance with a front panel knob. The APC-"C" group is supplied with slotted shafts for variation of the capacitance and a 5/16" hex locknut to prevent movement of the rotor in equipment subjected to high levels of vibration or shock.

APC

Capacitor Type	Net Price	Capacitor Type	Net Price
APC-25	$ 1.25	APC-100-B	$ 1.80
APC-50	1.35	APC-140-B	2.00
APC-75	1.45	APC-25-C	1.95
APC-100	1.60	APC-50-C	2.10
APC-140	1.80	APC-75-C	2.20
APC-25-B	1.35	APC-100-C	2.35
APC-50-B	1.45	APC-140-C	2.60
APC-75-B	1.55		

TYPE	CAPACITANCE		PLATES	DIMENSION "A"
	Max.	Min.		
APC-25	25.	3.0	7	21/64
APC-50	50.	3.9	14	1/2
APC-75	75.	4.6	20	11/16
APC-100	100.	5.5	27	59/64
APC-140	140.	6.7	37	1-7/32

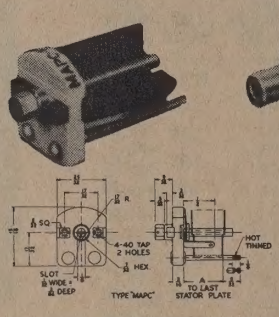
Note: When ordering the APC-"B" or "C" type, add the suffix -B or -C to the above listed type number.

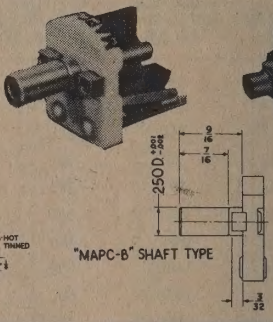
MAPC

FEATURES—The MAPC series is similar to the APC series of capacitors in that identical materials and assembly methods are employed. The silicone treated steatite bases and all brass nickel plated metal parts with exception of the phosphor bronze rotor wiper assure the same type of reliable performance that the APC series provides.

TYPE	CAPACITANCE		PLATES	DIMENSION "A"
	Max.	Min.		
MAPC-15	15	2.3	6	17/64
MAPC-25	25	2.6	10	3/8
MAPC-35	35	2.9	14	15/32
MAPC-50	50	3.2	19	37/64
MAPC-75	75	3.9	29	53/64
MAPC-100	100	4.5	38	1-5/64

Note: When ordering the MAPC-"B" or "C" type, add the suffix -B or -C to the type numbers listed above.



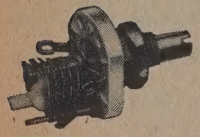


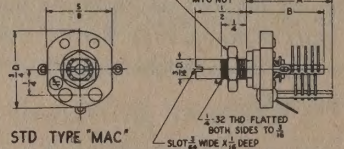
Capacitor Type	Net Price	Capacitor Type	Net Price	Capacitor Type	Net Price
MAPC-15	$ 1.10	MAPC-15-B	$ 1.10	MAPC-15-C	$ 1.45
MAPC-25	1.15	MAPC-25-B	1.15	MAPC-25-C	1.50
MAPC-35	1.20	MAPC-35-B	1.20	MAPC-35-C	1.55
MAPC-50	1.25	MAPC-50-B	1.25	MAPC-50-C	1.65
MAPC-75	1.35	MAPC-75-B	1.35	MAPC-75-C	1.70
MAPC-100	1.45	MAPC-100-B	1.45	MAPC-100-C	1.85

MAC

The MAC capacitors provide the low minimum capacitance and inductance essential for trimming and tuning resonant circuits in the VHF and UHF range. The materials employed and the constructional methods are the same as those used in the manufacture of the APC and MAPC series of capacitors.

TYPE	CAPACITANCE		PLATES	DIMENSIONS	
	Max.	Min.		"A"	"B"
MAC-5	5.4	1.3	5	45/64	39/64
MAC-10	9.6	1.5	9	13/16	23/32
MAC-15	15.8	1.9	15	1	29/32
MAC-20	21.5	2.2	21	1-11/64	1-5/64
MAC-30	32.0	2.5	27	1-17/65	1-11/64



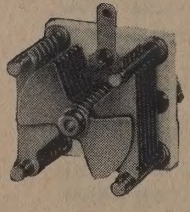


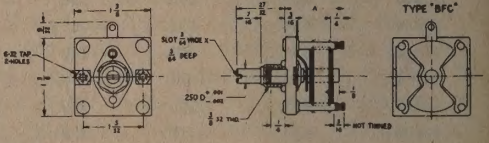
Cap. Type	Net Price	Cap. Type	Net Price
MAC-5	$ .90	MAC-20	$ 1.10
MAC-10	.95	MAC-30	1.20
MAC-15	1.00		

BFC

The BFC capacitors are of the butterfly type permitting operation as a series capacitor without a rotor connection or as a split stator capacitor with provision for grounding the rotor independently from the capacitor mounting studs, which are insulated from the rotor in the silicone treated steatite base.

CODE	CAPACITY/SECTION		SERIES CAPACITY		PLATES		DIMENSION "A"
	Max.	Min.	Max.	Min.	Rotor	Ea. Stator	
BFC-12	14.5	3.4	7.6	2.2	4	3	29/32
BFC-25	27.3	4.8	14.1	2.9	7	6	1-13/64
BFC-38	40.1	6.2	20.6	3.6	10	9	1-1/2



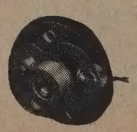


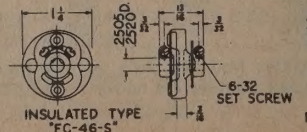
Cap Type	Net Price	Cap Type	Net Price
BFC-12	$ 2.55	BFC-38	$ 3.75
BFC-25	3.00		

FC-FNC

The FC-46-S is an insulated flexible coupling to prov mechanical ganging of angularly misaligned shafts. T FNC-46-S is non-insulated.

FC-46-S — $1.65; FNC-46-S — $1.30.





Net

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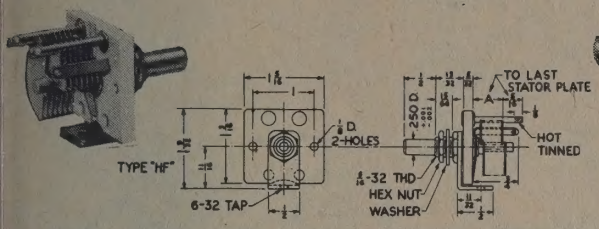
A Subsidiary of Electronic Assistance Corporation

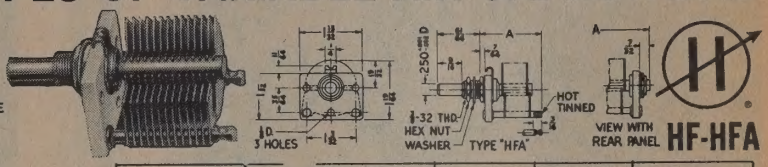
88 STANDARD TYPES OF VARIABLE AIR CAPACITORS



CODE	CAPACITY		PLATES/SECTION	DIMENSION "A"
	Max.	Min.		
HF-15	17.5	2.8	5	17/64
HF-35	36.	3.2	10	25/64
HF-50	52.	3.7	14	1/2
HF-100	102.	5.3	27	59/64
HF-140	142.	6.3	37	1-7/32
HF-15-X	15.	3.6	10	23/32
HF-30-X	30.	5.2	20	1-5/16

The HF is a single section capacitor employing the APC rotor and stator design. An extra long sleeve bearing and positive contact nickel-plated phosphor bronze wiper make this unit ideally suited to high frequency applications.

The HFA capacitors are similar to the HF series except that larger rotor and stator plates are used.



HF-HFA

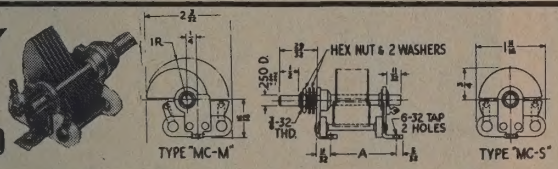
CODE	CAPACITY		AIR GAP	PLATES/ SECTION	DIMENSION "A"
	Max.	Min.			
HFA-100-A	102	4.5	0.020	19	1-13/32
HFA-140-A	145	6.0	0.020	27	1-23/32
HFA-200-A	200	8.0	0.020	38	2-7/32
HFA-15-B	16	2.8	0.030	5	7/8
HFA-25-B	25	3.0	0.030	7	31/32
HFA-50-B	50	4.3	0.030	14	1-3/8
HFA-100-B*	100	7.5	0.030	27	2-21/64
HFA-15-E	16	4.0	0.070	9	1-3/8

60 cycle peak test voltage
HFA-A, 1130 V. B, 1690 V. E, 1750 V.

*Has Front and Rear Supporting Panels.

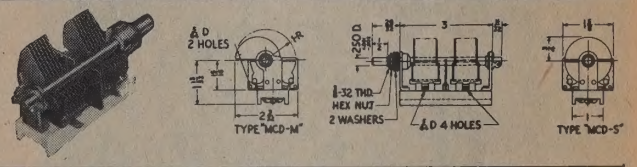
Cap. Type	Net Price	Cap. Type	Net Price
HF-15	$ 1.45	HFA-100-A	$ 2.95
HF-35	1.55	HFA-140-A	3.25
HF-50	1.75	HFA-200-A	4.00
HF-100	2.00	HFA-15-B	2.20
HF-140	2.15	HFA-25-B	2.30
HF-15-X	1.40	HFA-50-B	2.50
HF-30-X	1.85	HFA-100-B	4.35
		HFA-15-E	2.60

MC-MCD



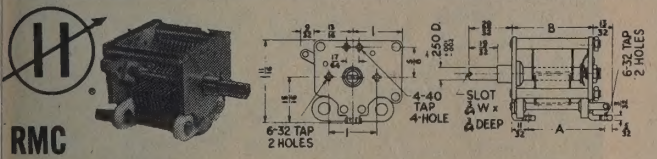
The MC is a versatile single section tuning capacitor designed to give the equipment engineer a choice of mountings, connections and capacity characteristics. The threaded brass front bearing and tapped aluminum end brackets permit panel or base mounting.

Capacitor Type	Net Price	Capacitor Type	Net Price	Capacitor Type	Net Price
MC-20-S	$ 2.75	MC-140-S	$ 3.50	MC-50-SX	$ 3.40
MC-35-S	2.85	MC-200-M	3.90	MC-100-SX	4.35
MC-50-M	2.95	MC-250-M	4.25	MCD-50-M	8.25
MC-50-S	2.95	MC-325-M	4.75	MCD-100-M	8.90
MC-75-M	3.10	MC-20-SX	2.95	MCD-100-S	8.75
MC-75-S	3.10	MC-35-MX	3.15	MCD-140-M	9.50
MC-100-M	3.25	MC-35-SX	3.15	MCD-35-MX	9.10
MC-100-S	3.25	MC-50-MX	3.40	MCD-35-SX	8.75
MC-140-M	3.50				



TYPE	CAPACITY		PLATES/SECTION	DIMENSION "A"
	Max.	Min.		
MC-20-S	20.	5.5	3	1-7/32
MC-35-S	35.	6.0	5	1-7/32
MC-50-M	50.	6.3	7	1-7/32
MC-50-S	50.	6.5	7	1-7/32
MC-75-M	80.	7.3	11	1-7/32
MC-75-S	80.	8.0	11	1-7/32
MC-100-M	100.	7.7	14	1-13/32
MC-100-S	100.	8.3	14	1-13/32
MC-140-M	140.	9.0	19	1-19/32
MC-140-S	140.	10.0	19	1-19/32
MC-200-M	200.	10.3	27	2
MC-250-M	250.	12.0	34	2-5/16
MC-325-M	320.	13.5	43	2-23/32
MC-20-SX	20.	6.8	7	1-13/32
MC-35-MX	32.	7.8	11	1-19/32
MC-35-SX	32.	8.5	11	1-19/32
MC-50-MX	53.	10.5	19	2-5/16
MC-50-SX	53.	11.5	19	2-5/16
MC-100-SX	100.	16.5	35	3-29/32
MCD-50-M	50.	5.5	7	Single Hole panel mtg. Length back of panel 3-11/32
MCD-100-M	100.	6.3	14	
MCD-100-S	100.	7.0	14	
MCD-140-M	140.	7.8	19	
MCD-35-MX	31.	6.0	11	
MCD-35-SX	31.	6.8	11	

RMC

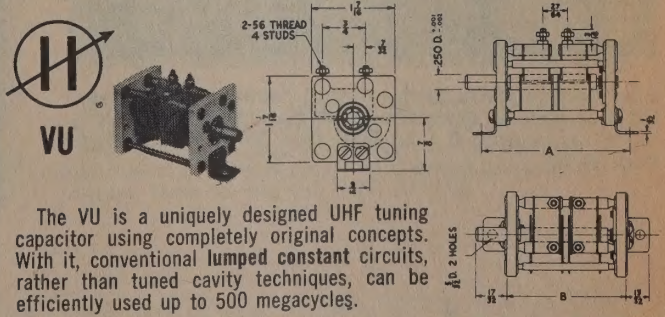


The RMC was designed specifically for applications requiring an MC type tuning capacitor with very rigid construction. Its sturdy frame consists of heavy gauge aluminum end panels held together by three aluminum tie rods.

Cap. Type	Net Price	Cap. Type	Net Price
RMC-50-S	$ 5.50	RMC-140-S	$ 6.65
RMC-100-S	5.85	RMC-325-S	7.85

CODE	CAPACITY		PLATES	DIMENSIONS	
	Max.	Min.		"A"	"B"
RMC-50-S	50.	7.3	7	1-7/32	1-5/16
RMC-100-S	105.	9.5	14	1-13/32	1-1/2
RMC-140-S	143.5	11.0	19	1-19/32	1-11/16
RMC-325-S	327.	17.5	43	2-23/32	2-13/16

VU



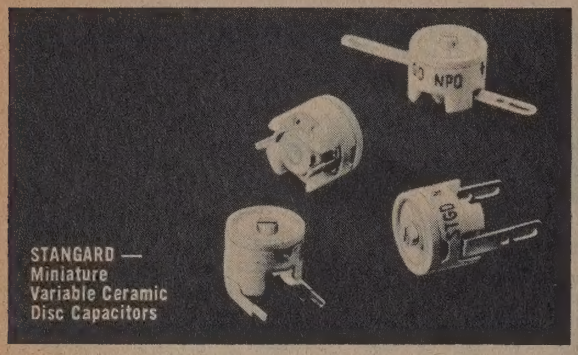
The VU is a uniquely designed UHF tuning capacitor using completely original concepts. With it, conventional **lumped constant** circuits, rather than tuned cavity techniques, can be efficiently used up to 500 megacycles.

Cap. Type	Net Price	Cap. Type	Net Price
VU-20	$ 8.20	VU-45	$ 9.15
VU-30	8.80		

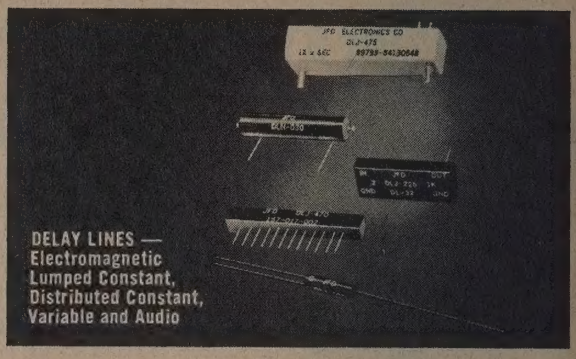
CODE	SERIES CAPACITY		PLATES/ SECTION	DIMENSIONS	
	Eff.	Min.		"A"	"B"
VU-20	22.5	3.35	11	2-9/32	1-25/32
VU-30	31.5	3.5	15	2-9/16	2-1/16
VU-45	45.0	3.8	21	2-31/32	2-15/32

JFD

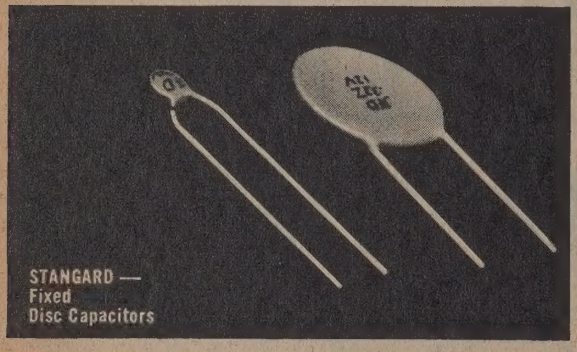
JFD ELECTRONICS CO./COMPONENTS DIVISION



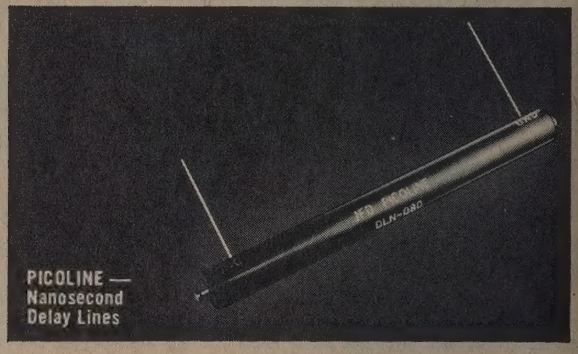
Low-cost for commercial and industrial applications. 9 △ Cs are available from 2.0 to 60.0 pf in 4 versatile configurations. DV11 Series meets or exceeds applicable MIL-C-81A. Write for catalogs STD-DV/67-A and DVJ-300/66.



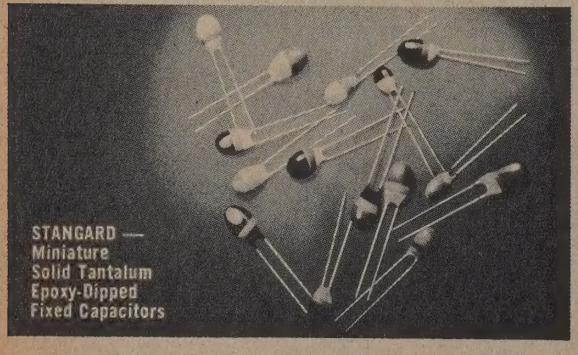
Top quality, rugged, precision components of proven dependability. High delay to rise time ratios. Mounting methods for a wide variety of circuit applications. Write for catalog DL-68.



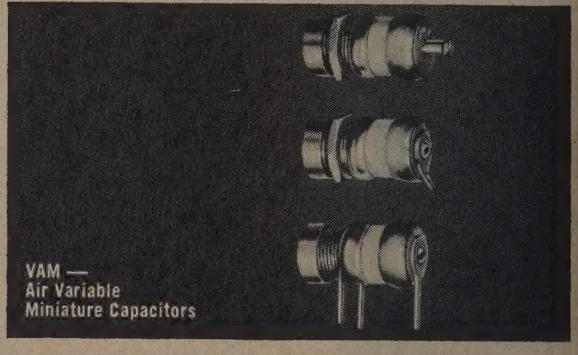
Low-cost for transistor and general commercial circuitry. High K. Available in voltage ratings from 3 volts and higher. Write for catalog STD-FD/67-A.



Ideal for nanosecond delay in high pulse circuitry. Rise time is less than one nanosecond. TC less than 20 PPM/°C. Operating temperature range —55°C to +125°C. Impedance 50 Ω. Write for catalog PL-67.



Low-cost for instrument, control, communication systems as well as general commercial circuitry. Capacitance range from 0.1 to 50.0 mfd. Write for catalog STD-TR/67.



Specially designed for high frequency applications that demand extreme stability, small size and high Q capacitance. Range measured at 1 MHz is 0.8 through 10.0 pf, Q measured at 10 pf and 100 MHz is greater than 2,000. Write for catalog VAM-67-B.

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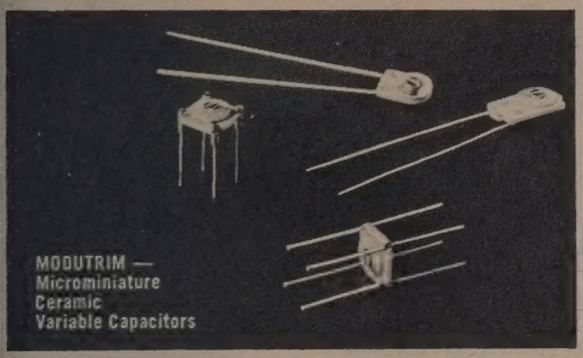
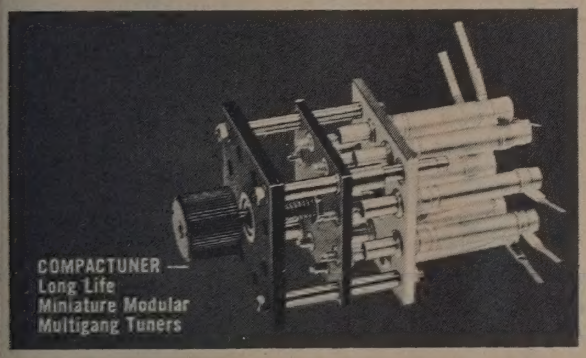
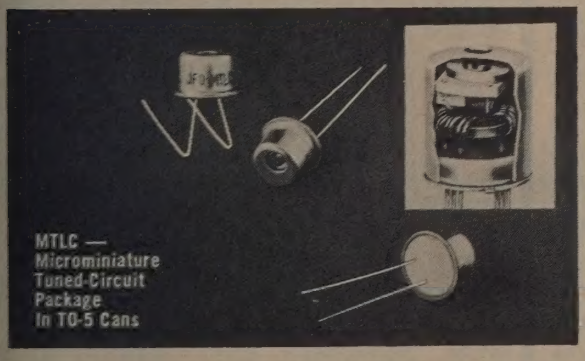


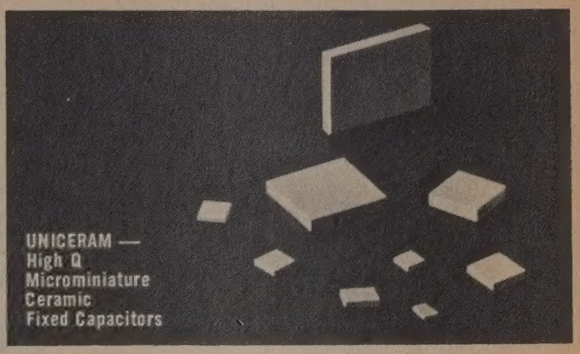
Offer micromodule and hybrid circuit designers a choice of wide △ Cs in extremely small and stable units. Capacitance ranges from 1.1 to 60.0 pf. Meet or exceed applicable MIL-C-81. Write for catalogs MT-67-A and MT-500-68.



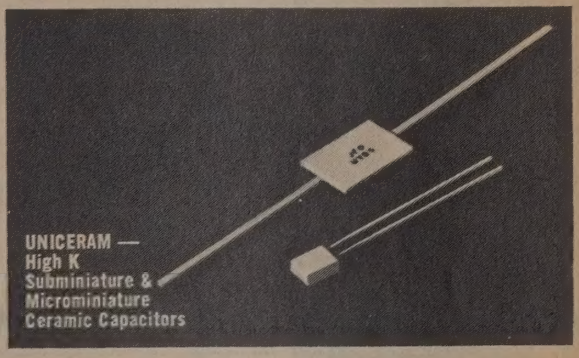
4 and 8 gang models for SLC and SLF tuning. Each provides stability and accuracy of tuning in a smaller sized package, unobtainable before Compactuner! Write for catalog LLCT-68.



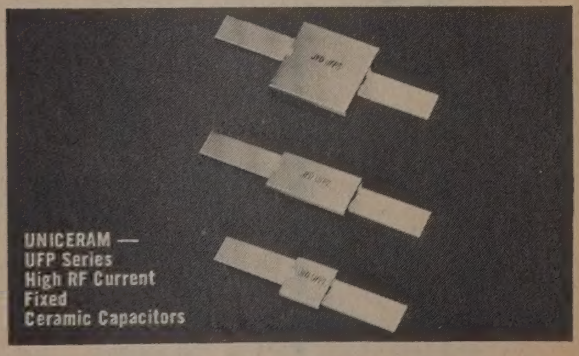
Complete LC tuned circuits within TO-5 cans. Standard frequency ranges from 2 to 300 MHz. Various other complex networks such as discriminators, phase detectors are also available on special order. Write for catalog MTLC-67-A.



Offer a high ratio of capacitance per unit volume. They combine exceptional stability and a guaranteed minimum Q in a smaller size package than competitive units. Over 1,000 glass encapsulated models with capacitance values from 0.5 to 3,000 pf. Write for catalog UNM-H/Q-67-A.



Multi-layer 'chips' and glass encapsulated leaded units are available in 5 square and 12 rectangular configurations. Ideal for hybrid integrated circuits. Capacitance range is 10 pf to 1.5 mfd. Meet or exceed applicable MIL-C-11015C. Write for catalog UNM-H/K-67.



The smallest high RF power capacitors available! Typical UFP1 rating is 12 KVAR at +25°C. Recommended 'space-savers' for use in military communications, mobile, commercial broadcast and amateur radio transmitters. Write for catalog UNM-UFP-68.

JFD JFD ELECTRONICS CO./COMPONENTS DIVISION

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JFD

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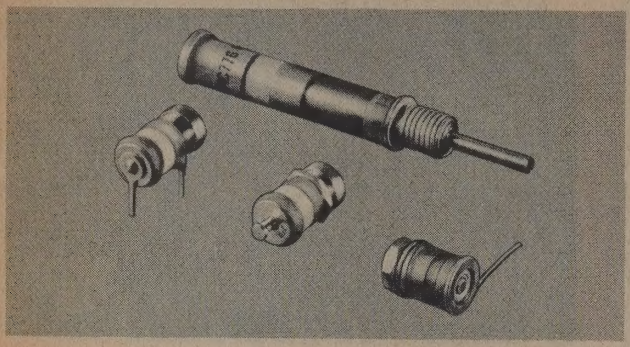


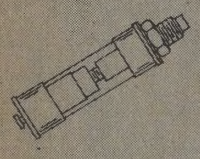
PISTON TRIMMER

JFD has available the largest selection of Precision Piston Trimmers in the industry—more than 2,500 standard and special designs that meet or exceed MIL-C-14409B.

JFD's unique capacitor-design-capability offers an unmatched number of exclusive features—Seven drive mechanisms incorporating advanced construction . . . Matched metalizing / homogeneous bond with dielectric . . . High level shock and vibration resistance . . . Clean room high reliability units available.

Write for complete catalog #C-67-A "Precision Piston Trimmer and Tuning Capacitors."

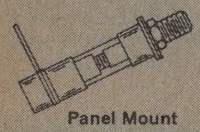
Max-C High Range Miniature Telescopic Sealed Capacitor Series



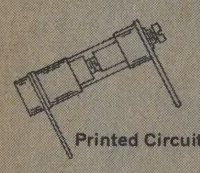
(Dia. 5/16 in.)

PANEL MOUNT					PRINTED CIRCUIT				
JFD No.	Mil. Spec.	Cap. (pf) Min.	Cap. (pf) Max.	Body Length	JFD No.	Mil. Spec.	Cap. (pf) Min.	Cap. (pf) Max.	Body Length
GLASS				±1/32 in.	**GLASS**				±1/32 in.
NMC601	PC39J160	1.0	16.0	15/32	NMC621	PC43J160	1.0	16.0	.750
NMC603	PC39J360	1.0	36.0	45/64	NMC623	PC43J360	1.0	36.0	.990
NMC604	PC39J520	1.0	52.0	59/64	NMC624	PC43J520	1.0	52.0	1.205
NMC606	PC39J750	1.0	75.0	1 11/64	NMC626	PC43J750	1.0	75.0	1.450
NMC609	PC39J121	1.0	120.0	1 49/64	NMC629	PC43J121	1.0	120.0	2.050
MC601Y	PC39J140	1.0	14.0	15/32	MC621Y	PC43J140	1.0	14.0	.750
MC603Y	PC39J280	1.0	28.0	45/64	MC621	PC43J140	1.0	14.0	.700
MC604Y	PC39J420	1.0	42.0	59/64	MC623Y	PC43J280	1.0	28.0	.990
MC606Y	PC39J600	1.0	60.0	1 11/64	MC623	PC43J280	1.0	28.0	.940
MC609Y	PC39J900	1.0	90.0	1 49/64	MC624Y	PC43J420	1.0	42.0	1.205
MC601	PC39J140	1.0	14.0	15/32	MC624	PC43J420	1.0	42.0	1.155
MC603	PC39J280	1.0	28.0	45/64	MC626Y	PC43J600	1.0	60.0	1.450
MC604	PC39J420	1.0	42.0	59/64	MC626	PC43J600	1.0	60.0	1.400
MC606	PC39J600	1.0	60.0	1 11/64	MC629Y	PC43J900	1.0	90.0	2.050
MC609	PC39J900	1.0	90.0	1 49/64	MC629	PC43J900	1.0	90.0	2.000

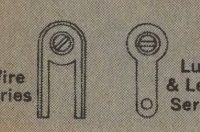
Miniature Telescopic Capacitor Series*



Panel Mount



Printed Circuit



Wire Series — Lug & Lead Series

(Dia. ¼ in.)

GLASS				+3/64–1/32	**GLASS**				±1/32 in.
NVC20G	PC50J110	0.8	11.0	35/64	NVC9GW	PC51J110	0.8	11.0	9/16
NVC21G	PC50J5R5	0.8	5.5	19/64	NVC10GW	PC51J5R5	0.8	5.5	5/16
NVC22G	PC50H160	0.8	16.0	3/4	NVC31GW	PC51H160	0.8	16.0	49/64
NVC23G	PC50H230	0.8	23.0	63/64	NVC32GW	PC51H230	0.8	23.0	1
NVC24G	PC50H380	1.0	38.0	1 19/32	NVC43GW	PC51H380	1.0	38.0	1 39/64
VC20GY	PC40J8R5	0.8	8.5	35/64	VC9GWY	PC41J8R5	0.8	8.5	9/16
VC21GY	PC40J4R5	0.8	4.5	19/64	VC10GWY	PC41J4R5	0.8	4.5	5/16
VC22GY	PC40H120	0.8	12.0	3/4	VC31GWY	PC41H120	0.8	12.0	49/64
VC23GY	PC40H180	0.8	18.0	63/64	VC32GWY	PC41H180	0.8	18.0	1
VC24GY	PC40H300	1.0	30.0	1 19/32	VC43GWY	PC41H300	1.0	30.0	1 39/64
VC20G	PC40J8R5	0.8	8.5	35/64	VC9GW	PC41J8R5	0.8	8.5	5/16
VC21G	PC40J4R5	0.8	4.5	19/64	VC10GW	PC41J4R5	0.8	4.5	9/16
VC22G	PC40H120	0.8	12.0	3/4	VC31GW	PC41H120	0.8	12.0	49/64
VC23G	PC40H180	0.8	18.0	63/64	VC32GW	PC41H180	0.8	18.0	1
VC24G	PC40H300	1.0	30.0	1 19/32	VC43GW	PC41H300	1.0	30.0	1 39/64
QUARTZ				+3/64–1/32	**QUARTZ**				±1/32 in.
NMQ101	PC40Q1R8	0.6	1.8	19/64	NMQ121	PC41Q1R8	0.6	1.8	5/16
NMQ103	PC40Q5R5	0.6	5.5	35/64	NMQ123	PC41Q5R5	0.6	5.5	9/16
NMQ106	PC40Q9R5	0.6	9.5	63/64	NMQ126	PC41Q9R5	0.6	9.5	1
NMQ109	PC40Q160	0.8	16.0	1 19/32	NMQ129	PC41Q160	0.8	16.0	1 19/32
MQ101	PC40Q1R8	0.6	1.8	19/64	MQ121	PC41Q1R8	0.6	1.8	5/16
MQ103	PC40Q5R5	0.6	5.5	35/64	MQ123	PC41Q5R5	0.6	5.5	9/16
MQ106	PC40Q9R5	0.6	9.5	63/64	MQ126	PC41Q9R5	0.6	9.5	1
MQ109	PC40Q160	0.8	16.0	1 19/32	MQ129	PC41Q160	0.8	16.0	1 39/64

TYPICAL SPECIFICATIONS	GLASS	QUARTZ
JFD No./Prefix 'N'	Green Glass dielectric & Hi-Life mechanism	Hi-Life mechanism only
JFD No./Suffix 'Y'	Hi-Life mechanism only	
WVDC	750	750
Dielectric Strength VDC	1,500	1,500
"Q" Minimum at 20 MC	500 min.	1,500 min.
Temperature Coefficient PPM/°C	±50 (−55 to +125°C)	+25 ±25 (−55 to +150°C)
Insulation Resistance megohms	10^6	10^6
Turning Torque inch ounces	1-10	1-10

Body length indicated on Panel Mount only is exclusive of mounting bushing. 'N' and 'Y' Series mounting bushing dimension: 9/32 in. All other ¼ in. ¼ in.
*Miniature Telescopic Capacitor Series available sealed.

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The RADIO-ELECTRONIC **MASTER**
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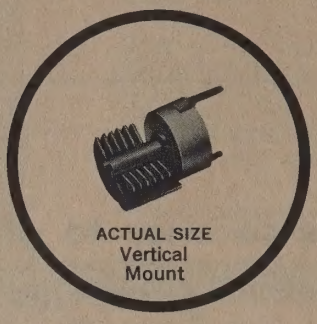
E. F. JOHNSON COMPANY

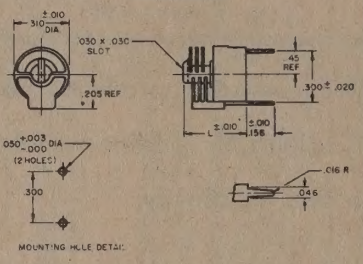
Sub miniature trimmer capacitors

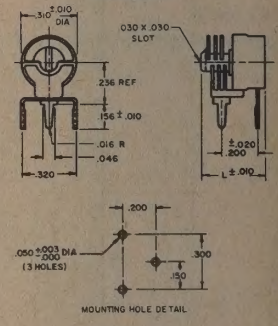
Type "T" air variable capacitors

Now—smaller versions of our widely used machined plate "U" capacitors. Printed circuit mounting—vertical or horizontal style. Mounting dimensions of vertical type are identical to those of ⅜" dia. PC type ceramic trimmers. Designed to meet or exceed EIA-RS 204 and MIL STD. 202C Methods 204A and 201A. Metal parts are silver plated and Iridited.

Plates are precision machined from brass extrusions and offer exceptional uniformity, stability, and absolute freedom from moisture entrapment. Stable electrically—temperature coefficient plus 30± 15 ppm/°C. Excellent retrace characteristics. High Q—greater than 1500 @ 1MHz. Ceramic is 95% Alumina grade L-624 or better. Can be supplied with tuning slot on both ends of rotor. High temperature versions available as specials.





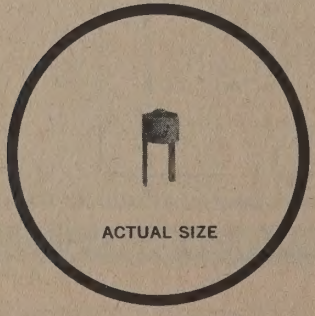


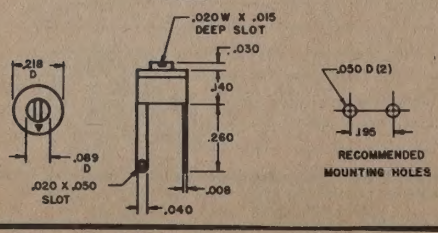
Specifications

Vertical Mounting Cat. No.	Horizontal Mounting Cat. No.	Nominal Capacity pF. Min.	Nominal Capacity pF. Max.	Total Plates	Air Gap (in.)	Minimum DC Voltage Breakdown	Length (inch)	Vertical Net Price	Horizontal Net Price
187-0103-005	187-0103-105	1.3	5.4	6	.008	250	.36"	$0.66	$0.70
187-0106-005	187-0106-105	1.7	11.0	12	.008	250	.47"	.70	.74
187-0109-005	187-0109-105	1.9	15.7	12	.008	250	.58"	.78	.78

Also available as specials with minimum of 4 plates to maximum of 20 plates.

Ceramic disc trimmer capacitors





This new micro-miniature ceramic disc trimmer exhibits extreme stability and long life due to encapsulation of the titinate rotor plate. The stator is of HIGH ALUMINA for lower loss and higher strength under extreme environmental conditions. Smooth, linear tuning is realized by precision lapping of bearing surfaces. Designed to meet or exceed applicable portions of MIL-C-81. Operating range is —55° to 125°C. Working Voltage 100 VDC up to 85°C, 50 VDC up to 125°C.

Catalog Number	Nominal Capacity (pF.) Min.	Nominal Capacity (pF.) Max.	Minimum DC Voltage Breakdown	Net Price
274-0003-001	1.0	3.0	200	$4.95
274-0009-001	2.5	9.0	200	4.95
274-0020-001	3.5	20.0	200	4.95
274-0025-001	5.0	25.0	200	4.95

Net

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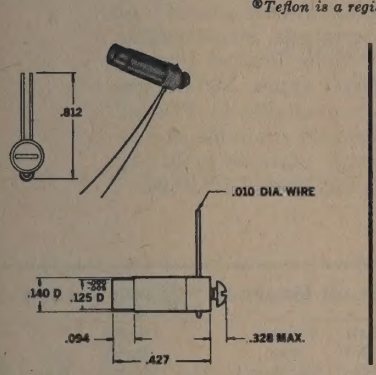
E. F. JOHNSON COMPANY

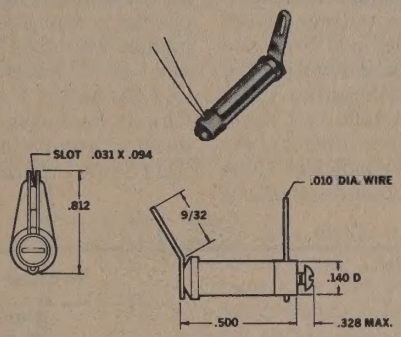
Miniature Teflon® dielectric trimmer capacitors

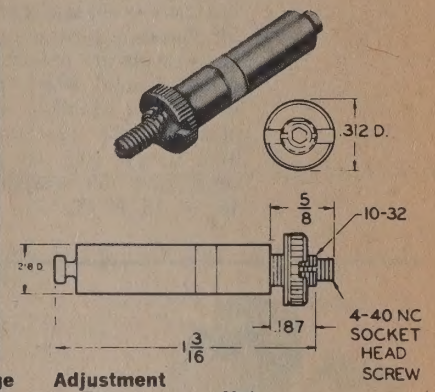
These new trimming capacitors are ideally suited for VHF and UHF applications requiring low minimum capacity and delta C. They provide high resolution and electrical stability. Tuning is linear. Q is high (2000 at 1 MHz typically). Insulation resistance 10^6 megohms. Temperature range $-55°$ to $+150°C$. High resistance to shock and vibration.

Metal parts are gold plated on PC and solder lug types, silver plated on panel mount version. Insulation is Teflon®.

®Teflon is a registered trade name of DuPont Co.



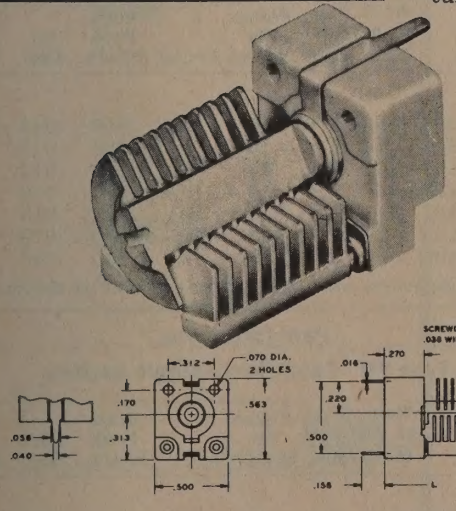




Cat. No.	Mounting	Nom. pf. Max.	Cap. Per Sec. Min.	Torque Oz. In.	Voltage Breakdown	Adjustment Turns Per Inch	Net Price
273-0001-001	PC	1.5	.25	.2-3.0	2,000	80	$0.60
273-0001-002	Solder Lug	1.5	.25	.2-3.0	2,000	80	.70
273-0015-001	Panel	2.9	.30	.2-10.0	2,000	40	1.00

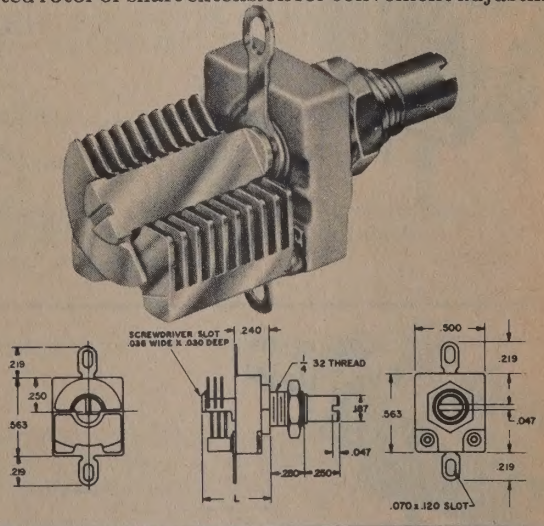
Type "V" capacitors

These air variables provide high capacity in small space. Printed circuit and panel mount types mount in less than 0.3 sq. in. area. Rotors and stators precision machined from one piece of solid brass for high reliability and outstanding mechanical stability. High "Q" (greater than 1500 at 1 MC) . . . high torque (2½ to 10 ounce inches) . . . low temperature coefficient (plus 50 ± 20 PPM/°C) . . . exceptionally uniform delta C and voltage characteristics. Metal parts silver-plated. Ceramic is steatite Grade L-423 or better. Voltage breakdown rating 650 VDC. Freedom from moisture entrapment. Slotted rotor or shaft extension for convenient adjustment.



Cat. No.	Nom. Cap. pf. per Sec. Max.	Min.	Plates Per Section	L ± 1/32"	Volts Peak Bkdwn.	Air Gap	Net Price
SINGLE SECTION—Printed Circuit Types							
193-0004-005	13	1.4	8	37/64"	650	.010"	$0.80
193-0006-005	20	1.7	12	1 1/16"	650	.010"	.85
193-0008-005	27	2.0	16	25/32"	650	.010"	.90
193-0010-005	34	2.2	20	57/64"	650	.010"	.95

Capacitors with .016" air gap available as specials.



Cat. No.	Nom. Cap. pf. per Sec. Max.	Min.	Plates Per Section	L ± 1/32"	Volts Peak Bkdwn.	Air Gap	Net Price
SINGLE SECTION—Panel Mount Type							
193-0004-001	13	1.4	8	35/64"	650	.010"	1.10
193-0006-001	20	1.7	12	21/32"	650	.010"	1.15
193-0008-001	27	2.0	16	3/4"	650	.010"	1.20
193-0010-001	34	2.2	20	55/64"	650	.010"	1.25

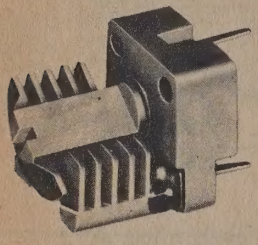
Capacitors with .016" air gap available as specials.

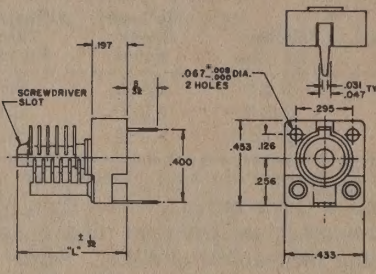
E. F. JOHNSON COMPANY

Miniature air variable capacitors

Type "U" capacitors

Sub-miniature Type "U" air variable capacitors cut costs, improve performance, and save valuable space in compact electronic equipment. Available in single section, differential and butterfly types, they occupy minimum mounting area. Single section type requires less than 0.2 square-inch and differential and butterfly types less than 0.23 square-inch area for chassis or printed board mounting. Rotors and stators are precision machined from one piece of solid brass, providing outstanding mechanical stability and uniformity. Units offer high "Q" (greater than 1500 at 1 mc.), high torque (2½ to 10 ounce inches), exceptionally low temperature coefficient (plus 45 ± 15 PPM/°C), and absolute freedom from moisture entrapment. All metal parts silver-plated—ceramic is steatite, Grade L-423 or better. Exceptionally uniform delta C and voltage characteristics . . . breakdown ratings available to 1100 volts DC. No special tools required for installation—slotted end accommodates large screwdriver for quick adjustment. Choice of wide, double-pierced or printed circuit style terminals. Single-section models available in 2-Hole; Printed Circuit; and #10-32 Panel Mount types. Differential and Butterfly models available in Printed Circuit mounting. Specials available in production quantities with features including front shaft extensions and special platings.

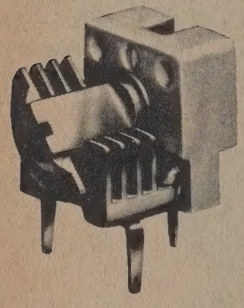


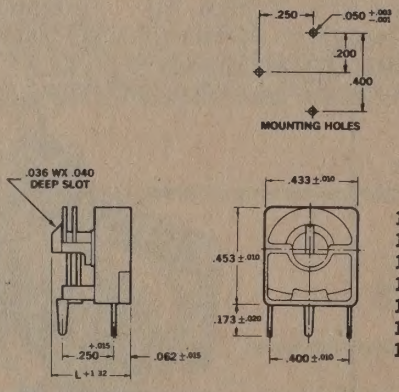


Printed Circuit Mounting —Single Section

Cat. No.	Nom. Cap. pf. per Sec. Max.	Min.	Plates Per Section	L ± 1/32"	Volts Peak Bkdwn.	Air Gap	Net Price
189-0501-005	4.2	1.2	4	27/64"	650	.010	$0.58
189-0502-005	6.7	1.3	6	15/32"	650	.010	.60
189-0503-005	9.2	1.4	8	33/64"	650	.010	.58
189-0504-005	11.6	1.5	10	9/16"	650	.010	.60
189-0505-005	14.1	1.7	12	39/64"	650	.010	.62
189-0506-005	16.7	1.8	14	43/64"	650	.010	.64
189-0507-005	19.3	2.0	16	23/32"	500	.010	.66
189-0508-005	21.9	2.2	18	49/64"	500	.010	.68
189-0509-005	24.5	2.4	20	13/16"	500	.010	.70

Capacitors with .016" air gap available as specials. Two-hole mounting type "U" with press-in acetal fastener for chassis mounting also available.

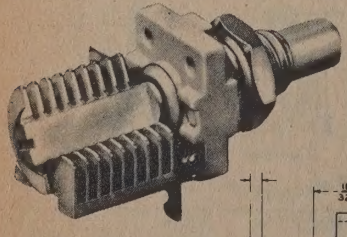


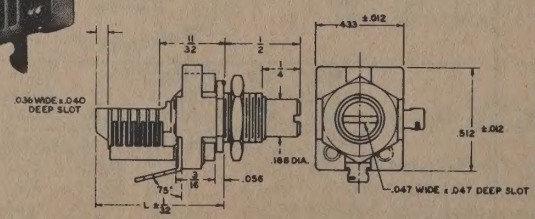


Horizontal Mounting Printed Circuit Type—Single Section

Cat. No.	Nom. Cap. pf. per Sec. Max.	Min.	Plates Per Section	L ± 1/32"	Volts Peak Brkdn.	Air Gap	Net Price
189-0503-105	9.2	1.4	8	31/64	650	.010	$0.72
189-0504-105	11.6	1.5	10	17/32	650	.010	.74
189-0505-105	14.1	1.7	12	37/64	650	.010	.76
189-0506-105	16.7	1.8	14	41/64	650	.010	.78
189-0507-105	19.3	2.0	16	11/16	500	.010	.80
189-0508-105	21.9	2.2	18	47/64	500	.010	.82
189-0509-105	24.5	2.4	20	25/32	500	.010	.84

Capacitors with .016" air gap available as specials.





Panel Mounting Type "U" Capacitors—Single Section

Cat. No.	Nom. Cap. pf. per Sec. Max.	Min.	Plates Per Section	L ± 1/32"	Volts Peak Brkdn.	Air Gap	Net Price
189-0563-001	9.2	1.4	8	9/16	650	.010	$0.88
189-0564-001	11.6	1.5	10	5/8	650	.010	.90
189-0565-001	14.1	1.7	12	43/64	650	.010	.92
189-0566-001	16.7	1.8	14	23/32	650	.010	.94
189-0567-001	19.3	2.0	16	49/64	500	.010	.96
189-0568-001	21.9	2.2	18	13/16	500	.010	.98
189-0569-001	24.5	2.4	20	7/8	500	.010	1.00

Capacitors with .016" air gap available as specials. Differential type "U" with PC mounting also available.

Net

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NYTRONICS, INC.
CAPACITOR DIVISION

Capacitors

Tantalum Capacitors

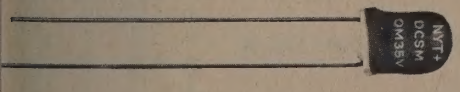
Miniaturized electrolytic tantalum capacitors offer long life, close tolerances, stability and sealed construction in a space saving size. Most units are made to rigid standards and will operate over a wide range of temperatures and environmental conditions. The wide variety of voltages, capacitance and physical configurations offer exceptional design versatility.

TYPE MCS (MIL TYPE CS12 and CS13) Miniature solid electrolyte hermetically sealed capacitor. This unit is a rugged, reliable, yet low cost unit for all but the most critical applications. Available in capacitance range: .0047 to 330 uf. Also available in non-polar construction.

TYPE CSR13 An established reliability capacitor manufactured to exacting military standards. Meets or exceeds the requirements of MIL-C-39003A. Capacitance range: .0047 to 330 uf.

TYPE TAK AND TAK-H (MIL TYPE CL64 and CL65) A sintered anode liquid electrolyte miniature capacitor, designed to operate over a wide temperature range and under extreme environmental conditions. Capacitance range: .4 to 560 uf.

TYPE MTAK Subminiature version of the TAK series offering the many advantages of the TAK units but in a much smaller configuration. Capacitance range: .5 to 325 uf.



TYPE DCS Designed for printed circuit applications. Available in capacitance range of .1 to 330 uf. This capacitor is epoxy sealed on a ceramic base combining dimensional integrity, quality and low cost.

TYPE ACS Solid electrolyte in metal can with epoxy end fill. Available in standard MCS can sizes and in subminiature cans. Axial or radial leads.

NYTRONICS, INC.
CAPACITOR DIVISION

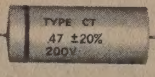
Capacitors

Film and Paper Dielectric Capacitors

Nytronics' broad experience in film and paper dielectrics is represented in a line of standard units for the aerospace, computer, instrumentation and consumer markets. The extensive Nytronics facilities are also available for production of custom components for use in these markets. A wide range of configurations and types is available to meet the most stringent requirements.

PSF SERIES — POLYSTYRENE AND FOIL Hermetically sealed in metal cases, these units are designed for applications requiring high insulation resistance, low dissipation factor, and minimal dielectric absorption. They are applicable for designs requiring high capacitor stability. Available in standard tolerance of ± 1% to ± 20%. They can be provided to special close tolerance requirements of ± 0.1%, as well as matching sets for application in digital computers, precision timing circuits, and laboratory standards.

RPM SERIES — METALIZED POLYCARBONATE Available in tubular cases with glass-to-metal – seal terminals, the RPM Series provides high insulation resistance, exceptional stability and a minimal change in capacitance with temperature. Its self-healing properties, in th remote event of a dielectric breakdown, provide an extremely reliable unit. It also offers a low dissipation factor for AC applications.



MAF SERIES — MYLAR AND FOIL Designed for applications requiring a flat capacitance change with temperature from +15 to +65°C the MAF series provides exceptional electrical properties in the temperatur range of −55°C to +125°C. The dissipation factor at room temperature i less than 0.6%. The extended foil design provides for positive electrical contact between leads and electrodes irrespective of the operating voltag

MAM SERIES — METALIZED MYLAR The MAM series offers a reduction in size over the MAF series. It's self-healing property, in the remote event of a dielectric breakdown, makes this hermetic unit suitable for the most stringent applications. Special capacitance tolerance of ± 1% can be provided on a special order basis.

AFS SERIES — KRAFT AND FOIL Hermetically sealed with compression type glass-to-metal solder-seal terminals the AFS series is approved to MIL-C-25. Designed for operation from −55°C to +125°C this series is intended for use in military and industrial electronics.

Various packaging configurations are available for the series shown above:

- wrap and fill
- plastic
- standard glasseals and other custom hermetic enclosures

Other dielectric series are available such as Teflon, Metalized Paper, Combination Films and/or Film Kraft.

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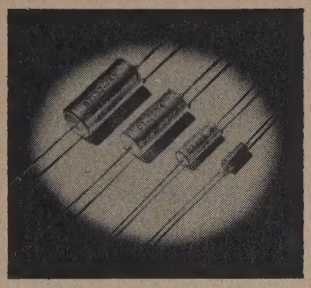
NYTRONICS, INC.
CAPACITOR DIVISION

Capacitors

stablished Reliability olid Electrolyte antalum Capacitors ype CSR13 to MIL-C-39003A



- Hermetically Sealed
- Insulated Metal Case
- Axial Leads
- –55°C to +125°C
- 6 to 50 Volts
- Four Case Configurations

TYPE DESIGNATION

CSR13	B	565	L	L*
STYLE	DC RATED & SURGE VOLTAGES	CAPACITANCE	CAPACITANCE TOLERANCE	FAILURE RATE LEVEL

SYMBOL	RATED	SURGE
B	6	8
C	10	13
D	15	20
E	20	26
F	35	46
G	50	65
H	75	98
J	100	130

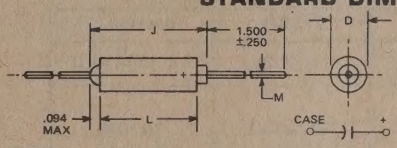
CAPACITANCE: NOMINAL CAPACITANCE IN PICOFARADS. FIRST TWO DIGITS ARE SIGNIFICANT FIGURES. LAST DIGIT SPECIFIES NUMBER OF ZEROS TO FOLLOW.
EXAMPLE: 565 = 5,600,000 pF OR 5.6 µF

CAPACITANCE TOLERANCE: K = ±10%, M = ±20%

FAILURE RATE LEVEL: ESTABLISHED AT 60% CONFIDENCE LEVEL, IN % PER 1000 HOURS. L = .2%, M = 1%, P = .1%, R = .01%, S = .001%

*COMPLETE TYPE NUMBER INCLUDES A FOUR-DIGIT SUFFIX FOLLOWING THE FAILURE-RATE DESIGNATION. SEE STANDARD RATING TABLES BELOW.

STANDARD DIMENSIONS



Case size	Dimensions L ±.031	D +.016 −.015	M ±.002	J Max
A	.286	.135	.020	.422
B	.474	.185	.020	.610
C	.686	.289	.025	.822
D	.786	.351	.025	.922

NOTES:
1. Dimensions are in inches.
2. These capacitors are not intended to be mounted by their leads.
3. The case insulation shall extend .015 inch (.38 mm) minimum beyond each end. However, when a shrink-fitted insulation is used, it shall lap over the ends of the capacitor body.
4. Example of marking:

83125	+	Source Code (Federal Supply Code)+
67139-JAN		Date (2 Digits) & Lot No. (3 Digits)
M39003/	+	Part of Part No. (Polarity)+
01-2001		Balance of Part No.
5.6 µF 6VDC 10%		Capacitance, Voltage, Tolerance

When size of can does not provide sufficient space for complete marking shown above, the following alternate markings are used:

83125+		J+
67139-J	OR	M390
M39003/		03/01
01-2001		2001

5. Case: Type – Tubular, insulated. Material – Metal. Type of seal – Hermetic.
6. Leads: Nickel, Tin-lead coated.
7. DC rated voltage: Above 85°C voltage derating is required, as follows:

AT 125°C	
SYMBOL	RATED	SURGE
B	4	5
C	7	9
D	10	12
E	13	16
F	23	28
G	33	40
H	50	64
J	67	81

TANDARD RATINGS

Type signation 1/	DC rated voltage	Capacitance 2/	Capacitance tolerance	DC leakage at +25°C	DC leakage at +85°C	DC leakage at +125°C	Dissipation factor at −55°C +25°C	Dissipation factor at +85°C +125°C	Case size	Dash number failure rate level (%/1,000 hours) 3/ L	M	P	R	S
	volts	µF	percent	µA	µA	µA	percent	percent		2.0	1.0	0.1	0.01	0.001
CR138565K-	6	5.6	10	.5	6	7.5	4	4	A	2001	2241	2481	2721	2961
8685K-	6	6.8	10	.5	6	7.5	6	6	A	2002	2242	2482	2722	2962
8685M-	6	6.8	20	.5	6	7.5	6	6	A	2003	2243	2483	2723	2963
8476K-	6	47.0	10	3.0	24	30.0	6	6	B	2004	2244	2484	2724	2964
8476M-	6	47.0	20	3.0	24	30.0	6	6	B	2005	2245	2485	2725	2965
8566K-	6	56.0	10	3.0	24	30.0	6	6	B	2006	2246	2486	2726	2966
8157K-	6	150.0	10	9.0	90	113.0	8	8	C	2007	2247	2487	2727	2967
8157M-	6	150.0	20	9.0	90	113.0	8	8	C	2008	2248	2488	2728	2968
8187K-	6	180.0	10	11.0	110	138.0	8	8	C	2009	2249	2489	2729	2969
8277K-	6	270.0	10	13.0	130	163.0	8	8	D	2010	2250	2490	2730	2970
8337K-	6	330.0	10	15.0	150	188.0	8	8	D	2011	2251	2491	2731	2971
8337M-	6	330.0	20	15.0	150	188.0	8	8	D	2012	2252	2492	2732	2972
C395K-	10	3.9	10	.6	6	7.5	4	4	A	2013	2253	2493	2733	2973
C475K-	10	4.7	10	.7	7	8.8	4	4	A	2014	2254	2494	2734	2974
C475M-	10	4.7	20	.7	7	8.8	4	4	A	2015	2255	2495	2735	2975
C276K-	10	27.0	10	4.0	40	50.0	6	6	B	2016	2256	2496	2736	2976
C336K-	10	33.0	10	5.0	50	63.0	6	6	B	2017	2257	2497	2737	2977
C336M-	10	33.0	20	5.0	50	63.0	6	6	B	2018	2258	2498	2738	2978
C396K-	10	39.0	10	5.0	50	63.0	6	6	B	2019	2259	2499	2739	2979
C826K-	10	82.0	10	8.0	80	100.0	6	6	C	2020	2260	2500	2740	2980
C107K-	10	100.0	10	10.0	100	125.0	8	8	C	2021	2261	2501	2741	2981
C107M-	10	100.0	20	10.0	100	125.0	8	8	C	2022	2262	2502	2742	2982
C127K-	10	120.0	10	12.0	120	150.0	8	8	C	2023	2263	2503	2743	2983
C187K-	10	180.0	10	18.0	180	226.0	8	8	D	2024	2264	2504	2744	2984
C227K-	10	220.0	10	20.0	200	250.0	8	8	D	2025	2265	2505	2745	2985
C227M-	10	220.0	20	20.0	200	250.0	8	8	D	2026	2266	2506	2746	2986
D275K-	15	2.7	10	.6	6	7.5	4	4	A	2027	2267	2507	2747	2987
D335K-	15	3.3	10	.8	8	10.0	4	4	A	2028	2268	2508	2748	2988
D335M-	15	3.3	20	.8	8	10.0	4	4	A	2029	2269	2509	2749	2989
D186K-	15	18.0	10	3.5	35	44.0	6	6	B	2030	2270	2510	2750	2990
D226K-	15	22.0	10	4.0	40	50.0	6	6	B	2031	2271	2511	2751	2991
D226M-	15	22.0	20	4.0	40	50.0	6	6	B	2032	2272	2512	2752	2992
D566K-	15	56.0	10	8.0	80	100.0	6	6	C	2033	2273	2513	2753	2993
D686K-	15	68.0	10	10.0	100	125.0	6	6	C	2034	2274	2514	2754	2994
D686M-	15	68.0	20	10.0	100	125.0	6	6	C	2035	2275	2515	2755	2995
D127K-	15	120.0	10	18.0	180	226.0	8	8	D	2036	2276	2516	2756	2996
D157K-	15	150.0	10	20.0	200	250.0	8	8	D	2037	2277	2517	2757	2997
D157M-	15	150.0	20	20.0	200	250.0	8	8	D	2038	2278	2518	2758	2998
E125K-	20	1.2	10	.6	6	7.5	4	4	A	2039	2279	2519	2759	2999
E155K-	20	1.5	10	.6	6	7.5	4	4	A	2040	2280	2520	2760	3000
E156M-	20	1.5	20	.6	6	7.5	4	4	A	2041	2281	2521	2761	3001
E185K-	20	1.8	10	.6	6	7.5	4	4	A	2042	2282	2522	2762	3002
E225K-	20	2.2	10	.8	8	10.0	4	4	A	2043	2283	2523	2763	3003
E225M-	20	2.2	20	.8	8	10.0	4	4	A	2044	2284	2524	2764	3004
E825K-	20	8.2	10	2.0	8	25.0	6	6	B	2045	2285	2525	2765	3005
E106K-	20	10.0	10	3.0	30	38.0	6	6	B	2046	2286	2526	2766	3006
E106M-	20	10.0	20	3.0	30	38.0	6	6	B	2047	2287	2527	2767	3007
E126K-	20	12.0	10	3.5	35	44.0	6	6	B	2048	2288	2528	2768	3008
E156K-	20	15.0	10	4.0	40	50.0	6	6	B	2049	2289	2529	2769	3009
E156M-	20	15.0	20	4.0	40	50.0	6	6	B	2050	2290	2530	2770	3010
E276K-	20	27.0	10	5.0	50	63.0	6	6	C	2051	2291	2531	2771	3011
E336K-	20	33.0	10	7.0	70	88.0	6	6	C	2052	2292	2532	2772	3012
E336M-	20	33.0	20	7.0	70	88.0	6	6	C	2053	2293	2533	2773	3013
E396K-	20	39.0	10	8.0	80	100.0	6	6	C	2054	2294	2534	2774	3014
E476K-	20	47.0	10	9.0	90	113.0	6	6	C	2055	2295	2535	2775	3015
E476M-	20	47.0	20	9.0	90	113.0	6	6	C	2056	2296	2536	2776	3016
E566K-	20	56.0	10	11.0	110	138.0	6	6	D	2057	2297	2537	2777	3017
E686K-	20	68.0	10	14.0	140	175.0	6	6	D	2058	2298	2538	2778	3018
E686M-	20	68.0	20	14.0	140	175.0	6	6	D	2059	2299	2539	2779	3019
E826K-	20	82.0	10	16.0	160	200.0	6	6	D	2060	2300	2540	2780	3020
E107K-	20	100.0	10	20.0	200	250.0	8	8	D	2061	2301	2541	2781	3021
E107M-	20	100.0	20	20.0	200	250.0	8	8	D	2062	2302	2542	2782	3022
F565K-	35	5.6	10	2.5	25	32.0	4	4	B	2063	2303	2543	2783	3023
F685K-	35	6.8	10	3.0	30	38.0	6	6	B	2064	2304	2544	2784	3024
F685M-	35	6.8	20	3.0	30	38.0	6	6	B	2065	2305	2545	2785	3025
F226K-	35	22.0	10	8.0	80	100.0	6	6	C	2066	2306	2546	2786	3026
F226M-	35	22.0	20	8.0	80	100.0	6	6	C	2067	2307	2547	2787	3027
F276K-	35	27.0	10	9.0	90	113.0	6	6	D	2068	2308	2548	2788	3028
F336K-	35	33.0	10	11.0	110	138.0	6	6	D	2069	2309	2549	2789	3029
F336M-	35	33.0	20	11.0	110	138.0	6	6	D	2070	2310	2550	2790	3030
CSR13F396K-	35	39.0	10	14.0	140	175.0	6	6	D	2071	2311	2551	2791	3031
F476K-	35	47.0	10	16.0	160	200.0	6	6	D	2072	2312	2552	2792	3032
G476M-	35	47.0	20	16.0	160	200.0	6	6	D	2073	2313	2553	2793	3033
G472K-	50	.0047	10	.5	5	6.3	2	4	A	2074	2314	2554	2794	3034
G472M-	50	.0047	20	.5	5	6.3	2	4	A	2075	2315	2555	2795	3035
G562K-	50	.0056	10	.5	5	6.3	2	4	A	2076	2316	2556	2796	3036
G682K-	50	.0068	10	.5	5	6.3	2	4	A	2077	2317	2557	2797	3037
G682M-	50	.0068	20	.5	5	6.3	2	4	A	2078	2318	2558	2798	3038
G822K-	50	.0082	10	.5	5	6.3	2	4	A	2079	2319	2559	2799	3039
G103K-	50	.01	10	.5	5	6.3	2	4	A	2080	2320	2560	2800	3040
G103M-	50	.01	20	.5	5	6.3	2	4	A	2081	2321	2561	2801	3041
G123K-	50	.012	10	.5	5	6.3	2	4	A	2082	2322	2562	2802	3042
G153K-	50	.015	10	.5	5	6.3	2	4	A	2083	2323	2563	2803	3043
G153M-	50	.015	20	.5	5	6.3	2	4	A	2084	2324	2564	2804	3044
G183K-	50	.018	10	.5	5	6.3	2	4	A	2085	2325	2565	2805	3045
G223K-	50	.022	10	.5	5	6.3	2	4	A	2086	2326	2566	2806	3046
G223M-	50	.022	20	.5	5	6.3	2	4	A	2087	2327	2567	2807	3047
G273K-	50	.027	10	.5	5	6.3	2	4	A	2088	2328	2568	2808	3048
G333K-	50	.033	10	.5	5	6.3	2	4	A	2089	2329	2569	2809	3049
G333M-	50	.033	20	.5	5	6.3	2	4	A	2090	2330	2570	2810	3050
G393K-	50	.039	10	.5	5	6.3	2	4	A	2091	2331	2571	2811	3051
G473K-	50	.047	10	.5	5	6.3	2	4	A	2092	2332	2572	2812	3052
G473M-	50	.047	20	.5	5	6.3	2	4	A	2093	2333	2573	2813	3053
G563K-	50	.056	10	.5	5	6.3	2	4	A	2094	2334	2574	2814	3054
G683K-	50	.068	10	.5	5	6.3	2	4	A	2095	2335	2575	2815	3055
G683M-	50	.068	20	.5	5	6.3	2	4	A	2096	2336	2576	2816	3056
G823K-	50	.082	10	.5	5	6.3	2	4	A	2097	2337	2577	2817	3057
G104K-	50	.1	10	.5	5	6.3	2	4	A	2098	2338	2578	2818	3058
G104M-	50	.1	20	.5	5	6.3	2	4	A	2099	2339	2579	2819	3059
G124K-	50	.12	10	.5	5	6.3	2	4	A	2100	2340	2580	2820	3060
G154K-	50	.15	10	.5	5	6.3	2	4	A	2101	2341	2581	2821	3061
G154M-	50	.15	20	.5	5	6.3	2	4	A	2102	2342	2582	2822	3062
G184K-	50	.18	10	.5	5	6.3	2	4	A	2103	2343	2583	2823	3063
G224K-	50	.22	10	.5	5	6.3	2	4	A	2104	2344	2584	2824	3064
G224M-	50	.22	20	.5	5	6.3	2	4	A	2105	2345	2585	2825	3065
G274K-	50	.27	10	.5	5	6.3	2	4	A	2106	2346	2586	2826	3066
G334K-	50	.33	10	.5	5	6.3	2	4	A	2107	2347	2587	2827	3067
G334M-	50	.33	20	.5	5	6.3	2	4	A	2108	2348	2588	2828	3068
G394K-	50	.39	10	.5	5	6.3	2	4	A	2109	2349	2589	2829	3069
G474K-	50	.47	10	.5	5	6.3	2	4	A	2110	2350	2590	2830	3070
G474M-	50	.47	20	.5	5	6.3	2	4	A	2111	2351	2591	2831	3071
G564K-	50	.56	10	.5	5	6.3	2	4	A	2112	2352	2592	2832	3072
G684K-	50	.68	10	.5	5	6.3	2	4	A	2113	2353	2593	2833	3073
G684M-	50	.68	20	.5	5	6.3	2	4	A	2114	2354	2594	2834	3074
G824K-	50	.82	10	.5	5	6.3	2	4	A	2115	2355	2595	2835	3075
G105K-	50	1.0	10	.8	8	10.0	2	4	A	2116	2356	2596	2836	3076
G105M-	50	1.0	20	.8	8	11.0	2	4	A	2117	2357	2597	2837	3077
G125K-	50	1.2	10	.9	9	11.0	4	4	A	2118	2358	2598	2838	3078
G155K-	50	1.5	10	1.2	12	15.0	4	4	B	2119	2359	2599	2839	3079
G155M-	50	1.5	20	1.2	12	15.0	4	4	B	2120	2360	2600	2840	3080
G185K-	50	1.8	10	1.4	14	18.0	4	4	B	2121	2361	2601	2841	3081
G225K-	50	2.2	10	1.7	17	22.0	4	4	B	2122	2362	2602	2842	3082
G225M-	50	2.2	20	1.7	17	22.0	4	4	B	2123	2363	2603	2843	3083
G275K-	50	2.7	10	2.0	20	25.0	4	4	B	2124	2364	2604	2844	3084
G335K-	50	3.3	10	2.5	25	32.0	4	4	B	2125	2365	2605	2845	3085
G335M-	50	3.3	20	2.5	25	32.0	4	4	B	2126	2366	2606	2846	3086
G395K-	50	3.9	10	3.0	30	38.0	4	4	B	2127	2367	2607	2847	3087
G475K-	50	4.7	10	3.5	35	44.0	4	4	B	2128	2368	2608	2848	3088
G475M-	50	4.7	20	3.5	35	44.0	4	4	B	2129	2369	2609	2849	3089
G565K-	50	5.6	10	4.5	45	56.0	4	4	C	2130	2370	2610	2850	3090
G685K-	50	6.8	10	4.5	45	56.0	6	6	C	2131	2371	2611	2851	3091
G685M-	50	6.8	20	4.5	45	56.0	6	6	C	2132	2372	2612	2852	3092
G825K-	50	8.2	10	5.0	50	63.0	6	6	C	2133	2373	2613	2853	3093
G106K-	50	10.0	10	5.0	50	63.0	6	6	C	2134	2374	2614	2854	3094
G106M-	50	10.0	20	5.0	50	63.0	6	6	C	2135	2375	2615	2855	3095
G126K-	50	12.0	10	8.0	60	75.0	6	6	C	2136	2376	2616	2856	3096
G156K-	50	15.0	10	8.0	80	100.0	6	6	C	2137	2377	2617	2857	3097
G156M-	50	15.0	20	8.0	80	100.0	6	6	C	2138	2378	2618	2858	3098
G186K-	50	18.0	10	9.0	90	113.0	6	6	C	2139	2379	2619	2859	3099
G226K-	50	22.0	10	11.0	110	138.0	6	6	D	2140	2380	2620	2860	3100
G226M-	50	22.0	20	11.0	110	138.0	6	6	D	2141	2381	2621	2861	3101

1/ Complete type designation will include an additional symbol to indicate failure rate level.
2/ For information only.
3/ Dash numbers – 2001 through – 3193 of this specification shall unilaterally supersede and be acceptable alternates for dash numbers – 0001 through – 1045 of MIL-C-39003/1 for units of equivalent capacitance, capacitance tolerance, voltage rating, failure rate level, and case size.

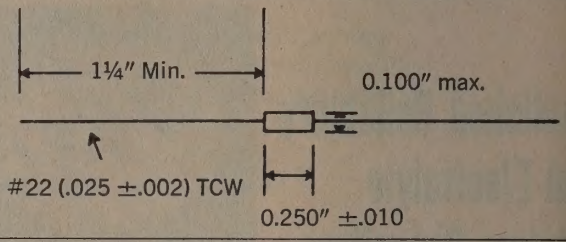
NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Capacitors

The DECI-CAP and DECI-CAP II

4.7 pF to 47,000 pF in 49 Standard Values.
Available from stock for Immediate Delivery.
Epoxy molded for highest performance and reliability.
High density cordwood packaging facilitated by single size. (.100 diameter x .250 length for entire range.)

DECI-CAPS offer the design engineer unique epoxy-molded reliability and a new high standard in performance. These subminiature ceramic capacitors feature low power factor and exhibit outstanding stability over the entire —55° to +125°C operating range. Rugged epoxy molded envelope and high quality ceramic dielectric is designed to meet the environmental requirements of MIL-C-11015.



Electrical Characteristics	Deci-Cap	Deci-Cap II
Capacitance Range, pF	4.7 to 27,000	4.7 to 47,000
Working Voltage 4.7 to 470 pF Above 470 pF	 200 VDC 100 VDC	 50 VDC 50 VDC
Standard Tolerance	±10%	±10%
Dissipation Factor	.025 Max.	.025 Max.
I.R., Megohms	20,000 Min.	20,000 Min.
Max. Charge from 25°C Capacitance, —55 to +125°C	±15%	±15%

Cap., pF	Deci-Cap Cat. No.	Deci-Cap II Cat. No.	Cap., pF	Deci-Cap Cat. No.	Deci-Cap II Cat. No.
4.7	DC-047	DC II B X 4R7	560	DC-561	DC II B X 561
5.6	DC-056	DC II B X 5R6	680	DC-681	DC II B X 681
6.8	DC-068	DC II B X 6R8	820	DC-821	DC II B X 821
8.2	DC-082	DC II B X 8R2	1000	DC-102	DC II B X 102
10	DC-100	DC II B X 100	1200	DC-122	DC II B X 122
12	DC-120	DC II B X 120	1500	DC-152	DC II B X 152
15	DC-150	DC II B X 150	1800	DC-182	DC II B X 182
18	DC-180	DC II B X 180	2200	DC-222	DC II B X 222
22	DC-220	DC II B X 220	2700	DC-272	DC II B X 272
27	DC-270	DC II B X 270	3300	DC-332	DC II B X 332
33	DC-330	DC II B X 330	3900	DC-392	DC II B X 392
39	DC-390	DC II B X 390	4700	DC-472	DC II B X 472
47	DC-470	DC II B X 470	5600	DC-562	DC II B X 562
56	DC-560	DC II B X 560	6800	DC-682	DC II B X 682
68	DC-680	DC II B X 680	8200	DC-822	DC II B X 822
82	DC-820	DC II B X 820	10000	DC-103	DC II B X 103
100	DC-101	DC II B X 101	12000	DC-123	DC II B X 123
120	DC-121	DC II B X 121	15000	DC-153	DC II B X 153
150	DC-151	DC II B X 151	18000	DC-183	DC II B X 183
180	DC-181	DC II B X 181	22000	DC-223	DC II B X 223
220	DC-221	DC II B X 221	27000	DC-273	DC II B X 273
270	DC-271	DC II B X 271	33000	—	DC II B X 333
330	DC-331	DC II B X 331	39000	—	DC II B X 393
390	DC-391	DC II B X 391	47000	—	DC II B X 473
470	DC-471	DC II B X 471			

Add K to Cat. No. for ±10% Tol, J for ±5%, M for ±20%

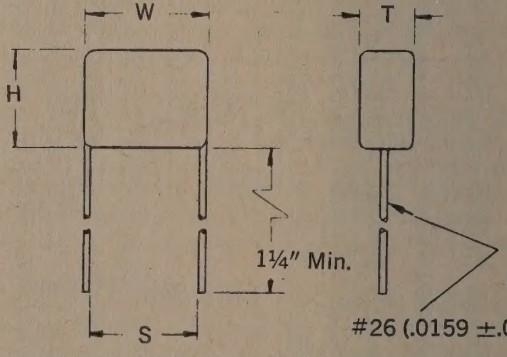
The HY-CAP

High Capacity Ceramic Capacitor. Capacitance Range .01 mfd to 2.5 mfd. New size H offers higher capacitance (0.12 uf) at 100 WVDC in shorter package than CK06, with same (.200) lead spacing.

Nytronics offers the HY-CAP Ceramic Capacitor to accommodate design application in coupling, by-pass, filter, and all other circuits where temperature stability and high capacitance are mandatory. .016 diameter leads are ideal for point-to-point wiring as well as PC work.

ELECTRICAL CHARACTERISTICS

Capacitance Range: .01 mfd to 2.5 mfd*
Tolerance: ±20% Std.; ±10% also available
Working Voltage: 100 Volts D.C. (No derating to 125°C).
Dissipation Factor: .025 Max.
Insulation Resistance: 1000 Megohm-microfarad, min.
Capacitance Change with Temperature: Max. Change ±15% from 25°C Cap., from —55° to +125°C.



Nytronics Part No.	Cap. (mfd.)	Size	Nytronics Part No.	Cap. (mfd.)	Size
HC-A-103-M	.01	A	HC-H-563-M	.056	H
HC-A-123-M	.012	A	HC-H-683-M	.068	H
HC-A-153-M	.015	A	HC-H-823-M	.082	H
HC-A-183-M	.018	A	HC-H-104-M	.10	H
HC-A-223-M	.022	A	HC-H-124-M	.12	H
HC-A-273-M	.027	A	HC-C-154-M	.15	C
HC-A-333-M	.033	A	HC-C-184-M	.18	C
HC-B-393-M	.039	B	HC-C-224-M	.22	C
HC-B-473-M	.047	B	HC-C-274-M	.27	C
HC-B-563-M	.056	B	HC-C-334-M	.33	C
HC-B-683-M	.068	B	HC-C-394-M	.39	C
HC-B-823-M	.082	B	HC-C-474-M	.47	C
HC-B-104-M	.10	B	HC-D-105-M	1.0	D
HC-B-124-M	.12	B	HC-E-155-M	1.5	E
HC-H-393-M	.039	H	HC-F-205-M	2.0	F
HC-H-473-M	.047	H	HC-G-255-M	2.5	G

Size	W max.	H max.	T max.	S ±.050
A	0.225	0.175	0.110	0.200
B	0.325	0.310	0.150	0.300
C	0.670	0.355	0.150	0.625
D	0.800	0.550	0.225	0.625
E	0.800	0.550	0.250	0.625
F	0.800	0.550	0.300	0.625
G	0.800	0.550	0.375	0.625
H	0.280	0.280	0.150	0.200

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NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Capacitors

The NYT-CAP
NPO Series

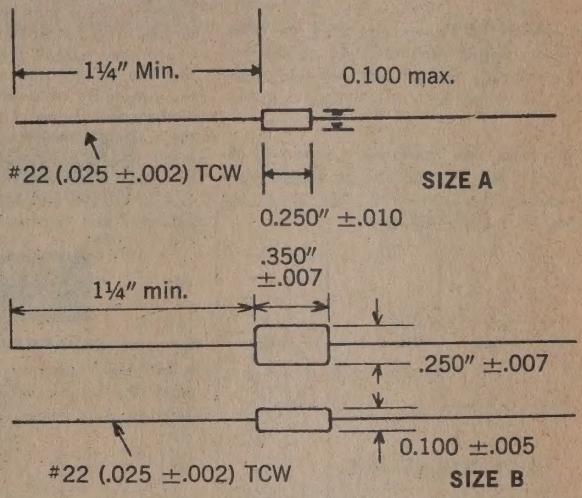
Ultra High Stability —0 ±25 ppm/°C Temperature Coefficient.
Transfer Molded Epoxy Case for high component density.
New extended range to 10,000 pF.
Available from stock.

new development from Nytronics' ceramic research labora-ry now makes possible the manufacture of an extremely able ceramic capacitor in a miniature package size. Now u can have the capacitor stability long desired for use in cillators, filters, and other critical circuitry.

ELECTRICAL CHARACTERISTICS

pacitance Range: 4.7 pF to 10,000 pF.
pacitance Tolerance: ±10% Standard; others available.
orking Voltage: 200 Volts D.C. to 4700 pF; 50 WVDC above this value.
mperature Coefficient: ±25 ppm/°C over temperature range of 55°C to +125°C.
ssipation Factor: Less than 0.001 at 25°C.
sulation Resistance: 100,000 Megohms at 25°C. (Minimum)

ote: Hybrid Manufacturers — Also available from stock as mono-hic (unencapsulated) chips for micro-circuit applications. "A" chip ze is .170 X .065 X .070; "B" is .280 X .145 X .070. Other specs same above. To order use part No. prefix NCU in place of NC.



Nytronics Part No.	Capacity (pF)	Case Size
NC-047	4.7	A
NC-056	5.6	A
NC-068	6.8	A
NC-082	8.2	A
NC-100	10	A
NC-120	12	A
NC-150	15	A
NC-180	18	A
NC-220	22	A
NC-270	27	A
NC-330	33	A

Nytronics Part No.	Capacity (pF)	Case Size
NC-390	39	A
NC-470	47	A
NC-560	56	A
NC-680	68	A
NC-820	82	A
NC-101	100	A
NC-121	120	A
NC-151	150	A
NC-181	180	A
NC-221	220	A

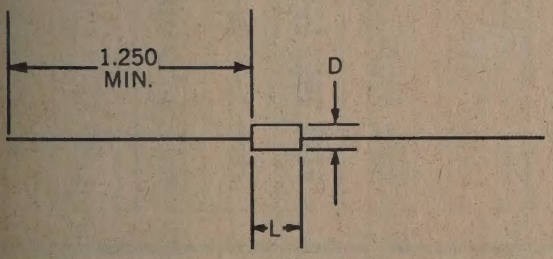
Nytronics Part No.	Capacity (pF)	Case Size
NC-271	270	B
NC-331	330	B
NC-391	390	B
NC-471	470	B
NC-561	560	B
NC-681	680	B
NC-821	820	B
NC-102	1000	B
NC-122	1200	B
NC-152	1500	B

Nytronics Part No.	Capacity (pF)	Case Size
NC-182	1800	B
NC-222	2200	B
NC-272	2700	B
NC-332	3300	B
NC-392	3900	B
NC-472	4700	B
NC-562	5600	B
NC-682	6800	B
NC-822	8200	B
NC-103	10000	B

The MILI-CAP

New series of encapsulated axial lead ceramic capacitors featuring values to 3.3 uf. Much lower leakage current than tantalum.

Designed to meet the requirements of MIL-C-11015/20 B



Case Size	L	D	Lead Size
A	.160 ± .010	.090 ± .010	#26 Awg
B	.250 ± .010	.090 ± .010	#26
C	.390 ± .010	.140 ± .010	#22
D	.500 ± .020	.250 ± .015	#22
E	.690 ± .030	.350 ± .020	#22

ELECTRICAL CHARACTERISTICS:

Capacitance Range: 10 pF to 3.3 uF
Capacitance Tolerance: ±10% std.; others available
Power Factor: Less than 2.5% at 1 KHz, 25°C
Temperature Range: —55°C to +125°C
Temperature Characteristic: ±15% max. Change from 25°C capacitance
Insulation Resistance: >100,000 Megohms or 1000 Megohms Microfarads, whichever is less.

Cap.	WVDC	Nytronics Catalog No.	Case Size	Cap.	WVDC	Nytronics Catalog No.	Case Size
10 Pf	100	EK12BX100K	A	10,000	100	EK13BX103K	B
12	100	EK12BX120K	A	12,000	50	EK13BX123K	B
15	100	EK12BX150K	A	15,000	50	EK13BX153K	B
18	100	EK12BX180K	A	18,000	50	EK13BX183K	B
22	100	EK12BX220K	A	22,000	50	EK13BX223K	B
27	100	EK12BX270K	A	27,000	50	EK13BR273K	B
33	100	EK12BX330K	A	33,000	50	EK13BR333K	B
39	100	EK12BX390K	A	39,000	50	EK13BR393K	B
47	100	EK12BX470K	A	47,000	50	EK13BR473K	B
56	100	EK12BX560K	A	.012 Mfd	100	EK14BX123K	C
68	100	EK12BX680K	A	.015	100	EK14BX153K	C
82	100	EK12BX820K	A	.018	100	EK14BX183K	C
100	100	EK12BX101K	A	.022	100	EK14BX223K	C
120	100	EK12BX121K	A	.027	100	EK14BX273K	C
150	100	EK12BX151K	A	.033	100	EK14BX333K	C
180	100	EK12BX181K	A	.039	100	EK14BX393K	C
220	100	EK12BX221K	A	.047	100	EK14BX473K	C
270	100	EK12BX271K	A	.056	100	EK14BR563K	C
330	100	EK12BX331K	A	.068	100	EK14BR683K	C
390	100	EK12BX391K	A	.1	100	EK14BR104K	C
470	100	EK12BX471K	A	.12	50	EK14BR124K	C
560	100	EK12BX561K	A	.15	50	EK14BR154K	C
680	100	EK12BX681K	A	.18	50	EK14BR184K	C
820	100	EK12BX821K	A	.22	50	EK14BR224K	C
1000	100	EK12BX102K	A	.27	50	EK14BR274K	C
1200	100	EK12BX122K	A	.1	100	EK15BX104K	D
1500	100	EK12BX152K	A	.12	100	EK15BR124K	D
1800	100	EK12BX182K	A	.15	100	EK15BR154K	D
2200	100	EK12BX222K	A	.18	100	EK15RB184K	D
2700	100	EK12BX272K	A	.22	100	EK15BR224K	D
3300	100	EK12BX332K	A	.27	100	EK15BR274K	D
3900	100	EK12BX392K	A	.33	100	EK15BR334K	D
4700	100	EK12BX472K	A	.47	50	EK15BR474K	D
5600	50	EK12BX562K	A	1.0	50	EK15BR105K	D
6800	50	EK12BX692K	A	.47	100	EK16BR474K	E
8200	50	EK12BX822K	A	1.0	100	EK16BR105K	E
10,000	50	EK12BX103K	A	2.2	50	EK16BR225K	E
5600	100	EK13BX562K	B	3.3	50	EK16BR335K	E
6800	100	EK13BX682K	B				
8200	100	EK13BX822K	B				

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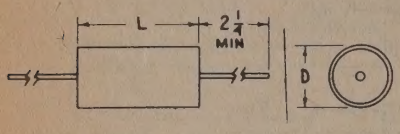
METALLIZED MYLAR* CAPACITORS

TYPE AM
MINIATURE TUBULAR

Type AM CAPACITORS are designed to withstand the most rugged environmental conditions. They are hermetically sealed and will withstand most military environmental and electrical requirements.

Type AM Capacitors are available in a variety of mounting styles. Size is given for grounded case style. For floating case, Circuit B, add 1/16" to length. Write for further information.



200 VOLTS D.C.

BASIC PART NO.	CAP MFD	SIZE CIRCUIT A OR F D	L
AM2-103	0.01	0.174	9/16
AM2-123	.012	.174	9/16
AM2-153	.015	.174	9/16
AM2-183	.018	.174	9/16
AM2-223	.022	.187	9/16
AM2-273	.027	.187	9/16
AM2-333	.033	.235	9/16
AM2-393	.039	.235	9/16
AM2-473	.047	.235	9/16
AM2-563	.056	.235	3/4
AM2-683	.068	.235	3/4
AM2-823	.082	.235	3/4
AM2-104	0.1	.235	3/4
AM2-124	.12	.312	3/4
AM2-154	.15	.312	3/4
AM2-184	.18	.312	3/4
AM2-224	.22	.312	3/4
AM2-274	.27	.400	3/4
AM2-334	.33	.400	3/4
AM2-394	.39	.400	3/4
AM2-474	.47	.400	1 1/16
AM2-564	.56	.400	1 1/16
AM2-684	.68	.400	1 1/16
AM2-824	.82	.562	1 1/16
AM2-105	1.0	.562	1 1/16
AM2-155	1.5	.562	1 1/4
AM2-205	2.0	.670	1 1/4
AM2-305	3.0	.670	1 1/2
AM2-405	4.0	.670	1 3/4
AM2-505	5.0	.750	1 3/4
AM2-805	8.0	1.0	1 3/4
AM2-106	10.0	1.0	2 1/4

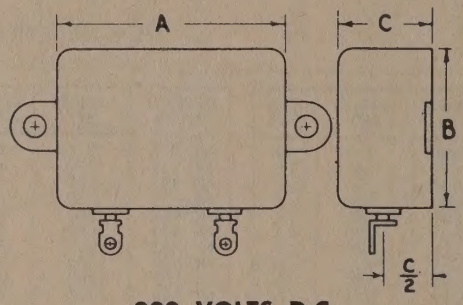
★ DUPONT POLYESTER FILM

METALLIZED MYLAR*
CHARACTERISTICS

Metallized MYLAR* satisfies the requirements of high resistance, low absorption, excellent retrace and capacitance stability over a wide temperature range and high ambient operating conditions. The self-healing characteristics are well known and extend the useful life of the capacitor. The second, and most overlooked feature, is the possibility of making full use of the highest volts-per-mil rating of the film by eliminating all the weak dielectric areas. This results in extreme small size without sacrificing life, reliability and economy. Temperature range is minus 90°C to 125°C without voltage deviation. All units are extended foil construction.

TYPE AB
BATHTUB STYLE

Type AB CAPACITORS are hermetically sealed in bathtub containers and designed to operate under the most severe military environment and electrical conditions.



200 VOLTS D.C.

PART NUMBER	CAP. MFD.	CASE SIZE A	B	C
AB2-504	0.5	1 1/8	1	13/16
AB2-105	1.0	1 1/8	1	13/16
AB2-205	2.0	1 1/8	1	13/16
AB2-405	4.0	1 3/4	1	3/4
AB2-505	5.0	1 3/4	1	3/4
AB2-605	6.0	1 3/4	1 1/4	7/8
AB2-805	8.0	1 3/4	1 1/4	7/8
AB2-106	10.0	2	1 3/4	7/8
AB2-126	12.0	2	1 3/4	7/8
AB2-156	15.0	2	1 3/4	7/8
AB2-206	20.0	2	2	1 1/8
AB2-306	30.0	2	2	1 1/4

TYPE AZ
EPOXY COATED

Type AZ CAPACITORS are an economical ver sion of the Type AM. These capacitors are no designed to withstand an extremely rugged envi ronment, but they are suitable for most commer cial applications.

Style W is tubular with axial leads.
Style X is tubular with radial leads.
Style Y is rectangular with axial leads.
Style Z is rectangular with radial leads.

HOW TO ORDER

Select the style required. Find style, voltage an capacitance in the table. Establish the part num ber by selecting the heading (i.e. AZ2-etc.) an adding the capacitance code and style lette Make certain that capacitance tolerance is ind cated as a separate item.

AZ2 is rated at 200 volts and AZ3 is rated at 30 volts operating.

TYPE AZ
STYLE W AND X 200 WVDC

Cap MFD	Cap Code	AZ2 D Max.	AZ2 L Max.	AZ3 D Max.	AZ3 L Max.
.01	103	.23	.38	.26	.38
.012	123	.24	.38	.23	.51
.015	153	.25	.38	.24	.51
.018	183	.23	.51	.25	.51
.022	223	.24	.51	.26	.51
.027	273	.25	.51	.28	.51
.033	333	.26	.51	.29	.51
.039	393	.27	.51	.26	.70
.047	473	.29	.51	.28	.70
.056	563	.26	.70	.29	.70
.068	683	.27	.70	.31	.70
.082	823	.29	.70	.33	.70
.1	104	.30	.70	.35	.70
.12	124	.32	.70	.37	.70
.15	154	.39	.70	.40	.70
.18	184	.39	.70	.43	.70
.22	224	.39	.70	.39	.95
.27	274	.44	.70	.42	.95
.33	334	.44	.70	.45	.95
.39	394	.47	.70	.48	.95
.47	474	.44	.95	.52	.95
.56	564	.47	.95	.55	.95
.68	684	.50	.95	.60	.95
.82	824	.50	.95	.65	.95
1.0	105	.57	.95	.64	1.13
1.5	155	.66	1.13	.75	1.13
2.0	205	.75	1.13	.85	1.13
3.0	305	.75	1.38	.84	1.63
4.0	405	.87	1.63	1.09	1.26
5.0	505	.87	1.63	1.05	1.63
8.0	805	1.07	1.63		
10.0	106	1.19	1.63		

TYPE EP
PLASTIC FILM HIGH VOLTAGE DC FILTER CAPACITOR

TYPE EP Capacitors are designed for commercial service. Econ omy and reliability were the determination factors. CP70 Con tainers oil filled. For 65°C operation.

PART NUMBER	CAP. MFD.	VOLTS DCW	A ±1/16	B ±1/16	C ±1/16	E MAX.
EP20-105	1.0	2000	2 1/2	1 3/16	2 3/4	1 1/8
EP20-205	2	2000	2 1/2	1 3/16	4	1 1/8
EP20-405	4	2000	3 3/4	1 3/4	3 1/2	1 1/8
EP20-805	8	2000	3 3/4	2 1/4	4 3/4	1 1/8
EP20-106	10	2000	3 3/4	3 3/16	4 1/2	1 1/8
EP30-504	0.5	3000	2 1/2	1 3/16	2 1/2	1 1/8
EP30-105	1.0	3000	2 1/2	13/16	3 3/4	1 1/8
EP30-205	2	3000	3 3/4	1 1/4	4 1/2	1 1/8
EP30-405	4	3000	3 3/4	2 1/4	4 3/4	1 1/8
EP30-805	8	3000	4 9/16	3 3/4	4 3/4	1 1/8
EP40-254	.25	4000	2 1/2	13/16	2 1/8	1 1/8
EP40-105	1	4000	3 3/4	1 1/4	3 1/2	1 1/8
EP40-205	2	4000	3 3/4	1 3/4	4 1/2	1 1/8
EP40-405	4	4000	4 9/16	3 3/4	3 3/4	1 1/8

PART NUMBER	CAP. MFD.	VOLTS DCW	A ±1/16	B ±1/16	C ±1/16	E MAX.
EP50-504	.05	5000	2 1/2	1 3/16	4	1 1/8
EP50-105	1.0	5000	3 3/4	1 3/4	3 3/4	1 1/8
EP50-205	2	5000	3 3/4	2 1/4	4 3/4	1 1/8
EP50-405	4	5000	4 9/16	3 3/4	4 3/4	1 1/8
EP80-104	0.1	8000	3 3/4	1 3/4	2 1/2	2 1/4
EP80-504	.5	8000	3 3/4	2 1/4	4 3/4	2 1/4
EP80-105	1.0	8000	3 3/4	3 3/16	5 1/4	2 1/4
EP100-104	0.1	10,000	3 3/4	1 3/4	3	2 1/4
EP100-254	0.25	10,000	3 3/4	1 3/4	4 1/4	2 1/4
EP100-504	0.5	10,000	3 3/4	2 1/4	5 3/4	2 1/4
EP100-105	1.0	10,000	4 9/16	3 3/4	5 1/2	2 1/4
EP100-205	2	10,000	4 9/16	3 3/4	10	2 1/4

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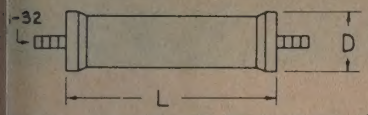
HIGH VOLTAGE FILTER CAPACITORS

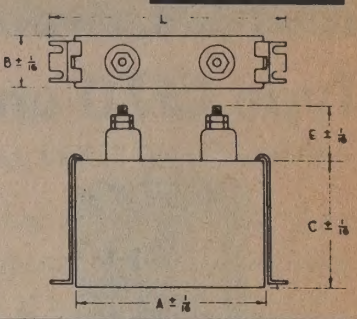
SMALLEST SIZE AVAILABLE ANYWHERE



ll glass containers with 'D' dimensions of 9/32 have 2-1/2 inch long 18 tinned cop-er pigtail leads.

ONTAINER is a hard glass pillar with ver fused to each end. A metal ferrule is ldered to each end assuring hermetic aling. The stud is silver soldered to the rrule. All parts are tin plated.

TYPE OF and **TYPE LK** capacitors are hermetically sealed, rated for operation at 85°C at full nameplate rating, and will withstand most environmental and electrical specifications in general use. Size is very small due to the nature of the dielectric used, and the particular attention to processing.



TYPE OF GLASS CONTAINER

PART NUMBER	CAP MFD	VOLTS DC	DIMENSIONS L	D
OF20-103	.01	2000	1 3/16	19/32
OF20-203	.02	2000	1 9/16	19/32
OF20-503	.05	2000	1 3/4	3/4
OF20-104	0.1	2000	2 1/4	3/4
OF20-254	0.25	2000	2 3/4	29/32
OF20-504	0.5	2000	2	1 3/8
OF30-103	.01	3000	1 9/16	19/32
OF30-203	.02	3000	1 3/4	3/4
OF30-503	.05	3000	2 1/4	3/4
OF30-104	0.1	3000	1 3/4	1 1/8
OF30-254	0.25	3000	2	1 3/8
OF30-504	0.5	3000	2 3/4	1 5/8
OF40-103	.01	4000	1 3/16	3/4
OF40-203	.02	4000	1 3/4	3/4
OF40-503	.05	4000	2	13/16
OF40-104	0.1	4000	2	1 1/8
OF40-254	0.25	4000	2 1/4	1 5/8
OF40-504	0.5	4000	3 3/4	1 5/8
OF50-201	.0002	5000	1 3/16	19/32
OF50-501	.0005	5000	1 3/16	19/32
OF50-102	.001	5000	1 3/16	19/32
OF50-202	.002	5000	1 3/16	19/32
OF50-502	.005	5000	1 5/8	19/32
OF50-103	.01	5000	1 3/4	3/4
OF50-203	.02	5000	2 1/4	3/4
OF50-503	.05	5000	2 1/4	29/32
OF50-104	0.1	5000	2 1/4	1 3/8
OF50-254	0.25	5000	3	1 5/8
OF50-504	0.5	5000	6	1 5/8
OF60-502	.005	6000	1 5/8	19/32
OF60-103	.01	6000	1 3/4	3/4
OF60-203	.02	6000	2 1/4	3/4
OF60-503	.05	6000	3 1/4	29/32
OF60-254	0.25	6000	4	1 5/8
OF80-501	.0005	8000	1 9/16	19/32
OF80-102	.001	8000	1 9/16	19/32
OF80-202	.002	8000	1 3/4	19/32
OF80-502	.005	8000	1 3/4	3/4
OF80-103	.01	8000	2 1/4	3/4
OF80-203	.02	8000	2 3/4	29/32
OF80-503	.05	8000	2 3/4	1 3/8
OF80-104	0.1	8000	3 5/8	1 5/8
OF80-204	0.2	8000	7	1 5/8
OF100-501	.0005	10KV	1 5/8	19/32
OF100-102	.001	10KV	1 5/8	19/32
OF100-202	.002	10KV	1 5/8	3/4
OF100-502	.005	10KV	1 3/4	13/16
OF100-103	.01	10KV	2 1/4	29/32
OF100-203	.02	10KV	2 3/4	1 1/8
OF100-503	.05	10KV	2 3/4	1 5/8
OF100-603	.06	10KV	3	1 5/8
OF100-104	0.1	10KV	5	1 5/8
OF150-501	.0005	15KV	2 1/4	19/32
OF150-202	.002	15KV	2 1/4	3/4
OF150-502	.005	15KV	2 3/4	1 1/8
OF150-103	.01	15KV	3 3/4	1 1/8
OF150-203	.02	15KV	4 1/4	1 3/8
OF150-503	.05	15KV	7	1 5/8
OF200-102	.001	20KV	3 1/2	3/4
OF200-202	.002	20KV	3 1/2	13/16
OF200-502	.005	20KV	3 1/2	1 1/8
OF200-103	.01	20KV	4 1/2	1 1/8
OF200-203	.02	20KV	4 1/2	1 5/8
OF300-201	.0002	30KV	4 9/16	19/32
OF300-501	.0005	30KV	4 9/16	19/32
OF300-502	.005	30KV	5	1 3/8
OF300-103	.01	30KV	6 1/2	1 5/8
OF300-203	.02	30KV	9	1 5/8
OF400-202	.002	40KV	6 1/2	1 1/8
OF400-502	.005	40KV	6 1/2	1 5/8
OF500-501	.0005	50KV	8 1/4	3/4
OF500-102	.001	50KV	8 1/4	13/16
OF500-202	.002	50KV	8 1/4	1 1/8
OF500-502	.005	50KV	10 3/4	1 3/8

TYPE LK CP70 CONTAINER

PART NUMBER	CAP MFD	VOLTS DC	DIMENSIONS A	B	C	E
LK6-504	.5	600	1 3/4	1	2 1/8	3/4
LK6-105	1	600	1 3/4	1	2 1/8	3/4
LK6-605	6	600	2 1/2	1 3/16	4 1/2	3/4
LK6-106	10	600	3 3/4	1 1/4	4 1/2	3/4
LK6-256	25	600	3 3/4	2 1/4	5 3/4	3/4
LK10-254	.25	1000	1 3/4	1	2 1/8	3/4
LK10-504	.5	1000	1 3/4	1	2 1/8	3/4
LK10-205	2	1000	1 3/4	1	3 1/2	3/4
LK10-405Y	4	1000	2 1/2	1 3/16	3 3/4	3/4
LK10-605	6	1000	2 1/2	1 3/16	5	3/4
LK10-805	8	1000	2 1/2	1 3/16	6 1/4	3/4
LK10-256	25	1000	3 3/4	2 1/4	6 1/4	3/4
LK20-104	.1	2000	1 3/4	1	2 1/8	1 1/8
LK20-254	.25	2000	1 3/4	1	2 1/8	1 1/8
LK20-504	.5	2000	1 3/4	1	2 1/8	1 1/8
LK20-105	1.0	2000	1 3/4	1	3 1/4	1 1/8
LK20-205	2	2000	2 1/2	1 3/16	3 1/2	1 1/8
LK20-405	4	2000	2 1/2	1 3/16	5 1/2	1 1/8
LK20-805Y	8	2000	3 3/4	1 3/4	4 1/2	1 1/8
LK20-106	10	2000	3 3/4	1 3/4	5 1/4	1 1/8
LK20-126	12	2000	3 3/4	1 3/4	6 1/4	1 1/8
LK20-156	15	2000	3 3/4	2 1/4	6	1 1/8
LK20-306	30	2000	4 9/16	3 3/4	5 3/4	1 1/8
LK20-506	50	2000	4 9/16	3 3/4	9 1/4	1 1/8
LK30-104	.1	3000	1 3/4	1	2 1/8	1 1/8
LK30-105	1	3000	1 3/4	1	5 1/4	1 1/8
LK30-205	2	3000	2 1/2	1 3/16	5 1/2	1 1/8
LK30-405	4	3000	3 3/4	1 1/4	6 1/4	1 1/8
LK30-805	8	3000	3 3/4	2 1/4	6 1/2	1 1/8
LK30-106	10	3000	3 3/4	3 3/16	5 3/4	1 1/8
LK30-306Z	30	3000	4 9/16	3 3/4	11 1/2	1 1/8
LK40-104	.1	4000	1 3/4	1	2 1/8	1 1/8
LK40-105	1	4000	2 1/2	1 3/16	4	1 1/8
LK40-205	2	4000	2 1/2	1 3/16	6 3/4	1 1/8
LK40-405	4	4000	3 3/4	1 3/4	6	1 1/8
LK40-106	10	4000	4 9/16	3 3/4	5 1/2	1 1/8
LK40-256Y	25	4000	4 9/16	3 3/4	11	1 1/8
LK50-104	.1	5000	1 3/4	1	2 1/8	1 1/8
LK50-504	.5	5000	1 3/4	1	4 3/4	1 1/8
LK50-105	1	5000	2 1/2	1 3/16	5	1 1/8
LK50-405	4	5000	3 3/4	2 1/4	6 1/4	1 1/8
LK50-805	8	5000	4 9/16	3 3/4	6 1/4	1 1/8
LK50-106Y	10	5000	4 9/16	3 3/4	7 1/2	1 1/8
LK80-254	.25	8000	3 3/4	1 1/4	3 3/4	1 1/2
LK80-504	.5	8000	3 3/4	1 1/4	5 3/4	1 1/2
LK80-105	1	8000	3 3/4	1 3/4	7	1 1/2
LK80-205Y	2	8000	4 9/16	3 3/4	5 1/4	1 1/2
LK80-405Y	4	8000	4 9/16	3 3/4	8 1/2	1 1/2
LK80-106Y	10	8000	7 5/16	5 9/16	9	1 1/2
LK100-104	.1	10KV	3 3/4	1 3/4	3 1/4	2 1/4
LK100-254	.25	10KV	3 3/4	1 3/4	3 3/4	2 1/4
LK100-105	1	10KV	3 3/4	2 1/4	7 1/4	2 1/4
LK100-126Y	12	10KV	13 1/2	4 1/8	11	2 1/4
LK150-503	.05	15KV	3 3/4	1 3/4	3 1/2	2 3/4
LK150-104	.1	15KV	3 3/4	1 3/4	3 3/4	2 3/4
LK150-504	.5	15KV	3 3/4	3 3/16	6 1/2	2 3/4
LK150-105	1	15KV	4 9/16	3 3/4	8 1/2	2 3/4
LK150-205Y	2	15KV	6	4 5/8	9 1/4	2 3/4
LK150-805	8	15KV	13 1/2	6 1/8	11 7/8	2 3/4
LK200-103	.01	20KV	3 3/4	2 1/4	3 1/4	2 3/4
LK200-203	.02	20KV	3 3/4	2 1/4	3 1/4	2 3/4
LK200-503	.05	20KV	3 3/4	2 1/4	3 3/4	2 3/4
LK200-104	.1	20KV	3 3/4	2 1/4	4 3/4	2 3/4
LK200-504	.5	20KV	4 9/16	3 3/4	7 1/2	2 3/4
LK300-103	.01	30KV	3 3/4	3 3/16	4	3 7/8
LK300-503	.05	30KV	3 3/4	3 3/16	5 1/2	3 7/8
LK300-205	2	30KV	13 1/2	6 1/8	12 7/8	3 7/8
LK400-503	.05	40KV	4 9/16	3 3/4	5 1/2	3 7/8
LK400-504	.5	40KV	13 1/2	5 1/8	12 7/8	3 7/8
LK500-203	.02	50KV	4 9/16	3 3/4	7 1/2	6
LK500-104	.1	50KV	8	4	9 1/4	6
LK500-254Z	.25	50KV	7 5/16	5 9/16	11	6

Plastic Capacitors, Inc.

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SANGAMO ELECTRIC COMPANY

capacitors

SANGAMO ELECTRONIC COMPONENTS

Type CE70 and CE71 MILITARY GRADE CAPACITORS

The Sangamo Types CE70 and CE71 are aluminum electrolytic capacitors designed and manufactured in accordance with Mil-C-62D. They are recommended for operation up to +85°C and are available in voltage ratings from 5 to 450 d-c volts. The Type CE71 is supplied with a plastic insulating sleeve. Commercial equivalents can be supplied which meet or exceed the applicable military requirements. ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2236.***

Type DCM Computer Grade

FILTER AND ENERGY STORAGE ELECTROLYTIC CAPACITOR

The SANGAMO Type DCM is a high quality, long life, electrolytic capacitor, specially designed for use as an energy storage or filter capacitor at 65°C. The Type DCM is enclosed in an aluminum can and is normally furnished with a clear plastic insulating sleeve. Aluminum terminals, which are permanently molded into the top, include #10-32 machine screws. A pressure-sensitive vent is provided as a safety mechanism in each top. A footed, wrap-around mounting bracket is available at extra cost. ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2231.***

Type 500 Computer Electrolytic

FOR HIGH RIPPLE AND HIGH TEMPERATURE APPLICATIONS

The Sangamo Type 500 capacitor represents the optimum design in electrolytic capacitors for storage and filter requirements in high reliability circuits requiring 85°C operation. An exceptional anode surface gain and better production control have been achieved in perfecting the Type 500. These advanced techniques, plus the use of the best electrolytes, result in capacitors having lower ESR which may be operated at higher ripple currents and in case sizes smaller than conventional capacitors. All units are supplied with screw terminals. Mounting brackets are furnished at extra cost.

FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2236.

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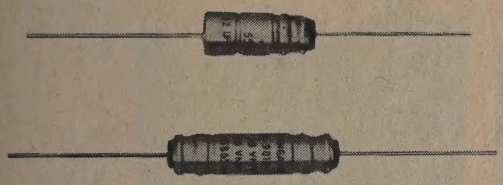
Type 557 Aluminum Electrolytic

−55°C TO +125°C AXIAL LEAD CAPACITOR



The axial lead type 557 has extremely stable characteristics at much wider temperature ranges. The type 557, designed for application in high reliability circuits, meets the MIL-C-39017 military specifications at temperatures from −55°C to +125°C. Mylar sleeves are provided for improved electrical insulation and mechanical properties. ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2240.***

Catalog Number	Cap. mfd.	d-c Volts +85°C rated	d-c Volts +85°C surge	d-c Volts +125°C rated	d-c Volts +125°C surge	Case Sizes* D	Case Sizes* L	Price 1-9†
557DC151U007B	150	7	10	5	7	3/8	1-5/8	$2.92
557DD221U007B	220	7	10	5	7	3/8	2-3/16	3.08
557DE281U007B	280	7	10	5	7	3/8	1-1/8	3.96
557DG421U007B	420	7	10	5	7	3/8	1-3/8	5.92
557DJ561U007B	560	7	10	5	7	3/8	1-5/8	6.04
557DL851U007B	850	7	10	5	7	3/8	2-3/16	6.44
557DX102U007B	1000	7	10	5	7	3/8	2-11/16	9.76
557DC101U015B	100	15	20	10	15	3/8	13/16	2.92
557DD151U015B	150	15	20	10	15	3/8	15/16	3.08
557DE191U015B	190	15	20	10	15	3/8	1-1/8	3.96
557DG291U015B	290	15	20	10	15	3/8	1-3/8	5.92
557DJ391U015B	390	15	20	10	15	3/8	1-5/8	6.04
557DL581U015B	580	15	20	10	15	3/8	2-3/16	6.44
557DX681U015B	680	15	20	10	15	3/8	2-11/16	9.76
557DC800U020B	80	20	25	15	20	3/8	13/16	2.92
557DD101U020B	100	20	25	15	20	3/8	15/16	3.08
557DE141U020B	140	20	25	15	20	3/8	1-1/8	3.96
557DG221U020B	220	20	25	15	20	3/8	1-3/8	5.92
557DJ291U020B	290	20	25	15	20	3/8	1-5/8	6.04
557DL441U020B	440	20	25	15	20	3/8	2-3/16	6.44
557DX601U020B	600	20	25	15	20	3/8	2-11/16	9.76
557DC700U025B	70	25	30	20	25	3/8	13/16	2.92
557DD800U025B	80	25	30	20	25	3/8	15/16	3.08
557DE101U025B	100	25	30	20	25	3/8	1-1/8	3.96
557DG151U025B	150	25	30	20	25	3/8	1-3/8	5.92
557DJ211U025B	210	25	30	20	25	3/8	1-5/8	6.04
557DL311U025B	310	25	30	20	25	3/8	2-3/16	6.44
557DX401U025B	400	25	30	20	25	3/8	2-11/16	9.76
557DC400U040B	40	40	50	30	40	3/8	13/16	2.92
557DD500U040B	50	40	50	30	40	3/8	15/16	3.08
557DE700U040B	70	40	50	30	40	3/8	1-1/8	3.96
557DG101U040B	100	40	50	30	40	3/8	1-3/8	5.92
557DJ141U040B	140	40	50	30	40	3/8	1-5/8	6.04
557DL211U040B	210	40	50	30	40	3/8	2-3/16	6.44
557DX251U040B	250	40	50	30	40	3/8	2-11/16	9.76
557DC250U050B	25	50	60	40	50	3/8	13/16	2.92
557DD350U050B	35	50	60	40	50	3/8	15/16	3.08
557DE500U050B	50	50	60	40	50	3/8	1-1/8	3.96
557DG750U050B	75	50	60	40	50	3/8	1-3/8	5.92
557DJ101U050B	100	50	60	40	50	3/8	1-5/8	6.04
557DL151U050B	150	50	60	40	50	3/8	2-3/16	6.44
557DX181U050B	180	50	60	40	50	3/8	2-11/16	9.76
557DC200U060B	20	60	70	50	60	3/8	13/16	2.92
557DD250U060B	25	60	70	50	60	3/8	15/16	3.08
557DE400U060B	40	60	70	50	60	3/8	1-1/8	3.96
557DG600U060B	60	60	70	50	60	3/8	1-3/8	5.92
557DJ800U060B	80	60	70	50	60	3/8	1-5/8	6.04
557DL121U060B	120	60	70	50	60	3/8	2-3/16	6.44
557DX151U060B	150	60	70	50	60	3/8	2-11/16	9.76
557DC150U070B	15	70	80	60	70	3/8	13/16	2.92
557DD200U070B	20	70	80	60	70	3/8	15/16	3.08
557DE300U070B	30	70	80	60	70	3/8	1-1/8	3.96
557DG500U070B	50	70	80	60	70	3/8	1-3/8	5.92
557DJ650U070B	65	70	80	60	70	3/8	1-5/8	6.04
557DL101U070B	100	70	80	60	70	3/8	2-3/16	6.44
557DX121U070B	120	70	80	60	70	3/8	2-11/16	9.76
557DC100T100B	10	100	125	75	100	3/8	13/16	2.92
557DD150T100B	15	100	125	75	100	3/8	15/16	3.08
557DE170T100B	17	100	125	75	100	3/8	1-1/8	3.96
557DG250T100B	25	100	125	75	100	3/8	1-3/8	5.92
557DJ350T100B	35	100	125	75	100	3/8	1-5/8	6.04
557DL500T100B	50	100	125	75	100	3/8	2-3/16	6.44
557DX680T100B	68	100	125	75	100	3/8	2-11/16	9.76
557DC080T150B	8	150	175	100	125	3/8	13/16	2.92
557DD100T150B	10	150	175	100	125	3/8	15/16	3.08
557DE120T150B	12	150	175	100	125	3/8	1-1/8	3.96
557DG180T150B	18	150	175	100	125	3/8	1-3/8	5.92
557DJ250T150B	25	150	175	100	125	3/8	1-5/8	6.04
557DL400T150B	40	150	175	100	125	3/8	2-3/16	6.44
557DX560T150B	56	150	175	100	125	3/8	2-11/16	9.76
557DC040T200B	4	200	225	150	175	3/8	13/16	2.92
557DD060T200B	6	200	225	150	175	3/8	15/16	3.08
557DE080T200B	8	200	225	150	175	3/8	1-1/8	3.96
557DG130T200B	13	200	225	150	175	3/8	1-3/8	5.92
557DJ170T200B	17	200	225	150	175	3/8	1-5/8	6.04
557DL260T200B	26	200	225	150	175	3/8	2-3/16	6.44
557DX390T200B	39	200	225	150	175	3/8	2-11/16	9.76

*All dimensions are in inches.
†Prices for larger quantities are available on request.

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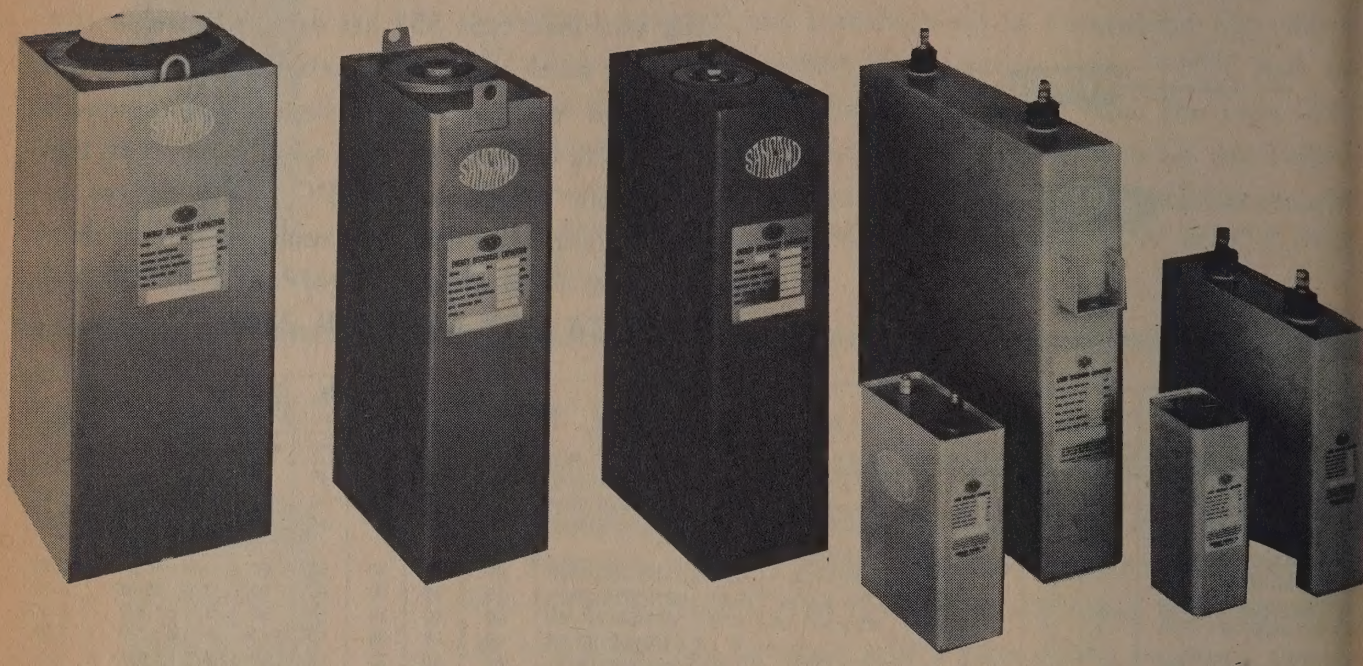
Type EDC and LDC Energy Discharge Capacitors

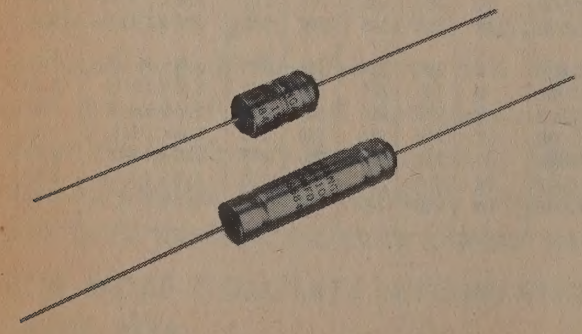


TYPE EDC & LDC CAPACITORS are used for generating the large magnetic fields required in Plasma Physics, Laser Experiments, Metal Forming and Hypervelocity Wind Tunnels. Type EDC Capacitors are designed to meet the rigid requirements of applications where ringing discharge currents are intense and voltage reversals are up to 90%. Type LDC Capacitors are especially designed for Laser Research. Units are also in photoflash and spot welding applications where the discharge is over-damped or the load is essentially resistive.

FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2610A.

Type 556 Computer Grade

ALUMINUM ELECTROLYTIC AXIAL LEAD CAPACITOR (105°C)



The Sangamo type 556 is a computer grade axial lead aluminum electrolytic capacitor with an operating temperature range of −40°C to 105°C. Voltage ratings from 3 to 150 VDC and capacitance values from 5 to 2,000 Mfd. are available in 12 case sizes. Mylar sleeves are provided for improved electrical insulation and mechanical properties. ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2239A.***

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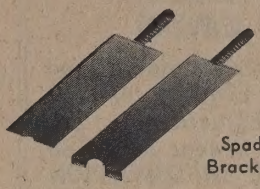
MIL Type CP72 PAPER



Spade Brackets

Footed Brackets

Type CP72 capacitors are furnished in drawn metal cases and are designed to comply with the requirements of specification MIL-C-25. They are impregnated with various dielectric oils to guarantee the desired electrical characteristics available. Capacitors rated at 3000 volts or less are normally supplied with solder lug (B) terminals capable of accomodating a #14AWG wire. Type D and E terminals may be substituted if desired. If brackets are required, specify a choice of spade, lug or footed type.

For more complete information write for Bulletin 2423.

Type HVC HIGH VOLTAGE PAPER CAPACITORS

Sangamo Type HVC High Voltage capacitors are impregnated with a halogenated hydrocarbon called Diaclor B. This oil provides the desirable electrical performance characteristics for the most severe applications. They are sealed in shock and vibration resistant drawn rectangular or cold-rolled steel cases. The absence of solder seams eliminates oil leakage and contamination from solder flux. A wide variety of capacitance ranges are available in voltage ratings up to 50,000 volts d-c. Spade, footed or wrap-around brackets are optional at extra cost, but will not be furnished unless requested. When choice of brackets is not indicated, spade type will be supplied.

For more complete information write for Bulletin 2425.

Type S Subminiature Hermetically Sealed Metal Tubular Capacitors

Sangamo Type S capacitors are designed to meet the demands for a high quality, hermetically sealed paper tubular capacitor. They are encapsulated in brass tubular cases finished with a high tin content alloy. Hermetic sealing is accomplished by using glass-to-metal solder seal terminals. The impregnant used in these units is Etherm, an oil of high thermal stability and superior electrical characteristics over the temperature range of -55°C to +125°C. Sangamo Type S capacitors meet the case sizes and performance requirements of military specification MIL-C-25. The limited number of popular listings below are furnished with insulated sections. They are also available with grounded case if equipment requirements so dictate. The adjacent cross reference table will assist in the interpretation of Sangamo catalog nomenclatures with the various military types and case constructions.

For more complete information write for Bulletin 2421.

Sangamo Type	Military Type	Description
SBA	CP04	Tab construction (without sleeve)
SBB	CP05	Tab construction (with sleeve)
SDA	CP08	Extended foil (without sleeve)
SDB	CP09	Extended foil (with sleeve)
SBC	CP10	Tab construction (with bracket)
SBE	CP11	Tab construction (with threaded mtg)
SDC	CP12	Extended foil (with bracket)
SDE	CP13	Extended foil (with threaded mtg)

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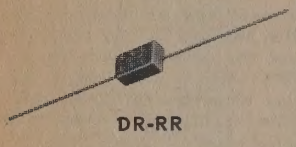
SANGAMO ELECTRONIC COMPONENTS

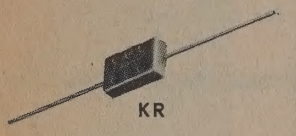
Type DR,RR and KR

SILVER MICA, 500W.V.D.C. (MILITARY CM15 and CM20)

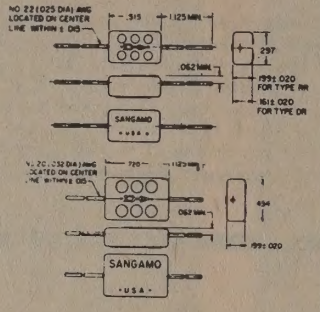
Type DR, RR and KR capacitors are molded in red Humiditite and are normally supplied to ±5% tolerance, "C" characteristic up to 20 mmf. Characteristic "E" is supplied on units above 20 mmf. unless specified otherwise. ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2320.***



DR-RR



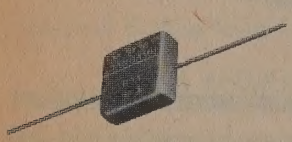
KR

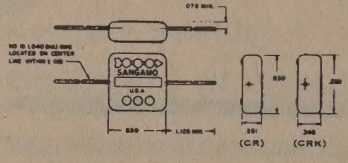


Type CR and CRK

SILVER MICA (MILITARY CM30 and CM35)

Types CR and CRK silvered mica capacitors are molded in red Humiditite and are normally supplied to ±5% capacitive tolerance and characteristic "E". Characteristics C, D and F are also available on request. When the thicker case size is required in higher capacitive values, the type designation changes to CRK (example: CRK5E362). ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2320.***



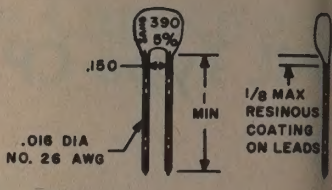


Type D10, D15, D19, D20, D30, and D42

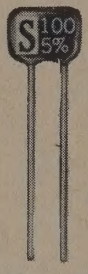
DIPPED SILVER MICA CAPACITORS

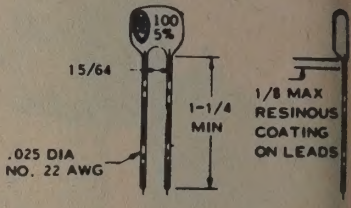
Sangamo Type D dipped Mica capacitors are available in six case sizes: D10, D25, D19, D20, D30 and D42. With the exception of the Type D20 they correspond to the MIL-C-5D sizes CM04, CM05, CM06, CM07 and CM08 respectively. These units utilize silvered mica sections encased in several coatings of electrical grade phenolic and epoxy resins. All commercial units meet or exceed the applicable requirements of MIL-C-5 and are normally furnished to a capacitive tolerance of ±5% and characteristic F. ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2323.***

TYPE D10
(MILITARY CM04)

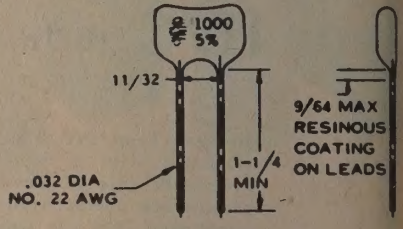


TYPE D15
(MILITARY CM05)

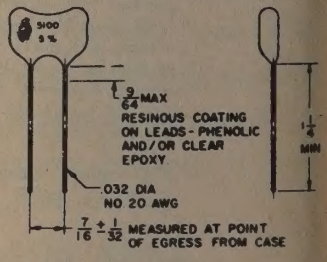




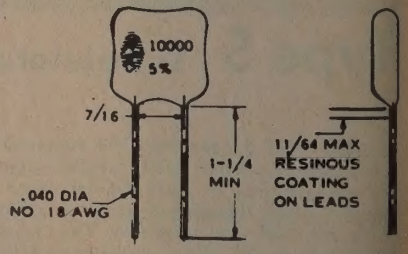
TYPE D19
(MILITARY CM06)



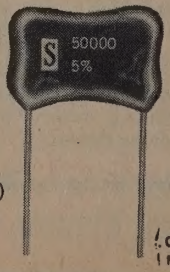
TYPE D20
(NON MILITARY)

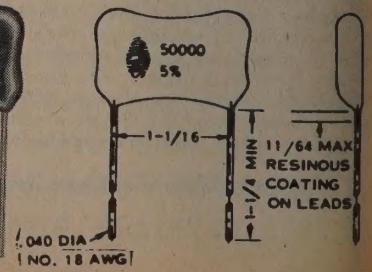


TYPE D30
(MILITARY CM07)



TYPE D42
(MILITARY CM08)





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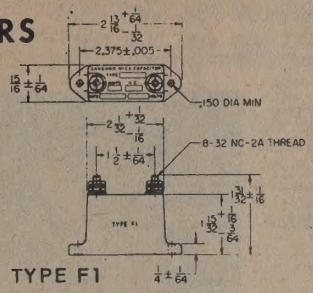
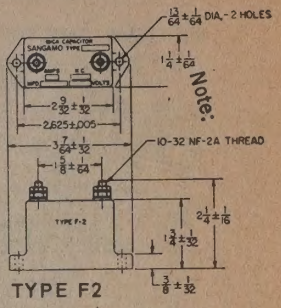
ypes F1-F2-F3 MICA CAPACITORS

ıe Types F1, F2 and F3 are the smallest of the Sangamo ıe of transmitting capacitors. They are encapsulated in w loss molded phenolic cases and possess a wide range voltage and current ratings. The mica and foil sections e pressure clamped, vacuum impregnated and encapsu- ted in the case in such a manner as to provide stable ıaracteristics and adequate resistance to moisture. All ype F1 and F2 capacitors meet or exceed the applicable quirements of the MIL-C-5 specification.

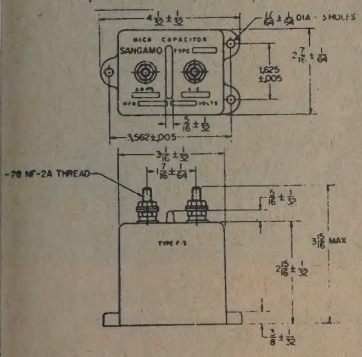
or more complete information write for Bulletin 2322.



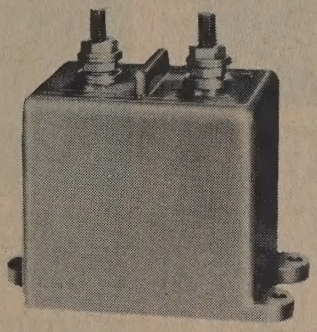
TYPE F1

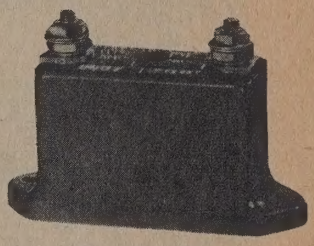


TYPE F2



TYPE F3





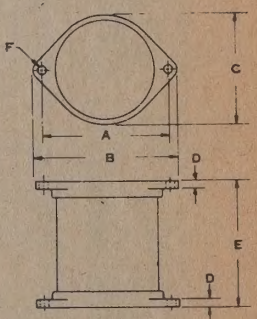
Type F1–F2

Types G1-G2-G3-G4-G5 *MICA*

Type G ceramic cased capacitors are intended for service where high voltage and R.F. current ratings are required, such as in commercial transmitting or induction heating applications. All possible steps are taken in design and manufacturing operations to insure permanence of quality. Terminal plates are designed to permit any usual connecting or mounting practices. Case sizes are in accordance with Mil-C-5C specification covering type CM75, 80, 85, 90 and 95. ***For more complete information write for Bulletin 2322.***

TYPE G MICA CAPACITOR DIMENSIONS - INCHES

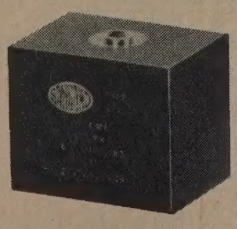
Type	A	B	C	D	E	F
G1	3¼	3-13/16	2-13/16	¼	2½	17/64
G2	4¼	5	3½	¼	3	.272
G3	5¾	6½	5	3/8	4	.377
G4	5¾	6½	5	3/8	5¾	.377
G5	8	9	6¾	½	10	13/32



TYPES G1, G2, G3, G4 and G5

Types 271-272-273-291-292-293-294 MICA CAPACITORS

TYPE 291



TYPE 272

Sangamo transmitting cast mica capacitors are supplied in seven basic case sizes. They are encapsulated in a high quality thermo-setting compound which eliminates moisture intrusion and makes them highly shock resistant. These capacitors are designed for frequencies ranging from 100 kilocycles per second to 3 megacycles per second and are ideally suited for high current and high voltage circuits.

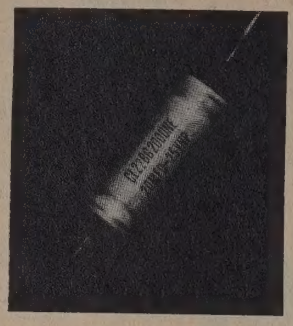
In capacitance and current ratings, Sangamo cast mica units are equivalent to MIL-C-5 Types CM65 through CM90 in molded and ceramic cases, but in environmental capability, operating temperature range, physical size, mounting configuration and reliability, they are far superior. ***FOR MORE COMPLETE INFORMATION WRITE FOR BULLETIN 2324.***

TANSITOR ELECTRONICS, INC.

MIL-C-3965 TANSITOR TANTALUM FOIL CAPACITORS

TYPES: CL20, CL21, CL22, CL23, CL30, CL31, CL32, CL33
−55°C to +85°C and +125°C derated

Tansitor Military Type Dual Rated capacitors are tantalum foil capacitors which will operate reliably over the temperature range −55°C to +85°C and to +125° derated.



CASE DIMENSIONS
CL20, CL22, CL30, CL32 — Uninsulated*

CASE SIZE	Dimensions (Nominal) Length x Diameter, Inches
E1	0.688 x 0.188
E2	0.906 x 0.281
E3	1.438 x 0.375
E4	2.125 x 0.375
E5	2.750 x 0.375

* For dimensions of insulated units add approximately 0.125″ to length, 0.015″ to diameter.

MIL-C-3965/17 ETCHED FOIL, POLAR

TYPE: CL20 (Uninsulated) CL21 (Insulated)

All Parts Numbers are listed as CL20 Type. If insulating sleeve is required, change CL20 to CL21.

Military Designation	Volts D.C.	Cap. Mfds.	Case Size
CL20BE150UPE	15	15	E1
CL20BE600UPE	15	60	E2
CL20BE201UPE	15	200	E3
CL20BE401UPE	15	400	E4
CL20BE581UPE	15	580	E5
CL20BG100UPE	25	10	E1
CL20BG400UPE	25	40	E2
CL20BG121UPE	25	120	E3
CL20BG251UPE	25	250	E4
CL20BG351UPE	25	350	E5
CL20BH080UPE	30	8	E1
CL20BH320UPE	30	32	E2
CL20BH111UPE	30	110	E3
CL20BH221UPE	30	220	E4
CL20BH301UPE	30	300	E5
CL20BJ4R5TPE	50	4.5	E1
CL20BJ180TPE	50	18	E2
CL20BJ600TPE	50	60	E3
CL20BJ101TPE	50	100	E4
CL20BJ151TPE	50	150	E5
CL20BL030TPE	75	3	E1
CL32BL120TPE	75	12	E2
CL20BL300TPE	75	30	E3
CL20BL700TPE	75	70	E4
CL20BL101TPE	75	100	E5
CL20BN020SPE	100	2	E1
CL20BN080SPE	100	8	E2
CL20BN250SPE	100	25	E3
CL20BN500SPE	100	50	E4
CL20BN700SPE	100	70	E5
CL20BQ010SPE	150	1	E1
CL20BQ040SPE	150	4	E2
CL20BQ130SPE	150	13	E3
CL20BQ250SPE	150	25	E4
CL20BQ360SPE	150	36	E5

MIL-C-3965/18 ETCHED FOIL, NON-POLAR

TYPE: CL22 (Uninsulated) CL23 (Insulated)

All Parts Numbers are listed as CL22 Type. If insulating sleeve is required, change CL22 to CL23.

Military Designation	Volts D.C.	Cap. Mfds.	Case Size
CL22BE100UNE	15	10	E1
CL22BE400UNE	15	40	E2
CL22BE121UNE	15	120	E3
CL22BE251UNE	15	250	E4
CL22BE351UNE	15	350	E5
CL22BH4R5UNE	30	4.5	E1
CL22BH180UNE	30	18	E2
CL22BH600UNE	30	60	E3
CL22BH121UNE	30	120	E4
CL22BH171UNE	30	170	E5
CL22BJ2R5TNE	50	2.5	E1
CL22BJ100TNE	50	10	E2
CL22BJ300TNE	50	30	E3
CL22BJ600TNE	50	60	E4
CL22BJ800TNE	50	80	E5
CL22BL1R5TNE	75	1.5	E1
CL22BL060TNE	75	6	E2
CL22BL150TNE	75	15	E3
CL22BL350TNE	75	35	E4
CL22BL500TNE	75	50	E5
CL22BN010SNE	100	1	E1
CL22BN040SNE	100	4	E2
CL22BN120SNE	100	12	E3
CL22BN250SNE	100	25	E4
CL22BN350SNE	100	35	E5
CL22BQ0R5SNE	150	0.5	E1
CL22BQ020SNE	150	12	E2
CL22BQ060SNE	150	6	E3
CL22BQ120SNE	150	12	E4
CL22BQ180SNE	150	18	E5

MIL-C-3965/15 PLAIN FOIL, POLAR

TYPE: CL30 (Uninsulated) CL31 (Insulated)

All Parts Numbers are listed as CL30 Type. If insulating sleeve is required, change CL30 to CL31.

Military Designation	Volts D.C.	Cap. Mfds.	Case Size
CL30BD060MPE	10	6	E1
CL30BD250MPE	10	25	E2
CL30BD800MPE	10	80	E3
CL30BD161MPE	10	160	E4
CL30BD221MPE	10	220	E5
CL30BH2R5MPE	30	2.5	E1
CL30BH300MPE	30	30	E3
CL30BH600MPE	30	60	E4
CL30BH850MPE	30	85	E5
CL30BJ1R5MPE	50	1.5	E1
CL30BJ060MPE	50	6	E2
CL30BJ200MPE	50	20	E3
CL30BJ400MPE	50	40	E4
CL30BJ550MPE	50	55	E5
CL30BL010MPE	75	1	E1
CL30BL040MPE	75	4	E2
CL30BL140MPE	75	14	E3
CL30BL280MPE	75	28	E4
CL30BL400MPE	75	40	E5
CL30BN0R8MPE	100	0.8	E1
CL30BN030MPE	100	3	E2
CL30BN100MPE	100	10	E3
CL30BN200MPE	100	20	E4
CL30BN300MPE	100	30	E5
CL30BQ0R5MPE	150	0.5	E1
CL30BQ020MPE	150	2	E2
CL30BQ040MPE	150	4	E3
CL30BQ070MPE	150	7	E3
CL30BQ080MPE	150	8	E4
CL30BQ120MPE	150	12	E4
CL30BQ140MPE	150	14	E4
CL30BQ200MPE	150	20	E5

MIL-C-3965/16 PLAIN FOIL, NON-POLAR

TYPE: CL32 (Uninsulated) CL33 (Insulated)

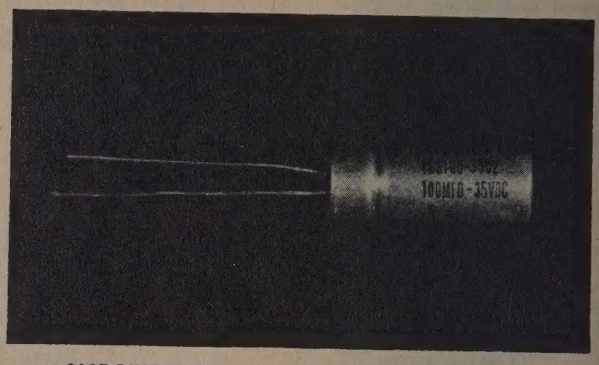
All Parts Numbers are listed as CL32 Type. If insulating sleeve is required, change CL32 to CL33.

Military Designation	Volts D.C.	Cap. Mfds.	Case Size
CL32BD040MNE	10	4	E1
CL32BD160MNE	10	16	E2
CL32BD550MNE	10	55	E3
CL32BD111MNE	10	110	E4
CL32BD151MNE	10	150	E5
CL32BH1R4MNE	30	1.4	E1
CL32BH5R5MNE	30	5.5	E2
CL32BH180MNE	30	18	E3
CL32BH360MNE	30	36	E4
CL32BH450MNE	30	45	E5
CL32BJ0R8MNE	50	0.8	E1
CL32BJ030MNE	50	3	E2
CL32BJ100MNE	50	10	E3
CL32BJ200MNE	50	20	E4
CL32BJ300MNE	50	30	E5
CL32BL0R5MNE	75	0.5	E1
CL32BL020MNE	75	2	E2
CL32BL070MNE	75	7	E3
CL32BL140MNE	75	14	E4
CI32BL200MNE	75	20	E5
CL32BN0R4MNE	100	0.4	E1
CL32BN1R5MNE	100	1.5	E2
CL32BN050MNE	100	5	E3
CL32BN100MNE	100	10	E4
CL32BN150MNE	100	15	E5
CL32BQR25MNE	150	0.25	E1
CL32BQ010MNE	150	1	E2
CL32BQ3R5MNE	150	3.5	E3
CL32BQ070MNE	150	7	E4
CL32BQ100MNE	150	10	E5

TANSITOR TANTALUM CAPACITORS

TYPE: TES −55°C to +85°C

Tansitor Type TES tantalum capacitors are unique small foil tantalum capacitors ideally suited for use in printed circuits. They are similar in performance to CL30 and CL22 Type capacitors, but offer significant savings in space because both leads emerge from one end of the capacitors. They operate reliably over the temperature range of −55°C to +85°C.



CASE DIMENSIONS (Uninsulated)*

CASE SIZE	Dimensions (Nominal) Length x Diameter, Inches
C1	0.650 x 0.312
C2	1.000 x 0.375

* For dimensions of insulated units add approximately 0.125″ to length, 0.030″ to diameter.

HIGH CAPACITANCE TYPE

CASE DIMENSIONS (Uninsulated)*

CASE SIZE	Dimensions (Nominal) Length x Diameter, Inches
C30	0.813 x 0.563
C32	0.938 x 0.563
C33	1.188 x 0.563
C34	1.250 x 0.563
C35	1.563 x 0.563
C36	1.688 x 0.563
C37	1.938 x 0.563
C38	2.188 x 0.563
C39	2.438 x 0.563
C40	0.813 x 0.625
C42	0.938 x 0.625
C43	1.188 x 0.625
C44	1.250 x 0.625
C45	1.563 x 0.625
C46	1.688 x 0.625
C47	1.938 x 0.625
C48	2.188 x 0.625
C49	2.438 x 0.625

* For dimensions of insulated units add approximately 0.065″ to length, 0.015″ to diameter.

ETCHED FOIL, POLAR*

Volts D.C.	Case Size	Cap. Mfds.	Tansitor[1] Catalog No.
10	C1	140	TES140-10C1
	C2	375	TES375-10C2
20	C1	70	TES70-20C1
	C2	180	TES180-20C2
50	C1	25	TES25-50C1
	C2	60	TES60-50C2
75	C1	14	TES14-75C1
	C2	35	TES35-75C2
100	C1	8.5	TES8.5-100C1
	C2	20	TES20-100C2
125	C1	5	TES5-125C1
	C2	14	TES14-125C2
150	C1	3.5	TES3.5-150C1
	C2	10	TES10-150C2

ETCHED FOIL, NON-POLAR*

10	C1	80	TES80-10C1N
	C2	200	TES200-10C20
20	C1	35	TES35-20C1N
	C2	100	TES100-20C2N
50	C1	13	TES13-50C1N
	C2	30	TES30-50C2N
75	C1	7	TES7-75C1N
	C2	18	TES18-75C2N
100	C1	4.2	TES4.2-100C1N
	C2	10	TES10-100C2N
125	C1	2.5	TES2.5-125C1N
	C2	7	TES7-125C2N
150	C1	1.8	TES1.8-150C1N
	C2	5	TES5-150C2N

HIGH CAPACITANCE FOIL, POLAR

Volts D.C.	Case Size	Cap. Mfds.	Tansitor[1] Catalog No.
25	C30	170	TES170-24C30
	C32	260	TES260-25C32
	C33	350	TES350-25C33
	C34	430	TES430-25C34
	C35	600	TES600-25C35
	C36	690	TES690-25C36
	C37	870	TES870-25C37
	C38	1000	TES1000-25C38
	C39	1200	TES1200-25C39
50	C40	100	TES100-50C40
	C42	150	TES150-50C42
	C43	210	TES210-50C43
	C44	260	TES260-50C44
	C45	360	TES360-50C45
	C46	410	TES410-50C46
	C47	520	TES520-50C47
	C48	620	TES620-50C48
	C49	720	TES720-50C49
150	C40	23	TES23-150C40
	C42	34	TES34-150C42
	C43	46	TES46-150C43
	C44	57	TES57-150C44
	C45	80	TES80-150C45
	C46	92	TES92-150C46
	C47	115	TES115-150C47
	C48	140	TES140-150C48
	C49	160	TES160-150C49

HIGH CAPACITANCE FOIL, NON-POLAR

25	C40	140	TES140-25C40N
	C42	210	TES210-25C42N
	C43	280	TES280-25C43N
	C44	350	TES350-25C44N
	C45	490	TES490-25C45N
	C46	550	TES550-25C46N
	C47	690	TES690-25C47N
	C48	830	TES830-25C48N
	C49	970	TES970-25C49N
50	C30	37	TES37-50C30N
	C32	55	TES55-50C32N
	C33	75	TES75-50C33N
	C34	90	TES90-50C34N
	C35	130	TES130-50C35N
	C36	150	TES150-50C36N
	C37	180	TES180-50C37N
	C38	220	TES320-50C38N
	C39	260	TES260-50C39N
150	C30	8	TES8-150C30N
	C32	12	TES12-150C32N
	C33	16	TES16-150C33N
	C34	20	TES20-150C34N
	C35	28	TES28-150C35N
	C36	33	TES33-150C36N
	C37	41	TES41-150C37N
	C38	50	TES50-150C38N
	C39	57	TES57-150C39N

[1] When insulating tube is desired, add letter "I" as a suffix to catalog number.
* Ratings in plain foil also available.

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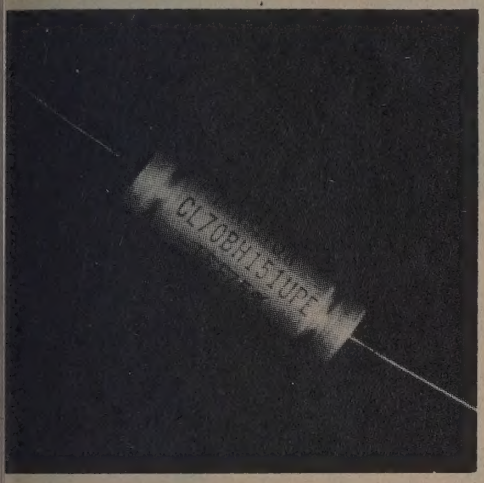
TANSITOR ELECTRONICS, INC.

MIL-C-3965D TANSITOR TANTALUM FOIL CAPACITORS TYPES: CL70, 71, 72, 73

Transitor Military Type extended range capacitors are manufactured to operate reliably from −55°C to +85°C and to +125° derated.



CASE DIMENSIONS

Case Size	Length Max.	Diameter Max.
E1	.750	.204
E2	.968	.297
E3	1.500	.391
E4	2.187	.391
E5	2.812	.391

CL70 & 71 POLAR

Type Designation[1]	VOLTAGE Rated +85°C	VOLTAGE Derated +125°C	Capacitance	Case Size
CL7-BE290UPE	15	10	29	E1
CL7-BE101UPE	15	10	100	E2
CL7-BE311UPE	15	10	310	E3
CL7-BE651UPE	15	10	650	E4
CL7-BE921UPE	15	10	920	E5
CL7-BG170UPE	25	15	17	E1
CL7-BG600UPE	25	15	60	E2
CL7-BG181UPE	25	15	180	E3
CL7-BG381UPE	25	15	380	E4
CL7-BG551UPE	25	15	550	E5
CL7-BH150UPE	30	20	15	E1
CL7-BH520UPE	30	20	52	E2
CL7-BH151UPE	30	20	150	E3
CL7-BH321UPE	30	20	320	E4
CL7-BH461UPE	30	20	460	E5
CL7-BJ070TPE	50	30	7	E1
CL7-BJ250TPE	50	30	25	E2
CL7-BJ750TPE	50	30	75	E3
CL7-BJ161TPE	50	30	160	E4
CL7-BJ231TPE	50	30	230	E5
CL7-BL040TPE	75	50	4	E1
CL7-BL150TPE	75	50	15	E2
CL7-BL450TPE	75	50	45	B3
CL7-BL950TPE	75	50	95	E4
CL7-BL131TPE	75	50	130	E5
CL7-BN030SPE	100	65	3	E1
CL7-BN100SPE	100	65	10	E2
CL7-BN300SPE	100	65	30	E3
CL7-BN630SPE	100	65	63	E4
CL7-BN900SPE	100	65	90	E5
CL7-BQ1R6SPE	150	100	1.6	E1
CL7-BQ5R5SPE	150	100	5.5	E2
CL7-BQ170SPE	150	100	17	E3
CL7-BQ350SPE	150	100	35	E4
CL7-BQ500SPE	150	100	50	E5

[1] For uninsulated — add CL70
For insulated — add CL71

CL72 & 73 NON-POLAR

Type Designation[1]	VOLTAGE Rated +85°C	VOLTAGE Derated +125°C	Capacitance	Case Size
CL7-BE200UNE	15	10	20	E1
CL7-BE700UNE	15	10	70	E2
CL7-BE201UNE	15	10	200	E3
CL7-BE411UNE	15	10	410	E4
CL7-BE591UNE	15	10	590	E5
CL7-BG100UNE	25	15	10	E1
CL7-BG350UNE	25	15	35	E2
CL7-BG101UNE	25	15	100	E3
CL7-BG211UNE	25	15	210	E4
CL7-BG301UNE	25	15	300	E5
CL7-BH080UNE	30	20	8	E1
CL7-BH290UNE	30	20	29	E2
CL7-BH800UNE	30	20	80	E3
CL7-BH171UNE	30	20	170	E4
CL7-BH241UNE	30	20	240	E5
CL7-BJ3R5TNE	50	30	3.5	E1
CL7-BJ130TNE	50	30	13	E2
CL7-BJ360TNE	50	30	36	E3
CL7-BJ750TNE	50	30	75	E4
CL7-BJ111TNE	50	30	110	E5
CL7-BL020TNE	75	50	2	E1
CL7-BL070TNE	75	50	7	E2
CL7-BL200TNE	75	50	20	E3
CL7-BL430TNE	75	50	43	E4
CL7-BL600TNE	75	50	60	E5
CL7-BN1R4SNE	100	65	1.4	E1
CL7-BN050SNE	100	65	5	E2
CL7-BN140SNE	100	65	14	E3
CL7-BN290SNE	100	65	29	E4
CL7-BN410SNE	100	65	41	E5
CL7-BQ75SNE	150	100	0.75	E1
CL7-BQ2R7SNE	150	100	2.7	E2
CL7-BQ7R5SNE	150	100	7.5	E3
CL7-BQ150SNE	150	100	15	E4
CL7-BQ220SNE	150	100	22	E5

[1] For uninsulated — add CL72
For insulated — add CL73

APPLICATION COMPARISON TABLE — CAPACITOR TYPES

CHARACTERISTIC	WET SLUG	SOLIDS	FOILS
TEMPERATURE STABILITY	GOOD	BEST	BETTER
EQUIVALENT SERIES RESISTANCE	GOOD	BEST	BETTER
DC LEAKAGE	BEST	GOOD	BETTER
CAPACITANCE RANGE	EXCELLENT	GOOD	VIRTUALLY UNLIMITED
MAXIMUM VOLTAGE	125	75	300
VOLUME EFFICIENCY	EXCELLENT	GOOD	GOOD
APPLICATIONS			
FILTER	EXCELLENT	EXCELLENT	EXCELLENT (BEST FOR HI FREQ.)
BYPASS	EXCELLENT	EXCELLENT	EXCELLENT
COUPLING	EXCELLENT	EXCELLENT	EXCELLENT
ENERGY STORAGE	EXCELLENT	EXCELLENT	EXCELLENT
TIMING	EXCELLENT	LIMITED	NOT RECOMMENDED
FAILURE			
MODE	GRADUAL DECREASE IN CAP., INCREASED ESR	SHORT	GRADUAL DECREASE IN CAP., INCREASED ESR
MECHANISM	LOSS OF ELECTROLYTE (VAPOR) THRU SEAL	CATASTROPHIC DIELECTRIC BREAKTHRU	LOSS OF ELECTROLYTE (VAPOR) THRU SEAL
CAUSE	NONHERMETIC SEAL	LOW IMPEDANCE APPLICATION	NONHERMETIC SEAL
POLARITY	POLAR ONLY	POLAR + NONPOLAR	POLAR + NONPOLAR
TEMPERATURE RANGE	−55 to +125°C	−80 to +200°C	−55 to +150°C
RELATIVE PRICE LEVEL	LOW TO MEDIUM	LOW	MEDIUM TO HIGH

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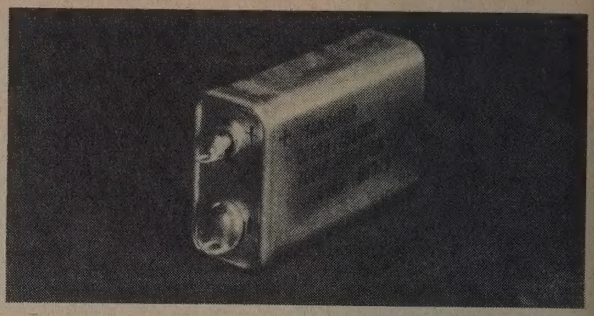
TANSITOR ELECTRONICS, INC.

MIL-C-3965 TANSITOR TANTALUM CAPACITORS

TYPES: CL51, CL52, CL53, CL54; −55°C to +85°C and +125°C derated

Tansitor's Type CL51, 52, 53 & 54 tantalum foil capacitors answer industry's need for packages of high capacitance in moderate size, hermetically sealed cases, and meet all the requirements of the current issue of MIL-C-3965. These units are equivalent to Tansitor Types RE & RP. Brackets available on request.

Case Size	Dimensions, Inches	Case Size	Dimensions, Inches
C1	0.750 x 0.750 x 0.500	D1	0.783 x 1.331 x 1.375
C2	0.750 x 0.750 x 0.875	D2	0.783 x 1.331 x 2.000
C3	0.750 x 0.750 x 1.125	D3	0.783 x 1.331 x 2.500



MILITARY DESIGNATION CODE

CL53	B	L	551	U	P	E or G
Style	Temp. Characteristic	Voltage	Capacitance	Capacitance Tolerance	Polarity	Type Seal

STANDARD MILITARY RATINGS

TYPE: CL53 — ETCHED FOIL*, POLAR

MIL-C-3965/11	D.C. Voltage at +125°C	Capacitance Mfds.	Case Size
CL53BE122UPG	10	1200	D1
CL53BE242UPG	10	2400	D2
CL53BE352UPG	10	3500	D3
CL53BH661UPG	20	660	D1
CL53BH132UPG	20	1300	D2
CL53BH182UPG	20	1800	D3
CL53BJ351UPG	30	350	D1
CL53BJ701UPG	30	700	D2
CL53BJ102UPG	30	1000	D3
CL53BL201UPG	50	200	D1
CL53BL401UPG	50	400	D2
CL53BL551UPG	50	550	D3
CL53BI121UPG	75	120	D1
CL52BI241UPG	75	240	D2
CL53BI321UPG	75	320	D3
CL53BQ700UPG	100	70	D1
CL53BQ141UPG	100	140	D2
CL53BQ201UPG	100	200	D3
CL53BJ550UPG	30	55	C1
CL53BJ111UPG	30	110	C2
CL53BJ181UPG	30	180	C3
CL53BL300UPG	50	30	C1
CL53BL600UPG	50	60	C2
CL53BL101UPG	50	100	C3
CL52BI180UPG	75	18	C1
CL53BI360UPG	75	36	C2
CL53BI600UPG	75	60	C3
CL53BQ120UPG	100	12	C1
CL53BQ240UPG	100	24	C2
CL53BQ360UPG	100	36	C3

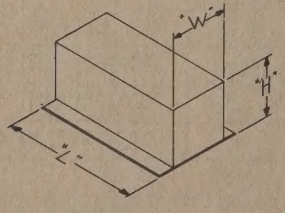
TYPE: CL54 — ETCHED FOIL*, NON-POLAR

MIL-C-3965/12	D.C. Voltage at +125°C	Capacitance Mfds.	Case Size
CL54BE751UNG	10	750	D1
CL54BE152UNG	10	1500	D2
CL54BE212UNG	10	2100	D3
CL54BH361UNG	20	360	D1
CL54BH721UNG	20	720	D2
CL54BH102UNG	20	1000	D3
CL54BJ201UNG	30	200	D1
CL54BJ401UNG	30	400	D2
CL54BJ551UNG	30	550	D3
CL54BL101UNG	50	100	D1
CL54BL201UNG	50	200	D2
CL54BL271UNG	50	270	D3
CL54BI600UNG	75	60	D1
CL54BI121UNG	75	120	D2
CL54BI161UNG	75	160	D3
CL54BQ350UNG	100	35	D1
CL54BQ700UNG	100	70	D2
CL54BQ101UNG	100	100	D3
CL54BJ300UNG	30	30	C1
CL54BJ600UNG	30	60	C2
CL54BJ101UNG	30	100	C3
CL54BL150UNG	50	15	C1
CL54BL300UNG	50	30	C2
CL54BL500UNG	50	50	C3
CL54BI090UNG	75	9	C1
CL54BI180UNG	75	18	C2
CL54BI300UNG	75	30	C3
CL54BQ060UNG	100	6	C1
CL54BQ120UNG	100	12	C2
CL54BQ180UNG	100	18	C3

* Ratings in plain foil (CL51, CL52) also available.

TANSITOR TANTALUM CAPACITORS

TYPE: CM, RECTANGULAR
−55°C to +125°C

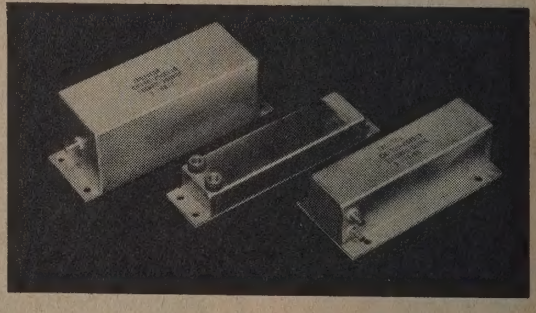


Tolerance on H, W & L dimensions is ±1/16"

SUGGESTED "STANDARD" CASE SIZES

DIMENSIONS IN INCHES H	W	L
3/16"	1 1/16"	3 7/8"
5/16"	1 5/16"	3 7/8"
1 1/16"	1 1/16"	3 7/8"
1 1/16"	1 5/16"	3 7/8"
1 5/16"	1 5/16"	3 7/8"
1 5/16"	2 1/16"	3 7/8"

DIMENSIONS IN INCHES H	W	L
2 1/16"	2 1/16"	3 7/8"
2 1/16"	2 5/16"	3 7/8"
2 5/16"	2 5/16"	3 7/8"
2 5/16"	3 1/16"	3 7/8"
3 1/16"	3 1/16"	3 7/8"
3 1/16"	3 5/16"	3 7/8"
3 5/16"	3 5/16"	3 7/8"



As the name implies, Tansitor Type CM or custom-made capacitor "packages" are designed to fill special or unusual tantalum capacitor needs, most frequently in the area of extra high capacitance.

In most cases, Type CM units have employed tantalum foil internally. By its nature, however, a CM unit may employ internal sections of solid or wet sintered anode tantalum capacitors where their respective characteristics are desired. Combinations of foil, solid and wet styles are also available, if needed.

A wide range of ratings are available, with capacitance values as high as 310,000 microfarads. The CM series, however is adaptable for many ratings beyond those suggested, even to 1 farad and above, if required.

Dual or plural ratings are available in a single case or other components can be potted in the same case with the capacitors. For specific applications contact Tansitor Electronics, Inc.

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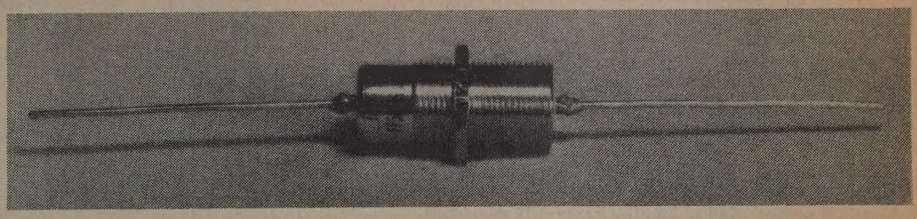
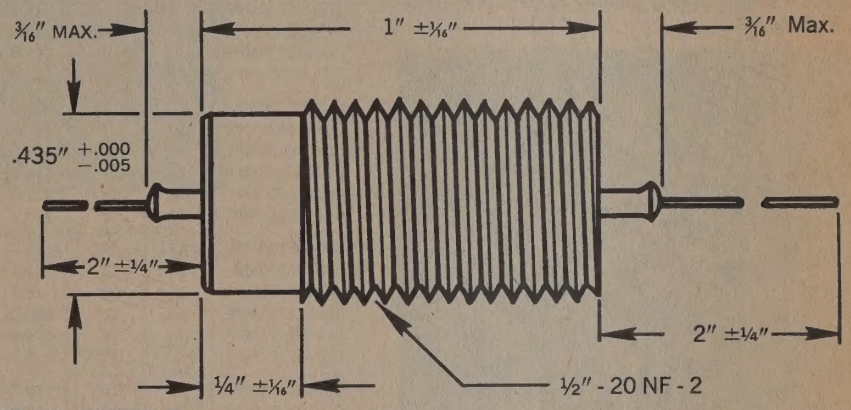
TANSITOR TYPE FF

TANTALUM FEED-THROUGH FOIL CAPACITORS

Volts	Cap. Mfds.	Tansitor Catalog No.
6	25	FF25-6C11
	150	FF150-6C11
10	16	FF16-10C11
	80	FF80-10C11
15	10	FF10-15C11
	50	FF50-15C11
20	8	FF8-20C11
	35	FF35-20C11
35	4	FF4-35C11
	18	FF18-35C11
50	3	FF3-50C11
	13	FF13-50C11
60	2.5	FF2.5-6011
	9.5	FF9.5-60C11
75	2	FF2-75C11
	7	FF7-75C11
100	1.5	FF1.5-100C11
	4.2	FF4.2-100C11
125	1.2	FF1.2-125C11
	2.5	FF2.5-125C11
150	1.0	FF1.0-150C11
	1.8	FF1.8-150C11

end of Part Number above add:
"N" For Non Polarity
"PP" For Feed-thru Positive (Polar)
"PN" For Feed-thru Negative (Polar)





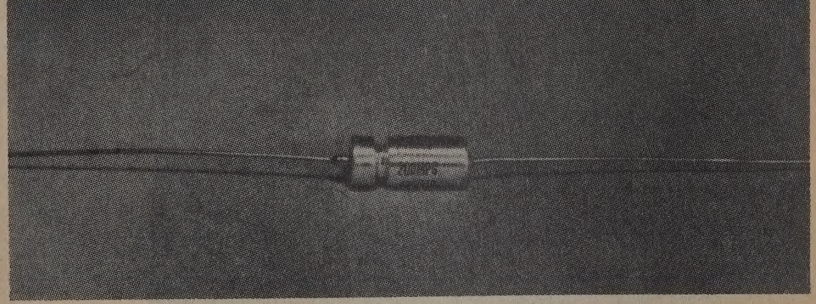
TYPE FF ASSEMBLY

Tansitor Type FF capacitors are of tantalum foil construction with a temperature range of −55°C to +85°C. • Hermetic Seal • Low Leakage • Long Shelf Life • High Voltage • 20 amps rms feed-thru current.

MIL-C-3965

TYPES: CL66 - CL67 −55°C to +85°C, and to +125°C Derated

Tansitor's Type CL66, 67, are wet sintered anode capacitors, employing glass-to-metal end seals, this series utilizes the same electrolyte systems as the CL64, 65 style with its well-known volumetric efficiency, but adds the reliability of a hermetically sealed unit.



Type Designaiton[1]	VOLTAGE Rated (+85° C) Volts, dc	VOLTAGE Derated (+125° C) Volts, dc	Capacitance[2] µf	Case Size
L66BB300MPG	6	4	30.0	T1
L66BB680MPG	6	4	68.0*	T1
L66BB141MPG	6	4	140.0	T2
L66BB271MPG	6	4	270.0*	T2
L66BB331MPG	6	4	330.0	T3
L66BB561MPG	6	4	560.0*	T3
L66BC250MPG	8	5	25.0	T1
L66BC560MPG	8	5	56.0*	T1
L66BC221MPG	8	5	220.0*	T2
L66BC431MPG	8	5	430.0*	T3
L66BD200MPG	10	7	20.0	T1
L66BD470MPG	10	7	47.0*	T1
L66BD101MPG	10	7	100.0	T2
L66BD181MPG	10	7	180.0*	T2
L66BD251MPG	10	7	250.0	T3
L66BD391MPG	10	7	390.0*	T3
L66BE150MPG	15	10	15.0	T1
L66BE330MPG	15	10	33.0*	T1
L66BE700MPG	15	10	70.0	T2
L66BE121MPG	15	10	120.0*	T2
L66BE171MPG	15	10	170.0	T3
L66BE271MPG	15	10	270.0*	T3
L66BG100MPG	25	15	10.0	T1
L66BG220MPG	25	15	22.0*	T1
L66BG101MPG	25	15	100.0*	T2
L66BG181MPG	25	15	180.0*	T3
L66BH080MPG	30	20	8.0	T1
L66BH150MPG	30	20	15.0*	T1
L66BH400MPG	30	20	40.0	T2
L66BH680MPG	30	20	68.0*	T2
L66BH101MPG	30	20	100.0	T3
L66BH151MPG	30	20	150.0*	T3
L66BJ050MPG	50	30	5.0	T1
L66BJ100MPG	50	30	10.0*	T1
L66BJ250MPG	50	30	25.0	T2
L66BJ470MPG	50	30	47.0*	T2
L66BJ600MPG	50	30	60.0	T3
L66BJ820MPG	50	30	82.0*	T3
L66BK040MPG	60	40	4.0	T1
L66BK8R2MPG	60	40	8.2*	T1
L66BK200MPG	60	40	20.0	T2
L66BK390MPG	60	40	39.0*	T2
L66BK500MPG	60	40	50.0	T3
L66BK680MPG	60	40	68.0*	T3

Type Designation[1]	VOLTAGE Rated (+85° C) Volts, dc	VOLTAGE Derated (+125° C) Volts, dc	Capacitance[2] µf	Case Size
CL66BL3R5MPG	75	50	3.5	T1
CL66BL6R8MPG	75	50	6.8*	T1
CL66BL150MPG	75	50	15.0	T2
CL66BL330MPG	75	50	33.0*	T2
CL66BL400MPG	75	50	40.0	T3
CL66BL560MPG	75	50	56.0*	73
CL66BN2R5MPG	100	65	2.5	T1
CL66BN4R7MPG	100	65	4.7*	T1
CL66BN110MPG	100	65	11.0	T2
CL66BN220MPG	100	65	22.0*	T2
CL66BN300MPG	100	65	30.0	T3
CL66BN430MPG	100	65	43.0*	T3

[1] For insulated version change CL66 to CL67.
For closer tolerances change letter M (±20%) to K (±10%) or J (±5%).

Type Designation[1]	VOLTAGE Rated (+85° C) Volts, dc	VOLTAGE Derated (+125° C) Volts, dc	Capacitance[2] µf	Case Size
CL66BP1R7MPG	125	85	1.7	T1
CL66BP3R6MPG	125	85	3.6*	T1
CL66BP090MPG	125	85	9.0	T2
CL66BP140MPG	125	85	14.0*	T2
CL66BP250MPG	125	85	25.0*	T3

Case Size	DIMENSIONS (Uninsulated) L[1] +.031 −.016	D (Nom.) ±.016 (.41)
T1	.453	.188
T2	.641	.281
T3	.766	.375

[1] For style C67, nonshrinkable sleeving shall extend .016 inch minimum, .062 inch maximum, beyond each end of the case; shrinkable sleeving shall lap over the ends of the case.

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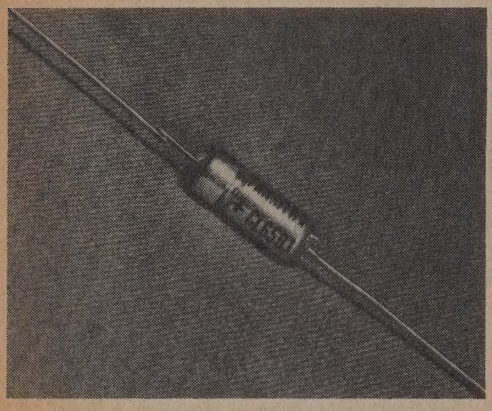
TANSITOR ELECTRONICS, INC.

MIL-C-3965D TANSITOR TANTALUM CAPACITORS TYPES: CL64 & CL65 −55°C to +85°C and −55°C to +125°C Derated

Tansitor wet sintered anode capacitors listed herein are manufactured to meet all the requirements of MIL-C-3965 for MIL Types CL65 and CL65. Encased in a fine silver can, the sintered porous tantalum anode provides exceptionally high capacitance per unit volume. These units exhibit extremely low leakage currents, low power factor, and little change in capacitance with frequency.

As opposed to "Shoulder Type" construction of other wet types, the CL64 and CL65 offer a straight cylindrical shape, readily lending them to flat circuit applications.



CASE DIMENSIONS (UNINSULATED)

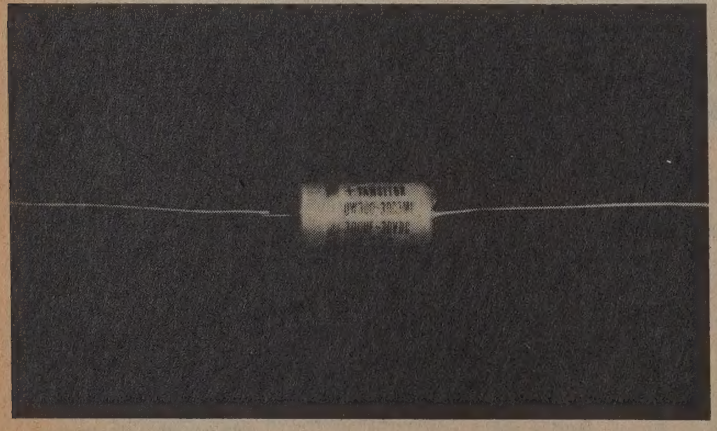
Case Size	L[1] ±.031 −.016	D ±.016 (.41)
T1	.453	.188
T2	.641	.281
T3	.766	.375

Type Designation[1]	VOLTAGE Rated +85°C	VOLTAGE Derated +125°C	Capacitance	Case Size
CL64BB300MPE	6	4	30.0	T1
CL64BB680MPE	6	4	68.0	T1
CL64BB141MPE	6	4	140.0	T2
CL64BB271MPE	6	4	270.0	T2
CL64BB331MPE	6	4	330.0	T3
CL64BB561MPE	6	4	560.0	T3
CL64BC250MPE	8	5	25.0	T1
CL64BC560MPE	8	5	56.0	T1
CL64BC221MPE	8	5	220.0	T2
CL64BC431MPE	8	5	430.0	T3
CL64BD200MPE	10	7	20.0	T1
CL64BD470MPE	10	7	47.0	T1
CL64BD101MPE	10	7	100.0	T2
CL64BD181MPE	10	7	180.0	T2
CL64BD251MPE	10	7	250.0	T3
CL64BD391MPE	10	7	390.0	T3
CL64BE150MPE	15	10	15.0	T1
CL64BE330MPE	15	10	33.0	T1
CL64BE700MPE	15	10	70.0	T2
CL64BE121MPE	15	10	120.0	T2
CL64BE171MPE	15	10	170.0	T3
CL64BE271MPE	15	10	270.0	T3
CL64BG100MPE	25	15	10.0	T1
CL64BG220MPE	25	15	22.0	T1
CL64BG101MPE	25	15	100.0	T2
CL64BG181MPE	25	15	180.0	73
CL64BH080MPE	30	20	8.0	T1
CL64BH150MPE	30	20	15.0	T1
CL64BH400MPE	30	20	40.0	T2
CL64BH680MPE	30	20	68.0	T2
CL64BH101MPE	30	20	100.0	T3
CL64BH151MPE	30	20	150.0	T3
CL64BJ050MPE	50	30	5.0	T1
CL64BJ100MPE	50	30	10.0	T1
CL64BJ250MPE	50	30	25.0	T2
CL64BJ470MPE	50	30	47.0	T2
CL64BJ600MPE	50	30	60.0	T3
CL64BJ820MPE	50	30	82.0	T3
CL64BK040MPE	60	40	4.0	T1
CL64BK8R2MPE	60	40	8.2	T1
CL64BK200MPE	60	40	20.0	T2
CL64BK390MPE	60	40	39.0	T2
CL64BK500MPE	60	40	50.0	T3
CL64BK680MPE	60	40	68.0	T3
CL64BL3R5MPE	75	50	3.5	T1
CL64BL6R8MPE	75	50	6.8	T1
CL64BL150MPE	75	50	15.0	T2
CL64BL330MPE	75	50	33.0	T2
CL64BL400MPE	75	50	40.0	T3
CL64BL560MPE	75	50	56.0	T3
CL64BN2R5MPE	100	65	2.5	T1
CL64BN4R7MPE	100	65	4.7	T1
CL64BN110MPE	100	65	11.0	T2
CL64BN220MPE	100	65	22.0	T2
CL64BN300MPE	100	65	30.0	T3
CL64BN430MPE	100	65	43.0	T3
CL64BP1R7MPE	125	85	1.7	T1
CL64BP3R6MPE	125	85	3.6	T1
CL64BP090MPE	125	85	9.0	T2
CL64BP140MPE	125	85	14.0	T2
CL64BP250MPE	125	85	25.0	T3

[1] CL64 indicates uninsulated unit. CL65 if outer insulation is required.

TANSITOR TYPE UW ULTRA HIGH CAP SERIES WET SINTERED ANODE TANTALUM CAPACITORS −55°C to 85°C

Where high volumetric efficiency is desired and space is critical, Tansitor's extended range sintered anode capacitor fill the requirements. This is accomplished by the use of a special sintered tantalum anode which greatly increases capacitance for a given volume. In some cases the capacitance is increased by nearly three times.



CASE DIMENSIONS (UNINSULATED)

Case Size	L ±.031 −.016	D ±.016 (.41)
C1	.453	.188
C2	.641	.281
C3	.766	.375

Case Size	Tansitor[1] Catalog No.	Capacity Mfds.	Volts, DC +85°C
C1	UW82-15C1M	82	15
C2	UW280-15C2M	280	15
C3	UW600-15C3M	600	15
C1	UW45-25C1M	45	25
C2	UW200-25C2M	200	25
C3	UW400-25C3M	400	25
C1	UW39-30C1M	39	30
C2	UW150-30C2M	150	30
C3	UW300-30C3M	300	30
C1	UW25-50C1M	25	50
C2	UW100-50C2M	100	50
C3	UW200-50C3M	200	50
C1	UW15-60C1M	15	60
C2	UW80-60C2M	80	60
C3	UW130-60C3M	130	60
C1	UW12-75C1M	12	75
C3	UW56-75C2M	56	75
C3	UW110-75C3M	110	75

[1] For insulated type add "I" to end of catalog number.

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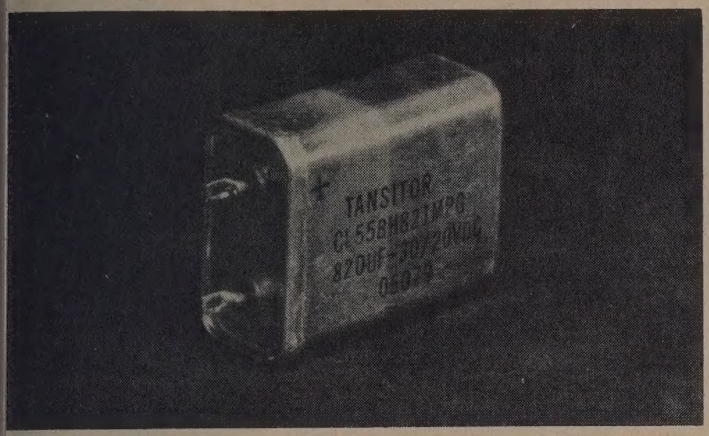
IIL-C-3965 TANSITOR TANTALUM CAPACITORS — TYPE: CL55



ansitor's Type CL55 tantalum capacitors are polarized, wet, sintered node units, capable of meeting all requirements of the current issue of IIL-C-3965.

haracteristics include:

- High capacitance per unit volume
- Polar construction
- Hermetic seal
- Long Shelf Life
- Lowest leakage currents
- Long operating life
- Low power factor

ype CL55 capacitors are used xtensively for coupling, filters, y-pass, energy storage and ther circuits.

CASE DIMENSIONS

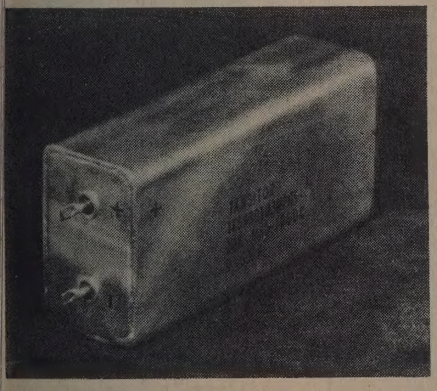
Case Code	Width Nom.	Thickness Nom.	Height Nom.
A1	1.275	.690	1.062
A2	1.275	.690	1.375
A3	1.275	.690	1.625
A4	1.275	.690	2.000
A5	1.275	.690	2.500

Type Designation	VOLTAGE Rated (85°C)	VOLTAGE Derated (125°C)	Capacitance	Case Size
CL55BE961MPG	15	10	960	A1
CL55BE122MPG	15	10	1200	A2
CL55BE142MPG	15	10	1400	A3
CL55BE212MPG	15	10	2100	A4
CL55BE242MPG	15	10	2400	A5
CL55BH521MPG	30	20	520	A1
CL55BH661MPG	30	20	660	A2
CL55BH821MPG	30	20	820	A3
CL55BH122MPG	30	20	1200	A4
CL55BH132MPG	30	20	1300	A5
CL55BJ401MPG	50	30	400	A1
CL55BJ431MPG	50	30	430	A1
CL55BJ501MPG	50	30	500	A2
CL55BJ601MPG	50	30	600	A3
CL55BJ801MPG	50	30	800	A4
CL55BJ102MPG	50	30	1000	A5
CL55BL271MPG	75	50	270	AE
CL55BL331MPG	75	50	330	A2
CL55BL401MPG	75	50	400	A3
CL55BL601MPG	75	50	600	A4
CL55BL661MPG	75	50	660	A5
CL55BN171MPG	100	65	170	A1
CL55BN221MPG	100	65	220	A2
CL55BN261MPG	100	65	260	A3
CL55BN351MPG	100	65	350	A4
CL55BN441MPG	100	65	440	A5
CL55BQ700MPG	150	100	70	A1
CL55BQ900MPG	150	100	90	A2
CL55BQ101MPG	150	100	100	A3
CL55BQ141MPG	150	100	140	A4
CL55BQ181MPG	150	100	180	A5

TANSITOR TANTALUM CAPACITORS — TYPE: TE59

Tansitor Type TE59 capacitors are similar in design to the CL 55 Type.

By a slight increase in size, it greatly increases the capacitance for more volumetric efficiency.



CASE DIMENSIONS

Case Code	Width Nom.	Thickness Nom.	Height Nom.
B1	1.593	1.000	1.500
B2	1.593	1.000	1.875
B3	1.593	1.000	2.250
B4	1.593	1.000	2.625
B5	1.593	1.000	3.000
B6	1.593	1.000	3.375
B7	1.593	1.000	3.750

Tansitor Part No.	Rated Volts DC to + 85°C	Derated Volts DC to + 125°C	Capacitance Mfds.	Case Size
TE59BB722MPG1	6	4	7,200	B1
TE59BB962MPG2	6	4	9,600	B2
TE59BB123MPG3	6	4	12,000	B3
TE59BB143MPG4	6	4	14,000	B4
TE59BB173MPG5	6	4	17,000	B5
TE59BB193MPG6	6	4	19,000	B6
TE59BB223MPG7	6	4	22,000	B7
TE59BC512MPG1	8	5	5,100	B1
TE59BC682MPG2	8	5	6,800	B2
TE59BC852MPG3	8	5	8,500	B3
TE59BC103MPG4	8	5	10,000	B4
TE59BC123MPG5	8	5	12,000	B5
TE59BC143MPG6	8	5	14,000	B6
TE59BC153MPG7	8	5	15,000	B7
TE59BD452MPG1	10	7	4,500	B1
TE59BD602MPG2	10	7	6,000	B2
TE59BD752MPG3	10	7	7,500	B3
TE59BD902MPG4	10	7	9,000	B4
TE59BD102MPG5	10	7	10,000	B5
TE59BD123MPG6	10	7	12,000	B6
TE59BD143MPG7	10	7	14,000	B7
TE59BE322MPG1	15	10	3,200	B1
TE59BE322MPG2	15	10	4,300	B2
TE59BE542MPG3	15	10	5,400	B3
TE59BE652MPG4	15	10	6,500	B4
TE59BE762MPG5	15	10	7,600	B5
TE59BE862MPG6	15	10	8,600	B6
TE59BE972MPG7	15	10	9,700	B7
TE59BG212MPG1	25	15	2,100	B1
TE59BG282MPG2	25	15	2,800	B2
TE59BG352MPG3	25	15	3,500	B3
TE59BG422MPG4	25	15	4,200	B4
TE59BG492MPG5	25	15	4,900	B5
TE59BG562MPG6	25	15	5,600	B6
TE59BG632MPG7	25	15	6,300	B7
TE59BH182MPG1	30	20	1,800	B1
TE59BH242MPG2	30	20	2,400	B2
TE59BH302MPG3	30	20	3,000	B3

Tansitor Part No.	Rated Volts DC to + 85°C	Derated Volts DC to + 125°C	Capacitance Mfds.	Case Size
TE59BH362MPG4	30	20	3,600	B4
TE59BH422MPG5	30	20	4,200	B5
TE59BH482MPG6	30	20	4,800	B6
TE59BH542MPG7	30	20	5,400	B7
TE59BJ961MPG1	50	30	960	B1
TE59BJ132MPG2	50	30	1,300	B2
TE59BJ162MPG3	50	30	1,600	B3
TE59BJ192MPG4	50	30	1,000	B4
TE59BJ222MPG5	50	30	2,200	B5
TE59BJ262MPG6	50	30	2,600	B6
TE59BJ292MPG7	50	30	2,900	B7
TE59BK841MPG1	60	40	840	B1
TE59BK112MPG2	60	40	1,100	B2
TE59BK142MPG3	60	40	1,400	B3
TE59BK172MPG4	60	40	1,700	B4
TE59BK202MPG5	60	40	2,000	B5
TE59BK222MPG6	60	40	2,200	B6
TE59BK252MPG7	60	40	2,500	B7
TE59BL661MPG1	75	50	660	B1
TE59BL881MPG2	75	50	880	B2
TE59BL112MPG3	75	50	1,100	B3
TE59BL142MPG4	75	50	1,400	B4
TE59BL152MPG5	75	50	1,500	B5
TE59BL182MPG6	75	50	1,800	B6
TE59BL202MPG7	75	50	2,000	B7
TE59BN511MPG1	100	65	510	B1
TE59BN681MPG2	100	65	680	B2
TE59BN851MPG3	100	65	850	B3
TE59BN102MPG4	100	65	1,000	B4
TE59BN122MPG5	100	65	1,200	B5
TE59BN142MPG6	100	65	1,400	B6
TE59BN152MPG7	100	65	1,500	B7
TE59BP341MPG1	125	85	340	B1
TE59BP451MPG2	125	85	450	B2
TE59BP561MPG3	125	85	560	B3
TE59BP671MPG4	125	85	670	B4
TE59BP791MPG5	125	85	790	B5
TE59BP901MPG6	125	85	900	B6
TE59BP102MPG7	125	85	1,000	B7

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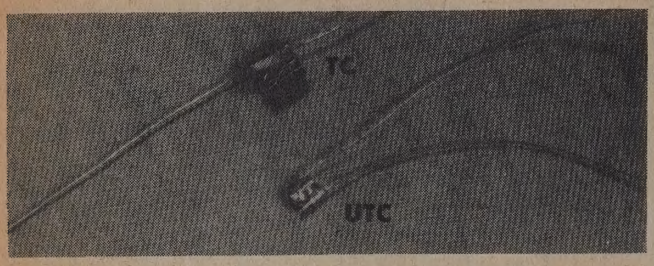
TANSITOR ELECTRONICS, INC.

TANSITOR SUBMINIATURE SOLID TANTALUM CHIP POLAR AND NON-POLAR TYPE TC AND UTC



Tansitor's Type TC solid tantalum capacitor is tailored to meet the demand for rectangular shaped, or "chip" components as often used in modular type assemblies. The small size facilitates high density packaging. TC styles find applications in many commercial and military electronic equipments, in by-pass, regulator, coupling, timing and hybrid circuits.

Tansitor's Type UTC capacitor is an unencapsulated version of the TC. The UTC is used primarily where space is limited and the final module is to be encapsulated. This capacitor has the same electrical characteristics and rating as the encapsulated TC. When ordering, add the letter "U" as prefix to TC part numbers shown below.

Type UTC is also available in Non-Polar style. Ratings on request.

CASE DIMENSIONS

(TC)

	POLAR			NON-POLAR			
Case Size	Length Max.	Width Max.	Thickness Max.	Case Size	Length Max.	Width Max.	Thickness Max.
C1	.125	.070	.040	N1	.220	.125	.125
C2	.165	.120	.070	N2	.280	.140	.180
C3	.225	.185	.075	N3	.370	.180	.220
C4	.290	.220	.110	N4	.390	.230	.230
C5	.310	.230	.130				
C6	.475	.375	.150				

UNENCAPSULATED (UTC)

Case Size	Length Max.	Width Max.	Thickness Max.	Case Size	Length Max.	Width Max.	Thickness Max.
C1	.110	.055	.035	C4	.270	.200	.100
C2	.130	.110	.060	C5	.290	.210	.120
C3	.170	.165	.065	C6	.425	.350	.125

TC POLAR

Tansitor * Part	Capacitance Mfd.	DC Working Voltage
TC.0010-20C1(A or R)E	0.0010	20
TC.0015-20C1(A or R)E	0.0015	20
TC.0022-20C1(A or R)E	0.0022	20
TC.0033-20C1(A or R)E	0.0033	20
TC.0047-20C1(A or R)E	0.0047	20
TC.0068-20C1(A or R)E	0.0068	20
TC.010-20C1(A or R)E	0.010	20
TC.015-20C1(A or R)E	0.015	20
TC.022-20C1(A or R)E	0.022	20
TC.033-20C1(A or R)E	0.033	20
TC.047-20C1(A or R)E	0.047	20
TC.068-20C1(A or R)E	0.068	20
TC.10-20C1(A or R)E	0.10	20
TC.15-20C1(A or R)E	0.15	20
TC.22-20C1(A or R)E	0.22	20
TC.33-15C1(A or R)E	0.33	15
TC.47-10C1(A or R)E	0.47	10
TC.68-6C1(A or R)E	0.68	6
TC1-4C1(A or R)E	1.0	4
TC1.5-3C1(A or R)E	1.5	3
TC.0047-35C2(A or R)M	0.0047	35
TC.0068-35C2(A or R)M	0.0068	35
TC.010-35C2(A or R)M	0.010	35
TC.015-35C2(A or R)M	0.015	35
TC.022-35C2(A or R)M	0.022	35
TC.033-35C2(A or R)M	0.033	35
TC.047-35C2(A or R)M	0.047	35
TC.068-35C2(A or R)M	0.068	35
TC.10-35C2(A or R)M	0.10	35
TC.15-35C2(A or R)M	0.15	35

TC POLAR (continued)

Tansitor * Part	Capacitance Mfd.	DC Working Voltage
TC.22-35C2(A or R)M	0.22	35
TC.33-35C2(A or R)M	0.33	35
TC.47-35C2(A or R)M	0.47	35
TC.68-25C2(A or R)M	0.68	25
TC1-20C2(A or R)M	1.0	20
TC1.5-15C2(A or R)M	1.5	15
TC2.2-10C2(A or R)M	2.2	10
TC3.3-6C2(A or R)M	3.3	6
TC4.7-4C2(A or R)M	4.7	4
TC6.8-3C2(A or R)M	6.8	3
TC10-2C2(A or R)M	10.0	2
TC.68-35C3(A or R)M	0.68	35
TC1-35C3(A or R)M	1.0	35
TC1.5-35C3(A or R)M	1.5	35
TC2.2-25C3(A or R)M	2.2	25
TC3.3-20C3(A or R)M	3.3	20
TC4.7-20C3(A or R)M	4.7	20
TC6.8-10C3(A or R)M	6.8	10
TC10-6C3(A or R)M	10.0	6
TC15-4C3(A or R)M	15.0	4
TC22-2C3(A or R)M	22.0	2
TC2.2-35C4(A or R)M	2.2	35
TC3.3-35C4(A or R)M	3.3	35
TC4.7-35C4(A or R)M	4.7	35
TC6.8-25C4(A or R)M	6.8	25
TC10-20C4(A or R)M	10.0	20
TC15-15C4(A or R)M	15.0	15
TC22-10C4(A or R)M	22.0	10
TC33-6C4(A or R)M	33.0	6
TC47-4C4(A or R)M	47.0	4
TC6.8-35CE(A or R)M	6.8	35
TC10-25C5(A or R)M	10.0	25
TC15-20C5(A or R)M	15.0	20
TC22-15C5(A or R)M	22.0	15
TC33-10C5(A or R)M	33.0	10
TC47-6C5(A or R)M	47.0	6
TC68-4C5(A or R)M	68.0	4
TC82-2C5(A or R)M	82.0	2
TC10-35C6(A or R)M	10.0	35
TC15-35C6(A or R)M	15.0	35
TC22-35C6(A or R)M	22.0	35
TC33-25C6(A or R)M	33.0	25
TC47-20C6(A or R)M	47.0	20
TC68-15C6(A or R)M	68.0	15
TC100-10C6(A or R)M	100.0	10
TC150-6C6(A or R)M	150.0	6
TC220-3C6(A or R)M	220.0	3

TC NON-POLAR

Tansitor * Part	Capacitance Mfd.	DC Working Voltage
TC.10-35N1(A or R)M	0.10	35
TC.15-35N1(A or R)M	0.15	35
TC.22-35N1(A or R)M	0.22	35
TC.33-25N1(A or R)M	0.33	25
TC.47-20N1(A or R)M	0.47	20
TC.68-15N1(A or R)M	0.68	15
TC1-10N1(A or R)M	1.0	10
TC1.5-6N1(A or R)M	1.5	6
TC2.2-4N1(A or R)M	2.2	4
TC3.3-3N1(A or R)M	3.3	3
TC4.7-25N1(A or R)M	4.7	2
TC.47-35N2(A or R)M	0.47	35
TC.68-35N2(A or R)M	0.68	35
TC1-25N2(A or R)M	1.0	25
TC1.5-20N2(A or R)M	1.5	20
TC2.2-20N2(A or R)M	2.2	20
TC3.3-10N2(A or R)M	3.3	10
TC4.7-6N2(A or R)M	4.7	6
TC6.8-4N2(A or R)M	6.8	4
TC10-2N2(A or R)M	10.0	2
TC3.3-25N3(A or R)M	3.3	25
TC4.7-20N3(A or R)M	4.7	20
TC6.8-15N3(A or R)M	6.8	15
TC10-10N3(A or R)M	10.0	10
TC15-6N3(A or R)M	15.0	6
TC22-4N3(A or R)M	22.0	4
TC6.8-20N4(A or R)M	6.8	20
TC10-15N4(A or R)M	10.0	15
TC15-10N4(A or R)M	15.0	10
TC22-6N4(A or R)M	22.0	6
TC33-4N4(A or R)M	33.0	4

* The (A or R) portion of part number offers a choice of axial (A) or radial (R) configuration. Use either letter in part number in accordance with design need.

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TANSITOR ELECTRONICS, INC.

TANSITOR SUBMINIATURE SOLID TANTALUM

TYPE: HA and UHA: −55°C to +85°C and +125°C Derated

Tansitor's Type HA and UHA solid tantalum capacitors are designed for miniature components users and offer size reductions not previously available. In some instances Tansitor has decreased unit diameters while maintaining or increasing capacitor ratings.

Tansitor's Type UHA capacitor is an unencapsulated version of the HA style.. The UHA is primarily used where space is limited and module is to be encapsulated. The UHA has the same electrical characteristics and ratings as the encapsulated HA. When ordering, add the letter "U" as prefix to HA part numbers shown below.

The UHA capacitor is also available in Non-Polar ratings on request.

CASE DIMENSIONS

HA POLAR			HA NON-POLAR			
Case Size	Length Max.	Diameter Max.	Case Size	Length Max.	Width Max.	Thickness Max.
C1	.110	.067	N1	.175	.120	.070
C2	.125	.067	N2	.210	.120	.070
C3	.145	.067	N3	.240	.140	.080
C4	.160	.070	N4	.275	.235	.105
C5	.160	.077	N5	.310	.270	.155
C6	.190	.077				
C7	.200	.080				
C8	.225	.100				
C9	.250	.150				

UHA POLAR		
Case Size	Length Max.	Diameter Max.
C1	.080	.060
C2	.095	.060
C3	.110	.060
C4	.125	.060
C5	.140	.070
C6	.175	.070
C7	.185	.070
C8	.195	.090
C9	.230	.135

HA POLAR

FOR RADIAL LEADS — INDICATE "R" • FOR AXIAL LEADS — INDICATE "A"

CASE SIZE — C1
STD. CAP. TOL. +40% −20%

Tansitor Part Number	Cap. Mfd.	Working Voltage DC
HA.0010-20C1(AorR)E	.0010	20
HA.0015-20C1(AorR)E	.0015	20
HA.0022-20C1(AorR)E	.0022	20
HA.0033-20C1(AorR)E	.0033	20
HA.0047-20C1(AorR)E	.0047	20
HA.0068-20C1(AorR)E	.0068	20
HA.010-20C1(AorR)E	.010	20
HA.015-20C1(AorR)E	.015	20
HA.022-20C1(AorR)E	.022	20
HA.033-20C1(AorR)E	.033	20
HA.047-20C1(AorR)E	.047	20
HA.068-20C1(AorR)E	.068	20
HA.10-20C1(AorR)E	.10	20
HA.15-20C1)AorR)E	.15	20
HA.22-15C1(AorR)E	.22	15
HA.33-10C1(AorR)E	.33	10
HA.47-6C1(AorR)E	.47	6
HA.68-4C1(AorR)E	.68	4
HA1-3C1(AorR)E	1.0	3
HA1.5-2C1(AorR)E	1.5	2

CASE SIZE — C2
STD. CAP. TOL. +40% −20%

HA.22-20C2(AorR)E	.22	20
HA.33-15C2(AorR)E	.33	15
HA.47-10C2(AorR)E	.47	10
HA.68-6C2(AorR)E	.68	6
HA1-4C2(AorR)E	1.0	4
HA1.5-3C2(AorR)E	1.5	3
HA2.2-2C2(AorR)E	2.2	2

CASE SIZE — C3
STD. CAP. TOL. +40% −20%

HA.33-20C3(AorR)E	.33	20
HA.47-15C3(AorR)E	.47	15
HA.68-10C3(AorR)E	.68	10
HA1-6C3(AorR)E	1.0	6
HA1.5-4C3(AorR)E	1.5	4
HA2.2-3C3(AorR)E	2.2	3
HA3.3-2C3(AorR)E	3.3	2

CASE SIZE — C4
STD. CAP. TOL. +40% −20%

HA.0010-50C4(AorR)E	.0010	50
HA.0015-50C4(AorR)E	.0015	50
HA.0022-50C4(AorR)E	.0022	50
HA.0033-50C4(AorR)E	.0033	50
HA.0047-50C4(AorR)E	.0047	50
HA.0068-50C4(AorR)E	.0068	50
HA.010-50C4(AorR)E	.010	50
HA.015-35C4(AorR)E	.015	35
HA.022-35C4(AorR)E	.022	35
HA.033-35C4(AorR)E	.033	35
HA.047-35C4(AorR)E	.047	35
HA.068-35C4(AorR)E	.068	35
HA.10-35C4(AorR)E	.10	35
HA.15-35C4(AorR)E	.15	35
HA.22-35C4(AorR)E	.22	35
HA.47-20C4(AorR)E	.47	20
HA.68-15C4(AorR)E	.68	15
HA1-10C4(AorR)E	1.0	10
HA1.5-6C4(AorR)E	1.5	6
HA.2.2-4C4(AorR)E	2.2	4
HA3.3-3C4(AorR)E	3.3	3
HA4.7-2C4(AorR)E	4.7	2

CASE SIZE — C5
STD. CAP. TOL. +40% −20%

HA.68-20C5(AorR)E	.68	20
HA1-15C5(AorR)E	1.0	15
HA1.5-10C5(AorR)E	1.5	10
HA2.2-6C5(AorR)E	2.2	6
HA3.3-4C5(AorR)E	3.3	4
HA4.7-3C5(AorR)E	4.7	3
HA6.8-2C5(AorR)E	6.8	2

HA POLAR (continued)

CASE SIZE — C6
STD. CAP. TOL. +40% −20%

Tansitor Part Number	Cap. Mfd.	Working Voltage DC
HA.33-35C6(AorR)E	.33	35
HA.47-35C6(AorR)E	.47	35
HA1-20C6(AorR)E	1.0	20
HA1.5-15C6(AorR)E	1.5	15
HA2.2-10C6(AorR)E	2.2	10
HA3.3-6C6(AorR)E	3.3	6
HA4.7-4C6(AorR)E	4.7	4
HA6.8-3C6(AorR)E	6.8	3
HA10-2C6(AorR)E	10	2

CASE SIZE — C7
STD. CAP. TOL. +40% −20%

HA1.5-20C7(AorR)E	1.5	20
HA2.2-15C7(AorR)E	2.2	15
HA3.3-10C7(AorR)E	3.3	10
HA4.7-6C7(AorR)E	4.7	6
HA6.8-4C7(AorR)E	6.8	4
HA10-3C7(AorR)E	10	3
HA15-2C7(AorR)E	15	2

CASE SIZE — C8
STD. CAP. TOL. +20% −20%

HA.68-35C8(AorR)M	.68	35
HA1-35C8(AorR)M	1.0	35
HA2.2-20C8(AorR)M	2.2	20
HA3.3-15C8(AorR)M	3.3	15
HA4.7-10C8(AorR)M	4.7	10
HA6.8-6C8(AorR)M	6.8	6
HA70-4C8(AorR)M	10	4
HA15-3C8(AorR)M	15	3
HA22-2C8(AorR)M	22	2

CASE SIZE — C9
STD. CAP. TOL. +20% −20%

Tansitor Part Number	Cap. Mfd.	Working Voltage DC
HA3.3-20C9(AorR)M	3.3	20
HA4.7-20C9(AorR)M	4.7	20
HA6.8-20C9(AorR)M	6.8	20
HA10-15C9(AorR)M	10	15
HA15-10C9(AorR)M	15	10
HA22-6C9(AorR)M	22	6
HA33-4C9(AorR)M	33	4
HA47-3C9(AorR)M	47	3

HA NON POLAR

FOR RADIAL LEADS — INDICATE "R" • FOR AXIAL LEADS — INDICATE "A"

CASE SIZE — N1
STD. CAP. TOL. +20% −20%

Tansitor Part Number	Cap. Mfd.	Working Voltage DC
HA.0010-20N1(AorR)M	.0010	20
HA.0015-20N1(AorR)M	.0015	20
HA.0022-20N1(AorR)M	.0022	20
HA.0033-20N1(AorR)M	.0033	20
HA.0047-20N1(AorR)M	.0047	20
HA.0068-20N1(AorR)M	.0068	20
HA.010-20N1(AorR)M	.010	20
HA.015-20N1)AorR)M	.015	20
HA.022-20N1(AorR)M	.022	20
HA.033-20N1(AorR)M	.033	20
HA.047-20N1(AorR)M	.047	20
HA.068-20N1(AorR)M	.068	20
HA.10-20N1(AorR)M	.10	20
HA.15-15N1(AorR)M	.15	15
HA.22-10N1(AorR)M	.22	10
HA.33-6N1(AorR)M	.33	6
HA.47-4N1(AorR)M	.47	4
HA.68-3N1(AorR)M	.68	3
HA1-2N1(AorR)M	1.0	2

CASE SIZE — N2
STD. CAP. TOL. +20% −20%

HA.0010-50N2(AorR)M	.0010	50
HA.0015-50N2(AorR)M	.0015	50
HA.0022-50N2(AorR)M	.0022	50
HA.0033-50N2(AorR)M	.0033	50
HA.0047-50N2(AorR)M	.0047	50
HA.0068-35N2(AorR)M	.0068	35
HA.010-35N2(AorR)M	.010	35
HA.015-35N2(AorR)M	.015	35
HA.022-35N2(AorR)M	.022	35
HA.033-35N2(AorR)M	.033	35
HA.047-35N2(AorR)M	.047	35
HA.068-35N2(AorR)M	.068	35
HA.10-35N2(AorR)M	.10	35
HA.15-20N2(AorR)M	.15	20
HA.22-20N2(AorR)M	.22	20
HA.33-15N2(AorR)M	.33	15
HA.47-10N2(AorR)M	.47	10
HA.68-6N2(AorR)M	.68	6
HA1-4N2(AorR)M	1.0	4
HA1.5-3N2(AorR)M	1.5	3
HA2.2-2N2(AorR)M	2.2	2

CASE SIZE — N3
STD. CAP. TOL. +20% −20%

Tansitor Part Number	Cap. Mfd.	Working Voltage DC
HA.15-35N3(AorR)M	.15	35
HA.22-35N3(AorR)M	.22	35
HA.33-20N3(AorR)M	.33	20
HA.47-20N3(AorR)M	.47	20
HA.68-15N3(AorR)M	.68	15
HA1-10N3(AorR)M	1.0	10
HA1.5-6N3(AorR)M	1.5	6
HA2.2-4N3(AorR)M	2.2	4
HA3.3-3N3(AorR)M	3.3	3
HA4.7-2N3(AorR)M	4.7	2

CASE SIZE — N4
STD. CAP. TOL. +20% −20%

HA.33-35N4(AorR)M	.33	35
HA.47-35N4(AorR)M	.47	35
HA.68-20N4(AorR)M	.68	20
HA1-20N4(AorR)M	1.0	20
HA1.5-15N4(AorR)M	1.5	15
HA2.2-10N4(AorR)M	2.2	10
HA3.3-6N4(AorR)M	3.3	6
HA4.7-4N4(AorR)M	4.7	4
HA6.8-3N4(AorR)M	6.8	3
HA10-2N4(AorR)M	10.0	2

CASE SIZE — N5
STD. CAP. TOL. +20% −20%

HA1.5-20N5(AorR)M	1.5	20
HA2.2-20N5(AorR)M	2.2	20
HA3.3-20N5(AorR)M	3.3	20
HA4.7-15N5(AorR)M	4.7	15
HA6.8-10N5(AorR)M	6.8	10
HA10-6N5(AorR)M	10.0	6
HA15-4N5(AorR)M	15.0	4
HA22-3N5(AorR)M	22.0	3

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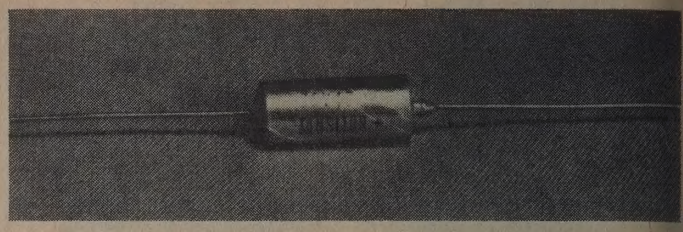
TANSITOR ELECTRONICS, INC.

TANSITOR TYPE S POLAR AND NON-POLAR SOLID TANTALUM CAPACITORS

Tansitor Type S Polar and Non-Polar Solid Tantalum Capacitors are designed for continuous dependable use over their full operating range of −80°C to +125°C. The units are similar to MIL Styles CS12 and CS13.

These advantages for the design engineer are further enhanced by the excellent showing made by S type units under conditions of high frequency application and when subjected to extensive vibration and shock, including all the stringent environmental requirements of MIL-C-26655, Styles CS12 and CS13.



STANDARD RATINGS OF TYPE S POLARIZED SOLID ELECTROLYTE TANTALUM CAPACITORS*

Cap. Mfds.	6VDC	10VDC	15VDC	20VDC	35VDC
0.0047	S0.0047-6C1	S0.0047-10C1	S0.0047-15C1	S0.0047-20C1	S0.0047-35C1
0.0056	S0.0056-6C1	S0.0056-10C1	S0.0056-15C1	S0.0056-20C1	S0.0056-35C1
0.0068	S0.0068-6C1	S0.0068-10C1	S0.0068-15C1	S0.0068-20C1	S0.0068-35C1
0.0082	S0.0082-6C1	S0.0082-10C1	S0.0082-15C1	S0.0082-20C1	S0.0082-35C1
0.01	S0.01-6C1	S0.01-10C1	S0.01-15C1	S0.01-20C1	S0.01-35C1
0.012	S0.012-6C1	S0.012-10C1	S0.012-15C1	S0.012-20C1	S0.12-35C1
0.015	S0.015-6C1	S0.015-10C1	S0.015-15C1	S0.015-20C1	S0.015-35C1
0.018	S0.018-6C1	S0.018-10C1	S0.018-15C1	S0.018-20C1	S0.018-35C1
0.022	S0.022-6C1	S0.022-10C1	S0.022-15C1	S0.022-20C1	S0.022-35C1
0.027	S0.027-6C1	S0.027-10C1	S0.027-15C1	S0.027-20C1	S0.027-35C1
0.033	S0.033-6C1	S0.033-10C1	S0.033-15C1	S0.033-20C1	S0.033-35C1
0.039	S0.039-6C1	S0.039-10C1	S0.039-15C1	S0.039-20C1	S0.039-35C1
0.047	S0.047-6C1	S0.047-10C1	S0.047-15C1	S0.047-20C1	S0.047-35C1
0.056	S0.056-6C1	S0.056-10C1	S0.056-15C1	S0.056-20C1	S0.056-35C1
0.068	S0.068-6C1	S0.068-10C1	S0.068-15C1	S0.068-20C1	S0.068-35C1
0.082	S0.082-6C1	S0.082-10C1	S0.082-15C1	S0.082-20C1	S0.082-35C1
0.1	S0.1-6C1	S0.1-10C1	S0.1-15C1	S0.1-20C1	S0.1-35C1
0.12	S0.12-6C1	S0.12-10C1	S0.12-15C1	S0.12-20C1	S0.12-35C1
0.15	S0.15-6C1	S0.15-10C1	S0.15-15C1	S0.15-20C1	S0.15-35C1
0.18	S0.18-6C1	S0.18-10C1	S0.18-15C1	S0.18-20C1	S0.18-35C1
0.22	S0.22-6C1	S0.22-10C1	S0.22-15C1	S0.22-20C1	S0.22-35C1
0.27	S0.27-6C1	S0.27-10C1	S0.27-15C1	S0.27-20C1	S0.27-35C1
0.33	S0.33-6C1	S0.33-10C1	S0.33-15C1	S0.33-20C1	S0.33-35C1
0.39	S0.39-6C1	S0.39-10C1	S0.39-15C1	S0.39-20C1	S0.39-35C1
0.47	S0.47-6C1	S0.47-10C1	S0.47-15C1	S0.47-20C1	S0.47-35C1
0.56	S0.56-6C1	S0.56-10C1	S0.56-15C1	S0.56-20C1	S0.56-35C1
0.68	S0.68-6C1	S0.68-10C1	S0.68-15C1	S0.68-20C1	S0.68-35C1
0.82	S0.82-6C1	S0.82-10C1	S0.82-15C1	S0.82-20C1	S0.82-35C1
1.0	S1.0-6C1	S1.0-10C1	S1.0-15C1	S1.0-20C1	S1.0-35C1
1.2	S1.2-6C1	S1.2-10C1	S1.2-15C1	S1.2-20C1	S1.2-35C2
1.5	S1.5-6C1	S1.5-10C1	S1.5-15C1	S1.5-20C1	S1.5-35C2
1.8	S1.8-6C1	S1.8-10C1	S1.8-15C1	S1.8-20C1	S1.8-35C2
2.2	S2.2-6C1	S2.2-10C1	S2.2-15C1	S2.2-20C1	S2.2-35C2
2.7	S2.7-6C1	S2.7-10C1	S2.7-15C1	S2.7-20C2	S2.7-35C2
3.3	S3.3-6C1	S3.3-10C1	S3.3-15C1	S3.3-20C2	S3.3-35C2
3.9	S3.9-6C1	S3.9-10C1	S3.9-15C2	S3.9-20C2	S3.9-35C2
4.7	S4.7-6C1	S4.7-10C1	S4.7-15C1	S4.7-20C2	S4.7-35C2
5.6	S5.6-6C1	S5.6-10C2	S5.6-15C2	S5.6-20C2	S5.6-35C2
6.8	S6.8-6C1	S6.8-10C2	S6.8-15C2	S6.8-20C2	S6.8-35C2
8.2	S8.2-6C2	S8.2-10C1	S8.2-10C2	S8.2-20C2	S8.2-35C3
10.0	S10-6C2	S10-10C2	S10-15C2	S10-20C2	S10-35C3
12.0	S12-6C2	S12-10C2	S12-15C2	S12-20C2	S12-35C3
15.0	S15-6C2	S15-10C2	S15-15C2	S15-20C2	S15-35C3
18.0	S18-6C2	S18-15C2	S18-15C2	S18-20C3	S18-35C3
22.0	S22-6C2	S22-10C2	S22-15C2	S22-20C3	S22-35C3
27.0	S27-6C2	S27-10C2	S27-15C3	S27-20C3	S27-35C4
33.0	S33-6C2	S33-10C2	S33-15C3	S33-20C3	S33-35C4
39.0	S39-6C2	S39-10C2	S39-15C3	S39-20C3	S39-35C4
47.0	S47-6C2	S47-10C3	S47-15C3	S47-20C3	S47-35C4
56.0	S56-6C2	S56-10C3	S56-15C3	S56-20C4	xxxxxxxxx
68.0	S68-6C3	S68-10C3	S68-15C3	S68-20C4	xxxxxxxxx
82.0	S82-6C3	S82-10C3	S82-15C4	S82-20C4	xxxxxxxxx
100.0	S100-6C3	S199-10C3	S100-15C4	S100-20C4	xxxxxxxxx
120.0	S120-6C3	S120-10C3	S120-15C4	xxxxxxxxx	xxxxxxxxx
150.0	S150-6C3	S150-10C4	S150-15C4	xxxxxxxxx	xxxxxxxxx
180.0	S180-6C3	S180-10C4	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
220.0	S220-6C4	S220-10C4	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
270.0	S270-6C4	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx
330.0	S330-6C4	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx

* To complete part numbers, add applicable tolerance letter, and if flexible outer insulating sleeve is required, add final suffix letter "I".

POLAR
CASE DIMENSIONS (Uninsulated)*

CASE SIZE	Dimensions (Nominal) Length x Diameter, Inches	CASE SIZE	Dimensions (Nominal) Length x Diameter, Inches
C1	0.125 x 0.250	C3	0.279 x 0.650
C2	0.175 x 0.438	C4	0.341 x 0.750

NON-POLAR
CASE DIMENSIONS (Uninsulated)*

CASE SIZE	Dimensions (Nominal) Length x Diameter, Inches	CASE SIZE	Dimensions (Nominal) Length x Diameter, Inches
N1	0.145 x 0.540	N3	0.304 x 1.320
N2	0.197 x 0.915	N4	0.366 x 1.520

* For dimensions of insulated units add approximately 0.063" to length, 0.015" to diameter.

STANDARD RATINGS OF TYPE S NON-POLAR SOLID ELECTROLYTE TANTALUM CAPACITORS*

Cap. Mfds.	6 Volts	10 Volts	15 Volts	20 Volts	35 Volts
0.16	S0.16-6N1	S0.16-10N1	S0.16-15N1	S0.16-20N1	S0.16-35N1
0.24	S0.24-6N1	S0.24-10N1	S0.24-15N1	S0.24-20N1	S0.34-35N1
0.34	S0.34-6N1	S0.34-10N1	S0.34-15N1	S0.34-20N1	S0.34-35N1
0.50	S0.50-6N1	S0.50-10N1	S0.50-15N1	S0.50-20N1	S0.50-35N1
0.75	S0.75-6N1	S0.75-10N1	S0.75-15N1	S0.75-20N1	S0.75-35N2
1.1	S1.1-6N1	S1.1-10N1	S1.1-15N1	S1.1-20N1	S1.1-35N2
1.6	S1.6-6N1	S1.6-10N1	S1.6-15N1	S1.6-20N2	S1.6-35N2
2.4	S2.4-6N1	S2.4-10N1	S2.4-15N2	S2.4-20N2	S2.4-35N2
3.4	S3.4-6N1	S3.4-10N2	S3.4-15N2	S3.4-20N2	S3.4-35N2
5.0	S5-6N2	S5-10N2	S5-15N2	S5-20N2	S5-35N3
7.5	S7.5-6N2	S7.5-10N2	S7.5-15N2	S7.5-20N2	S7.5-35N3
11.0	S11-6N2	S11-10N2	S11-15N2	S11-20N3	S11-35N3
16.0	S16-6N2	S16-10N2	S16-15N3	S16-20N3	S16-35N4
24.0	S24-6N2	S24-10N3	S24-15N3	S24-20N3	S24-35N4
34.0	S34-6N3	S34-10N3	S34-15N3	S34-20N4	xxxxxxxxxx
50.0	S50-6N3	S50-10N3	S50-15N4	S50-20N4	xxxxxxxxxx
75.0	S75-6N3	S75-10N4	S75-15N4	xxxxxxxxxx	xxxxxxxxxx
110.0	S110-6N4	S110-10N4	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx
160.0	S160-6N4	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx

* To complete part numbers, add applicable tolerance letter, and if flexible outer insulating sleeve is required, add final suffix letter "I".

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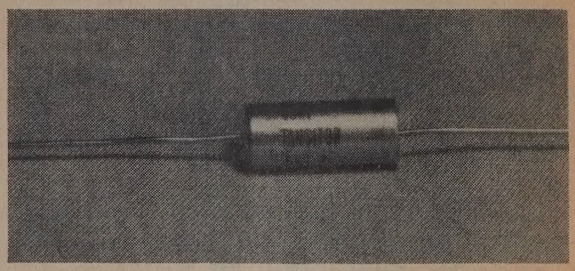
TANSITOR ELECTRONICS, INC.

ANSITOR TYPE ES POLAR

OLID TANTALUM CAPACITORS WITH EPOXY END SEAL CAPACITORS



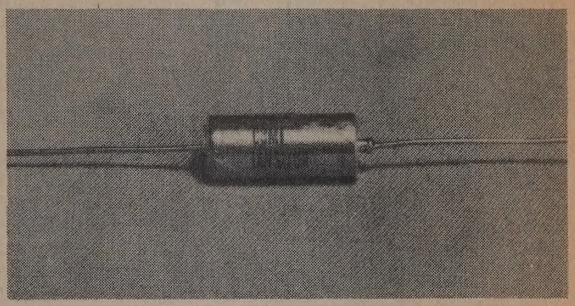
ecommended for printed circuit assembly and other special application. Epoxy cts as a heat sink; consequently, parts are less apt to be damaged from xcessive heat.

Capacitors are available in the same values as those listed under Type S on evious page — except start at .33 mfd. To order, add letter "E" as prefix to "S" art numbers.

Same physical dimensions as Tansitor Type S. Epoxy end seal is minimum of " thick. Insulated or uninsulated. Non-polar units available on request.

ANSITOR TYPE XS POLAR

PECIAL SOLID TANTALUM CAPACITORS



ansitor Type XS tantalum capacitors are unique in that they offer increased apacitance per case size.

Where size is a critical factor the XS type offers significant savings in space in at it employs one case size smaller than CS13 style and Tansitor's standard type for comparable ratings.

The XS type meets parameters of Tansitor's Type S.

Standard XS capacitors have glass to metal hermetic end seals.

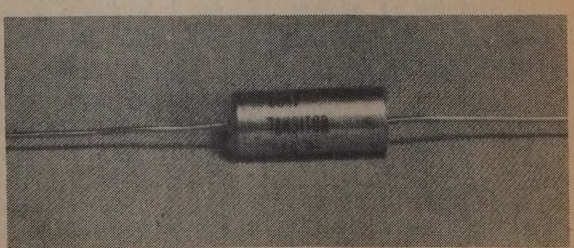
Non-Polar units are available upon request.

Cap. Mfds.	Tansitor Cat. No. Rating 6vdc / Surge 8vdc	Tansitor Cat. No. Rating 10vdc / Surge 15vdc	Tansitor Cat. No. Rating 15vdc / Surge 20vdc	Tansitor Cat. No. Rating 20vdc / Surge 26vdc	Tansitor Cat. No. Rating 35vdc / Surge 46vdc	Tansitor Cat. No. Rating 50vdc / Surge 60vdc
1.2					XS1.2-35C1	XS1.2-50C1
1.5					XS1.5-35C1	XS1.5-50C1
1.8					XS1.8-35C1	
2.2					XS2.2-35C2	
2.7				XS2.7-20C1		
3.3				XS3.3-20C1		
3.9			XS3.9-15C1			
4.7			XS4.7-15C1			
5.6		XS5.6-10C1				XS5.6-50C2
6.8		XS6.8-10C1				XS6.8-50C2
8.2	XS8.2-6C1	XS8.2-10C1				
10	XS10-6C1					
22						XS22-50C3
27			XS27-15C2		X2T7-35C3	XS27-50C4
33			XS33-15C2		XS33-35C3	XS33-50C4
39			XS39-15C2		XS47-35C3	
47		XS47-10C2			XS47-35C3	XS47-50C4
56		XS56-10C2		XS56-20C3	XS56-35C4	
60	XS60-6C2					
68	XS68-6C2			XS68-20C3		
82			XS82-15C3	XS82-20C3		
100			XS100-15C3	XS100-20C3		
120			XS120-15C3			
150		XS150-10C3		XS150-20C4		
180		XS180-10C3	XS180-15C4			
250		XS250-10C4				
400	XS400-6C4					
450	XS450-6C4					

NOTE: To complete part numbers add applicable tolerance letter (M = ±20%; K = ±10%; J = ±5%). If outer insulating sleeve is required add letter "I" as final suffix.

ANSITOR TYPE EXS

PECIAL SOLID TANTALUM CAPACITORS



ansitor Type EXS capacitors are a combination of the ES and XS type. The Type XS offers the saving in space employed by the use of the XS type and the ES vhich employ an epoxy end seal to eliminate the length of the glass seal xtension.

Non-Polar units are also available on request.

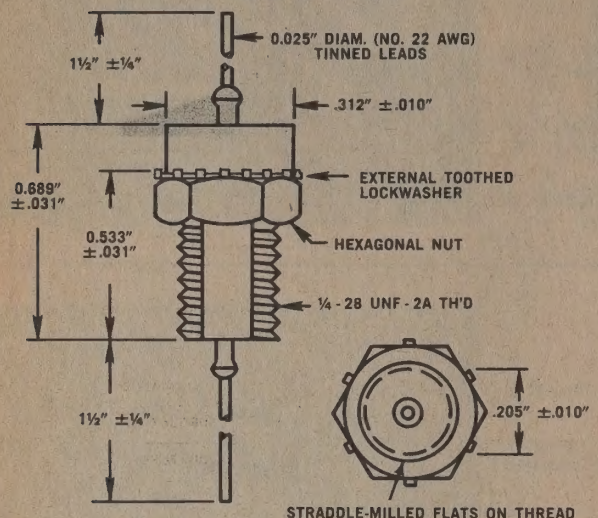
To order, change XS prefix to "EXS". Same ratings apply.

TANSITOR ELECTRONICS, INC.

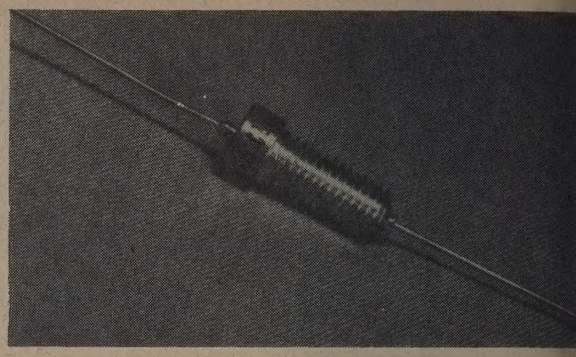
TANSITOR TYPE FT

SOLID TANTALUM FEED-THRU CAPACITOR

−80°C to +125°C



Tansitor's Type FT Solid Tantalum Capacitor is designed for use in R-F bypassing where high insertion loss characteristics are desirable. Case is negative, with both lead wires positive. In addition, it offers the following characteristics.



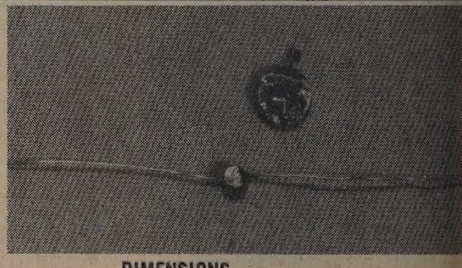
STANDARD RATINGS

Tansitor Part Number	25°C Capacitance Mfd. ±20%	85°C Working Voltage D.C.	125°C Working Voltage D.C.
FT60-6C2M	60	6	4
FT39-10C2M	39	10	7
FT22-15C2M	22	15	10
FT15-20C2M	15	20	13
FT6.8-35C2M	6.8	35	23
FT4.7-50C2M	4.7	50	33

Electrolyte leakage eliminated.
High capacitance per unit volume.
Small capacitance change.
Glass-to-metal hermetic seal.
Corrosion resistant metal case.
Negligible self-inductance.
RFI internal path minimal.

TANSITOR MICRO-MODULE UNENCAPSULATED TANTALUM CAPACITORS DISC TYPE −80°C to +125°C

Tansitor Disc Type are a new concept in tantalum capacitors. This capacitor has the best volumetric efficiency of any tantalum capacitor yet designed and produced for volume use. Specifically aimed at the micro-module market it supplements other Tansitor tantalum capacitors. Its characteristics include extremely low electrical leakage current, high capacitance per unit volume, exceptional stability over its temperature range −80°C to +125°C. Axial leads are standard. Special leads, ribbon or tab configurations available on request. Units are also available with thin epoxy coating to protect the body and ruggedize the weld junction.



DIMENSIONS

Case Size	Diameter Nom.	Thickness Max.
C1	0.100	0.060
C2	0.100	0.100
C3	0.250	0.060
C4	0.250	0.100
C5	0.500	0.060
C6	0.500	0.100

DISC CAPACITORS RATINGS AT 85°C

Rated Voltage at 85°C	DIMENSIONS OF UNITS											
	C1 0.100 Dia. x 0.060"		C2 0.100" Dia. x 0.100"		C3 0.250" Dia. x 0.060"		C4 0.250" Dia. x 0.100"		C5 0.500" Dia. x 0.060"		C6 0.500" Dia. x 0.100	
	CAP.	Part No.	CAP.	Part No.	CAP.	Part No.	CAP.	Part No.	CAP.	Part No.	CAP.	Part No.
3VDC	2.5	D2.5-3C1	5	D5-3C2	20	D20-3C3	40	D40-3C4	80	D80-3C5	160	D160-3C6
5	1.5	D1.5-5C1	3	D3-5C2	12	D12-5C3	24	D24-5C4	48	D48-5C5	96	D96-5C6
6	1.2	D1.2-6C1	2.4	D2.4-6C2	10	D10-6C3	20	D20-6C4	40	D40-6C5	80	D80-6C6
10	0.8	D0.8-10C1	1.6	D1.6-10C2	6	D6-10C3	12	D12-10C4	24	D24-10C5	48	D48-10C6
15	0.5	D0.5-15C1	1	D1-15C2	4	D4-15C3	8	D8-15C4	16	D16-15C5	32	D32-15C6
20	0.8	D0.8-20C2	0.4	D0.4-20C1	3	D3-20C3	6	D6-20C4	12	D12-20C5	24	D24-20C6
25	0.3	D0.3-25C1	0.6	D0.6-25C2	2.4	D2.4-25C3	4.8	D4.8-25C4	9.5	D9.5-25C5	19	D19-25C6
30	0.25	D0.25-30C1	0.5	D0.5-30C2	2	D2-30C3	4	D4-30C4	8	D8-30C5	16	D16-30C6
35	0.2	D0.2-35C1	0.4	D0.4-35C2	1.5	D1.5-35C3	3	D3-35C4	7	D7-35C5	14	D14-35C6
35	0.15	D0.15-35C1	0.3	D0.3-35C2	1.2	D1.2-35C3	2.4	D2.4-35C4	5	D5-35C5	10	D10-35C6
35	0.12	D0.12-35C1	0.24	D0.24-35C2	1	D1-35C3	2	D2-35C4	4	D4-25C5	8	D8-35C6

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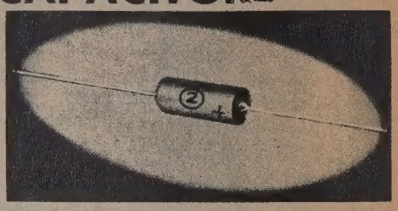
SPRAGUE CAPACITORS

TYPE 150D SOLID-ELECTROLYTE TANTALEX® CAPACITORS

- Combine True Miniaturization with Characteristics Previously Unobtainable in Electrolytic Capacitors.
- Hermetically Sealed Metal Case.
- Solid Electrolyte Cannot Leak or Corrode, Even if Hermetic Seal is Accidentally Broken.
- Exhibit Stable Capacitance and Low Dissipation Factor over Temperature Range of —80°C to +85°C. With Appropriate Voltage Derating, May Be Operated to +125°C.
- Listed Units have Plastic Sleeves. For Bare Case, end Cat. No. in "0" instead of "2."
- For complete technical data, refer to latest issue of Engineering Bulletin 3520.

Call Your Sprague Industrial Distributor For Current Quantity Prices



µF	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
6 WVDC — 8 VDC SURGE			
.22	A	150D224X0006A2	150D224X9006A2
.27	A	———	150D274X9006A2
.33	A	150D334X0006A2	150D334X9006A2
.39	A	———	150D394X9006A2
.47	A	150D474X0006A2	150D474X9006A2
.56	A	———	150D564X9006A2
.68	A	150D684X0006A2	150D684X9006A2
.82	A	———	150D824X9006A2
1.0	A	150D105X0006A2	150D105X9006A2
1.2	A	———	150D125X9006A2
1.5	A	150D155X0006A2	150D155X9006A2
1.8	A	———	150D185X9006A2
2.2	A	150D225X0006A2	150D225X9006A2
2.7	A	———	150D275X9006A2
3.3	A	150D335X0006A2	150D335X9006A2
3.9	A	———	150D395X9006A2
4.7	A	150D475X0006A2	150D475X9006A2
5.6	A	———	150D565X9006A2
6.8	A	150D685X0006A2	150D685X9006A2
8.2	B	———	150D825X9006B2
10	B	150D106X0006B2	150D106X9006B2
12	B	———	150D126X9006B2
15	B	150D156X0006B2	150D156X9006B2
18	B	———	150D186X9006B2
22	B	150D226X0006B2	150D226X9006B2
27	B	———	150D276X9006B2
33	B	150D336X0006B2	150D336X9006B2
39	B	———	150D396X9006B2
47	B	150D476X0006B2	150D476X9006B2
56	B	———	150D566X9006B2
68	B	150D606X0006B2	150D606X9006B2
82	R	150D686X0006R2	150D686X9006R2
82	R	———	150D826X9006R2
100	R	150D107X0006R2	150D107X9006R2
120	R	150D127X0006R2	150D127X9006R2
150	R	150D157X0006R2	150D157X9006R2
180	R	150D187X0006S2	150D187X9006R2
220	S	150D227X0006S2	150D227X9006S2
270	S	150D277X0006S2	150D227X9006S2
330	S	150D337X0006S2	150D337X9006S2
10 WVDC — 13 VDC SURGE			
.22	A	150D224X0010A2	150D224X9010A2
.27	A	———	150D274X9010A2
.33	A	150D334X0010A2	150D334X9010A2
.39	A	———	150D394X9010A2
.47	A	150D474X0010A2	150D474X9010A2
.56	A	———	150D564X9010A2
.68	A	150D684X0010A2	150D684X9010A2
.82	A	———	150D824X9010A2
1.0	A	150D105X0010A2	150D105X9010A2
1.2	A	———	150D125X9010A2
1.5	A	150D155X0010A2	150D155X9010A2
1.8	A	———	150D185X9010A2
2.2	A	150D225X0010A2	150D225X9010A2
2.7	A	———	150D275X9010A2
3.3	A	150D335X0010A2	150D335X9010A2
3.9	A	———	150D395X9010A2
4.7	A	150D475X0010A2	150D475X9010A2
5.6	B	———	150D565X9010B2
6.8	B	150D685X0010B2	150D685X9010B2
8.2	B	———	150D825X9010B2
10	B	150D106X0010B2	150D106X9010B2
12	B	———	150D126X9010B2
15	B	150D156X0010B2	150D156X9010B2
18	B	———	150D186X9010B2
22	B	150D226X0010B2	150D226X9010B2
27	B	———	150D276X9010B2
33	B	150D336X0010B2	150D336X9010B2
39	B	———	150D396X9010B2
40	B	150D406X0010B2	150D406X9010B2
47	R	150D476X0010R2	150D476X9010R2
56	R	———	150D566X9010R2
68	R	150D686X0010R2	150D686X9010R2
82	R	———	150D826X9010R2
100	R	150D107X0010R2	150D107X9010R2
120	R	150D127X0010R2	150D127X9010R2
150	S	150D157X0010S2	150D157X9010S2
180	S	———	150D187X9010S2
220	S	150D227X0010S2	150D227X9010S2
15 WVDC — 18 VDC SURGE			
.22	A	150D224X0015A2	150D224X9015A2
.27	A	———	150D274X9015A2
.33	A	150D334X0015A2	150D334X9015A2
.39	A	———	150D394X9015A2
.47	A	150D474X0015A2	150D474X9015A2
.56	A	———	150D564X9015A2
.68	A	150D684X0015A2	150D684X9015A2
.82	A	———	150D824X9015A2
1.0	A	150D105X0015A2	150D105X9015A2
1.2	A	———	150D125X9015A2
1.5	A	150D155X0015A2	150D155X9015A2
1.8	A	———	150D185X9015A2
2.2	A	150D225X0015A2	150D225X9015A2
2.7	A	———	150D275X9015A2
3.3	A	150D335X0015A2	150D335X9015A2
3.9	B	———	150D395X9015B2
4.7	B	150D475X0015B2	150D475X9015B2
5.6	B	———	150D565X9015B2
6.8	B	150D685X0015B2	150D685X9015B2
8.2	B	———	150D825X9015B2
10	B	150D106X0015B2	150D106X9015B2
12	B	———	150D126X9015B2
15	B	150D156X0015B2	150D156X9015B2
18	B	———	150D186X9015B2
22	B	150D226X0015B2	150D226X9015B2
27	R	———	150D276X9015R2
33	R	150D336X0015R2	150D336X9015R2
39	R	———	150D396X9015R2
47	R	150D476X0015R2	150D476X9015R2
56	R	———	150D566X9015R2
68	R	150D686X0015R2	150D686X9015R2
82	S	———	150D826X9015S2
100	S	150D107X0015S2	150D107X9015S2
120	S	———	150D127X9015S2
150	S	150D157X0015S2	150D157X9015S2
20 WVDC — 23 VDC SURGE			
.0047	A	150D472X0020A2	150D472X9020A2
.0056	A	———	150D562X9020A2
.0068	A	150D682X0020A2	150D682X9020A2
.0082	A	———	150D822X9020A2
.01	A	150D103X0020A2	150D103X9020A2
.012	A	———	150D123X9020A2
.015	A	150D153X0020A2	150D153X9020A2
.018	A	———	150D183X9020A2
.022	A	150D223X0020A2	150D223X9020A2
.027	A	———	150D273X9020A2
.033	A	150D333X0020A2	150D333X9020A2
.039	A	———	150D393X9020A2
.047	A	150D473X0020A2	150D473X9020A2
.056	A	———	150D563X9020A2
.068	A	150D683X0020A2	150D683X9020A2
.082	A	———	150D823X9020A2
.10	A	150D104X0020A2	150D104X9020A2
.12	A	———	150D124X9020A2
.15	A	150D154X0020A2	150D154X9020A2
.18	A	———	150D184X9020A2
.22	A	150D224X0020A2	150D224X9020A2
.27	A	———	150D274X9020A2
.33	A	150D334X0020A2	150D334X9020A2
.39	A	———	150D394X9020A2
.47	A	150D474X0020A2	150D474X9020A2
.56	A	———	150D564X9020A2
.68	A	150D684X0020A2	150D684X9020A2
.82	A	———	150D824X9020A2
1.0	A	150D105X0020A2	150D105X9020A2
1.2	A	———	150D125X9020A2
1.5	A	150D155X0020A2	150D155X9020A2
1.8	A	———	150D185X9020A2
2.2	A	150D225X0020A2	150D225X9020A2
2.7	B	———	150D275X9020B2
3.3	B	150D335X0020B2	150D335X9020B2
3.9	B	———	150D395X9020B2
4.7	B	150D475X0020B2	150D475X9020B2
5.6	B	———	150D565X9020B2
6.8	B	150D685X0020B2	150D685X9020B2
8.2	B	———	150D825X9020B2
10	B	150D106X0020B2	150D106X9020B2
12	B	———	150D126X9020B2
15	B	150D156X0020B2	150D156X9020B2
18	R	———	150D186X9020R2
22	R	150D226X0020R2	150D226X9020R2
27	R	———	150D276X9020R2
33	R	150D336X0020R2	150D336X9020R2
39	R	———	150D396X9020R2
47	R	150D476X0020R2	150D476X9020R2
56	S	———	150D566X9020S2
68	S	150D686X0020S2	150D686X9020S2
82	S	———	150D826X9020S2
100	S	150D107X0020S2	150D107X9020S2
35 WVDC — 40 VDC SURGE			
.0047	A	150D472X0035A2	150D472X9035A2
.0056	A	———	150D562X9035A2
.0068	A	150D682X0035A2	150D682X9035A2
.0082	A	———	150D822X9035A2
.01	A	150D103X0035A2	150D103X9035A2
.012	A	———	150D123X9035A2
.015	A	150D153X0035A2	150D153X9035A2
.018	A	———	150D183X9035A2
.022	A	150D223X0035A2	150D223X9035A2
.027	A	———	150D273X9035A2
.033	A	150D333X0035A2	150D333X9035A2
.039	A	———	150D393X9035A2
.047	A	150D473X0035A2	150D473X9035A2
.056	A	———	150D563X9035A2
.068	A	150D683X0035A2	150D683X9035A2
.082	A	———	150D823X9035A2
.10	A	150D104X0035A2	150D104X9035A2
.12	A	———	150D124X9035A2
.15	A	150D154X0035A2	150D154X9035A2
.18	A	———	150D184X9035A2
.22	A	150D224X0035A2	150D224X9035A2
.27	A	———	150D274X9035A2
.33	A	150D334X0035A2	150D334X9035A2
.39	A	———	150D394X9035A2
.47	A	150D474X0035A2	150D474X9035A2
.56	A	———	150D564X9035A2
.68	A	150D684X0035A2	150D684X9035A2
.82	A	———	150D824X9035A2
1.0	A	150D105X0035A2	150D105X9035A2
1.2	B	———	150D125X9035B2
1.5	B	150D155X0035B2	150D155X9035B2
1.8	B	———	150D185X9035B2
2.2	B	150D225X0035B2	150D225X9035B2
2.7	B	———	150D275X9035B2
3.3	B	150D335X0035B2	150D335X9035B2
3.9	B	———	150D395X9035B2
4.7	B	150D475X0035B2	150D475X9035B2
5.6	B	———	150D565X9035B2
6.8	B	150D685X0035B2	150D685X9035B2
8.2	R	———	150D825X9035R2
10	R	150D106X0035R2	150D106X9035R2
12	R	———	150D126X9035R2
15	R	150D156X0035R2	150D156X9035R2
18	R	———	150D186X9035R2
22	R	150D226X0035R2	150D226X9035R2
27	S	———	150D276X9035S2
33	S	150D336X0035S2	150D336X9035S2
39	S	———	150D396X9035S2
47	S	150D476X0035S2	150D476X9035S2

DIMENSIONS

Code	With Sleeve D. x L.	Bare Case D. x L.
A	.135" x .286"	.125" x .250"
B	.185" x .474"	.175" x .438"
P	.289" x .686"	.279" x .650"
S	.351" x .786"	.341" x .750"

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SPRAGUE CAPACITORS

TYPE 150D SOLID-ELECTROLYTE TANTALEX® CAPACITORS (Cont.)

50 WVDC, 65 VDC SURGE

μF	Size Code	Catalog Number ±20% Tol.	±10% Tol.
.0047	A	150D472X0050A2	150D472X9050A2
.0056	A	—	150D562X9050A2
.0068	A	150D682X0050A2	150D682X9050A2
.0082	A	—	150D822X9050A2
.01	A	150D103X0050A2	150D103X9050A2
.012	A	—	150D123X9050A2
.015	A	150D153X0050A2	150D153X9050A2
.018	A	—	150D183X9050A2
.022	A	150D223X0050A2	150D223X9050A2
.027	A	—	150D273X9050A2
.033	A	150D333X0050A2	150D333X9050A2
.039	A	—	150D393X9050A2
.047	A	150D473X0050A2	150D473X9050A2
.056	A	—	150D563X9050A2
.068	A	150D683X0050A2	150D683X9050A2
.082	A	—	150D823X9050A2
.1	A	150D104X0050A2	150D104X9050A2
.12	A	—	150D124X9050A2
.15	A	150D154X0050A2	150D154X9050A2
.18	A	—	150D184X9050A2
.22	A	150D224X0050A2	150D224X9050A2
.27	A	—	150D274X9050A2
.33	A	150D334X0050A2	150D334X9050A2
.39	A	—	150D394X9050A2
.47	A	150D474X0050A2	150D474X9050A2
.56	A	—	150D564X9050A2
.68	A	150D684X0050A2	150D684X9050A2
.82	A	—	150D824X9050A2
1.0	A	150D105X0050A2	150D105X9050A2
1.2	B	—	150D125X9050B2
1.5	B	150D155X0050B2	150D155X9050B2
1.8	B	—	150D185X9050B2
2.2	B	150D225X0050B2	150D225X9050B2
2.7	B	—	150D275X9050B2
3.3	B	150D335X0050B2	150D335X9050B2
3.9	B	—	150D395X9050B2
4.7	B	150D475X0050B2	150D475X9050B2
5.6	R	—	150D565X9050R2
6.8	R	150D685X0050R2	150D685X9050R2
8.2	R	—	150D825X9050R2
10	R	150D106X0050R2	150D106X9050R2
12	R	—	150D126X9050R2
15	R	150D156X0050R2	150D156X9050R2
18	R	—	150D186X9050R2
22	S	150D226X0050S2	150D226X9050S2

60 WVDC, 78 VDC SURGE

μF	Size Code	Catalog Number ±20% Tol.	±10% Tol.
.0047	A	150D472X0060A2	150D472X9060A2
.0056	A	—	150D562X9060A2
.0068	A	150D682X0060A2	150D682X9060A2
.0082	A	—	150D822X9060A2
.01	A	150D103X0060A2	150D103X9060A2
.012	A	—	150D123X9060A2
.015	A	150D153X0060A2	150D153X9060A2
.018	A	—	150D183X9060A2
.022	A	150D223X0060A2	150D223X9060A2
.027	A	—	150D273X9060A2
.033	A	150D333X0060A2	150D333X9060A2
.039	A	—	150D393X9060A2
.047	A	150D473X0060A2	150D473X9060A2
.056	A	—	150D563X9060A2
.068	A	150D683X0060A2	150D683X9060A2
.082	A	—	150D823X9060A2
.1	A	150D104X0060A2	150D104X9060A2
.12	A	—	150D124X9060A2
.15	A	150D154X0060A2	150D154X9060A2
.18	A	—	150D184X9060A2
.22	A	150D224X0060A2	150D224X9060A2
.27	A	—	150D274X9060A2
.33	A	150D334X0060A2	150D334X9060A2
.39	A	—	150D394X9060A2
.47	A	150D474X0060A2	150D474X9060A2
.56	A	—	150D564X9060A2
.68	A	150D684X0060A2	150D684X9060A2
.82	B	—	150D824X9060B2
1.0	B	150D105X0060B2	150D105X9060B2
1.2	B	—	150D125X9060B2
1.5	B	150D155X0060B2	150D155X9060B2
1.8	B	—	150D185X9060B2
2.2	B	150D225X0060B2	150D225X9060B2
2.7	B	—	150D275X9060B2
3.3	B	150D335X0060B2	150D335X9060B2
3.9	B	—	150D395X9060B2
4.7	R	150D475X0060R2	150D475X9060R2
5.6	R	—	150D565X9060R2
6.8	R	150D685X0060R2	150D685X9060R2
8.2	R	—	150D825X9060R2
10	R	150D106X0060R2	150D106X9060R2
12	S	—	150D126X9060S2
15	S	150D156X0060S2	150D156X9060S2
18	S	—	150D186X9060S2
22	S	150D226X0060S2	150D226X9060S2

75 WVDC, 97 VDC SURGE

μF	Size Code	Catalog Number ±20% Tol.	±10% Tol.
.0047	A	150D472X0075A2	150D472X9075A2
.0056	A	—	150D562X9075A2
.0068	A	150D682X0075A2	150D682X9075A2
.0082	A	—	150D822X9075A2
.01	A	150D103X0075A2	150D103X9075A2
.012	A	—	150D123X9075A2
.015	A	150D153X0075A2	150D153X9075A2
.018	A	—	150D183X9075A2
.022	A	150D223X0075A2	150D223X9075A2
.027	A	—	150D273X9075A2
.033	A	150D333X0075A2	150D333X9075A2
.039	A	—	150D393X9075A2
.047	A	150D473X0075A2	150D473X9075A2
.056	A	—	150D563X9075A2
.068	A	150D683X0075A2	150D683X9075A2
.082	A	—	150D823X9075A2
.1	A	150D104X0075A2	150D104X9075A2
.12	A	—	150D124X9075A2
.15	A	150D154X0075A2	150D154X9075A2
.18	A	—	150D184X9075A2
.22	A	150D224X0075A2	150D224X9075A2
.27	A	—	150D274X9075A2
.33	A	150D334X0075A2	150D334X9075A2
.39	A	—	150D394X9075A2
.47	A	150D474X0075A2	150D474X9075A2
.56	A	—	150D564X9075A2
.68	A	150D684X0075A2	150D684X9075A2
.82	B	—	150D824X9075B2
1.0	B	150D105X0075B2	150D105X9075B2
1.2	B	—	150D125X9075B2
1.5	B	150D155X0075B2	150D155X9075B2
1.8	B	—	150D185X9075B2
2.2	B	150D225X0075B2	150D225X9075B2
2.7	B	—	150D275X9075B2
3.3	B	150D335X0075B2	150D335X9075B2
3.9	B	—	150D395X9075B2
4.7	R	150D475X0075R2	150D475X9075R2
5.6	R	—	150D565X9075R2
6.8	R	150D685X0075R2	150D685X9075R2
8.2	R	—	150D825X9075R2
10.0	R	150D106X0075R2	150D106X9075R2
12.0	S	—	150D126X9075S2
15.0	S	150D156X0075S2	150D156X9075S2

100 WVDC, 115 VDC SURGE

μF	Size Code	Catalog Number ±20% Tol.	±10% Tol.
.0047	A	150D472X0100A2	150D472X9100A2
.0056	A	—	150D562X9100A2
.0068	A	150D682X0100A2	150D682X9100A2
.0082	A	—	150D822X9100A2
.01	A	150D103X0100A2	150D103X9100A2
.012	A	—	150D123X9100A2
.015	A	150D153X0100A2	150D153X9100A2
.018	A	—	150D183X9100A2
.022	A	150D223X0100A2	150D223X9100A2
.027	A	—	150D273X9100A2
.033	A	150D333X0100A2	150D333X9100A2
.039	A	—	150D393X9100A2
.047	A	150D473X0100A2	150D473X9100A2
.056	A	—	150D563X9100A2
.068	A	150D683X0100A2	150D683X9100A2
.082	A	—	150D823X9100A2
.1	A	150D104X0100A2	150D104X9100A2
.12	A	—	150D124X9100A2
.15	A	150D154X0100A2	150D154X9100A2
.18	A	—	150D184X9100A2
.22	A	150D224X0100A2	150D224X9100A2
.27	A	—	150D274X9100A2
.33	A	150D334X0100A2	150D334X9100A2
.39	A	—	150D394X9100A2
.47	A	150D474X0100A2	150D474X9100A2
.56	A	—	150D564X9100A2
.68	B	150D684X0100B2	150D684X9100B2
.82	B	—	150D824X9100B2
1.0	B	150D105X0100B2	150D105X9100B2
1.2	B	—	150D125X9100B2
1.5	B	150D155X0100B2	150D155X9100B2
1.8	B	—	150D185X9100B2
2.2	B	150D225X0100B2	150D225X9100B2
2.7	B	—	150D275X9100B2
3.3	R	150D335X0100B2	150D335X9100R2
3.9	R	—	150D395X9100R2
4.7	R	150D475X0100R2	150D475X9100R2
5.6	R	—	150D565X9100R2
6.8	R	150D685X0100R2	150D685X9100R2

125 WVDC, 140 VDC SURGE

μF	Size Code	Catalog Number ±20% Tol.	±10% Tol.
.0047	A	150D472X0125A2	150D472X9125A2
.0056	A	—	150D562X9125A2
.0068	A	150D682X0125A2	150D682X9125A2
.0082	A	—	150D822X9125A2
.01	A	150D103X0125A2	150D103X9125A2
.012	A	—	150D123X9125A2
.015	A	150D153X0125A2	150D153X9125A2
.018	A	—	150D183X9125A2
.022	A	150D223X0125A2	150D223X9125A2
.027	A	—	150D273X9125A2
.033	A	150D333X0125A2	150D333X9125A2
.039	A	—	150D393X9125A2
.047	A	150D473X0125A2	150D473X9125A2
.056	A	—	150D563X9125A2
.068	A	150D683X0125A2	150D683X9125A2
.082	A	—	150D823X9125A2
.1	A	150D104X0125A2	150D104X9125A2
.12	A	—	150D124X9125A2
.15	A	150D154X0125A2	150D154X9125A2
.18	A	—	150D184X9125A2
.22	A	150D224X0125A2	150D224X9125A2
.27	A	—	150D274X9125A2
.33	A	150D334X0125A2	150D334X9125A2
.39	A	—	150D394X9125A2
.47	A	150D474X0125A2	150D474X9125A2
.56	B	—	150D564X9125B2
.68	B	150D684X0125B2	150D684X9125B2
.82	B	—	150D824X9125B2
1.0	B	150D105X0125B2	150D105X9125B2
1.2	B	—	150D125X9125B2
1.5	B	150D155X0125B2	150D155X9125B2
1.8	B	—	150D185X9125B2
2.2	B	150D225X0125B2	150D225X9125B2

DIMENSIONS WITH SLEEVE

Code	D. x L.
A	.135"x.286"
B	.185"x.474"
R	.289"x.686"
S	.351"x.786"

Call Your Sprague Industrial Distributor for Current Quantity Prices

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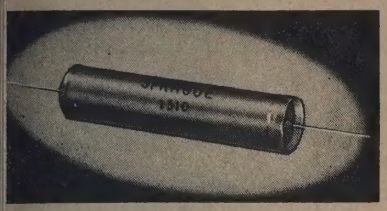
SPRAGUE CAPACITORS

151D NON-POLARIZED SOLID-ELECTROLYTE TANTALEX® CAPACITORS



- Truly Miniature Units Offer Excellent Electrical Characteristics and Outstanding Service Life.
- Hermetically Sealed in Metal Case.
- May Be Used At Full Rated Operating Voltages Up to 85°C. With Derating, May Be Used Up To 125°C.
- For Use Where Non-Polarized Solid Electrolyte Tantalums Excel—In Servo Systems, Crossover Networks, Low Frequency Tuned Circuits.
- Listed Units Have Plastic Sleeves.
- For Bare Case End Cat. No. in "0" Instead of "2."
- For Complete Technical Data, Refer To Latest Issue of Engineering Bulletin 3521.

Call Your Sprague Industrial Distributor For Current Quantity Prices

µF	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
6 VOLTS NP, 8 NP SURGE			
.11	W	151D114X0006W2	151D114X9006W2
.13	W	———	151D134X9006W2
.16	W	151D164X0006W2	151D164X9006W2
.19	W	———	151D194X9006W2
.23	W	151D234X0006W2	151D234X9006W2
.28	W	———	151D284X9006W2
.34	W	151D344X0006W2	151D344X9006W2
.41	W	———	151D414X9006W2
.50	W	151D504X0006W2	151D504X9006W2
.60	W	———	151D604X9006W2
.75	W	151D754X0006W2	151D754X9006W2
.90	W	———	151D904X9006W2
1	W	151D116X0006W2	151D115X9006W2
3	W	———	151D135X9006W2
.6	W	151D165X0006W2	151D165X9006W2
.9	W	———	151D195X9006W2
3	W	151D235X0006W2	151D235X9006W2
.8	W	———	151D285X9006W2
.4	W	151D345X0006W2	151D345X9006W2
.1	X	———	151D415X9006X2
.0	X	151D505X0006X2	151D505X9006X2
.0	X	———	151D605X9006X2
.5	X	151D755X0006X2	151D755X9006X2
.0	X	———	151D905X9006X2
1	X	151D116X0006X2	151D116X9006X2
3	X	———	151D136X9006X2
6	X	151D166X0006X2	151D166X9006X2
9	X	———	151D196X9006X2
3	X	151D236X0006X2	151D236X9006X2
8	X	———	151D286X9006X2
0	X	151D306X0006X2	151D306X9006X2
4	Y	151D346X0006Y2	151D346X9006Y2
1	Y	———	151D416X9006Y2
0	Y	151D506X0006Y2	151D506X9006Y2
0	Y	151D606X0006Y2	151D606X9006Y2
5	Y	151D756X0006Y2	151D756X9006Y2
0	Y	151D906X0006Y2	151D906X9006Y2
10	Z	151D117X0006Z2	151D117X9006Z2
30	Z	151D137X0006Z2	151D137X9006Z2
60	Z	151D167X0006Z2	151D167X9006Z2
10 VOLTS NP, 13 NP SURGE			
.11	W	151D114X0010W2	151D114X9010W2
.13	W	———	151D134X9010W2
.16	W	151D164X0010W2	151D164X9010W2
.19	W	———	151D194X9010W2
.23	W	151D234X0010W2	151D234X9010W2
.28	W	———	151D284X9010W2
.34	W	151D344X0010W2	151D344X9010W2
.41	W	———	151D414X9010W2
.50	W	151D504X0010W2	151D504X9010W2
.60	W	———	151D604X9010W2
.75	W	151D754X0010W2	151D754X9010W2
.90	W	———	151D904X9010W2
.1	W	151D115X0010W2	151D115X9010W2
.3	W	———	151D135X9010W2
.6	W	151D165X0010W2	151D165X9010W2
.9	W	———	151D195X9010W2
.3	W	151D235X0010W2	151D235X9010W2
.8	X	———	151D285X9010X2
.4	X	151D345X0010X2	151D345X9010X2
.1	X	———	151D415X9010X2
.0	X	151D505X0010X2	151D505X9010X2
.0	X	———	151D605X9010X2
.5	X	151D755X0010X2	151D755X9010X2
.0	X	———	151D905X9010X2
1	X	151D116X0010X2	151D116X9010X2
3	X	———	151D136X9010X2
6	X	151D166X0010X2	151D166X9010X2
9	X	———	151D196X9010X2
0	X	151D206X0010X2	151D206X9010X2
3	Y	151D236X0010Y2	151D236X9010Y2
8	Y	———	151D286X9010Y2
4	Y	151D346X0010Y2	151D346X9010Y2
1	Y	———	151D416X9010Y2
0	Y	151D506X0010Y2	151D506X9010Y2
0	Y	151D606X0010Y2	151D606X9010Y2
5	Z	151D756X0010Z2	151D756X9010Z2
90	Z	———	151D906X9010Z2
110	Z	151D117X0010Z2	151D117X9010Z2
15 VOLTS NP, 20 NP SURGE			
.11	W	151D114X0015W2	151D114X9015W2
.13	W	———	151D134X9015W2
.16	W	151D164X0015W2	151D164X9015W2
.19	W	———	151D194X9015W2
.23	W	151D234X0015W2	151D234X9015W2
.28	W	———	151D284X9015W2
.34	W	151D344X0015W2	151D344X9015W2
.41	W	———	151D414X9015W2
.50	W	151D504X0015W2	151D504X9015W2
.60	W	———	151D604X9015W2
.75	W	151D754X0015W2	151D754X9015W2
.90	W	———	151D904X9015W2
1.1	W	151D115X0015W2	151D115X9015W2
1.3	W	———	151D135X9015W2
1.6	W	151D165X0015W2	151D165X9015W2
1.9	X	———	151D195X9015X2
2.3	X	151D235X0015X2	151D235X9015X2
2.8	X	———	151D285X9015X2
3.4	X	151D345X0015X2	151D345X9015X2
4.1	X	———	151D415X9015X2
5.0	X	151D505X0015X2	151D505X9015X2
6.0	X	———	151D605X9015X2
7.5	X	151D755X0015X2	151D755X9015X2
9.0	X	———	151D905X9015X2
11	X	151D116X0015X2	151D116X9015X2
13	Y	———	151D136X9015Y2
16	Y	151D166X0015Y2	151D166X9015Y2
19	Y	———	151D196X9015Y2
23	Y	151D236X0015Y2	151D236X9015Y2
28	Y	———	151D286X9015Y2
34	Y	151D346X0015Y2	151D346X9015Y2
41	Z	———	151D416X9015Z2
50	Z	151D506X0015Z2	151D506X9015Z2
60	Z	———	151D606X9015Z2
75	Z	151D756X0015Z2	151D756X9015Z2
20 VOLTS NP, 26 NP SURGE			
.0023	W	151D232X0020W2	151D232X9020W2
.0028	W	———	151D282X9020W2
.0034	W	151D342X0020W2	151D342X9020W2
.0041	W	———	151D412X9020W2
.005	W	151D502X0020W2	151D502X9020W2
.006	W	———	151D602X9020W2
.0075	W	151D752X0020W2	151D752X9020W2
.009	W	———	151D902X9020W2
.011	W	151D113X0020W2	151D113X9020W2
.013	W	———	151D133X9020W2
.016	W	151D163X0020W2	151D163X9020W2
.019	W	———	151D193X9020W2
.023	W	151D233X0020W2	151D233X9020W2
.028	W	———	151D283X9020W2
.034	W	151D343X0020W2	151D343X9020W2
.041	W	———	151D413X9020W2
.05	W	151D503X0020W2	151D503X9020W2
.06	W	———	151D603X9020W2
.075	W	151D753X0020W2	151D753X9020W2
.09	W	———	151D903X9020W2
.11	W	151D114X0020W2	151D114X9020W2
.13	W	———	151D134X9020W2
.16	W	151D164X0020W2	151D164X9020W2
.19	W	———	151D194X9020W2
.23	W	151D234X0020W2	151D234X9020W2
.28	W	———	151D284X9020W2
.34	W	151D344X0020W2	151D344X9020W2
.41	W	———	151D414X9020W2
.50	W	151D504X0020W2	151D504X9020W2
.60	W	———	151D604X9020W2
.75	W	151D754X0020W2	151D754X9020W2
.90	W	———	151D904X9020W2
1.1	W	151D115X0020W2	151D115X9020W2
1.3	X	———	151D135X9020X2
1.6	X	151D165X0020X2	151D165X9020X2
1.9	X	———	151D195X9020X2
2.3	X	151D235X0020X2	151D235X9020X2
2.8	X	———	151D285X9020X2
3.4	X	151D345X0020X2	151D345X9020X2
4.1	X	———	151D415X9020X2
5.0	X	151D505X0020X2	151D505X9020X2
6.0	X	———	151D605X9020X2
7.5	X	151D755X0020X2	151D755X9020X2
9.0	Y	———	151D905X9020Y2
11	Y	151D116X0020Y2	151D116X9020Y2
13	Y	———	151D136X9020Y2
16	Y	151D166X0020Y2	151D166X9020Y2
19	Y	———	151D196X9020Y2
23	Y	151D236X0020Y2	151D236X9020Y2
28	Z	———	151D286X9020Z2
34	Z	151D346X0020Z2	151D346X9020Z2
41	Z	———	151D416X9020Z2
50	Z	151D506X0020Z2	151D506X9020Z2
35 VOLTS NP, 46 NP SURGE			
.0023	W	151D232X0035W2	151D232X9035W2
.0028	W	———	151D282X9035W2
.0034	W	151D342X0035W2	151D342X9035W2
.0041	W	———	151D412X9035W2
.005	W	151D502X0035W2	151D502X9035W2
.006	W	———	151D602X9035W2
.0075	W	151D752X0035W2	151D752X9035W2
.009	W	———	151D902X9035W2
.011	W	151D113X0035W2	151D113X9035W2
.013	W	———	151D133X9035W2
.016	W	151D163X0035W2	151D163X9035W2
.019	W	———	151D193X9035W2
.023	W	151D233X0035W2	151D233X9035W2
.028	W	———	151D283X9035W2
.034	W	151D343X0035W2	151D343X9035W2
.041	W	———	151D413X9035W2
.050	W	151D503X0035W2	151D503X9035W2
.060	W	———	151D603X9035W2
.075	W	151D753X0035W2	151D753X9035W2
.090	W	———	151D903X9035W2
.11	W	151D114X0035W2	151D114X9035W2
.13	W	———	151D134X9035W2
.16	W	151D164X0035W2	151D164X9035W2
.19	W	———	151D194X9035W2
.23	W	151D234X0035W2	151D234X9035W2
.28	W	———	151D284X9035W2
.34	W	151D344X0035W2	151D344X9035W2
.41	W	———	151D414X9035W2
.50	W	151D504X0035W2	151D504X9035W2
.60	X	———	151D604X9035X2
.75	X	151D754X0035X2	151D754X9035X2
.90	X	———	151D904X9035X2
1.1	X	151D115X0035X2	151D115X9035X2
1.3	X	———	151D135X9035X2
1.6	X	151D165X0035X2	151D165X9035X2
1.9	X	———	151D195X9035X2
2.3	X	151D235X0035X2	151D235X9035X2
2.8	X	———	151D285X9035X2
3.4	X	151D345X0035X2	151D345X9035X2
4.1	Y	———	151D415X9035Y2
5.0	Y	151D505X0035Y2	151D505X9035Y2
6.0	Y	———	151D605X9035Y2
7.5	Y	151D755X0035Y2	151D755X9035Y2
9.0	Y	———	151D905X9035Y2
11	Y	151D116X0035Y2	151D116X9035Y2
13	Z	———	151D136X9035Z2
16	Z	151D166X0035Z2	151D166X9035Z2
19	Z	———	151D196X9035Z2
23	Z	151D236X0035Z2	151D236X9035Z2

DIMENSIONS

Code	With Sleeve D. x L.	Bare Case D. x L.
W	.161" x .575"	.146" x .540"
X	.207" x .955"	.192" x .915"
Y	.314" x 1.350"	.299" x 1.320"
Z	.376" x 1.550"	.361" x 1.520"

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SPRAGUE CAPACITORS

TYPE 151D NON-POLARIZED SOLID-ELECTROLYTE TANTALEX® CAPACITORS (Cont.)

50 VOLTS NP, 65 NP SURGE

µF	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
.0023	W	151D232X0050W2	151D232X9050W2
.0028	W	———	151D282X9050W2
.0034	W	151D342X0050W2	151D342X9050W2
.0041	W	———	151D412X9050W2
.005	W	151D502X0050W2	151D502X9050W2
.006	W	———	151D602X9050W2
.0075	W	151D752X0050W2	151D752X9050W2
.009	W	———	151D902X9050W2
.011	W	151D113X0050W2	151D113X9050W2
.013	W	———	151D133X9050W2
.016	W	151D163X0050W2	151D163X9050W2
.019	W	———	151D193X9050W2
.023	W	151D233X0050W2	151D233X9050W2
.028	W	———	151D283X9050W2
.034	W	151D343X0050W2	151D343X9050W2
.041	W	———	151D413X9050W2
.05	W	151D503X0050W2	151D503X9050W2
.06	W	———	151D603X9050W2
.075	W	151D753X0050W2	151D753X9050W2
.09	W	———	151D903X9050W2
.11	W	151D114X0050W2	151D114X9050W2
.13	W	———	151D134X9050W2
.16	W	151D164X0050W2	151D164X9050W2
.19	W	———	151D194X9050W2
.23	W	151D234X0050W2	151D234X9050W2
.28	W	———	151D284X9050W2
.34	W	151D344X0050W2	151D344X9050W2
.41	W	———	151D414X9050W2
.50	W	151D504X0050W2	151D504X9050W2
.60	X	———	151D604X9050X2
.75	X	151D754X0050X2	151D754X9050X2
.90	X	———	151D904X9050X2
1.1	X	151D115X0050X2	151D115X9050X2
1.3	X	———	151D135X9050X2
1.6	X	151D165X0050X2	151D165X9050X2
1.9	X	———	151D195X9050X2
2.8	X	151D235X0050X2	151D235X9050X2
2.8	Y	———	151D285X9050Y2
3.4	Y	151D345X0050Y2	151D345X9050Y2
4.1	Y	———	151D415X9050Y2
5.0	Y	151D505X0050Y2	151D505X9050Y2
6.0	Y	———	151D605X9050Y2
7.5	Y	151D755X0050Y2	151D755X9050Y2
9.0	Y	———	151D905X9050Y2
11.0	Z	151D116X0050Z2	151D116X9050Z2

60 VOLTS NP, 78 NP SURGE

µF	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
.0023	W	151D232X0060W2	151D232X9060W2
.0028	W	———	151D282X9060W2
.0034	W	151D342X0060W2	151D342X9060W2
.0041	W	———	151D412X9060W2
.005	W	151D502X0060W2	151D502X9060W2
.006	W	———	151D602X9060W2
.0075	W	151D752X0060W2	151D752X9060W2
.009	W	———	151D902X9060W2
.011	W	151D113X0060W2	151D113X9060W2
.013	W	———	151D133X9060W2
.016	W	151D163X0060W2	151D163X9060W2
.019	W	———	151D193X9060W2
.023	W	151D233X0060W2	151D233X9060W2
.028	W	———	151D283X9060W2
.034	W	151D343X0060W2	151D343X9060W2
.041	W	———	151D413X9060W2
.05	W	151D503X0060W2	151D503X9060W2
.06	W	———	151D603X9060W2
.075	W	151D753X0060W2	151D753X9060W2
.09	W	———	151D903X9060W2
.11	W	151D114X0060W2	151D114X9060W2
.13	W	———	151D134X9060W2
.16	W	151D164X0060W2	151D164X9060W2
.19	W	———	151D194X9060W2
.23	W	151D234X0060W2	151D234X9060W2
.28	W	———	151D284X9060W2
.34	W	151D344X0060W2	151D344X9060W2
.41	X	———	151D414X9060X2
.50	X	151D504X0060X2	151D504X9060X2
.60	X	———	151D604X9060X2
.75	X	151D754X0060X2	151D754X9060X2
.90	X	———	151D904X9060X2
1.1	X	151D115X0060X2	151D115X9060X2
1.3	X	———	151D135X9060X2
1.6	X	151D165X0060X2	151D165X9060X2
1.9	X	———	151D195X9060X2
2.3	Y	151D235X0060Y2	151D235X9060Y2
2.8	Y	———	151D285X9060Y2
3.4	Y	151D345X0060Y2	151D345X9060Y2
4.1	Y	———	151D415X9060Y2
5.0	Y	151D505X0060Y2	151D505X9060Y2
6.0	Z	———	151D605X9060Z2
7.5	Z	151D755X0060Z2	151D755X9060Z2
9.0	Z	———	151D905X9060Z2
11.0	Z	151D116X0060Z2	151D116X9060Z2

75 VOLTS NP, 97 NP SURGE

µF	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
.0023	W	151D232X0075W2	151D232X9075W2
.0028	W	———	151D282X9075W2
.0034	W	151D342X0075W2	151D342X9075W2
.0041	W	———	151D412X9075W2
.005	W	151D502X0075W2	151D502X9075W2
.006	W	———	151D602X9075W2
.0075	W	151D752X0075W2	151D752X9075W2
.009	W	———	151D902X9075W2
.011	W	151D113X0075W2	151D113X9075W2
.013	W	———	151D133X9075W2
.016	W	151D163X0075W2	151D163X9075W2
.019	W	———	151D193X9075W2
.023	W	151D233X0075W2	151D233X9075W2
.028	W	———	151D283X9075W2
.034	W	151D343X0075W2	151D343X9075W2
.041	W	———	151D413X9075W2
.05	W	151D503X0075W2	151D503X9075W2
.06	W	———	151D603X9075W2
.075	W	151D753X0075W2	151D753X9075W2
.09	W	———	151D903X9075W2
.11	W	151D114X0075W2	151D114X9075W2
.13	W	———	151D134X9075W2
.16	W	151D164X0075W2	151D164X9075W2
.19	W	———	151D194X9075W2
.23	W	151D234X0075W2	151D234X9075W2
.28	W	———	151D284X9075W2
.34	W	151D344X0075W2	151D344X9075W2
.41	X	———	151D414X9075X2
.50	X	151D504X0075X2	151D504X9075X2
.60	X	———	151D604X9075X2
.75	X	151D754X0075X2	151D754X9075X2
.90	X	———	151D904X9075X2
1.1	X	151D115X0075X2	151D115X9075X2
1.3	X	———	151D135X9075X2
1.6	X	151D165X0075X2	151D165X9075X2
1.9	X	———	151D195X9075X2
2.3	Y	151D235X0075Y2	151D235X9075Y2
2.8	Y	———	151D285X9075Y2
3.4	Y	151D345X0075Y2	151D345X9075Y2
4.1	Y	———	151D415X9075Y2
5.0	Y	151D505X0075Y2	151D505X9075Y2
6.0	Z	———	151D605X9075Z2
7.5	Z	151D755X0075Z2	151D755X9075Z2

100 VOLTS NP, 115 NP SURGE

µF	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
.0023	W	151D232X0100W2	151D232X9100W2
.0028	W	———	151D282X9100W2
.0034	W	151D342X0100W2	151D342X9100W2
.0041	W	———	151D412X9100W2
.005	W	151D502X0100W2	151D502X9100W2
.006	W	———	151D602X9100W2
.0075	W	151D752X0100W2	151D752X9100W2
.009	W	———	151D902X9100W2
.011	W	151D113X0100W2	151D113X9100W2
.013	W	———	151D133X9100W2
.016	W	151D163X0100W2	151D163X9100W2
.019	W	———	151D193X9100W2
.023	W	151D233X0100W2	151D233X9100W2
.028	W	———	151D283X9100W2
.034	W	151D343X0100W2	151D343X9100W2
.041	W	———	151D413X9100W2
.050	W	151D503X0100W2	151D503X9100W2
.060	W	———	151D603X9100W2
.075	W	151D753X0100W2	151D753X9100W2
.090	W	———	151D903X9100W2
.11	W	151D114X0100W2	151D114X9100W2
.13	W	———	151D134X9100W2
.16	W	151D164X0100W2	151D164X9100W2
.19	W	———	151D194X9100W2
.23	W	151D234X0100W2	151D234X9100W2
.28	W	———	151D284X9100W2
.34	X	151D344X0100X2	151D344X9100X2
.41	X	———	151D414X9100X2
.50	X	151D504X0100X2	151D504X9100X2
.60	X	———	151D604X9100W2
.75	X	151D754X0100X2	151D754X9100W2
.90	X	———	151D904X9100X2
1.1	X	151D115X0100X2	151D115X9100X2
1.3	X	———	151D135X9100X2
1.6	Y	151D165X0100Y2	151D165X9100Y2
1.9	Y	151D195X0100Y2	151D195X9100Y2
2.3	Y	151D235X0100Y2	151D235X9100Y2
2.8	Y	151D285X0100Y2	151D285X9100Y2
3.4	Y	151D345X0100Y2	151D345X9100Y2

125 VOLTS NP, 140 NP SURGE

µF	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
.0023	W	151D232X0125W2	151D232X9125W2
.0028	W	———	151D282X9125W2
.0034	W	151D342X0125W2	151D342X9125W2
.0041	W	———	151D412X9125W2
.005	W	151D502X0125W2	151D502X9125W2
.006	W	———	151D602X9125W2
.0075	W	151D752X0125W2	151D752X9125W2
.009	W	———	151D902X9125W2
.011	W	151D113X0125W2	151D113X9125W2
.013	W	———	151D133X9125W2
.016	W	151D163X0125W2	151D163X9125W2
.019	W	———	151D193X9125W2
.023	W	151D233X0125W2	151D233X9125W2
.028	W	———	151D283X9125W2
.034	W	151D343X0125W2	151D343X9125W2
.041	W	———	151D413X9125W2
.05	W	151D503X0125W2	151D503X9125W2
.06	W	———	151D603X9125W2
.07	W	151D703X0125W2	151D703X9125W2
.09	W	———	151D903X9125W2
.11	W	151D114X0125W2	151D114X9125W2
.13	W	———	151D134X9125W2
.16	W	151D164X0125W2	151D164X9125W2
.19	W	———	151D194X9125W2
.23	W	151D234X0125W2	151D234X9125W2
.28	X	———	151D284X9125X2
.34	X	151D344X0125X2	151D344X9125X2
.41	X	———	151D414X9125X2
.50	X	151D504X0125X2	151D504X9125X2
.60	X	———	151D604X9125X2
.75	X	151D754X0125X2	151D754X9125X2
.90	X	———	151D904X9125X2
1.1	X	151D115X0125X2	151D115X9125X2

DIMENSIONS WITH SLEEVE Code	D. x L.
W	.161″ x .575″
X	.207″ x .955″
Y	.314″ x 1.350″
Z	.376″ x 1.550″

Call Your Sprague Industrial Distributor for Current Quantity Prices

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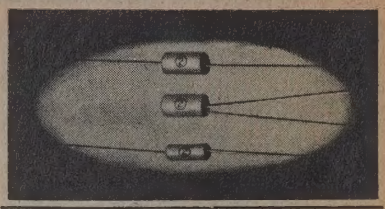
SPRAGUE CAPACITORS

TYPES 162D, 169D MINIATURE SOLID-ELECTROLYTE RED TOP® TANTALEX® CAPACITORS IN RESIN-SEALED CASES

- Miniature Polarized Tantalex Capacitors in Resin-sealed Case For Use in Compactly Designed Electronic Equipment.
- Two Lead Styles—Type 162D With Axial Leads, and "Single-Ended" Type 169D, Which is Especially Suited For Printed Wiring Board Applications.
- Red End Seal Indicates Positive End on Axial Lead Units. Center Lead is Positive on "Single-Ended" Type 169D Capacitors.
- Listed Units have Plastic-Film Insulation. Bare Metal Case Units Available.
- Ratings From 2 Through 100 WVDC Available.
- Capacitance Values From 0.033 μF to 68 μF.
- Temperature Range of —55 C to +85C.
- For Complete Technical Data, Refer to the Latest Issue of Sprague Engineering Bulletin No. 3536.

Call Your Sprague Industrial Distributor For Prices

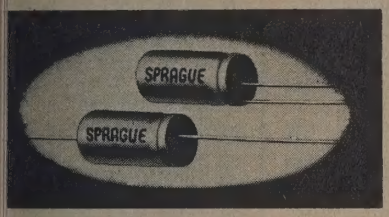


DIMENSIONS

Case Code	D	x	L
AA	0.080	x	0.135
AB	0.080	x	0.185
BA	0.105	x	0.265
CA	0.145	x	0.265

μF	WVDC	Size Code	Catalog Number Axial-Lead	Catalog Number Single-Ended
7	4	CA	162D476X9004CA2	169D476X9004CA2
.0	10	AA	162D105X9010AA2	169D105X9010AA2
0	10	BA	162D106X9010BA2	169D106X9010BA2
2	10	CA	162D226X9010CA2	169D226X9010CA2
68	15	AA	162D684X9015AA2	169D684X9015AA2
2.2	15	AB	162D225X9015AB2	169D225X9015AB2
6.8	15	BA	162D685X9015BA2	169D685X9015BA2
15	15	CA	162D156X9015CA2	169D156X9015CA2
.47	20	AA	162D474X9020AA2	169D474X9020AA2
1.0	20	AB	162D105X9020AB2	169D105X9020AB2
4.7	20	BA	162D475X9020BA2	169D475X9020BA2
.15	35	AA	162D154X9035AA2	169D154X9035AA2
.1	50	AA	162D104X9050AA2	169D104X9050AA2
.033	100	AA	162D333X9100AA2	169D333X9100AA2
.068	100	AA	162D683X9100AA2	169D683X9100AA2

TYPE 164D, SOLID-ELECTROLYTE RED TOP® TANTALEX® CAPACITORS



- Economically Priced Red Top Capacitors Are For Use in Commercial Digital Computers and All Types of Industrial Electronic Equipment.
- Metal Cases With Resin End Seals Afford Greater Moisture Protection Than Organic Housings Such as Moldings or Polyester Film.
- Case Sizes are the Same as those of the "Industrial Standard" Type 150D Hermetically-Sealed Design.
- Red End Seal Indicates Positive End on Axial Lead Units.
- Listed Units Have Plastic-Film Insulation. Bare Metal Case Units Available.
- Voltage Ratings From 6 Through 75 WVDC.
- Temperature Range of —55 C to +85 C.
- For Complete Technical Data, Refer to the Latest Issue of Sprague Engineering Bulletin No. 3537.

Call Your Sprague Industrial Distributor For Prices

DIMENSIONS Case Code A = .135 D. x .322 L. B = .185 D. x .510 L. R = .289 D. x .722 L. S = .351 D. x .822 L.

μF	WVDC	Size	Catalog Number Axial-Lead
5.6	6	A	164D565X9006A2
6.8	6	A	164D685X9006A2
47	6	B	164D476X9006B2
56	6	B	164D566X9006B2
50	6	R	164D157X9006R2
80	6	R	164D187X9006R2
70	6	S	164D277X9006S2
30	6	S	164D337X9006S2
3.9	10	A	164D395X9010A2
4.7	10	A	164D475X9010A2
27	10	B	164D276X9010B2
33	10	B	164D336X9010B2
39	10	B	164D386X9010B2
82	10	R	164D826X9010R2
00	10	R	164D107X9010R2
20	10	R	164D127X9010R2
80	10	S	164D187X9010S2
20	10	S	164D227X9010S2
2.7	15	A	164D275X9015A2
3.3	15	A	164D335X9015A2
18	15	B	164D186X9015B2
22	15	B	164D226X9015B2
56	15	R	164D566X9015R2
68	15	R	164D686X9015R2
20	15	S	164D127X9015S2
50	15	S	164D157X9015S2
1.2	20	A	164D125X9020A2
1.5	20	A	164D155X9020A2
1.8	20	A	164D185X9020A2
2.2	20	A	164D225X9020A2
8.2	20	B	164D825X9020B2
10	20	B	164D106X9020B2
12	20	B	164D126X9020B2
15	20	B	164D156X9020B2
27	20	R	164D276X9020R2
33	20	R	164D336X9020R2
39	20	R	164D396X9020R2
47	20	R	164D476X9020R2
56	20	S	164D566X9020S2
68	20	S	164D686X9020S2
82	20	S	164D826X9020S2
100	20	S	164D107X9020S2
.0047	35	A	164D472X9035A2
.0068	35	A	164D682X9035A2
.01	35	A	164D103X9035A2
.015	35	A	164D153X9035A2
.022	35	A	164D223X9035A2
.033	35	A	164D333X9035A2
.047	35	A	164D473X9035A2
.068	35	A	164D683X9035A2
.1	35	A	164D104X9035A2
.15	35	A	164D154X9035A2
.22	35	A	164D224X9035A2
.33	35	A	164D334X9035A2
.47	35	A	164D474X9035A2
.68	35	A	164D684X9035A2
1.0	35	A	164D105X9035A2
1.2	35	B	164D125X9035B2
1.5	35	B	164D155X9035B2
1.8	35	B	164D185X9035B2
2.2	35	B	164D225X9035B2
2.7	35	B	164D275X9035B2
3.3	35	B	164D335X9035B2
3.9	35	B	164D395X9035B2
4.7	35	B	164D475X9035B2
5.6	35	B	164D565X9035B2
6.8	35	B	164D685X9035B2
8.2	35	R	164D825X9035R2
10	35	R	164D106X9035R2
12	35	R	164D126X9035R2
15	35	R	164D156X9035R2
18	35	R	164D186X9035R2
22	35	R	164D226X9035R2
27	35	S	164D276X9035S2
33	35	S	164D336X9035S2
39	35	S	164D396X9035S2
47	35	S	164D476X9035S2
.0047	50	A	164D472X9050A2
.0068	50	A	164D682X9050A2
.01	50	A	164D103X9050A2
.015	50	A	164D153X9050A2
.022	50	A	164D223X9050A2
.033	50	A	164D333X9050A2
.047	50	A	164D473X9050A2
.068	50	A	164D683X9050A2
.1	50	A	164D104X9050A2
.15	50	A	164D154X9050A2
.22	50	A	164D224X9050A2
.33	50	A	164D334X9050A2
.47	50	A	164D474X9050A2
.68	50	A	164D684X9050A2
1.0	50	A	164D105X9050A2
1.2	50	B	164D125X9050B2
1.5	50	B	164D155X9050B2
1.8	50	B	164D185X9050B2
2.2	50	B	164D225X9050B2
2.7	50	B	164D275X9050B2
3.3	50	B	164D335X9050B2
3.9	50	B	164D395X9050B2
4.7	50	B	164D475X9050B2
5.6	50	R	164D565X9050R2
6.8	50	R	164D685X9050R2
8.2	50	R	164D825X9050R2
10	50	R	164D106X9050R2
12	50	R	164D126X9050R2
15	50	R	164D156X9050R2
18	50	R	164D186X9050R2
22	50	S	164D226X9050R2
.0047	75	A	164D472X9075A2
.0068	75	A	164D682X9075A2
.01	75	A	164D103X9075A2
.015	75	A	164D153X9075A2
.022	75	A	164D223X9075A2
.033	75	A	164D333X9075A2
.047	75	A	164D473X9075A2
.068	75	A	164D683X9075A2
.1	75	A	164D104X9075A2
.15	75	A	164D154X9075A2
.22	75	A	164D224X9075A2
.33	75	A	164D334X9075A2
.47	75	A	164D474X9075A2
.68	75	A	164D684X9075A2
1.0	75	B	164D105X9075B2
1.2	75	B	164D125X9075B2
1.5	75	B	164D155X9075B2
1.8	75	B	164D185X9075B2
2.2	75	B	164D225X9075B2
2.7	75	B	164D275X9075B2
3.3	75	B	164D335X9075B2
3.9	75	B	164D395X9075B2

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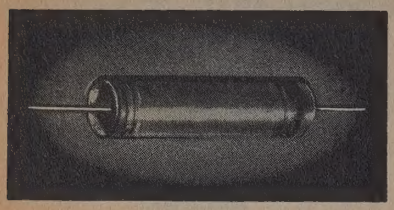
SPRAGUE CAPACITORS



85C FOIL TANTALEX® CAPACITORS

- Small Size, Electrically Stable, Long Life. For Data, See Latest Issue of Engineering Bulletin 3601
- 110D and 112D Available as MIL-C-3965 Units
- Tol. 110D, 111D, ±20% and ±15%; 112D and 113D +75%, −15%, +50%, −15% and +30%, −15%
- Plastic Wrap, For Bare Case, End Cat. No. in "0" Instead of "1"

Call Your Sprague Industrial Distributor For Quantity Prices

DIMENSIONS

Case	D x L	Case	D x L
D	0.203 x 0.812	P	0.390 x 2.875
G	0.296 x 1.000	R	0.483 x 2.875
J	0.390 x 1.562	Y	0.546 x 2.875
M	0.390 x 2.250		

TYPE 110D
POLARIZED PLAIN-FOIL

µF	Case	Catalog No.
3 WORKING VOLTS D-C		
10	D	110D106X0003D1
55	G	110D556X0003G1
160	J	110D167X0003J1
350	M	110D357X0003M1
440	P	110D447X0003P1
1100	R	110D118X0003R1
1300	Y	110D138X0003Y1
6 WORKING VOLTS D-C		
8	D	110D805X0006D1
35	G	110D356X0006G1
100	J	110D107X0006J1
200	M	110D207X0006M1
300	P	110D307X0006P1
460	R	110D467X0006R1
560	Y	110D567X0006Y1
10 WORKING VOLTS D-C		
6	D	110D605X0010D1
25	G	110D256X0010G1
80	J	110D806X0010J1
160	M	110D167X0010M1
220	P	110D227X0010P1
350	R	110D357X0010R1
420	Y	110D427X0010Y1
15 WORKING VOLTS D-C		
4.5	D	110D455X0015D1
18	G	110D186X0015G1
55	J	110D556X0015J1
110	M	110D117X0015M1
160	P	110D167X0015P1
260	R	110D267X0015R1
320	Y	110D327X0015Y1
25 WORKING VOLTS D-C		
3	D	110D305X0025D1
12	G	110D126X0025G1
35	J	110D356X0025J1
70	M	110D706X0025M1
100	P	110D107X0025P1
180	R	110D187X0025R1
210	Y	110D217X0025Y1
30 WORKING VOLTS D-C		
2.5	D	110D255X0030D1
10	G	110D106X0030G1
30	J	110D306X0030J1
60	M	110D606X0030M1
85	P	110D856X0030P1
150	R	110D157X0030R1
180	Y	110D187X0030Y1
50 WORKING VOLTS D-C		
1.5	D	110D155X0050D1
6	G	110D605X0050G1
20	J	110D206X0050J1
40	M	110D406X0050M1
55	P	110D556X0050P1
100	R	110D107X0050R1
120	Y	110D127X0050Y1
60 WORKING VOLTS D-C		
1.2	D	110D125X0060D1
5	G	110D505X0060G1
17	J	110D176X0060J1
34	M	110D346X0060M1
48	P	110D486X0060P1
85	R	110D856X0060R1
100	Y	110D107X0060Y1
75 WORKING VOLTS D-C		
1	D	110D105X0075D1
4	G	110D405X0075G1
14	J	110D146X0075J1
28	M	110D286X0075M1
40	P	110D406X0075P1
70	R	110D706X0075R1
88	Y	110D886X0075Y1
100 WORKING VOLTS D-C		
0.8	D	110D804X0100D1
3	G	110D305X0100G1
10	J	110D106X0100J1
20	M	110D206X0100M1
30	P	110D306X0100P1
57	R	110D576X0100R1
70	Y	110D706X0100Y1
150 WORKING VOLTS D-C		
0.5	D	110D504X0150D1
2	G	110D205X0150G1
7	J	110D705X0150J1
14	M	110D146X0150M1
20	P	110D206X0150P1
40	R	110D406X0150R1
47	Y	110D476X0150Y1
200 WORKING VOLTS D-C		
0.35	D	110D354X8200D1
1.5	G	110D155X8200G1
5.0	J	110D505X8200J1
10.0	M	110D106X8200M1
15.0	P	110D156X8200P1
25	R	110D256X8200R1
35	Y	110D356X8200Y1
250 WORKING VOLTS D-C		
0.3	D	110D304X8250D1
1.2	G	110D125X8250G1
4.0	J	110D405X8250J1
8.0	M	110D805X8250M1
12.0	P	110D126X8250P1
20	R	110D206X8250R1
30	Y	110D306X8250Y1
300 WORKING VOLTS D-C		
0.25	D	110D254X8300D1
1	G	110D105X8300G1
3	J	110D305X8300J1
7	M	110D705X8300M1
10	P	110D106X8300P1
18	R	110D186X8300R1
375 WORKING VOLTS D-C		
0.2	D	110D204X8375D1
0.8	G	110D804X8375G1
2.5	J	110D255X8375J1
5	M	110D505X8375M1
7	P	110D705X8375P1
12	R	110D126X8300R1
450 WORKING VOLTS D-C		
0.15	D	110D154X8450D1
0.65	G	110D654X8450G1
2	J	110D205X8450J1
4	M	110D405X8450M1
6	P	110D605X8450P1

TYPE 111D
NON-POLARIZED PLAIN-FOIL

µF	Case	Catalog No.
6 WORKING VOLTS N.P.		
7	D	111D705X0006D1
25	G	111D256X0006G1
85	J	111D856X0006J1
170	M	111D177X0006M1
250	P	111D257X0006P1
360	R	111D367X0006R1
470	Y	111D477X0006Y1
10 WORKING VOLTS N.P.		
4	D	111D405X0010D1
16	G	111D166X0010G1
55	J	111D556X0010J1
110	M	111D117X0010M1
150	P	111D157X0010P1
230	R	111D237X0010R1
280	Y	111D287X0010Y1
15 WORKING VOLTS N.P.		
2.5	D	111D255X0015D1
10	G	111D106X0015G1
35	J	111D356X0015J1
70	M	111D706X0015M1
100	P	111D107X0015P1
160	R	111D167X0015R1
200	Y	111D207X0015Y1
25 WORKING VOLTS N.P.		
1.5	D	111D155X0025D1
6	G	111D605X0025G1
20	J	111D206X0025J1
40	M	111D406X0025M1
60	P	111D606X0025P1
100	R	111D107X0025R1
120	Y	111D127X0025Y1
30 WORKING VOLTS N.P.		
1.4	D	111D145X0030D1
5.5	G	111D555X0030G1
18	J	111D186X0030J1
36	M	111D366X0030M1
45	P	111D456X0030P1
85	R	111D856X0030R1
100	Y	111D107X0030Y1
50 WORKING VOLTS N.P.		
0.8	D	111D804X0050D1
3	G	111D305X0050G1
10	J	111D106X0050J1
20	M	111D206X0050M1
30	P	111D306X0050P1
50	R	111D506X0050R1
65	Y	111D656X0050Y1
60 WORKING VOLTS N.P.		
0.6	D	111D604X0060D1
2.5	G	111D255X0060G1
8.5	J	111D855X0060J1
17	M	111D176X0060M1
24	P	111D246X0060P1
45	R	111D456X0060R1
53	Y	111D536X0060Y1
75 WORKING VOLTS N.P.		
0.5	D	111D504X0075D1
2	G	111D205X0075G1
7	J	111D705X0075J1
14	M	111D146X0075M1
20	P	111D206X0075P1
40	R	111D406X0075R1
47	Y	111D476X0075Y1
100 WORKING VOLTS N.P.		
0.4	D	111D404X0100D1
1.5	G	111D155X0100G1
5	J	111D505X0100J1
10	M	111D106X0100M1
15	P	111D156X0100P1
30	R	111D306X0100R1
37	Y	111D376X0100Y1
150 WORKING VOLTS N.P.		
0.25	D	111D254X0150D1
1.0	G	111D105X0150G1
3.5	J	111D355X0150J1
7	M	111D705X0150M1
10	P	111D106X0150P1
20	R	111D206X0150R1
24	Y	111D246X0150Y1
200 WORKING VOLTS N.P.		
0.15	D	111D154X8200D1
0.75	G	111D754X8200G1
2.5	J	111D255X8200J1
5.0	M	111D505X8200M1
7.5	P	111D755X8200P1
14	R	111D146X8200R1
17	Y	111D176X8200Y1
250 WORKING VOLTS N.P.		
0.15	D	111D154X8250D1
0.6	G	111D604X8250G1
2.0	J	111D205X8250J1
4.0	M	111D405X8250M1
6.0	P	111D605X8250P1
12	R	111D126X8250R1
15	Y	111D156X8250Y1
300 WORKING VOLTS N.P.		
0.1	D	111D104X8300D1
.5	G	111D504X8300G1
1.5	J	111D155X8300J1
3.5	M	111D355X8300M1
5	P	111D505X8300P1
9.5	R	111D955X8300R1

TYPE 112D
POLARIZED ETCHED-FOIL

µF	Case	Catalog No.
15 WORKING VOLTS D-C		
15	D	112D156C7015D1
36	D	112D366C7015D1
60	G	112D606C7015G1
130	G	112D137C7015G1
200	J	112D207C7015J1
370	J	112D377C7015J1
400	M	112D407C7015M1
580	P	112D587C7015P1
780	M	112D787C7015M1
1100	P	112D118C7015P1
2000	R	112D208C7015R1
2500	Y	112D258C7015Y1
25 WORKING VOLTS D-C		
10	D	112D106C7025D1
23	D	112D236C7025D1
40	G	112D406C7025G1
80	G	112D806C7025G1
120	J	112D127C7025J1
240	J	112D247C7025J1
250	M	112D257C7025M1
350	P	112D357C7025P1
510	M	112D517C7025M1
720	P	112D727C7025P1
1300	R	112D138C7025R1
1600	Y	112D168C7025Y1
30 WORKING VOLTS D-C		
8	D	112D805C7030D1
19	D	112D196C7030D1
32	G	112D326C7030G1
67	G	112D676C7030G1
110	J	112D117C7030J1
200	J	112D207C7030J1
220	M	112D227C7030M1
300	P	112D307C7030P1
420	M	112D427C7030M1
590	P	112D597C7030P1
1100	R	112D118C7030R1
1400	Y	112D148C7030Y1
50 WORKING VOLTS D-C		
4.5	D	112D455C5050D1
8	D	112D805C5050D1
18	G	112D186C5050G1
29	G	112D296C5050G1
60	J	112D606C5050J1
85	J	112D856C5050J1
100	M	112D107C5050M1
150	P	112D157C5050P1
180	M	112D187C5050M1
260	P	112D267C5050P1
470	R	112D477C5050R1
580	Y	112D587C5050Y1
60 WORKING VOLTS D-C		
4	D	112D405C5060D1
75 WORKING VOLTS D-C		
3	D	112D305C5075D1
4	D	112D405C5075D1
12	G	112D126C5075G1
15	G	112D156C5075G1
30	J	112D306C5075J1
45	J	112D456C5075J1
70	M	112D706C5075M1
95	M	112D956C5075M1
100	P	112D107C5075P1
130	P	112D137C5075P1
250	R	112D257C5075R1
300	Y	112D307C5075Y1
100 WORKING VOLTS D-C		
2	D	112D205C3100D1
3	D	112D305C3100D1
8	G	112D805C3100G1
10	G	112D106C3100G1
25	J	112D256C3100J1
30	J	112D306C3100J1
50	M	112D506C3100M1
63	M	112D636C3100M1
70	P	112D706C3100P1
90	P	112D906C3100P1
170	R	112D177C3100R1
210	Y	112D217C3100Y1
150 WORKING VOLTS D-C		
1	D	112D105C3150D1
1.6	D	112D165C3150D1
4	G	112D405C3150G1
5.5	G	112D555C3150G1
13	J	112D136C3150J1
17	J	112D176C3150J1
25	M	112D256C3150M1
35	M	112D356C3150M1
36	P	112D366C3150P1
50	P	112D506C3150P1
90	R	112D906C3150R1
120	Y	112D127C3150Y1
200 WORKING VOLTS D-C		
3	G	112D305X0200G1
9	J	112D905X0200J1
19	M	112D196X0200M1
27	P	112D276X0200P1
55	R	112D556X0200R1
66	Y	112D666X0200Y1
250 WORKING VOLTS D-C		
2	G	112D205X0250G1
6	J	112D605X0250J1
13	M	112D136X0250M1
19	P	112D196X0250P1
37	R	112D376X0250R1
45	Y	112D456X0250Y1
300 WORKING VOLTS D-C		
1.8	G	112D185X0300G1
5	J	112D505X0300J1
11	M	112D116X0300M1
15	P	112D156X0300P1
28	R	112D286X0300R1

TYPE 113D
NON-POLARIZED ETCHED-FOIL

µF	Case	Catalog No.
15 WORKING VOLTS N.P.		
10	D	113D106C7015D1
25	D	113D256C7015D1
40	G	113D406C7015G1
90	G	113D906C7015G1
120	J	113D127C7015J1
250	J	113D257C7015J1
250	M	113D257C7015M1
350	P	113D357C7015P1
530	M	113D537C7015M1
760	P	113D767C7015P1
1400	R	113D148C7015R1
2000	Y	113D208C7015Y1
25 WORKING VOLTS N.P.		
5	D	113D505C7025D1
14	D	113D146C7025D1
20	G	113D206C7025G1
50	G	113D506C7025G1
70	J	113D706C7025J1
140	J	113D147C7025J1
140	M	113D147C7025M1
200	P	113D207C7025P1
290	M	113D297C7025M1
420	P	113D427C7025P1
800	R	113D807C7025R1
1100	Y	113D118C7025Y1
30 WORKING VOLTS N.P.		
4.5	D	113D455C7030D1
11	D	113D116C7030D1
18	G	113D186C7030G1
39	G	113D396C7030G1
60	J	113D606C7030J1
110	J	113D117C7030J1
120	M	113D127C7030M1
170	P	113D177C7030P1
220	M	113D227C7030M1
320	P	113D327C7030P1
600	R	113D607C7030R1
850	Y	113D857C7030Y1
50 WORKING VOLTS N.P.		
2.5	D	113D255C5050D1
4	D	113D405C5050D1
10	G	113D106C5050G1
14	G	113D146C5050G1
30	J	113D306C5050J1
40	J	113D406C5050J1
60	M	113D606C5050M1
80	P	113D806C5050P1
84	M	113D846C5050M1
120	P	113D127C5050P1
230	R	113D237C5050R1
310	Y	113D317C5050Y1
75 WORKING VOLTS N.P.		
1.5	D	113D155C5075D1
2	D	113D205C5075D1
6	G	113D605C5075G1
7	G	113D705C5075G1
15	J	113D156C5075J1
20	J	113D206C5075J1
35	M	113D356C5075M1
43	M	113D436C5075M1
50	P	113D506C5075P1
60	P	113D606C5075P1
110	R	113D117C5075R1
160	Y	113D167C5075Y1
100 WORKING VOLTS N.P.		
1	D	113D105C3100D1
1.4	D	113D145C3100D1
4	G	113D405C3100G1
5	G	113D505C3100G1
12	J	113D126C3100J1
14	J	113D146C3100J1
25	M	113D256C3100M1
29	M	113D296C3100M1
35	P	113D356C3100P1
41	P	113D416C3100P1
78	R	113D786C3100R1
110	Y	113D117C3100Y1
150 WORKING VOLTS N.P.		
0.5	D	113D504C3150D1
0.75	D	113D754C3150D1
2	G	113D205C3150G1
2.7	G	113D275C3150G1
6	J	113D605C3150J1
7.5	J	113D755C3150J1
12	M	113D126C3150M1
15	M	113D156C3150M1
18	P	113D186C3150P1
22	P	113D226C3150P1
43	R	113D436C3150R1
60	Y	113D606C3150Y1

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SPRAGUE CAPACITORS

125C FOIL TANTALEX® CAPACITORS

- Small size, electrically stable, long life. For data, see latest Engineering Bulletin 3602.
- 120D, 122D available as MIL-C-3965 units.
- Tol., 120D, 121D, ±20%; 122D, 123D, −15, +75%.
- Listed units have plastic wrap. For bare metal case units, end Cat. No. in "0" instead of "1".

Call Your Sprague Industrial Distributor For Quantity Prices

Size Code	D. x L.	Size Code	D. x L.
E	0.203 x 0.843	Q	0.390 x 2.968
H	0.296 x 1.125	S	0.483 x 2.968
K	0.390 x 1.656	Z	0.546 x 2.968
N	0.390 x 2.343		

TYPE 120D
POLARIZED PLAIN-FOIL STANDARD RATINGS

µF	Case Code	Catalog Number
10 WORKING VOLTS D-C		
4.5	E	120D455X0010E1
18	H	120D186X0010H1
55	K	120D556X0010K1
110	N	120D117X0010N1
160	Q	120D167X0010Q1
260	S	120D267X0010S1
320	Z	120D327X0010Z1
15 WORKING VOLTS D-C		
3	E	120D305X0015E1
12	H	120D126X0015H1
35	K	120D356X0015K1
70	N	120D706X0015N1
100	Q	120D107X0015Q1
180	S	120D187X0015S1
210	Z	120D217X0015Z1
30 WORKING VOLTS D-C		
1.5	E	120D155X0030E1
6	H	120D605X0030H1
20	K	120D206X0030K1
40	N	120D406X0030N1
55	Q	120D556X0030Q1
100	S	120D107X0030S1
120	Z	120D127X0030Z1
50 WORKING VOLTS D-C		
1	E	120D105X0050E1
4	H	120D405X0050H1
14	K	120D146X0050K1
28	N	120D286X0050N1
40	Q	120D406X0050Q1
70	S	120D706X0050S1
88	Z	120D886X0050Z1
65 WORKING VOLTS D-C		
0.8	E	120D804X0065E1
3	H	120D305X0065H1
10	K	120D106X0065K1
20	N	120D206X0065N1
30	Q	120D306X0065Q1
57	S	120D576X0065S1
70	Z	120D706X0065Z1
100 WORKING VOLTS D-C		
0.5	E	120D504X0100E1
2	H	120D205X0100H1
7	K	120D705X0100K1
14	N	120D146X0100N1
20	Q	120D206X0100Q1
40	S	120D406X0100S1
47	Z	120D476X0100Z1
150 WORKING VOLTS D-C		
0.35	E	120D354X0150E1
1.5	H	120D155X0150H1
5	K	120D505X0150K1
10	N	120D106X0150N1
15	Q	120D156X0150Q1
25	S	120D256X0150S1
30	Z	120D306X0150Z1
200 WORKING VOLTS D-C		
0.25	E	120D254X8200E1
1	H	120D105X8200H1
3	K	120D305X8200K1
7	N	120D705X8200N1
10	Q	120D106X8200Q1
18	S	120D186X8200S1
250 WORKING VOLTS D-C		
0.2	E	120D204X8250E1
0.8	H	120D804X8250H1
2.5	K	120D255X8250K1
5	N	120D505X8250N1
8	Q	120D805X8250Q1
12	S	120D126X8250S1

µF	Case Code	Catalog Number
300 WORKING VOLTS D-C		
0.15	E	120D154X8300E1
0.65	H	120D654X8300H1
2	K	120D205X8300K1
4	N	120D405X8300N1
6	Q	120D605X8300Q1

TYPE 121D
NON-POLARIZED PLAIN-FOIL STANDARD RATINGS

µF	Case Code	Catalog Number
10 WORKING VOLTS N.P.		
2.5	E	121D255X0010E1
10	H	121D106X0010H1
35	K	121D356X0010K1
70	N	121D706X0010N1
100	Q	121D107X0010Q1
160	S	121D167X0010S1
200	Z	121D207X0010Z1
15 WORKING VOLTS N.P.		
1.5	E	121D155X0015E1
6	H	121D605X0015H1
20	K	121D206X0015K1
40	N	121D406X0015N1
60	Q	121D606X0015Q1
100	S	121D107X0015S1
120	Z	121D127X0015Z1
30 WORKING VOLTS N.P.		
0.8	E	121D804X0030E1
3	H	121D305X0030H1
10	K	121D106X0030K1
20	N	121D206X003UN1
30	Q	121D306X0030Q1
50	S	121D506X0030S1
65	Z	121D656X0030Z1
50 WORKING VOLTS N.P.		
0.5	E	121D504X0050E1
2	H	121D205X0050H1
7	K	121D705X0050K1
14	N	121D146X0050N1
20	Q	121D206X0050Q1
40	S	121D406X0050S1
47	Z	121D476X0050Z1
65 WORKING VOLTS N.P.		
0.4	E	121D404X0065E1
1.5	H	121D155X0065H1
5	K	121D505X0065K1
10	N	121D106X0065N1
15	Q	121D156X0065Q1
30	S	121D306X0065S1
37	Z	121D376X0065Z1
100 WORKING VOLTS N.P.		
0.25	E	121D254X0100E1
1.0	H	121D105X0100H1
3.5	K	121D355X0100K1
7	N	121D705X0100N1
10	Q	121D106X0100Q1
20	S	121D206X0100S1
24	Z	121D246X0100Z1
150 WORKING VOLTS N.P.		
0.15	E	121D154X0150E1
0.75	H	121D754X0150H1
2.5	K	121D255X0150K1
5.0	N	121D505X0150N1
7.5	Q	121D755X0150Q1
13	S	121D136X0150S1
16	Z	121D166X0150Z1
200 WORKING VOLTS N.P.		
0.1	E	121D104X8200E1
0.5	H	121D504X8200H1
1.5	K	121D155X8200K1
3.5	N	121D355X8200N1
5.0	Q	121D505X8200Q1
9.5	S	121D955X8200S1

µF	Case Code	Catalog Number
250 WORKING VOLTS N.P.		
0.1	E	121D104X8250E1
0.4	H	121D404X8250H1
1.2	K	121D125X8250K1
2.5	N	121D255X8250N1
4.0	Q	121D405X8250Q1

TYPE 122D
POLARIZED ETCHED-FOIL STANDARD RATINGS

µF	Case Code	Catalog Number
10 WORKING VOLTS D-C		
15	E	122D156C7010E1
60	H	122D606C7010H1
200	K	122D207C7010K1
400	N	122D407C7010N1
580	Q	122D587C7010Q1
15 WORKING VOLTS D-C		
10	E	122D106C7015E1
40	H	122D406C7015H1
120	K	122D127C7015K1
250	N	122D257C7015N1
350	Q	122D357C7015Q1
30 WORKING VOLTS D-C		
4.5	E	122D455C5030E1
18	H	122D186C5030H1
60	K	122D606C5030K1
100	N	122D107C5030N1
150	Q	122D157C5030Q1
50 WORKING VOLTS D-C		
3	E	122D305C5050E1
12	H	122D126C5050H1
30	K	122D306C5050K1
70	N	122D706C5050N1
100	Q	122D107C5050Q1
65 WORKING VOLTS D-C		
2	E	122D205C3065E1
8	H	122D805C3065H1
25	K	122D256C3065K1
50	N	122D506C3065N1
70	Q	122D706C3065Q1
100 WORKING VOLTS D-C		
1	E	122D105C3100E1
4	H	122D405C3100H1
13	K	122D136C3100K1
25	N	122D256C3100N1
36	Q	122D366C3100Q1

TYPE 122D
POLARIZED ETCHED-FOIL MAXIMUM RATINGS

µF	Case Code	Catalog Number
10 WORKING VOLTS D-C		
36	E	122D366C7010E1
130	H	122D137C7010H1
370	K	122D377C7010K1
780	N	122D787C7010N1
1100	Q	122D118C7010Q1
2000	S	122D208C7010S1
2500	Z	122D258C7010Z1
15 WORKING VOLTS D-C		
23	E	122D236C7015E1
80	H	122D806C7015H1
240	K	122D247C7015K1
510	N	122D517C7015N1
720	Q	122D727C7015Q1
1300	S	122D138C7015S1
1600	Z	122D168C7015Z1
20 WORKING VOLTS D-C		
19	E	122D196C7020E1
67	H	122D676C7020H1
200	K	122D207C7020K1
420	N	122D427C7020N1
590	Q	122D597C7020Q1
1100	S	122D118C7020S1
1400	Z	122D148C7020Z1

µF	Case Code	Catalog Number
30 WORKING VOLTS D-C		
8	E	122D805C5030E1
29	H	122D296C5030H1
85	K	122D856C5030K1
180	N	122D187C5030N1
260	Q	122D267C5030Q1
470	S	122D477C5030S1
580	Z	122D587C5030Z1
50 WORKING VOLTS D-C		
4	E	122D405C5050E1
15	H	122D156C5050H1
45	K	122D456C5050K1
95	N	122D956C5050N1
130	Q	122D137C5050Q1
250	S	122D257C5050S1
300	Z	122D307C5050Z1
65 WORKING VOLTS D-C		
3	E	122D305C3065E1
10	H	122D106C3065H1
30	K	122D306C3065K1
63	N	122D636C3065N1
90	Q	122D906C3065Q1
170	S	122D177C3065S1
210	Z	122D217C3065Z1
100 WORKING VOLTS D-C		
1.6	E	122D165C3100E1
5.5	H	122D555C3100H1
17	K	122D176C3100K1
35	N	122D356C3100N1
50	Q	122D506C3100Q1
90	S	122D906C3100S1
120	Z	122D127C3100Z1
150 WORKING VOLTS D-C		
0.75	E	122D754C3150E1
2.5	H	122D255C3150H1
7.5	K	122D755C3150K1
15	N	122D156C3150N1
22	Q	122D226C3150Q1
41	S	122D416C3150S1
51	Z	122D516C3150Z1
200 WORKING VOLTS D-C		
1.7	H	122D175X0200H1
5	K	122D505X0200K1
11	N	122D116X0200N1
15	Q	122D156X0200Q1
28	S	122D286X0200S1
250 WORKING VOLTS D-C		
1.3	H	122D135X0250H1
4	K	122D405X0250K1
8	N	122D805X0250N1
12	Q	122D126X0250Q1

TYPE 123D
NON-POLARIZED ETCHED-FOIL STANDARD RATINGS

µF	Case Code	Catalog Number
10 WORKING VOLTS N.P.		
10	E	123D106C7010E1
40	H	123D406C7010H1
120	K	123D127C7010K1
250	N	123D257C7010N1
350	Q	123D357C7010Q1
15 WORKING VOLTS N.P.		
5	E	123D505C7015E1
20	H	123D206C7015H1
70	K	123D706C7015K1
140	N	123D147C7015N1
200	Q	123D207C7015Q1
30 WORKING VOLTS N.P.		
2.5	E	123D255C5030E1
10	H	123D106C5030H1
30	K	123D306C5030K1
60	N	123D606C5030N1
80	Q	123D806C5030Q1

µF	Case Code	Catalog Number
50 WORKING VOLTS N.P.		
1.5	E	123D155C5050E1
6	H	123D605C5050H1
15	K	123D156C5050K1
35	N	123D356C5050N1
50	Q	123D506C5050Q1
65 WORKING VOLTS N.P.		
1	E	123D105C3065E1
4	H	123D405C3065H1
12	K	123D126C3065K1
25	N	123D256C3065N1
35	Q	123D356C3065Q1
100 WORKING VOLTS N.P.		
0.5	E	123D504C3100E1
2	H	123D205C3100H1
6	K	123D605C3100K1
12	N	123D126C3100N1
18	Q	123D186C3100Q1

TYPE 123D
NON-POLARIZED ETCHED-FOIL MAXIMUM RATINGS

µF	Case Code	Catalog Number
10 WORKING VOLTS N.P.		
25	E	123D256C7010E1
90	H	123D906C7010H1
250	K	123D257C7010K1
530	N	123D537C7010N1
760	Q	123D767C7010Q1
1400	S	123D148C7010S1
2000	Z	123D208C7010Z1
15 WORKING VOLTS N.P.		
14	E	123D146C7015E1
50	H	123D506C7015H1
140	K	123D147C7015K1
290	N	123D297C7015N1
420	Q	123D427C7015Q1
800	S	123D807C7015S1
1100	Z	123D118C7015Z1
20 WORKING VOLTS N.P.		
11	E	123D116C7020E1
39	H	123D396C7020H1
110	K	123D117C7020K1
230	N	123D237C7020N1
320	Q	123D327C7020Q1
600	S	123D607C7020S1
850	Z	123D857C7020Z1
30 WORKING VOLTS N.P.		
4	E	123D405C5030E1
14	H	123D146C5030H1
40	K	123D406C5030K1
84	N	123D846C5030N1
120	Q	123D127C5030Q1
230	S	123D237C5030S1
310	Z	123D317C5030Z1
50 WORKING VOLTS N.P.		
2	E	123D205C5050E1
7	H	123D705C5050H1
20	K	123D206C5050K1
43	N	123D436C5050N1
60	Q	123D606C5050Q1
110	S	123D117C5050S1
160	Z	123D167C5050Z1
65 WORKING VOLTS N.P.		
1.4	E	123D145C3065E1
5	H	123D505C3065H1
14	K	123D146C3065K1
29	N	123D296C3065N1
41	Q	123D416C3065Q1
78	S	123D786C3065S1
110	Z	123D117C3065Z1
100 WORKING VOLTS N.P.		
0.75	E	123D754C3100E1
2.7	H	123D275C3100H1
7.5	K	123D755C3100K1
15	N	123D156C3100N1
22	Q	123D226C3100Q1
43	S	123D436C3100S1
60	Z	123D606C3100Z1

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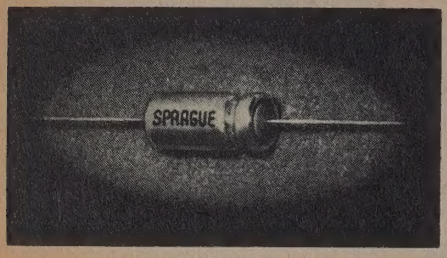
SPRAGUE CAPACITORS

TYPE 130D 125C SINTERED-ANODE TANTALEX® CAPACITORS



DIMENSIONS

Code	D x L	Code	D x L	Code	D x L	Code	D x L
C	.203 x .515	F	.296 x .703	T	.390 x .828	W	.390 x 1.312

- Reliable, Superior Quality Capacitors With no Voltage Derating for 125C Operation
- Especially Suited for Military Electronics
- Meets 2000 Cycle MIL Missile Vibration Requirements
- Clean, Shoulder-Less Design Simplifies Mounting on Printed Wiring Boards
- Voltage Ratings From 4 WVDC Through 100 WVDC
- Capacitances from 1.7 μF to 1200 μF
- For Complete Technical Data, Refer to th Latest Issue of Sprague Engineering Bulle tins 3701 and 3701.2
- Listed Units Have Plastic-Film Insulatio For Bare Metal Cases, Change Last Dig of Cat. No. to "0"

Call Your Sprague Industrial Distributor For Current Quantity Prices

GROUP 1: ±10%, +20, −15%, and +75, −15% Capacitance Tolerance with outer plastic-film insulatio

μF	WVDC	Case Code	Catalog Number ±10%	Catalog Number +20−15%	Catalog Number +75−15%
27	4	C	130D276X9004C2	130D276C2004C2	130D276C7004C2
30	4	C	130D306X9004C2	130D306C2004C2	130D306C7004C2
120	4	F	130D127X9004F2	130D127C2004F2	130D127C7004F2
140	4	F	130D147X9004F2	130D147C2004F2	130D147C7004F2
290	4	T	130D297X9004T2	130D297C2004T2	130D297C7004T2
330	4	T	130D337X9004T2	130D337C2004T2	130D337C7004T2
22	5	C	130D226X9005C2	130D226C2005C2	130D226C7005C2
25	5	C	130D256X9005C2	130D256C2005C2	130D256C7005C2
100	5	F	130D107X9005F2	130D107C2005F2	130D107C7005F2
120	5	F	130D127X9005F2	130D127C2005F2	130D127C7005F2
260	5	T	130D267X9005T2	130D267C2005T2	130D267C7005T2
290	5	T	130D297X9005T2	130D297C2005T2	130D297C7005T2
18	7	C	130D186X9007C2	130D186C2007C2	130D186C7007C2
20	7	C	130D206X9007C2	130D206C2007C2	130D206C7007C2
85	7	F	130D856X9007F2	130D856C2007F2	130D856C7007F2
100	7	F	130D107X9007F2	130D107C2007F2	130D107C7007F2
220	7	T	130D227X9007T2	130D227C2007T2	130D227C7007T2
250	7	T	130D257X9007T2	130D257C2007T2	130D257C7007T2
13	10	C	130D136X9010C2	130D136C2010C2	130D136C7010C2
15	10	C	130D156X9010C2	130D156C2010C2	130D156C7010C2
55	10	F	130D556X9010F2	130D556C2010F2	130D556C7010F2
70	10	F	130D706X9010F2	130D706C2010F2	130D706C7010F2
150	10	T	130D157X9010T2	130D157C2010T2	130D157C7010T2
170	10	T	130D177X9010T2	130D177C2010T2	130D177C7010T2
9	15	C	130D905X9015C2	130D905C2015C2	130D905C7015C2
10	15	C	130D106X9015C2	130D106C2015C2	130D106C7015C2
45	15	F	130D456X9015F2	130D456C2015F2	130D456C7015F2
50	15	F	130D506X9015F2	130D506C2015F2	130D506C7015F2
100	15	T	130D107X9015T2	130D107C2015T2	130D107C7015T2
110	15	T	130D117X9015T2	130D117C2015T2	130D117C7015T2
7	20	C	130D705X9020C2	130D705C2020C2	130D705C7020C2
8	20	C	130D805X9020C2	130D805C2020C2	130D805C7020C2
35	20	F	130D356X9020F2	130D356C2020F2	130D356C7020F2
40	20	F	130D406X9020F2	130D406C2020F2	130D406C7020F2
80	20	T	130D806X9020T2	130D806C2020T2	130D806C7020T2
100	20	T	130D107X9020T2	130D107C2020T2	130D107C7020T2
4.5	30	C	130D455X9030C2	130D455C2030C2	130D455C7030C2
5	30	C	130D505X9030C2	130D505C2030C2	130D505C7030C2
22	30	F	130D226X9030F2	130D226C2030F2	130D226C7030F2
25	30	F	130D256X9030F2	130D256C2030F2	130D256C7030F2
55	30	T	130D556X9030T2	130D556C2030T2	130D556C7030T2
60	30	T	130D606X9030T2	130D606C2030T2	130D606C7030T2
3.6	40	C	130D365X9040C2	130D365C2040C2	130D365C7040C2
4	40	C	130D405X9040C2	130D405C2040C2	130D405C7040C2
18	40	F	130D186X9040F2	130D186C2040F2	130D186C7040F2
20	40	F	130D206X9040F2	130D206C2040F2	130D206C7040F2
45	40	T	130D456X9040T2	130D456C2040T2	130D456C7040T2
50	40	T	130D506X9040T2	130D506C2040T2	130D506C7040T2
3	50	C	130D305X9050C2	130D305C2050C2	130D305C7050C2
3.5	50	C	130D355X9050C2	130D355C2050C2	130D355C7050C2
13	50	F	130D136X9050F2	130D136C2050F2	130D136C7050F2
15	50	F	130D156X9050F2	130D156C2050F2	130D156C7050F2
35	50	T	130D356X9050T2	130D356C2050T2	130D356C7050T2
40	50	T	130D406X9050T2	130D406C2050T2	130D406C7050T2
2.5	70	C	130D255X9070C2	130D255C2070C2	130D255C7070C2
10	70	F	130D106X9070F2	130D106C2070F2	130D106C7070F2
11	70	F	130D116X9070F2	130D116C2070F2	130D116C7070F2
27	70	T	130D276X9070T2	130D276C2070T2	130D276C7070T2
30	70	T	130D306X9070T2	130D306C2070T2	130D306C7070T2
1.7	85	C	130D175X9085C2	130D175C2085C2	130D175C7085C2
9	85	F	130D905X9085F2	130D905C2085F2	130D905C7085F2
18	85	T	130D186X9085T2	130D186C2085T2	130D186C7085T2
1.7	100	C	130D175X9100C2	130D175C2100C2	130D175C7100C2
6.8	100	F	130D685X9100F2	130D685C2100F2	130D685C7100F2
14	100	T	130D146X9100T2	130D146C2100T2	130D146C7100T2

GROUP 2: ±20% and ±10% Capacitance Tolerance with outer plastic-film insulation

These capacitors have approximately twice the capacitance of Group 1 Capacitors of the same physical size at a given voltage rating.

μF	WVDC	Case Code	±20% Tol.	±10% Tol.
68	4	C	130D686X0004C2	130D686X9004C2
270	4	F	130D277X0004F2	130D277X9004F2
560	4	T	130D567X0004T2	130D567X9004T2
1200	4	W	130D128X0004W2	130D128X9004W2
56	5	C	130D566X0005C2	130D566X9005C2
220	5	F	130D227X0005F2	130D227X9005F2
430	5	T	130D437X0005T2	130D437X9005T2
850	5	W	130D857X0005W2	130D857X9005W2
47	7	C	130D476X0007C2	130D476X9007C2
180	7	F	130D187X0007F2	130D187X9007F2
390	7	T	130D397X0007T2	130D397X9007T2
750	7	W	130D757X0007W2	130D757X9007W2
33	10	C	130D336X0010C2	130D336X9010C2
120	10	F	130D127X0010F2	130D127X9010F2
270	10	T	130D277X0010T2	130D277X9010T2
540	10	W	130D547X0010W2	130D547X9010W2
22	15	C	130D226X0015C2	130D226X9015C2
100	15	F	130D107X0015F2	130D107X9015F2
180	15	T	130D187X0015T2	130D187X9015T2
350	15	W	130D357X0015W2	130D357X9015W2
15	20	C	130D156X0020C2	130D156X9020C2
68	20	F	130D686X0020F2	130D686X9020F2
150	20	T	130D157X0020T2	130D157X9020T2
300	20	W	130D307X0020W2	130D307X9020W2
10	30	C	130D106X0030C2	130D106X9030C2
47	30	F	130D476X0030F2	130D476X9030F2
82	30	T	130D826X0030T2	130D826X9030T2
160	30	W	130D167X0030W2	130D167X9030W2
8.2	40	C	130D825X0040C2	130D825X9040C2
39	40	F	130D396X0040F2	130D396X9040F2
68	40	T	130D686X0040T2	130D686X9040T2
140	40	W	130D147X0040W2	130D147X9040W2
6.8	50	C	130D685X0050C2	130D685X9050C2
33	50	F	130D336X0050F2	130D336X9050F2
56	50	T	130D566X0050T2	130D566X9050T2
110	50	W	130D117X0050W2	130D117X9050W2
4.7	70	C	130D475X0070C2	130D475X9070C2
22	70	F	130D226X0070F2	130D226X9070F2
43	70	T	130D436X0070T2	130D436X9070T2
86	70	W	130D866X0070W2	130D866X9070W2
3.6	85	C	130D365X0085C2	130D365X9085C2
14	85	F	130D146X0085F2	130D146X9085F2
25	85	T	130D256X0085T2	130D256X9085T2
56	85	W	130D566X0085W2	130D566X9085W2
3	100	C	130D305X0100C2	130D305X9100C2
11	100	F	130D116X0100F2	130D116X9100F2
22	100	T	130D226X0100T2	130D226X9100T2

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SPRAGUE CAPACITORS

TYPE 130D TANTALEX® CAPACITORS, continued

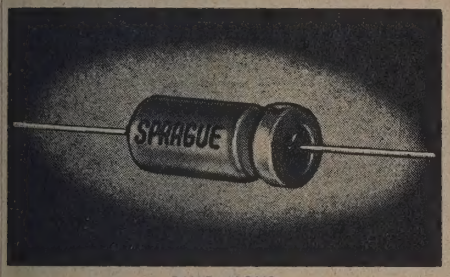
GROUP 3: ±20% and ±10% Capacitance Tolerance with outer plastic-film insulation

These are extended-range capacitors, with substantially higher capacitance than units of the same physical size in Groups 1 or 2.

µF	WVDC	Case Code	Catalog Number*
200	4	C	130D207X0004C2
820	4	F	130D827X0004F2
500	4	T	130D158X0004T2
180	5	C	130D187X0005C2
580	5	F	130D687X0005F2
400	5	T	130D148X0005T2
120	7	C	130D127X0007C2
150	7	C	130D157X0007C2
170	7	F	130D477X0007F2
560	7	F	130D567X0007F2
000	7	T	130D108X0007T2
200	7	T	130D128X0007T2
82	10	C	130D826X0010C2
100	10	C	130D107X0010C2
330	10	F	130D337X0010F2
390	10	F	130D397X0010F2
680	10	T	130D687X0010T2
820	10	T	130D827X0010T2
68	15	C	130D686X0015C2
270	15	F	130D277X0015F2
560	15	T	130D567X0015T2
39	20	C	130D396X0020C2
47	20	C	130D476X0020C2
56	20	C	130D566X0020C2
150	20	F	130D157X0020F2
180	20	F	130D187X0020F2
220	20	F	130D227X0020F2
330	20	T	130D337X0020T2
390	20	T	130D397X0020T2
470	20	T	130D477X0020T2
33	30	C	130D336X0030C2
120	30	F	130D127X0030F2
270	30	T	130D277X0030T2
18	40	C	130D186X0040C2
27	40	C	130D276X0040C2
68	40	F	130D686X0040F2
100	40	F	130D107X0040F2
140	40	T	130D147X0040T2
220	40	T	130D227X0040T2
12	50	C	130D126X0050C2
15	50	C	130D156X0050C2
22	50	C	130D226X0050C2
47	50	F	130D476X0050F2
56	50	F	130D566X0050F2
82	50	F	130D826X0050F2
82	50	T	130D826X0050T2
110	50	T	130D117X0050T2
180	50	T	130D187X0050T2

*Numbers shown are ±20% capacitors. For units with ±10% capacitance tolerance, change digit after X from 0 to 9.

TYPE 109D SINTERED-ANODE TANTALEX® CAPACITORS



DIMENSIONS

Code	D. x L.	Code	D. x L.	Code	D. x L.	Code	D. x L.
C	.203x.515	F	.296x.703	T	.380x.828	W	.390x1.312

- Intended for Applications Where Reliable Design in Military Equipment is Required
- Double Spun TFE-fluorocarbon Elastomer High Temp. End Seals
- Large Values of Capacitance in Small Physical Size
- Listed Units Have Plastic Sleeves
- For Bare Case, End Catalog Number in "0" instead of "2"
- May Be Operated at 85C at Rated Voltage and to 105C With 15% Voltage Derating
- Will Meet 2000 Cycle Missile Vibration Requirements
- For Complete Technical Data, See Latest Issue of Engineering Bulletin 3700 and 3700.2

Call Your Sprague Industrial Distributor For Current Quantity Prices

GROUP 1: Available in Capacitance Tolerances of ±10%, +20, −15%; +75, −15%

µF	WVDC	Size Code	Catalog Number ±10%	Catalog Number +20, −15%	Catalog Number +75, −15%
27	6	C	109D276X9006C2	109D276C2006C2	109D276C7006C2
30	6	C	109D306X9006C2	109D306C2006C2	109D306C7006C2
20	6	F	109D127X9006F2	109D127C2006F2	109D127C7006F2
40	6	F	109D147X9006F2	109D147C2006F2	109D147C7006F2
90	6	T	109D297X9006T2	109D297C2006T2	109D297C7006T2
30	6	T	109D337X9006T2	109D337C2006T2	109D337C7006T2
22	8	C	109D226X9008C2	109D226C2008C2	109D226C7008C2
25	8	C	109D256X9008C2	109D256C2008C2	109D256C7008C2
00	8	F	109D107X9008F2	109D107C2008F2	109D107C7008F2
20	8	F	109D127X9008F2	109D127C2008F2	109D127C7008F2
60	8	T	109D276X9008T2	109D267C2008T2	109D276C7008T2
90	8	T	109D297X9008T2	109D297C2008T2	109D297C7008T2
18	10	C	109D186X9010C2	109D186C2010C2	109D186C7010C2
20	10	C	109D206X9010C2	109D206C2010C2	109D206C7010C2
85	10	F	109D856X9010F2	109D856C2010F2	109D856C7010F2
00	10	F	109D107X9010F2	109D107C2010F2	109D107C7010F2
20	10	T	109D227X9010T2	109D227C2010T2	109D227C7010T2
50	10	T	109D257X9010T2	109D257C2010T2	109D257C7010T2
13	15	C	109D136X9015C2	109D136C2015C2	109D136C7015C2
15	15	C	109D156X9015C2	109D156C2015C2	109D156C7015C2
55	15	F	109D556X9015F2	109D556C2015F2	109D556C7015F2
70	15	F	109D706X9015F2	109D706C2015F2	109D706C7015F2
50	15	T	109D157X9015T2	109D157C2015T2	109D157C7015T2
70	15	T	109D177X9015T2	109D177C2015T2	109D177C7015T2
9	25	C	109D905X9025C2	109D905C2025C2	109D905C7025C2
·-	25	C	109D106X9025C2	109D106C2025C2	109D106C7025C2
45	25	F	109D456X9025F2	109D456C2025F2	109D456C7025F2
50	25	F	109D506X9025F2	109D506C2025F2	109D506C7025F2
00	25	T	109D107X9025T2	109D107C2025T2	109D107C7025T2
10	25	T	109D117X9025T2	109D117C2025T2	109D117C7025T2
7	30	C	109D705X9030C2	109D705C2030C2	109D705C7030C2
8	30	C	109D805X9030C2	109D805C2030C2	109D805C7030C2
35	30	F	109D356X9030F2	109D356C2030F2	109D356C7030F2
40	30	F	109D406X9030F2	109D406C2030F2	109D406C7030F2
80	30	T	109D806X9030T2	109D806C2030T2	109D806C7030T2
100	30	T	109D107X9030T2	109D107C2030T2	109D107C7030T2
4.5	50	C	109D455X9050C2	109D455C2050C2	109D455C7050C2
5	50	C	109D505X9050C2	109D505C2050C2	109D505C7050C2
22	50	F	109D226X9050F2	109D226C2050F2	109D226C7050F2
25	50	F	109D256X9050F2	109D256C2050F2	109D256C7050F2
55	50	T	109D556X9050T2	109D556C2050T2	109D556C7050T2
60	50	T	109D606X9050T2	109D606C2050T2	109D606C7050T2
3.6	60	C	109D365X9060C2	109D365C2060C2	109D365C7060C2
4	60	C	109D405X9060C2	109D405C2060C2	109D405C7060C2
18	60	F	109D186X9060F2	109D186C2060F2	109D186C7060F2
20	60	F	109D206X9060F2	109D206C2060F2	109D206C7060F2
45	60	T	109D456X9060T2	109D456C2060T2	109D456C7060T2
50	60	T	109D506X9060T2	109D506C2060T2	109D506C7060T2
3	75	C	109D305X9075C2	109D305C2075C2	109D305C7075C2
3.5	75	C	109D355X9075C2	109D355C2075C2	109D355C7075C2
13	75	F	109D136X9075F2	109D136C2075F2	109D136C7075F2
15	75	F	109D156X9075F2	109D156C2075F2	109D156C7075F2
35	75	T	109D356X9075T2	109D356C2075T2	109D356C7075T2
40	75	T	109D406X9075T2	109D406C2075T2	109D406C7075T2
2.5	100	C	109D255X9100C2	109D255C2100C2	109D255C7100C2
10	100	F	109D106X9100F2	109D106C2100F2	109D106C7100F2
11	100	F	109D116X9100F2	109D116C2100F2	109D116C7100F2
27	100	T	109D276X9100T2	109D276C2100T2	109D276C7100T2
30	100	T	109D306X9100T2	109D306C2100T2	109D306C7100T2
1.7	125	C	109D175X9125C2	109D175C2125C2	109D175C7125C2
9	125	F	109D905X9125F2	109D905C2125F2	109D905C7125F2
18	125	T	109D186X9125T2	109D186C2125T2	109D186C7125T2
1.7	150	C	109D175X9150C2	109D175C2150C2	109D175C7150C2
6.8	150	F	109D685X9150F2	109D685C2150F2	109D685C7150F2
14	150	T	109D146X9150T2	109D146C2150T2	109D146C7150T2

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SPRAGUE CAPACITORS

TYPE 109D TANTALEX® CAPACITORS, continued

GROUP 2: Available in Capacitance Tolerances of ±20% and ±10%

These capacitors have approximately twice the capacitance of Group 1 Capacitors of the same physical size at a given voltage rating.

µF	WVDC	Size Code	Catalog Number ±20% Tol.	Catalog Number ±10% Tol.
68	6	C	109D686X0006C2	109D686X9006C2
270	6	F	109D277X0006F2	109D277X9006F2
560	6	T	109D567X0006T2	109D567X9006T2
1200	6	W	109D128X0006W2	109D128X9006W2
56	8	C	109D566X0008C2	109D566X9008C2
220	8	F	109D227X0008F2	109D227X9008F2
430	8	T	109D437X0008T2	109D437X9008T2
850	8	W	109D857X0008W2	109D857X9008W2
47	10	C	109D476X0010C2	109D476X9010C2
180	10	F	109D187X0010F2	109D187X9010F2
390	10	T	109D397X0010T2	109D397X9010T2
750	10	W	109D757X0010W2	109D757X9010W2
33	15	C	109D336X0015C2	109D336X9015C2
120	15	F	109D127X0015F2	109D127X9015F2
270	15	T	109D277X0015T2	109D277X9015T2
540	15	W	109D547X0015W2	109D547X9015W2
22	25	C	109D226X0025C2	109D226X9025C2
100	25	F	109D107X0025F2	109D107X9025F2
180	25	T	109D187X0025T2	109D187X9025T2
350	25	W	109D357X0025W2	109D357X9025W2
15	30	C	109D156X0030C2	109D156X9030C2
68	30	F	109D686X0030F2	109D686X9030F2
150	30	T	109D157X0030T2	109D157X9030T2
300	30	W	109D307X0030W2	109D307X9030W2
10	50	C	109D106X0050C2	109D106X9050C2
47	50	F	109D476X0050F2	109D476X9050F2
82	50	T	109D826X0050T2	109D826X9050T2
160	50	W	109D167X0050W2	109D167X9050W2
8.2	60	C	109D825X0060C2	109D825X9060C2
39	60	F	109D396X0060F2	109D396X9060F2
68	60	T	109D686X0060T2	109D686X9060T2
140	60	W	109D147X0060W2	109D147X9060W2
6.8	75	C	109D685X0075C2	109D685X9075C2
33	75	F	109D336X0075F2	109D336X9075F2
56	75	T	109D566X0075T2	109D566X9075T2
110	75	W	109D117X0075W2	109D117X9075W
4.7	100	C	109D475X0100C2	109D475X9100C2
22	100	F	109D226X0100F2	109D226X9100F2
43	100	T	109D436X0100T2	109D436X9100T2
86	100	W	109D866X0100W2	109D866X9100W
3.6	125	C	109D365X0125C2	109D365X9125C2
14	125	F	109D146X0125F2	109D146X9125F2
25	125	T	109D256X0125T2	109D256X9125T2
56	125	W	109D566X0125W2	109D566X9125W
3	150	C	109D305X0150C2	109D305X9150C2
11	150	F	109D116X0150F2	109D116X9150F2
22	150	T	109D226X0150T2	109D226X9150T2

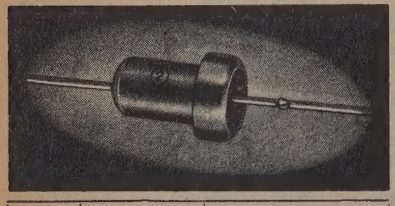
GROUP 3: Available in Capacitance Tolerances of ±20% and ±10%

These are extended-range capacitors, with substantially higher capacitance than units of the same physical size in Groups 1 or 2.

µF	WVDC	Case Code	Catalog Number*
200	6	C	109D207X0006C2
820	6	F	109D827X0006F2
1500	6	T	109D158X0006T2
180	8	C	109D187X0008C2
680	8	F	109D687X0008F2
1400	8	T	109D148X0008T2
120	10	C	109D127X0010C2
150	10	C	109D157X0010C2
470	10	F	109D477X0010F2
560	10	F	109D567X0010F2
1000	10	T	109D108X0010T2
1200	10	T	109D128X0010T2
82	15	C	109D826X0015C2
100	15	C	109D107X0015C2
330	15	F	109D337X0015F2
390	15	F	109D397X0015F2
680	15	T	109D687X0015T2
820	15	T	109D827X0015T2
68	25	C	109D686X0025C2
270	25	F	109D277X0025F2
560	25	T	109D567X0025T2
39	30	C	109D396X0030C2
47	30	C	109D476X0030C2
56	30	C	109D566X0030C2
150	30	F	109D157X0030F2
180	30	F	109D187X0030F2
220	30	F	109D227X0030F2
330	30	T	109D337X0030T2
390	30	T	109D397X0030T2
470	30	T	109D477X0030T2
33	50	C	109D336X0050C2
120	50	F	109D127X0050F2
270	50	T	109D277X0050T2
18	60	C	109D186X0060C2
27	60	C	109D276X0060C2
68	60	F	109D686X0060F2
100	60	F	109D107X0060F2
140	60	T	109D147X0060T2
220	60	T	109D227X0060T2
12	75	C	109D126X0075C2
15	75	C	109D156X0075C2
22	75	C	109D226X0075C2
47	75	F	109D476X0075F2
56	75	F	109D566X0075F2
82	75	F	109D826X0075F2
82	75	T	109D826X0075T2
110	75	T	109D117X0075T2
180	75	T	109D187X0075T2

* Numbers shown are ±20% capacitors. For units with ±10% capacitance tolerance, change digit after X from 0 to 9.

TYPE 133D "CUP STYLE" TANTALEX® CAPACITORS



Size Code	Dimensions Dia. x Length
U	7/32 x 15/32
V	9/32 x 11/16
T	3/8 x 49/64

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

- −55C to +125C Operation At Full Rating. May be Up-Rated 50% for Operation at 85C
- Meet Stringent Vibration Requirements in Military and Missile Applications
- Sintered Anode for Unusual Capacitance Stability, Large Values of Capacitance in Small Physical Size
- For Units with Outer Plastic Insulating Tube, Substitute 4 for 0 at End of Catalog Number
- Also Available as Type 132D for 85C Operation
- For Complete Technical Data See Latest Issue of Engineering Bulletins 3710 and 3711

µF	Size Code	Catalog Number −15, +20% Tol.	Catalog Number ±10% Tol.
4 WORKING VOLTS D-C			
30	U	133D306C2004U0	133D306X9004U0
140	V	133D147C2004V0	133D147X9004V0
320	T	133D327C2004T0	133D327X9004T0
5 WORKING VOLTS D-C			
25	U	133D256C2005U0	133D256X9005U0
7 WORKING VOLTS D-C			
20	U	133D206C2007U0	133D206X9007U0
100	V	133D107C2007V0	133D107X9007V0
250	T	133D257C2007T0	133D257X9007T0
10 WORKING VOLTS D-C			
15	U	133D156C2010U0	133D156X9010U0
70	V	133D706C2010V0	133D706X9010V0
170	T	133D177C2010T0	133D177X9010T0
15 WORKING VOLTS D-C			
10	U	133D106C2015U0	133D106X9015U0
20 WORKING VOLTS D-C			
8	U	133D805C2020U0	133D805X9020U0
40	V	133D406C2020V0	133D406X9020V0
100	T	133D107C2020T0	133D107X9020T0
30 WORKING VOLTS D-C			
5	U	133D505C2030U0	133D505X9030U0
25	V	133D256C2030V0	133D256X9030V0
60	T	133D606C2030T0	133D606X9030T0
40 WORKING VOLTS D-C			
4	U	133D405C2040U0	133D405X9040U0
20	V	133D206C2040V0	133D206X9040V0
50	T	133D506C2040T0	133D506X9040T0
50 WORKING VOLTS D-C			
3.5	U	133D355C2050U0	133D355X9050U0
15	V	133D156C2050V0	133D156X9050V0
40	T	133D406C2050T0	133D406X9050T0
70 WORKING VOLTS D-C			
2	U	133D205C2070U0	133D205X9070U0
11	V	133D116C2070V0	133D116X9070V0
30	T	133D306C2070T0	133D306X9070T0
85 WORKING VOLTS D-C			
1.7	U	133D175C2085U0	133D175X9085U0
9	V	133D905C2085V0	133D905X9085V0
25	T	133D256C2085T0	133D256X9085T0

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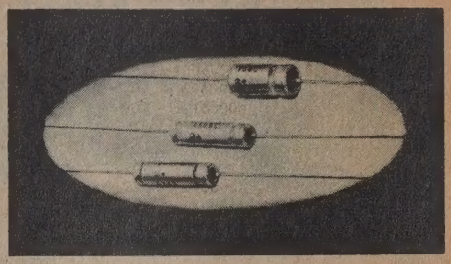
SPRAGUE CAPACITORS

TYPE 137D HERMETICALLY-SEALED GELLED-ELECTROLYTE SINTERED-ANODE TANTALEX® CAPACITORS

- Glass-to-metal Hermetic Seal Makes Type 137D Capacitors Especially Well Suited For Use in Satellites and Other Space Equipment.
- Gelled-electrolyte For Optimum Performance Characteristics
- High Volumetric Efficiency Results in Space Savings
- Operating Temperature Range of —55C to +175C
- Available in Voltage Ratings From 6 WVDC Through 150 WVDC At 85C With Appropriate Derating For Higher Temperature Operation
- Capacitors Listed Below Have Outer Plastic Insulating Sleeve. For Units with Bare Case, End Catalog Number in 0 Instead of 2
- For Complete Technical Data, See Latest Issue of Sprague Engineering Bulletin Number 3703

Call Your Sprague Industrial Distributor For Current Quantity Prices



µF	Case Size	Catalog Number*
6 WVDC		
68	C	137D686X0006C2
40	C	137D147X0006C2
70	F	137D277X0006F2
60	F	137D567X0006F2
60	A	137D567X0006A2
60	T	137D567X0006T2
00	T	137D108X0006T2
00	W	137D128X0006W2
8 WVDC		
56	C	137D566X0008C2
20	C	137D127X0008C2
20	F	137D227X0008F2
70	F	137D477X0008F2
70	A	137D477X0008A2
70	T	137D477X0008T2
50	T	137D857X0008T2
00	W	137D108X0008W2
10 WVDC		
39	C	137D396X0010C2
47	C	137D476X0010C2
82	C	137D826X0010C2
00	C	137D107X0010C2
50	F	137D157X0010F2
80	F	137D187X0010F2
30	F	137D337X0010F2
30	A	137D337X0010A2
30	T	137D337X0010T2
90	F	137D397X0010F2
90	A	137D397X0010A2
90	T	137D397X0010T2
00	T	137D607X0010T2
80	W	137D687X0010W2
50	T	137D757X0010T2
20	W	137D827X0010W2
15 WVDC		
33	C	137D336X0015C2
68	C	137D686X0015C2
20	F	137D127X0015F2
70	F	137D277X0015F2
70	A	137D277X0015A2
70	T	137D277X0015T2
40	T	137D547X0015T2
60	W	137D567X0015W2
20 WVDC		
27	C	137D276X0020C2
56	C	137D566X0020C2
100	F	137D107X0020F2
220	F	137D227X0020F2
220	A	137D227X0020A2
220	T	137D227X0020T2
390	T	137D397X0020T2
470	W	137D477X0020W2

µF	Case Size	Catalog Number*
25 WVDC		
22	C	137D226X0025C2
47	C	137D476X0025C2
100	F	137D107X0025F2
180	F	137D187X0025F2
180	A	137D187X0025A2
180	T	137D187X0025T2
350	T	137D357X0025T2
390	W	137D397X0025W2
30 WVDC		
18	C	137D186X0030C2
39	C	137D396X0030C2
82	F	137D826X0030F2
150	F	137D157X0030F2
150	A	137D157X0030A2
150	T	137D157X0030T2
300	T	137D307X0030T2
330	W	137D337X0030W2
35 WVDC		
12	C	137D126X0035C2
15	C	137D156X0035C2
27	C	137D276X0035C2
33	C	137D336X0035C2
56	F	137D566X0035F2
68	F	137D686X0035F2
100	F	137D107X0035F2
100	A	137D107X0035A2
100	T	137D107X0035T2
120	F	137D127X0035F2
120	A	137D127X0035A2
120	T	137D127X0035T2
180	T	137D187X0035T2
220	T	137D227X0035T2
220	W	137D227X0035W2
270	W	137D277X0035W2
50 WVDC		
10	C	137D106X0050C2
22	C	137D226X0050C2
47	F	137D476X0050F2
82	F	137D826X0050F2
82	A	137D826X0050A2
82	T	137D826X0050T2
160	T	137D167X0050T2
180	W	137D187X0050W2
60 WVDC		
8.2	C	137D825X0060C2
18	C	137D186X0060C2
39	F	137D396X0060F2
68	F	137D686X0060F2
68	A	137D686X0060A2
68	T	137D686X0060T2
140	T	137D147X0060T2
150	W	137D157X0060W2

µF	Case Size	Catalog Number*
75 WVDC		
5.6	C	137D565X0075C2
6.8	C	137D685X0075C2
12	C	137D126X0075C2
15	C	137D156X0075C2
27	F	137D276X0075F2
33	F	137D336X0075F2
47	F	137D476X0075F2
47	A	137D476X0075A2
47	T	137D476X0075T2
56	F	137D566X0075F2
56	A	137D566X0075A2
56	T	137D566X0075T2
82	T	137D826X0075T2
100	W	137D107X0075W2
110	T	137D117X0075T2
120	W	137D127X0075W2
100 WVDC		
3.9	C	137D395X0100C2
4.7	C	137D475X0100C2
15	F	137D156X0100F2
18	F	137D186X0100F2
22	F	137D226X0100F2
33	A	137D336X0100A2
33	T	137D336X0100T2
43	A	137D436X0100A2
43	T	137D436X0100T2
68	W	137D686X0100W2
86	W	137D866X0100W2
125 WVDC		
3.6	C	137D365X0125C2
9.0	F	137D905X0125F2
14	F	137D146X0125F2
18	T	137D186X0125T2
25	T	137D256X0125T2
28	A	137D286X0125A2
56	W	137D566X0125W2
150 WVDC		
1.7	C	137D175X0150C2
3.0	C	137D305X0150C2
6.8	F	137D685X0150F2
11	F	137D116X0150F2
14	T	137D146X0150T2
22	T	137D226X0150T2
22	A	137D226X0150A2
47	W	137D476X0150W2

DIMENSIONS

Case Code	Diam. x Length
C	0.219 x 0.515
F	0.312 x 0.704
A	0.312 x 1.095
T	0.406 x 0.828
W	0.406 x 1.312

Catalog numbers listed above are for ±20% tolerance capacitors. For units with capacitance tolerance of +20%, —15% change X0 in middle of catalog number to 2; for +75, —15% change digits to C7; for ±10% change digits to X9.

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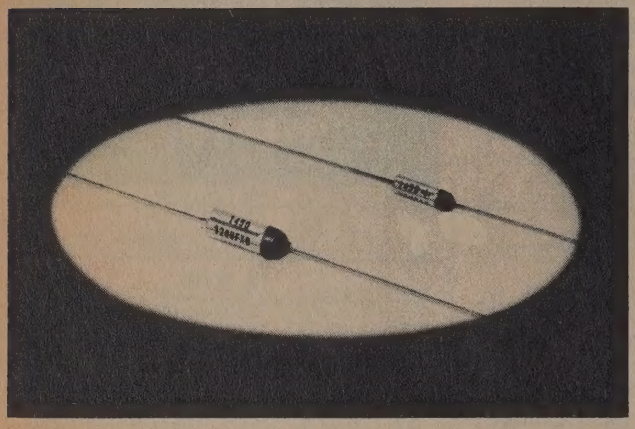
SPRAGUE CAPACITORS

TYPE 145D NON-SOLID ELECTROLYTE SINTERED-PELLET MINIATURE TANTALEX® CAPACITORS



- High Volumetric Efficiency—Designed for Use in Mini ture Commercial and Industrial Printed Wiring Board Packaged Circuit Modules, Low-Frequency Filters, an Allied Applications Where Space is at a Premium
- Elastomer End Seals Capped With Plastic Resin for Ad ditional Protection—Prevents Electrolyte Leakage an Lead Breakage
- Will Operate at Temperatures from −55C to +85 Without Voltage Derating
- Capacitors Shown Below Have Outer Plastic-Film Insula tion. For Units With Bare Case, Change Last Digit o Catalog Number From 2 to 0
- For Complete Technical Data, Refer to Latest Issue of En gineering Bulletin 3750

μF	Diam.	Length	Catalog Number*
		6 WVDC	
27	0.115	0.312	145D276X0006E2
180	0.145	0.600	145D187X0006H2
560	0.225	0.700	145D567X0006J2
		8 WVDC	
22	0.115	0.312	145D226X0008E2
150	0.145	0.600	145D157X0008H2
470	0.225	0.700	145D477X0008J2
		10 WVDC	
18	0.115	0.312	145D186X0010E2
120	0.145	0.600	145D127X0010H2
390	0.225	0.700	145D397X0010J2
		12 WVDC	
15	0.115	0.312	145D156X0012E2
100	0.145	0.600	145D107X0012H2
330	0.225	0.700	145D337X0012J2
		15 WVDC	
12	0.115	0.312	145D126X0015E2
82	0.145	0.600	145D826X0015H2
270	0.225	0.700	145D277X0015J2
		20 WVDC	
10	0.115	0.312	145D106X0020E2
68	0.145	0.600	145D686X0020H2
220	0.225	0.700	145D227X0020J2
		25 WVDC	
8.2	0.115	0.312	145D825X0025E2
56	0.145	0.600	145D566X0025H2
180	0.225	0.700	145D187X0025J2

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μF	Diam.	Length	Catalog Number*
		30 WVDC	
6.8	0.115	0.312	145D685X0030E2
47	0.145	0.600	145D476X0030H2
150	0.225	0.700	145D157X0030J2
		35 WVDC	
5.6	0.115	0.312	145D565X0035E2
39	0.145	0.600	145D396X0035H2
120	0.225	0.700	145D127X0035J2
		40 WVDC	
4.7	0.115	0.312	145D475X0040E2
33	0.145	0.600	145D336X0040H2
100	0.225	0.700	145D107X0040J2
		50 WVDC	
3.9	0.115	0.312	145D395X0050E2
27	0.145	0.600	145D276X0050H2
82	0.225	0.700	145D826X0050J2
		60 WVDC	
3.3	0.115	0.312	145D335X0060E2
22	0.145	0.600	145D226X0060H2
68	0.225	0.700	145D686X0060J2
		75 WVDC	
2.2	0.115	0.312	145D225X0075E2
2.7	0.115	0.312	145D275X0075E2
15	0.145	0.600	145D156X0075H2
18	0.145	0.600	145D186X0075H2
47	0.225	0.700	145D476X0075J2
56	0.225	0.700	145D566X0075J2

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

*Catalog Numbers listed are for ±20% tolerance capacitors. For units with a capacitance tolerance of ±10%, change the digit following th letter X from 0 to 9.

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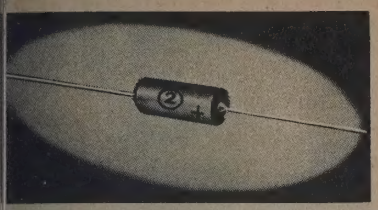
SPRAGUE CAPACITORS



MIL-C-26655 Solid TANTALUM CAPACITORS

- Military Version of Type 150D.
- CS12, Bare Tube; CS13, Insulating Sleeve
- Solid Electrolyte Will Not Seep Even if Hermetic Seal is Accidentally Broken
- Temperature Range of −55C to +85C. Also −55C to +125C With Voltage Derating
- For Complete Technical Data, See Latest Issue of Engineering Bulletin 3520.1
- For Insulated Style CS13, Add 0.010" to Diameter and 0.036" to Length

SIZE CODE

A = .125" D. x .250" L. C = .279" D. x .650" L.
B = .175" D. x .438" L. D = .341" D. x .750" L.

µF	Size Code	Tol.	CS12 Type Designation	CS13 Type Designation
6 WVDC				
5.6	A	10%	CS12BB565K	CS13BB565K
5.8	A	10%	CS12BB585K	CS13BB635K
5.8	A	20%	CS12BB685M	CS13BB685M
7	B	10%	CS12BB476K	CS13BB476K
7	B	20%	CS12BB476M	CS13BB476M
5	B	10%	CS12BB566K	CS13BB566K
)	C	10%	CS12BB157K	CS13BB157K
)	C	20%	CS12BB157M	CS13BB157M
)	C	10%	CS12BB187K	CS13BB187K
)	D	10%	CS12BB277K	CS13BB277K
)	D	10%	CS12BB337K	CS13BB337K
)	D	20%	CS12BB337M	CS13BB337M
10 WVDC				
3.9	A	10%	CS12BC395K	CS13BC395K
4.7	A	10%	CS12BC475K	CS13BC475K
4.7	A	20%	CS12BC475M	CS13BC475M
7	B	10%	CS12BC276K	CS13BC276K
3	B	10%	CS12BC336K	CA13BC336K
3	B	20%	CS12BC336M	CA13BC336M
)	B	10%	CS12BC396K	CS13BC396K
2	C	10%	CS12BC826K	CS13BC826K
)	C	10%	CS12BC107K	CS13BC107K
)	C	20%	CS12BC107M	CS13BC107M
)	C	10%	CS12BC127K	CS13BC127K
)	D	10%	CS12BC187K	CS13BC187K
)	D	10%	CS12BC227K	CS13BC227K
)	D	20%	CS12BC227M	CS13BC227M
15 WVDC				
2.7	A	10%	CS12BD275K	CS13BD275K
3.3	A	10%	CS12BD335K	CS13BD335K
3.3	A	20%	CS12BD335M	CS13BD335M
3	B	10%	CS12BD186K	CS13BD186K
2	B	10%	CS12BD226K	CS13BD226K
2	B	20%	CS12BD226M	CS13BD226M
5	C	10%	CS12BD566K	CS13BD566K
3	C	10%	CS12BD686K	CS13BD686K
3	C	20%	CS12BD686M	CS13BD636M
)	D	10%	CS12BD127K	CS13BD127K
)	D	10%	CS12BD157K	CS13BD157K
)	D	20%	CS12BD157M	CS13BD157M
20 WVDC				
1.2	A	10%	CS12BE125K	CS13BE125K
1.5	A	10%	CS12BE155K	CS13BE155K
1.5	A	20%	CS12BE155M	CS13BE155M
1.8	A	10%	CS12BE185K	CS13BE185K
2.2	A	10%	CS12BE225K	CS13BE225K
2.2	A	20%	CS12BE225M	CS13BE225M
3.2	B	10%	CS12BE825K	CS13BE825K
)	B	10%	CS12BE106K	CS13BE106K
)	B	20%	CS12BE106M	CS13BE106M
2	B	10%	CS12BE126K	CS13BE126K
5	B	10%	CS12BE156K	CS13BE156K
5	B	20%	CS12BE156M	CS13BE156M
7	C	10%	CS12BE276K	CS13BE276K
3	C	10%	CS12BE336K	CS13BE336K
3	C	20%	CS12BE336M	CS13BE336M
9	C	10%	CS12BE396K	CS13BE396K
7	C	10%	CS12BE476K	CS13BE476K
7	C	20%	CS12BE476M	CS13BE476M
6	D	10%	CS12BE566K	CS13BE566K
8	D	10%	CS12BE686K	CS13BE686K
8	D	20%	CS12BE686M	CS13BE686M
2	D	10%	CS12BE826K	CS13BE826K
0	D	10%	CS12BE107K	CS13BE107K
0	D	20%	CS12BE107M	CS13BE107M
35 WVDC				
.33	A	10%	CS12BF334K	CS13BF334K
.33	A	20%	CS12BF334M	CS13BF334M
.39	A	10%	CS12BF394K	CS13BF394K
.47	A	10%	CS12BF474K	CS13BF474K
.47	A	20%	CS12BF564K	CS13BF474M
.56	A	10%	CS12BF564K	CS13BF564K
.68	A	10%	CS12BF684K	CS13BF684K
.68	A	20%	CS12BF684M	CS13BF684M
.82	A	10%	CS12BF824K	CS13BF824K
1.0	A	10%	CS12BF105K	CS13BF105K
1.0	A	20%	CS12BF105M	CS13BF105M
1.2	B	10%	CS12BF125K	CS13BF125K
1.5	B	10%	CS12BF155K	CS13BF155K
1.5	B	20%	CS12BF155M	CS13BF155M
1.8	B	10%	CS12BF185K	CS13BF185K
2.2	B	10%	CS12BF225K	CS13BF225K
2.2	B	20%	CS12BF225M	CS13BF225M
2.7	B	10%	CS12BF275K	CS13BF275K
3.3	B	10%	CS12BF335K	CS13BF335K
3.3	B	20%	CS12BF335M	CS13BF335M
3.9	B	10%	CS12BF395K	CS13BF395K
4.7	B	10%	CS12BF475K	CS13BF475K
4.7	B	20%	CS12BF475M	CS13BF475M
5.6	B	10%	CS12BF565K	CS13BF565K
6.8	B	10%	CS12BF685K	CS13BF685K
6.8	B	20%	CS12BF635M	CS13BF685M
8.2	C	10%	CS12BF825K	CS13BF825K
10	C	10%	CS12BF106K	CS13BF106K
10	C	20%	CS12BF106M	CS13BF106M
12	C	10%	CS12BF126K	CS13BF126K
15	C	10%	CS12BF156K	CS13BF156K
15	C	20%	CS12BF156M	CS13BF156M
18	C	10%	CS12BF186K	CS13BF186K
22	C	10%	CS12BF226K	CS13BF226K
22	C	20%	CS12BF226M	CS13BF226M
27	D	10%	CS12BF276K	CS13BF276K
33	D	10%	CS12BF336K	CS13BF336K
33	D	20%	CS12BF336M	CS13BF336M
39	D	10%	CS12BF396K	CS13BF396K
47	D	10%	CS12BF476K	CS13BF476K
47	D	20%	CS12BF476M	CS13BF476M
50 WVDC				
1.0	A	10%	CS12BG105K	CS13BG105K
1.0	A	20%	CS12BG105M	CS13BG105M
1.2	B	10%	CS12BG125K	CS13BG125K
1.5	B	10%	CS12BG155K	CS13BG155K
1.5	B	20%	CS12BG155M	CS13BG155M
1.8	B	10%	CS12BG185K	CS13BG185K
2.2	B	10%	CS12BG225K	CS13BG225K
2.2	B	20%	CS12BG225M	CS13BG225M
2.7	B	10%	CS12BG275K	CS13BG275K
3.3	B	10%	CS12BG335K	CS13BG335K
3.3	B	20%	CS12BG335M	CS13BG335M
3.9	B	10%	CS12BG395K	CS13BG395K
4.7	B	10%	CS12BG475K	CS13BG475K
4.7	B	20%	CS12BG475M	CS13BG475M
5.6	C	10%	CS12BG565K	CS13BG565K
6.8	C	10%	CS12BG685K	CS13BG685K
6.8	C	20%	CS12BG685M	CS13BG685M
8.2	C	10%	CS12BG825K	CS13BG825K
10	C	10%	CS12BG106K	CS13BG106K
10	C	20%	CS12BG106M	CS13BG106M
12	C	10%	CS12BG126K	CS13BG126K
15	C	10%	CS12BG156K	CS13BG156K
15	C	20%	CS12BG156M	CS13BG156M
18	C	10%	CS12BG186K	CS13BG186K
22	D	10%	CS12BG226K	CS13BG226K
22	D	20%	CS12BG226M	CS13BG226M
75 WVDC				
.10	A	10%	CS12BH104K	CS13BH104K
.10	A	20%	CS12BH104M	CS13BH104M
.12	A	10%	CS12BH124K	CS13BH124K
.15	A	10%	CS12BH154K	CS13BH154K
.15	A	20%	CS12BH154M	CS13BH154M
.18	A	10%	CS12BH184K	CS13BH184K
.22	A	10%	CS12BH224K	CS13BH224K
.22	A	20%	CS12BH224M	CS13BH224M
.27	A	10%	CS12BH274K	CS13BH274K
.33	A	10%	CS12BH334K	CS13BH334K
.33	A	20%	CS12BH334M	CS13BH334M
.39	A	10%	CS12BH394K	CS13BH394K
.47	A	10%	CS12BH474K	CS13BH474K
.47	A	20%	CS12BH474M	CS13BH474M
.56	A	10%	CS12BH564K	CS13BH564K
.68	A	10%	CS12BH684K	CS13BH684K
.68	A	20%	CS12BH684M	CS13BH684M
.82	B	10%	CS12BH824K	CS13BH824K
1.0	B	10%	CS12BH105K	CS13BH105K
1.0	B	20%	CS12BH105M	CS13BH105M
1.2	B	10%	CS12BH125K	CS13BH125K
1.5	B	10%	CS12BH155K	CS13BH155K
1.5	B	20%	CS12BH155M	CS13BH155M
1.8	B	10%	CS12BH185K	CS13BH185K
2.2	B	10%	CS12BH225K	CS13BH225K
2.2	B	20%	CS12BH225M	CS13BH225M
2.7	B	10%	CS12BH275K	CS13BH275K
3.3	B	10%	CS12BH335K	CS13BH335K
3.3	B	20%	CS12BH335M	CS13BH335M
3.9	B	10%	CS12BH395K	CS13BH395K
4.7	C	10%	CS12BH475K	CS13BH475K
4.7	C	20%	CS12BH475M	CS13BH475M
5.6	C	10%	CS12BH565K	CS13BH565K
6.8	C	10%	CS12BH685K	CS13BH685K
6.8	C	20%	CS12BH635M	CS13BH685M
8.2	C	10%	CS12BH825K	CS13BH825K
10	C	10%	CS12BH106K	CS13BH106K
10	C	20%	CS12BH106M	CS13BH106M
12	D	10%	CS12BH126K	CS13BH126K
15	D	10%	CS12BH156K	CS13BH156K
15	D	20%	CS12BH156M	CS13BH156M
100 WVDC				
.0047	A	10%	CS12BJ472K	CS13BJ472K
.0047	A	20%	CS12BJ472M	CS13BJ472M
.0056	A	10%	CS12BJ562K	CS13BJ562K
.0068	A	10%	CS12BJ682K	CS13BJ682K
.0068	A	20%	CS12BJ682M	CS13BJ682M
.0082	A	10%	CS12BJ822K	CS13BJ822K
.01	A	10%	CS12BJ103K	CS13BJ103K
.01	A	20%	CS12BJ103M	CS13BJ103M
.012	A	10%	CS12BJ123K	CS13BJ123K
.015	A	10%	CS12BJ153K	CS13BJ153K
.015	A	20%	CS12BJ153M	CS13BJ153M
.018	A	10%	CS12BJ183K	CS13BJ183K
.022	A	10%	CS12BJ223K	CS13BJ223K
.022	A	20%	CS12BJ223M	CS13BJ223M
.027	A	10%	CS12BJ273K	CS13BJ273K
.033	A	10%	CS12BJ333K	CS13BJ333K
.033	A	20%	CS12BJ333M	CS13BJ333M
.039	A	10%	CS12BJ393K	CS13BJ393K
.047	A	10%	CS12BJ473K	CS13BJ473K
.047	A	20%	CS12BJ473M	CS13BJ473M
.056	A	10%	CS12BJ563K	CS13BJ563K
.068	A	10%	CS12BJ683K	CS13BJ683K
.068	A	20%	CS12BJ683M	CS13BJ683M
.082	A	10%	CS12BJ823K	CS13BJ823K
.10	A	10%	CS12BJ104K	CS13BJ104K
.10	A	20%	CS12BJ104M	CS13BJ104M
.12	A	10%	CS12BJ124K	CS13BJ124K
.15	A	10%	CS12BJ154K	CS13BJ154K
.15	A	20%	CS12BJ154M	CS13BJ154M
.18	A	10%	CS12BJ184K	CS13BJ184K
.22	A	10%	CS12BJ224K	CS13BJ224K
.22	A	20%	CS12BJ224M	CS13BJ224M
.27	A	10%	CS12BJ274K	CS13BJ274K
.33	A	10%	CS12BJ334K	CS13BJ334K
.33	A	20%	CS12BJ334M	CS13BJ334M
.39	A	10%	CS12BJ394K	CS13BJ394K
.47	A	10%	CS12BJ474K	CS13BJ474K
.47	A	20%	CS12BJ474M	CS13BJ474M
.56	A	10%	CS12BJ564K	CS13BJ564K
.68	B	10%	CS12BJ684K	CS13BJ684K
.68	B	20%	CS12BJ684M	CS13BJ684M
.82	B	10%	CS12BJ824K	CS13BJ824K
1.0	B	10%	CS12BJ105K	CS13BJ105K
1.0	B	20%	CS12BJ105M	CS13BJ105M
1.2	B	10%	CS12BJ125K	CS13BJ125K
1.5	B	10%	CS12BJ155K	CS13BJ155K
1.5	B	20%	CS12BJ155M	CS13BJ155M
1.8	B	10%	CS12BJ185K	CS13BJ185K
2.2	B	10%	CS12BJ225K	CS13BJ225K
2.2	B	20%	CS12BJ225M	CS13BJ225M
2.7	B	10%	CS12BJ275K	CS13BJ275K

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Sizes subject to change without notice.

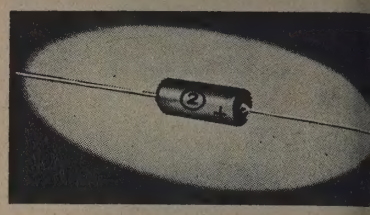
SPRAGUE CAPACITORS

MIL-C-39003 Solid Tantalum CAPACITORS

- Military Version of Type 150D
- Solid Electrolyte Will Not Seep Even if Hermetic Seal is Accidentally Broken
- Temperature Range of -55C to +125C
- Capacitance Tolerance Indicated by 10th Character in MIL Type Designation: K = +10%, -10% M = +20%, -20%
- Supplied With Insulating Sleeve
- Established Reliability

SIZE CODE

A = .135"D. x .286"L. C = .289"D. x .686"L.
B = .185"D. x .474"L. D = .351"D. x .786"L.



µF	Case Code	MIL Type Designation L 2% Failure Rate	M 1% Failure Rate	P .1% Failure Rate
6 WVDC				
5.6	A	CSR13B565KL	CSR13B565KM	CSR13B565KP
6.8	A	CSR13B685KL	CSR13B685KM	CSR13B685KP
6.8	A	CSR13B685ML	CSR13B685MM	CSR13B685MP
47	B	CSR13B476KL	CSR13B476KM	CSR13B476KP
47	B	CSR13B476ML	CSR13B476MM	CSR13B476MP
56	B	CSR13B566KL	CSR13B566KM	CSR13B566KP
150	C	CSR13B157KL	CSR13B157KM	CSR13B157KP
150	C	CSR13B157ML	CSR13B157MM	CSR13B157MP
180	C	CSR13B187KL	CSR13B187KM	CSR13B187KP
270	D	CSR13B277KL	CSR13B277KM	CSR13B277KP
330	D	CSR13B337KL	CSR13B337KM	CSR13B337KP
330	D	CSR13B337ML	CSR13B337MM	CSR13B337MP
10 WVDC				
3.9	A	CSR13C395KL	CSR13C395KM	CSR13C395KP
4.7	A	CSR13C475KL	CSR13C475KM	CSR13C475KP
4.7	A	CSR13C475ML	CSR13C475MM	CSR13C475MP
27	B	CSR13C276KL	CSR13C276KM	CSR13C276KP
33	B	CSR13C336KL	CSR13C336KM	CSR13C336KP
33	B	CSR13C336ML	CSR13C336MM	CSR13C336MP
39	B	CSR13C396KL	CSR13C396KM	CSR13C396KP
82	C	CSR13C826KL	CSR13C826KM	CSR13C826KP
100	C	CSR13C107KL	CSR13C107KM	CSR13C107KP
100	C	CSR13C107ML	CSR13C107MM	CSR13C107MP
120	C	CSR13C127KL	CSR13C127KM	CSR13C127KP
180	D	CSR13C187KL	CSR13C187KM	CSR13C187KP
220	D	CSR13C227KL	CSR13C227KM	CSR13C227KP
220	D	CSR13C227ML	CSR13C227MM	CSR13C227MP
15 WVDC				
2.7	A	CSR13D275KL	CSR13D275KM	CSR13D275KP
3.3	A	CSR13D335KL	CSR13D335KM	CSR13D335KP
3.3	A	CSR13D335ML	CSR13D335MM	CSR13D335MP
18	B	CSR13D186KL	CSR13D186KM	CSR13D186KP
22	B	CSR13D226KL	CSR13D226KM	CSR13D226KP
22	B	CSR13D226ML	CSR13D226MM	CSR13D226MP
56	C	CSR13D566KL	CSR13D566KM	CSR13D566KP
68	C	CSR13D686KL	CSR13D686KM	CSR13D686KP
68	C	CSR13D686ML	CSR13D686MM	CSR13D686MP
120	D	CSR13D127KL	CSR13D127KM	CSR13D127KP
150	D	CSR13D157KL	CSD13D157KM	CSR13D157KP
150	D	CSR13D157ML	CSR13D157MM	CSR13D157MP
20 WVDC				
1.2	A	CSR13E125KL	CSR13E125KM	CSR13E125KP
1.5	A	CSR13E155KL	CSR13E155KM	CSR13E155KP
1.5	A	CSR13E155ML	CSR13E155MM	CSR13E155MP
1.8	A	CSR13E185KL	CSR13E185KM	CSR13E185KP
2.2	A	CSR13E225KL	CSR13E225KM	CSR13E225KP
2.2	A	CSR13E225ML	CSR13E225MM	CSR13E225MP
8.2	B	CSR13E825KL	CSR13E825KM	CSR13E825KP
10	B	CSR13E106KL	CSR13E106KM	CSR13E106KP
10	B	CSR13E106ML	CSR13E106MM	CSR13E106MP
12	B	CSR13E126KL	CSR13E126KM	CSR13E126KP
15	B	CSR13E156KL	CSR13E156KM	CSR13E156KP
15	B	CSR13E156ML	CSR13E156MM	CSR13E156MP
27	C	CSR13E276KL	CSR13E276KM	CSR13E276KP
33	C	CSR13E336KL	CSR13E336KM	CSR13E336KP
33	C	CSR13E336ML	CSR13E336MM	CSR13E336MP
39	C	CSR13E396KL	CSR13E396KM	CSR13E396KP
20 WVDC (Cont.)				
47	C	CSR13E476KL	CSR13E476KM	CSR13E476KP
47	C	CSR13E476ML	CSR13E476MM	CSR13E476MP
56	D	CSR13E566KL	CSR13E566KM	CSR13E566KP
68	D	CSR13E686KL	CSR13E686KM	CSR13E686KP
68	D	CSR13E686ML	CSR13E686MM	CSR13E686MP
82	D	CSR13E826KL	CSR13E826KM	CSR13E826KP
100	D	CSR13E107KL	CSR13E107KM	CSR13E107KP
100	D	CSR13E107ML	CSR13E107MM	CSR13E107MP
35 WVDC				
5.6	B	CSR13F565KL	CSR13F565KM	CSR13F565KP
6.8	B	CSR13F685KL	CSR13F685KM	CSR13F685KP
6.8	B	CSR13F685ML	CSR13F685MM	CSR13F685MP
22	C	CSR13F226KL	CSR13F226KM	CSR13F226KP
22	C	CSR13F226ML	CSR13F226MM	CSR13F226MP
27	D	CSR13F276KL	CSR13F276KM	CSR13F276KP
33	D	CSR13F336KL	CSR13F336KM	CSR13F336KP
33	D	CSR13F336ML	CSR13F336MM	CSR13F336MP
39	D	CSR13F396KL	CSR13F396KM	CSR13F396KP
47	D	CSR13F476KL	CSR13F476KM	CSR13F476KP
47	D	CSR13F476ML	CSR13F476MM	CSR13F476MP
50 WVDC				
.0047	A	CSR13G472KL	CSR13G472KM	CSR13G472KP
.0047	A	CSR13G472ML	CSR13G472MM	CSR13G472MP
.0056	A	CSR13G562KL	CSR13G562KM	CSR13G562KP
.0068	A	CSR13G682KL	CSR13G682KM	CSR13G682KP
.0068	A	CSR13G682ML	CSR13G682MM	CSR13G682MP
.0082	A	CSR13G822KL	CSR13G822KM	CSR13G822KP
.01	A	CSR13G103KL	CSR13G103KM	CSR13G103KP
.01	A	CSR13G103ML	CSR13G103MM	CSR13G103MP
.012	A	CSR13G123KL	CSR13G123KM	CSR13G123KP
.015	A	CSR13G153KL	CSR13G153KM	CSR13G153KP
.015	A	CSR13G153ML	CSR13G153MM	CSR13G153MP
.018	A	CSR13G183KL	CSR13G183KM	CSR13G183KP
.022	A	CSR13G223KL	CSR13G223KM	CSR13G223KP
.022	A	CSR13G223ML	CSR13G223MM	CSR13G223MP
.027	A	CSR13G273KL	CSR13G273KM	CSR13G273KP
.033	A	CSR13G333KL	CSR13G333KM	CSR13G333KP
.033	A	CSR13G333ML	CSR13G333MM	CSR13G333MP
.039	A	CSR13G393KL	CSR13G393KM	CSR13G393KP
.047	A	CSR13G473KL	CSR13G473KM	CSR13G473KP
.047	A	CSR13G473ML	CSR13G473MM	CSR13G473MP
.056	A	CSR13G563KL	CSR13G563KM	CSR13G563KP
.068	A	CSR13G683KL	CSR13G683KM	CSR13G683KP
.068	A	CSR13G683ML	CSR13G683MM	CSR13G683MP
.082	A	CSR13G823KL	CSR13G823KM	CSR13G823KP
.1	A	CSR13G104KL	CSR13G104KM	CSR13G104KP
.1	A	CSR13G104ML	CSR13G104MM	CSR13G104MP
.12	A	CSR13G124KL	CSR13G124KM	CSR13G124KP
.15	A	CSR13G154KL	CSR13G154KM	CSR13G154KP
.15	A	CSR13G154ML	CSR13G154MM	CSR13G154MP
.18	A	CSR13G184KL	CSR13G184KM	CSR13G184KP
.22	A	CSR13G224KL	CSR13G224KM	CSR13G224KP
.22	A	CSR13G224ML	CSR13G224MM	CSR13G224MP
.27	A	CSR13G274KL	CSR13G274KM	CSR13G274KP
.33	A	CSR13G334KL	CSR13G334KM	CSR13G334KP
.33	A	CSR13G334ML	CSR13G334MM	CSR13G334MP
.39	A	CSR13G394KL	CSR13G394KM	CSR13G394KP
.47	A	CSR13G474KL	CSR13G474KM	CSR13G474KP
.47	A	CSR13G474ML	CSR13G474MM	CSR13G474MP

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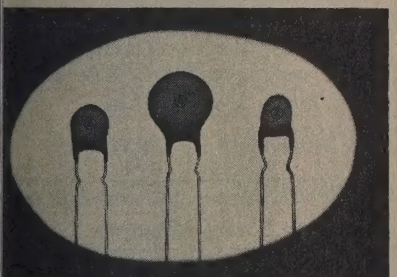
SPRAGUE CAPACITORS

TYPE CSR13 SOLID-ELECTROLYTE TANTALUM CAPACITORS (Cont.)

µF	Case Code	MIL Type Designation L 2% Failure Rate	M 1% Failure Rate	P .1% Failure Rate
		50 WVDC (Cont.)		
.56	A	CSR13G564KL	CSR13G564KM	CSR13G564KP
.68	A	CSR13G684KL	CSR13G684KM	CSR13G684KP
.68	A	CSR13G684ML	CSR13G684MM	CSR13G684MP
.82	A	CSR13G824KL	CSR13G824KM	CSR13G824KP
	A	CSR13G105KL	CSR13G105KM	CSR13G105KP
	A	CSR13G105ML	CSR13G105MM	CSR13G105MP
.2	B	CSR13G125KL	CSR13G125KM	CSR13G125KP
.5	B	CSR13G155KL	CSR13G155KM	CSR13G155KP
.5	B	CSR13G155ML	CSR13G155MM	CSR13G155MP
.8	B	CSR13G185KL	CSR13G185KM	CSR13G185KP
.2	B	CSR13G225KL	CSR13G225KM	CSR13G225KP
.2	B	CSR13G225ML	CSR13G225MM	CSP13G225MP
.7	B	CSR13G275KL	CSR13G275KM	CSR13G275KP
.3	B	CSR13G335KL	CSR13G335KM	CSR13G335KP
.3	B	CSR13G335ML	CSR13G335MM	CSR13G335MP
.9	B	CSR13G395KL	CSR13G395KM	CSR13G395KP
.7	B	CSR13G475KL	CSR13G475KM	CSR13G475KP
.7	B	CSR13G475ML	CSR13G475MM	CSR13G475MP
.6	C	CSR13G565KL	CSR13G565KM	CSR13G565KP
.8	C	CSR13G685KL	CSR13G685KM	CSR13G685KP
.8	C	CSR13G685ML	CSR13G685MM	CSR13G685MP
.2	C	CSR13G825KL	CSR13G825KM	CSR13G825KP
	C	CSR13G106KL	CSR13G106KM	CSR13G106KP
	C	CSR13G106ML	CSR13G106MM	CSR13G106MP
	C	CSR13G126KL	CSR13G126KM	CSR13G126KP
	C	CSR13G156KL	CSR13G156KM	CSR13G156KP
	C	CSR13G156ML	CSR13G156MM	CSR13G156MP
	C	CSR13G186KL	CSR13G186KM	CSR13G186KP
	D	CSR13G226KL	CSR13G226KM	CSR13G226KP
	D	CSR13G226ML	CSR13G226MM	CSR13G226MP
		75 WVDC		
.1	A	CSR13H104KL	CSR13H104KM	———
.1	A	CSR13H104ML	CSR13H104MM	———
.12	A	CSR13H124KL	CSR13H124KM	———
.15	A	CSR13H154KL	CSR13H154KM	———
.15	A	CSR13H154ML	CSR13H154MM	———

µF	Case Code	MIL Type Designation L 2% Failure Rate	M 1% Failure Rate	P .1% Failure Rate
		75 WVDC (Cont.)		
.18	A	CSR13H184KL	CSR13H184KM	———
.22	A	CSR13H224KL	CSR13H224KM	———
.22	A	CSR13H224ML	CSR13H224MM	———
.27	A	CSR13H274KL	CSR13H274KM	———
.33	A	CSR13H334KL	CSR13H334KM	———
.33	A	CSR13H334ML	CSR13H334MM	———
.39	A	CSR13H394KL	CSR13H394KM	———
.47	A	CSR13H474KL	CSR13H474KM	———
.47	A	CSR13H474ML	CSR13H474MM	———
.56	A	CSR13H564KL	CSR113H564KM	———
.68	A	CSR13H684KL	CSR13H684KM	———
.68	A	CSR13H684ML	CSR13H684MM	———
.82	B	CSR13H824KL	CSR13H824KM	———
1	B	CSR13H105KL	CSR13H105KM	———
1	B	CSR13H105ML	CSR13H105MM	———
1.2	B	CSR13H125KL	CSR13H125KM	———
1.5	B	CSR13H155KL	CSR13H155KM	———
1.5	B	CSR13H155ML	CSR13H155MM	———
1.8	B	CSR13H185KL	CSR13H185KM	———
2.2	B	CSR13H225KL	CSR13H225KM	———
2.2	B	CSR13H225ML	CSR13H225MM	———
2.7	B	CSR13H275KL	CSR13H275KM	———
3.3	B	CSR13H335KL	CSR13H335KM	———
3.3	B	CSR13H335ML	CSR13H335MM	———
3.9	B	CSR13H395KL	CSR13H395KM	———
4.7	C	CSR13H475KL	CSR13H475KM	———
4.7	C	CSR13H475ML	CSR13H475MM	———
5.6	C	CSR13H565KL	CSR13H565KM	———
6.8	C	CSR13H685KL	CSR13R685KM	———
6.8	C	CSR13H685ML	CSR13H685MM	———
8.2	C	CSR13H825KL	CSR13H825KM	———
10	C	CSR13H106KL	CSR13H106KM	———
10	C	CSR13H106ML	CSR13H106MM	———
12	D	CSR13H126KL	CSR13H126KM	———
15	D	CSR13H156KL	CSR13H156KM	———
15	D	CSR13H156ML	CSR13H156MM	———

TYPE 196D EPOXY-DIPPED SOLID-ELECTROLYE TANTALEX® CAPACITORS



- Epoxy-Dipped Coating Economically Provides Good Electrical and Mechanical Protection
- Radial Leads For Plug-in Mounting on Printed Wiring Boards
- High Stability, Very Little Capacitance Change, Even at Outer Limits of Operation Temperature Range (-55C to +85C)
- Small Size Lets You Minimize Equipment Size and Weight
- Low Dissipation Factor Permits Higher Ripple Currents

Call Your Sprague Distributor For Quantity Prices

µF	Catalog Number	Height x Width x Thickness
	4 WVDC	
33	196D336X0004EB	.350 x .400 x .225
50	196D157X0004FB	.450 x .450 x .250
	6 WVDC	
22	196D226X0006EB	.350 x .400 x .225
00	196D107X0006FB	.450 x .450 x .250
30	196D337X0006GB	.670 x .600 x .275
	10 WVDC	
15	196D156X0010EB	.350 x .400 x .225
68	196D686X0010FB	.450 x .450 x .250
20	196D227X0010GB	.670 x .600 x .275
	15 WVDC	
10	196D106X0015EB	.350 x .400 x .225
33	196D336X0015FB	.450 x .450 x .250
47	196D476X0015FB	.450 x .450 x .250
50	196D157X0015GB	.670 x .600 x .275
	20 WVDC	
2.2	196D225X0020EB	.350 x .400 x .225
4.7	196D475X0020EB	.350 x .400 x .225

µF	Catalog Number	Height x Width x Thickness
	20 WVDC (Cont.)	
6.8	196D685X0020EB	.350 x .400 x .225
10	196D106X0020FB	.450 x .450 x .250
22	196D226X0020FB	.450 x .450 x .250
100	196D107X0020GB	.670 x .600 x .275
	35 WVDC	
.1	196D104X0035DB	.400 x .250 x .200
.22	196D224X0035DB	.400 x .250 x .200
.33	196D334X0035DB	.400 x .250 x .200
.47	196D474X0035DB	.400 x .250 x .200
.68	196D684X0035DB	.400 x .250 x .200
1.0	196D105X0035DB	.400 x .250 x .200
1.0	196D105X0035EB	.350 x .400 x .225
1.5	196D155X0035EB	.350 x .400 x .225
2.2	196D225X0035FB	.450 x .450 x .250
3.3	196D335X0035FB	.450 x .450 x .250
4.7	196D475X0035FB	.450 x .450 x .250
6.8	196D685X0035FB	.450 x .450 x .250
27	196D276X0035GB	.670 x .600 x .275

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IND-REM-7C-6908

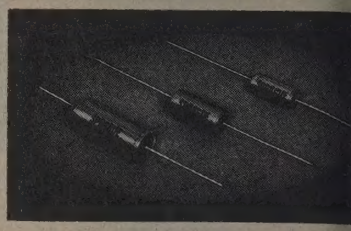
Sizes subject to change without notice.

SPRAGUE CAPACITORS

MIL-C-3965 FOIL TANTALUM CAPACITORS TYPES CL24 & CL

- For −55C to +85C Operation up to 150 Volts in Military and Industrial Electronic Equipment
- Low Leakage Current and Stable Temperature Coefficient Makes Possible Its Use in Many Circuits Where Aluminum Foil Designs Are Undesirable
- The Electrolyte System Used Assures Long Operating and Shelf Life, excellent Low-temperature Performance, Chemical Stability and Inertness
- Dimensions Listed Are For Bare Metal-Case For Insulated Case Add 1/64" to Diameter and 1/8" to Length
- MIL Version of Sprague Type 112D
- Type CL24 Is a Bare Metal-Case Unit. If An Outer Insulating Sleeve Is Desired, Order Type CL25

Call Your Sprague Industrial Distributor For Current Quantity Prices

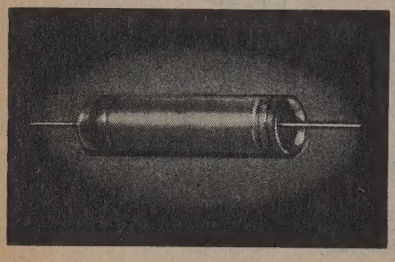


DIMENSIONS

Code	D. x L.	Code	D. x L.
D	13/64 x 3/4	M	25/64 x 2
G	19/64 x 15/16	P	25/64 x 2
J	25/64 x 1 1/2		

µF	WVDC	Size Code	Military Designation*	
15	15	D	CL24BE150UP3	CL25BE150UP3
60	15	G	CL24BE600UP3	CL25BE600UP3
200	15	J	CL24BE201UP3	CL25BE201UP3
400	15	M	CL24BE401UP3	CL25BE401UP3
580	15	P	CL24BE581UP3	CL25BE581UP3
10	25	D	CL24BG100UP3	CL25BG100UP3
40	25	G	CL24BG400UP3	CL25BG400UP3
120	25	J	CL24BG121UP3	CL25BG121UP3
250	25	M	CL24BG251UP3	CL25BG251UP3
350	25	P	CL24BG351UP3	CL25BG351UP3
8	30	D	CL24BH080UP3	CL25BH080UP3
32	30	G	CL24BH320UP3	CL25BH320UP3
110	30	J	CL24BH111UP3	CL25BH111UP3
220	30	M	CL24BH221UP3	CL25BH221UP3
300	30	P	CL24BH301UP3	CL25BH301UP3
4.5	50	D	CL24BJ4R5TP3	CL25BJ4R5TP3
18	50	G	CL24BJ180TP3	CL25BJ180TP3
60	50	J	CL24BJ600TP3	CL25BJ600TP3
100	50	M	CL24BJ101TP3	CL25BJ101TP3
150	50	P	CL24BJ151TP3	CL25BJ151TP3
3	75	D	CL24BL030TP3	CL25BL030TP3
12	75	G	CL24BL120TP3	CL25BL120TP3
30	75	J	CL24BL300TP3	CL25BL300TP3
70	75	M	CL24BL700TP3	CL25BL700T
100	75	P	CL24BL101TP3	CL25BL101T
2	100	D	CL24BN020SP3	CL25BN020S
8	100	G	CL24BN080SP3	CL25BN080S
25	100	J	CL24BN250SP3	CL25BN250S
50	100	M	CL24BN500SP3	CL25BN500S
70	100	P	CL24BN700SP3	CL25BN700S
1	150	D	CL24BQ010SP3	CL25BQ010S
4	150	G	CL24BQ040SP3	CL25BQ040S
13	150	J	CL24BQ130SP3	CL25BQ130S
25	150	M	CL24BQ250SP3	CL25BQ250S
36	150	P	CL24BQ360SP3	CL25BQ360S

*Note: For vibration grade 1 or 2, change last digit of military designation to 1 or 2.



MIL-C-3965 FOIL TANTALUM CAPACITORS TYPES CL34 and CL35

- For use in military and industrial electronic equipment. Designed to operate over the temperature range of −55C to +85C
- Long operation and shelf life, excellent low temperature performance, and optimum electrical characteristics
- For use in circuits where aluminum foil units are unsatisfactory
- Low leakage current and good te perature coefficient
- Type CL34 is a bare metal case u If an outer insulating sleeve is sired, order Type CL35
- MIL version of Sprague Type 11

Call Your Sprague Industrial Distrib tor For Current Quantity Prices

DIMENSIONS

Code	D. x L.	Code	D. x L.
D	3/16 x 1 1/16	M	3/8 x 2 1/8
G	3/32 x 7/8	P	3/8 x 2 3/4
J	3/8 x 1 7/16		

µF	WVDC	Size Code	Military Designation*	
10	3	D	CL34BA100MP3	CL35BA100MP3
50	3	G	CL34BA500MP3	CL35BA500MP3
8	6	D	CL34BB080MP3	CL35BB080MP3
30	6	G	CL34BB300MP3	CL35BB300MP3
100	6	J	CL34BB101MP3	CL35BB101MP3
200	6	M	CL34BB201MP3	CL35BB201MP3
300	6	P	CL34BB301MP3	CL35BB301MP3
6	10	D	CL34BD060MP3	CL35BD060MP3
25	10	G	CL34BD250MP3	CL35BD250MP3
80	10	J	CL34BD800MP3	CL35BD800MP3
160	10	M	CL34BD161MP3	CL35BD161MP3
220	10	P	CL34BD221MP3	CL35BD221MP3
4.5	15	D	CL34BE4R5MP3	CL35BE4R5MP3
10	15	G	CL34BE100MP3	CL35BE100MP3
18	15	G	CL34BE180MP3	CL35BE180MP3
55	15	J	CL34BE550MP3	CL35BE550MP3
110	15	M	CL34BE111MP3	CL35BE111MP3
160	15	P	CL34BE161MP3	CL35BE161MP3
2.5	30	D	CL34BH2R5MP3	CL35BH2R2MP3
30	30	J	CL34BH300MP3	CL35BH300MP3
60	30	M	CL34BH600MP3	CL35BH600MP3
85	30	P	CL34BH850MP3	CL35BH850MP3
1.5	50	D	CL34BJ1R5MP3	CL35BJ1R5MP3
6	50	G	CL34BJ060MP3	CL35BJ060MP3
20	50	J	CL34BJ200MP3	CL35BJ200MP3
40	50	M	CL34BJ400MP3	CL35BJ400MP3
55	50	P	CL34BJ550MP3	CL35BJ550MP3
1	75	D	CL34BL010MP3	CL35BL010MP3
4	75	G	CL34BL040MP3	CL35BL040MP3
14	75	J	CL34BL140MP3	CL35BL140MP3
28	75	M	CL34BL280MP3	CL35BL280MP3
40	75	P	CL34BL400MP3	CL35BL400MP3
0.8	100	D	CL34BN0R8MP3	CL35BN0R8MP3
3	100	G	CL34BN030MP3	CL35BN030MP3
10	100	J	CL34BN100MP3	CL35BN100MP3
20	100	M	CL34BN200MP3	CL35BN200MP3
30	100	P	CL34BN300MP3	CL35BN300MP3
0.5	150	D	CL34BQ0R5MP3	CL35BQ0R5MP3
2	150	G	CL34BQ020MP3	CL35BQ020MP3
4	150	J	CL34BQ040MP3	CL35BQ040MP3
7	150	J	CL34BQ070MP3	CL35BQ070M
8	150	M	CL34BQ080MP3	CL35BQ080M
12	150	M	CL34BQ120MP3	CL35BQ120M
14	150	M	CL34BQ140MP3	CL35BQ140M
20	150	P	CL34BQ200MP3	CL35BQ200M
.35	200	D	CL34BRR35LP3	CL35BRR35LP
1.5	200	G	CL34BR1R5LP3	CL35BR1R5LP
5	200	J	CL34BR050LP3	CL35BR050LP
10	200	M	CL34BR100LP3	CL35BR100LP
15	200	P	CL34BR150LP3	CL35BR150LP
.30	250	D	CL34BSR30LP3	CL35BSR30LP
1.2	250	G	CL34BS1R2LP3	CL35BS1R2LP
4	250	J	CL34BS040LP3	CL35BS040LP
8	250	M	CL34BS080LP3	CL35BS080LP
12	250	P	CL34BS120LP3	CL35BS120LP
1	300	G	CL34BX010LP3	CL35BX010LP
3	300	J	CL34BX030LP3	CL35BX030LP
7	300	M	CL34BX070LP3	CL35BX070LP
10	300	P	CL34BX100LP3	CL35BX100LP

*Note: For vibration grade 1 or 2, change last digit of military designation to 1 or 2.

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SPRAGUE CAPACITORS

MIL-C-3965 TUBULAR FOIL TANTALUM ELECTROLYTICS

TYPES CL20, CL21, CL22, CL23, CL30, CL31, CL32, and CL33

Meet Requirements of Military Specification MIL-C-3965

Small Electrically Stable Foil Tantalums, Long, Reliable Life

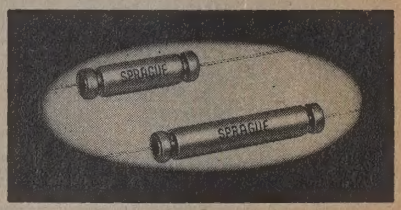
Available in Industrial Equivalents as Types 120D, 121D, 122D, 123D

Temperature Rating 125C

Types Marked (★) Have Insulating Sleeves. All Others are Bare Case

- Capacitance Tolerance
  M = +20, −20% S = +30, −15%
  T = +50, −15% U = +75, −15%
- Call Your Sprague Industrial Distributor for Current Quantity Prices

SIZE CODE (Diam x Length)	
E 13/64 x 3/4	N 25/64 x 2 1/4
H 19/64 x 1 1/32	Q 25/64 x 2 7/8
K 25/64 x 1 9/16	



Size Code	MIL Type Number to MIL-C-3965/17C	MIL Type Number to MIL-C-3965/17B*
TYPE CL20 POLARIZED ETCHED FOIL		
10 WVDC		
.5 E	CL20BE150UPE	CL20CD150UP3
0 H	CL20BE600UPE	CL20CD600UP3
0 K	CL20BE201UPE	CL20CD201UP3
0 N	CL20BE401UPE	CL20CD401UP3
0 Q	CL20BE581UPE	CL20CD581UP3
15 WVDC		
0 E	CL20BG100UPE	CL20CE100UP3
0 H	CL20BG400UPE	CL20CE400UP3
0 K	CL20BG121UPE	CL20CE121UP3
0 N	CL20BG251UPE	CL20CE251UP3
0 Q	CL20BG351UPE	CL20CE351UP3
20 WVDC		
.8 E	CL20BH080UPE	———
2 H	CL20BH320UPE	———
0 K	CL20BH111UPE	———
0 N	CL20BH221UPE	———
0 Q	CL20BH301UPE	———
30 WVDC		
.5 E	CL20BJ4R5TPE	CL20CH4R5TP3
8 H	CL20BJ180TPE	CL20CH180TP3
0 K	CL20BJ600TPE	CL20CH600TP3
0 N	CL20BJ101TPE	CL20CH101TP3
0 Q	CL20BJ151TPE	CL20CH151TP3
50 WVDC		
3 E	CL20BL030TPE	CL20CJ030TP3
2 H	CL20BL120TPE	CL20CJ120TP3
0 K	CL20BL300TPE	CL20CJ300TP3
0 N	CL20BL700TPE	CL20CJ700TP3
0 Q	CL20BL101TPE	CL20CJ101TP3
65 WVDC		
2 E	CL20BN020SPE	CL20CK020TP3
8 H	CL20BN080SPE	CL20CK080TP3
5 K	CL20BN250SPE	CL20CK250TP3
0 N	CL20BN500SPE	CL20CK500TP3
0 Q	CL20BN700SPE	CL20CK700TP3
100 WVDC		
1 E	CL20BQ010SPE	CL20CN010SP3
4 H	CL20BQ040SPE	CL20CN040SP3
3 K	CL20BQ130SPE	CL20CN130SP3
5 N	CL20BQ250SPE	CL20CN250SP3
6 Q	CL20BQ360SPE	CL20CN360SP3
TYPE CL21★ POLARIZED ETCHED FOIL		
10 WVDC		
.5 E	CL21BE150UPE	CL21CD150UP3
0 H	CL21BE600UPE	CL21CD600UP3
0 K	CL21BE201UPE	CL21CD201UP3
0 N	CL21BE401UPE	CL21CD401UP3
0 Q	CL21BE581UPE	CL21CD581UP3
15 WVDC		
0 E	CL21BG100UPE	CL21CE100UP3
0 H	CL21BG400UPE	CL21CE400UP3
0 K	CL21BG121UPE	CL21CE121UP3
0 N	CL21BG251UPE	CL21CE251UP3
0 Q	CL21BG351UPE	CL21CE351UP3
20 WVDC		
8 E	CL21BH080UPE	———
2 H	CL21BH320UPE	———
0 K	CL21BH111UPE	———
0 N	CL21BH221UPE	———
0 Q	CL21BH301UPE	———

Size Code	MIL Type Number to MIL-C-3965/17C	MIL Type Number to MIL-C-3965/17B*
30 WVDC		
4.5 E	CL21BJ4R5TPE	CL21CH4R5TP3
18 H	CL21BJ180TPE	CL21CH180TP3
60 K	CL21BJ600TPE	CL21CH600TP3
100 N	CL21BJ101TPE	CL21CH101TP3
150 Q	CL21BJ151TPE	CL21CH151TP3
50 WVDC		
3 E	CL21BL030TPE	CL21CJ030TP3
12 H	CL21BL120TPE	CL21CJ120TP3
30 K	CL21BL300TPE	CL21CJ300TP3
70 N	CL21BL700TPE	CL21CJ700TP3
100 Q	CL21BL101TPE	CL21CJ101TP3
65 WVDC		
2 E	CL21BN020SPE	CL21CK020TP3
8 H	CL21BN080SPE	CL21CK080TP3
25 K	CL21BN250SPE	CL21CK250TP3
50 N	CL21BN500SPE	CL21CK500TP3
70 Q	CL21BN700SPE	CL21CK700TP3
100 WVDC		
1 E	CL21BQ010SPE	CL21CN010SP3
4 H	CL21BQ040SPE	CL21CN040SP3
13 K	CL21BQ130SPE	CL21CN130SP3
25 N	CL21BQ250SPE	CL21CN250SP3
36 Q	CL21BQ360SPE	CL21CN360SP3
TYPE CL22 NON-POLARIZED ETCHED FOIL		
10 WVDC		
10 E	CL22BE100UNE	CL22CD100UN3
40 H	CL22BE400UNE	CL22CD400UN3
120 K	CL22BE121UNE	CL22CD121UN3
250 N	CL22BE251UNE	CL22CD251UN3
350 Q	CL22BE351UNE	CL22CD351UN3
15 WVDC		
5 E	CL22BG050UNE	CL22CE050UN3
20 H	CL22BG200UNE	CL22CE200UN3
70 K	CL22BG700UNE	CL22CE700UN3
140 N	CL22BG141UNE	CL22CE141UN3
200 Q	CL22BG201UNE	CL22CE201UN3
20 WVDC		
4.5 E	CL22BH4R5UNE	———
18 H	CL22BH180UNE	———
60 K	CL22BH600UNE	———
120 N	CL22BH121UNE	———
170 Q	CL22BH171UNE	———
30 WVDC		
2.5 E	CL22BJ2R5TNE	CL22CH2R5TN3
10 H	CL22BJ100TNE	CL22CH100TN3
30 K	CL22BJ300TNE	CL22CH300TN3
60 N	CL22BJ600TNE	CL22CH600TN3
80 Q	CL22BJ800TNE	CL22CH800TN3
50 WVDC		
1.5 E	CL22BL1R5TNE	CL22CJ1R5TN3
6 H	CL22BL060TNE	CL22CJ060TN3
15 K	CL22BL150TNE	CL22CJ150TN3
35 N	CL22BL350TNE	CL22CJ350TN3
50 Q	CL22BL500TNE	CL22CJ500TN3
65 WVDC		
1 E	CL22BN010TNE	CL22CK010TN3
4 H	CL22BN040TNE	CL22CK040TN3
12 K	CL22BN120TNE	CL22CK120TN3
25 N	CL22BN250TNE	CL22CK250TN3
35 Q	CL22BN350TNE	CL22CK350TN3
100 WVDC		
.5 E	CL22BQ0R5SNE	CL22CN0R5SN3
2 H	CL22BQ020SNE	CL22CN020SN3
6 K	CL22BQ060SNE	CL22CN060SN3
12 N	CL22BQ120SNE	CL22CN120SN3
18 Q	CL22BQ180SNE	CL22CN180SN3

Size Code	MIL Type Number to MIL-C-3965/17C	MIL Type Number to MIL-C-3965/17B*
TYPE CL23★ NON-POLARIZED ETCHED FOIL		
10 WVDC		
10 E	CL23BE100UNE	CL23CD100UN3
40 H	CL23BE400UNE	CL23CD400UN3
120 K	CL23BE121UNE	CL23CD121UN3
250 N	CL23BE251UNE	CL23CD251UN3
350 Q	CL23BE351UNE	CL23CD351UN3
15 WVDC		
5 E	CL23BG050UNE	CL23CE050UN3
20 H	CL23BG200UNE	CL23CE200UN3
70 K	CL23BG700UNE	CL23CE700UN3
140 N	CL23BG141UNE	CL23CE141UN3
200 Q	CL23BG201UNE	CL23CE201UN3
20 WVDC		
4.5 E	CL23BH4R5UNE	———
18 H	CL23BH180UNE	———
60 K	CL23BH600UNE	———
120 N	CL23BH121UNE	———
170 Q	CL23BH171UNE	———
30 WVDC		
2.5 E	CL23BJ2R5TNE	CL23CH2R5TN3
10 H	CL23BJ100TNE	CL23CH100TN3
30 K	CL23BJ300TNE	CL23CH300TN3
60 N	CL23BJ600TNE	CL23CH600TN3
80 Q	CL23BJ800TNE	CL23CH800TN3
50 WVDC		
1.5 E	CL23BL1R5TNE	CL23CJ1R5TN3
6 H	CL23BL060TNE	CL23CJ060TN3
15 K	CL23BL150TNE	CL23CJ150TN3
35 N	CL23BL350TNE	CL23CJ350TN3
50 Q	CL23BL500TNE	CL23CJ500TN3
65 WVDC		
1 E	CL23BN010TNE	CL23CK010TN3
4 H	CL23BN040TNE	CL23CK040TN3
12 K	CL23BN120TNE	CL23CK120TN3
25 N	CL23BN250TNE	CL23CK250TN3
35 Q	CL23BN350TNE	CL23CK350TN3
100 WVDC		
.5 E	CL23BQ0R5SNE	CL23CN0R5SN3
2 H	CL23BQ020SNE	CL23CN020SN3
6 K	CL23BQ060SNE	CL23CN060SN3
12 N	CL23BQ120SNE	CL23CN120SN3
18 Q	CL23BQ180SNE	CL23CN180SN3
TYPE CL30 POLARIZED PLAIN FOIL		
2 WVDC		
10 E	CL30BA100MPE	———
50 H	CL30BA500MPE	———
4 WVDC		
8 E	CL30BB080MPE	———
30 H	CL30BB300MPE	———
100 K	CL30BB101MPE	———
200 N	CL30BB201MPE	———
300 Q	CL30BB301MPE	———
7 WVDC		
6 E	CL30BD060MPE	———
25 H	CL30BD250MPE	———
80 K	CL30BD800MPE	———
160 N	CL30BD161MPE	———
220 Q	CL30BD221MPE	———
10 WVDC		
4.5 E	CL30BE4R5MPE	CL30CD4R5MP3
10 H	CL30BE100MPE	———
18 H	CL30BE180MPE	CL30CD180MP3
55 K	CL30BE550MPE	CL30CD550MP3
110 N	CL30BE111MPE	CL30CD111MP3
160 Q	CL30BE161MPE	CL30CD161MP3

Size Code	MIL Type Number to MIL-C-3965/17C	MIL Type Number to MIL-C-3965/17B*
15 WVDC		
3 E	CL30BG030MPE	CL30CE030MP3
12 H	CL30BG120MPE	CL30CE120MP3
35 K	CL30BG350MPE	CL30CE350MP3
70 N	CL30BG700MPE	CL30CE700MP3
100 Q	CL30BG101MPE	CL30CE101MP3
20 WVDC		
2.5 E	CL30BH2R5MPE	———
10 H	CL30BH100MPE	———
30 K	CL30BH300MPE	———
60 N	CL30BH600MPE	———
85 Q	CL30BH850MPE	———
30 WVDC		
1.5 E	CL30BJ1R5MPE	CL30CH1R5MP3
6 H	CL30BJ060MPE	CL30CH060MP3
20 K	CL30BJ200MPE	CL30CH200MP3
40 N	CL30BJ400MPE	CL30CH400MP3
55 Q	CL30BJ550MPE	CL30CH550MP3
50 WVDC		
1 E	CL30BL010MPE	CL30CJ010MP3
4 H	CL30BL040MPE	CL30CJ040MP3
14 K	CL30BL140MPE	CL30CJ140MP3
28 N	CL30BL280MPE	CL30CJ280MP3
40 Q	CL30BL400MPE	CL30CJ400MP3
65 WVDC		
.8 E	CL30BN0R8MPE	CL30CK0R8MP3
3 H	CL30BN030MPE	CL30CK030MP3
10 K	CL30BN100MPE	CL30CK100MP3
20 N	CL30BN200MPE	CL30CK200MP3
30 Q	CL30BN300MPE	CL30CK300MP3
100 WVDC		
.5 E	CL30BQ0R5MPE	CL30CN0R5MP3
2 H	CL30BQ020MPE	CL30CN020MP3
4 K	CL30BQ040MPE	———
7 K	CL30BQ070MPE	CL30CN070MP3
8 N	CL30BQ080MPE	———
12 N	CL30BQ120MPE	———
14 N	CL30BQ140MPE	CL30CN140MP3
20 Q	CL30BQ200MPE	CL30CN200MP3
150 WVDC		
.35 E	CL30BZR35LPE	CL30CQR35MP3
1.5 H	CL30BZ1R5LPE	CL30CQ1R5MP3
5 K	CL30BZ050LPE	CL30CQ050MP3
10 N	CL30BZ100LPE	CL30CQ100MP3
15 Q	CL30BZ150LPE	CL30CQ150MP3
165 WVDC		
.3 E	CL30B0R30LPE	———
1.2 H	CL30B01R2LPE	———
4 K	CL30B0040LPE	———
8 N	CL30B0080LPE	———
12 Q	CL30B0120LPE	———
200 WVDC		
.27 E	CL30BXR27LPE	———
1 H	CL30BX010LPE	———
3.3 K	CL30BX3R3LPE	———
6.8 N	CL30BX6R8LPE	———
10 Q	CL30BX100LPE	———
250 WVDC		
.22 E	CL30BYR22LPE	———
.82 H	CL30BYR82LPE	———
2.7 K	CL30BY2R7LPE	———
5.6 N	CL30BY5R6LPE	———
8.2 Q	CL30BY8R2LPE	———
300 WVDC		
.15 E	CL30BUR15LPE	———
.56 H	CL30BUR56LPE	———
1.8 K	CL30BU1R8LPE	———
3.9 N	CL30BU3R9LPE	———
5.6 Q	CL30BU5R6LPE	———

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SPRAGUE CAPACITORS

MIL-C-3965 FOIL TANTALUM ELECTROLYTICS, continued

TYPE CL31★ POLARIZED PLAIN FOIL

µF	Size Code	MIL-Type Number to MIL-C-3965/17C	MIL-Type Number to MIL-C-3965/17B*
2 WVDC			
10	E	CL31BA100MPE	
50	H	CL31BA500MPE	
4 WVDC			
8	E	CL31BB080MPE	
30	H	CL31BB300MPE	
100	K	CL31BB101MPE	
200	N	CL31BB201MPE	
300	Q	CL31BB301MPE	
7 WVDC			
6	E	CL31BD060MPE	
25	H	CL31BD250MPE	
80	K	CL31BD800MPE	
160	N	CL31BD161MPE	
220	Q	CL31BD221MPE	
10 WVDC			
4.5	E	CL31BE4R5MPE	CL31CD4R5MP3
10	H	CL31BE100MPE	
18	H	CL31BE180MPE	CL31CD180MP3
55	K	CL31BE550MPE	CL31CD550MP3
110	N	CL31BE111MPE	CL31CD111MP3
160	Q	CL31BE161MPE	CL31CD161MP3
15 WVDC			
3	E	CL31BG030MPE	CL31CE030MP3
12	H	CL31BG120MPE	CL31CE120MP3
35	K	CL31BG350MPE	CL31CE350MP3
70	N	CL31BG700MPE	CL31CE700MP3
100	Q	CL31BG101MPE	CL31CE101MP3
20 WVDC			
2.5	E	CL31BH2R5MPE	
10	H	CL31BH100MPE	
30	K	CL31BH300MPE	
60	N	CL31BH600MPE	
85	Q	CL31BH850MPE	
30 WVDC			
1.5	E	CL31BJ1R5MPE	CL31CH1R5MP3
6	H	CL31BJ060MPE	CL31CH060MP3
20	K	CL31BJ200MPE	CL31CH200MP3
40	N	CL31BJ400MPE	CL31CH400MP3
55	Q	CL31BJ550MPE	CL31CH550MP3
50 WVDC			
1	E	CL31BL010MPE	CL31CJ010MP3
4	H	CL31BL040MPE	CL31CJ040MP3
14	K	CL31BL140MPE	CL31CJ140MP3
28	N	CL31BL280MPE	CL31CJ280MP3
40	Q	CL31BL400MPE	CL31CJ400MP3
65 WVDC			
.8	E	CL31BN0R8MPE	CL31CK0R8MP3
3	H	CL31BN030MPE	CL31CK030MP3
10	K	CL31BN100MPE	CL31CK100MP3
20	N	CL31BN200MPE	CL31CK200MP3
30	Q	CL31BN300MPE	CL31CK300MP3
100 WVDC			
.5	E	CL31BQ0R5MPE	CL31CN0R5MP3
2	H	CL31BQ020MPE	CL31CN020MP3
4	K	CL31BQ040MPE	
7	K	CL31BQ070MPE	CL31CN070MP3
8	N	CL31BQ080MPE	
12	N	CL31BQ120MPE	
14	N	CL31BQ140MPE	CL31CN140MP3
20	Q	CL31BQ200MPE	CL31CN200MP3
150 WVDC			
.35	E	CL31BZR35LPE	CL31CQR35MP3
1.5	H	CL31BZ1R5LPE	CL31CQ1R5MP3
5	K	CL31BZ050LPE	CL31CQ050MP3
10	N	CL31BZ100LPE	CL31CQ100MP3
15	Q	CL31BZ150LPE	CL31CQ150MP3
165 WVDC			
.3	E	CL31BOR30LPE	
1.2	H	CL31BO1R2LPE	
4	K	CL31BO040LPE	
8	N	CL31BO080LPE	
12	Q	CL31BO120LPE	
200 WVDC			
.27	E	CL31BXR27LPE	
1	H	CL31BX010LPE	
3.3	K	CL31BX3R3LPE	
6.8	N	CL31BX6R8LPE	
10	Q	CL31BX100LPE	
250 WVDC			
.22	E	CL31BYR22LPE	
.82	H	CL31BYR82LPE	
2.7	K	CL31BY2R7LPE	
5.6	N	CL31BY5R6LPE	
8.2	Q	CL31BY8R2LPE	
300 WVDC			
.15	E	CL31BUR15LPE	
.56	H	CL31BUR56LPE	
1.8	K	CL31BU1R8LPE	
3.9	N	CL31BU3R9LPE	
5.6	Q	CL31BU5R6LPE	

TYPE CL32 NON-POLARIZED PLAIN FOIL

µF	Size Code	MIL-Type Number to MIL-C-3965/17C	MIL-Type Number to MIL-C-3965/17B*
2 WVDC			
10	E	CL32BA100MNE	
45	H	CL32BA450MNE	
140	K	CL32BA141MNE	
280	N	CL32BA281MNE	
400	Q	CL32BA401MNE	
4 WVDC			
7	E	CL32BB070MNE	
25	H	CL32BB250MNE	
85	K	CL32BB850MNE	
170	N	CL32BB171MNE	
250	Q	CL32BB251MNE	
7 WVDC			
4	E	CL32BD040MNE	
16	H	CL32BD160MNE	
55	K	CL32BD550MNE	
110	N	CL32BD111MNE	
150	Q	CL32BD151MNE	
10 WVDC			
2.5	E	CL32BE2R5MNE	CL32CD2R5MN3
10	H	CL32BE100MNE	CL32CD100MN3
35	K	CL32BE350MNE	CL32CD350MN3
70	N	CL32BE700MNE	CL32CD700MN3
100	Q	CL32BE101MNE	CL32CD101MN3
15 WVDC			
1.5	E	CL32BG1R5MNE	CL32CE1R5MN3
6	H	CL32BG060MNE	CL32CE060MN3
20	K	CL32BG200MNE	CL32CE200MN3
40	N	CL32BG400MNE	CL32CE400MN3
60	Q	CL32BG600MNE	CL32CE600MN3
20 WVDC			
1.4	E	CL32BH1R4MNE	
5.5	H	CL32BH5R5MNE	
18	K	CL32BH180MNE	
36	N	CL32BH360MNE	
45	Q	CL32BH450MNE	
30 WVDC			
.8	E	CL32BJ0R8MNE	CL32CH0R8MN3
3	H	CL32BJ030MNE	CL32CH030MN3
10	K	CL32BJ100MNE	CL32CH100MN3
20	N	CL32BJ200MNE	CL32CH200MN3
30	Q	CL32BJ300MNE	CL32CH300MN3
50 WVDC			
.5	E	CL32BL0R5MNE	CL32CJ0R5MN3
2	H	CL32BL020MNE	CL32CJ020MN3
7	K	CL32BL070MNE	CL32CJ070MN3
14	N	CL32BL140MNE	CL32CJ140MN3
20	Q	CL32BL200MNE	CL32CJ200MN3
65 WVDC			
.4	E	CL32BN0R4MNE	CL32CK0R4MN3
1.5	H	CL32BN1R5MNE	CL32CK1R5MN3
5	K	CL42BN050MNE	CL32CK050MN3
10	N	CL32BN100MNE	CL32CK100MN3
15	Q	CL32BN150MNE	CL32CK150MN3
100 WVDC			
.25	E	CL32BQR25MNE	CL32CNR25MN3
1	H	CL32BQ010MNE	CL32CN010MN3
3.5	K	CL32BQ3R5MNE	CL32CN3R5MN3
7	N	CL32BQ070MNE	CL32CN070MN3
10	Q	CL32BQ100MNE	CL32CN100MN3
150 WVDC			
.15	E	CL32BZR15LNE	CL32CQR15MN3
.75	H	CL32BZR75LNE	CL32CQR75MN3
2.5	K	CL32BZ2R5LNE	CL32CQ2R5MN3
5	N	CL32BZ050LNE	CL32CQ050MN3
7.5	Q	CL32BZ7R5LNE	CL32CQ7R5MN3
165 WVDC			
.15	E	CL32BO815LNE	
.6	H	CL32BO0R6LNE	
2	K	CL32BO020LNE	
4	N	CL32BO040LNE	
6	Q	CL32BO060LNE	
200 WVDC			
.12	E	CL32BXR12LNE	
.47	H	CL32BXR47LNE	
1.5	K	CL32BX1R5LNE	
3.3	N	CL32BX3R3LNE	
4.7	Q	CL32BX4R7LNE	
250 WVDC			
.1	E	CL32BY0R1LNE	
.39	H	CL32BYR39LNE	
1.2	K	CL32BY1R2LNE	
2.2	N	CL32BY2R2LNE	
3.9	Q	CL32BY3R9LNE	

TYPE CL33★ NON-POLARIZED PLAIN FOIL

µF	Size Code	MIL-Type Number to MIL-C-3965/17C	MIL-Type Number to MIL-C-3965/1
2 WVDC			
10	E	CL33BA100MNE	
45	H	CL33BA450MNE	
140	K	CL33BA141MNE	
280	N	CL33BA281MNE	
400	Q	CL33BA401MNE	
4 WVDC			
7	E	CL33BB070MNE	
25	H	CL33BB250MNE	
85	K	CL33BB850MNE	
170	N	CL33BB171MNE	
250	Q	CL33BB251MNE	
7 WVDC			
4	E	CL33BD040MNE	
16	H	CL33BD160MNE	
55	K	CL33BD550MNE	
110	N	CL33BD111MNE	
150	Q	CL33BD151MNE	
10 WVDC			
2.5	E	CL33BE2R5MNE	CL33CD2R5MN
10	H	CL33BE100MNE	CL33CD100MN
35	K	CL33BE350MNE	CL33CD350MN
70	N	CL33BE700MNE	CL33CD700MN
100	Q	CL33BE101MNE	CL33CD101MN
15 WVDC			
1.5	E	CL33BG1R5MNE	CL33CE1R5MN
6	H	CL33BG060MNE	CL33CE060MN
20	K	CL33BG200MNE	CL33CE200MN
40	N	CL33BG400MNE	CL33CE400MN
60	Q	CL33BG600MNE	CL33CE600MN
20 WVDC			
1.4	E	CL33BH1R4MNE	
5.5	H	CL33BH5R5MNE	
18	K	CL33BH180MNE	
36	N	CL33BH360MNE	
45	Q	CL33BH450MNE	
30 WVDC			
.8	E	CL33BJ0R8MNE	CL33CH0R8MN
3	H	CL33BJ030MNE	CL33CH030MN
10	K	CL33BJ100MNE	CL33CH100MN
20	N	CL33BJ200MNE	CL33CH200MN
30	Q	CL33BJ300MNE	CL33CH300MN
50 WVDC			
.5	E	CL33BL0R5MNE	CL33CJ0R5MN
2	H	CL33BL020MNE	CL33CJ020MN
7	K	CL33BL070MNE	CL33CJ070MN
14	N	CL33BL140MNE	CL33CJ140MN
20	Q	CL33BL200MNE	CL33CJ200MN
65 WVDC			
.4	E	CL33BN0R4MNE	CL33CK0R4MN
1.5	H	CL33BN1R5MNE	CL33CK1R5MN
5	K	CL33BN050MNE	CL33CK050MN
10	N	CL33BN100MNE	CL33CK100MN
15	Q	CL33BN150MNE	CL33CK150MN
100 WVDC			
.25	E	CL33BQR25MNE	CL33CNR25MN
1	H	CL33BQ010MNE	CL33CN010MN
3.5	K	CL33BQ3R5MNE	CL33CN3R5MN
7	N	CL33BQ070MNE	CL33CN070MN
10	Q	CL33BQ100MNE	CL33CN100MN
150 WVDC			
.15	E	CL33BZR15LNE	CL33CQR15MN
.75	H	CL33BZR75LNE	CL33CQR75MN
2.5	K	CL33BZ2R5LNE	CL33CQ2R5MN
5	N	CL33BZ050LNE	CL33CQ050MN
7.5	Q	CL33BZ7R5LNE	CL33CQ7R5MN
165 WVDC			
.15	E	CL33BOR15LNE	
.6	H	CL33BO0R6LNE	
2	K	CL33BO020LNE	
4	N	CL33BO040LNE	
6	Q	CL33BO060LNE	
200 WVDC			
.12	E	CL33BXR12LNE	
.47	H	CL33BXR47LNE	
1.5	K	CL33BX1R5LNE	
3.3	N	CL33BX3R3LNE	
4.7	Q	CL33BX4R7LNE	
250 WVDC			
.1	E	CL33BY0R1LNE	
.39	H	CL33BYR39LNE	
1.2	K	CL33BY1R2LNE	
2.2	N	CL33BY2R2LNE	
3.9	Q	CL33BY3R9LNE	

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SPRAGUE CAPACITORS

MIL-C-3965 TUBULAR SINTERED-ANODE TANTALEX® CAPACITORS—TYPES CL64 and CL65

Reliable Superior Quality Capacitors With No Voltage Derating For 125C Operation

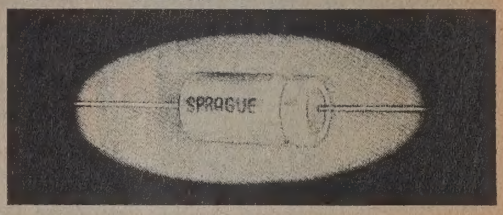
MIL Version of Sprague Type 130D

Voltage Ratings From 6 WVDC Through 125 WVDC

Type CL64 Is a Bare Metal-Case Unit. If An Outer Insulating Sleeve is Desired, Order Type CL65.

- Capacitance Tolerance: K = ±10%; M = ± 20%

Call Your Sprague Industrial Distributor For Quantity Prices



DIMENSIONS

Code	D. x L.	Code	D. x L.	Code	D. x L.
T1	.188" x .453"	T2	.281" x .641"	T3	.375" x .766"

TYPES CL64, CL65 - 85C ALSO AVAILABLE IN CHARACTERISTIC C (125C)

µF	Size Code	CL64 Type Number*	CL65 Type Number*
6 WVDC			
30	T1	CL64BB300KP3	CL65BB300KP3
30	T1	CL64BB300MP3	CL65BB300MP3
68	T1	CL64BB680MP3	CL65BB680MP3
10	T2	CL64BB141KP3	CL65BB141KP3
10	T2	CL64BB141MP3	CL65BB141MP3
70	T2	CL64BB271MP3	CL65BB271MP3
30	T3	CL64BB331KP3	CL65BB331KP3
30	T3	CL64BB331MP3	CL65BB331MP3
60	T3	CL64BB561MP3	CL65BB561MP3
8 WVDC			
25	T1	CL64BC250KP3	CL65BC250KP3
25	T1	CL64BC250MP3	CL65BC250MP3
56	T1	CL64BC560MP3	CL65BC560MP3
20	T2	CL64BC221MP3	CL65BC221MP3
30	T3	CL64BC431MP3	CL65BC431MP3
10 WVDC			
20	T1	CL64BD200KP3	CL65BD200KP3
20	T1	CL64BD200MP3	CL65BD200MP3
47	T1	CL64BD470MP3	CL65BD470MP3
00	T2	CL64BD101KP3	CL65BD101KP3
00	T2	CL64BD101MP3	CL65BD101MP3
80	T2	CL64BD181MP3	CL65BD181MP3
50	T3	CL64BD251KP3	CL65BD251KP3
50	T3	CL64BD251MP3	CL65BD251MP3
90	T3	CL64BD391MP3	CL65BD391MP3
15 WVDC			
15	T1	CL64BE150KP3	CL65BE150KP3
15	T1	CL64BE150MP3	CL65BE150MP3
33	T1	CL64BE330MP3	CL65BE330MP3
70	T2	CL64BE700KP3	CL65BE700KP3
70	T2	CL64BE700MP3	CL65BE700MP3
20	T2	CL64BE121MP3	CL65BE121MP3
70	T3	CL64BE171KP3	CL65BE171KP3
70	T3	CL64BE171MP3	CL65BE171MP3
270	T3	CL64BE271MP3	CL65BE271MP3
25 WVDC			
10	T1	CL64BG100KP3	CL65BG100KP3
10	T1	CL64BG100MP3	CL65BG100MP3
22	T1	CL64BG220MP3	CL65BG220MP3
100	T2	CL64BG101MP3	CL65BG101MP3
180	T3	CL64BG181MP3	CL65BG181MP3
30 WVDC			
8	T1	CL64BH080KP3	CL65BH080KP3
8	T1	CL64BH080MP3	CL65BH080MP3
15	T1	CL64BH150MP3	CL65BH150MP3
40	T2	CL64BH400KP3	CL65BH400KP3
40	T2	CL64BH400MP3	CL65BH400MP3
68	T2	CL64BH680MP3	CL65BH680MP3
100	T3	CL64BH101KP3	CL65BH101KP3
100	T3	CL64BH101MP3	CL65BH101MP3
150	T3	CL64BH151MP3	CL65BH151MP3
50 WVDC			
5	T1	CL64BJ050KP3	CL65BJ050KP3
5	T1	CL64BJ050MP3	CL65BJ050MP3
10	T1	CL64BJ100MP3	CL65BJ100MP3
25	T2	CL64BJ250KP3	CL65BJ250KP3
25	T2	CL64BJ250MP3	CL65BJ250MP3
47	T2	CL64BJ470MP3	CL65BJ470MP3
60	T3	CL64BJ600KP3	CL65BJ600KP3
60	T3	CL64BJ600MP3	CL65BJ600MP3
82	T3	CL64BJ820MP3	CL65BJ820MP3
60 WVDC			
4	T1	CL64BK040KP3	CL65BK040KP3
4	T1	CL64BK040MP3	CL65BK040MP3
8.2	T1	CL64BK8R2MP3	CL65BK8R2MP3
20	T2	CL64BK200KP3	CL65BK200KP3
20	T2	CL64BK200MP3	CL65BK200MP3
39	T2	CL64BK390MP3	CL65BK390MP3
50	T3	CL64BK500KP3	CL65BK500KP3
50	T3	CL64BK500MP3	CL65BK500MP3
68	T3	CL64BK680MP3	CL65BK680MP3
75 WVDC			
3.5	T1	CL64BL3R5KP3	CL65BL3R5KP3
3.5	T1	CL64BL3R5MP3	CL65BL3R5MP3
6.8	T1	CL64BL6R8MP3	CL65BL6R8MP3
15	T2	CL64BL150KP3	CL65BL150KP3
15	T2	CL64BL150MP3	CL65BL150MP3
33	T2	CL64BL330MP3	CL65BL330MP3
40	T3	CL64BL400KP3	CL65BL400KP3
40	T3	CL64BL400MP3	CL65BL400MP3
56	T3	CL64BL560MP3	CL65BL560MP3
100 WVDC			
2.5	T1	CL64BN2R5KP3	CL65BN2R5KP3
2.5	T1	CL64BN2R5MP3	CL65BN2R5MP3
4.7	T1	CL64BN4R7MP3	CL65BN4R7MP3
11	T2	CL64BN110KP3	CL65BN110KP3
11	T2	CL64BN110MP3	CL65BN110MP3
22	T2	CL64BN220MP3	CL65BN220MP3
30	T3	CL64BN300KP3	CL65BN300KP3
30	T3	CL64BN300MP3	CL65BN300MP3
43	T3	CL64BN430MP3	CL65BN430MP3
125 WVDC			
1.7	T1	CL64BP1R7MP3	CL65BP1R7MP3
1.7	T1	CL64BP1R7KP3	CL65BP1R7KP3
3.6	T1	CL64BP3R6MP3	CL65BP3R6MP3
3.6	T1	CL64BP3R6KP3	CL65BP3R6KP3
9	T2	CL64BP090MP3	CL65BP090MP3
9	T2	CL64BP090KP3	CL65BP090KP3
14	T2	CL64BP140MP3	CL65BP140MP3
14	T2	CL64BP140KP3	CL65BP140KP3
18	T3	CL64BP180MP3	CL65BP180MP3
18	T3	CL64BP180KP3	CL65BP180KP3
25	T3	CL64BP250MP3	CL65BP250MP3
25	T3	CL64BP250KP3	CL65BP250KP3

For Vibration Guide 1, or 2, change last digit in Type Number to 1, or 2.

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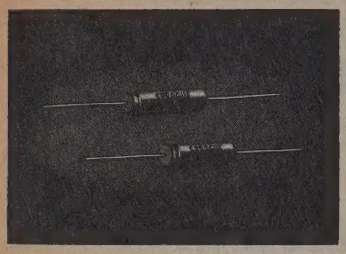
TE LITTL-LYTIC® ELECTROLYTICS



- Ultra-Small — Excellent, Dependable Replacement Units for Transistorized Equipment Presently on the Market
- Reliability at Reasonable Prices
- All-Welded Construction — No Pressure Joints to Cause "Open" or Intermittent Circuits
- No Corrosion as with Competitive Units
- Extremely Low Leakage Current, Lon Shelf Life
- Withstand Temperatures Up to 85 (185F)
- Furnished with Clear Plastic Out Insulating Sleeves
- Packed 5 to a Handy Rigid Kleer-Pak Plastic Box

For Complete Technical Data, See Latest Issue of Sprague Engineering Bulletin 3150

μF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part. No.
3 WVDC			
1	.260 x .536	TE-1050	30D105G003BA2
2	.260 x .536	TE-1051	30D205G003BA2
3	.260 x .536	TE-1052	30D305G003BA2
4	.260 x .536	TE-1052.1	30D405G003BA2
5	.260 x .536	TE-1052.2	30D505G003BA2
6	.260 x .536	TE-1052.3	30D605G003BA2
8	.260 x .536	TE-1052.5	30D805G003BA2
10	.260 x .536	TE-1053	30D106G003BA2
15	.260 x .536	TE-1053.5	30D156G003BA2
20	.260 x .536	TE-1054	30D206G003BA2
25	.260 x .536	TE-1055	30D256G003BA2
30	.260 x .536	TE-1055.5	30D306G003BA2
35	.260 x .723	TE-1056*	30D356G003BB2
40	.260 x .723	TE-1057*	30D406G003BB2
50	.260 x .723	TE-1058	30D506G003BB2
65	.260 x .723	TE-1058.5	30D656G003BB2
75	.322 x .723	TE-1059	30D756G003CB2
100	.322 x .723	TE-1059.5	30D107G003CB2
110	.322 x .723	TE-1060*	30D117G003CB2
130	.322 x .723	TE-1060.1	30D137G003CB2
150	.322 x .848	TE-1061	30D157G003CC2
200	.322 x .848	TE-1064	30D207G003CC2
250	.385 x .848	TE-1065	30D257G003DC2
300	.385 x .848	TE-1066	30D307G003DC2
400	.385 x .973	TE-1067	30D407G003DD2
500	.385 x 1.286	TE-1068	30D507G003DF2
600	.385 x 1.286	TE-1069.1	30D607G003DF2
800	.385 x 1.536	TE-1070.1	30D807G003DH2
6 WVDC			
1	.260 x .536	TE-1080	30D105G006BA2
2	.260 x .536	TE-1081	30D205G006BA2
3	.260 x .536	TE-1082	30D305G006BA2
4	.260 x .536	TE-1083	30D405G006BA2
5	.260 x .536	TE-1084	30D505G006BA2
6	.260 x .536	TE-1085	30D605G006BA2
8	.260 x .536	TE-1086	30D805G006BA2
10	.260 x .536	TE-1087	30D106G006BA2
15	.260 x .536	TE-1089	30D156G006BA2
20	.260 x .536	TE-1090	30D206G006BA2
25	.260 x .723	TE-1091	30D256G006BB2
30	.260 x .723	TE-1092*	30D306G006BB2
35	.260 x .723	TE-1093	30D356G006BB2
50	.322 x .723	TE-1100	30D506G006CB2
75	.322 x .723	TE-1101.5	30D756G006CB2
90	.322 x .723	TE-1101.7	30D906G006CB2
100	.322 x .848	TE-1102	30D107G006CC2
140	.322 x .848	TE-1102.5	30D147G006CC2
150	.385 x .848	TE-1103	30D157G006DC2
200	.385 x .848	TE-1104	30D207G006DC2
250	.385 x .973	TE-1105	30D257G006DD2
300	.385 x 1.286	TE-1106	30D307G006DF2
400	.385 x 1.286	TE-1107	30D407G006DF2
500	.385 x 1.536	TE-1107.5	30D507G006DH2
600	.385 x 1.536	TE-1108.5	30D607G006DH2

*Available until present stock is exhausted

μF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part. No.
12 WVDC			
1	.260 x .536	TE-1120	30D105G012BA2
2	.260 x .536	TE-1121	30D205G012BA2
3	.260 x .536	TE-1122	30D305G012BA2
4	.260 x .536	TE-1123	30D405G012BA2
5	.260 x .536	TE-1127	30D505G012BA2
6	.260 x .536	TE-1127.1	30D605G012BA2
8	.260 x .536	TE-1127.3	30D805G012BA2
10	.260 x .536	TE-1128	30D106G012BA2
15	.260 x .536	TE-1129	30D156G012BA2
20	.260 x .723	TE-1130	30D206G012BB2
25	.260 x .723	TE-1131	30D256G012BB2
30	.260 x .723	TE-1132.1	30D306G012BB2
35	.322 x .723	TE-1132*	30D356G012CB2
50	.322 x .723	TE-1133	30D506G012CB2
60	.322 x .723	TE-1133.5	30D606G012CB2
75	.322 x .848	TE-1134	30D756G012CC2
90	.385 x .723	TE-1134.5	30D906G012DB2
100	.322 x .848	TE-1135	30D107G012CC2
140	.385 x .848	TE-1135.5	30D147G012DC2
150	.385 x .973	TE-1136	30D157G012DD2
190	.385 x .973	TE-1136.5	30D197G012DD2
200	.385 x 1.286	TE-1137	30D207G012DF2
250	.385 x 1.286	TE-1138	30D257G012DF2
290	.385 x 1.286	TE-1139	30D297G012DF2
390	.385 x 1.536	TE-1140	30D397G012DH2
16 WVDC			
1	.260 x .536	TE-1148	30D105G016BA2
2	.260 x .536	TE-1149	30D205G016BA2
3	.260 x .536	TE-1150	30D305G016BA2
4	.260 x .536	TE-1151	30D405G016BA2
5	.260 x .536	TE-1152	30D505G016BA2
6	.260 x .536	TE-1153	30D605G016BA2
8	.260 x .536	TE-1154	30D805G016BA2
10	.260 x .536	TE-1155	30D106G016BA2
15	.260 x .723	TE-1156	30D156G016BB2
20	.260 x .723	TE-1157	30D206G016BB2
25	.260 x .723	TE-1157.1	30D256G016BB2
30	.322 x .723	TE-1158	30D306G016CB2
35	.322 x .723	TE-1159	30D356G016CB2
50	.322 x .723	TE-1160	30D506G016CB2
75	.322 x .848	TE-1161	30D756G016CC2
85	.385 x .723	TE-1161.5	30D856G016DB2
90	.322 x .848	TE-1161.7	30D906G016CC2
100	.385 x .848	TE-1162	30D107G016DC2
130	.385 x .848	TE-1162.5	30D137G016DC2
150	.385 x .973	TE-1163	30D157G016DD2
180	.385 x .973	TE-1163.7	30D187G016DD2
200	.385 x 1.286	TE-1164	30D207G016DF2
250	.385 x 1.286	TE-1164.5	30D257G016DF2
300	.385 x 1.536	TE-1165.5	30D307G016DH2
350	.385 x 1.536	TE-1166	30D357G016DH2

μF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part. No.
25 WVDC			
1	.260 x .536	TE-1200	30D105G025BA2
2	.260 x .536	TE-1201	30D205G025BA2
3	.260 x .536	TE-1201.1	30D305G025BA2
4	.260 x .536	TE-1201.2	30D405G025BA2
5	.260 x .536	TE-1202	30D505G025BA2
6	.260 x .536	TE-1203	30D605G025BA2
8	.260 x .536	TE-1203.5	30D805G025BA2
10	.260 x .723	TE-1204	30D106G025BB2
15	.260 x .723	TE-1205	30D156G025BB2
20	.322 x .723	TE-1206	30D206G025CB2
25	.322 x .723	TE-1207	30D256G025CB2
30	.322 x .723	TE-1207.5	30D306G025CB2
35	.322 x .723	TE-1208	30D356G025CB2
50	.322 x .848	TE-1209	30D506G025CC2
75	.385 x .848	TE-1210	30D756G025DC2
100	.385 x .973	TE-1211	30D107G025DD2
150	.385 x 1.286	TE-1212	30D157G025DF2
200	.385 x 1.536	TE-1213	30D207G025DH2
50 WVDC			
1	.260 x .536	TE-1300	30D105G050BA2
2	.260 x .536	TE-1301	30D205G050BA2
3	.260 x .536	TE-1302	30D305G050BA2
4	.260 x .536	TE-1302.1	30D405G050BA2
5	.260 x .723	TE-1303	30D505G050BB2
6	.260 x .723	TE-1303.1	30D605G050BB2
8	.260 x .723	TE-1303.3	30D805G050BB2
10	.322 x .723	TE-1304	30D106G050CB2
15	.322 x .723	TE-1304.2	30D156G050CB2
20	.322 x .848	TE-1305	30D206G050CC2
25	.322 x .848	TE-1305.5	30D256G050CC2
35	.385 x .848	TE-1306	30D356G050DC2
50	.385 x .973	TE-1307	30D506G050DD2
75	.385 x 1.286	TE-1308	30D756G050DF2
100	.385 x 1.536	TE-1309	30D107G050DH2
100 WVDC			
1	.260 x .536	TE-1400	30D105G100BA2
2	.260 x .723	TE-1401	30D205G100BB2
3	.322 x .723	TE-1402	30D305G100CB2
4	.322 x .723	TE-1403	30D405G100CB2
5	.322 x .848	TE-1404	30D505G100CC2
6	.322 x .848	TE-1405	30D605G100CC2
8	.385 x .848	TE-1406	30D805G100DC2
10	.385 x .848	TE-1407	30D106G100DC2
15	.385 x .973	TE-1408	30D156G100DD2
20	.385 x 1.286	TE-1409	30D206G100DF2
25	.385 x 1.536	TE-1410	30D256F100DH2
30	.385 x 1.536	TE-1411	30D306F100DH2
150 WVDC			
1	.260 x .536	TE-1500	30D105G150BA2
2	.260 x .723	TE-1501	30D205G150BB2
3	.322 x .723	TE-1502	30D305G150CB2
4	.322 x .848	TE-1503	30D405G150CC2
5	.322 x .848	TE-1504	30D505G150CC2
6	.385 x .848	TE-1505	30D605G150DC2
7	.385 x .848	TE-1505.5	30D705F150DC2
8	.385 x .848	TE-1506	30D805G150DC2
10	.385 x .973	TE-1507	30D106G150DD2
15	.385 x 1.286	TE-1508.1	30D156F150DF2
20	.385 x 1.536	TE-1509	30D206F150DH2

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conomy Line "Made-in-America" Quality t Import Prices

xcellent Low Temperature Operation

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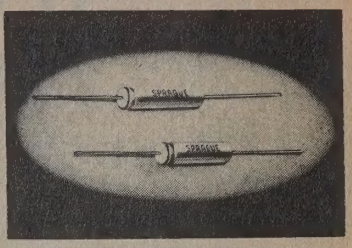
Vithstand High Surge Voltages

ong Shelf Life, Extremely Low Leakage Current

- High Capacitance in Ultra-Small Physical Size
- Furnished with Plastic Outer Insulating Sleeves
- Packaged 5 to A Handy Rigid Kleer-Pak Plastic Box
- For Complete Technical Data, See Latest Issue of Sprague Engineering Bulletin 3149



WVDC	D. x L.	Cat. No.
3	.260 x .536	500D105G003BA7
3	.260 x .536	500D205G003BA7
3	.260 x .536	500D305G003BA7
3	.260 x .536	500D405G003BA7
3	.260 x .536	500D505G003BA7
3	.260 x .536	500D605G003BA7
3	.260 x .536	500D805G003BA7
3	.260 x .536	500D106G003BA7
3	.260 x .536	500D156G003BA7
3	.260 x .536	500D206G003BA7
3	.260 x .536	500D256G003BA7
3	.260 x .536	500D306G003BA7
3	.260 x .723	500D506G003BB7
3	.260 x .723	500D656G003BB7
3	.322 x .723	500D756G003CB7
3	.322 x .723	500D107G003CB7
3	.322 x .723	500D137G003CB7
3	.322 x .848	500D157G003CC7
3	.322 x .848	500D207G003CC7
3	.385 x .848	500D257G003DC7
3	.385 x .848	500D307G003DC7
3	.385 x .973	500D407G003DD7
3	.385 x 1.286	500D507G003DF7
3	.385 x 1.286	500D607G003DF7
3	.385 x 1.536	500D807G003DH7
6	.260 x .536	500D105G006BA7
6	.260 x .536	500D205G006BA7
6	.260 x .536	500D305G006BA7
6	.260 x .536	500D405G006BA7
6	.260 x .536	500D505G006BA7
6	.260 x .536	500D605G006BA7
6	.260 x .536	500D805G006BA7
6	.260 x .536	500D106G006BA7
6	.260 x .536	500D156G006BA7
6	.260 x .536	500D206G006BA7
6	.260 x .723	500D256G006BB7
6	.260 x .723	500D356G006BB7
6	.260 x .723	500D506G006BB7
6	.322 x .723	500D756G006CB7
6	.322 x .723	500D906G006CB7
6	.322 x .848	500D107G006CC7
6	.322 x .848	500D147G006CC7
6	.385 x .848	500D157G006DC7
6	.385 x .848	500D207G006DC7
6	.385 x .973	500D257G006DD7
6	.385 x .973	500D307G006DD7
6	.385 x 1.286	500D407G006DF7
6	.385 x 1.536	500D507G006DH7
6	.385 x 1.536	500D607G006DH7
12	.260 x .536	500D105G012BA7

µF	WVDC	D. x L.	Cat. No.
2	12	.260 x .536	500D205G012BA7
3	12	.260 x .536	500D305G012BA7
4	12	.260 x .536	500D405G012BA7
5	12	.260 x .536	500D505G012BA7
6	12	.260 x .536	500D605G012BA7
8	12	.260 x .536	500D805G012BA7
10	12	.260 x .536	500D106G012BA7
15	12	.260 x .536	500D156G012BA7
20	12	.260 x .723	500D206G012BB7
25	12	.260 x .723	500D256G012BB7
30	12	.260 x .723	500D306G012BB7
50	12	.322 x .723	500D506G012CB7
60	12	.322 x .723	500D606G012CB7
75	12	.322 x .848	500D756G012CC7
90	12	.385 x .723	500D906G012DB7
100	12	.322 x .848	500D107G012CC7
140	12	.385 x .848	500D147G012DC7
150	12	.385 x .973	500D157G012DD7
190	12	.385 x .973	500D197G012DD7
200	12	.385 x 1.286	500D207G012DF7
250	12	.385 x 1.286	500D257G012DF7
290	12	.385 x 1.286	500D297G012DF7
390	12	.385 x 1.536	500D397G012DH7
1	16	.260 x .536	500D105G016BA7
2	16	.260 x .536	500D205G016BA7
3	16	.260 x .536	500D305G016BA7
4	16	.260 x .536	500D405G016BA7
5	16	.260 x .536	500D505G016BA7
6	16	.260 x .536	500D605G016BA7
8	16	.260 x .536	500D805G016BA7
10	16	.260 x .536	500D106G016BA7
15	16	.260 x .723	500D156G016BB7
20	16	.260 x .723	500D206G016BB7
25	16	.260 x .723	500D256G016BB7
30	16	.322 x .723	500D306G016CB7
35	16	.322 x .723	500D356G016CB7
50	16	.322 x .723	500D506G016CB7
75	16	.322 x .848	500D756G016CC7
85	16	.385 x .723	500D856G016DB7
90	16	.322 x .848	500D906G016CC7
100	16	.385 x .848	500D107G016DC7
130	16	.385 x .848	500D137G016DC7
150	16	.385 x .973	500D157G016DD7
180	16	.385 x .973	500D187G016DD7
200	16	.385 x 1.286	500D207G016DF7
250	16	.385 x 1.286	500D257G016DF7
300	16	.385 x 1.536	500D307G016DH7
350	16	.385 x 1.536	500D357G016DH7
1	25	.260 x .536	500D105G025BA7
2	25	.260 x .536	500D205G025BA7
3	25	.260 x .536	500D305G025BA7

µF	WVDC	D. x L.	Cat. No.
4	25	.260 x .536	500D405G025BA7
5	25	.260 x .536	500D505G025BA7
6	25	.260 x .536	500D605G025BA7
8	25	.260 x .536	500D805G025BA7
10	25	.260 x .723	500D106G025BB7
15	25	.260 x .723	500D156G025BB7
25	25	.322 x .723	500D256G025CB7
30	25	.322 x .723	500D306G025CB7
35	25	.322 x .723	500D356G025CB7
50	25	.322 x .848	500D506G025CC7
75	25	.385 x .848	500D756G025DC7
100	25	.385 x .973	500D107G025DD7
150	25	.385 x 1.286	500D157G025DF7
200	25	.385 x 1.536	500D207G025DH7
1	50	.260 x .536	500D105G050BA7
2	50	.260 x .536	500D205G050BA7
3	50	.260 x .536	500D305G050BA7
4	50	.260 x .536	500D405G050BA7
5	50	.260 x .723	500D505G050BB7
6	50	.260 x .723	500D605G050BB7
8	50	.260 x .723	500D805G050BB7
10	50	.322 x .723	500D106G050CB7
15	50	.322 x .723	500D156G050CB7
20	50	.322 x .848	500D206G050CC7
25	50	.322 x .848	500D256G050CC7
35	50	.385 x .848	500D356G050DC7
50	50	.385 x .973	500D506G050DD7
75	50	.385 x 1.286	500D756G050DF7
100	50	.385 x 1.536	500D107G050DH7
1	100	.260 x .536	500D105F100BA7
2	100	.260 x .723	500D205F100BB7
3	100	.322 x .723	500D305F100CB7
4	100	.322 x .723	500D405F100CB7
5	100	.322 x .848	500D505F100CC7
6	100	.322 x .848	500D605F100CC7
8	100	.385 x .848	500D805F100DC7
10	100	.385 x .848	500D106F100DC7
15	100	.385 x .848	500D156F100DD7
20	100	.385 x 1.286	500D206F100DF7
25	100	.385 x 1.536	500D256F100DH7
30	100	.385 x 1.536	500D306F100DH7
1	150	.260 x .536	500D105F150BA7
2	150	.260 x .723	500D205F150BB7
3	150	.322 x .723	500D305F150CB7
4	150	.322 x .848	500D405F150CC7
5	150	.322 x .848	500D505F150CC7
6	150	.385 x .848	500D605F150DC7
7	150	.385 x .848	500D705F150DC7
8	150	.385 x .848	500D805F150DC7
10	150	.385 x .973	500D106F150DD7
15	150	.385 x 1.286	500D156F150DF7
20	150	.385 x 1.536	500D206F150DH7

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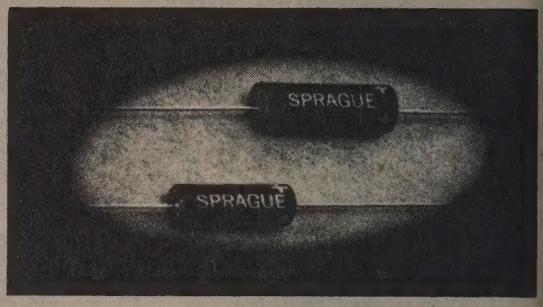
SPRAGUE CAPACITORS

TL TRANSI-LYTIC® ELECTROLYTICS

- Miniature Low-Cost Capacitors For Use in Transistorized Pocket and "Personal Portable" Radios
- Special Low-Leakage Current Construction to Meet The Requirements of Transistor Circuitry
- Sturdy Plastic Case With Thermo-setting Resin End Seals
- Excellent Resistance to High Humidity Conditions
- Polarity Stamped on Each Unit



µF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part No.
3 WVDC			
1	.180 x .570	TL-1050	31D1
2	.180 x .570	TL-1051	31D2
3	.180 x .570	TL-1052	31D3
4	.180 x .570	TL-1052.1	31D4
5	.180 x .570	TL-1052.2	31D5
6	.180 x .570	TL-1052.3	31D6
8	.180 x .570	TL-1052.5	31D7
10	.180 x .570	TL-1053	31D8
15	.180 x .570	TL-1053.5	31D9
20	.210 x .700	TL-1054	31D10
25	.210 x .700	TL-1055	31D11
35	.250 x .820	TL-1056	31D12
50	.250 x .820	TL-1058	31D13
75	.250 x .820	TL-1059	31D14
100	.312 x .820	TL-1059.5	31D15
150	.375 x 1.070	TL-1061	31D16
200	.375 x 1.070	TL-1064	31D17
250	.375 x 1.070	TL-1065	31D18
300	.375 x 1.070	TL-1066	31D93
400	.437 x 1.070	TL-1067	31D94
500	.437 x 1.070	TL-1068	31D95
1000	.625 x 1.700	TL-1069	31D96
1500	.625 x 1.700	TL-1070	31D97
2000	.625 x 1.700	TL-1071	31D98
2500	.750 x 2.100	TL-1072	31D99
3000	.750 x 2.100	TL-1073	31D100
4000	.750 x 2.100	TL-1074	31D101
6 WVDC			
1	.180 x .570	TL-1080	31D19
2	.180 x .570	TL-1081	31D20
3	.180 x .570	TL-1082	31D21
4	.180 x .570	TL-1083	31D22
5	.180 x .570	TL-1084	31D23
6	.180 x .570	TL-1085	31D24
8	.180 x .570	TL-1086	31D25
10	.180 x .570	TL-1087	31D26
15	.210 x .700	TL-1089	31D27
20	.210 x .700	TL-1090	31D28
25	.250 x .820	TL-1091	31D29
35	.250 x .820	TL-1093	31D30
50	.250 x .820	TL-1100	31D31
75	.312 x .820	TL-1101.5	31D32
100	.375 x 1.070	TL-1102	31D33
150	.375 x 1.070	TL-1103	31D34
175	.375 x 1.070	TL-1103.5	31D35
200	.375 x 1.070	TL-1104	31D102
250	.437 x 1.070	TL-1105	31D103
300	.437 x 1.070	TL-1106	31D104
400	.500 x 1.440	TL-1107	31D105
500	.500 x 1.440	TL-1108	31D106
1000	.625 x 1.700	TL-1111	31D107
1500	.625 x 1.700	TL-1112	31D108
2000	.750 x 2.100	TL-1113	31D109
2500	.750 x 2.100	TL-1114	31D110
3000	.875 x 2.320	TL-1115	31D111
4000	.875 x 2.320	TL-1116	31D112
12 WVDC			
1	.180 x .570	TL-1120	31D36
2	.180 x .570	TL-1121	31D37
3	.180 x .570	TL-1122	31D38
4	.180 x .570	TL-1123	31D39
5	.180 x .570	TL-1127	31D40
6	.180 x .570	TL-1127.1	31D41
8	.210 x .700	TL-1127.3	31D42
10	.210 x .700	TL-1128	31D43
15	.210 x .700	TL-1129	31D44
20	.250 x .820	TL-1130	31D45
25	.250 x .820	TL-1131	31D46
35	.250 x .820	TL-1132	31D47
50	.312 x .820	TL-1133	31D48
75	.375 x 1.070	TL-1134	31D49
100	.375 x 1.070	TL-1135	31D50
150	.375 x 1.070	TL-1136	31D113
200	.437 x 1.070	TL-1137	31D114
250	.500 x 1.440	TL-1138	31D115
300	.500 x 1.440	TL-1139	31D116
400	.500 x 1.440	TL-1140	31D181
500	.625 x 1.700	TL-1141	31D117
1000	.625 x 1.700	TL-1142	31D118
1500	.750 x 1.440	TL-1143	31D119
2000	.750 x 2.100	TL-1144	31D120
2500	.875 x 2.320	TL-1145	31D121
3000	.875 x 2.320	TL-1146	31D122
4000	1.000 x 2.320	TL-1147	31D123
16 WVDC			
1	.180 x .570	TL-1148	31D51
2	.180 x .570	TL-1149	31D52
3	.180 x .570	TL-1150	31D53
4	.180 x .570	TL-1151	31D54
5	.180 x .570	TL-1152	31D55
6	.180 x .570	TL-1153	31D56
8	.210 x .700	TL-1154	31D57
10	.210 x .700	TL-1155	31D58
15	.250 x .820	TL-1156	31D59
20	.250 x .820	TL-1157	31D60
25	.250 x .820	TL-1157.1	31D61
35	.312 x .820	TL-1159	31D62
50	.312 x .820	TL-1160	31D63
75	.375 x 1.070	TL-1161	31D64
100	.375 x 1.070	TL-1162	31D65
150	.375 x 1.070	TL-1163	31D124
200	.437 x 1.070	TL-1164	31D125
250	.500 x 1.440	TL-1164.5	31D126
300	.500 x 1.440	TL-1165	31D127
400	.625 x 1.700	TL-1165.5	31D128
500	.625 x 1.700	TL-1166	31D129
1000	.750 x 1.700	TL-1166.5	31D130
1500	.750 x 1.700	TL-1167	31D131
2000	.875 x 2.320	TL-1167.5	31D132
2500	.875 x 2.320	TL-1168	31D133
3000	1.000 x 2.320	TL-1168.5	31D134
20 WVDC			
1	.180 x .570	TL-1170	31D66
2	.180 x .570	TL-1171	31D67
3	.180 x .570	TL-1172	31D68
4	.180 x .570	TL-1173	31D69
5	.180 x .570	TL-1174	31D70
6	.210 x .700	TL-1175	31D71
8	.210 x .700	TL-1176	31D72
10	.210 x .700	TL-1177	31D73
15	.250 x .820	TL-1178	31D74
20	.250 x .820	TL-1179	31D75
25	.250 x .820	TL-1180	31D76
35	.312 x .820	TL-1181	31D77
50	.312 x .820	TL-1182	31D78
75	.375 x 1.070	TL-1183	31D79
100	.375 x 1.070	TL-1184	31D135
150	.437 x 1.070	TL-1185	31D136
200	.500 x 1.440	TL-1186	31D137
250	.500 x 1.440	TL-1187	31D138
300	.500 x 1.440	TL-1188	31D139
400	.625 x 1.700	TL-1189	31D140
500	.625 x 1.700	TL-1190	31D141
1000	.750 x 1.700	TL-1191	31D142
1500	.750 x 2.100	TL-1192	31D143
2000	.875 x 2.320	TL-1193	31D144
2500	1.000 x 2.320	TL-1194	31D145
3000	1.000 x 2.320	TL-1195	31D146
25 WVDC			
1	.180 x .570	TL-1200	31D80
2	.180 x .570	TL-1201	31D81
3	.180 x .570	TL-1201.1	31D82
4	.180 x .570	TL-1201.2	31D83
5	.210 x .700	TL-1202	31D84
6	.210 x .700	TL-1203	31D85
8	.210 x .700	TL-1203.5	31D86
10	.250 x .820	TL-1204	31D87
15	.250 x .820	TL-1205	31D88
20	.250 x .820	TL-1206	31D89
25	.312 x .820	TL-1207	31D90
35	.375 x 1.070	TL-1208	31D91
50	.375 x 1.070	TL-1209	31D92
75	.375 x 1.070	TL-1210	31D147
100	.437 x 1.070	TL-1211	31D148
150	.500 x 1.440	TL-1212	31D149
200	.500 x 1.440	TL-1213	31D150
250	.625 x 1.700	TL-1214	31D151
300	.625 x 1.700	TL-1215	31D152
400	.625 x 1.700	TL-1216	31D153
500	.625 x 1.700	TL-1217	31D154
1000	.750 x 2.100	TL-1218	31D155
1500	.875 x 2.320	TL-1219	31D156
2000	1.000 x 2.320	TL-1220	31D157
50 WVDC			
1	.180 x .570	TL-1300	31D158
2	.180 x .570	TL-1301	31D159
3	.210 x .700	TL-1302	31D160
4	.210 x .700	TL-1302.1	31D161
5	.250 x .820	TL-1303	31D162
6	.250 x .820	TL-1303.1	31D163
8	.250 x .820	TL-1303.3	31D164
10	.250 x .820	TL-1304	31D165
15	.312 x .820	TL-1304.2	31D166
20	.375 x 1.070	TL-1305	31D167
25	.375 x 1.070	TL-1305.1	31D168
35	.375 x 1.070	TL-1306	31D169
50	.437 x 1.070	TL-1307	31D170
75	.500 x 1.440	TL-1308	31D171
100	.500 x 1.440	TL-1309	31D172
150	.625 x 1.700	TL-1310	31D173
175	.625 x 1.700	TL-1311	31D174
200	.625 x 1.700	TL-1312	31D175
250	.625 x 1.700	TL-1313	31D176
300	.750 x 1.195	TL-1314	31D177
400	.750 x 2.100	TL-1315	31D178
500	.750 x 2.100	TL-1316	31D179
1000	1.000 x 2.320	TL-1317	31D180

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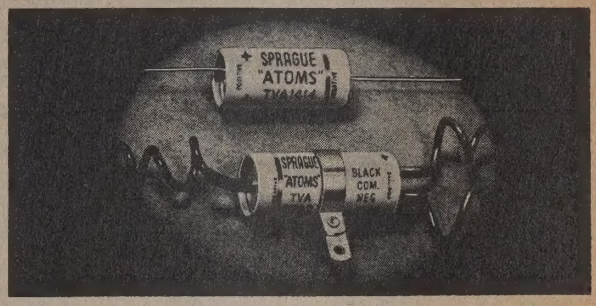
SPRAGUE CAPACITORS

ATOM® ELECTROLYTICS

- The Smallest Dependable Standard Tubular—Designed for 85C (185F) Operation in Voltages to 475 WVDC
- Whether For AC-DC Sets, Auto Radios, Home Radio-phono Combinations, Or TV Sets, The SPRAGUE Line Will Handle All Your Replacement Requirements—No Dual Inventory Problems
- Have Low Leakage And Long Shelf Life
- Will Withstand High Temperatures, High Ripple Currents, High Surge Voltages
- Metal Case Construction with Outer Kraftboard Insulating Case Except as Noted by † Sign



SINGLE UNITS

µF	WVDC	D. x L.	Cat. No.
50	3	13/32 x 1 19/32	TVA-1907*
50	6	11/32 x 3/4	TVA-1100*
00	6	11/32 x 7/8	TVA-1101*
50	6	13/32 x 1	TVA-1102*
00	6	13/32 x 1 19/32	TVA-1103*
00	6	3/4 x 1 13/16	TVA-1104
00	6	13/16 x 2 1/16	TVA-1105
00	6	13/16 x 2 1/16	TVA-1106
8	10NP	9/16 x 1 5/16	TVAN-1112
50	10NP	9/16 x 1 9/16	TVAN-1117
60	10NP	11/16 x 1 13/16	TVAN-1120
00	12	11/32 x 7/8	TVA-1130*
50	12	13/32 x 1 5/16	TVA-1131*
00	12	15/32 x 1 19/32	TVA-1132*
00	12	13/16 x 1 13/16	TVA-1133
00	15	9/16 x 1 5/16	TVA-1160*
50	15	13/32 x 1 5/16	TVA-1161*
00	15	15/32 x 1 19/32	TVA-1162*
00	15	13/16 x 1 13/16	TVA-1163
00	15	13/16 x 2 13/16	★TVA-1170
00	15	1 11/16 x 4 1/16	TVA-1175
2	25	9/32 x 19/32	TVA-1201*
2	25NP	9/16 x 1 9/16	TVAN-1202
4	25NP	15/16 x 1 5/16	★TVAN-1202.2
5	25	9/32 x 19/32	TVA-1203*
5	25NP	9/16 x 1 5/16	TVAN-1203.1
8	25NP	11/16 x 1 13/16	★TVAN-1203.8
10	25	9/32 x 3/4	TVA-1204*
10	25NP	9/16 x 1 5/16	TVAN-1204.1
20	25	11/32 x 3/4	TVA-1204.5*
25	25	11/32 x 3/4	TVA-1205*
50	25	11/32 x 7/8	TVA-1206*
50	25NP	11/16 x 1 13/16	TVAN-1206.1
00	25	13/32 x 1	TVA-1207*
00	25NP	1 1/16 x 1 5/16	TVAN-1207.1
50	25	13/16 x 1 5/16	TVA-1207.5*
250	25	15/32 x 1 5/16	TVA-1208*
500	25	3/4 x 1 13/16	TVA-1209
000	25	13/16 x 2 5/16	TVA-1211
3	30NP	11/16 x 1 5/16	TVAN-1215
20	30NP	11/16 x 1 9/16	TVAN-1220
10	40NP	9/16 x 1 13/16	TVAN-1230
1	50	9/32 x 19/32	TVA-1300*
2	50	9/32 x 19/32	TVA-1301*
2	50NP	11/16 x 1 13/16	TVAN-1301.1
3	50	9/16 x 19/32	TVA-1302*
3	50NP	9/16 x 1 9/16	TVAN-1302.1
4	50NP	11/16 x 1 7/16	★TVAN-1302.5
5	50	9/32 x 3/4	TVA-1303*
5	50NP	11/16 x 2 5/16	TVAN-1303.1
10	50	11/32 x 3/4	TVA-1304*
10	50NP	11/16 x 2 1/16	TVAN-1304.1
15	50	11/32 x 3/4	TVA-1305*
20	50	11/32 x 7/8	TVA-1305.5*
25	50	11/32 x 7/8	TVA-1306*
50	50	13/32 x 1	TVA-1308*
50	50NP	13/16 x 2 1/16	TVAN-1308.1
100	50	13/32 x 1 19/32	TVA-1310*
150	50	15/32 x 1 19/32	TVA-1311*
250	50	13/16 x 1 9/16	TVA-1312
500	50	1 x 1 15/16	TVA-1313
10	90	13/32 x 7/8	TVA-1320
10	100NP	11/16 x 1 13/16	TVAN-1333
1	150	9/32 x 19/32	TVA-1400*
4	150	9/32 x 19/32	TVA-1402*
4	150NP	9/16 x 1 13/16	TVAN-1402.1
5	150	11/32 x 7/8	TVA-1403*
8	150	7/16 x 1 7/8	TVA-1405*
10	150	9/16 x 1 5/16	TVA-1406*
10	150NP	13/16 x 1 9/16	TVAN-1406.1
12	150	9/16 x 1 5/16	TVA-1407*
16	150	9/16 x 1 9/16	TVA-1409*
20	150	5/8 x 1 9/16	TVA-1410*
25	150	3/4 x 1 9/16	TVA-1411*
30	150	13/16 x 1 5/16	TVA-1412*
40	150	13/16 x 1 9/16	TVA-1413
50	150	13/16 x 1 13/16	TVA-1414
60	150	15/16 x 1 9/16	TVA-1415
80	150	15/16 x 1 9/16	TVA-1418
100	150	15/16 x 2 1/16	TVA-1420
150	150	1 1/16 x 2 1/16	TVA-1422
200	150	1 1/16 x 2 9/16	TVA-1423
250	150	1 1/4 x 4 3/8	★TVA-1424†
300	150	1 1/16 x 3 5/16	TVA-1425
80	175	1 1/16 x 2 1/16	TVA-1430
2	200NP	9/16 x 1 9/16	TVAN-1435.1
60	200NP	1 11/16 x 2 13/16	TVAN-1440
100	200	1 1/16 x 2 5/16	TVA-1445
150	200	1 3/8 x 3 3/8	★TVA-1447†
200	200	1 3/8 x 3 3/8	★TVA-1480†
1	250	9/16 x 1 5/16	TVA-1500*
4	250	9/16 x 1 5/16	TVA-1501
8	250	9/16 x 1 9/16	TVA-1503*
10	250	5/8 x 1 9/16	TVA-1504*
12	250	5/8 x 1 9/16	TVA-1505*
16	250	13/16 x 1 5/16	TVA-1507
20	250	13/16 x 1 5/16	TVA-1508
30	250	13/16 x 1 13/16	TVA-1510
40	250	13/16 x 2 1/16	TVA-1511
50	250	15/16 x 1 13/16	TVA-1512
60	250	1 x 1 13/16	TVA-1513
70	250	1 1/16 x 2 1/16	TVA-1515
100	250	1 1/16 x 2 5/16	TVA-1522
200	250	1 3/8 x 3 1/8	TVA-1528†
100	300	1 1/16 x 3 1/16	TVA-1573
140	300	1 3/8 x 3 3/8	★TVA-1575†
150	300	1 3/8 x 3 7/8	TVA-1576†
200	300	1 3/8 x 4 5/8	TVA-1578†
4	350	1 1/16 x 1 5/16	TVA-1601*
5	350NP	13/16 x 1 13/16	TVAN-1602
8	350	1 1/16 x 1 9/16	TVA-1603*
10	350	3/4 x 1 9/16	TVA-1604
10	350NP	1 1/16 x 2 1/16	TVAN-1604.1
12	350	13/16 x 1 9/16	TVA-1605
16	350	13/16 x 1 9/16	TVA-1607
20	350	13/16 x 1 13/16	TVA-1608
30	350	13/16 x 2 1/16	TVA-1610
40	350	15/16 x 2 1/16	TVA-1611
60	350	1 1/16 x 2 1/16	TVA-1613
100	350	1 1/16 x 2 13/16	TVA-1620
150	350	1 3/8 x 3 3/8	TVA-1622†
200	350	1 3/8 x 4 1/8	TVA-1624†
10	400NP	1 1/16 x 2 1/16	★TVAN-1650
20	400NP	1 1/16 x 2 5/16	TVAN-1652
1	450	9/16 x 1 5/16	TVA-1700*
2	450	9/16 x 1 5/16	TVA-1701*
4	450	11/16 x 1 5/16	TVA-1702*
5	450	11/16 x 1 9/16	TVA-1703
8	450	3/4 x 1 9/16	TVA-1704
10	450	13/16 x 1 9/16	TVA-1705
12	450	13/16 x 1 9/16	TVA-1706
16	450	13/16 x 1 13/16	TVA-1708
20	450	15/16 x 1 13/16	TVA-1709
30	450	15/16 x 2 1/16	TVA-1711
40	450	1 1/16 x 2 1/16	TVA-1712
50	450	1 1/16 x 2 9/16	TVA-1713
60	450	1 1/16 x 2 13/16	TVA-1714
80	450	1 1/16 x 3 13/16	TVA-1716
100	450	1 1/16 x 4 1/16	TVA-1718
150	450	1 3/8 x 3 3/8	TVA-1719†
200	450	1 1/2 x 4 5/8	TVA-1720†
10	475	13/16 x 2 1/16	TVA-1802
20	475	15/16 x 2 5/16	TVA-1804
8	500	15/16 x 1 13/16	TVA-1902
10	500	15/16 x 1 13/16	TVA-1903
12	500	15/16 x 2 1/16	TVA-1904
16	500	1 x 2 5/16	TVA-1905
20	500	1 1/16 x 2 5/16	TVA-1906
40	500	1 1/16 x 3 1/16	TVA-1908
8	600	1 1/16 x 3 3/16	TVA-1962
10	600	1 1/16 x 3 3/16	TVA-1963
16	600	1 1/16 x 4 3/16	TVA-1965
20	600	1 1/16 x 4 3/16	TVA-1966

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Mounting straps attached †Kraftboard construction. *Heat shrinkable plastic sleeve.

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United Technical Publications

SPRAGUE CAPACITORS

ATOM® ELECTROLYTICS, continued

μF	WVDC	Diam. x Length	Cat. No.
DUAL UNITS (COMMON NEGATIVE)—3 LEADS			
10-10	25-25	15/16 x 1 9/16	★TVA-2210
10-10	50-50	1 3/16 x 1 3/16	★TVA-2315
8-8	150-150	1 3/16 x 1 5/16	★TVA-2415
16-16	150-150	1 3/16 x 1 9/16	★TVA-2420
30-20	150-150	1 5/16 x 1 9/16	★TVA-2421
20-12	150-150	1 3/16 x 1 9/16	★TVA-2425
20-20	150-150	1 3/16 x 1 9/16	★TVA-2428
30-30	150-150	1 5/16 x 1 9/16	★TVA-2434
40-20	150-150	1 5/16 x 1 9/16	★TVA-2438
40-30	150-150	1 5/16 x 1 13/16	★TVA-2442
40-40	150-150	1 5/16 x 2 1/16	★TVA-2445
50-30	150-150	1 5/16 x 2 1/16	★TVA-2450
50-50	150-150	1 5/16 x 2 1/16	★TVA-2453
60-20	150-150	1 5/16 x 2 1/16	★TVA-2455
60-40	150-150	1 5/16 x 2 13/16	★TVA-2456
60-60	150-150	1 5/16 x 2 13/16	★TVA-2457
80-20	150-150	1 5/16 x 2 9/16	★TVA-2459
80-30	150-150	1 5/16 x 2 9/16	★TVA-2460
80-40	150-150	1 5/16 x 2 9/16	★TVA-2461
80-50	150-150	1 5/16 x 2 9/16	★TVA-2462
100-50	150-150	1 1/16 x 2 13/16	★TVA-2463
100-100	150-150	1 3/8 x 3 3/8	TVA-2464†
150-150	150-150	1 3/8 x 4 1/8	TVA-2466†
200-5	150-150	1 1/16 x 3 9/16	★TVA-2467
200-100	150-150	1 3/8 x 5 1/8	★TVA-2470†
250-50	150-150	1 3/8 x 3 1/8	TVA-2473†
250-200	150-150	1 3/8 x 4 1/8	TVA-2475†
60-125	200-50	1 1/8 x 2 7/8	★TVA-2484†
60-1	200-200	1 5/16 x 2 5/16	★TVA-2493
200-5	200-200	1 1/16 x 3 13/16	★TVA-2498
20-20	250-250	1 5/16 x 1 13/16	★TVA-2515
40-10	250-250	1 5/16 x 2 1/16	★TVA-2520
80-10	250-250	1 1/16 x 2 5/16	★TVA-2525
120-80	250-250	1 3/8 x 3 7/8	TVA-2535†
140-100	300-50	1 3/8 x 3 3/8	TVA-2563†
200-100	300-50	1 3/8 x 4 5/8	★TVA-2565†
60-32	300-300	1 1/16 x 3 1/16	★TVA-2585
150-100	300-300	1 3/8 x 4 7/8	TVA-2590†
140-5	350-350	1 1/4 x 3 7/8	★TVA-2640†
10-100	450-50	1 x 2 3/8	★TVA-2663†
80-100	450-50	1 3/8 x 4 3/4	TVA-2711†
8-8	450-450	1 5/16 x 1 13/16	★TVA-2720
10-10	450-450	1 5/16 x 2 1/16	★TVA-2722
16-8	450-450	1 5/16 x 2 5/16	★TVA-2725
20-20	450-450	1 5/16 x 2 13/16	TVA-2730
30-30	450-450	1 1/16 x 3 5/16	★TVA-2735
40-40	450-450	1 1/16 x 4 1/16	★TVA-2740
50-30	450-450	1 1/16 x 4 1/16	★TVA-2743
80-30	450-450	1 1/16 x 4 9/16	★TVA-2750
20-100	475-50	1 1/16 x 2 9/16	★TVA-2765
DUAL UNITS (SEPARATE SECTIONS)—4 LEADS			
20-20	150-150	1 x 2 3/8	★TU-220†
40-20	150-150	1 1/16 x 2 3/8	★TU-420†
16-16	250-250	1 x 2 7/8	TU-216†
8-8	450-450	1 1/16 x 3 3/8	★TU-88†
16-16	450-450	1 3/8 x 3 1/8	★TU-1616†
120-120	150-150	1 1/16 x 4 1/16	TU-2120
TRIPLE UNITS			
40-40-250	150-150-10	1 x 2 1/16	★TVA-3406
20-20-20	150-150-25	15/16 x 1 9/16	★TVA-3415
30-30-100	150-150-12	1 5/16 x 2 1/16	★TVA-3419
60-40-250	150-150-15	1 1/16 x 2 1/16	★TVA-3421.5
40-20-20	150-150-25	1 5/16 x 1 13/16	★TVA-3422.9
40-30-20	150-150-25	1 5/16 x 2 1/16	★TVA-3423
40-40-20	150-150-25	1 5/16 x 2 5/16	★TVA-3425
40-40-100	150-150-25	1 5/16 x 2 9/16	★TVA-3427
50-30-20	150-150-25	1 5/16 x 2 5/16	★TVA-3430
50-30-100	150-150-25	1 5/16 x 2 9/16	★TVA-3432
50-30-200	150-150-25	1 1/16 x 2 5/16	★TVA-3433
50-50-20	150-150-25	1 x 2 5/16	★TVA-3436
80-20-100	150-150-25	1 1/4 x 2 7/8	TVA-3437†
80-40-20	150-150-25	1 1/16 x 2 1/16	★TVA-3437.1
250-120-50	150-150-25	1 3/8 x 3 7/8	★TVA-3437.6†
20-20-20	150-150-150	1 5/16 x 1 13/16	★TVA-3440
30-25-20	150-150-150	1 5/16 x 2 5/16	★TVA-3442
30-30-20	150-150-150	1 5/16 x 2 5/16	★TVA-3443
30-30-30	150-150-150	1 5/16 x 2 5/16	★TVA-3444
40-20-10	150-150-150	1 5/16 x 2 5/16	★TVA-3445
40-20-20	150-150-150	1 5/16 x 2 1/16	★TVA-3446
40-30-20	150-150-150	1 5/16 x 2 5/16	★TVA-3448
40-30-30	150-150-150	1 1/16 x 2 5/16	★TVA-3449
40-40-20	150-150-150	1 5/16 x 2 5/16	★TVA-3450
40-40-40	150-150-150	1 1/16 x 2 5/16	★TVA-3451
50-30-20	150-150-150	1 1/16 x 2 5/16	★TVA-3453
50-50-50	150-150-150	1 1/16 x 3 1/16	★TVA-3453.5
60-40-40	150-150-150	1 1/16 x 2 9/16	★TVA-3454.3
80-40-20	150-150-150	1 1/16 x 3 1/16	★TVA-3455
80-40-40	150-150-150	1 1/16 x 3 1/16	★TVA-3456
80-50-50	150-150-150	1 1/16 x 3 5/16	★TVA-3456.5
80-60-20	150-150-150	1 1/4 x 4 5/8	★TVA-3457
100-30-10	150-150-150	1 1/16 x 2 13/16	★TVA-3458
150-150-150	150-150-150	1 1/4 x 4 5/8	★TVA-3459†
250-200-10	150-150-150	1 3/8 x 3 3/8	★TVA-3460†
40-20-100	250-250-50	1 3/8 x 2 3/8	TVA-3485†
200-150-50	250-250-150	1 1/2 x 4 1/8	TVA-3493†
80-10-100	300-250-50	1 3/8 x 3 3/8	★TVA-3556†
80-40-100	300-300-50	1 3/8 x 3 7/8	TVA-3558†
100-60-100	300-300-50	1 3/8 x 3 7/8	TVA-3559†
120-40-100	300-300-50	1 3/8 x 4 3/8	TVA-3560†
120-40-10	300-300-250	1 3/8 x 3 3/8	TVA-3563†
60-60-60	300-300-300	1 3/8 x 3 7/8	TVA-3567†
80-40-40	300-300-300	1 3/8 x 3 5/8	TVA-3569†
100-40-40	350-300-250	1 3/8 x 4 5/8	★TVA-3590†
100-20-50	350-350-50	1 3/8 x 3 7/8	★TVA-3605†
140-5-200	350-350-200	1 1/2 x 5 1/8	TVA-3620†
60-60-60	350-350-250	1 3/8 x 3 7/8	TVA-3626†
60-60-4	350-350-350	1 3/8 x 3 3/8	TVA-3630†
10-80-60	400-250-150	1 3/8 x 3 3/8	TVA-3650†
100-75-70	400-400-25	1 1/2 x 4 3/8	TVA-3667†
5-80-40	450-400-400	1 3/8 x 4 1/8	★TVA-3712†
12-12-20	450-450-25	1 1/16 x 2 1/16	★TVA-3716
20-20-20	450-450-25	1 1/16 x 2 9/16	★TVA-3718
40-40-20	450-450-25	1 1/16 x 4 1/16	★TVA-3720
40-20-20	450-450-450	1 1/16 x 4 1/16	★TVA-3740
60-60-60	450-450-450	1 1/2 x 4 3/8	TVA-3748†
QUADRUPLE UNITS			
40-20-20-100	150-150-150-25	1 1/4 x 2 7/8	TVA-4517†
40-40-20-20	150-150-150-25	1 1/8 x 2 5/8	★TVA-4520†
50-50-30-25	150-150-150-25	1 3/8 x 2 7/8	TVA-4525†
60-40-40-20	150-150-150-25	1 1/4 x 2 5/8	TVA-4529†
40-40-40-25	250-250-150-25	1 1/16 x 3 1/16	★TVA-4560
100-40-40-25	300-300-50-25	1 1/2 x 3 1/8	TVA-4567†
140-5-200-30	350-300-200-150	1 1/2 x 4 7/8	TVA-4576†
150-100-20-100	300-300-300-25	1 3/8 x 4 5/8	TVA-4580†
100-80-20-50	300-300-300-50	1 3/8 x 4 3/8	TVA-4580.5†
80-40-10-40	300-300-300-250	1 3/8 x 4 1/8	TVA-4582†
120-40-40-10	300-300-300-250	1 3/8 x 4 5/8	TVA-4584†
140-5-200-30	350-300-200-200	1 1/2 x 5 1/8	TVA-4607†
80-60-40-20	350-350-300-150	1 1/2 x 4 5/8	TVA-4618†
80-10-40-100	400-400-300-50	1 3/8 x 4 1/8	★TVA-4659†
10-80-40-100	450-300-250-50	1 3/8 x 4 1/8	★TVA-4705†
20-120-40-100	450-300-250-50	1 3/8 x 4 3/8	★TVA-4706†
10-80-40-40	450-300-250-250	1 3/8 x 4 3/8	★TVA-4708†
10-20-20-10	450-300-300-300	1 3/8 x 3 1/8	TVA-4712†
20-20-20-10	450-450-450-450	1 3/8 x 3 5/8	TVA-4742†
40-20-20-10	450-450-450-450	1 3/8 x 4 3/8	TVA-4748†
40-40-20-20	450-450-450-450	1 1/2 x 4 1/4	TVA-4750†
QUINTUPLE UNITS			
40-20-20-20-50	300-300-300-300-50	1 3/8 x 3 1/8	TVA-5100†

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★Mounting straps attached (†)cardboard construction.

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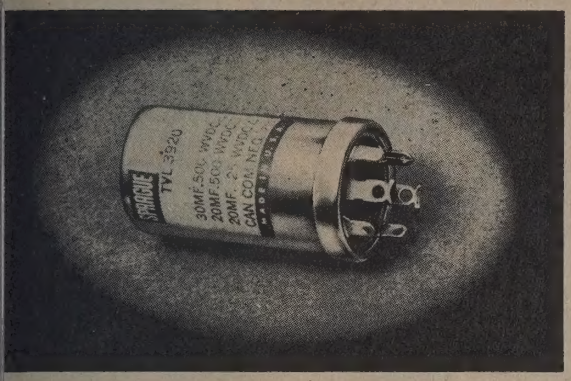
SPRAGUE CAPACITORS

TVL TWIST-LOK® ELECTROLYTICS



- Hermetically Sealed in Aluminum Cans for Long Life and Dependable Performance in TV, Radio and Hi-Fi
- Designed for 85C (185F) Operation
- Stand Up Under Extremely High Temperatures Often Encountered in TV, Hi-Fi, and Auto Radio Cabinets
- Withstand High Surge Voltages
- Ideal for High Ripple Selenium Rectifier Circuits
- Can Be Safely Mounted "Above Ground" Using Phenolic Mounting Plate and Insulating Tube
- Easy to Mount—Unit Locks Firmly in Place with a Twist of the Tabs

The Twist-lok Capacitors listed here include only popular ratings for industrial applications. For the complete line of more than 2400 Twist-lok Capacitors, please refer to Distributor's Guide to Replacement Electroyltic Capacitors, C-1005.

F	WVDC	Dia. x Length	Cat. No.
		SINGLE UNITS	
00	6	1⅜ x 2	TVL-1115
00	10	1⅜ x 2½	TVL-1140
25	15	¾ x 2	TVL-1160
00	15	1 x 1½	TVL-1165
00	15	1 x 2	TVL-1167
00	15	1⅜ x 2	TVL-1168
00	15	1⅜ x 2	TVL-1170
00	15	1⅜ x 3½	TVL-1173
00	25	¾ x 2	TVL-1215
00	25	1 x 1½	TVL-1220
00	25	1⅜ x 2	TVL-1230
25	50	¾ x 2	TVL-1308
00	50	¾ x 2	TVL-1317
50	50	¾ x 2½	TVL-1320
50	50	1 x 2	TVL-1324
00	50	1⅜ x 2	TVL-1330
00	50	1⅜ x 2½	TVL-1338
00	50	1⅜ x 3	TVL-1341
30	150	1 x 2	TVL-1408
50	150	1 x 1½	TVL-1415
80	150	1 x 2½	TVL-1420
00	150	1 x 1½	TVL-1423
20	150	1 x 2	TVL-1425
20	150	1⅜ x 2½	TVL-1426
40	150	1 x 2½	TVL-1428
50	150	1 x 2	TVL-1429
50	150	1⅜ x 2	TVL-1430
200	150	1⅜ x 2	TVL-1431
200	150	1 x 3	TVL-1431.1
300	150	1⅜ x 2	TVL-1434
500	150	1⅜ x 4	TVL-1439.5
125	200	1 x 2½	TVL-1470
150	200	1 x 2⅞	TVL-1471
160	200	1⅜ x 2	TVL-1473
200	200	1⅜ x 2	TVL-1475
500	200	1⅜ x 4	TVL-1490
20	250	1 x 2	TVL-1509
40	250	1 x 2	TVL-1519
100	250	1 x 3	TVL-1535
150	250	1 x 3	TVL-1539
150	250	1⅜ x 2½	TVL-1540
160	250	1⅜ x 2½	†TVL-1541

†Furnished with a plastic outer insulating sleeve.

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μF	WVDC	Dia. x Length	Cat. No.
160	250	1 x 4	TVL-1541.1
200	250	1⅜ x 2½	TVL-1547
60	300	1 x 3	TVL-1570
80	300	1 x 2½	TVL-1573
100	300	1 x 2½	TVL-1578
125	300	1⅜ x 2½	TVL-1580
150	300	1⅜ x 3½	TVL-1584
250	300	1⅜ x 4	TVL-1590
30	350	1 x 2	TVL-1617
40	350	1 x 2	TVL-1621
50	350	1 x 2	TVL-1622
60	350	1 x 2½	TVL-1624
80	350	1⅜ x 2	TVL-1630
125	350	1⅜ x 2½	TVL-1638
150	350	1⅜ x 2½	TVL-1642
250	350	1⅜ x 4½	TVL-1644.2
320	350	1⅜ x 4	TVL-1645
4	450	1 x 2	TVL-1702
10	450	1 x 1½	TVL-1705
15	450	1 x 1½	TVL-1709
20	450	1 x 2	TVL-1714
25	450	1 x 2	TVL-1716
30	450	1 x 2½	TVL-1720
40	450	1 x 2½	TVL-1725
50	450	1 x 2½	TVL-1728
60	450	1⅜ x 2½	TVL-1730
80	450	1⅜ x 2½	TVL-1735
100	450	1⅜ x 2½	TVL-1750
125	450	1⅜ x 3½	TVL-1760
150	450	1⅜ x 4	TVL-1770
40	475	1⅜ x 2	TVL-1820
10	500	1 x 1½	TVL-1940
20	500	1 x 2½	TVL-1943
30	500	1 x 2½	TVL-1947
40	500	1 x 2½	TVL-1950
80	500	1⅜ x 2½	TVL-1958
90	500	1⅜ x 3	TVL-1960
15	525	1⅜ x 3	TVL-1980

		DUAL UNITS	
500-500	15-15	1 x 2	TVL-2157
1000-1000	15-15	1 x 2½	TVL-2160
1000-1000	15-15	1⅜ x 2½	TVL-2161
500-100	16-16	1 x 2	TVL-2175

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SPRAGUE CAPACITORS

TVL TWIST-LOK® ELECTROLYTICS, continued

μF	WVDC	Dia. x Length	Cat. No.
800-200	16-16	1 x 2	TVL-2179.5
1000-500	16-16	1 x 2½	TVL-2185
500-200	16-16	1 x 2	TVL-2190
500-500	25-25	1⅜ x 2	TVL-2233
1000-500	25-25	1⅜ x 2	TVL-2239
100-25	50-50	1 x 2	TVL-2324
100-100	50-50	1 x 1½	TVL-2326
150-100	150-50	1 x 3	TVL-2413
20-20	150-150	1 x 1½	TVL-2415
30-30	150-150	1 x 1½	TVL-2422
40-20	150-150	1 x 1½	TVL-2425
40-30	150-150	1 x 2	TVL-2427
40-40	150-150	1 x 1½	TVL-2428
50-30	150-150	1 x 1½	TVL-2432
50-50	150-150	1 x 1½	TVL-2435
60-20	150-150	1 x 2	TVL-2436
60-60	150-150	1 x 3½	TVL-2438
70-30	150-150	1 x 2	TVL-2439
75-75	150-150	1 x 2	TVL-2440
80-40	150-150	1⅜ x 2	TVL-2442
80-50	150-150	1 x 2½	TVL-2442.1
80-60	150-150	1 x 3	TVL-2442.2
80-80	150-150	1⅜ x 2	TVL-2442.4
125-100	150-150	1⅜ x 2½	TVL-2443.3
150-80	150-150	1⅜ x 2½	TVL-2443.5
200-5	150-150	1⅜ x 3	TVL-2444
200-125	150-150	1⅜ x 3½	TVL-2445
200-150	150-150	1⅜ x 4	TVL-2446
200-200	150-150	1⅜ x 2½	TVL-2447
60-60	200-200	1 x 1¾	TVL-2461
60-60	200-200	1⅜ x 2	TVL-2462
100-100	200-200	1⅜ x 3	TVL-2464
200-5	200-200	1⅜ x 2	TVL-2470
20-20	250-250	1 x 1½	TVL-2515
40-40	250-250	1 x 3	TVL-2520
150-150	250-250	1⅜ x 2½	TVL-2535
200-200	250-250	1⅜ x 4	TVL-2538
100-100	300-200	1 x 3½	TVL-2562
40-30	300-300	1 x 3	TVL-2574
40-40	300-300	1⅜ x 2	TVL-2575
80-80	300-300	1⅜ x 2½	TVL-2585
120-20	300-300	1⅜ x 3½	TVL-2588
120-40	300-300	1⅜ x 3½	TVL-2589
150-100	300-300	1⅜ x 3	TVL-2591
200-80	300-300	1⅜ x 4½	TVL-2593
15-15	350-350	1 x 2	TVL-2625
20-20	350-350	1 x 2	TVL-2626
30-30	350-350	1 x 2½	TVL-2628
50-30	350-350	1⅜ x 2	TVL-2630
80-20	350-350	1⅜ x 2½	TVL-2633
80-40	350-350	1⅜ x 2½	TVL-2634
80-80	350-350	1⅜ x 2½	TVL-2635
90-40	350-350	1⅜ x 3	TVL-2637
100-60	350-350	1⅜ x 3½	TVL-2639
100-100	350-350	1⅜ x 3	TVL-2641
160-10	350-350	1⅜ x 3	TVL-2643
200-200	350-350	1⅜ x 5	TVL-2645.5
100-30	400-50	1⅜ x 2½	TVL-2655
80-80	400-200	1⅜ x 3½	TVL-2656
80-60	400-400	1⅜ x 3	TVL-2677
80-80	400-400	1⅜ x 4	TVL-2678
120-40	400-400	1⅜ x 4	TVL-2679
40-100	450-50	1 x 3½	TVL-2709
80-100	450-50	1⅜ x 3	TVL-2711
20-50	450-250	1 x 3	TVL-2722
20-160	450-250	1⅜ x 4	TVL-2722.7
80-200	450-250	1⅜ x 4½	TVL-2722.8
40-10	450-300	1 x 3	TVL-2724
80-2	450-350	1⅜ x 2½	TVL-2738.5
10-10	450-450	1 x 2	TVL-2750
15-15	450-450	1 x 2½	TVL-2753
20-10	450-450	1 x 2½	TVL-2754
20-20	450-450	1 x 2½	TVL-2755
30-10	450-450	1 x 2½	TVL-2757
30-30	450-450	1⅜ x 2	TVL-2759
40-20	450-450	1⅜ x 2	TVL-2762
40-40	450-450	1⅜ x 2½	TVL-2764
50-50	450-450	1⅜ x 3	TVL-2767
60-20	450-450	1⅜ x 3	TVL-2768
60-40	450-450	1⅜ x 3½	TVL-2770
60-60	450-450	1⅜ x 3	TVL-2772
80-10	450-450	1⅜ x 3	TVL-2776
80-20	450-450	1⅜ x 2½	TVL-2776.5
80-30	450-450	1⅜ x 4	TVL-2777
80-40	450-450	1⅜ x 3½	TVL-2778
80-50	450-450	1⅜ x 4	TVL-2778.5
80-80	450-450	1⅜ x 3½	TVL-2779
100-40	450-450	1⅜ x 3½	TVL-2780
30-100	475-50	1 x 3½	TVL-2803
80-160	475-250	1⅜ x 4½	TVL-2808
20-100	475-400	1⅜ x 3	TVL-2813
15-15	475-475	1 x 2½	TVL-2820
30-10	475-475	1 x 3	TVL-2824
80-50	475-475	1⅜ x 3½	TVL-2851
10-10	500-500	1 x 2½	TVL-2933
20-20	500-500	1⅜ x 2	TVL-2935
30-30	500-500	1⅜ x 2½	TVL-2937
40-40	500-500	1⅜ x 2½	TVL-2940
60-40	500-500	1⅜ x 3½	TVL-2944

TRIPLE UNITS

850-400-4	16-16-11.5	1 x 2½	TVL-3021
1000-500-4	16-16-11.5	1⅜ x 2	TVL-3021.5
400-100-100	16-16-16	1 x 2	TVL-3025
500-500-100	16-16-16	1 x 2	TVL-3026.8
1000-500-20	16-16-16	1⅜ x 2	TVL-3027
20-20-20	25-25-25	1 x 1½	TVL-3210
40-20-20	150-150-25	1 x 2	TVL-3422
40-40-20	150-150-25	1 x 1½	TVL-3426
40-40-200	150-150-25	1 x 2	TVL-3426.3
40-40-250	150-150-25	1 x 2½	TVL-3426.4
50-30-20	150-150-25	1 x 2½	TVL-3426.7
50-50-20	150-150-25	1 x 3	TVL-3430
60-40-200	150-150-25	1 x 3	TVL-3431.3
80-40-20	150-150-25	1 x 2½	TVL-3432
20-20-20	150-150-150	1 x 1½	TVL-3433
30-30-10	150-150-150	1 x 2	TVL-3435
40-20-10	150-150-150	1 x 2	TVL-3436
40-20-20	150-150-150	1 x 1½	TVL-3437
40-30-20	150-150-150	1 x 2	TVL-3438
40-40-40	150-150-150	1 x 1¾	TVL-3440
50-40-10	150-150-150	1 x 2½	TVL-3441
50-50-50	150-150-150	1 x 3	TVL-3442
60-40-20	150-150-150	1 x 1¾	TVL-3443
70-40-40	150-150-150	1 x 3	TVL-3443.4
80-40-20	150-150-150	1 x 2	TVL-3444
80-80-80	150-150-150	1⅜ x 3	TVL-3446
100-30-10	150-150-150	1 x 2½	TVL-3447
120-80-40	150-150-150	1⅜ x 3½	TVL-3448
120-120-40	150-150-150	1⅜ x 2	TVL-3448.2
200-100-60	150-150-150	1⅜ x 2½	TVL-3450
200-150-150	150-150-150	1⅜ x 4	TVL-3452
250-200-10	150-150-150	1⅜ x 4	TVL-3453
60-200-140	200-150-150	1⅜ x 3	TVL-3461.4
60-5-20	200-200-50	1 x 2½	TVL-3467
80-10-20	200-200-50	1 x 3	TVL-3471
250-200-10	200-200-200	1⅜ x 4	TVL-3490

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SPRAGUE CAPACITORS

VL TWIST-LOK® ELECTROLYTICS, continued

μF	WVDC	Dia. x Length	Cat. No.
15-15-20	250-250-25	1 x 2	TVL-3510
20-20-20	250-250-250	1 x 2	TVL-3532
40-20-20	250-250-250	1 x 2	TVL-3540
80-80-60	250-250-250	1⅜ x 3	TVL-3545
00-60-20	300-150-50	1⅜ x 3	TVL-3560.1
00-200-60	300-150-150	1⅜ x 4	TVL-3560.5
00-200-30	300-150-150	1⅜ x 4	TVL-3560.6
20-100-100	300-200-50	1 x 3½	TVL-3560.10
00-60-20	300-250-250	1⅜ x 3	TVL-3562
00-60-20	300-250-250	1⅜ x 4	TVL-3563
00-10-60	300-300-50	1⅜ x 2½	TVL-3574
25-20-20	300-300-50	1⅜ x 3½	TVL-3574.3
25-60-40	300-300-50	1⅜ x 4	TVL-3574.6
40-100-60	300-300-50	1⅜ x 3½	TVL-3574.7
40-100-100	300-300-50	1⅜ x 3½	TVL-3574.8
10-10-10	300-300-300	1 x 2	TVL-3580
80-40-40	300-300-300	1⅜ x 2½	TVL-3583
20-50-40	300-300-300	1⅜ x 3	TVL-3585
40-100-20	300-300-300	1⅜ x 4½	TVL-3585.5
60-60-20	300-300-300	1⅜ x 4	TVL-3587
40-200-100	350-150-150	1⅜ x 3½	TVL-3608.3
60-200-30	350-150-150	1⅜ x 3	TVL-3608.6
25-5-100	350-200-75	1⅜ x 3	TVL-3610
30-30-20	350-300-25	1 x 3	TVL-3620
15-10-20	350-350-25	1 x 2	TVL-3630
20-10-20	350-350-25	1 x 2	TVL-3634
20-20-20	350-350-25	1 x 2	TVL-3635
30-20-20	350-350-25	1 x 2	TVL-3636
00-10-50	350-350-25	1⅜ x 4	TVL-3636.8
20-5-150	350-350-50	1 x 3	TVL-3638.1
80-40-100	350-350-200	1⅜ x 3	TVL-3639
00-60-20	350-350-200	1⅜ x 3	TVL-3639.2
20-10-10	350-350-350	1 x 2	TVL-3639.6
30-20-10	350-350-350	1 x 2½	TVL-3639.8
60-40-20	350-350-350	1⅜ x 3½	TVL-3640
60-50-50	350-350-350	1⅜ x 2½	TVL-3641
80-60-60	350-350-350	1⅜ x 3½	TVL-3642
90-40-20	350-350-350	1⅜ x 2½	TVL-3645
40-140-20	350-350-350	1⅜ x 4	TVL-3648
80-80-100	400-200-50	1⅜ x 3	TVL-3652
40-200-60	400-200-200	1⅜ x 4	TVL-3653
10-4-20	400-350-25	1 x 2	TVL-3668
00-10-20	400-350-50	1⅜ x 3½	TVL-3672
20-20-20	400-400-25	1 x 2½	TVL-3678
80-40-60	400-400-50	1⅜ x 3½	TVL-3682.8
80-40-100	400-400-50	1⅜ x 3	TVL-3683
80-40-150	400-400-50	1⅜ x 4	TVL-3684
100-10-20	400-400-50	1⅜ x 2	TVL-3685
20-20-10	400-400-350	1 x 3	TVL-3687.4
60-30-20	400-400-350	1⅜ x 3	TVL-3688
80-20-10	400-400-350	1⅜ x 3	TVL-3689
100-10-80	400-400-350	1⅜ x 3½	TVL-3689.3
100-30-20	400-400-400	1⅜ x 4	TVL-3697
100-40-10	400-400-400	1⅜ x 4	TVL-3698
10-100-200	450-200-25	1 x 3½	TVL-3708.2
10-100-100	450-200-50	1 x 3½	TVL-3708.4
50-160-50	450-250-50	1⅜ x 4	TVL-3711.2
20-160-40	450-250-150	1⅜ x 3	TVL-3711.3
10-40-10	450-300-150	1⅜ x 2	TVL-3713.7
50-10-160	450-350-250	1⅜ x 4½	TVL-3719.4
60-80-20	450-400-250	1⅜ x 4	TVL-3720
80-50-100	450-350-200	1⅜ x 4	TVL-3723.7
40-80-40	450-350-350	1⅜ x 3½	TVL-3724.7
10-10-20	450-450-25	1 x 2	TVL-3731
15-15-40	450-450-25	1 x 2½	TVL-3734
20-10-20	450-450-25	1 x 3	TVL-3735
20-20-20	450-450-25	1 x 3	TVL-3739
40-40-20	450-450-25	1⅜ x 2½	TVL-3744
40-40-40	450-450-25	1⅜ x 2½	TVL-3744.2
80-40-100	450-450-25	1⅜ x 4	TVL-3746
20-10-50	450-450-50	1 x 3	TVL-3751
30-10-150	450-450-50	1⅜ x 2	TVL-3752
80-65-50	450-450-50	1⅜ x 3½	TVL-3754.9
40-40-100	450-450-50	1⅜ x 3	TVL-3755
60-40-75	450-450-50	1⅜ x 4	TVL-3756
80-20-100	450-450-50	1⅜ x 3½	TVL-3757
40-40-40	450-450-150	1⅜ x 3	TVL-3758
40-10-100	450-450-200	1⅜ x 3½	TVL-3762
40-40-100	450-450-200	1⅜ x 3	TVL-3764
40-40-80	450-450-350	1⅜ x 4	TVL-3774
50-20-4	450-450-350	1 x 3½	TVL-3774.6
80-80-10	450-450-400	1⅜ x 4	TVL-3775.7
10-10-10	450-450-450	1 x 2	TVL-3776
15-15-10	450-450-450	1 x 3	TVL-3778
15-15-15	450-450-450	1 x 2½	TVL-3778.2
20-10-10	450-450-450	1 x 3	TVL-3779
20-20-20	450-450-450	1⅜ x 2	TVL-3780
30-10-10	450-450-450	1⅜ x 2	TVL-3780.5
30-20-20	450-450-450	1⅜ x 3	TVL-3781
30-30-30	450-450-450	1⅜ x 3	TVL-3782
40-10-10	450-450-450	1⅜ x 2½	TVL-3783
40-30-20	450-450-450	1⅜ x 2½	TVL-3784
40-40-10	450-450-450	1⅜ x 2½	TVL-3785
40-40-20	450-450-450	1⅜ x 2½	TVL-3786
40-40-40	450-450-450	1⅜ x 3	TVL-3787
50-20-4	450-450-450	1 x 3½	TVL-3787.5
50-40-30	450-450-450	1⅜ x 3	TVL-3788
60-20-20	450-450-450	1⅜ x 3	TVL-3789
60-30-10	450-450-450	1⅜ x 3	TVL-3790
60-40-20	450-450-450	1⅜ x 3	TVL-3791
80-40-20	450-450-450	1⅜ x 3	TVL-3793
80-50-30	450-450-450	1⅜ x 4	TVL-3793.3
40-80-10	475-300-300	1⅜ x 3½	TVL-3806
10-100-25	475-350-25	1⅜ x 3	TVL-3806.4
10-4-100	475-350-50	1 x 2	TVL-3806.6
20-10-5	475-350-150	1 x 2½	TVL-3806.8
40-80-10	475-450-450	1⅜ x 4	TVL-3816
50-40-40	475-475-25	1⅜ x 3½	TVL-3816.11
20-10-100	475-475-50	1⅜ x 2	TVL-3817
20-10-100	475-475-400	1⅜ x 3½	TVL-3819
30-30-20	475-475-475	1⅜ x 3	TVL-3840
40-20-20	475-475-475	1⅜ x 3	TVL-3842
40-30-10	475-475-475	1⅜ x 3	TVL-3842.6
40-30-30	475-475-475	1⅜ x 4	TVL-3843
20-10-100	500-500-50	1 x 4	TVL-3928
40-40-100	500-500-200	1⅜ x 4	TVL-3935
10-10-10	500-500-500	1 x 2½	TVL-3952
30-20-20	500-500-500	1⅜ x 3	TVL-3956
40-40-10	500-500-500	1⅜ x 3½	TVL-3965

QUADRUPLE UNITS

50-40-160-40	150-150-25-25	1⅜ x 2	TVL-4410.7
60-40-20-200	150-150-150-10	1⅜ x 2	TVL-4414
40-40-30-20	150-150-150-25	1⅜ x 2	TVL-4420
40-40-40-20	150-150-150-25	1⅜ x 2	TVL-4421
80-40-40-20	150-150-150-25	1⅜ x 2	TVL-4431
80-40-40-40	150-150-150-25	1⅜ x 2½	TVL-4432
80-40-40-100	150-150-150-25	1⅜ x 2	TVL-4434
250-200-10-25	150-150-150-50	1⅜ x 3	TVL-4440
200-200-100-10	150-150-150-75	1⅜ x 2½	TVL-4440.3
40-40-40-30	150-150-150-150	1⅜ x 2	TVL-4441
100-80-60-40	150-150-150-150	1⅜ x 3	TVL-4445
200-200-60-30	150-150-150-150	1⅜ x 4	TVL-4448
200-200-60-30	175-175-175-175	1⅜ x 3½	TVL-4450
100-40-10-100	250-250-250-50	1⅜ x 3½	TVL-4516
10-200-140-30	300-150-150-150	1⅜ x 3½	TVL-4559
10-200-200-30	300-150-150-150	1⅜ x 4	TVL-4559.2
100-60-10-20	300-200-150-50	1⅜ x 3	TVL-4559.5
100-10-200-30	300-300-150-150	1⅜ x 3½	TVL-4561
140-10-200-30	300-300-150-150	1⅜ x 4	TVL-4561.3
60-40-20-50	300-300-300-25	1⅜ x 3½	TVL-4570

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SPRAGUE CAPACITORS

TVL TWIST-LOK® ELECTROLYTICS, continued

μF	WVDC	Dia. x Length	Cat. No.
150-30-30-150	300-300-300-50	1⅜ x 4	TVL-4574
80-20-20-200	300-300-300-150	1⅜ x 3½	TVL-4576
40-20-10-10	300-300-300-300	1⅜ x 2	TVL-4578
40-40-20-10	300-300-300-300	1⅜ x 2	TVL-4579
40-40-30-20	300-300-300-300	1⅜ x 3	TVL-4580
60-40-10-10	300-300-300-300	1⅜ x 2½	TVL-4583
150-100-10-5	300-300-300-300	1⅜ x 4	TVL-4587
140-100-20-20	300-300-300-300	1⅜ x 4½	TVL-4588
150-150-30-30	300-300-300-300	1⅜ x 4½	TVL-4589
200-20-20-20	300-300-300-300	1⅜ x 3½	TVL-4590
10-20-10-50	350-200-200-50	1⅜ x 2	TVL-4603.13
5-100-20-100	350-200-200-25	1⅜ x 2	TVL-4603.15
160-30-30-20	350-300-300-50	1⅜ x 4	TVL-4605.2
140-100-20-20	350-300-300-300	1⅜ x 4	TVL-4605.3
160-60-10-4	350-300-300-300	1⅜ x 3½	TVL-4605.5
40-80-10-10	350-300-300-300	1⅜ x 2½	TVL-4605.6
60-4-100-40	350-350-25-25	1⅜ x 2½	TVL-4607
60-20-80-100	350-350-150-50	1⅜ x 3	TVL-4608
5-20-100-100	350-350-200-50	1⅜ x 2	TVL-4608.12
60-40-60-20	350-350-200-150	1⅜ x 3	TVL-4609
100-60-10-100	350-350-200-150	1⅜ x 4½	TVL-4609.4
100-80-10-20	350-350-300-50	1⅜ x 4	TVL-4610.8
30-10-5-200	350-350-350-25	1⅜ x 2	TVL-4620.3
40-20-20-25	350-350-350-25	1⅜ x 2½	TVL-4621.3
40-40-20-20	350-350-350-25	1⅜ x 2½	TVL-4621.6
40-40-30-10	350-350-350-25	1⅜ x 3	TVL-4622
40-40-40-40	350-350-350-25	1⅜ x 2½	TVL-4622.3
250-20-20-50	350-350-350-25	1⅜ x 4½	TVL-4622.11
90-30-5-100	350-350-350-75	1⅜ x 3½	TVL-4625
60-30-30-150	350-350-350-50	1⅜ x 3	TVL-4630.4
70-40-10-50	350-350-350-50	1⅜ x 3	TVL-4631
100-10-10-20	350-350-350-50	1⅜ x 3	TVL-4632
100-20-10-20	350-350-350-50	1⅜ x 3½	TVL-4633
100-40-30-50	350-350-350-50	1⅜ x 4	TVL-4634
30-20-5-100	350-350-350-200	1⅜ x 3	TVL-4634.6
30-10-5-100	350-350-350-200	1⅜ x 2½	TVL-4634.7
40-20-20-10	350-350-350-350	1⅜ x 2	TVL-4635
40-40-40-40	350-350-350-350	1⅜ x 4	TVL-4635.3
80-60-40-20	350-350-350-350	1⅜ x 3½	TVL-4635.7
90-40-30-30	350-350-350-350	1⅜ x 4	TVL-4635.8
20-10-10-20	400-350-200-25	1⅜ x 2	TVL-4652
40-80-100-100	400-350-200-50	1⅜ x 3½	TVL-4653
40-80-100-25	400-350-200-50	1⅜ x 3½	TVL-4654
40-80-10-100	400-350-350-200	1⅜ x 4	TVL-4661.4
40-100-20-10	400-350-350-350	1⅜ x 4	TVL-4661.6
50-40-100-100	400-400-50-25	1⅜ x 4	TVL-4663.2
80-40-100-20	400-400-50-25	1⅜ x 3	TVL-4663.4
100-10-30-20	400-400-50-50	1⅜ x 2½	TVL-4663.5
50-20-20-25	400-400-350-25	1⅜ x 3	TVL-4665.5
100-10-20-20	400-400-350-50	1⅜ x 3	TVL-4666.2
80-40-10-20	400-400-400-25	1⅜ x 3½	TVL-4669
80-40-30-40	400-400-400-25	1⅜ x 3½	TVL-4670
90-20-10-50	400-400-400-50	1⅜ x 4	TVL-4670.7
80-10-4-100	400-400-400-50	1⅜ x 4	TVL-4670.9
80-40-10-100	400-400-400-200	1⅜ x 4	TVL-4671.2
80-40-30-4	400-400-400-350	1⅜ x 4	TVL-4672
50-40-30-20	400-400-400-400	1⅜ x 4	TVL-4674
80-25-10-10	400-400-400-400	1⅜ x 4	TVL-4680
100-40-10-10	400-400-400-400	1⅜ x 4	TVL-4681
100-80-10-10	400-400-400-400	1⅜ x 4	TVL-4683
100-80-30-10	400-400-400-400	1⅜ x 4½	TVL-4683.8
20-80-20-50	450-200-200-50	1⅜ x 3	TVL-4701
20-160-50-50	450-250-75-50	1⅜ x 4	TVL-4701.3
25-100-10-60	450-300-300-50	1⅜ x 3	TVL-4703.5
10-100-20-20	450-300-300-200	1⅜ x 3	TVL-4704
80-2-100-25	450-350-25-25	1⅜ x 3	TVL-4705.3
40-30-15-50	450-350-300-50	1⅜ x 3	TVL-4705.8
10-140-100-20	450-350-300-300	1⅜ x 4	TVL-4705.9
80-10-40-30	450-400-300-300	1⅜ x 4	TVL-4710.2
20-80-50-100	450-350-350-50	1⅜ x 4	TVL-4711
60-40-20-20	450-400-400-400	1⅜ x 4	TVL-4711.3

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μF	WVDC	Dia. x Length	Cat. No.
20-15-20-20	450-450-25-25	1⅜ x 2	TVL-4712
50-20-4-40	450-450-150-25	1⅜ x 2½	TVL-4712.9
50-40-4-40	450-450-150-25	1⅜ x 2½	TVL-4712.10
35-25-20-100	450-450-200-50	1⅜ x 2½	TVL-4714
80-30-20-50	450-450-250-50	1⅜ x 3½	TVL-4714.2
40-40-100-60	450-450-200-200	1⅜ x 4	TVL-4714.3
30-20-160-40	450-450-250-150	1⅜ x 4½	TVL-4714.4
80-50-100-250	450-450-250-50	1⅜ x 4	TVL-4714.5
80-50-20-50	450-450-250-50	1⅜ x 4	TVL-4714.6
30-20-160-10	450-450-250-250	1⅜ x 4	TVL-4714.10
30-20-4-200	450-450-350-250	1⅜ x 4½	TVL-4716.4
40-40-30-30	450-450-350-350	1⅜ x 4	TVL-4720
10-10-10-20	450-450-450-25	1⅜ x 2	TVL-4723
20-20-20-20	450-450-450-25	1⅜ x 2	TVL-4724.2
40-20-20-20	450-450-450-25	1⅜ x 3	TVL-4731
40-20-20-40	450-450-450-25	1⅜ x 2½	TVL-4732
40-30-10-20	450-450-450-25	1⅜ x 3	TVL-4734
40-40-10-20	450-450-450-25	1⅜ x 3½	TVL-4736
40-40-20-20	450-450-450-25	1⅜ x 3½	TVL-4737
40-40-40-40	450-450-450-25	1⅜ x 3	TVL-4739
60-50-5-20	450-450-450-25	1⅜ x 4	TVL-4739.5
80-40-40-40	450-450-450-25	1⅜ x 4	TVL-4739.6
80-50-10-20	450-450-450-25	1⅜ x 4	TVL-4739.9
40-20-10-100	450-450-450-50	1⅜ x 3½	TVL-4743
40-40-10-25	450-450-450-50	1⅜ x 3	TVL-4745
40-40-10-50	450-450-450-50	1⅜ x 4	TVL-4746
40-40-10-100	450-450-450-100	1⅜ x 3½	TVL-4747
20-30-80-40	450-450-450-150	1⅜ x 4	TVL-4754
40-20-10-100	450-450-450-250	1⅜ x 4	TVL-4757
30-20-10-20	450-450-450-350	1⅜ x 2½	TVL-4757.12
40-10-10-40	450-450-450-350	1⅜ x 3	TVL-4758
5-5-5-5	450-450-450-450	1⅜ x 2	TVL-4759.7
10-10-10-10	450-450-450-450	1⅜ x 2	TVL-4760
20-10-10-10	450-450-450-450	1⅜ x 2	TVL-4761
20-20-20-20	450-450-450-450	1⅜ x 2½	TVL-4763
30-30-20-20	450-450-450-450	1⅜ x 3	TVL-4769.4
35-35-10-5	450-450-450-450	1⅜ x 3	TVL-4771
40-10-10-10	450-450-450-450	1⅜ x 3	TVL-4771.3
40-35-10-10	450-450-450-450	1⅜ x 3	TVL-4771.8
40-40-20-20	450-450-450-450	1⅜ x 2½	TVL-4773
40-40-30-30	450-450-450-450	1⅜ x 4	TVL-4774
40-40-40-40	450-450-450-450	1⅜ x 3½	TVL-4775
60-20-20-20	450-450-450-450	1⅜ x 3	TVL-4778
80-10-10-10	450-450-450-450	1⅜ x 3½	TVL-4783
20-80-20-10	475-300-300-300	1⅜ x 3½	TVL-4801
20-140-20-10	475-300-300-300	1⅜ x 4	TVL-4801.2
10-100-10-100	475-300-300-25	1⅜ x 3½	TVL-4802
10-140-4-100	475-350-350-50	1⅜ x 4	TVL-4803.3
10-130-20-10	475-350-350-350	1⅜ x 3	TVL-4803.4
30-130-10-10	475-350-350-350	1⅜ x 4	TVL-4803.8
10-40-100-10	475-400-50-25	1⅜ x 2½	TVL-4804
10-40-4-100	475-400-350-50	1⅜ x 2½	TVL-4805
10-80-40-100	475-400-400-50	1⅜ x 4	TVL-4805.2
10-60-30-125	475-450-400-50	1⅜ x 4	TVL-4811
10-50-30-30	475-450-450-25	1⅜ x 3	TVL-4813
80-4-4-200	475-450-450-25	1⅜ x 3½	TVL-4813.2
10-40-10-100	475-450-450-50	1⅜ x 2½	TVL-4814
50-18-4-40	475-475-150-25	1⅜ x 2½	TVL-4814.7
20-10-20-100	475-475-450-25	1⅜ x 2½	TVL-4818
100-4-4-200	475-475-475-25	1⅜ x 4	TVL-4818.5
80-4-4-4	475-450-450-450	1⅜ x 3	TVL-4820.3
50-40-4-40	475-475-150-25	1⅜ x 3½	TVL-4820.4
80-80-4-4	475-475-450-450	1⅜ x 4	TVL-4820.5
80-4-4-200	475-475-475-25	1⅜ x 3½	TVL-4823
20-20-10-10	475-475-475-475	1⅜ x 2½	TVL-4832
20-20-20-20	475-475-475-475	1⅜ x 2½	TVL-4834
40-20-10-10	475-475-475-475	1⅜ x 2½	TVL-4840
10-10-4-20	500-300-300-25	1⅜ x 2	TVL-4909
30-10-150-30	500-450-50-50	1⅜ x 3	TVL-4917
10-10-10-10	500-500-500-500	1⅜ x 2	TVL-4940
40-40-8-8	500-500-500-500	1⅜ x 4	TVL-4944

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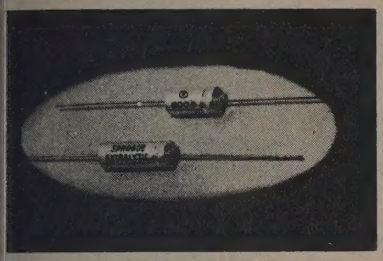
SPRAGUE CAPACITORS



TYPE 600D EXTRALYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

- Extended Operating Temperature Range From —55C to +125C
- Dual Rating Makes Possible Operation At Either 85C or 125C
- Voltage Ratings Up to 250 Volts D-C
- Improved Oxide Systems, Etching Techniques, and End Seals; a New Electrolyte Makes The Type 600D Equivalent to Or Better Than Comparable Foil Tantalum Capacitors.
- Lower Cost and One Third The Weight of Comparable Foil Tantalums

For Complete Technical Data, See Latest Issue of Sprague Engineering Bulletin 3455.

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

µF	Case Code	Catalog Number†
7 WVDC @ 85C, 5 WVDC @ 125C		
120	KD	600D127G007KD4
220	DD	600D227G007DD4
270	DE	600D277G007DE4
390	DG	600D397G007DG4
560	DJ	600D567G007DJ4
820	DL	600D827G007DL4
1000	DX	600D108G007DX4
10 WVDC @ 85C, 7 WVDC @ 125C		
100	KD	600D107G010KD4
180	DE	600D187G010DE4
220	DE	600D227G010DE4
330	DG	600D337G010DG4
470	DJ	600D447G010DJ4
680	DL	600D687G010DL4
820	DX	600D827G010DX4
15 WVDC @ 85C, 10 WVDC @ 125C		
68	KD	600D686G015KD4
82	KD	600D826G015KD4
150	DD	600D157G015DD4
180	DE	600D187G015DE4
270	DG	600D277G015DG4
390	DJ	600D397G015DJ4
560	DL	600D567G015DL4
680	DX	600D687G015DX4
20 WVDC @ 85C, 15 WVDC @ 125C		
68	KD	600D686G020KD4
100	DD	600D107G020DD4
140	DE	600D147G020DE4
220	DG	600D227G020DG4
290	DJ	600D297G020DJ4
440	DL	600D447G020DL4
600	DX	600D607G020DX4
30 WVDC @ 85C, 20 WVDC @ 125C		
33	KD	600D336G030KD4
47	KD	600D476G030KD4
82	DD	600D826G030DD4
100	DE	600D107G030DE4
120	DG	600D127G030DG4
150	DG	600D157G030DG4
220	DJ	600D227G030DJ4
330	DL	600D337G030DL4
390	DX	600D397G030DX4
40 WVDC @ 85C, 30 WVDC @ 125C		
30	KD	600D306G040KD4
50	DD	600D506G040DD4
70	DE	600D706G040DE4
100	DG	600D107G040DG4
140	DJ	600D147G040DJ4
210	DL	600D217G040DL4
280	DX	600D287G040DX4
50 WVDC @ 85C, 40 WVDC @ 125C		
22	KD	600D226G050KD4
33	DD	600D336G050DD4
47	DE	600D476G050DE4
56	DG	600D566G050DG4
68	DG	600D686G050DG4
100	DJ	600D107G050DJ4
150	DL	600D157G050DL4
180	DX	600D187G050DX4
60 WVDC @ 85C, 50 WVDC @ 125C		
17	KD	600D176G060KD4
25	DD	600D256G060DD4
40	DE	600D406G060DE4
60	DG	600D606G060DG4
80	DJ	600D806G060DJ4
120	DL	600D127G060DL4
160	DX	600D167G060DX4
75 WVDC @ 85C, 60 WVDC @ 125C		
12	KD	600D126F075KD4
22	DD	600D226F075DD4
33	DE	600D336F075DE4
47	DG	600D476F075DG4
68	DJ	600D686F075DJ4
100	DL	600D107F075DL4
120	DX	600D127F075DX4
100 WVDC @ 85C, 75 WVDC @ 125C		
8.2	KD	600D825F100KD4
12	DD	600D126F100DD4
15	DE	600D156F100DE4
22	DG	600D226F100DG4
33	DJ	600D336F100DJ4
47	DL	600D476F100DL4
68	DX	600D686F100DX4
150 WVDC @ 85C, 100 WVDC @ 125C		
4.7	KD	600D475F150KD4
5.6	KD	600D565F150KD4
8.2	DD	600D825F150DD4
12	DE	600D126F150DE4
18	DG	600D186F150DG4
22	DJ	600D226F150DJ4
33	DL	600D336F150DL4
56	DX	600D566F150DX4
200 WVDC @ 85C, 150 WVDC @ 125C		
4	KD	600D405F200KD4
6	DD	600D605F200DD4
8	DE	600D805F200DE4
13	DG	600D136F200DG4
17	DJ	600D176F200DJ4
26	DL	600D266F200DL4
39	DX	600D396F200DX4
250 WVDC @ 85C, 200 WVDC @ 125C		
3.3	KD	600D335F250KD4
5.6	DD	600D565F250DD4
6.8	DE	600D685F250DE4
10	DG	600D106F250DG4
12	DJ	600D126F250DJ4
22	DL	600D226F250DL4
27	DX	600D276F250DX4

TABLE OF DIMENSIONS

Case Code	With Outer Insulation D	L
KD	.296	1.000
DD	.390	1.000
DE	.390	1.187
DG	.390	1.437
DJ	.390	1.687
DL	.390	2.249
DX	.390	2.749

Catalog numbers listed are for capacitors with Outer Insulation. For units with bare can substitute "0" for "4" at the end of the catalog number, and subtract /64" from diameter.

SPECIAL PURPOSE ELECTROLYTIC CAPACITORS

- Designed to Filter Low Voltage Power Supplies For Aircraft
- Solder Lug Terminals

µF	D. x L.	VDC	Catalog Number	
1250	1 x 2 3/4	3NP	D16255	(S17377)*
3750	1 3/8 x 3 5/8	3NP	D3759	(S17378)*

*Please use "S" number when ordering.

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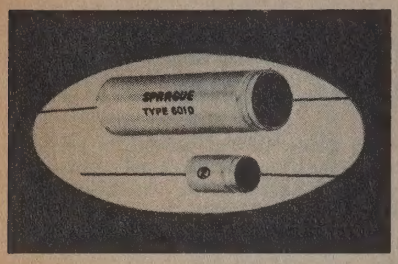
SPRAGUE CAPACITORS



TYPE 601D EXTRALYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

- Supplement Type 600D Extralytic Capacitors With Larger Case Sizes and Higher Capacitance Values
- Pressure-sensitive Safety Vent
- Designed to Operate at a Temperature Range of —55C to +85C
- Unique New Electrolyte, High-gain Etched Foil, Improved Oxide System Provide Long Life With Superior Electrical Characteristics
- For Complete Technical Data, See Latest Issue of Sprague Engineering Bulletin 3456

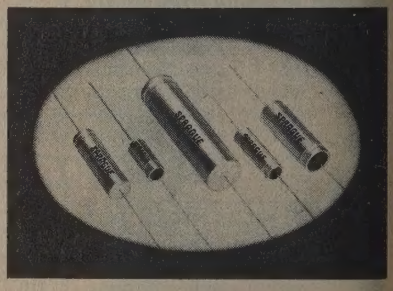
Call Your Sprague Industrial Distributor For Current Quantity Prices

μF	Diam. (±0.031)	Length (±0.062)	Catalog Number*
5 VOLTS D-C WORKING, 7 VDC SURGE			
1500	.687	1.250	601D158G005FJ4
2300	.687	2.250	601D238G005FL4
3500	.687	3.250	601D358G005FS4
5500	.812	3.250	601D558G005GS4
10000	1.062	3.250	601D109G005JS4
13000	1.062	3.750	601D139G005JT4
7.5 VOLTS D-C WORKING, 10 VDC SURGE			
650	.687	1.250	601D657G7R5FE4
1000	.812	1.250	601D108G7R5GE4
2000	.812	1.750	601D208G7R5GJ4
4000	1.062	1.750	601D408G7R5JJ4
6000	1.062	2.250	601D608G7R5JL4
11000	1.062	3.750	601D119G7R5JT4
10 VOLTS D-C WORKING, 15 VDC SURGE			
540	.687	1.250	601D547G010FE4
1000	.687	1.750	601D108G010FJ4
1600	.687	2.250	601D168G010FL4
2500	.812	2.250	601D258G010GL4
5000	1.062	2.250	601D508G010JL4
9100	1.062	3.750	601D918G010JT4
15 VOLTS D-C WORKING, 20 VDC SURGE			
650	.812	1.250	601D657G015GE4
1200	.687	2.250	601D128G015FL4
2500	1.062	1.750	601D258G015JJ4
4200	.937	3.250	601D428G015HS4
6900	1.062	3.750	601D698G015JT4
25 VOLTS D-C WORKING, 40 VDC SURGE			
220	.687	1.250	601D227G025FE4
500	.937	1.250	601D507G025HE4
1000	.812	2.250	601D108G025GL4
2200	.937	3.250	601D228G025HS4
3700	1.062	3.750	601D378G025JT4
30 VOLTS D-C WORKING, 45 VDC SURGE			
190	.687	1.250	601D197G030FE4
310	.812	1.250	601D317G030GE4
580	.687	2.250	601D587G030FL4
1000	.687	3.750	601D108G030FT4
2000	.937	3.250	601D208G030HS4
3300	1.062	3.750	601D338G030JT4
50 VOLTS D-C WORKING, 75 VDC SURGE			
110	.687	1.250	601D117G050FE4
170	.812	1.250	601D177G050GE4
250	.937	1.250	601D257G050HE4
500	.687	3.250	601D507G050FS4
1100	.937	3.250	601D118G050HS4
1800	1.062	3.750	601D188G050JT4
150 VOLTS D-C WORKING, 200 VDC SURGE			
18	.687	1.250	601D186F150FE4
55	.687	2.250	601D556F150FL4
100	.687	3.750	601D107F150FT4
260	.937	3.750	601D267F150HT4
360	1.062	3.750	601D367F150JT4
200 VOLTS D-C WORKING, 250 VDC SURGE			
16	.687	1.250	601D166F200FE4
50	.812	1.750	601D506F200GJ4
100	.812	3.250	601D107F200GS4
160	1.062	2.250	601D167F200JL4
210	.937	3.750	601D217F200HT4
290	1.062	3.750	601D297F200JT4

*Catalog numbers listed are for capacitors with Outer Insulation. For units with bare can substitute "0" for "4" at the end of the catalog number, and subtract 1/64" from diameter.

TYPE 39D POWERLYTIC® CAPACITORS

- Designed for Such Applications as Transistorized Apparatus, Which Require the Greatest Possible Capacitance in Small Case Size.
- Type 39D Capacitors Supplement the Original Type 36D Powerlytic by Offering Lower Capacitance Values in Small Case Size.
- Welds at all Critical Anode and Cathode Terminals Eliminates Riveted or Pressure Connections to Assure Freedom from Open Circuits Even During Operation in the Microvolt or Millivolt Signal Range.
- End-seals of an Improved Molded Phenolic
- Furnished with an Outer Insulation of Flexible Plastic.
- Operating Temperature Up to 85C
- These Capacitors are Provided with a Pressure-sensitive Safety Vent.
- For Additional Technical Data, Consult the Latest Issue of Sprague Electric Company Engineering Bulletin 3415.



μF	D. x L.	Catalog Number
3 WVDC, 4 VDC SURGE		
1,300	½ x 2⅛	39D138G003EL4
2,100	⅞ x 1⅛	39D218G003HE4
3,000	1 x 1⅛	39D308G003JE4
5,700	¾ x 2⅝	39D578G003GP4
10,000	⅞ x 3⅛	39D109G003HS4
18,000	1 x 3⅝	39D189G003JT4
6 WVDC, 8 VDC SURGE		
600	½ x 1⅝	39D607G006EJ4
1,000	¾ x 1⅛	39D108G006GE4
2,000	¾ x 1⅝	39D208G006GJ4
4,000	¾ x 2⅝	39D408G006GP4
6,000	¾ x 2⅝	39D608G006HP4
10,000	1 x 3⅛	39D109G006JS4
10 WVDC, 12 VDC SURGE		
500	½ x 1⅝	39D507G010EJ4
1,000	⅝ x 1⅝	39D108G010FJ4
1,600	⅞ x 2⅛	39D168G010FL4
2,500	¾ x 2⅛	39D258G010GL4
5,000	⅞ x 2⅝	39D508G010HP4
10,000	1 x 3⅝	39D109G010JT4
15 WVDC, 18 VDC SURGE		
600	½ x 2⅛	39D607G015EL4
1,200	⅝ x 2⅛	39D128G015FL4
2,500	¾ x 2⅝	39D258G015GP4
4,000	1 x 2⅛	39D408G015JL4
8,000	1 x 3⅝	39D808G015JT4
25 WVDC, 30 VDC SURGE		
200	½ x 1⅝	39D207G025EJ4
500	⅞ x 1⅛	39D507G025HE4
1,000	¾ x 2⅛	39D108G025GL4
2,200	⅞ x 2⅝	39D228G025HP4
4,000	1 x 3⅝	39D408G025JS4
30 WVDC, 40 VDC SURGE		
75	½ x 1⅛	39D756G030EE4
150	½ x 1⅝	39D157G030EJ4
250	½ x 2⅛	39D257G030EL4
500	⅝ x 2⅛	39D507G030FL4
1,100	¾ x 2⅝	39D118G030GP4
2,100	⅞ x 3⅛	39D218G030HS4
3,000	1 x 3⅛	39D308G030JS4
50 WVDC, 65 VDC SURGE		
50	½ x 1⅛	39D506G050EE4
100	½ x 1⅝	39D107G050EJ4
150	½ x 2⅛	39D157G050EL4
250	⅞ x 1⅛	39D257G050HE4
500	¾ x 2⅛	39D507G050GL4
1,100	⅞ x 2⅝	39D118G050HP4
2,300	1 x 3⅝	39D238G050JT4
150 WVDC, 175 VDC SURGE		
25	½ x 1⅝	39D256F150EJ4
50	⅝ x 1⅝	39D506F150FJ4
100	⅝ x 2⅝	39D107F150FP4
250	⅞ x 2⅝	39D257F150HP4
530	1 x 3⅝	39D537F150JT4
250 WVDC, 300 VDC SURGE		
20	½ x 2⅛	39D206F250EL4
50	1 x 1⅛	39D506F250JE4
100	⅞ x 2⅛	39D107F250HL4
200	1 x 2⅝	39D207F250JP4
300	1 x 3⅝	39D307F250JT4
350 WVDC, 400 VDC SURGE		
20	⅝ x 2⅛	39D206F350FL4
30	⅝ x 2⅝	39D306F350FP4
40	¾ x 2⅛	39D406F350GL4
50	¾ x 2⅝	39D506F350GP4
100	⅞ x 3⅛	39D107F350HS4
160	1 x 3⅝	39D167F350JT4
450 WVDC, 525 VDC SURGE		
5	½ x 2⅛	39D505F450EL4
10	⅝ x 2⅛	39D106F450FL4
20	¾ x 2⅛	39D206F450GL4
50	1 x 2⅝	39D506F450JP4
75	1 x 3⅝	39D756F450JT4

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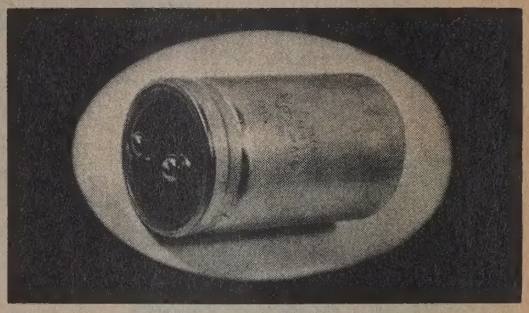
SPRAGUE CAPACITORS

TYPE 36D POWERLYTIC® ALUMINUM ELECTROLYTICS



For Maximum Capacitance in a Given Case Size.
Especially Suitable for Transistorized Circuitry where High Capacitance is Required.
Maximum Space Economy at Operating Temperatures Up To 65 C.
Low ESR and Leakage Currents. • Extremely Long Shelf Life.
Uses Most Reliable Seal Developed by Sprague for Aluminum Electrolytic Capacitors. Pressure-type Safety Vents Employing Silicone Rubber Are Used On All Cases.
Low Screw Insert Terminal, 9/32" high. • Plastic Outer Tube.
Superior Electrical and Life Characteristics Are Insured By Careful Raw Material Inspection, High Quality Control Standards and Close Manufacturing Supervision. • For Complete Technical Data, Consult Sprague Engineering Bulletin 3431.

µF	Case Code	WVDC	Catalog No.
,000	DF	3	36D274G003DF2A
,000	DC	6	36D124G006DC2A
,000	DF	6	36D194G006DF2A
,000	AA	10	36D602G010AA2A
,000	AB	10	36D123G010AB2A
,000	AC	10	36D183G010AC2A
,000	BB	10	36D283G010BB2A
,000	BC	10	36D423G010BC2A
,000	CB	10	36D483G010CB2A
,000	DC	10	36D104G010DC2A
,000	DF	10	36D164G010DF2A
,600	AA	15	36D462G015AA2A
,200	AB	15	36D922G015AB2A
,000	AC	15	36D133G015AC2A
,000	BB	15	36D213G015BB2A
,000	BC	15	36D313G015BC2A
,000	CB	15	36D363G015CB2A
,000	CC	15	36D543G015CC2A
,000	CD	15	36D633G015CD2A
,000	DC	15	36D803G015DC2A
,700	AA	25	36D272G025AA2A
,500	AB	25	36D552G025AB2A
,200	AC	25	36D822G025AC2A
,000	BC	25	36D183G025BC2A
,000	CC	25	36D323G025CC2A
,000	DC	25	36D473G025DC2A
,000	DD	25	36D553G025DD2A
,000	DF	25	36D713G025DF2A
,000	DC	30	36D363G030DC2A
,000	DD	30	36D423G030DD2A
,500	AC	40	36D552G040AC2A
,400	BB	40	36D842G040BB2A
,000	BC	40	36D123G040BC2A
,000	CC	40	36D213G040CC2A
,000	CD	40	36D253G040CD2A
,300	AA	50	36D132G050AA2A
,600	AB	50	36D262G050AB2A
,900	AC	50	36D392G050AC2A
,000	BB	50	36D602G050BB2A
,000	BC	50	36D902G050BC2A
,000	CC	50	36D153G050CC2A
,000	DC	50	36D223G050DC2A
,500	AC	75	36D252F075AC2A
,900	BB	75	36D392F075BB2A
,900	BC	75	36D592F075BC2A
,000	CD	75	36D113F075CD2A
,000	DC	75	36D143F075DC2A
,000	DF	75	36D223F075DF2A

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

µF	Case Code	WVDC	Catalog No.
450	AA	100	36D451F100AA2A
1,300	AC	100	36D132F100AC2A
3,000	BC	100	36D302F100BC2A
5,300	CC	100	36D532F100CC2A
7,800	DC	100	36D782F100DC2A
300	AA	150	36D301F150AA2A
900	AC	150	36D901F150AC2A
1,400	BB	150	36D142F150BB2A
2,100	BC	150	36D212F150BC2A
3,600	CC	150	36D362F150CC2A
5,300	DC	150	36D532F150DC2A
7,800	DF	150	36D782F150DF2A
250	AA	200	36D251F200AA2A
430	AB	200	36D431F200AB2A
640	AC	200	36D641F200AC2A
1,400	BC	200	36D142F200BC2A
1,600	CB	200	36D162F200CB2A
3,700	DC	200	36D372F200DC2A
5,500	DF	200	36D552F200DF2A
530	AC	250	36D531F250AC2A
1,200	BC	250	36D122F250BC2A
3,000	DC	250	36D302F250DC2A
4,500	DF	250	36D452F250DF2A
240	AB	300	36D241F300AB2A
820	BC	300	36D821F300BC2A
2,100	DC	300	36D212F300DC2A
95	AA	350	36D950F350AA2A
190	AB	350	36D191F350AB2A
420	BB	350	36D421F350BB2A
650	BC	350	36D651F350BC2A
1,100	CC	350	36D112F350CC2A
1,600	DC	350	36D162F350DC2A
2,500	DF	350	36D252F350DF2A
420	BC	400	36D421F400BC2A
50	AA	450	36D500F450AA2A
140	AC	450	36D141F450AC2A
220	BB	450	36D221F450BB2A
330	BC	450	36D331F450BC2A
860	DC	450	36D861F450DC2A

CALL YOUR SPRAGUE DISTRIBUTOR FOR QUANTITY PRICES

CASE CODE	BARE CAN D x L	CASE CODE	BARE CAN D x L
AA	1⅜ x 2⅛	CB	2½ x 3⅛
AB	1⅜ x 3⅛	CC	2½ x 4⅛
AC	1⅜ x 4⅛	CD	2½ x 4⅝
BB	2 x 3⅛	DC	3 x 4⅛
BC	2 x 4⅛	DD	3 x 4⅝
		DF	3 x 5⅝

VERTICAL MOUNTING Cat. No.	CLAMPS Dia.
CMC-22	1⅜
CMC-32	2
CMC-40	2½
CMC-48	3

Add ½" to diameter and 1/16" to length for plastic outer tube.

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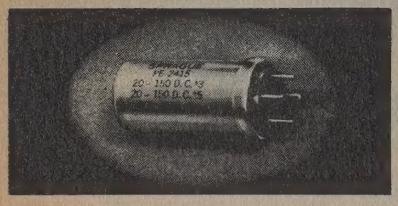
SPRAGUE CAPACITORS

PE OCTAL-BASE ELECTROLYTICS



- For Applications where Rapid Changing of Capacitors is Desired
- Will Fit Standard Octal-Base Tube Sockets
- Hermetically Sealed in Metal Cans for Long Life
- Will Stand Up Under High Temperatures, High Ripple Currents, High Surge Voltages

Terminal Code		
Sections	—	+
Single	1	5
Dual	1	3,5
Triple	1	3,5,7
Quadruple	Gnd Lug	1,3,5,7

µF	WVDC	Diam. x Lgth.	Cat. No.
100	350	1⅜ x 3	PE-1636
10	450	1 5/32 x 2½	PE-1705
20	450	1 5/32 x 2½	PE-1714
40	450	1⅜ x 2½	PE-1725
80	450	1⅜ x 3½	PE-1730
20-20	150-150	1 5/32 x 2½	PE-2415
40-40	150-150	1 5/32 x 2½	PE-2428

Call Your Sprague Distributor for Prices

µF	WVDC	Diam. x Lgth.	Cat. No.
10-10	450-450	1 5/32 x 2½	PE-2750
20-20	450-450	1⅜ x 2½	PE-2755
40-40	450-450	1⅜ x 3½	PE-2764
10-10-10	450-450-450	1 5/32 x 2½	PE-3776
20-20-20	450-450-450	1⅜ x 3	PE-3780
30-30-10-20	450-450-450-50	1⅜ x 3½	PE-4741

Call Your Sprague Distributor for Prices

MIL-C-25 CAPACITORS—TYPE CP53

- Impregnated with specially processed mineral oil to exceed performance requirements of MIL-C-25A
- Hermetically sealed, with silicone rubber compression terminals
- Rated for —55°C to +85°C operation
- Drawn metal cases have mounting flanges as integral part of containers
- Single and dual capacitance units have insulated sections — triple capacitance units have grounded cases
- Call Your Sprague Distributor for Current Prices

NOTE: Capacitors listed below have capacitance tolerances of +20%, —10% (V) or ±10% (K). For ±20% units, change last letter in catalog number from K to M or V to M.

µF	Volts	L. x W. x H.	Cat. No.
Single Capacitance			
.05	600	1 13/16 x 1 x ¾	*CP53B1EF503KI
.05	1000	1 13/16 x 1 x ¾	CP53B1EG503KI
.1	600	1 13/16 x 1 x ¾	*CP53B1EF104KI
.1	1000	1 13/16 x 1 x ¾	CP53B1EG104KI
.25	600	1 13/16 x 1 x ¾	CP53B1EF254KI
.25	1000	1 13/16 x 1 x ⅞	CP53B1EG254KI
.5	400	1 13/16 x 1 x ⅞	*CP53B1EE504KI
.5	600	1 13/16 x 1 x 1	CP53B1EF504KI
.5	1000	2 x 1¾ x ⅞	CP53B1EG504KI
1.0	600	2 x 1¾ x 1	CP53B1EF105KI
1.0	1000	2 x 2 x 1⅛	CP53B1EG105KI
2.0	100	2 x 1¾ x ⅞	CP53B1EB205KI
2.0	200	2 x 2 x 1	CP53B1EC205KI
2.0	600	2 x 2 x 1⅛	CP53B1EF205KI
4.0	100	2 x 2 x 1⅛	CP53B1EB405KI

*Available until present stocks are exhausted

Call Your Sprague Distributor for Prices

µF	Volts	L. x W. x H.	Cat. No.
Dual Capacitance			
.05 + .05	600	1 13/16 x 1 x ¾	CP53B4EF503VI
.05 + .05	1000	1 13/16 x 1 x ¾	CP53B4EG503VI
.1 + .1	600	1 13/16 x 1 x ¾	CP53B4EF104VI
.1 + .1	1000	1 13/16 x 1 x ⅞	CP53B4EG104VI
.25 + .25	600	1 13/16 x 1 x 1	CP53B4EF254VI
.25 + .25	1000	2 x 1¾ x ⅞	CP53B4EF504VI
.5 + .5	600	2 x 1¾ x 1	CP53B4EG254VI
.5 + .5	1000	2 x 2 x 1⅛	CP53B4EG504VI
1.0 + 1.0	600	2 x 2 x 1⅛	CP53B4EF105VI
Triple Capacitance			
.05 + .05 + .05	600	1 13/16 x 1 x ¾	*CP53B5EF503VI
.1 + .1 + .1	600	1 13/16 x 1 x ⅞	CP53B5EF104VI
.5 + .5 + .5	600	2 x 2 x 1⅛	CP53B5EF504VI

Call Your Sprague Distributor for Prices

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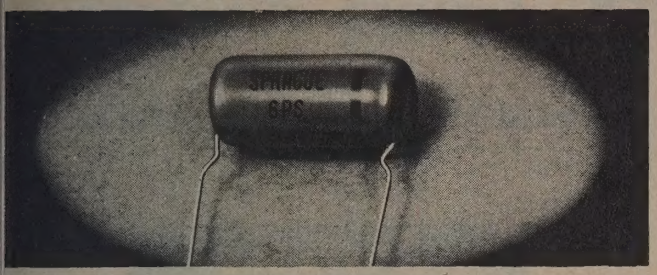
SPRAGUE CAPACITORS

DIFILM® ORANGE DROP® DIPPED TUBULARS



- Dual Dielectric (Film-paper) Solidly Impregnated With Exclusive HCX®—Produces Rock-Hard Capacitor Section
- Crimped Wire Leads for Correct Spacing When Mounted On Printed Wiring Boards.
- Outside Foil on All Units Identified by Black Striping
- Double Dipped in Bright Orange Epoxy Resin—Beats Heat and Humidity
- Won't Leak or Drip
- For Complete Data, See Latest Issue of Bulletin 2004

µF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part No.
	200 VOLTS D-C		
.02	3/8 x 7/8	2PS-S20	.....
.022	25/64 x 7/8	2PS-S22	220P22392
.047	29/64 x 7/8	2PS-S47	220P47392
.05	15/32 x 7/8	2PS-S50	.....
.1	31/64 x 1 3/16	2PS-P10	220P10492
.15	9/16 x 1 3/16	2PS-P15	220P15492
.2	19/32 x 1 5/16	2PS-P20	.....
.22	39/64 x 1 5/16	2PS-P22	220P22492
.25	5/8 x 1 5/16	2PS-P25	.....
.33	5/8 x 1 5/8	2PS-P33	220P33492
.47	45/64 x 1 5/8	2PS-P47	220P47492
.5	23/32 x 1 5/8	2PS-P50	.....
	400 VOLTS D-C		
.01	13/32 x 1 1/16	4PS-S10	220P10394
.015	29/64 x 1 1/16	4PS-S15	220P15394
.02	13/32 x 7/8	4PS-S20	.....
.022	27/64 x 7/8	4PS-S22	220P22394
.025	7/16 x 7/8	4PS-S25	.....
.03	29/64 x 7/8	4PS-S30	.....
.033	15/32 x 7/8	4PS-S33	220P33394
.04	27/64 x 1 3/16	4PS-S40	.....
.047	29/64 x 1 3/16	4PS-S47	220P47394
.05	29/64 x 1 3/16	4PS-S50	.....
.056	31/64 x 1 3/16	4PS-S56	220P56394
.068	33/64 x 1 3/16	4PS-S68	220P68394
.075	33/64 x 1 3/16	4PS-S75	.....
.1	37/64 x 1 3/16	4PS-P10	220P10494
.15	39/64 x 1 5/16	4PS-P15	220P15494
.2	19/32 x 1 5/8	4PS-P20	.....
.22	39/64 x 1 5/8	4PS-P22	220P22494
.25	41/64 x 1 5/8	4PS-P25	.....
	600 VOLTS D-C		
.001	21/64 x 1 1/16	6PS-D10	220P10296
.0012	21/64 x 1 1/16	6PS-D12	220P12296
.0015	21/64 x 1 1/16	6PS-D15	220P15296
.0018	21/64 x 1 1/16	6PS-D18	220P18296
.002	21/64 x 1 1/16	6PS-D20	.....
.0022	21/64 x 1 1/16	6PS-D22	220P22296
.0025	21/64 x 1 1/16	6PS-D25	.....
.0027	11/32 x 1 1/16	6PS-D27	220P27296
.003	11/32 x 1 1/16	6PS-D30	.....
.0033	23/64 x 1 1/16	6PS-D33	220P33296
.0039	3/8 x 1 1/16	6PS-D39	220P39296
.004	3/8 x 1 1/16	6PS-D40	.....
.0047	25/64 x 1 1/16	6PS-D47	220P47296
.005	25/64 x 1 1/16	6PS-D50	.....
.0056	25/64 x 1 1/16	6PS-D56	220P56296
.006	13/32 x 1 1/16	6PS-D60	.....
.0068	13/32 x 1 1/16	6PS-D68	220P68296
.0075	23/64 x 7/8	6PS-D75	.....
.008	23/64 x 7/8	6PS-D80	.....
.0082	3/8 x 7/8	6PS-D82	220P82296
.01	25/64 x 7/8	6PS-S10	220P10396
.012	25/64 x 7/8	6PS-S12	220P12396
.015	27/64 x 7/8	6PS-S15	220P15396
.02	31/64 x 7/8	6PS-S20	.....
.022	31/64 x 7/8	6PS-S22	220P22396
.025	17/32 x 7/8	6PS-S25	.....
.027	7/16 x 1 3/16	6PS-S27	220P27396

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

µF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part No.
	600 VOLTS D-C (cont.)		
.03	7/16 x 1 3/16	6PS-S30	.....
.033	15/32 x 1 3/16	6PS-S33	220P33396
.035	15/32 x 1 3/16	6PS-S35	.....
.039	31/64 x 1 3/16	6PS-S39	220P39396
.04	1/2 x 1 3/16	6PS-S40	.....
.047	17/32 x 1 3/16	6PS-S47	220P47396
.05	17/32 x 1 3/16	6PS-S50	.....
.056	35/64 x 1 3/16	6PS-S56	220P56396
.06	9/16 x 1 3/16	6PS-S60	.....
.068	37/64 x 1 3/16	6PS-S68	220P68396
.075	9/16 x 1 5/16	6PS-S75	.....
.082	37/64 x 1 5/16	6PS-S82	220P82396
.1	5/8 x 1 5/16	6PS-P10	220P10496
.15	43/64 x 1 5/8	6PS-P15	220P15496
.2	3/4 x 1 5/8	6PS-P20	.....
.22	25/32 x 1 5/8	6PS-P22	220P22496
.25	13/16 x 1 5/8	6PS-P25	.....
.33	55/64 x 1 5/8	6PS-P33	.....
.47	61/64 x 1 5/8	6PS-P47	.....
	1000 VOLTS D-C		
.001	21/64 x 1 1/16	10PS-D10	220P102910
.0015	11/32 x 1 1/16	10PS-D15	220P152910
.002	3/8 x 1 1/16	10PS-D20	.....
.0022	3/8 x 1 1/16	10PS-D22	220P222910
.003	11/32 x 7/8	10PS-D30	.....
.004	3/8 x 7/8	10PS-D40	.....
.0047	13/32 x 7/8	10PS-D47	220P472910
.005	13/32 x 7/8	10PS-D50	.....
	1600 VOLTS D-C		
.0005	3/8 x 1 1/4	16PS-T50	.....
.001	3/8 x 1 1/4	16PS-D10	220P102916
.0015	3/8 x 1 1/4	16PS-D15	220P152916
.002	3/8 x 1 1/4	16PS-D20	.....
.0022	3/8 x 1 1/4	16PS-D22	220P222916
.003	7/16 x 1 1/4	16PS-D30	.....
.0033	7/16 x 1 1/4	16PS-D33	220P332916
.004	1/2 x 1 1/2	16PS-D40	.....
.0047	1/2 x 1 1/2	16PS-D47	220P472916
.005	1/2 x 1 1/2	16PS-D50	.....
.006	1/2 x 1 1/2	16PS-D60	.....
.0068	1/2 x 1 1/2	16PS-D68	220P682916
.007	1/2 x 1 1/2	16PS-D70	.....
.0075	1/2 x 1 1/2	16PS-D75	.....
.008	5/8 x 1 7/8	16PS-D80	.....
.01	5/8 x 1 7/8	16PS-S10	220P103916
.015	5/8 x 1 7/8	16PS-S15	220P153916
.02	5/8 x 1 7/8	16PS-S20	.....
.022	5/8 x 1 7/8	16PS-S22	220P223916
.03	3/4 x 2 1/4	16PS-S30	.....
.04	3/4 x 2 1/4	16PS-S40	.....
.05	3/4 x 2 1/4	16PS-S50	.....
	2000 VOLTS D-C		
.001	3/8 x 1 1/4	20PS-D10	.....
.0015	3/8 x 1 1/4	20PS-D15	.....
.0022	3/8 x 1 1/4	20PS-D22	.....
.0033	7/16 x 1 1/4	20PS-D33	.....
.0047	1/2 x 1 1/2	20PS-D47	.....
.0056	1/2 x 1 1/2	20PS-D56	.....
.0068	1/2 x 1 1/2	20PS-D68	.....

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

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SPRAGUE CAPACITORS

DIFILM® BLACK BEAUTY® MOLDED TUBULARS

- Developed Especially for Long Life Under High Humidity and Temperature Operating Conditions
- Dual Dielectric (film and paper) Combines Best Features of Both Polyester Film and Paper Capacitors
- Exclusive HCX® Solid Impregnated Construction Results in Rock-hard Section
- Won't Leak or Drip

DUAL DIELECTRIC **ULTRA-RELIABLE WINDING** **DUAL-MARKED**

ROCK-HARD CONSTRUCTION **LEAKPROOF** **TOUGH MOLDED HOUSING**

LOOK FOR THE RED MARKINGS ON THE BLACK CASE

- Mica-filled, Non-flammable Molded Case. Won't Crack when Dropped; Soldering won't Harm it
- Every Capacitor Marked Twice. No Twisting the Case to Read Ratings
- Also Available in Handy Sprague Kleer-Pak®
- **Capacitance Tolerance:** ±10% from .001 μF up Except 2TM-M1 ±20%

For Complete Technical Data, See Latest Sprague Engineering Bulletin 2025

The World's Best Molded Tubular at No Extra Cost!

μF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part. No.
200 WVDC			
.01	5/16 x 1	2TM-S10	160P10392
.02	3/8 x 1 1/4	2TM-S20	.....
.022	3/8 x 1 1/4	2TM-S22	160P22392
.047	3/8 x 1 1/4	2TM-S47	160P47392
.05	3/8 x 1 1/4	2TM-S50	.....
.1	7/16 x 1 1/4	2TM-P10	160P10492
.15	1/2 x 1 1/2	2TM-P15	160P15492
.22	5/8 x 1 7/8	2TM-P22	160P22492
.25	5/8 x 1 7/8	2TM-P25	.....
.47	5/8 x 1 7/8	2TM-P47	160P47492
.5	5/8 x 1 7/8	2TM-P50	.....
1.0	3/4 x 2 1/4	2TM-M1	161P10502
400 WVDC			
.001	5/16 x 1	4TM-D10	160P10294
.005	5/16 x 1	4TM-D50	.....
.01	5/16 x 1	4TM-S10	160P10394
.015	3/8 x 1 1/4	4TM-S15	160P15394
.02	3/8 x 1 1/4	4TM-S20	.....
.022	3/8 x 1 1/4	4TM-S22	160P22394
.025	3/8 x 1 1/4	4TM-S25	.....
.03	3/8 x 1 1/4	4TM-S30	.....
.04	7/16 x 1 1/4	4TM-S40	.....
.047	7/16 x 1 1/4	4TM-S47	160P47394

μF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part. No.
400 WVDC (Cont.)			
.05	7/16 x 1 1/4	4TM-S50	.....
.068	1/2 x 1 1/2	4TM-S68	160P68394
.1	1/2 x 1 1/2	4TM-P10	160P10494
.15	5/8 x 1 7/8	4TM-P15	160P15494
.2	5/8 x 1 7/8	4TM-P20	.....
.22	5/8 x 1 7/8	4TM-P22	160P22494
.25	5/8 x 1 7/8	4TM-P25	.....
.47	3/4 x 2 1/4	4TM-P47	160P47494
.5	3/4 x 2 1/4	4TM-P50	.....
1.0	1 x 2 1/2	4TM-M1	161P10594
600 WVDC			
.0001	5/16 x 1	6TM-T10	.....
.00025	5/16 x 1	6TM-T25	.....
.0004	5/16 x 1	6TM-T40	.....
.0005	5/16 x 1	6TM-T50	.....
.001	5/16 x 1	6TM-D10	160P10296
.0015	5/16 x 1	6TM-D15	160P15296
.002	5/16 x 1	6TM-D20	.....
.0022	5/16 x 1	6TM-D22	160P22296
.0025	5/16 x 1	6TM-D25	.....
.003	5/16 x 1	6TM-D30	.....
.0033	5/16 x 1	6TM-D33	160P33296
.004	3/8 x 1 1/4	6TM-D40	.....

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SPRAGUE CAPACITORS

DIFILM® BLACK BEAUTY® MOLDED TUBULARS, continued

µF	D. x L.	Sprague Products Cat. No.	Sprague O.E.M. Part. No.
600 WVDC (Cont.)			
.0047	3/8 x 1 1/4	6TM-D47	160P47296
.005	3/8 x 1 1/4	6TM-D50	.....
.006	3/8 x 1 1/4	6TM-D60	.....
.0068	3/8 x 1 1/4	6TM-D68	160P68296
.008	3/8 x 1 1/4	6TM-D80	.....
.01	3/8 x 1 1/4	6TM-S10	160P10396
.015	3/8 x 1 1/4	6TM-S15	160P15396
.02	7/16 x 1 1/4	6TM-S20	.....
.022	7/16 x 1 1/4	6TM-S22	160P22396
.025	7/16 x 1 1/4	6TM-S25	.....
.03	7/16 x 1 1/4	6TM-S30	.....
.033	7/16 x 1 1/4	6TM-S33	160P33396
.035	7/16 x 1 1/4	6TM-S35	.....
.04	1/2 x 1 1/2	6TM-S40	.....
.047	1/2 x 1 1/2	6TM-S47	160P47396
.05	1/2 x 1 1/2	6TM-S50	.....
.06	1/2 x 1 1/2	6TM-S60	.....
.068	1/2 x 1 1/2	6TM-S68	160P68396
.1	5/8 x 1 7/8	6TM-P10	160P10496
.15	5/8 x 1 7/8	6TM-P15	160P15496
.2	3/4 x 2 1/4	6TM-P20	.....
.22	3/4 x 2 1/4	6TM-P22	160P22496
.25	3/4 x 2 1/4	6TM-P25	.....
.47	1 x 2 1/2	6TM-P47	161P47496
.5	1 x 2 1/2	6TM-P50	.....
.0	1 x 2 1/2	6TM-M1	.....
1000 WVDC			
.0005	5/16 x 1	10TM-T50	.....
.001	5/16 x 1	10TM-D10	160P102910
.0015	5/16 x 1	10TM-D15	160P152910
.002	3/8 x 1 1/4	10TM-D20	.....
.0022	3/8 x 1 1/4	10TM-D22	160P222910
.003	3/8 x 1 1/4	10TM-D30	.....
.004	3/8 x 1 1/4	10TM-D40	.....
.0047	3/8 x 1 1/4	10TM-D47	160P472910
.005	3/8 x 1 1/4	10TM-D50	.....
.0068	3/8 x 1 1/4	10TM-D68	160P682910
.01	7/16 x 1 1/4	10TM-S10	160P103910
.015	1/2 x 1 1/2	10TM-S15	160P153910
.02	1/2 x 1 1/2	10TM-S20	.....
.022	1/2 x 1 1/2	10TM-S22	160P223910
.03	5/8 x 1 7/8	10TM-S30	.....
.035	5/8 x 1 7/8	10TM-S35	.....
.047	5/8 x 1 7/8	10TM-S47	160P473910
.05	5/8 x 1 7/8	10TM-S50	.....
.068	5/8 x 1 7/8	10TM-S68	160P683910
.1	3/4 x 2 1/4	10TM-P10	160P104910
.15	3/4 x 2 1/4	10TM-P15	160P154910
1600 WVDC BUFFER CAPACITORS			
.0005	3/8 x 1 1/4	MB-T5	.....
.001	3/8 x 1 1/4	MB-D1	160P102916
.0015	3/8 x 1 1/4	MB-D15	160P152916
.002	3/8 x 1 1/4	MB-D2	.....
.0022	3/8 x 1 1/4	MB-D22	160P222916
.003	7/16 x 1 1/4	MB-D3	.....
.0033	7/16 x 1 1/4	MB-D33	160P332916
.004	1/2 x 1 1/2	MB-D4	.....
.0047	1/2 x 1 1/2	MB-D47	160P472916
.005	1/2 x 1 1/2	MB-D5	.....
.006	1/2 x 1 1/2	MB-D6	.....
.0068	1/2 x 1 1/2	MB-D68	160P682916
.007	1/2 x 1 1/2	MB-D7	.....
.0075	1/2 x 1 1/2	MB-D75	.....
.008	5/8 x 1 7/8	MB-D8	.....
.01	5/8 x 1 7/8	MB-S1	160P103916
.015	5/8 x 1 7/8	MB-S15	160P153916
.02	5/8 x 1 7/8	MB-S2	.....
.022	5/8 x 1 7/8	MB-S22	160P223916
.03	3/4 x 2 1/4	MB-S3	.....
.04	3/4 x 2 1/4	MB-S4	.....
.05	3/4 x 2 1/4	MB-S5	.....

TYPE 185P HIGH-VOLTAGE TELECAP® DIFILM® CAPACITORS

- Designed to Minimize Corona Effects in High-Voltage Suited for Use in Instruments and Other Applications Circuits Which Utilize High Voltage Power Supplies
- Pre-molded Cases are Mechanically Rugged, Non-flammable, and Resistant to Heat and Humidity
- Higher Ripple Voltage Capability, Depending on Frequency, Than Conventional Extended-foil "Non-inductive" Section Capacitors of the Same d-c Voltage Rating
- Available in Standard Capacitance Tolerance of ±10%

µF	WVDC	D. x L.	Cat. No.
.047	6,000	1 3/8 x 2 3/4	185P473960
.033	7,000	1 3/8 x 2 3/4	185P333970
.022	8,000	1 3/8 x 2 3/4	185P223980
.00047	10,000	3/4 x 2 1/4	185P4719100
.0010	10,000	1 x 2 1/2	185P1029100
.0015	10,000	1 x 2 1/2	185P1529100
.0022	10,000	1 x 2 1/2	185P2229100
.0033	10,000	1 x 2 1/2	185P3329100
.0047	10,000	1 3/8 x 2 3/4	185P4729100
.0068	10,000	1 3/8 x 2 3/4	185P6829100
.010	10,000	1 3/8 x 2 3/4	185P1039100
.015	10,000	1 3/8 x 2 3/4	185P1539100

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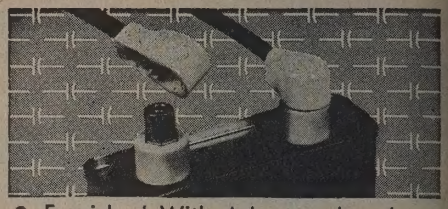
SPRAGUE CAPACITORS

TYPE CR RECTANGULAR OIL CAPACITORS

- Hermetically sealed in Rugged Rectangular Metal Cans
- Oil-Impregnated and Oil-Filled
- Extremely High Insulation Resistance
- Will Withstand High Surge Voltages and High Ambient Temperatures
- Widely Used in Transmitter Power Supplies and Other High-Voltage Applications



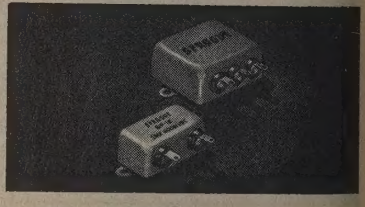
- Furnished With Adapters (as shown above) to Fit Standard Transmitting Tube Plate Caps

Call your Sprague Industrial Distributor for Current Quantity Prices

μF	Size T. x W. x L.	Catalog Number
	600 WVDC	
1.0	1 1/16 x 1 13/16 x 2 1/4	CR-16
2.0	1 1/16 x 1 13/16 x 2 7/8	CR-26
4.0	1 3/16 x 2 1/2 x 3 1/2	CR-46
6.0	1 3/16 x 2 1/2 x 4 3/4	CR-66
8.0	1 1/4 x 3 3/4 x 3 7/8	CR-86
10.0	1 1/4 x 3 3/4 x 4 3/4	CR-106
	1000 WVDC	
.1	1 1/16 x 1 13/16 x 1 5/8	CR-011
.5	1 1/16 x 1 13/16 x 2 1/4	CR-051
1.0	1 1/16 x 1 13/16 x 2 1/4	CR-11
2.0	1 1/16 x 1 13/16 x 3 7/8	CR-21
4.0	1 3/16 x 2 1/2 x 3 5/8	CR-41
	1000 WVDC, cont.	
8.0	1 1/4 x 3 3/4 x 4 3/4	CR-81
10.0	1 3/4 x 3 3/4 x 4 3/4	CR-101
	1500 WVDC	
.5	1 1/16 x 1 13/16 x 2 7/8	CR-0515
4.0	1 1/4 x 3 3/4 x 4 3/4	CR-415
	2000 WVDC	
.25	1 3/16 x 2 1/2 x 2 1/2	CR-0252
.5	1 3/16 x 2 1/2 x 2 7/8	CR-052
1.0	1 3/16 x 2 1/2 x 3 1/2	CR-12
2.0	1 1/4 x 3 3/4 x 4 1/4	CR-22
3.0	1 1/4 x 3 3/4 x 4 3/4	CR-32
4.0	2 1/4 x 3 3/4 x 3 7/8	CR-42

TYPE BP BATHTUB CAPACITORS

- For Applications Where Severe Operating Conditions Are Found
- Hermetically Sealed for Extra Protection
- Seamless Drawn Metal Can
- Oil-Filled and Oil-Impregnated for Long, Dependable Service Life
- Convenient Mounting Ears are Integral Part of Metal Container



CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

μF	Size L. x W. x H.	Catalog Number
	600 WVDC	
.1	1 13/16 x 1 x 3/4	BP-16
.25	1 13/16 x 1 x 3/4	BP-256
.5	1 13/16 x 1 x 1	BP-506
1.0	2 x 1 3/4 x 1	BP-106
2.0	2 x 2 x 1 1/8	BP-206
.05+.05	1 13/16 x 1 x 3/4	BP-2056
.1 + .1	1 13/16 x 1 x 3/4	BP-216
.25+.25	1 13/16 x 1 x 1	BP-2256
.5 + .5	2 x 1 3/4 x 1	BP-2506
.1 + .1 + .1	1 13/16 x 1 x 7/8	BP-316
.5 + .5 + .5	2 x 2 x 1 1/8	BP-356
	1000 WVDC	
.05	1 13/16 x 1 x 3/4	BP-51
.1	1 13/16 x 1 x 3/4	BP-11
.25	1 13/16 x 1 x 7/8	BP-251
.5	2 x 1 3/4 x 7/8	BP-501
1.0	2 x 2 x 1 1/8	BP-101
.05+.05	1 13/16 x 1 x 3/4	BP-2051
.1 + .1	1 13/16 x 1 x 7/8	BP-211
.25+.25	2 x 1 3/4 x 3/4	BP-2251
.5 + .5	2 x 2 x 1 1/8	BP-2501

*Available until present stocks are exhausted.

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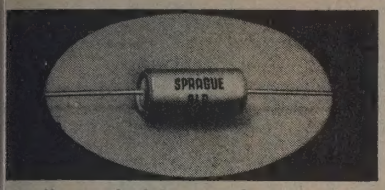
SPRAGUE CAPACITORS

VITAMIN Q® SUBMINIATURE PAPER CAPACITORS



These capacitors are the most widely used of all paper capacitors in commercial and military electronic equipment. Hermetically sealed in metal cases, they are electrically and mechanically designed to meet stringent operating requirements. Impregnated with Vitamin Q, a substantially linear, controlled molecular weight, hydrocarbon polymer, which is exclusive with Sprague, these dependable capacitors are available for operation in two temperature ranges: −55°C to +85°C and −55°C to +125°C. Because of their Vitamin Q impregnation, these subminiature capacitors have a higher insulation resistance and longer life than comparable units with ordinary oils.

Sprague Subminiature paper capacitors exceed the performance requirements of military specification MIL-C-25A. A limited number of the ratings shown here are listed in the military specification and should be ordered by their MIL type designation where equipment specifications so require. (See page after next.)

Listed below are the most popular insulated section (ungrounded case) capacitors. For technical data on these and other types, ratings, and tolerances, as well as on wax-impregnated units for absolute minimum size, refer to the latest issue of Engineering Bulletin 2110.

Call your Sprague Industrial Distributor for Current Quantity Prices.

CHOICE OF INSERTED TAB OR EXTENDED FOIL CONSTRUCTION

In the past, inserted tab capacitors have not been recommended for low-voltage applications (e.g., below 10 volts) but recent improvements in design now make it possible to recommend them for operation at all voltages from 1 to rated, for nearly all applications.

From the application standpoint, the principal difference between the two construction types is that, at resonance, losses are likely to be lower in the extended foil type. This is because the resistive component of impedance is likely to be higher at resonance in the inserted tab type of construction. Unless unusual circuit requirements make the losses at resonance a critical factor, the inserted tab construction is recommended, primarily because of the smaller size of the capacitor roll.

TYPE 91P, INSERTED TAB CONSTRUCTION, 85°C OPERATION

			Capacitance Tolerance ±20%				Capacitance Tolerance ±10%			
			Style 2 (bare metal case)		Style 4 (w/plastic sleeve)*		Style 4 (w/plastic sleeve)*		Style 2 (bare metal case)	
μF	WVDC	D. x L. Size	Cat. No.	Call Your Sprague Industrial Distributor for Current Quantity Prices	Cat. No.	Call Your Sprague Industrial Distributor for Current Quantity Prices	Cat. No.	Call Your Sprague Industrial Distributor for Current Quantity Prices	Cat. No.	Call Your Sprague Industrial Distributor for Current Quantity Prices
.001	100	.175 x ¾	91P10201S2		91P10201S4		91P10291S2		91P10291S4	
	600	.235 x ¾	91P10206S2		91P10206S4		91P10296S2		91P10296S4	
.0015	100	.175 x ¾	91P15201S2		91P15201S4		91P15291S2		91P15296S4	
	600	.235 x ¾	91P15206S2		91P15206S4		91P15296S2		91P15291S4	
.0022	600	.235 x ¾	91P22206S2		91P22206S4		91P22296S2		91P22296S4	
.0033	100	.175 x ¾	91P33201S2		91P33201S4		91P33291S2		91P33291S4	
	600	.235 x ¾	91P33206S2		91P33206S4		91P33296S2		91P33296S4	
.0047	100	.175 x ¾	91P47201S2		91P47201S4		91P47291S2		91P47291S4	
	600	.235 x ¾	91P47206S2		91P47206S4		91P4729652		91P47296S4	
.0068	600	.235 x ¾	91P68206S2		91P68206S4		91P68296S2		91P68296S4	
.01	100	.175 x ¾	91P10301S2		91P10301S4		91P10391S2		91P10391S4	
	400	.235 x ¾	91P10304S2		91P10304S4		91P10394S2		91P10394S4	
	600	.312 x ⅞	91P10306S2		91P10306S4		91P10396S2		91P10396S4	
.015	300	.235 x ¾	91P15303S2		91P15303S4		91P15393S2		91P15393S4	
.022	100	.195 x ¾	91P22301S2		91P22301S4		91P22391S2		91P22391S4	
	200	.235 x ¾	91P22302S2		91P22302S4		91P22392S2		91P22392S4	
	600	.312 x ⅞	91P22306S2		91P22306S4		91P22396S2		91P22396S4	
.033	100	.235 x ¾	91P33301S2		91P33301S4		91P33391S2		91P33391S4	
	400	.312 x ⅞	91P33304S2		91P33304S4		91P33394S2		91P33394S4	
.047	300	.312 x ⅞	91P47303S2		91P47303S4		91P47393S2		91P47393S4	
	400	.400 x ⅞	91P47304S2		91P47304S4		91P47394S2		91P47394S4	
	600	.400 x 1⅛	91P47306S2		91P47306S4		91P47396S2		91P47396S4	
.068	200	.312 x ⅞	91P68302S2		91P68302S4		91P68392S2		91P68392S4	
	300	.400 x ⅞	91P68303S2		91P68303S4		91P68393S2		91P68393S4	

*For Style 4 units add .0625" to diameter and 1/16" to length.

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SPRAGUE CAPACITORS

TYPE 91P, continued

μF	WVDC	Size D. x L.	Capacitance Tolerance ±20%				Capacitance Tolerance ±10%			
			Style 2 (bare metal case)		Style 4 (w/plastic sleeve)*		Style 2 (bare metal case)		Style 4 (w/plastic sleeve)*	
			Cat. No.		Cat. No.		Cat. No.		Cat. No.	
.1	100	.312 x 7/8	91P10401S2	Call Your Sprague Industrial Distributor for Current Quantity Prices	91P10401S4	Call Your Sprague Industrial Distributor for Current Quantity Prices	91P10491S2	Call Your Sprague Industrial Distributor for Current Quantity Prices	91P10491S4	Call Your Sprague Industrial Distributor for Current Quantity Prices
	200	.400 x 7/8	91P10402S2		91P10402S4		91P10492S2		91P10492S4	
	300	.400 x 1 1/8	91P10403S2		91P10403S4		91P10493S2		91P10493S4	
	400	.400 x 1 3/8	91P10404S2		91P10404S4		91P10494S2		91P10494S4	
	600	.562 x 1 1/8	91P10406S2		91P10406S4		91P10496S2		91P10496S4	
.22	100	.400 x 1 1/8	91P22401S2		91P22401S4		91P22491S2		91P22491S4	
	200	.400 x 1 3/8	91P22402S2		91P22402S4		91P22492S2		91P22492S4	
	300	.562 x 1 1/8	91P22403S2		91P22403S4		91P22493S2		91P22493S4	
	400	.562 x 1 3/8	91P22404S2		91P22404S4		91P22494S2		91P22494S4	
	600	.562 x 1 7/8	91P22406S2		91P22406S4		91P22496S2		91P22496S4	
.47	100	.400 x 1 3/8	91P47401S2		91P47401S4		91P47491S2		91P47491S4	
	200	.562 x 1 3/8	91P47402S2		91P47402S4		91P47492S2		91P47492S4	
	400	.670 x 1 7/8	91P47404S2		91P47404S4		91P4749 4S2		91P47494S4	
	600	.750 x 2 1/8	91P47406S2		91P47406S4		91P47496S2		91P47496S4	
1.0	100	.562 x 1 7/8	91P10501S2		91P10501S4		91P10591S2		91P10591S4	
	200	.670 x 1 7/8	91P10502S2		91P10502S4		91P10592S2		91P10592S4	
	400	1.000 x 1 7/8	91P10504S2		91P10504S4		91P10594S2		91P10594S4	

TYPE 96P, INSERTED TAB CONSTRUCTION, 125°C OPERATION

μF	WVDC	Size D. x L.	Capacitance Tolerance ±20%				Capacitance Tolerance ±10%			
			Style 2 (bare metal case)		Style 4 (w/plastic sleeve)*		Style 2 (bare metal case)		Style 4 (w/plastic sleeve)*	
			Cat. No.		Cat. No.		Cat. No.		Cat. No.	
.001	100	.175 x 3/4	96P10201S2	Call Your Sprague Industrial Distributor for Current Quantity Prices	96P10201S4	Call Your Sprague Industrial Distributor for Current Quantity Prices	96P10291S2	Call Your Sprague Industrial Distributor for Current Quantity Prices	96P10291S4	Call Your Sprague Industrial Distributor for Current Quantity Prices
	600	.235 x 3/4	96P10206S2		96P10206S4		96P10296S2		96P10296S4	
.0015	100	.175 x 3/4	96P15201S2		96P15201S4		96P15291S2		96P15291S4	
	600	.235 x 3/4	96P15206S2		96P15206S4		96P15296S2		96P15296S4	
.0022	600	.235 x 3/4	96P22206S2		96P22206S4		96P22296S2		96P22296S4	
.0033	100	.175 x 3/4	96P33201S2		96P33201S4		96P33291S2		96P33291S4	
	600	.235 x 3/4	96P33206S2		96P33206S4		96P33296S2		96P33296S4	
.0047	100	.175 x 3/4	96P47201S2		96P47201S4		96P47291S2		96P47291S4	
	600	.235 x 3/4	96P47206S2		96P47206S4		96P47296S2		96P47296S4	
.0068	600	.235 x 3/4	96P68206S2		96P68206S4		96P68296S2		96P68296S4	
.01	100	.175 x 3/4	96P10301S2		96P10301S4		96P10391S2		96P10391S4	
	400	.235 x 3/4	96P10304S2		96P10304S4		96P10394S2		96P10394S4	
	600	.312 x 7/8	96P10306S2		96P10306S4		96P10396S2		96P10396S4	
.015	300	.235 x 3/4	96P15303S2		96P15303S4		96P15393S2		96P15393S4	
.022	100	.195 x 3/4	96P22301S2		96P22301S4		96P22391S2		96P22391S4	
	200	.235 x 3/4	96P22302S2		96P22302S4		96P22392S2		96P22392S4	
	600	.312 x 7/8	96P22306S2		96P22306S4		96P22396S2		96P22396S4	
.033	100	.235 x 3/4	96P33301S2		96P33301S4		96P33391S2		96P33391S4	
	400	.312 x 7/8	96P33304S2		96P33304S4		96P3394S2		96P33394S4	
.047	300	.312 x 7/8	96P47303S2		96P47303S4		96P47393S2		96P47393S4	
	400	.400 x 7/8	96P47304S2		96P47304S4		96P47394S2		96P47394S4	
	600	.400 x 1 1/8	96P47306S2		96P47306S4		96P47396S2		96P47396S4	
.068	200	.312 x 7/8	96P68302S2		96P68302S4		96P68392S2		96P68392S4	
	300	.400 x 7/8	96P68303S2		96P68303S4		96P68393S2		96P68393S4	
.1	100	.312 x 7/8	96P10401S2		96P10401S4		96P10491S2		96P10491S4	
	200	.400 x 7/8	96P10402S2		96P10402S4		96P10492S2		96P10492S4	
	300	.400 x 1 1/8	96P10403S2		96P10403S4		96P10493S2		96P10493S4	
	400	.400 x 1 3/8	96P10404S2		96P10404S4		96P10494S2		96P10494S4	
	600	.562 x 1 1/8	96P10406S2		96P10406S4		96P10496S2		96P10496S4	
	1000	.562 x 1 5/8	.....		.....		96P10491OS2		96P10491OS4	
.22	100	.400 x 1 1/8	96P22401S2		96P22401S4		96P22491S2		96P22491S4	
	200	.400 x 1 3/8	96P22402S2		96P22402S4		96P22492S2		96P22492S4	
	300	.562 x 1 1/8	96P22403S2		96P22403S4		96P22493S2		96P22493S4	
	400	.562 x 1 3/8	96P22404S2		96P22404S4		96P22494S2		96P22494S4	
	600	.562 x 1 7/8	96P22406S2		96P22406S4		96P22496S2		96P22496S4	
.47	100	.562 x 1 1/8	96P47401S2		96P47401S4		96P47491S2		96P47491S4	
	200	.562 x 1 3/8	96P47402S2		96P47402S4		96P47492S2		96P47492S4	
	400	.670 x 1 7/8	96P47404S2		96P47404S4		96P47494S2		96P47494S4	
	600	.750 x 2 1/8	96P47406S2		96P47406S4		96P47496S2		96P47496S4	
1.0	100	.562 x 1 7/8	96P10501S2		96P10501S4		96P10591S2		96P10591S4	
	200	.670 x 1 7/8	96P10502S2		96P10502S4		96P10592S2		96P10592S4	
	400	1.000 x 1 7/8	96P10504S2		96P10504S4		96P10594S2		96P10594S4	

*For Style 4 units add .0625 to diameter and 1/16" to length.

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SPRAGUE CAPACITORS

TYPE 191P, EXTENDED FOIL CONSTRUCTION, 125°C OPERATION

µF	WVDC	Size D. x L.	Capacitance Tolerance ±20%				Capacitance Tolerance ±10%			
			Style 2 (bare metal case)		Style 4 (w/plastic sleeve)*		Style 2 (bare metal case)		Style 4 (w/plastic sleeve)*	
			Cat. No.		Cat. No.		Cat. No.		Cat. No.	
.001	600	.235 x ¾	191P10206S2	CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES	191P10206S4	CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES	191P10296S2	CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES	191P10296S4	CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES
.0022	600	.235 x ¾	191P22206S2		191P22206S4		191P22296S2		191P22296S4	
.0047	100	.175 x ¾	191P47201S2		191P47201S4		191P47291S2		191P47291S4	
	300	.235 x ¾	191P47203S2		191P47203S4		191P47293S2		191P47293S4	
.01	100	.235 x ¾	191P10301S2		191P10301S4		191P10391S2		191P10391S4	
	600	.312 x ⅞	191P10306S2		191P10306S4		191P10396S2		191P10396S4	
.015	100	.235 x ¾	191P15301S2		191P15301S4		191P15391S2		191P15391S4	
	400	.312 x ⅞	191P15304S2		191P15304S4		191P15394S2		191P15394S4	
.022	300	.312 x ⅞	191P22303S2		191P22303S4		191P22393S2		191P22393S4	
	600	.400 x ⅞	191P22306S2		191P22306S4		191P22396S2		191P22396S4	
.033	200	.312 x ⅞	191P33302S2		191P33302S4		191P33392S2		191P33392S4	
	600	.400 x 1⅛	191P33306S2		191P33306S4		191P33396S2		191P33396S4	
.047	100	.312 x ⅞	191P47301S2		191P47301S4		191P47391S2		191P47391S4	
	300	.400 x ⅞	191P47303S2		191P47303S4		191P47393S2		191P47393S4	
	400	.400 x 1⅛	191P47304S2		191P47304S4		191P47394S2		191P47394S4	
	600	.400 x 1⅜	191P47306S2		191P47306S4		191P47396S2		191P47396S4	
.068	200	.400 x ⅞	191P68302S2		191P68302S4		191P68392S2		191P68392S4	
.1	100	.400 x ⅞	191P10401S2		191P10401S4		191P10491S2		191P10491S4	
	200	.400 x 1⅛	191P10402S2		191P10402S4		191P10492S2		191P10492S4	
	300	.400 x 1⅜	191P10403S2		191P10403S4		191P10493S2		191P10493S4	
	400	.562 x 1⅛	191P10404S2		191P10404S4		191P10494S2		191P10494S4	
	600	.562 x 1⅜	191P10406S2		191P10406S4		191P10496S2		191P10496S4	
.15	200	.400 x 1⅜	191P15402S2		191P15402S4		191P15492S2		191P15492S4	
	400	.562 x 1⅜	191P15404S2		191P15404S4		191P15494S2		191P15494S4	
.22	100	.400 x 1⅜	191P22401S2		191P22401S4		191P22491S2		191P22491S4	
	200	.562 x 1⅛	191P22402S2		191P22402S4		191P22492S2		191P22492S4	
	400	.562 x 1⅝	191P22404S2		191P22404S4		191P22494S2		191P22494S4	
	600	.670 x 1⅝	191P22406S2		191P22406S4		191P22496S2		191P22496S4	
.33	100	.562 x1⅛	191P33401S2		191P33401S4		191P33491S2		191P33491S4	
.47	100	.562 x 1⅜	191P47401S2		191P47401S4		191P47491S2		191P47491S4	
	200	.562 x 1⅝	191P47402S2		191P47402S4		191P47492S2		191P47492S4	
	400	.750 x 2⅛	191P47404S2		191P47404S4		191P47494S2		191P47494S4	
	600	.750 x 2⅜	191P47406S2		191P47406S4		191P47496S2		191P47496S4	
.68	100	.562 x 1⅝	191P68401S2		191P68401S4		191P68491S2		191P68491S4	
1.0	100	.670 x 1⅝	191P10501S2		191P10501S4		191P10591S2		191P10591S4	
	200	.750 x 2⅛	191P10502S2		191P10502S4		191P10592S2		191P10592S4	

*For Style 4 units add .0625" to diameter and 1/16" to length.

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SPRAGUE CAPACITORS

TYPE 196P, EXTENDED FOIL CONSTRUCTION, 125°C OPERATION

μF	WVDC	Size D. x L.	Capacitance Tolerance ±20% — Style 2 (bare metal case) Cat. No.	Capacitance Tolerance ±20% — Style 4 (w/plastic sleeve)* Cat. No.	Capacitance Tolerance ±10% — Style 2 (bare metal case) Cat. No.	Capacitance Tolerance ±10% — Style 4 (w/plastic sleeve)* Cat. No.
.001	600	.235 x ¾	196P10206S2	196P10206S4	196P10296S2	196P10296S4
.0022	600	.235 x ¾	196P22206S2	196P22206S4	196P22296S2	196P22296S4
.0047	100	.175 x ¾	196P47201S2	196P47201S4	196P47291S2	196P47291S4
	300	.235 x ¾	196P47203S2	196P47203S4	196P47293S2	196P47293S4
.01	100	.235 x ¾	196P10301S2	196P10301S4	196P10391S2	196P10391S4
	600	.312 x ⅞	196P10306S2	196P10306S4	196P10396S2	196P10396S4
	1000	.400 x ⅞	———	———	196P103910S2	196P103910S4
.015	100	.235 x ¾	196P15301S2	196P15301S4	196P15391S2	196P15391S4
	400	.312 x ⅞	196P15304S2	196P15304S4	196P15394S2	196P15394S4
.022	300	.312 x ⅞	196P22303S2	196P22303S4	196P22393S2	196P22393S4
	600	.400 x ⅞	196P22306S2	196P22306S4	196P22396S2	196P22396S4
.027	200	.312 x ⅞	———	———	196P27392S2	196P27392S4
.033	200	.312 x ⅞	196P33302S2	196P33302S4	196P33392S2	196P33392S4
	600	.400 x 1⅛	196P33306S2	196P33306S4	196P33396S2	196P33396S4
.039	100	.312 x ⅞	———	———	196P39391S2	196P39391S4
.047	100	.312 x ⅞	196P47301S2	196P47301S4	196P47391S2	196P47391S4
	300	.400 x ⅞	196P47303S2	196P47303S4	196P47393S2	196P47393S4
	400	.400 x 1⅛	196P47304S2	196P47304S4	196P47394S2	196P47394S4
	600	.400 x 1⅜	196P47306S2	196P47306S4	196P47396S2	196P47396S4
.056	200	.400 x ⅞	———	———	196P56392S2	196P56392S4
.068	200	.400 x ⅞	196P68302S2	196P68302S4	196P68392S2	196P68392S4
.1	100	.400 x ⅞	196P10401S2	196P10401S4	196P10491S2	196P10491S4
	200	.400 x 1⅛	196P10402S2	196P10402S4	196P10492S2	196P10492S4
	300	.400 x 1⅜	196P10403S2	196P10403S4	196P10493S2	196P10493S4
	400	.562 x 1⅛	196P10404S2	196P10404S4	196P10494S2	196P10494S4
	600	.562 x 1⅜	196P10406S2	196P10406S4	196P10496S2	196P10496S4
	1000	.670 x 1⅝	———	———	196P10910S2	196P10910S4
.15	200	.400 x 1⅜	196P15402S2	196P15402S4	196P15492S2	196P15492S4
	400	.562 x 1⅜	196P15404S2	196P15404S4	196P15494S2	196P15494S4
.22	100	.400 x 1⅜	196P22401S2	196P22401S4	196P22491S2	196P22491S4
	200	.562 x 1⅛	196P22402S2	196P22402S4	196P22492S2	196P22492S4
	400	.562 x 1⅝	196P22404S2	196P22404S4	196P22494S2	196P22494S4
	600	.670 x 1⅝	196P22406S2	196P22406S4	196P22496S2	196P22496S4
	1000	.750 x 2⅛	———	———	196P224910S2	196P224910S4
.33	100	.562 x 1⅛	196P33401S2	196P33401S4	196P33491S2	196P33491S4
.47	100	.562 x 1⅜	196P47401S2	196P47401S4	196P47491S2	196P47491S4
	200	.562 x 1⅝	196P47402S2	196P47402S4	196P47492S2	196P47492S4
	400	.750 x 2⅛	196P47404S2	196P47404S4	196P47494S2	196P47494S4
	600	.750 x 2⅜	196P47406S2	196P47406S4	196P47496S2	196P47496S4
	1000	1.000 x 2⅜	———	———	196P474910S2	196P474910S4
.68	100	.562 x 1⅝	196P68401S2	196P68401S4	196P68491S2	196P68491S4
1.0	100	.670 x 1⅝	196P10501S2	196P10501S4	196P10591S2	196P10591S4
	200	.750 x 2⅛	196P10502S2	196P10502S4	196P10592S2	196P10592S4

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*For Style 4 units add .0625" to diameter and 1/16" to length.

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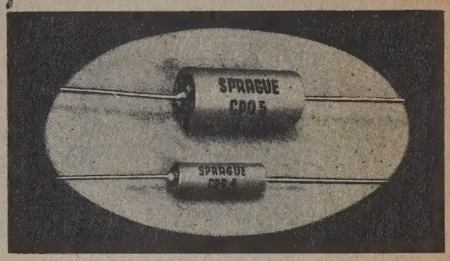
SPRAGUE CAPACITORS

TYPE CP04 CAPACITORS TO MIL-C-25C

- Impregnation wth Vitamin Q assures capacitors exceed MIL-C-25C performance requirements.
- Inserted tab construction for applications where minimum size is needed.
- Positive hermetic closure of the metal cases assured by glass-to-metal solder-seal terminals.
- Type CP04 has plain metal case.
- Available in Characteristic K (−55C to +125C). ±10% Capacitance Tolerance.
- Only popular insulated section (ungrounded case) capacitors are listed. For grounded case units, consult your Sprague Distributor.
- Call your Sprague Industrial Distributor for Quantity Prices.



μF	WVDC	D. x L.	Cat. No.*
.001	600	.235 x 3/4	CP04A1KF102K3
.0015	600	.235 x 3/4	CP04A1KF152K3
.0022	600	.235 x 3/4	CP04A1KF222K3
.0033	600	.235 x 3/4	CP04A1KF332K3
.0047	600	.235 x 3/4	CP04A1KF472K3
.0068	600	.235 x 3/4	CP04A1KF682K3
.01	400	.235 x 3/4	CP04A1KE103K3
	600	.312 x 7/8	CP04A1KF103K3
.022	200	.235 x 3/4	CP04A1KC223K3
	600	.312 x 7/8	CP04A1KF223K3
.033	100	.235 x 3/4	CP04A1KB333K3
	400	.312 x 7/8	CP04A1KE333K3
.047	400	.400 x 7/8	CP04A1KE473K3
	600	.400 x 1 1/8	CP04A1KF473K3

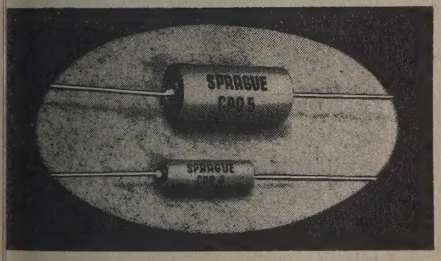
CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

μF	WVDC	D. x L.	Cat. No.*
.068	200	.312 x 7/8	CP04A1KC683K3
.1	100	.312 x 7/8	CP04A1KB104K3
	200	.400 x 7/8	CP04A1KC104K3
	400	.400 x 1 3/8	CP04A1KE104K3
	600	.562 x 1 1/8	CP04A1KF104K3
	1000	.562 x 1 5/8	CP04A1KG104K3
.22	100	.400 x 1 1/8	CP04A1KB224K3
	200	.400 x 1 3/8	CP04A1KC224K3
	400	.562 x 1 3/8	CP04A1KE224K3
	600	.562 x 1 7/8	CP04A1KF224K3
.47	100	.562 x 1 1/8	CP04A1KB474K3
	200	.562 x 1 3/8	CP04A1KC474K3
	400	.670 x 1 7/8	CP04A1KE474K3
	600	.750 x 2 1/8	CP04A1KF474K3
1.0	100	.562 x 1 7/8	CP05A1KB105K3
	200	.670 x 1 7/8	CP05A1KC105K3
	400	1.000 x 1 7/8	CP04A1KE105K3

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

For Vibration Grade 1, change last digit of Cat. No. to 1

TYPE CP05 CAPACITORS TO MIL-C-25C



- Vitamin Q impregnation assures performance above and beyond MIL-C-25C requirements.
- Inserted tab construction for applications where minimum size is needed.
- Positive hermetic closure of the metal cases assured by glass-to-metal solder-seal terminals.
- Type CP05 has insulating sleeve.
- Capacitance Tolerance ±10%. Characteristic K Temperature Range (−55°C to +125°C).
- Only popular insulated section (ungrounded case) capacitors are listed. For grounded case units, consult your Sprague Distributor.
- Call your Sprague Industrial Distributor for Quantity Prices.

μF	WVDC	D. x L.	Cat. No.*
.001	600	.298 x 13/16	CP05A1KF102K3
.0015	600	.298 x 13/16	CP05A1KF152K3
.0022	600	.298 x 13/16	CP05A1KF222K3
.0033	600	.298 x 13/16	CP05A1KF332K3
.0047	600	.298 x 13/16	CP05A1KF472K3
.0068	600	.298 x 13/16	CP05A1KF682K3
.01	400	.298 x 13/16	CP05A1KE103K3
	600	.375 x 15/16	CP05A1KF103K3
.022	200	.298 x 13/16	CP05A1KC223K3
	600	.375 x 15/16	CP05A1KF223K3
.033	100	.298 x 13/16	CP05A1KB333K3
	400	.375 x 15/16	CP05A1KE333K3
.047	400	.463 x 15/16	CP05A1KE473K3
	600	.463 x 1 3/16	CP05A1KF473K3

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

μF	WVDC	D. x L.	Cat. No.*
.068	200	.375 x 15/16	CP05A1KC683K3
.1	100	.463 x 15/16	CP05A1KB104K3
	200	.463 x 15/16	CP05A1KC104K3
	400	.463 x 17/16	CP05A1KE104K3
	600	.625 x 13/16	CP05A1KF104K3
	1000	.625 x 1 11/16	CP05A1KG104K3
.22	100	.463 x 13/16	CP05A1KB224K3
	200	.463 x 17/16	CP05A1KC224K3
	400	.625 x 17/16	CP05A1KE224K3
	600	.625 x 1 15/16	CP05A1KF224K3
.47	100	.625 x 13/16	CP05A1KB474K3
	200	.625 x 17/16	CP05A1KC474K3
	400	.733 x 1 15/16	CP05A1KE474K3
	600	.813 x 2 3/16	CP05A1KF474K3
1.0	100	.625 x 1 15/16	CP05A1KB105K3
	200	.733 x 1 15/16	CP05A1KC105K3
	400	1.063 x 1 15/16	CP05A1KE105K3

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*For Vibration Grade 1, change last digit of Cat. No. to 1

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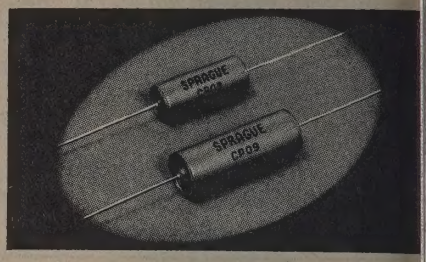
SPRAGUE CAPACITORS

TYPE CP08 CAPACITORS TO MIL-C-25C

- Vitamin Q impregnation assures performance above and beyond MIL-C-25C requirements.
- Positive hermetic closure of the metal cases with glass-to-metal solder-seal terminals.
- Capacitance Tolerance ±10%. Characteristic K Temperature Range (−55°C to +125°C).
- Type CP08 has plain metal case.
- Extended foil (so-called non-inductive section) construction.
- Listed below are popular insulated section (ungrounded case) capacitors. Consult your Sprague Industrial Distributor for information on grounded case units.
- Call your Sprague Industrial Distributor for Quantity Prices.



µF	WVDC	D. x L.	Cat. No.*
.001	600	.235 x 3/4	CP08A1KF102K3
.0022	600	.235 x 3/4	CP08A1KF222K3
.01	100	.235 x 3/4	CP08A1KB103K3
	600	.312 x 7/8	CP08A1KF103K3
	1000	.400 x 7/8	CP08A1KG103K3
.015	100	.235 x 3/4	CP08A1KB153K3
	400	.312 x 7/8	CP08A1KE153K3
.022	600	.400 x 7/8	CP08A1KF223K3
.027	200	.312 x 7/8	CP08A1KC273K3
.033	200	.312 x 7/8	CP08A1KC333K3
	600	.400 x 1 1/8	CP08A1KF333K3
.039	100	.312 x 7/8	CP08A1KB393K3
.047	100	.312 x 7/8	CP08A1KB473K3
	400	.400 x 1 1/8	CP08A1KE473K3
	600	.400x 1 3/8	CP08A1KF473K3

Call Your Sprague Industrial Distributor for Current Quantity Prices

µF	WVDC	D. x L.	Cat. No.*
.056	200	.400 x 7/8	CP08A1KC563K3
.068	200	.400 x 7/8	CP08A1KC683K3
.1	100	.400 x 7/8	CP08A1KB104K3
	200	.400 x 1 1/8	CP08A1KC104K3
	400	.562 x 1 1/8	CP08A1KE104K3
	600	.562 x 1 3/8	CP08A1KF104K3
	1000	.670 x 1 5/8	CP08A1KG104K3
.15	200	.400 x 1 3/8	CP08A1KC154K3
	400	.562 x 1 3/8	CP08A1KE154K3
.22	100	.400 x 1 3/8	CP08A1KB224K3
	200	.562 x 1 1/8	CP08A1KC224K3
	400	.562 x 1 5/8	CP08A1KE224K3
	600	.670 x 1 5/8	CP08A1KF224K3
	1000	.750 x 2 1/8	CP08A1KG224K3

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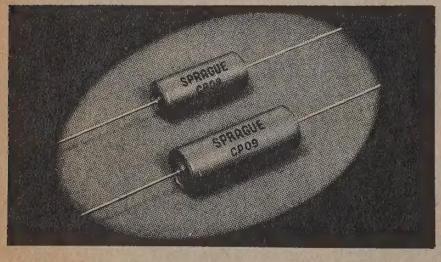
*For Vibration Grade 1, change last digit of Catalog Number to "1."

TYPE CP09 CAPACITORS TO MIL-C-25C



- Vitamin Q impregnation assures performance above and beyond MIL-C-25C requirements.
- Positive hermetic closure of the metal cases with glass-to-metal solder-seal terminals.
- Available in Characteristic K (−55C to +125C). Capacitance Tolerance ±10%.
- Type CP09 has insulating sleeve.
- Extended foil, non-inductive section construction.
- Listed below are popular insulated section (ungrounded case) capacitors. Consult your Sprague Industrial Distributor for information on grounded case units.
- Call your Sprague Industrial Distributor for Quantity Prices.

µF	WVDC	D. x L.	Cat. No.*
.001	600	.298 x 13/16	CP09A1KF102K3
.0022	600	.298 x 13/16	CP09A1KF222K3
.01	100	.298 x 13/16	CP09A1KB103K3
	600	.375 x 15/16	CP09A1KF103K3
	1000	.463 x 15/16	CP09A1KG103K3
.015	100	.298 x 13/16	CP09A1KB153K3
	400	.375 x 15/16	CP09A1KE153K3
.022	600	.463 x 15/16	CP09A1KF223K3
.027	200	.375 x 15/16	CP09A1KC273K3
.033	200	.375 x 15/16	CP09A1KC333K3
	600	.463 x 13/16	CP09A1KF333K3
.039	100	.375 x 15/16	CP09A1KB393K3
.047	100	.375 x 15/16	CP09A1KB473K3
	400	.463 x 13/16	CP09A1KE473K3
	600	.463 x 17/16	CP09A1KF473K3

Call Your Sprague Industrial Distributor for Current Quantity Prices

µF	WVDC	D. x L.	Cat. No.*
.056	200	.463 x 15/16	CP09A1KC563K3
.068	200	.463 x 15/16	CP09A1KC683K3
.1	100	.463 x 15/16	CP09A1KB104K3
	200	.463 x 13/16	CP09A1KC104K3
	400	.625 x 13/16	CP09A1KE104K3
	600	.625 x 17/16	CP09A1KF104K3
	1000	.733 x 111/16	CP09A1KG104K3
.15	200	.463 x 17/16	CP09A1KC154K3
	400	.625 x 17/16	CP09A1KE154K3
.22	100	.463 x 17/16	CP09A1KB224K3
	200	.625 x 13/16	CP09A1KC224K3
	400	.625 x 111/16	CP09A1KE224K3
	600	.733 x 111/16	CP09A1KF224K3
	1000	.813 x 23/16	CP09A1KG224K3

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*For Vibration Grade 1, change last digit of Catalog Number to "1."

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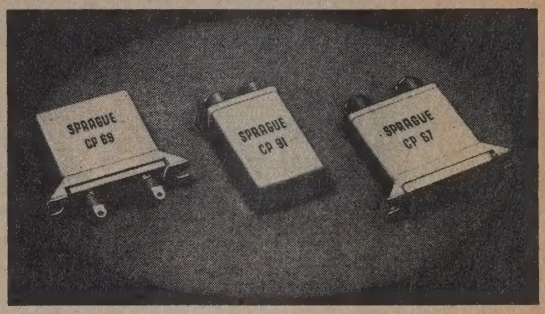
SPRAGUE CAPACITORS

TYPE CP67, CP69, CP91, CAPACITORS to MIL-C-25C

Note: For Type CP53 Capacitors, See Page IND-REM-17A-6727

µF	WVDC	CAT. NO.	SIZE	Mounting Brackets CAT. NO.
TYPE CP67 Terminals opposite channel bracket				
.1	600	CP67B1EF104K1	1¾ x 4¼ x 1 1/16	Integral Channel Brackets
.25	600	CP67B1EF254K1	1¾ x 4¼ x 1½	
.5	600	CP67B1EF504K1	1¾ x 4¼ x 2	
1.0	600	CP67B1EF105K1	1¾ x 4¼ x 2¾	
TYPE CP69 Terminals on same end as channel bracket				
.05	600	CP69B1EF503K1	1¾ x 4¼ x 1 1/16	Integral Channel Brackets
.1	600	CP69B1EF104K1	1¾ x 4¼ x 1 1/16	
.25	600	CP69B1EF254K1	1¾ x 4¼ x 1½	
.5	600	CP69B1EF504K1	1¾ x 4¼ x 2	
1.0	600	CP69B1EF105K1	1¾ x 4¼ x 2¾	
TYPE CP91				
.05	600	CP91B1EF503K1	1 5/16 x ⅜ x 1 1/16	CP091SB1
.25	600	CP91B1EF254K1	1 5/16 x ⅜ x 1⅝	CP091SB3
.5	600	CP91B1EF504K1	1 5/16 x ⅜ x 2	CP091SB4
1.0	600	CP91B1EF105K1	1 5/16 x ⅜ x 2¾	CP091SB6
.05-.05	600	CP91B6EF503V1	1 5/16 x ⅜ x 1⅜	CP091SB2
.1-.1	600	CP91B6EF104V1	1 5/16 x ⅜ x 1⅝	CP091SB3
.25-.25	600	CP91B6EF254V1	1 5/16 x ⅜ x 2	CP091SB4
.5-.5	600	CP91B6EF504V1	1 5/16 x ⅜ x 2¾	CP091SB6

Call Your Sprague Industrial Distributor for Current Quantity Prices



- Mineral Oil Impregnated for Minimum Capacitance Change with Temperature
- Hermetically Sealed in Drawn Metal Cases
- Have Silicone Rubber Compression Terminals for Positive Prevention Against Entrance of Moisture or Leakage of Impregnant
- Designed and Manufactured for Service Life Beyond Specification Requirements
- Units Listed are Most Popular Ratings. Complete Military Line Available from Sprague
- These Units Have Acceptance Tolerance of ±10% (K) or +20, −10% (V).

Call Your Sprague Industrial Distributor For Current Quantity Prices

TYPES CP70, CP72 CAPACITORS to MIL-C-25

- Ruggedly Constructed for Exacting Heavy-Duty Applications
- Long Life and Reliable Service under High Ambient Temperatures
- Terminals have Ceramic Pillar Insulators (E) or Rubber Compression Seals (B)
- Impregnated with a Specially Processed Mineral Oil to Withstand Severe Operating Conditions
- Char. F Units Recommended Primarily for Ground Equipment Where no Low Temperatures are Encountered

Call Your Sprague Industrial Distributor For Current Quantity Prices

		Char. E (E Term.)			Char. F (B Term.)			Char. E (B Term.)			DIMENSIONS	
µF	WVDC	*MIL-C-25A Cat No	MIL-C-25C Cat. No.	Case Code	*MIL-C-25A Cat. No.	MIL-C-25C Cat. No.	Case Code	*MIL-C-25A Cat. No.	MIL-C-25C Cat. No.	Case Code	Code	W. x T. x H.
.1	1000	CP70E1EG104K	CP72E1EG104K1	A1	———	———	—	———	———	—	A1	1 3/16 x 1 1/16 x 1⅜
.25	1000	CP70E1EG254K		A2	———	———	—	———	———	—	A2	1 3/16 x 1 1/16 x 2¼
.25	2000	CP70E1EJ254K	CP72E1EJ254K1	B1	———	———	—	———	———	—	A3	1 3/16 x 1 1/16 x 2⅞
.5	1000	CP70E1EG504K	CP72E1EG504K1	A2	———	———	—	———	CP72B1EG504K1	—	A4	1 3/16 x 1 1/16 x 3¼
.5	1500	CP70E1EH504K	CP72E1EH504K1	A3	———	———	—	———	———	A2	A5	1 3/16 x 1 1/16 x 3⅞
.5	2000	CP70E1EJ504K	CP72E1EJ504K1	B2	———	———	—	———	———	—	A6	1 3/16 x 1 1/16 x 4¾
1.0	600	———	CP72E1EF105K1	A2	———	———	—	———	CP72B1EF105K1	A2	B1	2½ x 1 3/16 x 2½
1.0	1000	———	CP72E1EG105K1	A3	———	———	—	CP70B1EG105K	CP72B1EG105K1	A3	B2	2½ x 1 3/16 x 2⅞
1.0	1500	CP70E1EH105K	———	A6	———	———	—	———	———	—	B3	2½ x 1 3/16 x 3½
1.0	2000	———	CP72E1EJ105K1	B6	———	———	—	———	———	—	B4	2½ x 1 3/16 x 3⅞
1.0	2500	CP70E1EK105K	———	D2	———	———	—	———	———	—	B6	2½ x 1 3/16 x 4¾
2.0	600	———	CP72E1EF205K1	A4	———	———	—	———	CP72B1EF205K1	A4	C2	3¾ x 1¼ x 3⅞
2.0	1000	———	CP72E1EG205K1	A6	———	CP72B1FG205K1	A5	CP70B1EG205K	CP72B1EG205K1	A6	C3	3¾ x 1¼ x 4¼
2.0	1500	———		—	———	———	—	CP70B1EH205K	———	B6	C4	3¾ x 1¼ x 4¾
2.0	2000	CP70E1EJ205K	CP72E1EJ205K1	C4	———	———	—	———	———	—	D2	3¾ x 1¾ x 3⅞
2.0	2500	CP70E1EK205K	———	E5	———	———	—	———	———	—	D3	3¾ x 1¾ x 4
4.0	600	———	CP72E1EF405K1	B4	CP70B1FF405K	CP72B1EF405K1	B3	———	CP72B1EF405K1	B4	D4	3¾ x 1¾ x 4¼
4.0	1000	CP70E1EG405K	CP72E1EG405K1	C2	CP70B1FG405K	———	B6	CP70B1EG405K	———	C2	D5	3¾ x 1¾ x 4¾
4.0	1500	———	CP72E1EH405K1	D4	———	———	—	———	———	—	E5	3¾ x 2¼ x 4¾
4.0	2000	CP70E1EJ405K	CP72E1EJ405K1	E6	———	———	—	———	———	—	E6	3¾ x 2¼ x 5⅛
4.0	2500	CP70E1EK405K	———	J2	———	———	—	———	———	—	F2	3¾ x 2½ x 5¾
6.0	600	———	CP72E1EF605K1	C2	———	———	—	———	CP72B1EF605K1	C2	G2	3¾ x 3 3/16 x 4¾
6.0	1000	CP70E1EG605K	CP72E1EG605K1	D3	CP70B1FG605K	———	C4	CP70B1EG605K	CP72B1EG605K1	D3	G4	3¾ x 3 3/16 x 5½
6.0	1500	CP70E1EH605K	———	E5	———	———	—	CP70B1EH605K	———	E5	J2	4 9/16 x 3¾ x 4⅜
8.0	600	CP70E1EF805K	CP72E1EF805K1	C3	———	———	—	———	CP72B1EF805K1	C3		
8.0	1000	CP70E1EG805K	CP72E1EG805K1	D5	CP70B1FG805K	———	D2	———	———	—		
8.0	1500	CP70E1EH805K	———	F2	———	———	—	CP70B1EH805K	———	F2		
10.0	600	———	CP72E1EF106K1	D3	CP70B1FF106K	CP72B1FF106K1	C4	———	CP72B1EF106K1	D3		
10.0	1000	CP70E1EG106K	CP72E1EG106K1	E5	———	———	—	———	———	G4		
10.0	1500	CP70E1EH106K	———	G4	———	———	—	CP70B1EH106K	———	E6		
12.0	1000	CP70E1EG126K	———	E6	———	———	—	CP70B1EG126K	———			

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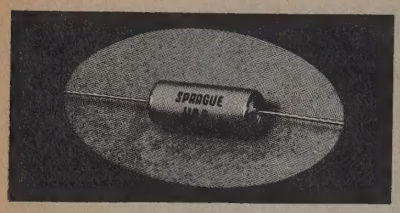
SPRAGUE CAPACITORS



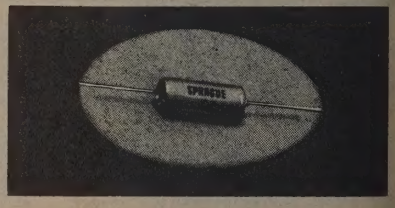
118P DIFILM® METALLIZED CAPACITORS

- Unique Dual Dielectric—a Combination of Metallized Paper and of Polyester Film, Impregnated With Special High-Temperature Mineral Wax
- Subjected to Stringent Quality Control During Manufacture
- Higher Insulation Resistance Than Any Other Metallized Paper Capacitors—at 125°C, Minimum Product of Insulation Resistance and Capacitance is 10 Megohm-microfarads for 200 V Units or 40 Megohm-microfarads for 400 and 600 V Units
- Best of Their Type Possible to Produce at the Present State of the Art
- Rated for Operation at 125°C WITHOUT VOLTAGE DERATING
- Capacitor Sections are Effectively of Non-inductive Construction, I sulting in Capacitors Unmatched by any Other Metallized Capaciti
- Hermetically Sealed, with Glass-to-metal Solder-seal Terminals
- Have Unusual Self-healing Characteristics, in the Rare Event Capacitor Dielectric Breakdown
- May be Used at Extremely Low Voltages Where Metallized Pap Construction has Previously Been Unsatisfactory
- For Complete Data, see Latest Issue of Engineering Bulletin 2211
- For Units With Outer Plastic Insulating Sleeves, Change Last Digit Cat. No. From "2" to "4"
- Capacitors Listed Below Are Ungrounded Case (Insulating Sectio Units Without Outer Insulating Sleeves. For Information on Oth Styles Consult Your Sprague Industrial Distributor

Call Your Sprague Industrial Distributor For Quantity Prices

µF	D. x L.	±20% Tol. Cat. No.	±10% Tol. Cat. No.
200 WVDC			
.01	.175 x .749	118P10302S2	118P10392S2
.015	.195 x .749	118P15302S2	118P15392S2
.022	.235 x .749	118P22302S2	118P22392S2
.033	.235 x .749	118P33302S2	118P33392S2
.047	.312 x .874	118P47302S2	118P47392S2
.068	.312 x .874	118P68302S2	118P68392S2
.082	.312 x .874		118P82392S2
.1	.312 x .874	118P10402S2	118P10492S2
.15	.312 x 1.124	118P15402S2	118P15492S2
.22	.400 x .874	118P22402S2	118P22492S2
.27	.400 x 1.124		118P27492S2
.33	.400 x 1.124	118P33402S2	118P33492S2
.47	.500 x 1.124	118P47402S2	118P47492S2
.56	.500 x 1.124		118P56492S2
.68	.500 x 1.124	118P68402S2	118P68492S2
.82	.562 x 1.124		118P82492S2
1.0	.562 x 1.124	118P10502S2	118P10592S2
1.5	.562 x 1.624	118P15502S2	118P15592S2
2.0	.670 x 1.624	118P20502S2	118P20592S2
3.0	.670 x 1.874	118P30502S2	118P30592S2
4.0	.750 x 1.874	118P40502S2	118P40592S2
5.0	1.000 x 1.874	118P50502S2	118P50592S2
6.8	1.000 x 1.874	118P60502S2	118P60592S2
8.0	1.000 x 1.874	118P80502S2	118P80592S2
10.0	1.000 x 2.374	118P10602S2	118P10692S2
12.0	1.000 x 2.624	118P12602S2	118P12692S2
400 WVDC			
.15	.500 x 1.124	118P15404S2	118P15494S2
1.0	.750 x 1.874	118P10504S2	118P10594S2
2.0	1.000 x 1.874	118P20504S2	118P20594S2
3.0	1.000 x 2.624	118P30504S2	118P30594S2
600 WVDC			
.01	.312 x .874	118P10306S2	118P10396S2
.047	.400 x 1.124	118P47306S2	118P47396S2
.1	.500 x 1.124	118P10406S2	118P10496S2
.15	.562 x 1.124	118P15406S2	118P15496S2
.22	.562 x 1.374	118P22406S2	118P22496S2
.33	.562 x 1.624	118P33406S2	118P33496S2
.47	.670 x 1.624	118P47406S2	118P47496S2
1.0	1.000 x 1.874	118P10506S2	118P10596S2
2.0	1.000 x 2.124	118P20506S2	118P20596S2
2.5	1.000 x 2.624	118P25506S2	118P25596S2

121P METALLIZED PAPER CAPACITORS



- Designed to Operate at 125C WITHOUT VOLTAGE DERATING—Extremely Important in Military and Industrial Equipment Where Higher Temperatures Are Encountered.
- Quality of These Capacitors Is Surpassed only by Type 118P Units Described Above.
- High Insulation Resistance—at 85C, Minimum Product of Insulation Resistance and Capacitance Is 20 Megohm-Microfarads. At 125C, Minimum Product is 1.0 Megohm-Microfarads.
- Hermetically Sealed With Glass-to-Metal Solder-Seal Terminals—Capacitor Cases Are of Corrosion Resistant Materials—Similar in Appearance to Type 118P.
- May Be Operated at Low Voltages, Unlike Many Other Metallized Capacitors.
- For Complete Technical Data, See Latest Issue of Engineering Bulletin 2210.
- Capacitors Listed Below Are Ungrounded Case (Insulated Section) Units Without Outer Insulating Sleeves. For Information on Other Styles Consult Your Sprague Industrial Distributor.
- For Units With Outer Plastic Insulating Sleeve, Change Last Digit in Cat. No. From 2 to 4.

Call Your Sprague Industrial Distributor For Quantity Prices

µF	WVDC	D. x L.	±20% Tol. Cat. No.	±10% Tol. Cat. No.
150 WVDC				
1.5	150	.562 x 1⅛	121P15501R5S2	121P15591R5S2
2.0	150	.562 x 1⅜	121P20501R5S2	121P20591R5S2
3.0	150	.670 x 1⅜	121P30501R5S2	121P30591R5S2
4.0	150	.670 x 1⅝	121P40501R5S2	121P40591R5S2
5.0	150	.670 x 1⅞	121P50501R5S2	121P50591R5S2
6.0	150	.750 x 1⅞	121P60501R5S2	121P60591R5S2
8.0	150	.750 x 2⅜	121P80501R5S2	121P80591R5S2
10	150	.750 x 2⅝	121P10601R5S2	121P10691R5S2
12	150	1.000 x 1⅞	121P12601R5S2	121P12691R5S2
16	150	1.000 x 2⅜	121P16601R5S2	121P16691R5S2
18	150	1.000 x 2⅝	121P18601R5S2	121P18691R5S2

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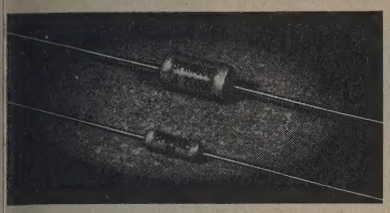
SPRAGUE CAPACITORS

TYPE 192P PACER® FILMITE® 'E' CAPACITORS



- New Minimum Construction Size. Extended Foil Film Sections Terminate in End Caps, Best Possible Non-Inductive Section. Rated for −55C to +85C
- Controlled Dimensions—May Be Used With Automatic Insertion Equipment
- Wound With Polyester Film Dielectric and Thin Gage Foil Under Controlled Atmospheric Conditions. Entire Assembly Protected by Orange Heat Shrinkable Mylar Sleeve
- Capacitance Tolerance: ±10%
- Also Available in Kleer-Pak® Boxes
- See Latest Issue of Sprague Engineering Bulletin 2066

Call Your Sprague Industrial Distributor For Current Quantity Prices

µF	D	x	L	Cat. No.
80 VOLTS D-C				
.0022	0.138		5/16	192P2229R8
.0027	0.138		5/16	192P2729R8
.0033	0.138		5/16	192P3329R8
.0039	0.138		5/16	192P3929R8
.0047	0.138		5/16	192P4729R8
.0056	0.170		3/8	192P5629R8
.0068	0.170		3/8	192P6829R8
.0082	0.170		3/8	192P8229R8
.01	0.170		3/8	192P1039R8
.012	0.170		7/16	192P1239R8
.015	0.170		7/16	192P1539R8
.018	0.170		1/2	192P1839R8
.022	0.170		1/2	192P2239R8
.027	0.204		7/16	192P2739R8
.033	0.204		7/16	192P3339R8
.039	0.204		9/16	192P3939R8
.047	0.204		9/16	192P4739R8
.056	0.225		9/16	192P5639R8
.068	0.225		9/16	192P6839R8
.082	0.290		1/2	192P8239R8
.1	0.290		1/2	192P1049R8
.12	0.290		5/8	192P1249R8
.15	0.290		5/8	192P1549R8
.18	0.318		5/8	192P1849R8
.22	0.318		5/8	192P2249R8
.27	0.318		7/8	192P2749R8
.33	0.318		7/8	192P3349R8
.39	0.318		1 3/16	192P3949R8
.47	0.318		1 3/16	192P4749R8

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR QUANTITY PRICES

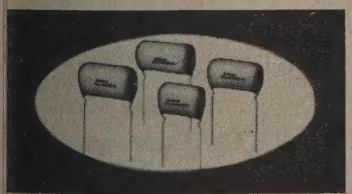
µF	D	x	L	Cat. No.
200 VOLTS D-C				
0.00047	0.138		5/16	192P47192
0.00056	0.138		5/16	192P56192
0.00068	0.138		5/16	192P68192
0.00082	0.138		5/16	192P82192
0.001	0.138		5/16	192P10292
0.0012	0.138		5/16	192P12292
0.0015	0.138		5/16	192P15292
0.0018	0.170		5/16	192P18292
0.0022	0.170		5/16	192P22292
0.0027	0.170		5/16	192P27292
0.0033	0.170		5/16	192P33292
0.0039	0.170		7/16	192P39292
0.0047	0.170		7/16	192P47292
0.0056	0.170		7/16	192P56292
0.0068	0.170		7/16	192P68292
0.0082	0.170		1/2	192P82292
0.01	0.170		1/2	192P10392
0.012	0.204		7/16	192P12392
0.015	0.204		7/16	192P15392
0.018	0.204		9/16	192P18392
0.022	0.204		9/16	192P22392
0.027	0.225		9/16	192P27392
0.033	0.225		9/16	192P33392
0.039	0.290		1/2	192P39392
0.047	0.290		1/2	192P47392
0.056	0.290		5/8	192P56392
0.068	0.290		5/8	192P68392
0.082	0.318		5/8	192P82392
0.1	0.318		5/8	192P10492
0.12	0.318		7/8	192P12492
0.15	0.318		7/8	192P15492

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR QUANTITY PRICES

µF	D	x	L	Cat. No.
200 VOLTS D-C (Cont.)				
0.18	0.318		1 3/16	192P18492
0.22	0.318		1 3/16	192P22492
400 VOLTS D-C				
0.00047	0.170		3/8	192P47194
0.00056	0.170		3/8	192P56194
0.00068	0.170		3/8	192P68194
0.00082	0.170		3/8	192P82194
0.001	0.170		3/8	192P10294
0.0012	0.170		3/8	192P12294
0.0015	0.170		3/8	192P15294
0.0018	0.170		7/16	192P18294
0.0022	0.170		7/16	192P22294
0.0027	0.204		7/16	192P27294
0.0033	0.204		7/16	192P33294
0.0039	0.204		7/16	192P39294
0.0047	0.204		7/16	192P47294
0.0056	0.225		9/16	192P56294
0.0068	0.225		9/16	192P68294
0.0082	0.225		9/16	192P82294
0.01	0.225		9/16	192P10394
0.012	0.290		1/2	192P12394
0.015	0.290		1/2	192P15394
0.018	0.290		5/8	192P18394
0.022	0.290		5/8	192P22394
0.027	0.318		5/8	192P27394
0.033	0.318		5/8	192P33394
0.039	0.318		7/8	192P39394
0.047	0.318		7/8	192P47394
0.056	0.318		1 3/16	192P56394
0.068	0.318		1 3/16	192P68394

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR QUANTITY PRICES

TYPE DF METALLIZED FILM ORANGE DROP® CAPACITORS



- Fit Easily into Tight Spots Because They're Smaller Than Other Types of Comparably-Rated Capacitors
- Extremely High Insulation Resistance Insures Peak Performance At Temperatures Up to +85C (185F)
- Radial Leads Are Extra Long For Point-to-Point Wiring and Crimped For Printed Board Insertion
- Double Dipped in Orange Epoxy Resin For Protection Against Heat And Humidity
- Capacitance Tolerance: ±10% • Ideal For Color TV Capacitor Replacement

Call Your Sprague Industrial Distributor For Current Quantity Prices

µF	H. x T. x L.	Cat. No.
100 WVDC		
.15	15/32 x 1/4 x 13/16	1DF-P15
.22	1/2 x 1/4 x 13/16	1DF-P22
.33	17/32 x 5/16 x 13/16	1DF-P33
.47	5/8 x 13/32 x 13/16	1DF-P47
.68	9/16 x 11/32 x 1 1/4	1DF-P68
1.0	5/8 x 13/32 x 1 1/4	1DF-M1
1.5	11/16 x 15/32 x 1 1/4	1DF-M1.5
2.0	25/32 x 9/16 x 1 1/4	1DF-M2
2.5	13/16 x 19/32 x 1 1/4	1DF-M2.5
3.0	25/32 x 9/16 x 1 5/8	1DF-M3
3.5	13/16 x 19/32 x 1 5/8	1DF-M3.5
4.0	27/32 x 5/8 x 1 5/8	1DF-M4
4.5	7/8 x 21/32 x 1 5/8	1DF-M4.5
5.0	29/32 x 11/16 x 1 5/8	1DF-M5
5.5	15/16 x 23/32 x 1 5/8	1DF-M5.5

µF	H. x T. x L.	Cat. No.
200 WVDC		
.15	9/16 x 3/8 x 3/16	2DF-P15
.22	5/8 x 7/16 x 13/16	2DF-P22
.33	11/16 x 1/2 x 13/16	2DF-P33
.47	13/16 x 9/16 x 13/16	2DF-P47
.68	3/4 x 1/2 x 1 1/4	2DF-P68
1.0	13/16 x 9/16 x 1 1/4	2DF-M1
1.5	7/8 x 5/8 x 1 1/4	2DF-M1.5
2.0	15/16 x 11/16 x 1 1/4	2DF-M2
2.5	1 1/16 x 13/16 x 1 1/4	2DF-M2.5
3.0	1 5/16 x 1 1/16 x 1 5/8	2DF-M3
3.5	1 x 3/4 x 1 5/8	2DF-M3.5
4.0	1 1/16 x 13/16 x 1 5/8	2DF-M4
4.5	1 1/8 x 7/8 x 1 5/8	2DF-M4.5
5.0	1 1/8 x 7/8 x 1 5/8	2DF-M5
5.5	1 3/16 x 1 5/16 x 1 5/8	2DF-M5.5

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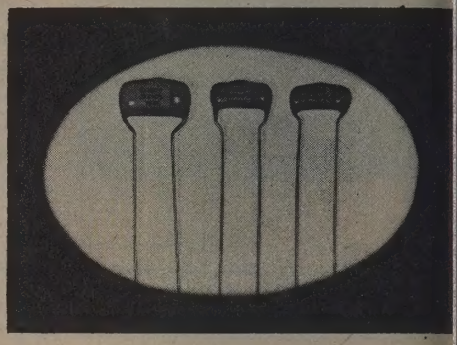
SPRAGUE CAPACITORS

TYPE 225P FILMITE® 'E' ORANGE DROP® CAPACITORS

- Designed Specifically for Printed Wiring Board Applications and are Furnished with Radial Leads to Facilitate Insertion on Boards
- Find Wide Application in Television Receivers, Radio Sets, and Commercial Electronic Equipment
- Available in Voltage Ratings of 75 Volts and 100 Volts D-C for Operation up to 85C
- Capacitor Sections are Wound From Polyester Film and Thin-gage Foil Under Carefully Controlled Atmospheric Conditions
- Protected Against Moisture by a Wax-free Conformal Coating of Epoxy
- Capacitance Tolerance, ±10%
- For Complete Technical Data, Refer to Latest Issue of Sprague Engineering Bulletin 2062



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μF	Size H. x T. x L.	Catalog Number
	75 WVDC	
.12	5/8 x 25/64 x 3/4	225P1249R75ZD3
.15	5/8 x 25/64 x 3/4	225P1549R75ZD3
.18	43/64 x 27/64 x 3/4	225P1849R75ZD3
.22	43/64 x 27/64 x 3/4	225P2249R75ZD3
.27	27/32 x 31/64 x 3/4	225P2749R75ZD3
.33	27/32 x 31/64 x 3/4	225P3349R75ZD3
.39	27/32 x 19/32 x 3/4	225P3949R75ZD3
.47	27/32 x 19/32 x 3/4	225P4749R75ZD3
.56	57/64 x 9/16 x 13/16	*225P5649R75
.68	29/32 x 19/32 x 13/16	*225P6849R75
.82	53/64 x 21/32 x 13/16	*225P8249R75
1.0	63/64 x 47/64 x 13/16	*225P1059R75
	100 WVDC	
.001	5/16 x 13/64 x 45/64	225P10291WD3
.0012	5/16 x 13/64 x 45/64	225P12291WD3
.0015	5/16 x 13/64 x 45/64	225P15291WD3
.0018	5/16 x 13/64 x 45/64	225P18291WD3
.0022	5/16 x 13/64 x 45/64	225P22291WD3
.0027	5/16 x 13/64 x 45/64	225P27291WD3
.0033	5/16 x 13/64 x 45/64	225P33291WD3
.0039	5/16 x 13/64 x 45/64	225P39291WD3
.0047	5/16 x 13/64 x 45/64	225P47291WD3
.0056	5/16 x 13/64 x 45/64	225P56291WD3
.0068	5/16 x 13/64 x 45/64	225P68291WD3
.0082	5/16 x 13/64 x 45/64	225P82291WD3
.01	5/16 x 13/64 x 45/64	225P10391WD3
.012	5/16 x 13/64 x 45/64	225P12391WD3
.015	5/16 x 13/64 x 45/64	225P15391WD3
.018	5/16 x 13/64 x 45/64	225P18391WD3
.022	5/16 x 13/64 x 45/64	225P22391WD3
.027	21/64 x 15/64 x 45/64	225P27391WD3
.033	21/64 x 15/64 x 45/64	225P33391WD3
.039	11/32 x 1/4 x 45/64	225P39391WD3
.047	11/32 x 1/4 x 45/64	225P47391WD3
.056	3/8 x 9/32 x 45/64	225P56391WD3
.068	3/8 x 9/32 x 45/64	225P68391WD3
.082	17/32 x 21/64 x 45/64	225P82391WD3
.1	17/32 x 21/64 x 45/64	225P10491WD3
.56	57/64 x 9/16 x 13/16	225P56491YD3
.68	29/32 x 19/32 x 13/16	225P68491YD3
.82	61/64 x 21/32 x 13/16	225P82491YD3
1.0	63/64 x 47/64 x 13/16	225P10591YD3

μF	Size H. x T. x L.	Catalog Number
	200 WVDC	
.001	9/16 x 15/64 x 13/16	225P10292XD3
.0015	9/16 x 15/64 x 13/16	225P15292XD3
.0022	9/16 x 15/64 x 13/16	225P22292XD3
.0033	9/16 x 15/64 x 13/16	225P33292XD3
.0047	9/16 x 15/64 x 13/16	225P47292XD3
.0068	19/32 x 1/4 x 13/16	225P68292XD3
.01	19/32 x 1/4 x 13/16	225P10392XD3
.015	19/32 x 1/4 x 13/16	225P15392XD3
.022	19/32 x 1/4 x 13/16	225P22392XD3
.033	5/8 x 9/32 x 13/16	225P33392XD3
.047	5/8 x 9/32 x 13/16	225P47392XD3
.068	41/64 x 5/16 x 13/16	225P68392XD3
.1	23/32 x 3/8 x 13/16	225P10492XD3
.15	3/4 x 27/64 x 13/16	225P15492XD3
.22	25/32 x 15/32 x 13/16	225P22492XD3
.33	23/32 x 27/64 x 13/16	225P33492YD3
.47	27/32 x 1/2 x 13/16	225P47492YD3
.68	1 1/64 x 27/32 x 13/16	225P68492YD3
	400 WVDC	
.001	9/16 x 15/64 x 13/16	225P10294XD3
.0015	9/16 x 15/64 x 13/16	225P15294XD3
.0022	9/16 x 15/64 x 13/16	225P22294XD3
.0033	9/16 x 15/64 x 13/16	225P33294XD3
.0047	9/16 x 15/64 x 13/16	225P47294XD3
.0068	19/32 x 1/4 x 13/16	225P68294XD3
.01	19/32 x 1/4 x 13/16	225P10394XD3
.015	19/32 x 9/32 x 13/16	225P15394XD3
.022	19/32 x 5/16 x 13/16	225P22394XD3
.033	21/32 x 11/32 x 13/16	225P33394XD3
.047	21/32 x 27/64 x 13/16	225P47394XD3
.068	13/16 x 31/64 x 13/16	225P68394XD3
.1	27/32 x 17/32 x 13/16	225P10494XD3
.15	13/16 x 31/64 x 13/16	225P15494YD3
.22	57/64 x 9/16 x 13/16	225P22494YD3
.33	1 x 47/64 x 13/16	225P33494YD3
.47	1 1/64 x 27/32 x 13/16	225P47494YD3

*Available until present stocks are exhausted.

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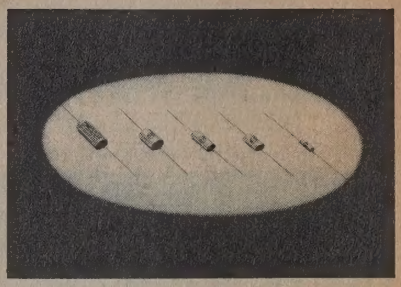
SPRAGUE CAPACITORS

TYPE 431P METFILM® 'E' CAPACITORS



Unique Construction Gives Definite Space Advantages Over Metal-Encased, Molded, or Wax-Coated Cardboard-Case Tubulars of Comparable Ratings.

Axial-Lead Polyester-Film Capacitor Section Protected Against Moisture By An Outer Wrap of Polyester-Film Tape.

An Improved End Seal of a Plastic Resin Which Bonds With the Film Wrap and the Tinned Leads Provides Superior Humidity Resistance.

- Because of Their Small Size, These Capacitors Are Particularly Well-Suited For Potting or Encapsulating in Electronic Sub-Assemblies.
- For Complete Technical Data, Refer to The Latest Issue of Sprague Engineering Bulletin 2445.
- Call Your Sprague Industrial Distributor For Current Quantity Prices.

μF	T. x W. x L.	WVDC	Catalog Number
.047	3/32 x 3/16 x 5/8	50	431P4739R5
.068	1/8 x 7/32 x 5/8	50	431P6839R5
.10	5/32 x 7/32 x 5/8	50	431P1049R5
.15	3/16 x 1/4 x 5/8	50	431P1549R5
.22	5/32 x 9/32 x 3/4	50	431P2249R5
.33	3/16 x 5/16 x 3/4	50	431P3349R5
.47	3/16 x 5/16 x 1	50	431P4749R5
.68	3/16 x 3/8 x 1	50	431P6849R5
1.0	1/4 x 13/32 x 1	50	431P1059R5
1.5	9/32 x 1/2 x 1	50	431P1559R5
2.0	3/8 x 9/16 x 1	50	431P2059R5
2.5	11/32 x 17/32 x 1 1/4	50	431P2559R5
3.0	3/8 x 19/32 x 1 1/4	50	431P3059R5
4.0	3/8 x 19/32 x 1 1/2	50	431P4059R5
5.0	13/32 x 19/32 x 1 3/4	50	431P5059R5
6.0	15/32 x 11/16 x 1 1/2	50	431P6059R5
7.0	15/32 x 11/16 x 1 3/4	50	431P7059R5
0.0	9/16 x 25/32 x 1 3/4	50	431P1069R5
2.0	1/2 x 13/16 x 2 1/4	50	431P1269R5
.015	3/32 x 3/16 x 5/8	200	431P15392
.022	1/8 x 3/16 x 5/8	200	431P22392
.033	1/8 x 7/32 x 5/8	200	431P33392
.047	5/32 x 1/4 x 5/8	200	431P47392
.068	5/32 x 9/32 x 3/4	200	431P68392
.1	3/16 x 5/16 x 3/4	200	431P10492
.15	7/32 x 11/32 x 3/4	200	431P15492
.22	1/4 x 13/32 x 3/4	200	431P22492
.33	7/32 x 13/32 x 1	200	431P33492
.47	7/32 x 13/32 x 1 1/4	200	431P47492
.68	5/16 x 17/32 x 1	200	431P68492
1.0	5/16 x 17/32 x 1 1/4	200	431P10592
1.5	11/32 x 9/16 x 1 1/2	200	431P15592
2.0	3/8 x 9/16 x 1 3/4	200	431P20592
2.5	15/32 x 21/32 x 1 1/2	200	431P25592
3.0	15/32 x 21/32 x 1 3/4	200	431P30592
4.0	17/32 x 3/4 x 1 3/4	200	431P40592
5.0	15/32 x 3/4 x 2 1/4	200	431P50592
6.0	15/32 x 25/32 x 2 1/2	200	431P60592
7.0	3/4 x 15/16 x 1 3/4	200	431P70592
0.0	23/32 x 1 x 2 1/4	200	431P10692
2.0	23/32 x 1 x 2 1/2	200	431P12692

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

μF	T. x W. x L.	WVDC	Catalog Number
.0033	3/32 x 3/16 x 5/8	400	431P33294
.0047	1/8 x 3/16 x 5/8	400	431P47294
.0068	5/32 x 7/32 x 5/8	400	431P68294
.01	3/16 x 1/4 x 5/8	400	431P10394
.015	5/32 x 9/32 x 3/4	400	431P15394
.022	3/16 x 5/16 x 3/4	400	431P22394
.033	7/32 x 11/32 x 3/4	400	431P33394
.047	1/4 x 13/32 x 3/4	400	431P47394
.068	7/32 x 3/8 x 1	400	431P68394
.1	9/32 x 7/16 x 1	400	431P10494
.15	5/16 x 17/32 x 1	400	431P15494
.22	13/32 x 19/32 x 1	400	431P22494
.33	11/32 x 9/16 x 1 1/2	400	431P33494
.47	3/8 x 9/16 x 1 3/4	400	431P47494
.68	15/32 x 21/32 x 1 3/4	400	431P68494
1.0	1/2 x 23/32 x 2	400	431P10594
1.5	1/2 x 25/32 x 2 1/2	400	431P15594
.0015	3/32 x 3/16 x 5/8	600	431P15296
.0022	1/8 x 3/16 x 5/8	600	431P22296
.0033	5/32 x 7/32 x 5/8	600	431P33296
.0047	1/8 x 1/4 x 3/4	600	431P47296
.0068	5/32 x 9/32 x 3/4	600	431P68296
.01	3/16 x 5/16 x 3/4	600	431P10396
.015	3/16 x 3/8 x 3/4	600	431P15396
.022	1/4 x 13/32 x 3/4	600	431P22396
.033	7/32 x 3/8 x 1	600	431P33396
.047	7/32 x 3/8 x 1 1/4	600	431P47396
.068	5/16 x 1/2 x 1	600	431P68396
.1	3/8 x 19/32 x 1	600	431P10496
.15	3/8 x 19/32 x 1 1/4	600	431P15496
.22	11/32 x 9/16 x 1 3/4	600	431P22496
.33	7/16 x 21/32 x 1 3/4	600	431P33496
.47	9/16 x 3/4 x 1 3/4	600	431P47496
.68	15/32 x 25/32 x 2 1/2	600	431P68496
1.0	3/4 x 31/32 x 2	600	431P10596
1.5	3/4 x 1 1/16 x 2 1/2	600	431P15596

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

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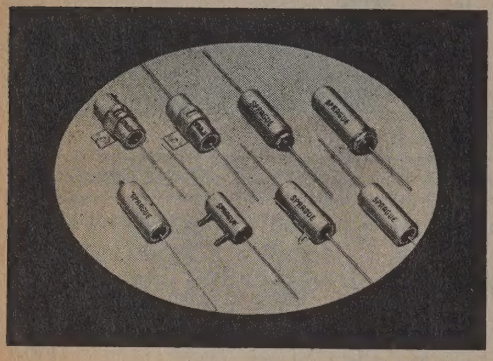
SPRAGUE CAPACITORS

TYPE 260P
TUBULAR METAL-CLAD METALLIZED FILMITE® 'K' CAPACITOR



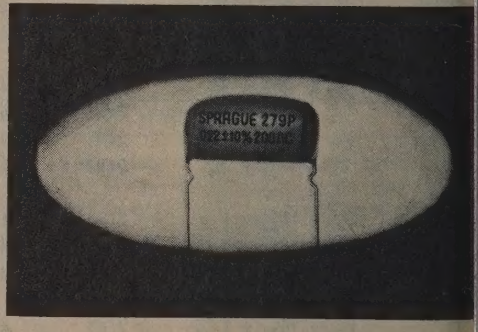
- Designed for Applications Such as Low-frequency Tuned Circui Analog Computer Reference Capacitors and Precision Timing a Integrating Circuits
- High Insulation Resistance, High Stability, Minimum Capacitan Change with Temperature, Low Dielectric Absorption and L Dissipation Factor
- Capacitor Sections are of Non-inductive Construction
- Will Operate at Full Rated D-C Voltage Over the Temperatu Range of −55C to +105C
- Capacitance Tolerance ±5%, Voltage Rating 200 WVDC
- For Complete Technical Data, Refer to the Latest Issue of Sprag Engineering Bulletin 2705

Call Your Sprague Industrial Distributor for Current Quantity Pric

μF	WVDC	Size D. x L.	Catalog Number
.01	200	.175 x ¾	260P10352S4
.015	200	.195 x ¾	260P15352S4
.022	200	.235 x ¾	260P22352S4
.033	200	.235 x ¾	260P33352S4
.047	200	.312 x ⅞	260P47352S4
.056	200	.312 x ⅞	260P56352S4
.068	200	.312 x ⅞	260P68352S4
.1	200	.312 x ⅞	260P10452S4
.15	200	.312 x 1⅛	260P15452S4
.22	200	.400 x ⅞	260P22452S4
.33	200	.400 x 1⅛	260P33452S4
.47	200	.400 x 1⅜	260P47452
.68	200	.562 x 1⅛	260P68452
1.0	200	.562 x 1⅜	260P10552
2.0	200	.670 x 1⅝	260P20552
3.0	200	.750 x 1⅞	260P30552
4.0	200	.750 x 2⅛	260P40552
5.0	200	.750 x 2⅜	260P50552
7.0	200	1.000 x 1⅞	260P70552
8.0	200	1.000 x 2⅛	260P80552
10.0	200	1.000 x 2⅝	260P10652

TYPE 279P ISOFARAD® PLASTIC FILM CAPACITORS

- Isofarad Quality is a Must in Color TV Synchroguide Circuits, Horizontal and Vertical Oscillators, Bridge and Parallel-T Circuits and Other Tuned Circuit Applications Requiring Close Tolerance and Zero Temperature Coefficient of Capacitance
- Superior to Silvered Mica Capacitors, Yet Considerably Less Expensive
- Constant Capacitance—Will Not Change More Than ±0.2% from Room Temperature to +80C at a Maximum Rated Voltage. Will Withstand Operating Temperatures to 85C (185F)
- **Capacitance Tolerance: ±5%**



CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

μF	WVDC	Size D. x L.	Catalog Number
.001	500	⅜ x 1	279P10255VB3
.0015	500	⅜ x 1	279P15255VB3
.0022	500	⅜ x 1	279P22255VB3
.0033	500	⅜ x 1	279P33255VB3
.0039	500	⅜ x 1¼	279P39255WB3
.0047	500	⅜ x 1¼	279P47255WB3
.0068	500	⅜ x 1¼	279P68255WB
.01	500	⅜ x 1¼	279P10355WB
.015	500	7/16 x 1¼	279P15355XB3
.022	500	½ x 1½	279P22355YB3
.033	500	½ x 1½	279P33355YB3
.047	500	⅝ x 1⅞	279P47355ZB3
.068	500	⅝ x 1⅞	279P68355ZB3

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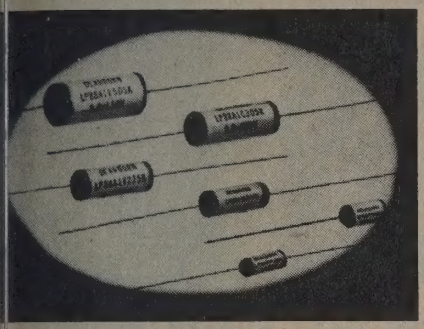
SPRAGUE CAPACITORS

DEARBORN STYLE LP88 DELTAFILM® 'LP' METALLIZED POLYCARBONATE-FILM CAPACITORS



NOW AVAILABLE FROM SPRAGUE INDUSTRIAL DISTRIBUTORS

(Dearborn Electronics, Inc. is a subsidiary of the Sprague Electric Co.)

- Style LP88 Sets New Standards of Small Physical Size, While Maintaining the Superior Electrical Characteristics of Polycarbonate-film Capacitors.
- High Volume Efficiency . . . Superior Operational Reliability . . . Exceptional Life Expectancy . . . Extremely High Insulation Resistance . . . Low Dissipation Factor (High Q) . . . Low Temperature Coefficient . . . Excellent Resistance to Shock and Vibration.
- Fuz-ion Sealed*—Heat-Shrinkable Plastic Case is Fused to Epoxy, Ensuring Maximum Seal Efficiency. This Exclusive Plastic-to-Resin Sealed Case is Nonconductive, Fungus-Proof, Corrosion-Proof, and Highly Resistant to Humidity and to the Effects of Long-Term Shelf Life.
- Operating Temperature Range, −55C to +125C Without Voltage Derating.
- Capacitance Tolerance, ±10%.
- For Complete Technical Data, See Latest Issue of Dearborn Engineering Bulletin 154.

*Trademark.

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

50 WVDC				200 WVDC			
μF	Diameter	Length	Cat. No.	μF	Diameter	Length	Cat. No.
.056★	.170	.400	LP88A1A563K	.01	.170	.400	LP88A1C103K
.068	.170	.400	LP88A1A683K	.012	.190	.400	LP88A1C123K
.082	.190	.400	LP88A1A823K	.015★	.190	.400	LP88A1C153K
				.018	.230	.400	LP88A1C183K
.10★	.230	.400	LP88A1A104K				
.12	.230	.400	LP88A1A124K	.022★	.230	.400	LP88A1C223K
.15	.230	.400	LP88A1A154K	.027	.260	.400	LP88A1C273K
.18	.260	.400	LP88A1A184K	.033★	.260	.400	LP88A1C333K
				.039	.230	.530	LP88A1C393K
.22★	.260	.400	LP88A1A224K				
.27	.230	.530	LP88A1A274K	.047★	.230	.530	LP88A1C473K
.33	.260	.530	LP88A1A334K	.056	.260	.530	LP88A1C563K
.39	.260	.530	LP88A1A394K	.068★	.260	.530	LP88A1C683K
				.082	.310	.530	LP88A1C823K
.47★	.310	.530	LP88A1A474K				
.56	.310	.530	LP88A1A564K	.10★	.310	.530	LP88A1C104K
.68	.350	.530	LP88A1A684K	.12	.350	.530	LP88A1C124K
.82	.350	.530	LP88A1A824K	.15	.310	.750	LP88A1C154K
				.18	.310	.750	LP88A1C184K
.0★	.310	.750	LP88A1A105K				
.2	.310	.750	LP88A1A125K	.22★	.350	.750	LP88A1C224K
.5	.350	.750	LP88A1A155K	.27	.350	.750	LP88A1C274K
.8	.400	.750	LP88A1A185K	.33	.400	.750	LP88A1C334K
				.39	.350	1.030	LP88A1C394K
.0★	.400	.750	LP88A1A205K				
.2	.400	.750	LP88A1A225K	.47★	.400	1.030	LP88A1C474K
.7	.350	1.030	LP88A1A275K	.56	.400	1.030	LP88A1C564K
				.68	.440	1.030	LP88A1C684K
.0	.400	1.030	LP88A1A305K	.82	.490	1.030	LP88A1C824K
.3	.400	1.030	LP88A1A335K				
.9	.440	1.030	LP88A1A395K	1.0★	.490	1.250	LP88A1C105K
				1.2	.490	1.250	LP88A1C125K
.7	.440	1.030	LP88A1A475K	1.5	.560	1.250	LP88A1C155K
.0★	.490	1.030	LP88A1A505K	1.8	.560	1.500	LP88A1C185K
.6	.490	1.030	LP88A1A565K				
.8	.490	1.250	LP88A1A685K	2.0★	.560	1.500	LP88A1C205K
.2	.560	1.250	LP88A1A825K	2.2	.610	1.500	LP88A1C225K
				2.7	.670	1.500	LP88A1C275K
★	.610	1.250	LP88A1A106K	3.0	.670	1.500	LP88A1C305K
	.610	1.500	LP88A1A126K				
	.610	1.500	LP88A1A156K				
	.670	1.500	LP88A1A186K	3.3	.740	1.500	LP88A1C335K
★	.740	1.500	LP88A1A226K	3.9	.740	1.500	LP88A1C395K
				4.7	.870	1.500	LP88A1C475K
	.870	1.500	LP88A1A276K	5.0★	.870	1.500	LP88A1C505K
	.870	1.500	LP88A1A336K				
	1.000	1.500	LP88A1A396K	5.6	1.000	1.500	LP88A1C565K
	1.000	1.750	LP88A1A476K	6.8	1.000	1.500	LP88A1C685K
★	1.000	1.750	LP88A1A506K	8.2★	1.000	1.750	LP88A1C825K

★Preferred Value—For Fast Delivery.

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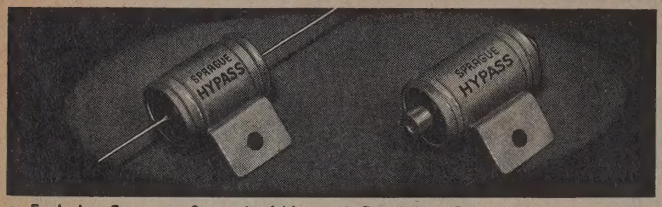
SPRAGUE FILTERS

HYPASS® CAPACITORS



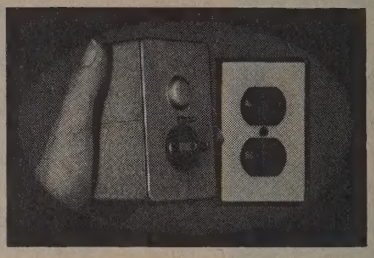
- Exclusive Sprague 3-terminal Network Feed-thru Capacitors
- Bypass V-H-F Currents Where Ordinary Capacitors are Ineffective
- Suppress TVI from Short-wave Transmitters, Diathermy Machines, Electronic Heating Apparatus, etc.
- Eliminate Interference caused by Line-conducted Radiation Between Neighboring TV Sets
- Install Leads in Series with Circuit Being Filtered and Ground the Case

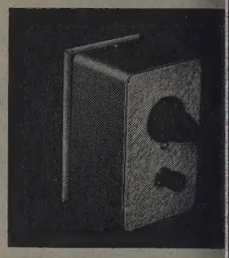
μF	Amps.	WVDC	Dia. x Length	Cat. No.
.5	40	50	1 x 1 13/16	*48P18
.5	60	50	1 x 1 13/16	48P100
.25	20	200	3/4 x 1 13/16	*48P10
.5	20	200	1 x 1 13/16	*48P14
.1	20	250(VAC)	1 1/16 x 1 13/16	*48P9
.1	20	400	1 1/16 x 1 13/16	*48P6
.1	20	400	1 1/16 x 1 13/16	†80P1
.002	15	600	1/4 x 1 3/8	46P12
.005	15	600	1/4 x 1 5/8	46P8
.01	20	600	7/16 x 1 1/4	47P6
.02	20	600	7/16 x 1 1/2	47P8
.1	20	600	1 1/16 x 1 13/16	*48P8
.1	20	600	1 1/16 x 1 13/16	*†80P3
.25	20	600	1 x 1 13/16	*48P12
.5	20	600	1 x 2 1/4	*48P16
.005	20	1000	7/16 x 1 1/4	47P12
.01	20	1000	7/16 x 1 1/2	47P13
.005	20	2500	1 x 1 9/16	47P14
.01	20	2500	1 x 1 9/16	47P15
.002	20	5000	1 x 1 9/16	47P16

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT PRICES

Has female screw terminals †Bulkhead mounting

TYPE F-400 MIRACLE FILTEROL®



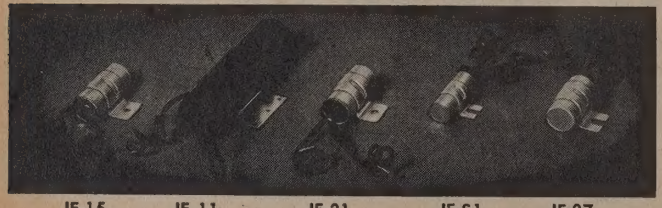


A LINE FILTER THAT REALLY WORKS

- Effectively Suppresses Radio Interference by Filtering Power Lines Receivers and Appliances
- Maximum Noise Eliminating Efficiency because of Practically Zero Leng of Ground Lead
- Plugs into Standard Duplex Wall Outlet — Captive Screw Fastens Filte F-400 to Outlet for Safe, Secure Mounting
- Direct Wall-Mounting Provides Neat Installation — No Unsightly Cord Receiver or Appliance Plugs into Standard Outlet on Face of F-400
- Will Also Operate at Slightly Reduced Efficiency in Older Homes whe Wiring is of Knob and Tube or 2-Conductor Non-Metallic Sheathed Cab Type by Using the External Grounding Post Provided for this Purpo
- Handsomely Finished in Tan Hammerloid Baked Enamel
- Rated at 5 Amperes, 125 Volts AC or DC

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT PRIC

TYPE IF FILTERS



IF-15 IF-11 IF-21 IF-S1 IF-37

IF-15 — TRIPLE-SECTION FILTER for small motor-operated devices such as fans, drills, etc. designed to prevent shocks from discharge of filter capacitors.

IF-11 — DUAL HIGH-CAPACITY FILTER designed for use on motors over 1 hp up to 220 volts ac-dc. Also used on high-current arcing devices.

IF-21 — COMPACT DUAL FILTER for use on fractional horsepower motors with case grounded to motor frame. Also used across line terminals of motors.

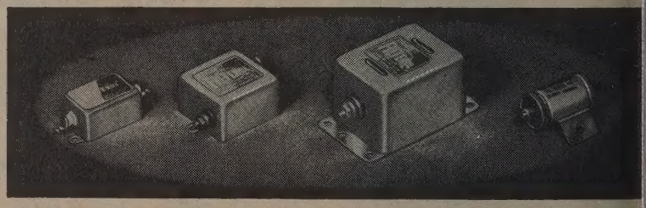
IF-S1 — SINGLE SECTION 2-LEAD FILTER for use across make-and-break contacts, such as thermostats, circuit breakers, etc.

IF-37 — 3-SECTION DELTA-CONNECTED FILTER especially designed for fluorescent fixtures. Also used on governor-type motors.

Underwriters' Laboratories, Inc. listed.

Cat. No.	Volts AC or DC	Dia. x Length
IF-15	220	1 x 2 3/16
IF-11	220	1 3/8 x 5 1/4
IF-21	220	1 x 2 3/16
IF-S1	220	3/4 x 2 1/16
IF-37	220	1 x 2"

FILTEROL® FILTERS



FILTEROL 1 FILTEROL 2 FILTEROL 3 FILTEROL 4

Filterol Types 1, 2, and 3 — Designed for connection in series with pow supply lines to interference-producing devices . . . A 3-terminal network wi the case as one terminal . . . The selected filter should have a rating high than the continuous operating current of the offending device . . . A sing Filterol connected to the high side of the line is usually sufficient . . . In seve cases a Filterol in each leg of the power line may be necessary . . . For thre or four-wire systems, a Filterol in each wire is necessary.

Filterol Type 4 — A new, exclusive Sprague development incorporating Sprague HYPASS® Capacitor . . . Provides exceptionally high attenuation frequencies above 5 megacycles . . . Intended for small devices with contin ous current ratings up to 20 amperes.

Cat. No.	Amps.	Volts AC or DC	Size
Filterol 1	1	115	7/8 x 1 1/4 x 1 3/4
Filterol 2	10	115	1 1/8 x 2 x 2
Filterol 3	35	115	1 7/8 x 2 7/8 x 3 1/8
Filterol 4	20	115	1" dia. x 1 13/16" long

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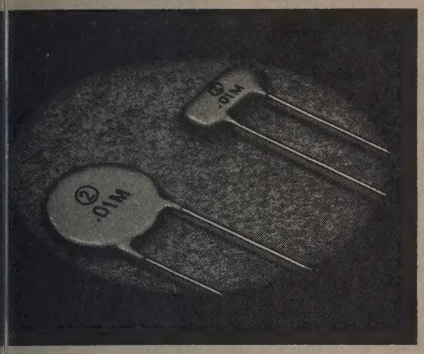
SPRAGUE CAPACITORS

CERA-MITE® CERAMIC CAPACITORS



- Tiny, Tough, Dependable In Every Application
- Low Self-Inductance Of Silvered Flat-plate Design Means Very High By-pass Efficiency In All TV Circuits
- Flat-plate Construction Permits Higher Self-resonant Frequency Than Tubular Ceramic Or Molded Mica Capacitors
- Tough Moisture-proof Coating Protects Against Short-circuiting And Assures Good Performance Under Severe Conditions Of Humidity And Vibration
- Cera-mite Capacitors Easily Fit Into Tight Spaces, Even Across Subminiature Tube Sockets
- Designed For 85C (185F) Continuous Operation

Call your Sprague Industrial Distributor for Current Quantity Prices

GENERAL APPLICATION TYPES

- Excellent Where Temperature Coefficient Is Not Important, Such As By-pass and Coupling Applications in IF and RF Circuits
- EIA Designation: 5GA=Z5U, TG=Z5U
- Low Cost, Smallest Size 1 kV General Application Type Available
- Same Characteristic Available In High Voltage At Low Cost

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
1000 WVDC (discs) ±20% Tol.			
5.0	5GA-V50	C023B102E5R0M	5/16 x 5/32
6.8	5GA-V68	C023B102E6R8M	5/16 x 5/32
7.5	5GA-V75	C023B102E7R5M	5/16 x 5/32
8.2	5GA-V82	C023B102E8R2M	5/16 x 5/32
0	5GA-Q10	C023B102E100M	5/16 x 5/32
2	5GA-Q12	C023B102E120M	5/16 x 5/32
5	5GA-Q15	C023B102E150M	5/16 x 5/32
8	5GA-Q18	C023B102E180M	5/16 x 5/32
0	5GA-Q20	C023B102E200M	5/16 x 5/32
2	5GA-Q22	C023B102E220M	5/16 x 5/32
5	5GA-Q25	C023B102E250M	5/16 x 5/32
7	5GA-Q27	C023B102E270M	5/16 x 5/32
0	5GA-Q30	C023B102E300M	5/16 x 5/32
3	5GA-Q33	C023B102E330M	5/16 x 5/32
9	5GA-Q39	C023B102E390M	5/16 x 5/32
7	5GA-Q47	C023B102E470M	5/16 x 5/32
0	5GA-Q50	C023B102E500M	5/16 x 5/32
6	5GA-Q56	C023B102E560M	5/16 x 5/32
8	5GA-Q68	C023B102E680M	5/16 x 5/32
5	5GA-Q75	C023B102E750M	5/16 x 5/32
2	5GA-Q82	C023B102E820M	5/16 x 5/32
0	5GA-T10	C023B102E101M	5/16 x 5/32
0	5GA-T12	C023B102E121M	5/16 x 5/32
0	5GA-T15	C023B102E151M	5/16 x 5/32
0	5GA-T18	C023B102E181M	5/16 x 5/32
0	5GA-T20	C023B102E201M	5/16 x 5/32
0	5GA-T22	C023B102E221M	5/16 x 5/32
0	5GA-T25	C023B102E251M	5/16 x 5/32
0	5GA-T27	C023B102E271M	5/16 x 5/32
0	5GA-T30	C023B102E301M	5/16 x 5/32
0	5GA-T33	C023B102E331M	5/16 x 5/32
0	5GA-T36	C023B102E361M	5/16 x 5/32
0	5GA-T39	C023B102E391M	5/16 x 5/32
0	5GA-T47	C023B102E471M	5/16 x 5/32

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
1000 WVDC (discs) (cont.)			
500	5GA-T50	C023B102E501M	5/16 x 5/32
560	5GA-T56	C023B102E561M	5/16 x 5/32
680	5GA-T68	C023B102E681M	5/16 x 5/32
750	5GA-T75	C023B102E751M	5/16 x 5/32
800	5GA-T80	C023B102E801M	5/16 x 5/32
820	5GA-T82	C023B102E821M	5/16 x 5/32
.001 µF	5GA-D10	C023B102E102M	5/16 x 5/32
.0012	5GA-D12	C023B102E122M	5/16 x 5/32
.0015	5GA-D15	C023B102E152M	5/16 x 5/32
.0018	5GA-D18	C023B102E182M	5/16 x 5/32
.002	5GA-D20	C023B102F202M	3/8 x 5/32
.0022	5GA-D22	C023B102F222M	3/8 x 5/32
.0025	5GA-D25	C023B102F252M	3/8 x 5/32
.0027	5GA-D27	C023B102F272M	3/8 x 5/32
.003	5GA-D30	C023B102F302M	3/8 x 5/32
.0033	5GA-D33	C023B102F332M	3/8 x 5/32
.0039	5GA-D39	C023B102G392M	7/16 x 5/32
.004	5GA-D40	C023B102G402M	7/16 x 5/32
.0047	5GA-D47	C023B102G472M	7/16 x 5/32
.005	5GA-D50	C023B102G502M	7/16 x 5/32
.0068	5GA-D68	C023B102H682M	1/2 x 5/32
.0082	5GA-D82	C023B102J822M	5/8 x 5/32
.01	5GA-S10	C023A102K103M	5/8 x 5/32
.015	5GA-S15	C023A102L153M	11/16 x 5/32
.02	5GA-S20	C023A102P203M	7/8 x 5/32
500 WVDC(discs) ±20% Tol.			
.01 µF	5GAS-S10	C023B501G103M	3/8 x 5/32
.02	5GAS-S20	C023B501J203M	3/8 x 5/32
.025	5GA-S25	C023B501K253M	5/8 x 5/32
.04	5GA-S40	C023A501P403M	7/8 x 5/32
.05	5GA-S50	C023A501P503M	7/8 x 5/32
.1	5GA-P10	41C92A10	7/8 x 3/16

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
3000 WVDC (discs) ±20% Tol.			
1.5	30GA-V15	19C306	3/8 x 1/4
3.3	30GA-V33	19C307	3/8 x 1/4
4.7	30GA-V47	19C308	3/8 x 1/4
5.0	30GA-V50	19C309	3/8 x 1/4
6.0	30GA-V60	19C310	3/8 x 1/4
6.8	30GA-V68	19C311	3/8 x 1/4
7.5	30GA-V75	19C291	3/8 x 1/4
8.2	30GA-V82	19C290	3/8 x 1/4
10	30GA-Q10	19C312	3/8 x 1/4
12	30GA-Q12	19C313	3/8 x 1/4
15	30GA-Q15	19C314	3/8 x 1/4
18	30GA-Q18	19C292	3/8 x 1/4
20	30GA-Q20	19C315	3/8 x 1/4
22	30GA-Q22	19C316	3/8 x 1/4
25	30GA-Q25	19C317	3/8 x 1/4
27	30GA-Q27	19C318	3/8 x 1/4
30	30GA-Q30	19C319	3/8 x 1/4
33	30GA-Q33	19C320	3/8 x 1/4
39	30GA-Q39	19C321	3/8 x 1/4
47	30GA-Q47	19C322	3/8 x 1/4
50	30GA-Q50	19C323	3/8 x 1/4
56	30GA-Q56	19C324	3/8 x 1/4
60	30GA-Q60	19C325	3/8 x 1/4
62	30GA-Q62	19C326	3/8 x 1/4
68	30GA-Q68	19C327	3/8 x 1/4
75	30GA-Q75	19C328	3/8 x 1/4
82	30GA-Q82	20C184	7/16 x 1/4
100	30GA-T10	20C43	7/16 x 1/4
120	30GA-T12	20C44	7/16 x 1/4
150	30GA-T15	20C45	7/16 x 1/4
180	30GA-T18	20C46	7/16 x 1/4
200	30GA-T20	20C47	7/16 x 1/4

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IND-REM-49-6908

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SPRAGUE CAPACITORS

CERA-MITE® CERAMIC CAPACITORS, continued

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
3000 WVDC (cont.)			
220	30GA-T22	20C48	7/16 x 1/4
250	30GA-T25	20C49	7/16 x 1/4
270	30GA-T27	20C50	7/16 x 1/4
300	30GA-T30	20C51	7/16 x 1/4
330	30GA-T33	20C28A	7/16 x 1/4
390	30GA-T39	20C176	7/16 x 1/4
400	30GA-T40	20C175	7/16 x 1/4
470	30GA-T47	29C289	19/32 x 1/4
500	30GA-T50	29C90	19/32 x 1/4
560	30GA-T56	29C290	19/32 x 1/4
680	30GA-T68	29C288	19/32 x 1/4
750	30GA-T75	29C298	19/32 x 1/4
820	30GA-T82	29C299	19/32 x 1/4
.001 μF	30GA-D10	29C300	19/32 x 1/4
.0012	30GA-D12	29C301	19/32 x 1/4
.0015	30GA-D15	29C302	19/32 x 1/4
.002	30GA-D20	29C303	19/32 x 1/4
.0022	30GA-D22	29C255A	19/32 x 1/4
.0025	30GA-D25	44C63	21/32 x 1/4
.0027	30GA-D27	44C65	21/32 x 1/4
.003	30GA-D30	33C31A1	11/16 x 1/4
.0033	30GA-D33	33C32A2	11/16 x 1/4
.0039	30GA-D39	36C155A	25/32 x 1/4
.004	30GA-D40	36C78A	25/32 x 1/4
.0047	30GA-D47	36C339	25/32 x 1/4
.005	30GA-D50	36C124A	25/32 x 1/4
.006	30GA-D60	41C34A	27/32 x 1/4
.0068	30GA-D68	41C153	27/32 x 1/4
.008	30GA-D80	41C151	27/32 x 1/4
.0082	30GA-D82	41C150	27/32 x 1/4
.01	30GA-S10	41C121A2	27/32 x 1/4

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
6000 WVDC (discs) ±20% Tol.			
1.5	60GA-V15	29C406	5/16 x 5/16
4.7	60GA-V47	29C407	5/16 x 5/16
6.8	60GA-V68	29C408	5/16 x 5/16
8.2	60GA-V82	29C409	5/16 x 5/16
10	60GA-Q10	29C410	5/16 x 5/16
12	60GA-Q12	29C411	5/16 x 5/16
15	60GA-Q15	29C412	5/16 x 5/16
18	60GA-Q18	29C413	5/16 x 5/16
20	60GA-Q20	29C414	5/16 x 5/16
22	60GA-Q22	29C415	5/16 x 5/16
25	60GA-Q25	29C416	5/16 x 5/16
27	60GA-Q27	29C417	5/16 x 5/16
30	60GA-Q30	29C418	5/16 x 5/16
33	60GA-Q33	29C419	5/16 x 5/16
39	60GA-Q39	29C420	5/16 x 5/16
47	60GA-Q47	29C421	5/16 x 5/16
50	60GA-Q50	29C422	5/16 x 5/16
56	60GA-Q56	29C423	5/16 x 5/16
60	60GA-Q60	29C424	5/16 x 5/16
68	60GA-Q68	29C425	5/16 x 5/16
75	60GA-Q75	29C426	5/16 x 5/16
82	60GA-Q82	29C427	5/16 x 5/16
100	60GA-T10	29C428	5/16 x 5/16
120	60GA-T12	29C429	5/16 x 5/16
150	60GA-T15	33C187	11/16 x 5/16
180	60GA-T18	33C188	11/16 x 5/16
200	60GA-T20	33C189	11/16 x 5/16
220	60GA-T22	33C190	11/16 x 5/16

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
6000 WVDC (cont.)			
250	60GA-T25	33C191	11/16 x 5/16
270	60GA-T27	33C192	11/16 x 5/16
300	60GA-T30	36C265	3/4 x 5/16
330	60GA-T33	36C266	3/4 x 5/16
390	60GA-T39	41C9A1	7/8 x 5/16
400	60GA-T40	41C142	7/8 x 5/16
470	60GA-T47	41C80A1	7/8 x 5/16
500	60GA-T50	33C185	11/16 x 5/16
560	60GA-T56	33C186	11/16 x 5/16
680	60GA-T68	33C107	11/16 x 5/16
750	60GA-T75	33C108	11/16 x 5/16
820	60GA-T82	33C109	11/16 x 5/16
.001 μF	60GA-D10	33C90A	11/16 x 5/16
.0012	60GA-D12	33C101	11/16 x 5/16
.0015	60GA-D15	36C253A	3/4 x 5/16
.0022	60GA-D22	41C152	7/8 x 5/16
.0025	60GA-D25	41C250	7/8 x 5/16
.0027	60GA-D27	41C251	7/8 x 5/16
.003	60GA-D30	41C252	7/8 x 5/16
.0033	60GA-D33	41C253	7/8 x 5/16
.0039	60GA-D39	41C254	7/8 x 5/16
.0047	60GA-D47	41C255	7/8 x 5/16

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x
7500 WVDC (discs) ±20% Tol.			
4.7	75GA-V47	29C387	5/16 x
8.2	75GA-V82	29C380	5/16 x
10	75GA-Q10	29C382	5/16 x
12	75GA-Q12	29C383	5/16 x
15	75GA-Q15	29C378	5/16 x
18	75GA-Q18	29C379	5/16 x
20	75GA-Q20	29C405	5/16 x
22	75GA-Q22	29C118A	5/16 x
30	75GA-Q30	29C418A	5/16 x
33	75GA-Q33	29C419A	5/16 x
47	75GA-Q47	29C381	5/16 x
56	75GA-Q56	29C30A	5/16 x
100	75GA-T10	33C56A2	11/16 x
220	75GA-T22	33C224	11/16 x
470	75GA-T47	33C169	11/16 x
500	75GA-T50	44C89	21/32 x
560	75GA-T56	44C90	21/32 x
680	75GA-T68	44C92	21/32 x
750	75GA-T75	33C175	11/16 x
820	75GA-T82	33C177	11/16 x
.001 μF	75GA-D10	33C178	11/16 x
.0012	75GA-D12	36C334	3/4 x
.0015	75GA-D15	41C221	7/8 x
.0018	75GA-D18	41C223	7/8 x
.002	75GA-D20	41C224	7/8 x
.0022	75GA-D22	41C225	7/8 x
.0025	75GA-D25	41C226	7/8 x

HIGH-K TYPES

- Designed for By-Pass and Coupling Applications Where Additional Capacitance Will Not Affe Circuit Operation • Smallest Physical Size • EIA Designation: 5HK=Z5U
- 5HKS-S10 thru 5HK-P10, **500 WVDC,** Capacitance Tolerance: +80 —20%
- All Other 5HK are **1000 WVDC,** Capacitance Tolerance: GMV

μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
SINGLE UNITS			
.001	5HK-D10	C023B102E102P	5/16 x 5/32
.0015	5HK-D15	C023B102F152P	3/8 x 5/32
.002	5HK-D20	C023B102F202P	3/8 x 5/32
.0022	5HK-D22	C023B102F222P	3/8 x 5/32
.0033	5HK-D33	C023B102G332P	7/16 x 5/32
.0039	5HK-D39	C023B102G392P	7/16 x 5/32
.0047	5HK-D47	C023B102H472P	1/2 x 5/32
.005	5HK-D50	C023B102H502P	1/2 x 5/32
.0068	5HK-D68	C023B102J682P	5/16 x 5/32
.0082	5HK-D82	C023B102L822P	11/16 x 5/32
.01	5HK-S10	C023B102L103P	11/16 x 5/32
.01	5HKS-S10	C023B501G103Z	7/16 x 5/32
.015	5HK-S15	C023B501J153Z	5/16 x 5/32

μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
SINGLE UNITS (cont.)			
.02	5HK-S20	C023B501J203Z	5/16 x 5
.025	5HK-S25	C023B501K253Z	5/8 x 5
.04	5HK-S40	44C124A	11/16 x 3
.05	5HK-S50	33C58	11/16 x 5
.1	5HK-P10	41C92	7/8 x 3
DUAL UNITS			
2 x .001	5HK-2D10	20C253	7/16 x 5
2 x .0015	5HK-2D15	55C67	1/2 x 5
2 x .002	5HK-2D20	29C175	5/16 x 5
2 x .0022	5HK-2D22	29C27	5/16 x 5
2 x .0047	5HK-2D47	36C330	3/4 x 5
2 x .01	5HK-2S10	41C238	7/8 x 5
2 x .02	5HK-2S20	41C219	1 x 7

MINIATURIZED DISC CERAMIC CAPACITORS FOR TRANSISTORIZED CIRCUITRY

- For Coupling and By-Pass Applications

Type TG Standard Tolerance ±20%

μF	Volts	Sprague Products Cat. No.	Sprague O.E.M. Cat. No.	Size D. x
.005	100	TG-D50	C023B101E502M	5/16 x 5
.01	100	TG-S10	C023B101F103M	3/8 x 5
.02	100	TG-S20	C023B101H203M	1/2 x 5
.025	100	TG-S25	C023B101J253M	1/2 x 5
.03	100	TG-S30	C023A101J303M	5/8 x 5
.05	100	TG-S50	C023B101L503M	1/2 x 5
.1	100	TG-P10	33C41B6	11/16 x 5
.05	100	TGL-S50	C023B101L503M	11/16 x 5

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SPRAGUE CAPACITORS

ERA-MITE® CERAMIC CAPACITORS, continued

SEMI-STABLE TYPES

Better Stability Than the General Application Types. • Tighter Tolerance of ±10% is Better Than General Application Types
Ideal for Replacing Other Types of Capacitors Such as Molded Micas, Paper Tubulars, and Mylar Film Tubulars
Available in 1KV and a Smaller Size 250 Volt Rating • Small Size, Low Cost • EIA Designation: 10SS=Z5P, 2SS=Z5P

SEMI-STABLE 250 WVDC STANDARD TOLERANCE ±10%

	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.	μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.	μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
0pF	2SS-T75	C067B251E751K	5/16 x 5/32	.0022	2SS-D22	C067B251F222K	3/8 x 5/32	.0068	2SS-D68	C067B251J682K	9/16 x 5/32
0pF	2SS-T82	C067B251E821K	5/16 x 5/32	.0027	2SS-D27	C067B251G272K	7/16 x 5/32	.0082	2SS-D82	C067B251L822K	11/16 x 5/32
1	2SS-D10	C067B251E102K	5/16 x 5/32	.0033	2SS-D33	C067B251G332K	7/16 x 5/32	.01	2SS-S10	C067A251M103K	3/4 x 5/32
12	2SS-D12	C067B251E122K	5/16 x 5/32	.0039	2SS-D39	C067B251H392K	1/2 x 5/32	.012	2SS-S12	29C527	9/16 x 7/32
15	2SS-D15	C067B251F152K	3/8 x 5/32	.0047	2SS-D47	C067B251H472K	1/2 x 5/32	.015	2SS-S15	33C304	11/16 x 7/32
18	2SS-D18	C067B251F182K	3/8 x 5/32	.005	2SS-D50	C067B251H502K	1/2 x 5/32	.018	2SS-S18	33C291	11/16 x 7/32
2	2SS-D20	C067B251F202K	3/8 x 5/32	.0056	2SS-D56	C067B251J562K	9/16 x 5/32	.02	2SS-S20	36C413	3/4 x 7/32

SEMI-STABLE 1000 WVDC STANDARD TOLERANCE ±10%

	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.	μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.	μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
0	10SS-T47	C067B102E471K	5/16 x 5/32	.0018	10SS-D18	C067B102G182K	7/16 x 5/32	.0068	10SS-D68	C067A102M682K	3/4 x 5/32
0	10SS-T50	C067B102E501K	5/16 x 5/32	.002	10SS-D20	C067B102G202K	7/16 x 5/32	.0082	10SS-D82	C067A102P822K	7/8 x 5/32
0	10SS-T56	C067B102E561K	5/16 x 5/32	.0022	10SS-D22	C067B102H222K	1/2 x 5/32	.010	10SS-S10	C067A102P103K	7/8 x 5/32
0	10SS-T68	C067B102E681K	5/16 x 5/32	.0027	10SS-D27	C067B102H272K	1/2 x 5/32	.012	10SS-S12	33C249A	3/4 x 7/32
0	10SS-T75	C067B102F751K	3/8 x 5/32	.0033	10SS-D33	C067B102J332K	9/16 x 5/32	.015	10SS-S15	41C299A	15/16 x 7/32
0	10SS-T82	C067B102F821K	3/8 x 5/32	.0039	10SS-D39	C067B102J392K	9/16 x 5/32	.018	10SS-S18	41C300A1	15/16 x 7/32
1μF	10SS-D10	C067B102F102K	3/8 x 5/32	.0047	10SS-D47	C067B102K472K	5/8 x 5/32	.02	10SS-S20	41C301A1	15/16 x 7/32
12	10SS-D12	C067B102F122K	3/8 x 5/32	.005	10SS-D50	C067B102K502K	5/8 x 5/32	.022	10SS-S22	41C310A1	15/16 x 7/32
15	10SS-D15	C067B102G152K	7/16 x 5/32	.0056	10SS-D56	C067B102L562K	11/16 x 5/32				

TEMPERATURE-STABLE TYPES

Used Where Minimum Capacitance Change With Temperature Is An Important Consideration • Rated at **1000 WVDC**
Standard Capacitance Tolerance: ±10% except 10TS-S15, 10TS-S20, 10TS-S30 ±15%. • EIA Designation: 10TS=X5E

	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.	pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.	μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
3.3	10TS-V33	C028B102E3R3K	5/16 x 5/32	75	10TS-Q75	C028B102E750K	5/16 x 5/32	.001	10TS-D10	C106B102G102K	7/16 x 5/32
5.0	10TS-V50	C028B102E5R0K	5/16 x 5/32	82	10TS-Q82	C028B102E820K	5/16 x 5/32	.0012	10TS-D12	C016B102G122K	7/16 x 5/32
6.8	10TS-V68	C028B102E6R8K	5/16 x 5/32	91	10TS-Q91	C028B102E910K	5/16 x 5/32	.0015	10TS-D15	C016B102J152K	9/16 x 5/32
7.5	10TS-V75	C028B102E7R5K	5/16 x 5/32	100	10TS-T10	C028B102E101K	5/16 x 5/32	.0018	10TS-D18	C016B102J182K	9/16 x 5/32
8.2	10TS-V82	C028B102E8R2K	5/16 x 5/32	120	10TS-T12	C028B102E121K	5/16 x 5/32	.0020	10TS-D20	C016B102J202K	9/16 x 5/32
0	10TS-Q10	C028B102E100K	5/16 x 5/32	150	10TS-T15	C028B102E151K	5/16 x 5/32	.0022	10TS-D22	C016B102J222K	9/16 x 5/32
2	10TS-Q12	C028B102E120K	5/16 x 5/32	180	10TS-T18	C028B102E181K	5/16 x 5/32	.0025	10TS-D25	C016B102K252K	5/8 x 5/32
5	10TS-Q15	C028B102E150K	5/16 x 5/32	200	10TS-T20	C028B102E201K	5/16 x 5/32	.0027	10TS-D27	C016B102K272K	5/8 x 5/32
8	10TS-Q18	C028B102E180K	5/16 x 5/32	220	10TS-T22	C028B102E221K	5/16 x 5/32	.0030	10TS-D30	C016B102K302K	5/8 x 5/32
0	10TS-Q20	C028B102E200K	5/16 x 5/32	250	10TS-T25	C028B102E251K	5/16 x 5/32	.0033	10TS-D33	C016B102L332K	11/16 x 5/32
2	10TS-Q22	C028B102E220K	5/16 x 5/32	270	10TS-T27	C016B102E271K	5/16 x 5/32	.0039	10TS-D39	C016A102M392K	3/4 x 5/32
5	10TS-Q25	C028B102E250K	5/16 x 5/32	300	10TS-T30	C016B102E301K	5/16 x 5/32	.0040	10TS-D40	C016A102M402K	3/4 x 5/32
7	10TS-Q27	C028B102E270K	5/16 x 5/32	330	10TS-T33	C016B102E331K	5/16 x 5/32	.0047	10TS-D47	C016A102P472K	7/8 x 5/32
0	10TS-Q30	C028B102E300K	5/16 x 5/32	390	10TS-T39	C016B102E391K	5/16 x 5/32	.0050	10TS-D50	C016A102P502K	7/8 x 5/32
3	10TS-Q33	C028B102E330K	5/16 x 5/32	470	10TS-T47	C016B102E471K	5/16 x 5/32	.0056	10TS-D56	C016A102P562K	7/8 x 5/32
9	10TS-Q39	C028B102E390K	5/16 x 5/32	500	10TS-T50	C016B102F501K	3/8 x 5/32	.0068	10TS-D68	36C108A	13/16 x 7/32
7	10TS-Q47	C028B102E470K	5/16 x 5/32	560	10TS-T56	C016B102F561K	3/8 x 5/32	.0075	10TS-D75	36C395	13/16 x 7/32
0	10TS-Q50	C028B102E500K	5/16 x 5/32	680	10TS-T68	C016B102F681K	3/8 x 5/32	.0082	10TS-D82	41C306A	15/16 x 7/32
6	10TS-Q56	C028B102E560K	5/16 x 5/32	750	10TS-T75	C016B102F751K	3/8 x 5/32	.01	10TS-S10	41C121A1	15/16 x 7/32
8	10TS-Q68	C028B102E680K	5/16 x 5/32	820	10TS-T82	C016B102F821K	3/8 x 5/32				

DISC CERAMICS FOR AC APPLICATIONS

Rated at 125 VAC or 1400 VDC • Standard Tolerance ±20%
For AC Line Bypass Application • Heavy Duty for Long Life
May Be Connected Across the Line or Chassis to Line

F	Sprague Products Catalog No.	Sprague O.E.M. Part No.	D. x T.
1	125L-D10	19C251	3/8 x 7/32
15	125L-D15	19C252	3/8 x 7/32
2	125L-D20	19C253	3/8 x 7/32
47	125L-D47	29C145	9/16 x 7/32
5	125L-D50	29C145A	9/16 x 7/32
	125L-S10	36C218	3/4 x 7/32
	125L-S20	36C220	3/4 x 1/4
< .005	125L-2D50	29C147	9/16 x 1/4
< .01	125L-2S10	36C219	3/4 x 1/4

DISC CERAMICS FOR BUFFER APPLICATIONS

• Rated at 2000 WVDC • Standard Tolerance ±20%

μF	Sprague Products Catalog No.	Sprague O.E.M. Part No.	D. x T.
.001	BL-D10	29C162	9/16 x 7/32
.002	BL-D20	29C163	9/16 x 7/32
.003	BL-D30	29C164	9/16 x 7/32
.004	BL-D40	29C165	9/16 x 7/32
.005	BL-D50	29C251	9/16 x 7/32
.006	BL-D60	44C126	11/16 x 7/32
.007	BL-D70	33C82	11/16 x 7/32
.0075	BL-D75	33C81	11/16 x 7/32
.008	BL-D80	33C84	11/16 x 7/32
.01	BL-S10	36C151	3/4 x 7/32

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SPRAGUE CAPACITORS

CERA-MITE® CERAMIC CAPACITORS, continued

TEMPERATURE-COMPENSATING AND NP0 TYPES

- Zero Temperature-coefficient Capacitors used Where Capacitance Change with Temperature is Undesirable
- Superior to Silvered-mica Types in Stability, High "Q", and Insulation Resistance
- Units listed below are discs
- Eliminate oscillator drift in TV, FM, VHF and AM receivers
- Negative Temperature Coefficient is 30 ppm/°C for N030 types, 80 ppm/°C for N080 types, 150 ppm/°C for N150 types, 220 ppm/°C for N220 types, 330 ppm/°C for N330 types, 470 ppm/°C for N470 types, 750 ppm/°C for N750 types, 1500 ppm/°C N1500 types and 2200 ppm/°C for N2200 types.
- Standard Capacitance Tolerance of 12 pF and up; ±5%. On 1(and below: ±0.5 pF
- Rated at **500 WVDC**
- For Use in Tuned Circuits
- Temperature-compensating Types Have a Linear Negative Coeffic Curve
- Available in Standard 5% Decade Values in NPO and N030 N2200 Coefficients

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
		NP0	
1.0	10TCC-V10	C030B501S1R0D	3/8 x 1/4
1.2	10TCC-V12	C030B501S1R2D	3/8 x 1/4
1.5	10TCC-V15	C030B501S1R5D	3/8 x 1/4
1.8	10TCC-V18	C030B501S1R8D	3/8 x 1/4
2.2	10TCC-V22	C030B501S2R2D	3/8 x 1/4
2.7	10TCC-V27	C030B501S2R7D	3/8 x 1/4
3.0	10TCC-V30	C030B501S3R0D	3/8 x 1/4
3.3	10TCC-V33	C030B501E3R3D	5/16 x 5/32
3.9	10TCC-V39	C030B501E3R9D	5/16 x 5/32
4.7	10TCC-V47	C030B501E4R7D	5/16 x 5/32
5.0	10TCC-V50	C030B501E5R0D	5/16 x 5/32
5.6	10TCC-V56	C030B501E5R6D	5/16 x 5/32
6.8	10TCC-V68	C030B501E6R8D	5/16 x 5/32
8.2	10TCC-V82	C030B501E8R2D	5/16 x 5/32
10	10TCC-Q10	C030B501E100D	5/16 x 5/32
12	10TCC-Q12	C030B501E120J	5/16 x 5/32
15	10TCC-Q15	C030B501F150J	3/8 x 5/32
18	10TCC-Q18	C030B501F180J	3/8 x 5/32
20	10TCC-Q20	C030B501F200J	3/8 x 5/32
22	10TCC-Q22	C030B501G220J	7/16 x 5/32
25	10TCC-Q25	C030B501G250J	7/16 x 5/32
27	10TCC-Q27	C030B501G270J	7/16 x 5/32
30	10TCC-Q30	C030B501G300J	7/16 x 5/32
33	10TCC-Q33	C030B501G330J	7/16 x 5/32
39	10TCC-Q39	C030B501H390J	1/2 x 5/32
47	10TCC-Q47	C030B501J470J	9/16 x 5/32
50	10TCC-Q50	C030B501J500J	9/16 x 5/32
56	10TCC-Q56	C030B501J560J	9/16 x 5/32
68	10TCC-Q68	C030B501K680J	5/8 x 5/32
75	10TCC-Q75	C030B501K750J	5/8 x 5/32
82	10TCC-Q82	C030B501L820J	11/16 x 5/32
100	10TCC-T10	C030B501L101J	11/16 x 5/32
120	10TCC-T12	C030A501M121J	3/4 x 5/32
150	10TCC-T15	C030A501P151J	7/8 x 5/32
180	10TCC-T18	33C307	3/4 x 7/32
200	10TCC-T20	33C308	3/4 x 7/32
220	10TCC-T22	33C418	3/4 x 7/32
270	10TCC-T27	41C410	13/16 x 7/32
300	10TCC-T30	41C411	13/16 x 7/32
330	10TCC-T33	41C412	15/16 x 7/32
		N030	
1.0	10TCM-V10	C025B501S1R0D	3/8 x 1/4
1.2	10TCM-V12	C025B501S1R2D	3/8 x 1/4
1.5	10TCM-V15	C025B501S1R5D	3/8 x 1/4
1.8	10TCM-V18	C025B501S1R8D	3/8 x 1/4
2.2	10TCM-V22	C025B501S2R2D	3/8 x 1/4
2.7	10TCM-V27	C025B501S2R7D	3/8 x 1/4
3.0	10TCM-V30	C025B501S3R0D	3/8 x 1/4
3.3	10TCM-V33	C025B501S3R3D	3/8 x 1/4
3.9	10TCM-V39	C025B501S3R9D	3/8 x 1/4
4.7	10TCM-V47	C025B501E4R7D	5/16 x 5/32
5.0	10TCM-V50	C025B501E5R0D	5/16 x 5/32
5.6	10TCM-V56	C025B501E5R6D	5/16 x 5/32
6.8	10TCM-V68	C025B501E6R8D	5/16 x 5/32
8.2	10TCM-V82	C025B501E8R2D	5/16 x 5/32
10	10TCM-Q10	C025B501E100J	5/16 x 5/32
12	10TCM-Q12	C025B501E120J	5/16 x 5/32
15	10TCM-Q15	C025B501F150J	3/8 x 5/32
18	10TCM-Q18	C025B501F180J	3/8 x 5/32
20	10TCM-Q20	C025B501F200J	3/8 x 5/32
22	10TCM-Q22	C025B501G220J	7/16 x 5/32
25	10TCM-Q25	C025B501G250J	7/16 x 5/32
27	10TCM-Q27	C025B501G270J	7/16 x 5/32
30	10TCM-Q30	C025B501G300J	7/16 x 5/32
33	10TCM-Q33	C025B501G330J	7/16 x 5/32
39	10TCM-Q39	C025B501H390J	1/2 x 5/32
47	10TCM-Q47	C025B501H470J	1/2 x 5/32
50	10TCM-Q50	C025B501J500J	9/16 x 5/32
56	10TCM-Q56	C025B501J560J	9/16 x 5/32
68	10TCM-Q68	C025B501K680J	5/8 x 5/32
75	10TCM-Q75	C025B501K750J	5/8 x 5/32
82	10TCM-Q82	C025B501K820J	5/8 x 5/32
100	10TCM-T10	C025B501L101J	11/16 x 5/32
120	10TCM-T12	C025A501M121J	3/4 x 5/32
150	10TCM-T15	C025A501P151J	7/8 x 5/32
180	10TCM-T18	C025A501P181J	7/8 x 5/32
		N080	
2.2	10TCN-V22	C026B501S2R2D	3/8 x 1/4
2.7	10TCN-V27	C026B501S2R7D	3/8 x 1/4
3.0	10TCN-V30	C026B501S3R0D	3/8 x 1/4
3.3	10TCN-V33	C026B501S3R3D	3/8 x 1/4
3.9	10TCN-V39	C026B501S3R9D	3/8 x 1/4
4.7	10TCN-V47	C026B501S4R7D	3/8 x 1/4
5.0	10TCN-V50	C026B501E5R0D	5/16 x 5/32
5.6	10TCN-V56	C026B501E5R6D	5/16 x 5/32
6.8	10TCN-V68	C026B501E6R8D	5/16 x 5/32
8.2	10TCN-V82	C026B501E8R2D	5/16 x 5/32
10	10TCN-Q10	C026B501E100J	5/16 x 5/32
12	10TCN-Q12	C026B501E120J	5/16 x 5/32
15	10TCN-Q15	C026B501F150J	3/8 x 5/32
18	10TCN-Q18	C026B501F180J	3/8 x 5/32
20	10TCN-Q20	C026B501F200J	3/8 x 5/32
22	10TCN-Q22	C026B501F220J	3/8 x 5/32
25	10TCN-Q25	C026B501G250J	7/16 x 5/32
27	10TCN-Q27	C026B501G270J	7/16 x 5/32
30	10TCN-Q30	C026B501G300J	7/16 x 5/32
33	10TCN-Q33	C026B501G330J	7/16 x 5/32
39	10TCN-Q39	C026B501G390J	7/16 x 5/32
47	10TCN-Q47	C026B501H470J	1/2 x 5/32
50	10TCN-Q50	C026B501H500J	1/2 x 5/32
56	10TCN-Q56	C026B501J560J	9/16 x 5/32
68	10TCN-Q68	C026B501J680J	9/16 x 5/32
75	10TCN-Q75	C026B501K750J	5/8 x 5/32
82	10TCN-Q82	C026B501K820J	5/8 x 5/32
100	10TCN-T10	C026B501L101J	11/16 x 5/32
120	TCN-T12	C026B501L121J	11/16 x
150	10TCN-T15	C026A501P151J	7/8 x
180	10TCN-T18	C026A501P181J	7/8 x
200	10TCN-T20	C026A501P201J	7/8 x
220	10TCN-T22	C026A501P221J	7/8 x
		N150	
2.2	10TCP-V22	C032B501S2R2D	3/8 x
2.7	10TCP-V27	C032B501S2R7D	3/8 x
3.0	10TCP-V30	C032B501S3R0D	3/8 x
3.3	10TCP-V33	C032B501S3R3D	3/8 x
3.9	10TCP-V39	C032B501S3R9D	3/8 x
4.7	10TCP-V47	C032B501S4R7D	3/8 x
5.0	10TCP-V50	C032B501S5R0D	3/8 x
5.6	10TCP-V56	C032B501E5R6D	5/16 x
6.8	10TCP-V68	C032B501E6R8D	5/16 x
8.2	10TCP-V82	C032B501E8R2D	5/16 x
10	10TCP-Q10	C032B501E100J	5/16 x
12	10TCP-Q12	C032B501E120J	5/16 x
15	10TCP-Q15	C032B501E150J	5/16 x
18	10TCP-Q18	C032B501F180J	3/8 x
20	10TCP-Q20	C032B501F200J	3/8 x
22	10TCP-Q22	C032B501F220J	3/8 x
25	10TCP-Q25	C032B501F250J	3/8 x
27	10TCP-Q27	C032B501F270J	3/8 x
30	10TCP-Q30	C032B501F300J	3/8 x
33	10TCP-Q33	C032B501G330J	7/16 x
39	10TCP-Q39	C032B501G390J	7/16 x
47	10TCP-Q47	C032B501G470J	7/16 x
50	10TCP-Q50	C032B501H500J	1/2 x
56	10TCP-Q56	C032B501H560J	1/2 x
68	10TCP-Q68	C032B501J680J	9/16 x
75	10TCP-Q75	C032B501J750J	9/16 x
82	10TCP-Q82	C032B501J820J	9/16 x
100	10TCP-T10	C032B501K101J	5/8 x
120	10TCP-T12	C032B501L121J	11/16 x
150	10TCP-T15	C032A501M151J	3/4 x
180	10TCP-T18	C032A501P181J	7/8 x
200	10TCP-T20	C032A501P201J	7/8 x
220	10TCP-T22	C032A501P221J	7/8 x
		N220	
3.0	10TCR1V30	C033B501S3R0D	3/8 x
3.3	10TCR-V33	C033B501S3R3D	3/8 x
3.9	10TCR-V39	C033B501S3R9D	3/8 x
4.7	10TCR-V47	C033B501S4R7D	3/8 x

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SPRAGUE CAPACITORS

CERA-MITE® CERAMIC CAPACITORS, continued

N220 (cont.)

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
5.0	10TCR-V50	C033B501S5R0D	3/8 x 1/4
5.6	10TCR-V56	C033B501S5R6D	3/8 x 1/4
6.8	10TCR-V68	C033B501E6R8D	5/16 x 5/32
8.2	10TCR-V82	C033B501E8R2D	5/16 x 5/32
10	10TCR-Q10	C033B501E100J	5/16 x 5/32
12	10TCR-Q12	C033B501E120J	5/16 x 5/32
15	10TCR-Q15	C033B501E150J	5/16 x 5/32
18	10TCR-Q18	C033B501E180J	5/16 x 5/32
20	10TCR-Q20	C033B501F200J	3/8 x 5/32
22	10TCR-Q22	C033B501F220J	3/8 x 5/32
25	10TCR-Q25	C033B501F250J	3/8 x 5/32
27	10TCR-Q27	C033B501F270J	3/8 x 5/32
30	10TCR-Q30	C033B501F300J	3/8 x 5/32
33	10TCR-Q33	C033B501G330J	7/16 x 5/32
39	10TCR-Q39	C033B501G390J	7/16 x 5/32
47	10TCR-Q47	C033B501G470J	7/16 x 5/32
50	10TCR-Q50	C033B501G500J	7/16 x 5/32
56	10TCR-Q56	C033B501H560J	1/2 x 5/32
68	10TCR-Q68	C033B501J680J	7/16 x 5/32
75	10TCR-Q75	C033B501J750J	9/16 x 5/32
82	10TCR-Q82	C033B501J820J	9/16 x 5/32
00	10TCR-T10	C033B501K101J	5/8 x 5/32
20	10TCR-T12	C033B501L121J	11/16 x 5/32
50	10TCR-T15	C033B501L151J	11/16 x 5/32
80	10TCR-T18	C033A501M181J	3/4 x 5/32
00	10TCR-T20	C033A501P201J	7/8 x 5/32
20	10TCR-T22	C033A501P221J	7/8 x 5/32
70	10TCR-T27	C033A501P271J	7/8 x 5/32
00	10TCR-T30	C033A501P301J	7/8 x 5/32

N330

3.0	10TCS-V30	C034B501S3R0D	3/8 x 1/4
3.3	10TCS-V33	C034B501S3R3D	3/8 x 1/4
3.9	10TCS-V39	C034B501S3R9D	3/8 x 1/4
4.7	10TCS-V47	C034B501S4R7D	3/8 x 1/4
5.0	10TCS-V50	C034B501S5R0D	3/8 x 1/4
5.6	10TCS-V56	C034B501S5R6D	3/8 x 1/4
6.8	10TCS-V68	C034B501S6R8D	3/8 x 1/4
8.2	10TCS-V82	C034B501E8R2D	5/16 x 5/32
10	10TCS-Q10	C034B501E100J	5/16 x 5/32
12	10TCS-Q12	C034B501E120J	5/16 x 5/32
15	10TCS-Q15	C034B501E150J	5/16 x 5/32
18	10TCS-Q18	C034B501E180J	5/16 x 5/32
20	10TCS-Q20	C034B501E200J	5/16 x 5/32
22	10TCS-Q22	C034B501F220J	3/8 x 5/32
25	10TCS-Q25	C034B501F250J	3/8 x 5/32
27	10TCS-Q27	C034B501F270J	3/8 x 5/32
30	10TCS-Q30	C034B501F300J	3/8 x 5/32
33	10TCS-Q33	C034B501F330J	3/8 x 5/32
39	10TCS-Q39	C034B501G390J	7/16 x 5/32
47	10TCS-Q47	C034B501G470J	7/16 x 5/32
50	10TCS-Q50	C034B501G500J	7/16 x 5/32
56	10TCS-Q56	C034B501G560J	7/16 x 5/32
68	10TCS-Q68	C034B501H680J	1/2 x 5/32
75	10TCS-Q75	C034B501H750J	1/2 x 5/32
82	10TCS-Q82	C034B501J820J	9/16 x 5/32
00	10TCS-T10	C034B501J101J	9/16 x 5/32
20	10TCS-T12	C034B501K121J	5/8 x 5/32
50	10TCS-T15	C034B501L151J	11/16 x 5/32
80	10TCS-T18	C034A501M181J	3/4 x 5/32
00	10TCS-T20	C034A501M201J	3/4 x 5/32
20	10TCS-T22	C034A501P221J	7/8 x 5/32
70	10TCS-T27	C034A501P271J	7/8 x 5/32
00	10TCS-T30	C034A501P301J	7/8 x 5/32

N470

3.0	10TCT-V30	C035B501S3R0D	3/8 x 1/4
3.3	10TCT-V33	C035B501S3R3D	3/8 x 1/4
3.9	10TCT-V39	C035B501S3R9D	3/8 x 1/4
4.7	10TCT-V47	C035B501S4R7D	3/8 x 1/4
5.0	10TCT-V50	C035B501S5R0D	3/8 x 1/4
5.6	10TCT-V56	C035B501S5R6D	3/8 x 1/4
6.8	10TCT-V68	C035B501S6R8D	3/8 x 1/4
8.2	10TCT-V82	C035B501S8R2D	3/8 x 1/4
10	10TCT-Q10	C035B501E100J	5/16 x 5/32
12	10TCT-Q12	C035B501E120J	5/16 x 5/32
15	10TCT-Q15	C035B501E150J	5/16 x 5/32
18	10TCT-Q18	C035B501E180J	5/16 x 5/32
20	10TCT-Q20	C035B501E200J	5/16 x 5/32
22	10TCT-Q22	C035B501E220J	5/16 x 5/32
25	10TCT-Q25	C035B501F250J	3/8 x 5/32
27	10TCT-Q27	C035B501F270J	3/8 x 5/32
30	10TCT-Q30	C035B501F300J	3/8 x 5/32
33	10TCT-Q33	C035B501F330J	3/8 x 5/32
39	10TCT-Q39	C035B501F390J	3/8 x 5/32
47	10TCT-Q47	C035B501G470J	7/16 x 5/32
50	10TCT-Q50	C035B501G500J	7/16 x 5/32
56	10TCT-Q56	C035B501G560J	7/16 x 5/32
68	10TCT-Q68	C035B501H680J	1/2 x 5/32
75	10TCT-Q75	C035B501H750J	1/2 x 5/32
82	10TCT-Q82	C035B501H820J	1/2 x 5/32
100	10TCT-T10	C035B501J101J	9/16 x 5/32
120	10TCT-T12	C035B501J121J	9/16 x 5/32
150	10TCT-T15	C035B501K151J	5/8 x 5/32
180	10TCT-T18	C035B501L181J	11/16 x 5/32
200	10TCT-T20	C035B501L201J	11/16 x 5/32
220	10TCT-T22	C035B501M221J	3/4 x 5/32
270	10TCT-T27	C035A501P271J	7/8 x 5/32
300	10TCT-T30	C035A501P301J	7/8 x 5/32
330	10TCT-T33	C035A501P331J	7/8 x 5/32
390	10TCT-T39	C035A501P391J	7/8 x 5/32

N750

4.7	10TCU-V47	C036B501S4R7D	3/8 x 1/4
5.0	10TCU-V50	C036B501S5R0D	3/8 x 1/4
5.6	10TCU-V56	C036B501S5R6D	3/8 x 1/4
6.8	10TCU-V68	C036B501S6R8D	3/8 x 1/4
8.2	10TCU-V82	C036B501S8R2D	3/8 x 1/4
10	10TCU-Q10	C036B501S100J	3/8 x 1/4
12	10TCU-Q12	C036B501E120J	5/16 x 5/32
15	10TCU-Q15	C036B501E150J	5/16 x 5/32
18	10TCU-Q18	C036B501E180J	5/16 x 5/32
20	10TCU-Q20	C036B501E200J	5/16 x 5/32
22	10TCU-Q22	C036B501E220J	5/16 x 5/32
25	10TCU-Q25	C036B501E250J	5/16 x 5/32
27	10TCU-Q27	C036B501E270J	5/16 x 5/32
30	10TCU-Q30	C036B501E300J	5/16 x 5/32
33	10TCU-Q33	C036B501E330J	5/16 x 5/32
39	10TCU-Q39	CO36B501F390J	3/8 x 5/32
47	10TCU-Q47	C036B501F470J	3/8 x 5/32
50	10TCU-Q50	C036B501F500J	3/8 x 5/32
56	10TCU-Q56	C036B501F560J	3/8 x 5/32
68	10TCU-Q68	C036B501G680J	7/16 x 5/32
75	10TCU-Q75	C036B501G750J	7/16 x 5/32
82	10TCU-Q82	C036B501G820J	7/16 x 5/32
100	10TCU-T10	C036B501H101J	1/2 x 5/32
120	10TCU-T12	C036B501H121J	1/2 x 5/32
150	10TCU-T15	C036B501J151J	9/16 x 5/32
180	10TCU-T18	C036B501K181J	5/8 x 5/32
200	10TCU-T20	C036B501K201J	5/8 x 5/32
220	10TCU-T22	C036B501K221J	5/8 x 5/32
270	10TCU-T27	C036B501L271J	11/16 x 5/32
300	10TCU-T30	C036A501M301J	3/4 x 5/32
330	10TCU-T33	C036A501M331J	3/4 x 5/32
390	10TCU-T39	C036A501P391J	7/8 x 5/32
470	10TCU-T47	C036A501P471J	7/8 x 5/32

N1500

pF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	Size D. x T.
10	10TCW-Q10	C048B501S100J	3/8 x 1/4
12	10TCW-Q12	C048B501S120J	3/8 x 1/4
15	10TCW-Q15	C048B501S150J	3/8 x 1/4
18	10TCW-Q18	C048B501E180J	5/16 x 5/32
20	10TCW-Q20	C048B501E200J	5/16 x 5/32
22	10TCW-Q22	C048B501E220J	5/16 x 5/32
25	10TCW-Q25	C048B501E250J	5/16 x 5/32
27	10TCW-Q27	C048B501E270J	5/16 x 5/32
30	10TCW-Q30	C048B501E300J	5/16 x 5/32
33	10TCW-Q33	C048B501E330J	5/16 x 5/32
39	10TCW-Q39	C048B501E390J	5/16 x 5/32
47	10TCW-Q47	C048B501F470J	3/8 x 5/32
50	10TCW-Q50	C048B501F500J	3/8 x 5/32
56	10TCW-Q56	C048B501F560J	3/8 x 5/32
68	10TCW-Q68	C048B501F680J	3/8 x 5/32
75	10TCW-Q75	C048B501G750J	7/16 x 5/32
82	10TCW-Q82	C048B501G820J	7/16 x 5/32
100	10TCW-T10	C048B501G101J	7/16 x 5/32
120	10TCW-T12	C048B501G121J	7/16 x 5/32
150	10TCW-T15	C048B501H151J	1/2 x 5/32
180	10TCW-T18	C048B501J181J	9/16 x 5/32
200	10TCW-T20	C048B501J201J	9/16 x 5/32
220	10TCW-T22	C048B501K221J	5/8 x 5/32
270	10TCW-T27	C048B501K271J	5/8 x 5/32
300	10TCW-T30	C048B501L301J	11/16 x 5/32
330	10TCW-T33	C048B501L331J	11/16 x 5/32
390	10TCW-T39	C048A501M391J	3/4 x 5/32
470	10TCW-T47	C048A501P471J	7/8 x 5/32
560	10TCW-T56	C048A501P561J	7/8 x 5/32

N2200

10	10TCY-Q10	C041B501S100J	3/8 x 1/4
12	10TCY-Q12	C041B501S120J	3/8 x 1/4
15	10TCY-Q15	C041B501S150J	3/8 x 1/4
18	10TCY-Q18	C041B501S180J	3/8 x 1/4
20	10TCY-Q20	C041B501S200J	3/8 x 1/4
22	10TCY-Q22	C041B501E220J	5/16 x 5/32
25	10TCY-Q25	C041B501E250J	5/16 x 5/32
27	10TCY-Q27	C041B501E270J	5/16 x 5/32
30	10TCY-Q30	C041B501E300J	5/16 x 5/32
33	10TCY-Q33	C041B501E330J	5/16 x 5/32
39	10TCY-Q39	C041B501E390J	5/16 x 5/32
47	10TCY-Q47	C041B501E470J	5/16 x 5/32
50	10TCY-Q50	C041B501E500J	5/16 x 5/32
56	10TCY-Q56	C041B501E560J	5/16 x 5/32
68	10TCY-Q68	C041B501E680J	5/16 x 5/32
75	10TCY-Q75	C041B501E750J	5/16 x 5/32
82	10TCY-Q82	C041B501F820J	3/8 x 5/32
100	10TCY-T10	C041B501F101J	3/8 x 5/32
120	10TCY-T12	C041B501F121J	3/8 x 5/32
150	10TCY-T15	C041B501G151J	7/16 x 5/32
180	10TCY-T18	C041B501G181J	7/16 x 5/32
200	10TCY-T20	C041B501G201J	7/16 x 5/32
220	10TCY-T22	C041B501H221J	1/2 x 5/32
270	10TCY-T27	C041B501H271J	1/2 x 5/32
300	10TCY-T30	C041B501J301J	9/16 x 5/32
330	10TCY-T33	C041B501J331J	9/16 x 5/32
390	10TCY-T39	C041B501J391J	9/16 x 5/32
470	10TCY-T47	C041B501K471J	5/8 x 5/32
560	10TCY-T56	C041B501L561J	11/16 x 5/32
680	10TCY-T68	C041A501M681J	3/4 x 5/32
750	10TCY-T75	C041A501M751J	3/4 x 5/32
820	10TCY-T82	C041A501P821J	7/8 x 5/32
1000	10TCY-D10	C041A501P102J	7/8 x 5/32

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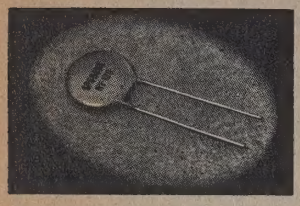
SPRAGUE CAPACITORS

HYPERCON® CERAMIC DISCS



- Superior to Electrolytic Capacitors of Similar Capacitance Values because of the Very Low Power Factor of Hypercons
- Ultra-miniature Ceramic Discs Ideal for use in Transistorized Circuitry
- Designed for By-pass and Couplir Applications but Particularly We suited for any Low Voltage u Where High Capacitance and Lo Power Factor are Important Co siderations
- Tolerance: +80−20%

μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	D. x T.
	12 VOLTS D-C		
.022	HY-340	C080B120C223Y	1/4 x 5/32
.033	HY-345	C080B120E333Y	5/16 x 5/32
.047	HY-350	C080B120F473Y	3/8 x 5/32
.068	HY-355	C080B120F683Y	3/8 x 5/32
.1	HY-360	C080B120H104Y	1/2 x 5/32
.15	HY-365	C080B120J154Y	9/16 x 5/32
.22	HY-370	C080B120K224Y	5/8 x 5/32
.33	HY-375	C080A120M334Y	3/4 x 5/32
.47	HY-380	C080A120P474Y	7/8 x 5/32
	16 VOLTS D-C		
.01	HY-420	C069B160E103Z	5/16 x 5/32
.022	HY-425	C069B160F223Z	3/8 x 5/32

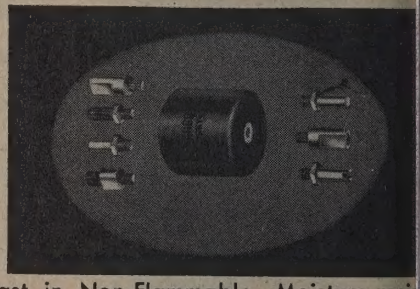
CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

μF	Sprague Products Cat. No.	Sprague O.E.M. Part No.	D. x T.
	16 VOLTS D-C, Continued		
.033	HY-430	C069B160G333Z	7/16 x 5/32
.047	HY-435	C069B160H473Z	1/2 x 5/32
.068	HY-440	C069B160K683Z	5/8 x 5/32
.1	HY-450	C069B160L104Z	11/16 x 5/32
.2	HY-470	C069A160P204Z	7/8 x 5/32
	25 VOLTS D-C		
.0047	HY-510	C069B250C472Z	1/4 x 5/32
.01	HY-520	C069B250F103Z	3/8 x 5/32
.022	HY-525	C069B250G223Z	7/16 x 5/32
.033	HY-530	C069B250H333Z	1/2 x 5/32
.047	HY-535	C069B250J473Z	9/16 x 5/32
.068	HY-540	C069B250L683Z	11/16 x 5/32
.1	HY-550	C069A250M104Z	3/4 x 5/32

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

HIGH-VOLTAGE DOORKNOB CERAMICS

- For Bypass, Arc Suppression and Other High-Voltage Applications
- 20DK-T5 Comes Complete with 7 Terminals, as illustrated. (Packaged 2 per Plastic Box, with 14 terminals
- 30DK-T5 is Supplied with 2 Terminals, as per Style Marked "A"
- Capacitor Body has Female Threads for interchangeable Screw-in Terminals



pF	KV	Diam. x Length	Sprague Products Cat. No.	Sprague O.E.M. Cat. No.
500	20	1.000 x 1.122	20DK-T5	708C50
500	30	1.312 x 1.312	30DK-T5	709C2

Call Your Sprague Distributor for Current Prices

- Cast in Non-Flammable, Moisture-resis tant, Epoxy Resin

SPARK GAPS

- A Spark Gap Consists of a Wire Loop Encased in Phenolic Resin. After the Loop Has Been Encased a Precise Slot is Cut Through The Wire Loop and Its Protective Case to Form a Spark Gap
- Suppress Transient Voltage Surges That Damage Costly Electronic Equipment
- Protect TV Circuits From Damage Caused By the Momentary Arcing or Shorting of Elements Within Expensive Set Components
- Mechanically Sturdy and Electrically Reliable
- Each Unit is Accurately Checked for Voltage Breakdown as Part of the Manufacturing Process
- See Latest Issue of Engineering Bulletin 6145

Capacitance	Arc-over Voltage	Catalog Number
0.75pF	1.5kV ±0.5kV	302C100A2
0.75pF	2.5kV ±0.5kV	302C100A3

TV YOKE CAPACITORS

- High Quality Factor
- High Corona Start Voltag
- Does Not Cause Interference or Failure Due to Arcin
- Standard Tolerance ±10%

pF	Sprague Products Catalog Number	Sprague O.E.M. Catalog Number	Size D. x T.
	30TCY 3000 WVDC		
50	30TCY-Q50	29C483	3/4 x 3/
75	30TCY-Q75	44C113	3/4 x 3/
100	30TCY-T10	33C269	13/16 x 3/
130	30TCY-T13	36C368	7/8 x 3/
150	30TCY-T15	41C340	1 x 3/
180	30TCY-T18	41C341	1 x 3/
	50TCY 5000 WVDC		
50	50TCY-Q50	44C115	3/4 x 3/
75	50TCY-Q75	33C270	13/16 x 3/
100	50TCY-T10	41C344	1 x 3/
130	50TCY-T13	41C345	1 x 3/
	60TCY 6000 WVDC		
130	60TCY-T13	41C281A4	1 x 3/

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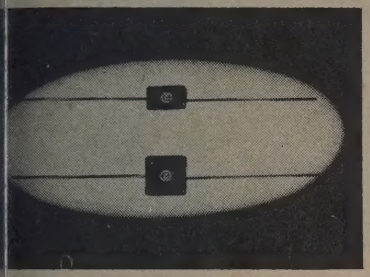
SPRAGUE CAPACITORS

MONOLYTHIC® AXIAL-LEAD CERAMIC CAPACITORS



- Proven Reliable in Wide Usage Over Many Years.
- Available in a Variety of Body Formulations, Capacitance Values, and Sizes.
- Made By Spraying Alternate Layers of Ceramic Dielectric Material and Metallic Electrodes, then Firing as a Single Piece Into an All But Indestructible Homogeneous Block.
- Protected Against Mechanical Damage and Moisture by a Tough Resin Coating.
- For Complete Technical Data, See Latest Issue of Engineering Bulletin 6201.

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

TEMPERATURE CHARACTERISTICS

Formulation	Temp. Range	Max. Change over Temp. Range
N030	−55C to +125C	−30 ±30 ppm/°C
N750	−55C to +125C	meets MIL-C-20 Char. UJ
	+25C to + 85C	−750 ±120 ppm/°C
W5R	−55C to +125C	±15%
Z5U	+10C to + 85C	+22, −56%

DIMENSIONS (in inches)

Type Number*	Length	Width	Thickness
3C	.390	.202	.156
4C	.515	.296	.156
5C	.500	.500	.156

*(1st and 2nd characters of catalog number signify Type number)

	WVDC	Catalog Number ±20% Cap. Tol.	Catalog Number ±10% Cap. Tol.
		FORMULATION N030	
1	200	3C025510X0201B1	3C025510X9201B1
6	200	3C025560X0201B1	3C025560X9201B1
2	200	3C025620X0201B1	3C025620X9201B1
8	200	3C025680X0201B1	3C025680X9201B1
5	200	3C025750X0201B1	3C025750X9201B1
2	200	3C025820X0201B1	3C025820X9201B1
1	200	3C025910X0201B1	3C025910X9201B1
0	200	3C025101X0201B1	3C025101X9201B1
0	200	3C025111X0201B1	3C025111X9201B1
0	200	3C025121X0201B1	3C025121X9201B1
0	200	3C025131X0201B1	3C025131X9201B1
0	200	3C025151X0201B1	3C025151X9201B1
0	200	3C025161X0201B1	3C025161X9201B1
0	200	3C025181X0201B1	3C025181X9201B1
0	200	3C025201X0201B1	3C025201X9201B1
0	200	3C025221X0201B1	3C025221X9201B1
0	200	3C025241X0201B1	3C025241X9201B1
0	200	3C025271X0201B1	3C025271X9201B1
0	200	3C025301X0201B1	3C025301X9201B1
0	200	3C025331X0201B1	3C025331X9201B1
0	200	3C025361X0201B1	3C025361X9201B1
0	200	3C025391X0201B1	3C025391X9201B1
0	200	3C025431X0201B1	3C025431X9201B1
0	200	3C025471X0201B1	3C025471X9201B1
0	200	3C025511X0201B1	3C025511X9201B1
0	200	3C025561X0201B1	3C025561X9201B1
0	200	3C025621X0201B1	3C025621X9201B1
0	200	3C025681X0201B1	3C025681X9201B1
0	200	3C025751X0201B1	3C025751X9201B1
		FORMULATION N750	
0	200	3C075821X0201B1	3C075821X9201B1
0	200	3C075911X0201B1	3C075911X9201B1
0	200	3C075102X0201B1	3C075102X9201B1
0	200	3C075112X0201B1	3C075112X9201B1
0	200	3C075122X0201B1	3C075122X9201B1
0	200	3C075132X0201B1	3C075132X9201B1

pF	WVDC	Catalog Number ±20% Cap. Tol.	Catalog Number ±10% Cap. Tol.
		FORMULATION N750, Continued	
1500	200	3C075152X0201B1	3C075152X9201B1
1600	200	3C075162X0201B1	3C075162X9201B1
1800	200	3C075182X0201B1	3C075182X9201B1
2000	200	3C075202X0201B1	3C075202X9201B1
2200	200	3C075222X0201B1	3C075222X9201B1
2400	200	3C075242X0201B1	3C075242X9201B1
2700	200	3C075272X0201B1	3C075272X9201B1
3000	200	3C075302X0201B1	3C075302X9201B1
3300	200	3C075332X0201B1	3C075332X9201B1
		FORMULATION W5R	
3900	100	3C067392X0101B1	3C067392X9101B1
4700	100	3C067472X0101B1	3C067472X9101B1
5600	100	3C067562X0101B1	3C067562X9101B1
6800	100	3C067682X0101B1	3C067682X9101B1
8200	100	3C067822X0101B1	3C067822X9101B1
.010μF	100	3C067103X0101B1	3C067103X9101B1
.012	100	3C067123X0101B1	3C067123X9101B1

μF	WVDC	±20% Cap. Tol.	+80, −20% Cap. Tol.
		FORMULATION Z5U	
.015	50	3C023153X0500B1	3C023153D8500B1
.022	50	3C023223X0500B1	3C023223D8500B1
.033	50	3C023333X0500B1	3C023333D8500B1
.047	50	3C023473X0500B1	3C023473D8500B1
.068	50	3C023683X0500B1	3C023683D8500B1
.10	50	3C023104X0500B1	3C023104D8500B1
.15	50	3C023154X0500B1	3C023154D8500B1
.22	50	3C023224X0500B1	3C023224D8500B1
.33	50	4C023334X0500B1	4C023334D8500B1
.47	50	4C023474X0500B1	4C023474D8500B1
.68	50	4C023684X0500B1	4C023684D8500B1
1.0	50	5C023105X0500B1	5C023105D8500B1
1.5	50	5C023155X0500B1	5C023155D8500B1

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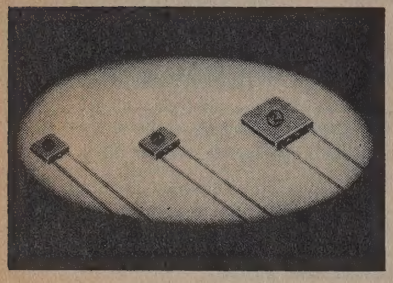
SPRAGUE CAPACITORS

MONOLYTHIC® RADIAL-LEAD CERAMIC CAPACITORS



- Radial Lead Style Especially Designed For Printed Wiring Board Mounting.
- New Phenolic Terminal Base With Stand-Off "Feet" Provides these Advantages: No Resin Run-Down on Leads; Uniform Lead Spacing; No Dirt and Moisture Entrapment; Degreasing Fluid Flows Freely Between Capacitors and Board.
- Made by Spraying Alternate Layers of Ceramic Dielectric Material and Metallic Electrodes, Firing into a Solid Homogeneous block, then Coating with a T Phenolic Resin.
- All Capacitors Listed Below Rated a WVDC.
- For Complete Technical Data, See L Issue of Engineering Bulletin 6202.

Call Your Sprague Industrial Distribute For Current Quantity Prices

TEMPERATURE CHARACTERISTICS

Formulation	Temp. Range	Max. Change over Temp. Range
NP0	−55C to +125C	NP0 ±60ppm/°C
N750	−55C to +125C	meets MIL-C-20 Char. UJ
	+25C to + 85C	−750ppm/°C, ±120ppm/°C
W5R	−55C to +125C	±15%
Z5U	+10C to + 85C	+22, −56%

DIMENSIONS (in inches)
(Last letter of catalog number signifies the case code)

Case Code	Length	Width	Thick
D	.390	.275	.1
E	.535	.550	.1
F	.535	.550	.2

pF	Catalog Number ±20% Cap. Tol.	Catalog Number ±10% Cap. Tol.
FORMULATION NP0		
51	7C082510X0500D	7C082510X9500D
56	7C082560X0500D	7C082560X9500D
62	7C082620X0500D	7C082620X9500D
68	7C082680X0500D	7C082680X9500D
75	7C082750X0500D	7C082750X9500D
82	7C082820X0500D	7C082820X9500D
91	7C082910X0500D	7C082910X9500D
100	7C082101X0500D	7C082101X9500D
110	7C082111X0500D	7C082111X9500D
120	7C082121X0500D	7C082121X9500D
130	7C082131X0500D	7C082131X9500D
150	7C082151X0500D	7C082151X9500D
160	7C082161X0500D	7C082161X9500D
180	7C082181X0500D	7C082181X9500D
200	7C082201X0500D	7C082201X9500D
220	7C082221X0500D	7C082221X9500D
240	7C082241X0500D	7C082241X9500D
270	7C082271X0500D	7C082271X9500D
300	7C082301X0500D	7C082301X9500D
330	7C082331X0500D	7C082331X9500D
360	7C082361X0500D	7C082361X9500D
390	7C082391X0500D	7C082391X9500D
430	7C082431X0500D	7C082431X9500D
470	7C082471X0500D	7C082471X9500D
510	7C082511X0500D	7C082511X9500D
FORMULATION N750		
560	7C075561X0500D	7C075561X9500D
620	7C075621X0500D	7C075621X9500D
680	7C075681X0500D	7C075681X9500D
750	7C075751X0500D	7C075751X9500D
820	7C075821X0500D	7C075821X9500D
910	7C075911X0500D	7C075911X9500D
1000	7C075102X0500D	7C075102X9500D

pF	Catalog Number ±20% Cap. Tol.	Catalog Number ±10% Cap. T
FORMULATION W5R		
1200	7C067122X0500D	7C067122X950
1500	7C067152X0500D	7C067152X950
1800	7C067182X0500D	7C067182X950
2200	7C067222X0500D	7C067222X950
2700	7C067272X0500D	7C067272X950
3300	7C067332X0500D	7C067332X950
3900	7C067392X0500D	7C067392X950
4700	7C067472X0500D	7C067472X950
5600	7C067562X0500D	7C067562X950
6800	7C067682X0500D	7C067682X950
8200	7C067822X0500D	7C067822X950
FORMULATION Z5U		
μF	±20% Cap. Tol.	+80, −20% Cap.
.010	7C023103X0500D	7C023103D850
.015	7C023153X0500D	7C023153D850
.022	7C023223X0500D	7C023223D850
.033	7C023333X0500D	7C023333D850
.047	7C023473X0500D	7C023473D850
.068	7C023683X0500D	7C023683D850
.10	7C023104X0500D	7C023104D850
.15	7C023154X0500D	7C023154D850
.22	7C023224X0500D	7C023224D850
.33	7C023334X0500E	7C023334D850
.47	7C023474X0500E	7C023474D850
.68	7C023684X0500E	7C023684D850
1.0	7C023105X0500E	7C023105D850
1.5	7C023155X0500E	7C023155D850
2.2	7C023225X0500F	7C023225D850

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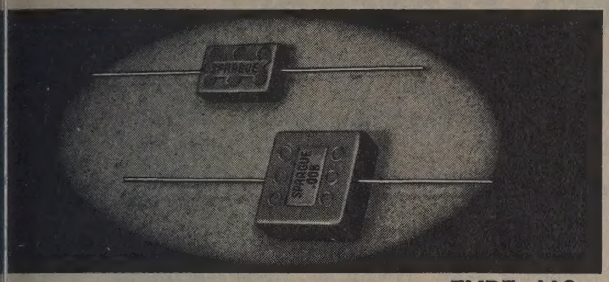
SPRAGUE CAPACITORS

MICA CAPACITORS TYPE MS and 1FM MICAS



- Each Mica Capacitor Section Receives a Radio Frequency Test Before Molding
- Careful Selection and Electrical Grading of Raw Mica Assures Maximum Quality
- Section Foils on Foil Micas are Connected to Terminals through Special Low-resistance R-F Bonds
- R-F Current Tested for Peak Ratings After Molding
- Available Until Present Stocks Are Exhausted

TYPE MS — SILVERED MICA
(Standard Capacitance Tolerance ±5%)

	Cat. No.*
00 WVDC, 1000 V Test	
005	MS-55
010	MS-41
012	MS-412
015	MS-415
018	MS-418
020	MS-42
022	MS-422
024	MS-424
025	MS-425
027	MS-427
030	MS-43
033	MS-433
036	MS-436
039	MS-439
040	MS-44
043	MS-443
047	MS-447
050	MS-45
051	MS-451
056	MS-456
060	MS-46
062	MS-462

μF	Cat. No.*
.000068	MS-468
.000070	MS-47
.000075	MS-475
.000082	MS-482
.000091	MS-491
.000100	MS-31
.000110	MS-311
.000120	MS-312
.000130	MS-313
.000150	MS-315
.000160	MS-316
.000180	MS-318
.000200	MS-32
.000220	MS-322
.000240	MS-324
.000250	MS-325
.000270	MS-327
.000300	MS-33
.000330	MS-333
.000360	MS-336
.000390	MS-339
.000400	MS-34
.000430	MS-343

μF	Cat. No.*
.000470	MS-347
.000500	MS-35
.000510	MS-351
.000560	MS-356
.000600	MS-36
.000620	MS-362
.000680	MS-368
.000700	MS-37
.000750	MS-375
.000800	MS-38
.000820	MS-382
.000900	MS-39
.000910	MS-391
.001000	MS-21
.001100	MS-211
.001200	MS-212
.001300	MS-213
.001500	MS-215
.001600	MS-216
.001800	MS-218
.002000	MS-22
.002200	MS-222
.002400	MS-224

μF	Cat. No.*
.002500	MS-225
.002700	MS-227
.003000	MS-23
.003300	MS-233
.003600	MS-236
.003900	MS-239
.004000	MS-24
.004300	MS-243
.004700	MS-247
.005000	MS-25
.005100	MS-251
.005600	MS-256
.006000	MS-26
.006200	MS-262
300 WVDC, 600 V Test	
.006800	MS-268
.007000	MS-27
.007500	MS-275
.008000	MS-28
.008200	MS-282
.009000	MS-29
.009100	MS-291
.010000	MS-11

Call Your Sprague Distributor For Current Prices

vailable until present stocks are exhausted.

TYPE 1FM
(Standard Capacitance Tolerance ±20%)

	Cat. No.*
00 WVDC, 1000 V Test	
010	1FM-41
012	1FM-412
015	1FM-415
018	1FM-418
020	1FM-42
022	1FM-422
024	1FM-424
027	1FM-427
030	1FM-43
033	1FM-433
036	1FM-436
039	1FM-439
040	1FM-44
043	1FM-443
047	1FM-447
050	1FM-45
051	1FM-451
056	1FM-456
062	1FM-462
068	1FM-468
075	1FM-475

μF	Cat. No.*
.000082	1FM-482
.000091	1FM-491
.000100	1FM-31
.000110	1FM-311
.000120	1FM-312
.000130	1FM-313
.000150	1FM-315
.000160	1FM-316
.000180	1FM-318
.000200	1FM-32
.000220	1FM-322
.000240	1FM-324
.000250	1FM-325
.000270	1FM-327
.000300	1FM-33
.000330	1FM-333
.000350	1FM-335
.000360	1FM-336
.000390	1FM-339
.000400	1FM-34
.000430	1FM-343

μF	Cat. No.*
.000470	1FM-347
.000500	1FM-35
.000510	1FM-351
.000560	1FM-356
.000620	1FM-362
.000680	1FM-368
.000700	1FM-37
.000750	1FM-375
.000820	1FM-382
.000910	1FM-391
.001000	1FM-21
.001100	1FM-211
.001200	1FM-212
.001300	1FM-213
.001500	1FM-215
.001600	1FM-216
.001800	1FM-218
.002000	1FM-22
.002200	1FM-222
.002400	1FM-224
.002500	1FM-225
.002700	1FM-227

μF	Cat. No.*
.003000	1FM-23
.003300	1FM-233
.003600	1FM-236
.003900	1FM-239
.004000	1FM-24
.004300	1FM-243
.004700	1FM-247
.005000	1FM-25
.005100	1FM-251
.005600	1FM-256
.006000	1FM-26
.006200	1FM-262
300 WVDC, 600 V Test	
.006800	1FM-268
.007000	1FM-27
.007500	1FM-275
.008000	1FM-28
.008200	1FM-282
.009000	1FM-29
.009100	1FM-291
.010000	1FM-11

Call Your Sprague Distributor For Current Prices

vailable until present stocks are exhausted.

MS and 1FM Dimensions

alog Numbers	L x W x T
55 thru MS-35	51/64 x 15/32 x 7/32
351 thru MS-222	53/64 x 53/64 x 9/32
224	53/64 x 53/64 x 11/32
225 thru MS-227	53/64 x 53/64 x 9/32
23	53/64 x 53/64 x 11/32

Catalog Numbers	L x W x T
MS-233	53/64 x 53/64 x 9/32
MS-236 thru MS-282	53/64 x 53/64 x 11/32
MS-29 thru MS-11	1 x 5/8 x 5/16
1FM-41 thru 1FM-462	51/64 x 15/32 x 7/32
1FM-468 thru 1FM-475	53/64 x 53/64 x 9/32

Catalog Numbers	L x W x T
1FM-482 thru 1FM-356	51/64 x 15/32 x 7/32
1FM-362 thru 1FM-233	53/64 x 53/64 x 9/32
1FM-236 thru 1FM-282	53/64 x 53/64 x 11/32
1FM-29 thru 1FM-11	1 x 5/8 x 5/16

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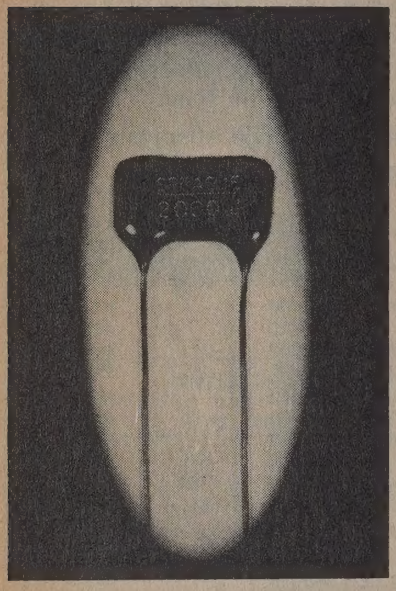
SPRAGUE CAPACITORS

TYPE 424M DIPPED MICA CAPACITORS



- Expressly Made For Applications Requiring Optimum Capacitance Stabi and Retrace Characteristics.
- Designed For Continuous Operation at Temperatures Up to +85C.
- Not Affected by High Relative Humidity.
- Critically-Tested Mica Dielectric With "Fired-On" Silver electrodes.
- Special Electrode Terminations to Minimize Capacitance Drift and Inter Noise.
- Resin-Impregnated Multiple Phenolic Coating for High Moisture Resistance Mechanical Strength.
- Capacitance Tolerance, ±5%.
- For Complete Technical Data, See Latest Issue of Engineering Bulletin 10

Call Your Sprague Industrial Distributor
For Current Quantity Prices

pF	Dimensions Length	Width	Thickness	Catalog Number
500 WVDC				
47	.640	.500	.190	424MC47ROJ501
51	.640	.500	.190	424MC51ROJ501
56	.640	.500	.190	424MC56ROJ501
62	.640	.500	.190	424MC62ROJ501
68	.640	.500	.190	424MC68ROJ501
75	.640	.500	.190	424MC75ROJ501
82	.640	.500	.190	424MC82ROJ501
91	.640	.500	.190	424MC91ROJ501
100	.640	.500	.190	424MC1000J501
110	.640	.500	.190	424MC1100J501
120	.640	.500	.190	424MC1200J501
130	.640	.500	.190	424MC1300J501
150	.640	.500	.190	424MC1500J501
160	.640	.500	.190	424MC1600J501
180	.640	.500	.190	424ME1800J501
200	.640	.500	.190	424ME2000J501
220	.640	.500	.190	424ME2200J501
240	.640	.500	.190	424ME2400J501
270	.640	.500	.190	424ME2700J501
300	.640	.500	.190	424ME3000J501
330	.640	.500	.190	424ME3300J501
360	.640	.510	.200	424ME3600J501
390	.640	.510	.200	424ME3900J501
430	.640	.510	.200	424ME4300J501
470	.640	.510	.200	424ME4700J501
510	.650	.510	.200	424ME5100J501
560	.650	.510	.200	424ME5600J501
620	.650	.510	.200	424ME6200J501

pF	Dimensions Length	Width	Thickness	Catalog Number
500 WVDC, Continued				
680	.650	.510	.210	424ME6800J5
750	.650	.510	.210	424ME7500J5
820	.650	.510	.210	424ME8200J5
910	.650	.510	.210	424ME9100J5
1000	.650	.520	.220	424ME1001J5
1100	.650	.520	.220	424ME1101J5
1200	.660	.520	.220	424ME1201J5
1300	.660	.520	.220	424ME1301J5
1500	.660	.520	.230	424ME1501J5
1600	.660	.530	.230	424ME1601J5
1800	.670	.530	.240	424ME1801J5
2000	.670	.530	.240	424ME2001J5
2200	.670	.530	.250	424ME2201J5
2400	.670	.540	.260	424ME2401J5
2700	.680	.540	.270	424ME2701J5
3000	.680	.550	.280	424ME3001J5
3300	.680	.550	.290	424ME3301J5
3600	.680	.560	.300	424ME3601J5
3900	.690	.560	.310	424ME3901J5
4300	.690	.570	.330	424ME4301J5
4700	.700	.580	.350	424ME4701J5
5100	.710	.590	.370	424ME5101J5
300 WVDC				
5600	.680	.550	.310	424ME5601J3
6200	.690	.560	.320	424ME6201J3
6800	.690	.570	.330	424ME6801J3

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CAIG LABORATORIES INC.

CRAMOLIN-ELECTRONIC CONTACT CLEANER

"THE LESS YOU USE—THE BETTER IT WORKS!"

The amazing contact cleaner with a world wide reputation for excellence in performance. Used by the professionals who want only the best — Army, Air Force, Navy, Bureau of Standards and hundreds of top known manufacturers of electronic apparatus.

FEATURES:

- CLEANER
- LUBRICANT
- PRESERVATIVE
- ANTI-CORROSIVE

THE *BREAK-THRU* FOR

HIGHER PERFORMANCE ELECTRIC CONTACTS

Reduces contact resistance and sparking by dissolving oxide film formations. Temp. operating range −34°C. to 150°C. Effective on all metals and their alloys including gold, silver, copper, etc. Stays on moving contacts. Free of acids. Safe to use. Lasts for years.

Write for Tech Facts.

CRAMOLIN: Fluid for protection & cleaning of old & new contacts.
CRAMOLIN-SPECIAL: Fluid for protection of new contacts.
CRAMOLIN-PASTE: Semi-solid for protection & cleaning High Voltage/Amperage contacts.

PRICES

DESCRIPTION	CRAMOLIN (Red Color)	CRAMOLIN-SPECIAL (Blue Color)	CRAMOLIN-PASTE	*CAEON SOLVENT #27
2 oz. Glass Bottle	$2.25	$2.55		
4 oz. Glass Bottle				$1.60
½ pint Glass Bottle	7.45	8.25		2.85
1 pint, Glass Bottle	14.50	16.00		4.00
1 quart, Glass Bottle	28.00	31.00		6.00
¼ Kg Can (½ lb)			$2.90	
6 oz. Spray	3.25	3.75		
Engineers Kit [with tech facts]	7.50	(Contains: CRAMOLIN, CR-Special & Paste.)		

CONTACT CLEANER SPRAY

"CRAMOLIN — SPRAY R"

FREE — 6" EXTENSION SPRAY TUBE

Now — for those who prefer the spray can method of application. CRAMOLIN SPRAY R has same properties as CRAMOLIN FLUID. Packaged in neat spray can with automatic valve. Equipped with a whirl spray head, which will apply CRAMOLIN — breath thin — to most remote areas. The Hygrade propellant and speedy evaporating solvent leaves only a microfilm of actual CRAMOLIN on contact area.

$3.25 6 OZ. SPRAY CAN

MOISTURE REPELLENT

"CRAMOLIN SPRAY 3S"

PROTECT — RESTORE — CLEAN

LUBRICATE

For all electric and electronic equipment • Effective as a general cleaner, hydro-repellent, dielectric sealer and lubricant • Has excellent adherence. Safe to use on metals, rubber and synthetic materials • Reduces arcing, stops sparking and creeping currents in high voltage parts, switchboards, control panels, isolators, tube sockets, etc. • Temperature consistency between −50°C to +200°C • Can be used on all electronic equipment which is constantly used in high humidity and water, dust and gas fumes • Prevents corrosion, will not evaporate, will not gum, improves lubricating and sliding properties. Contains no silicon.

Write for Bulletin C-400

$4.25 6 OZ. SPRAY CAN

ACRYLIC PLASTIC SPRAY

CRAMOLIN — SPRAY PLASTIK"

An air drying, colorless special plastic spray coating for electronic circuits, T.V., Radio, Aerial construction, automotive and many electric applications • It seals, protects, insulates and coats • Is age and weatherproof, water repellent, will not fade, has excellent adherence properties. Tropics proof • Resists acid and alkaline solutions as well as mineral oils • Withstands temperatures up to +180°C. Assures long lasting protective coatings on all metals, alloys & chrome • Protects against creeping currents, short circuits, weakened insulation breakdowns • As a sealant it helps to eliminate corrosion.

$2.75 6 OZ. SPRAY CAN

CLEANING SOLVENT

"CAEON SOLVENT #27"

(Trichlorotrifluorethane)

A cleaning agent for removal of oil, grease, and dirt from objects without harm to metal, plastic, or elastomeric parts.

• NON-FLAMMABLE • VIRTUALLY NON-TOXIC • CHEMICALLY AND PHYSICALLY PURE • CHEMICALLY AND THERMALLY INERT • STABLE

The solvent exhibits a washing and penetrating action which aids its cleaning ability. High density and low surface tension enables Caeon #27 to wet the surface of most materials and wash away dirt and sludge.

The solvent is useful in ultrasonic and vapor degreasing equipment. Soils which are normally insoluable in any solvent can often be removed by this solvent with cavitation in ultrasonic units. Vapor rinsing is more easily accomplished without exposing object to high temperatures.

The solvent is compatible with most organic systems. It will remove soils or contaminants and leave the surface 'Residue-Free'. All standard methods of using a solvent may be employed.

Write for Tech Facts. *See Price List on This Page

WESCOLITE SOLDER KIT

SOLDERING SIMPLIFIED

Combines a New Wonder Flux and the finest silver solder for stronger bond. Fast and easy to use. Soldering of the difficult or impossible metals together or to each other.

$2.50 KIT

No Pre-Cleaning • No After Cleaning
Removes oxides, promotes tinning and capillary flow.

WESCOL FLUX

4 oz. dispenser	$1.70	½ gallon	$ 8.00
16 oz. dispenser	3.15	1 gallon	14.00

Wescol Solder 220 . . . Soft Silver Solder. 5/6% Silver. Balance Tin.
1/16" dia., 3/32" dia., 1/8" dia. ..... **$19.95/lb.**
1/32" dia., 3/64" dia. ..... **21.00/lb.**
Shipped in one (1) lb. reels

CHEMTRONICS

CHEMICALS FOR THE ELECTRONIC INDUSTRY

TUN-O-WASH

POWER SPRAY
CLEANER-DEGREASER

Gets Tuners Really Clean! Flushes Away "Gunk" grease, oil, dust and dirt. Harmless to plastics. Leaves no residue. Will not detune. Excellent for cleaning PC boards, switches, relays, instruments, motors, controls, etc.

Order No. 2400 24 oz. can only **3.25**

TUN-O-FOAM

SPACE AGE TUNER LUBRICANT/CLEANER

- Cleans, Polishes and Lubricates Contacts each time channel is changed.
- Extremely long lasting lubricant works from —100°F to +400°F. Unique foaming action. Won't dry out or cake up. Will not cause detuning. Safe for all plastics. Keeps tuners working smoother longer. Excellent for any electronic contact that requires long lasting lubrication.

Order No. TOF-8 8 oz. can only **2.39**

SUPER FROST AID

COMPONENT COOLER

- Cools Faster — to —50°F
- Leaves no liquid residue

Excellent for locating thermal intermittents, discovering faulty components, cracked PC boards etc. One spray cools components to —50°F. Checks transistors fast. Cools twice as many components per oz. as ordinary circuit coolers.

Order No. 1550 15 oz. can only **2.79**

COLOR LUBE

TUNER CLEANER/
LUBRICANT

Especially recommended for critical Color TV Tuners. Guaranteed safe for all plastics. Will not detune. Lubricates as it cleans.

8 oz. can only **2.39**
Order No. CL8 16 oz. can only **3.25**

TUN-O-LUBE 800

NUVISTOR/TRANSISTOR
TUNER CLEANER

Recommended for sensitive Nuvistor and Transistor Tuners. Leaves no residue. Will not detune. Safe for all plastics.

Order No. 800 8 oz. can only **1.98**

TUN-O-LUBE (REGULAR)

TUNER CLEANER/
LUBRICANT

Recommended for Black & White Tuners. Will not harm plastic or detune. Provides long lasting lubricating film which minimizes noise, wear and oxidation.

Order No. **301** 3 oz. spray can only **.98**
810 8 oz. spray can only **1.98**
1610 16 oz. spray can only **2.79**

CHEMTRONICS

ALL PRICES ARE DEALER NE

Net
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REGULAR FROST AID

Second only to Super Frost Aid in cooling power. Proven effective in locating thermal intermittents, cracked PC boards, cooling components, etc. Spray onto diodes and transistors to prevent soldering damage. Leaves no liquid residue.

Order No. 850 8 oz. can only **1.59**
1650 16 oz. can only **2.49**

NO ARC

HIGH VOLTAGE INSULATOR

- Recommended for Potting and Waterproofing

Positively stops arcing and corona shorts in high voltage circuits. Withstands up to 30,000 volts. Insulates and protects printed circuits. Spray can jets out for pinpoint application.

Order No. 501-1 2 oz. bottle only **1.10** with brush
830 8 oz. spray can only **2.79**

KLEER SPRAY

Clear acrylic insulating and protective spray. Protects exposed wiring, auto ignition systems, antenna terminals etc. Waterproofs, insulates and prevents corrosion.

Order No. 890 16 oz. can only **1.59**

CONTACT KLEEN

CONTACT/CONTROL CLEANER

Leaves no oily residue. Cleans switches, relays, potentiometers and all other contact devices. Melts away oxidation, dirt and oily residue.

Order No. 605 8 oz. can only **1.79**

TROL AID

CONTROL AND CONTACT CLEANER/LUBRICANT

Cleans and lubricates in one spray. For controls, switches, relays and all other sliding contact devices requiring lubrication.

Order No. 302 3 oz. spray can only **.98**
820 8 oz. spray can only **1.98**
506-5 2 oz. bottle **.79** with dropper

MASK-N-GLAS

GLASS AND PLASTIC CLEANER/POLISHER

ANTI-STATIC.

Especially recommended for cleaning TV picture tubes, masks, safety glass and plastic cabinets. Non-abrasive and scratch proof. Lint free polishing cloth in every can.

Order No. 840 8 oz. can only **1.79**

CHEM-OIL

PENETRATING & LUBRICATING OIL

Cuts through rust. Frees frozen yokes. Excellent lubricant for record changers, tape recorders and appliances.

Order No. 870 8 oz. can only **1.79**

LUBRIPLATE

WHITE GREASE LUBRICANT

Ideal for motors, gears, bearings and other electrical and electronic applications.

Order No. 105 1¾ oz. tube only **.75**

TAPE HEAD CLEANER

Cleans cassette and reel to reel tape heads. Protects heads and tapes. Guaranteed non abrasive and safe for all plastics.

Order No. THC-6 6 oz. can only **1.95**
504-3 2 oz. bottle only **.89** with felt applicator

RECORD CLEANER

Anti-static. Cleans records and leaves dust repellent coating. Lint free cloth with every can.

Order No. RC33 6 oz. can only **.98**

NON-SLIP RUBBER RESTORER

Prevents slippage on rubber drives and belts to insure uniform speed. Thin coating provides excellent traction and restores speed.

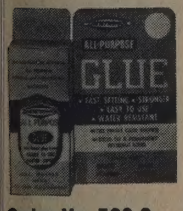
Order No. 507-7 2 oz. bottle only **.98** with felt applicator

TV RADIO CEMENT

Recommended for repairing speakers. Excellent for joining glass, plastics and metals. Waterproof.

Order No. 502-2 2 oz. bottle only **.59** with applicator

ALL PURPOSE GLUE

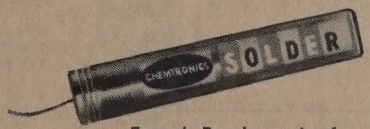


Dries clear. Joins wood, metal and plastics. Great for repairing broken cabinets. Waterproof.

Order No. 503-6 2 oz. bottle only **.59** with applicator

SOLDER

- FAST FLOWING
- NON-CORROSIVE



Exceeds Requirements of Federal Spec QQ-S-571d

110 inches of top quality activated rosin core solder in a handy dispenser tube. 60/40 pure tin-lead alloy.

Order No. S-100 only **.39**
110″ Dispenser Tube

BULK SOLDER

Excellent for all industrial uses. Activated rosin core. Exceeds requirements of Federal Spec QQ-S-571d.

COMPOSITION	DIAMETER IN INCHES	WT.	DEALER NET
40% tin, 60% lead	.062(1/16)	1 lb.	1.69
50% tin, 50% lead	.062(1/16)	1 lb.	2.03
60% tin, 40% lead	.062(1/16)	1 lb.	2.31
60% tin, 40% lead	.031(1/32)	1 lb.	2.98

CHEMTRONICS

PRICES ARE DEALER NET

GC ELECTRONICS

CHEMICALS AND KITS

GC NON-TOXIC ELECTRO-TET CLEANER

Closely parallels Carbon Tetrachloride, but much safer. Non-flammable, fast drying.
Cat. No. 10-G..1 gallon **Net $7.50**

GC KLEEN-TEX CLEANER

Removes grease, oil, wax. Safe, slow burning, high flash, inexpensive cleaner for motors, chassis, vacuum cleaners, etc.
Cat. No. 11-G..1 gallon **Net $3.75**

GC ELECTRONIC CONTACT CLEANER HYPODERMIC NEEDLE INJECTOR

A handy applicator using the hypodermic injection method for cleaning and lubricating around controls and tight places.
Cat. No. 8383..... **Net $ .48**

WALSCOLUB-B

Electrically neutral lubricant that prevents corrosion. Makes for smooth, noise-free operation of electrical contacts, band switches, attenuators, push button tuners, remote control switches and other contacts.

No.	Desc	
22-01S	1-3/4-oz tube	**Net $ .55**

INSUL-VOLT

HIGH VOLTAGE INSULATING SPRAY WITH SURE-SHOT CONFINED STREAM

Positive insulation against hi-voltage leaks, arcing and corona shorts. Recommended for use on transformers, electric motors, generators, and all electrical windings. Ideal for servicemen and manufactors of generators, motors and transformers.

GC. No.	Walsco		Std. Pkg.	
10-608	40-804	6 ounce spray	12	**$1.99**

WALSCO ACTION

Electronic Silicone Contact Cleaner--won't harm plastics, non-flammable. Provides long-lasting protection.

No.		Net
99-06	6-ounce Spray Can	$ .99
99-16	16-ounce Spray Can	$1.79

COLORMAGIC SPRA LUBE COLOR TV TUNER CLEANER

Non-Drift cleaner especially formulated for cleaning and lubricating all color TV Tuners. Completely safe for plastics used in tuners. Made of highest quality chemicals. Safe to use - non-flammable.

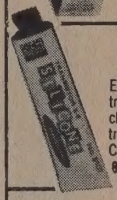
Cat. No. **8888** ... 8oz spray can **$1.79**

GC DE-OX-ID KIT WITH NEEDLE INJECTOR

Contains 2-ounce bottle of De-Ox-Id cleaner and hypodermic type of applicator.
Cat. No. 8460..... **Net $.145**

GC PHONO TURNTABLE MOTOR & GEAR LUBRICANT

A specially developed lubricant for phonographs. Lubricant clings to surface of parts; eliminates future repairs.
Cat. No. 1223-S 2-ounce **Net $ .59**



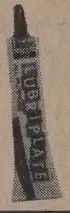
GC TRANSISTOR Z-5 SILICONE COMPOUND

Essential in maintaining efficient transfer of heat from transistor to chassis. Use whenever replacing transistors.

Cat. No.	1-ounce tube
8101-S	**Net $2.39**

GC SKRATCH STIK KIT

For Walnut, Mahogany and Light wood surfaces. Kit of 3 sticks.
Cat.No. 909-K ..... **Net $1.80**



LUBRIPLATE

Super lubricant, grease type, protective. Reduces friction loss, prevents rust and corrosion. Extends bearing life 50% ...increases mechanical efficiency 20% over ordinary lubricant.

No.	Desc	
23-02-S	2-oz tube	$ .75

SUPER GLUE

New miracle cement. Bond strength of over 3000 lbs. per square inch. Particularly suitable for cementing non-porous materials. Cures at room temperature through chemical action. Supplied in two ingredients which must be mixed before application.

No.		Std. Pkg.	Net
40-100	2 - ¾ oz. tubes	12	$ .99

ZERO–MIST

PLASTIC SPRAY EXTENSION INCLUDED FREE!

The new scientific way to locate "intermittence" in electronic equipment, caused by component failures, due to heating. The application of GC Zero-Mist cools components instantly, thereby pinpointing faulty capacitors, transistors, oxidized junctions, etc. Use of GC Flex-Sol spray can extension is recommended.

GC No.	Walsco	
8667	214-12	16 oz. Aerosol
	Standard Package 12	**$2.19**

WALSCO ACRY-SPRAY

Prevents corrosion, rust, oxidation on all metals.

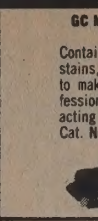
No.		Net
140-12	Clear	1.50
8665 GC		
141-12	Aluminum	**$1.50**
8660 GC		

COLORMAGIC COLOR CLEAR COLOR TV TUBE CLEANER & ANTI-STATIC AGENT

Keeps away unsightly dust and lint. Cleans and destaticizes color TV picture tube surface sparkling clear.

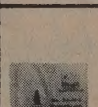
Cat. No. **8890** ... 8 oz spray can

Net $ .99



GC MASTER DELUXE CABINET REPAIR KIT

Contains varnishes, enamels, spirit stains, all of the essentials needed to make cabinet repairs like a professional. Satisfy even the most exacting customer.
Cat. No. 900..... **Net $9.65**



"TUNERLUB"

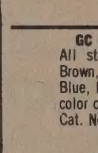
Assures quiet operation of television tuners. Tunerlub restores smooth positive action to worn and dirty television tuners. Compounded to form a strong film that gives lasting protection to high frequency switch contacts in TV and FM tuners. Free of zinc and other metal oxides which impair high frequency operation.

No.		Std. Pkg.	Net
26-01S	1¾ oz. tube, carded	12	$ .99
26-17	1 lb. Can	1	$2.55

GC TUBE BASE CEMENT "Repairs CRT and Octal Type Tubes"

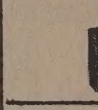
Tube Base Cement is ideal for repairing octal and CRT type tubes that have separated from the glass. Easy to apply in plastic squeeze bottle. Set up in approximately 2 hours under normal conditions.

No.		Std. Pkg.	Net
54-2S	2 oz.	6	$ .99



GC E.I.A. COLOR CODING KIT

All standard E.I.A. colors: Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray and White. E.I.A. color chart included.
Cat. No. 677..... **Net $1.47**

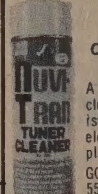


SUPER STRONG GC EPOX CEMENT

"Bond Anything to Anything"

GC Epoxy Adhesive is one of the new miracle cements with properties never before attainable. This adhesive cures at room temperature through chemical reaction. It will provide high bond strength and exceptional adhesion to many materials which are normally difficult, if not impossible, to cement. This product is supplied in two ingredients which must be mixed before application.

No.		Std. Pkg.	Net
346	Kit of two tubes (approx. 3 oz.)	1	**$1.95**



NUVI-TRAN TUNER CLEANER

Formulated Especially for Critical Nuvistor and transistor Circuitry

A non-conductive, non-toxic cleaner for cleaning sensitive Nuvistor and Transistor Tuners. Nuvi-Tran will not affect electrical properties, and is safe for all plastics TV tuners.

GC No.		Net
5555	8 oz. spray can	**$2.29**
	Standard Package 12	

GC DRI-SPRA

FORMULA X-27
STOPS ELECTRICAL FAILURE?

Cleans and lubricates - seals out moisture - prevents rust and corrosion. New water displacement spray prevents 80% of electrical equipment failures.

Cat. No. **8678** 6 oz spray can **Net $1.79**

GC PLASTIC & GLASS CLEANER

Spray on - wipe off dirt, dust and grime from all glass and plastic surfaces without streaks or dulling residue. Contains grease - cutting ammonia.

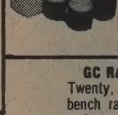
Cat. No. **9082** 16 oz spray can

Net $ .79

GC DIAL & SIGNAL LIGHT COLORING KITS

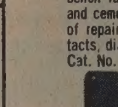
For signal systems, radio dial corative lighting, etc. Contain Green, Blue, Amber, Purple solvent.

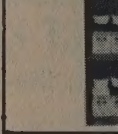
Cat. No. 66-5, kit of 5, no pur	Net
Cat. No. 66-6, kit of 6...	Net



GC RADIO TV CHEMICAL LAB

Twenty, 2-ounce bottles in permanent bench rack. Every needed chemical and cement is included for all types of repairs on speakers, coils, contacts, dials, etc.
Cat. No. 997..... **Net $12.19**





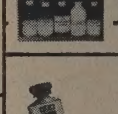
GC DELUXE RADIO-TV CHEMICAL LAB

For service shop and ind plant. Complete practical la signed for serviceman, en technician. Contains solvents, ers, cements, etc.
Cat. No. 998..... **Net $**

GC DC-Z9 SILICON HEAT SINK COMPOU

DC-Z9 increases the efficie electronic devices lowering temperature level. High heat c tive metallic oxides suspended cone dissipate "hot spots". seals between transistors, diode compound will not dry out or ha

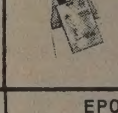
No.	
8109	1-oz. Tube



EPOXY GLUE "SUPER GR

This remarkable Epoxy Glue is fied by NASA for use in it's Program. The selection of this ular Epoxy Glue by NASA wa because of it's outstanding prop Epoxy Glue is dimensionally s it won't shrink or expand. It is ically stable, also resisting alkali, grease, gas, water, etc electrical resistance is yet and it's assets. Mixed in equal a from two tubes, it will harden i utes under 150 degrees F. heat 2 to 4 hours at room temperatur

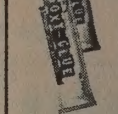
No.		Std. Pkg.
347	Kit of two tubes (approx. 4 oz.)	6



GC PRESSURIZED LUBRICATING OIL

For complete, thorough lubri Reaches into smallest areas. Ex for ball bearings, moving mac gears, etc. A high-grade, light oil. No spilling, No waste.

Cat. No. **10-916** 6 oz spray can **Net**



GC BENCH FIRE EXTINGUIS

Works on all types of fires; ele oil, grease. Fast, low-cost me fighting small fires - excellent mental fire protection. Keep garage shop or home.

Cat. No. **10-914** 16 oz spray can **Net**

AUDIO-VIDEO MAGNE TAPE HEAD CLEAN

GC Audio-Video Tape Head quickly removes dirt and oxide b won't harm tape, tape coating finish. This cleaner will not interf transmission and may be used on tape. Audio-Visual Tape Head eliminates applying cleaner with swab. 6" spray extension is f with each can for pinpointing spra

No.		Std. Pkg
10-620	16 oz. aerosol	12

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

Net

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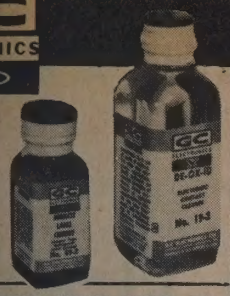
CHEMICALS AND KITS



emicals
s. Thin-
Paints,
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handy
bottles
rush-in-
so sup-
larger

DIO-TELEVISION SERVICE CEMENT—This ade cement is specially prepared for elevision and Speaker Work. Unexcelled enting and replacing cones on dynamic s, repairing rattling or torn cones, ng voice coils, spiders, etc.
30-2 GC 2 oz. Net $ .59
50-2 Walsco

STIC CEMENT—Excellent for cementing plastic cabinets, cementing grille cloth e, cementing dial and glass crystal as- s, cementing knots in dial, cords, etc.
32-2A GC 2 oz. Net $ .59
40-02 Walsco

AKELITE" CEMENT—This cement is espe- made for cementing "BAKELITE" to ITE" and to other materials.
32-2 GC 2-oz. Net $ .99
66-02 Walsco

NYLITE" CEMENT—This new G-C Cement upon "VINYLITE" vinyl resins, has great n, high tackiness and extreme flexibility.
58-2 GC 2-oz. Net $ .59
55-02 Walsco

DRIC AND GRILLE CLOTH CEMENT—For ng grille cloth and fabrics to either plastic or wood cabinets.
22-2 GC 2-oz. Net $ .60
53-02 Walsco

OD CABINET GLUE—This is the ordinary wn wood glue that is used in repair ture, chairs, radio cabinets, etc.
39-2 GC 2-oz. Net $ .59
78-02 Walsco

20 CEMENT THINNER— This thinner is same solvents as G-C Service Cement kes the best thinner for G-C Service

28-2 GC 2-oz Net $ .59

IO SERVICE SOLVENT—The best solvent ening cement on speaker cones, frames, ade to dissolve all types of cements. o be used as a thinner for G-C Cement er cements.
31-2 GC 2-oz. Net $ .59
201-02 Walsco

29 LACQUER THINNER—Solvent for thin- l lacquers, lacquer enamels, telephone nd gray, touch-up lacquers.
29-2 2-oz. Net $ .59

G-C No. 41 Q-DOPE THINNER—Excellent solvent for Polystyrene, Q-Dope and any other Polystyrene Coil Dopes and Cements. Will soften and disolve polystyrene rods, sheets, etc. Clear water-white solvent will not change characteristics of original materials.
Cat. No. 41-2 GC 2-oz. Net $ .59
56-02 Walsco

G-C RUBBER-TO-METAL & PHONO DRIVE CEMENT Specially prepared for cementing ruber phono and dial drives to shafts and pulleys.
Cat. No. 35-2 GC 2-oz. Net $ .60
56-02 Walsco

G-C PLIOBOND CEMENT—Bonds anything to anything—iron, steel, plastic, glass, aluminum, cotton, vinyl sheets, stainless steel, etc. A truly universal cement.
Cat. No. 43-2 GC 2-oz. Net $ .60
67-02 Walsco

G-C ACRYLIC-PLEXIGLASS CEMENT — Specially prepared for cementing Lucite, Plexiglass and other arcylic materials.
Cat. No. 40-2 GC 2-oz. Net $ .60
65-02 Walsco

G-C NE-O-PRENE CEMENT—For cementing neoprene rubber to neoprene or neoprene to other products, such as metal, wood, paper, etc.
Cat. No. 52-2 2-oz. Net $ .98

G-C TV HIGH VOLTAGE CORONA DOPE—Prevents corona shorts on high voltage circuits in Television sets.
Cat. No. 47-2 GC 2-oz. Net $ .78
195-02 Walsco

G-C RED-X TV CORONA DOPE—Prevents corona shorts in high voltage circuits in TV sets. Coat surfaces and sharp corners to stop corona effect.
Cat. No. 50-2 GC 2-oz. Net $ .78
198-02 Walsco

G-C TV TUBE KOAT—For recoating the outside of TV picture tubes that have become scratched or the surface is peeling.
Cat. No. 49-2 GC 2-oz. Net $ .72
199-02 Walsco

LIQUID NON-SLIP—Penetrating and fast-drying liquid dressing. Shrinks fibres, prolongs life of cables and belts and prevents slipping.
Cat. No. 1211 ¼-oz. Net $ .38

G-C No. 67 PAINT THINNER—Excellent for Ruf-Koat, Krome-Koat, B-K Cement, Insulating Varnish and Rubber Cements.
Cat. No. 67-2 GC 2-oz. Net $ .59
204-02 Walsco

G-C PHONO NON-SLIP COMPOUND—Prevents slippage of phono drives on changers, tape recorders, and all types of recorder drives.
Cat. No. 86-2-S GC 2-oz Net $ .96
144-02 Walsco

G-C RED GLYPTAL INSULATING VARNISH—Most common of all protective insulating coatings, used on all solder connections, high voltage points, anti-corona.
Cat. No. 90-2 GC 2-oz. Net $ .63
134-02 Walsco

G-C CARBON TETRA-CHLORIDE—100% pure Carbon Tetra-Chloride, non-explosive and non-inflammable. For cleaning electrical controls and contacts.
Cat. No. 211-2 2-oz. Net $ .59

G-C CONTACT DOPE—Ideal contact cleaner for electronic switches, controls and contacts. Specially prepared to resist corrosion and oxidation on contacts.
Cat. No. 1214 2-oz. Net $ .48

G-C NON-CORROSIVE LIQUID SOLDERING FLUX—Best quality non-corrosive flux for all types of radio and electrical soldering, for copper, brass, steel, nickel, etc.
Cat. No. 42-2 2-oz. Net $ .55

G-C Q-DOPE (COIL DOPE)—Specially prepared for coating, doping, sealing, cementing and impregnating coils and paints in "Very High" and "Ultra High" frequency ranges.
Cat. No. 37-2 GC 2-oz. Net $ .55
57-02 Walsco

G-C LIQUIDOPE—Gives coils a tough protective film that insures firmness and prevents characteristic changes due to weather.
Cat. No. 36-2 2-oz. Net $ .60

G-C RADIO AND TELEVISION CEMENT—High grade speaker cement in a handy tube for those who prefer to use a tube. Cement can be applied directly from tube on the parts to be cemented without the use of a brush. Also used for television work, sealing nuts, bolts, etc., on antennas, rotators, etc.
Cat. No. 34-2
2-oz. tube Net $ .59

G-C INSULATING & DIPPING VARNISH—Produces a smooth, tough film that is water-proof, oil-proof and non-corrosive. Recommended for treating field coils, noisy or buzzing transformers and choke coils.
Cat. No. 56-2 GC 2-oz. Net $ .60
190-02 Walsco

G-C FUNGUS VARNISH—Used on all types of Radio, Electronics and Communication equipment to prevent moisture absorption and fungus growth, when equipment is used in hot and humid climates.
Cat. No. 57-2 GC 2-oz. Net $ .79
135-02 Walsco

G-C STRIP-X—Removes insulating enamel from wires for easy soldering. Use on magnet wire, etc.
Cat. No. 26-2 GC 2-oz. Net $ .78
251-02 Walsco

G-C MAG-NETIK RECORDING HEAD CLEANER—Cleans without injury to the recording head that gradually lose their sensitivity if oxide accumulates.
Cat. No. 53-1 1-oz. Net $ .67
53-2 2-oz. $1.03

GC MAGNETIC CEMENT--Permanently bonds iron cores, broken loopsticks, slugs, flyback and yoke cores. Renews part to original function.
Cat.No. 38-2 2-oz. Net $ .89

G-C No. 14-2 PRINT-KOTE SILICONE RESIN—After repairing or replacing parts in printed circuits, protect the panel joints and parts. Fast air drying.
Cat. No. 14-2 2-oz. Net $1.40

G-C No. 13-2 PRINT-KOTE SOLVENT FOR SILICONE RESIN—The only solvent for G-C 14-2 Silicone Resin. Will dissolve and remove silicone resin from printed circuits.
Cat. No. 13-2 2-oz. Net $/.42

G-C PRINT-KOTE SOLDERING FLUX—Non-corrosive liquid flux for easy soldering and repairing of printed circuits.
Cat. No. 12-2 2-oz. Net $ .60

G-C CEMENT KIT — A kit containing a complete selection for every application. Kit includes 2-oz. samples of Service, Pli-O-Bond, Acrylic, Plastic, Bakelite, Vinylite, Grille Cloth, Model, Wood, Rubber-to-Metal, Electrical and Resistor, Neoprene, Label and Vinyl Cements. Ideal for research and development.
Cat. No. 345 Net $9.05

GLASS TREATMENT COMPOUND
"For All Glass and Plastics"
- DEGREASES
- REMOVES STATIC
- WATERPROOFS

"GC 60" treatment compound makes all glass and plastics cleaner and brighter, degreases, removes static, waterproofs and keeps surfaces cleaner longer. Comes with handy spray applicator for easier application. Easy to use, just spray on and wipe clean.

	Std. Pkg.	
16 oz. bottle	12	$ 1.15
15 oz. bottle	3	$ 2.02
1 gallon	1	$12.99

SUPER FREEZE MIST
PLASTIC SPRAY EXTENSION
"COOL CIRCUITS THREE TIMES FASTER"

Instant cooling action at its best. Super Freeze Mist is a "Dry" cooler because it leaves no liquid residue. Here is a cooling agent which is non-toxic and nonflammable, has a pleasant odor, and does the job three times faster than other coolers.
Super Freeze Mist enables the Serviceman to pinpoint bad capacitors, transistors, oxidized joints, by cooling components.

GC No.	Watsco		Net
8668	216-06	6 oz. aerosol	$1.44
	Standard Package 24		

"Most Powerful All-Purpose TV–Radio Cleaner"
The most ourstanding "All purpose" electronic contact cleaner. This is not a solvent-type cleaner but consists of active ingredients in light oil base. Use it on volume controls, tone controls, audio mixers, relays, etc. A small drop lasts for months or years.

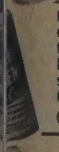
DE-OX-ID

GC No.		Std. Pkg.	Net
19-1	1 oz. bottle	6	.70
19-2	2 oz. bottle	12	1.03
19-2-S	2 oz. bottle carded	12	1.03
19-6	6 oz. aerosol can	6	2.45
19-16	16 oz. bottle	3	8.50

NO-OX

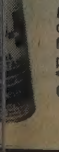
Walsco		Std. Pkg.	Net
100-01	1 oz. bottle	6	$ .70
100-02	2 oz. bottle	12	$ 1.03
100-02-S	2 oz. bottle carded	12	$ 1.03
100-06	6 oz. aerosol can	6	$ 2.45
100-16	16 oz. bottle	3	$ 8.50
100-33	1 gallon	1	$40.65

SPRA-KLEEN - eliminates noise due to dust, dirt and corrosion on contacts. Just spray, and work controls.
Cat. No. 8666...6 oz.. Net $ .99
Cat. No. 8666-16..... Net $1.95
16 oz (sprays upside-down)



RELAY-KLEEN - contact cleaner; excellent for cleaning relays and contacts in switchboards, automatic pinball or bowling machines, rocket or satellite circuitry.
Cat. No. 8682....6 oz.. Net $1.89
Cat. No. 8682-16..16 oz... Net $3.49

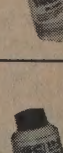
JIF - contact and control cleaner - will not harm plastics. Contains no harsh solvents. Cleans, lubricates, long-lasting protection.
Cat. No. 8670-6...6 oz. Net $1.79



MP-5 outdoor metal protectant; provides chemisorption type bond to metal surfaces. Superior to other organic compounds. Contains - UCARSIL* silicones. *Trademark of Union Carbide Corp.
Cat. No. 8681 ...6 oz..... Net $1.79

ZERO-MIST SPRA KOAT - instantly locates defective(intermittent) circuit components due to temperature change. Circuits cooled instantly. Components isolated.
Cat. No. 8667...16 oz.. Net $2.19

RUF-KOAT WRINKLE VARNISH - hard, durable finish.
Cat. No. 60-12..... Net $2.25
12 oz. Black
Cat. No. 60-13..... Net $2.25
12 oz. Gray



GC DE-OX-ID - electrical contact cleaner for silver, detent and radar contacts. For TV, radio, telephone, relays, contacts, etc.
Cat. No. 19-6...6 oz... Net $2.45

GC ELECTRONIC DRY CLEANER
"Leaves Absolutely No Deposits"
Plastic Spray Extension Included FREE!
Clean contacts, relays, and other electronic devices with this "Dry" cleaner where no residual, oily deposits are desired. This product is also an excellent degreaser and general solvent for inks, gummy deposits, etc., on all electrical or mechanical devices such as typewriters, presses, etc.

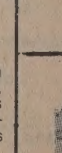
No.	Std. Pkg.	Net
8669	16 oz. aerosol.....12	$2.10

CREME-O-WAX POLISH
New Improved
"For Radio and TV Cabinets"
The best white non-staining polish that money can but for furniture, radio-TV cabinets, pianos, etc, Dries to hard glossy finish. Polish cabinets after service calls, results bring added sales.

GC No.	Walsco		Std. Pkg.	Net
92-2		2 oz. bottle	6	$ .49
92-8	230-08	8 oz. bottle	6	$ .70
95-16		16 oz. bottle	3	$1.05
95-G		1 gallon	1	$4.95

K-27 PRINT-KOTE - TV silicone resin for printed circuits. Insulates, protects, prevents shorts. As used by the original manufacturer.
Cat. No. 14-6 GC 6-oz. Net $2.42
120-06 Walsco

GC SILVER PRINT - for printed circuit repairs Same Pure Silver as used by original printed circuit manufacturers
Cat. No. 21-1 GC ½ troy oz. Net $4.75
36 Walsco
Cat. No. 21-2 GC 1 troy oz. Net $7.95
36-1 Walsco
GC COPPERPRINT 2 oz bottle
Cat No 20-2 Net $1.95



Spra-Koat
RED - X TV CORONA DOPE
Prevents Corona Shorts in High Voltage TV Circuits
New red color coats surface and corners to stop corona effect. Fast drying, silicone base. Has excellent dielectric strength
GC No. 50-12 16 oz. spray can Net $2.18
Standard Package 12

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

INJECTORALL CHEMICALS and TOOLS

INJECTORALL ELECTRONICS CORP.

ALIGNMENT TOOLS

IN 8606 5" HEX WRENCH — double end net $ .48

IN 8606L 11" HEX WRENCH — double end net $ .63

IN 8607 5" HEX WRENCH & SCREWDRIVER net $ .48

IN 8727 7" TUNER SCREWDRIVER — double end net $ .43

IN 8728L 12" TUNER SCREWDRIVER — double end net $ .53

IN 9300 5" MIDGET HEX WRENCH — double end net $ .48

KIT NO. 6 Six Alignment Tools. Yellow nylon alignment tools as listed above.

KIT 6 6 alignment tools net $1.95

AIR CONDITIONER

Aero-Kleen

Oil spray for air-conditioner filters, dripless and scented.

495 16 oz. spray can net $1.45

CEMENTS & GLUES

Phono Grip-Well

Non-slip compound for dial cords, and slipping phono turntables.

68-2 2 oz. glass bottle net $1.00

Speaker Cement

Vibration proof, fast drying, forms flexible bond; brush in cap, a plastic glue.

201 2 oz. glass bottle net $ .60

Stik-It Glue

All purpose glue in squeeze bottle, spreads white, dries clear, spout with attached cap.

39 2 oz. squeeze bottle net $ .33

CIRCUIT COOLERS

Chill-It

A refrigerant spray, to pin-point defective electronic components.

179-6 6 oz. spray can net $1.32

179-16 16 oz. spray can net $2.25

CLEANERS

Contact Cleaner

Superior non-toxic spray solvent, dries quickly; with 4" steel needle.

999WN 6 oz. spray can net $1.79

Degreaser No. 3

Air drying cleaning compound, excellent for ultrasonic application.

3 1 gal. can net $7.80

Drive Wheel Cleaner

Cleans and renews neoprene and rubber drive wheels.

251-2 2 oz. glass bottle net $1.00

Lens Kleen

Plastic cleaner, antistatic, for plastic TV windows and meters; with cleaning cloth.

20 6 oz. aerosol can net $1.17

CLEANERS

Fidelity Record Cleaner

Antistatic spray, cleans and protects records; with record cleaning cloth.

70WC 3 oz. spray can net 1.00

Hi-Fi Control Cleaner

Cleaner and lubricant for volume controls; with plastic needle.

799-3 3 oz. spray can net $1.00

Tape Head Cleaner

Cleans tape recorder heads, removes squeal, flutter, wow, safe to use, with cotton-covered wire brush.

250-2 2 oz. glass bottle net $ .90

250-3 3 oz. spray can with plastic needle net 1.32

Spray Clean

Tuner degreaser and all purpose cleaner, safe for plastics, leaves no film, non-flammable, conforms to MIL SPEC O-T-620a.

3-24 24 oz. spray can with plastic nozzle net $3.00

Super 100

Tuner cleaner and lubricant, will not affect plastics, contains ANTI-STATIC agent, for color and black & white TV tuners. NET

100-3 3 oz. spray w/plastic Needle $1.00

100-6 6 oz. spray w/steel Needle 2.10

100-8 8 oz. spray w/steel Needle 2.25

100-16 16 oz. spray w/steel Needle 2.99

Tuner Cleaner

Cleaner and lubricant for TV tuners and controls, non-toxic, non-flammable. NET

899-6 6 oz. spray can only without Needle $1.95

899WN 6 oz. spray w/steel Needle 2.10

899-16WN 16 oz. spray w/steel Needle 2.99

COATINGS & INSULATORS

Clear Spray

A transparent plastic spray, waterproofs, insulates metal, wood, rubber and paper surfaces.

399 16 oz. spray can net $1.45

Red Hi-Volt

Fast drying insulator, prevents arcing and corona in high voltage circuits, has high dielectric strength.

129-2 2 oz. glass bottle net $1.00

129-6 6 oz. spray can $1.32

129-16 16 oz. spray can 2.40

129G 1 gallon can 7.80

OILS & LUBRICANTS

Slide E-Z Grease

A Grease Gun In An Aerosol Can — contains ANTI-OXIDANT to prevent corrosion, extends part life.

668-4 4 oz. aerosol can net 1.32

Spot Lubricating Oil

Non-gumming, for tape-recorders and record players; with plastic needle.

10-3 3 oz. spray can net $1.00

10-16 16 oz. spray can net $2.25

Squeal-Stop

Dry lubricant, leaves no oily film, won't affect wires; with plastic needle.

50 3 oz. spray can net $1.00

PAINTS & VARNISHES

Anti-Fungus Varnish

Conforms to MIL 173B specifications, natural color; prevents fungus growth.

15-16 16 oz. spray can net $2.4

Injectorall Spray Paints

With FREE masking tape - 13 oz. ea. net $1.1

GLOSS

300-13 Gloss White
301-13 Appliance White
302-13 Gloss Black
303-13 Clear
307-13 Fire Red
308-13 Ribbon Blue
309-13 Pink
310-13 Rich Blue
311-13 Mist Green
312-13 Light Gray
313-13 Hunter Green
316-13 Light Yellow

FLAT & METALLIC

304-13 Flat White
305-13 Flat Black
306-13 Metal Primer Grey
314-13 Gold
315-13 Aluminum

Fluorescent Paints - 13 oz. spray can net $2.1

FLUORESCENT

325-13 Cerise Red
326-13 Green
327-13 Blue
328-13 Red Orange
329-13 Lemon Yellow

PRINTED CIRCUITS

Printed Circuit Kit

Contains 2 boards, resist ink pen, etchant, resist ink solvent, drill bit, plastic developing tray and complete step-by-step instructions.

Kit 500 printed circuit kit net $5.95

Resist Ink Pen

Use like any felt marker pen. Black only

195 fine tip net $1.2

196 medium tip net $1.2

Resist Ink Solvent

Removes inks, markings and surplus flux. Evaporates quickly. Non-toxic, non-flammable.

198 2 oz. glass bottle net $ .9

198G gallon net $7.8

Etchant

Removes excess copper from printed circuit boards. Electronic grade solvent.

199 1 pint plastic bottle net $1.41

199Q quart net $2.25

199G gallon net $8.50

Poly Spray Insulator

For Coating Printed Circuits — a polyurethane resin forms a smooth, transparent coating, conforms to MIL 1-46058A specifications.

65-16 16 oz. spray can net $2.40

SERVICE AIDS

Jet Air

Removes dust, lint and dirt from electronic chassis, projectors and precision instruments. Dry air reaches hard-to-get-at places.

8 8 oz. spray can net $1.45

Net

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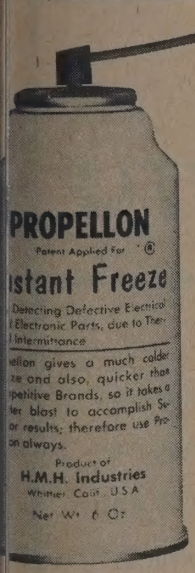
Heeger, Inc., as national sales administrators, present the following chemicals that have found favor with engineers, laboratory technicians and production in industry, to assist them in procuring the best proven material to enable them to arrive at the best results.

From the laboratories of
H. M. H. INDUSTRIES

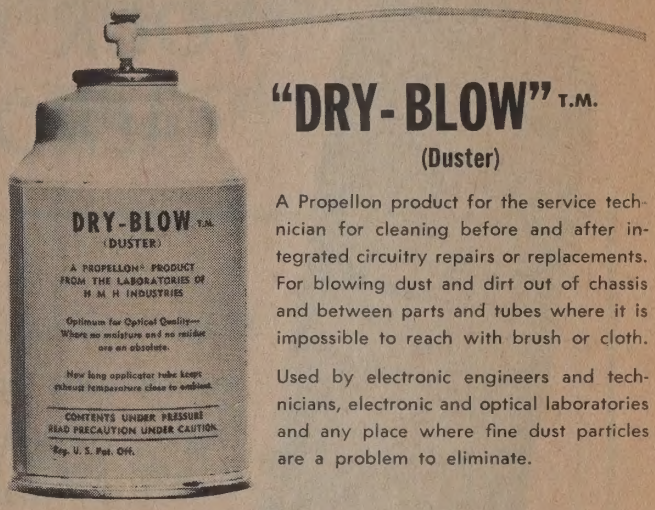


PROPELLON INSTANT FREEZE

Used by electronic engineers and technicians for detecting defective electronic and electrical parts, due to thermal intermittance. Valuable in the laboratory, field testing, service bench or field work, maintenance of equipment and in the electronic and electrical analysis of trouble. Propellon "Instant Freeze" delivers the lowest temperature practical for above uses. Odorless, non-toxic and non-flammable.

The 12" extender facilitates in directing the spray directly onto the area tested. Also aids in getting into inaccessible places.

O A CASE
KED IN 7 OZ. CANS AND 15 OZ. CANS — 12" EXTENDER FREE
H EACH CAN
OZ. CAN, with 12" extender.....ea. $1.45
OZ. CAN, with 12" extender.....ea. $2.25



"DRY-BLOW" T.M.

(Duster)

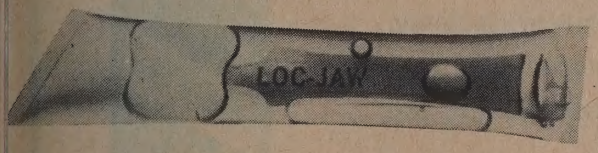
A Propellon product for the service technician for cleaning before and after integrated circuitry repairs or replacements. For blowing dust and dirt out of chassis and between parts and tubes where it is impossible to reach with brush or cloth.

Used by electronic engineers and technicians, electronic and optical laboratories and any place where fine dust particles are a problem to eliminate.

12 TO A CASE
PACKED in 15 OZ. CANS — 18" EXTENDER FREE WITH EACH CAN
15 OZ. CAN, with 18" extender.....ea. $2.25

From the laboratories of
HASCOL ENTERPRISES

LOC-JAW



A SCIENTIFICALLY COMPOUNDED ADHERENT FORMULA

"oc-Jaw" is an "Epoxy" base compound for bonding tal to metal, glass to glass, glass to wood, wood to ood, metal to wood, etc. Properly proportioned, it rmetically seals small parts and connections. After ting, it actively resists salt water and salt air, gaso- e, chemicals and solvents of all types and with- nds temperatures up to 300° F. Applicable to many dustrial uses. Packed in its own plastic container and plicator. Indispensable where an adherent or sealer needed.

DIVIDUAL PLASTIC CONTAINER .....ea. $ .98
G OF 10 .....per bag $7.50

From HASCOL LABORATORIES

SAL-MET

NON-CORROSIVE FLUX

- **SOLDERS COPPER TO ALUMINUM**
- **ALUMINUM TO ALUMINUM**
- **SOLDERS ALL METALS**

A scientific laboratory non-corrosive flux for soldering all metals. By using "SAL-MET," copper can be soldered to aluminum, aluminum to aluminum, copper to steel, copper to copper; in fact, any metal to metal is possible. No special preparation on material to be soldered. Use conventional solder, applied with quick heat, regular soldering iron, torch or pot.

1 oz. Tubes.....ea. $ .95
1 lb. Can.....ea. $7.88

WRITE FOR COMPLETE CATALOG

PRICES SUBJECT TO CHANGE

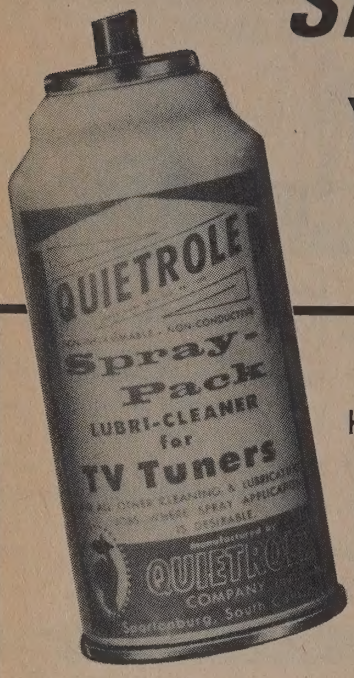
L M B®

QUIETROLE

the original LUBRICANT CLEANER

SPRAY IT OR DROP IT . . .

YOUR CHOICE— AEROSOL OR BOTTLE



Keeps TV tuners controls, switches, relays and all electronic moving parts operating longer and smoother. Assures highest efficiency performance of COLOR and BLACK and WHITE. "The choice of better servicemen everywhere."

Non-flammable, non-conductive, non-corrosive rated virtually non-toxic harmless to plastic and metal, zero effect on capacity and resistance.

QUIETROLE Mark II SPRAY-PACK Aerosol and QUIETROLE in bottles will meet all cleaning and lubricating problems in electronic equipment. It has been a trusted and proven product for more years than any other product in its field. Once used you will use no other. Insist on QUIETROLE for results.

QUIETROLE AEROSOL
includes plastic extender

Cat. No.	Size	Order Min.	Min. Re-order	Dist. Net Resale Price
10-5	6-oz.	12	12	$2.89

QUIETROLE BOTTLE WITH BRUSH-N-CAP

10-3A	4-oz.	16	8	$2.64

QUIETROLE BOTTLE

Cat. No.	Size	Order Min.	Min. Re-order	Dist. Net Resale Price
10-2	2-oz.	24	24	$1.69
10-3	4-oz.	16	8	$2.54
10-4	8-oz.	8	6	$5.07

QUIETROLE COMPANY

Net

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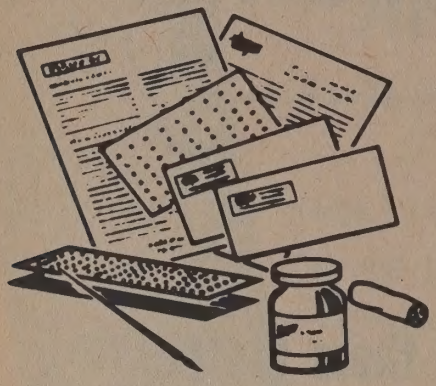
whatever electronic products
you require...

...you'll find them faster
in the MASTER...
...the world's largest catalog
of electronic
products
sold through
distributors

ETCHED CIRCUIT KITS

The production of professional-quality etched crcuit boards — using the latest tested and proved techniques and processes — is possible with the KEPRO Kits now available. No prior experience in the art is necessary nor will you need elaborate darkroom or production facilities. Your office desk becomes your prototype "factory".

The comprehensive KEPRO instructions, supplied with each take all mystery out of etched circuit production and you progress quickly from your first experimental "breadboard" to sh run production quantities of functional etched circuit pa KEPRO kits are the most complete to be found. With most them, you will need to supply, additionally, only water, electric and time.

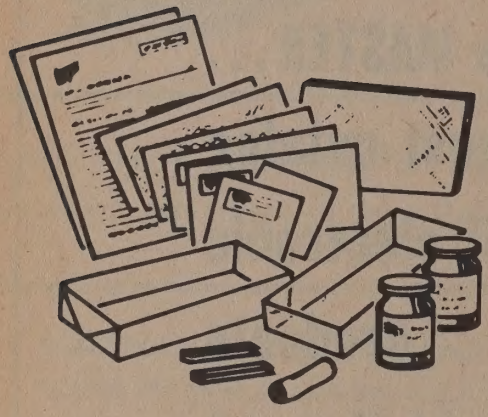


STANDARD MANUAL RESIST ETCHED CIRCUIT KITS

Produce basic etched circuit patterns quickly and accurately. I and pressure-sensitive tape resists are applied directly to copp clad boards before etching. Kits include three 3" x 6" boards, cl one side with one ounce foil, an ink resist fiber pen, assortme of pressure sensitive conductor strip and termination circle tape etching solution, tray and instructions. One of the boards is p forated with .040" diameter holes on 2/10th grid for simplifi component mounting.

CAT. NO. S-101A — Standard Manual Resist Kit with XXXP Pap Base Phenolic Boards. Wt., 1 lb., 13 oz.
Suggested Net Price, **$3.**

CAT NO. S-101A-G — Standard Manual Resist Kit with G-10 Gla Epoxy Boards. Wt., 1 lb., 15 oz. Suggested Net Price, **$5.**



PROFESSIONAL PHOTO RESIST ETCHED CIRCUIT KITS

No darkroom needed to produce professional-quality photo-e graved etched circuit boards with these KEPRO kits. One 3" x and two 3" x 6" photosensitized boards, each clad one side wi 1 ounce copper foil, can be handled in subdued room light. Ki include "cut and peel" mechanical negatives, exposure frame, d veloping solution and tray, etching solution and tray plus instru tions that educate. You can produce any number of **identical** c cuit board patterns using the photo resist method.

CAT. NO. P-101A — Professional Photo Resist Etched Circuit K with XXXP Paper Base Phenolic Boards. Wt., 2 lbs., 13 oz.
Suggested Net Price, **$5.**

CAT. NO. P-101A-G — Professional Photo Resist Etched Circu Kit with G-10 Glass Epoxy Boards. Wt., 2 lbs., 15 oz.
Suggested Net Price, **$7.**

MASTER PHOTO LAYOUT KIT

This kit offers materials which eliminate inking and letterin Use of mechanical negatives and pressure-sensitive conduct strip and termination circle tapes enable the draftsman to produ professional etched circuit artwork in less than half the tin needed with conventional methods.

Finished art may be used directly as a negative or positi when made to 1:1 scale, or produced at 2:1 or 4:1 scale a photographically reduced to desired size.

Materials provided, which will make four pieces of master a work, 18" x 24" in size, include generous amounts of conduct strips and termination circles in a variety of widths and diamete matte surface mylar, mechanical negatives, mylar master layo grid sheet, graph paper, sheet of pressure-sensitive black opaq nomenclature characters in several fonts and sizes, assortment good quality drafting tools and complete instructions.

CAT. NO. PL-200A — Master Photo Layout Kit. Wt., 4 lbs.
Suggested Net Price, **$38.**

BASIC PHOTO LAYOUT KIT

CAT. NO. PL-2A — Materials for two pieces of 8" x 10" artwor No tools in kit. Wt., 1 lb. Suggested Net Price, **$3.**

(A complete selection of photo layout materials and tools is listed on page 394)

Net

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ETCHED CIRCUIT KITS

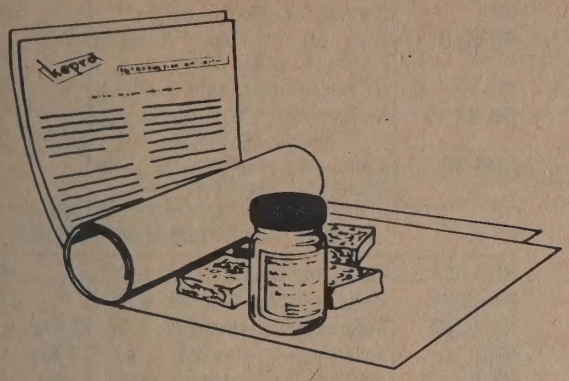
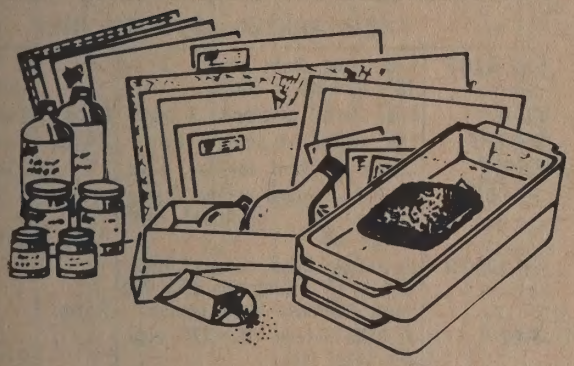


PHOTO REVERSING KIT

With this kit, you can prepare line negatives or positives from taped or inked artwork in just two simple steps. Use, also, to reverse existing negatives or positives. Photosensitized film is contact exposed, then simply wiped with developing solution. No darkroom, tanks, trays or fixing required.

Kit includes two pieces of reversing film, 10″ x 24″, developing solution, cotton pads and complete instructions.

CAT. NO. FK-701 — Photo Reversing Kit. Wt., 1 lb., 8 oz. Suggested Net Price, **$7.20**



ETCHED CIRCUIT LAB KITS

The most complete etched circuit kits available. Only water, electricity and time are needed to produce more than three square feet of single and double clad boards. Parts up to 7″ x 10″ in size may be made by both manual and photo resist methods.

The KEPRO Lab Kits, designed for the industrial design engineer or serious experimenter, offer materials and equipment to span a range from single breadboard to short run production of high quality photo-processed boards. A KEPRO PL-2A Photo Layout Kit is included for fast, simple artwork preparation. The photosensitized copper clad materials can be handled in subdued ambient room light — no darkroom needed. Laminates are 1/16″ thick, clad with one ounce copper.

Kits include 20 pieces of plain and photosensitized copper clad boards in assorted sizes up to 7″ x 10″, exposure lamp, trays, chemicals and full instructions.

CAT. NO. L-505A — Etched Circuit Lab Kit with XXXP Paper Base Phenolic Boards. Wt., 20 lbs. Suggested Net Price, **$34.75**

CAT. NO. L-505A-G — Etched Circuit Lab Kit with G-10 Glass Epoxy Boards. Wt., 21 lbs. Suggested Net Price, **$42.95**

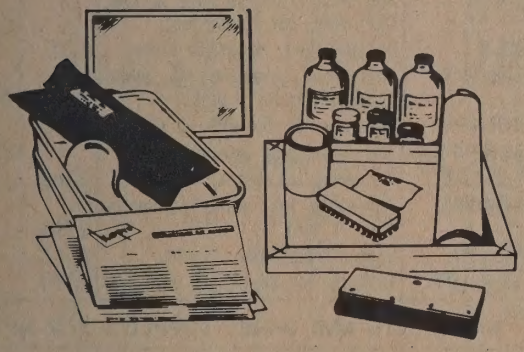
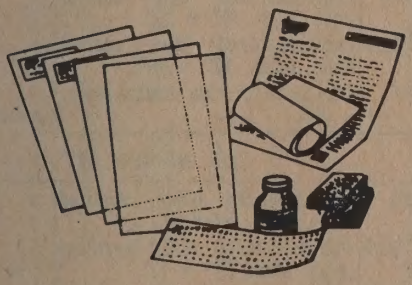


PHOTO SCREEN KIT

An outstanding feature of this popular KEPRO kit is the very complete instructions that fully explain the art of silk screen production and printing. Although ideal for hobbyists, material and equipment in this kit are of professional type and quality and the assembled screen printer can be used to produce up to 1000 impressions per day for short-run production requirements.

Kit includes 10″ x 12″ wood frame with stretched silk, two additional silks, film emulsion for three photo stencils, frame mounting hinges, squeegee, film exposure frame, photoflood lamp, developing chemicals and trays, thermometer and both black and white screening inks.

CAT. NO. SC-601A — Photo Screen Kit. Wt., 25 lbs. Suggested Net Price, **$35.00**



NAMEPLATE AND PANEL KITS

Produce professional-appearing nameplates and panels as they are needed. Prototyping engineers can dress up their "black boxes" for presentation. Hams and experimenters can customize home-built gear. No darkroom needed. Each kit supplied with pressure-sensitive opaque nomenclature letters and numbers plus clear acetate sheets to make sharp, clear film positives. Finished plates are mounted with double-face adhesive tape, supplied.

BLUE ENAMEL

Sensitized blue aluminum plate is exposed through film positive. In development, the unexposed areas masked by the opaque characters are washed away. The result is sharply detailed aluminum nomenclature on attractive blue background. Complete instructions and everything needed to process 160 square inches of plate. Two 8″ x 10″ sensitized plates in kit.

CAT. NO. NP-303A — Blue Enamel Nameplate and Panel Kit. Wt., 1 lb. Suggested Net Price, **$7.25**

BLACK ANODIZED

Photosensitive black anodized aluminum panels are exposed through film positives. Areas receiving light become insoluble to developing solution and remain on panel surface to form etch resist. When etched, high contrast aluminum and black panels result. Kit includes full instructions and all materials to produce three 3″ x 6″ panels (54 square inches).

CAT. NO. NP-404 — Black Anodized Nameplate and Panel Kit. Wt., 1 lb., 8 oz. Suggested Net Price, **$6.55**

Kepro EXTRA ETCHED CIRCUIT PROCESSING SUPPLIES AND MATERIA

PHOTO LAYOUT MATERIALS

PRESSURE SENSITIVE BLACK OPAQUE TERMINAL CIRCLES. Precision die-cut card-mounted circles can be used with conductor strips, below, to form resist circuit patterns either directly on copper clad board surfaces or on clear acetate to make film positives. First three numbers in catalog number indicate outside diameter (OD) and last three numbers indicate inside diameter (ID) in thousandth inches. Numbers in parentheses ( ) indicate number of circles per card. Wt., 2 oz., each.

CATALOG NUMBER	CATALOG NUMBER	SUGGESTED NET PRICE PER CARD					
OD ID	OD ID	1-9	10-24	25-49	50-99	100-499	500-UP
TC-093-031 (112)	TC- 375-094 (54)	$.55	$.45	$.37	$.30	$.24	$.22
TC-125-031 (112)	TC- 400-080 (48)						
TC-187-062 (112)	TC- 437-093 (48)						
TC-200-080 (96)	TC- 437-125 (48)	(Terminal Circle sizes may be assorted to obtain quantity discounts.)					
TC-250-062 (96)	TC- 500-062 (42)						
TC-281-046 (80)	TC- 500-094 (42)						
TC-312-062 (80)	TC- 750-062 (20)						
TC-375-062 (54)	TC-1000-062 (12)						

PRESSURE SENSITIVE BLACK OPAQUE CONDUCTOR STRIPS. Use with terminal circles, above, for fast, accurate PC artwork. Can be applied in straight or curved lines. Cat. No. indicates width in thousandth in. 18 yd. rolls. Wt., 1 oz., each.

CAT. NO.	SUGGESTED NET PRICE PER ROLL				
	1 - 4	5 - 9	10 - 24	25 - 99	100-up
CSR-015	$ .90	$ .83	$ .75	$ .67	$ .60
CSR-031	.96	.88	.80	.71	.64
CSR-062	.96	.88	.80	.71	.64
CSR-080	.96	.88	.80	.71	.64
CSR-093	.96	.88	.80	.71	.64
CSR-100	.96	.88	.80	.71	.64
CSR-125	.96	.88	.80	.71	.64
CSR-156	1.08	.99	.90	.80	.72
CSR-187	1.08	.99	.90	.80	.72
CSR-200	1.08	.99	.90	.80	.72
CSR-250	1.08	.99	.90	.80	.72
CSR-375	1.68	1.54	1.40	1.25	1.12
CSR-500	1.80	1.65	1.50	1.34	1.20

Additional Photolayout Supplies

CATALOG NO.	DESCRIPTION	WEIGHT	SUG'D. NET PRICE
AT-810	Pressure sensitive black opaque nomenclature letters & numbers on transparent base. 3 sizes, 4 fonts. 8" x 10" sheets. (Use also for nameplate & panel supply.)	4 oz.	$2.50
AS-3	Acetate layout film, clear, 18" x 24".	8 oz.	1.15
GP-10	1/10th grid layout graph paper, 22" wide x 10 feet.	4 oz.	2.00
MS-3	Matte surface ink receptive mylar drafting film, 18" x 24".	8 oz.	1.95
GS-1824	1/10th grid re-usable translucent mylar master layout sheet, 18" x 24".	8 oz.	7.95
MN-1212	Cut and peel mechanical negative, 12" x 12".	4 oz.	1.25
MN-40	Cut and peel mechanical negative, 40" wide, per lineal ft.	8 oz.	2.95
RMP-700	Resist marking pen, black opaque ink, fiber point.	4 oz.	.75
DI-1	Drafting ink, black waterproof.	4 oz.	$
KS-H10	Knife set. 5" holder, 9 asst'd blades, 1 scribe point.	10 oz.	
BD-6B	6" bow dividers, with 2 blades.	8 oz.	
KB-67	Knife blades, .081" shank, pkg. of 4 blades. Fit BD-6B.	2 oz.	
CDC-50	Center dot cutter, .050", for mechanical negatives.	1 oz.	

PHOTO REVERSING MATERIALS

RF-1024	Photo reversing film, 10" x 24".	8 oz.	$
RF-2024	Photo reversing film, 20" x 24".	16 oz.	
RFD-1PT	Reversing film developer, 1 pt.	2 lbs.	
RFD-1G	Reversing film developer, 1 gal.	13 lbs.	
PE-2	#2 Photoflood exposure lamp.	1 lb.	

PHOTO SCREEN SUPPLIES, INKS

SSF-8103	Film type photo stencil, 8" x 10", package of three.	8 oz.	$
SD-4	Film stencil developer, 1 quart.	2 lbs., 4 oz.	
SH-1PT	Film stencil hardener, 1 pint.	2 lbs., 4 oz.	
SBO-4	Screen blockout solution, 4 oz.	10 oz.	
SF-1012	Re-usable wood screen frame, 10" x 12", stretched with 16XXX silk.	1 lb., 12 oz.	
SF-1012S	Re-usable wood screen frame, 10" x 12", stretched with 200 mesh stainless steel screen.	2 lbs.	
S-42	#16XXX screen silk, 42" wide, per lineal foot.	12 oz.	
S-48S	200 mesh stainless steel screen, 48" wide, per lineal foot.	16 oz.	1
SQ-8	8" squeegee, neoprene blade.	1 lb.	
SIR-1PT	Etch resist screening ink, alkali strippable blue, 1 pint.	2 lbs., 6 oz.	
RIR-1PT	Reducer, for SIR-1PT, 1 pint.	2 lbs.	
ASP-1PT	Alkali stripping powder, 1 pint.	12 oz.	
SIB-1PT	Screening ink, black, 1 pint.	2 lbs.	
SIW-1PT	Screening ink, white nomenclature, 1 pint.	2 lbs.	
SR-1PT	Solder resist, red, 1 pint.	2 lbs.	
SRR-1PT	Reducer for SR-1PT, 1 pint.	2 lbs.	

NAMEPLATE AND PANEL SUPPLIES FOR NP-303A

NP-EP810	Photosensitized blue enamel alum. plate, 8" x 10".	6 oz.	$
NP-EP1220	Photosensitized blue enamel alum. plate, 12" x 20".	1 lb.	
NPD-1PT	Developer for blue enamel plate, 1 pint.	2 lbs., 12 oz.	

FOR NP-404 KIT

NP-SA36	Potosensitized black anodized alum. plate, 3" x 6".	3 oz.	$
NP-SA1212	Photosensitized black anodized alum. plate, 12" x 12".	1 lb.	
NP-SA1220	Photosensitized black anodized alum. plate, 12" x 20".	2 lbs.	
D-1PT	Developer for black anodized alum. plate, 1 pint.	2 lbs., 12 oz.	
NP-E	Etching powder, black anodized plate. Makes 1 pint.	12 oz.	

FOR NP-303A & NP-404

NP-AS	Double face adhesive sheet, 8" x 10".	6 oz.	
NP-AS1722	Double face adhesive sheet, 17" x 22".	1 lb.	

(Extra pressure sensitive nomenclature letters and numbers for plate and panel use listed under photo layout supplies as AT-810

Net

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PRECISION SHEARED COPPER CLAD LAMINATES

IMPORTANT

Catalog Number Prefix Indicates Material Type

(P1 — Unsensitized, Clad 1 Side)
(P2 — Unsensitized, Clad 2 Sides)
(S1 — Photosensitized, Clad 1 Side)
(S2 — Photosensitized, Clad 2 Sides)

1/16" XXXP PAPER BASE PHENOLIC — 1 OZ. (.00135) COPPER FOIL

INDIVIDUALLY PACKAGED			MATERIAL	PACKAGED 5 PIECES PER PACK						
NO.	WT. (OZ.)	NET PRICE	SIZE	CAT. NO.	WEIGHT lbs.	WEIGHT oz.	NET PRICE PER 5 PACK 1	5	10	25
33	2	$ .40	3" x 3"	P1-335		12	$1.45	$1.25	$1.15	$1.05
36	3	.54	3" x 6"	P1-365	1		2.05	1.80	1.65	1.50
36PB*	3	.62	3" x 6"	P1-365PB*	1		2.45	2.20	2.05	1.90
46	4	.60	4" x 6"	P1-465	1	6	2.30	2.00	1.85	1.70
66	5	.84	6" x 6"	P1-665	1	12	3.40	3.00	2.75	2.50
710	6	1.42	7" x 10"	P1-7105	2		6.05	5.35	4.85	4.40
1212	11	2.48	12" x 12"	P1-12125	3	8	11.15	9.45	7.35	7.00
33	2	.44	3" x 3"	P2-335		12	1.65	1.45	1.30	1.20
36	3	.64	3" x 6"	P2-365	1		2.55	2.25	2.05	1.85
46	4	.70	4" x 6"	P2-465	1	6	2.80	2.45	2.25	2.05
66	5	1.02	6" x 6"	P2-665	1	12	4.30	3.80	3.45	3.15
710	6	1.82	7" x 10"	P2-7105	2		8.05	7.10	6.45	5.90
1212	11	3.22	12" x 12"	P2-12125	3	8	14.85	12.60	9.80	9.35
33	2	.58	3" x 3"	S1-335		12	2.35	2.00	1.85	1.70
36	3	.90	3" x 6"	S1-365	1		3.85	3.30	3.00	2.80
46	4	1.06	4" x 6"	S1-465	1	6	4.60	3.95	3.60	3.30
66	5	1.52	6" x 6"	S1-665	1	12	6.80	5.85	5.30	4.90
710	6	2.72	7" x 10"	S1-7105	2		12.55	10.80	9.80	9.05
1212	11	5.36	12" x 12"	S1-12125	3	8	25.55	21.20	16.85	16.10
33	2	.74	3" x 3"	S2-335		12	3.15	2.70	2.45	2.25
36	3	1.22	3" x 6"	S2-365	1		5.45	4.70	4.25	3.95
46	4	1.46	4" x 6"	S2-465	1	6	6.60	5.70	5.15	4.72
66	5	2.18	6" x 6"	S2-665	1	12	10.10	8.70	7.90	7.30
710	6	3.86	7" x 10"	S2-7105	2		18.25	15.70	14.25	13.15
1212	11	7.62	12" x 12"	S2-12125	3	8	36.85	30.60	24.30	23.20

1/16" GLASS MAT POLYESTER — 1 OZ. (.00135) COPPER FOIL

-33M	3	.42	3" x 3"	P1-335M	1		$1.55	$1.35	$1.25	$1.10
-36M	4	.58	3" x 6"	P1-365M	1	4	2.25	2.00	1.80	1.65
-46M	5	.66	4" x 6"	P1-465M	1	9	2.60	2.30	2.10	1.90
-66M	6	.94	6" x 6"	P1-665M	2		3.90	3.45	3.15	2.85
-710M	7	1.58	7" x 10"	P1-7105M	2	6	6.85	6.05	5.50	5.00
-1212M	12	2.84	12" x 12"	P1-12125M	2	10	12.95	11.00	8.55	8.15
-33M	3	.48	3" x 3"	P2-335M	1	2	1.85	1.60	1.45	1.35
-36M	4	.70	3" x 6"	P2-365M	1	6	2.85	2.50	2.30	2.10
-46M	5	.80	4" x 6"	P2-465M	1	10	3.30	2.90	2.65	2.40
-66M	6	1.18	6" x 6"	P2-665M	2	4	5.10	4.50	4.10	3.75
-710M	7	2.06	7" x 10"	P2-7105M	2	10	9.25	8.15	7.40	6.75
-1212M	12	3.82	12" x 12"	P2-12125M	3	14	17.85	15.15	11.75	11.25
-33M	3	.60	3" x 3"	S1-335M	1		2.45	2.10	1.90	1.75
-36M	4	.94	3" x 6"	S1-365M	1	4	4.05	3.50	3.15	2.90
-46M	5	1.12	4" x 6"	S1-465M	1	9	4.90	4.20	3.80	3.55
-66M	6	1.62	6" x 6"	S1-665M	2		7.30	6.30	5.70	5.25
-710M	7	2.88	7" x 10"	S1-7105M	2	6	13.35	11.50	10.40	9.35
-1212M	12	5.72	12" x 12"	S1-12125M	3	10	27.35	22.70	18.05	17.20
-33M	3	.78	3" x 3"	S2-335M	1	2	3.35	2.85	2.60	2.40
-36M	4	1.28	3" x 6"	S2-365M	1	6	5.75	4.95	4.50	4.15
-46M	5	1.56	4" x 6"	S2-465M	1	10	7.10	6.10	5.55	5.10
-66M	6	2.34	6" x 6"	S2-665M	2	4	10.90	9.40	8.50	7.85
-710M	7	4.30	7" x 10"	S2-7105M	2	10	20.45	17.60	15.95	14.75
-1212M	12	8.42	12" x 12"	S2-12125M	3	14	40.85	33.90	29.95	25.75

1/16" G-10 GLASS EPOXY — 1 OZ. (.00135) COPPER FOIL

-33G	3	$ .66	3" x 3"	P1-335G	1		$2.75	$2.40	$2.20	$2.00
-36G	4	1.08	3" x 6"	P1-365G	1	4	4.75	4.20	3.80	3.45
-46G	5	1.20	4" x 6"	P1-465G	1	9	5.30	4.65	4.25	3.85
-66G	6	1.90	6" x 6"	P1-665G	2		8.70	7.65	7.00	6.35
-710G	7	3.50	7" x 10"	P1-7105G	2	6	16.45	14.50	13.15	12.00
-1212G	12	6.76	12" x 12"	P1-12125G	3	10	32.55	27.65	21.50	20.50

at. No. P1-36PB is a factory perforated board with holes .040" dia. punched on 2/10th grid.)

PRECISION SHEARED COPPER CLAD LAMINATES

1/16" G-10 GLASS EPOXY — 1 OZ. (.00135) COPPER FOIL continued

INDIVIDUALLY PACKAGED			MATERIAL	PACKAGED 5 PIECES PER PACK					
CAT. NO.	WT. (OZ.)	NET PRICE	SIZE	CAT. NO.	WEIGHT lbs.	WEIGHT oz.	NET PRICE PER 5 PACK 1	5	10	25
P2-33G	3	.68	3" x 3"	P2-335G	1	2	$2.85	$2.50	$2.25	$2.0
P2-36G	4	1.12	3" x 6"	P2-365G	1	6	4.95	4.35	3.95	3.6
P2-46G	5	1.26	4" x 6"	P2-465G	1	10	5.60	4.90	4.90	4.1
P2-66G	6	2.00	6" x 6"	P2-665G	2	4	9.22	8.10	7.40	6.7
P2-710G	7	3.66	7" x 10"	P2-7105G	2	10	17.25	15.20	13.80	12.6
P2-1212G	12	7.06	12" x 12"	P2-12125G	3	14	34.05	28.95	22.45	21.4
S1-33G	3	.84	3" x 3"	S1-335G	1		3.65	3.20	2.90	2.6
S1-36G	4	1.44	3" x 6"	S1-365G	1	4	6.55	5.75	5.25	4.8
S1-46G	5	1.66	4" x 6"	S1-465G	1	9	7.60	6.70	6.10	5.5
S1-66G	6	2.58	6" x 6"	S1-665G	2		12.10	10.65	9.70	8.8
S1-710G	7	4.80	7" x 10"	S1-7105G	2	6	22.95	19.75	17.90	16.5
S1-1212G	12	9.64	12" x 12"	S1-12125G	3	10	46.95	38.95	31.00	29.5
S2-33G	3	.98	3" x 3"	S2-335G	1	2	4.35	3.80	3.45	3.1
S2-36G	4	1.70	3" x 6"	S2-365G	1	6	7.85	6.90	6.30	5.7
S2-46G	5	2.02	4" x 6"	S2-465G	1	10	9.40	8.25	7.50	6.8
S2-66G	6	3.16	6" x 6"	S2-665G	2	4	15.00	13.20	12.00	10.9
S2-710G	7	5.90	7" x 10"	S2-7105G	2	10	28.45	24.50	22.20	20.5
S2-1212G	12	11.72	12" x 12"	S2-12125G	3	14	57.35	47.60	37.85	36.1

1/16" G-10 GLASS EPOXY — 2 OZ. (.00270) COPPER FOIL

P12-33G	4	.68	3" x 3"	P12-335G	1	4	$2.85	$2.50	$2.25	$2.0
P12-36G	5	1.10	3" x 6"	P12-365G	1	8	4.85	4.30	3.90	3.5
P12-46G	6	1.24	4" x 6"	P12-465G	1	12	5.50	4.85	4.55	4.0
P12-66G	7	1.98	6" x 6"	P12-665G	2	4	9.10	8.05	7.30	6.6
P12-710G	8	3.62	7" x 10"	P12-7105G	2	10	17.05	15.00	13.65	12.4
P12-1212G	16	7.02	12" x 12"	P12-12125G	4	4	33.85	28.75	22.35	21.3
P22-33G	5	.70	3" x 3"	P22-335G	1	6	2.95	2.60	2.35	2.1
P22-36G	6	1.14	3" x 6"	P22-365G	1	10	5.05	4.45	4.05	3.7
P22-46G	7	1.28	4" x 6"	P22-465G	1	14	5.70	5.00	4.55	4.1
P22-66G	8	2.06	6" x 6"	P22-665G	2	8	9.50	8.40	7.60	6.9
P22-710G	9	3.78	7" x 10"	P22-7105G	2	14	17.85	15.70	14.30	13.0
P22-1212G	20	7.36	12" x 12"	P22-12125G	4	8	35.55	30.20	23.45	22.4
S12-33G	4	.86	3" x 3"	S12-335G	1	4	3.75	3.30	3.00	2.7
S12-36G	5	1.46	3" x 6"	S12-365G	1	8	6.65	5.85	5.35	4.8
S12-46G	6	1.70	4" x 6"	S12-465G	1	12	7.80	6.85	6.25	5.7
S12-66G	7	2.66	6" x 6"	S12-665G	2	4	12.50	11.00	10.00	9.1
S12-710G	8	4.72	7" x 10"	S12-7105G	2	10	22.55	19.40	17.60	16.2
S12-1212G	16	9.90	12" x 12"	S12-12125G	4	4	48.25	40.05	31.85	30.4
S22-33G	5	1.00	3" x 3"	S22-335G	1	6	4.45	3.90	3.55	3.2
S22-36G	6	1.72	3" x 6"	S22-365G	1	10	7.95	7.00	6.35	5.8
S22-46G	7	2.04	4" x 6"	S22-465G	1	14	9.50	8.35	7.60	6.9
S22-66G	8	3.22	6" x 6"	S22-665G	2	8	15.30	13.50	12.55	11.2
S22-710G	9	6.02	7" x 10"	S22-7105G	2	14	29.05	25.00	22.65	20.9
S22-1212G	20	11.96	12" x 12"	S22-12125G	4	8	58.55	48.60	38.65	36.9

Kepro can supply special size cuts of copperclad in a wide variety of base materials and foil weight. Quotations submitted promptly for plain or photosensitized lamina

COPPER CLAD MYLAR

.004" thick mylar film clad one side with 1 oz. copper foil. Use for flexible circuitry. Plain or photosensitized.

CAT. NO.	DESCRIPTION	SIZE	WEIGHT	NET PRICE
P1-618F	Unsen., clad 1 side	6" x 18"	14 oz.	$2.52
S1-618	Photosen. clad 1 side	6" x 18"	14 oz.	4.95

MANUAL RESISTS — For Unsensitized Boards

(See page 5 for complete listing of pressure sensitive black opaque terminal circles and conductor strips and for resist marking pen.)

CAT. NO.	DESCRIPTION	WEIGHT	NET PRICE
R-1PT	Etch Resist Paint, black, 1 pt.	2 lbs., 4 oz.	$2.25
T-1PT	Resist Paint Thinner, 1 pt.	2 lbs.	1.95

ETCHED CIRCUIT PROCESSING CHEMICALS

(shipped surface transportation, only)

CAT. NO.	DESCRIPTION	WEIGHT	NE PRI
D-1PT	Developer for photosensitized copper clad boards, 1 pt.	2 lbs., 12 oz.	$1.
D-1G	Developer for photosenstized copper clad boards, 1 gal.	16 lbs.	5.
D-5G	Developer for photosensitized copper clad boards, 5 gal.	75 lbs.	25.
E-1PT	Ferric chloride etching solution, 1 pt.	2 lbs., 1 oz.	.
E-1G	Ferric chloride etching solution, 1 gal.	15 lbs., 8 oz.	3.
E-5G	Ferric chloride etching solution, 5 gal.	70 lbs.	15.
	DRY ETCHANT (may be shipped air)		
EP-1G	Ammonium persulphate (makes 1 gal.)	3½ lbs.	3.
EP-5G	Ammonium persulphate (makes 5 gal.)	15 lbs.	9.

Net

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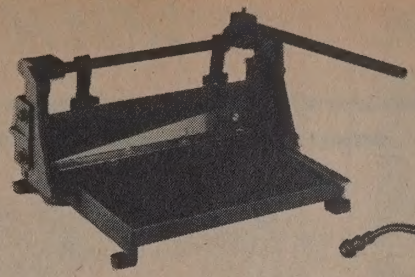
ETCHED CIRCUIT PROTOTYPING TOOLS



EPRO MODEL MIS-12 MARK 1 LAMINATE SHEAR

avy duty hand shear is especially useful in R & D shops. ear and trims unclad or metal clad laminates up to 3/32" ck. Can be used to cut sheet metals up to 1/16" thick. 12" de may be reversed to provide a new cutting edge. ear has a fixed side squaring gauge with a length gauge ustable up to 5¼". Blade clearance is adjustable.

rame of the Mark 1 shear is cast of grade #319 alumi- n. Blade is of hardened hot-rolled spring steel, C-1095.

DEL MIS-12 Shear. Size, 19½" x 13½" x 11" Wt., 18 lbs.
Suggested Net Price, **$94.00**

KEPRO MODEL S-5E HAND EYELETER

s helical screw hand operated press features a simple nd operated lever to set eyelets in a variety of sizes. An ustable and removable set cap holder is provided for nple alignment of setting tools. Eyeleter has reach of 5 3/16" adjustable stop limits travel of the setting tool to obtain sired setting. For stability, eyeleter may be mounted to nch of bolting through three holes in base of the sturdy st frame.

ncluded with eyeleter are four pairs of setting tools and selection kit of more than 15,000 eyelets in 21 standard es. Imported.

DEL S-5E EYELETER. Size, 10 3/8" x 3 5/16". Wt., 14 lbs.
Suggested Net Price, **$98.00**

KEPRO ELECTRONIC EYELETS

b-miniature and miniature eyelets designed specifically to vide superior electrical through connections in both gle and double clad etched circuit boards. Offer increased iabilty of components subject to vibration or extreme tem- rature variation. Available in brass (Cat. No. suffix -B) d oxygen-free high conductive copper (Cat. No. suffix -C). r 1/16" boards.

SUB-MINIATURE EYELETS — .047 OD, .032 ID, .080 Flange

CAT. NO.	HEAD	CLAD SIDES	SUGGESTED NET PRICE		
			1,000	5,000	10,000
S-6125-B	Flat	1 or 2	$3.08	$11.65	$21.00
S-6125-C	Flat	1 or 2	3.08	11.65	21.00
S-6025-B	Funnel	1	3.08	11.65	21.00
S-6025-C	Funnel	1	3.08	11.65	21.00
S-6064-B	Funnel	2	3.08	11.65	21.00
S-6064-C	Funnel	2	3.08	11.65	21.00
MINIATURE EYELETS — .059 OD, .045 ID, .095 Flange					
S-6145-B	Flat	1 or 2	$3.08	$11.65	$21.00
S-6145-C	Flat	1 or 2	3.08	11.65	21.00
S-6045-B	Funnel	1	3.08	11.65	21.00
S-6045-C	Funnel	1	3.08	11.65	21.00
S-6084-B	Funnel	2	3.08	11.65	21.00
S-6084-C	Funnel	2	3.08	11.65	21.00

Shipping wt., approx. 2 oz. per thousand eyelets.

THE KEPRO PRODUCT LINE . . .

represents the most complete array of etched circuit kits, materials, supplies and tools ever assembled in one catalog. The R & D experimenter, the production engineer, the industrial buyer — each will find exactly what is needed for the job, whether that job be the making of a single breadboard or the production of thousands of screen printed etched circuit parts.

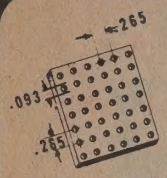
Since 1954, KEPRO has supplied American industry with the finest etched circuit products available from one source . . . and that source strategically centered in the very "Heart of America". KEPRO warehouses in St. Louis — and can supply immediately — a complete selection of unsensitized or photo-sensitized copper clad laminates in a variety of materials, thicknesses and foil weights meeting or exceeding MIL standards and NEMA grades. Sheared pieces or full sheets are "off the shelf".

KEPRO products are stocked by leading industrial electronics distributors across the nation. These distributors — and KEPRO — are ready to serve you, the industrial, with the finest etched circuit products, in reasonable quantities and at industrial prices. This is our reason for being.

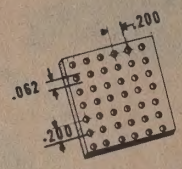
Vector Electronic Company
INCORPORATED

Prices subject to change without notice.

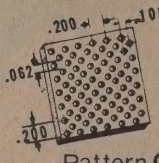
VECTORBORD*



Pattern A



Pattern F



Pattern G

Pattern	Spacing	Pattern	Spacing	Pattern	Spacing
A	.265 Centers	B	.188 Centers	H	.100 Centers
C	.200 Centers	E	.141 Centers	G	.20 x .10
		F	.200 Centers	L	.250 Centers

Vectorbord* (Pre-Punched Terminal Board) has precision pre-punched holes at various spacings on tan XXXP phenolic type PBE-P (Mil-P-3115), ivory EXXXP Epoxy Paper type PEE (Mil-P-22324), G-10 Epoxy Glass type GEE (Mil-P-18177), Copper clad G-10 Epoxy Glass type FL-GE (Mil-P-13949C), copper clad XXXP phenolic type PP (Mil-P-13949) and copper clad Epoxy Paper (Mil-P-13949). Ideal for prototypes and many production uses. Vector Push-In Terminals or standard turned terminals and eyelets fit pre-punched holes. User can make own etched circuits with listed copper clad boards. May be sawed, drilled or punched.

Cat. No.	Pattern	Hole Size	Dimensions	No. of Holes	Price 1-19
XXXP Phenolic					
18A18	A	.093	4.80 x 4.80 x 1/16	18 x 18	$ .45
32A9	A	.093	8.51 x 2.41 x 1/16	32 x 9	.47
32AA18	A	.093	8.51 x 4.80 x 3/32	32 x 18	.87
64A18	A	.093	16.99 x 4.8 x 1/16	64 x 18	1.30
64AA18	A	.093	16.99 x 4.8 x 3/32	64 x 18	1.66
64AA32	A	.092	16.99 x 8.51 x 3/32	64 x 32	2.86
45B30	B	.062	8.51 x 5.69 x 1/16	45 x 30	.87
90B30	B	.062	16.97 x 5.69 x 1/16	90 x 30	1.68
85C24	C	.093	16.99 x 4.80 x 1/16	85 x 24	1.30
95G175	G	.093	35.00 x 19.00 x 1/16	(94 x 175) x 2	7.92
26L18	L	.093	6.5 x 4.5 x 1/16	26 x 18	.73
34L19	L	.093	8.5 x 4.8 x 1/16	34 x 19	.78
68L34	L	.093	16.99 x 8.5 x 1/16	68 x 34	2.03
68LL19	LL	.093	16.99 x 4.8 x 3/32	68 x 19	1.66

*Vectorbord is a registered trade-mark of Vector Electronic Co., Inc.

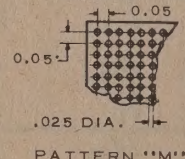
Cat. No.	Pattern	Hole Size	Dimensions	No. of Holes	Price 1-19
Epoxy Paper					
32AA18EP	A	.093	8.51 x 4.80 x 3/32	32 x 18	$1.46
64AA18EP	A	.093	16.99 x 4.80 x 3/32	64 x 18	2.03
64AA32EP	A	.093	16.99 x 8.51 x 3/32	64 x 32	4.57
85F24EP	F	.062	16.99 x 4.80 x 1/16	85 x 24	2.14
85G24EP	G	.062	16.99 x 4.80 x 1/16	(85 x 23) x 2	2.14
85G42EP	G	.062	16.99 x 8.5 x 1/16	(85 x 42) x 2	3.30
120E33EP	E	.062	16.99 x 4.80 x 1/16	120 x 33	2.32
Epoxy Glass					
32A18WE	A	.093	8.51 x 4.80 x 1/16	32 x 18	1.97
42G24WE	G	.062	8.5 x 4.80 x 1/16	(42 x 23) x 2	1.97
85G24WE	G	.062	16.99 x 4.80 x 1/16	(85 x 23) x 2	3.96
170H48WE	H	.062	17.00 x 4.80 x 1/16	169 x 47	4.23
120E33WE	E	.062	16.99 x 4.80 x 1/16	120 x 33	4.15
Copper Clad XXXP Phenolic					
42F22C1*	F	.062	8.5 x 4.5 x 1/16	42 x 22	1.04
42F22C2**	F	.062	8.5 x 4.5 x 1/16	42 x 22	1.37
3070-1XXXP*	F	.062	6.5 x 4.5 x 1/16	28 x 22	.87
3070-2XXXP**	F	.062	6.5 x 4.5 x 1/16	28 x 22	1.08
3106-1XXXP*	F	.062	4.5 x 3" x 1/16	18 x 14	.47
3106-2XXXP**	F	.062	4.5 x 3" x 1/16	18 x 14	.57
Copper Clad Epoxy Paper					
3070-1EP*	F	.062	6.5 x 4.5 x 1/16	28 x 22	1.45
3070-2EP**	F	.062	6.5 x 4.5 x 1/16	28 x 22	1.74
Copper Clad Epoxy Glass					
42G22WEC1*	G	.062	8.5 x 4.5 x 1/16	(42 x 22) x 2	$2.65
42G22WEC2**	G	.062	8.5 x 4.5 x 1/16	(42 x 22) x 2	2.70
85F42WEC1*	F	.062	16.99 x 8.51 x 1/16	85 x 42	9.70
85F42WEC2**	F	.062	16.99 x 8.51 x 1/16	85 x 42	10.66

Copper Clad Unperforated		CU 1 Side	Price 1-19	CU, 2 Sides	Price 1-19
4½" x 3"	XXXP Phenolic	CU45/30-1*	$ .31	CU45/30-2	$ .42
6½" x 4½"	XXXP Phenolic	CU65/45-1*	.62	CU65/45-2	.80
8½" x 4½"	XXXP Phenolic	CU85/45-1*	.73	CU85/45-2	1.02
4½" x 3"	Epoxy Glass	CU45/30WE-1*	.72	CU45/30WE-2	.80
6½" x 4½"	Epoxy Glass	CU65/45WE-1*	1.39	CU65/45WE-2	1.58
8½" x 4½"	Epoxy Glass	CU85/45WE-1*	1.78	CU85/45WE-2	2.03

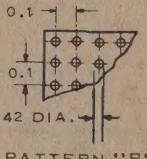
* Indicates 2 oz. Copper Clad 1 Side
** Indicates 2 oz. Copper Clad 2 Sides

MICRO-VECTORBORD*

FOR USE WITH FLAT PAKS



PATTERN "M"



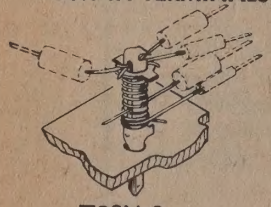
PATTERN "P"

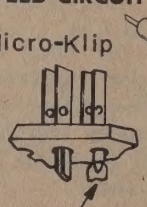
FOR DIRECT MOUNTING D.I.P. UNITS 8C SOCKETS

Micro-Vectorbord* has been specially designed to mount integrated circuits. "P" pattern accepts Dual-In-Line sockets or I.C.'s; "M" pattern will accept "flat-pack" leads. All boards listed are G-10 Epoxy Glass type GEE (MIL-P-18177), or G-10 Epoxy Glass type FL-GE (MIL-P-13949) except "EP" types which are epoxy paper type PEE grade EXXXP per MIL-P-22324.
† Indicates epoxy paper. * trade-mark

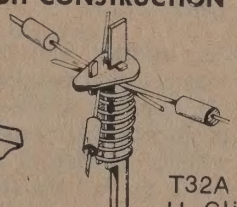
Cat. No.	Pattern	Hole Size	Dimension	Material or No. of Holes	Price
59P19/032	P	.042"	6"x2"x1/32"	59 x 19	$ .89
†64P44/062EP	P	.042"	4½"x6½"x1/16"	64 x 44	1.69
64P44-062	P	.042"	4½"x6½"x1/16"	Epoxy Glass	1.79
169P44-062	P	.042"	4½"x17"x1/16"	Epoxy Glass	4.36
†169P47/062EP	P	.042"	4.8"x17"x1/16"	169 x 47	3.99
169P59/032	P	.042"	17"x6"x1/32"	169 x 59	5.79
169P84-062	P	.042"	8½"x17"x1/16"	169 x 59	7.99
†169P84-062-EP	P	.042"	8½"x17"x1/16"	169 x 59	6.79
EPOXY GLASS COPPER CLAD					
169P44-062C1	P	.042"	4½"x17"x1/16"	Cu 1 side	5.89
169P44-062C2	P	.042"	4½"x17"x1/16"	Cu 2 sides	6.27
336M76-032C1	M	.042"	4"x17"x1/32"	Cu 1 side	6.80

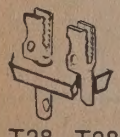
PUSH-IN TERMINALS, SPEED CIRCUIT CONSTRUCTION


T30N-2 Springclip

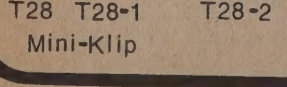


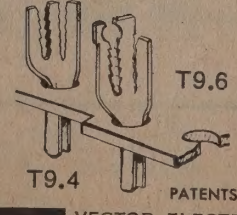
T42-1 may be flared


T32A U-Clip


T28

T28-1 Mini-Klip


T28-2



PATENTS

Terminals push into .042", .062" or .093" holes and hold without staking. Solderless types T30 and T32 provide reliable low resistance solderless connection for breadboarding and experimental work. For faster insertion, order listed tools.

Cat. No.	Fits Holes	Description	Quan. per bag	Net Price 1-19 bags	1-4 Bags (1000 per bag)
T9.4	.093"	Brass, Tin Pltg.	100	$1.44	$10.18
T9.4A	.093"	Brass, Tin Pltg. w/o slot serr.	100	1.44	10.18
T9.6	.093"	Beryllium Copper, Tin Pltg.	100	2.40	15.66
P122B	Inserting tool for T9.4, T9-4A & T9.6		1	1.40	any quan.
T28	.062"	Beryllium Copper, Tin Pltg.	100	1.61	11.44
T28S	.062"	Beryllium Copper, Silver Pltg.	100	1.72	13.51
T28-1	.062"	Beryllium Copper, Tin Pltg. except .325 O/A height	100	1.61	11.44
T28-2	.062"	Beryllium Copper, Tin Pltg. slotted tail	100	2.14	15.60
P91	Inserting tool for T28 series		1	.50	1-49 pcs.
T30-2	.093"	Brass, Silver Pltg.	10	1.03	
T30-2	.093"	Brass, Silver Pltg.	100	7.70	54.97
T30N-2	.093"	Brass, Nickel Pltg.	10	.99	
T30N-2	.093"	Brass, Nickel Pltg.	100	7.23	50.44
P92A	Inserting tool for T30-2 series		1	.50	1-49 pcs.
T32A	.093"	Brass, Nickel Pltg.	100	10.30	any quan.
T32A-1	.062"	Brass, Nickel Pltg.	100	10.30	any quan.
P136	Inserting tool for T32 series		1	1.20	any quan.
T42-1	.042"	Beryllium Copper, Tin Pltg.	100	1.82	13.51
P149A	Inserting tool for T42-1 series		1	1.50	1-49 pcs.

VECTOR ELECTRONIC CO., INC.

Net

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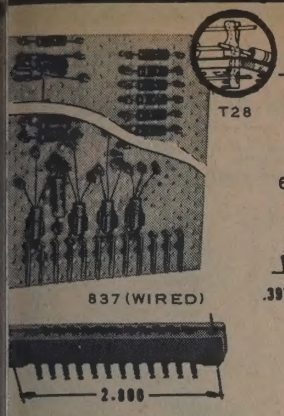
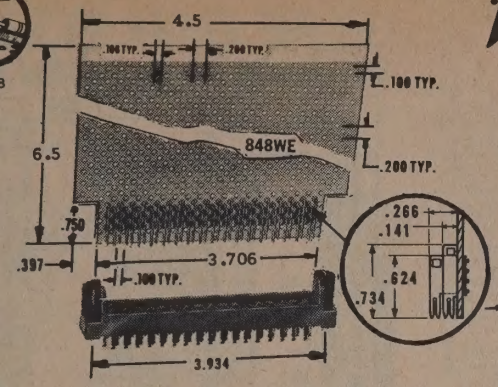
Vector PLUGBORDS



R612-1



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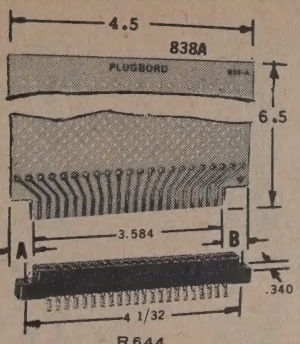

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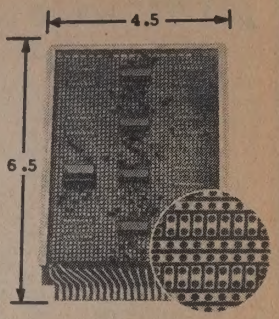


VECTOR D.I.P. PLUGBORDS

ECTOR PLUGBORDS speed plug-in circuit construction ecause the pre punched holes accept push-in terminals, relets or turned terminals and the contacts are already n the board. Epoxy paper boards meet requirements of IL-P-22323, Type PEE; Epoxy glass is G-10 grade per IL-P-18177; copper clad Epoxy paper meets MIL-P-13949 ype PX, and copper clad Epoxy glass meets MIL-P-13949.

38 SERIES same as above, except with 2 oz. copper tched contacts on .156" centers. 838PWE has TO-5 ansistor base pad network one side. "GN" types have ickel plated gold flashed contacts.

12, 837, 848 SERIES furnished with attached Elco Varicon ontacts have .062" holes on alternate 0.1" centers.

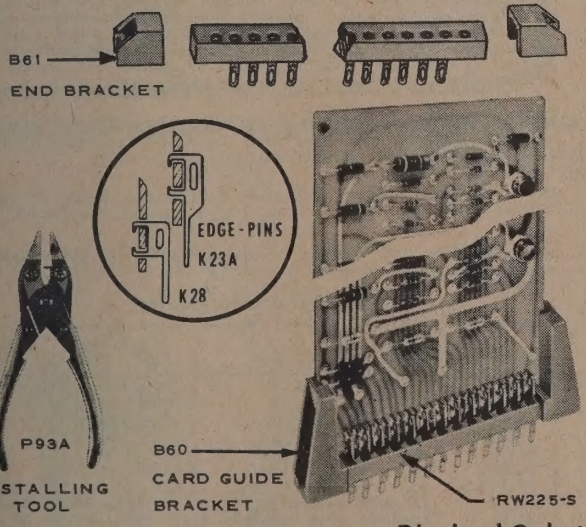
ECTOR D.I.P. PLUGBORDS are punched with .042" iameter holes on 0.1" centers so D.I.P.s or D.I.P. ockets may be mounted. Plugbords are furnished with or ithout etched wiring matrix consisting of .070" wide ines running horizontally on board front and vertically n reverse side. On matrix type, 12 etched pad areas for 4 pin D.I.P.s are provided.

eceptacles listed are glass filled diallyl phthalate.

Ordering Information

Cat. No.	Description	A	B	Net Price 1-19
812	4½" x 6½" Epoxy Paper, 16 Varicon Contacts			$2.98
812WE	4½" x 6½" Epoxy Glass, 16 Varicon Contacts			3.53
R616-1	Molded Receptacle for 812, 812WE			2.36
837	3" x 4½" Epoxy Paper, 12 Varicon Contacts			2.33
837WE	3" x 4½" Epoxy Glass, 12 Varicon Contacts			2.58
R612-1	Molded Receptacle for 837, 837WE			1.89
838	4½" x 6½" Epoxy Paper, 43 Etched Contacts, 2 Sides	.408"	.508"	3.89
838-1	4½" x 6½" Epoxy Paper, 43 Etched Contacts, 2 Sides	.453"	.453"	3.89
838A	4½" x 6½" Epoxy Paper, 22 Etched Contacts, 1 Side	.408"	.508"	2.81
838A-1	4½" x 6½" Epoxy Paper, 22 Etched Contacts, 1 Side	.453"	.453"	2.81
838AWE	4½" x 6½" Epoxy Glass, 22 Etched Contacts, 1 Side	.408"	.508"	3.17
838AWE-1GN	4½" x 6½" Epoxy Glass, 22 Etched Contacts, 1 Side	.453"	.453"	4.70
838PWE	4½" x 6½" Epoxy Glass, Etched Pads, 1 side	.408"	.508"	3.65
838WE	4½" x 6½" Epoxy Glass, 43 Etched Contacts, 2 Sides	.408"	.508"	3.86
838WE-1GN	4½" x 6½" Epoxy Glass, 43 Etched Contacts, 2 Sides	.453"	.453"	5.81
R644	Receptacle for above (fits all above etched boards)			2.62
848WE	4½" x 6½" Epoxy Glass, 35 Varicon Contacts			6.09
R635	Receptacle for 848WE			4.91
D.I.P. PLUGBORDS	and Accessories—All boards 4½" W. by 6½" L.			
3474	44 Etched contacts -x-y matrix mates w/R644, Above			10.50
3474-2	44 Etched contacts, no matrix mates w/R644, Above			7.95
3476	35 Elco/Varicon Contacts -x-y matrix mates w/R635 above			11.40
3476-2	35 Elco/Varicon Contacts no matrix mates w/R635 above			5.68
3662	44 Etched contacts no matrix mates w/R644 above			6.95
K24A	Terminal Pin for D.I.P. Plugbord, Gold flashed	1.44/50		20.59/M.
K24C	Terminal Pin for D.I.P. Plugbord, Tin Plated			.86/50 $11.21 M
P139	Hand line cutter tool—Breaks D.I.P. Plugbord Copper lines			1.50 any qty.

VECTORCONN CONNECTORS WITH EDGE-PIN PLUGBORDS



VERSATILE NEW VECTORCONN CONNECTORS

(For .040" diameter round pins)

Contact Reliability ● Large Variety of Sizes ● Top, Bottom, or Side Mounting Styles ● Solder Tab or Printed Circuit Tab ● Optional Card Guide Ends

VECTORCONNS employ wrap around contacts with outstanding time proven reliability in the tube socket industry. Receptacles accept available Vector Edge-pins and Inbord pins or any .040" diameter round pins. Receptacle can also be used as: Multiple test points on printed circuit boards. Front panel test points, in-out jacks, patch points.

EDGE-PIN PLUGBORDS are ready-to-wire and plug into VECTORCONN receptacles. Plugbords are provided with an overall pattern of .062" holes on alternate 0.1" centers, Vector Pattern "G".

Castings, end pieces and card guides are Diallyl Phthalate, glass filled per MIL-M-14 type SDG. Contacts are beryllium copper or phosphor bronze, nickel and gold plated.

Vectorconn Ordering Information

Cat. No.	Description	Mounting Hole Centers	Net Price 1-49
	.296" Wide Casting		
R112-S	12 Contact Single Row Solder Tab	2.742	$1.50
R225-S	25 Contact Double Row Solder Tab	2.742	1.86
	.450 Wide Casting		
RW120-S	20 Contact Single Row Solder Tab	4.350	1.81
RW241-S	41 Contact Double Row Solder Tab	4.350	2.80
K-23A	Lower Row Edge Pin—Bags of 50 any Quantity		2.01
K-28	Upper Row Edge Pin—Bags of 50 any Quantity		2.01
	Accessories		
P-93A	Staking Pliers for K-23A, K-28		26.00
B-61	End Brackets, Small for side mounting— and cut down VECTORCONNS—Pkg. 10 any Quantity		1.30
B-60	Card Guide Brackets, Pkg. of 5 Pr. any Quantity		1.50

• Additional VECTORCONN Connectors listed in Vector's General Catalog.

Plugbord Ordering Information

PLUGBORD CAT. NO.	DESCRIPTION MATERIAL	WIDTH	LENGTH (With Pins)	CONTACTS Lower	CONTACTS Upper	NET PRICE 1-19	USE WITH
842-120	Epoxy-Paper	4.5"	x 6.5"	20	—	$3.02	RW-120-S
842-120WE	Epoxy-Glass	4.5"	x 6.5"	20	—	3.33	RW-120-S
842-241WE	Epoxy-Glass	4.5"	x 6.5"	20	21	4.94	RW-241-S
856-112	Epoxy-Paper	3"	x 4.5"	12	—	1.87	R-112-S
856-112WE	Epoxy-Glass	3"	x 4.5"	12	—	2.08	R-112-S
856-225WE	Epoxy-Glass	3"	x 4.5"	12	13	3.12	R-225-S

VECTOR ELECTRONIC CO., INC.

Vector ROUND AND SQUARE PLUG-INS

G2.2-8F

G2.2-8-4

G2.1-8

C12-K1.02 (with 514)

G2-10-10

G2.2-10-10

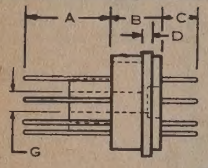
SMALL ROUND AND SQUARE PLUG-INS are ideal for packaging hand wired, printed, or solid state plug-in modules. Aluminum cases provide shielding and strength. Wide variety of internal structures eases circuit wiring. 7 8 and 9-pin plugs are standard tube base style. 14-pin is relay type. Plug Key in square Octal based units points toward case corner.

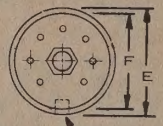
Catalog No.	Bottom Plug	Case Type	Case Height (Less Prongs)	Internal Structure	Net Price 1-49
B-8	8 P. Oct.	1.42" Sq.	2"	None	$1.56
B-10	8 P. Oct.	1.42" Sq.	2.5"	None	1.57
B-10-N	8 P. Oct.	1.42" Sq.	2.5"	Turret	2.46
B-10-T	8 P. Oct.	1.42" Sq.	2.5"	Turret	1.90
B-10-4†	8 P. Oct.	1.42" Sq.	2.5"	Card W/Terms.	2.19
C-10	8 P. Oct.	2" Sq.	2.5"	None	1.50
C-12	8 P. Oct.	2" Sq.	3"	None	1.44
C-12K1.02	8 P. Oct.	2" Sq.	3"	None	1.10
511 (Terminal Card 1.9" x 2.7")†					.69
514 (Terminal Card 1.9" x 2.7")†					.91
C-12-T	8 P. Oct.	2" Sq.	3"	Turret W/12 Lugs.	2.11
C-12-4†	8 P. Oct.	2" Sq.	3"	Card W/Terms.	3.14
G2-10	8 P. Oct.	1.25" Rd.	2.5"	None	1.16
G2-10-10‡	14 Pin	1.25" Rd.	2.5"	Card	
G2.2-10-10*	7 P. Min.	.625" Rd.	2.5"	Card	
G2-10-4†	8 P. Oct.	1.25" Rd.	2.5"	Card W/Terms.	2.24
G2.1-8	9 P. Min.	.75" Rd.	2"	Spacer	1.45
G2.1-8F	9 P. Min.	.75" Rd.	2"	None	1.49
G2.1-8-4†	9 P. Min.	.75" Rd.	2"	Card W/Terms.	2.09
G2.2-8F	7 P. Min.	.625" Rd.	2"	None	1.49
G2.2-8-4†	7 P. Min.	.625" Rd.	2"	Card W/Terms.	2.07

‡ Card 2.20" X 1.10" w/.042" holes .1" centers.
* Card 2.20" X .50" w/.042" holes .1" centers.

†511 has .093" holes spaced .265"; 514 has .062" holes, spaced alt. 0.1" Ctrs.; B-10-4 has wall 1.37" (W), 1.87" (L), W/.093" holes spaced .265" Ctrs. Trmls; C-12-4 has wall 1.88" (W), 2.37" (L), W/.093" holes spaced .200" x .265" Ctrs., Trmls; G-2-10-4 has wall 1.08" (W), 1.78" (L), W/.093" holes spaced .250", Trmls; G2.1-8-4 has wall .60" (W), 1.62" (L), W/.062"holes spaced .141" Ctrs., Trmls; G2.2-8-4 has wall .46" (W), 2" (L), W/.062" holes spaced .141" Ctrs, Trmls.

TUBE BASE PLUGS





P7

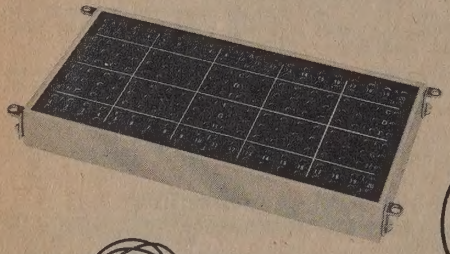
K1.434

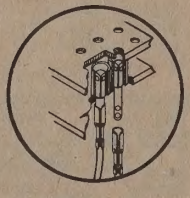
VECTOR TUBE BASE PLUGS fit standard 7-pin miniature, 9-pin noval, and 14-pin relay sockets. Round metal cans may be attached with screws to units with KF number which indicates (2) recessed 1/72" inserts in plug sides. Plugs are mica filled phenolic with phosphor bronze .040" diameter tinned pins. All except K1.14 have center screw hole 1/8" and recessed bottom cavity for small pattern nut on underside.

Ordering Information

Catalog No.	Type	DIMENSIONS A	B	C	D	E	F	G	Net Price 1-49
P7	7 p. min.	17/32	.300	.265	1/16	.621	.575	.125	$.47
P9	9 p. nov.	17/32	.300	.265	1/16	.748	.700	.125	.52
K1.402	(same as P9 except no center post)								.52
K1.334	7 Pin hooked		.300	.265	1/16	.621	.575	.125	.53
K1.434	9 Pin hooked		.300	.265	1/16	.748	.700	.125	.58
KR1.334	(same as K1.334 except with retaining ring)								.62
KR1.434	(same as K1.434 except with retaining ring)								.67
K1.14	14 pin	17/32	.300	.265	1/16	.750	.700		.99
KF1.335	(Similar to K1.334 except has knurl nuts and no keyway.)								.65
KF1.435	(Similar to K1.434 except has knurl nuts and no keyway.)								.70

PATCHBOARDS


PB1020-2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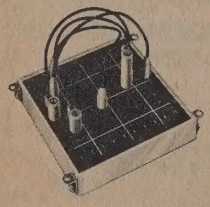
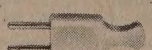

PB1010-2

PATCHCORD K2.06


JUMPER PLUG K2.02-1

PIGGY-BACK PATCHCORD

All boards are marked front and back with horizontal rows lettered alphabetically and vertical columns numbered. Brackets for mounting are supplied. Holes for plugs are .093" diameter, spaced on .265" centers. Front panels are removable and may be changed if necessary. Larger contact systems can be made by mounting standard panels adjacent. Special sizes, special marking and screening in colors are made to order at minimum cost.

SPECIFICATIONS:

Panels: Black XXXP phenolic, Type PBE-P. Grade EXXXP per MIL-P 3115, .093" thick with silkscreened white numbers and letters.

Contacts: Beryllium copper, nickel plated gold flashed, 2 holes for soldering on leads. Add letter "A" to Cat. No. if wire wrap tabs are desired.

Patchcords: Plugs .087"—.091" diameter x .468" long, nickel plated with standard #20 gage wire vinyl insulation. 6" black, 9" yellow, 15" blue.

Ordering Information

Cat. No.	No. of Contacts	Hole Layout	L	W	THK	Net Price 1-49
PB33-2	9	3 x 3	1.130 x	1.130 x	1"	$ 2.95
PB110-2	10	10 x 1	2.985 x	.600 x	1"	3.25
PB210-2	20	20 x 2	2.985 x	.865 x	1"	4.25
PB510-2	50	10 x 5	2.985 x	1.660 x	1"	6.45
PB1010-2	100	10 x 10	2.985 x	2.985 x	1"	10.85
PB1020-2	200	20 x 10	5.635 x	2.985 x	1"	21.60
PB1520-2	300	20 x 15	5.635 x	4.310 x	1"	32.35
*K2.06	Patchcord, single contact ea. end 6" (25 per bdl.)					bdl/3.04
*K2.09	Patchcord, single contact ea. end 9" (25 per bdl.)					bdl/3.08
*K2.15	Patchcord, single contact ea. end 15" (25 per bdl.)					bdl/3.53
†K9.06	Patchcord, Piggy-back each end 6"					ea. .93
†K9.09	Patchcord, Piggy-back each end 9"					ea. .93
†K9.15	Patchcord, Piggy-back each end 15"					ea. .93
*K2.02-1	Jumper Plug, Jumper type (25 per bdl.)					bdl/3.35
1723/1	Solderless slip on contact for rear connection					32.91/M
P115	Crimping tool for above contact					Contact factory

*Net any quantity
†Net price 1-999

Vector Fixed Panel style Patchboards provide simple but reliable low-cost units for multiple connection, single conductor patching for test panels, automation and telemetry equipment, low cost computers, numerical control equipment, paging and speaker systems or other equipment where economy and connection multiplicity are desired.

Extremely low contact resistance (less than .001 ohms) and long contact life (over 2000 insertions per contact without resistance change) assures reliability.

Removable Pre-Programming Patchboard and patchcords also available with 204, 300, 450, 600 and 1200 contacts. Write factory.

VECTOR ELECTRONIC CO., INC.

Net

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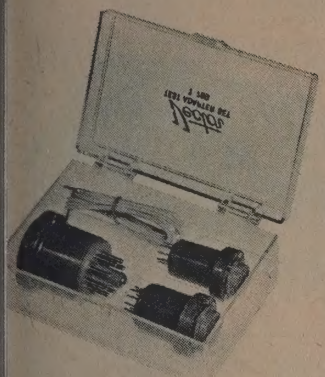
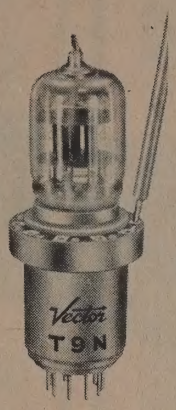
Vector TUBE SOCKET TEST ADAPTERS AND EXTENDED TUBE SOCKET TEST ADAPTERS



T-789



T9N

T7MS

TUBE SOCKET TEST ADAPTERS are ideal for making voltage resistance and wave form measurements from the tube side of electronic equipment. To use, insert adapter between tube and socket, and replace tube in adapter socket. Special test tabs are recessed on the adapter skirt and have a hole to grip test probe and protect operator's fingers during insertion and withdrawal. Regular alligator test-clipped probes also hold on tab and socket. Castings are low loss phenolic and fit all shield bases for miniature and noval type or into standard tube clamps. Reduced body diameter permits insertion into new telescoping shields. Adapter socket contacts are beryllium copper, silver plated for long life and low resistance. Electrostatic capacity between adjacent leads of the adapter is approximately 1 micro-micro-farad. Flash over voltage between adjacent terminals is in excess of 1500 volts DC.

Kit T789 consists of the three popular "must have" sizes, 7-pin miniature, 8-pin octal, 9-pin noval and a P1 probe in a handy clear plastic carrying case.

For most work the short, unshielded adapters are adequate. For hard to reach locations or where surrounding equipment restricts use of regular test adapters, the 3 to 4 inch extended adapter may be used. In these the leads between plug and socket are individually shielded to minimize coupling.

Cat. No.	Tube Type	Body Dia.	Skirt Dia.	Length Less Prongs	Price 1-19
T-7-0	7 Pin Small	1.26	1.56	1.50	$ 3.25
T-7-L	7 Pin Large	1.45	1.75	1.50	3.25
T-7-M	7 Pin Min.	0.75	1.03	1.50	1.85
T-8-0	8 Pin Octal	1.25	1.56	1.50	1.95
T-9-N	9 Pin Noval	0.87	1.16	1.50	1.95
T789	Set of types T-7-M, T-8-0, T-9-N, P1, in case.				6.27
T-7-M-S	7 Pin Min.	0.75	1.03	3.25	5.91
T-8-0-S	8 Pin Octal	1.25	1.56	4.00	6.60
T-9-N-S	9 Pin Noval	0.87	1.16	3.25	6.60
T-789-S	Set of above in case with P1				19.47
P1	Plug-in Probe with 30" lead.				.52

Special Adapters Designed to Customer Specifications—Write Factory.

EXPERIMENTER'S TEST ADAPTERS SOCKET EXTENDERS

PERIMENTER'S TEST ADAPTERS. These are similar to the Socket Test Adapter t are less the shells and tabs so that connections can be cross-connected in y desired way. User must solder connections.

CKET EXTENDERS provide a replaceable unit for use in tube testers and pensive meters. Wear is shifted from the socket in the tester to the one the extender. Sockets have beryllium copper silver plated contacts for long . An all molded outside shell is used with socket leads soldered to g pins.

X-8-0
CTAL

1264
7 P. MINIATURE

Experimenter's Test Adapters

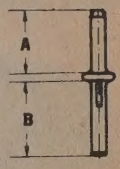
Cat. No.	Socket Type	Net Price 1-19
TX-8-0	Octal	$2.47
TX-7-M	Miniature	.88
TX-9-N	Noval	.94
TX-789	Set of above three in kit	3.58

Socket Extenders

Cat. No.	Socket Type	Net Price 1-19
1262	Octal 8	$1.95
1263	9 P. Noval	1.75
1264	7 P. Miniature	1.75

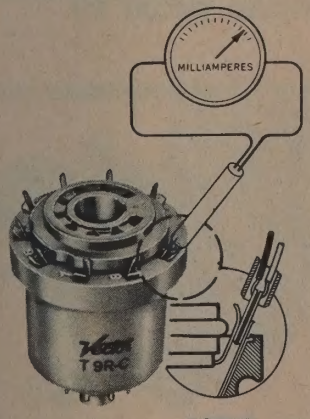
INBORD PINS

Vector Inbord Pins answer the need for small compact terminals for circuit boards. Pins will fit .025", .040" holes. Knurled portion in body of terminal provides tight fit in circuit board holes without special staking. Soldering leads to the pins or use of retainers makes pin permanent. Mating receptacle R23A accepts .040 diameter pins. All pins are phosphor bronze.



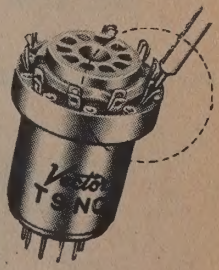
Pin	For Hole Size	Description	Dimension A	Dimension B	Price 50	Price 1000
K24A	.042"	.042" diam. nickel plated gold flashed	.255"	.375"	1.44	20.59
K26A	.042"	.042" diam. nickel plated gold flashed	.160"	.195"	.92	13.16
K30A	.042"	.042" diam. nickel plated gold flashed	.225"	.305"	1.49	22.63
K38A	.042"	.042" diam. nickel plated gold flashed	.080"	.600"	1.39	21.50
K27A	.025"	.024" diam. nickel plated gold flashed	.160"	.195"	.86	11.16
K36A	.025"	.024" diam. nickel plated gold flashed	.293"	.400"	1.25	17.98
K37A	.025"	.024" diam. nickel plated gold flashed	.255"	.140"	.95	12.95

CURRENT TEST ADAPTERS



T9R-C
WITH P-2 PROBE

VECTOR CURRENT TEST ADAPTERS have two spring test tab elements for each pin. These test tab elements break the circuit when a dual-sided probe is inserted in test position. Probes are gripped by the test tabs and need not be held in position. Current is read at the meter where the two test leads are connected. The same test adapters and probe also permit voltage and wave form readings on any pin position, merely by connecting the leads jointly to the meter. The adapters have mica-filled shell and keyways, and may be used in a horizontal or vertical position.



Ordering Information

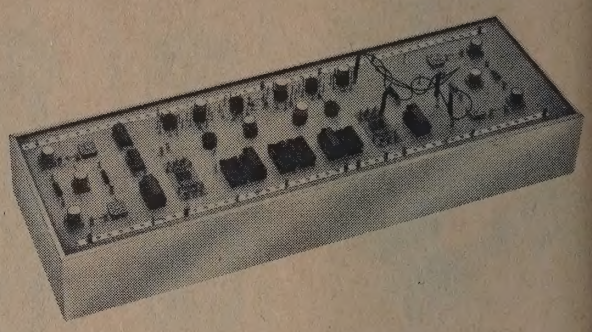
Cat. No.	Type	Net Price 1-19
T-7-M-C	7 Pin Min.	$2.53
T-8-0-C	8-Pin Octal	3.19
T-9-N-C	9 Pin Noval	2.70
T-9-R-C	9 Pin Novar	3.65
T-12-C	12 Pin Compactron	3.85
P-2	Dual Sided Plug-in Probe, Required for above. Any Quantity	.79
T-789-C	Set of First 3 Adapters With P-2 Probe in Case	9.74
T-912-C	Set of Novar and Compactron Adapters With P-2 Probe in Case	8.29

Versatile VECTOR CURRENT TEST ADAPTERS make possible tube circuit current or voltage measurements without cutting leads or making computations. All measurements may be made from the tube side of the electronic equipment without disturbing the chassis.

29X INTEGRATED CIRCUIT EXPERIMENTER'S KIT

NEW

The 29X Kit is a special group of new Vector products especially designed for fast, easy hookups of nearly all package configurations of integrated circuits. The mounting surface is a pre-punched Micro-Vectorbord* having .042" diameter holes on 1/10" grid spacings supported on Vector Frame-Loc Rails 2" high. Dual-in-line packages may be fastened directly to the breadboard with the tails extending through the holes; or special sockets supplied may be used which have square tails which also push into the board. Integrated circuits of the TO-5 type may also be mounted with wafers, which are supplied, or in sockets supplied with leads formed to plug into the board. Transistor sockets whose leads also fit the board are supplied. Supplied T42-1 Micro-Klip push-in terminals fit board holes and are ideal for mounting discrete components of various types. Inbord Pins of .040" diameter also push into the holes for tie points or plug points. Wiring of these leads may be done by use of supplied polyurethane coated solderable wire which may be wrapped around the terminals and soldered through the insulation or by "Daisy Chain" patch cords which will connect directly to the wire-wrap tabs or other pins, thus facilitating quick experimental connection. Flatpacks with .05" spaced leads may also be mounted by use of furnished adapter plates which plug into the holes of the breadboard. These will normally be soldered to the adapter plate terminals. **$ 59.75**

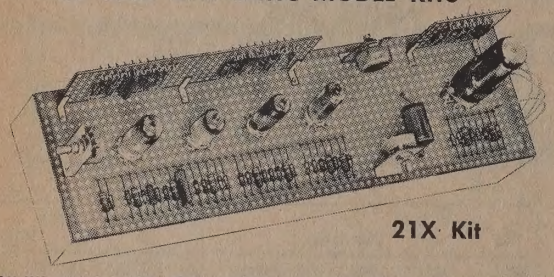


KIT CONTENTS

14- and 16- pin DIP Sockets, TO-5 ICP Sockets, Transistor Sockets, Flatpack Adapter Plates, T42-1 ZIP Terminals, K24C Inbord Pins, Adapter Wafers, "Daisy Chain" Patchcords, DIP Extractor Tool, P149A Insertion Tool for T42-1 Terminals, Bus Strips, Layout Paper, Special Contacts, assorted wire, miscellaneous mounting hardware and P pattern Micro-Vectorbord.*

* T.M.

20 AND 21X BASIC MODEL KITS

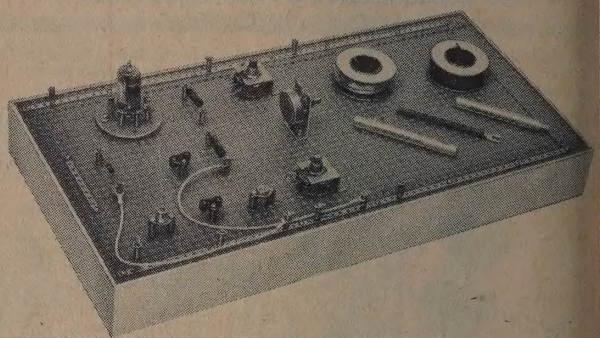


21X Kit

21X KIT BASIC MODEL FOR LABS—Large 4.8" x 17" x 2" new extruded aluminum Frame-Loc Rail chassis with 3/32" Vectorbord deck. Besides main deck, includes 2 extra Vectorbord pieces, more terminals and sockets. Detailed contents follow: 6 Transistor sockets include 2 power and 4 universal type; 3 each 7 and 9 pin skt. and 2 octal, 100 "Zip" Push-In Terminals, 50 solderless Springclips, 8 hookup patchcords, bus strip, terminal installing tools, grid layout paper, 4 pot and switch brackets, bare and insulated hookup wires, assorted screws, nuts, brackets, spacers. **$16.75**

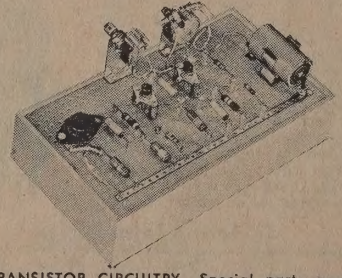
20X STARTER ASSORTMENT — 4.8"x 8½"x 2" extruded aluminum Frame-Loc Chassis with 3/32" thick Vectorbord deck plus many other parts including: 3 each 7 and 9 pin tube sockets and 2 octal sockets with mounting hardware; 75 patented T9.4 Zip Push-In Terminals; 20 new T30N-2 Solderless Springclip with hand insertion tool; 3 sheets layout paper; 54 assorted screws, nuts, spacers. Ideal for beginners or simple circuits. **$ 6.75** (Not illustrated)

25X SOLDERLESS EXPERIMENTER'S KIT



25X SOLDERLESS TUBE AND TRANSISTOR EXPERIMENTER'S CHASSIS KIT- **$21.45** Dual type solderless kit with full complement of tube and transistor sockets. Belongs in every electronics lab. Differs from other Vector kits because it includes large number of Solderless U-Clip terminals and special solderless connectors for pots and switches, plus more of all other components. Detail of contents: 8½" x 17" x 2" Extruded Aluminum chassis frame with 3/32" Vectorbord deck, 2 power and 6 universal transistor sockets with pigtails, 3 each 7 and 9 pin tube sockets, 2-8 pin octal; 100 Zip Push-In Terminals, 90 Solderless Springclip terminals, 10 Solderless U-Clips, 10 hookup patchcords, bus strip, 8 wafers to make solderless sockets, terminal installing tools, bare and insulated wire, grid layout paper, 4 pot and switch brackets, 204 assorted screws, nuts, brackets.

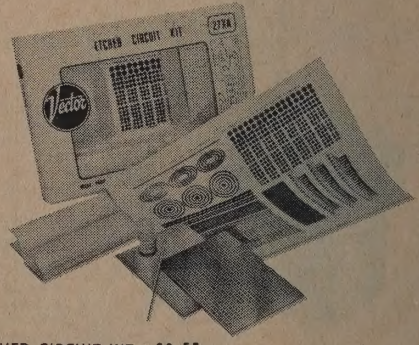
22X, 22XA TRANSISTOR CIRCUITRY KIT



22X KIT FOR TRANSISTOR CIRCUITRY—Special parts assortment for transistor circuitry. 4.8" x 8½" x 2" extruded aluminum Frame-Loc Chassis rail with 3/32" Vectorbord deck. Transistor sockets include 2 power type, 6 universal type, 75 Zip Push In Terminals, 20 Solderless Springclip terminals, 6 hookup patchcords, bus strip, terminal installing tools, bare and insulated hookup wire, 4 pot and switch brackets, 134 assorted screws, nuts, spacers, brackets. **$11.50**

22XA— **$28.00** (Not illustrated)—Larger professional sized version of 22X above. Chassis extruded Aluminum Frame-Loc type 17" x 8½" x 2" with Vectorbord deck. Includes 2 power transistor sockets, 6 universal type transistor sockets with pigtail leads, 124 Zip Push-In Terminals, 100 Solderless Springclips, 18 Solderless U-Clips, 14 hookup patchcords, bus strip, terminal installing tools, bare and insulated wire, layout paper, 4 pot and switch brackets, 160 assorted brackets, screws, nuts.

27XA ETCHED CIRCUIT KIT



27XA ETCHED CIRCUIT KIT—**$6.50**
LOW COST—FAST—HAS EVERYTHING EXCEPT HOT WATER. Specially designed for lab use in making uncomplicated etched circuits. Kit built around Vectoresist, Vector's rub-on resist transfer sheet. Resist lines, dots, or connector pattern transfer by rubbing to furnished 2 oz. copper clad prepunched boards in minutes. Then etch in etchant furnished in heavy plastic bag with special activator in as little as 30 minutes. Kit includes 2 copper clad boards, 4½" x 6½", 2 bags of etchant, 8½" x 11" sheet rub-on Vectoresist, layout paper, complete instructions. See Kit Accessories page for Vectoresist details.

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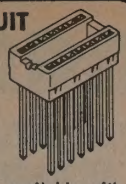
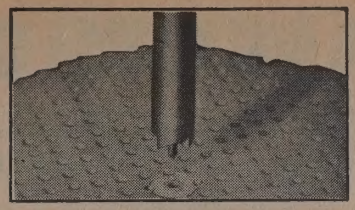
INTEGRATED CIRCUIT SOCKETS (D.I.P.)



D.I.P. Socket
R-714 and R-716
Wire Wrap Type

New D.I.P. R-714 Sockets, available with leads fitting .042 holes. R-714-1 intended for soldering directly to P.C. pads. R-716 and R-716-1 have 16 contacts and leads in similar arrangement, with 8 leads per side instead of 7.

CAT. NO.	DESCRIPTION	PRICE
R-714 (Pkg. 5)	Wire-wrap leads. 14 contacts on R-714, 16 contacts on R-716. Glass filled nylon, Phos. brz. nickel, gold plated contacts.	$4.90/pkg.
R-716 (Pkg. 5)		$5.90/pkg.
R-714-1 (Pkg. 5)	R-714-1, 14 contacts, R-716-1, 16 contacts. Nylon casting, Phos. brz. tin pltd. contacts.	$3.20/pkg. Short Tabs
R-716-1 (Pkg. 5)		$3.85/pkg. Short Tabs



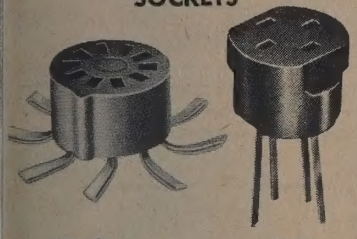
PAD CUTTER TOOLS — Use for isolating terminals from rest of copper cladding. Tools have pilot pin which enters prepunched Vectorbord holes. Rotation of cutter leaves center copper "do-nut" around hole to provide solder tie for terminals. Shank type fits hand or machine drill chuck accepting 1/8" or 1/4" drill. Handle types are for hand use.

Cat. No.	Pilot Pin Dia.	Ring O.D.	Handle	Price
P116	.055	.250	No	$1.85
P116A	.055	.188	No	1.98
P116B	.055	.250	Yes	2.45
P116C	.055	.188	Yes	2.58
P138A	.040	.125	Yes	2.58
P138C	.040	.125	No	1.98
P138D	.022	.125	Yes	2.58
P138E	.022	.125	No	1.98

RUB-ON RESIST for making prototype etched circuits. Eliminates messy tape and eliminates undercutting at circuit junctions. Resist ink is printed on semitransparent film sheets 10" x 15" and transfers onto copper clad board when back is rubbed with ball point pen. Available in multipurpose printed sheets with assortment of various width lines, pads, circles and 43 contact connector with .156" spaced contacts or specialized sheets shown below. Works in ferric chloride or ammonium persulfate etchant.

Cat. No.	Description	$2.00 per Sheet
R322	All purpose sheet with connect. pattern	
R405	Sheet of assorted straight lines	
R406	Transistor Pad patterns	
R393A-1	Letters and numbers, black ink, Display and etch use	
R393A-2	Letters and numbers, white ink, Display and etch use	

I.C.P. AND TRANSISTOR SOCKETS



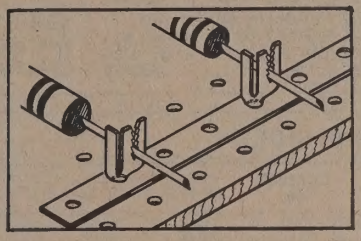
RA10-1
I.C.P. Socket

RA9
Transistor Socket

Transistor Sockets accept 4 leads on 0.2" diam. circle. MFE and Beryl. Cop.

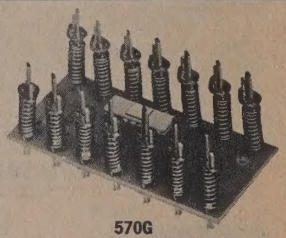
I.C.P. Sockets fit TO-5 size, 8 or 10 leads. Formed to insert in 0.1" grid holes (P or H pattern bds.) D.A.P. body and Beryl. copper contacts.

CAT. NO.	NO. TABS	SADDLE	PRICE 1 - 49
RA-9	4	No	.38
RA-9.1	4	Yes	.45
RA-88-1	8	No	1.00
RA-10-1	10	No	1.07



Prepunched narrow brass tinned strip mounts to prepunched boards with Zip Push-In terminals or screws. Make connections wherever required quickly. New T104 type has .2" spaced holes for convenient mounting on "E", "F", "G", or "H" pattern prepunched Vectorbord.

Cat. No.	Description	Price
T57	16" long. .093" holes spaced .265"	$1.79 /Pkg. 10
T58	8" long. .093" holes spaced .265"	1.10/Pkg. 10
T104	17" long. .062" holes spaced .2"	1.21/Pkg. 10

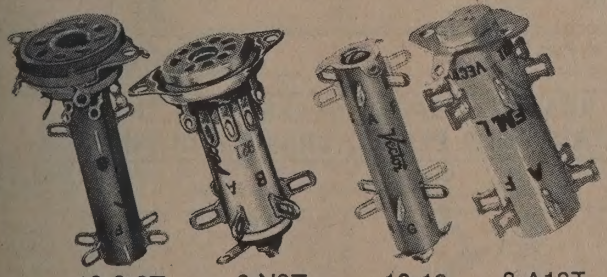


570G

SOLDERLESS SOCKETS save experimental time. Multiple connections can be made to any pin by connecting wires to corresponding SOLDERLESS SPRINGCLIP TERMINAL which is permanently connected to socket contact. Tube socket types mount on Vectorbord with furnished hardware; 570B and 570G press fit in .093 holes spaced on .265 centers.

Cat. No.	Description	Price
567-1C	Solderless Octal Socket	$1.50
568-1C	Solderless Noval (9 pin) Socket	1.65
569-1C	Solderless Miniature (7 pin) Socket	1.35
570B	Solderless Universal Transistor Socket	1.20
570G	Solderless 14 pin D.I.P. Breadboard socket	3.95

POST SOCKET TURRETS



10-0-9T 6-N6T 10-12 8-A12T

Vector Socket, Terminal and Transistor Turrets simplify electronic construction. Faster wiring, greater component density and higher reliability are assured by their use. Transistor sockets accommodate 3-in-line or "top-hat" transistors. Commercial types have mica filled sockets, hot tin dipped steel saddles and XXXP phenolic turret posts with brass tinned terminals. Military types (premium grade) have MIL sockets with beryllium copper silver plated socket contacts, brass nickel plated hot tin dipped saddles and glass silicone turret posts with tinned brass terminals.

PATENTED

Catalog Numbers Comm. Types	Catalog Numbers Military Types	Turret Details Height	Turret Details No. of Term.	Turret Details No. of Rings	Turret Details Space Between Rings	Net Price Comm. Type 1-49
OCTAL SOCKET TURRETS						
8-0-9T	681	2"	9	2	1"	$ .68
10-0-9T	683	2½"	9	2	1⅜"	.72
7-PIN SOCKET TURRETS						
6-M-6T	687	1½"	6	1	—	.72
8-M-9T	688	2"	9	2	1"	.79
9-PIN SOCKET TURRETS						
6-N-6T	693	1½"	6	1	—	.72
8-N-9T	694	2"	9	2	1"	.79
TERMINAL TURRETS						
8-12	677	1-27/32"	12	2	1"	.60
10-12	678	2"	12	2	1⅜"	.64
TRANSISTOR TURRETS						
8-A-12T		2-11/32"	12	2	1⅜"	1.23

Note: Tolerance on dimensions 1/16"

Longer or shorter types and other terminal configuration to order.

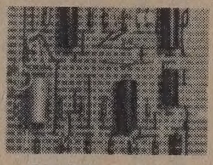
VECTOR ELECTRONIC CO., INC.

VERO ELECTRONICS inc.

VEROBOARD BK-6 KITS ETC.

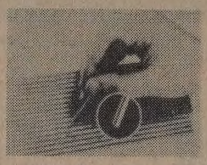
STEP NO. 1

First stage is to lay out the circuit plan on a Vero Design Sheet — printed to represent the plain and copper sides of the appropriate Veroboard — allowing proper spacing for components and indicating where the copper strips are to be broken.



STEP NO. 2

Layout components on the back (plain) side of the Veroboard across the copper strips inserting leads into appropriate holes. You now have connected your components as required using the copper strips as your interconnectors. Leads may be soldered directly to the strips using a light, printed circuit type iron. Careful soldering will enable you to remove components and replace them if required.



STEP NO. 3

Break the circuit where required by breaking the copper strips with the Vero spotface cutter provided in your kit. The cutter is a precision, hardened steel tool which has a pilot pin that fits into any hole, and two cutting edges. Simply turn the cutter several times and the copper strip in the area of the chosen hole will be removed. Your circuit is now complete.

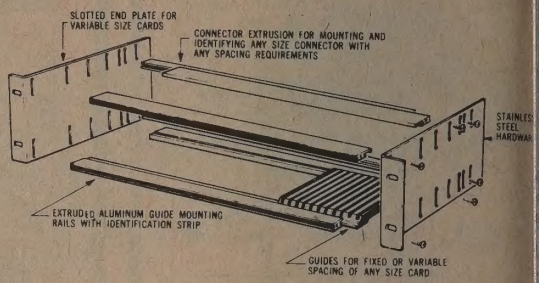
*PATENTED

VERO MODEL BK-6 Kit — With 6 assorted Veroboards, Vero spotface cutter and instructions. List Price **$5.95**

VERO MODEL BK-7 Kit — With 8 assorted Veroboards up to 18" lg., plain Veroboard with staggered grid, spot-face cutter, terminal pin insertion tool, 500 terminal pins, reproducible design sheet and instructions. List Price **$29.95**

VERO MODEL MC-10 Kit — Integrated circuit breading kit designed for dual in line integrated circuits. Contains single sided 18" long board, plug in single and double sided Veroboard, plain glass board all pierced on .1"x.1" centers. Also includes connector, pins, tools and design sheet. List Price **$29.95**

VERORACK 3 CARD FRAME KIT



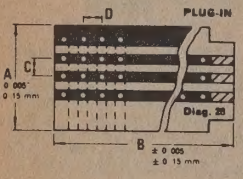
Features .5" card spacing with Noryl guide slabs that slide into precision anodized extrusions. Slotted 5¼" anodized end plates accept card heights up to 4½". Includes connector mounting rails, hardware and identification strip.

VERO NUMBER VR3/S
2⅝" guide length. List Price **$21.0**

VERO NUMBER VR3/M
5⅜" guide length. List Price **22.0**

VERO NUMBER VR3/L
6⅜" guide length. List Price **23.0**
Other slotted end plates available

"X-Y" PLUG-IN VEROBOARD — DOUBLE SIDED

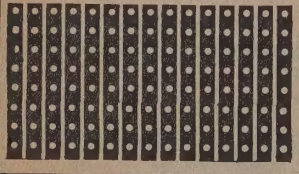


Part No.	Price 1-5	Contact No.	Thk.	A	B	C	D	Dia. of Hole	Compatible Connector
1911	8.05	32	.062	5.0	7.85	.1	.1	.040	2234
1912	7.35	32	.062	4.5	6.5	.1	.1	.040	2234
1913	9.50	40	.062	5.0	7.85	.1	.1	.040	2236
1914	9.25	40	.062	4.43	8.0	.1	.1	.040	2236
1915	4.10	24	.062	2.495	4.75	.1	.1	.040	2233

PLUG-IN VEROBOARD — SINGLE SIDED

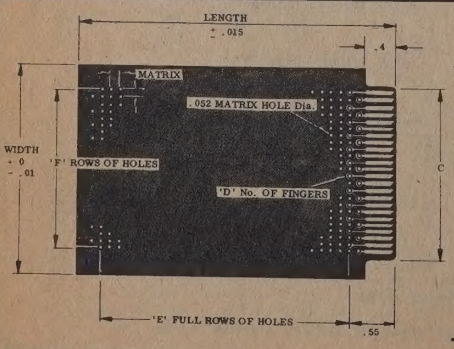
Part No.	Price 1-5	Contact No.	Thk.	A	B	C	D	Dia. of Hole	Compatible Connector
322*	4.15	32	.062	4.5	6.5	.1	.1	.040	2234
323*	4.45	40	.062	4.5	6.5	.1	.1	.040	2236
308	3.93	32	.062	3.75	5.1	.1	.1	.040	2234
11246	3.85	22	.062	4.5	6.5	.156	.1	.052	2245
304	2.50	16	.062	2.55	3.7	.1	.1	.040	2232

FULLY PIERCED COPPER CLAD SINGLE SIDED VEROBOARD .1 x .1 MATRIX



Part No.	Price 1-5	Length	Width	No. of Pierced Copper Strips	Thk.	Hole Dia.
126	6.25	17.9	4.7	38	.062	.040
122*	4.52	17.9	3.75	34	.062	.040
124	8.22	17.9	7.05	60	.062	.040

*NOTE: For G10 FR4 Epoxy Glass add FG to Part No.



FINGER BOARDS — EPOXY GLASS, 1/16 THICK, .1x.1 MATRIX GOLD PLATED CONNECTOR FINGERS

Epoxy Glass Part No.	Size	Contacts	Contact Spacing	C	E	F	Price 1-5	Compatible Connector
10236	4.5x6.5	22	.156	3.572	58	42	6.65	2245
10238	5x8	22	.156	3.572	73	42	7.15	2245
10239	5x8	32	.1	3.294	73	42	6.95	2234
10237	4.5x6.5	32	.1	3.294	58	42	6.25	2234
10295	4.5x6.5	40	.1	4.029	58	42	7.20	2236
11253	5x8	40	.1	4.029	73	42	7.90	2236
10290	4.5x6.5	44	.156	3.572	52	42	7.00	2245/2

22 Each Side

Trade Discount Applies To List Prices Only

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VERO ELECTRONICS inc.

VERO D.I.P. BOARDS

Epoxy Glass Part #	Price 1-5	Paper Part #	Price 1-5	Width	Length	Contacts	Spacing	Compatible Connector #
11821	7.00	11820	5.50	4.5	6.5	40	.1	2236
11823	7.25	11822	5.85	4.5	6.5	43	.1	2238 Keyed
11825	8.40	11824	6.90	4.5	6.5	44 22 Each Side	.156	2245/2

UNCH BOARDS .1 x .1 MATRIX WITH .052 DIA. HOLE 1/16" THICK

Size	No. of Holes	G10	Price 1-5	CU 1 Side G10	Price 1-5
2.5x4.5	24x44	50042FG	.90	50042FG/1	1.20
2.5x6.5	24x64	50043FG	1.25	50043FG/1	1.70
3x4.5	29x44	50044/FG	1.05	50044FG/1	1.40
3x6.5	29x64	50045/FG	1.50	50045FG/1	2.00
3.5x4.5	34x44	50046FG	1.15	50046FG/1	1.60
3.5x6.5	34x64	50047FG	1.75	50047FG/1	2.20
4x4.5	39x44	50048FG	1.40	50048FG/1	1.90
4.5x6.5	44x64	50049FG	2.00	50049FG/1	2.85
4.5x17	44x169	50051FG	6.30	50051FG/1	8.00
6x17	59x169	50050FG	6.50	50050FG/1	8.50

STAGGERED .1 x .2 MATRIX WITH A .052 DIA. HOLE 1/16" THICK

Size	No. of Holes	XXXP	Price 1-19	G10	Price 1-19	CU 1 Side G10	Price 1-19
3x4.5	(15x22) 2	50031	.30	50031FG	.80	50031FG/1	1.10
3x6.5	(15x33) 2	50032	.45	50032FG	1.15	50032FG/1	1.60
3.5x4.5	(17x22) 2	50033	.35	50033FG	.90	50033FG/1	1.25
3.5x6.5	(17x33) 2	50034	.55	50034FG	1.30	50034FG/1	1.80
4x6.5	(20x33) 2	50035	.60	50035FG	1.45	50035FG/1	2.05
4.5x6.5	(22x34) 2	50036	.65	50036FG	1.60	50036FG/1	2.30
4.5x8.5	(22x42) 2	50037	.90	50037FG	1.85	50037FG/1	2.55
4.8x8.5	(23x42) 2	50038	.95	50038FG	1.90	50038FG/1	2.60
4.8x17	(23x85) 2	50039	3.05	50039FG	4.07	50039FG/1	4.80

BLANK BOARDS 1/16" THICKNESS

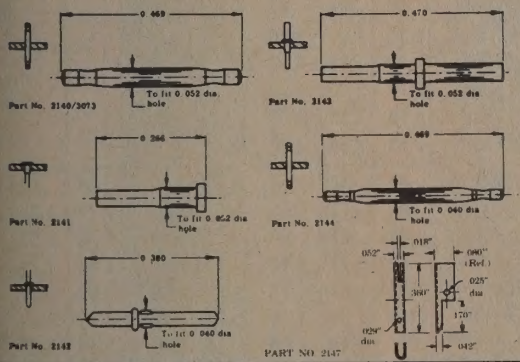
Size	XXXP CU1Side	Price 1-19	XXXP CU2Side	Price 1-19	G10 CU1Side	Price 1-19	G10 CU2Side	Price 1-19
3x4.5	50040/1	.30	50040/2	.40	50040FG/1	.70	50040FG/2	.75
4.5x6.5	50041/1	.60	50041/2	.75	50041FG/1	1.35	50041FG/2	1.50

SPOT FACE CUTTERS

This cutter when used by hand, or, with the handle removed and fitted in a bench drill will remove the copper strips locally to make a copper break. Best results are obtained when light pressure is used.

Veroboard Hole Matrix

Part No.	ins.	Price
2022	0.1, 0.156 and 0.2	1.50



TERMINAL PINS AND PIN INSERTION TOOLS

These pins are intended for use in .040 ins. (1 mm.) and 0.052 ins. (1.3 mm.) diameter holes. Hand tools are available to insert "through" pin types.

Part No.	Hole Diameter ins.	Price	Compatible Insertion Tool Part No.	Price
2140	0.052	11.75M	2150	2.00
2141	0.052	9.00M	none	—
2142	0.040	9.00M	2151	2.00
2143	0.052	11.50M	2150	2.00
2144	0.040	11.50M	2151	2.00
2147	0.052	11.75M	2152	2.00

All pins are packed in packets of 500.

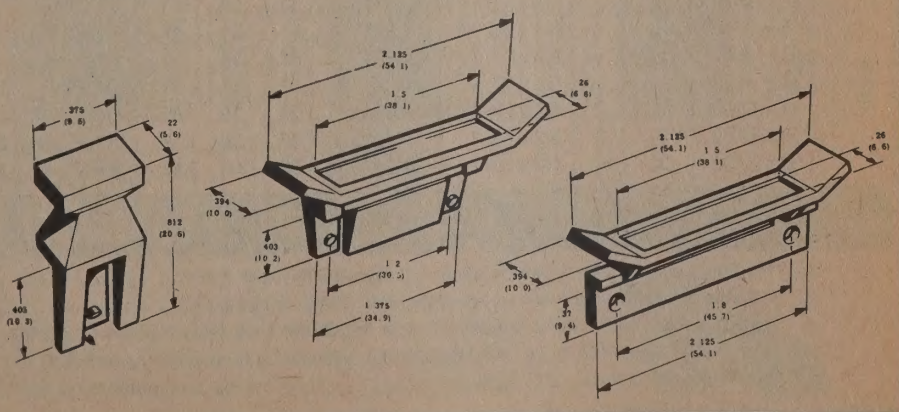
PC CARD HANDLES

SPECIFICATION

MATERIAL Noryl
Temperature Range —60° to +125° C.
Colors Available in Handles CH/C/10036 CH/C/10037, CH/C/10035 as follows:

Black	Standard
Signal Red	/1
Pea Green	/2
Sky Blue	/3
White	/4

Vero Number	Net per Pkg. of 10 1-5 Pkgs.	6-25 Pkgs.
10035	$1.50	$1.20
10036	2.50	2.30
10037	2.50	2.30

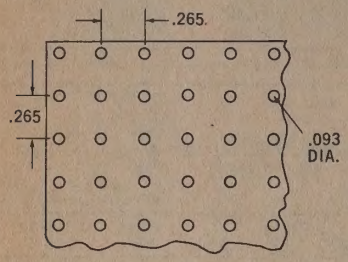


waldom

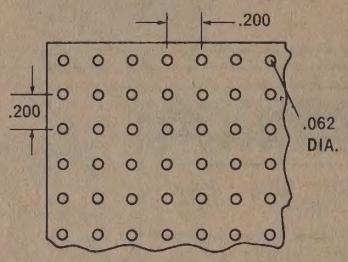
CIRCUIT DEVELOPMENT BOARDS

"Wizardbord" Phenolic, Epoxy Paper, Glass Epoxy

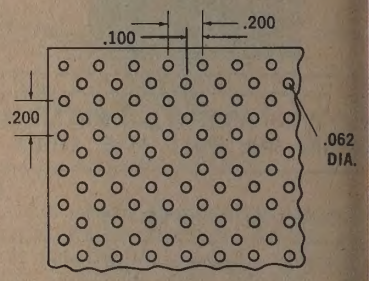
Punched board as shown below consists of the more popular patterns and are precut to the more asked for sizes. We will be happy to quote prices on sizes to meet your specifications.



"A" PATTERN PUNCHED BOARD with .093 diameter holes on .265 grid centers.



"F" PATTERN PUNCHED BOARD with .062 diameter holes on .200 grid centers.



"G" PATTERN PUNCHED BOARD with .06 diameter holes on .100 alternate grid center

"A," "F," & "G" PATTERN PUNCHED BOARDS

PATTERN	SIZE Width x Length	THICKNESS Inches	SEE NOTE	NO. OF HOLES Width x Length	PART NO. MAT'L XXXP PHENOLIC	PRICE EACH 1-19	20-99	100-199	PART NO. MAT'L EPOXY PAPER	PRICE EACH 1-19	20-99	100-199	PART NO. MAT'L GLASS EPOXY	PRICE EACH 1-19	20-99	100-1
A	4.77 x 4.77	1/16		18 x 18	18P18	.43	.39	.36	18E18P	.72	.65	.60	18E18G	1.44	1.30	1.1
	1.06 x 8.48	1/16		3 x 32	3P32	.30	.27	.25	3E32P	.40	.36	.34	3E32G	.44	.40	.3
	1.88 x 8.48	1/16		7 x 32	7P32	.39	.35	.33	7E32P	.66	.61	.55	7E32G	.72	.65	.6
	2.41 x 8.48	1/16		9 x 32	9P32	.45	.41	.38	9E32P	.78	.71	.67	9E32G	.98	.89	.8
	3.25 x 8.48	1/16		13 x 32	13P32	.60	.56	.52	13E32P	.95	.88	.74	13E32G	1.48	1.39	1.3
	4.77 x 8.48	1/16	1	18 x 32	18P32	.72	.65	.59	18E32P	1.25	1.13	1.06	18E32G	1.89	1.70	1.5
	4.77 x 16.96	1/16	2	18 x 64	18P64	1.25	1.15	1.10	18E64P	2.06	1.85	1.74	18E64G	3.72	3.37	3.1
	8.48 x 16.96	1/16	4	32 x 64	32P64	2.13	1.91	1.79	32E64P	3.17	2.86	2.67	32E64G	5.86	5.32	5.0
	8.48 x 11.92	1/16	3	32 x 45	32P45	1.60	1.44	1.34	32E45P	2.12	1.90	1.70	32E45G	3.91	3.55	3.4
	4.77 x 4.77	3/32		18 xx 18	18PP18	.43	.39	.36	18EE18P	.80	.72	.65				
	1.06 x 8.48	3/32		3 xx 32	3PP32	.46	.42	.39	3EE32P	.40	.36	.34				
	1.38 x 8.48	3/32		5 xx 32	5PP32	.48	.43	.40	5EE32P	.74	.67	.59				
	1.88 x 8.48	3/32		7 xx 32	7PP32	.60	.55	.51	7EE32P	.95	.88	.83				
	3.25 x 8.48	3/32		13 xx 32	13PP32	.74	.69	.63	13EE32P	1.15	1.06	1.00				
	4.77 x 8.48	3/32	1	18 xx 32	18PP32	.84	.76	.71	18EE32P	1.40	1.26	1.18				
	4.77 x 16.96	3/32	2	18 xx 64	18PP64	1.60	1.44	1.34	18EE64P	2.73	2.46	2.29				
	8.48 x 16.96	3/32	4	32 xx 64	32PP64	2.45	2.20	2.05	32EE64P	4.35	3.95	3.65				
	8.48 x 11.92	3/32	3	32 xx 45	32PP45	1.99	1.80	1.62	32EE45P	2.83	2.55	2.30				
F	1.25 x 8.50	1/16		8 x 42	F8P42	.33	.30	.27	F8E42P	.44	.40	.36	F8E42G	.48	.44	.40
	2.25 x 8.50	1/16		11 x 42	F11P42	.55	.50	.45	F11E42P	.80	.72	.65	F11E42G	1.16	1.03	.94
	3.63 x 8.50	1/16		18 x 42	F18P42	.62	.56	.50	F18E42P	.95	.85	.80	F18E42G	1.75	1.57	1.48
	4.88 x 8.50	1/16	1	24 x 42	F24P42	.72	.65	.58	F24E42P	1.42	1.27	1.12	F24E42G	1.89	1.71	1.57
	4.88 x 17.00	1/16	2	24 x 85	F24P85	1.20	1.10	1.05	F24E85P	2.06	1.85	1.73	F24E85G	3.60	3.24	3.06
	8.50 x 12.00	1/16	3	42 x 59	F42P59	1.45	1.30	1.17	F42E59P	2.10	1.90	1.70	F42E59G	3.75	3.40	3.10
	8.50 x 17.00	1/16	4	42 x 85	F42P85	1.90	1.68	1.58	F42E85P	3.17	2.85	2.66	F42E85G	5.44	4.90	4.59
G	1.25 x 8.50	1/16		(8 x 42) 2	G16P84	.33	.30	.27	G16E84P	.44	.40	.36	G16E84G	.48	.44	.40
	2.25 x 8.50	1/16		(11 x 42) 2	G22P84	.55	.51	.46	G22E84P	.80	.75	.70	G22E84G	1.16	1.03	.94
	3.63 x 8.50	1/16		(18 x 42) 2	G36P84	.62	.56	.50	G36E84P	.95	.85	.76	G36E84G	1.75	1.57	1.48
	4.88 x 8.50	1/16	1	(24 x 42) 2	G48P84	.72	.65	.59	G48E84P	1.42	1.30	1.22	G48E84G	1.89	1.71	1.57
	4.88 x 17.00	1/16	2	(24 x 85) 2	G48P170	1.20	1.10	1.05	G48E170P	2.06	1.85	1.73	G48E170G	3.60	3.24	3.06
	8.50 x 12.00	1/16	3	(42 x 59) 2	G84P158	1.45	1.30	1.17	G84E158P	2.10	1.90	1.70	G84E158G	3.75	3.40	3.10
	8.50 x 17.00	1/16	4	(42 x 85) 2	G84P170	1.90	1.65	1.58	G84E170P	3.17	2.85	2.66	G84E170G	5.40	4.85	4.40

Notes:
1. This size punched board can be used with our 20001 and 20010 metal bases.
2. This size punched board can be used with our 20002 and 20011 metal bases.
3. This size punched board can be used with our 20003 metal base.
4. This size punched board can be used with our 20004 metal base.
5. XXXP Phenolic Type PBE is per Mil-P-3115C and withstands temperatures to 250°F.
6. Epoxy Paper Type PEE is per Mil-P-22324 and withstands temperatures to 250°F.
7. Glass Epoxy G-10 Type GEE is per Mil-P-18177 and withstands temperatures to 300°F.

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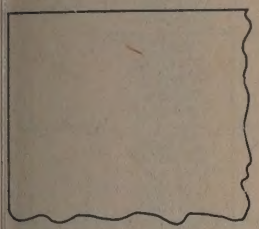
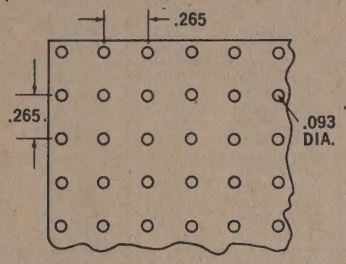
CIRCUIT DEVELOPMENT BOARDS

Wizardbord" Copper Clad

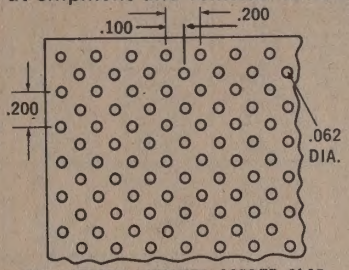
l copper clad boards are sealed in poly bags to minimize deterioration from handling and exposure to chemicals and osive material in air. Your copper clad board is etching fresh at shipment and remains so until you open the sealed poly bag.



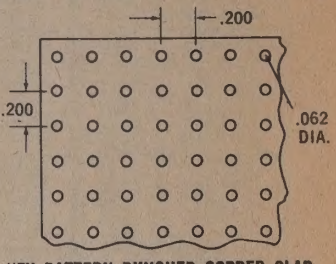
NPUNCHED COPPER CLAD BOARD pre- ut to the more popular sizes ready or etching. Consult the factory for izes and materials not shown.



"A" PATTERN PUNCHED COPPER CLAD BOARD with .093 diameter holes on .265 grid centers.



"G" PATTERN PUNCHED COPPER CLAD BOARD with .062 diameter holes on .100 alternate grid centers.



"F" PATTERN PUNCHED COPPER CLAD BOARD with .062 diameter holes on .200 grid centers.

1/16" THICK COPPER CLAD BOARD

SIZE Width x Length	NO. OF HOLES Width x Length	PART NO. COPPER CLAD ONE SIDE PHENOLIC XXXP	PRICE EACH 1-19	20-99	100-199	PART NO. COPPER CLAD TWO SIDES PHENOLIC XXXP	PRICE EACH 1-19	20-99	100-199	PART NO. COPPER CLAD ONE SIDE GLASS EPOXY	PRICE EACH 1-19	20-99	100-199	PART NO. COPPER CLAD TWO SIDES GLASS EPOXY	PRICE EACH 1-19	20-99	100-199
2.0 x 4.5	None	CP100	.35	.32	.30	CCP100	.40	.36	.33	CG100	.55	.50	.45	CCG100	.60	.54	.49
2.25 x 3.0	None	CP101	.30	.27	.24	CCP101	.35	.32	.29	CG101	.50	.45	.41	CCG101	.55	.50	.45
3.0 x 4.5	None	CP102	.40	.36	.33	CCP102	.55	.50	.45	CG102	.85	.77	.70	CCG102	.90	.81	.73
4.5 x 6.5	None	CP103	.65	.59	.53	CCP103	1.00	.90	.81	CG103	1.50	1.35	1.22	CCG103	1.60	1.44	1.30
3.62 x 6.87	None	CP104	.60	.54	.49	CCP104	.85	.77	.70	CG104	1.30	1.17	1.06	CCG104	1.40	1.26	1.14
4.5 x 8.5	None	CP105	.80	.72	.66	CCP105	1.15	1.04	.94	CG105	1.90	1.71	1.54	CCG105	2.15	1.94	1.75
9.0 x 12.0	None	CP106	2.15	1.94	1.76	CCP106	2.95	2.66	2.39	CG106	4.95	4.46	4.00	CCG106	5.60	5.04	4.54
6.12 x 9.87	None	CP107	1.45	1.31	1.18	CCP107	1.65	1.49	1.34	CG107	2.80	2.52	2.27	CCG107	3.20	2.88	2.59
8.5 x 17.0	None	CP108	2.75	2.48	2.23	CCP108	3.85	3.47	3.12	CG108	6.95	6.26	5.63	CCG108	7.95	7.15	6.44
3.45 x 5.03	13 x 19	HCP10	.70	.63	.57	HCCP10	.80	.72	.66	HCG10	1.10	.99	.90	HCCG10	1.15	1.04	.94
3.71 x 6.89	14 x 26	HCP20	.80	.72	.66	HCCP20	.95	.86	.78	HCG20	1.35	1.22	1.10	HCCG20	1.45	1.31	1.18
5.03 x 6.89	19 x 26	HCP30	1.10	.99	.90	HCCP30	1.35	1.22	1.10	HCG30	1.95	1.76	1.58	HCCG30	2.15	1.94	1.75
6.89 x 9.81	26 x 37	HCP40	1.95	1.76	1.58	HCCP40	2.25	2.03	1.83	HCG40	3.45	3.11	2.80	HCCG40	3.75	3.38	3.04
8.48 x 16.96	32 x 64	HCP50	3.95	3.56	3.20	HCCP50	4.60	4.14	3.73	HCG50	7.15	6.44	5.80	HCCG50	7.55	6.80	6.12
1.75 x 4.00	(8 x 19) 2	G16P38-1	.40	.36	.33	G16P38-2	.45	.41	.37	G16G38-1	.95	.86	.78	G16G38-2	1.05	.95	.86
2.25 x 8.50	(11 x 42) 2	G22P84-1	.80	.72	.66	G22P84-2	.90	.81	.73	G22G84-1	1.40	1.26	1.14	G22G84-2	1.65	1.49	1.34
3.50 x 4.00	(17 x 19) 2	G34P38-1	.60	.54	.49	G34P38-2	.75	.68	.62	G34G38-1	1.30	1.17	1.06	G34G38-2	1.40	1.26	1.13
3.50 x 8.50	(17 x 42) 2	G34P84-1	1.25	1.13	1.02	G34P84-2	1.70	1.53	1.38	G34G84-1	2.15	1.94	1.75	G34G84-2	2.50	2.25	2.03
4.50 x 6.50	(22 x 32) 2	G44P64-1	1.05	.95	.86	G44P64-2	1.25	1.13	1.02	G44G64-1	2.05	1.85	1.67	G44G64-2	2.40	2.16	1.94
4.88 x 8.50	(24 x 42) 2	G48P84-1	1.95	1.76	1.58	G48P84-2	2.55	2.30	2.07	G48G84-1	2.70	2.43	2.19	G48G84-2	3.35	3.02	2.72
4.88 x 17.00	(24 x 85) 2	G48P170-1	3.75	3.38	3.04	G48P170-2	4.65	4.19	3.77	G48G170-1	5.20	4.68	4.21	G48G170-2	6.10	5.49	4.94
8.50 x 17.00	(42 x 85) 2	G84P170-1	5.50	4.95	4.46	G84P170-2	6.75	6.08	5.47	G84G170-1	9.75	8.78	7.90	G84G170-2	10.50	9.45	8.50
1.25 x 8.50	8 x 42	F8P42-1	.70	.63	.57	F8P42-2	1.00	.90	.81	F8G42-1	1.25	1.13	1.02	F8G42-2	1.60	1.44	1.30
4.50 x 6.50	22 x 30	F22P30-1	.95	.86	.78	F22P30-2	1.20	1.08	.98	F22G30-1	2.20	1.98	1.78	F22G30 2	2.40	2.16	1.94
3.00 x 4.50	14 x 20	F14P20-1	.55	.51	.47	F14P20-2	.65	.59	.54	F14G20-1	1.15	1.04	.94	F14G20-2	1.30	1.17	1.05
3.63 x 8.50	18 x 42	F18P42-1	1.25	1.13	1.02	F18P42-2	1.65	1.49	1.34	F18G42-1	2.15	1.94	1.75	F18G42-2	2.50	2.25	2.03
4.88 x 8.50	24 x 42	F24P42-1	1.95	1.76	1.58	F24P42-2	2.45	2.21	2.00	F24G42-1	2.70	2.43	2.19	F24G42-2	3.40	3.06	2.75
4.88 x 17.00	24 x 85	F24P85-1	3.75	3.38	3.04	F24P85-2	4.75	4.28	3.85	F24G85-1	5.25	4.73	4.26	F24G85-2	6.25	5.63	5.07
8.50 x 17.00	42 x 85	F42P85-1	5.50	4.95	4.46	F42P85-2	6.75	6.08	5.47	F42G85-1	9.75	8.78	7.90	F42G85-2	10.50	9.45	8.50

otes: 1. XXXP is Type PP Copper Clad per Mil-P-13949 and withstands temperatures to 250°F.
2. Glass Epoxy Copper Clad is per Mil-P-13949B and withstands temperatures to 300°F.

WALDOM PRINTED CIRCUIT ETCHING KIT

A prototype circuit etching kit which will develop printed circuit boards in 3 to 6 minutes. Kits are packaged in a plastic box which can be used as an etching tray. Contents of kit include: etching salts, catalyst, paint resist and an artist brush. Tape and pad are also included. Complete instructions on how to use this fast and economical kit are furnished. **Cat. No. EK-100 Price Each** **$2.75**

PRICE LIST

CATALOG NUMBER	NET PRICE	CATALOG NUMBER	NET PRICE	CATALOG NUMBER	NET PRICE	CATALOG NUMBER	NET PRICE	CATALOG NUMBER	NET PRICE	CATALOG NUMBER	NET PRICE
20A000-0	.87	22A332RBI	1.89	26A024-2	1.26	47A103CPC	2.97	62A022-2	1.74	70F394AI	.81
20A000-1	1.05	22A333RBI	1.68	26A024-3	1.26	47A104CPC	2.88	62A022-3	1.74	70F395AI	.75
20A000-2	1.05	22A334RBI	1.62	26A024-4	1.26	47A105CPC	2.79	62A022-4	1.74	70F396AI	.66
20A000-3	1.05	22A335RBI	1.62	26A024-5	1.62	47A106CPC	2.73	62A022-5	2.01	70F472AF	1.26
20A000-4	1.05	22A472RBI	1.92	26A024-6	1.26	47A107CPC	2.70	62A022-6	1.74	70F473AI	.90
20A000-5	1.26	22A473RBI	1.68	26A024-7	1.26	47A124CPC	2.88	62A022-7	1.74	70F474AI	.81
20A000-6	1.05	22A474RBI	1.62	27A013-0	.78	47A125CPC	2.79	62A024-0	1.56	70F475AI	.75
20A000-7	1.05	22A475RBI	1.62	27A013-1	.96	47A126CPC	2.73	62A024-1	1.74	70F476AI	.66
20A103RBI	1.38	22A682RBI	1.95	27A013-2	.96	47A127CPC	2.70	62A024-2	1.74	70F477AP	.66
20A104RBI	1.38	22A683RBI	1.68	27A013-3	.96	47A154CPC	2.88	62A024-3	1.74	70F502AF	1.29
20A105RBI	1.38	22A684RBI	1.62	27A013-4	.96	47A155CPC	2.79	62A024-4	1.74	70F504AI	.81
20A106RBI	1.23	22A685RBI	1.62	27A013-5	1.29	47A156CPC	2.76	62A024-5	2.01	70F562AF	1.35
20A107RBI	1.17	22A822RBI	2.04	27A013-6	.96	47A157CPC	2.70	62A024-6	1.74	70F563AI	.90
20A154RBI	1.38	22A823RBI	1.71	27A013-7	.96	47A184CPC	2.88	62A024-7	1.74	70F564AI	.81
20A155RBI	1.38	22A824RBI	1.62	27A014-0	.78	47A185CPC	2.79	64A022-0	1.89	70F565AI	.75
20A156RBI	1.23	22A825RBI	1.62	27A014-1	.96	47A186CPC	2.76	64A022-1	2.04	70F566AI	.66
20A157RBI	1.17	23A013-0	.81	27A014-2	.96	47A187CPC	2.70	64A022-2	2.04	70F682AF	1.47
20A224RBI	1.38	23A013-1	.96	27A014-3	.96	47A224CPC	2.88	64A022-3	2.04	70F683AI	.90
20A225RBI	1.23	23A013-2	.96	27A014-4	.96	47A225CPC	2.79	64A022-4	2.04	70F684AI	.81
20A226RBI	1.23	23A013-3	.96	27A014-5	1.29	47A226CPC	2.76	64A022-5	2.22	70F685AI	.75
20A227RBI	1.17	23A013-4	.96	27A014-6	.96	47A227CPC	2.73	64A022-6	2.04	70F686AI	.66
20A334RBI	1.38	23A013-5	1.26	27A014-7	.96	47A274CPC	2.88	64A022-7	2.04	70F687AP	.66
20A335RBI	1.38	23A013-6	.96	46A013-0	.81	47A275CPC	2.82	64A024-0	1.89	70F752AF	1.56
20A336RBI	1.23	23A013-7	.96	46A013-1	.96	47A276CPC	2.76	64A024-1	2.04	70F753AI	.90
20A337RBI	1.23	23A013-8	.96	46A013-2	.96	47A277CPC	2.73	64A024-2	2.04	70F754AI	.81
20A474RBI	1.38	23A014-0	.81	46A013-3	.96	47A334CPC	2.97	64A024-3	2.04	70F755AI	.75
20A475RBI	1.38	23A014-1	1.05	46A013-4	.96	47A335CPC	2.82	64A024-4	2.04	70F756AI	.66
20A476RBI	1.23	23A014-2	1.05	46A013-5	1.26	47A336CPC	2.76	64A024-5	2.22	70F757AP	.66
20A477RBI	1.23	23A014-3	1.05	46A013-6	.96	47A337CPC	2.73	64A024-6	2.04	70F822AF	1.56
20A684RBI	1.38	23A014-4	1.05	46A013-7	.96	47A394CPC	2.97	64A024-7	2.04	70F823AI	1.08
20A685RBI	1.38	23A014-5	1.26	46A014-0	.96	47A395CPC	2.82	66A022-0	2.04	70F824AI	.81
20A686RBI	1.23	23A014-6	1.05	46A014-1	1.14	47A396CPC	2.76	66A022-1	2.25	70F825AI	.75
20A687RBI	1.23	23A014-7	1.05	46A014-2	1.14	47A397CPC	2.73	66A022-2	2.25	70F826AI	.66
20A824RBI	1.38	23A014-8	1.05	46A014-3	1.14	47A474CPC	2.97	66A022-3	2.25	70F827AP	.66
20A825RBI	1.38	23A101RPC	1.50	46A014-4	1.14	47A475CPC	2.82	66A022-4	2.25	70F912AF	1.59
20A826RBI	1.23	23A102RPC	1.44	46A014-5	1.32	47A476CPC	2.79	66A022-5	2.46	70F913AI	1.08
20A827RBI	1.23	23A103RPC	1.44	46A014-6	1.14	47A477CPC	2.73	66A022-6	2.25	70F914AI	.81
21A000-0	.87	23A104RPC	1.32	46A014-7	1.14	47A564CPC	2.97	66A022-7	2.25	70F915AI	.75
21A000-1	1.05	23A105RPC	1.23	46A103CPC	2.04	47A565CPC	2.82	66A024-0	2.04	70F916AI	.66
21A000-2	1.05	23A106RPC	1.14	46A104CPC	1.98	47A566CPC	2.79	66A024-1	2.25	73F102AF	1.14
21A000-3	1.05	23A107RPC	1.14	46A105CPC	1.92	47A567CPC	2.73	66A024-2	2.25	73F103AF	.87
21A000-4	1.05	23A152RPC	1.44	46A106CPC	1.86	47A684CPC	2.97	66A024-3	2.25	73F104AF	.81
21A000-5	1.26	23A153RPC	1.44	46A107CPC	1.80	47A685CPC	2.82	66A024-4	2.25	73F123AF	.87
21A000-6	1.05	23A154RPC	1.32	46A124CPC	1.98	47A666CPC	2.79	66A024-5	2.46	73F124AF	.81
21A000-7	1.05	23A155RPC	1.32	46A125CPC	1.92	47A687CPC	2.73	66A024-6	2.25	73F153AF	.87
21A102RBI	1.71	23A156RPC	1.14	46A126CPC	1.86	47A824CPC	2.97	66A024-7	2.25	73F154AF	.81
21A103RBI	1.56	23A157RPC	1.14	46A127CPC	1.80	47A825CPC	2.82	70F101AF	1.62	73F183AF	.87
21A104RBI	1.44	23A222RPC	1.50	46A154CPC	1.98	47A826CPC	2.79	70F102AI	1.08	73F184AF	.81
21A105RBI	1.38	23A223RPC	1.44	46A155CPC	1.92	47A827CPC	2.73	70F103AI	.81	73P223AF	.87
21A106RBI	1.23	23A224RPC	1.32	46A156CPC	1.86	50A103EBI	4.68	70F104AI	.75	73F224AF	.81
21A153RBI	1.56	23A225RPC	1.32	46A157CPC	1.80	50A104EBI	4.56	70F105AI	.75	73F273AF	.87
21A154RBI	1.44	23A226RPC	1.23	46A184CPC	1.98	50A105EBI	3.99	70F106AI	.66	73F274AF	.81
21A155RBI	1.38	23A227RPC	1.14	46A185CPC	1.92	50A106EBI	3.90	70F107AP	.66	73F333AF	.96
21A156RBI	1.23	23A332RPC	1.50	46A186CPC	1.86	50A153EBI	4.68	70F122AI	1.17	73F334AF	.81
21A223RBI	1.56	23A333RPC	1.44	46A187CPC	1.80	50A154EBI	4.59	70F123AI	.81	73F393AF	.96
21A224RBI	1.44	23A334RPC	1.32	46A224CPC	1.98	50A155EBI	3.99	70F124AI	.75	73F394AF	.81
21A225RBI	1.38	23A335RPC	1.32	46A225CPC	1.92	50A156EBI	3.90	70F125AI	.75	73F473AF	.96
21A226RBI	1.23	23A336RPC	1.23	46A226CPC	1.86	50A223EBI	4.71	70F126AI	.66	73F474AF	.81
21A333RBI	1.56	23A337RPC	1.14	46A227CPC	1.83	50A224EBI	4.59	70F152AI	1.17	73F563AF	1.08
21A334RBI	1.44	23A472RPC	1.50	46A274CPC	1.98	50A225EBI	4.08	70F153AI	.81	73F564AF	.81
21A335RBI	1.38	23A473RPC	1.44	46A275CPC	1.95	50A226EBI	3.90	70F154AI	.75	73F683AF	1.08
21A336RBI	1.23	23A474RPC	1.32	46A276CPC	1.86	50A333EBI	4.65	70F155AI	.75	73F684AF	.87
21A473RBI	1.62	23A475RPC	1.32	46A277CPC	1.83	50A334EBI	4.62	70F156AI	.66	73F823AF	1.14
21A474RBI	1.44	23A476RPC	1.23	46A334CPC	2.01	50A335EBI	4.08	70F157AP	.66	73F824AF	.87
21A475RBI	1.38	23A477RPC	1.14	46A335CPC	1.95	50A336EBI	3.98	70F182AI	1.17	74F104AI	.66
21A476RBI	1.23	23A682RPC	1.50	46A336CPC	1.86	50A473EBI	4.77	70F183AI	.81	74F105AP	.54
21A683RBI	1.62	23A683RPC	1.44	46A337CPC	1.83	50A474EBI	4.62	70F184AI	.75	74F106AP	.48
21A684RBI	1.44	23A684RPC	1.32	46A394CPC	2.01	50A475EBI	4.11	70F185AI	.75	74F125AP	.54
21A685RBI	1.38	23A685RPC	1.32	46A395CPC	1.95	50A476EBI	3.93	70F186AI	.66	74F126AP	.48
21A686RBI	1.23	23A686RPC	1.23	46A396CPC	1.86	50A683EBI	4.77	70F204AI	.75	74F155AP	.54
21A823RBI	1.62	23A687RPC	1.14	46A397CPC	1.83	50A684EBI	4.65	70F222AI	1.26	74F156AP	.48
21A824RBI	1.56	23A822RPC	1.50	46A474CPC	2.01	50A685EBI	4.11	70F223AI	.87	74F185AP	.54
21A825RBI	1.38	23A823RPC	1.44	46A475CPC	1.95	50A686EBI	3.93	70F224AI	.75	74F186AP	.48
21A826RBI	1.23	23A824RPC	1.44	46A476CPC	1.92	50A823EBI	4.77	70F225AI	.75	74F225AI	.54
22A000-0	1.38	23A825RPC	1.32	46A477CPC	1.83	50A824EBI	4.65	70F226AI	.66	74F226AP	.48
22A000-1	1.56	23A826RPC	1.23	46A564CPC	2.01	50A825EBI	4.14	70F227AP	.66	74F275AI	.60
22A000-2	1.56	23A827RPC	1.14	46A565CPC	1.95	50A826EBI	3.93	70F252AF	1.17	74F276AP	.48
22A000-3	1.56	24A024-0	1.14	46A566CPC	1.92	60A022-0	1.47	70F253AI	.90	74F335AI	.60
22A000-4	1.56	24A024-1	1.26	46A567CPC	1.83	60A022-1	1.62	70F254AI	.75	74F336AP	.48
22A000-5	1.80	24A024-2	1.26	46A684CPC	2.04	60A022-2	1.62	70F255AI	.75	74F395AI	.63
22A000-6	1.56	24A024-3	1.26	46A685CPC	1.95	60A022-3	1.62	70F272AF	1.17	74F396AP	.48
22A000-7	1.56	24A024-4	1.26	46A886CPC	1.92	60A022-4	1.62	70F273AI	.90	74F475AI	.66
22A101RBI	2.28	24A024-5	1.62	46A687CPC	1.83	60A022-5	1.86	70F274AI	.75	74F476AP	.48
22A102RBI	1.71	24A024-6	1.26	46A824CPC	2.04	60A022-6	1.62	70F275AI	.75	74F565AI	.66
22A103RBI	1.62	24A024-7	1.26	46A825CPC	1.95	60A022-7	1.62	70F276AI	.66	74F566AP	.48
22A104RBI	1.59	25A014-0	.78	46A826CPC	1.92	60A024-0	1.38	70F304AI	.75	74F685AI	.66
22A105RBI	1.50	25A014-1	.96	46A827CPC	1.83	60A024-1	1.62	70F332AF	1.20	74F686AP	.48
22A152RBI	1.83	25A014-2	.96	47A024-0	1.68	60A024-2	1.62	70F333AI	.90	74F825AI	.66
22A153RBI	1.62	25A014-3	.96	47A024-1	1.80	60A024-3	1.62	70F334AI	.75	74F826AP	.48
22A154RBI	1.59	25A014-4	.96	47A024-2	1.80	60A024-4	1.62	70F335AI	.75	970	.84
22A155RBI	1.50	25A014-5	1.29	47A024-3	1.80	60A024-5	1.86	70F336AI	.66	971	.84
22A222RBI	1.83	25A014-6	.96	47A024-4	1.80	60A024-6	1.62	70F337AP	.66	972	.84
22A223RBI	1.62	25A014-7	.96	47A024-5	2.01	60A024-7	1.62	70F354AI	.75	973	.90
22A224RBI	1.59	26A024-0	1.14	47A024-6	1.80	62A022-0	1.56	70F392AF	1.23	974	.90
22A225RBI	1.59	26A024-1	1.26	47A024-7	1.80	62A0221	1.74	70F393AI	.90	975	.90

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985	1.05	4517	.84	4648	.81	9220-12	1.05	9250-152	1.98	9320-28	.66
986	1.08	4519	.84	4648-E	1.86	9220-14	1.05	9250-153	2.34	9320-30	.66
987	1.11	4525	6.78	4649	.81	9220-15	1.05	9250-154	2.82	9320-32	.66
988	1.17	4526	10.20	4649-E	2.22	9220-16	1.05	9250-155	3.00	9320-34	.66
989	1.20	4527	1.17	4650	.81	9220-18	1.14	9250-181	1.68	9320-35	.66
990	1.23	4528	.72	4650-E	2.22	9220-20	1.14	9250-182	1.98	9320-36	.66
991	1.29	4528-1	.72	4651	.81	9220-22	1.14	9250-183	2.34	9320-38	.66
992	1.35	4529	.72	4651-E	2.22	9220-24	1.14	9250-184	2.82	9330-00	.66
993	1.41	4529-10	.72	4652	.81	9220-26	1.14	9250-185	3.00	9330-01	.66
994	1.47	4530	1.35	4652-E	2.22	9220-28	1.14	9250-221	1.68	9330-02	.66
4200-0	.75	4531	1.02	4662	.84	9220-30	1.35	9250-222	1.98	9330-03	.66
4200-1	.84	4531-0	1.02	4662-E	2.28	9220-32	1.35	9250-223	2.34	9330-04	.66
4200-2	.84	4531-1	1.02	4664	.87	9220-34	1.35	9250-224	2.82	9330-05	.66
4200-3	.84	4532	1.05	4664-E	2.28	9220-36	1.35	9250-225	3.00	9330-06	.66
4200-4	.84	4533	2.82	4666	.96	9220-38	1.35	9250-271	1.68	9330-07	.66
4200-5	1.14	4534	2.25	4666-E	2.40	9220-40	1.35	9250-272	1.98	9330-08	.66
4200-6	.84	4535	2.55	4668	1.08	9220-42	1.35	9250-273	2.34	9330-10	.66
4200-7	.84	4536	3.27	4668-E	2.46	9220-44	1.35	9250-274	2.82	9330-12	.66
4200-8	.84	4537	1.08	4669	1.20	9220-46	1.35	9250-275	3.00	9330-14	.66
4201	1 11	4638	1.23	4669-E	2.58	9220-48	1.35	9250-331	1.68	9330-16	.66
4201-A	1.11	4539	1.29	4670	1.20	9220-50	1.35	9250-332	1.98	9330-18	.75
4202	1.11	4540	1.35	4670-E	2.58	9220-52	1.35	9250-333	2.34	9330-20	.75
4203	1.14	4541	1.74	4671	1.20	9220-54	1.35	9250-334	2.82	9330-22	.75
4204	1.17	4542	2.55	4671-E	2.61	9220-56	1.50	9250-335	3.00	9330-24	.75
4205	1.20	4543	2.79	4672	1.47	9220-58	1.50	9250-391	1.68	9330-26	.75
4206	1.29	4544	3.06	4672-E	3.06	9220-60	1.50	9250-392	1.98	9330-28	.75
4207	1.32	4545	4.35	6302	1.05	9220-62	1.50	9250-393	2.34	9330-30	.75
4208	1.35	4546	4.77	6302-E	2.58	9220-64	1.50	9250-394	2.82	9330-32	.75
4209	1.38	4547	5.10	6304	1.23	9220-66	1.50	9250-395	3.00	9330-34	.75
4300-0	1.08	4550	2.19	6304-E	2.70	9220-68	1.50	9250-471	1.68	9330-36	.75
4300-1	1.23	4551	2.79	6306	1.35	9220-70	1.50	9250-472	1.98	9330-38	.75
4300-2	1.23	4552	1.08	6306-E	2.85	9220-72	1.50	9250-473	2.34	9340-00	.78
4300-3	1.23	4553	1.08	6308	1.35	9220-74	1.50	9250-474	2.82	9340-02	.78
4300-4	1.23	4554	1.17	6308-E	3.06	9220-76	1.50	9250-475	3.00	9340-03	.78
4300-5	1.41	4555	1.29	6310	1.62	9230-00	1.02	9250-561	1.68	9340-04	.78
4300-6	1.23	4556	1.32	6310-E	3.24	9230-02	1.02	9250-562	1.98	9340-06	.78
4300-7	1.23	4557	1.17	9001	1.44	9230-04	1.02	9250-563	2.34	9340-08	.78
4301	1.74	4558	1.17	9002	1.62	9230-06	1.02	9250-564	2.82	9340-10	.78
4302	1.74	4559	1.35	9003	1.95	9230-08	1.02	9250-565	3.00	9340-12	.78
4303	1.77	4560	1.50	9004	2.28	9230-10	1.02	9250-681	1.68	9340-14	.78
4304	1.80	4561	1.53	9005	2.55	9230-12	1.02	9250-682	1.98	9340-16	.78
4305	1.86	4580	.60	9006	2.97	9230-14	1.02	9250-683	2.34	9340-18	.78
4306	1.92	4580-E	1.56	9007	3.06	9230-16	1.02	9250-684	2.82	9340-20	.78
4307	2.01	4582	.60	9008	3.09	9230-18	1.02	9250-685	3.00	9340-22	.78
4308	2.04	4582-E	1.56	9009	3.21	9230-20	1.02	9250-821	1.68	9340-24	.78
4309	2.07	4584	.60	9011	1.80	9230-22	1.08	9250-822	1.98	9340-26	.78
4310	2.10	4584-E	1.56	9012	1.95	9230-24	1.08	9250-823	2.34	9340-28	.84
4311	2.13	4586	.60	9013	2.28	9230-26	1.08	9250-824	2.82	9340-30	.84
4312	2.16	4586-E	1.56	9014	2.58	9230-28	1.08	9250-825	3.00	9340-32	.84
4313	2.19	4588	.60	9015	2.88	9230-30	1.08	9310-00	.60	9340-34	.84
4314	2.19	4588-E	1.56	9016	2.97	9230-32	1.08	9310-02	.60	9340-36	.84
4315	2.19	4590	.60	9017	3.03	9230-34	1.08	9310-04	.60	9340-38	.84
4400-0	1.32	4590-E	1.56	9018	3.42	9230-36	1.08	9310-06	.60	9340-39	.84
4400-1	1.50	4592	.60	9019	3.54	9230-38	1.23	9310-07	.60	9340-40	.84
4400-2	1.50	4592-E	1.56	9050	2.04	9230-40	1.23	9310-08	.60	9340-42	.84
4400-3	1.50	4594	.60	9051	2.04	9230-42	1.23	9310-10	.60	9340-44	.84
4400-4	1.50	4594-E	1.56	9052	2.07	9230-44	1.23	9310-12	.60	9350-00	1.02
4400-5	1.68	4602	.60	9053	2.07	9230-46	1.32	9310-14	.60	9350-02	1.02
4400-6	1.50	4602-E	1.56	9054	2.10	9230-48	1.32	9310-16	.60	9350-04	1.08
4400-7	1.50	4604	.60	9055	2.10	9230-50	1.32	9310-18	.60	9350-06	1.08
4403	1.98	4604-E	1.56	9056	2.10	9230-52	1.32	9310-20	.60	9350-08	1.08
4404	2.01	4606	.60	9057	2.16	9230-54	1.32	9310-22	.60	9350-10	1.08
4405	2.04	4606-E	1.56	9058	2.16	9230-56	1.41	9310-24	.60	9350-12	1.08
4406	2.10	4608	.60	9059	2.16	9230-58	1.65	9310-26	.60	9350-14	1.08
4407	2.16	4608-E	1.56	9060	2.37	9230-60	1.65	9310-28	.60	9350-16	1.08
4408	2.28	4609	.60	9061	2.37	9230-62	1.65	9310-30	.66	9350-18	1.08
4409	2.34	4609-E	1.59	9062	2.37	9230-64	1.65	9310-32	.66	9350-20	1.08
4410	2.37	4610	.63	9063	2.46	9230-66	1.65	9310-34	.66	9350-22	1.08
4411	2.40	4610-E	1.59	9210-54	.90	9230-68	1.65	9310-36	.66	9350-24	1.11
4412	2.43	4611	.63	9210-56	.90	9230-70	2.25	9310-38	.66	9350-26	1.11
4413	2.46	4611-E	1.59	9210-58	.90	9230-72	2.25	9310-40	.66	9350-28	1.11
4414	2.46	4612	.63	9210-60	.90	9230-74	2.25	9310-42	.66	9350-30	1.11
4500-0	1.17	4612-E	1.59	9210-62	.90	9230-76	2.25	9310-44	.66	9350-32	1.14
4500-1	1.32	4622	.69	9210-64	.90	9230-78	2.25	9310-46	.75	9350-34	1.14
4500-2	1.32	4622-E	1.65	9210-66	.90	9230-80	2.25	9310-48	.75	9350-36	1.14
4500-3	1.32	4624	.69	9210-68	.90	9230-82	2.25	9310-50	.75	9350-37	1.20
4500-4	1.32	4624-E	1.65	9210-70	.90	9230-84	2.25	9310-52	.75	9350-38	1.20
4500-5	1.53	4626	.72	9210-72	.90	9230-86	2.25	9320-00	.60	9350-39	1.20
4500-6	1.32	4626-E	1.65	9210-74	.90	9230-88	2.25	9320-02	.60	9350-40	1.20
4500-7	1.32	4628	.72	9210-76	.99	9230-90	2.25	9320-04	.60	9350-41	1.20
4501	1.80	4628-E	1.65	9210-78	.99	9230-92	2.25	9320-06	.60	9350-44	1.20
4502	1.80	4629	.75	9210-80	.99	9230-94	1.02	9320-07	.60	9360-01	1.26
4503	1.80	4629-E	1.65	9210-82	.99	9230-96	1.02	9320-08	.60	9360-02	1.26
4504	1.80	4630	.75	9210-84	.99	9250-101	1.68	9320-09	.60	9360-03	1.26
4505	1.89	4630-E	1.65	9210-86	.99	9250-102	1.98	9320-10	.60	9360-04	1.26
4506	1.95	4631	.75	9210-88	.99	9250-103	1.98	9320-11	.60	9360-05	1.26
										9360-06	1.26
										9360-07	1.26
										9360-08	1.35
										9360-09	1.35
										9360-10	1.35
										9360-11	1.35
										9360-12	1.35
										9360-13	1.35

All Items Subject to Price Change or Withdrawal Without Notice

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Nicknamed the "Micro-Mite", these rugged coils exhibit high Q and very low distributed capa all concentrated into an amazingly small package. They are ideal for use where weight, space high Q considerations are involved. Size reduction ranges up to 80% of equivalent standard mo chokes. The construction of these coils permits miniaturization without the use of ferrite mater thus maintaining temperature stability. This series of molded coils conforms to MIL-C-15305.

Miller Part Number	M S Type	Measured on Model 260A Q-Meter			Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	Milliamp Rating Maximum*	Core Material
		Inductance Microhenries	Q Minimum	Testing Frequency				
9210-54	90538-01	36 ± 5%	60	2.5 MHz	15.5	2.50	180	IRON
9210-56	90538-02	39 ± 5%	60	2.5 MHz	14.5	2.60	176	IRON
9210-58	90538-03	43 ± 5%	60	2.5 MHz	13.7	2.70	172	IRON
9210-60	90538-04	47 ± 5%	55	2.5 MHz	13.0	2.75	170	IRON
9210-62	90538-05	51 ± 5%	55	2.5 MHz	12.7	2.85	167	IRON
9210-64	90538-06	56 ± 5%	55	2.5 MHz	12.0	3.00	164	IRON
9210-66	90538-07	62 ± 5%	55	2.5 MHz	11.5	3.15	160	IRON
9210-68	90538-08	68 ± 5%	55	2.5 MHz	11.0	3.30	156	IRON
9210-70	90538-09	75 ± 5%	55	2.5 MHz	10.5	3.70	147	IRON
9210-72	90538-10	82 ± 5%	50	2.5 MHz	10.3	3.90	143	IRON
9210-74	90538-11	91 ± 5%	50	2.5 MHz	10.0	4.30	136	IRON
9210-76	90538-12	100 ± 5%	50	2.5 MHz	9.5	4.50	133	IRON
9210-78	90538-13	110 ± 5%	60	.790 MHz	8.9	4.90	128	IRON
9210-80	90538-14	120 ± 5%	65	.790 MHz	8.7	5.20	124	IRON
9210-82	90538-15	130 ± 5%	65	.790 MHz	8.5	5.45	121	IRON
9210-84	90538-16	150 ± 5%	65	.790 MHz	8.0	6.05	114	IRON
9210-86	90538-17	160 ± 5%	65	.790 MHz	7.5	6.40	111	IRON
9210-88	90538-18	180 ± 5%	65	.790 MHz	7.0	6.75	108	IRON
9210-90	90538-19	200 ± 5%	65	.790 MHz	6.5	7.10	106	IRON
9210-92	90538-20	220 ± 5%	65	.790 MHz	6.2	7.45	103	IRON
9210-94	90538-21	240 ± 5%	65	.790 MHz	5.9	7.80	101	IRON

Mold Size: .155 ± .010 diameter; .375 ± .010 length. Leads: AWG #22 TCW; 1.44 ± .125 length. Power Rating: .22 Watt Max. at 90° C.
*Current based on (1) Temperature rise not to exceed 15°C at 90° ambient. (2) Overload not to exceed 1½ times rated current.

Miller Part Number	M S Type	Measured on Model 260A Q-Meter			Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	Milliamp Rating Maximum*	Mold Size	Core Material
		Inductance Microhenries	Q Minimum	Testing Frequency					
9220-00	90539-01	270 ± 5%	65	.790 MHz	5.6	8.2	110	A	IRON
9220-02	90539-02	300 ± 5%	65	.790 MHz	5.3	8.7	107	A	IRON
9220-04	90539-03	330 ± 5%	65	.790 MHz	5.0	9.1	105	A	IRON
9220-06	90539-04	360 ± 5%	65	.790 MHz	4.7	9.6	102	A	IRON
9220-08	90539-05	390 ± 5%	65	.790 MHz	4.5	10.0	100	A	IRON
9220-10	90539-06	430 ± 5%	65	.790 MHz	4.3	10.6	97	A	IRON
9220-12	90539-07	470 ± 5%	65	.790 MHz	4.0	11.1	95	A	IRON
9220-14		500 ± 5%	65	.790 MHz	3.8	11.6	93	A	IRON
9220-15	90539-08	510 ± 5%	65	.790 MHz	3.8	11.6	92	A	IRON
9220-16	90539-09	560 ± 5%	65	.790 MHz	3.6	12.3	91	A	IRON
9220-18	90539-10	620 ± 5%	60	.790 MHz	3.5	13.0	88	A	IRON
9220-20	90539-11	680 ± 5%	60	.790 MHz	3.4	13.7	85	A	IRON
9220-22	90539-12	750 ± 5%	60	.790 MHz	3.3	14.4	83	A	IRON
9220-24	90539-13	820 ± 5%	60	.790 MHz	3.1	15.1	81	A	IRON
9220-26	90539-14	910 ± 5%	60	.790 MHz	2.9	15.8	79	A	IRON
9220-28	90539-15	1000 ± 5%	60	.790 MHz	2.8	16.5	78	A	IRON
9220-30	90540-01	1100 ± 5%	60	.250 MHz	2.8	21.0	78	B	IRON
9220-32	90540-02	1200 ± 5%	60	.250 MHz	2.7	22.0	76	B	IRON
9220-34	90540-03	1300 ± 5%	60	.250 MHz	2.6	23.0	75	B	IRON
9220-36	90540-04	1500 ± 5%	65	.250 MHz	2.4	25.0	72	B	IRON
9220-38	90540-05	1600 ± 5%	65	.250 MHz	2.3	26.0	70	B	IRON
9220-40	90540-06	1800 ± 5%	65	.250 MHz	2.2	28.0	68	B	IRON
9220-42	90540-07	2000 ± 5%	65	.250 MHz	2.1	29.0	67	B	IRON
9220-44	90540-08	2200 ± 5%	70	.250 MHz	2.0	30.0	66	B	IRON
9220-46	90540-09	2400 ± 5%	70	.250 MHz	1.9	31.0	64	B	IRON
9220-48	90540-10	2700 ± 5%	70	.250 MHz	1.8	33.0	62	B	IRON
9220-50	90540-11	3000 ± 5%	70	.250 MHz	1.7	35.0	61	B	IRON
9220-52	90540-12	3300 ± 5%	70	.250 MHz	1.6	38.0	58	B	IRON
9220-54	90540-13	3600 ± 5%	70	.250 MHz	1.5	40.0	57	B	IRON
9220-56	90541-01	3900 ± 5%	80	.250 MHz	1.45	44.0	61	C	IRON
9220-58	90541-02	4300 ± 5%	80	.250 MHz	1.40	46.0	59	C	IRON
9220-60	90541-03	4700 ± 5%	80	.250 MHz	1.35	48.0	58	C	IRON
9220-62	90541-04	5000 ± 5%	80	.250 MHz	1.30	50.0	57	C	IRON
9220-64	90541-05	5600 ± 5%	80	.250 MHz	1.25	53.0	56	C	IRON
9220-66	90541-06	6200 ± 5%	80	.250 MHz	1.20	56.0	54	C	IRON
9220-68	90541-07	6800 ± 5%	80	.250 MHz	1.15	59.0	52	C	IRON
9220-70	90541-08	7500 ± 5%	80	.250 MHz	1.10	62.0	51	C	IRON
9220-72	90541-09	8200 ± 5%	80	.250 MHz	1.05	65.0	50	C	IRON
9220-74	90541-10	9100 ± 5%	80	.250 MHz	1.00	68.0	49	C	IRON
9220-76	90541-11	10000 ± 5%	80	.250 MHz	.95	72.0	47	C	IRON

*Current based on (1) Temperature rise not to exceed 15°C at 90° ambient. (2) Overload not to exceed 1½ times rated current.

Mold Size	Mold Diameter	Mold Length	Lead Size	Lead Length	Max. Watt at 90° C.
A	.190 ± .010	.440 ± .010	AWG #22	1.44 ± .125	.25
B	.215 ± .010	.560 ± .010	AWG #21	1.44 ± .125	.40
C	.240 ± .010	.740 ± .010	AWG #20	1.44 ± .125	.45

Refer to Pages 1-2 for Prices

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Miller Part Number	M S Type	Measured on Model 260A Q-Meter: Inductance Microhenries	Q Minimum	Testing Frequency	Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	Milliamp Rating Maximum*	Core Material
9310-00	18130-1	.15 ± 20%	50	25 MHz	525	.03	2450	PHENOLIC
9310-02	18130-2	.22 ± 20%	50	25 MHz	450	.055	1900	PHENOLIC
9310-04	18130-3	.33 ± 20%	45	25 MHz	360	.09	1400	PHENOLIC
9310-06	18130-4	.47 ± 20%	45	25 MHz	310	.12	1225	PHENOLIC
9310-07	18130-5	.56 ± 10%	50	25 MHz	280	.135	1220	PHENOLIC
9310-08	18130-6	.68 ± 10%	50	25 MHz	250	.15	1100	PHENOLIC
9310-10	18130-7	.82 ± 10%	50	25 MHz	220	.22	900	PHENOLIC
9310-12	18130-8	1.00 ± 10%	50	25 MHz	200	.29	830	PHENOLIC
9310-14	18130-9	1.20 ± 10%	33	7.9 MHz	180	.42	650	PHENOLIC
9310-16	18130-10	1.50 ± 10%	33	7.9 MHz	160	.50	600	PHENOLIC
9310-18	18130-11	1.80 ± 10%	33	7.9 MHz	150	.65	525	PHENOLIC
9310-20	18130-12	2.20 ± 10%	33	7.9 MHz	135	.95	435	PHENOLIC
9310-22	18130-13	2.70 ± 10%	33	7.9 MHz	120	1.20	385	PHENOLIC
9310-24	18130-14	3.30 ± 10%	33	7.9 MHz	110	2.00	300	PHENOLIC
9310-26	18130-15	3.90 ± 10%	33	7.9 MHz	100	2.30	280	PHENOLIC
9310-28	18130-16	4.70 ± 10%	33	7.9 MHz	90	2.60	260	PHENOLIC
9310-30	18130-17	5.60 ± 10%	45	7.9 MHz	60	.32	750	IRON
9310-32	18130-18	6.80 ± 10%	50	7.9 MHz	55	.50	600	IRON
9310-34	18130-19	8.20 ± 10%	50	7.9 MHz	50	.60	545	IRON
9310-36	18130-20	10.0 ± 10%	55	7.9 MHz	45	.90	445	IRON
9310-38	18130-21	12.0 ± 10%	65	2.5 MHz	42	1.10	404	IRON
9310-40	18130-22	15.0 ± 10%	65	2.5 MHz	40	1.40	370	IRON
9310-42	18130-23	18.0 ± 10%	75	2.5 MHz	34	2.25	280	IRON
9310-44	18130-24	22.0 ± 10%	75	2.5 MHz	30	2.50	265	IRON
9310-46		24.0 ± 10%	60	2.5 MHz	26	2.50	265	IRON
9310-48	18130-25	27.0 ± 10%	60	2.5 MHz	25	2.60	260	IRON
9310-50		30.0 ± 10%	65	2.5 MHz	19	2.80	255	IRON
9310-52	18130-26	33.0 ± 10%	65	2.5 MHz	19	3.00	250	IRON

Mold Size .155 ± .010 diameter; .375 ± .010 length. Leads: AWG #22 TCW; 1.437 ± .125 length. Power Rating: .25 Watt Max. at 90° C.

Miller Part Number	M S Type	Measured on Model 260A Q-Meter: Inductance Microhenries	Q Minimum	Testing Frequency	Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	Milliamp Rating Maximum*	Core Material
9320-00	75008-21	.15 ± 20%	55	25 MHz	510	.030	3000	PHENOLIC
9320-02	75008-22	.22 ± 20%	50	25 MHz	415	.035	2800	PHENOLIC
9320-04	75008-23	.33 ± 20%	50	25 MHz	350	.065	2000	PHENOLIC
9320-06	75008-24	.47 ± 20%	50	25 MHz	300	.085	1700	PHENOLIC
9320-07	75008-25	.56 ± 10%	50	25 MHz	270	.125	1450	PHENOLIC
9320-08	75008-26	.68 ± 10%	45	25 MHz	250	.150	1300	PHENOLIC
9320-09	75008-27	.82 ± 10%	40	25 MHz	210	.205	1100	PHENOLIC
9320-10	75008-28	1.00 ± 10%	40	25 MHz	200	.290	930	PHENOLIC
9320-11	75008-29	1.20 ± 10%	30	7.9 MHz	180	.400	785	PHENOLIC
9320-12	75008-30	1.50 ± 10%	30	7.9 MHz	170	.485	700	PHENOLIC
9320-13	75008-31	1.80 ± 10%	30	7.9 MHz	150	.740	580	PHENOLIC
9320-14	75008-32	2.20 ± 10%	30	7.9 MHz	140	.970	505	PHENOLIC
9320-16	75008-33	2.70 ± 10%	30	7.9 MHz	120	1.20	460	PHENOLIC
9320-18	75008-34	3.30 ± 10%	30	7.9 MHz	70	.140	1350	IRON
9320-20	75008-35	3.90 ± 10%	30	7.9 MHz	65	.155	1250	IRON
9320-22	75008-36	4.70 ± 10%	30	7.9 MHz	60	.210	1100	IRON
9320-24	75008-37	5.60 ± 10%	30	7.9 MHz	50	.280	935	IRON
9320-26	75008-38	6.80 ± 10%	30	7.9 MHz	50	.375	810	IRON
9320-28	75008-39	8.20 ± 10%	30	7.9 MHz	48	.440	750	IRON
9320-30	75008-40	10.0 ± 10%	30	7.9 MHz	42	.605	640	IRON
9320-32	75008-41	12.0 ± 10%	50	2.5 MHz	36	1.05	490	IRON
9320-34	75008-42	15.0 ± 10%	55	2.5 MHz	30	1.20	460	IRON
9320-35	75008-43	18.0 ± 10%	60	2.5 MHz	30	1.95	360	IRON
9320-36	75008-44	22.0 ± 10%	60	2.5 MHz	24	2.20	335	IRON
9320-38	75008-45	27.0 ± 10%	65	2.5 MHz	22	2.75	300	IRON

Mold Size: 0.185 ± .031 diameter; 0.437 ± .031 length. Leads: AWG #22 TCW; 1.437 ± .125 length. Power Rating: .25 Watt Max. at 90° C.

Miller Part Number	M S Type	Measured on Model 260A Q-Meter: Inductance Microhenries	Q Minimum	Testing Frequency	Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	Milliamp Rating Maximum*	Core Material
9330-00	90542-01	.47 ± 10%	65	25 MHz	300	.06	1970	PHENOLIC
9330-01	90542-02	.56 ± 10%	65	25 MHz	270	.08	1850	PHENOLIC
9330-02	90542-03	.68 ± 10%	65	25 MHz	240	.08	1700	PHENOLIC
9330-03	90542-04	.82 ± 10%	65	25 MHz	220	.11	1520	PHENOLIC
9330-04	90542-05	1.00 ± 10%	65	25 MHz	200	.14	1290	PHENOLIC
9330-05	90542-06	1.20 ± 10%	40	7.9 MHz	180	.19	1120	PHENOLIC
9330-06	90542-07	1.50 ± 10%	40	7.9 MHz	160	.28	925	PHENOLIC
9330-07	90542-08	1.80 ± 10%	40	7.9 MHz	150	.37	790	PHENOLIC
9330-08	90542-09	2.20 ± 10%	40	7.9 MHz	135	.50	680	PHENOLIC
9330-10	90542-10	2.70 ± 10%	40	7.9 MHz	120	.65	600	PHENOLIC
9330-12	90542-11	3.30 ± 10%	40	7.9 MHz	105	1.00	480	PHENOLIC
9330-14	90542-12	3.90 ± 10%	40	7.9 MHz	100	1.20	440	PHENOLIC
9330-16	90542-13	4.70 ± 10%	40	7.9 MHz	90	1.80	360	PHENOLIC
9330-18	90542-14	5.60 ± 10%	35	7.9 MHz	55	.13	1340	IRON
9330-20	90542-15	6.80 ± 10%	35	7.9 MHz	50	.20	1080	IRON
9330-22	90542-16	8.20 ± 10%	35	7.9 MHz	44	.22	1030	IRON
9330-24	90542-17	10.0 ± 10%	35	7.9 MHz	42	.26	950	IRON
9330-26	90542-18	12.0 ± 10%	45	2.5 MHz	34	.45	720	IRON
9330-28	90542-19	15.0 ± 10%	45	2.5 MHz	32	.52	670	IRON
9330-30	90542-20	18.0 ± 10%	50	2.5 MHz	28	.70	580	IRON
9330-32	90542-21	22.0 ± 10%	60	2.5 MHz	24	1.00	480	IRON
9330-34	90542-22	27.0 ± 10%	60	2.5 MHz	22	1.30	420	IRON
9330-36	90542-23	33.0 ± 10%	60	2.5 MHz	20	1.50	390	IRON
9330-38	90542-24	39.0 ± 10%	70	2.5 MHz	18	2.00	340	IRON

Mold Size: 0.215 ± .010 diameter; 0.560 ± .010 length. Leads: AWG #22 TCW; 1.437 # .125 length. Power Rating: .33 Watt Max. at 90° C.

*Current based on (1) Temperature rise not to exceed 35°C at 90° ambient. (2) Overload not to exceed 1½ times rated current.

Refer to Pages 1-2 for Prices

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Miller Part Number	M S Type	Measured on Model 260A Q-Meter: Inductance Microhenries	Q Minimum	Testing Frequency	Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	Milliamp Rating Maximum*	Core Material
9340-00	91189-14	1.2 ± 10%	60	7.9 MHz	170	.075	2400	PHENOL
9340-02	91189-15	1.5 ± 10%	60	7.9 MHz	160	.090	2150	PHENOL
9340-03	91189-16	1.8 ± 10%	60	7.9 MHz	140	.135	1750	PHENOL
9340-04	91189-17	2.2 ± 10%	60	7.9 MHz	125	.160	1600	PHENOL
9340-06	91189-18	2.7 ± 10%	60	7.9 MHz	115	.220	1350	PHENOL
9340-08	91189-19	3.3 ± 10%	60	7.9 MHz	100	.305	1150	PHENOL
9340-10	91189-20	3.9 ± 10%	60	7.9 MHz	95	.45	955	PHENOL
9340-12	91189-21	4.7 ± 10%	60	7.9 MHz	90	.560	860	PHENOL
9340-14	91189-22	5.6 ± 10%	60	7.9 MHz	80	.745	745	PHENOL
9340-16	91189-23	6.8 ± 10%	60	7.9 MHz	75	1.05	635	PHENOL
9340-18	91189-24	8.2 ± 10%	60	7.9 MHz	68	1.4	550	PHENOL
9340-20	91189-25	10.0 ± 10%	60	7.9 MHz	60	1.9	460	PHENOL
9340-22	91189-26	12.0 ± 10%	40	2.5 MHz	53	2.65	395	PHENOL
9340-24	91189-27	15.0 ± 10%	40	2.5 MHz	50	3.25	355	PHENOL
9340-26	91189-28	18.0 ± 10%	40	2.5 MHz	45	4.15	315	PHENOL
9340-28	91189-29	22.0 ± 10%	50	2.5 MHz	25	.295	1150	IRON
9340-30	91189-30	27.0 ± 10%	45	2.5 MHz	22	.350	1050	IRON
9340-32	91189-31	33.0 ± 10%	60	2.5 MHz	20	.550	865	IRON
9340-34	91189-32	39.0 ± 10%	55	2.5 MHz	18	.65	810	IRON
9340-36	91189-33	47.0 ± 10%	65	2.5 MHz	16	1.0	640	IRON
9340-38	91189-34	56.0 ± 10%	65	2.5 MHz	14	1.15	620	IRON
9340-39	91189-35	68.0 ± 10%	75	2.5 MHz	13	1.85	470	IRON
9340-40	91189-36	82.0 ± 10%	75	2.5 MHz	13	2.10	440	IRON
9340-42	91189-37	100.0 ± 10%	75	2.5 MHz	12	2.50	405	IRON
9340-44	91189-38	120.0 ± 10%	95	.79 MHz	10	4.00	315	IRON

Mold Size: 0.280 ± .010 diameter; 0.900 ± .010 length. Leads: AWG #21 TCW; 1.437 ± .125 length. Power Rating: 3/8 Watt Max. at 90° C.
*Current based on (1) Temperature rise not to exceed 35°C at 90° ambient. (2) Overload not to exceed 1½ times rated current.

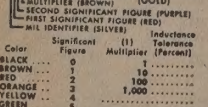
Miller Part Number	M S Type	Measured on Model 260A Q-Meter: Inductance Microhenries	Q Minimum	Testing Frequency	Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	Milliamp Rating Maximum*	Mold Size	Core Material
9350-00	75052-1	47 ± 10%	18	2.5 MHz	13.5	5.9	195	A	PHENOL
9350-02	75052-2	56 ± 10%	18	2.5 MHz	13	6.4	185	A	PHENOL
9350-04	75052-3	68 ± 10%	70	2.5 MHz	13	3.3	255	A	IRON
9350-06	75052-4	82 ± 10%	65	2.5 MHz	11.7	3.5	245	A	IRON
9350-08	75052-5	100 ± 10%	65	2.5 MHz	10.7	3.8	235	A	IRON
9350-10	75052-6	120 ± 10%	75	.79 MHz	9.3	4.7	215	A	IRON
9350-12	75052-7	150 ± 10%	75	.79 MHz	8.3	5.3	200	A	IRON
9350-14	75053-1	180 ± 10%	80	.79 MHz	6.0	5.5	225	B	IRON
9350-16	75053-2	220 ± 10%	80	.79 MHz	5.5	5.9	220	B	IRON
9350-18	75053-3	270 ± 10%	80	.79 MHz	5.1	6.6	210	B	IRON
9350-20	75053-4	330 ± 10%	75	.79 MHz	4.2	7.8	185	B	IRON
9350-22	75053-5	390 ± 10%	75	.79 MHz	3.9	8.7	180	B	IRON
9350-24	75054-1	470 ± 10%	80	.79 MHz	3.7	9.0	190	C	IRON
9350-26	75054-2	560 ± 10%	80	.79 MHz	3.5	10.0	180	C	IRON
9350-28	75054-3	680 ± 10%	75	.79 MHz	3.2	11.2	170	C	IRON
9350-30	75054-4	820 ± 10%	75	.79 MHz	3.0	13.0	155	C	IRON
9350-32	75054-5	1000 ± 10%	70	.79 MHz	2.7	14.5	145	C	IRON
9350-34	75055-1	1500 ± 10%	85	.25 MHz	2.2	22.0	127	D	IRON
9350-36		2000 ± 10%	85	.25 MHz	1.9	26.0	125	D	IRON
9350-37	75055-2	2200 ± 10%	85	.25 MHz	1.8	27.0	115	D	IRON
9350-38		2500 ± 10%	85	.25 MHz	1.7	30.0	115	D	IRON
9350-39	75055-3	2700 ± 10%	85	.25 MHz	1.6	32.0	105	D	IRON
9350-40		5000 ± 10%	70	.25 MHz	1.2	65.0	78	D	IRON
9350-41	75055-4	5100 ± 10%	70	.25 MHz	1.0	66.0	73	D	IRON
9350-44	75055-5	10000 ± 10%	70	.25 MHz	0.8	70.0	71	D	FERRITE

*Current based on (1) Temperature rise not to exceed 35°C at 90° ambient. (2) Overload not to exceed 1½ times rated current.

COIL DIMENSIONS	A	B	C	D	LEAD DIMENSIONS
DIAMETER ± .010	.250	.310	.375	.468	AWG 20, 21, 22 TCW
LENGTH ± .010	.560	.560	.625	.687	1.437 ± .125
MAX. WATT. AT 90° C.	.30	.40	.45	.55	

FIGURE 1.
REFERENCE TO MIL-C-15305C
6.8 MICROHENRIES ± 10 PERCENT

270 MICROHENRIES ± 5 PERCENT



Color	Significant Figure	(1) Multiplier	Inductance Tolerance (Percent)
BLACK	0	1	
BROWN	1	10	
RED	2	100	
ORANGE	3	1,000	
YELLOW	4		
GREEN	5		
BLUE	6		
VIOLET	7		
GRAY	8		
WHITE	9		
NONE (2)			± 20
SILVER			± 10
GOLD	DECIMAL POINT		± 5

(1) The multiplier is the factor by which the two significant figures are multiplied to yield the nominal inductance value.
(2) Indicates body color.

Molded Choke Coils Color Coding

For cylindrical choke coils. Cylindrical choke coils shall be marked with five colored bands. A silver band MIL identifier of double the width of the other four bands, located near one end of the coil, identifies military radiofrequency coils; four other bands of equal width, three indicating the inductance in microhenries and the fourth band indicating the tolerance in percent. Color coding shall be in accordance with the color code of table II. When either the first or second band of the three bands is gold, this band shall represent the decimal point for inductance values less than 10, and the other two bands shall represent significant figures. For inductance values of 10 or more, the first two bands shall represent significant figures, and the third band shall represent the multiplier. For small units, dots may be used instead of bands, when specified. The diameter of the MIL-identifier dot shall be larger than the other dots. The colors used shall be in accordance with MIL-STD-174. Typical color coding for units with inductance values less than 10 and for 10 or greater is shown on figure 1.

Refer to Pages 1-2 *for Prices*

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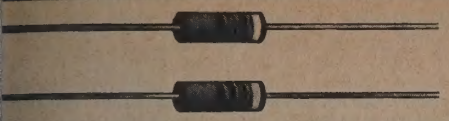


Molded R.F. Chokes

This series of molded chokes conforms to the requirements of Mil type LT8K.
Mold Size: .281 ± .031 Diameter; .937 ± .0625 Length.
Leads: 1.500 ± .125.

Miller Part Number	MS Type	Measured on Model 260A Q-Meter			Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum	Core Material
		Inductance Microhenries	Q Minimum	Testing Frequency				
9360-01	91189-1	1.1 ±20%	60	10.0 MHz	200	0.09	2800	PHENOLIC
9360-02	91189-2	2.2 ±20%	65	10.0 MHz	165	.20	1800	PHENOLIC
9360-03	91189-3	3.3 ±10%	50	6.0 MHz	130	.32	1500	PHENOLIC
9360-04	91189-4	4.7 ±10%	45	5.0 MHz	100	.60	1100	PHENOLIC
9360-05	91189-5	6.8 ±10%	40	4.0 MHz	90	1.10	800	PHENOLIC
9360-06	91189-6	10.0 ±10%	40	3.5 MHz	70	1.80	600	PHENOLIC
9360-07	91189-7	15.0 ±10%	40	3.0 MHz	55	3.00	500	PHENOLIC
9360-08	91189-8	22.0 ±10%	30	2.5 MHz	27	.30	1500	IRON
9360-09	91189-9	33.0 ±10%	45	2.0 MHz	21	.60	1100	IRON
9360-10	91189-10	47.0 ±10%	70	1.5 MHz	16	1.20	700	IRON
9360-11	91189-11	82.0 ±10%	85	1.2 MHz	14	2.20	600	IRON
9360-12	91189-12	100.0 ±10%	85	1.0 MHz	14	2.80	500	IRON
9360-13	91189-13	120.0 ±10%	85	1.0 MHz	13	4.00	400	IRON

Micro Miniature Molded R.F. Chokes

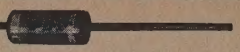
We are pleased to offer the following series of molded R.F. chokes. They represent what we believe to be the smallest package for the current rating specified. Color Coding is per MIL-C-15305.

Miller Part Number	Measured on Model 260A Q-Meter			Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum*	Core Material
	Inductance Microhenries	Q Minimum	Test Frequency				
9230-94	.10 ± 10%	40	25.0 MHz	690	.07	1100	PHENOLIC
9230-96	.12 ± 10%	40	25.0 MHz	650	.08	1100	PHENOLIC
9230-00	.15 ± 10%	38	25.0 MHz	600	.10	1100	PHENOLIC
9230-02	.18 ± 10%	35	25.0 MHz	550	.12	1010	PHENOLIC
9230-04	.22 ± 10%	33	25.0 MHz	510	.14	935	PHENOLIC
9230-06	.27 ± 10%	33	25.0 MHz	430	.16	875	PHENOLIC
9230-08	.33 ± 10%	30	25.0 MHz	410	.20	780	PHENOLIC
9230-10	.39 ± 10%	30	25.0 MHz	380	.30	640	PHENOLIC
9230-12	.47 ± 10%	30	25.0 MHz	340	.35	590	PHENOLIC
9230-14	.56 ± 10%	30	25.0 MHz	300	.50	495	PHENOLIC
9230-16	.68 ± 10%	28	25.0 MHz	275	.60	450	PHENOLIC
9230-18	.82 ± 10%	28	25.0 MHz	250	.85	380	PHENOLIC
9230-20	1.00 ± 10%	25	25.0 MHz	230	1.00	350	PHENOLIC
9230-22	1.20 ± 10%	25	7.9 MHz	150	.18	825	IRON
9230-24	1.50 ± 10%	28	7.9 MHz	140	.22	745	IRON
9230-26	1.80 ± 10%	30	7.9 MHz	125	.30	640	IRON
9230-28	2.20 ± 10%	30	7.9 MHz	115	.40	550	IRON
9230-30	2.70 ± 10%	37	7.9 MHz	100	.50	495	IRON
9230-32	3.30 ± 10%	45	7.9 MHz	90	.85	380	IRON
9230-34	3.90 ± 10%	45	7.9 MHz	82	1.00	350	IRON
9230-36	4.70 ± 10%	45	7.9 MHz	75	1.20	320	IRON
9230-38	5.60 ± 10%	50	7.9 MHz	68	1.80	260	IRON
9230-40	6.80 ± 10%	50	7.9 MHz	60	2.00	245	IRON
9230-42	8.20 ± 10%	55	7.9 MHz	55	2.70	210	IRON
9230-44	10.0 ± 10%	55	7.9 MHz	50	3.70	180	IRON
9230-46	12.0 ± 10%	45	2.5 MHz	40	2.70	210	IRON
9230-48	15.0 ± 10%	45	2.5 MHz	35	2.80	205	IRON
9230-50	18.0 ± 10%	50	2.5 MHz	32	3.10	195	IRON
9230-52	22.0 ± 10%	50	2.5 MHz	25	3.30	190	IRON
9230-54	27.0 ± 10%	50	2.5 MHz	22	3.50	185	IRON
9230-56	33.0 ± 10%	45	2.5 MHz	24	3.40	187	FERRITE
9230-58	39.0 ± 10%	45	2.5 MHz	22	3.60	180	FERRITE
9230-60	47.0 ± 10%	45	2.5 MHz	20	4.50	165	FERRITE
9230-62	56.0 ± 10%	45	2.5 MHz	18	5.70	145	FERRITE
9230-64	68.0 ± 10%	50	2.5 MHz	15	6.70	135	FERRITE
9230-66	82.0 ± 10%	50	2.5 MHz	14	7.30	130	FERRITE
9230-68	100.0 ± 10%	50	2.5 MHz	13	8.00	125	FERRITE
9230-70	120.0 ± 10%	30	.79 MHz	12	13.00	97	FERRITE
9230-72	150.0 ± 10%	30	.79 MHz	11	15.00	85	FERRITE
9230-74	180.0 ± 10%	30	.79 MHz	10	17.00	79	FERRITE
9230-76	220.0 ± 10%	30	.79 MHz	9	21.00	73	FERRITE
9230-78	270.0 ± 10%	30	.79 MHz	8	25.00	65	FERRITE
9230-80	330.0 ± 10%	30	.79 MHz	7	28.00	62	FERRITE
9230-82	390.0 ± 10%	30	.79 MHz	6.5	35.00	55	FERRITE
9230-84	470.0 ± 10%	30	.79 MHz	6	42.00	50	FERRITE
9230-86	560.0 ± 10%	30	.79 MHz	5	46.00	48	FERRITE
9230-88	680.0 ± 10%	30	.79 MHz	4.2	60.00	42	FERRITE
9230-90	820.0 ± 10%	30	.79 MHz	3.8	65.00	40	FERRITE
9230-92	1000.0 ± 10%	30	.79 MHz	3.4	72.00	38	FERRITE

Mold Size: .095 ± .010 Diameter; .250 ± .010 Length. Leads AWG #24 TCW; 1.500 ± .125 Length.
Power Rating: .17 Watt Max. at 90°C. For —00 thru —70, 94 and 96
.15 Watt Max. at 90°C. For —72 thru —92.
*Current based on (1) Temperature rise not to exceed 35° C at 90° C ambient. (2) Overload not to exceed 1½ times rated current.

Refer to Pages 1-2 for Prices

MOLDED SHIELDED MINIATURE R.F. CHOKES



Size: .157 ± .010 diameter; .395 ± .020 length.
Leads AWG #22TCW; 1.438 ± .188 length.
Meets MIL-C-15305, Grade 1, Class B.

*0.10 thru 0.82 uh — Phenolic Core
0.00 thru 12 uh — Iron Core
15 + uh — Ferrite Core

An extremely useful series of chokes where extraneous coupling presents problems in den packaging. Electromagnetic shielding limits coupling to less than 2% when two units a placed side by side. Conforms to MIL-C-15305 and MS 90537 (LT4K).

**Current based on (1) Temperature rise not to exceed 35° C at 90° C ambient.
(2) Overload not to exceed 1½ times rated current.
***Current required to decrease inductance 5% based on test voltage (V = 1.6f √

Miller Part Number	MS Type	Measured on Model 260A Q-Meter			Self Resonant Frequency Minimum (MHz)	D. C. Resistance Maximum	*Milliamp Rating Maximum	**Incremental Current Milliamps Approx.
		Inductance Microhenries ± 10%	Q Minimum	Testing Frequency				
9250-101	90537- 1	0.10	50	25	250.	.025	2900	2900
9250-121	90537- 2	.12	51	25	250	.034	2800	2800
9250-151	90537- 3	.15	51	25	250	.037	2750	2750
9250-181	90537- 4	.18	50	25	250	.047	2200	2200
9250-221	90537- 5	.22	49	25	250	.067	1700	1700
9250-271	90537- 6	.27	47	25	250	.11	1500	1500
9250-331	90537- 7	.33	46	25	250	.13	1300	1300
9250-391	90537- 8	.39	44	25	250	.18	1100	1100
9250-471	90537- 9	.47	44	25	235	.25	1000	1000
9250-561	90537-10	.56	43	25	210	.33	900	900
9250-681	90537-11	.68	42	25	190	.45	750	750
9250-821	90537-12	.82	40	25	180	.59	600	600
9250-102	90537-13	1.00	47	25	140	.07	1900	1900
9250-122	90537-14	1.20	46	7.9	130	.093	1600	1600
9250-152	90537-15	1.50	45	7.9	115	.12	1300	1300
9250-182	90537-16	1.80	43	7.9	105	.14	1200	1200
9250-222	90537-17	2.20	45	7.9	100	.19	1100	1100
9250-272	90537-18	2.70	46	7.9	92	.28	950	950
9250-332	90537-19	3.30	44	7.9	85	.35	800	800
9250-392	90537-20	3.90	44	7.9	75	.40	750	750
9250-472	90537-21	4.70	44	7.9	70	.55	650	650
9250-562	90537-22	5.60	47	7.9	65	.72	550	550
9250-682	90537-23	6.80	50	7.9	55	1.02	500	500
9250-822	90537-24	8.20	50	7.9	50	1.32	475	475
9250-103	90537-25	10.0	49	7.9	46	1.62	450	450
9250-123	90537-26	12.0	55	2.5	44	2.00	400	400
9250-153	90537-27	15.0	44	2.5	49	.80	620	250
9250-183	90537-28	18.0	45	2.5	45	.89	610	235
9250-223	90537-29	22.0	46	2.5	41	.96	600	220
9250-273	90537-30	27.0	49	2.5	38	1.19	500	200
9250-333	90537-31	33.0	45	2.5	34	1.37	490	190
9250-393	90537-32	39.0	53	2.5	29	1.93	410	180
9250-473	90537-33	47.0	52	2.5	27	2.11	400	175
9250-563	90537-34	56.0	49	2.5	25	2.23	380	160
9250-683	90537-35	68.0	51	2.5	21	2.70	370	150
9250-823	90537-36	82.0	45	2.5	10.5	2.44	360	140
9250-104	90537-37	100.0	52	2.5	10.	3.12	325	120
9250-124	90537-38	120.0	57	.79	9.7	3.60	290	95
9250-154	90537-39	150.0	56	.79	8.5	4.10	275	90
9250-184	90537-40	180.0	60	.79	8.0	4.40	260	85
9250-224	90537-41	220.0	58	.79	7.5	5.00	250	80
9250-274	90537-42	270.0	60	.79	7.0	5.80	240	70
9250-334	90537-43	330.0	54	.79	6.5	6.40	225	65
9250-394	90537-44	390.0	67	.79	6.2	7.40	200	60
9250-474	90537-45	470.0	60	.79	5.7	9.50	180	58
9250-564	90537-46	560.0	60	.79	4.7	10.5	174	55
9250-684	90537-47	680.0	60	.79	4.5	11.8	168	50
9250-824	90537-48	820.0	57	.79	4.2	13.0	152	45
9250-105	90537-49	1,000.0	65	.79	3.8	17.5	135	40
9250-125	90537-50	1,200.0	45	.25	1.5	22.1	115	35
9250-155	90537-51	1,500.0	49	.25	1.2	26.5	110	33
9250-185	90537-52	1,800.0	47	.25	1.0	29.9	105	30
9250-225	90537-53	2,200.0	50	.25	.97	33.8	99	27
9250-275	90537-54	2,700.0	47	.25	.92	47.3	83	25
9250-335	90537-55	3,300.0	43	.25	.84	53.0	80	22
9250-395	90537-56	3,900.0	43	.25	.80	73.8	67	20
9250-475	90537-57	4,700.0	44	.25	.74	81.6	63	19
9250-565	90537-58	5,600.0	45	.25	.73	98.9	56	17
9250-685	90537-59	6,800.0	43	.25	.66	111.0	54	16
9250-825	90537-60	8,200.0	42	.25	.54	119.0	52	15
9250-106	90537-61	10,000.0	39	.25	.47	137.0	49	14

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R.F. Chokes with Axial Leads

These chokes cover an inductance range from .1 microhenry to 10 millihenries or 5 decades with 8 coils per decade. Inductance values are ncreasing in steps of appr. 50%. Either single layer or 3-pi universal winding is used to insure low distributed capacity. Chokes are vound on low-loss molded phenolic or powdered iron core forms and are impregnated with a moisture and fungus-resistant varnish.

Phenolic Core Single Layer Windings

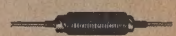
Dimensions of core: 3/16" diameter x 3/4" long. Leads are 1 1/2" long.

Miller Part Number	Measured on Model 260A Q-Meter			Self Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum	Diameter over Winding	Total Turns
	Inductance Nominal *	Q Minimum	Test Frequency					
4580	.10 uh	68	25.0 MHz	500	.017	3000	.270	3
4582	.15 uh	73	25.0 MHz	410	.018	2900	.270	4
4584	.22 uh	77	25.0 MHz	340	.020	2800	.270	7
4586	.33 uh	80	25.0 MHz	288	.024	2600	.270	10
4588	.47 uh	90	25.0 MHz	243	.034	2500	.270	13
4590	.68 uh	83	25.0 MHz	208	.036	2400	.270	18
4592	.75 uh	81	25.0 MHz	204	.040	2200	.270	21
4594	.82 uh	88	25.0 MHz	200	.043	2100	.270	22
4602	1.0 uh	60	7.9 MHz	190	.050	2000	.270	28
4604	1.5 uh	58	7.9 MHz	149	.093	1800	.270	34
4606	2.4 uh	56	7.9 MHz	120	.190	1500	.270	44
4608	3.9 uh	60	7.9 MHz	93	.450	1000	.270	50
4609	5.5 uh	57	7.9 MHz	80	.670	850	.270	64
4610	6.2 uh	57	7.9 MHz	76	.830	700	.270	66
4611	8.2 uh	57	7.9 MHz	65	1.20	600	.270	77
4612	10.0 uh	36	2.5 MHz	61	1.50	500	.270	96

*TOLERANCE 0.1 TO 1.0 UH ± 20%, 1.1 TO 10 UH ± 10%

Iron Core Single Layer Windings

Dimensions of core: 7/32" diameter x 7/8" long. Leads are 1 1/2" long.



Miller Part Number	Measured on Model 260A Q-Meter			Self Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum	Diameter over Winding	Total Turns
	Inductance Nominal	Q Minimum	Test Frequency					
4622	10 uh ±5%	69	2.5 MHz	40	.11	1500	.29	32
4624	15 uh ±5%	62	2.5 MHz	33	.17	1000	.29	36
4626	24 uh ±5%	65	2.5 MHz	25	.34	800	.29	50
4628	39 uh ±5%	70	2.5 MHz	20	.65	600	.29	63
4629	55 uh ±5%	72	2.5 MHz	17	1.0	500	.29	83
4630	62 uh ±5%	83	2.5 MHz	16	1.2	475	.29	77
4631	82 uh ±5%	85	2.5 MHz	13	1.9	450	.29	92
4632	100 uh ±5%	107	.79 MHz	12	3.0	400	.29	96

Phenolic Core 3-Section Windings

Dimensions of core: 3/16" diameter x 3/4" long. Leads are 1 1/2" long.

Miller Part Number	Measured on Model 260A Q-Meter			Self Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum	Diameter over Winding	Total Turns
	Inductance Nominal	Q Minimum	Test Frequency					
4642	.10 mh ±5%	49	.79 MHz	11	5.4	160	.406	219
4644	.15 mh ±5%	53	.79 MHz	8.8	6.5	160	.406	258
4646	.24 mh ±5%	56	.79 MHz	7.2	8.5	160	.438	321
4648	.39 mh ±5%	57	.79 MHz	5.6	11	160	.500	396
4649	.55 mh ±5%	58	.79 MHz	4.8	13	160	.500	420
4650	.62 mh ±5%	59	.79 MHz	4.5	15	160	.531	477
4651	.75 mh ±5%	56	.79 MHz	4.0	16	160	.531	495
4652	1.0 mh ±5%	59	.25 MHz	3.7	19	160	.563	574

Iron Core 3-Section Windings

Dimensions of core: 7/32" diameter x 7/8" long. Leads are 1 1/2" long.

Miller Part Number	Measured on General Radio Inductance Bridge Type 1632-A		Self Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum	Diameter over Winding	Total Turns
	Inductance @ 1000 Hertz	Q Minimum					
4662	1.0 mh ±5%	83 @ 250 kHz	2.6	8.6	160	.469	300
4664	1.5 mh ±5%	82 @ 250 kHz	2.1	11	160	.469	366
4666	2.4 mh ±5%	80 @ 250 kHz	1.7	15	160	.531	471
4668	3.9 mh ±5%	73 @ 250 kHz	1.4	20	160	.563	585
4669	5.5 mh ±5%	69 @ 250 kHz	1.1	25	160	.594	600
4670	6.2 mh ±5%	89 @ 250 kHz	1.0	37	100	.531	750
4671	8.2 mh ±5%	83 @ 250 kHz	.94	46	100	.563	900
4672	10 mh ±5%	68 @ 79 kHz	.82	50	100	.594	948

Ferrite Core 3-Section Windings

Dimensions of core: 1/4" diameter x 7/8" long. Leads are 1 1/2" long.

Miller Part Number	Measured on General Radio Inductance Bridge Type 1632-A		Self Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum	Diameter over Winding	Total Turns
	Inductance @ 1000 Hertz	Q Minimum					
6302	2.5 mh ±5%	106 @ 250 kHz	1.3	9.0	160	.469	300
6304	5.0 mh ±5%	91 @ 250 kHz	1.0	14	160	.531	432
6306	10 mh ±5%	108 @ 79 kHz	.71	31	100	.531	615
6308	25 mh ±5%	102 @ 79 kHz	.47	82	65	.531	969
6310	50 mh ±5%	113 @ 79 kHz	.33	127	65	.625	1392

Refer to Pages 1-2 for Prices

Sub-Miniature R.F. Chokes

An extremely versatile series of iron core R.F. chokes designed to meet the industries' demand for high reliability, ul miniature components. The coils are ideally suited to network and filter design, delay lines, and computer applicati The coils are impregnated with a moisture resistant lacquer and on special order they can be fungus-proofed per JA T-152 using varnish per MIL-V-173A. They can also be encapsulated in epoxy resin to conform to Grade 1, Clas of MIL-C-15305.

Miller Part No.	Measured on Model 260A Q-Meter			Resonant Frequency Minimum MHz	D.C. Resistance Maximum	Milliamp Rating Maximum	Maximum Winding Diameter	Form Length ± 1/32
	Inductance Nominal*	Q Minimum	Test Frequency					
70F107AP	.10 uh★	49	25 MHz	600	.013	3200	.156	5/16
70F157AP	.15 uh★	52	25 MHz	490	.025	1600	.141	5/16
70F227AP	.22 uh★	48	25 MHz	400	.038	1280	.141	5/16
70F337AP	.33 uh★	47	25 MHz	330	.070	800	.125	5/16
70F477AP	.47 uh★	46	25 MHz	280	.125	510	.125	5/16
70F687AP	.68 uh★	48	25 MHz	240	.200	400	.125	5/16
70F757AP	.75 uh★	48	25 MHz	224	.264	320	.125	5/16
70F827AP	.82 uh★	48	25 MHz	216	.290	300	.125	5/16
70F106AI	1.0 uh	41	25 MHz	118	.048	636	.165	1/4
70F126AI	1.2 uh	45	7.9 MHz	118	.072	400	.160	1/4
70F156AI	1.5 uh	42	7.9 MHz	102	.096	316	.160	1/4
70F186AI	1.8 uh	31	7.9 MHz	89	.096	400	.160	1/4
70F226AI	2.2 uh	43	7.9 MHz	87	.156	202	.160	1/4
70F276AI	2.7 uh	34	7.9 MHz	74	.168	256	.160	1/4
70F336AI	3.3 uh	40	7.9 MHz	66	.240	159	.150	1/4
70F396AI	3.9 uh	35	7.9 MHz	61	.264	159	.150	1/4
70F476AI	4.7 uh	43	7.9 MHz	53	.457	100	.150	1/4
70F566AI	5.6 uh	41	7.9 MHz	49	.492	100	.150	1/4
70F686AI	6.8 uh	40	7.9 MHz	49	.624	100	.150	1/4
70F756AI	7.5 uh	32	7.9 MHz	44	.624	100	.150	1/4
70F826AI	8.2 uh	37	7.9 MHz	41	.744	100	.150	1/4
70F916AI	9.1 uh	41	7.9 MHz	21	1.44	75	.160	1/4
70F105AI	10 uh	36	7.9 MHz	19	1.56	75	.160	1/4
70F125AI	12 uh	52	2.5 MHz	19	1.68	75	.160	1/4
70F155AI	15 uh	52	2.5 MHz	16	1.92	75	.165	1/4
70F185AI	18 uh	52	2.5 MHz	15	2.28	75	.165	1/4
70F225AI	22 uh	51	2.5 MHz	13	2.28	75	.165	1/4
70F255AI	25 uh	48	2.5 MHz	13	2.64	75	.170	1/4
70F275AI	27 uh	49	2.5 MHz	12	2.64	75	.170	1/4
70F335AI	33 uh	50	2.5 MHz	10	2.76	75	.170	1/4
70F395AI	39 uh	48	2.5 MHz	9.3	3.36	75	.175	1/4
70F475AI	47 uh	44	2.5 MHz	9.1	3.36	75	.175	1/4
70F565AI	56 uh	45	2.5 MHz	8.6	3.84	75	.180	1/4
70F685AI	68 uh	42	2.5 MHz	8.1	4.20	75	.180	1/4
70F755AI	75 uh	38	2.5 MHz	7.2	4.56	75	.185	1/4
70F825AI	82 uh	41	2.5 MHz	6.7	4.80	75	.185	1/4
70F915AI	91 uh	41	2.5 MHz	6.7	4.92	75	.185	1/4
70F104AI	100 uh	25	2.5 MHz	3.6	7.68	75	.165	1/4
70F124AI	120 uh	40	790 kHz	3.2	8.16	75	.165	1/4
70F154AI	150 uh	47	790 kHz	3.0	8.16	75	.165	1/4
70F184AI	180 uh	48	790 kHz	2.8	8.16	75	.170	1/4
70F204AI	200 uh	47	790 kHz	2.7	10.3	75	.170	1/4
70F224AI	220 uh	46	790 kHz	2.5	11.5	75	.170	1/4
70F254AI	250 uh	49	790 kHz	2.5	12.1	75	.170	1/4
70F274AI	270 uh	46	790 kHz	2.5	13.2	75	.175	1/4
70F304AI	300 uh	46	790 kHz	2.2	13.2	75	.175	1/4
70F334AI	330 uh	41	790 kHz	2.0	13.9	75	.175	1/4
70F354AI	350 uh	46	790 kHz	2.0	14.4	75	.180	1/4
70F394AI	390 uh	45	790 kHz	2.0	15.8	75	.180	1/4
70F474AI	470 uh	35	790 kHz	1.8	16.3	75	.185	1/4
70F504AI	500 uh	49	790 kHz	1.8	18.0	75	.195	1/4
70F564AI	560 uh	41	790 kHz	1.7	19.2	75	.195	1/4
70F684AI	680 uh	37	790 kHz	1.6	19.8	75	.200	1/4
70F754AI	750 uh	40	790 kHz	1.6	22.9	75	.210	1/4
70F824AI	820 uh	33	790 kHz	1.6	22.9	75	.210	1/4
70F914AI	910 uh	32	790 kHz	1.4	24.0	75	.220	1/4

*Tolerance 0.1 to 1.0 UH ± 20%, 1.1 to 15 UH ± 10%, over 15 UH ± 5%

★Measured with leads 1/4" long from Q Meter binding posts.

Continued on following page

Refer to Page 1-2 for Prices

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Sub-Miniature R.F. Chokes

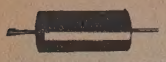
Continued from previous page

Miller Part Number	Measured on Model 260A Q-Meter			Resonant Frequency Minimum MHz	D.C. Resistance Maximum	Milliamp Rating Maximum	Maximum Winding Diameter	Form Length ± 1/32
	Inductance Nominal*	Q Minimum	Test Frequency					
103AI	1.00 mh	30	790 kHz	1.4	24.0	75	.225	1/4
123AI	1.20 mh	34	250 kHz	1.2	33.6	75	.220	1/4
153AI	1.50 mh	40	250 kHz	1.1	37.2	75	.225	1/4
183AI	1.80 mh	40	250 kHz	.96	42.0	75	.235	1/4
223AI	2.20 mh	40	250 kHz	.96	45.6	75	.240	1/4
253AI	2.50 mh	48	250 kHz	.96	45.6	75	.260	3/8
273AI	2.70 mh	50	250 kHz	.88	45.6	75	.260	3/8
333AI	3.30 mh	52	250 kHz	.80	51.6	75	.260	3/8
393AI	3.90 mh	53	250 kHz	.76	57.6	75	.275	3/8
473AI	4.70 mh	49	250 kHz	.68	64.8	75	.285	3/8
563AI	5.60 mh	53	250 kHz	.68	69.6	75	.300	3/8
683AI	6.80 mh	51	250 kHz	.64	78.0	75	.310	3/8
753AI	7.50 mh	49	250 kHz	.60	85.2	75	.310	3/8
823AI	8.20 mh	48	250 kHz	.60	92.4	75	.330	3/8
913AI	9.10 mh	52	250 kHz	.56	98.4	75	.330	3/8
102AI	10.0 mh	41	250 kHz	.52	101	75	.335	3/8
122AI	12 mh	46	79 kHz	.36	100	75	.300	1/2
152AI	15 mh	50	79 kHz	.32	113	75	.300	1/2
182AI	18 mh	49	79 kHz	.29	128	75	.325	1/2
222AI	22 mh	50	79 kHz	.27	144	75	.330	1/2
252AF	25 mh	59	79 kHz	.250	115	60	.300	5/8
272AF	27 mh	61	79 kHz	.244	120	60	.313	5/8
332AF	33 mh	61	79 kHz	.232	134	60	.313	5/8
392AF	39 mh	59	79 kHz	.220	147	60	.330	5/8
472AF	47 mh	57	79 kHz	.206	168	60	.344	5/8
502AF	50 mh	57	79 kHz	.196	175	60	.360	5/8
562AF	56 mh	57	79 kHz	.188	189	60	.360	5/8
682AF	68 mh	57	79 kHz	.180	215	60	.375	5/8
752AF	75 mh	53	79 kHz	.174	222	60	.390	5/8
822AF	82 mh	50	79 kHz	.168	238	60	.390	5/8
912AF	91 mh	51	79 kHz	.166	250	60	.390	5/8
101AF	100 mh	48	79 kHz	.157	278	60	.406	5/8

*Tolerance 0.1 to 1.0 UH ± 20%, 1.1 to 15 UH ± 10%, over 15 UH ± 5%

All catalog items stocked in depth. Orders shipped the same day received. See your distributor for quantity prices.

Encapsulated Radio Frequency Chokes



The following series of R.F. chokes range in value from 0.1 uh to 50 mh. These coils are encapsulated in epoxy resin and conform to MIL-C-15305. Min. lead length 1".

Miller Part Number	Measured on Model 260A Q-Meter: Inductance Nominal*	Q Minimum	Test Frequency	Self Resonant Frequency Minimum MHz	D. C. Resistance Maximum	*Milliamp Rating Maximum	Diameter and Length	Total Turns
4580-E	.10 uh	68	25 MHz	400	.017	3000	.312 x 1.000	3
4582-E	.15 uh	73	25 MHz	328	.018	2900	.312 x 1.000	4
4584-E	.22 uh	77	25 MHz	272	.020	2800	.312 x 1.000	7
4586-E	.33 uh	80	25 MHz	230	.024	2600	.312 x 1.000	10
4588-E	.47 uh	90	25 MHz	194	.034	2500	.312 x 1.000	13
4590-E	.68 uh	82	25 MHz	166	.036	2400	.312 x 1.000	18
4592-E	.75 uh	81	25 MHz	163	.040	2200	.312 x 1.000	21
4594-E	.82 uh	88	25 MHz	160	.043	2100	.312 x 1.000	22
4602-E	1.0 uh	60	7.9 MHz	152	.050	2000	.312 x 1.000	28
4604-E	1.5 uh	58	7.9 MHz	119	.093	1800	.312 x 1.000	34
4606-E	2.4 uh	56	7.9 MHz	96	.190	1500	.312 x 1.000	44
4608-E	3.9 uh	60	7.9 MHz	74	.450	1000	.312 x 1.000	50
4609-E	5.5 uh	57	7.9 MHz	64	.670	850	.312 x 1.000	64
4610-E	6.2 uh	57	7.9 MHz	61	.830	700	.312 x 1.000	66
4611-E	8.2 uh	57	7.9 MHz	52	1.20	600	.312 x 1.000	77
4612-E	10 uh	36	2.5 MHz	49	1.50	500	.312 x 1.000	96
4622-E	10 uh	69	2.5 MHz	32	.110	1500	.375 x 1.125	32
4624-E	15 uh	62	2.5 MHz	26	.170	1000	.375 x 1.125	36
4626-E	24 uh	65	2.5 MHz	20	.340	800	.375 x 1.125	50
4628-E	39 uh	70	2.5 MHz	16	.650	600	.375 x 1.125	63
4629-E	55 uh	72	2.5 MHz	13	1.00	500	.375 x 1.125	83
4630-E	62 uh	83	2.5 MHz	12	1.20	475	.375 x 1.125	77
4631-E	82 uh	85	2.5 MHz	10	1.90	450	.375 x 1.125	92
4632-E	100 uh	107	.79 MHz	9.6	3.00	400	.375 x 1.125	96
4642-E	.10 mh	49	.79 MHz	8.8	5.40	160	.500 x 1.000	219
4644-E	.15 mh	53	.79 MHz	7.0	6.50	160	.500 x 1.000	258
4646-E	.24 mh	56	.79 MHz	5.7	8.50	160	.500 x 1.000	321
4648-E	.39 mh	57	.79 MHz	4.5	11.0	160	.500 x 1.000	396
4649-E	.55 mh	58	.79 MHz	3.8	13.0	160	.625 x 1.000	420
4650-E	.62 mh	59	.79 MHz	3.6	15.0	160	.625 x 1.000	477
4651-E	.75 mh	56	.79 MHz	3.2	16.0	160	.625 x 1.000	495
4652-E	1.0 mh	59	.25 MHz	2.9	19.0	160	.625 x 1.000	574
4662-E	1.0 mh	83	.25 MHz	2.1	8.6	160	.625 x 1.125	300
4664-E	1.5 mh	82	.25 MHz	1.7	11.0	160	.625 x 1.125	366
4666-E	2.4 mh	80	.25 MHz	1.3	15.0	160	.625 x 1.125	471
4668-E	3.9 mh	73	.25 MHz	1.1	20.0	160	.625 x 1.125	585
4669-E	5.5 mh	69	.25 MHz	.88	25.0	160	.625 x 1.125	600
4670-E	6.2 mh	89	.25 MHz	.80	37.0	100	.625 x 1.125	750
4671-E	8.2 mh	83	.25 MHz	.75	46.0	100	.625 x 1.125	900
4672-E	10 mh	68	79 kHz	.65	50.0	100	.625 x 1.125	948
6302-E	2.5 mh	106	250 kHz	1.00	9.0	160	.625 x 1.125	300
6304-E	5.0 mh	91	250 kHz	.80	14.0	160	.625 x 1.125	432
6306-E	10 mh	108	79 kHz	.57	31.0	100	.625 x 1.125	615
6308-E	25 mh	102	79 kHz	.37	82.0	65	.625 x 1.125	969
6310-E	50 mh	113	79 kHz	.26	127	65	.625 x 1.125	1392

*TOLERANCE 0.1 TO 1.0 UH ± 20%, 1.1 TO 15 UH ± 10%, OVER 15 UH ± 5%

Air Core Printed Circuit R.F. Chokes

The following R.F. Chokes have been designed to offer a wide range of inductance values for use in printed circuit applications. Our standard stock of these coils is impregnated with a high grade coil varnish to prevent moisture absorption. On special orders we can supply these items treated with fungus resistant material, or encapsulated in epoxy resin to meet MIL-C-15305.

Coil length: 7/8" on all items. Diameter as tabulated.

Miller Part Number	Measured on General Radio Inductance Bridge Type 1632-A: Inductance @ 1000 Hertz	Q Minimum	Self Resonant Frequency Minimum MHz	D. C. Resistance Maximum	Milliamp Rating Maximum	Diameter over Winding	Total Turns
970	1.0 mh. ±5%	45 @ 250 kHz	1.57	20.6	125	.700	251
971	1.2 mh. ±5%	47 @ 250 kHz	1.46	23.8	125	.720	278
972	1.5 mh. ±5%	49 @ 250 kHz	1.38	26.4	125	.740	305
973	1.8 mh. ±5%	50 @ 250 kHz	1.24	29.6	125	.750	335
974	2.2 mh. ±5%	51 @ 250 kHz	1.04	32.9	125	.770	373
975	2.7 mh. ±5%	52 @ 250 kHz	1.06	37.4	125	.800	410
976	3.3 mh. ±5%	52 @ 250 kHz	.985	41.8	125	.820	450
977	3.9 mh. ±5%	52 @ 250 kHz	.900	46.7	125	.850	490
978	4.7 mh. ±5%	52 @ 250 kHz	.848	51.8	125	.875	533
979	5.6 mh. ±5%	51 @ 250 kHz	.760	57.6	125	.910	580
980	6.8 mh. ±5%	51 @ 250 kHz	.716	64.4	125	.950	635
981	8.2 mh. ±5%	38 @ 250 kHz	.520	73.0	100	.850	785
982	10.0 mh. ±5%	43 @ 79 kHz	.480	81.6	100	.880	850
983	12.0 mh. ±5%	46 @ 79 kHz	.424	92.4	100	.910	940
984	15.0 mh. ±5%	48 @ 79 kHz	.398	105	100	.950	1050
985	18.0 mh. ±5%	51 @ 79 kHz	.370	117	100	.985	1130
986	22.0 mh. ±5%	51 @ 79 kHz	.320	130	75	.985	1347
987	27.0 mh. ±5%	51 @ 79 kHz	.294	145	75	1.045	1367
988	33.0 mh. ±5%	44 @ 79 kHz	.288	251	75	1.000	1527
989	39.0 mh. ±5%	44 @ 79 kHz	.264	277	75	1.050	1647
990	47.0 mh. ±5%	40 @ 79 kHz	.190	316	50	.910	1995
991	56.0 mh. ±5%	39 @ 79 kHz	.177	351	50	.950	2160
992	68.0 mh. ±5%	33 @ 79 kHz	.160	391	50	1.000	2390
993	82.0 mh. ±5%	31 @ 79 kHz	.145	442	50	1.025	2590
994	100.0 mh. ±5%	29 @ 79 kHz	.138	473	50	1.075	2720

Refer to Pages 1-2 *for Prices*

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Single Pi Ferrite Core R.F. Chokes

This series of single pi R.F. Chokes affords maximum Q with minimum resistance through the use of ferrite core material. The coils are impregnated in a fungus resistant lacquer. Form Dimensions .187 x 5/8"

r	L ± 5%	Min. Q at Freq. kc.	Min. fo Mc	Max. R Ohms	Approx. Coil Dia.	Max. Ma.
AF	100 uh	140 @ 790	7.7	2.0	17/64	250
AF	120 uh	140 @ 790	7.0	2.2	17/64	250
AF	150 uh	160 @ 790	6.3	2.5	17/64	250
AF	180 uh	160 @ 790	6.0	2.9	9/32	250
AF	220 uh	160 @ 790	5.6	3.2	19/64	250
AF	270 uh	160 @ 790	5.1	3.6	19/64	250
AF	330 uh	160 @ 790	4.8	3.8	5/16	250
AF	390 uh	160 @ 790	4.4	4.2	21/64	225
AF	470 uh	160 @ 790	3.9	4.8	21/64	200
AF	560 uh	160 @ 790	3.6	5.3	11/32	200
AF	680 uh	160 @ 790	3.4	6.0	23/64	200
AF	820 uh	150 @ 790	3.1	6.8	3/8	200
AF	1.0 mh	140 @ 790	2.6	7.5	13/32	150
AF	1.2 mh	140 @ 250	2.2	7.8	31/64	150
AF	1.5 mh	140 @ 250	2.0	8.8	33/64	150
AF	1.8 mh	140 @ 250	1.8	11.0	35/64	150
AF	2.2 mh	100 @ 250	1.5	12.0	3/8	150
AF	2.7 mh	100 @ 250	1.4	13.5	13/32	125
AF	3.3 mh	100 @ 250	1.3	15.1	7/16	125
AF	3.9 mh	95 @ 250	1.2	18.0	29/64	125
AF	4.7 mh	95 @ 250	1.0	21.5	15/32	100
AF	5.6 mh	95 @ 250	1.0	25.0	1/2	80
AF	6.8 mh	95 @ 250	.90	29.0	17/32	80
AF	8.2 mh	70 @ 250	.91	30.0	31/64	80
AF	10.0 mh	65 @ 250	.85	34.0	33/64	80

Single Layer Color Coded R.F. Chokes

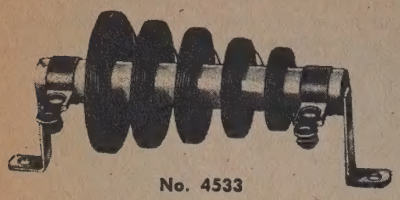
The following solenoid wound R.F. Chokes are impregnated with a thermosetting varnish and are color coded to EIA standards. Form Dimensions .156 x 1/2"

).	L*	Min. Q @ F	Min. Fo. Mc.	R Ohms Max.	I Ma. Max.	Core Material
AP	1.0 uh	45 @ 7.9 Mc	238	.20	1000	Phenolic
AP	1.2 uh	45 @ 7.9 Mc	218	.22	950	Phenolic
AP	1.5 uh	45 @ 7.9 Mc	200	.25	900	Phenolic
AP	1.8 uh	45 @ 7.9 Mc	180	.28	850	Phenolic
AP	2.2 uh	45 @ 7.9 Mc	165	.30	800	Phenolic
AP	2.7 uh	45 @ 7.9 Mc	149	.50	700	Phenolic
AP	3.3 uh	45 @ 7.9 Mc	136	.70	600	Phenolic
AP	3.9 uh	45 @ 7.9 Mc	127	.80	500	Phenolic
AP	4.7 uh	50 @ 7.9 Mc	114	1.00	400	Phenolic
AP	5.6 uh	50 @ 7.9 Mc	104	1.80	350	Phenolic
AP	6.8 uh	50 @ 7.9 Mc	94.8	1.85	300	Phenolic
AP	8.2 uh	50 @ 7.9 Mc	86.1	1.90	275	Phenolic
AP	10 uh	50 @ 7.9 Mc	78.5	3.00	250	Phenolic
AP	12 uh	30 @ 2.5 Mc	71.6	3.60	200	Phenolic
AP	15 uh	30 @ 2.5 Mc	63.9	6.00	150	Phenolic
AP	18 uh	30 @ 2.5 Mc	57.5	7.50	100	Phenolic
AI	22 uh	85 @ 2.5 Mc	36.1	2.00	500	Iron
AI	27 uh	80 @ 2.5 Mc	33.2	1.85	450	Iron
AI	33 uh	80 @ 2.5 Mc	30.6	2.00	450	Iron
AI	39 uh	90 @ 2.5 Mc	26.6	2.60	400	Iron
AI	47 uh	90 @ 2.5 Mc	24.9	3.50	350	Iron
AI	56 uh	90 @ 2.5 Mc	23.6	3.75	300	Iron
AI	68 uh	90 @ 2.5 Mc	21.6	4.00	250	Iron
AI	82 uh	100 @ 2.5 Mc	19.0	5.10	200	Iron
AI	100 uh	100 @ 2.5 Mc	17.8	6.00	150	Iron

ctance icro-H	Color Code	Inductance in Micro-H	Color Code	Inductance in Micro-H	Color Code
.0	Brown—Black—Gold	5.6	Green—Blue—Gold	27.0	Red—Violet—Black
.2	Brown—Red—Gold	6.8	Blue—Gray—Gold	33.0	Orange—Orange—Black
.5	Brown—Green—Gold	8.2	Gray—Red—Gold	39.0	Orange—White—Black
.8	Brown—Gray—Gold	10.0	Brown—Black—Black	47.0	Yellow—Violet—Black
.2	Red—Red—Gold	12.0	Brown—Red—Black	56.0	Green—Blue—Black
.7	Red—Violet—Gold	15.0	Brown—Green—Black	68.0	Blue—Gray—Black
.3	Orange—Orange—Gold	18.0	Brown—Gray—Black	82.0	Gray—Red—Black
.9	Orange—White—Gold	22.0	Red—Red—Black	100.0	Brown—Black—Brown
.7	Yellow—Violet—Gold	*Tolerance 1.0 to 2.2 uh ± 20%, 2.7 to 100 uh ± 10%			

Refer to Pages 1-2 for Prices

Transmitter R.F. Chokes



No. 4533

A series of transmitter chokes designed particularly for the constructor of amateur and commercial equipment. The mounting brackets may be removed to permit end mounting by means of the tapped holes in ends of ceramic forms.

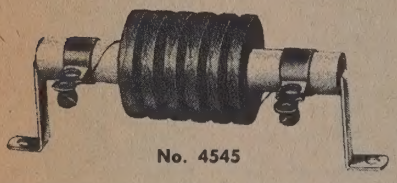
Dimensions: (form) ½" diameter by 3½" long.

Part No.	mh.	Ohms Max.	ma	Schematic	Net Price
4534	1.0	3.00	1000	1	$2.25
4535	1.5	4.32	1000	1	2.55
4533	2.5	5.40	750	1	2.82
4536	4.0	6.60	750	1	3.27
2881	7.0	8.60	750	1	4.50

Dimensions: (form) ½" diameter by 2½" long.

Part No.	mh.	Ohms Max.	ma	Schematic	Net Price
4550	2.0	7.80	400	1	$2.19
4551	4.0	12.0	400	1	2.79

High Inductance Chokes



No. 4545

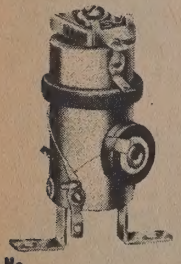
Miller High Inductance Chokes are particularly useful in the construction of special electronic equipment where inductance requirements are out-of-the ordinary for the usual air-core choke.

Dimensions: (form) ½" diameter by 2½" long.

Part No.	mh.	Ohms Max.	Fo. Min.	ma.	Q Min.	Net Price
4542	50	266	344 kc.	100	65 @ 79 kc.	$2.55
4543	75	348	312 kc.	100	66 @ 79 kc.	2.79
4544	100	420	256 kc.	100	60 @ 79 kc.	3.06

Dimensions: (form) ½" diameter by 3½" long.

4545	150	576	196 kc.	75	75 @ 50 kc.	4.35
4546	200	636	168 kc.	75	75 @ 50 kc.	4.77
4547	250	828	160 kc.	75	80 @ 50 kc.	5.10

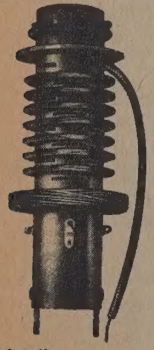


Capacity Relay Coil

This coil may be used for almost all types of capacity operated electronic devices such as alarm systems, show windows, counter displays, novelties, etc. The coil is a center-tapped oscillator winding with an adjustable grid coupling condenser and an r.f. choke, all assembled on a bakelite form. A typical wiring diagram is supplied.

Dimensions: ⅞" diameter (form) x 2¼" high.

Cat. No.	Use	Schematic	Net Price
695	Capacity Relay Coil	78	$2.70

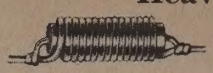


R.F. Transformer for HV Power Supply

These R.F. power supply transformers for use with television receivers and cathode ray oscilloscopes make it possible to construct an inexpensive source of high voltage DC. Two types are available, the #4525 for voltage to 5000 DC and the #4526 for voltages to 10,000 DC (or 30,000 DC in a voltage rectifier tripler circuit). Type 1B3-GT tubes are used as rectifiers and the R.F. oscillator circuit uses one or more type 6V6 or 6Y6 tubes connected in parallel. The high frequency AC source permits use of simple and inexpensive resistive capacitive filters with low ripple content in the output.

Cat. No.	Item	Schematic	Net Price
4525	H.V. R.F. Trans. (to 5 KV)	52	$6.78
	Dimensions: 1¼" diameter x 3¾" high.	(Not Illustrated)	
4526	H.V. R.F. Trans. (to 30 KV)	52	$10.20
	Dimensions: 2¼" diameter x 6" high.	(Illustrated)	

Heavy Duty Hash Chokes



Through the use of a molded powdered form we are able to offer a series of rela high inductance, high current hash filter cl

Part No.	Uh. ± 20%	Ohms Max.	Amperes	Dimensions	Schematic	Ne
5218	3.35	.010	13	17/32"x1 5/16"	3	
5219	4.9	.016	8	½"x1¼"	3	
5220	8.8	.021	5	½"x1¼"	3	
5230	4.0	.012	5	5/16"x29/32"	3	
5240	40.0	.082	2	9/16"x1¼"	3	
5248	68.0	.054	5	17/32"x1¼"	3	
5250	100.0	.216	2	5/16"x1¼"	3	

Filament Choke

Designed to prevent ignition and generator ference noise pick-up from battery wiring sy and from vibrator and motor-generator plate s systems.

Dimensions: ¾" diameter by 2" long.

Part No.	Uh. ± 20%	Ohms Max.	Amperes	Schematic	Ne
5221	4	.024	6	1	

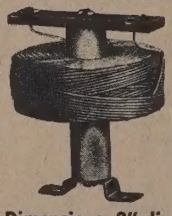
Plate Supply Choke

A companion choke to the #5221 filament choke fo in the power supply of battery and generator or vibrato supply packs for portable or mobile radio and elect equipment. Will prevent interference and r.f. "hash" pr in the power source from interfering with normal oper of the equipment. Unit is a duo-lateral wound coil enc in a sealed Kraft container and provided with conve axial wire leads. Insulated enclosure permits mountin out-of-the-way corners of the chassis.

Dimensions: ¾" diameter by 1⅛" long.

Part No.	Mh. ± 10%	Ohms Max.	MA	Schematic	Ne
5222	2.5	33.6	200	1	

Rectifier Hash Filter Chokes

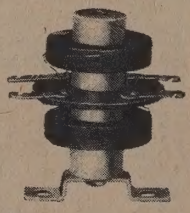


Duo-lateral wound chokes for use in series the plate leads of mercury vapor rectifiers to vent r.f. hash feed-back. The chokes are woun Alsimag forms and have solder type lugs for nection. Two hole mounting brackets prevent choke from turning. The terminal lugs are eye to a canvas base bakelite strip and provide a spa of 1½" between connections. The insulatio ground will withstand in excess of 10,000 v

Dimensions: 2" diameter x 2⅜" high.

Part No.	Mh. ± 10%	Ohms Max.	MA	Schematic	Ne
7867	4.50	5.40	500	1	
7868	2.75	2.76	1000	1	

Twin Rectifier Filter Chokes



These chokes are similar to those listed a except that two duo-lateral wound coils are sembled on a single ceramic form with a bak terminal plate. They are for use with full w mercury vapor rectifier tubes or with sepa tubes having a maximum plate current of than 300 MA. A two-hole mounting clip is vided. Insulation is adequate for peak volt up to 2500. The entire assembly is thorou impregnated in tropicalized Q-Max lacquer.

Dimensions: 1¼" diameter x 1¾" high. Mounting centers: 1".

Part No.	Mh.	Ohms	MA	Ne
7865	3.25 (per coil)	15.	300	
9501	1 mh. (per coil)	1.72	1,000	

Stud Mounted Low-Capacity R.F. Chok

Single stud mounted resistor-type r.f. chokes for us transmitters and receivers. Pj-wound for very low dis uted capacity. Constructed on moulded bakelite forms equipped with Miller "Sta-On" terminal clips which not work loose. Co-axial #6-32 thread mounting stud.

Dimensions: ⅝" o.d. by 1¼" high (plus 7/16" stud)

Part No.	mh*	Ohms	ma	Schematic	Ne
4527	1.0	16.8	200	1	
4530	2.5	27.6	200	1	

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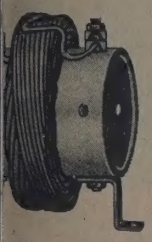
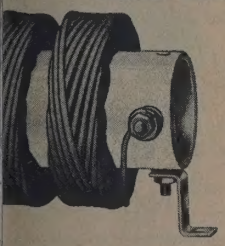
Medium Duty Duo-Lateral Line Filter Chokes



Miller Duo-Lateral wound chokes combine small physical size with low distributed capacity—an essential requirement for radio interference filter chokes—and are characteristics found in no other type of radio interference filter choke. These chokes are particularly recommended to manufacturers of farm lighting plants, sign flashers, signal systems, oil burners, diathermy equipment and all types of intermittent switching systems. Miller Duo-Lateral wound filter chokes are specially designed for technicians and electricians who find it desirable to construct their own filters as a part of the equipment being manufactured. When used with amateur and commercial transmitters, constructed with Miller Duo-Lateral wound chokes will prevent feedback into the power line, thus eliminating carrier radiation within the electrical wiring system. Miller Duo-Lateral wound chokes are wound on ceramic forms with suitable brass terminals.

Amperes	Ohms	Uh.	Dimensions	Schematic	Net Price
5	.28	570	2½" x 4"	1	$6.75
10	.15	370	2½" x 4"	1	7.59
15	.085	200	2½" x 4"	1	7.89
20	.05	135	2½" x 4"	1	8.25

Dual Line Filter Chokes



Miller Dual Duo-Lateral Line Filter Chokes are wound with two coils on one form, giving the advantage of small physical size in cases where space requirements are stringent and two single coils would occupy too much area. Identical in specifications, except for dimensions, to our single type Duo-Lateral chokes. They are wound on white ceramic forms 2" in diameter by 4½" long.

Amperes	Ohms	Uh.	Dimensions	Net Price
5	.28	570	4½" x 4"	$ 9.90
10	.15	370	4½" x 4"	11.88
15	.085	200	4½" x 4"	14.01
20	.05	135	4½" x 4"	17.16

Light Duty Duo-Lateral Line Filter Chokes

Single Line Filter Chokes

sions: 1⅞" x 1¾".

Amperes	Ohms	Uh.	Schematic	Net Price
2	.7	600	1	$2.64
3	.25	250	1	2.64
5	.1	100	1	2.64
8	.05	50	1	2.88

Dual Line Filter Chokes

sions: 3¼" x 2⅛".

Amperes	Ohms	Uh.	Net Price
2	.7	600	$6.12
3	.25	250	6.12
5	.1	100	6.12
8	.05	50	6.48

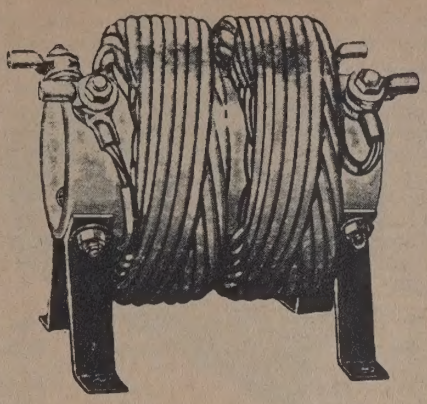
Phono-Oscillator Coil

The Miller Phono-Oscillator coil is used in the construction of radio operated phonograph players. The coils are permeability tuned and are assembled in an aluminum shield. The frequency range as provided by the adjustable iron core is from 540 to 700 KC. The windings are of the sectional duo-lateral type. The oscillator grid leak and grid coupling condenser are included in the coil assembly. A typical circuit diagram is supplied with each coil.

Dimensions: 1 7/16" square x 2½" high.

Use	Range	Net Price
Phono-Oscillator	540-700 KC	$3.42

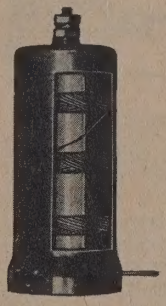
Heavy Duty Line Filter Chokes



Miller Heavy Duty Line Filter Chokes are wound on electrical porcelain forms measuring 4" in diameter by 8" long. All windings are of the duo-lateral type and use double cotton covered stranded cable expressly made for this purpose. Copper terminal lugs and brass bolts are used on all current-carrying parts. Four sturdy steel mounting brackets are provided with each choke. Windings are thoroughly impregnated with glyptal varnish and baked. In addition to their use for radio interference filter applications, these chokes find wide application in power circuits and high voltage rectifier circuits to reduce the peak value of transient surges and thus protect valuable equipment and switch gear. (Available from Los Angeles stock only.) (D-7830 is a dual type—two chokes on one form. Illustrated.)

Cat. No.	Amperes	Ohms	Uh.	Dimensions	Schematic	Net Price
7830	40	.036	250	8" x 10"	1	$37.80
D-7830	40	.036	250	8" x 10"		59.40
7831	60	.023	215	8" x 10"	1	57.00
7832	75	.010	175	8" x 12½"	1	58.80

High Tension Filter Choke



Through extensive research, Miller has developed what is believed to be the only satisfactory filter choke for the elimination of radio interference generated by high-tension (secondary circuit) neon sign animators and tubing. Chokes are sectional wound on ½" diameter by 2½" long ceramic forms and are enclosed in a weatherproof bakelite shell. All windings are impregnated against moisture absorption and all hardware is cadmium plated. The #7875 choke is insulated for 15,000 volts and for continuous operation at currents up to 100 milliamperes. The filter chokes are easily installed in existing installations and they are fully guaranteed. Many cities and communities have radio interference ordinances and these chokes are an indispensable part of every neon sign installation. Each installation requires one choke per circuit, plus one for the common circuit of the transformer and one for the common circuit of the animator. A complete circuit diagram is supplied with each choke.

Dimensions: 1⅜" diameter x 3¼" high.

Cat. No.	Volts	Amperes	Schematic	Net Price
7875	15,000	.1	1	$3.42

Radio Interference Filter Condenser

Highest quality mylar dielectric condenser especially developed for radio interference filter use. While rated at 220 volts AC-DC, this condenser is designed to withstand transient surges up to 1000 volts. Extremely low reactance to all interference frequencies is obtained by non-inductive construction. It will give a lifetime of trouble-free service and we give an unqualified guarantee against breakdown when used with interference filters on circuits having a maximum RMS voltage not exceeding 220.

Cat. No.	Capacity	Volts	Dimensions	Net Price
7804	2.0 mfd.	220 AC	⅞" x 1" x 2½"	$5.88

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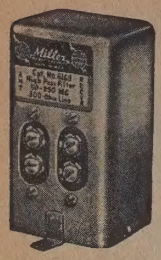
TV High-Pass Filters

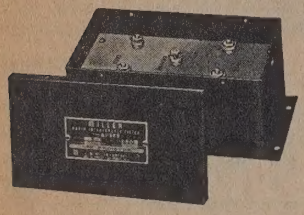


This TV High-Pass Filter will eliminate or greatly reduce annoying interference which may be picked up by the intermediate-frequency amplifier section of your television receiver. Improves picture clarity by rejecting interference from short wave stations, amateur transmitters, X-Ray and diathermy equipment, industrial r.f. heating units, electric appliances, etc. Clear, steady pictures insured with a minimum of noise streaks, sound bars or herringbone. Filter is designed to attenuate all signals from zero frequency to 40 megacycles. All television channels passed with minimum loss. No tuning required. Installed easily in antenna lead-in receiver. In aluminum shield with convenient "L"-type bracket for mounting.

Dimensions: 1 7/16" by 1 7/8" by 3 1/2" high.

Cat. No.	Use	Schematic	Net Price
6167	TV High-Pass Filter— 72-ohm line	46	$4.29
6168	TV High-Pass Filter—300-ohm line	47	4.29

Cash Register Filter



The radio interference produced by most cash registers and business machines, such as comptometers and billing machines, is, in many cases, quite severe and the general purpose type of filter does not always give adequate protection. The Miller Cash Register Filter has been expressly designed to meet the requirements of this type of equipment and will provide positive elimination of radio interference feed-back into the power supply line. The filter is of the two-section type and consists of four duo-lateral wound chokes and four .5 mfd. condensers.

Dimensions: 3 1/4" x 4" x 7" long.

Part No.	Volts	Amperes	Schematic	Net Price
7814	230	5	17	$32.67

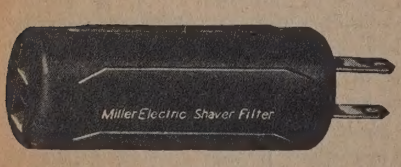
TV and Appliance Filter

Similar in construction to the Cat. No. 7818, the Cat. No. 7815 is designed for use with larger household appliances and commutator-type motors as well as communications-type receivers and recording equipment. Useful for elimination of TV interference in radio receivers when inserted in television receiver line cord. The #7815 filter uses larger capacitors and heavier capacity inductors to handle load requirements up to 550 watts. It is assembled in a gray Hammertone finished case.

Dimensions: 2 1/4" square x 4 1/2" long.

Cat. No.	Volts	Watts	Schematic	Net Price
7815	115	550	11	$12.21

Electric Shaver Filter

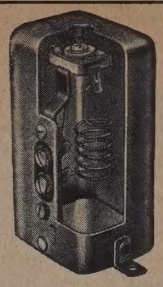


This filter contains an inductive - capacitive circuit consisting of two duo-lateral wound chokes and a non-inductive condenser, giving complete freedom from radio interference. No ground connection is needed for the filter and the danger of accidental shock is avoided through the use of shock-proof, unbreakable moulded rubber construction.

Dimensions: 1 1/8" diameter x 3" long.

Cat. No.	Volts	Watts	Finish	Schematic	Net Price
7817	115	50	Black	14	$4.95

TV and FM Wave Traps

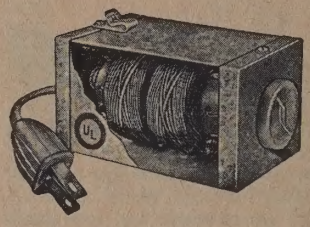


These new high-Q series-resonant wave traps completely eliminate interference and undesi images in television and FM receivers. When to the frequency of interfering signal, they are effective in reducing sound bars and herring patterns, or streaks and tearing in the televisio ture. Superimposed pictures from two differen tions also may be prevented. For FM receive cross-talk from interfering station is greatly d ished. Use of one of these traps generally reduce interference caused by a near-by transmitter to a degree will permit satisfactory reception from a weaker station.

Dimensions: 1 3/8" by 1 7/8" by 3 1/2" high.

Cat. No.	Frequency Range	Schematic
6163	150-250 MC	45
6164	75-150 MC	45
6165	40- 80 MC	45
6166	20- 40 MC	79

All-Wave Interference Filter

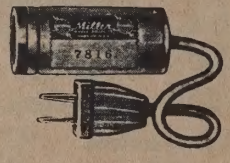


Designed to eliminate radio caused by small household appli such as food mixers, sewing mac vacuum cleaners, etc. When nected between the radio rec and the power outlet, the filter prevent pick-up of interference unwanted signals through the wiring system. When used household appliances the filter vents the interference energy getting into the house wiring d and disturbing receivers throug the neighborhood.

Dimensions: 2 1/4" square x 4 1/2" long.

Cat. No.	Volts	Watts	Schematic	
7818	115	220	13	$1

Capacity Type Line Filter

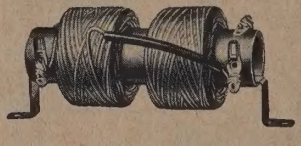


The Miller Capacity Line filter is an purpose filter for the elimination of interference caused by the operation household appliances such as electric ra heating pads, hair dryers, food mi vacuum cleaners and practically all com household devices and fractional h power motors. This filter will provide quate filtering in less severe cases of i ference and in instances where the cost of Miller Inductive-Capaci type filters is not warranted. A bakelite receptacle at one end and foot long cord with plug at the other end makes installation sim

Dimensions: 1 1/8" diameter x 2 5/8" long.

Cat. No.	Volts	Watts	Schematic	
7816	115	660	15	$

Un-Cased Interference Filters



These filters utilize two duo-lat wound chokes and a dual .2 n non-inductive wound, oil imp nated condenser. The filters are sembled on 1" diameter bak tubes and are provided with sol type terminals and brass mount brackets. While designed primarily for use with traffic signals, its fulness is by no means limited to this application. These filters may used for built-in application with any type of radio interference ducing electronic device whose voltage and current requirements within the rating limits of the filters.

Dimensions: #7880—2 1/4" diameter x 5" long; 90 uh; .125 ohms; dua mfd. condenser.
#7881—3 1/4" diameter x 5" long; 125 uh; .065 ohms; dua mfd. condenser.

Cat. No.	Volts	Amperes	Schematic	
7880	220	5.	10	$7
7881	220	10.	10	9

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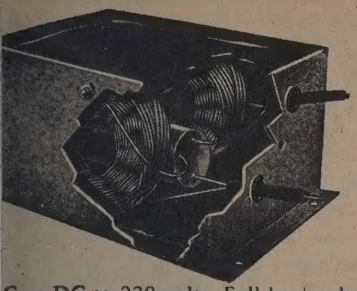
Industrial Filters



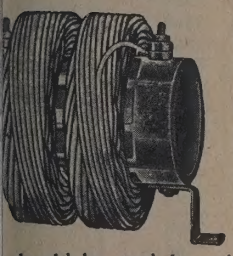
Miller industrial filters are designed for all types of radio interference producing devices and are highly effective at broadcast and short wave frequencies. The unique filter circuit, consisting of **two duo-lateral wound chokes and two single layer solenoid chokes combined with two 2. mfd. non-inductive wound paper dielectric condensers.**

C or DC to 220 volts. Full-load voltage drop is approximately 2

sions: 9¾" x 6½" x 5" high. Weight: Approx. 14 lbs.

Volts	Amps.	Schematic	Net Price
220	5	12	$49.50
220	10	12	51.00
220	20	12	52.80
220	30	12	57.00
220	40	12	58.80

Tower Lighting Chokes



Duo-lateral wound chokes designed for use in the tower lighting circuits of broadcast and commercial transmitter antenna towers. These chokes offer high impedance to radio frequency and have extremely low distributed capacity. Low power-frequency reactance and DC resistance insure minimum lighting power loss. The chokes are wound on ceramic forms and the windings are of the two-pi sectional type and are protected by a baked glyptal varnish. One should be used in series with each line of the tower lighting . A suitable weatherproof cabinet should be used to house the s and is preferably mounted at the base of the tower.

ss condensers from line-to-ground are NOT used with these r.

sions: 4" diameter x 4½" long.

Amps.	Ohms	Mh.	Schematic	Net Price
5	.56	1.20	1	$10.80
10	.30	.75	1	12.60
15	.17	.45	1	14.40

Teletype Radio Interference Filter

A compact skeleton type filter using both inductance and capacity for maximum effectiveness in suppressing the interference generated by the small brush-type universal motors used on teletype printers. The filter is constructed for fastening directly to the motor terminals and is easily installed. The two duo-lateral chokes are wound on bakelite tubing and the dual condenser is fastened inside of the tube. A ground terminal is provided for connection to the motor frame. May be used on AC or DC circuits up to 120 volts and at a maximum current of .5 ampere.

sions: 1⅜" diameter x 3" high.

Volts	Amperes	Schematic	Net Price
120	.5	10	$4.95

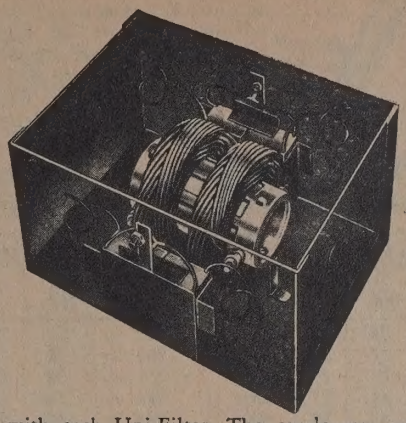
Loop Antenna Wave Traps

They are to be connected between the grid terminal of the loop antenna and the ground or grid return circuit of the receiver. When tuned to resonance these traps offer extremely low impedance to the interfering signal.

Dimensions: 1⅜" square by 1¾" high.

	Band	KC Range	Schematic	Net Price
1	I.F. & Commercial	250-500	81	$2.25
2	I.F. & Commercial	125-250	81	2.25
C1	Broadcast	900-1800	81	2.25
C2	Broadcast	500-900	81	2.25
	Amateur	1500-2500	81	2.25
	Amateur	2000-4500	81	2.25

Miller Uni-Filters

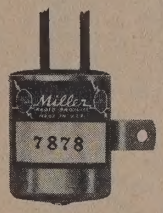


Universal type filters adaptable to any filter application through the simple process of making the necessary internal connections. They are designed for preventing feedback into the power lines from interference producing devices such as—farm lighting plants, electric refrigerators, diathermy and electrocautery devices, oil burner ignition systems, sign flashers, rotary converters, vibrator type converters, portable gas-electric plants and electric motors. Two capacitor blocks, each consisting of dual condensers, are included with each Uni-Filter. The condensers are rated at 220 volts AC or DC. Complete data and circuit diagram supplied with each filter.

Dimensions: 8" long x 6¼" wide x 4¾" high.

Cat. No.	Amperes	Ohms	Inductance	Schematic	Net Price
7819	5	.28	.570 mh	16	$32.67
7820	10	.15	.370 mh	16	36.00
7821	15	.085	.200 mh	16	37.95
7822	20	.05	.135 mh	16	37.95

Fluorescent Lighting Filter Chokes



The interference energy which is fed back into the AC lines may often affect the operation of radio and television receivers within a radius of several hundred feet. This interference energy may be absorbed by the use of suitable filter chokes and condensers. Miller Fluorescent filter chokes effectively block line interference feed-back and may be simply installed in the lighting fixture. The chokes are assembled in aluminum shields 1¼" in diameter by 1½" long, provided with a single hole mounting bracket, and flexible approved wire leads. Installation instructions supplied with each choke. Normally, two chokes should be used per fixture, each choke having a rating equal to the total wattage of all lamps in the fixture.

Cat. No.	Volts	Watts	Schematic	Net Price
7876	220	20	1	$2.28
7877	220	40	1	2.28
7878	220	80	1	2.28
7879	220	160	1	2.40

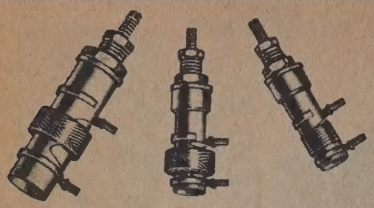
Shielded Wave Traps

Miller 812 Series Wave Traps reaches a new high of performance in the elimination of interference from CW and amateur phone stations and from commercial transmitters. A completely shielded high "Q" parallel resonant circuit. The units are easily installed, simply connect them in series with the antenna. In order to eliminate interference from more than one station connect several of these units in series. The traps will not interfere with the operation of the receiver at frequencies other than that to which the traps are tuned.

Dimensions: 1 7/16" square x 2½" high.

Cat. No.	Band	KC Range	Schematic	Net Price
812-X1	I.F. & Commercial	425-525	80	$2.25
812-X2	I.F. & Commercial	225-325	80	2.25
812-X3	I.F. & Commercial	150-225	80	2.25
812-BC1	Broadcast	1200-1600	80	2.25
812-BC2	Broadcast	800-1200	80	2.25
812-BC3	Broadcast	500-800	80	2.25
812-A	Amateur	1500-2500	80	2.25
812-B	Amateur	2000-4500	80	2.25
812-C	Amateur	5000-8500	80	2.25
812-D	Amateur	12000-18000	80	2.25
812-E	Amateur	25000-35000	80	2.25

All Items Subject to Price Change or Withdrawal Without Notice



Resinite Adjustable R.F. Coils

Resinite is a phenolic impregnated tubing which combines the mechanical and dielectric advan of phenolics with the high dielectric strength, moisture resistance, and non-corrosive prope of cellulose acetate. Resinite can be certified to MIL-P-79B Type PBG. This series feature extremely wide choice of inductance ranges and utilizes only the highest quality commerical m rials throughout. They find application where the severe moisture resistant characteristics of encapsulated units and the mechanical properties of the ceramics are not required.

Miniature Adjustable R.F. Coils

COILS WOUND ON FORM NO. 20A000

Dimensions (form): 1/4" Diameter x 13/16" long. Mounting hole 13/64".

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Maximum	Maximum Current Milliamperes	Diameter over Winding	Turns
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency				
20A107RBI	.088 uh	56	25. MHz	.120 uh	51	25. MHz	.041	1600	.343	3
20A157RBI	.131 uh	77	25. MHz	.180 uh	72	25. MHz	.044	1600	.343	4
20A227RBI	.162 uh	77	25. MHz	.264 uh	68	25. MHz	.051	1600	.343	5
20A337RBI	.238 uh	64	25. MHz	.396 uh	68	25. MHz	.054	1000	.343	6
20A477RBI	.356 uh	66	25. MHz	.564 uh	60	25. MHz	.078	1000	.343	7
20A687RBI	.508 uh	72	25. MHz	.816 uh	50	25. MHz	.082	635	.343	8
20A827RBI	.735 uh	57	25. MHz	.984 uh	41	25. MHz	.090	635	.343	9
20A106RBI	.885 uh	53	25. MHz	1.20 uh	42	7.9 MHz	.135	400	.343	10
20A156RBI	1.08 uh	44	7.9 MHz	1.80 uh	44	7.9 MHz	.205	400	.343	12
20A226RBI	1.62 uh	39	7.9 MHz	2.64 uh	44	7.9 MHz	.522	100	.343	13
20A336RBI	2.38 uh	40	7.9 MHz	3.96 uh	42	7.9 MHz	.640	100	.343	17
20A476RBI	3.56 uh	44	7.9 MHz	5.64 uh	42	7.9 MHz	.770	100	.343	20
20A686RBI	5.08 uh	43	7.9 MHz	8.16 uh	40	7.9 MHz	.950	100	.343	24
20A826RBI	7.35 uh	45	7.9 MHz	9.84 uh	38	7.9 MHz	1.00	100	.343	28
20A105RBI	8.85 uh	37	7.9 MHz	12.0 uh	45	2.5 MHz	1.45	100	.343	31
20A155RBI	10.8 uh	32	2.5 MHz	18.0 uh	52	2.5 MHz	1.70	100	.343	37
20A225RBI	16.2 uh	39	2.5 MHz	26.4 uh	42	2.5 MHz	2.10	100	.343	48
20A335RBI	23.8 uh	40	2.5 MHz	39.6 uh	40	2.5 MHz	2.59	100	.343	57
20A475RBI	35.6 uh	42	2.5 MHz	56.4 uh	37	2.5 MHz	3.10	100	.343	68
20A685RBI	50.8 uh	36	2.5 MHz	81.6 uh	32	2.5 MHz	3.84	100	.343	80
20A825RBI	73.5 uh	38	2.5 MHz	98.4 uh	36	2.5 MHz	4.71	100	.375	94
20A104RBI	88.5 uh	32	2.5 MHz	120. uh	37	.79 MHz	5.00	100	.406	105
20A154RBI	108. uh	28	.79 MHz	180. uh	40	.79 MHz	5.95	100	.406	125
20A224RBI	162. uh	40	.79 MHz	264. uh	38	.79 MHz	7.50	100	.406	154
20A334RBI	238. uh	43	.79 MHz	396. uh	44	.79 MHz	9.50	100	.437	187
20A474RBI	356. uh	43	.79 MHz	564. uh	38	.79 MHz	12.0	100	.500	224
20A684RBI	508. uh	40	.79 MHz	816. uh	32	.79 MHz	14.5	100	.500	266
20A824RBI	735. uh	39	.79 MHz	984. uh	32	.79 MHz	17.0	100	.562	308
20A103RBI	885. uh	40	.79 MHz	1.20 mh	24	.25 MHz	21.0	100	.594	341

Standard Adjustable R.F. Coils

COILS WOUND ON FORM NO. 21A000

Dimensions (form): 3/8" Diameter x 1 1/8" long. Mounting hole 1/4".

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Maximum	Maximum Current Milliamperes	Diameter over Winding	Turns
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency				
21A106RBI	.885 uh	64	25. MHz	1.20 uh	52	7.9 MHz	.121	635	.437	7
21A156RBI	1.08 uh	55	7.9 MHz	1.80 uh	52	7.9 MHz	.135	635	.437	9
21A226RBI	1.62 uh	56	7.9 MHz	2.64 uh	44	7.9 MHz	.160	635	.437	11
21A336RBI	2.38 uh	65	7.9 MHz	3.96 uh	35	7.9 MHz	.184	635	.437	15
21A476RBI	3.56 uh	60	7.9 MHz	5.64 uh	44	7.9 MHz	.210	635	.437	17
21A686RBI	5.08 uh	57	7.9 MHz	8.16 uh	41	7.9 MHz	.468	255	.437	18
21A826RBI	7.35 uh	53	7.9 MHz	9.84 uh	44	7.9 MHz	.780	255	.437	20
21A105RBI	8.85 uh	47	7.9 MHz	12.0 uh	51	2.5 MHz	1.46	100	.437	21
21A155RBI	10.8 uh	40	2.5 MHz	18.0 uh	49	2.5 MHz	1.76	100	.437	26
21A225RBI	16.2 uh	36	2.5 MHz	26.4 uh	41	2.5 MHz	2.08	100	.437	31
21A335RBI	23.8 uh	36	2.5 MHz	39.6 uh	32	2.5 MHz	2.56	100	.468	38
21A475RBI	35.6 uh	36	2.5 MHz	56.4 uh	38	2.5 MHz	3.50	100	.468	47
21A685RBI	50.8 uh	32	2.5 MHz	81.6 uh	32	2.5 MHz	3.50	100	.468	54
21A825RBI	73.5 uh	27	2.5 MHz	98.4 uh	36	2.5 MHz	3.94	100	.500	59
21A104RBI	88.5 uh	27	2.5 MHz	120. uh	40	.79 MHz	4.43	100	.500	65
21A154RBI	108. uh	20	.79 MHz	180. uh	40	.79 MHz	5.88	100	.531	86
21A224RBI	162. uh	33	.79 MHz	264. uh	39	.79 MHz	7.20	100	.531	103
21A334RBI	238. uh	34	.79 MHz	396. uh	38	.79 MHz	9.20	100	.562	128
21A474RBI	356. uh	33	.79 MHz	564. uh	35	.79 MHz	10.7	100	.562	155
21A684RBI	508. uh	32	.79 MHz	816. uh	32	.79 MHz	12.8	100	.625	180
21A824RBI	735. uh	26	.79 MHz	984. uh	26	.79 MHz	15.0	100	.625	200
21A103RBI	885. uh	26	.79 MHz	1.20 mh	28	.25 MHz	17.6	100	.687	235
21A153RBI	1.08 mh	32	.25 MHz	1.80 mh	32	.25 MHz	22.8	100	.687	291
21A223RBI	1.62 mh	36	.25 MHz	2.64 mh	35	.25 MHz	28.6	100	.781	350
21A333RBI	2.38 mh	32	.25 MHz	3.96 mh	31	.25 MHz	49.8	65	.687	422
21A473RBI	3.56 mh	37	.25 MHz	5.64 mh	32	.25 MHz	64.7	65	.750	507
21A683RBI	5.08 mh	36	.25 MHz	8.16 mh	32	.25 MHz	76.1	65	.812	591
21A823RBI	7.35 mh	36	.25 MHz	9.84 mh	20	.25 MHz	91.0	65	.843	694
21A102RBI	8.85 mh	36	.25 MHz	12.0 mh	18	79. kHz	104.	65	.950	774

Refer to Pages 1-2 for Prices

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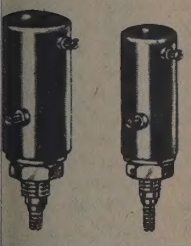
Jumbo Adjustable R.F. Coils

COILS WOUND ON FORM NO. 22A000

Dimensions (form): ½" Diameter x 1⅞" long. Mounting hole ¼".

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Maximum	Maximum Current Milliamperes	Diameter over Winding	Turns
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency				
1105RBI	8.85 uh	72	7.9 MHz	12.0 uh	59	2.5 MHz	.348	1000	.563	22
1155RBI	10.8 uh	66	2.5 MHz	18.0 uh	49	2.5 MHz	.400	1000	.563	29
1225RBI	16.2 uh	63	2.5 MHz	26.4 uh	52	2.5 MHz	.552	400	.563	31
1335RBI	23.8 uh	68	2.5 MHz	39.6 uh	44	2.5 MHz	.798	400	.563	42
1475RBI	35.6 uh	66	2.5 MHz	56.4 uh	56	2.5 MHz	1.85	160	.563	45
1685RBI	50.8 uh	64	2.5 MHz	81.6 uh	48	2.5 MHz	2.33	160	.563	59
1825RBI	73.5 uh	68	2.5 MHz	98.4 uh	76	2.5 MHz	3.48	160	.563	63
1104RBI	88.5 uh	26	2.5 MHz	120. uh	56	790. kHz	4.56	100	.563	56
1154RBI	108. uh	24	790. kHz	180. uh	60	790. kHz	5.60	100	.594	72
1224RBI	162. uh	43	790. kHz	264. uh	49	790. kHz	7.02	100	.625	88
1334RBI	238. uh	41	790. kHz	396. uh	45	790. kHz	8.25	100	.625	105
1474RBI	356. uh	40	790. kHz	564. uh	44	790. kHz	9.70	100	.625	125
1684RBI	508. uh	35	790. kHz	816. uh	36	790. kHz	12.1	100	.656	150
1824RBI	735. uh	32	790. kHz	984. uh	53	790. kHz	14.7	100	.688	175
1103RBI	885. uh	29	790. kHz	1.20 mh	56	250. kHz	17.1	100	.688	195
1153RBI	1.08 mh	42	250. kHz	1.80 mh	56	250. kHz	21.0	100	.718	240
1223RBI	1.62 mh	45	250. kHz	2.64 mh	63	250 kHz	27.6	100	.781	295
1333RBI	2.38 mh	45	250. kHz	3.96 mh	57	250. kHz	33.7	100	.843	385
1473RBI	3.56 mh	48	250. kHz	5.64 mh	54	250. kHz	41.1	100	.875	425
1683RBI	5.08 mh	43	250. kHz	8.16 mh	61	250. kHz	51.6	100	.938	510
1823RBI	7.35 mh	50	250. kHz	9.84 mh	39	250. kHz	78.0	65	.688	609
1102RBI	8.85 mh	51	250. kHz	12.0 mh	42	79. kHz	87.6	65	.718	699
1152RBI	10.8 mh	56	79. kHz	18.0 mh	47	79. kHz	122.	65	.718	837
1222RBI	16.2 mh	33	79. kHz	26.4 mh	56	79. kHz	150.	65	.750	1035
1332RBI	23.8 mh	35	79. kHz	39.6 mh	52	79. kHz	195.	65	.781	1260
1472RBI	35.6 mh	41	79. kHz	56.4 mh	60	79. kHz	210.	65	.843	1485
1682RBI	50.8 mh	48	79. kHz	81.6 mh	64	79. kHz	290.	65	.968	1800
1822RBI	73.5 mh	48	79. kHz	98.4 mh	65	79. kHz	300.	65	.984	1950
1101RBI	88.5 mh	49	79. kHz	120. mh	60	79. kHz	340.	65	1.00	2142

Encapsulated Adjustable R.F. Coils

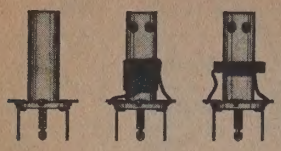


"UNISEAL," a recent development of the J. W. Miller Co., has successfully been applied to the production of encapsulated adjustable R.F. inductors. The primary difficulty encountered in the encapsulation of adjustable inductors is the prevention of moisture entering the coil form around the threaded stud. The moisture being subsequently absorbed by the coil form results in deterioration of coil efficiency. Miller has overcome this in "Uniseal" by using a molded epoxy shell open on only one end. To provide a smooth turning core the shell is filled with a silicone grease. The brass bushing holding the adjustable core is then bonded to the open end and the assembly inserted into another epoxy shell which is then filled with epoxy resin. This forms one solid mass of epoxy from the inner coil form to the outer shell. The unit is impervious to moisture and is extremely shock and vibration resistant.

FORM LENGTH: 1.000

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Maximum	Maximum Current Milliamperes	Diameter Inches	Turns
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency				
1106EBI	.73 uh	100	25. MHz	1.02 uh	90	7.9 MHz	.07	636	.437	9
1156EBI	1.15 uh	90	7.9 MHz	1.65 uh	86	7.9 MHz	.11	636	.437	12
1226EBI	1.88 uh	83	7.9 MHz	2.40 uh	82	7.9 MHz	.12	636	.437	16
1336EBI	2.32 uh	64	7.9 MHz	3.20 uh	73	7.9 MHz	.22	400	.437	19
1476EBI	3.20 uh	62	7.9 MHz	4.95 uh	49	7.9 MHz	.24	400	.437	25
1686EBI	4.80 uh	60	7.9 MHz	7.05 uh	64	7.9 MHz	.69	160	.437	27
1826EBI	5.41 uh	63	7.9 MHz	7.83 uh	66	7.9 MHz	.75	160	.437	31
1105EBI	6.25 uh	56	7.9 MHz	10.0 uh	58	7.9 MHz	1.2	100	.437	32
1155EBI	9.25 uh	64	7.9 MHz	15.0 uh	58	2.5 MHz	1.5	100	.437	43
1225EBI	16.2 uh	44	2.5 MHz	24.4 uh	72	2.5 MHz	3.2	65	.437	51
1335EBI	22.3 uh	34	2.5 MHz	33.0 uh	51	2.5 MHz	2.4	100	.437	61
1475EBI	31.2 uh	31	2.5 MHz	46.5 uh	46	2.5 MHz	2.7	100	.437	75
1685EBI	46.7 uh	32	2.5 MHz	70.0 uh	42	2.5 MHz	3.5	100	.437	98
1825EBI	54.0 uh	42	2.5 MHz	83.5 uh	58	2.5 MHz	6.0	65	.437	104
1104EBI	76.8 uh	30	2.5 MHz	99.2 uh	51	2.5 MHz	6.7	65	.625	102
1154EBI	108. uh	30	2.5 MHz	142. uh	45	.79 MHz	9.0	65	.625	100
1224EBI	169. uh	36	.79 MHz	232. uh	52	.79 MHz	12.	65	.625	120
1334EBI	258. uh	36	.79 MHz	346. uh	50	.79 MHz	15.	65	.625	148
1474EBI	344. uh	38	.79 MHz	460. uh	50	.79 MHz	17.	65	.625	172
1684EBI	505. uh	37	.79 MHz	655. uh	50	.79 MHz	21.	65	.625	206
1824EBI	650. uh	37	.79 MHz	855. uh	44	.79 MHz	23.	65	.625	234
1103EBI	860. uh	34	.25 MHz	1.10 mh	46	.79 MHz	26.	65	.625	270
1153EBI	1.2 mh	32	.25 MHz	1.56 mh	46	.25 MHz	34.	65	.625	320
1223EBI	2.0 mh	36	.25 MHz	2.40 mh	49	.25 MHz	44.	65	.625	400
1333EBI	3.0 mh	40	.25 MHz	3.44 mh	52	.25 MHz	53.	65	.625	476
1473EBI	4.2 mh	41	.25 MHz	4.81 mh	48	.25 MHz	66.	60	.625	560
1683EBI	6.1 mh	41	.25 MHz	6.88 mh	45	.25 MHz	83.	60	.625	660
1823EBI	6.9 mh	34	.25 MHz	8.75 mh	36	.25 MHz	83.	60	.625	990

Refer to Pages 1-2 for Prices



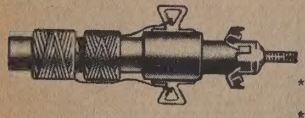
Vertical Mounted Printed Circuit Ceramic Adjustable R.F. Coils

COILS WOUND ON FORM NO. 46A013

*Self resonant frequency measured at maximum inductance.

For use where mechanical and trical stability is of paramoun portance. This series features icone impregnated ceramic and a silicone-fiberglas ter collar. A Kel-F locking inse provided with each coil to pr accidental core movement conditions of shock and vibr

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Max.	Max. Current Ma.	Min* Fo. MHz.	Dia. over Winding	Color Code	
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency					1	2
46A107CPC	.095 uh	70	25.0 MHz	.105 uh	74	25.0 MHz	.02	2500	370.	.343	Brown	
46A127CPC	.114 uh	55	25.0 MHz	.126 uh	75	25.0 MHz	.04	2000	340.	.343	Red	
46A157CPC	.142 uh	70	25.0 MHz	.158 uh	90	25.0 MHz	.03	2500	300.	.343	Orange	
46A187CPC	.171 uh	80	25.0 MHz	.189 uh	90	25.0 MHz	.03	2000	280.	.343	Yellow	
46A227CPC	.209 uh	70	25.0 MHz	.231 uh	90	25.0 MHz	.04	1300	245.	.343	Green	
46A277CPC	.256 uh	85	25.0 MHz	.284 uh	90	25.0 MHz	.06	635	220.	.343	Blue	
46A337CPC	.314 uh	85	25.0 MHz	.347 uh	90	25.0 MHz	.07	810	200.	.343	Violet	
46A397CPC	.370 uh	85	25.0 MHz	.410 uh	90	25.0 MHz	.08	635	185.	.343	Grey	
46A477CPC	.446 uh	85	25.0 MHz	.495 uh	85	25.0 MHz	.08	400	175.	.343	White	
46A567CPC	.532 uh	85	25.0 MHz	.590 uh	85	25.0 MHz	.09	400	160.	.343	Brown	Black
46A687CPC	.645 uh	85	25.0 MHz	.715 uh	85	25.0 MHz	.10	400	142.	.343	Brown	Brown
46A827CPC	.770 uh	85	25.0 MHz	.850 uh	85	25.0 MHz	.11	400	130.	.343	Brown	Red
46A106CPC	.950 uh	85	25.0 MHz	1.05 uh	85	25.0 MHz	.13	400	119.	.343	Brown	Orang
46A126CPC	1.14 uh	67	7.9 MHz	1.26 uh	67	7.9 MHz	.14	635	108.	.343	Brown	Yellow
46A156CPC	1.42 uh	71	7.9 MHz	1.58 uh	70	7.9 MHz	.16	635	97.	.343	Brown	Green
46A186CPC	1.62 uh	71	7.9 MHz	1.98 uh	68	7.9 MHz	.16	400	86.	.343	Brown	Blue
46A226CPC	1.99 uh	76	7.9 MHz	2.42 uh	73	7.9 MHz	.17	400	78.	.343	Brown	Violet
46A276CPC	2.42 uh	76	7.9 MHz	2.96 uh	75	7.9 MHz	.19	400	70.	.343	Brown	Grey
46A336CPC	2.96 uh	76	7.9 MHz	3.64 uh	75	7.9 MHz	.21	400	64.	.343	Brown	White
46A396CPC	3.50 uh	61	7.9 MHz	4.27 uh	52	7.9 MHz	.24	400	59.	.343	Red	Black
46A476CPC	4.24 uh	65	7.9 MHz	5.20 uh	51	7.9 MHz	.38	400	53.	.343	Red	Brown
46A566CPC	5.00 uh	65	7.9 MHz	6.30 uh	51	7.9 MHz	1.0	100	23.	.343	Red	Red
46A686CPC	6.10 uh	52	7.9 MHz	7.50 uh	52	7.9 MHz	1.1	100	21.	.343	Red	Orang
46A826CPC	7.30 uh	48	7.9 MHz	8.90 uh	56	7.9 MHz	1.2	100	20.	.343	Red	Yellow
46A105CPC	8.50 uh	48	7.9 MHz	11.5 uh	52	7.9 MHz	1.3	100	18.	.343	Red	Green
46A125CPC	10.8 uh	48	2.5 MHz	13.2 uh	56	2.5 MHz	1.4	100	16.	.343	Red	Blue
46A155CPC	13.2 uh	60	2.5 MHz	16.5 uh	56	2.5 MHz	1.6	100	14.	.343	Red	Violet
46A185CPC	16.2 uh	59	2.5 MHz	19.5 uh	56	2.5 MHz	1.8	100	12.	.343	Red	Grey
46A225CPC	19.5 uh	63	2.5 MHz	24.3 uh	56	2.5 MHz	2.0	100	11.	.375	Red	White
46A275CPC	24.2 uh	61	2.5 MHz	29.5 uh	68	2.5 MHz	2.2	100	10.	.375	Orange	Black
46A335CPC	29.5 uh	59	2.5 MHz	36.5 uh	67	2.5 MHz	2.7	100	9.2	.375	Orange	Brown
46A395CPC	35.0 uh	58	2.5 MHz	43.0 uh	64	2.5 MHz	2.9	100	8.0	.375	Orange	Red
46A475CPC	42.0 uh	56	2.5 MHz	51.5 uh	56	2.5 MHz	2.9	100	6.8	.406	Orange	Orang
46A565CPC	50.0 uh	56	2.5 MHz	62.0 uh	60	2.5 MHz	3.2	100	5.8	.406	Orange	Yellow
46A685CPC	61.0 uh	52	2.5 MHz	75.0 uh	59	2.5 MHz	3.5	100	5.3	.406	Orange	Green
46A825CPC	74.0 uh	56	2.5 MHz	90.0 uh	55	2.5 MHz	3.9	100	4.8	.406	Orange	Blue
46A104CPC	90.0 uh	48	2.5 MHz	110.0 uh	52	2.5 MHz	4.1	100	4.4	.406	Orange	Violet
46A124CPC	108.0 uh	65	.79 MHz	132.0 uh	62	.79 MHz	4.5	100	4.1	.406	Orange	Grey
46A154CPC	132.0 uh	64	.79 MHz	165.0 uh	72	.79 MHz	5.0	100	3.7	.406	Orange	White
46A184CPC	162.0 uh	59	.79 MHz	198.0 uh	62	.79 MHz	5.5	100	3.5	.406	Yellow	Black
46A224CPC	197.0 uh	64	.79 MHz	243.0 uh	63	.79 MHz	6.0	100	3.2	.437	Yellow	Brown
46A274CPC	242.0 uh	68	.79 MHz	295.0 uh	68	.79 MHz	6.6	100	3.0	.437	Yellow	Red
46A334CPC	295.0 uh	67	.79 MHz	365.0 uh	60	.79 MHz	7.3	100	2.8	.437	Yellow	Orange
46A394CPC	350.0 uh	64	.79 MHz	430.0 uh	64	.79 MHz	8.0	100	2.5	.468	Yellow	Yellow
46A474CPC	420.0 uh	67	.79 MHz	515.0 uh	64	.79 MHz	10.	100	2.3	.468	Yellow	Green
46A564CPC	500.0 uh	65	.79 MHz	620.0 uh	62	.79 MHz	12.	100	2.2	.500	Yellow	Blue
46A684CPC	610.0 uh	64	.79 MHz	750.0 uh	60	.79 MHz	13.	100	2.1	.500	Yellow	Violet
46A824CPC	740.0 uh	60	.79 MHz	900.0 uh	58	.79 MHz	15.	100	2.0	.531	Yellow	Grey
46A103CPC	900.0 uh	61	.79 MHz	1100.0 uh	58	.79 MHz	18.	100	1.9	.531	Yellow	White



Adjustable Wide Range Inductors

Dimensions: Max. dia. 7/8"x2 1/4" long. Mtg. hole 5/16"

*Inductance calculated at frequency shown.

**Minimum self resonant frequency measured at maximum inductance.

Due to the wide range of these coils t will find immediate application in m prototype designs where the exact va of the required inductance is not kno

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Max.	Max. Current Ma.	Min.** Fo. MHz.	Dia. over Winding	Total Turns
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency					
9001	40. uh	85	2.5 MHz	.240 mh	220	790. kHz	2.04	250	6.0	.40	102
9002	.180 mh	80	790. kHz	.800 mh	170	790. kHz	4.08	250	4.0	.45	204
9003	.570 mh	73	790. kHz	2.80 mh	110	250. kHz	8.52	250	.90	.58	376
9004	2.10 mh	72	250. kHz	8.00 mh	88	250. kHz	15.4	250	.62	.68	608
9005	6.00 mh	69	250. kHz	16.0 mh	105	79. kHz	33.6	200	.40	.80	1000
9006	12.0 mh	43	79. kHz	40.0 mh	72	79. kHz	91.2	125	.26	.75	1480
9007	30.0 mh	43	79. kHz	105. mh	76	50 kHz*	148.	75	.14	.68	2480
9008	78.0 mh	36	79. kHz	240. mh	61	20 kHz*	264.	75	.10	.75	3860
9009	180. mh	20	20. kHz*	750. mh	41	20 kHz*	620.	50	.03	.75	6100

Refer to Pages 1-2 for Prices

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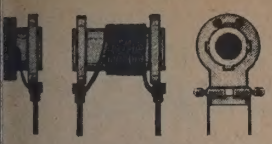

Horizontal Mounted Printed Circuit Ceramic Adjustable R.F. Coils

COILS WOUND ON FORM NO. 47A024

*Self resonant frequency measured at maximum inductance

Fundamentally equivalent to the 46A series in electrical characteristics, this series provides the designer with the choice of a horizontally mounted coil for use where height is a problem or access to the top of the P.C. board is restricted.

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Max.	Max. Current Ma.	Min.* Fo. MHz.	Dia. over Winding	Color Code	
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency					1	2
107CPC	.095 uh	70	25.0 MHz	.105 uh	90	25.0 MHz	.02	2500	500.0	.312	Brown	
127CPC	.114 uh	55	25.0 MHz	.126 uh	85	25.0 MHz	.04	2000	500.0	.312	Red	
157CPC	.142 uh	70	25.0 MHz	.158 uh	90	25.0 MHz	.03	2500	450.0	.312	Orange	
187CPC	.171 uh	80	25.0 MHz	.189 uh	90	25.0 MHz	.03	2000	450.0	.312	Yellow	
227CPC	.209 uh	70	25.0 MHz	.231 uh	90	25.0 MHz	.04	1300	450.0	.312	Green	
277CPC	.256 uh	85	25.0 MHz	.284 uh	90	25.0 MHz	.06	635	400.0	.312	Blue	
337CPC	.314 uh	85	25.0 MHz	.347 uh	90	25.0 MHz	.07	810	380.0	.312	Violet	
397CPC	.370 uh	85	25.0 MHz	.410 uh	90	25.0 MHz	.08	635	330.0	.312	Grey	
477CPC	.446 uh	85	25.0 MHz	.495 uh	90	25.0 MHz	.08	400	280.0	.312	White	
567CPC	.532 uh	85	25.0 MHz	.590 uh	90	25.0 MHz	.09	400	240.0	.312	Brown	Black
687CPC	.645 uh	85	25.0 MHz	.715 uh	90	25.0 MHz	.10	400	220.0	.312	Brown	Brown
827CPC	.770 uh	90	25.0 MHz	.850 uh	90	25.0 MHz	.11	400	200.0	.312	Brown	Red
106CPC	.950 uh	90	25.0 MHz	1.05 uh	90	25.0 MHz	.13	400	180.0	.312	Brown	Orange
126CPC	1.14 uh	90	7.9 MHz	1.26 uh	80	7.9 MHz	.14	400	170.0	.312	Brown	Yellow
156CPC	1.42 uh	75	7.9 MHz	1.58 uh	80	7.9 MHz	.16	400	140.0	.312	Brown	Green
186CPC	1.62 uh	75	7.9 MHz	1.98 uh	85	7.9 MHz	.16	400	130.0	.312	Brown	Blue
226CPC	1.99 uh	75	7.9 MHz	2.42 uh	80	7.9 MHz	.17	400	110.0	.312	Brown	Violet
276CPC	2.42 uh	80	7.9 MHz	2.96 uh	80	7.9 MHz	.19	400	90.0	.312	Brown	Grey
336CPC	2.96 uh	80	7.9 MHz	3.64 uh	75	7.9 MHz	.21	400	90.0	.312	Brown	White
396CPC	3.50 uh	80	7.9 MHz	4.27 uh	65	7.9 MHz	.24	400	80.0	.312	Red	Black
476CPC	4.24 uh	80	7.9 MHz	5.20 uh	60	7.9 MHz	.38	400	70.0	.312	Red	Brown
566CPC	5.00 uh	65	7.9 MHz	6.30 uh	65	7.9 MHz	1.0	100	29.0	.343	Red	Red
686CPC	6.10 uh	65	7.9 MHz	7.50 uh	70	7.9 MHz	1.1	100	27.0	.343	Red	Orange
826CPC	7.30 uh	60	7.9 MHz	8.90 uh	70	7.9 MHz	1.2	100	25.0	.343	Red	Yellow
105CPC	8.50 uh	60	7.9 MHz	11.5 uh	70	7.9 MHz	1.3	100	23.0	.343	Red	Green
125CPC	10.8 uh	60	2.5 MHz	13.2 uh	70	2.5 MHz	1.4	100	20.0	.343	Red	Blue
155CPC	13.2 uh	65	2.5 MHz	16.5 uh	70	2.5 MHz	1.6	100	18.0	.343	Red	Violet
185CPC	16.2 uh	65	2.5 MHz	19.5 uh	70	2.5 MHz	1.8	100	16.0	.343	Red	Grey
225CPC	19.5 uh	65	2.5 MHz	24.3 uh	70	2.5 MHz	2.0	100	14.5	.375	Red	White
275CPC	24.2 uh	65	2.5 MHz	29.5 uh	70	2.5 MHz	2.2	100	13.0	.375	Orange	Black
335CPC	29.5 uh	65	2.5 MHz	36.5 uh	70	2.5 MHz	2.7	100	11.5	.375	Orange	Brown
395CPC	35.0 uh	65	2.5 MHz	43.0 uh	70	2.5 MHz	2.9	100	10.0	.375	Orange	Red
475CPC	42.0 uh	70	2.5 MHz	51.5 uh	70	2.5 MHz	2.9	100	8.5	.375	Orange	Orange
565CPC	50.0 uh	70	2.5 MHz	62.0 uh	70	2.5 MHz	3.2	100	7.3	.406	Orange	Yellow
685CPC	61.0 uh	65	2.5 MHz	75.0 uh	70	2.5 MHz	3.5	100	6.7	.406	Orange	Green
825CPC	74.0 uh	65	2.5 MHz	90.0 uh	65	2.5 MHz	3.9	100	6.1	.406	Orange	Blue
104CPC	90.0 uh	65	2.5 MHz	110.0 uh	65	2.5 MHz	4.1	100	5.5	.406	Orange	Violet
124CPC	108.0 uh	60	.79 MHz	132.0 uh	65	.79 MHz	4.5	100	5.2	.406	Orange	Grey
154CPC	132.0 uh	65	.79 MHz	165.0 uh	65	.79 MHz	5.0	100	4.8	.406	Orange	White
184CPC	162.0 uh	70	.79 MHz	198.0 uh	70	.79 MHz	5.5	100	4.4	.406	Yellow	Black
224CPC	197.0 uh	70	.79 MHz	243.0 uh	70	.79 MHz	6.0	100	4.1	.437	Yellow	Brown
274CPC	242.0 uh	70	.79 MHz	295.0 uh	70	.79 MHz	6.6	100	3.8	.437	Yellow	Red
334CPC	295.0 uh	75	.79 MHz	365.0 uh	75	.79 MHz	7.3	100	3.5	.468	Yellow	Orange
394CPC	350.0 uh	75	.79 MHz	430.0 uh	75	.79 MHz	8.0	100	3.2	.468	Yellow	Yellow
474CPC	420.0 uh	75	.79 MHz	515.0 uh	75	.79 MHz	10.0	100	2.9	.468	Yellow	Green
564CPC	500.0 uh	75	.79 MHz	620.0 uh	75	.79 MHz	12.0	100	2.75	.500	Yellow	Blue
684CPC	610.0 uh	70	.79 MHz	750.0 uh	70	.79 MHz	13.0	100	2.65	.500	Yellow	Violet
824CPC	740.0 uh	65	.79 MHz	900.0 uh	65	.79 MHz	14.5	100	2.5	.531	Yellow	Grey
103CPC	900.0 uh	65	.79 MHz	1100.0 uh	65	.79 MHz	17.5	100	2.4	.562	Yellow	White

Adjustable Wide Range Tapped Inductors

Dimensions: Max. dia. 7/8" x 2 1/4" long. Mtg. hole 5/16"

*Inductance calculated at frequency shown.

**Minimum self resonant frequency measured at maximum inductance.

An inexpensive series of adjustable inductors that feature large inductance change, excellent Q, and a tap at one third the total turns. These coils should find application in many prototype designs.

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Max.	Max. Current Ma.	Min.* Fo. MHz.	Dia. over Winding	Total Turns	Turns to Tap
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency						
2011	40. uh	85	2.5 MHz	.240 mh	220	790 kHz	2.04	250	6.0	.40	102	34
2012	.180 mh	80	790. kHz	.800 mh	170	790 kHz	4.08	250	4.0	.45	204	68
2013	.570 mh	73	790. kHz	2.80 mh	110	250 kHz	8.52	250	.90	.58	376	128
2014	2.10 mh	72	250. kHz	8.00 mh	88	250 kHz	15.4	250	.62	.68	608	203
2015	6.00 mh	69	250. kHz	16.0 mh	105	79 kHz	33.6	200	.40	.80	1000	333
2016	12.0 mh	43	79. kHz	40.0 mh	72	79 kHz	91.2	125	.26	.75	1480	493
2017	30.0 mh	43	79. kHz	105. mh	76	50 kHz*	148.	75	.14	.68	2480	827
2018	78.0 mh	36	79. kHz	240. mh	61	20 kHz*	264.	75	.10	.75	3860	1286
2019	180. mh	20	20. kHz*	750. mh	41	20 kHz*	620.	50	.03	.75	6100	2030

Refer to Pages 1-2 for Prices

Vertical Mounted Printed Circuit Velvetork Adjustable R.F. Coils

COILS WOUND ON FORM NO. 23A013

Dimensions (form only) Over Collar 3/8" Dia. x 3/4" long.

***Minimum self resonant frequency measured at maximum inductance**

The coil form is Polyester im nated Alpha-Cellulose tubing internally bonded resilient ribs provide both thread and torque trol. Coils may be adjusted either end of form.

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Max.	Max. Current Ma.	Min.* Fo. MHz.	Dia. over Winding	Color Code		
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency					1	2	3
23A107RPC	.095 uh	77	25.0 MHz	.125 uh	94	25.0 MHz	.02	4100	350.	.40	Brown	Black	S
23A157RPC	.130 uh	68	25.0 MHz	.170 uh	92	25.0 MHz	.02	1600	300.	.37	Brown	Green	S
23A227RPC	.185 uh	88	25.0 MHz	.265 uh	100	25.0 MHz	.02	1600	230.	.37	Red	Red	S
23A337RPC	.285 uh	88	25.0 MHz	.410 uh	93	25.0 MHz	.03	1000	198.	.37	Orange	Orange	S
23A477RPC	.420 uh	100	25.0 MHz	.580 uh	80	25.0 MHz	.03	2500	150.	.37	Yellow	Violet	S
23A687RPC	.540 uh	101	25.0 MHz	.850 uh	89	25.0 MHz	.03	1600	136.	.37	Blue	Grey	S
23A827RPC	.640 uh	101	25.0 MHz	1.00 uh	78	25.0 MHz	.03	1600	118.	.37	Grey	Red	S
23A106RPC	.760 uh	98	25.0 MHz	1.25 uh	70	7.9 MHz	.04	1600	114.	.37	Brown	Black	G
23A156RPC	1.20 uh	65	7.9 MHz	1.87 uh	70	7.9 MHz	.06	1000	89.	.37	Brown	Green	G
23A226RPC	1.65 uh	61	7.9 MHz	2.75 uh	65	7.9 MHz	.14	400	77.	.37	Red	Red	G
23A336RPC	2.40 uh	64	7.9 MHz	4.10 uh	60	7.9 MHz	.17	400	62.	.37	Orange	Orange	G
23A476RPC	3.40 uh	68	7.9 MHz	5.80 uh	60	7.9 MHz	.24	400	53.	.37	Yellow	Violet	G
23A686RPC	4.60 uh	64	7.9 MHz	8.50 uh	56	7.9 MHz	.39	250	45.	.37	Blue	Grey	G
23A826RPC	5.60 uh	64	7.9 MHz	10.0 uh	57	2.5 MHz	.64	160	40.	.37	Grey	Red	G
23A105RPC	7.10 uh	68	7.9 MHz	12.5 uh	55	2.5 MHz	.77	160	38.	.37	Brown	Black	B
23A155RPC	10.0 uh	58	2.5 MHz	18.7 uh	95	2.5 MHz	1.68	100	11.7	.37	Brown	Green	B
23A225RPC	14.8 uh	61	2.5 MHz	27.5 uh	90	2.5 MHz	1.91	100	8.4	.37	Red	Red	B
23A335RPC	22.0 uh	60	2.5 MHz	41.0 uh	75	2.5 MHz	2.34	100	6.7	.37	Orange	Orange	B
23A475RPC	31.0 uh	58	2.5 MHz	58.0 uh	68	2.5 MHz	2.72	100	5.6	.40	Yellow	Violet	B
23A685RPC	43.5 uh	56	2.5 MHz	85.0 uh	55	2.5 MHz	3.30	100	4.6	.40	Blue	Grey	B
23A825RPC	61.0 uh	48	2.5 MHz	100.0 uh	88	790. kHz	3.89	100	4.3	.40	Grey	Red	B
23A104RPC	76.0 uh	52	2.5 MHz	125.0 uh	90	790. kHz	4.39	100	3.8	.40	Brown	Black	Br
23A154RPC	105.0 uh	57	790. kHz	187.0 uh	92	790. kHz	5.46	100	3.3	.40	Brown	Green	Br
23A224RPC	160.0 uh	63	790. kHz	275.0 uh	90	790. kHz	6.70	100	2.9	.44	Red	Red	Br
23A334RPC	240.0 uh	66	790. kHz	410.0 uh	90	790. kHz	8.30	100	2.5	.44	Orange	Orange	Br
23A474RPC	360.0 uh	68	790. kHz	580.0 uh	81	790. kHz	10.50	100	2.1	.48	Yellow	Violet	Br
23A684RPC	530.0 uh	66	790. kHz	850.0 uh	75	790. kHz	12.90	100	1.75	.48	Blue	Grey	Br
23A824RPC	700.0 uh	64	790. kHz	1.00 mh	80	250. kHz	14.90	100	1.70	.53	Grey	Red	Br
23A103RPC	910.0 uh	66	790. kHz	1.25 mh	85	250. kHz	17.10	100	1.61	.58	Brown	Black	R
23A153RPC	990.0 uh	35	250. kHz	1.87 mh	60	250. kHz	28.20	65	.73	.45	Brown	Green	R
23A223RPC	1.60 mh	39	250. kHz	2.75 mh	62	250. kHz	34.80	65	.62	.45	Red	Red	R
23A333RPC	2.40 mh	41	250. kHz	4.10 mh	60	250. kHz	42.90	65	.60	.48	Orange	Orange	R
23A473RPC	3.40 mh	42	250. kHz	5.80 mh	57	250. kHz	51.60	65	.53	.48	Yellow	Violet	R
23A683RPC	5.15 mh	42	250. kHz	8.50 mh	50	250. kHz	63.60	65	.50	.55	Blue	Grey	R
23A823RPC	7.40 mh	42	250. kHz	10.00 mh	50	79. kHz	75.60	65	.40	.55	Grey	Red	R
23A102RPC	9.80 mh	40	250. kHz	12.50 mh	52	79. kHz	87.30	65	.38	.55	Brown	Black	Or
23A152RPC	12.00 mh	39	79. kHz	18.70 mh	55	79. kHz	111.0	65	.32	.60	Brown	Green	Or
23A222RPC	12.10 mh	20	79. kHz	27.50 mh	51	79. kHz	197.0	33	.26	.60	Red	Red	Or
23A332RPC	18.20 mh	24	79. kHz	41.00 mh	54	79. kHz	244.0	33	.21	.60	Orange	Orange	Or
23A472RPC	27.50 mh	28	79. kHz	58.00 mh	56	79. kHz	302.0	33	.20	.60	Yellow	Violet	Or
23A682RPC	40.00 mh	32	79. kHz	85.00 mh	56	79. kHz	378.0	33	.16	.58	Blue	Grey	Or
23A822RPC	50.00 mh	34	79. kHz	100.00 mh	58	79. kHz	423.0	33	.15	.58	Grey	Red	Or
23A101RPC	62.00 mh	35	79. kHz	125.00 mh	56	79. kHz	468.0	33	.14	.60	Brown	Black	Yel

Shielded Subminiature Adjustable R.F. Coils

These compact adjustable coils offer a minimum two-to-one inductance range with relatively small changes in Q. The tu adjustment is accessible from either the top or bottom of the coil assembly. Magnetic shielding is achieved through the use o cores while the metal shield offers effective electrostatic shielding. Printed circuit terminals on base and shield.

Dimension: 1/2" sq. x 5/8" high. *Minimum self resonant frequency measured at maximum inductance.

Miller Part Number	Minimum Core Position			Maximum Core Position			R Ohms Max.	Max. Current Ma.	Min.* Fo. MHz
	Inductance Maximum	Q Min.	Test Frequency	Inductance Minimum	Q Min.	Test Frequency			
9050	1.5 uh	40	7.9 MHz	3.0 uh	41	7.9 MHz	.66	80	39.
9051	3.0 uh	46	7.9 MHz	7.0 uh	45	7.9 MHz	.85	125	23.
9052	7.0 uh	40	7.9 MHz	14.0 uh	62	2.5 MHz	1.38	80	12.
9053	14.0 uh	48	2.5 MHz	28.0 uh	66	2.5 MHz	2.10	80	7.2
9054	28.0 uh	48	2.5 MHz	60.0 uh	45	2.5 MHz	3.00	100	4.9
9055	60.0 uh	40	2.5 MHz	120. uh	69	790. kHz	4.00	100	3.6
9056	120. uh	52	790. kHz	280. uh	68	790. kHz	5.75	80	2.5
9057	280. uh	52	790. kHz	650. uh	62	790. kHz	12.0	80	1.7
9058	650. uh	36	790. kHz	1.3 mh	68	250. kHz	15.0	100	1.2
9059	1.3 mh	43	250. kHz	3.0 mh	53	250. kHz	23.0	100	.57
9060	3.0 mh	32	250. kHz	10.0 mh	32	79. kHz	76.0	30	.48
9061	8.0 mh	35	250. kHz	20.0 mh	38	79. kHz	110.	30	.33
9062	15.0 mh	25	79. kHz	40.0 mh	40	79. kHz	150.	30	.24
9063	20.0 mh	36	79. kHz	60.0 mh	60	79. kHz	175.	25	.09

Refer to Pages 1-2 for Prices

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Sub-Miniature Adjustable R.F. Coils

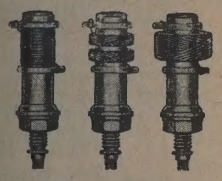
The following permeability tuned coils wound on silicone impregnated ceramic forms will find many applications where space restrictions rule out the use of the larger size coils in the 4400 and 4500 series. These coils mount by means of a bushing which requires an 11/64" hole.

Dimensions (form): 3/16" diameter x 5/8" long.

*Minimum self resonant frequency measured at maximum inductance.

iller art nber	Minimum Core Position Inductance Maximum	Q Min.	Test Frequency	Maximum Core Position Inductance Minimum	Q Min.	Test Frequency	R Ohms Max.	Max. Current Ma.	Min.* Fo. MHz.	Dia. over Winding	Turns
301	.190 uh	64	25. MHz	.250 uh	53	25. MHz	.014	1600	288.	.312	5¼
302	.300 uh	57	25. MHz	.390 uh	44	25. MHz	.017	1600	212.	.312	7¼
303	.440 uh	61	25. MHz	.620 uh	44	25. MHz	.031	1000	184.	.312	9¼
304	.770 uh	62	25. MHz	.900 uh	41	25. MHz	.054	636	148.	.312	11¼
305	1.00 uh	40	7.9 MHz	1.40 uh	37	7.9 MHz	.15	256	114.	.312	13¼
306	1.60 uh	40	7.9 MHz	2.40 uh	36	7.9 MHz	.25	202	92.	.312	17¼
307	2.70 uh	40	7.9 MHz	4.20 uh	36	7.9 MHz	.62	100	69.	.312	21¼
308	4.70 uh	42	7.9 MHz	6.80 uh	33	7.9 MHz	.91	100	60.	.312	30¼
309	7.80 uh	30	7.9 MHz	11.0 uh	42	2.5 MHz	1.4	100	18.	.312	34
310	14.0 uh	34	2.5 MHz	19.0 uh	37	2.5 MHz	1.9	100	13.	.312	47
311	22.0 uh	33	2.5 MHz	31.0 uh	38	2.5 MHz	2.2	100	12.	.343	73
312	36.0 uh	32	2.5 MHz	49.0 uh	33	2.5 MHz	3.1	100	9.6	.375	75
313	56.0 uh	23	2.5 MHz	97.0 uh	24	2.5 MHz	5.6	64	7.3	.375	91
314	111 uh	26	.79 MHz	171. uh	26	.79 MHz	7.9	64	6.0	.406	134
315	196 uh	25	.79 MHz	285. uh	24	.79 MHz	11.	64	4.4	.437	164

Standard Adjustable R.F. Coils



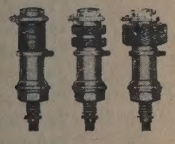
This series of variable inductors offers a higher Q coil with a slightly larger inductance range than can be obtained in either of the two smaller series. The same high grade silicone-impregnated ceramic forms are used in their construction to insure a product of high quality. These coils mount by means of a bushing that requires a 1/4" diameter mounting hole. Hardware consisting of nut, lock washer, and spring clip is supplied.

Dimensions (form): 3/8" diameter x 1 1/16" long.

*Minimum self resonant frequency measured at maximum inductance.

iller art nber	Minimum Core Position Inductance Maximum	Q Min.	Test Frequency	Maximum Core Position Inductance Minimum	Q Min.	Test Frequency	R Ohms Max.	Max. Current Ma.	Min.* Fo. MHz.	Dia. over Winding	Turns
403	.990 uh	18	25. MHz	1.50 uh	57	7.9 MHz	.04	1600	75.	.500	9¼
404	1.60 uh	67	7.9 MHz	3.10 uh	52	7.9 MHz	.08	1000	51.	.500	12¼
405	3.30 uh	70	7.9 MHz	6.50 uh	44	7.9 MHz	.17	636	41.	.500	18¼
406	7.30 uh	50	7.9 MHz	14.0 uh	35	2.5 MHz	.57	256	26.	.500	26¼
407	16.0 uh	52	2.5 MHz	29.0 uh	56	2.5 MHz	2.2	100	7.6	.500	34
408	33.0 uh	51	2.5 MHz	66.0 uh	37	.79 MHz	3.1	100	4.9	.500	49
409	74.0 uh	42	2.5 MHz	124 uh	44	.79 MHz	4.5	100	3.7	.500	73
410	138 uh	47	2.5 MHz	238 uh	44	.79 MHz	6.6	100	3.0	.531	103
411	270 uh	57	.79 MHz	451 uh	43	.79 MHz	8.9	100	2.2	.562	138
412	495 uh	56	.79 MHz	760 uh	41	.79 MHz	12.	100	2.0	.625	180
413	825 uh	41	.79 MHz	1.30 mh	27	.25 MHz	20.	100	1.7	.593	268
414	1.40 mh	40	.25 MHz	2.00 mh	33	.25 MHz	25.	100	1.6	.656	346

Miniature Adjustable R.F. Coils



A new series of small adjustable coils designed for the most exacting requirements. Wound on silicone impregnated high grade ceramic forms. Tuning is by means of a powdered iron core. These coils require little space and are for mounting in a 3/16" diameter hole.

Dimensions (form): 1/4" diameter x 7/8" long.

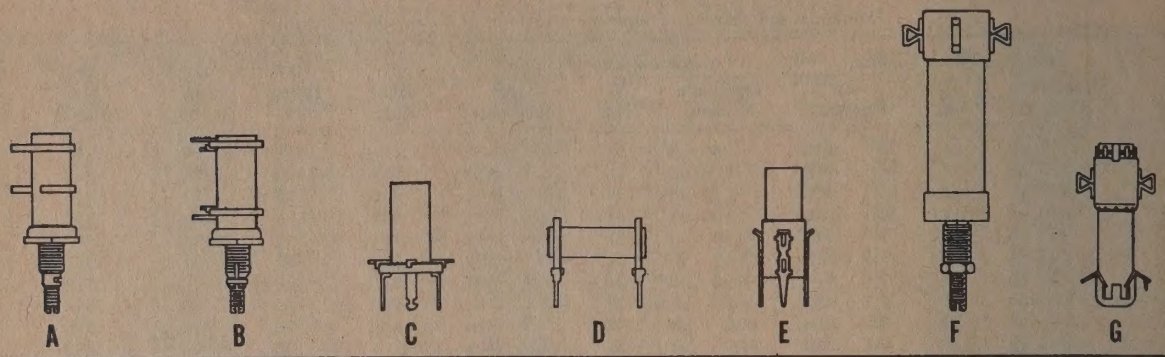
*Minimum self resonant frequency measured at maximum inductance.

iller art nber	Minimum Core Position Inductance Maximum	Q Min.	Test Frequency	Maximum Core Position Inductance Minimum	Q Min.	Test Frequency	R Ohms Max.	Max. Current Ma.	Min.* Fo. MHz.	Dia. over Winding	Turns
4501	.440 uh	80	25. MHz	.760 uh	52	25. MHz	.03	1600	142.	.406	8¼
4502	1.10 uh	72	25. MHz	1.50 uh	40	7.9 MHz	.06	1000	96.	.406	12¾
4503	1.70 uh	51	7.9 MHz	2.70 uh	36	7.9 MHz	.11	636	80.	.406	17¼
4504	3.10 uh	56	7.9 MHz	4.80 uh	33	7.9 MHz	.23	400	58.	.406	23¼
4505	5.50 uh	60	7.9 MHz	8.60 uh	33	7.9 MHz	.49	256	45.	.406	33
4506	9.90 uh	52	7.9 MHz	15.0 uh	41	2.5 MHz	1.5	100	32.	.406	40
4507	17.0 uh	47	2.5 MHz	23.0 uh	53	2.5 MHz	2.3	100	19.	.406	50
4508	26.0 uh	48	2.5 MHz	33.0 uh	51	2.5 MHz	2.9	100	16.	.406	62
4509	38.0 uh	50	2.5 MHz	57.0 uh	48	2.5 MHz	3.4	100	12.	.406	76
4511	66.0 uh	44	2.5 MHz	114. uh	40	.79 MHz	4.1	100	5.2	.406	88
4512	120. uh	46	.79 MHz	190. uh	40	.79 MHz	5.7	100	4.1	.437	117
4513	209. uh	45	.79 MHz	314. uh	32	.79 MHz	7.7	100	3.2	.468	157
4514	350. uh	53	.79 MHz	475. uh	41	.79 MHz	10.	100	2.9	.500	193
4514-1	528. uh	44	.79 MHz	760. uh	40	.79 MHz	14.	100	2.5	.562	234

Refer to Pages 1-2 *for Prices*

Ceramic, Phenolic, Nylon and Alpha Cellulose Coil Forms
Printed Circuit and Bushing Mount

This short form listing of our adjustable coils forms tabulates the major parameters and available cores. All metal parts are plated for protection against corrosion and the powdered iron core materials are moisture proofed. For detailed information, request our Coil Form Catalog.



Miller Part Number	Style	Form Material	Form Dimensions	Mounting	Terminals
4300	A	Ceramic	.205 x .593	Bushing	2 Wire rings
60A022	B	Ceramic	.205 x .593	Bushing	2 Collars with 1 Terminal on e
60A024	B	Ceramic	.205 x .593	Bushing	2 Collars with 2 Terminals on e
4500	A	Ceramic	.260 x .858	Bushing	2 Wire rings
62A022	B	Ceramic	.260 x .858	Bushing	2 Collars with 1 Terminal on e
62A024	B	Ceramic	.260 x .858	Bushing	2 Collars with 2 Terminals on e
4400	A	Ceramic	.375 x 1.060	Bushing	2 Wire rings
64A022	B	Ceramic	.375 x 1.060	Bushing	2 Collars with 1 Terminal on e
64A024	B	Ceramic	.375 x 1.060	Bushing	2 Collars with 2 Terminals on e
66A022	B	Ceramic	.500 x 1.249	Bushing	2 Collars with 1 Terminal on e
66A024	B	Ceramic	.500 x 1.249	Bushing	2 Collars with 2 Terminals on e
20A000	A	Phenolic (PBG)	.250 x .860	Bushing	2 Wire rings
21A000	A	Phenolic (PBG)	.375 x 1.125	Bushing	2 Wire rings
22A000	F	Phenolic (PBG)	.500 x 1.937	Bushing	4 Terminals
27A013 (1)	C	Alpha Cellulose	.162 x .400	Printed Circuit	3 Terminals
27A014 (1)	C	Alpha Cellulose	.162 x .400	Printed Circuit	4 Terminals
26A024 (1)	D	Alpha Cellulose	.162 x .520	Printed Circuit	2 Collars with 2 Terminals on e
25A014 (1)	C	Alpha Cellulose	.211 x .625	Printed Circuit	4 Terminals
24A024 (1)	D	Alpha Cellulose	.211 x .680	Printed Circuit	2 Collars with 2 Terminals on e
46A013	C	Ceramic	.260 x .625	Printed Circuit	3 Terminals
46A014	C	Ceramic	.260 x .625	Printed Circuit	4 Terminals
47A024	D	Ceramic	.260 x .625	Printed Circuit	2 Collars with 2 Terminals on e
23A013*	E	Alpha Cellulose	.281 x .750	Printed Circuit	3 Terminals
23A014*	E	Alpha Cellulose	.281 x .750	Printed Circuit	4 Terminals
4200*	G	Nylon	.285 x 1.250	Clip	2 Terminals

The following cores are available for all listed coil forms. Add the Core Dash No. after the Miller Part No., i.e. 4500-4.

Core Dash No.	Recommended Frequency Range	Material	Color Code
—0	Form only		
—1	0.2 — 1.5 MHz	Powdered Iron	Yellow
—2	1.0 — 20 MHz	Powdered Iron	Red
—3	20 — 50 MHz	Powdered Iron	Green
—4	50 — 200 MHz	Powdered Iron	White
—5	100 and up MHz	Brass	None
—6	2.0 — 25 MHz	Powdered Iron	Purple
—7	25 and up MHz	Powdered Iron	Blue
—8*	Under 25 MHz	Ferrite	None

(1) —6 and —7 cores are ferrite for these coil forms *Available for 23A013, 23A014 and 4200 forms only
Mounting hardware supplied where required

Refer to Pages 1-2 *for Prices*

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10.7 MC Transistor Transformers

A complete series of I.F. Transformers specifically designed for operation with transistors in intermediate frequency stages operating at 10.7 megacycles. Proper impedance matching is assured when these transformers are used with the specified transistor shown on our data sheet. Through the use of a Discriminator, maximum efficiency, and good limiting of the F.M. signal are assured.

Miniature Double Tuned

ions: ¾" Sq. x 2" High.

Item	Schematic	List Price
10.7 Mc. Transistor First I.F.	114	$4.40
10.7 Mc. Transistor Second I.F.	114	4.45
10.7 Mc. Transistor Third I.F.	114	4.45
10.7 Mc. Discriminator	20	4.90
10.7 Mc. Ratio Detector with diodes	94	9.20
10.7 Mc. Ratio Detector	95	4.90

niature Printed Circuit Double Tuned

ally the same as part numbers 1601, 1602, 1603 and 1605, tems have printed circuit terminals and shield lugs.
ions: ¾" sq. x 2⅛" high.

Item	Schematic	List Price
10.7 Mc. Transistor First I.F.	114	$5.50
10.7 Mc. Transistor Second I.F.	114	5.55
10.7 Mc. Transistor Third I.F.	114	4.90
10.7 Mc. Ratio Detector with Diodes	94	10.90

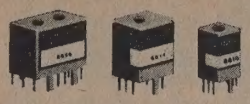
Sub Miniature Style

Single Tuned I.F.'s and Double Tuned Ratio Detector

Dimensions: I.F. Transformers 13/32" sq. x ½" high
Ratio Detector 13/32" length x ¾" width x ½" high.

Description	List Price
First I.F. 10.7 Mc.	$4.30
Second I.F. 10.7 Mc.	4.30
Third I.F. 10.7 Mc.	4.30
Ratio Detector 10.7 Mc.	5.15

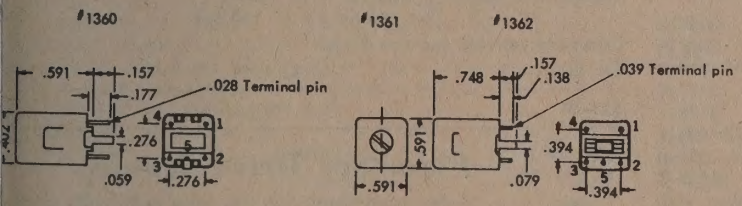
I.F. Components Sub Miniature



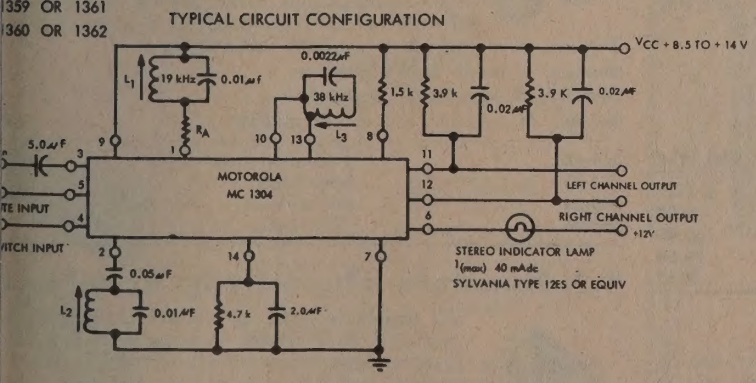
The transformers in this series represents the state of the art, as it relates to a commercial product. In both the 455 kc. and 10.7 Mc. groups there are a complete set of I.F. transformers as well as Ratio Detector and Discriminator transformers. Part No. 8814 incorporates a single section mechanical filter that sharpens the I.F. passband appreciably 4 kc. @ 6 db and 12 kc. @ 20 db. The physical dimensions of this unit are .415 wide .460 deep and .600 high.

Dimensions: 8849, 8850, 8851, 8805, 8806 & 8807—25/32" x 7/16" x ½" high.
8852, 8853 & 8854—13/32" sq. x ⅝" high.
8808* & 8809*—¼" sq. x 7/16" high.
*To be used as a pair.
8810, 8811, 8812 & 8813—9/32" sq. x 15/32" high.
8814—13/32" x 15/32" x 3/16".

Cat. No.	Specs.	Description	Schematic	List Price
		10.7 Mc. Transistor Transformers		
8849	500 kc. P/P	10.7 Mc. Ratio Detector		$4.85
8850	300 kc. P/P	10.7 Mc. Discriminator		4.85
8851-A	6 db 300 kc.	10.7 Mc. Double Tuned I.F.		3.80
8852	100K-300	10.7 Mc. Single Tuned I.F.	27	3.25
8853	20K-500	10.7 Mc. Single Tuned I.F.	72	3.25
8854	25K-500	10.7 Mc. Single Tuned I.F.	72	3.25
		455 Kc. Transistor Transformers		
8805	20 kc. P/P	455 kc. Ratio Detector		3.80
8806	20 kc. P/P	455 kc. Discriminator		3.80
8807	6 db 15 kc.	455 kc. Double Tuned I.F.		3.80
8808	100K Input	455 kc. Discriminator Pri.*	101	2.95
8809	20 kc. P/P	455 kc. Discriminator Sec.*	44	2.95
8810	50K - 800	455 kc. Single Tuned I.F.	72	2.70
8811	30K - 500	455 kc. Single Tuned I.F.	72	2.70
8812	20K - 5K	455 kc. Single Tuned I.F.	72	2.70
8813	Oscillator (455 kc. I.F.), (Tuning Cap. 78 to 110 pf. Max.)		101	2.70
8814	70K - 800	455 kc. Single Tuned I.F. with Single Section Mechanical Filter		4.85

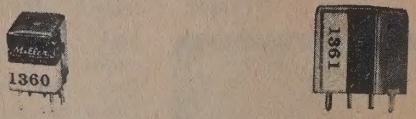


359 OR 1361
360 OR 1362



PICAL CIRCUIT OPERATION SEE APPLICATION NOTE AN-432 AVAILABLE MOTOROLA SEMICONDUCTOR PRODUCTS INC. BOX 20912 PHOENIX, 85036

SMALLEST YET



STEREO MULTIPLEX

These recently developed Multiplex units when used with a Motorola IC #MC1304 FM Stereo Demodulator form a complete FM Stereo Decoder System. They provide excellent opportunity for OEM and Experimenter projects.

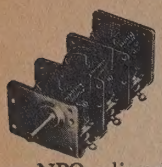
Each Multiplex System requires:

2 No. 1359 and 1 No. 1360 or
2 No. 1361 and 1 No. 1362

Cat. No.	Description	Schematic	Net Price
★1359	19 KHz	68	$1.65
★1360	38 KHz	44	1.65
★1361	19 KHz	68	1.80
★1362	38 KHz	44	1.80

Prices Subject to Change or Withdrawal Without Notice ★ *Star Indicates New Items*

FM Variable Capacitors

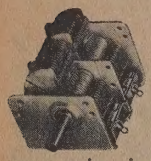


These two- and three-gang variable capacitors feature wide plate spacing (.042 Air Gap) along with a rigid construction to assure the highest stability. The plate contour results in an almost linear frequency versus rotation characteristic. Trimmers are supplied on each section. However, it is recommended that the oscillator trimmer be replaced with an NPO adjustable ceramic. Capacity range 6.6-22.7 pf per section. Trimmer capacity 2-20 pf. Shaft .250 diameter, one inch long.

Dimensions: 1461-BS 3 3/16"x1 13/16"x1 5/8"
1461-2 2 3/16"x1 13/16"x1 5/8

Cat. No.	Item	Net Price
1461-BS	3-Gang FM Tuning Capacitor	$4.80
1461-2	2-Gang FM Tuning Capacitor	3.18

Midget Variable Condensers



These high quality midget variable condensers will find ready application in the construction of portable and compact receivers of all types. Split outer plates on the rotors permit accurate alignment. High frequency trimmers are provided on the short side of the 2 and 3 section types. Mounting is provided by tapped holes in the frame of the condenser. Maximum rotor swing is 1". Counterclock rotation for capacity increase. Shaft is 1/4".

Capacity range—10 to 365 pF per section.

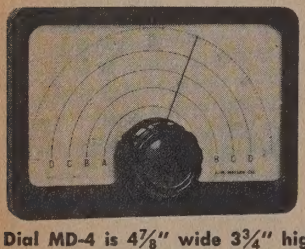
Cat. No.	Sections	Dimensions	Net Price
2111	1	1 3/16" x 1 3/8" x 1 5/16"	$2.52
2112	2	2 3/16" x 1 13/16" x 1 5/8"	3.06
2113	3	3 3/16" x 1 13/16" x 1 5/8"	4.29

Variable Condensers

A miniature 2-gang variable condenser. The antenna section has a range of 10-130 mmf. The oscillator section has a range of 10-78 mmf. Trimmer capacitors are self-contained and have a range of approximately 12 mmf. Tapped mounting holes provided on front of condenser. Counter clockwise rotation. Shaft is 1/4" dia. x 3/4" long.

Cat. No.	Sections	Dimensions	Net Price
2110	2	15/16" x 1 3/8" x 1 5/16"	$2.52

Front Panel Dials

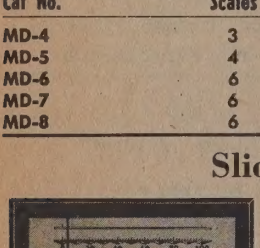


High quality panel dials with black crackle finish on the exterior metal work while the calibration plate is finished in a light grey color with the calibration scale 0-100 printed in red. The self calibration scales are in black and a supply of numerals for use on these scales are included to give a professional finish.

Dial MD-4 is 4 7/8" wide 3 3/4" high 1/8" deep
Dials MD-5 and MD-7 are 6 1/4" wide 4 1/8" high 1/2" deep
Dials MD-6 and MD-8 are 7 1/32" wide 4 7/8" high 1/2" deep

Cat No.	Scales	Turns Ratio	Net Price
MD-4	3	6:1 and 36:1	$ 8.25
MD-5	4	9:1	9.00
MD-6	6	9:1	9.90
MD-7	6	6:1 and 36:1	16.50
MD-8	6	6:1 and 36:1	16.50

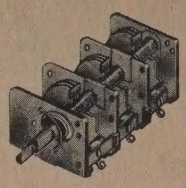
Slide Rule Dial



A top quality slide rule dial for use on projects where this feature would add to the appearance of the completed assembly. The dial face opening is 6 1/4" wide by 1 5/8" high and requires a slightly larger opening in the metal panel.
This dial has a 10:1 turns ratio.

Cat. No.	Description	Net Price
SL-16	Slide Rule Dial	$6.60

FM Three Gang Variable with Planetary Drive

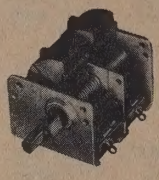


A commercial quality FM variable having a C of 10 picofarads and intended for use in cir having a minimum amount of stray capacit Capacitor is an ideal unit for use as a bandsp variable in short wave receivers.
This capacitor features a planetary drive that a 6:1 turning ratio, and can be used with k #565-24 and 565-26.

Capacitance range 7.0 to 17.7pf per section
Trimmers on all three sections 2-15pf

Cat. No.	Dimensions	Net
777-VC	3 3/16x1 13/16x1 5/8	$

Two Section Variable Capacitor with Planetary Dri

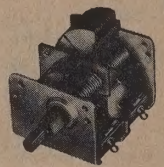


A two section variable capacitor having equal va of capacitance for use in tuned radio frequency cuits or in superhet circuits where a series padd used in the oscillator circuit. This capacitor featu planetary drive that has a 6:1 turning ratio and be used with knobs #565-24 and 565-26.

Capacitance range 10 to 365pf. per section
Trimmers on both sections 2-15pf.

Cat. No.	Dimensions	Net
565-8	2 3/16x1 13/16x1 5/8	$

Cut Section Two Gang with Planetary Drive

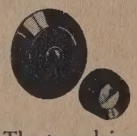


A two section variable capacitor for use in br cast band (535 to 1650 kc) receivers. The sp design of the oscillator plate makes the use padding capacitor unnecessary. This capacitor tures a planetary drive that has a 6:1 turning and can be used with knobs #555-20 and 555-2

Capacitance range RF section 10 to 365pf
Osc section 8.6 to 170.6pf
Trimmers on both sections 2-15pf

Cat. No.	Dimensions	Net
555-27	2 3/16x1 13/16x1 5/8	$

Planetary Drive Knobs



A two piece knob that has been specifically designed use with the planetary drives used on the above vari capacitors. The larger knob #555-20 has a stamped calibration covering 550 to 1600 kc w #565-24 has a gold marker for use with a self calib ed scale on the front panel of a piece of equipm The two drive knobs have a metalic inlaid insert.

Diameter of larger knob 2 1/2 inches
Diameter of drive knob 1 1/4 inches

Cat. No.	Description	Net
555-20	Calibrated knob	$
555-21	Drive knob	
565-24	Marker knob	
565-26	Drive knob	

Sub-Miniature Three Gang Variable Ca

An extremely small but stable air dielectric vari capacitor. Each section is composed of 4 stator 5 rotor plates. Trimmer capacitors are mounted on antenna and R.F. sections only. Capacitor range: 20.7 mmfd.; Trimmer range: 2.0-12 mmfd. S .250" diameter and 15/16" long.
Send for detailed literature.

Dimensions: 1 1/16" wide x 1 3/16" high x 2" deep.

Cat. No.	Item	Net P
1460	3-Gang Variable Capacitor	$4
1460-1	3-Gang Variable Capacitor	4

Prices Subject to Change or Withdrawal Without Notice

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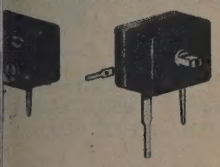
ro Miniature B.C. Variable Capacitor

To our knowledge this unit represents the smallest two section Broadcast Band variable capacitor generally available. The capacitor is manufactured by evaporating silver on the ceramic plates, which are lapped to perfect mechanical register. This construction assures against and vibration with a complete absence of microphonics.

ction 6.5 to 145 pf. use JWM#2009
ction 6.5 to 69.7 pf. use JWM#2069
s on both sections 1.5 to 6.5 pf.
ons .60" sq. by .43" deep

Description	Net Price
2 Section Variable	$3.81
Companion Osc. Coil	2.40

ro Miniature F.M. Variable Capacitor

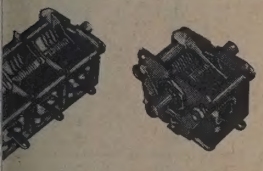


A companion variable capacitor to our part No. 2108 ceramic variable. The ceramic material has a temperature coefficient of —120 parts per million per degree C over the range of —20 to +70°C. The use of silvered ceramic rotor and stator assemblies results in a capacitor that is ely free of microphonics. This is very important in the design l F.M. receivers that are subject to shock and vibration.

" sq. x .39" deep
tion 3.0 to 19.0 pf.
tion 3.0 to 19.0 pf.
s both sections 1.5 to 5.0 pf.

Net Price
$3.30

Precision Variable Capacitors



The capacitors we list in this group represent the highest standards that can be achieved in a commercial product. The rotor shaft revolves in a ball race at both front and back, with the torque controlled very closely. Each section has its own wipers ed to the frame to assure that the rotor does not present ground The stator in each section is supported on four ceramic pillars e excellent mechanical stability as well as insulation resistance than 1000 megohms. The complete mechanical assembly is lated to keep R.F. losses to a minimum.

ons 2101 1.5" x 1.26" x 1.0"
2102 1.5" x 1.26" x 3.0"

Sections	Capacitance pf.	Net Price
1	10.5 to 104	$ 8.40
3	5 to 22.5	14.10
3	10.5 to 104	14.10

455 kc I.F. Amplifier

A pre-packaged, pre-tuned IF strip that simplifies the construction of many projects.

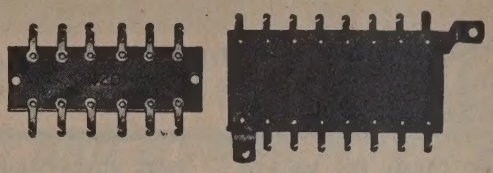
Gain	45 db average
Selectivity	8 kc @ 6 db

By purchasing Cat. No. 8903-B, which consists of one 8901-B input matching transformer and one 8902-B IF strip, a substantial savings can be realized.

Dimensions 8901-B: 13/32" sq.x5/8"
8902-B: 1.5"x.55"x.51"

Cat. No.	Net Price
8901	$2.25
8901-B	2.25
8902-B	5.10
8903-B	6.00

Bakelite Terminal Plates

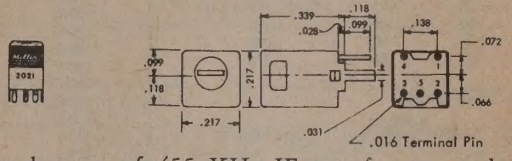


These terminal plates, provided with securely riveted solder type terminal lugs, are particularly adaptable to the assembly of groups of resistors and by-pass condensers. They will facilitate wiring of the chassis and provide rigid mounting of parts which cannot be properly assembled by point-to-point wiring. Lugs are on 1/16" thick bakelite sheet stock and the terminal spacing is 7/16".

Cat. No.	Dimensions	Lugs per Side	List Price
420	1" x 3"	6	$ .90
430	1¾" x 2½"	5	1.00
440	1" x 5¾"	14	1.25
450	1¾" x 3¾"	8	1.55
460	1¾" x 5¼"	11	2.00
470	1¾" x 8⅜"	19	2.20

Special types available on order. Please supply sketch and indicate quantity desired.

TRANSISTOR COILS... SMALLEST YET LESS THAN 1/4"



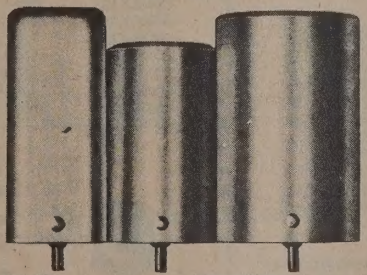
A complete set of 455 KHz IF transformers and matching Osc. coil, and a complete set of 10.7 MHz IF transformers and matching Discriminator coils... all so small as to be almost unbelievable.

Each unit measures only .217 x .217 x .339 and is for printed circuitry.

Cat. No.	Freq.	Impedance	Use	Schematic	Net Price
★ 8855	10.7 MHz	20 K— 75 Ω	1st IF	27	$1.50
★ 8856	10.7 MHz	15 K—300 Ω	2nd & 3rd IF	72	1.50
★ 8857	10.7 MHz	12 K— 3 K	Disc. Pri.	101	1.65
★ 8858	10.7 MHz	.... 12 K	Disc. Sec.		1.65
★ 8815	455 KHz	50 K— 2 K	1st IF	72	1.50
★ 8816	455 KHz	50 K— 2 K	2nd IF	72	1.50
★ 8817	455 KHz	5 K— 5 K	3rd IF	72	1.50
★ 8818	540-1600 KHz		BC Osc.	101	1.50

(Tuning capacitor 67-78 pF maximum)

Aluminum Coil Shields



All Miller coil shields are of the finest quality drawn aluminum and have a satin finish which will not show finger marks and does not tarnish. Two #6-32 threaded spade bolts are riveted to the shield for easy attachment to the chassis.

Cat. No.	Dimensions	Mounting Center	List Price
S-21	2 1/16" diameter x 3½"	2"	$1.10
S-31	1 5/8" diameter x 3"	1 11/16"	1.10
S-32	1⅛" square x 2⅛"	1 1/16"	1.10
S-33	1⅛" square x 2⅛"	1 1/16"	1.10
S-34	1" square x 1¼" high		1.10
S-41	2" diameter x 3"	1 15/16"	1.10
S-42	2" diameter x 3" high	No spadebolts	1.05
S-42-C	Cover for S-42		.90
S-51	1⅜" square x 3¼"	1 5/16"	1.10
S-74	1¼" diameter x 2"	1 5/16"	1.10
L-110	2" square x 4¼"	1 15/16"	1.55
S-727	2 1/16" diameter x 2½"	2"	1.10
L-727	2 1/16" diameter x 4"	2"	1.55

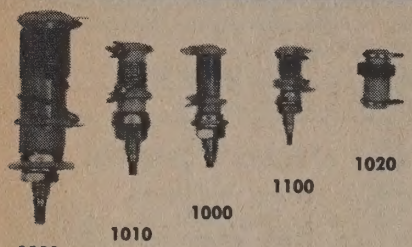
Prices Subject to Change or Withdrawal Without Notice ★ *Stars Indicate New Items*

NORTH HILLS ELECTRONICS, INC.

COILS

HIGH PERFORMANCE SERIES, ADJUSTABLE AND FIXED
To Cover All Frequency Ranges from Audio to 200 MHz

COILS ON CERAMIC FORMS PER MIL-I-10



Series No.	Dimensions (Inches) Dia.	Length	Mtg. Hole Dia. (Inches)
1000	.50	.88	.196
1020	.50	.63	.050, .500 Apart
1100	.33	.63	.166
1300	.70	1.80	.252
1010	.43	.88	.196

Miniature 1000 Series

Part No.	Range Microhenries	Average Q
1000-A	1.0- 1.6	70 @ 7.9 MHz
1000-B	1.6- 2.7	80 @ 7.9 MHz
1000-C	2.7- 4.5	85 @ 7.9 MHz
1000-D	4.5- 8.5	85 @ 7.9 MHz
1000-E	8.5-14.5	75 @ 2.5 MHz
1000-F	14.5-22	65 @ 2.5 MHz
1000-G	22-29	65 @ 2.5 MHz
1000-H	29-55	85 @ 2.5 MHz
1000-I	55-110	80 @ 2.5 MHz
1000-J	110-185	85 @ .79 MHz
1000-K	185-305	85 @ .79 MHz
1000-L	305-515	85 @ .79 MHz
1000-M	515-820	85 @ .79 MHz
1000-N	820-1100	75 @ .79 MHz

RF Printed Circuit Coils

1020-A	0.41- 0.53	75 @ 25 MHz
1020-B	0.85- 1.15	65 @ 7.9 MHz
1020-C	1.87- 2.50	65 @ 7.9 MHz
1020-D	4.0 - 5.4	70 @ 7.9 MHz
1020-E	7.5 -12.5	70 @ 2.5 MHz
1020-F	20 -29	80 @ 2.5 MHz
1020-G	33 -61	80 @ 2.5 MHz
1020-H	80 -120	60 @ 0.79 MHz
1020-I	170 -260	70 @ 0.79 MHz

Subminiature 1100 Series

1100-A	0.9- 1.4	60 @ 7.9 MHz
1100-B	1.4- 1.9	70 @ 7.9 MHz
1100-C	1.9- 2.6	65 @ 7.9 MHz
1100-D	2.6- 3.7	65 @ 7.9 MHz
1100-E	3.7- 5.5	65 @ 7.9 MHz
1100-F	5.5- 7.4	60 @ 7.9 MHz
1100-G	7.4-12.5	70 @ 7.9 MHz
1100-H	12.5-18.0	65 @ 2.5 MHz
1100-I	18.0-28.0	70 @ 2.5 MHz
1100-J	28.0-38.0	70 @ 2.5 MHz
1100-K	38.0-55.0	70 @ 2.5 MHz

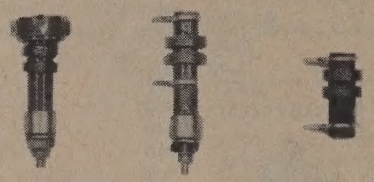
Transmitter 1300 Series

1300-A	For use from 90-200 MHz	
1300-B	For use from 40-90 MHz	
1300-C	For use from 20-40 MHz	
1300-D	0.7- 1.1	170 @ 25 MHz
1300-E	1.1- 1.7	130 @ 7.9 MHz
1300-F	1.7- 2.7	140 @ 7.9 MHz
1300-G	2.7- 4.5	140 @ 7.9 MHz
1300-H	4.5- 6.8	140 @ 7.9 MHz
1300-I	6.8-10.8	140 @ 7.9 MHz
1300-J	10.8-17.0	110 @ 2.5 MHz
1300-K	17.0-29.0	95 @ 2.5 MHz
1300-L	29.0-45.0	100 @ 2.5 MHz
1300-M	45.0-75.0	100 @ 2.5 MHz

HF Coils, Variable Approx. ±15%

1010-A	0.118	115 @ 50 MHz
1010-B	0.225	125 @ 25 MHz
1010-C	0.315	130 @ 25 MHz

WIDE ADJUSTMENT RANGE 120 SERIES



120 Series Mica-filled form .75" O.D. x 1.3" H. .196" dia. mtg. hole

PCS-120 Series Phenolic form

PC-120 Series Phenolic form .5" O.D. x 1.25" L. .05" Pins, .70" Apart

Part No.	Range Microhenries	Average Q
120-A	2-3	70 @ 7.9 MHz
120-B	3-5	80 @ 7.9 MHz
120-C	5-9	85 @ 7.9 MHz
120-D	9-18	65 @ 2.5 MHz
120-E	18-36	70 @ 2.5 MHz
120-F	36-64	65 @ 2.5 MHz
120-G	64-105	85 @ 2.5 MHz
120-H	105-200	80 @ .79 MHz
120-I	200-500	75 @ .79 MHz
120-J	500-1000	85 @ .79 MHz
120-K	1000-2000	50 @ .25 MHz

Subminiature 600 Series

- Variable ±10%
- Shielded
- 0.3" O.D. x 0.4" H
- .020" Leads .30" Apart

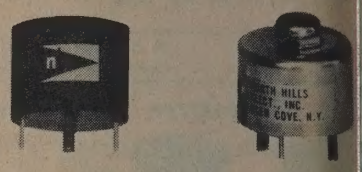
Part No.	Nominal Microhenries	Average Q
600U1X0	1.0	120 @ 7.9 MHz
600U1X5	1.5	120 @ 7.9 MHz
600U2X2	2.2	120 @ 7.9 MHz
600U3X3	3.3	130 @ 7.9 MHz
600U4X7	4.7	125 @ 7.9 MHz
600U6X8	6.8	140 @ 7.9 MHz
600U10X	10	135 @ 7.9 MHz
600U15X	15	130 @ 2.5 MHz
600U22X	22	135 @ 2.5 MHz
600U33X	33	130 @ 2.5 MHz
600U47X	47	130 @ 2.5 MHz
600U68X	68	120 @ 2.5 MHz
600MX10	100	100 @ 2.5 MHz
600MX15	150	125 @ .79 MHz
600MX22	220	130 @ .79 MHz
600MX33	330	125 @ .79 MHz
600MX47	470	120 @ .79 MHz
600MX68	680	100 @ .79 MHz
600M1X0	1000	100 @ .79 MHz

High Q RF Coils, Fixed

- .75" O.D. x .63" H
- Hermetically sealed
- Complete shielding
- For printed circuitry
- For standard circuitry

Part No.	Nominal Microhenries	Average Q
1219-A	0.47± 5%	170 @ 20 MHz
1219-B	1.0 ± 5%	170 @ 10 MHz
1219-C	2.2 ± 5%	170 @ 8 MHz
1219-D	4.7 ± 5%	170 @ 5 MHz
1219-E	10 ± 5%	170 @ 3 MHz
1219-F	22 ±3%	170 @ 1.5 MHz
1219-G	47 ±3%	170 @ 1 MHz
1219-H	100 ±3%	170 @ 0.8 MHz
1219-I	220 ±3%	170 @ 0.7 MHz
1219-J	470 ±3%	170 @ 0.6 MHz
1219-K	1000 ±3%	170 @ 0.5 MHz
1219-L	2200 ±3%	150 @ 0.25 MHz

Hi Q 801, 802 Series, Adjustable ±10%

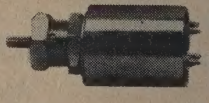


Industrial 801, 802 Series 1.13" O.D. x .88" H

Hermetically Sealed MS801, MS802 Series 1.25" O.D. x 1.25"

Part No.	Nominal Millihenries	Peak Q
801M1X0	1.0	100 @ 10 kHz
801M1X5	1.5	100 @ 10 kHz
801M2X2	2.2	100 @ 10 kHz
801M3X3	3.3	100 @ 10 kHz
801M4X7	4.7	100 @ 10 kHz
801M6X8	6.8	100 @ 10 kHz
801M10X	10	200 @ 20 kHz
801M15X	15	200 @ 20 kHz
801M22X	22	200 @ 20 kHz
801M33X	33	200 @ 20 kHz
801M47X	47	200 @ 20 kHz
801M68X	68	200 @ 20 kHz
801HX10	100	300 @ 30 kHz
801HX15	150	300 @ 30 kHz
801HX22	220	300 @ 30 kHz
801HX33	330	250 @ 20 kHz
801HX47	470	250 @ 20 kHz
801HX68	680	250 @ 20 kHz
801H1X0	1000	150 @ 15 kHz
802M1X0	1.0	400 @ 100 kHz
802M1X5	1.5	400 @ 100 kHz
802M2X2	2.2	400 @ 100 kHz
802M3X3	3.3	400 @ 100 kHz
802M4X7	4.7	400 @ 100 kHz
802M6X8	6.8	400 @ 100 kHz
802M10X	10	400 @ 70 kHz
802M15X	15	400 @ 70 kHz
802M22X	22	400 @ 70 kHz
802M33X	33	400 @ 70 kHz
802M47X	47	400 @ 40 kHz

SHIELDED COILS



- Shielded
- Encapsulated

- .44" Diameter **900 Series**

Part No.	Range Microhenries	Average Q
900-A	0.5- 0.8	80 @ 25 MHz
900-B	0.8- 1.3	70 @ 18 MHz
900-C	1.3- 2.0	60 @ 15 MHz
900-D	2.0- 4.0	70 @ 8 MHz
900-E	4.0- 7.0	70 @ 5 MHz
900-F	7.0-12.0	70 @ 4 MHz
900-G	12.0-20.0	70 @ 3 MHz
900-H	20.0-35.0	70 @ 2.5 MHz
900-I	35.0-60.0	70 @ 2.0 MHz
900-J	60.0-100.0	70 @ 1.0 MHz

- .63" Diameter **1500 Series**

Part No.	Range Millihenries	Average Q
1500-A	.100- .175	80 @ 790 kHz
1500-B	.175- .300	80 @ 790 kHz
1500-C	.300- .500	80 @ 790 kHz
1500-D	.500- .800	75 @ 790 kHz
1500-E	.800-1.15	55 @ 500 kHz
1500-F	1.15-1.50	55 @ 250 kHz
1500-G	1.50-2.30	55 @ 250 kHz
1500-H	2.30-3.50	50 @ 250 kHz
1500-I	3.50-7.50	40 @ 250 kHz

SEE PAGE 1469 FOR WIDEBAND TRANSFORMERS

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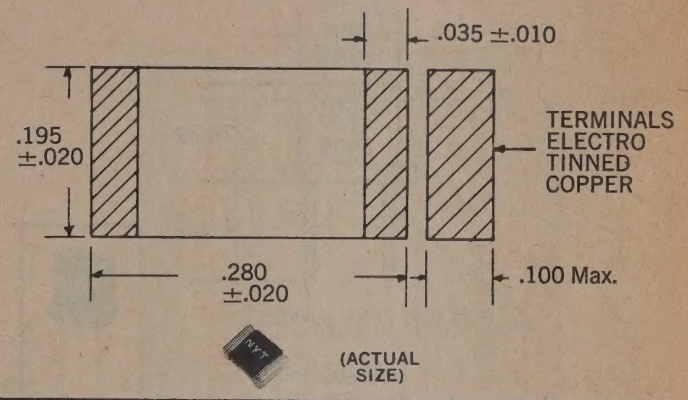
NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

/EW from Nytronics–The Wee-Chip Inductor
Designed for Micro Circuit and Hybrid Applications

Wee-Chip Inductor is a magnetically shielded miniaized inductor made especially for mounting on substrates. inductor body is of high stability, low loss ferrite, comed with a coil cavity of optimum cross sectional area, and an radius produces a unit having excellent "Q" factor. pper terminations are of the wrap-around type for the hest degree of mounting flexibility.



ELECTRICAL DATA: WEE-CHIP INDUCTOR

Part No.	L UH ±10%	Q (Min.)	Test Freq. MHz	SRF (Min.) MHz	DCR (Max.) Ohms	Current (Max.) MA
WCI- 15	15	70	2.5	21.5	1.75	345
WCI- 18	18	70	2.5	19.0	1.90	335
WCI- 22	22	75	2.5	17.5	2.20	325
WCI- 27	27	75	2.5	16.0	2.40	310
WCI- 33	33	75	2.5	15.0	2.60	300
WCI- 39	39	75	2.5	14.5	2.75	295
WCI- 47	47	75	2.5	13.0	2.95	285
WCI- 56	56	75	2.5	12.0	3.25	270
WCI- 68	68	75	2.5	11.0	3.50	255
WCI- 82	82	75	2.5	10.5	4.00	235
WCI- 100	100	70	2.5	9.0	4.25	225
WCI- 120	120	70	0.79	8.5	4.50	215
WCI- 150	150	70	0.79	7.0	5.50	200
WCI- 180	180	75	0.79	6.5	6.50	190
WCI- 220	220	75	0.79	6.0	8.00	170
WCI- 270	270	75	0.79	5.5	12.0	140
WCI- 330	330	75	0.79	5.0	13.0	130
WCI- 390	390	75	0.79	4.5	14.0	120
WCI- 470	470	75	0.79	4.0	15.0	115
WCI- 560	560	75	0.79	3.5	22.0	100
WCI- 680	680	70	0.79	3.0	24.0	95
WCI- 820	820	70	0.79	2.5	26.0	90
WCI-1000	1000	70	0.79	2.0	36.0	75

NOTES:
1. Shielding: 2% max. coupling when two units are tested side by side
2. Designed to meet the requirements of MIL-C-15305 grade 2 class B
3. Stability: temp. coefficient of inductance ranges from 100 to 500 PPM/°C depending on inductance
4. Current Ratings: Based on a 35°C temperature rise from an ambient temp of 90°C
5. L, Q & SRF measurements made using Boonton 260-A Q-meter
6. Other inductance values and tolerances available on special order

ECTRICAL CHARACTERISTICS

uctance Tolerance: ±10% Over Entire Range Standard

ielectric Strength: 500 VRMS

DENSITY CHARACTERISTICS

Volume: 0.0055 Cubic Inches

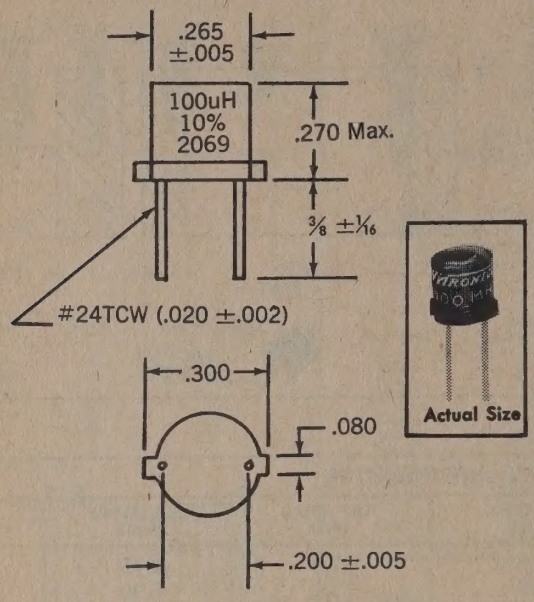
Weight: 0.35 Grams Max.

NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

NEW! Pee-Cee Ductor

Subminiature, Shielded Radial Lead Inductor.
High Q Values: 0.10 to 100,000uH
Unitized Epoxy-Molded Construction



This inductor is designed to meet MIL-C-15305C, Grade 1, Class B. Printed board mounting is facilitated by 0.200 grid spacing and unit has shielded construction to allow maximum density packaging. Standardized in 73 stock values.

ELECTRICAL CHARACTERISTICS

L (Tol.): ±10% over entire range as measured per MIL-C-15305C.

Q and f_o Values: Minimum not less than 80% of specified value.

Dielectric Strength: 840 Volts R.M.S. at sea level.

Working Voltage: 300 Volts D.C.

Maximum Current: Based on temperature rise not to exceed 35°C at 90°C ambient.

Incremental Current: Defined as the DC current required to cause a five percent reduction in the nominal inductance value.

DENSITY CHARACTERISTICS

Weight: 1.0 grams maximum

Volume: .015 cubic inches

Shielding: 3% coupling maximum when two units are tested side by side.

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: —55°C to +125°C.

Moisture, Vibration, and Shock Resistance: Meet requirements of MIL-C-15305C, Grade 1, Class B. Low frequency 10 to 55 cps @ .06" maximum total excursion at rate of 1 linear sweep per minute for 2 hours repeated for each of three mutually perpendicular planes. Shock: 50G, 11 MS. (body mounted)

Marking: Manufacturer data printed.

Terminal Pull: Three pounds.

Nytronics Catalog No.	L nom. μh	f MC	Q nom.	Fo nom. MC	D.C.R. 25°C Max. ohms	Max. I m.a.	Incr. I m.a.
PC- 0.10	.10	25	70	>250	0.030	2500	2500
PC- 0.12	.12	25	70	>250	0.030	2500	2500
PC- 0.15	.15	25	70	>250	0.030	2500	2500
PC- 0.18	.18	25	70	>250	0.035	2400	2400
PC- 0.22	.22	25	70	>250	0.038	2300	2300
PC- 0.27	.27	25	80	>250	0.040	2200	2200
PC- 0.33	.33	25	80	>250	0.040	2200	2200
PC- 0.39	.39	25	80	250	0.045	2100	2100
PC- 0.47	.47	25	80	230	0.045	2100	2100
PC- 0.56	.56	25	80	220	0.050	2000	2000
PC- 0.68	.68	25	80	190	0.055	1900	1900
PC- 0.82	.82	25	85	180	0.060	1800	1800
PC- 1.00	1.00	25	85	160	0.070	1700	1700
PC- 1.2	1.2	7.9	90	170	0.085	1670	1670
PC- 1.5	1.5	7.9	100	155	0.100	1540	1540
PC- 1.8	1.8	7.9	115	135	0.110	1470	1470
PC- 2.2	2.2	7.9	110	120	0.120	1410	1410
PC- 2.7	2.7	7.9	110	104	0.125	1380	1380
PC- 3.3	3.3	7.9	90	93.0	0.165	1200	1200
PC- 3.9	3.9	7.9	90	87.0	0.180	1135	1135
PC- 4.7	4.7	7.9	95	79.0	0.245	985	985
PC- 5.6	5.6	7.9	95	72.0	0.265	950	950
PC- 6.8	6.8	7.9	85	63.0	0.330	853	853
PC- 8.2	8.2	7.9	95	60.0	0.460	720	720
PC- 10	10	7.9	90	54.0	0.640	620	620
PC- 12	12	2.5	120	37.0	0.800	545	545
PC- 15	15	2.5	120	28.8	0.865	520	520
PC- 18	18	2.5	115	23.8	0.940	504	504
PC- 22	22	2.5	125	21.3	1.03	460	460
PC- 27	27	2.5	115	20.6	1.18	418	418
PC- 33	33	2.5	120	18.6	1.30	398	398
PC- 39	39	2.5	120	17.7	1.41	385	385
PC- 47	47	2.5	110	14.9	1.61	350	350
PC- 56	56	2.5	115	13.9	2.08	330	330
PC- 68	68	2.5	105	12.9	2.20	320	320
PC- 82	82	2.5	105	11.7	2.42	300	300
PC- 100	100	2.5	95	10.5	2.15	333	333
PC- 120	120	0.790	95	5.60	2.38	316	190
PC- 150	150	0.790	90	5.20	2.52	306	175
PC- 180	180	0.790	95	4.90	2.88	288	150
PC- 220	220	0.790	95	4.60	3.18	273	125
PC- 270	270	0.790	100	4.20	3.50	260	120
PC- 330	330	0.790	100	3.55	4.80	222	110
PC- 390	390	0.790	100	3.45	5.44	209	105
PC- 470	470	0.790	100	3.20	5.90	201	100
PC- 560	560	0.790	95	2.90	6.30	194	90
PC- 680	680	0.790	100	2.70	7.20	181	80
PC- 820	820	0.790	90	2.50	8.00	172	70
PC- 1,000	1,000	0.790	100	2.35	12.0	141	65
PC- 1,200	12,00	0.250	95	2.20	13.5	132	60
PC- 1,500	1,500	0.250	90	1.90	16.5	119	55
PC- 1,800	1,800	0.250	100	1.80	18.0	114	47
PC- 2,200	2,200	0.250	100	1.70	20.5	107	43
PC- 2,700	2,700	0.250	95	1.50	22.5	102	39
PC- 3,300	3.300	0.250	90	1.40	42.0	76	36
PC- 3,900	3,900	0.250	85	1.27	47.5	71	35
PC- 4,700	4,700	0.250	85	1.24	53.0	67	34
PC- 5,600	5,600	0.250	85	0.93	62.5	65	31
PC- 6,800	6,800	0.250	75	0.79	69.5	58	27
PC- 8,200	8,200	0.250	80	0.75	75.0	56	26
PC- 10,000	10,000	0.250	70	0.70	100.0	49	24
PC- 12,000	12,000	0.079	70	.50	64	60	40
PC- 15,000	15,000	0.079	70	.38	84	52	34
PC- 18,000	18,000	0.079	70	.36	93	50	30
PC- 22,000	22,000	0.079	70	.32	104	45	28
PC- 27,000	27,000	0.079	70	.30	173	35	26
PC- 33,000	33,000	0.079	70	.27	187	32	24
PC- 39,000	39,000	0.079	70	.26	220	30	22
PC- 47,000	47,000	0.079	70	.25	253	28	20
PC- 56,000	56,000	0.079	70	.24	285	26	19
PC- 68,000	68,000	0.079	60	.20	311	24	18
PC- 82,000	82,000	0.079	60	.19	385	22	16
PC-100,000	100,000	0.079	60	.17	420	20	15

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NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

W/Mili-Ductor

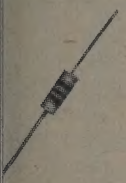
0.10uH to 1000uH Range
0.100" diameter by 0.250" length
49 STANDARD VALUES

LI-DUCTOR offers the design engineer epoxy-molded reliability iformity in a subminiature R.F. Inductor. ductor line is designed to meet all the environmental specifica- MIL-C-15305C, Grade 1, Class B.

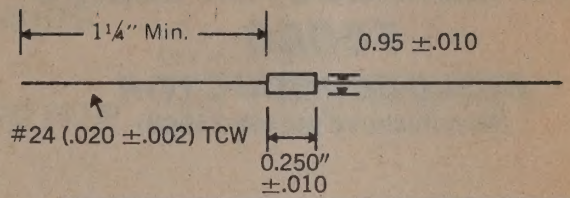
ICAL CHARACTERISTICS
nce Tolerance: ±10% over entire range.
ic Strength: 1000 volts RMS at sea level.
sonant Frequency: Measured per MIL-C-15305C. Maximum current based on; 35°C rise in 90° ambient for c, 15°C rise in 90° ambient for iron, 35°C rise in 70° ambient ite core inductors.

Y CHARACTERISTICS
: 0.002 cubic inches; **Weight** .030 grams.

AL AND ENVIRONMENTAL CHARACTERISTICS
ng Temperature: —55°C to +125°C phenolic core, —55°C to iron and ferrite core.
al Strength: Meets five pound pull test; five 360° rotations in te directions per MIL-C-15305C.
re, Vibration, and Shock Resistance: Meets requirements of L5305C, 10 cps to 2000 cps @ 15G ±10% maximum for 12 nmic swings each of 20 minute duration repeated for each of mutually perpendicular planes. Shock: 50G, 11 MS (body d).



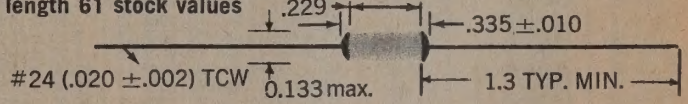
ctual Size



NYTRONICS CATALOG NO.	L uH	Q Min.		Min. Fo MC	Max. DCR at 25°C OHMS	Max. I mA	MATERIAL
MD-0.10	0.10	40	25	680	0.08	1350	PHENOLIC
MD-0.12	0.12	40	25	640	0.09	1270	PHENOLIC
MD-0.15	0.15	38	25	600	0.10	1200	PHENOLIC
MD-0.18	0.18	35	25	550	0.12	1105	PHENOLIC
MD-0.22	0.22	33	25	510	0.14	1025	PHENOLIC
MD-0.27	0.27	33	25	460	0.16	960	PHENOLIC
MD-0.33	0.33	30	25	410	0.22	815	PHENOLIC
MD-0.39	0.39	30	25	365	0.30	700	PHENOLIC
MD-0.47	0.47	30	25	330	0.35	650	PHENOLIC
MD-0.56	0.56	30	25	310	0.50	545	PHENOLIC
MD-0.68	0.68	28	25	280	0.60	495	PHENOLIC
MD-0.82	0.82	28	25	260	0.85	415	PHENOLIC
MD-1.00	1.00	25	25	240	1.10	385	PHENOLIC
MD-1.20	1.20	30	7.9	150	0.18	860	IRON
MD-1.50	1.50	30	7.9	140	0.22	775	IRON
MD-1.80	1.80	30	7.9	125	0.30	685	IRON
MD-2.20	2.20	30	7.9	115	0.40	585	IRON
MD-2.70	2.70	40	7.9	100	0.50	485	IRON
MD-3.30	3.30	45	7.9	90	0.85	400	IRON
MD-3.90	3.90	45	7.9	80	1.0	350	IRON
MD-4.70	4.70	45	7.9	75	1.2	325	IRON
MD-5.60	5.60	50	7.9	65	1.5	290	IRON
MD-6.80	6.80	50	7.9	60	1.8	265	IRON
MD-8.20	8.20	55	7.9	55	2.4	220	IRON
MD-10.0	10.0	55	7.9	50	3.1	200	IRON
MD-12.0	12.0	45	2.5	40	3.4	200	IRON
MD-15.0	15.0	40	2.5	35	2.75	215	IRON
MD-18.0	18.0	50	2.5	30	3.0	210	IRON
MD-22.0	22.0	50	2.5	25	3.3	200	IRON
MD-27.0	27.0	50	2.5	20	3.6	190	IRON
MD-33.0	33.0	45	2.5	24	3.4	193	FERRITE
MD-39.0	39.0	45	2.5	22	3.6	185	FERRITE
MD-47.0	47.0	45	2.5	20	4.5	167	FERRITE
MD-56.0	56.0	45	2.5	18	5.7	150	FERRITE
MD-68.0	68.0	50	2.5	15	6.7	137	FERRITE
MD-82.0	82.0	50	2.5	14	7.3	132	FERRITE
MD-100	100	50	2.5	13	8.0	125	FERRITE
MD-120	120	30	0.79	12	13	100	FERRITE
MD-150	150	30	0.79	11	15	90	FERRITE
MD-180	180	30	0.79	10	17	84	FERRITE
MD-220	220	30	0.79	9	21	76	FERRITE
MD-270	270	30	0.79	8	25	70	FERRITE
MD-330	330	30	0.79	7	28	65	FERRITE
MD-390	390	30	0.79	6.5	35	60	FERRITE
MD-470	470	30	0.79	6	42	53	FERRITE
MD-560	560	30	0.79	5	46	51	FERRITE
MD-680	680	30	0.79	4	60	45	FERRITE
MD-820	820	30	0.79	3.8	65	43	FERRITE
MD-1000	1000	30	0.79	3.4	72	41	FERRITE

ee Wee-Ductor

The smallest shielded inductor for high density circuits 0.10 to 10,000uH 0.133" diameter x 0.335" length 61 stock values



EE WEE-DUCTOR offers the Design Engineer an encapsulated niature shielded inductor to solve special problems in density application. This shielded inductor has great inductance-to-tio and is designed to meet the stringent requirements of MIL-5C, Grade 1, Class B.

RICAL CHARACTERISTICS
nce Tolerance: ±10% (Q-Meter).
ic Strength: 700 volts RMS at sea level.
sonant Frequency: Minimum f_o to be not less than 80% of ed data, and measured with full length leads on Q-Meter.
Rp Values: Measured on Q-Meter.
I maximum based on ⅓ watt dissipation.

TY CHARACTERISTICS
: 0.0041 cubic inches **Weight:** 0.50 grams maximum
ng: Less than 3% coupling with two units mounted side by 1000 cycles.

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS
Operating Temperature: —55°C to +125°C.
Terminal Strength: Meets five pound pull test; five 360° rotations in alternate directions per MIL-C-15305C.
Moisture, Vibration and Shock Resistance: Meets requirements of MIL-C-15305C, Grade 1, Class B. High Frequency: 10 cps to 2000 cps @ 15G ±10% maximum for 12 logarithmic swings each of 20 minute duration repeated for each of three mutually perpendicular planes. Shock: 50G, 11 MS.
Marking: Color coded per MIL-C-15305C.

WEE WEE-DUCTOR STANDARD VALUES

ONICS ART O.	L uH	Q min.		approx. Fo MC	approx. Cd uuF	Max. DCR at 125°C Ω	Max. I mA	Incr.* I mA	MATERIAL
- 0.10	0.10	42	25	500	0.67	.112	1720	1720	PHENOLIC
- 0.12	0.12	42	25	500	0.67	.126	1630	1630	
- 0.15	0.15	42	25	500	0.67	.138	1550	1550	
- 0.18	0.18	42	25	458	0.67	.165	1420	1420	
- 0.22	0.22	42	25	414	0.67	.198	1330	1330	
- 0.27	0.27	42	25	373	0.67	.220	1230	1230	
- 0.33	0.33	42	25	360	0.66	.258	1140	1140	
- 0.39	0.39	42	25	339	0.57	.292	1060	1060	
- 0.47	0.47	41	25	309	0.57	.360	960	960	
- 0.56	0.56	39	25	295	0.52	.397	915	915	
- 0.68	0.68	36	25	270	0.52	.472	840	840	
- 0.82	0.82	35	25	250	0.52	.638	720	720	
- 1.0	1.0	42	25	170	0.87	.208	1260	1260	IRON
- 1.2	1.2	38	7.9	150	0.94	.225	1210	1210	
- 1.5	1.5	38	7.9	139	0.87	.265	1120	1120	
- 1.8	1.8	38	7.9	129	0.85	.285	1080	1080	
- 2.2	2.2	36	7.9	118	0.83	.330	1000	1000	
- 2.7	2.7	38	7.9	106	0.83	.381	935	935	
- 3.3	3.3	38	7.9	98	0.81	.432	875	875	
- 3.9	3.9	40	7.9	91	0.79	.576	755	755	
- 4.7	4.7	42	7.9	83	0.79	.787	650	650	
E- 5.6	5.6	42	7.9	77	0.79	1.04	565	565	
E- 6.8	6.8	45	7.9	67	0.83	1.40	485	485	
E- 8.2	8.2	47	7.9	62	0.81	1.68	440	440	
E- 10	10	51	7.9	55	0.83	2.58	355	355	
E- 12	12	51	2.5	49	0.88	3.65	300	300	
E- 15	15	45	2.5	55	0.56	.862	620	200	
E- 18	18	43	2.5	50	0.57	1.02	570	175	
E- 22	22	42	2.5	45	0.57	1.12	545	160	
E- 27	27	37	2.5	41	0.58	1.28	510	155	

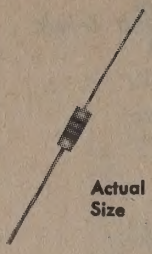
tal Current: The D.C. current required to cause a maximum reduction of from nominal inductance value.

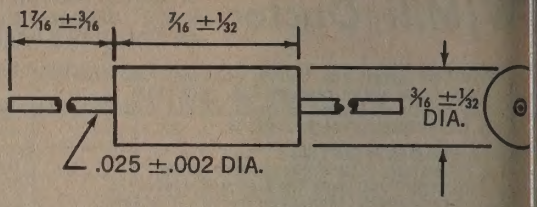
NYTRONICS PART NO.	L uH	Q min.		approx. Fo MC	approx. Cd uuF	Max. DCR at 125°C Ω	Max. I mA	Incr.* I mA	MATERIAL
WEE-WEE- 33	33	46	2.5	37	0.57	1.70	440	150	FERRITE
WEE-WEE- 39	39	38	2.5	33	0.59	1.99	405	145	
WEE-WEE- 47	47	42	2.5	29	0.64	2.41	370	140	
WEE-WEE- 56	56	41	2.5	27	0.54	2.85	340	130	
WEE-WEE- 68	68	46	2.5	23	0.71	3.21	320	120	
WEE-WEE- 82	82	46	2.5	21	0.71	3.57	305	115	
WEE-WEE- 100	100	43	2.5	19	0.71	4.10	280	100	
WEE-WEE- 120	120	50	0.79	16	0.79	5.97	235	80	
WEE-WEE- 150	150	49	0.79	15	0.75	7.05	215	68	
WEE-WEE- 180	180	56	0.79	14	0.72	8.12	200	64	
WEE-WEE- 220	220	53	0.79	12	0.79	14.8	150	60	
WEE-WEE- 270	270	57	0.79	11.5	0.72	16.8	140	58	
WEE-WEE- 330	330	57	0.79	10.5	0.70	18.6	130	56	
WEE-WEE- 390	390	57	0.79	10.0	0.65	21.1	120	54	
WEE-WEE- 470	470	50	0.79	8.5	0.75	32.2	100	52	
WEE-WEE- 560	560	50	0.79	7.5	0.80	36.4	95	50	
WEE-WEE- 680	680	56	0.79	7.0	0.77	41.1	90	48	
WEE-WEE- 820	820	49	0.79	6.5	0.74	45.0	85	47	
WEE-WEE- 1000	1000	49	0.79	6.0	0.74	52.0	80	45	
WEE-WEE- 1200	1200	55	0.25	3.4	1.9	31	100	40	
WEE-WEE- 1500	1500	55	0.25	3.3	1.6	41	90	35	
WEE-WEE- 1800	1800	55	0.25	3.1	1.5	45	86	32	
WEE-WEE- 2200	2200	55	0.25	3.0	1.3	55	78	30	
WEE-WEE- 2700	2700	55	0.25	2.8	1.2	60	74	28	
WEE-WEE- 3300	3300	55	0.25	2.7	1.1	80	65	26	
WEE-WEE- 3900	3900	55	0.25	2.25	1.1	105	56	23	
WEE-WEE- 4700	4700	55	0.25	2.2	1.1	118	53	20	
WEE-WEE- 5600	5600	55	0.25	2.1	1.0	140	48	18	
WEE-WEE- 6800	6800	50	0.25	1.85	1.0	177	43	15	
WEE-WEE- 8200	8200	50	0.25	1.80	1.0	202	40	12	
WEE-WEE-10,000	10,000	50	0.25	1.60	1.0	231	37	10	

NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

NEW MS-INDUCTOR SERIES
75008
MOLDED INDUCTOR
(Manufactured per MS-75008)





ALL DIMENSIONS IN INCHES

Proven reliability molded inductors designed to meet MS-75008 and MIL-C-15305C.
Inductance 0.15 to 27.0 uhy

ELECTRICAL CHARACTERISTICS

Inductance Tolerance: 0.15 to 0.47 uhy ±20%; 0.56 to 27.0 uhy ±10%
Dielectric Strength: 700 Volts RMS at sea level
Max. Temp. Rise: 35°C

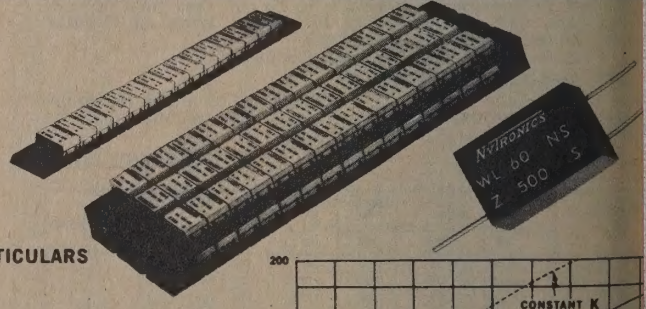
PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: —55°C to +125°C.
Terminal Strength: Meets five pound pull test per MIL-C-15305C.
Moisture, Vibration, and Shock Resistance: Meets requirements of MIL-C-15305C, Grade 1, Class B. High frequency 10 cps to 2000 @ 15G ±10% maximum for 12 logarith swings, each of 20 minute duration repe for each of three mutually perpendic planes. (body mounted)
Volume: S Type — 0.012 cu. in.
Weight: S Type — 0.90 grams
Marking: Color banded per MIL-C-15305

Nytronics Catalog No.	Type Designation	Former Type Designation	Former MS Part No.	Inductance	Q; Min.	Test Frequency	Self-resonant Frequency, Min.	DC Resistance, Max.	Rated DC Current	Materia
				uh		Mc	Mc	Ohms	ma	
75008-21	LT4K027	LT7K125	MS16224-1 and MS75008-1	0.15 ±20%	55	25.0	510	0.030	3,000	PHENOLIC
75008-22	LT4K028	LT7K126	MS16224-2 and MS75008-2	0.22 ±20%	50	25.0	415	0.035	2,800	
75008-23	LT4K029	LT7K127	MS16224-3 and MS75008-3	0.33 ±20%	50	25.0	350	0.065	2,000	
75008-24	LT4K030	LT7K128	MS16224-4 and MS75008-4	0.47 ±20%	50	25.0	300	0.085	1,700	
75008-25	LT4K031	—	—	0.56 ±10%	50	25.0	270	0.125	1,450	
75008-26	LT4K032	LT7K129	MS16224-5 and MS75008-5	0.68 ±10%	45	25.0	250	0.150	1,300	
75008-27	LT4K033	—	—	0.82 ±10%	40	25.0	210	0.205	1,100	
75008-28	LT4K034	LT7K130	MS16224-6 and MS75008-6	1.00 ±10%	40	25.0	200	0.290	930	
75008-29	LT4K035	—	—	1.20 ±10%	30	7.9	180	0.400	785	
75008-30	LT4K036	LT7K131	MS16224-7 and MS75008-7	1.50 ±10%	30	7.9	170	0.485	700	
75008-31	LT4K037	—	—	1.80 ±10%	30	7.9	150	0.740	580	
75008-32	LT4K038	LT7K132	MS16224-8 and MS75008-8	2.20 ±10%	30	7.9	140	0.970	505	
75008-33	LT4K039	LT7K133	MS16224-9 and MS75008-9	2.70 ±10%	30	7.9	120	1.20	460	IRON
75008-34	LT4K040	LT7K134	MS16224-10 and MS75008-10	3.30 ±10%	30	7.9	70	0.140	1,350	
75008-35	LT4K041	LT7K135	MS16224-11 and MS75008-11	3.90 ±10%	30	7.9	65	0.155	1,250	
75008-36	LT4K042	LT7K136	MS16224-12 and MS75008-12	4.70 ±10%	30	7.9	60	0.210	1,100	
75008-37	LT4K043	LT7K137	MS16224-13 and MS75008-13	5.60 ±10%	30	7.9	50	0.280	935	
75008-38	LT4K044	LT7K138	MS16224-14 and MS75008-14	6.80 ±10%	30	7.9	50	0.375	810	
75008-39	LT4K045	LT7K139	MS16224-15 and MS75008-15	8.20 ±10%	30	7.9	48	0.440	750	
75008-40	LT4K046	LT7K140	MS16224-16 and MS75008-16	10.00 ±10%	30	7.9	42	0.605	640	
75008-41	LT4K047	LT7K141	MS16224-17 and MS75008-17	12.00 ±10%	50	2.5	36	1.05	490	
75008-42	LT4K048	LT7K142	MS16224-18 and MS75008-18	15.00 ±10%	55	2.5	30	1.20	460	
75008-43	LT4K049	—	—	18.00 ±10%	60	2.5	30	1.95	360	
75008-44	LT4K050	LT7K143	MS16224-19 and MS75008-19	22.00 ±10%	60	2.5	24	2.20	335	
75008-45	LT4K051	LT7K144	MS16224-20 and MS75008-20	27.00 ±10%	65	2.5	22	2.75	300	

NEW! The Wee-Bit
(Nytronics Delay Line Sections)

Unique sectional construction available utilizing individual pre-designed Wee-Bit Pulse Delay elements. 48 hour delivery not 8 weeks. No tooling expenses.



The **WEE-BIT** offers the advantage of assembling a unique sectionalized delay line that reduces delivery on prototype delay lines from weeks to days and eliminates expensive tooling and design efforts. Consisting of pre-designed LC sections called Wee-Bits, a discrete value of delay time is offered. The aggregate number of Wee-Bits determines the total delay time and is a function of delay to rise time ratio. An assembly is made of selected Wee-Bits mounted on printed circuit boards that conform to MIL-P-13949B, stacked or single layer and permits increment of delay to be tapped without disturbing uniform pulse shape. Wee-Bit size 0.401" long by 0.625" wide by 0.230" height and are epoxy molded to meet environmental conditions of MIL-C-15305C. Temperature range —55°C to 125°C. 300 VDC working voltage. Delay time available per Wee-Bit from 10 nanoseconds to 100 nanoseconds in 10 nanoseconds increments. Wee-Bits also stocked with 200 nanoseconds delay. This unique wee line sectionalized delay line concept allows reduction of approximately 40% in number of sections ordinarily required*, flexibility of design, and line tapping.

*Compared to constant K

LEADING ELECTRICAL PARTICULARS

Delay Tolerance:	±5%
Risetime Tolerance:	±20%
Noise:	1 to 10%, less than 3% for most types
Ripple:	1 to 10%, less than 3% for most types
Attenuation:	0.2 db/usec. to 1.0 db/usec. most types 0.2 db/usec.
Temp. Coefe.:	150 $(10)^{6}$ us/us —°C
Impedance:	500 ohms ±5%
Operating Voltage:	300 Volts D.C.

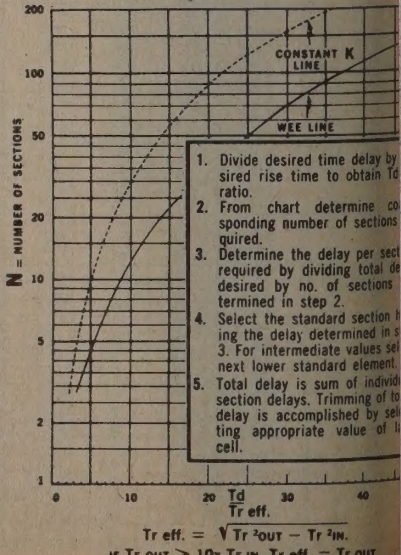
Tr MEASURED AT 10% & 90% and Td MEASURED AT 50% POINTS OF INPUT AND OUTPUT PULSES. Individual Sections furnished in ±5% Tolerance (or ±1NS, whichever is greater) and must be tested in accordance with Nytronics, Inc. DSI 394.

LEADING MECHANICAL PARTICULARS (for 15 section delay line)

Length of 15 cells	6.125"
Length of 15 cells plus P.C. mounting board	7.141"
Width of cells plus P.C. mounting board	0.750"
Height of cells plus P.C. mounting board	0.330"

Basic cell size: Length — 0.401"
Width — 0.625"
Height — 0.230"

Temperature range and operating environmental conditions are covered by MIL-C-15305B.



$$Tr\ eff. = \sqrt{Tr^{2}_{OUT} - Tr^{2}_{IN}}$$

IF $Tr_{OUT} \geq 10 \times Tr_{IN}$, $Tr\ eff. = Tr_{OUT}$

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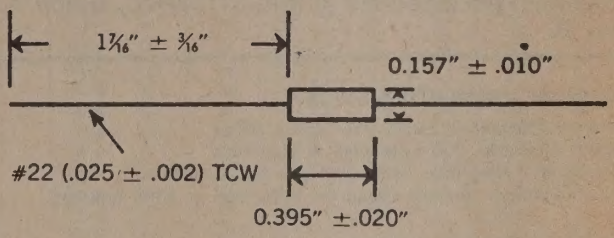
NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

NEW MS-INDUCTOR SERIES
90537
MOLDED SHIELDED INDUCTOR
(Manufactured per MS-90537)

Ultra-Reliable Molded Shielded Miniature Inductor.
Inductance Range: 0.1uH to 100,000uH.
Unique "T" design eliminates Fine Wire considerations.

MS-INDUCTOR SERIES are R.F. Inductors specifically gned to meet the demanding requirements of MIL-C-)5C, Grade 1, Class B. The unique "T" design eliminates wire consideration that has previously concerned design neers on critical circuitry. The MS-INDUCTOR Series epoxy led envelope and shielding offers the design engineer bility, electrical performance, and minimum coupling in density packaging.



CTRICAL CHARACTERISTICS
tance Tolerance: ±10% over the entire inductance range.
ctric Strength: 700 volts RMS at sea level.
tesonant Frequency: Measured per MIL-C-15305C.
d Rp Values: Measured on a Q-Meter. Minimum Rp values at frequencies are all conservative.
mum Current: Based on temperature rise not to exceed 35°C °C ambient.

SITY CHARACTERISTICS
he: 0.0076 cubic inches **Weight:** 0.75 grams maximum
ding: At 1000 cycles two units assembled side by side exhibit than 3% coupling.

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS
Operating Temperature: —55°C to +125°C.

Terminal Strength: Meets five pound pull test; five 360° rotations in alternate directions per MIL-C-15305C.

Moisture, Vibration, and Shock Resistance: Meets requirements of MIL-C-15305C, Grade 1, Class B. High frequency 10 cps to 2000 cps @ 15G ±10% maximum for 12 logarithmic swings each of 20 minute duration repeated for each of three mutually perpendicular planes. Shock: 50G, 11 MS.

Marking: Color coded per MIL-C-15305C.

MATERIAL	NYTRONICS CATALOG NO.	L	Q min		min. Fo	Max DCR at 125°C	Max. I	Incr.** I
		uH		MC	MC	Ω	mA	mA
PHENOLIC	90537- 1	0.10	50	25	500	0.025	2900	>2900
	90537- 2	0.12	51	25	450	0.034	2800	>2800
	90537- 3	0.15	51	25	400	0.037	2750	>2750
	90537- 4	0.18	50	25	375	0.047	2200	>2200
	90537- 5	0.22	49	25	330	0.067	1700	>1700
	90537- 6	0.27	47	25	290	0.11	1500	>1500
	90537- 7	0.33	46	25	280	0.13	1300	>1300
	90537- 8	0.39	44	25	255	0.18	1100	>1100
	90537- 9	0.47	44	25	235	0.25	1000	>1000
	90537-10	0.56	43	25	210	0.33	900	> 900
	90537-11	0.68	42	25	190	0.45	750	> 750
	90537-12	0.82	40	25	180	0.59	600	> 600
IRON	90537-13	1.0	47	25	140	0.070	1900	>1900
	90537-14	1.2	46	7.9	130	0.093	1600	>1600
	90537-15	1.5	45	7.9	115	0.12	1300	>1300
	90537-16	1.8	43	7.9	105	0.14	1200	>1200
	90537-17	2.2	45	7.9	100	0.19	1100	>1100
	90537-18	2.7	46	7.9	92	0.28	950	> 950
	90537-19	3.3	44	7.9	85	0.35	800	> 800
	90537-20	3.9	44	7.9	75	0.40	750	> 750
	90537-21	4.7	44	7.9	70	0.55	650	> 650
	90537-22	5.6	47	7.9	65	0.72	550	> 550
	90537-23	6.8	50	7.9	55	1.02	500	> 500
	90537-24	8.2	50	7.9	50	1.32	475	> 475
	90537-25	10	49	7.9	46	1.62	450	> 450
	90537-26	12	55	2.5	44	2.00	400	> 400
FERRITE	90537-27	15	44	2.5	49	0.80	620	250
	90537-28	18	45	2.5	45	0.89	610	235
	90537-29	22	46	2.5	41	0.96	600	220
	90537-30	27	49	2.5	38	1.19	500	200
	90537-31	33	45	2.5	34	1.37	490	190
	90537-32	39	53	2.5	29	1.93	410	180
	90537-33	47	52	2.5	27	2.11	400	175
	90537-34	56	49	2.5	25	2.23	380	160
	90537-35	68	51	2.5	21	2.70	370	150
	90537-36	82	45	2.5	10.5	2.44	360	140

MATERIAL	NYTRONICS CATALOG NO.	L	Q min		min. Fo	Max DCR at 125°C	Max. I	Incr.** I
		uH		MC	MC	Ω	mA	mA
FERRITE	90537-37	100	52	2.5	10.0	3.12	325	120
	90537-38	120	57	.79	9.7	3.60	290	95
	90537-39	150	56	.79	8.5	4.10	275	90
	90537-40	180	60	.79	8.0	4.40	260	85
	90537-41	220	58	.79	7.5	5.00	250	80
	90537-42	270	60	.79	7.0	5.80	240	70
	90537-43	330	54	.79	6.5	6.40	225	65
	90537-44	390	67	.79	6.2	7.40	200	60
	90537-45	470	60	.79	5.7	9.50	180	58
	90537-46	560	60	.79	4.7	10.5	174	55
	90537-47	680	60	.79	4.5	11.8	168	50
	90537-48	820	57	.79	4.2	13.0	152	45
	90537-49	1000	65	.79	3.8	17.5	135	40
	90537-50	1200	45	.25	1.5	22.1	115	35
	90537-51	1500	49	.25	1.2	26.5	110	33
	90537-52	1800	47	.25	1.0	29.9	105	30
	90537-53	2200	50	.25	0.97	33.8	99	27
	90537-54	2700	47	.25	0.92	47.3	83	25
	90537-55	3300	43	.25	0.84	53.0	80	22
	90537-56	3900	43	.25	0.80	73.8	67	20
	90537-57	4700	44	.25	0.74	81.6	63	19
	90537-58	5600	45	.25	0.73	98.9	56	17
	90537-59	6800	43	.25	0.66	111.0	54	16
	90537-60	8200	42	.25	0.54	119.0	52	15
	90537-61	10,000	39	.25	0.47	137.0	49	14
	90537-62	12,000	31	.079	0.33	143.0	46	13
	90537-63	15,000	31	.079	0.29	157.0	45	12
	90537-64	18,000	31	.079	0.28	175.0	41	10
	90537-65	22,000	27	.079	0.25	274.0	33	9
	90537-66	27,000	27	.079	0.21	308.0	31	8
	90537-67	33,000	27	.079	0.19	343.0	30	7.5
	90537-68	39,000	27	.079	0.17	376.0	27	6.0
	90537-69	47,000	23	.079	0.16	473.0	26	5.5
	90537-70	56,000	23	.079	0.14	512.0	25	5.0
	90537-71	68,000	23	.079	0.13	580.0	24	4.0
	90537-72	82,000	21	.079	0.12	618.0	23	3.5
	90537-73	100,000	18	.079	0.11	678.0	22	3.0

CREMENTAL CURRENT The D.C. current required to cause a 5% reduction in the nominal inductance value.

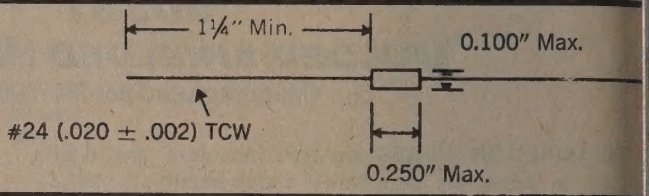
NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

DECI-DUCTOR

New Subminiature Inductor 0.10uH to 1000uH Range
0.100" diameter by 0.250" length 49 STANDARD VALUES

The **DECI-DUCTOR** offers the design engineer epoxy-molded reliability and uniformity in a subminiature R.F. Inductor. This smallest of Nytronics growing R.F. Inductor line is designed to meet all the environmental specifications of MIL-C-15305C, Grade 1, Class B.



ELECTRICAL CHARACTERISTICS

Inductance Tolerance: ±10% over entire range.
Dielectric Strength: 700 volts RMS at sea level.
Self-Resonant Frequency: Measured per MIL-C-15305C.
Rating: Maximum Current based on 35°C rise in 90°C ambient.

DENSITY CHARACTERISTICS

Volume: 0.002 cubic inches **Weight:** 0.35 grams

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: —55°C to +125°C

Terminal Strength: Meets three pound pull test; five 360° rotati in alternate directions per MIL-C-15305C.

Moisture, Vibration, and Shock Resistance: Meets requirements MIL-C-15305C, 10 cps to 2000 cps @ 15G ±10% maximum for logarithmic swings each of 20 minute duration repeated for each three mutually perpendicular planes. Shock: 50G, 11 MS. (b mounted)

Marking: Color coded per MIL-C-15305C.

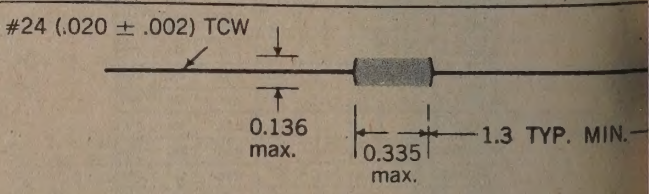
MATERIAL	NYTRONICS CATALOG NO.	L	Q Min.		Min. Fo	Max. DCR at 25°C	Max. I
		uH		MC	MC	OHMS	mA
PHENOLIC	DD-0.10	0.10	40	25	690	0.07	2000
	DD-0.12	0.12	40	25	650	0.08	1900
	DD-0.15	0.15	38	25	600	0.09	1750
	DD-0.18	0.18	38	25	550	0.10	1600
	DD-0.22	0.22	35	25	510	0.11	1550
	DD-0.27	0.27	35	25	470	0.15	1350
	DD-0.33	0.33	32	25	410	0.21	1150
	DD-0.39	0.39	32	25	370	0.29	970
	DD-0.47	0.47	32	25	340	0.35	820
	DD-0.56	0.56	32	25	310	0.48	700
	DD-0.68	0.68	33	25	280	0.65	600
	DD-0.82	0.82	30	25	255	0.82	500
	DD-1.00	1.00	30	25	240	1.10	475
IRON	DD-1.20	1.20	30	7.9	155	0.16	1200
	DD-1.50	1.50	32	7.9	140	0.20	1100
	DD-1.80	1.80	35	7.9	130	0.32	900
	DD-2.20	2.20	35	7.9	120	0.37	760
	DD-2.70	2.70	37	7.9	105	0.49	700
	DD-3.30	3.30	45	7.9	95	0.67	575
	DD-3.90	3.90	45	7.9	87	0.95	500
	DD-4.70	4.70	45	7.9	80	1.10	475
	DD-5.60	5.60	52	7.9	75	1.60	380
	DD-6.80	6.80	52	7.9	65	1.80	350
	DD-8.20	8.20	60	7.9	62	2.40	300
	DD-10.0	10.0	60	7.9	52	3.40	265

MATERIAL	NYTRONICS CATALOG NO.	L	Q Min.		Min. Fo	Max. DCR at 25°C	Ma
		uH		MC	MC	OHMS	
IRON	DD-12.0	12.0	45	2.5	42	2.40	3
	DD-15.0	15.0	47	2.5	36	2.70	2
	DD-18.0	18.0	50	2.5	32	3.00	2
	DD-22.0	22.0	50	2.5	28	3.30	2
	DD-27.0	27.0	50	2.5	25	3.80	2
FERRITE	DD-33.0	33.0	50	2.5	30	3.80	2
	DD-39.0	39.0	50	2.5	26	4.10	2
	DD-47.0	47.0	50	2.5	24	4.40	2
	DD-56.0	56.0	50	2.5	22	5.70	2
	DD-68.0	68.0	52	2.5	19	6.50	1
	DD-82.0	82.0	52	2.5	17	7.30	1
	DD-100	100	50	2.5	15	8.20	1
	DD-120	120	28	0.79	14	14	1
	DD-150	150	28	0.79	13	16	1
	DD-180	180	28	0.79	12	18	1
	DD-220	220	26	0.79	11	25	
	DD-270	270	26	0.79	10	33	
	DD-330	330	26	0.79	9.0	37	
	DD-390	390	25	0.79	8.0	51	
	DD-470	470	27	0.79	7.0	56	
	DD-560	560	27	0.79	6.5	61	
	DD-680	680	28	0.79	6.0	70	
	DD-820	820	28	0.79	5.5	91	
	DD-1000	1000	28	0.79	5.2	102	

SUPER WEE-WEE-DUCTOR

An Ultra-Reliable molded shielded inductor. Subminiature size for high density circuits. Great Inductance-to-size ratio. .10 uH to 10,000 uH. 0.136" diameter x 0.335" length. 61 stock values.

The **SUPER WEE-WEE-DUCTOR,** a shielded miniaturized inductor, provides a greater inductance-to-size ratio in a molded epoxy envelope. Use of unique "T" lead construction on all values from .10 uH to 10,000 uH assures exceptional reliability in ranges where fine wire sizes are used. Designed to meet the stringent requirements of MIL-C-15305C, Grade 1, Class B. This provides the design engineer with utmost reliability, electrical performance, and minimum coupling in high density packaging.



ELECTRICAL CHARACTERISTICS

Inductance Tolerance: ±10% (Q-Meter).
Dielectric Strength: 700 volts RMS at sea level.
Self-Resonant Frequency: Measured with full length leads on Q-Meter.
Q and Rp Values: Measured on Q-Meter.
Rating: 1 maximum based on ⅓ watt dissipation.

DENSITY CHARACTERISTICS

Volume: 0.0041 cubic inches.
Weight: 0.50 grams maximum.
Shielding: Less than 3% coupling with two units mounted side by side at 1000 cycles.

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: —55°C to + 125°C.
Terminal Strength: Meets five pounds pull test; five 360° rotations alternate directions per MIL-C-15305C.
Moisture, Vibration and Shock Resistance: Meets requirements MIL-C-15305C, Grade 1, Class B. High Frequency: 10 cps to 2000 c @ 15G ±10% maximum for 12 logarithmic swings each of 20 minu duration repeated for each of three mutually perpendicular plan Shock: 50G, 11 MS.
Marking: Color coded per MIL-C-15305C.

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NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

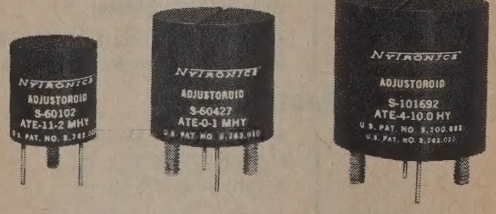
SUPER WEE-WEE-DUCTOR STANDARD VALUES

Nytronics Part No.	L	Q min.		min. Fo	approx. Cd	Max. DCR at 25°C	Max. I	Incr.* I
	μH		MC	MC	Pf	Ω	mA	mA
SW-W- 0.10	0.10	42	25	480	.70	.087	1650	>1650
SW-W- 0.12	0.12	42	25	460	.63	.090	1630	>1630
SW-W- 0.15	0.15	42	25	400	.66	.098	1550	>1550
SW-W- 0.18	0.18	42	25	360	.62	.117	1420	>1420
SW-W- 0.22	0.22	42	25	340	.63	.141	1330	>1330
SW-W- 0.27	0.27	42	25	320	.59	.157	1230	>1230
SW-W- 0.33	0.33	42	25	295	.55	.178	1140	>1140
SW-W- 0.39	0.39	42	25	275	.55	.208	1060	>1060
SW-W- 0.47	0.47	41	25	250	.56	.257	960	> 960
SW-W- 0.56	0.56	39	25	238	.52	.283	915	> 915
SW-W- 0.68	0.68	36	25	224	.50	.337	840	> 840
SW-W- 0.82	0.82	35	25	205	.50	.470	720	> 720
SW-W- 1.0	1.0	38	25	135	.87	.170	1180	>1180
SW-W- 1.2	1.2	38	7.9	124	.87	.190	1150	>1150
SW-W- 1.5	1.5	38	7.9	114	.87	.212	1050	>1050
SW-W- 1.8	1.8	38	7.9	105	.89	.242	990	> 990
SW-W- 2.2	2.2	38	7.9	95	.88	.263	950	> 950
SW-W- 2.7	2.7	38	7.9	85	.83	.320	880	> 880
SW-W- 3.3	3.3	38	7.9	78	.81	.345	820	> 820
SW-W- 3.9	3.9	42	7.9	74	.76	.411	755	> 755
SW-W- 4.7	4.7	42	7.9	68	.75	.562	650	> 650
SW-W- 5.6	5.6	42	7.9	62	.77	.742	565	> 565
SW-W- 6.8	6.8	45	7.9	55	.80	1.00	485	> 485
SW-W- 8.2	8.2	47	7.9	51	.78	1.20	440	> 440
SW-W- 10	10	51	7.9	45	.78	1.84	355	> 335
SW-W- 12	12	51	2.5	41	.85	2.60	300	> 300
SW-W- 15	15	45	2.5	48	.55	.635	610	200
SW-W- 18	18	45	2.5	44	.55	.728	570	175
SW-W- 22	22	45	2.5	37	.60	.825	530	160
SW-W- 27	27	45	2.5	32	.65	.950	500	155

Material	Nytronics Part No.	L	Q min.		min. Fo	approx. Cd	Max. DCR at 25°C	Max. I	Incr.* I
		μH		MC	MC	Pf	Ω	mA	mA
FERRITE "T" LEAD	SW-W- 33	33	46	2.5	30	.65	1.26	430	150
	SW-W- 39	39	46	2.5	27	.66	1.42	405	145
	SW-W- 47	47	46	2.5	23	.66	1.72	370	140
	SW-W- 56	56	48	2.5	21	.75	2.03	340	130
	SW-W- 68	68	48	2.5	18.5	.75	2.29	320	120
	SW-W- 82	82	46	2.5	17.0	.75	2.55	305	115
	SW-W- 100	100	46	2.5	15.5	.78	2.92	280	100
	SW-W- 120	120	53	0.79	14.5	.72	3.30	235	80
	SW-W- 150	130	53	0.79	13.0	.70	4.30	215	68
	SW-W- 180	180	53	0.79	11.5	.70	5.40	200	64
	SW-W- 220	220	55	0.79	10.0	.84	6.65	150	60
	SW-W- 270	270	57	0.79	9.50	.74	7.60	140	58
	SW-W- 330	330	57	0.79	8.50	.75	8.50	130	56
	SW-W- 390	390	57	0.79	8.00	.74	10.0	120	54
	SW-W- 470	470	57	0.79	7.20	.70	13.5	100	52
	SW-W- 560	560	61	0.79	6.40	.70	14.5	95	50
	SW-W- 680	680	61	0.79	5.80	.78	16.0	90	48
	SW-W- 820	820	58	0.79	5.30	.78	19.0	85	47
	SW-W- 1000	1000	58	0.79	4.80	.78	21.5	80	45
	SW-W- 1200	1200	55	0.25	2.90	1.9	23	100	40
	SW-W- 1500	1500	55	0.25	2.80	1.6	30	90	35
	SW-W- 1800	1800	55	0.25	2.60	1.5	33	86	32
	SW-W- 2200	2200	55	0.25	2.55	1.3	40	78	30
	SW-W- 2700	2700	55	0.25	2.40	1.2	43	74	28
	SW-W- 3300	3300	55	0.25	2.00	1.1	58	65	26
	SW-W- 3900	3900	55	0.25	1.95	1.1	76	56	23
	SW-W- 4700	4700	55	0.25	1.85	1.1	85	53	20
	SW-W- 5600	5600	55	0.25	1.75	1.0	100	48	18
	SW-W- 6800	6800	50	0.25	1.58	1.0	127	43	15
	SW-W- 8200	8200	50	0.25	1.55	1.0	150	40	12
	SW-W-10,000	10,000	50	0.25	1.45	1.0	190	37	10

*INCREMENT CURRENT — The D.C. current required to cause a 5% reduction in the nominal inductance value.

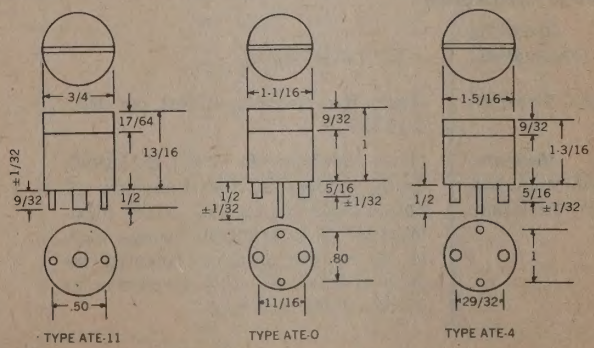
This radically new development in the toroidal coil field offers a miniature variable toroid in one of three case sizes as shown above. The **ADJUSTOROID** was developed especially for printed circuit and similar lightweight applications. This unit is hermetically sealed, and there is no physical contact between the adjusting screw and the toroidal winding.



ADJUSTOROID

(U.S. Patent Numbers 2,762,020 and 3,100,882)

Miniature Variable Toroid
Stepless Adjustment
Very High "Q"
Available to 12 Henries
Completely Hermetically Sealed
Fully Shielded

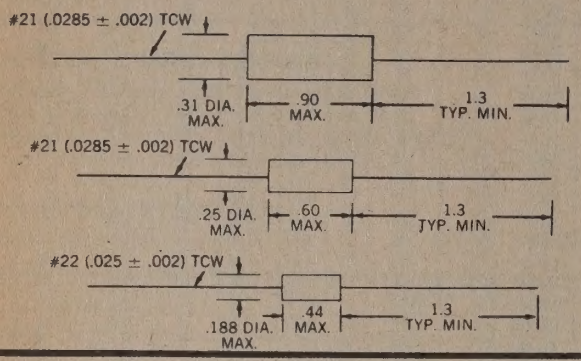


NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

MOLDED NON-SHIELDED S, M, and L INDUCTORS

Proven reliability molded inductors designed to meet MIL-C-15305A. Inductance 0.10 to 10,000 uH in three envelopes.



These units offer the design engineer a rugged, molded inductor that has been recognized for years throughout the industry for exceptional reliability in critical circuitry applications.

ELECTRICAL CHARACTERISTICS

Inductance Tolerance: 0.1 to 22uH ±10% on Q-Meter
27uH to 10,000 ±5% 1,000 cps bridge

Dielectric Strength: 700 volts RMS at sea level.

Self-Resonant Frequency: Minimum f_o to be not less than 80% of published data and measured with full length leads on Grid-Dip Meter.

Q and Rp Values: Measured on Q-Meter.

Rating: ⅓ watt dissipation for series S and M and ½ watt dissipation for L series.

DENSITY CHARACTERISTICS

Volume:
S Type — 0.012 cu. in.
M Type — 0.029 cu. in.
L Type — 0.068 cu. in.

Weight:
S Type — 0.90 grams
M Type — 2.00 grams
L Type — 4.10 grams

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: −55°C to +125°C.

Terminal Strength: Meets five pound pull test per MIL-C-15305C.

Moisture, Vibration, and Shock Resistance: Meets requirements of MIL-C-15305C, Grade 1, Class B. High frequency 10 cps to 2000 cps @ 15G ±10% maximum for 12 logarithemic swings, each of 20 minute duration repeated for each of three mutually perpendicular planes. (body mounted)

MATERIAL	NYTRONICS PART NO.	L	Q min		approx. Fo	approx. Cd	max DCR at 125°C	m
		µH		MC	MC	µµF	Ω	
PHENOLIC	RFC-S- 0.10	0.10	85	50	>500	0.4	.02	40
	RFC-S- 0.12	0.12	85	50	500	0.4	.025	35
	RFC-S- 0.15	0.15	85	50	>500	0.4	.03	30
	RFC-S- 0.18	0.18	75	50	500	0.4	.03	30
	RFC-S- 0.22	0.22	75	50	500	0.4	.03	30
	RFC-S- 0.27	0.27	70	45	470	0.4	.04	27
	RFC-S- 0.33	0.33	70	40	440	0.4	.05	25
	RFC-S- 0.39	0.39	65	40	400	0.4	.08	20
	RFC-S- 0.47	0.47	60	25	360	0.4	.08	20
	RFC-S- 0.56	0.56	55	25	330	0.4	.10	17
	RFC-S- 0.68	0.68	55	25	300	0.4	.12	15
	RFC-S- 0.82	0.82	50	25	275	0.4	.18	13
	RFC-S- 1.0	1.0	50	20	250	0.4	.24	11
	RFC-S- 1.2	1.2	45	20	220	0.4	.35	10
	RFC-S- 1.5	1.5	45	15	200	0.4	.43	85
	RFC-S- 1.8	1.8	45	15	180	0.4	.65	72
	RFC-S- 2.2	2.2	45	15	165	0.4	.80	65
IRON	RFC-S- 2.7	2.7	55	10	110	0.7	.12	160
	RFC-S- 3.3	3.3	55	10	100	0.7	.15	140
	RFC-S- 3.9	3.9	60	10	95	0.7	.23	120
	RFC-S- 4.7	4.7	70	7.9	90	0.7	.30	100
	RFC-S- 5.6	5.6	65	7.9	80	0.7	.45	90
	RFC-S- 6.8	6.8	65	7.9	70	0.7	.55	80
	RFC-S- 8.2	8.2	60	7.9	65	0.7	.65	72
	RFC-S- 10	10	60	5	60	0.7	.73	65
	RFC-S- 12	12	65	5	53	0.7	1.1	59
	RFC-S- 15	15	80	2.5	47	0.7	1.4	50
	RFC-S- 18	18	75	2.5	43	0.7	1.6	46
	RFC-S- 22	22	75	2.5	40	0.7	1.8	43
	RFC-S- 27	27	75	2.5	36	0.7	2.7	36
	RFC-S- 33	33	85	2.5	32	0.7	3.5	30
	RFC-S- 39	39	80	2.5	26	0.9	3.8	29
	RFC-S- 47	47	80	2.5	22	1.1	4.0	27
	RFC-S- 56	56	75	2.5	19	1.3	4.4	26
	RFC-S- 68	68	75	2.5	16	1.5	4.7	25
	RFC-S- 82	82	75	2.5	13	2.0	5.3	23
	RFC-S- 100	100	75	1.5	10	2.5	6.0	22
	RFC-M- 120	120	95	1.5	14	1.1	7.5	20
	RFC-M- 150	150	90	1.0	11	1.3	8	19
	RFC-M- 180	180	85	1.0	9	1.8	9	18
	RFC-M- 220	220	85	1.0	7	2.2	10	18
	RFC-M- 270	270	80	1.0	5.5	3.0	11	17
	RFC-M- 330	330	80	.8	4.5	3.8	12	16
	RFC-M- 390	390	75	.8	4.0	4.1	13	15
	RFC-M- 470	470	75	.8	3.5	4.4	14	15
	RFC-M- 560	560	65	.8	3.1	4.7	16	14
	RFC-M- 680	680	65	.8	2.7	5.0	17	14
	RFC-M- 820	820	65	.8	2.5	5.0	19	13
	RFC-M-1000	1000	70	.5	2.3	5.0	21	12
	RFC-L- 1200	1200	75	.5	2.1	4.4	27	13
	RFC-L- 1500	1500	75	.4	1.9	4.5	29	13
	RFC-L- 1800	1800	65	.4	1.7	4.6	32	12
	RFC-L 2200	2200	65	.25	1.5	4.7	35	12
	RFC-L- 2700	2700	65	.25	1.3	5.0	40	11
	RFC-L- 3300	3300	65	.25	1.2	5.3	45	10
	RFC-L- 3900	3900	65	.25	1.05	5.6	49	10
	RFC-L- 4700	4700	65	.25	.95	6.2	53	9
	RFC-L- 5600	5600	65	.25	.85	6.3	60	9
	RFC-L- 6800	6800	65	.25	.75	6.3	67	8
	RFC-L- 8200	8200	65	.25	.65	7.2	75	8
	RFC-L-10000	10000	65	.15	.58	7.8	80	8

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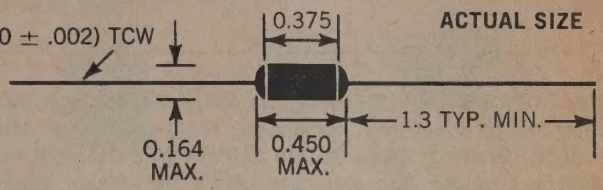
NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

WEE-DUCTOR

**Miniature Shielded Inductor with high inductance-to-size ratio.
0.10uH to 180,000uH in 76 values
Designed to meet MIL-C-15305C.**

WEE-DUCTOR was the first miniature shielded inductor Nytronics standardized for stock delivery. This encapsd non-flammable shielded unit in a 0.164" diameter by " long envelope offers the design engineer extremely nductance for density packaging. The WEE-DUCTOR is ned to meet the environmental requirements of MIL-C-5C, Grade 1, Class B.



TRICAL CHARACTERISTICS

ance Tolerance: 0.1 to 22uH ±10% (Q-Meter); 27uH to 1,000 (1KC Bridge); 1,200uH to 56,000uH ±10% (1KC Bridge) 68,- to 180,000uH ±20% (1KC Bridge) measured at point on leads n from body.

ric Strength: 700 volts RMS at sea level.

sonant Frequency: Minimum f_o to be not less than 80% of ned data, and measured with full length leads on Q-Meter.

Rp Values: Measured on Q-Meter. Minimum Rp values on ned data sheet are conservative.

um Current: Based on temperature rise not to exceed 40°C C ambient.

DENSITY CHARACTERISTICS

Volume: 0.0087 cubic inches **Weight:** 0.75 grams maximum
Shielding: Less than 3% coupling with two units measured side by side at 1000 cycles.

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: —55°C to +125°C.
Terminal Strength: Meets five pound pull test; five 360° rotations in alternate directions per MIL-C-15305C.
Moisture, Vibration, and Shock Resistance: Meets requirements of MIL-C-15305C, Grade 1, Class B. Low frequency 10 to 55 cps @ .06" maximum total excursion at rate of 1 linear sweep per minute for 2 hours repeated for each of three mutually perpendicular planes. Shock: 50G, 11 MS.
Marking: Printed with pertinent data.

TERIAL	NYTRONICS PART NO.	L	Q min		approx. Fo	approx. Cd	Max. DCR at 125°C	Max. I	Incr* I
		µH		MC	MC	µµF	Ω	mA	mA
PHENOLIC	WEE- 0.10	0.10	63	25	>500	0.67	0.020	4000	4000
	WEE- 0.12	0.12	61	25	>500	0.67	0.029	3350	3350
	WEE- 0.15	0.15	59	25	>500	0.67	0.032	3000	3000
	WEE- 0.18	0.18	57	25	458	0.67	0.040	2850	2850
	WEE- 0.22	0.22	56	25	414	0.67	0.045	2700	2700
	WEE- 0.27	0.27	50	25	373	0.67	0.08	2000	2000
	WEE- 0.33	0.33	48	25	337	0.67	0.09	1900	1900
	WEE- 0.39	0.39	48	25	310	0.67	0.16	1420	1420
	WEE- 0.47	0.47	48	25	283	0.67	0.17	1400	1400
	WEE- 0.56	0.56	45	25	258	0.67	0.36	960	960
	WEE- 0.68	0.68	45	25	235	0.67	0.37	940	940
	WEE- 0.82	0.82	41	25	214	0.67	0.46	870	870
IRON	WEE- 1.0	1.0	42	7.9	164	0.92	0.062	2300	2300
	WEE- 1.2	1.2	43	7.9	150	0.92	0.067	2200	2200
	WEE- 1.5	1.5	41	7.9	135	0.92	0.16	1420	1420
	WEE- 1.8	1.8	42	7.9	124	0.92	0.17	1370	1370
	WEE- 2.2	2.2	42	7.9	112	0.92	0.19	1300	1300
	WEE- 2.7	2.7	41	7.9	107	0.92	0.20	1270	1270
	WEE- 3.3	3.3	40	7.9	91.5	0.92	0.31	1030	1030
	WEE- 3.9	3.9	40	7.9	84.5	0.92	0.33	1000	1000
	WEE- 4.7	4.7	40	7.9	76.5	0.92	0.58	750	750
	WEE- 5.6	5.6	40	7.9	69.5	0.92	0.64	710	710
	WEE- 6.8	6.8	40	7.9	63.5	0.92	0.68	680	680
	WEE- 8.2	8.2	45	7.9	57.5	0.92	1.3	500	500
	WEE- 10	10	46	2.5	52.5	0.92	1.4	480	480
	WEE- 12	12	47	2.5	47.5	0.92	1.5	460	460
	WEE- 15	15	47	2.5	42.5	0.92	1.7	440	440
FERRITE	WEE- 18	18	45	2.5	53.5	0.49	0.88	610	235
	WEE- 22	22	47	2.5	47.0	0.50	0.95	590	220
	WEE- 27	27	42	2.5	44.0	0.48	1.15	530	200
	WEE- 33	33	43	2.5	40.0	0.48	1.2	520	193
	WEE- 39	39	45	2.5	36.5	0.48	1.6	450	183
	WEE- 47	47	46	2.5	33.0	0.49	1.8	420	177
	WEE- 56	56	40	2.5	30.0	0.49	2.2	390	170
	WEE- 68	68	40	2.5	27.0	0.50	2.3	375	165
	WEE- 82	82	42	2.5	17.5	1.0	2.4	360	160
	WEE- 100	100	63	.79	15.0	1.0	2.6	345	157
	WEE- 120	120	62	.79	14.0	1 0	2.9	330	145

MATERIAL	NYTRONICS PART NO.	L	Q min		approx. Fo	approx. Cd	Max. DCR at 125°C	Max. I	Incr* I
		µH		MC	MC	µµF	Ω	mA	mA
FERRITE	WEE- 150	150	63	.79	12.5	1.0	3.3	315	126
	WEE- 180	180	60	.79	11.5	1.0	3.6	300	110
	WEE- 220	220	57	.79	11.0	0.94	4.1	280	105
	WEE- 270	270	52	.79	10.0	0.92	4.8	260	91
	WEE- 330	330	50	.79	9.0	0.92	5.6	240	87
	WEE- 390	390	43	.79	8.5	0.87	6.2	230	72
	WEE- 470	470	66	.79	8.0	0.83	10.0	180	67
	WEE- 560	560	64	.79	7.5	0.82	11.5	170	65
	WEE- 680	680	71	.79	6.5	0.87	12.0	160	60
	WEE- 820	820	67	.79	6.0	0.87	13.8	150	55
	WEE- 1000	1000	62	.79	5.6	0.87	16.0	140	52
	WEE- 1200	1200	52	.250	1.490	9.0	18.2	135	50
	WEE- 1500	1500	51	.250	1.460	8.0	23.7	118	48
	WEE- 1800	1800	51	.250	1.420	6.5	30.2	105	42
	WEE- 2200	2200	50	.250	1.300	6.8	33.7	99	37
	WEE- 2700	2700	51	.250	1.180	6.8	43.1	87	33
	WEE- 3300	3300	52	.250	1.050	7.0	48.7	82	30
	WEE- 3900	3900	48	.250	.960	7.0	62.7	72	29
	WEE- 4700	4700	48	.250	.840	7.4	70.5	68	28
	WEE- 5600	5600	48	.250	.810	6.8	104	56	24
	WEE- 6800	6800	45	.250	.740	6.8	118	53	20
	WEE- 8200	8200	38	.250	.580	9.2	146	47	18
	WEE- 10,000	10,000	36	.079	.470	11.5	76.6	66	15
	WEE- 12,000	12,000	36	.079	.370	15.0	109	55	14
	WEE- 15,000	15,000	38	.079	.330	15.0	119	52	13
	WEE- 18,000	18,000	38	.079	.305	15.0	138	49	13
	WEE- 22,000	22,000	32	.079	.295	13.0	219	39	12
	WEE- 27,000	27,000	32	.079	.270	13.0	259	35	12
	WEE- 33,000	33,000	32	.079	.250	12.5	296	33	11
	WEE- 39,000	39,000	30	.079	.215	14.0	395	29	10
	WEE- 47,000	47,000	25	.079	.210	12.5	452	27	9
	WEE- 56,000	56,000	25	.079	.195	12.0	499	26	8
	WEE- 68,000	68,000	20	.079	.130	18.4	395	29	1.1
	WEE- 82,000	82,000	20	.079	.125	16.5	452	27	1.1
	WEE-100,000	100,000	20	.079	.115	16.2	499	26	1.1
	WEE-120,000	120,000	20	.070	.105	16.8	540	23	1.1
	WEE-150,000	150,000	20	.060	.098	13.4	750	20	1.0
	WEE-180,000	180,000	20	.050	.094	13.4	880	18	0.8

*Incremental Current: The D.C. current required to cause a maximum reduction of 5 percent from nominal inductance value.

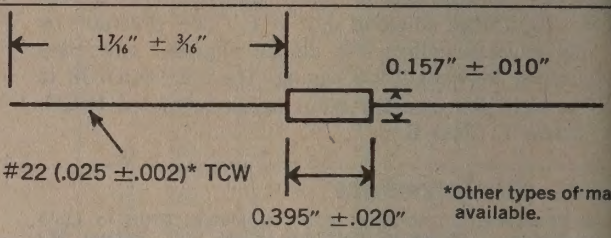
NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

SUPER WEE-DUCTOR MOLDED SHIELDED INDUCTOR

Reliable Molded Shielded Miniature Indu
Inductance Range: 0.1uH to 100,000uH.

The **SUPER WEE-DUCTOR** is an R.F. Inductor specifically designed to meet the demanding requirements of MIL-C-15305C, Grade 1, Class B. The SUPER WEE-DUCTOR epoxy molded envelope and shielding offers the design engineer reliability, electrical performance, design flexibility, and minimum coupling in high density packaging.



*Other types of mater
available.

ELECTRICAL CHARACTERISTICS

Inductance Tolerance: ±10% std. Other tolerances available.
Dielectric Strength: 700 volts RMS at sea level.
Self-Resonant Frequency: Measured per MIL-C-15305C.
Q and Rp Values: Measured on a Q-Meter. Minimum Rp values at listed frequencies are all conservative.
Maximum Current: Based on temperature rise not to exceed 35°C at 90°C ambient.

DENSITY CHARACTERISTICS

Volume: 0.0076 cubic inches **Weight:** 0.75 grams maximum
Shielding: At 1000 cycles two units assembled side by side exhibit less than 3% coupling.

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: —55°C to +125°C.

Terminal Strength: Meets five pound pull test; five 360° rotation alternate directions per MIL-C-15305C.

Moisture, Vibration, and Shock Resistance: Meets requirements MIL-C-15305C, Grade 1, Class B. High frequency 10 cps to 2000 @ 15G ±10% maximum for 12 logarithmic swings each of 20 mi duration repeated for each of three mutually perpendicular pla Shock: 50G, 11 MS.

Marking: Color coded per MIL-C-15305C.

MATERIAL	NYTRONICS CATALOG NO.	L	Q min		min. Fo	approx. Cd	Max DCR at 125°C	Max. I	Incr.** I
		µH		MC	MC	µµF	Ω	mA	mA
PHENOLIC	SWD- 0.10	0.10	50	25	500	0.67	0.025	2900	>2900
	SWD- 0.12	0.12	51	25	450	0.67	0.034	2800	>2800
	SWD- 0.15	0.15	51	25	400	0.67	0.037	2750	>2750
	SWD- 0.18	0.18	50	25	375	0.67	0.047	2200	>2200
	SWD- 0.22	0.22	49	25	330	0.67	0.067	1700	>1700
	SWD- 0.27	0.27	47	25	290	0.67	0.11	1500	>1500
	SWD- 0.33	0.33	46	25	280	0.67	0.13	1300	>1300
	SWD- 0.39	0.39	44	25	255	0.67	0.18	1100	>1100
	SWD- 0.47	0.47	44	25	235	.067	0.25	1000	>1000
	SWD- 0.56	0.56	43	25	210	0.67	0.33	900	> 900
	SWD- 0.68	0.68	42	25	190	0.67	0.45	750	> 750
	SWD- 0.82	0.82	40	25	180	0.67	0.59	600	> 600
IRON	SWD- 1.0	1.0	47	25	140	0.84	0.070	1900	>1900
	SWD- 1.2	1.2	46	7.9	130	0.83	0.093	1600	>1600
	SWD- 1.5	1.5	45	7.9	115	0.83	0.12	1300	>1300
	SWD- 1.8	1.8	43	7.9	105	0.83	0.14	1200	>1200
	SWD- 2.2	2.2	45	7.9	100	0.73	0.19	1100	>1100
	SWD- 2.7	2.7	46	7.9	92	0.73	0.28	950	> 950
	SWD- 3.3	3.3	44	7.9	85	0.76	0.35	800	> 800
	SWD- 3.9	3.9	44	7.9	75	0.73	0.40	750	> 750
	SWD- 4.7	4.7	44	7.9	70	0.73	0.55	650	> 650
	SWD- 5.6	5.6	47	7.9	65	0.73	0.72	550	> 550
	SWD- 6.8	6.8	50	7.9	55	0.78	1.02	500	> 500
	SWD- 8.2	8.2	50	7.9	50	0.78	1.32	475	> 475
	SWD- 10	10	49	7.9	46	0.84	1.62	450	> 450
	SWD- 12	12	55	2.5	44	0.73	2.00	400	> 400
FERRITE	SWD- 15	15	44	2.5	49	0.48	0.80	620	250
	SWD- 18	18	45	2.5	45	0.48	0.89	610	235
	SWD- 22	22	46	2.5	41	0.48	0.96	600	220
	SWD- 27	27	49	2.5	38	0.48	1.19	500	200
	SWD- 33	33	45	2.5	34	0.48	1.37	490	190
	SWD- 39	39	53	2.5	29	0.48	1.93	410	180
	SWD- 47	47	52	2.5	27	0.48	2.11	400	175
	SWD- 56	56	49	2.5	25	0.48	2.23	380	160
	SWD- 68	68	51	2.5	21	0.50	2.70	370	150
	SWD- 82	82	45	2.5	10.5	1.70	2.44	360	140

MATERIAL	NYTRONICS CATALOG NO.	L	Q min		min. Fo	approx. Cd	Max DCR at 125°C	Max. I	Incr.** I
		µH		MC	MC	µµF	Ω	mA	mA
FERRITE	SWD- 100	100	52	2.5	10.0	1.70	3.12	325	120
	SWD- 120	120	57	.79	9.7	1.40	3.60	290	95
	SWD- 150	150	56	.79	8.5	1.50	4.10	275	90
	SWD- 180	180	60	.79	8.0	1.40	4.40	260	85
	SWD- 220	220	58	.79	7.5	1.30	5.00	250	80
	SWD- 270	270	60	.79	7.0	1.30	5.80	240	70
	SWD- 330	330	54	.79	6.5	1.10	6.40	225	65
	SWD- 390	390	67	.79	6.2	1.00	7.40	200	60
	SWD- 470	470	60	.79	5.7	1.00	9.50	180	58
	SWD- 560	560	60	.79	4.7	1.30	10.5	174	55
	SWD- 680	680	60	.79	4.5	1.10	11.8	168	50
	SWD- 820	820	57	.79	4.2	1.10	13.0	152	45
	SWD- 1000	1000	65	.79	3.8	1.10	17.5	135	40
	SWD- 1200	1200	45	.25	1.5	6.20	22.1	115	35
	SWD- 1500	1500	49	.25	1.2	8.20	26.5	110	33
	SWD- 1800	1800	47	.25	1.0	8.70	29.9	105	30
	SWD- 2200	2200	50	.25	0.97	8.00	33.8	99	27
	SWD- 2700	2700	47	.25	0.92	7.00	47.3	83	25
	SWD- 3300	3300	43	.25	0.84	7.20	53.0	80	22
	SWD- 3900	3900	43	.25	0.80	6.50	73.8	67	20
	SWD- 4700	4700	44	.25	0.74	6.40	81.6	63	19
	SWD- 5600	5600	45	.25	0.73	5.50	98.9	56	17
	SWD- 6800	6800	43	.25	0.66	5.50	111.0	54	16
	SWD- 8200	8200	42	.25	0.54	6.70	119.0	52	15
	SWD- 10,000	10,000	39	.25	0.47	7.30	137.0	49	14
	SWD- 12,000	12,000	31	.079	0.33	12.0	143.0	46	13
	SWD- 15,000	15,000	31	.079	0.29	12.7	157.0	45	12
	SWD- 18,000	18,000	31	.079	0.28	11.2	175.0	41	10
	SWD- 22,000	22,000	27	.079	0.25	11.6	274.0	33	9
	SWD- 27,000	27,000	27	.079	0.21	12.9	308.0	31	8
	SWD- 33,000	33,000	27	.079	0.19	13.3	343.0	30	7.5
	SWD- 39,000	39,000	27	.079	0.17	14.1	376.0	27	6.0
	SWD- 47,000	47,000	23	.079	0.16	13.5	473.0	26	5.5
	SWD- 56,000	56,000	23	.079	0.14	13.2	512.0	25	5.0
	SWD- 68,000	68,000	23	.079	0.13	13.2	580.0	24	4.0
	SWD- 82,000	82,000	21	.079	0.12	12.9	618.0	23	3.5
	SWD-100,000	100,000	18	.079	0.11	12.2	678.0	22	3.0

**INCREMENTAL CURRENT The D.C. current required to cause a 5% reduction in the nominal inductance value.

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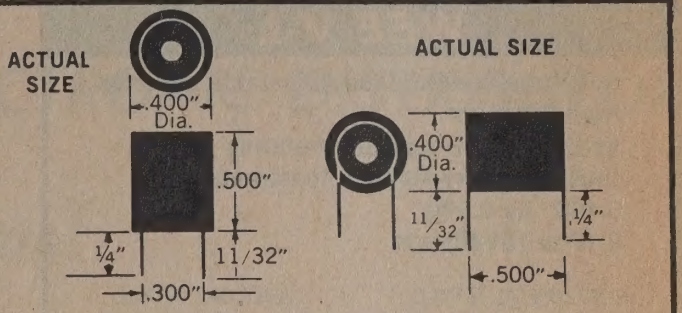
NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

VARIABLE INDUCTOR

Miniature with inductance range of 0.10 to 4700uH in 29 values.
Encapsulated in epoxy resin for reliability.
Designed to meet MIL-C-15305A.



Terminal Leads #22 (.025 ± .002) VCW

VERTICAL STYLE HORIZONTAL STYLE

e **VARIABLE INDUCTOR** offers high reliability and ceptional stability over extreme temperature vari-ons. This small lightweight unit is furnished in rtical and horizontal styles to facilitate mounting printed circuit boards. The unit is designed to eet the requirements of MIL-C-15305A, Grade 1, ass B.

LECTRICAL CHARACTERISTICS

ductance Range: 0.33 to 4700uH Tunable Range ±20%
0.15 to 0.22uH Tunable Range ±15%
0.1 Tunable Range ±10%
All measurements at 25°C on Q-Meter using miniature alligator clips mounted 1/32" from body.
Q values ±20%

Self-Resonant Frequency: Minimum f_o to be not less than 80% of published data as measured with Grid-Dip Meter

ENSITY CHARACTERISTICS

Volume: 0.063 cubic inches

Weight: 2.6 grams

HYSICAL AND ENVIRONMENTAL HARACTERISTICS

Torque: 0.75 to 5.0 inch-ounces
Use Nytronics Tuning Tool No. B-305 or equal.

Operating Temperature: −55°C to +125°C

rminal Strength: Meets five pound pull tests.

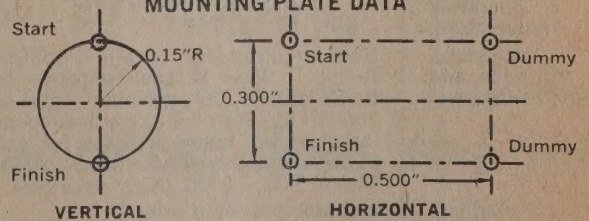
Moisture, Vibration, and hock Resistance: Meets requirements of MIL-C-15305A, Grade 1, Class B. Low frequency 10 cps to 55 cps @ .06" total excursion at rate of 1 linear sweep per minute for 2 hours repeated for each of 3 mutually perpendicular planes. Shock: 50G, 11ms.

Core Material: Iron

Marking: Manufacturer data printed.

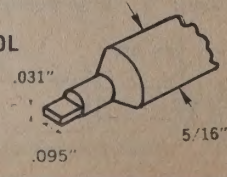
NYTRONICS PART NO.		L nom	Q at L nom		Approx. Fo, L nom	max DCR at 25°C
VIV	VIH	μH		MC	MC	Ω
VIV- 0.10	VIH- 0.10	0.10	85	25.	>500.	0.02
VIV- 0.15	VIH- 0.15	0.15	100	25.	>500.	0.035
VIV- 0.22	VIH- 0.22	0.22	100	25.	>500.	0.04
VIV- 0.33	VIH- 0.33	0.33	100	25.	334.	0.04
VIV- 0.47	VIH- 0.47	0.47	100	25.	285.	0.05
VIV- 0.68	VIH- 0.68	0.68	100	25.	237.	0.07
VIV- 1.00	VIH- 1.00	1.00	90	25.	205.	0.13
VIV- 1.50	VIH- 1.50	1.50	70	7.9	168.	0.24
VIV- 2.20	VIH- 2.20	2.20	73	7.9	135.	0.30
VIV- 3.30	VIH- 3.30	3.30	80	7.9	112.	0.45
VIV- 4.70	VIH- 4.70	4.70	75	7.9	100.0	0.80
VIV- 6.80	VIH- 6.80	6.80	80	7.9	80.0	1.1
VIV- 10.0	VIH- 10.0	10.0	82	7.9	67.0	1.9
VIV- 15.0	VIH- 15.0	15.0	65	2.5	54.2	3.2
VIV- 22.0	VIH- 22.0	22.0	55	2.5	17.5	3.4
VIV- 33.0	VIH- 33.0	33.0	54	2.5	15.0	3.6
VIV- 47.0	VIH- 47.0	47.0	51	2.5	13.2	4.5
VIV- 68.0	VIH- 68.0	68.0	55	2.5	12.0	5.5
VIV- 100	VIH- 100	100.0	50	2.5	10.5	6.7
VIV- 150	VIH- 150	150.	50	.79	3.0	11.0
VIV- 220	VIH- 220	220.	50	.79	2.70	13.0
VIV- 330	VIH- 330	330.	48	.79	2.24	16.0
VIV- 470	VIH- 470	470.	45	.79	1.90	18.0
VIV- 680	VIH- 680	680.	42	.79	1.70	21.0
VIV-1000	VIH-1000	1000.	40	.79	1.40	38.0
VIV-1500	VIH-1500	1500.	40	.25	1.14	54.0
VIV-2200	VIH-2200	2200.	44	.25	0.96	66.0
VIV-3300	VIH-3300	3300.	46	.25	0.86	85.0
VIV-4700	VIH-4700	4700.	48	.25	0.76	99.0

MOUNTING PLATE DATA



TYPICAL ALIGNING TOOL

B-305

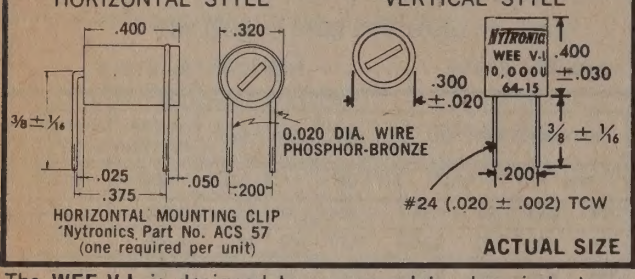


NYTRONICS, INC.
ESSEX ELECTRONICS DIVISION

Inductors

WEE V-L

Subminiature Shielded Adjustable Inductor
High Q Values
Vertical or Horizontal* Mounting
Unitized Epoxy-Molded Construction
0.400" by 0.300"
0.10 to 100,000uH



The **WEE V-L** is designed to accommodate close inductance adjustments in high-density circuits that demand exceptional stability and high "Q" in the smallest size available.
The **WEE V-L** is designed to meet MIL-C-15305C, Grade 1, Class B. Printed board mounting is facilitated by 0.200 grid spacing and unit has shield construction to allow maximum density packaging. Standardized in 73 stock values.

ELECTRICAL CHARACTERISTICS

Adjustable Inductance Range:	±10%** over entire range as measured per MIL-C-15305C
Q and f_o Values:	Minimum not less than 80% of specified value at L nominal.
Dielectric Strength:	840 Volts R.M.S. at sea level.
Working Voltage:	300 Volts D.C.
Maximum Current:	Based on temperature rise not to exceed 35°C at 90°C ambient.
Incremental Current:	Defined as the DC current required to cause a five percent reduction in the nominal inductance value.

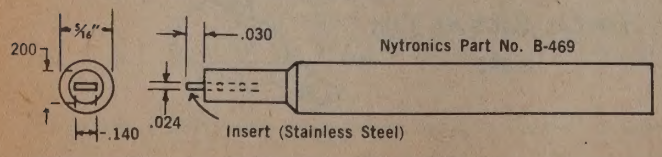
DENSITY CHARACTERISTICS

Weight:	1.5 grams maximum
Volume:	.0346 cubic inches
Shielding:	3% coupling maximum when two units are tested side by side.

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Use Nytronics Tuning Tool No. B-469 or equal.

Torque:	0.75 to 6.0 inch-oz.
Operating Temperature:	−55°C to +125°C.
Moisture, Vibration, and Shock Resistance:	Meet requirements of MIL-C-15305C, Grade 1, Class B. Low frequency 10 to 55 cps @ .06" maximum total excursion at rate of 1 linear sweep per minute for 2 hours repeated for each of three mutually perpendicular planes. Shock: 50G, 11 MS. (body mounted)
Marking:	Manufacturer data printed.
Terminal Pull:	Three pounds.



NYTRONICS CATALOG NO.	L nom.	f	Q nom.	Fo nom.	D.C.R. 25°C Max.	Max. I	In
	µh	MC		MC	ohms	m.a.	
**WEE V-L 0.10	.10	25	70	>250	0.030	2500	2
**WEE V-L 0.12	.12	25	70	>250	0.030	2500	2
WEE V-L 0.15	.15	25	70	>250	0.030	2500	2
WEE V-L 0.18	.18	25	70	>250	0.035	2400	2
WEE V-L 0.22	.22	25	70	>250	0.038	2300	2
WEE V-L 0.27	.27	25	80	>250	0.040	2200	2
WEE V-L 0.33	.33	25	80	>250	0.040	2200	2
WEE V-L 0.39	.39	25	80	250	0.045	2100	2
WEE V-L 0.47	.47	25	80	230	0.045	2100	2
WEE V-L 0.56	.56	25	80	220	0.050	2000	2
WEE V-L 0.68	.68	25	80	190	0.055	1900	1
WEE V-L 0.82	.82	25	85	180	0.060	1800	1
WEE V-L 1.00	1.00	25	85	160	0.070	1700	1
WEE V-L 1.2	1.2	7.9	90	170	0.085	1670	1
WEE V-L 1.5	1.5	7.9	100	155	0.100	1540	1
WEE V-L 1.8	1.8	7.9	115	135	0.110	1470	1
WEE V-L 2.2	2.2	7.9	110	120	0.120	1410	1
WEE V-L 2.7	2.7	7.9	110	104	0.125	1380	1
WEE V-L 3.3	3.3	7.9	90	93.0	0.165	1200	1
WEE V-L 3.9	3.9	7.9	90	87.0	0.180	1135	1
WEE V-L 4.7	4.7	7.9	95	79.0	0.245	985	
WEE V-L 5.6	5.6	7.9	95	72.0	0.265	950	
WEE V-L 6.8	6.8	7.9	85	63.0	0.330	853	
WEE V-L 8.2	8.2	7.9	95	60.0	0.460	720	
WEE V-L 10	10	7.9	90	54.0	0.640	620	
WEE V-L 12	12	2.5	120	37.0	0.800	545	
WEE V-L 15	15	2.5	120	28.8	0.865	520	
WEE V-L 18	18	2.5	115	23.8	0.940	504	
WEE V-L 22	22	2.5	125	21.3	1.03	460	
WEE V-L 27	27	2.5	115	20.6	1.18	418	
WEE V-L 33	33	2.5	120	18.6	1.30	398	
WEE V-L 39	39	2.5	120	17.7	1.41	385	
WEE V-L 47	47	2.5	110	14.9	1.61	350	
WEE V-L 56	56	2.5	115	13.9	2.08	330	
WEE V-L 68	68	2.5	105	12.9	2.20	320	
WEE V-L 82	82	2.5	105	11.7	2.42	300	
WEE V-L 100	100	2.5	95	10.5	2.15	333	
WEE V-L 120	120	0.790	95	5.60	2.38	316	
WEE V-L 150	150	0.790	90	5.20	2.52	306	
WEE V-L 180	180	0.790	95	4.90	2.88	288	
WEE V-L 220	220	0.790	95	4.60	3.18	273	
WEE V-L 270	270	0.790	100	4.20	3.50	260	
WEE V-L 330	330	0.790	100	3.55	4.80	222	
WEE V-L 390	390	0.790	100	3.45	5.44	209	
WEE V-L 470	470	0.790	100	3.20	5.90	201	
WEE V-L 560	560	0.790	95	2.90	6.30	194	
WEE V-L 680	680	0.790	100	2.70	7.20	181	
WEE V-L 820	820	0.790	90	2.50	8.00	172	
WEE V-L 1,000	1,000	0.790	100	2.35	12.0	141	
WEE V-L 1,200	1,200	0.250	95	2.20	13.5	132	
WEE V-L 1,500	1,500	0.250	90	1.90	16.5	119	
WEE V-L 1,800	1,800	0.250	100	1.80	18.0	114	
WEE V-L 2,200	2,200	0.250	100	1.70	20.5	107	
WEE V-L 2,700	2,700	0.250	95	1.50	22.5	102	
WEE V-L 3,300	3,300	0.250	90	1.40	42.0	76	
WEE V-L 3,900	3,900	0.250	85	1.27	47.5	71	
WEE V-L 4,700	4,700	0.250	85	1.24	53.0	67	
WEE V-L 5,600	5,600	0.250	85	0.93	62.5	65	
WEE V-L 6,800	6,800	0.250	75	0.79	69.5	58	
WEE V-L 8,200	8,200	0.250	80	0.75	75.0	56	
WEE V-L 10,000	10,000	0.250	70	0.70	100.0	49	
WEE V-L 12,000	12,000	0.079	70	.50	64	60	
WEE V-L 15,000	15,000	0.079	70	.38	84	52	
WEE V-L 18,000	18,000	0.079	70	.36	93	50	
WEE V-L 22,000	22,000	0.079	70	.32	104	45	
WEE V-L 27,000	27,000	0.079	70	.30	173	35	
WEE V-L 33,000	33,000	0.079	70	.27	187	32	
WEE V-L 39,000	39,000	0.079	70	.26	220	30	
WEE V-L 47,000	47,000	0.079	70	.25	253	28	
WEE V L 56,000	56.000	0.079	70	.24	285	26	
WEE V-L 68,000	68,000	0.079	60	.20	311	24	
WEE V-L 82,000	82,000	0.079	60	.19	385	22	
WEE V-L 100,000	100,000	0.079	60	.17	420	20	

*For Horizontal mounting use Nytronics mounting clip No. ACS-57 or order with prefix H (i.e. H WEE V-L 0.10).

**Tunable range ±5.0% on 0.10uH & 0.12uH

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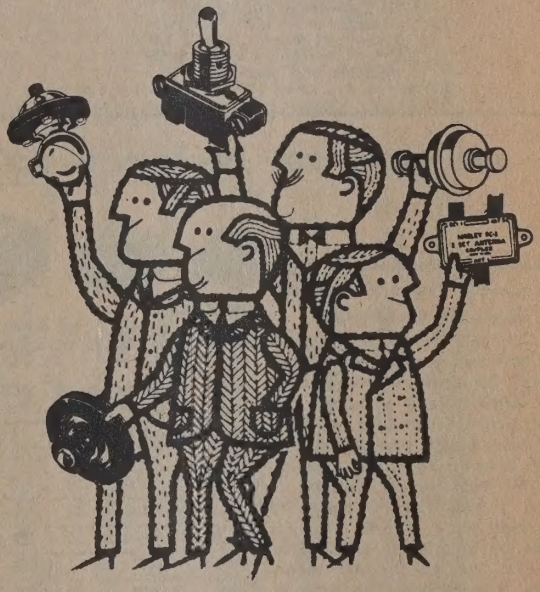


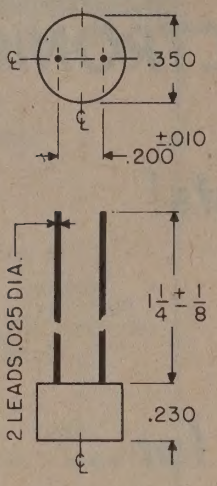
- *Availability of the latest products*
- *Speedy purchasing — one order does the job*

HIGH Q COILS & INDUCTANCE DECADE

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specification

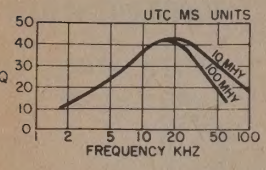
See UTC Electric Wave Filter in filter section 2700 and Transformers in transformer section 5600.

MS* MINIATURE TOROIDAL HIGH Q INDUCTORS



MS UNIT WEIGHT 1.3 GM

TYPICAL Q CURVE



Stock Type No.	Ind. Mhy (0 DC)	ma DC Max.*	DCRΩ Max.	Price 1-24
MS-1	1	60	1.4	$7.50
MS-5	5	28	7	7.50
MS-10	10	20	11	7.80
MS-25	25	13	38	8.10
MS-50	50	9	75	8.40
MS-100	100	6	132	8.40

* The maDC shown is for approximately 5% drop in inductance.

PHYSICAL CHARACTERISTICS

UTC's new MS series of high Q coils are only .23" high x .35" diameter. The low profile makes them ideal for high-density packaging requirements. All coils are molded in black epoxy.

Base diameter (.35") and lead spacing (.2") fall within TO-5 envelope dimensions.

Leads are .025" diameter gold-plated dumet, type D per MIL-STD-1276A, and are both weldable and solderable.

Q CHARACTERISTICS

Excellent Q in the 10 kHz to 50 kHz range, matching and often excelling the performance of much larger units. Designed for application over the wider range of 1 kHz to 100 kHz. See Q Response Curve.

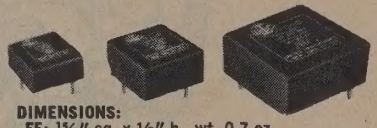
MIL SPECS

All units have been designed, manufactured and successfully tested to complete MIL-27C environmental requirements. MIL Type TF5RX20ZZ.

TOLERANCE AND TEMPERATURE STABILITY

MS units have an inductance tolerance of ±2% at 0.1V RMS, 1 kHz, 0 DC, 25°C. All have excellent inductance stability with temperature: less than ±2% from −55°C to +105°C.

NEW "FE,* FI,* FO"* MINIATURE INDUCTORS



Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications

FE, FI, FO miniature inductors are ideal for transistor and printed circuit applications, having both pin terminals and a molded flat construction. These units are symmetrical toroids providing maximum Q in minimum size. The FE and FI inductors are adjusted at 1 V, 1 kHz. The FO units are adjusted at 1 V, 400 Hz. All units are adjusted to a tolerance of ±1%. The ma DC Max shown is for approximately 5% drop in inductance. The temperature stability is unequalled from −55°C to +100°C. For AC level limitations, a general rule of thumb would be to consider the maximum AC current approximately equal to the maximum DC current rating. However, for specific applications, contact UTC with exact level, frequency, and Q requirements to determine suitability of part in application. All FE, FI, FO inductors are equally well suited for vacuum tube application. All units Mil Type: TF5RX20ZZ.

DIMENSIONS:
FE: 15/16" sq. x 1/2" h., wt. 0.7 oz.
FI: 1 3/16" sq. x 5/8" h., wt. 1.5 oz.
FO: 1 27/32" sq. x 27/32" h., wt. 5 oz.

Type No.	Ind. Hy, (0 DC)	ma DC Max.	DCR Max.	Suggested Price Net
FE-.01	.0100	70	2.5	$ 8.70
FE-.02	.0200	50	5.1	9.00
FE-.05	.0500	30	12	9.60
FE-.1	.100	22	22	10.20
FE-.5	.500	10	122	10.80
FE-1	1.00	7	250	11.40
FE-2	2.00	5	500	12.00
FI-.04	.0400	50	4.3	10.80
FI-.1	.100	30	11	11.10
FI-.25	.250	20	27	11.40
FI-.5	.500	14	60	11.70
FI-1	1.00	10	110	12.00
FI-4	4.00	5	430	12.90
FO-.1	.100	60	4.2	15.00
FO-.5	.500	25	23	15.00
FO-1	1.00	18	43	15.60
FO-2	2.00	12	92	16.20
FO-5	5.00	8	240	16.80
FO-10	10.0	6	440	18.00

MILITARY STANDARD INDUCTORS

Two windings for series or parallel connection. Inductance shown for series connection. All but Z-847 are standard MIL case types. Rated 3500 WVDC, unless otherwise noted.

UTC Type	MS No.	MIL Type	Induct. Hy.	ma DC	DCR Ohms	MIL Case Pg. 15	Sugg. Net Each
Z-848*	90009-2	04FA001■	16	80	645	FA	$14.40
Z-849*	90010-2	04GA002■	25	80	670	GA	16.50
Z-850*	90011-2	04HA003■	40	80	1020	HA	22.50
Z-851†	90013-2	04HA005■	16	125	330	HA	18.00
Z-852†	90014-2	04JB006■	25	125	460	JB	25.50
Z-853	90037-2	04KA007■	40	125	535	KA	31.50
Z-854	75000-2	04LA009•	16	200	180	LA	34.80
Z-855	75001-2	04MA010•	25	200	210	MA	37.50
Z-856	75002-2	04NA012•	16	315	105	NA	49.80
Z-857	75003-2	04YY013•	25	315	150	YY	75.00

*1000 WVDC. †2000 WVDC. ■TFIRX-. •TF4RX.

HIGH Q PRECISION INDUCTANCE DECADE

Invaluable instruments for design and experimental work with tuned circuits, wave filters, and equalizers. The low hum pickup toroid coils employ a new permalloy dust core which, combined with special winding methods, provides very high Q, excellent voltage and temperature stability, and high self resonance frequency. The inductance values are laboratory adjusted to better than 1% precision, with calibration noted on base. Not to MIL-T-27C.

DI CASE
Length ..... 4 1/2"
Width ..... 4 3/8"
Height ..... 2 3/8"
Weight ..... 2 lbs.

Type No.	Induct. Henries	Optimum Range	Max. Q	Max. ACma	Ins. Test Volts RMS	Sugg. Net Ea.
DI-1	10 x .01	2-60 KC	200	500	500	$51.00
DI-2	10 x .1	.25-20 KC	200	150	500	58.50
DI-3	10 x 1	.25-10 KC	200	50	500	61.50
DI-4	10 x 10	.2-1.5 KC	100	15	500	78.00

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HIGH Q COILS & INDUCTORS

** Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications.**

MINIDUCTORS*

All these ultracompact high Q units are grade 5, hermetically sealed to (MIL-T-27C). Temperature stability rated from ±1% to ±3%, −55°C to +105°C, depending on series.

MM—Ultraminiature epoxy molded toroidal inductors with pin terminals for printed circuit application. Maximum Q at 30 kHz. 3/16 dia. x 1/4"; wt. .07 oz.
MH—Ultraminiature epoxy molded toroidal inductors similar to MM except maximum Q at 100 kHz. Size & wt. as MM.
ML—Ultraminiature hipermalloy cased inductors with epoxy board and pin terminals for printed circuit application. Maximum Q at 800 Hz to 2 kHz, depnding on inductance. 3/8 x 3/16 x 3/16"; wt. .2 oz.
MO—Miniature epoxy molded inductors with pin terminals for printed circuit application. Maximum Q at 600 Hz to 1500 Hz depending on inductance. 3/4 x 1 1/16 x 13/16"; wt. 1 oz.
MW—Miniature epoxy molded toroidal inductors with pin terminals for printed circuit application. Maximum Q at 5 to 10 kHz. 23/32 dia. x 13/32"; wt. .25 oz.

UTC Type	Induct., Hys.	Sugg. Net Ea.	UTC Type	Induct., Hys.	Sugg. Net Ea.	UTC Type	Induct., Hys.	Sugg. Net Ea.
ML-0	.15	$ 8.40	MM-6	.03	$ 8.10	MO-2	2	$9.60
ML-1	.25	8.40	MM-7	.06	8.40	MO-5	5	9.60
ML-2	.40	8.40	MM-8	.12	8.40	MO-7.5	7.5	9.60
ML-3	.70	8.40	MH-1	.0006	8.10	MO-20	20	9.60
ML-4	1.4	8.40	MH-2	.0015	8.10	MO-50	50	9.90
ML-5	2.5	8.40	MH-3	.0025	8.40	MO-100	100	9.90
ML-6	4.0	8.40	MH-4	.006	8.40	MW-.05	.05	7.20
ML-7	6.0	8.40	MH-5	.01	8.70	MW-.10	.10	7.50
ML-8	10	8.40	MH-6	.015	8.70	MW-.25	.25	7.50
ML-9	25	8.70	MH-7	.025	9.00	MW-.5	.5	7.80
ML-10	60	9.90	MH-8	.04	9.00	MW-.75	.75	8.40
MM-1	.003	7.50	MO-.1	.1	9.30	MW-1	1	8.70
MM-2	.005	7.50	MO-.15	.15	9.30	MW-1.2	1.2	9.30
MM-3	.008	7.80	MO-.3	.3	9.30	MW-2	2	10.80
MM-4	.0125	7.80	MO-.5	.5	9.30	MW-3	3	11.70
MM-5	.02	8.10	MO-1	1	9.30	MW-5	5	13.50

HIGH Q TOROID INDUCTORS

Favorites for over fifteen years, UTC HQ Toroids are only excelled by the preferred new "M" series. As typical Q curves show, HQ coils are available for application from 100 Hz to 100 kHz. Adjusted to 1%, the inductance is virtually independent of frequency, temperature, and vibration. Voltage stability is excellent, and shielding case assures 80 db coupling attenuation. Hermetically to MIL-T-27C. All units MIL type TF4RX-20YY.

HQA and HQC CASE
Diamter 1 13/16"
Height 1 3/16"
Mounting 1 1/8"
Screws 6-32
Cutout 5/8 x 13/16"
Weight 5 oz.

HQB CASE
Length 2 5/8"
Width 1 5/8"
Height 2 5/8"
Mounting 1 11/64 x 2 11/64"
Screws 6-32
Cutout 5/8 x 1 1/8"
Weight 14 oz.

HQE CASE
Length 1 1/16"
Width 1/2"
Height 1 7/32"
Mounting 3/4"
Screws 4-40
Cutout 5/8 x 1/2"
Weight 1.5 oz.

Type No.	Inductance (O DC)		DC ma Max.	Sugg. Net Each	Type No.	Inductance (O DC)		DC ma Max.	Sugg. Net Each
HQA-1	5	mhy.	400	$8.70	HQB-1	10	mhy.	410	$16.50
HQA-2	12.5	mhy.	260	9.00	HQB-2	30	mhy.	240	16.80
HQA-3	20	mhy.	200	9.30	HQB-3	70	mhy.	170	17.40
HQA-4	30	mhy.	160	9.60	HQB-4	120	mhy.	120	18.30
HQA-5	50	mhy.	130	9.90	HQB-5	.5	hy.	60	18.90
HQA-6	80	mhy.	100	10.20	HQB-6	1	hy.	41	19.50
HQA-7	125	mhy.	85	10.20	HQB-7	2	hy.	30	20.40
HQA-8	200	mhy.	65	10.80	HQB-8	3.5	hy.	22	21.30
HQA-9	300	mhy.	50	10.80	HQB-9	7.5	hy.	16	22.50
HQA-10	.5	hy.	40	11.10	HQB-10	12	hy.	11	23.70
HQA-11	.75	hy.	35	11.10	HQB-11	18	hy.	9	24.90
HQA-12	1.25	hy.	26	12.00	HQB-12	25	hy.	8	26.40
HQA-13	2	hy.	20	12.60	HQC-1	1	mhy.	1350	15.60
HQA-14	3	hy.	16	14.40	HQC-2	2.5	mhy.	850	16.80
HQA-15	5	hy.	13	15.30	HQC-3	5	mhy.	600	18.00
HQA-16	7.5	hy.	10	16.50	HQC-4	10	mhy.	420	19.80
HQA-17	10	hy.	9	17.40	HQC-5	20	mhy.	300	24.00
HQA-18	15	hy.	8	18.30	HQE-1	5	mhy.	155	7.80
					HQE-2	10	mhy.	110	7.80
					HQE-3	50	mhy.	50	8.10
					HQE-4	100	mhy.	35	8.40
					HQE-5	200	mhy.	25	8.70

HERMETIC "M" TYPE TOROIDS

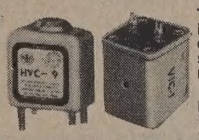
UTC permalloy dust toroids provide highest Q factor with miniaturized dimensions. Lab adjusted to 1% tolerance and sealed to MIL-T-27C specs. Magnetic case plus toroid provide 80 db shielding.

Type
MQA 40 at 500 Hz, 160 at 5 kHz, approx. 40 at 20 kHz. SIZE 1 1/4" x 1 19/32" x 1 23/32" h.; wt. 4 oz.
MQB 40 at 250 Hz, 250 at 3 kHz, approx. 40 at 20 kHz. SIZE 1 3/4" x 2 3/16" x 2 13/64" h.; wt. 14 oz.
MQD 40 at 5 kHz, 185 at 50 kHz, approx. 40 at 300 kHz. SIZE 1 1/4" x 1 3/32" x 1 23/64" h.; wt. 4 oz.
MQE 20 at 600 Hz, 140 at 10 kHz, approx. 40 at 40 kHz. SIZE 1/2" x 1 1/16" x 1 1/32" h.; wt. 1.5 oz.

TQA units are similar to MQA but enter tapped for oscillator application, etc. Net each: TQA-1 thru TQA-15, $1.50 more than MQA's; TQA-16, 14.70; TQA-17, 15.90; TQA-18, 17.40; TQA-19, 21.00; TQA-20, 23.40.

UTC Type	Ind., Hys.	Sugg. Net Ea.	UTC Type	Ind., Hys.	Sugg. Net Ea.	UTC Type	Ind., Hys.	Sugg. Net Ea.
MQA-1	.007	$ 7.50	MQB-1	.010	$14.70	MQD-6	.020	$21.00
MQA-2	.012	7.80	MQB-2	.030	14.70	MQD-7	.030	22.80
MQA-3	.020	8.10	MQB-3	.070	14.70	MQE-0	.004	6.90
MQA-4	.030	8.40	MQB-4	.120	14.70	MQE-1	.007	7.20
MQA-5	.050	8.70	MQB-5	.50	15.60	MQE-2	.012	7.50
MQA-6	.070	9.00	MQB-6	1.0	16.20	MQE-3	.020	7.80
MQA-7	.120	9.30	MQB-7	2.0	16.20	MQE-4	.030	7.80
MQA-8	.20	9.60	MQB-8	3.5	16.80	MQE-5	.050	8.10
MQA-9	.30	9.90	MQB-9	7.5	18.30	MQE-6	.070	8.40
MQA-10	.50	10.20	MQB-10	12	19.20	MQE-7	.100	8.40
MQA-11	.70	10.50	MQB-11	18	21.00	MQE-8	.150	8.70
MQA-12	1.0	10.80	MQB-12	25	22.50	MQE-9	.250	8.70
MQA-13	1.5	11.10	MQB-13	40.0	24.60	MQE-10	.40	9.00
MQA-14	2.5	11.40	MQB-14	60.0	27.30	MQE-11	.60	9.00
MQA-15	4.0	12.00	MQD-0	.001	14.70	MQE-12	.90	9.30
MQA-16	6.0	12.90	MQD-1	.002	15.00	MQE-13	1.5	9.90
MQA-17	10.0	13.80	MQD-2	.003	15.60	MQE-14	2.0	10.80
MQA-18	15.0	15.00	MQD-3	.005	16.20	MQE-15	2.8	12.00
MQA-19	22.0	18.00	MQD-4	.007	16.80	MQE-16	4.0	13.50
MQA-20	35.0	20.70	MQD-5	.012	18.00			

VARIDUCTORS



HVC & HVV (*VIC is not a MIL item) **VIC**

These variable inductors are ideal for use in tuned circuits, equalizers, oscillators, etc. TYPE HVC:—Gives highest Q and stability; adjustable −70% to +200% of mean value. Hermetically sealed to MIL-T-27C.

HVV Types: For precise matching; vernier inductance variation ±10% of nominal value. Offer high Q over a wide frequency range and high temperature stability.

VIC:—Adjustable −45% to +85% of mean value.

Size: HVC, TVC and HVV types, 1 1/16" lg. x 25/32" w. x 1 7/32" h.; weight 2 oz. VIC type, 1 1/32" lg. x 1 1/4" w. x 1 1/16" h.; weight 5 1/2 oz.

TVC type inductors are identical to HVC units, but provide taps at 30% and 50% of total turns — ideal for oscillator circuits, etc.
HVC & TVC: U. S. Pat. No. 2,879,489.
HVV: U. S. Pat. No. 3,267,400.

UTC Type	Mean Hys.	DC ma	Sugg. Net Ea.	UTC Type	Mean Hys.	DC ma	Sugg. Net Ea.
HVC-1	.006	100	$ 9.00	TVC-6	.6	15	$11.10
HVC-2	.015	60	9.00	TVC-7	1.5	10	11.70
HVC-3	.040	40	9.00	TVC-8	4	7	11.70
HVC-4	.1	30	9.00	TVC-9	10	5	11.70
HVC-5	.25	20	9.00	TVC-10	25	3.5	12.90
HVC-6	.6	15	9.00	TVC-11	60	2	14.10
HVC-7	1.5	10	9.60	TVC-12	150	1.5	15.30
HVC-8	4	7	9.60				
HVC-9	10	5	9.60	VIC-1	.0085	75	6.90
HVC-10	25	3.5	9.90	VIC-2	.013	60	6.90
HVC-11	60	2	10.80	VIC-3	.021	50	6.90
HVC-12	150	1.5	12.00	VIC-4	.034	40	6.90
				VIC-5	.053	35	6.90
HVV-.006	.006	200	12.00	VIC-6	.084	30	6.90
HVV-.015	.015	120	12.00	VIC-7	.13	25	6.90
HVV-.04	.04	80	12.00	VIC-8	.21	21	7.20
HVV-.1	.10	50	12.00	VIC-9	.34	18	7.20
HVV-.25	.25	30	12.00	VIC-10	.54	15	7.20
HVV-.6	.6	20	12.00	VIC-11	.85	12	7.20
HVV-1.5	1.5	13	12.90	VIC-12	1.3	10	7.50
HVV-4	4	6	12.90	VIC-13	2.2	8	7.50
HVV-10	10	4.5	12.90	VIC-14	3.4	7	7.50
HVV-25	25	3	13.20	VIC-15	5.4	6	7.80
HVV-60	60	2	14.40	VIC-16	8.5	5	7.80
HVV-150	150	1.3	15.90	VIC-17	13	4	7.80
				VIC-18	21	3.5	8.10
TVC-1	.006	100	11.10	VIC-19	33	3	8.10
TVC-2	.015	60	11.10	VIC-20	52	2	9.00
TVC-3	.040	40	11.10	VIC-21	83	1.5	9.60
TVC-4	.1	30	11.10	VIC-22	130	1	12.60
TVC-5	.25	20	11.10				

LOW FREQUENCY HIGH Q COILS

MQL TYPES

All these units of MIL type TF4RX20YY induct value to 2% tolerance at 1v., 60 Hz. Exceptional Q and stability, inductance swing less than 3% from −55°C to +105°C. The case, sealed hermetically to MIL-T-27C is 1 13/16" dia. 2 1/2" h. Transformer, parallel, series or center-tapped connections are permitted due to dual windings to 4 terminals. Mounting 1 1/2" sq. with a 6-32 screw. Cutout 1 1/2" dia wt. 1 lb.

Type No.	Hys. (0 DC) Series	Parallel	Sugg. Net Ea.	Type No.	Hys. (0 DC) Series	Parallel	Sugg. Net Ea.
MQL-0	1	.25	$33.00	MQL-3	200	50	$33.00
MQL-1	10	2.5	33.00	MQL-4	400	100	34.50
MQL-2	20	5	33.00	MQL-5	2500	625	36.00

MQM TYPES

Designed for high Q at low frequencies. Structure provides exceptional stability, adjusted to 2% at 1V. 60 Hz. Inductance variation less than 2% from −55°C to +130°C. Made to MIL-T-27C, MIL type TF4SX20YY. Size 1 3/16" d x 1 5/8" h., cutout: 1" d., wt. 5 oz.

Type No.	Series Hy (0 DC)	Parallel Hy (0 DC)	Series DCRΩ ±20%	Sugg. Net Ea.
MQM-2	2	.5	21	$18.90
MQM-16	16	4	143	18.90
MQM-40	40	10	368	18.90
MQM-300	300	75	3700	19.80
MQM-600	600	150	5720	19.80

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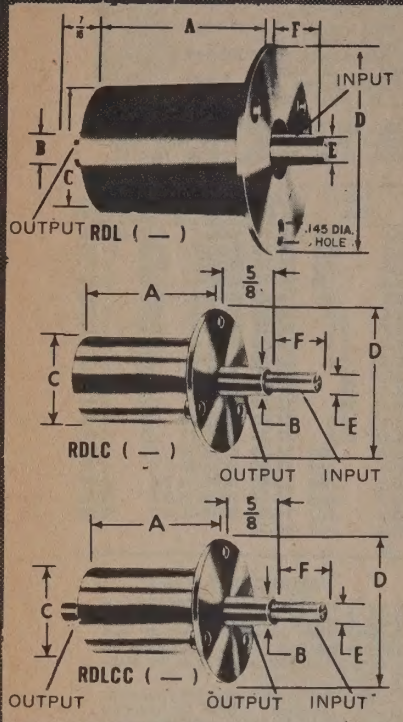
JAN HARDWARE MANUFACTURING COMPANY, INC.



RATIO DRIVES

for FINE INSTRUMENT AND MACHINE CONTROLS

Ball Bearing Type **Compact, durable, exceptionally smooth action**

These unique ratio drives employ precision ball bearings. Used for rotary control of components in instruments, they provide unexcelled smooth motion. Ruggedly built, permanently sealed and lubricated, JAN Ratio Drives accommodate applications where miniaturization is essential.

Input and output shafts of these units operate in the SAME DIRECTION. Type "RDL" provides "in-line" input-output shafts. Type "RDLC" is supplied with **concentric** shafts whereby the output envelopes the input shaft. An added feature of type RDLCC is the output shaft in the rear.

CAT. No.	RATIO	A	B O.D.	B I.D.	C	D	Input Shaft E	F	Bolt-Mtg. Dia.
RDL-1	2.6:1	1	3/8	1/4	1 1/8	1 13/16	1/4	3/4	1 15/32
RDL-2	7.0:1	1 13/32	3/8	1/4	1 1/8	1 13/16	1/4	3/4	1 15/32
RDL-3	17.0:1	1 13/16	3/8	1/4	1 1/8	1 13/16	1/4	3/4	1 15/32
RDLC-1	2.6:1	1	3/8	1/4	1 1/8	1 13/16	1/4	1 1/2	1 15/32
RDLC-2	7.0:1	1 13/32	3/8	1/4	1 1/8	1 13/16	1/4	1 5/64	1 15/32
RDLC-3	17.0:1	1 13/16	3/8	1/4	1 1/8	1 13/16	1/4	23/32	1 15/32
RDLCC-1	2.6:1	1 13/32	[illegible]	1/4	1 1/8	1 13/16	1/4	1 5/64	1 15/32
RDLCC-3	17.0:1	2 43/64	3/8	1/4	1 3/16	1 55/64	1/4	11/16	1 15/32

ALL RATIOS ARE ±10%

KNOB RATIO DRIVE

9 to 1 ratio (to dial skirt). 1:1 to potentiometer.

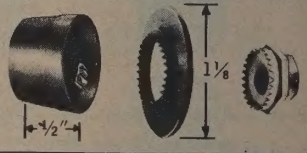
Cat. No. KRD-11
(plain gripping surface)

Cat. No. KRD-12
(knurled gripping surface)

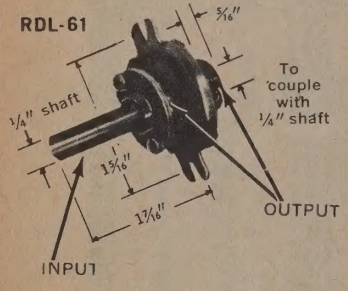
Exploded view shows engineered miniature gear system, to permit precise, fine tuning of controls. As shown, 9 to 1 ratio (to dial skirt). 1:1 to potentiometer. Other ratios designed to specifications.

Brass gears; black anodized aluminum knob and dial. Available with knurled or non-knurled outside knob.

Available for 1/8" shafts. 1/4" on special order.



RDL-61



Now! Corrosion Resistant!

IN-LINE RATIO DRIVE

6.3 : 1

Variations available to customers specifications.

For smooth rotary control of components requiring Vernier adjustments. Suitable for use where panel space is at a premium. Durable, ruggedized ball bearing mechanism.

LIMIT STOP COMPONENTS

Designers can now consider the limit stop as a component to design with, such as potentiometers, capacitors, or other standard units. The simplicity of adjustment and the large number of available turns enables the stop range to be set with extreme precision. Conveniently located dual locking screws maintain settings under all conditions of shock and vibration.

Available for 1/4" and 3/4" shafts.
Specify — (3) for 3/16"
— (4) for 1/4"

LS 552 Washer — LS 554 Collar — LS 556 Stop Plate — Typical End Product

RIGHT ANGLE RATIO DRIVES

Versatile, miniaturized, right angle rotary controls.

Featuring dual output stainless steel shafts at right angles to input, these engineered drives provide an ideal type of instrument control. Available with matched bevel or worm gears covering a wide range of ratios.

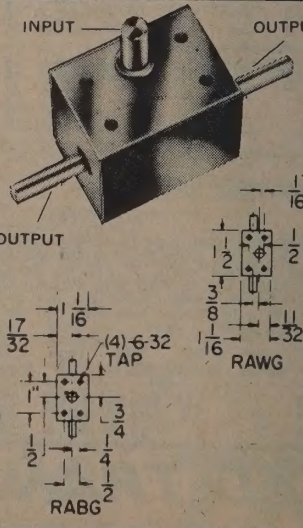
JAN'S RIGHT ANGLE DRIVES are especially useful for handling spring or gravity-loaded components since the output shaft automatically locks in any desired position yet remains free for smooth adjustment by the input shaft. Assembled in dust-proof housings, the gears are permanently pinned in place on stainless-steel shafts mounted in oilite bearings and held under constant pressure.

BEVEL GEAR RIGHT ANGLE DRIVES

CAT. No.	RATIO	"A"
RABG-1	1:1	7/8
RABG-2	2:1	7/8
RABG-3	3:1	7/8

WORM GEAR RIGHT ANGLE DRIVES

CAT. No.	RATIO	"A"
RAWG-1	5:1	3/4
RAWG-2	10:1	3/4
RAWG-22	12:1	3/4
RAWG-3	20:1	3/4



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JAN HARDWARE MANUFACTURING COMPANY, INC.

U.S. PATENT NO. 2,681,378

HI-VOLTAGE INSULATED COUPLINGS

MEETS MIL SPECS: TEMPERATURE - HUMIDITY - SHOCK - VIBRATION - FUNGUS

HI-VOLTAGE INSULATED COUPLINGS

15 KV Breakdown 10 inch pounds torque

Series No. AK-5079 & No. AK-5164

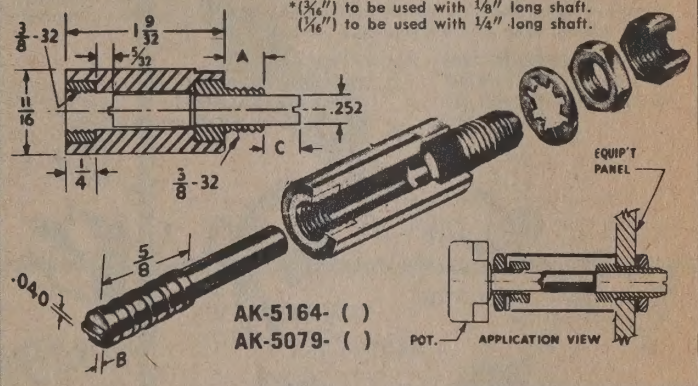
Engineered with stainless steel shaft and precision, screwdriver tip molded integrally with Diallyl Phthalate Material in accordance with Military Specifications. Completely shock, vibration and fungus proof, they operate with ease over an ambient temperature range of —75 to +175° C. Supplied complete with nickel plated mounting hardware.

Stainless steel screw driver tip fits all standard slotted shafts (potentiometer, etc.) without need for further machining. Ideally suited to adjust high voltage controls thus protecting operating personnel against danger. They are also used to reduce ground capacitance on other types of sensitive instrument controls.

For Commercial Instrument Applications . . .
These couplings are available in general Purpose Black Bakelite.
Cat. No. 6164-(X or B)-( ) For Standard Type
Cat. No. 6079-(X or B)-( ) with Locking Type Bushing.
Dimensions are identical with 5000 series, in chart above.

	CAT No.	"A"	"B" *	SHAFT	"C"
STANDARD TYPE	AK-5164-X-1	3/8"	3/16"	Slotted	5/16"
	AK-5164-B-1	3/8"	1/16"	Slotted	3/16"
	AK-5164-X-2	3/8"	3/16"	Slotted	15/32"
	AK-5164-B-2	3/8"	1/16"	Slotted	15/32"
	AK-5164-X-3	3/8"	3/16"	No Slot	13/16"
	AK-5164-B-3	3/8"	1/16"	No Slot	13/16"
	AK-5164-X-4	3/8"	3/16"	No Slot	1 1/16"
	AK-5164-B-4	3/8"	1/16"	No Slot	1 1/16"
	AK-5164-X-5	3/8"	3/16"	Slotted	Minus 1/16"
	AK-5164-B-5	3/8"	1/16"	Slotted	Minus 1/16"
WITH LOCKING TYPE BUSHING	AK-5079-X-1	5/16"	3/16"	Slotted	1/8"
	AK-5079-B-1	5/16"	1/16"	Slotted	1/8"
	AK-5079-X-2	5/16"	3/16"	Slotted	9/32"
	AK-5079-B-2	5/16"	1/16"	Slotted	9/32"

*(3/16") to be used with 1/8" long shaft.
(1/16") to be used with 1/4" long shaft.

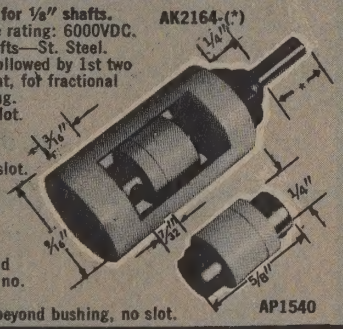


Hi-Voltage Insulated Couplings for 1/8" shafts. AK2164-(*)
White Cycalac material. Voltage rating: 6000VDC.
Hubs—Brass, Nickel Pltd.; Shafts—St. Steel.
*Insert letter "S" or "N" followed by 1st two numbers of decimal equivalent, for fractional length of shaft beyond bushing.
"S" = with slot. "N" = no slot.

Typical part number:
AK2164-N31 = 5/16" long shaft beyond bushing (standard), no slot.

If length is 1" use "X"
Typical part numbers:
AK2164-SX = 1" long shaft beyond bushing, slotted.

If length exceeds 1", use "X" and decimal equivalent for balance of no.
Typical part numbers:
AK2164-NX31 = 1 5/16" long shaft beyond bushing, no slot.

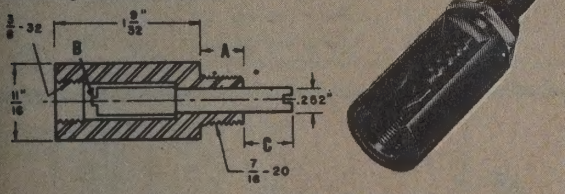


AP1540

COMMERCIAL INSULATED COUPLINGS

30 KV Breakdown **Series No. AK-4160**
10 inch pounds torque **For TV and Industrial Applications**

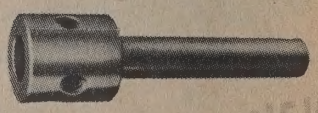
These handy couplings, capable of withstanding 30 KV, are made of high grade Bakelite throughout except for the stainless steel screwdriver tip molded within the drive shaft. Mounting hardware suppplied.



	CAT No.	"A"	"B"	SHAFT	"C"
STANDARD TYPE	AK-4160-X-1	3/8"	3/16"	Slotted	1/8"
	AK-4160-B-1	3/8"	1/16"	Slotted	
	AK-4160-X-2	3/8"	3/16"	No Slot	1/2"
	AK-4160-B-2	3/8"	1/16"	No Slot	

SHAFT COUPLING EXTENDER
Cat. No. AP1010

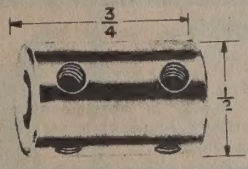
Nickel plated brass with 2 set screws for firm attachment to shaft.
1/2" O.D.; 1 3/4" overall length.



SHAFT COUPLING
Cat. No. AP-15150

A rugged, nickel plated brass coupling for joining two 1/4" shafts. Supplied with 4 set screws for firm attachment to shafts.

Cat. No. AP-15151
Same as above, 2 set screws.

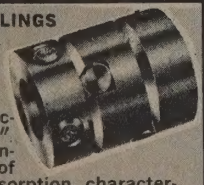


AUTOLINEAR (INSULATED) SHAFT COUPLINGS

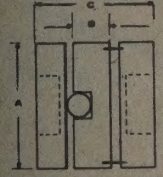
2.5 - 5KV BREAKDOWN

Universal, miniature, self-aligning

Cat. No. AP-1530 & AP-1538



A unique series of shaft couplers that accommodate either similar or disimilar 1/8", 3/16" or 1/4" shafts. Permits offset misalignment to 1/16" and 5° angle. Operates free of backlash. Self-extinguishing low water absorption characteristic plastic insulator between precision cast aluminum hubs. Each hub has 2 set screws for firm attachment. Alodine finish.



PART NO.		DIA. HOLE	"A"	"B"	"C"
AP-1530	-2	1/8"	1/2"	13/64"	5 9/64" ± 1/32"
	-3	3/16"			
	-4	1/4"			
AP-1538	-2	1/8"	1/2"	27/64"	1 7/64" ± 1/32"
	-3	3/16"			
	-4	1/4"			

TYPICAL PART NUMBERS:
AP-1530-34
AP-1538-22

VOLTAGE RATING:
AP-1530 — 2500 VOLTS
AP-1538 — 5000 VOLTS

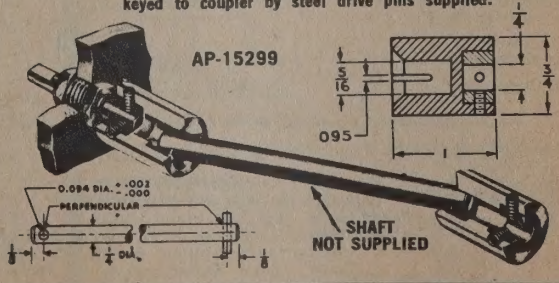
OFFSET-SHAFT (INSULATED) COUPLINGS

10 KV Breakdown—±30° Offset
Cat. No. AP-15299

Highly versatile, durable insulated couplings made with single-unit, molded Nylon-to-metal insert construction. Application requires two couplings—permits smooth control for two parallel shafts offset from each other up to 30 degrees at separations greater than 3 inches. Secured to component and control shafts by 2 set screws.

Note: Coupling is accomplished with a 1/4" shaft of any length (not furnished). Coupling shaft keyed to coupler by steel drive pins supplied.

AP-15299



JAN HARDWARE MANUFACTURING COMPANY, INC.

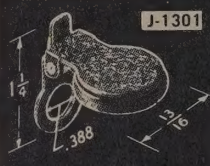
JACK COVERS (TRIMMER COVERS)

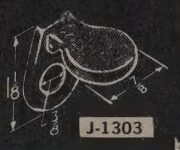
These sturdy Jack Covers fit jack or panel bushings and are used to keep out dust and moisture as well as to prevent inadvertent disturbance of control settings. Outer surfaces are finished in standard colors of baked enamel.

To Order Colors: Specify:
(-1) Black Wrinkle; (-2) Smooth Gray; (-3) Smooth Olive; (-4) Smooth Black. Other colors on request.

Example: Jack cover, color black wrinkle, order as J-1301 (-1)

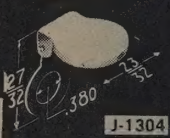
J-1301 ( ) STANDARD JACK COVER

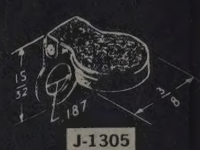




J-1303 ( ) WATERPROOF JACK COVER Gasket & Nut

J-1304 ( ) MINI-JACK COVER





J-1305 ( ) SUB-MINI JACK COVER

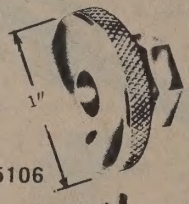
SHAFT LOCKS

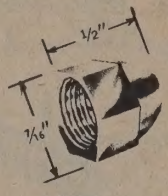
Cat. No. AK-5100 thru No. AK-5107
Split-bushing, collet type locks.

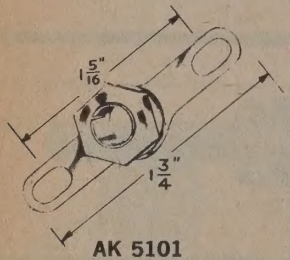
Used to securely hold the shaft of volume controls, capacitors, switches, etc. in position. Body and lock nut are brass—nickel plated. Supplied with nickel plated internal tooth lock washers, upon request.

SPLIT BUSHING TYPE For ¼" shafts

AK-5100 Standard Lock Nut
AK-5101 Panel Mount Type
AK-5106 Knurled Shaft Lock (1" O.D. Knurl)
AK-5107 Lock Nut (Round Head)

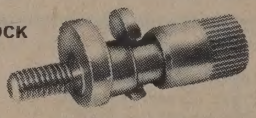






NEW!

DIAL LOCK
Cat. No.
AP1060



Supplied completely assembled. Securely locks dial in position. Nickel plated on brass. Knurled head. 1 3/8" overall length.

NYLON SHAFT LOCK Cat. No. AK-1050

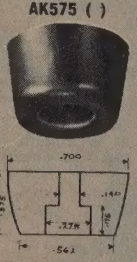
One-piece, black nylon; fits standard 3/8"-32 thread of shaft bushing. Friction grip holds ¼" shaft to prevent accidental or vibrational disturbance of control settings. Adjustment for semi-permanent locking, provided.

CHASSIS & CABINET BUMPERS

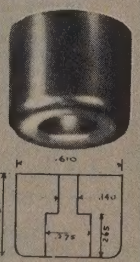
Durable, low-friction polyethylene. Guards against scuffing. Supplied in either black or russet brown, with recessed hole for screw or bolt usage.

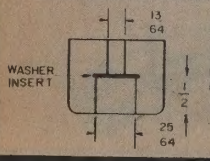
To Order Colors:
Black, specify (4);
Brown specify (7).
Other colors on request.

Cat. No. AK575 ( )



Cat. No. AK574 ( )



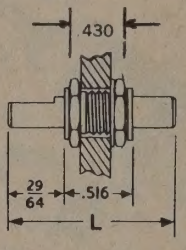


No. AK 576-4 HEAVY DUTY CHASSIS & CABINET BUMPER.
(with steel washer insert). Molded neoprene. 1" Diameter, 13/16" high. Configuration similar to AK 574 above. Color. Black. Other colors on request.

PANEL BEARING & SHAFT ASSEMBLIES

Cat. No. AP-15350 series

Used for rotary control of components. Passivated stainless steel shaft is ¼" dia. with one end flattened for attaching to knob control by set screws. Supplied completely assembled with two retaining rings, jam nut with lock washer and nickel plated, brass panel bearing. Fits panels up to 3/16" thick; mounts in 13/32" dia. hole.



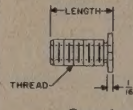
AP 15350

AP 15350- ( )
STAINLESS STEEL

Cat. No. AK 5511 Panel Bearing Assembly.
Shafts available on special order

Cat. No.	Item	"L" Shaft Length
AP 15350	Panel Bearing	—
AP 15350-1	Panel Bearing &	1 1/16"
AP 15350-2	Shaft Assembly	3"
AP 15350-3		6"

PANEL BUSHING FOR 1/4 & 3/8 SHAFT
TOL ± .005



LENGTH	A=3/8 1/4-28 THREAD	A=1/2 3/8-32 THREAD	THREAD "C" DIA
3/8	PB 60614	PB 80638	1/4-28 .127
7/16	PB 60714	PB 80738	3/8-32 .252
1/2	PB 60814	PB 80838	
5/8	PB 61014	PB 81038	
3/4	PB 61214	PB 81238	

EXAMPLE (TO ORDER)
PT NO PB 60814-B= 1/4-28 THD., 1/2 LG PANEL BUSHING - BRASS W/.127 HOLE.

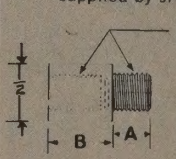
BUSHING SUPPLIED WITH MTG NUT & INT TOOTH LOCKWASHER

Can be made to order with special nylon bearings.

BUSHING EXTENDERS Cat. No. AK-5075-1 thru No. AK-5075-11

Permit staggered mounting of components having ¼" shafts, behind a panel. Useful in meeting problems of space economy. Supplied in nickel plated brass.

Note: Extender No. AK-5075-9 is a locking (collet) type and is supplied by JAN with lock nut.



AK 5075- ( )

Cat. No.	"B"	"A"
AK5075-1	5/8"	3/8"
AK5075-2	5/8"	1/4"
AK5075-3	5/8"	3/16"
AK5075-4	3/4"	1/4"
AK5075-5	2 1/4"	1/4"
AK5075-6	1 5/8"	1/4"
AK5075-7	1 7/16"	3/16"
AK5075-8	1 1/16"	1/4"
AK5075-9	11/16"	1/2"
AK5075-10	1 21/64"	1/16"
AK5075-11	55/64"	1/16"

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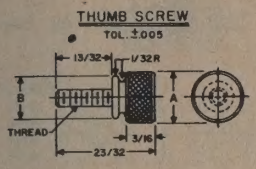
JAN HARDWARE
MANUFACTURING COMPANY, INC.

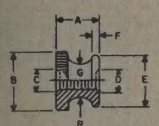
THUMB SCREW
TOL. ±.005



THREAD	A DIA.	B DIA.	PT. NO.
6-32	3/8	5/16	TS 6056
	7/16	3/8	TS 7066
	1/2	7/16	TS 8076
8-32	3/8	5/16	TS 6058
	7/16	3/8	TS 7068
	1/2	7/16	TS 8078
10-32	3/8	5/16	TS 60510
	7/16	3/8	TS 70610
	1/2	7/16	TS 80710

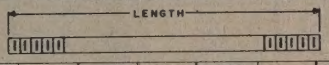
EXAMPLE (TO ORDER)
PT. NO. TS6056-B • 6-32 X 13/32 LG. THREAD, THUMB SCREW - BRASS

THUMB NUT KNURLED
TOL. ±.005



THREAD SIZE	A	B DIA.	C DIA.	D DIA.	E DIA.	F	G	R RAD.	PART NO.
4-36	1/4	3/8	1/8	.147	5/16	3/64	7/32	3/64	KN436
4-40	1/4	3/8	1/8	.147	5/16	3/64	7/32	3/64	KN440
6-32	1/4	3/8	9/64	.169	5/16	3/64	7/32	3/64	KN632
6-32	9/32	13/32	9/64	13/64	11/32	3/64	7/32	1/16	KN6321
8-32	5/16	7/16	11/64	15/64	3/8	1/16	1/4	1/16	KN832
10-24	21/64	1/2	13/64	17/64	7/16	1/16	9/32	.070	KN124
10-32	21/64	1/2	13/64	17/64	7/16	1/16	9/32	.070	KN132
12-24	11/32	9/16	7/32	19/64	1/2	1/16	21/64	.070	KN224
1/4-20	3/8	5/8	17/64	21/64	9/16	1/16	23/64	5/64	KN420

THREADED ROD
1/4-20 THREAD
2" EACH END



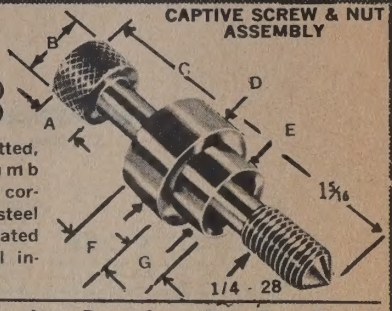
LENGTH		LENGTH		LENGTH		LENGTH		LENGTH		LENGTH	
6-1/2	TR 1445	7	TR 1470	9-1/2	TR 1495	12	TR 14120	14-1/2	TR 14145	17-1/2	TR 14175
5	TR 1450	7-1/2	TR 1475	10	TR 14100	12-1/2	TR 14125	15	TR 14150	18	TR 14180
5-1/2	TR 1455	8	TR 1480	10-1/2	TR 14105	13	TR 14130	15-1/2	TR 14155	18-1/2	TR 14185
6	TR 1460	8-1/2	TR 1485	11	TR 14110	13-1/2	TR 14135	16	TR 14160	19	TR 14190
6-1/2	TR 1465	9	TR 1490	11-1/2	TR 14115	14	TR 14140	16-1/2	TR 14165	19-1/2	TR 14195
								17	TR 14170	20	TR 14200

MATERIALS B • BRASS, A • ALUMINUM, SS • STAINLESS STEEL

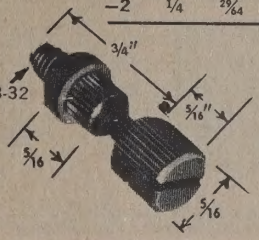
CAPTIVE SCREW & NUT ASSEMBLY

No. AP711-(1) -(2)

Consists of slotted, knurled thumb screws made of corrosion resistant steel bar, and nickle-plated (on brass) panel inserts.



	A	B	C	D	E	F	G
–1	1/4	3/8	1 5/16	5/16	13/32	5/16	3/8
–2	1/4	29/64	1 7/16	5/16	13/32	5/16	3/8



Cat. No. AP1040
Screw, Captive

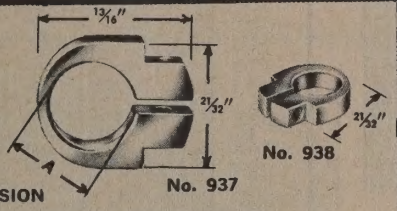
Cat. No. AP1039
Insert, Captive

Cat. No. AP1197
Screw, captive.

1/8" slotted knurled head (7/16" O.D.) 1 1/4" overall length; 8-32 thread.

"NO-MAR" CLAMPS

Set screw does not touch shaft.
Ideal for knob and gear applications.
Variety of sizes available.

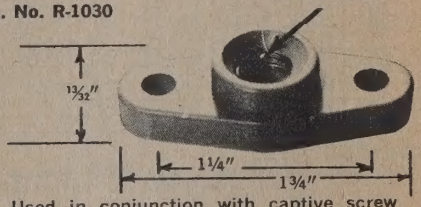


A DIMENSION

Cat. No.	–2	–3	–4	–5	–6	–7	–8
937	1/8"	3/16"	1/4"	5/16"	3/8"	13/32"	7/16"
938	1/8"	3/16"	1/4"	5/16"	3/8"	13/32"	

RETAINER NUT
Cat. No. R-1030

3/8–16 NC2



Used in conjunction with captive screw and nut assemblies. Die casting. Can be painted. Other thread sizes available upon special order.

Cat. No. H 465
VIEWING HOOD and/or ADAPTER

Can be used as viewing hood, on 2¾" dia. bezels. (#1427; 1428; 1429). Also serves as adapter to permit use of face-fitting neoprene rubber viewing hoods. (see above). All aluminum. Dull black enamel finish

VIEWING HOOD
No. H-689-1 (5⅝" I.D.)

Black neoprene rubber. contour-molded, fits shape of face. Keeps out ambient light when viewing scope.

Used with following Jan Bezels: 19636; 19495; 13584; 1465

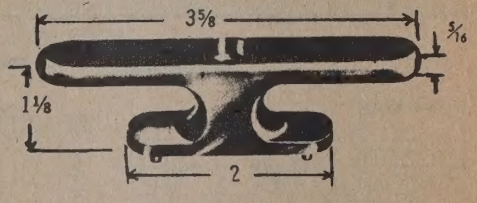
No. H-689-2 (4⅞" I.D.)

Used with Jan Bezel #545

VIEWING HOOD
to fit rectangular bezels
Cat. No. H-1008

Black, contour molded neoprene rubber. Keeps ambient light out, when viewing scope. Fits shape of face. Can be adapted for smaller I.D.'S.

Can be used with JAN Bezel CP1328P. Can be adapted for #1533-P



HANDLE, CORD **Cat. No. H-692-1**

This durable, die-cast aluminum handle is designed for use on small instrument panels. Single integral hole accepts No. 10 screw.

Colors:
(-1) Grey.
Special colors on request.

The service of JAN's design engineers is available to assist you with your Component requirements.

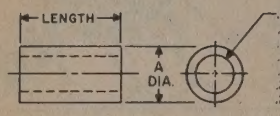
JAN will design and manufacture special Components to customers' specifications.

Complete facilities for prototype work.

JAN HARDWARE MANUFACTURING COMPANY, INC.

SPACER-THRU HOLE

TOL. ±.005



CLEARANCE HOLE	CODE
.091 DIA. (No. 2 SCREW)	1
.116 DIA. (No. 4 SCREW)	2
.141 DIA. (No. 6 SCREW)	3
.171 DIA. (No. 8 SCREW)	4
.194 DIA. (No. 10 SCREW)	5
.219 DIA. (No. 12 SCREW)	6
.257 DIA. (No. 1/4 SCREW)	7

LENGTH	A=1/8	A=3/16	A=1/4	LENGTH	A=3/16	A=1/4
1/16	SP0021	SP0031		11/16	SP0311	SP0411
1/8	SP0022	SP0032	SP0042	3/4	SP0312	SP0412
3/16	SP0023	SP0033	SP0043	7/8	SP0314	SP0414
1/4	SP0024	SP0034	SP0044	15/16	SP0315	SP0415
5/16	SP0025	SP0035	SP0045	1	SP0316	SP0416
3/8	SP0026	SP0036	SP0046	1-1/8		SP0418
7/16	SP0027	SP0037	SP0047	1-1/4		SP0420
1/2	SP0028	SP0038	SP0048	1-3/8		SP0422
9/16	SP0029	SP0039	SP0049	1-1/2		SP0424
5/8		SP0310	SP0410			

EXAMPLE (TO ORDER)

PT. NO. SP035-2-B = 3/16 DIA. X 5/16 LG. SPACER-BRASS
W/.116 CLEARANCE HOLE FOR #4 SCREW

LENGTH	A=5/16	A=3/8	A=1/2	LENGTH	A=5/16	A=3/8	A=1/2
1/8	SP052	SP062	SP082	7/8	SP0514	SP0614	SP0814
3/16	SP053	SP063	SP083	15/16	SP0515	SP0615	SP0815
1/4	SP054	SP064	SP084	1	SP0516	SP0616	SP0816
5/16	SP055	SP065	SP085	1-1/8	SP0518	SP0618	SP0818
3/8	SP056	SP066	SP086	1-1/4	SP0520	SP0620	SP0820
7/16	SP057	SP067	SP087	1-3/8	SP0522	SP0622	SP0822
1/2	SP058	SP068	SP088	1-1/2	SP0524	SP0624	SP0824
9/16	SP059	SP069	SP089	1-5/8		SP0626	SP0826
5/8	SP0510	SP0610	SP0810	1-3/4		SP0628	SP0828
11/16	SP0511	SP0611	SP0811	1-7/8		SP0630	SP0830
3/4	SP0512	SP0612	SP0812	2		SP0632	SP0832

EXAMPLE (TO ORDER)

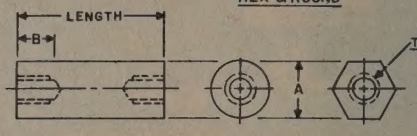
PT. NO. SP064-3-PH = 3/8 DIA. X 1/4 LG. SPACER-PHENOLIC
W/.141 CLEARANCE HOLE FOR #6 SCREW

MATERIALS

B = BRASS A = ALUMINUM SS = STAINLESS STEEL PH = PHENOLIC

STANDOFF THREADED ENDS HEX & ROUND

TOL. ±.005



THREAD	DEPTH B
0-80	3/16
4-40	1/4
6-32	3/8
8-32	7/16

LENGTH	A=1/8 DIA 0-80 THREAD		A=1/4 DIA. 4-40 THREAD		A=1/4 DIA. 6-32 THREAD		A=1/4 DIA 8-32 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX	ROUND	HEX
1-1/16	DR217	DH217	DR4174	DH4174	DR4176	DH4176	DR4178	DH4178
1-1/8	DR218	DH218	DR4184	DH4184	DR4186	DH4186	DR4188	DH4188
1-3/16	DR219	DH219	DR4194	DH4194	DR4196	DH4196	DR4198	DH4198
1-1/4	DR220	DH220	DR4204	DH4204	DR4206	DH4206	DR4208	DH4208
1-5/16	DR221	DH221	DR4214	DH4214	DR4216	DH4216	DR4218	DH4218
1-3/8	DR222	DH222	DR4224	DH4224	DR4226	DH4226	DR4228	DH4228
1-7/16	DR223	DH223	DR4234	DH4234	DR4236	DH4236	DR4238	DH4238
1-1/2	DR224	DH224	DR4244	DH4244	DR4246	DH4246	DR4248	DH4248
2			DR4324	DH4324	DR4326	DH4326	DR4328	DH4328
2-1/8			DR4344	DH4344	DR4346	DH4346	DR4348	DH4348
2-3/4			DR4444	DH4444	DR4446	DH4446	DR4448	DH4448
3			DR4484	DH4484	DR4486	DH4486	DR4488	DH4488

EXAMPLE (TO ORDER)

PT. NO. DH219-B = 1/8 DIA. X 1-3/16 LG. HEX STANDOFF-TAPPED BOTH ENDS
BRASS W/0-80 X 3/16 HOLE.

LENGTH	A=5/16 DIA. 6-32 THREAD		A=3/8 DIA. 6-32 THREAD		A=3/8 DIA. 8-32 THREAD		A=1/2 DIA. 8-32 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX	ROUND	HEX
1-1/16	DR5176	DH5176	DR6176	DH6176	DR6178	DH6178	DR8178	DH8178
1-1/8	DR5186	DH5186	DR6186	DH6186	DR6188	DH6188	DR8188	DH8188
1-3/16	DR5196	DH5196	DR6196	DH6196	DR6198	DH6198	DR8198	DH8198
1-1/4	DR5206	DH5206	DR6206	DH6206	DR6208	DH6208	DR8208	DH8208
1-5/16	DR5216	DH5216	DR6216	DH6216	DR6218	DH6218	DR8218	DH8218
1-3/8	DR5226	DH5226	DR6226	DH6226	DR6228	DH6228	DR8228	DH8228
1-7/16	DR5236	DH5236	DR6236	DH6236	DR6238	DH6238	DR8238	DH8238
1-1/2	DR5246	DH5246	DR6246	DH6246	DR6248	DH6248	DR8248	DH8248
1-3/4	DR5286	DH5286	DR6286	DH6286	DR6288	DH6288	DR8288	DH8288
2	DR5326	DH5326	DR6326	DH6326	DR6328	DH6328	DR8328	DH8328
2-1/4	DR5366	DH5366	DR6366	DH6366	DR6368	DH6368	DR8368	DH8368
2-1/2	DR5406	DH5406	DR6406	DH6406	DR6408	DH6408	DR8408	DH8408
3	DR5486	DH5486	DR6486	DH6486	DR6488	DH6488	DR8488	DH8488
3-1/2	DR5566	DH5566	DR6566	DH6566	DR6568	DH6568	DR8568	DH8568
4	DR5646	DH5646	DR6646	DH6646	DR6648	DH6648	DR8648	DH8648

EXAMPLE (TO ORDER)

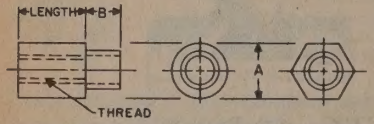
PT. NO. DR6186-A = 3/8 DIA. X 1-1/8 LG. ROUND STANDOFF-ALUMINUM-TAPPED
BOTH ENDS W/6-32 X 3/8 TH'D.

MATERIALS

B = BRASS A = ALUMINUM SS = STAINLESS STEEL PH = PHENOLIC

STANDOFF-RIVET HEX & ROUND

TOL. ±.005



CODE	BOARD THICKNESS	SHANK B
1	1/32	.075
2	1/16	.105
3	3/32	.135
4	1/8	.165
5	3/16	.230
6	1/4	.290

LENGTH	A=1/8 DIA. 0-80 THREAD		A=1/4 DIA. 2-56 THREAD		A=5/16 DIA. 4-40 THREAD		A=3/8 DIA. 6-32 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX	ROUND	HEX
1/8	RR202	RH202	RR4022	RH4022	RR5024	RH5024	RR6026	RH6026
3/16	RR203	RH203	RR4032	RH4032	RR5034	RH5034	RR6036	RH6036
1/4	RR204	RH204	RR4042	RH4042	RR5044	RH5044	RR6046	RH6046
5/16	RR205	RH205	RR4052	RH4052	RR5054	RH5054	RR6056	RH6056
3/8	RR206	RH206	RR4062	RH4062	RR5064	RH5064	RR6066	RH6066
7/16	RR207	RH207	RR4072	RH4072	RR5074	RH5074	RR6076	RH6076
1/2	RR208	RH208	RR4082	RH4082	RR5084	RH5084	RR6086	RH6086
9/16	RR209	RH209	RR4092	RH4092	RR5094	RH5094	RR6096	RH6096
5/8	RR210	RH210	RR4102	RH4102	RR5104	RH5104	RR6106	RH6106
11/16	RR211	RH211	RR4112	RH4112	RR5114	RH5114	RR6116	RH6116
3/4	RR212	RH212	RR4122	RH4122	RR5124	RH5124	RR6126	RH6126
7/8	RR214	RH214	RR4142	RH4142	RR5144	RH5144	RR6146	RH6146
1	RR216	RH216	RR4162	RH4162	RR5164	RH5164	RR6166	RH6166

EXAMPLE (TO ORDER)

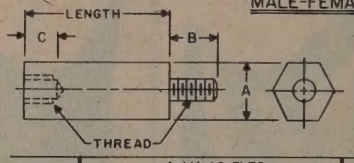
PT. NO. RR4052-2-B = 1/4 DIA. X 5/16 LG. ROUND, RIVET STANDOFF-BRASS
W/2-56 THREAD. SHANK=.105 FOR 1/16 BOARD.

MATERIALS

B = BRASS A = ALUMINUM SS = STAINLESS STEEL PH = PHENOLIC

STANDOFF MALE-FEMALE

TOL. ±.005



THREAD	B	C
4-40	3/16	1/4
6-32	1/4	3/8
8-32	3/8	7/16
10-32	3/8	1/2

LENGTH	A=1/4 AC. FLTS.				A=3/8 AC. FLTS.			
	4-40	6-32	8-32	10-32	4-40	6-32	8-32	10-32
1/4	MF4044	MF4046	MF4048	MF40410	MF6044	MF6046	MF6048	MF60410
3/8	MF4064	MF4066	MF4068	MF40610	MF6064	MF6066	MF6068	MF60610
1/2	MF4084	MF4086	MF4088	MF40810	MF6084	MF6086	MF6088	MF60810
5/8	MF4104	MF4106	MF4108	MF41010	MF6104	MF6106	MF6108	MF61010
3/4	MF4124	MF4126	MF4128	MF41010	MF6124	MF6126	MF6128	MF61210
7/8	MF4144	MF4146	MF4148	MF41410	MF6144	MF6146	MF6148	MF61410
1	MF4164	MF4166	MF4168	MF41610	MF6164	MF6166	MF6168	MF61610
1-1/8	MF4184	MF4186	MF4188	MF41810	MF6184	MF6186	MF6188	MF61810
1-1/4	MF4204	MF4206	MF4208	MF42010	MF6204	MF6206	MF6208	MF62010
1-3/8	MF4224	MF4226	MF4228	MF42210	MF6224	MF6226	MF6228	MF62210
1-1/2	MF4244	MF4246	MF4248	MF42410	MF6244	MF6246	MF6248	MF62410
1-5/8	MF4264	MF4266	MF4268	MF42610	MF6264	MF6266	MF6268	MF62610
1-3/4	MF4284	MF4286	MF4288	MF42810	MF6284	MF6286	MF6288	MF62810
2	MF4324	MF4326	MF4328	MF43210	MF6324	MF6326	MF6328	MF63210
2-1/2	MF4404	MF4406	MF4408	MF44010	MF6404	MF6406	MF6408	MF64010
3	MF4484	MF4486	MF4488	MF44810	MF6484	MF6486	MF6488	MF64810

EXAMPLE (TO ORDER)

PT. NO. MF4146-B = 1/4 AC. FLTS. STANDOFF-BRASS
6-32 MALE-FEMALE THREADS.

MATERIALS

B = BRASS
A = ALUMINUM
SS = STAINLESS STEEL

SPECIAL SIZES AND MATERIALS MANUFACTURED TO ORDER

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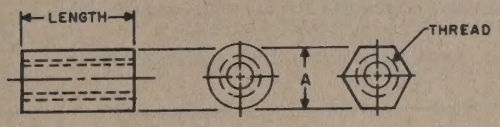
JAN HARDWARE MANUFACTURING COMPANY, INC.

STANDOFF-THREADED

HEX & ROUND

TOL. ±.005



LENGTH	A=1/8 DIA. 0-80 THREAD		A=3/16 DIA. 2-56 THREAD		A=3/16 DIA. 4-40 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX
1/16	SR201	SH201	SR3012	SH3012	SR3014	SH3014
1/8	SR202	SH202	SR3022	SH3022	SR3024	SH3024
3/16	SR203	SH203	SR3032	SH3032	SR3034	SH3034
1/4	SR204	SH204	SR3042	SH3042	SR3044	SH3044
5/16	SR205	SH205	SR3052	SH3052	SR3054	SH3054
3/8	SR206	SH206	SR3062	SH3062	SR3064	SH3064
7/16	SR207	SH207	SR3072	SH3072	SR3074	SH3074
1/2	SR208	SH208	SR3082	SH3082	SR3084	SH3084
9/16	SR209	SH209	SR3092	SH3092	SR3094	SH3094
5/8	SR210	SH210	SR3102	SH3102	SR3104	SH3104
3/4	SR212	SH212	SR3122	SH3122	SR3124	SH3124
1			SR3162	SH3162	SR3164	SH3164

EXAMPLE (TO ORDER)

PT. NO. SR3032-A = 3/16 DIA. X 3/16 LG. ROUND STANDOFF - ALUMINUM W/2-56 THREADED HOLE

LENGTH	A=1/4 DIA. 4-40 THREAD		6-32 THREAD		8-32 THREAD		10-32 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX	ROUND	HEX
1/8	SR4024	SH4024	SR4026	SH4026	SR4028	SH4028	SR40210	SH40210
3/16	SR4034	SH4034	SR4036	SH4036	SR4038	SH4038	SR40310	SH40310
1/4	SR4044	SH4044	SR4046	SH4046	SR4048	SH4048	SR40410	SH40410
5/16	SR4054	SH4054	SR4056	SH4056	SR4058	SH4058	SR40510	SH40510
3/8	SR4064	SH4064	SR4066	SH4066	SR4068	SH4068	SR40610	SH40610
7/16	SR4074	SH4074	SR4076	SH4076	SR4078	SH4078	SR40710	SH40710
1/2	SR4084	SH4084	SR4086	SH4086	SR4088	SH4088	SR40810	SH40810
9/16	SR4094	SH4094	SR4096	SH4096	SR4098	SH4098	SR40910	SH40910
5/8	SR4104	SH4104	SR4106	SH4106	SR4108	SH4108	SR41010	SH41010
3/4	SR4124	SH4124	SR4126	SH4126	SR4128	SH4128	SR41210	SH41210
7/8	SR4144	SH4144	SR4146	SH4146	SR4148	SH4148	SR41410	SH41410
1	SR4164	SH4164	SR4166	SH4166	SR4168	SH4168	SR41610	SH41610

EXAMPLE (TO ORDER)

PT. NO. SH4086-B = 1/4 DIA. X 1/2 LG. HEX STANDOFF-BRASS W/6-32 THREADED HOLE.

LENGTH	A=5/16 DIA. 4-40 THREAD		6-32 THREAD		8-32 THREAD		10-32 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX	ROUND	HEX
1/8	SR5024	SH5024	SR5026	SH5026	SR5028	SH5028	SR50210	SH50210
3/16	SR5034	SH5034	SR5036	SH5036	SR5038	SH5038	SR50310	SH50310
1/4	SR5044	SH5044	SR5046	SH5046	SR5048	SH5048	SR50410	SH50410
5/16	SR5054	SH5054	SR5056	SH5056	SR5058	SH5058	SR50510	SH50510
3/8	SR5064	SH5064	SR5066	SH5066	SR5068	SH5068	SR50610	SH50610
7/16	SR5074	SH5074	SR5076	SH5076	SR5078	SH5078	SR50710	SH50710
1/2	SR5084	SH5084	SR5086	SH5086	SR5088	SH5088	SR50810	SH50810
9/16	SR5094	SH5094	SR5096	SH5096	SR5098	SH5098	SR50910	SH50910
5/8	SR5104	SH5104	SR5106	SH5106	SR5108	SH5108	SR51010	SH51010
3/4	SR5124	SH5124	SR5126	SH5126	SR5128	SH5128	SR51210	SH51210
7/8	SR5144	SH5144	SR5146	SH5146	SR5148	SH5148	SR51410	SH51410
1	SR5164	SH5164	SR5166	SH5166	SR5168	SH5168	SR51610	SH51610

EXAMPLE (TO ORDER)

PT. NO. SR5146-PH=5/16 DIA. X 7/8 LG. ROUND STANDOFF - PHENOLIC W/6-32 THREADED HOLE.

LENGTH	3/8 DIA. 6-32 THREAD		8-32 THREAD		10-32 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX
1/8	SR6026	SH6026	SR6028	SH6028	SR60210	SH60210
3/16	SR6036	SH6036	SR6038	SH6038	SR60310	SH60310
1/4	SR6046	SH6046	SR6048	SH6048	SR60410	SH60410
5/16	SR6056	SH6056	SR6058	SH6058	SR60510	SH60510
3/8	SR6066	SH6066	SR6068	SH6068	SR60610	SH60610
7/16	SR6076	SH6076	SR6078	SH6078	SR60710	SH60710
1/2	SR6086	SH6086	SR6088	SH6088	SR60810	SH60810
9/16	SR6096	SH6096	SR6098	SH6098	SR60910	SH60910
5/8	SR6106	SH6106	SR6108	SH6108	SR61010	SH61010
3/4	SR6126	SH6126	SR6128	SH6128	SR61210	SH61210
7/8	SR6146	SH6146	SR6148	SH6148	SR61410	SH61410
1	SR6166	SH6166	SR6168	SH6168	SR61610	SH61610

EXAMPLE (TO ORDER)

PT. NO. SH6068-B = 3/8 DIA. X 3/8 LG. HEX STANDOFF-BRASS W/8-32 THREADED HOLE.

LENGTH	A=1/2 DIA. 8-32 THREAD		10-32 THREAD		12-24 THREAD		1/4-20 THREAD	
	ROUND	HEX	ROUND	HEX	ROUND	HEX	ROUND	HEX
1/8	SR8028	SH8028	SR80210	SH80210	SR80212	SH80212	SR80214	SH80214
3/16	SR8038	SH8038	SR80310	SH80310	SR80312	SH80312	SR80314	SH80314
1/4	SR8048	SH8048	SR80410	SH80410	SR80412	SH80412	SR80414	SH80414
5/16	SR8058	SH8058	SR80510	SH80510	SR80512	SH80512	SR80514	SH80514
3/8	SR8068	SH8068	SR80610	SH80610	SR80612	SH80612	SR80614	SH80614
7/16	SR8078	SH8078	SR80710	SH80710	SR80712	SH80712	SR80714	SH80714
1/2	SR8088	SH8088	SR80810	SH80810	SR80812	SH80812	SR80814	SH80814
9/16	SR8098	SH8098	SR80910	SH80910	SR80912	SH80912	SR80914	SH80914
5/8	SR8108	SH8108	SR81010	SH81010	SR81012	SH81012	SR81014	SH81014
3/4	SR8128	SH8128	SR81210	SH81210	SR81212	SH81212	SR81214	SH81214
7/8	SR8148	SH8148	SR81410	SH81410	SR81412	SH81412	SR81414	SH81414
1	SR8168	SH8168	SR81610	SH81610	SR81612	SH81612	SR81614	SH81614

EXAMPLE (TO ORDER)

PT. NO. SR80910-A = 1/2 DIA. X 9/16 LG. ROUND STANDOFF-ALUMINUM W/10-32 THREADED HOLE.

SPECIAL SIZES AND MATERIALS MANUFACTURED TO ORDER

MATERIALS

B = BRASS
A = ALUMINUM
SS = STAINLESS STEEL
PH = PHENOLIC

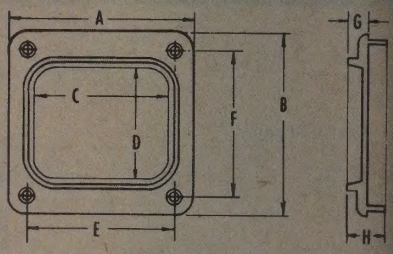
JAN HARDWARE MANUFACTURING COMPANY, INC.

JAN's Bezels enhance the appearance of the instruments on which they are used. These units are functionally designed to provide OPTIMUM UTILIZATION OF THE CRT SCREEN, as well as safety against tube breakage and danger to operating personnel.

JAN Bezel Assemblies are supplied with a **bezel, calibrated graticule,** (where applicable) **light filter** and **CRT cushion.** Bezels are finished in a smooth dull black non-reflecting surface. These units fit JAN Mu-Metal Shields.

Edge-lit Bezels (E.L.B.A.)** These Bezels are designed to provide edge lighting of the engraved scale-calibrated graticule by means of pilot lights.

Camera Mount Bezel These units provide an integral cast mounting flange that fits all standard 3", 5" and 7" CRT cameras.

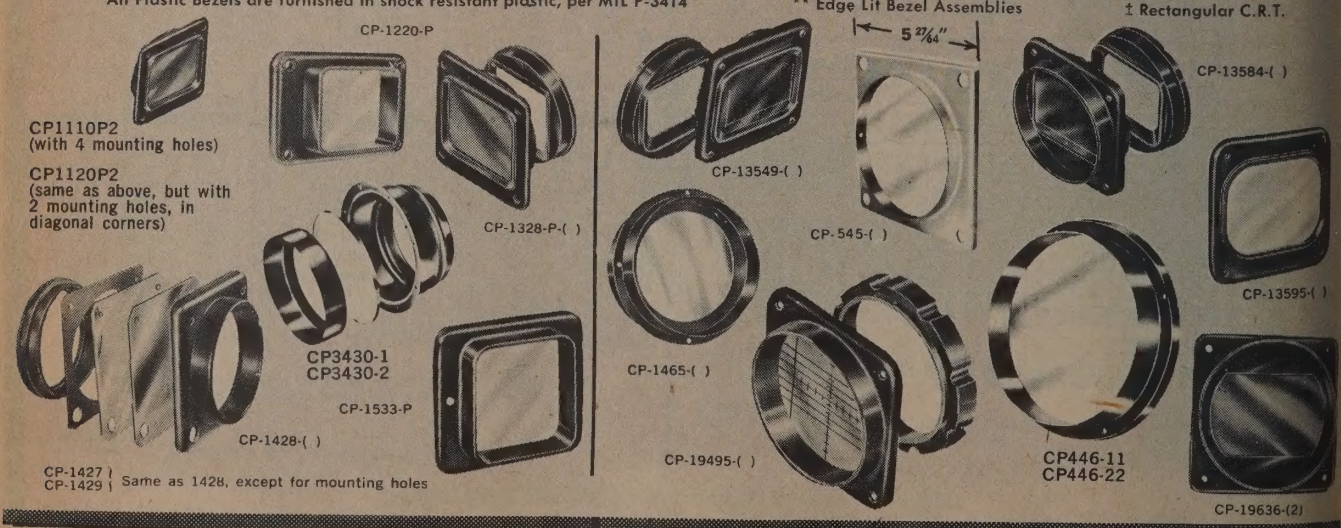


Catalog No.	CRT Face	Material	Type	Panel Opening	A Overall Width	B Overall Height	C D Visible Area (Bezel) Width	Height	E F Mounting Holes Width	Height	G- Thickness (Face Only)	H- Thickness (Incl. Flange)	Visible Area (Cushion) Height	Width
BEZELS FOR 2" C.R.T.														
CP-1110-P-2	Flat	Plastic*	Standard	2 3/16"	2 5/8"	2 5/8"	1 3/4"	1 3/4"	2"	2"	5/16"	7/16"	1 3/4"	1 3/4"
BEZELS FOR 3" C.R.T.														
CP-1220-P‡	Curved or Flat	Plastic*	Camera Mount	—	4 7/8"	3 1/4"	2 3/4"	2 1/4"	4"	2 1/2"	5/16"	1 1/16"	—	
CP-1328-P-1 CP-1328-P-2	Curved Flat	Plastic*	Standard	3 33/64"	3 1/4"	3 3/4"	2 5/8"	2 3/16"	3"	3"	3/8"	45/64	2 1/2"	2 1/16"
CP-1427-1 CP-1427-2	Curved Flat	Aluminum	Camera Mount	3 17/64"	4"	4"	2 3/4" Dia.		3"	3"	5/16"	27/32"	2 23/32" Dia.	
CP-1428-1** CP-1428-2**	Curved Flat	Aluminum	Camera Mount E.L.B.A.**	3 17/64"	4"	4"	2 3/4" Dia.		3"	3"	5/16"	27/32"	2 23/32" Dia.	
CP-1429-1 CP-1429-2	Curved Flat	Aluminum	Camera Mount	3 17/64"	4"	4"	2 3/4" Dia.		3"	3"	5/16"	27/32"	2 23/32" Dia.	
CP-3430-1 CP-3430-2	Curved Flat	Steel	Standard	—	4 1/16" Dia.		3 3/8" Dia.		3 3/4"	3 3/4"	1 41/64"	1 41/64"	2 23/32" Dia.	
BEZELS FOR 4" C.R.T.														
CP-1533-P‡		Plastic*	Camera Mount	3 1/32"	4 37/64"	3 61/64"	3"	3"	4"		1 3/32"	1 3/32"	No Cushion	
BEZELS FOR 5" C.R.T.														
CP-13549-1 CP-13549-2	Curved Flat	Aluminum	Standard	6.0"	6 1/4"	6 1/4"	4 7/8"	3 3/4"	4 15/16"	4 15/16"	17/32"	1 3/32"	4 1/4"	3 3/16"
CP-13584-1 CP-13584-2	Curved Flat	Aluminum	Camera Mount	6.0"	6 1/4"	6 1/4"	4 7/8"	3 3/4"	4 15/16"	4 15/16"	1 3/32"	1 23/32"	4 1/4"	3 3/16"
CP-13595-1** CP-13595-2**	Curved Flat	Aluminum	Standard E.L.B.A.**	5 7/16"	6 1/4"	6 1/4"	4 7/8"	3 3/4"	4 15/16"	4 15/16"	17/32"	—	4 3/4" Dia.	
CP-1465 CP-1465-2	Curved or Flat Flat	Steel	Camera Mount	5 5/16" 5 17/32"	6 3/8" Dia.		5 25/64" Dia.		6"	6"	7/8"	7/8"	No Cushion 4 1/2" Dia.	
CP-19495-1** CP-19495-2**	Curved Flat	Aluminum	Camera Mount E.L.B.A.**	5 7/16"	6 1/4"	6 1/4"	5 1/4" Dia.		4 15/16"	4 15/16"	1 3/32"	—	4 3/4" Dia.	
CP-19636-2**	Flat	Aluminum	Camera Mount E.L.B.A.**	5 5/8"	5 7/8"	5 7/8"	4 1/2" Dia.	3"	4 7/8"	4 7/8"	1 1/4"	—	4 1/2" Dia.	
CP-446-11 CP-446-22	Flat	Steel	Camera Mount	—	6 9/16" Dia.		5 9/16" Dia.		6 5/32" 6 1/8"	6 5/32" 6 1/8"	1"	1 19/64" 1 31/64"	4 1/2" Dia.	
CP-545	Curved or Flat	Aluminum	Camera Mount	5"	5 27/32"	5 27/32"	4 25/32"		5"	5"	25/32"	—	—	

* All Plastic Bezels are furnished in shock resistant plastic, per MIL P-3414

** Edge Lit Bezel Assemblies

‡ Rectangular C.R.T.



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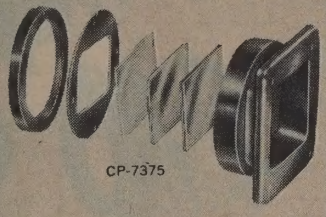
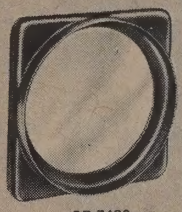
JAN HARDWARE
MANUFACTURING COMPANY, INC.

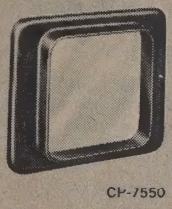
Catalog No.	CRT Face	Material	Type	Panel Opening	A Overall Width	B Overall Height	C D Visible Area (Bezel) Width	Height	E F Mounting Holes Width	Height	G- H- Thickness (Face Only)	(Incl. Flange)	Visible Area (Cushion) Height	Width
BEZELS FOR 7" C.R.T.														
CP-7330 1 CP-7331-2**	Curved Flat	Aluminum	Standard E.L.B.A.**	7 13/32"	7 13/16"	7 13/16"	6 5/16" Dia.		6 3/16"	6 3/16"	3/4"	3/4"	6 3/8" Dia.	
CP-7375-1** -2**	Curved Flat	Aluminum	E.L.B.A.**	7 13/32"	8"	8"	4 1/2"	4 1/2"	6 3/16"	6 3/16"	1 17/32"	2 29/32"	4 1/2"	4 1/2"
CP-7420-1** -2**	Curved Flat	Aluminum	Camera Mount	7 13/32"	7 13/16"	7 13/16"	6 13/16" Dia.		6 3/16"	6 3/16"	3/4"	1 3/8"	6 3/8" Dia.	
CP-7550	Curved or Flat	Aluminum	Camera Mount	4 25/32"	7 3/8"	6 1/4"	4 3/4"	4 3/4"	6 1/4"	5 1/8"	1 3/16"	1 3/16"	No Cushion	
BEZEL FOR 10" C.R.T.														
CP-10860	Curved or Flat	Aluminum	Standard	11 1/32"	12 1/4" Dia.		8 1/16"	6 1/4"	11 1/2" B.C		1 1/16"	1 3/16"	No Cushion	

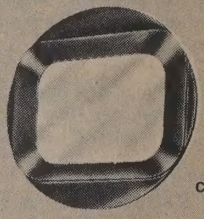
** Edge Lit Bezel Assemblies

CP-7330


CP-7375


CP-7420

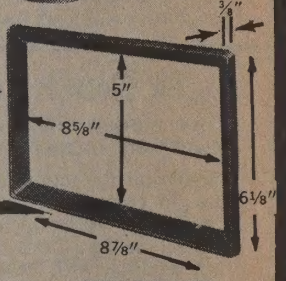

CP-7550


CP-10860

DISTINCTIVE FEATURES

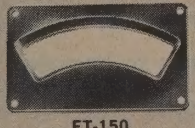
- Engineered for 2", 3", 4", 5", 7", 8" and 10" CRT
- Maximum display area
- Precision engraved, scale-calibrated graticules; standard or to customer's specifications
- Materials and finish to "Mil Spec"
- Heavy buna-S shock cushion
- Models for edge-lighting
- Phosphor-matched light filters
- Non-reflecting matte surfaces
- Rugged camera mounts
- Models for curved and flat-faced CRT

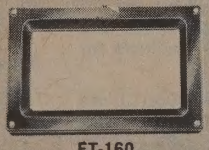
Cat. No. CP5900
Die-Cast Aluminum. Suitable for computer and digital readout applications.
Finishes available to suit your design requirements.



ESCUTCHEON PLATES For Elegant Framing of Panel Openings

ET-120

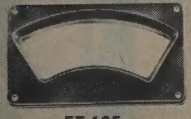

ET-150


ET-160

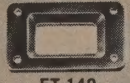
EM-310

EM-320

EM-325

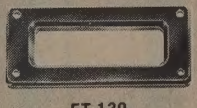

ET-125

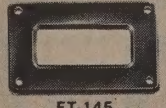
ET-165

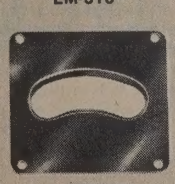

ET-140

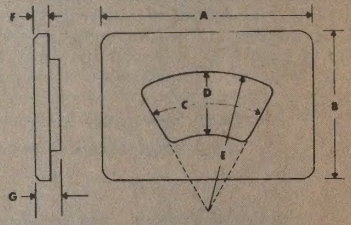
ET-155

ET-135


ET-130


ET-145


EM-315



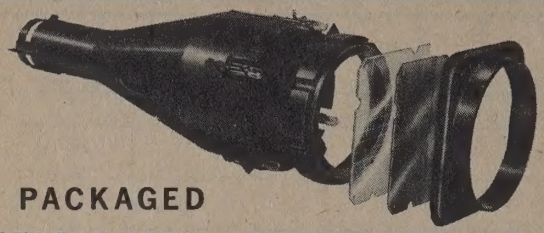
SPECIFICATIONS — JAN ESCUTCHEONS

Escutcheon Cat. No.	A Overall Width	B Overall Height	C Window Width	D Window Height	E Effective Outer Dial Radius	Thickness F=Face Only	Thickness G=Incl. Flange	Panel Opening Width	Panel Opening Height	Mounting Holes Width	Mounting Holes Height	Type of Dial	Material
ET-120	2 27/32	1 1/8	1 1/4	1"	1 27/32	3/16	3/16	2 11/32	1 3/8	2 5/16 top 2 1/16 bottom	1 5/8	—	Injection Molded Tenite II, Black Matte Finish
ET-125	3 1/8	2 13/16	2 7/8	1"	3 1/4	3/16	3/16	3 1/2	1 1/2	3 1/2	1 15/16	Circular	
ET-135	2 3/4	1 7/8	1 1/2	7/8	1 7/8	3/16	1/4	1 31/32	1 1/32	2 1/4	1 3/8		
ET-150	3 1/8	2 5/16	2 7/8	3/4	3 1/16	3/16	3/16	3 1/32	1 1/32	3 1/2	1 15/16		
ET-165	2 5/8	1 5/8	1 49/64	9/16	2 3/32	1/8	1/4	2 7/16	1 1/2	2 1/16	1 1/16		
ET-130	4	1 13/16	2 1/4	13/16	—	3/16	1/4	2 13/32	1 11/32	3 1/2	1 5/16	Flexible Tape, Digital Counter, Cylinder or Drum	Injection Molded Tenite II, Black Matte Finish
ET-140	2 1/2	1 1/2	1 1/4	5/8	—	1/8	3/16	1 17/32	1 1/32	2	1		
ET-145	3 1/4	2 1/16	1 15/16	3/4	—	3/32	3/32	2 13/32	1 3/32	2 3/4	1 9/16		
ET-155	2 1/2	1 5/16	1 15/16	1/2	—	3/32		2 1/32	2 9/32	2 1/4	15/16		
ET-160	3 1/8	2 1/2	2 15/16	1 5/8	—	1/8	1/8	3	2 1/32	3 5/8	2 1/4		
EM-310	3	3	2 1/16	1 15/16	2 5/16	1/32	1/4	3 11/32	2 1/2	2 1/2	2 1/2	Helical	Soft Aluminum with Black Matte Enamel Finish
EM-315	3 1/4	3	2 1/4	5/8	2 1/16	1/32	1/8	2 13/32	1 3/4	2 3/4	2 3/8	Circular	
EM-320	3 1/4	2 1/4	2 1/4	5/8	2 1/16	1/32	1/4	2 23/64	1 3/4	2 3/4	2 1/4	Circular	
EM-325	3	3	2 1/16	1 1/2	2 5/16	1/32	1/4	2 11/32	1 41/64	2 1/2	2 1/2	Helical	

* **To Order** specify: (1) frame only; (2) frame with clear window; (3) frame with clear window scribed with a center line.

JAN'S molded, black, shock-resistant plastic escutcheons are available in an exceptionally wide variety of different types and sizes. They provide a pleasing window to frame dial plates mounted behind the panel.
Plastic escutcheons are available in the following ways: frame only; frame with clear windows; frame with clear window scribed with a center line.
For especially large working areas, stamped aluminum escutcheons, finished in dull black are available to meet the needs for space economy.
Withstands temperature shock −65° to +85° C.
NON INFLAMMABLE

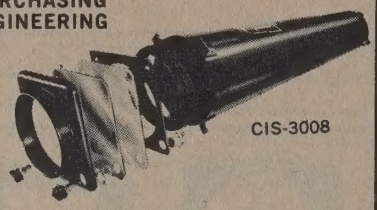
JAN HARDWARE MANUFACTURING COMPANY, INC.



PACKAGED SHIELD-BEZEL ASSEMBLIES

ELIMINATES \ MULTIPLE PURCHASING / COMPLEX ENGINEERING

SAVES \ TIME / MONEY



CIS-3008

All necessary items for CRT Magnetic Shield and Bezel applications are packaged in one unit.

EACH ASSEMBLY CONTAINS } Shield, JAN Bezel, CRT Rubber Cushion, Graticule, Filter, Light Sockets, Pilot Lamps (for edge-lit bezel-shield assemblies) plus Hardware.

When ordering specify:
"JAN PACKAGED UNIT" giving JAN shield No., JAN bezel No. and CRT tube type with which it is to be used.

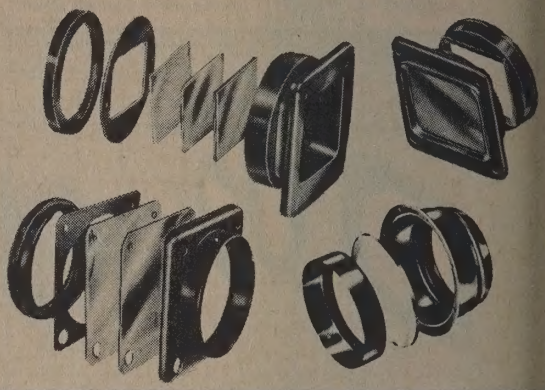
PILOT LIGHT ASSEMBLIES FOR EDGE LIGHTING

Cat. No. 100306

Cat. No. 100232

SHIELD/BEZEL ASSEMBLIES

Assorted Sizes and Shapes



JOLTA SHOCK TEST MACHINES For reproducible impact-shock test pulses

Four models engineered to reproduce the entire spectrum of all significant impact shock waves.

Designed for laboratory and production testing of light to medium weight components as well as complete instrumentation. Produced to meet practically all requirements of common Mil. Spec. qualification tests. Each JOLTA is electronically calibrated to certify compliance with test specifications.

JOLTA – Bench Model No. 1001 – Produced to meet JAN-S-44 & Mil-Std. 202 (202A). Standard model range-30-120G. Accessory plate springs available for test pulses to 500 G.

JOLTA – Bench Model No. M-500 – Produced to meet Mil-T-12679A (Sig. C) and Mil. T-19500A. Standard model range –200 to 1000 G at 1.0 millisecs. Alternate anvil and pad kits available to order.

JOLTA—Floor Model Nos. F-3003-C1, C2, C-3—Designed for high impact shock testing for small and moderate-sized components. Precision-machined magnesium casting utilized for higher shock amplitudes. Typical tests with these units 50 to 5000 G at .2 to 11.0 millisecs. For high impact testing, accessory springs and twin anvil combinations yield impulses of 0.2 millisecs to 5000 G.

Note: New design allows for quick changeovers of accessories.

For Production Testing, can be automated for continuous operation.

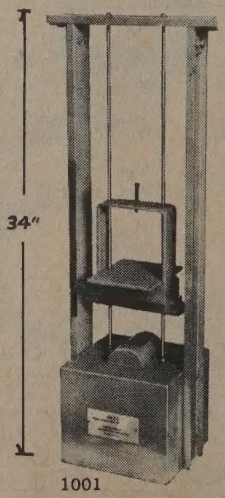
FEATURES

- Economical
- Simple to operate
- Rugged
- Uniformly accurate

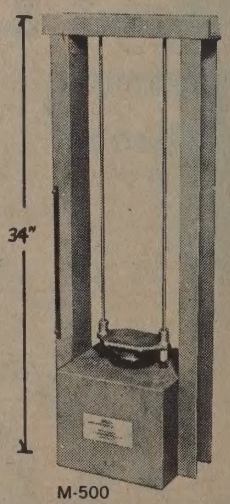
SPECIFICATIONS – JOLTA SHOCK TESTERS

Model No.	Carriage Volume	Test Weight	"G" Ranges
1001	4" x 4" x 5"	0-12 lbs.	25-500
M-500	3" cube	0-2.0 lbs.	100-1000
F-3003-C-1	5" cube	0-12 lbs.	50-1500
F-3003-C-2	5" cube	0-4.0 lbs.	350-5000

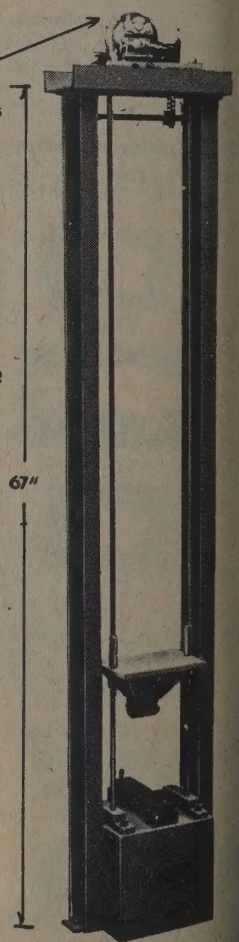
Free engineering services available to customers where adaptation or conversion of standard machines are needed to meet Mil. Spec. changes or other special needs.



1001



M-500



F-3003-C

NEW! Plastic impact pad for clean ½ MS-2000 G impact shock.

Net

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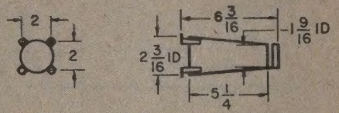
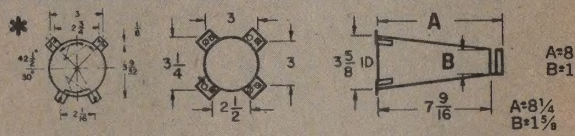
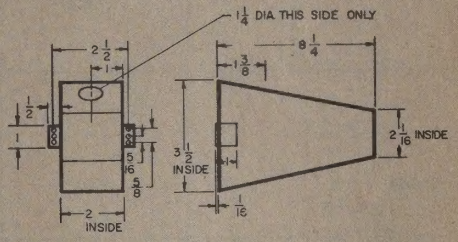
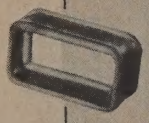
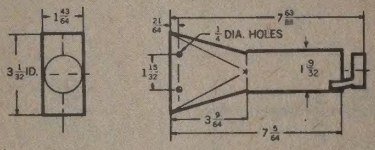
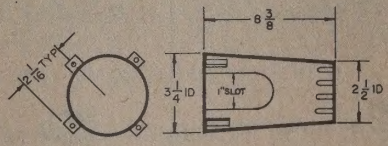
JAN HARDWARE MANUFACTURING COMPANY, INC.

JAN'S MAGNETIC SHIELDS are made of MU-Metal or equal and are hydrogen annealed by a special process to assure optimum orientation of the molecular structure of the alloy for best magnetic shielding. JAN'S MAGNETIC SHIELDS prevent distortion and intensity modulation of the electron beam due to stray magnetic fields.

In addition, the use of these shields protect personnel against the dangers of accidental tube breakage. Mounting holes are tapped for No. 6-32 screws as shown. These shields are designed to fit JAN'S standard bezels as listed below. See preceding pages for specifications on JAN'S BEZEL ASSEMBLIES.

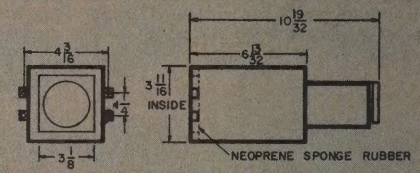
SHIELD CAT. NO.	FOR USE WITH C.R.T. NO.	MATCHING JAN BEZEL	
S2001 S2001-1	902 2AP 2BP	CP1110P2 CP1120P2	
S3001 adaptable for edge-lighting graticule using S3010 with Bezel CP1428✱	3RP 3RPA	CP1328-P-1 CP1427-1 CP1429-1 CP1328-P2 CP1427-2 CP1429-2 CP3430-1 CP3430-2	 A=8¼ B=1⅝ A=8¼ B=1⅝
S3003 S3003-1	3KP 908A 3AP	CP1328-P1 CP1427-1 CP1429-1	Same type as S-3001, except A=10⅛ B=2
S3004—12 (less anode hole) —22 (with anode hole) adaptable for edge-lighting graticule using S3012 with Bezel CP1428✱	3BP 3JP 3ACP	Same as S3003 Same as S3005	Same type as S-3001, except A=8⅝ B=2⅜
S3005 adaptable for edge-lighting graticule using S3008 with Bezel CP1428✱	3WP	CP1328-P2 CP1427-2 CP1429-2	Same type as S-3001, except A=10⅝ B=1⅞
S3016	3ASP		
S3019	3XP	CP-725	 
S3031	3BFP		

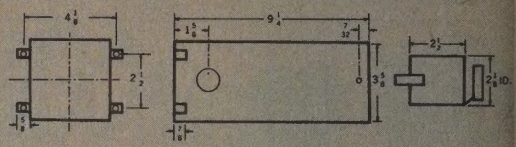
ALL SHIELDS ARE FABRICATED WITH OVERLAPPED AND SPOT WELDED CONSTRUCTION

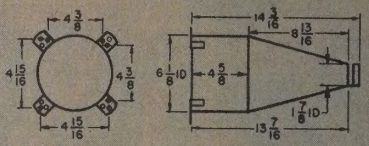
*See mounting hole arrangement illustrated witn S3001 edge-lit dimension drawing.

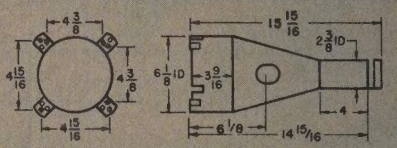
JAN HARDWARE
MANUFACTURING COMPANY, INC.

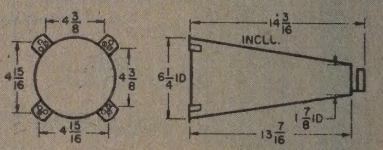
SHIELD CAT. NO.	FOR USE WITH C.R.T. NO.	MATCHING JAN BEZEL
S3027	4KP 4ER	CP1533P
S4001	SC3511 4MP	CP-1533P
S5001	5UP	CP1465 CP13584-1 CP13549-1 CP13595-1 CP19495-1 CP446-11 CP446-22
S5002 adaptable for edge-lighting	5BP 5CP 5ABP 5ADP	Same as S5001 Same as S5006
S5003	5UP	CP1465 CP13584-1 CP13549-1 CP13595-1 CP19495-1
S5005 adaptable for edge-lighting	5AQP 5ABP 5ADP	CP1465-2 CP13549-2 CP13584-2 CP13595-2 CP19495-2 CP446-11 CP446-22
S5006 adaptable for edge-lighting	5RPA 5 AWP	CP1465-2 CP13549-2 CP13584-2 CP13595-2 CP19495-2

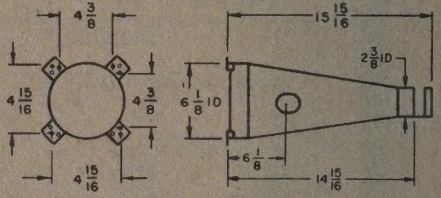


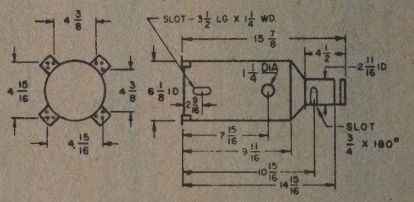






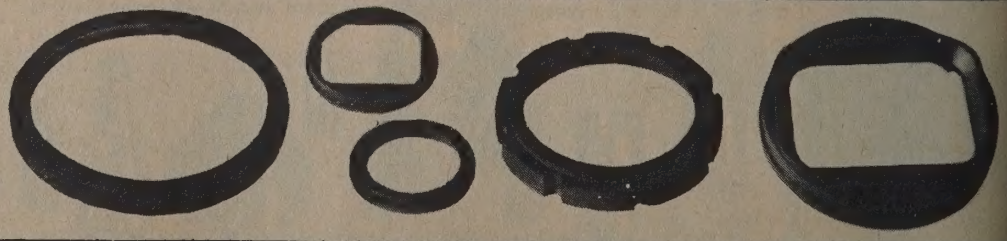






Shielding for EMC, RFI, and EMI now available, as bezels, shields, cushions, gaskets . . . in strip, sheet, formed and molded.

CUSHIONS — Assorted Sizes and Shapes



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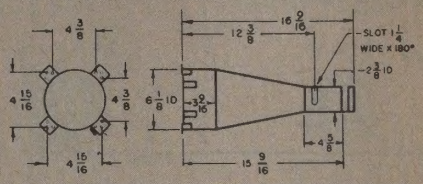
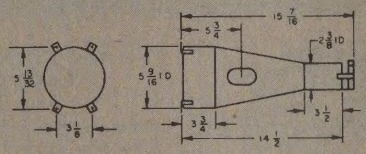
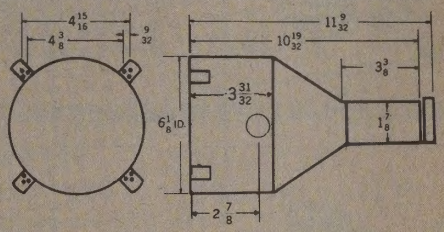
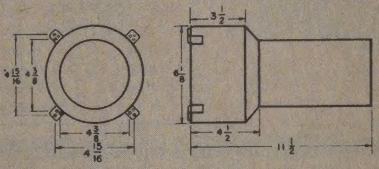
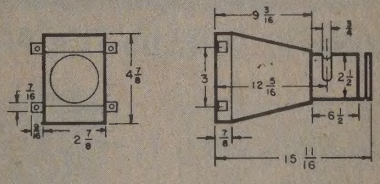
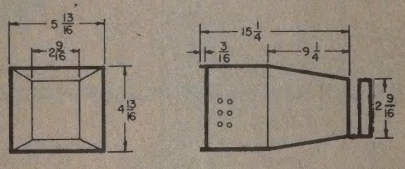
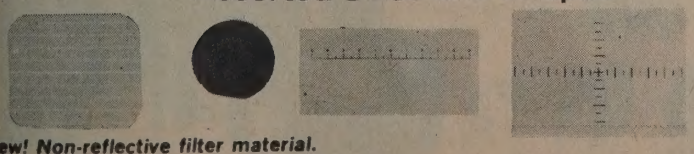
Shielding for EMC, RFI, and EMI now available, as bezels, shields, cushions, gaskets . . . in strip, sheet, formed and molded.

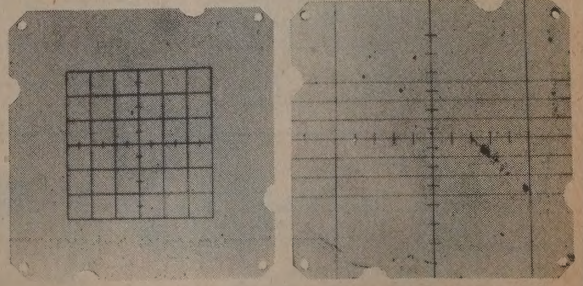
SHIELD CAT. NO.	FOR USE WITH C.R.T. NO.	MATCHING JAN BEZEL	
S5008 adaptable for edge-lighting	5AMP	CP1465-2 CP13549-2 CP13584-2 CP13595-2 CP19495-2	
S5017 adaptable for edge-lighting	5ABP 5ADP	CP1465-2 CP19636-2	
S5027	5BTP	CP19495-2	
S5032	5CEP	CP19495-2	
S5500	5BXP		
S6600	6E17P		

ALL SHIELDS ARE FABRICATED WITH OVERLAPPED AND SPOT WELDED CONSTRUCTION

We will design and manufacture special Shields & Bezels to customers specifications. Complete facilities for prototype work.

GRATICULES — FILTERS — Assorted Sizes and Shapes

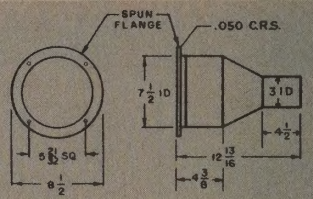
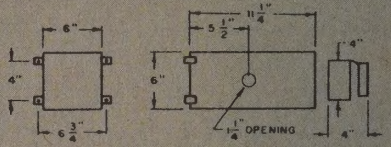
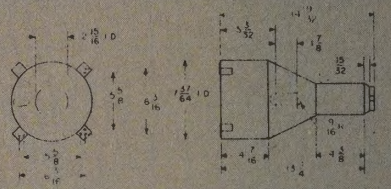
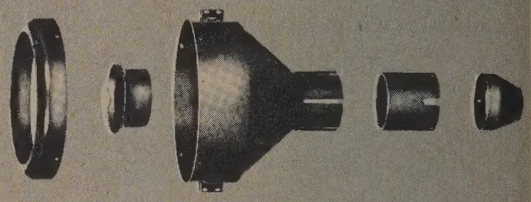




New! Non-reflective filter material.

Matte 1 side. Grey or Blue. Other colors on special order.

JAN HARDWARE MANUFACTURING COMPANY, INC.

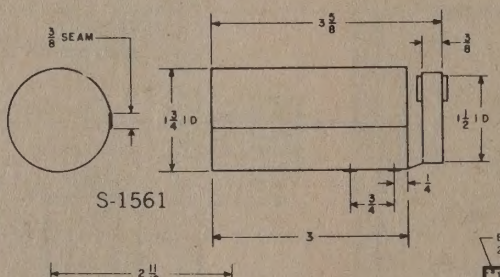
SHIELD CAT. NO.	FOR USE WITH C.R.T. NO.	MATCHING JAN BEZEL	
S7001	7GP 7JP 7VP	CP7330 CP7445 CP7331 CP7550 CP7420	
S7003 (Shield supplied as two separate sections)	7YP3	CP-7550	
S7006	7AEP	CP7330 CP7445 CP7331 CP7550 CP7420	
S10002	10KP 10WP		

When ordering, be sure to specify CRT type number. Anode openings provided, where required.

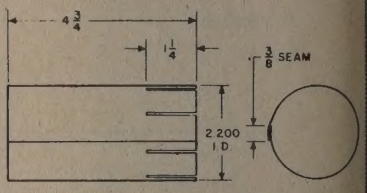
Shielding for EMC, RFI, and EMI now available, as bezels, shields, cushions, gaskets . . . in strip, sheet, formed and molded.

MAGNETIC SHIELDS FOR PHOTO-MULTIPLIER & SPECIAL PURPOSE TUBES

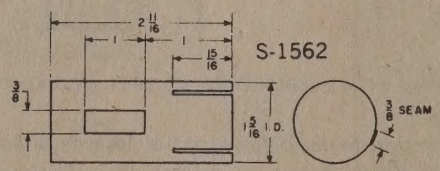
SHIELD	TUBE	SHIELD	TUBE
S-1091	ICP1	S-2003	6903
S-1181	929 930 5581 5653 IP39 IP40	S-2004	5819 6292 6342 6571 6655
S-1500	6291	S-2005	6372
S-1561	6199 7102	S-2007	7850
S-1562	931 6323 6328 IP21 IP22 IP28	S-2008	6217
S-1563	1EP1	S-3015	1197 6363
S-2002	6810 7264	S-5013	1112
		S-5018	1198 6364
		S-7009	1238 1287



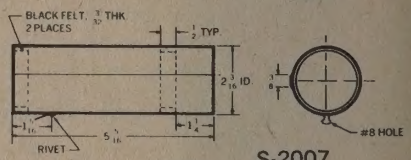
S-1561



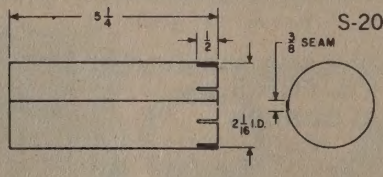
S-2004



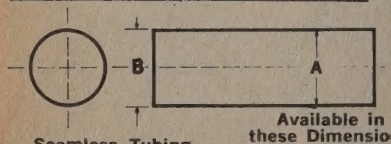
S-1562



S-2007



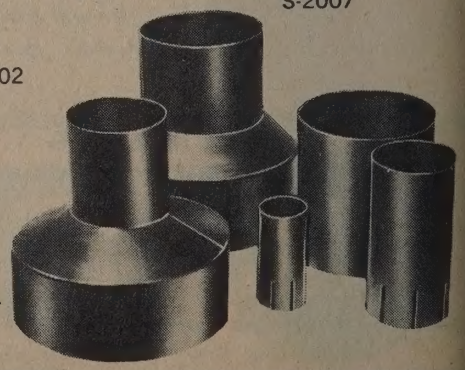
S-2002



Seamless Tubing.
Can be supplied cut to your length, with holes and/or cut-outs to your specifications.

Available in these Dimensions

A	B
1.010	1.050
.998	1.048
.742	.784
.632	.663



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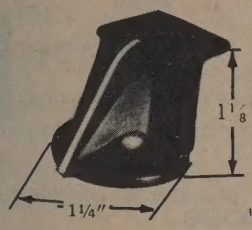
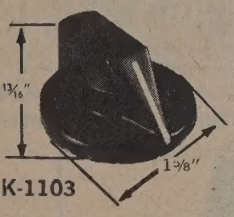
TRANSILLUMINATED POINTER KNOBS

MS25165-1

NAS 539-1B
NAS 539-1C



USAF 61D 404 74
Cat. No. K997



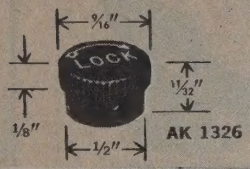
Cat. No. K-1103

MS91528

Precision molded of JAN's transparent plastic material, to NAS specs, with dull finish. Transilluminated pointers permit easy reading under subdued lighting conditions. For use on instrument panels, switchboards electrical and electronic apparatus.

NEW METAL MINIATURE KNOBS

AK 1326
For 1/4" Shaft



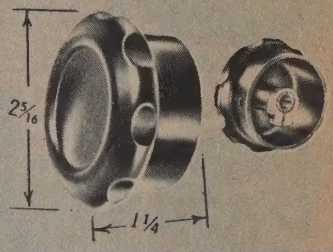
AK 1326

BK 1080
For 1/8" Flatted Shaft

BK1080

TUNING KNOB
Cat. No. K243

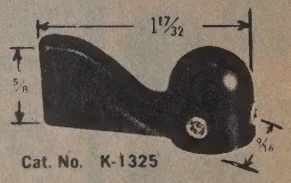
For 5/16" shaft. Die cast aluminum. Made to Fed. Spec. QQ-A-591 and MIL-F-14072. Use no-mar clamp Cat. No. 937-8 for mounting. (Not supplied).



BAR-KNOB

Cat. No. K-1325

Precision cast aluminum for 1/4" shafts. Furnished with twin 8-32 set screws for shaft attachment. Provides a 1.0" integrally cast lever arm for heavy-load switching. Finished to specifications.



Cat. No. K-1325

Cat. No. K936-5

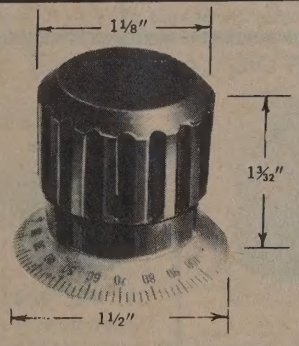
Black phenolic molded knob, with beveled satin aluminum skirt, anodized finish.

Deeply etched and filled contrasting markings.

Accurately centered brass insert, for 5/16" shafts.

Cat. No. K936-4 (1/4" shaft)

Variations on shaft sizes and markings available in production quantities.



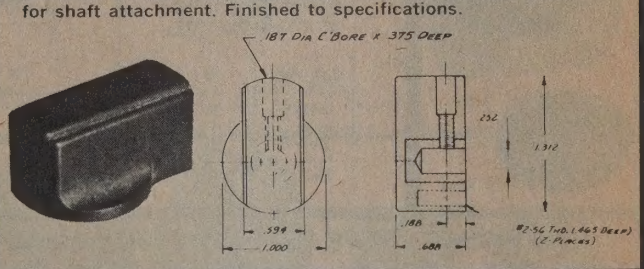
KNOB ONLY

Cat. No. K 929-5 (5/16" shaft)
Same as above, less skirt

Cat. No. K-929-4 (1/4" shaft)

BAR KNOB Cat. No. K783

Phenolic molded knob, with metal insert. Set screw at back, for shaft attachment. Finished to specifications.

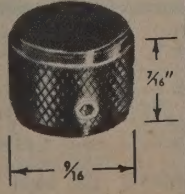


POINTER KNOB Cat. No. K-706

Molded thermosetting phenolic. Type CFG per MIL-P-14. Designed for square shaft, providing positive action.

KNOB Cat. No. K-897

Machined knurled edge for easy turning. Has set screw for firm attachment to 1/4" shafts. Height 7/16" 5/8" diam.

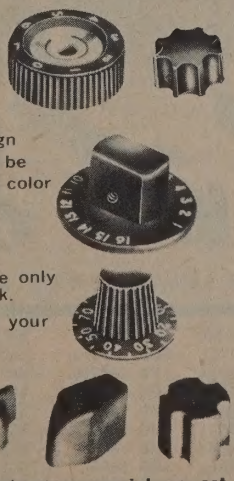


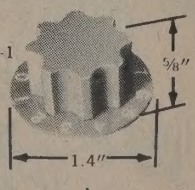
STANDARD PLASTIC KNOBS

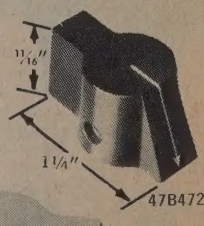
Knobs to satisfy almost any design or demand. Can be produced in any color or finish, either illuminated or non-illuminated.

Knobs shown are only part of our stock.

Let us quote on your specifications.

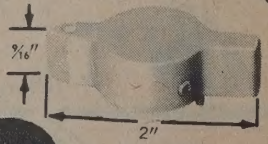




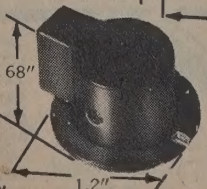


47B47299

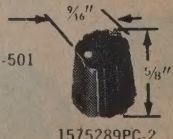
NEW!



51A30C82



1007267-501

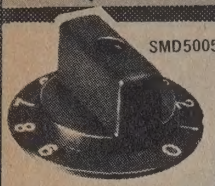


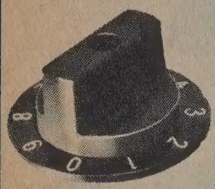
1575289PC-2

- **Knobs back lighted on special request, only.**
- **Special marking by engraving or screening, available to your specifications.**

JAN HARDWARE

MANUFACTURING COMPANY, INC.


SMD500502


SMD500501

KNOBS TO MILITARY SPECIFICATIONS

One of the largest assortment of Military Knobs in the country.

No. 1005
Available with or without skirt

MACHINED KNOBS

No. 1006-(2) -(4) **No. 1007-(2) -(4)**
3/4" high; 3/8" dia. 3/4" high; 3/4" O.D.

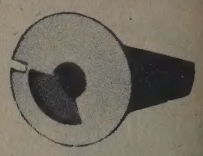
No. 1020 **No. 1021**
11/16" high; 7/16" base dia. 11/16" high; 1" base dia.

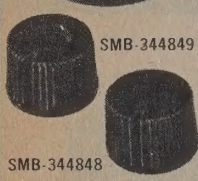
CAST ALUMINUM KNOBS

Available in black. Other colors on request. Specify shaft hole size required.

No. 1022
Full Round Skirt
1/4" hole; 1 1/32" high; 15/16" base dia.

No. 1023
Flat Back Round Skirt
1/4" hole; 1 1/32" high; 15/16" base dia.; (29/32" to flat back)


No. 1024
With Cam Shape Cut-out.
1/4" hole; 1 1/32" high; 15/16" base dia.


SCB-41848

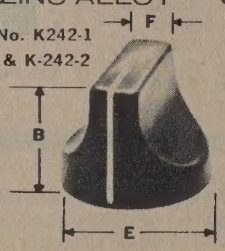
SMB-344849

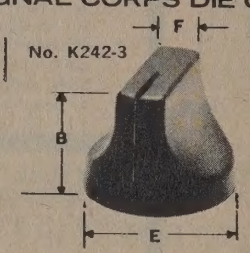
SMB-344848

K-1047

K-1124

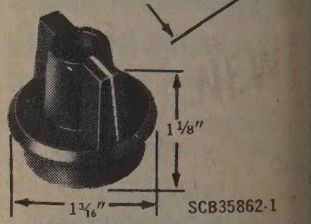
ZINC ALLOY SIGNAL CORPS DIE CAST KNOBS ALUMINUM





Cat. No.	B	E	F	Marking
242-1	3/4"	15/16"	5/16"	White
242-2	7/8"	1 1/8"	3/8"	White
242-3	3/4"	15/16"	5/16"	None

Cat. No. 984
Dimensions as per 242-3
No markings.
Aluminum.
.257 tear drop shaft hole.

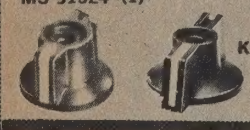


SCB35862-1

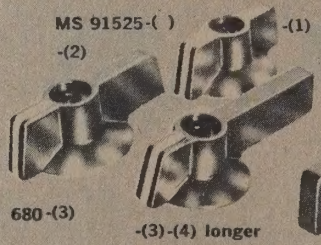
MS SIGNAL CORPS DIE-CAST ALUMINUM & ZINC ALLOY CONTROL KNOBS

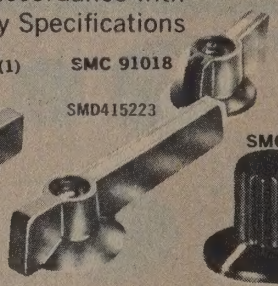
Manufactured in accordance with applicable Military Specifications

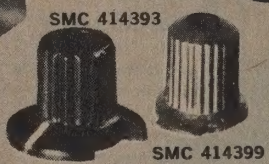
SMC 414401


MS 91524 -(1)

K 680-(3)

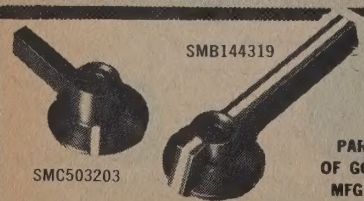






SMC 414680-1 Thru 10

(Many sizes available. Lengths from 1 3/16" to 2 5/16").



PARTIAL LIST OF GOV'T KNOBS MFG'D BY JAN

SMC 100446	SMB 134957	MS 25165	SMC 414393	SMC 447226	SCB 72687
SCB 104717	SMB 143975	SMC 328371	SMC 414399	SMB 456374	NAV ORD 814528
SMC 108874	SMB 144318	SMC 344847	SMC 414401	SMC 500407	SCB 82716
SMC 108875	SMB 144319	SMC 345389	SMC 414680-1 thru -10	SMC 502491	SMB 902574-1
SMC 108876	SMB 144358	SCB 35862	SMD 415160	NAS 539 1B	SMC 91018
SMC 108951	SMB 144517	SCB 35863	SMD 415161	NAS 539 1C	MS 91524
SMB 134093	SMB 16505	SCB 40771	SMD 415223	USAF 61D40474	MS 91525-1 thru -4
SMB 134094	SMB 16552	SCB 40859	BU ORD 416956 PT2	SCB 16532	MS 91528
SMB 134171	SMB 180288A2	SCB 40860	SMC 447052	SCB 65884	MS 91522
SMB 134884	SMB 180465A1	SCB 41848		SCB 72585	

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JAN HARDWARE
MANUFACTURING COMPANY, INC.

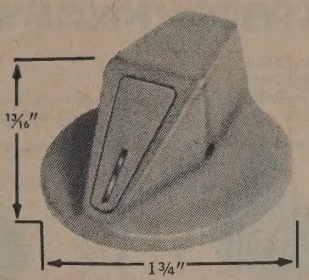
SAFETY KNOBS

Cat. No. LM

NEW!

USED ON LUNAR MODULES!

Precision aluminum casting.
Adaptable for back lighting.
With slip clutch features similar to K1375 (see below).



"PRESS-TO-TURN" KNOBS
For Low Torque Applications

Knobs spin freely . . . and **MUST BE PRESSED-IN** while making changes. Developed specifically to prevent inadvertent changing of settings.

For basic dimensions, see our "De-luxe Instrument Knobs" on page 18. (9, 12, 17 and 22 body diameter series).

When ordering, be sure to substitute prefix "I" for 90 Series and "Q" for 175 Series, as per typical part nos.

11C4GA = 90 Dia./Press to Turn/Round/Dial/1/4"/Glossy/Black

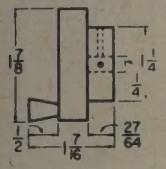
SLIP-CLUTCH With Fixed or Retractable Spinners

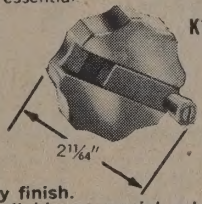
Cat. Nos. K-1375 & K-1376 (For 1/4" Shafts)

For driving devices such as variable capacitors, inductors, potentiometers, etc., the "slip-clutch"* automatically disengages and slips when the pre-determined torque has been exceeded. Knobs are fluted, and are equipped with either fixed or retractable spinner for fast turning. Backlash-free units safeguard delicate and costly instruments against careless or inadvertent cranking beyond their normal stops.

****Normally set for 3-6" lbs. Can be modified for other requirements.***

Model No. K-1376 is identical with No. K-1375 but has the additional feature of a retractable spinner. Spring loading provides positive, toggle-type action to lock spinner in either open or closed position. Model No. K-1376 is designed for use where economy of space is essential.





SPINNER KNOBS

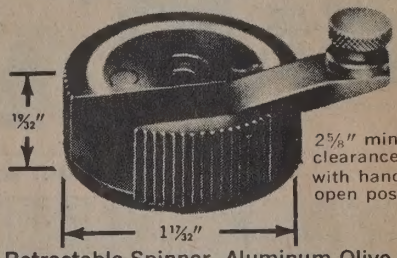
With Fixed or Retractable Spinners | **Standard: glossy finish. (Matte finish available on special order).**

Cat. Nos. K-1275 & K-1276 (For 1/4" shafts)

In appearance, these knobs are identical with No. K-1375 and No. K-1376 but without JAN'S Slip-Clutch mechanism. Made with single-unit, molded Bakelite-to-metal-insert construction, with two set screws for firm attachment to shafts.

CRANK KNOB

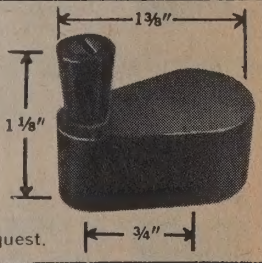
Cat. No. MS 91522-1



2 5/8" minimum clearance required with handle in open position.

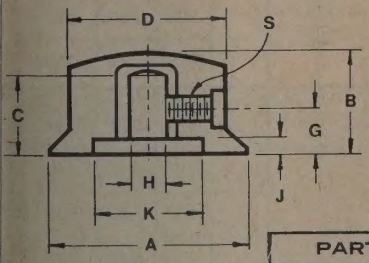
Retractable Spinner. Aluminum Olive Drab. Other colors on request. For 1/4" shaft. Other shaft diameters on request.

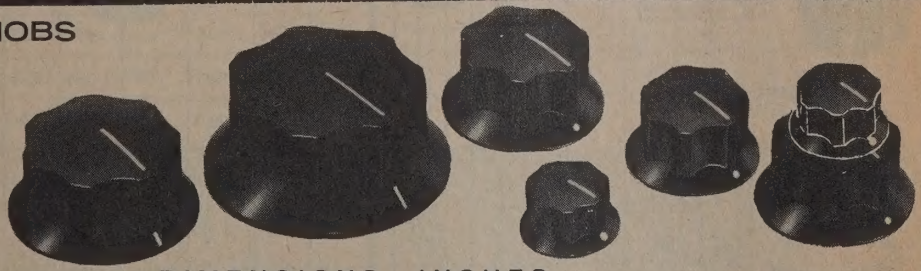
Cat. No. K 1125
SPINNER KNOB
For limited space applications.



For 1/4" shaft. Other shaft diameters on request.

INSTRUMENT KNOBS





DIMENSIONS, INCHES

PART NO.				A	B	C	D	G	H	J	K	S
6	1	C	SPECIFY AS REQUIRED	3/4	7/16	3/8	5/8	7/32	1/4	1/16	9/16	6-32
8	1	C		1	19/32	1/2	13/16	9/32	1/4	3/32	11/16	8-32
10	1	C		1-1/4	21/32	1/2	1	9/32	1/4	3/32	11/16	8-32
13	1	C		1-1/2	3/4	9/16	1-1/4	11/32	1/4	5/32	31/32	8-32
16	1	C		2	7/8	21/32	1-5/8	13/32	1/4	3/32	13/16	8-32

BODY DIA.
6 = 5/8"
8 = 13/16"
10 = 1"
13 = 1 1/4"
16 = 1 5/8"

BODY STYLE
1 = ROUND
2 = POINTER

SKIRT
A = NONE
C = SKIRT W/ INDICATOR MARKER

SHAFT HOLE DIA.
2 = 1/8"
4 = 1/4"
(Standard—with metal insert.
"0" preceding number means without metal insert)

FINISH
G = GLOSSY (Standard)
M = MATTE

COLOR
A = BLACK
B = RED
C = GREY
D = GREEN
E = YELLOW
F = PURPLE
G = BLUE
H = WHITE
J = ORANGE

(Other shaft holes to order)

TYPICAL PART NUMBERS

81C4GB = 13/16" Dia./Round/Skirt w/indicator marker/1/4" Shaft Hole dia./Glossy/Red
101C4MA = 1" Dia./Round/Skirt w/indicator marker/1/4" Shaft Hole dia./Matte/Black
101C04MA = 1" Dia./Round/Skirt w/indicator marker/1/4" Shaft Hole dia. without metal insert/Matte/Black

Available with Metal Tops

DELUXE INSTRUMENT KNOBS

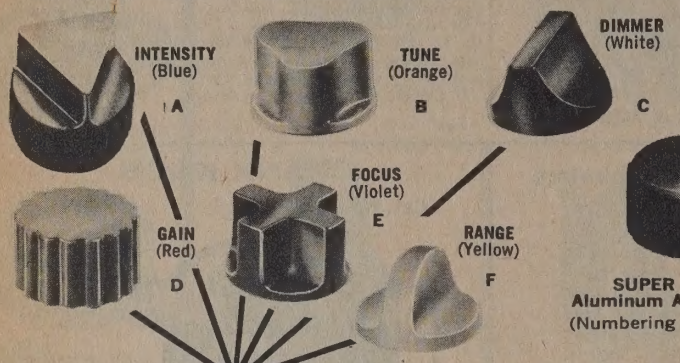
MEETS PERFORMANCE OF MIL-STD-242D (SHIPS) AND MS 91528D

JAN's Standard Instrument Control Knobs for use with electronic equipment. Molded of polycarbonate, these knobs will withstand the extreme environmental conditions of MIL-E-16400. Either knob-cap or entire knob is available in a variety of colors, in MATTE (M) or GLOSSY (G) finish. Complete range of sizes . . . send for catalog.

QPL #3926 — T.R. #J101

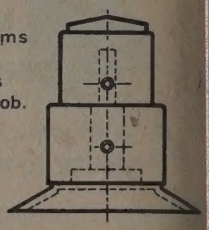
TACTILE SHAPE CONTROL KNOBS

Expressly made for both visual and tactile function identification. Each Tactile knob is produced in the standard recognizable color identified with its configuration. Available in other colors on special order.
See column—below, for applicable tactile shape.



SUPER DELUXE Aluminum Anodized Top.
(Numbering as below)

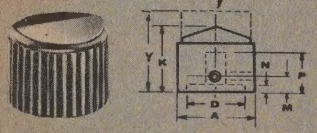
See diagrams below for dimensions of each knob.



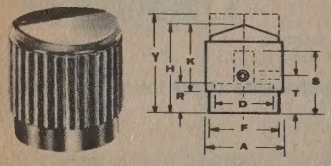
DUAL KNOBS FOR CONCENTRIC CONTROLS

APPROVED FOR USE MIL STD 242D and MS 91528C

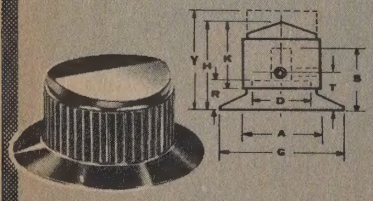
Molded of polycarbonate plastic, these "piggy-bac knobs are used with dual concentric potent meters and in other similar applications. M performance of military specs above.



NO SKIRT



PLAIN SKIRT



DIAL SKIRT

DIMENSIONS

PART NO.	A	D	F	G	H	K	M	N	P	R	S	T	Y
5 1 A	.505	.435				.509	.158	.026	.408				
7 1 A	.708	.486				.626	.187	.026	.406				.915
9 1 A	.911	.645				.798	.255	.114	.521				1.171
12 1 A	1.255	.974				.703	.260	.115	.458				1.220
17 1 A	1.755	1.465				.854	.255	.114	.521				
22 1 A	2.255	1.870				.885	.255	.114	.521				
5 1 B	.505	.435	.450		.660	.509				.181	.563	.324	
7 1 B	.708	.486	.670		.805	.626				.188	.568	.340	1.100
9 1 B	.911	.654	.826		1.027	.798				.323	.730	.484	1.399
12 1 B	1.255	.974	1.155		.870	.703				.262	.605	.427	1.399
17 1 B	1.755	1.465	1.666		1.088	.854				.333	.740	.489	
22 1 B	2.255	1.870	2.153		1.114	.885				.333	.740	.489	
5 1 C	.505	.435		.885	.660	.509				.181	.563	.324	
7 1 C	.708	.486		1.135	.805	.626				.188	.568	.340	1.100
9 1 C	.911	.645		1.510	1.027	.798				.323	.730	.484	1.399
12 1 C	1.255	.974		1.822	.870	.703				.262	.605	.427	1.399
17 1 C	1.755	1.465		2.453	1.088	.854				.333	.740	.489	
22 1 C	2.255	1.870		3.005	1.114	.885				.333	.740	.489	

SPECIFY AS REQUIRED

1 TOP (Color or Tactile)	2 BODY DIA.	3 BODY STYLE	4 SKIRT	5 SHAFT HOLE DIA.	6 FINISH	7 COLOR
0=NO TOP— Shaft Hole Drilled Thru.	5=.51	1=ROUND	A=NONE	2=.128	M=MATTE	A=BLACK
A=(INTENSITY—Blue)	7=.71	2=POINTER	B=PLAIN	3=.190	G=GLOSSY	B=RED
B=(TUNE—Orange)	9=.90		C=DIAL W/ POINTER	4=.253		C=GREY
C=(DIMMER-White)	T=.90	Press-to-Turn	D=DIAL W/O POINTER	5=.312		D=GREEN
D=(GAIN—Red)	12=1.25		H=Slot	6=.375		E=YELLOW
E=(FOCUS—Violet)	17=1.75			7=.268		F=PURPLE
F=(RANGE—Yellow)	Q=1.75	Press-to-Turn		"D" FLAT SHAFT HOLES		G=BLUE
M=ALUM ANODIZED TOP	22=2.25			B=.107 (⅛")		H=WHITE
				D=.222 (¼")		J=ORANGE

*T=STANDARD Should only be used when color of standard shape top is different than body color. Precede T by color code from Column 7 (BT—would mean standard shape RED top)

TYPICAL PART NUMBERS

91C4GA=.90 Dia./Round/Dial/¼"/Glossy/Black
ΠC4GA=.90 Dia./Press-to-Turn/Round/Dial/¼"/Glossy/Black
A71B4MA=Triangle Top Blue/.72/Round/Plain/¼"/Matte/Black
BA71B4MA=Triangle Top Red/.72/Round/Plain/¼"/Matte/Black
BT71B4MA=Standard Top Red/.72/Round/Plain/¼"/Matte/Black
** 071B4MA=No Top, Shaft hole drilled thru/.72/Round/Plain/¼"/Matte/Black

***—Specify if .187, .190, .250 hole is required for dual mounting*
*NOTE: *T—Preceded by color code (BT—would mean Standard RED top)*

IF WHITE DOTS ARE REQUIRED—ADD SUFFIX/WD TO CATALOG NO.
IF FLORESCENT DOTS ARE REQUIRED—ADD SUFFIX/FD TO CATALOG NO.
IF PHOSPHORESCENT DOTS ARE REQUIRED—ADD SUFFIX/PD TO CATALOG NO.
IF FLORESCENT ARROW IS REQUIRED—ADD SUFFIX/FA TO CATALOG NO.
IF PHOSPHORESCENT ARROW IS REQUIRED—ADD SUFFIX/PA TO CATALOG NO.
FOR SPECIAL KNOBS—GIVE FULL DESCRIPTION OR SKETCH WITH ORDER.

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DELUXE INSTRUMENT KNOBS

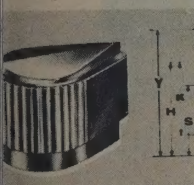
MEETS PERFORMANCE OF MIL-STD-242D (SHIPS) AND MS 91528D

JAN's Standard Instrument Control Knobs for use with electronic equipment. Molded of polycarbonate, these knobs will withstand the extreme environmental conditions of MIL-E-16400. Either knob-cap or entire knob is available in a variety of colors, in MATTE (M) or GLOSSY (G) finish. Complete range of sizes . . . send for catalog.

QPL #3926 — T.R. #J101

POINTER KNOBS

POINTER



POINTER WITH SKIRT

DIMENSIONS

PART NO.	A	D	F	H	K	M	N	P	R	S	T	Y
52A	.750	.406			.505	.158	.026	.402				
72A	1.038	.486			.619	.187	.026	.406				.918
92A	1.344	.645			.796	.255	.114	.555				1.171
52B	.750	.406	.669	.655	.505			.402	.177	.563	.324	
72B	1.038	.486	.940	.791	.619			.406	.193	.573	.364	1.100
92B	1.344	.645	1.251	1.015	.796			.555	.328	.796	.479	1.400

SPECIFY AS REQUIRED

1 TOP (Color or Tactile)	2 BODY DIA.	3 BODY STYLE	4 SKIRT	5 SHAFT HOLE DIA.	6 FINISH	7 COLOR
G=(RANGE—Yellow)	5=.51 7=.72 9=.90	2=POINTER	A=NONE B=PLAIN	2=.128 3=.190 4=.253 5=.312 6=.375 7=.268	M=MATTE G=GLOSSY	A=BLACK B=RED C=GREY D=GREEN E=YELLOW F=PURPLE G=BLUE H=WHITE J=ORANGE

"D" FLAT SHAFT HOLES
B=.107 (⅛")
D=.222 (¼")

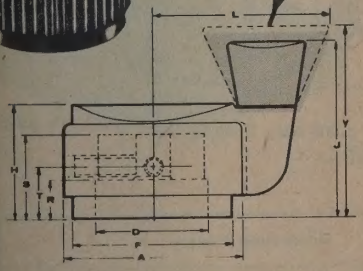
TYPICAL PART NUMBERS
72B4MA=Regular Top
G72A4MA=Tactile Top

CRANK KNOBS

STANDARD HANDLE

BEARING GREY

MARKER GREEN



PART NO.	A	D	F	H	J	L	P	R	S	T	Y
12 4 B	1.250	0.685	1.185	.850	1.350	1.275		.250	.605	.427	1.475
17 4 B	1.750	0.685	1.690	1.070	1.758	1.735		.320	.740	.489	1.940
22 4 B	2.250	0.685	2.185	1.095	1.782	1.970		.320	.740	.489	1.970

SPECIFY AS REQUIRED

1 HANDLE (Color or Tactile)	2 BODY DIA.	3 BODY STYLE	4 SKIRT	5 SHAFT HOLE DIA.	6 FINISH	7 COLOR
H=GREEN J=GREY	12=1.25 17=1.75 22=2.25	4=SPINNER	B=PLAIN	4=.253	M=MATTE G=GLOSSY	A=BLACK B=RED C=GREY D=GREEN E=YELLOW F=PURPLE G=BLUE H=WHITE J=ORANGE

TYPICAL PART NUMBERS
J174B4MA=Grey Tactile Handle
124B4MA=Standard Handle

SHAFT KNOB LOCK

Cat. No. AK 1057-2 (*) (⅛" shaft)
AK 1057-4 (*) (¼" shaft)
(Used with 71 Series Knob)
Cat. No. AK 1059-4 (*) (¼" shaft)
(Used with 91 Series Knob)

*Specify "M" or "G" for matte or glossy finish

Prevents movement of controls due to shock . . . vibration . . . or accidental manual contact. Available in matte or glossy finish, for commercial or military applications.

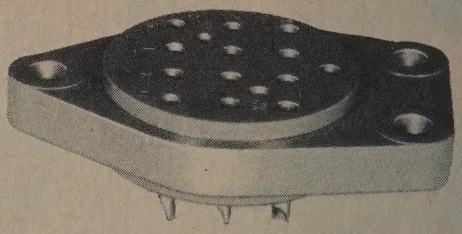
Typical Part Nos.
AK 1057-2MA=For ⅛" Shaft/matte finish/Black
AK 1059-4GA=For ¼" Shaft/glossy finish/Black

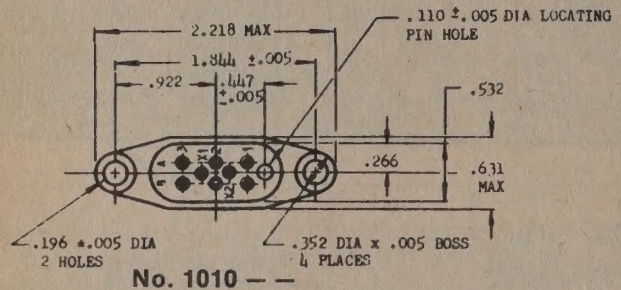
JAN HARDWARE MANUFACTURING COMPANY, INC.

RELAY SOCKETS with Fixed or Removable Contacts!

Jan's relay sockets are specifically designed for use with plug-in relays . . . in electronic circuit applications which demand quick and easy assembly and maintenance.
Available with dip-solder pin terminals for printed circuit assembly, or solder cup and turret terminals for direct wiring. For applications requiring removable contacts, solderless wire crimp terminations are available for #16, 20, 22, or 24 AWG wire sizes.
A variety of mounting styles are offered including . . . tapped inserts with studs for top chassis mounting; thru hole; or tapped inserts with removable standoffs and screws for mounting on either side of chassis or panel. Unexpected disconnect because of vibration is eliminated by fastening the relay to the socket. Polarization dots and/or index holes (optional) aid in plugging in relay correctly. Socket contact material is spring tempered phosphor bronze gold plate over silver plate. Body material is Diallyl Phthalate, fiberglass filled per MIL-M-19833.

1000 SERIES





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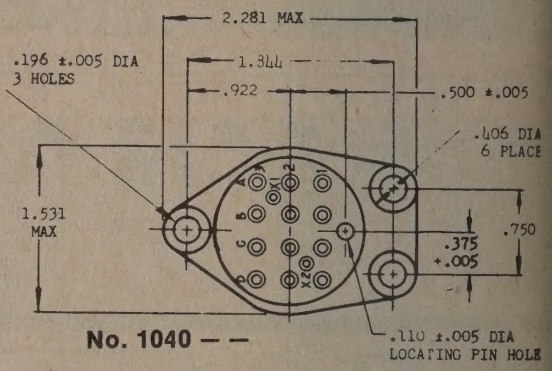

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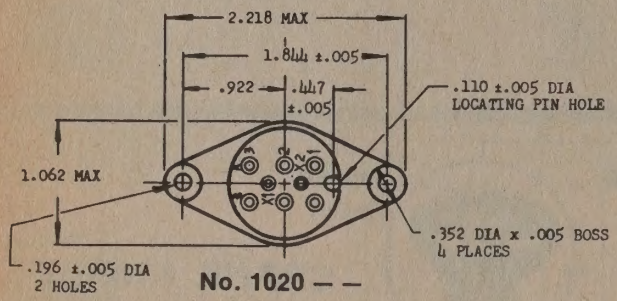

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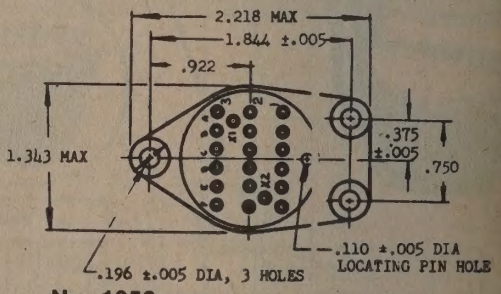

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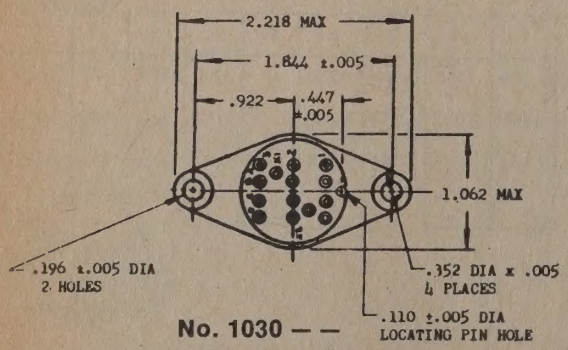


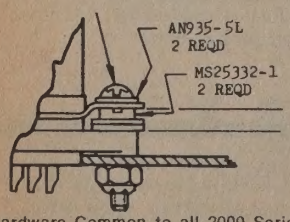
No. 1030 — —

Numbering System

1000 — — —

- 1 = Solder Cup
- 2 = Eyelet
- 3 = Turret
- 4 = Dip Solder
- 5 = Taper

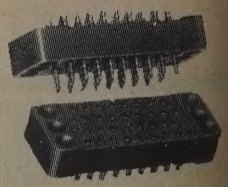
A = Closed Entry
B = Slotted



Hardware Common to all 2000 Series.
Available for above or below chassis mounting.

MS No.	JAN Part No.	MS No.	JAN Part No.
MS25322	No. 1010	MS25456	No. 1060
MS25324	No. 1020	MS25458	No. 1070
MS25326	No. 1030	MS25460	No. 1080
MS25328	No. 1040	MS25462	No. 1090
MS25330	No. 1050	MS25464	No. 1100

The service of JAN's design engineers is available to assist you in the design and manufacture of special sockets and connectors.



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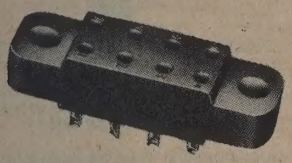
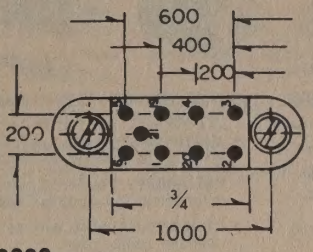
JAN HARDWARE MANUFACTURING COMPANY, INC.

RELAY SOCKETS with Fixed or Removable Contacts!

2000 SERIES





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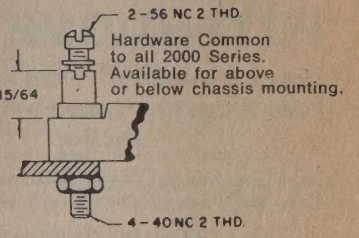

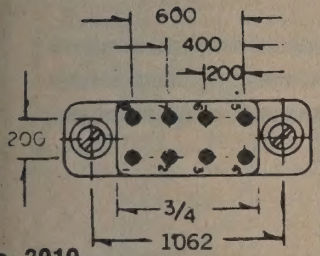

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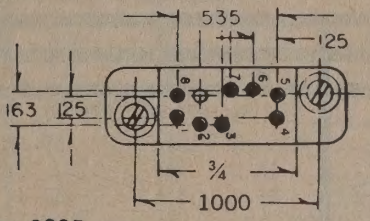


No. 2030 — —

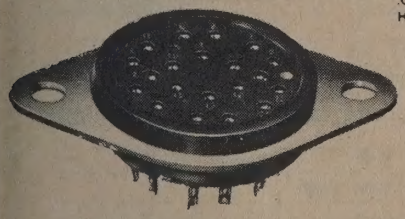
Numbering System

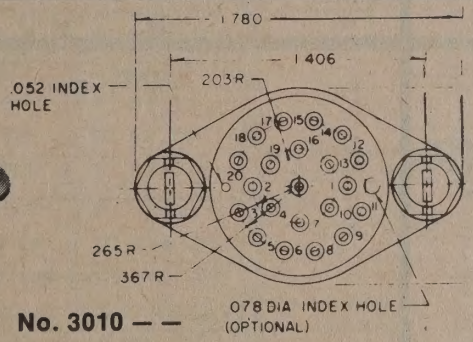
2000 — — —

A = Closed Entry
B = Slotted

1 = Solder Cup
2 = Eyelet
3 = Turret
4 = Dip Solder
5 = Taper

3000 SERIES





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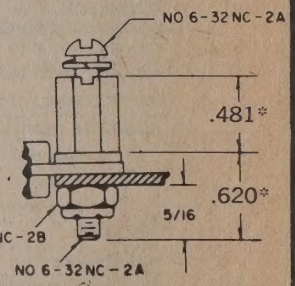

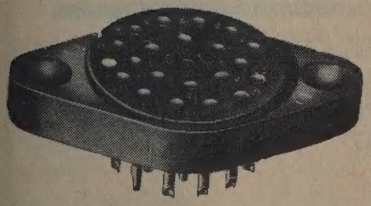

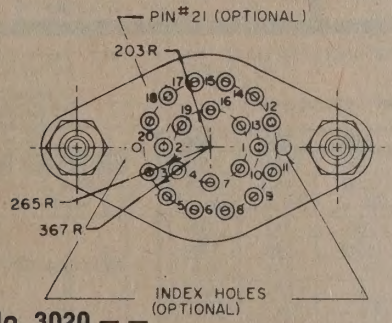

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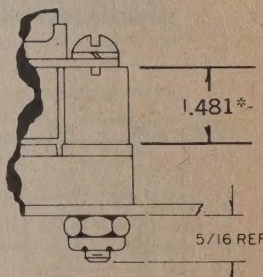


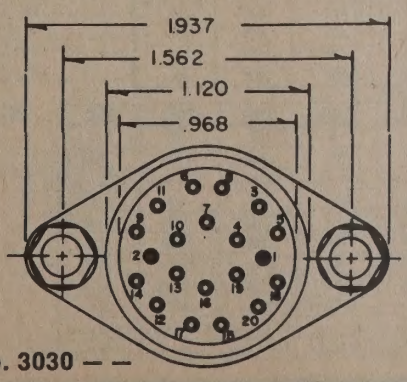
Numbering System

3000 — — —

A = Closed Entry
B = Slotted

1 = Solder Cup
2 = Eyelet
3 = Turret
4 = Dip Solder
5 = Taper

JAN Part No.			Relay Type
No. 3010	No. 3020	No. 3030	6PDT
No. 3011	No. 3021	No. 3031	6PDTL
No. 3012	No. 3022	No. 3032	4PDT
No. 3013	No. 3023	No. 3033	4PDTL
No. 3014	No. 3024	No. 3034	3PDT
No. 3015	No. 3025	No. 3035	3PDTL



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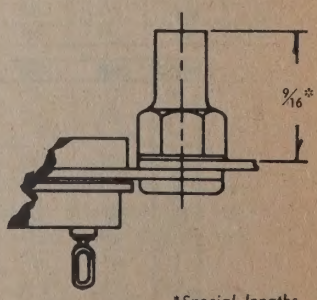


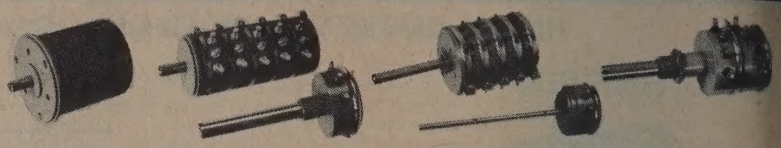
*Special lengths available on request.

JAN HARDWARE

MANUFACTURING COMPANY, INC.

PRECISION WIRE WOUND POTENTIOMETERS

• Linear and Non-Linear • Single and Multi-Turn
• Pendulum Operated • Sectors and Gyro Pickoffs
• Switches



Reliable, competitively priced wire-wound potentiometers for commercial, industrial and military electronic equipment manufacturers.

- **EXCELLENT LINEARITY: 0.03%** available in single turn 5" diam. unit.
- **LONG LIFE:** Over two million revolutions with base metal windings.
- **WIDE TEMPERATURE RANGE:** Available for operation from −55°C to +125°C.
- **MAXIMUM STORAGE LIFE:** Platinum alloy winding also insures low noise level.
- **RELIABILITY:** Welded taps for better mechanical and electrical connections.
- **HIGH RESOLUTION:** Wire as fine as 0.0003" diameter can be used.
- **CUSTOM DESIGNS:** Fast prototype delivery on special linear or non-linear units.
- **PRECISION CONSTRUCTION:** Anodized aluminum housings and polished steel shafts.
- **ACCURATE FUNCTIONS:** Welded taps to a single turn of wire eliminates shorted sections of winding at intermediate taps.
- **RUGGEDNESS:** Meets all applicable MIL Specs.
- **LOW NOISE:** Maintained over long life and extreme environments by unique wiper designs compatible with winding configurations.

DIAMETER	1/2"	7/8"	1-1/16"	1-7/16"	1-3/4"	2"	3"
SERIES	05	09	11	15	18	20	30
ELECTRICAL							
STANDARD RESISTANCE RANGE, OHMS	100 To 100K	100 To 100K	200 To 110K	200 To 120K	200 To 155K	200 To 180K	200 To 230K
STANDARD RESISTANCE TOLERANCE %	5% 3%	5% 3%	5% 3%	5% 2%	5% 1%	5% 0.5%	5% 0.5%
STANDARD LINEARITY %	0.5	0.5	0.5	0.5	0.3	0.3	0.3
BEST LINEARITY %	0.2	0.2	0.15	0.12	0.1	0.1	0.05
POWER RATING, WATTS AT 40 DEG.°	1.2	1.2	2.0	3.0	3.5	4.0	6.0
NOISE MAX. IN OHMS	100	100	100	100	100	100	100
TEMP. COEFFICIENT OF WIRE PPM/°C	± 20	± 20	± 20	± 20	± 20	± 20	± 20
ELECTRICAL ROTATION (NOMINAL)	352°	354°	354°	354°	356°	356°	358°
MECHANICAL							
MECHANICAL ROTATION	AS REQUIRED						
WEIGHT, OZ., SINGLE SECTION	0.5	0.6	0.8	1.7	2.5	3.5	6.0
EACH ADDITIONAL SECTION	0.2	0.3	0.5	1.0	1.3	1.5	1.8
TORQUE, MAX. STARTING, OZ. IN. B.B., SINGLE SECTION	0.1	0.1	0.3	0.4	0.7	0.8	1.1
EACH ADDITIONAL SECTION	0.1	0.1	0.2	0.4	0.5	0.6	0.6
TORQUE, MAX. RUNNING, OZ. IN., SINGLE SECTION	0.1	0.1	0.15	0.2	0.5	0.6	0.6
EACH ADDITIONAL SECTION	0.1	0.1	0.15	0.2	0.5	0.6	0.6
TAPS, MAXIMUM	4	9	12	17	20	24	27
TAP TOLERANCE	AS REQUIRED ± 1 TURN OF WIRE						
GANGED SECTION, MAXIMUM	3	6	6	8	8	9	9
LIFE EXPECTANCE, SHAFT REVOLUTIONS	2×10^6	2×10^6	2×10^6	2×10^6	2×10^6	2×10^6	2×10^6
SHAFT RUNOUT, MAX. T.I.R., IN.	.001	.001	.001	.001	.001	.001	.001
SHAFT RADIAL PLAY MAX. T.I.R. IN.	.001	.001	.001	.001	.001	.001	.001

NOTE: UNITS WILL MEET MILITARY REQUIREMENTS PER MIL-R-12934
MIL-R-19A
NAS-710

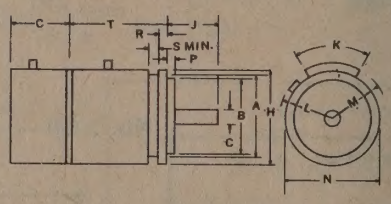
ENVIRONMENTAL DATA WILL BE SUBMITTED ON REQUEST.

NOTE: VARIATIONS OF THE ABOVE SPECIFICATIONS AVAILABLE ON ORDER TO SUIT USER REQUIREMENTS.

STANDARD UNITS UTILIZE BALL BEARINGS AND ALUMINUM HOUSINGS. PLASTIC HOUSINGS AND SLEEVE BEARINGS AVAILABLE ON REQUEST.

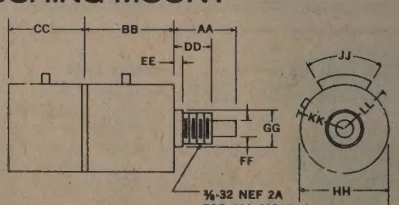
SERIES	05A	09A	11A	15A	18A	20A	30A
A	.450	.781	.975	1.312	1.625	1.875	2.875
B	.437	.750	.968	1.312	1.562	1.875	2.875
C	.380 max.	.380 max.	.380 max.	.500 max.	.500 max.	.500 max.	.500 max.
G	.124	.124	.124	.249	.249	.249	.249
H	.500	.875	1.062	1.437	1.750	2.000	3.000
J	1/2	1/2	7/8	9/16	9/16	9/16	9/16
K	40°	40°	60°	60°	36°	36°	24°
L	.200	.572 max.	.671 max.	.875 max.	1.109 max.	1.359 max.	1.843 max.
M	45/64	5/8 max.	23/32 max.	1-1/16 max.	1-1/4 max.	1-3/8 max.	1-7/8 max.
N	1/2 max.	7/8 max.	1-1/16 max.	1-7/16 max.	1-3/4 max.	2" max.	3" max.
P	.062	.062	.062	.062	.062	.062	.062
R	.062	.062	.062	.093	.093	.093	.093
S	.062	.057	.057	.073	.073	.073	.073
T	.660	.500	.687	.800	.800	.800	.800

SERVO MOUNT



SERIES	05B	09B	11B	15B	18B	20B	30B
AA	1/2	1/2	7/8	7/8	7/8	7/8	7/8
BB	.660	.687	.687	.705	.703	.706	.703
CC	.380 max.	.380 max.	.380 max.	.500 max.	.500 max.	.500 max.	.500 max.
DD	5/16	5/16	3/8	3/8	3/8	3/8	3/8
EE	1/16	1/16	1/16	1/16	1/16	1/16	1/16
FF	.124	.124	.124	.249	.249	.249	.249
GG	.281	.406	.406	.406	.406	.406	.593
HH	.500	40°	1.062	1.437	1.562	2.000	3.000
JJ	40°	60°	60°	40°	36°	36°	24°
KK	.200	.572 max.	.671 max.	.875 max.	1.109 max.	1.359 max.	1.843 max.
LL	45/64	5/8 max.	23/32 max.	1-1/16 max.	1-1/4 max.	1-3/8 max.	1-7/8 max.

BUSHING MOUNT



1/4-32 NEF 2A
FOR ALL MODELS
EXCEPT 1/4-32 NEF 2A
FOR MODEL 05B

Net

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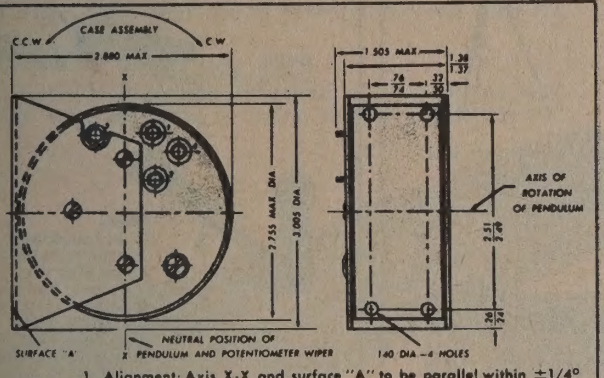
JAN HARDWARE MANUFACTURING COMPANY, INC.

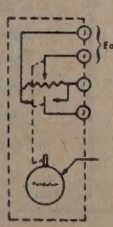
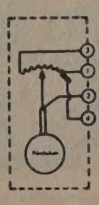
POTENTIOMETERS —STANDARD PENDULUM OPERATED UNITS

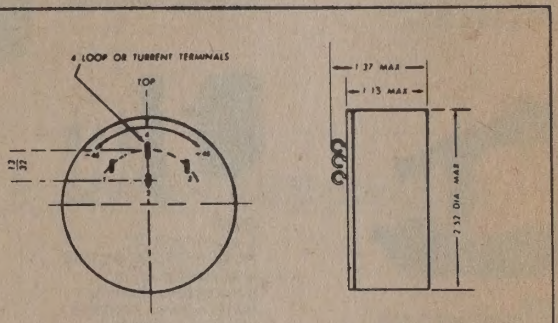
This unit consists of a pendulum suspended on two low torque bearings. Attached to the pendulum is a wiper arm which wipes against the sector potentiometer element attached to the case. The voltage output of the potentiometer is proportional to the angular displacement of the case from a vertical reference. The mechanisms are hermetically sealed in silicone oil which acts as a damping medium. The unit can contain switching sections or a center tap in addition to the basic potentiometer.

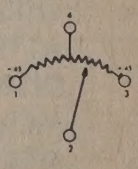
Typical applications include: pitch angle detection of torpedoes, railroad track level sensing, directional sensing in automatic remote mining equipment, level sensing of missile launchers, and machine tool control systems.



NOTES:
1. Alignment: Axis X-X and surface "A" to be parallel within ±1/4°
2. C.W. and C.C.W. directions refer to the case rotation from neutral (axis X-X) when the unit is viewed from the terminal end.

BUORD DRAWING NO.	2086929	1202225
Mechanical Rotation	88° ±4° Arc 44° ±2° CW 44° ±2° CCW	66° ±4° Arc 25° ±2° CW 41° ±2° CCW
Potentiometer Active Rotation	72° ±1° Arc 36° ±0.5° CW 36° ±0.5° CCW	53° ±1° Arc 33° ±0.5° CW 20° ±0.5° CCW
Potentiometer Resistance	1000 ±10% ohms	265 ± 20 ohms
Power Dissipation	20 watts max. at 55°C	
Switch Continuity from Neutral	38° ±1° CW to Mechanical Stop 38° ±1° CCW to Mechanical Stop	36° ±1° CCW to Mechanical Stop
Potentiometer Linearity	±0.5% Maximum	
Pendulum Damped Frequency	2.3 to 2.5 cps at 25°C	
Pendulum Damping Ratio	.26 ±.02 at 70°F ±2°F	
Resolution	Combined resolution of the pendulum and the potentiometer shall not exceed 0.25°	
Centering	Ratio of E_o/E_i with pendulum in neutral position (0° 15') shall be .500 ±.008.	Not Applicable
Temperature	−18° C to 55°C oper. −55°C to 71°C storage	
Weight	14 oz. maximum	
Military Specification	Buord Dwg #2086929	MIL-P-21441 (Nord)
Schematic		



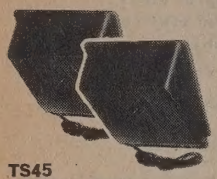
BUORD DRAWING NO. 1626674	
Range:	±45 Minimum.
Resistance:	2000 ±5% ohms.
Power Dissipation:	5.0 watt minimum.
Linearity:	±0.5% of Total Range.
Repeatability:	0.5° or less with vibration. 1.5° or less static.
Damping:	Viscous .5-.7 critical at 25° C.
Natural Frequency:	2.5 cps approx.
Weight:	12 oz. maximum.
Location:	Center Tap within 0.25% of electrical center.
Schematic	

Units available with accuracies to 1 minute of arc. Special resistances, damping ratios, angular movements and special internal switch arrangements readily obtainable. All units are hermetically sealed, therefore are immune to environmental conditions.

Philmore

SERVING THE ELECTRONIC INDUSTRY 49th YEAR

ALL NEW CONSUMER PRODUCTS



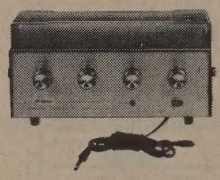
TS45
STEREO CAR SPEAKERS can be mounted anywhere without drilling holes. Impedance 8 ohms.

KIT16
Sixteen educational electronic games. When module cubes are correctly positioned they become audio devices.

ZTT
Table telescope with tripod. 30-power scope includes a ZOOM lens.

DC98
Dual (hi-lo impedance) cardioid microphone with a built-in combination on-off switch and volume control. Freq. Resp.: 50 to 15000 Hz; Output —57 db. 20 ft. shielded cable.

BE69
6 and 9 volt AC Adapter incorporating the most popular connectors. Selector Switch gives positive choice of voltage.



PA230
Solid State AC-DC P.A. Amplifier

RU88
Auto Reverberation Echo System.

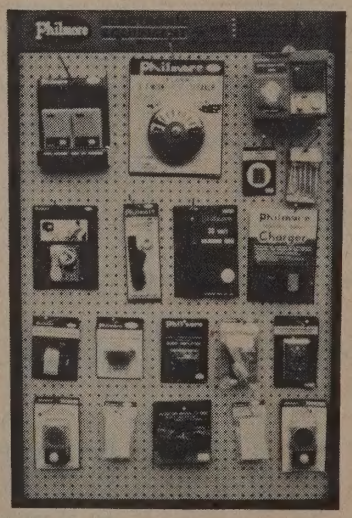
300-75
75-ohm coaxial cable conversion outfit.

STR500
32-Watt Hi-Fi Solid State Stereo Receiver incorporating a built-in circuit breaker relay system for protection against fuse and power transistor blowout. Complete pre-amp monitoring facilities. Specs to satisfy the most discriminating hi-fi enthusiast.

For EVERYTHING in Electronic—Hi-Fi Equipment and Components for Consumer and Industrial Applications, see PHILMORE MASTER CATALOG No. 689 and Supplements.

THIS ATTRACTIVE DISPLAY RACK MOVES MERCHANDISE!

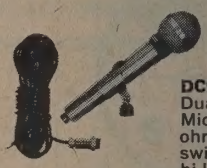
Ask about our Free Display Rack Deal



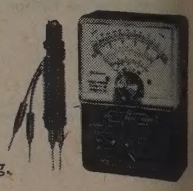
PROFITABLE NEW PRODUCTS FOR 1969-70

TVS
Remote Control for any audio device (TV, Radio Hi-Fi, etc.)

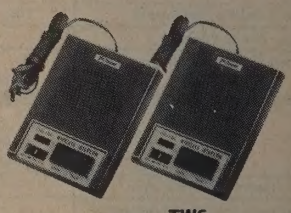
10120
Standard Alligator Clip with screw.



DC95
Dual Impedance Microphone (250-50K ohm). Has two switches: one for hi-lo selection, other for on-off. 20 ft. shielded cable. Freq. Resp.: 100-10K Hz; Output —62 db. Packaged in see-thru box.



PNH200D
Volt-Ohm-Milliammeter 20,000 ohm with diode to protect against overloading.



TW6
Wireless Intercom for desk use; has provision for flush mounting on wall. Elegantly blister packaged.

– ALSO –

Adaptors . . . Battery Chargers
Code Practice Oscillators . . .
Connectors . . . Demagnetizers
Dials . . . Earphones . . . Hi-Fi
Speakers . . . Jacks . . . Knobs . . .
Telegraph Keys . . . Magnifier
Meters . . . Microphones . . .
Switches . . . Test Leads . . .
Telephone Plugs and Jacks.

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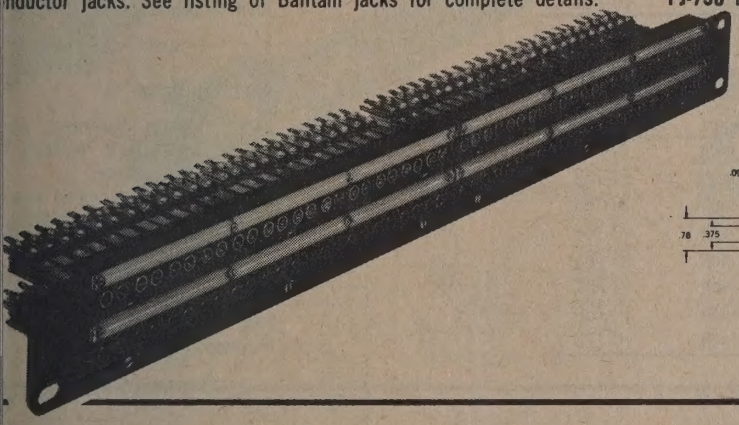
DC bantam jack panels

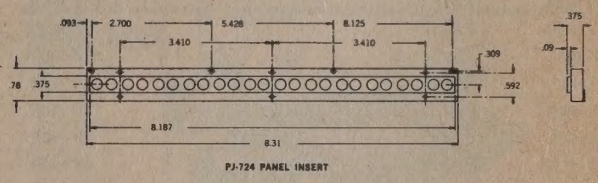
am Jack Panels are designed to satisfy the increas- demand for more compact patchfields in modern ronic and communication equipment. Bantam Jack els, with miniaturized jacks, provide twice the num- of jacks in a standard size panel. They require ½ the rack space previously used by conventional ls. The new panel assemblies weigh 65% less when pared to an assembly using an equivalent number of jacks on a conventional jack panel. ■ Bantam Jack Panels are compact, lightweight, and yet provide the same dependable service as the long established telephone types. This new design offers 96 jacks (48 pairs) in a 1¾ inch x 19 inch standard sized panel. The jacks on this panel are spaced to prevent the cross patching of adjacent circuits when using double plugs.

cifications

nel: Aluminum alloy, extruded. Finished black anodized per Mil-A-25A. Overall dimensions 1¾"x19"—Standard EIA mounting centers.
ck Mounting: Four moulded plastic inserts, each provides for 24 cks. Pairs of jacks on ⅜ inch centers. Double-row panel provides jacks total. Blank inserts can be furnished where only single row jacks is required.
signation Strip: Extruded clear plastic.
nel assemblies are available with a wide variety of two and three- nductor jacks. See listing of Bantam jacks for complete details.

PJ-731 Double row panel, assembly less jacks, holds 96 jacks.
PJ-737 Double row panel, with 48 pair (96 total) PJ-818 jacks.
PJ-739 Double row panel, with 48 pair (96 total) PJ-839 jacks.
PJ-724 Panel inserts, less jacks, 24 holes.
PJ-700 Panel inserts, blank (same as PJ-724 without holes).
PJ-736 Double row panel, with 104 PJ-818 jacks.
PJ-738 Double row panel, with 104 PJ-839 jacks.

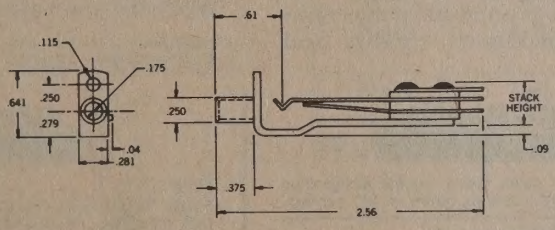




PJ-724 PANEL INSERT

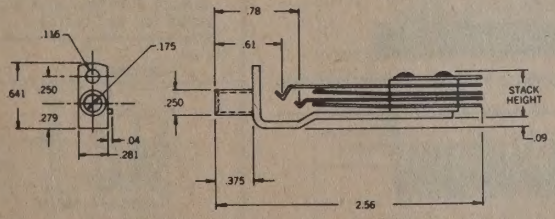
DC bantam jacks

tam Jacks will meet the rical, mechanical and en- nmental requirements of military specification for frame telephone jacks. Al- gh reduced in size these s will provide the same re- e service equal to that ex- ed from regular size tele- ne jacks. These jacks are lable in a variety of two three conductor types, isolated circuit contacts ell as normalling contacts.



2 CONDUCTOR JACK

3 CONDUCTOR JACK



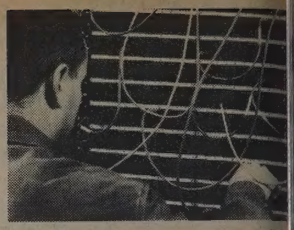
SCHEMATIC DIAGRAM	PART NO.	STACK HEIGHT (Inches)
	PJ-803	13/32
	PJ-808	43/64
	PJ-815	35/64
	PJ-816	35/64
	PJ-818	13/32
	PJ-823	27/64
	PJ-836	5/8
	PJ-805	43/64
	PJ-824	43/64
	PJ-838	35/64
	PJ-839	17/32
	PJ-841	43/64
	PJ-880	3/4

cifications

e: Steel, Cadmium plate with chromate conversion coating to with- l 50 hours of salt spray.
gs: Nickel silver.
Contacts: W. E. #1 Gold Alloy, cross-bar contacts are welded to springs.
Insulation: Spacers, Phenolic Type PBE-P per Mil-P-3115B.
Bushing: Brass, silver soldered to frame. Finish same as frame.

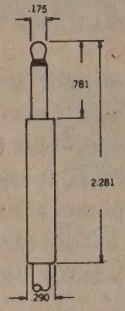
ADC bantam patch cords

Bantam Patch Cords are plastic jacketed, shielded cords complete with molded-on plugs. The plugs are made with molded insulation between conductors. Bantam Patch Cords are available with single and double two and three conductor plugs. A cord strain relief feature is included in the plug construction.



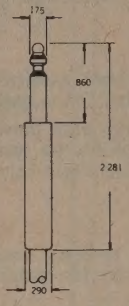
2 CONDUCTOR SINGLE PLUG

Length (see Note 1)	Single (2) Conductor Plug
6 inch	PJ-701
12 inch	PJ-702
18 inch	PJ-703
24 inch	PJ-704
30 inch	PJ-705
36 inch	PJ-706
48 inch	PJ-708
60 inch	PJ-710



3 CONDUCTOR SINGLE PLUG

Length (see Note 1)	Single (3) Conductor Plug
6 inch	PJ-711
12 inch	PJ-712
18 inch	PJ-713
24 inch	PJ-714
30 inch	PJ-715
36 inch	PJ-716
48 inch	PJ-718
60 inch	PJ-720



specifications

Cord: Plastic jacketed, stra copper conductors, braided sh Jacket color — gray.

Plugs: Conductor parts are b finished to 32 microinch finish m mum.

Plug Insulation: Molded polystyr

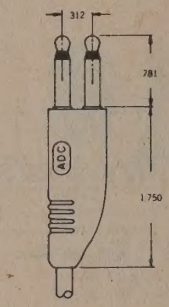
Internal Connections: Soldered

Plug Shell: Plastic, black, rigid t moplastic.

NOTE 1: Length is measured from rear of the plug shell to rear of shell on opposite end.

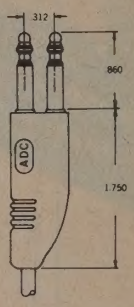
2 CONDUCTOR (DOUBLE)

Length	Double (2) Conductor Plug
6 inch	PJ-751
12 inch	PJ-752
18 inch	PJ-753
24 inch	PJ-754
30 inch	PJ-755
36 inch	PJ-756
48 inch	PJ-758
60 inch	PJ-760



3 CONDUCTOR (DOUBLE)

Length	Double (3) Conductor Plug
6 inch	PJ-761
12 inch	PJ-762
18 inch	PJ-763
24 inch	PJ-764
30 inch	PJ-765
36 inch	PJ-766
48 inch	PJ-768
60 inch	PJ-770



specifications

Cord: Plastic jacketed, stra copper conductors, braided sh Jacket color — gray.

Plugs: Conductor parts are b finished to 32 microinch finish m mum.

Plug Insulation: Molded polystyr

Internal Connections: Soldered

Plug Shell: Plastic, gray, flex thermoplastic.

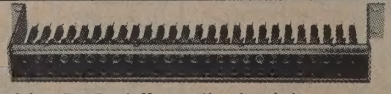
ADC jack panels

ADC offers the most complete assortment of jack panels available today. ADC panels are used in television and broadcasting stations, recording studios, industrial paging systems, and communication equipment of all kinds where there is a need to efficiently switch and distribute audio signals. Molded of solid phenolic, reinforced with steel to provide maximum rigidity and strength. Jacks are spaced to permit use of any sta ard double plug with 5/8" spacing. Mounting brack and designation strips furnished with each panel. panels designed to fit standard 19" relay rack. Cons ADC for your standard and special jack panel requi ments.

PJ-30
Double Panel. Holds 52 jacks — requires 1¾" panel space. Double designation strip. Brackets for flush rack mounting. All jack mounting holes on 5/8" centers.

PJ-31
Double Panel. Holds 48 jacks. Holes spaced to prevent patching adjacent circuits. Requires 2⅛" panel space.

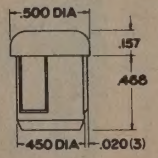
PJ-33
Single Panel. Holds 24 jacks. Holes spaced to prevent patching adjacent circuits. Requires 1¾" panel space.



PJ-35
Same as PJ-30, except has 7" standoff mounting brackets.

PJ-36
Single Panel. Holds 26 jacks — requires 1¾" panel space. Brackets for rack mounting. All jack mounting holes on 5/8" centers.

PJ-37
Triple-Row Panel. Holds 78 jacks. Requires 2⅝" panel space (1½" standard spaces). Provided with brackets for flush rack mounting and PJ-901 design strips top and bottom.



HOLE PLUG

Molded of black polyethylene plastic. Fit ADC standard jack panels. Made to plug un jack mounting holes in jack panels. **PJ-29**

Panel Less Jacks	Panel With PJ-318	Panel With PJ-339	Panel Less Jacks	Panel With PJ-318	Panel With PJ-339
PJ-30	PJ-340	PJ-390	PJ-35	PJ-350	PJ-395
PJ-31	PJ-341	PJ-391	PJ-36	PJ-360	PJ-396
PJ-33	PJ-343	PJ-393	PJ-37	PJ-370	PJ-397

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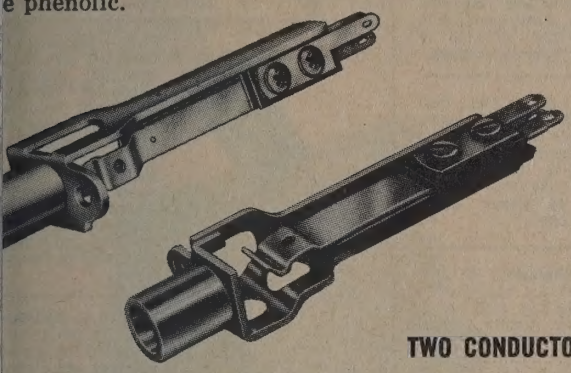
cks

ADC

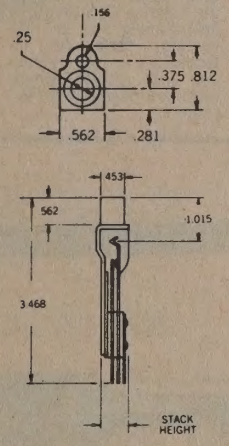
PHONE TYPE

is recognized as a leading supplier of long frame, hone type jacks. As evidence of their outstanding ty, ADC jacks are used by the country's foremost ufacturers of communication equipment. The unique, one-piece frame is strong, dimensionally stable and ily interchangeable both mechanically and electrically commonly used jacks. Plating withstands 50-hour spray tests. Coin silver contacts are welded to nickel r springs. Lugs are hot tin dipped. Insulation is high e phenolic.

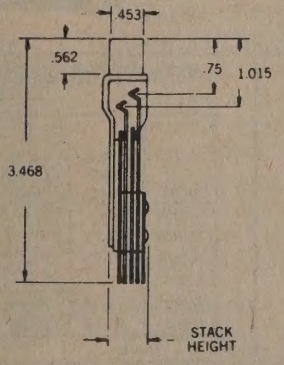


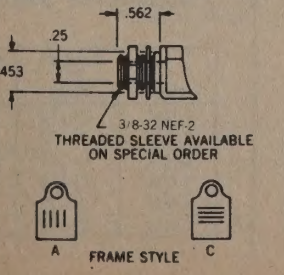
matic gram Jacks	WE Equiv.	Frame Style	Stack Height (Inches)
PJ-115	215-A	A	5/8
PJ-116	216-A	A	5/8
PJ-117	217-A	A	9/16
PJ-123	223-A	A	7/16
PJ-125	225-A	A	21/32
PJ-202	None	C	3/4
PJ-203	303-A	A	9/16
PJ-204**	None	A	3/4
PJ-205**	240-A	A	3/4
PJ-206**	242-A	A	3/4
PJ-207**	285-A	A	27/32
PJ-208**	284-A	A	63/64
PJ-209**	411-A	A	27/32
PJ-226	226-A	A	5/8
PJ-237	237-A	A	15/32
PJ-238	238-A	A	9/16
PJ-240	240-C	C	3/4
PJ-241**	241-A	A	3/4
PJ-242	242-C	C	3/4
PJ-280	280-C	C	23/32
PJ-318	218-A	A	1/2
PJ-336	236-C	C	19/32
PJ-338	438-C	C	13/16
PJ-339	239-A	A	9/16
PJ-418	218-C	C	1/2
PJ-246*	246-A	A	9/16
PJ-248*	248-A	A	9/16
PJ-249*	249-A	A	9/16

TWO CONDUCTOR



THREE CONDUCTOR





MILITARY JACKS

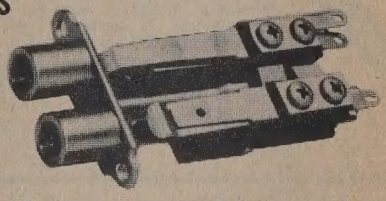
Designed to meet the rugged, exacting requirements of military applications. These ADC jacks are made in accordance with Mil-J-641B specifications. Highest quality materials and closely held tolerances on dimensions conform with military specifications.

Schematic Diagram	MIL Jacks	Frame Style	Stack Height (Inches)	Schematic Diagram	MIL Jacks	Frame Style	Stack Height (Inches)
	JJ-015	C	3/4		JJ-073**	A	3/4
	JJ-016	A	9/16		JJ-074	A	3/4
	JJ-017**	A	3/4		JJ-075**	A	3/4
	JJ-019	C	11/16		JJ-077	A	27/32
	JJ-022	A	9/16		JJ-078**	A	63/64
	JJ-024	A	1/2		JJ-084	A	5/8
	JJ-035	A	5/8		JJ-085	A	9/16
	JJ-042	A	9/16		JJ-086	A	7/16
	JJ-072	A	5/8		JJ-087**	A	27/32

*For use with PJ-309 or other similar type plugs having .207" diameter sleeves.

**Caution — Because of Stack Height these "A" frame jacks cannot be installed on 5/8" centers. "C" Frame version if not listed can be furnished on special order.

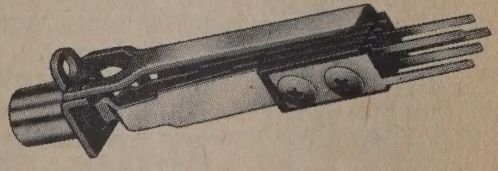
TWIN JACKS



ADC Twin Jacks are essentially two jacks with a common mounting frame. Jack sleeves are on 5/8" centers for vertical mounting in standard jack panels. Normal springs are cross-connected or strapped. Jack sleeves are brass, nickel plated. Die formed springs are nickel silver. Frame and hardware are steel, cadmium-chromate plated to withstand 50 hours salt spray.

Part No.	WE Equivalent	No. Conductors	Use With Plug
PJ-410	410A	2	PJ-047, PJ-1 and PJ-327
PJ-482	482A	3	PJ-051, PJ-7

WRAPID JACKS (For Wrapped Solderless Connections)

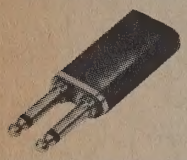


ADC offers a variety of Wrapid Jacks with .032" by .062" rectangular terminals for wrapped wire connections. These jacks feature cross-bar contacts. Overall length is 3.825" maximum, otherwise, dimensionally the same as telephone jacks.

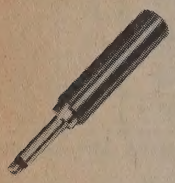
Schematic Diagram	Wrapid Jack	Frame Style
	PJ-238W	A
	PJ-240W	C
	PJ-241W	A
	PJ-242W	C
	PJ-339W	A

ADC plugs

TWO CONDUCTOR



PJ-1 — Equivalent WE-241. Heavy duty die cast frame. Black phenolic shell. Has self-aligning plug sleeves on 5/8" centers for use with all standard jack panels. Two tip conductors, plus sleeve connection common to both sleeves.



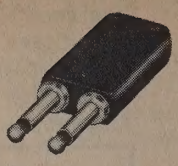
PJ-047R — Equivalent WE-347. Designed for use with tip and sleeve jacks. Molded insulation, red plastic handle, design and construction in accordance with MIL-P-642B specifications.

PJ-047B — Same as above except black plastic handle.

PJ-055B — Formerly ADC PJ-5, fits 1/4" phone jacks. Black plastic shell. Screw terminals, designed and manufactured in accordance with MIL-P-642B.

PJ-055M — Same as above except has metal handle, brass, nickel plated.

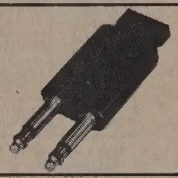
PJ-055R — Same as above except has red plastic handle.



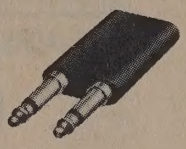
PJ-327 — Equivalent WE-327. Twin plug provides two electrically independent 2 conductor plugs in a black phenolic shell which is notched to indicate polarity. Self-aligning plug sleeves are on 5/8" centers. Designed and constructed in accordance with specification MIL-P-642B.

THREE CONDUCTOR

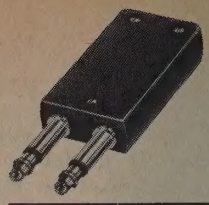
PJ-2—Equivalent WE-291A. Designed for use with 1/4" diameter tip, ring and sleeve jacks. Especially designed cone-shaped tip to prevent momentary shorting of tip and ring conductors when used with ADC PJ-339, WE-239A or similar three circuit jacks.



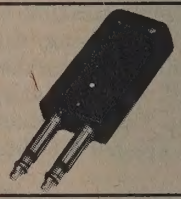
PJ-4 — Looping plug, dual three conductor type. Same conductor configuration as PJ-051 except has conductors wired internally, tip to tip, ring to ring and sleeve to sleeve. Black plastic shell.



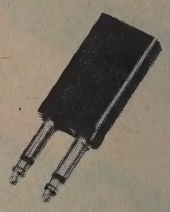
PJ-6 — Equivalent WE-213. Designed for applications requiring two separate 3 conductor circuits. Popularly used with operator's intercom / monitor headsets. Black shell notched for polarity identification. Self-aligning plug on 1 1/16" centers. (**Note:** Not intended for use with standard jack panels where jacks are mounted on 5/8" centers.)



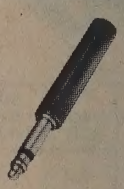
PJ-7 — Equivalent WE-42 Twin type plug with ti ring and sleeve conducto on 5/8" centers for u with all standard jack pa els. Designed to mate wi three conductor jacks ha ing 1/4" diameter sleeve Molded insulation. Bla phenolic shell is notch to indicate polarity.



PJ-8 — Dual three co ductor type with same co ductor configuration PJ-2, designed for no shorting of tip and ri circuits when used wi PJ-339, WE-239A or simil jacks. Black plastic hand notched to indicate pola ity.



PJ-9 — Equivalent WE-33 Designed for applicatio requiring two separate conductor circuits. W mate with three-conduct jacks having 1/4" diamet sleeves. Molded insul tion, black plastic hand notched to indicate p larity. Self-aligning pl sleeves on 5/8" center Has two separate cord e try holes and requires "Y type cord or two separa cords.

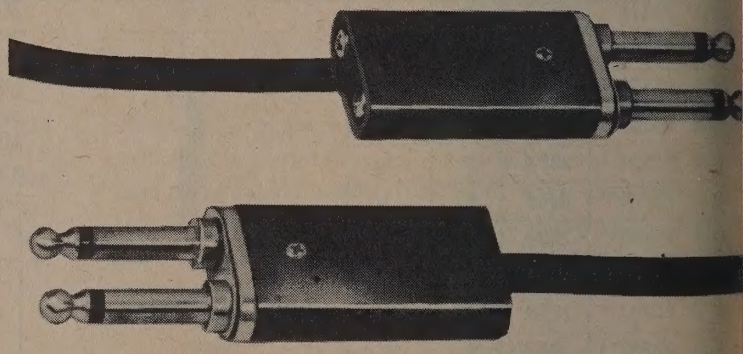


PJ-051R — Equivalent W 310. Formerly ADC PJ- Designed for use with 1/ tip, ring and sleeve jack Molded insulation, re plastic shell, three co ductor. Is in accordan with MIL-P-642B.

PJ-051B — Same as abov except black plastic ha dle.

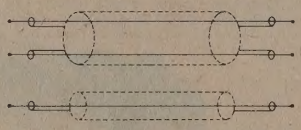
ADC patch cords

ADC Patch Cords have become standards in the communications industry. The heavy Nylon braided jacket excels in abrasion resistance. All cords have been designed to give the ultimate combination of durability, flexibility and reliability. ADC has numerous combinations of special cord assemblies using virtually every plug combination required. You are invited to submit your requests or requirements for quotations.



2 CONDUCTOR SHIELDED, CORD ASSEMBLIES

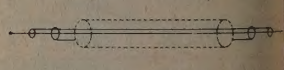
Length	Cord w/ PJ-1 Plugs	Cord w/ PJ-055B Plugs	Replacement Cords Only
6 inch	PJ-10½	PJ-50½	PJ-20½
1 foot	PJ-11	PJ-51	PJ-21
2 feet	PJ-12	PJ-52	PJ-22
3 feet	PJ-13	PJ-53	PJ-23
4 feet	PJ-14	PJ-54	PJ-24
5 feet	PJ-15	PJ-55	PJ-25
6 feet	PJ-16	PJ-56	PJ-26
10 feet	PJ-10	PJ-50	PJ-20



These cords provide two tinsel wire conductors plus a braided shield. The overall jacket is braided nylon. Black nylon is standard, also available in slate, green and red on special order.

3 CONDUCTOR SHIELDED, CORD ASSEMBLIES

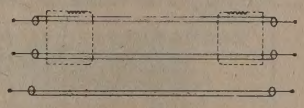
Length	Cord w/ PJ-2 Plugs	Cord w/ PJ-051R Plugs	Replacement Cords Only
1 foot	PJ-71	PJ-81	PJ-61
2 feet	PJ-72	PJ-82	PJ-62
3 feet	PJ-73	PJ-83	PJ-63
4 feet	PJ-74	PJ-84	PJ-64
5 feet	PJ-75	PJ-85	PJ-65
6 feet	PJ-76	PJ-86	PJ-66



These cords provide two tinsel wi conductors plus a braided shie Overall jacket is braided nylon. Bla nylon is standard with slate color jacket also stocked. Green and r are available on special order.

2 CONDUCTOR UNSHIELDED, CORD ASSEMBLIES

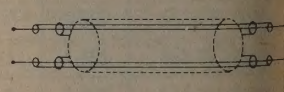
Patch Cords Length	Cord w/ PJ-327 Plugs	Cord w/ PJ-047R Plugs
1 foot	PJ-181	PJ-471
2 feet	PJ-182	PJ-472
3 feet	PJ-183	PJ-473
4 feet	PJ-184	PJ-474
5 feet	PJ-185	PJ-475
6 feet	PJ-186	PJ-476



The PJ-180 and PJ-470 series cords offer tinsel wire conductors, thermo plastic insulated. Standard color for PJ-180 series patch cords is slate. The standard color for the PJ-470 series cords is red. Other colors are available on special order.

3 CONDUCTOR SHIELDED, CORD ASSEMBLIES

Length	Cord w/ PJ-7 Plugs	Cord w/ PJ-8 Plugs
1 foot	PJ-171	PJ-91
2 feet	PJ-172	PJ-92
3 feet	PJ-173	PJ-93
4 feet	PJ-174	PJ-94
5 feet	PJ-175	PJ-95
6 feet	PJ-176	PJ-96



The PJ-90 and PJ-170 series cords pr vide four tinsel wire conductors, pl a shield common to both sleeves the plugs. Standard color for the cords is black. They are also availab in slate, green or red on special orde

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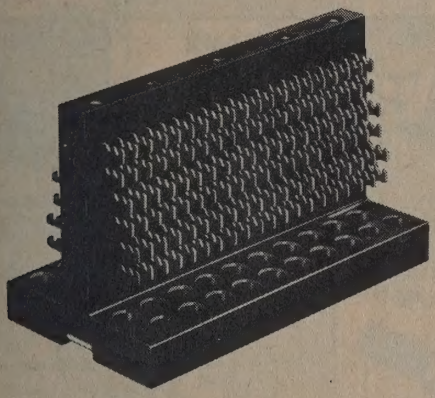
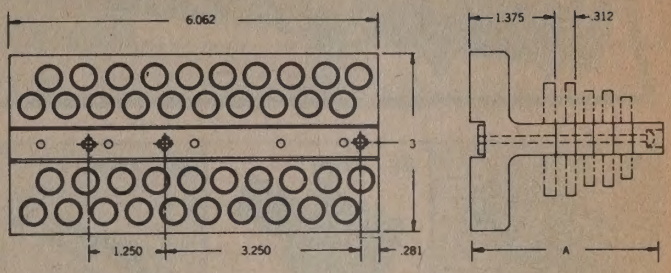
ADC molded terminal blocks—20 pin

wn for their ruggedness, ADC "Christmas Tree" minal Blocks have become standards in the Broad- and Telecommunications Industries. The ADC Pin Terminal Blocks are molded of durable, black, rmo-set plastic per Military specifications MIL-F- . Terminals are brass with a tin alloy plating for ing solderability (see specifications below for details olderability). The PJ-101 series blocks have termin- graduated in length for ease of wiring. The Figure 2 erless terminals as furnished on the PJ-161 series ks are designed to accommodate AMP No. 60197-1 nectors as supplied by American Pamcor, Inc. or be used as regular solder terminals. All Terminal ks are numbered along the top row for easy terminal tification.





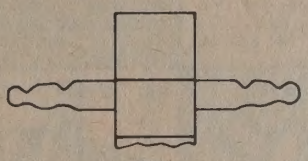


FIG. 1
Solder Type
Mat'l. .040 Thick

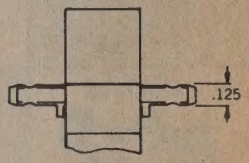


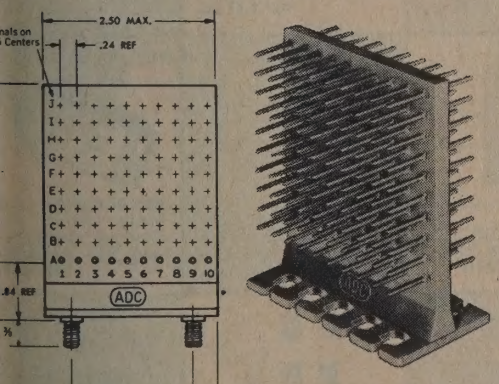
FIG. 2
Solderless or Solder
Mat'l. .032 Thick

ifications

inals: Brass, Tin alloy plated.
ating Strips and Base: Black Thermoset plastic per MIL-M-14F, Type CFG.
ting Strip: Steel, Cadmium-Chromate per MIL-F-14072, #M262, Type II.
nt Carrying Capacity: 5 Amperes.
ation Resistance: 1000 Megohms Min.
ctric Strength: 2500 V RMS 60 Hz. between terminals.
rability: Per MIL-STD-202C, Method 203A
tial: Excellent (over 95% coverage).
49 hour salt spray per MIL-STD-202C. Method 1013: good (90% coverage).
240 hours conditioning at +150 F and 95-98%. Relative Humidity: excellent.
90 day storage at room temperature: excellent.

Catalog No.				
Fig. 1 Terminal	Fig. 2 Terminal	No. Rows	No. Terminals	Dim. A
PJ-101	PJ-161	1	20	1.906
PJ-102	PJ-162	2	40	2.250
PJ-103	PJ-163	3	60	2.593
PJ-104	PJ-164	4	80	2.937
PJ-105	PJ-165	5	100	3.281
PJ-106	PJ-166	6	120	3.625
PJ-107	PJ-167	7	140	3.968
PJ-108	PJ-168	8	160	4.312
PJ-109		9	180	4.656
PJ-110		10	200	4.968
PJ-111		11	220	5.281
PJ-112		12	240	5.593

ADC "wrapid" terminal blocks FOR WRAPPED WIRE CONNECTIONS



ADC's Wrapid Terminal Blocks provide for up to 100 connections in a space of 2½" wide by 3⅜" high. ADC offers a variety of Wrapid Terminal Blocks designed for specific wiring applications. The Wrapid Terminal Blocks can be used for wrapped solderless connections, wrapped and soldered connections, or in applications requiring wrap to solder or solderless connectors. Wrapped wire terminations can be accomplished with any commercially available wrapping tool. Behind the development of these terminal blocks is 30 years of experience in meeting rigid commercial and military specifications on a wide variety of devices. This is your assurance of top performance and long dependable service life.

specifications

Terminals: Brass, Electro-Tin Plated.
Block and Fanning Strip: PJ-600 Series — Asbestos Filled Polypropylene Molded. PJ-620 and 640 Series — Glass-filled NYLON (high temperature). Color — Natural (White). Heat Distortion — 442°F with 264 P.S.I.
Mounting Studs: (2) 8-32 Steel, Cadmium-Chromate Plating per MIL-F-14072 No. M262 II.

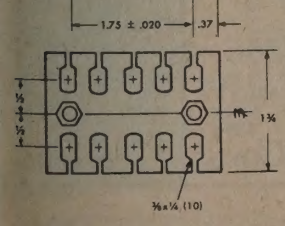


Fig. 1

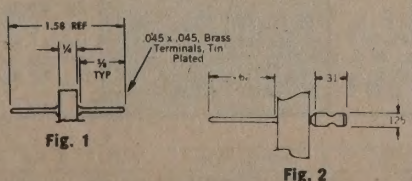


Fig. 2

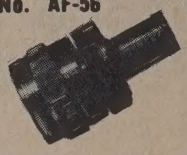
No. of Terminals	Wrapped Solderless Application Fig. 1 Terminal	Wrapped and Solder Application Fig. 1 Terminal	Wrapped to Solder or Solderless Application Fig. 2 Terminal	H. Dim.
40	PJ-604	PJ-624	PJ-644	1.75
60	PJ-606	PJ-626	PJ-646	2.25
80	PJ-608	PJ-628	PJ-648	2.75
100	PJ-610	PJ-630	PJ-650	3.25

AVA Electronics & Machine Corp.

No. AC-52

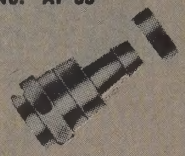
No. AC-52 — "C" type cable connector for RG/59/U cable. **Net $.36 ea.**

No. AF-56



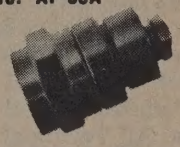
No. AF-56 — "F" male cable connector for RG6/U foam cable **Net $.45 ea.**

No. AF-59



No. AF-59 — "F" male RG-59/U cable connector. **Net $.30 ea.**

No. AF-59A



No. AF-59A — "F" male RG-59/U cable connector, ferrule built on. **Net $.30 ea.**

No. APG-59

No. APG-59 — "F" male pushon connector with pin for RG-59/U cable. **Net $1.25 ea.**

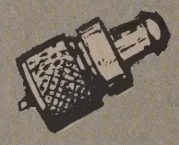
No. AG-59

No. AG-59 — "F" male pushon connector for RG-59/U cable. **Net $.50 ea.**

No. AF-59-TS

No. AF-59-TS — "F" terminating male connector. **Net .75 ea.**

No. AC-52-TS



No. AC-52-TS — "C" terminating male connector. **Nt $.75 ea.**

No. AF-61A

No. AF-61A — "F" Female spring contact chassis connector. **Net $.50 ea.**

No. AF-61-ABM

No. AF-61-ABM — "F" female back mount chassis connector spring contact. **Net $.50 ea.**

No. AF61-APO

No. AF61-APO — "F" female spring contact push-on chassis connector. **Net $.75 ea.**

No. AF61-AP

No. AF61-AP — "F" female pressurized spring contact chassis connector. **Net $.90 ea.**

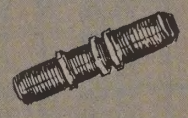
No. AF-81

No. AF-81 — "F" female adaptor, mates with F-59 and F-59A male connector. **Net $.50 ea.**

No. AF81-A

No. AF81-A — "F" female adaptor, with spring contact, fits all "F" male connectors. **Net $.95 ea.**

No. AF81-AB

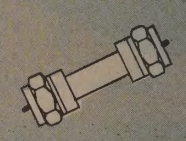


No. AF81-AB — "F" bulk head spring contact connector 1¾" long **Net $1.25 ea.**

No. P091-APM

No. P091-APM — "F" pushon panel mount connector, spring contacts front and rear. **Net $2.95 ea.**

No. AF-71

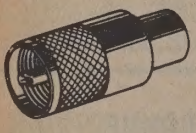


No. AF-71 — "F" male adaptor. **Net $1.25 ea.**

Crimping Ring for RG-59 cable, ACR-59-10 (10 per bag). **Net $.30 bag;** ACR-59-100 (100 bag) **Net $2.50 bag.**

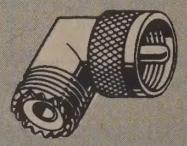
Crimping Ring for RG-6 foam cable, ACR-6-10 (10 per bag). **Net $.50 bag;** ACR-6-100 (100 per bag) **Net $3.50 bag.**

No. PL-259



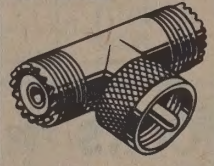
No. PL-259 — Male UHF cable connector. **Net $.50 ea.**

No. M-359



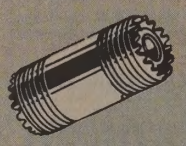
No. M-359 — Right angle UHF adaptor. **Net $1.25 ea.**

No. M-358



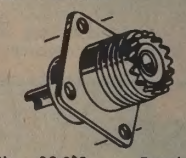
No. M-358 — "T" UHF adaptor. **Net $1.95 ea.**

No. PL-258



No. PL-258 — Female UHF adaptor. **Net $1.15 ea.**

No. SO-239



No. SO-239 — Female chassis UHF connector. **Net $.45 ea.**

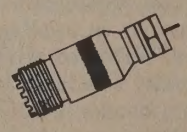
No. UG-175/U — Adaptor for RG-58/U cable. **Net $.15 ea.**

No. UG-176/U — Adaptor for RG-59/U cable. **Net $.15 ea.**

No. 5804

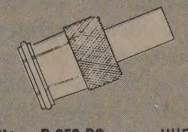
No. 5804 — Female UHF chassis connector, ½" demounting. **Net $1.15 ea.**

No. A56-5804



No. A56-5804 — UHF male to "F" female adaptor. **Net $3.50 ea.**

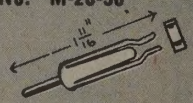
No. B-259-PO



No. B-259-PO — UHF pushon male connector for RG-59/U cable. **Net $1.95 ea.**

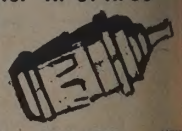
WALL PLATES
all types
TV - CATV - MATV

No. M-20-59
No. M-20-56



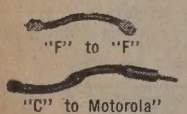
No. M-20-59 for RG-59/U, No. M-20-56 for RG-6/U — RF and shielded connectors. **Net $.20 ea.**

No. AF-61-APSO



No. AF-61-APSO — "F" female pushon chassis connector, staked or soldered body to chassis. **Net $.75 ea.**

CABLE ASSEMBLIES
all types

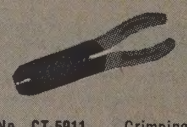


"F" to "F"

"C" to Motorola"

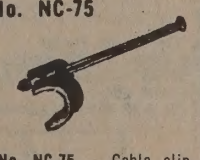
"C" to transformers.

No. CT-5911

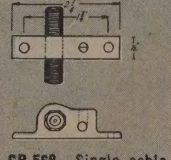


No. CT-5911 — Crimping tool — crimps ferrules on RG-6, RG-59 and RG-11/U cables. **Net $2.95 ea.**

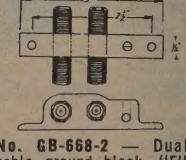
No. NC-75



No. NC-75 — Cable clip — for installing RG-59/U and other cables, up to .0250 OD, to wood or brick. **Net $2.00 C**



No. GB-568—Single cable ground block "F" female spring contact on each end of connector SS hardware. **Net $2.50 ea.**



No. GB-668-2 — Dual cable ground block, "F" female spring contacts on each end of connector, SS hardware. **Net $3.95 ea.**

No. FK-36 — Kits — assorted "F" connectors — Contents: 6 ea. — AC-52, AF-56, AF-59, AF-59A, AF-61A, AF-81. **Net $12.95 per kit**

AVA FOR ALL YOUR CONNECTOR NEEDS

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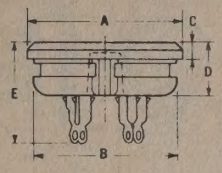
"S" TYPE SOCKETS

AMPHENOL
THE BUNKER-RAMO CORPORATION

" Type Tube Sockets WITH RETAINER RING MOUNTING

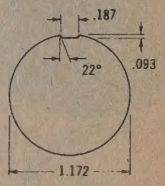
se quick-mounting sockets use no screws or rivets; they securely held by the retainer ring and can be easily nted with a screwdriver or AMPHENOL hand tool 51-3. " type sockets may also be used with plug caps to make igh quality, low cost cable connections.

CIFY CHASSIS THICKNESS. Unless otherwise specified, type sockets are grooved to fit 22 gauge (.031") to 18 e (.050") panels or chassis. This standard grooving also lug caps. They can be grooved to fit up to 13 gauge (.093").



78-S8

Black enolic art No.	Steatite Part No.	Contacts	Pin Circle Dia.	Voltage Rating (RMS)	Current Rating	Mating Plug	DIMENSIONS A	B	C	D	E
'8-S4	49-SS4	4	.640	2000	5	86-CP4	1¼	1⁵⁄₃₂	.135	.420	27⁄32
'8-S5	49-SS5	5	.750	1250	5	86-CP5	1¼	1⁵⁄₃₂	.135	.420	27⁄32
'8-S6	49-SS6	6	.750	1250	5	86-CP6	1¼	1⁵⁄₃₂	.135	.420	27⁄32
'8-S7L	49-SS7L	7 Large	.855	1250	5	86-CP7L	1⅜	1⁹⁄₆₄	.135	.420	27⁄32
'8-S7S	49-SS7S	7 Std.	.750	1250	5	86-CP7S	1¼	1⁵⁄₃₂	.135	.420	27⁄32
'8-S8	49-SS8	8 Octal	.687	1250	3	86-CP8	1¼	1⁵⁄₃₂	.145	.490	⅞
'8-S8L	—	8 Loktal	.750	1250	3	86-CP11	1¼	1⁵⁄₃₂	3⁄32	23⁄64	29⁄32
'8-S9	—	9	.687	1250	3	86-CP9	1¼	1⁵⁄₃₂	.145	.490	⅞
'8-S11	—	11	.750	1250	3	86-CP11	1¼	1⁵⁄₃₂	.145	.490	⅞
'8-S16	—	16	† §	500	3	86-CP16	1¼	1⁵⁄₃₂	.145	.490	⅞
'8-B	—	Blank	—	—	—	—	1¼	1⁵⁄₃₂	.145	.490	⅞

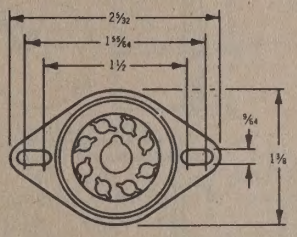


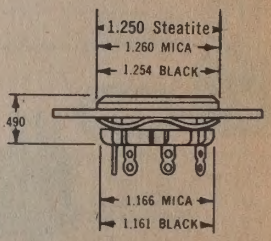
" Type Replacement Sockets

se sockets are regular "S" type sockets, assembled with a iner ring holding a sturdy nickel-plated steel mounting plate. order replacement socket, insert "R" before "S" in applicable t number; for example 78-RS4 is replacement socket com- able to 78-S4.

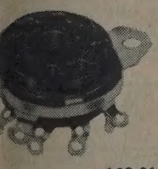
78-RS8

49-RSS8

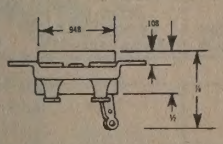


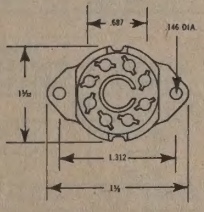


ddle Type Octal



168-015

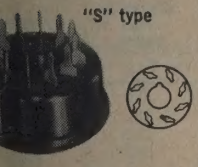




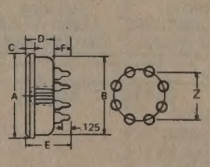
High quality economical sockets with 4 lugs for below-chassis mounting. Choice of wrap around or tuning fork contacts. Mounts in 1" diameter round hole. Dielectric is black phenolic. Mica-filled phenolic sockets are available when specified.

Part No.	Contacts No.	Contacts Material	Pin Circle Diameter	Voltage Rating (RMS at Sea Level)	Current Rating (Amps)
168-001	8	Brass	.687	1250	3
168-015	8	Lubaloy	.687	1250	3

EW! Standard 78S and 77MIP Series Sockets FOR PC BOARD INSTALLATION



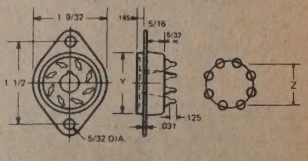
"S" type



Rugged copper alloy contacts, 5⁄32" long, have .125" tapered lead-in sections for quick insertion in plated-through holes in circuit boards. Broader shoulder section allows .020" clearance for air circulation.

To order: Add suffix "W0125" to part number. Where strain on terminals is expected use MIP style with screws and standoffs. For extra insulation and dielectric strength add letter "T" to number. EX: 77MIP8*TW-0125*.

"MIP" type



ENSIONS

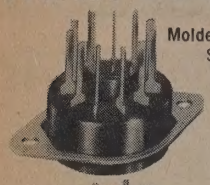
Sockets	A	B	C	D	E	F
3, -S9, -S11, -S12	1¼	1⁵⁄₃₂	.145	.490	1⅛ Approx.	3⁄16

MIP Sockets	"Y" Dimension
77 MIP 8-9	1⁷⁄₆₄
77 MIP 11-12	1¾₄
77 MIP 20	1¹⁵⁄₆₄

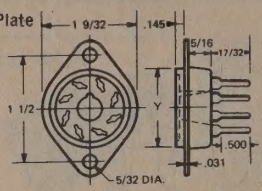
NEW SOCKETS
WITH PC BOARD TERMINATIONS

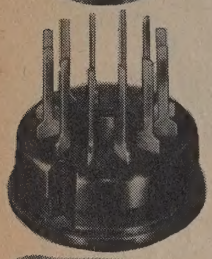
AMPHENOL
THE BUNKER RAMO CORPORATION

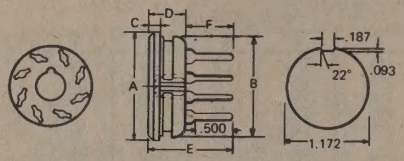
NEW! Standard 78S and 77MIP Series Sockets WITH WIRE WRAP TERMINATIONS



Molded-In-Plate Style







"S" Style

Wire-wrap terminations permit users of hand and semi-automat wrapping equipment to terminate tube sockets in the same operati as other components without extra soldering. Two mounting styl and two types of dielectric: phenolic/mica-filled phenolic.

CONTACTS: Copper alloy (Lubaloy) with cadmium plated finis "tuning fork" shaped for low contact resistance. Tails are ½" lon 1/16" wide. Available in two thicknesses: *Standard* .016" rated at amps continuous with 3 oz. min. retention force; *heavy-duty* .02 rated at 7.5 amps continuous with 5 oz. retention.

DIMENSIONS

Sockets	Y	Sockets	A	B	C	D	E	
77 MIP 8-9	1 7/64						1 1/8	
77 MIP 11-12	1 7/64	78-S8, -S9, -S11, -S12	1 1/4	1 5/32	.145	.490	Approx.	5/

ORDERING INFORMATION

Number of Contacts	Standard Contacts Molded-In-Plate Style	Standard Contacts Retaining Ring Style	Heavy Duty Contacts Molded-In-Plate Style	Heavy Duty Contacts Retaining Ring Style
8	77-MIP8W-0500	78-S8W-0500	77-MIP8W-0525	78-S8W-0525
9	77-MIP9W-0500	78-S9W-0500	77-MIP9W-0525	78-S9W-0525
11	77-MIP11W-0500	78-S11W-0500	77-MIP11W-0525	78-S11W-0525
12	77-MIP12W-0500	78-S12W-0500	77-MIP12W-0525	78-S12W-0525

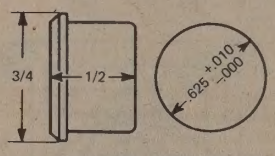
For sockets with mica-filled phenolic dielectric, add "T" in part number, f example: 77-MIP8TW-0500

78 Series Miniature Sockets WITH PC OR WIRE WRAP TERMINATIONS

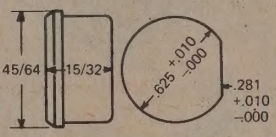
Wire Wrap
78-S4SW-0500

P.C. Mount
78-S5SW-0125

VIEW A



Size and Mounting Hole for 3 and 4 Contact Sockets.



Size and Mounting Hole for 5 and 6 Contact Sizes.

Pin Circle Diameter (A)

Number of Contacts	3	4	5	6
Diameter (inches)	.344"	.406"	.406"	.406"

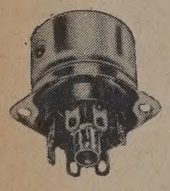
To meet customer requirements for low cost terminations, Amphen introduces miniature sockets for PC board mounting and Wire Wra termination. These sockets can be used for vacuum tubes, relay input or output cable connections and many other circuit requir ments where standard size sockets won't fit. Performance is equal larger sockets; general purpose or mica-filled dielectric availabl Wire-wrap termination type mounts in ⅝" diameter round or shaped panel cut out; friction-type retainer ring included. PC boar types mount through 1/16" diameter holes in PC board arranged proper pin circle diameter as shown (view "A"). Contact shoulders prevent socket from bottoming, allow clearance f air circulation and cleaning.

Number of Contacts	Wire Wrap Termination Standard Contact	Wire Wrap Termination Heavy Duty Contact	Printed Circuit Board Mounting
3	78-S3SW-0500	78-S3SW-0525	78-S3SW-0125
4	78-S4SW-0500	78-S4SW-0525	78-S4SW-0125
5	Not Available	Not Available	78-S5SW-0125
6	Not Available	Not Available	78-S6SW-0125

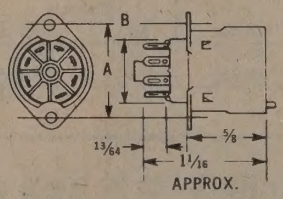
For mica-filled phenolic dielectric, add "T" to part number. EX: 78-S3STW-01

7 & 9 Contact Miniature

147 and 59 Series sockets, suitable for any miniature application, may be ordered with or without tube shield base or center shield, for top or below-chassis mounting.

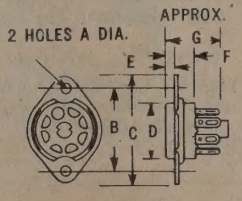


7 Pin
147-905
(Shown)
9 Pin
59-407



Part	A	B
147 Series	.175	.615
59 Series	1.125	47/64

7 Pin
147-500
(Shown)
9 Pin
59-409



Part	A	B	C	D	E	F	G
147 Series	.125	.875	1 1/8	.610	.113	.306	7/16
59 Series	.095	1.125	—	47/64	.062	.295	19/32

147 Series — 7 Contacts

Insulator Material	Part Number Phosphor Bronze, Cadmium Plated Contacts	Part Number Beryllium Copper, Silver Plated Contacts	Mtg. Hole Dia. Saddle	Center Shield
SHIELDED BASE TYPE				
Black	147-905	*	.095	Large
Mica	147-913	*	.095	Small
Mica	—	147-916	.125	Small
SADDLE TYPE — Bottom Mounting (Top mounting available when specified				
Mica	147-170-20	*	.125	No
Black	147-500	*	.125	Large
Black	147-504	*	.125	No
Mica	147-505	*	.125	Small
Mica	—	147-840	.125	No

59 Series — 9 Contacts

Insulator Material	Part Number Phosphor Bronze, Cadmium Plated Contacts	Part Number Beryllium Copper, Silver Plated Contacts	Mtg. Hole Dia. Saddle	Center Shield
SHIELDED BASE TYPE				
Mica	*	59-403	.125	Large
Mica	59-405	*	.095	No
Black	59-406	*	.095	Large
Mica	59-407	*	.095	Large
Black	59-461	*	.125	Large
SADDLE TYPE — Bottom Mounting				
Black	59-409	*	095	Large
Mica	59-410	*	.095	Large
Mica	59-411	*	.095	No
Mica	*	59-412	.125	Large
Mica	59-424	*	.125	Large
Black	59-446	*	.125	No

** Must be specified.*

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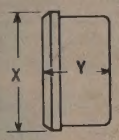
SOCKETS

AMPHENOL
THE BUNKER-RAMO CORPORATION

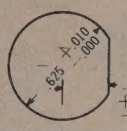
niature Tube and Chassis Sockets WITH RETAINER RING MOUNTING

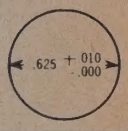
78-S6S
78-7P

Sockets are easily mounted without screws or rivets in 5/8" round or "D" shaped hole. Correct size retainer ring supplied with all sockets is easily assembled which assures a tight and secure mounting. Body is black phenolic but is also available in mica-filled phenolic when specified.



Part	X	Y
78-7P 78-S3S 78-S4S	45/64	13/32
78-S5S	3/4	1/2





Part No.	Contacts No.	Pin Circle Diameter	Voltage Rating (RMS)	Current Rating (Amps)	Mating Plugs (Pages 4 & 5) Unshielded	Shielded
78-S3S	3	.344	500	3	71-3S	91-MPM31
78-S4S	4	.406	500	3	71-4S	91-MPM4L
78-S5S	5	.406	500	3	71-5S	91-MPM5L
78-S6S	6	.406	500	3	71-6S	91-MPM6L
78-7P	7	.375	500	3	86-896	86-895

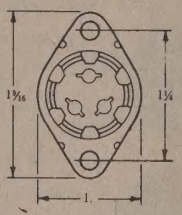
elded Chassis Type

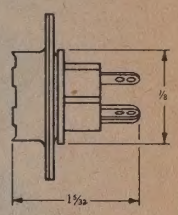
78-PCG3

Mount on surface or behind chassis or panel in 7/8" diameter hole on 1¼" centers.

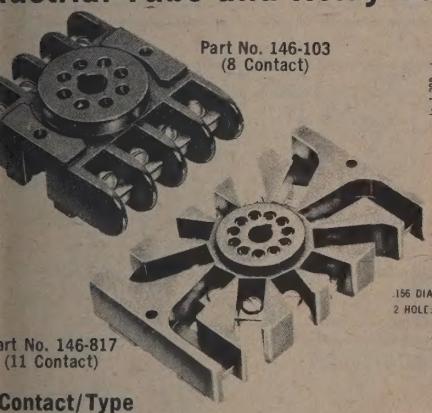
For a fully shielded connection, mate with 91 Series Long Shell Shielded Plugs.

Part No.	Contacts No.	Pin Circle Diameter	Current Rating (Amps)	Mating Plugs Unshielded	Shielded
78-PCG3	3	.344	3	71-3S	91-MPM3L
78-PCG4	4	.406	3	71-4S	91-MPM4L
78-PCG5	5	.406	3	71-5S	91-MPM5L
78-PCG6	6	.406	3	71-6S	91-MPM6L



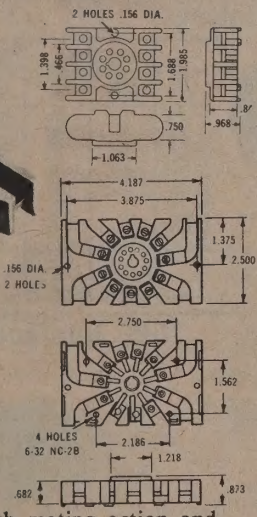


lustrial Tube and Relay Sockets



Part No. 146-103
(8 Contact)

rt No. 146-817
(11 Contact)



Contact/Type

ed 10 amps., 600 volts. May gang mounted, either above below chassis. High, thick lating barriers provide long page paths between contacts.

ocket-type contacts assure firm, smooth mating action and llent relay retention even after repeated matings.

ETMA-numbered solderless, reversible screw terminals. 4 ded-in threaded-brass insert tie points. Replaceable contacts

trical and Mechanical Characteristics

tric: Melamine
ded insert: Brass
cts: Phosphor bronze Grade A, plated .0002-.0004" nickel per QQN-290
lumber to Order: 146-817

8 Contact Type

Molded in one piece of melamine. Rugged insulating barriers provide long creepage paths between contacts and to ground. Patented "Clover Leaf" contacts offer minimum contact resistance. Removable contacts. RETMA-numbered reversible screw type terminals simplify wiring and permit use of wiring harness and terminal lug type connections. Above or below chassis mounting. May be gang mounted. Voltage rating is 1250V RMS at 5 amps.

Part No.	Description
146-103	Standard Socket Without Tie Point Inserts — Top Mounted
146-104	Socket With Four Molded-in Threaded Inserts for Tie Points — Top Mounted
146-203	Same As 146-103 Except For Bottom Mounting
146-204	Same As 146-104 Except For Bottom Mounting

14 Contact Type

Part No.
59-106

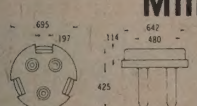
Cadmium plated steel mounting plate with two .125" dia. holes on 1.125" centers. Mounting hole is .750" minimum diameter. Wrap around type contacts of silver plated phosphor bronze with hot tin dipped tails. Dielectric is mica-filled phenolic. Mates with 14-contact relay plugs.

20 Contact Relay Socket

Part No.
59-470

Molded of diallyl phthalate. Contacts are heat-treated, half-hard beryllium copper, hooded and with turret type terminals. Mounting plate is passivated stainless steel with two .144" dia. holes on 1.406" centers. Mounting hole is 1.000" diameter. Mates with 20-contact relay plugs.

Miniature Tube Bases

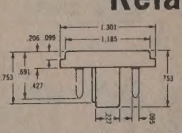


For photo cells or miniature tubes, 3 and 4-contact bases are available on special order.

art No.	Contacts	Pin Circle Diameter	Voltage Rating (RMS Sea Level)	Current Rating (Amps)	Mating Socket (Page 10)
50-821*	4	.406	1250	5	78-S4S
50-034*	3	.343	1250	5	78-S3S
50-035	3	.343	1250	5	78-S3S

Relay & Tube Bases

50-801



Four notches allow quick staking of a relay plate to either 8 or 11-pin plug base.

Part No.	Contacts	Pin Circle Diameter	Voltage Rating (RMS Sea Level)	Current Rating (Amps)	Mating Socket (Page 4)
50-801	8	.687	1250	5	77-MIP-8
50-820	11	.750	1250	5	77-MIP-11

TUBE SOCKETS/PLUGS

AMPHENOL
THE BUNKER-RAMO CORPORATION

"MIP" Molded-In Plate Tube Sockets

X=3/32 on MIP-4-5-6-7S & 7L
X=.145 on MIP 8-9-11-12
X=.145 on 77-MIP-8FK & 59-103
Y=1 7/64 on MIP-4-5-6-7S
Y=1 15/64 on MIP-7L-20
Y=1 3/64 on MIP-11-12
Y=1 7/64 on 77-MIP-8FX
Y=1.110 on 59-103
Z=1/2 on 77-MIP-8FX
Z=.490 on 59-103

77-MIP-8

Steel mounting plate molded directly into solid phenolic body.

Two holes in each contact provide wiring and anchoring points for resistors, capacitors, chokes, and other components.

All sockets are designed for above-chassis mounting in round holes 1 3/16" diameter except 77-MIP-7L (1 19/32" dia.) and 77-MIP-20 (1 5/16" dia.).

MIP Part No.	Contacts	Pin Circle Diameter	Voltage Rating (RMs)	Current Rating (Amps)	Mating Plug (Page 5)
77-MIP-4	4	.640	2000	5	86-CP4
77-MIP-5	5	.750	1250	5	86-CP5
77-MIP-6	6	.750	1250	5	86-CP6
77-MIP-7L	7 Large	.855	1250	5	86-CP7L
77-MIP-7S	7 Std.	.750	1250	5	86-CP7S
77-MIP-8	8 Octal	.687	1250	3	86-CP8
77-MIP-9	9	.687	1250	3	86-CP9
77-MIP-11	11	.750	500	3	86-CP11
77-MIP-12	12	.750	500	3	86-CP12
77-MIP-20	20	1.000 Outer .687 Inner	500	3	70-20

DEVIATIONS — When no deviations are specified, mounting plate is steel, contacts are cadmium plated brass, contact tails are not tinned, and dielectric is black phenolic. To specify any of the following deviations add the designation at the end of the part number.

T — Mica-filled phenolic M — Phosphor bronze, silver plated contacts and stainless steel mounting plate 1 — Contact tails tinned

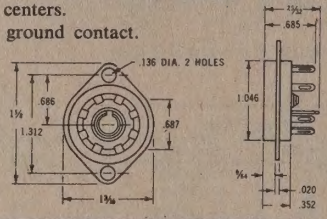
Compact "MIP" Sockets

Similar to standard "MIP" types except smaller. They mount in 1 1/8" diameter round hole, have two .136" diameter mounting plate holes on 1 5/16" centers.

Loktal style has center ground contact.

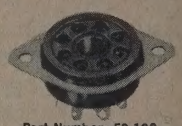
88-8 Octal

88-8) Lokta



Part No.	Pin Circle Diameter	Voltage Rating (RMS)	Current Rating (Amps)
88-8	.687	1250	3
88-8X	.687	1250	3

Octal is like the standard "MIP" octal but has exclusive, patented Clover Leaf contacts. Body is mica-filled phenolic, mounting plate is stainless steel, contacts are silver plated phosphor bronze, contact tails are hot dipped. Rated 1250 V at 5 Amps.


Part Number: 59-103

Floating Octal are like standard "MIP" octal sockets but have live rubber grommets that fit into mounting holes to cushion socket for vibration-free operation; may be mounted above or below chassis.

77-MIP-8FK

Part No.		Pin Circle Dia.
77-MIP-8FK	Octal. Complete with 4 rubber grommets, 2 mounting screws, nuts and washers.	.687
77-3K	Kit for making any "MIP" into floating socket. 4 grommets, 2 mounting screws, nuts and washers.	.687

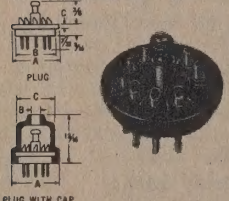
"CP" Type Plugs with Retainer Ring Mounting

Plugs with 4, 5, 6, and 7 contacts do not have center guide post but are polarized for correct insertion by use of two pins of larger diameter than others.

Molded-in contacts are nickel plated brass. Standard dielectric is black phenolic, but all sizes are available also in mica-filled phenolic. To order, just add T to the part number — for example, 86-CP8T.

Part No.	Contacts	Pin Circle Dia.	Volt. Rating (RMS)	Curr. Rating (Amps)	Mating Sockets Ret.Ring Type (Pg. 3)	Mating Sockets "MIP" Type (Pg. 3)	Dimensions A	B	C	D
86-CP4	4	.640	2000	5	78-S4	77-MIP4	1 1/4	13/32	5/32	7/16
86-CP5	5	.750	1250	5	78-S5	77-MIP5	1 1/4	13/32	5/32	7/16
86-CP6	6	.750	1250	5	78-S6	77-MIP6	1 1/4	13/32	5/32	7/16
86-CP7L	7 Large	.855	1250	5	78-S7L	77-MIP7L	1 3/8	1 13/16	5/32	7/16
86-CP7S	7 Std.	.750	1250	5	78-S7S	77-MIP7S	1 3/8	1 13/16	5/32	7/16
86-CP8	8 Octal	.687	1250	5	78-S8	77-MIP8	1 1/4	13/32	.145	7/16
86-CP9	9	.687	1250	5	78-S9	77-MIP9	1 1/4	13/32	.145	7/16
86-CP11	11	.750	500	5	78-S11	77-MIP11	1 1/4	13/32	.145	7/16
86-CP12	12	.750	500	3	78-S12	77-MIP12	1 1/4	13/32	.145	7/16
80-CP16	16	Outer: .750 Inner: Eccentric	500	5	78-S16	—	1 1/4	13/32	.145	7/16

Miniature "CP" Plugs



Molded from diallyl phthalate. Feature a molded-in strain relief post. Gold-over-silver plated contacts.

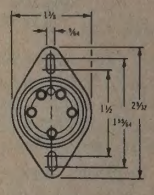
Styles with rubber plug caps in end and cable outlet on side also available.

ELECTRICAL & MECHANICAL CHARACTERISTICS
Voltage Rating: 1500 V RMS Sea Level
Current Rating: 5 Amps.
Insulation Resistance (Min): 10,000 Megohms
Contact Pins: .040 dia. S.A.E #72 Brass

Part No.	Description	A	B	C	Pin Circle Diameter
86-896	7-Pin Plug	.685	.575	.070	.375
86-893	9-Pin Plug	.778	.668	.070	.468
86-895	7-Pin Plug with Cap	.781	171	.625	.375
86-897	9-Pin Plug with Cap	.875	.285	.718	.468
86-894	7-Pin Plug with Side Outlet Cap	.750	.468	.171	.375

"CP" Replacement

86-RCP5



To order replacement type plugs add "R" to regular part number, for example, 86-RCP5. Replacement plugs are of black phenolic but are available also in mica-filled phenolic; just add "T" to the part number.

Unshielded Miniatures

71-3S Below Chassis

86-CP-4S Above Chassis

Part No.	Contacts	Pin Circle Dia.	Voltage Rating (RMS)	Current Rating (amps)	Mating Sockets Unshielded	Shielded
BELOW CHASSIS						
71-3S	3	.343	500	5	78-S3S	78-PCG3
71-4S	4	.343	500	5	78-S4S	78-PCG4
71-5S	5	.406	500	5	78-S5S	78-PCG5
71-6S	6	.406	500	5	78-S6S	78-PCG6
ABOVE CHASSIS						
86-CP-3S	3	.343	500	5	78-S3S	91-MPF3S
86-CP-4S	4	.406	500	5	78-S4S	91-MPF4S
86-CP-5S	5	.406	500	5	78-S5S	91-MPF5S
86-CP-6S	6	.406	500	5	78-S6S	91-MPF6S

Molded Speaker Type Plugs

71-5

Part No.	Contacts	Mating Sockets "S" Type	Mating Sockets "MIP" Type
71-4	4	78-S4	77-MIP-4
71-5	5	78-S5	77-MIP-5
71-6	6	78-S6	77-MIP-6
71-7	7	78-S7S	77-MIP-7S
70-8	8	78-S8	77-MIP-8
70-9	9	78-S9	77-MIP-9
70-12	12	78-S12	77-MIP-12
70-20	20	—	77-MIP-20

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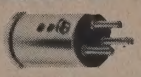
CABLE CONNECTORS SCR SOCKETS/HARDWARE

AMPHENOL
THE BUNKER-RAMO CORPORATION

Miniature Cable Connectors

91-MPF3S


91-MPM3L

High quality compact connectors for shielded or unshielded cables. Make ideal battery or antenna connectors. Can also serve as inexpensive microphone connectors.

Black phenolic elements, housed in cadmium plated brass shells and held in place by set screws in side. Polarized contact spacing prevents incorrect insertion. Accommodate cables up to ¼" diameter. Rated 3 amps., 500 volts.

Cable Sockets					Mating Plugs			
Short Shell 13/16" Long	Long Shell 1 3/16" Long	Flared End Shell 1 3/16"	Chassis Mounting Shielded	Chassis Mounting Unshielded	Cable Plug Short 13/16"	Cable Plug Long 1 3/16"	Chassis Mounting Shielded	Chassis Mounting Unshielded
91-MPF3S	91-MPF3L	91-MPF3	78-PCG3	78-S3S	91-MPM3S	91-MPM3L	86-PCG3	86-CP3S
91-MPF4S	91-MPF4L	91-MPF4	78-PCG4	78-S4S	91-MPM4S	91-MPM4L	86-PCG4	86-CP4S
91-MPF5S	91-MPF5L	91-MPF5	78-PCG5	78-S5S	91-MPM5S	91-MPM5L	86-PCG5	86-CP5S
91-MPF6S	91-MPF6L	91-MPF6	78-PCG6	78-S6S	91-MPM6S	91-MPM6L	86-PCG6	86-CP6S

SCR Sockets

Three contact receptacle designed to accept General Electric Company's C106 SCR (Silicone controlled rectifier). Nickel silver contacts. Black nylon insulator. Voltage rating: 500 volts RMS. Current rating: 5 amps. Contact spacing: .200" centers. Mating engagement depth: .160" min. Contact length: Approximately .323" x .020" square. Contact tails designed for wire wrap or printed circuit board mounting.

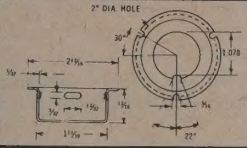
77-115	Press fit style without flange. To fit rectangular panel or chassis cut dimensions .340" x .164", .330" x .161".
77-116	Mounting flange style. Molded mounting flange has two .125" diameter mounting holes on .625" centers. Assembly fits rectangular panel or chassis cut-out .325" x .200".

Plug Caps

Sturdy drawn steel plug caps. Provide protected, attractive cable terminations when assembled with retainer ring type plugs and sockets. Can be easily assembled to the following standard grooved connector series: 49SS, 60, 61, 78S, 86CP, and 160.

Part No.	Cable Outlet	Finish	Insltr.	Lgth.
3-10	None	Blk. Japan	No	1"
3-10-1000	None	Cadmium	No	1"
3-12	End Metal Grommet 5/16" I.D.	Blk. Japan	Yes	1"
3-13	End Metal Grommet 7/16" I.D.	Blk. Japan	Yes	1"
3-17	Side Rubber Grommet 7/16" I.D.	Blk. Japan	Yes	1"
3-24	Cable Clamp for Cables to 3/8"	Blk. Japan	Yes	1 7/16"
3-856	Cable Clamp for Cables to 3/8"	Cadmium	Yes	1 7/16"
3-857	End Rubber Grommet 7/16" I.D.	Cadmium	Yes	1"
79-CC4	Cable Clamp only as used on 3-24	Cadmium	—	—

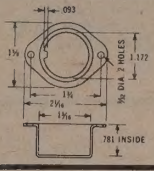
Receptacle Shells



Aluminum shells extend "S" sockets, "CP" plugs, and outlet type connectors 13/16" above or below surface. Knockouts on 4 sides of shell provide wire entrances from any angle. Mount in 1¾" hole; have 3 notched holes for No. 6 screws.

Part Number to Order: 23-1S — For standard "S" sockets or "CP" Plugs.

Recessed Mounting Shells



Cadmium plated steel shells lower S sockets, CP plugs, and outlet type connectors 1-3/16" below surface. Mount in 1-7/16" hole; have two 5/32" dia. screw holes on 1¾" centers.

Part Number to Order: 61-61.

Tip Jacks

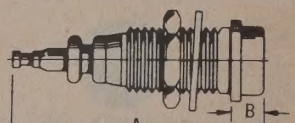
350-19175

350-19200

350-50200

Complete selection of tip jacks in different terminal styles, variety of contact and mounting shell platings, wide range of colors, and other options.

SPECIFICATIONS: INSULATORS — Nylon (Zytel 101) per MIL-P-17091; or teflon.
MOUNTING SHELLS — Brass per Q-4-B-746 Comp. A. Nickel or cadmium plated.
HEX NUTS — Standard thickness .062" brass per QQ-B-626, Comp. 22. Nickel or cadmium plated.
LOCKWASHERS — Phosphor bronze per QQ-B-746 Comp. A. Nickel or cadmium plated.
CONTACTS — Beryllium copper per QQ-C-530, Cond. H. Silver, gold or nickel plated or electro-tinned.
FEED THRU TERMINAL — Brass per QQ-B-611 Comp. B.
RATED CURRENT — 5 amps.
MILLIVOLT DROP — 20 Mv. maximum at rated current.
MAXIMUM OPERATING VOLTAGE — 1000 volts rms.
INSULATION RESISTANCE — 5000 megohms min.
MAXIMUM OPERATING TEMPERATURE—256°F. All jacks mount through a ¼" hole.



DIMENSIONS

Part No. 350-	14400	16175	19175	29175	39175	60000	61000	19100	19200	29200	50200
A	5/64	5/64	5/64	5/64	5/64	5/64	5/64	5/16	1 1/32	1 13/16	1 1/8
B	3/64	3/64	3/64	3/64	3/64	3/64	3/64	3/32	3/64	3/64	3/64

COLORS AVAILABLE (Add suffix for desired color at end of part number.)

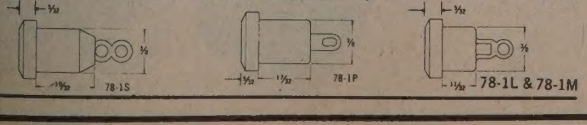
-1 Red	-4 Green	-7 Blue	-10 Lt. Blue	-13 Yellow
-2 Black	-5 Orange	-8 Gray	-11 Lt. Green	-14 Natural
-3 Brown	-6 White	-9 Pink	-12 Buff	-15 Violet

Test Jacks

78-1S

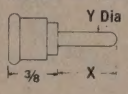
Mount in .375" −.000 +.010 hole with retainer ring (furnished). Contacts recessed ⅛" below top of insulator to prevent accidental shorts from contact tip to chassis. Contact-to-panel breakdown voltage (with plug inserted) is over 10,000 VAC.

Part Number		Application
Black Phenolic	Red Phenolic	(Single Prong Plugs Below)
78-1S	78-1S-1000	For 3/32" Plug
78-1L	78-1L-1000	For 3/32" Plug
78-1M	78-1M-1000	For 1/8" Plug
78-1P	78-1P-1000	For .080" Phone Tip



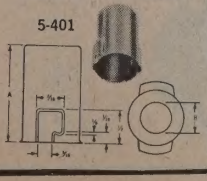
Single Prong Plug

Black or red phenolic. For use with Test Jacks.



Part Number		Application	Dimensions	
Black Phenolic	Red Phenolic	(Test Jacks Above)	X	Y
71-1M	71-1S-1000	For 3/32" Socket	7/16	3/32
71-1S	71-1M-1000	For 1/8" Socket	9/16	1/8
71-1L	71-1L-1000	For 3/32" Socket	9/16	5/32

Tube Shield



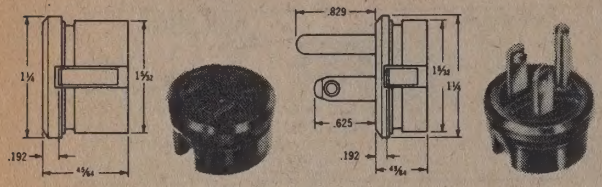
Made of cold rolled steel, cadmium plated. Spiral spring assembly holds tube firmly to prevent movement.

Part No.	A	B	Application
5-401	1 3/8"	1/2"	7-Contact Miniature Sockets
5-402	1 3/4"	1/2"	7-Contact Miniature Sockets
5-405	1 1/2"	19/32"	9-Contact Miniature Sockets
5-408	1 15/16"	19/32"	9-Contact Miniature Sockets
5-409	2 3/8"	19/32"	9-Contact Miniature Sockets

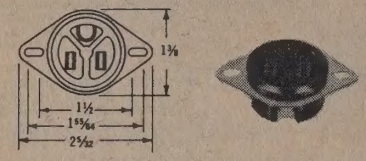
PLUGS AND RECEPTACLES

AMPHENOL
THE BUNKER-RAMO CORPORATION

Plugs and Receptacles, 125 Volt Home and Industrial Type

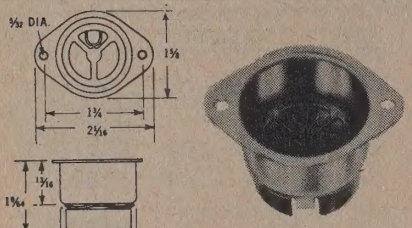


Heavy duty outlet plugs and receptacles that meet Underwriters' Labo tories requirements for grounding home appliances and tools. All have approval except the 160-10 and 160-11 which requires grounding a mounting. Rated at 15 amp 125 volt or 10 amp 250 volt.



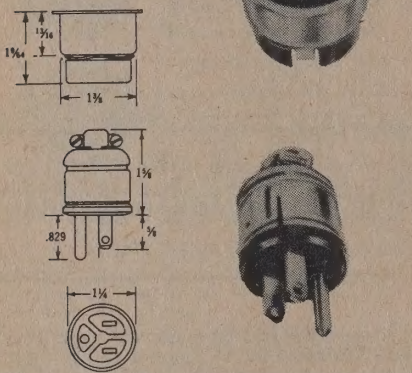
Inserts

General purpose phenolic bodies meet MIL-M-14-F requirements.
Part Number to Order: 160-10 2-Pole Receptacle Insert — 160-11 2-Pole Plug Insert



With Mounting Plate

Nickel plated steel mounting plate assembled to general purpose phenc body.
Part Number to Order: 160-2 2-Pole Receptacle — 160-3 2-Pole Plug



Flush Motor Type

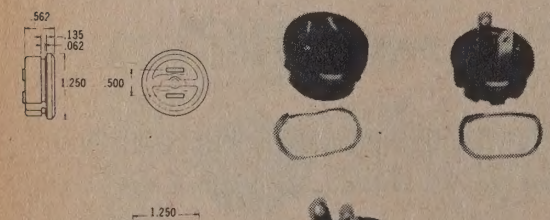
Consist of 160-10 and 160-11 inserts assembled in cadmium plated st shells for below-surface mounting.
Part Number to Order: 160-4 2-Pole Flush Motor Receptacle — 160-5 2-Pole Flush Motor P

Shielded

Consists of inserts 160-10 and 160-11 assembled in sturdy steel plug c finished in cadmium plate. Also available in black japan on special reque

Part Number to Order:
160-6 2-Pole Shielded Receptacle with Rubber Grommet
160-7 2-Pole Shielded Plug with Rubber Grommet
160-8 2-Pole Shielded Receptacle with cable clamp
160-9 2-Pole Shielded Plug with Cable Clamp

110 Volt Home and Industrial Type



Inserts

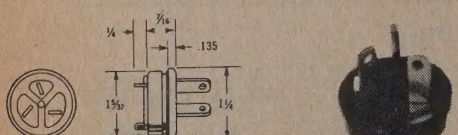
Compact black phenolic units built to Underwriters' Laboratories standards. Rated 15 amp, 110 volt or 10 amp, 250 volt. Available in either retainer ring or mounting pl style.

Assemble retainer ring style with plug caps listed on page 16 for required ty Mounts in 1-11/64" keyed hole on chassis up to .125" thick. Mounting plate style quires 1-9/32" dia. hole. Mounts on 1½" to 1-55/64" centers.

61-M plug has standard ¼" blades spread ½". 61-MP has one 5/16" blade spread ½". 60-M has three ¼" blades staggered spaced. Binding screws for connecting cables are used on both plugs and receptacles.

Molded-In-Plate Receptacle

High quality 110-volt receptacle identical to 61-F except for steel mounting plate molded into phenolic body. Mounts in 1-3/16" dia. hole on 1½" centers. Mounting hole, 5/32" dia.



Flush Motor Plug & Receptacle

Compact plug or receptacle assembled in No. 61-61 steel shell for below-surface mounting. Mounts in 1-7/16" hole; two 5/32" screw holes on 1¾" centers.

Part Number Retainer Ring Type	Part Number Mounting Plate Type	Description
PLUGS		
61-M	61-M1	2-pole, Standar
61-MP	61-MP1	2-pole, Polarize
60-M	60-M1	3-pole, Polarize
RECEPTACLES		
61-F	61-F1	2-pole, Univers
60-F	60-F1	3-pole, Polarize

Part No.	Description
60-F10	3-pole Polarized Recep tacle
60-M10	3-pole Polarized Plug
61-F10	2-pole Universal Recep tacle
61-M10	2-pole Standard Plug
61-MP10	2-pole Polarized Plug

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MICROPHONE CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

EW! EXCELLITE Microphone Plugs and Receptacles

quality performance and appearance in a lightweight, petitively-priced audio connector

ceptionally rugged, molded plastic bodies make these icrophone connectors lightweight . . . yet uniquely urable.

tin-smooth nickel plating provides effective shielding r high impedance audio circuits PLUS that touch of leluxe" you want on all your audio accessories.

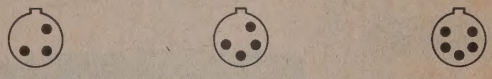
ick-release latch, removable inserts and solder cup con- cts enable fast, easy removal and maintenance.

cially designed and *styled* for use in modern, streamlined o and other low-level circuits, AMPHENOL/EXCELLITE nectors are intermateable with industry-standard connectors, re lighter weight and more competitively priced than metal- types.

XCELLITE Connectors can be used on: test equipment, d and recording systems, computers and a large variety of r high performance applications with consistently better- adequate results.

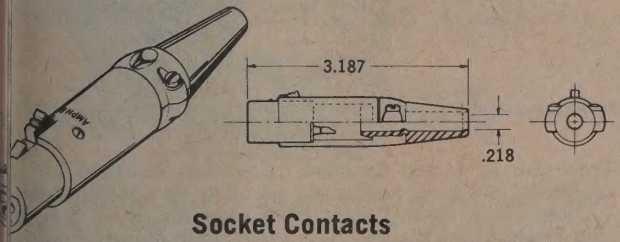
king full advantage of modern technology and materials, superior design assures you of their dependable service and life. Just look at these quality features: tough-molded ABS olac) bodies; satin-nickel plating inside and out; push-button and release; positive-gripping cycolac cable clamps (for up to 5/16" O.D.); unitized, removable inserts of high im- thermo-plastic; machine screw design silver-plated brass acts and positive grounding action when contacts engage/ gage (#1 engages first). The cable boot is black rubber. *oltage rating:* test: 1400 v. RMS; service: 133 v. RMS. *ent rating* varies with the number of contacts. (See below).

STANDARD CONTACT ARRANGEMENT
(Face view — pin insert)



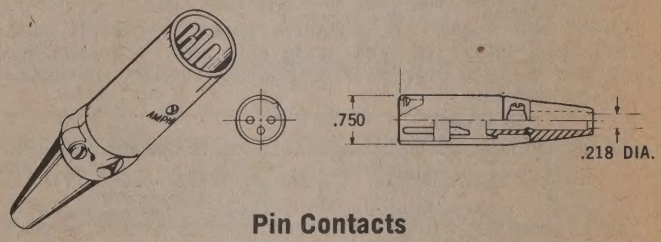
3—#14 Contacts	4—#16 Contacts	5—#18 Contacts
15 AMPS	10 AMPS	7.5 AMPS

STRAIGHT CORD PLUGS



Socket Contacts

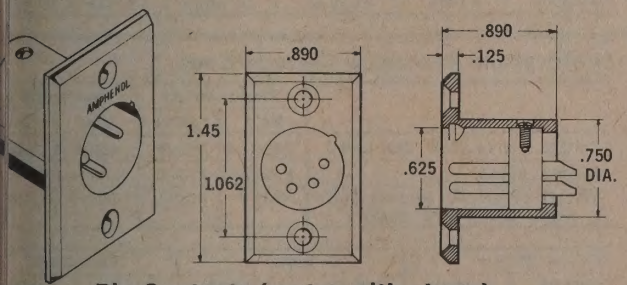
ber of Contacts		3	4	5
Number		91-454	91-458	91-462
trical	Cannon	XLR-3-11C	XLR-4-11C	XLR-5-11C
valent	Switchcraft	A3F	A4F	None



Pin Contacts

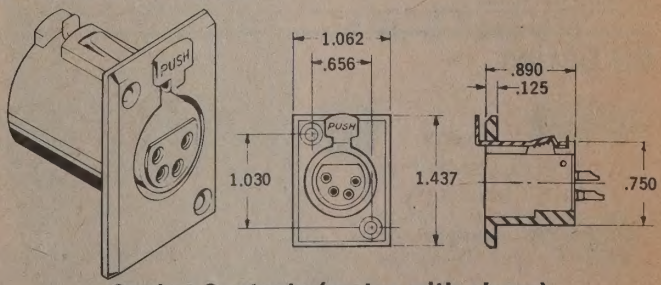
Number of Contacts		3	4	5
Part Number		91-453	91-457	91-461
Electrical	Cannon	XLR-3-12C	XLR-4-12C	XLR-5-12C
Equivalent	Switchcraft	A3M	A4M	None

WALL MOUNTING RECEPTACLE



Pin Contacts (mates with above)

ber of Contacts		3	4	5
Number		91-455	91-459	91-463
trical	Cannon	XLR-3-32	XLR-4-32	XLR-5-32
valent	Switchcraft	D3M	D4M	None



Socket Contacts (mates with above)

Number of Contacts		3	4	5
Part Number		91-456	91-460	91-464
Electrical	Cannon	XLR-3-31	XLR-3-31	XLR-5-31
Equivalent	Switchcraft	D3F	D4F	None

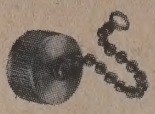
MICROPHONE CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

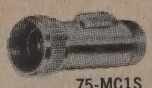
75 Series

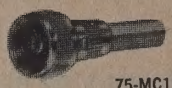
75-PC1M

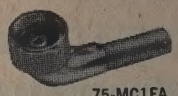
75CL-PC1M

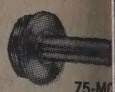

75-CCC1

75-MC1M


75-MC1S


75-MC1F


75-MC1FA


75-MC

Single Contact

Standard with leading manufacturers for many years. Widely used also on amplifiers, transmitters, phono-electric devices, home recorders, PM speakers, headphones, theft alarms and coin operated devices.

Unbreakable shielded cable type connectors of chrome plated, machined brass. The threaded ends engage with the coupling rings to make a positive, noise-free, leak-proof connection by pressing the center contacts firmly together. Spring cord protectors accommodate cables up to ¼" diameter. Receptacles mount in .385" holes when grounding to chassis; mount in .500" holes for ungrounded two-circuit applications. Can be screwed into housing or stand with standard ⅜"-24 tapped hole.

Part No.	Description
75-PC1M	Locknut Receptacle
75CL-PC1M	Locknut Receptacle w/Spring Loaded Contact
75-MC1M	Cable Jack
75-MC1F	Straight Plug
75-MC1FA	Angle Plug
75-CCC1	Cap and Chain
75-MC1P	Phone Plug Adapter
75-MC1S	Microphone Switch

75-1

75-2

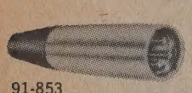
Miniature 75-1, 75-2, 75-3

Designed for transistor audio equipment, they have the same simplicity of connection and reliability of operation as the world-recognized AMPHENOL regular microphone connectors, but only about half their size and weight.

Part No.	Description	Length	Weight
75-1	Plug	1 11/64"	.011 lb.
75-2	Jack	1"	.009 lb.
75-3	Receptacle Locknut	⅝"	.008 lb.

75-3

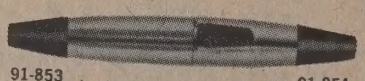
91 Series

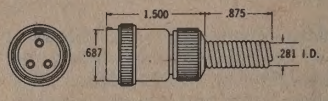

91-853

91-856

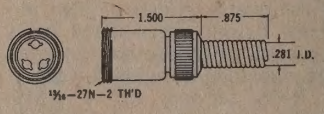
91-855

91-854

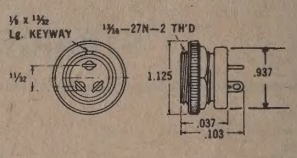

91-853 91-854

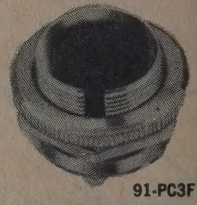


91-MC3M



91-MC3F




91-PC3F

Qwiks

Efficient, easy-to-operate, quick-disconnect microphone connectors. Disconnect by means of a button, slid forward in the jack, depressed in the female receptacle. Connect by simply clicking-in plug or jack. Plug and jack also mate.

Qwiks are finished in attractive corrosion-resistant satin nickel, with bodies of high grade zinc alloy. Contacts are bronze, gold-plated over silver for high conductivity. Dielectric is diallyl phthalate.

Part Number 3 Contacts	Part Number 4 Contacts	Description
91-853	91-857	Male Plug
91-854	91-858	Female jack
91-855	91-859	Male chassis receptacle
91-856	91-860	Female chassis receptacle

These are 3, 4, and 6-contact connectors designed for aud equipment but used extensively on all types of equipment.

Dielectric is molded from black phenolic. Shell is of bra with bright nickel plating. Also available in chrome finish. (Part number below is for chrome plating. To get nickel platin substitute "N" for "C" in part number, for example, 91-MN3M

Electrical and Mechanical Characteristics

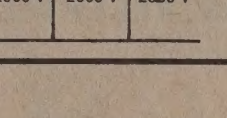
	3-Contact Female	3-Contact Male	4-Contact Female	4-Contact Male	6-Contact Female	6-Contact Male
Voltage Rating (RMS) Sea Level	600 V	800 V	600 V	600 V	600 V	600 V
Current Rating	3 Amps	5 Amps	3 Amps	5 Amps	3 Amps	5 Amps
Voltage Breakdown (RMS) Between Terminal and Ground	2000 V	2000 V	2000 V	2000 V	2000 V	2000 V

Plugs Part No.	Plugs Contacts	Jacks Parts No.	Jacks Contacts	Receptacles Part No.	Receptacles Contacts
91-MC3M	3 Male	91-MC3F	3 Female	91-PC3F	3 Female
91-MC3F1	3 Female	91-MC3M1	3 Male	91-PC3M	3 Male
91-MC4M	4 Male	91-MC4F	4 Female	91-PC4F	4 Female
91-MC4F1	4 Female	91-MC4M1	4 Male	91-PC4M	4 Male
91-MC6M	6 Male	91-MC6F	6 Female	91-PC6F	6 Female

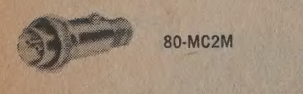
80 Series

80-MC2F

80-PC2F



80-MC2M



Single and double-contact connectors. Element is black phenolic; shell is machined from solid brass and finished in polished chrome. All mounts in ⅝" holes. Maximum chassis thickness for lock-nut type receptacles is 11/32".

Electrical and Mechanical Characteristics

	Single Contact Male	Single Contact Female	Double Contact Male	Double Contact Female
Voltage Rating (RMS Sea Level)	1250 V	100 V	600 V	600 V
Current Rating	5 Amps	3 Amps	3 Amps	3 Amps
Voltage Breakdown Between Terminals and Ground (RMS)	3000 V	4000 V	2000 V	2000 V

Plugs Part No.	Plugs Contacts	Jacks Part No.	Jacks Contacts	Receptacles Part No.	Receptacles Contacts
80-M	1 Male	80-F	1 Female	80-C	1 Female
80-F1	1 Female	80-M1	1 Male	80-C1	1 Male
80-MC2M	2 Male	80-MC2F	2 Female	80-PC2F	2 Female
80-MC2F1	2 Female	80-MC2M1	2 Male	80-PC2M	2 Male

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RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

SPECIFY ASTROplate — for BRAWN and BEAUTY in RF Connectors

BECAUSE ASTRO PLATE IS SPACE-AGE NEW!

For years the industry has searched for a tough finish to replace silver plate in commercial instrumentation, communications equipment, cable connections and the countless applications there are for RF connectors. Today's applications demand the advantages of precious metal without its softness and susceptibility to corrosion. Now it's here—developed by Amphenol—world leader in RF connectors. *It's a totally new finish.*

Astroplate — better than silver

Exclusive, new, non-tarnish finish meets or exceeds latest MIL-C-3012 requirements. Under salt-spray tests (per MIL-Std. 202), Astroplated components have been exposed to over 400 hours without evidence of corrosion. Samples have undergone many times the standard four-hour potassium sulfide exposure without showing tarnish. Under the same conditions, silver tarnishes in less than one-half hour. Excelling also in abrasion resistance, Astro-plate measures between 200 and 350 on the Vickers Hardness Test vs. 70 to 155 for silver plate. Ideal for high temperature applications, Astroplate withstands over 2500°F.

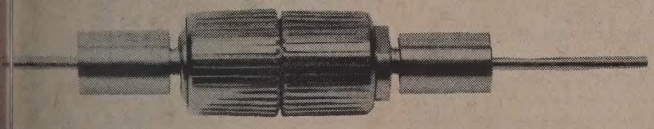
Astroplate — interchangeable with silver

Fully compatible, Astroplate presents no galvanic corrosion problem when mated with silver, and its tested solderability (MIL-Spec QQ-S-365) is equal to that of silver.

In Stock On All Popular BNC and UHF Connectors

UG Part Number	Amphenol Part Number	Description
	UHF CONNECTORS	
PL-259	83-1SP-1050	UHF Plug
SO-239	83-1R-1050	UHF Panel Receptacle
UG-176	83-168-1050	UHF Reducing Adaptor
UG-175	83-185-1050	UHF Reducing Adaptor
UG-363	83-1F-1050	UHF Bulkhead Adaptor
PL-258	83-1J-1050	UHF Adaptor
M-358	83-1T-1050	UHF Tee Adaptor
—	*83-877-1050	UHF Double Male Adaptor
—	*83-878-1050	UHF Single Hole Receptacle
UG-646	83-1AP-1050	UHF Angle Adaptor
PL-259	83-822-1050	UHF Plug
PL-259A	83-1SPN-1050	UHF Plug
	BNC CONNECTORS	*New Products
UG-1094	31-221-1050	BNC Bulkhead Receptacle
UG-88	31-002-1050	BNC Plug
UG-260	31-012-1050	BNC Plug
UG-657	31-102-1050	BNC Bulkhead Receptacle
UG-625	5575-1050	BNC Bulkhead Receptacle
UG-290	31-003-1050	BNC Panel Receptacle
CW-123A	31-026-1050	BNC Cap and Chain
UG-88B	31-018-1050	BNC Plug
UG-88C	31-202-1050	BNC Plug
UG-260-A	31-021-1050	BNC Plug
UG-260-B	31-212-1050	BNC Plug
UG-260-D	31-3212-1050	BNC Plug
UG-625-B	31-236-1050	BNC Bulkhead Receptacle
UG-290-A	31-203-1050	BNC Panel Receptacle
UG-914	31-219-1050	BNC Straight Adaptor
UG-274	31-008-1050	BNC "T" Adaptor
UG-492-A	31-220-1050	BNC Bulkhead Adaptor
	31-759-1050	BNC Ground Lug

Precision 7mm Connectors — APC-7



APC-7. Precision 50-ohm connector for use with 7mm (inner diameter of outer conductor) rigid air line and semi-rigid (ALJAK) coaxial cable.

Sexless coupling permits interconnection of any two APC-7's. Identical plane of electrical and mechanical contact permits accurate determination of the electrical length of a mated pair or of an air line assembly with a connector at each end. All components held captive.

Connectors packaged in pairs in protective wooden box; assembly instructions and certified SWR test report included with each pair.

Specifically designed for microwave and precision test equipment — Component manufacturers now using APC-7 fittings include: Alford, Alfred, EG&G, Hewlett-Packard, Maury Microwave, Microlab/FXR, Narda, PRD, Rantec, and Weinschel Engineering.

CHARACTERISTICS (TYPICAL)

ELECTRICAL (for mated pair): **Impedance:** 50 ohm ± 0.1 ohms. **Frequency Range:** DC to 18 GHz. **SWR:** 1.039 max. to 18 GHz. **Insertion loss (in db):** $<7x10^{-3}\sqrt{\text{Freq.}}$ (example: 0.028 db at 16.0 GHz). **RF Leakage:** <signal inside coaxial line ratio >120 db▲. **Electrical length:** 0.723 ± 0.001 inches (1.836 ± .00254 cm). **Contact Resistance:** inner: <1.0 milliohm, outer: <0.1 milliohm.
▲RF Leakage: Until satisfactory test methods are developed, the maximum frequency of measurement is limited to 6.0 GHz.

ENVIRONMENTAL: **Thermal Limits:** storage: —67° to 158°F (—55° to 70°C) operating: 55° to 91°F (13° to 33°C). **Humidity:** 20 to 80% RH. **Pressure:** 590 to 760 mm Hg. MECHANICAL: **Mating:** sexless, coplanar by means of threaded ring housed within coupling nut. **Life:** >5000 connect/disconnect operations.

MATERIAL: **Coupling Mechanism:** stainless steel. **Body:** gold plated beryllium copper. **Center Contact:** gold plated beryllium copper. **Bead Assembly:** Rexolite insulation.

For use with	Part No.	Maximum SWR For a Mated Pair	Dimensions, Inches a	b
7mm air line	131-1050	1.039 to 18 GHz	5⅝4	13⁄16
131-182 (.325) semi-rigid ALJAK cable	131-1019	1.10 to 12.4 GHz	1 5⅝4	13⁄16

Short and Open Circuit Terminations

Reflection coefficient 0.9995 minimum. Reference plane for opens is 1.25mm ±0.2mm beyond face of electrical mating plane.

Part No.	Description	Dimensions, Inches a	b
131-1206	short, less coupling mechanism	3⁄4	11⁄16
131-1205	short, with coupling mechanism	1 1⁄8	13⁄16
131-1204	open, less coupling mechanism	3⁄4	11⁄16
131-1203	open, with coupling mechanism	1 1⁄8	13⁄16

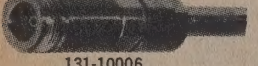
APC-7 Tool Kit

TOOL KIT 131-2025
For disassembly; assembly to air line. Contains collet extractor, spanner wrench, torque wrench & line wrench.

RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

APC N Plugs and Jacks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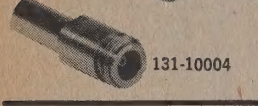
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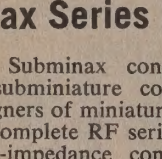
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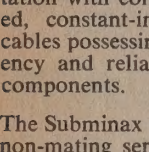

131-10004

APC-N. 50-ohm connectors. Use interchangeably with APC-7; mate with all other type N's. Their excellent electrical performance will make them an "industry standard" for future equipment. SWR for mated pairs: only 1.06 through 12 GHz; 1.08 through 18 GHz.

CHARACTERISTICS (TYPICAL)

ELECTRICAL (for mated pair APC-N connectors). **Impedance:** 50 ohm ± 0.2 ohms. **Frequency Range:** 0-18 GHz. **SWR:** 1.08 max. to 18 GHz. **Insertion Loss (in db):** $<3x10^{-2}\sqrt{\text{Freq. GHz.}}$ **RF Leakage:** <signal inside coaxial line by ratio >90 db▲. **Contact Resistance:** inner: <1.0 milliohm; outer: <1.1 milliohm.

▲**RF Leakage:** Until satisfactory test methods are developed, the maximum frequency of measurement is limited to 6.0 GHz.

ENVIRONMENTAL: **Thermal Limits:** storage: —67-158°F (—55-70°C); operating: 55-91°F (13-33°C). **Humidity:** 20 to 80% RH. **Pressure:** 590 to 780 mm Hg.

MECHANICAL: **Mating:** 5/8-24 threaded coupling. Matin mensions are MIL-C-39012 Class II nominal with tighte erances. The APC-N mates with all existing Type N nectors including MIL-C-71.

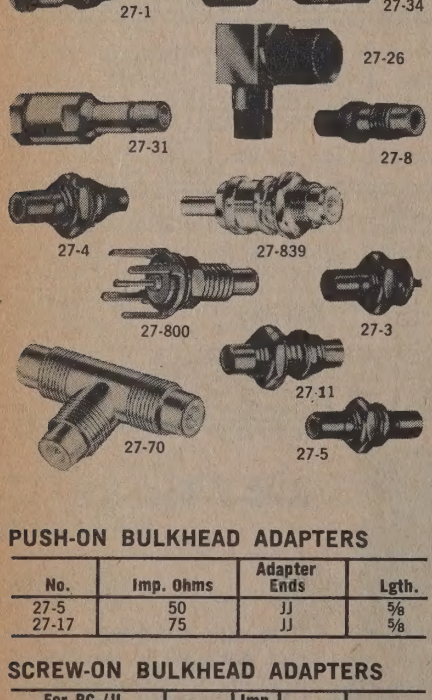
MATERIAL: **Body and Coupling Nut:** stainless steel. C **Contacts:** gold plated beryllium copper. **Bead Asse** Rexolite insulation.

For Use With	Con-fig.	Maximum SWR For a Mated Pair	Part No.	Dimens Inch A
7mm air line	plug	1.08 to 18 GHz	131-10003	1 9/64
7mm air line	jack	1.08 to 18 GHz	131-10004	1 3/32
semi-rigid ALJAK	plug	1.125 to 12.4 GHz	131-10005	2 5/32
semi-rigid ALJAK	jack	1.125 to 12.4 GHz	131-10006	2 3/16

Subminax Series 27

Amphenol's Subminax connectors and Amphenol subminiature coaxial cables provide designers of miniature instrumentation with complete RF series of matched, constant-impedance connectors and cables possessing the same electrical efficiency and reliability as standard-size RF components.

The Subminax line comprises two distinct, non-mating series: the 27 Series and the 5116 Series.



CHARACTERISTICS

ELECTRICAL: **Impedance:** 50 ohm, 75 ohm. **Frequency Range:** 0-10 GHz. **Voltage Rating:** 500 volts peak. **Dielectric Withstanding Voltage:** 1,500 volts rms. **SWR (50 ohm):** 1.2 (0-4 GHz); 1.5 (4-10 GHz); 1.3 (UG's) (0-6 GHz); 1.5 (UG's) (6-10 GHz). **Other:** multivolt drop 6 MV. insulation resistance 1,000 megohms.

ENVIRONMENTAL: **Thermal Limits:** —67° to 390°F (—55° to 199°C). **Weatherproof:** all 27 series are non-weatherproof, radial crimp have plastic boot or optional heat shrink tubing. **Hermetic Seals:** pass helium leakage test of 2 x 10^{-8} cc/sec. **Thermal Shock:** Mil. Std. 202 method 107. **Shock:** Mil. Std. 202 method 202. **Vibration:** Mil. Std. 202 method 204 (test cond. D). **Moisture Resistance:** Mil. Std. 202 method 106A. **Corrosion:** Mil. Std. 202 method 101 (test cond. B).

MECHANICAL: **Contacts:** radial crimp, not tivated; quick crimp, full captivated; field ser able, semicaptivated. **Mating:** push-on (sna and screw-on, (50 ohm have 10-32 threaded c ling; 75 ohms, 5/8-32). **Cable Affixment (Brai Jacket):** radial crimp: Quick-Crimp (hex cri field serviceable clamp mechanism. **Cable A ment (Center Conductor):** solder only. **Coup Nut:** recommended torque (hex nuts); 50 i ounces. Axial pull-off force: withstand up 50 lbs.

MATERIAL: **Contacts:** male and outer (push- brass female: beryllium copper. **Other Metal P** brass. **Plating (All Metal Parts):** .000050 gold copper, (UG's .0001" gold over copper). **Insulat** Teflon, Kel-F-Teflon, glass Teflon (hermetic sealed).

MILITARY SPECIFICATIONS: UG items fully co with MIL-C-22557A.

PUSH-ON STRAIGHT PLUGS — SCREW-

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth.
174, 179, 187, 188	27-841	50	QC, CC	1
	27-1	50	RC	19/32
180, 195, A 21-597	27-828	75	QC, CC	1 5/64
	27-13	75	RC	5/8
178, 196	27-30	50	FS, CC	25/32
			* UG-1460 † UG-1465	

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth
174, 179, 187, 188	27-844	50	QC, CC	1
	27-7	50	RC	19
	†27-106	50	FS, CC	25
180, 195, A 21-597	27-835	75	QC, CC	1 5
	27-19	75	RC	
178, 196	27-34	50	FS, CC	25
	*27-104	50	FS, CC	37

PUSH-ON ANGLE PLUGS — SCREW-

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth.
174, 179, 187, 188	27-843	50	QC, CC	41/64
	27-6	50	RC	9/16
180, 195, 21-597	27-834	75	QC, CC	41/64
	27-18	75	RC	39/64
178, 196	27-33	50	FS, CC	9/16
	27-823	50	FS, CC, HOC	19/32

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth
174, 179, 187, 188	27-846	50	QC, CC	19
	27-26	50	RC	39
180, 195, 21-597	27-836	75	QC, CC	41
	27-25	75	RC	5
178, 196	27-37	50	FS, CC	39

PUSH-ON STRAIGHT JACKS — SCREW-

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth.
174, 179, 187, 188	27-849	50	QC, CC	1
	27-2	50	RC	35/64
180, 195, 21-597	27-837	75	QC, CC	1
	27-14	75	RC	9/16
178, 196	27-31	50	FS, CC	47/64

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth
174, 179, 187, 188	27-8	50	RC	19
	*27-105	50	FS, CC	39
178, 196	27-35	50	FS, CC	39
	†27-107	50	FS, CC	39
180, 195, 21-597	27-20	75	RC	19
			* UG-1467	† UG-14

PUSH-ON BULKHEAD JACKS — SCREW-

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth.
174, 179, 187, 188	27-842	50	QC, CC	1 1/16
	27-4	50	RC	41/64
180, 195, 21-597	27-838	75	QC, CC	1 1/64
	27-16	75	RC	41/64
178, 196	27-32	50	FS, CC	13/16
			* UG-1463	† UG-1468

For RG-/U Cable	No.	Imp. Ohms	Notes.	Lgth
174, 179, 187, 188	27-845	50	QC, CC	1 1
	27-10	50	RC	21
	†27-103	50	FS, CC	7
180, 195, 21-597	27-839	75	QC, CC	1 1
	27-22	75	RC	21
178, 196	27-36	50	FS, CC	57
	*27-102	50	FS, CC	57

PUSH-ON BULKHEAD RECEPTACLES — SCREW-

—	27-3	50	T	—	37/64	—	27-9	50	I	—
—	27-15	75	T	—	37/64	—	27-12	50	GT	H
—	27-27	50	GT	H	45/64	—	27-21	75	T	—
—	27-45	75	GT	H	23/32	—	27-24	75	GT	H
						—	27-800	50	T	PC
						1619	27-101	50	T	RM, FS, CC
—	27-72	50	T	GC	31/64	1464	27-108	50	T	FM, FS, CC

PUSH-ON BULKHEAD ADAPTERS

No.	Imp. Ohms	Adapter Ends	Lgth.
27-5	50	JJ	5/8
27-17	75	JJ	5/8

SCREW-ON BULKHEAD ADAPTERS

For RG-/U Cable	No.	Imp. Ohms	Notes	Lgth.
174, 179, 187, 188	27-849	50	QC, CC	1
	27-2	50	RC	35/64

SCREW-ON TEE ADAPTERS

No.	Imp. Ohms	Adapter Ends	Lgth.
27-70	75	JJJ	1.050

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RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

ıminax Series 5116

CHARACTERISTICS

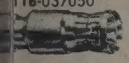
ICAL
dance: 50, 75 or 95 ohm.
uency range: 0-4 Gc.
ge: 500 v. peak.
potential: 1500 v. rms. 60 cycles, 1 min.

NMENTAL
mal limits: —67°F to 390°F.
herproof: screw-on types.
etic seals: pass helium leak test of 2 x 10^{-8} cc/sec.

NICAL
ng: push-on or screw-on.
affixment: Quick-Crimp.

IAL
acts: male: brass; female: beryllium copper.
r metal parts: brass.
act plating: .0002" gold-over-silver min.
r plating: .0002" silver min.
ators: Teflon or glass-Teflon.

116-037050



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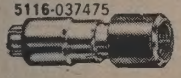

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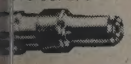

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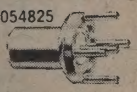

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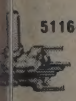


PUSH-ON STRAIGHT PLUGS SCREW-ON

For RG-/U Cable	No. 5116-	Imp. Ohms	Notes	Lgth.	For RG-/U Cable	No. 5116-	Imp. Ohms	Notes	Lgth.
178A, 178B, 196, 196A	-037050	50		1 3/32	178A, 178B, 196, 196A	-037475	50	W	1
179A, 179B, 187, 187A	-037100	75		1 3/32	179A, 179B, 187, 187A	-037525	75	W	1
180, 180A, 180B, 195, 195A, A21-597	-037125	95		1 3/32	180, 180A, 180B, 195, 195A, A21-597	-037550	95	W	1
188, 188A, 316	-037075	50		1 3/32	188, 188A, 316	-037575	50	W	1

PUSH-ON ANGLE PLUGS SCREW-ON

178A, 178B, 196, 196A	-037150	50		4 9/64	178A, 178B, 196, 196A	-037600	50	W	5/8
179A, 179B, 187, 187A	-037200	75		25/32	179A, 179B, 187, 187A	-037625	75	W	4 1/64
180, 180A, 180B, 195, 195A, A21-597	-037225	95		25/32	180, 180A, 180B, 195, 195A, A21-597	-037650	95	W	45/64
188, 188A, 316	-037175	50		25/32	188, 188A, 316	-037675	50	W	41/64

PUSH-ON STRAIGHT JACKS SCREW-ON

178A, 178B, 196, 196A	-037275	50		1	178A, 178B, 196, 196A	-037700	50	W	1
179A, 179B, 187, 187A	-037325	75		1	179A, 179B, 187, 187A	-037725	75	W	1
180, 180A, 180B, 195, 195A, A21-597	-037350	95		1	180, 180A, 180B, 195, 195A, A21-597	-037750	95	W	1
188, 188A, 316	-037300	50		1	188, 188A, 316	-037775	50	W	1

PUSH-ON BULKHEAD JACKS SCREW-ON

178A, 178B, 196, 196A	-037375	50		29/32	178A, 178B, 196, 196A	-037800	50	W	25/32
179A, 179B, 187, 187A	-037425	75		29/32	179A, 179B, 187, 187A	-037825	75	W	25/32
180, 180A, 180B, 195, 195A, A21-597	-037450	95		29/32	180, 180A, 180B, 195, 195A, A21-597	-037850	95	W	25/32
188, 188A, 316	-037400	50		29/32	188, 188A, 316	-037875	50	W	25/32

PUSH-ON STRAIGHT RECEPTACLES SCREW-ON

No. 5116-	Imp. Ohms	Ins.	Notes	Lgth.	No. 5116-	Imp. Ohms	Ins.	Notes	Lgth.
-054825	50	T	PC	15/32	-058375	50	T	PC, W	15/32
					-054875	95	T	PC, W	15/32
					-057350	50	gT	H, W	9/16
					-057375	95	gT	H, W	9/16

PUSH-ON ANGLE RECEPTACLES SCREW-ON

-054850	50	T	PC	9/16	-054900	50	T	PC, W	15/32
					-054925	95	T	PC, W	15/32

PUSH-ON BULKHEAD RECEPTACLES SCREW-ON

-054300	50	T	MLC	45/64	-058350	50	T		1/4
-054325	50	T		23/32	-056825	75	T		9/32
					-057400	95	T		5/16

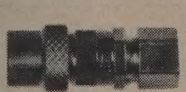
SCREW-ON BULKHEAD ADAPTERS

No. 5116-	Imp. Ohms	Ins.	Ends Mate With	Lgth.
-054475	50	T	m m	1 3/32
-054525	75	T	m m	1 3/32
-054550	95	T	m m	1 3/32

SCREW-ON MALE CAPS

No. 5116-	Imp. Ohms	Notes	Lgth.
-054575	50	SMC	3/8
-054650	50		13/64
-054600	75	SMC	5/16
-054675	75		13/64
-054625	95	SMC	5/16
-054700	95		13/64

ries MB



y small bayonet-lock connectors with an overall length that, n few exceptions, measures under an inch. Of particular im- tance to the user are the excellent electrical and mechanical formance parameters offered at low cost. Crimp designs red require no special crimping tools; a simple pair of stand- pliers will do the job. Plugs in this series have female con- s; jacks have male contacts. For further information, uest catalog CC-6.

ARACTERISTICS, typical

TRICAL: Impedance: non-constant; **frequency range:** 0-500 MHz. **Voltage g:** 500 v. peak.

IRONMENTAL: Thermal limits: Kel-F: —67° to 390°F (—55° to 199°C); n: —67° to 300°F (—55° to 149°C). **Weatherproof:** all MB series are weatherproof. **Hermetic seal:** pass helium leak test of 2 x 10^{-8} cc/sec.

HANICAL: Mating: 2-stud bayonet lock. **Cable affixment:** hooded, jacket or dard braid clamp and nut; inner jacket crimp.

ERIAL: Contacts: male: brass; female: beryllium copper. **Other metal s:** brass. **Plating: all metal parts except contacts:** except as noted, el .0001" min. per QQ-N-290. **Contact plating:** except as noted, .0002" er min. **Insulators:** as noted, Kel-F, nylon or teflon.

STRAIGHT PLUGS

RG/U Cable	Part No.	Insulation	Dimensions Inches Length	O.D.	Cable Diam.	Notes
55, 58, 141, 142	49200	Kel-F	31/32	3/8	.214	jacket clamp
	45050	nylon	23/32	3/8	.203	standard clamp
	45525	Kel-F	23/32	3/8	.203	standard clamp
	44900	Kel-F	13/16	3/8	.197	standard clamp
	45325	Kel-F	13/16	3/8	.197	standard clamp
58	44200	Kel-F	23/32	3/8	.203	standard clamp/ solderless contact
	44975	nylon	23/32	3/8	.203	standard clamp/ solderless contact
	45000	nylon	23/32	3/8	.203	standard clamp/ solderless contact
59, 62, 140, 210	44800	Kel-F	27/32	3/8	.255	standard clamp
	45025	nylon	27/32	3/8	.255	hooded clamp/ solderless contact
	45550	Kel-F	27/32	3/8	.255	hooded clamp
	47800	Kel-F	31/32	3/8	.255	jacket clamp/ solderless contact
122, 180, 195	45075	nylon	23/32	3/8	.177	standard clamp
	45700	Kel-F	23/32	3/8	.148	standard clamp
	48850	Kel-F	25/32	3/8	.158	crimp/silver-plated body
174, 179, 187, 188	44950	Kel-F	13/16	3/8	.126	crimp/silver-plated body
	45125	nylon	23/32	3/8	.126	crimp
	45275	Kel-F	13/16	3/8	.126	crimp
	47750	Kel-F	47/64	3/8	.128	crimp
	48325	Kel-F	3/4	3/8	.112	standard clamp
	48825	Kel-F	25/32	3/8	.119	crimp/silver-plated body
	95200	Kel-F	25/32	3/8	.119	crimp/gold-plated contact/silver body
	45650	nylon	23/32	3/8	.104	crimp/silver-plated body

SERIES MB CONTINUED

RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

Series MB CONTINUED

STRAIGHT PLUGS continued

RG/U Cable	Part No.	Insulation	Dimensions Inches Length	O.D.	Cable Diam.	Notes
178, 196	45100	nylon	25/32	3/8	.081	crimp
	45175	nylon	23/32	3/8	.091	crimp
	45425	Kel-F	23/32	3/8	.091	crimp
	45475	Kel-F	23/32	3/8	.081	crimp
	45725	Kel-F	23/32	3/8	.091	crimp/silver-plated body
	45900	Teflon	23/32	3/8	.081	crimp/silver-plated body
	47775	Kel-F	47/64	3/8	.096	jacket clamp/ silver-plated body

ANGLE PLUGS

RG/U Cable	Part No.	Insulation	Length	O.D.	Cable Diam.	Notes
55, 58, 141, 142	49225	Kel-F	3/4	3/8	.214	jacket clamp/ sil.-pltd. body
	45350	Kel-F	3/4	3/8	.197	standard clamp/ sil.-pltd. body
	48175	Kel-F	3/4	3/8	.207	standard clamp
	53000	nylon	3/4	3/8	.207	hooded clamp
59, 62, 140, 210	43700	Kel-F	3/4	3/8	.255	hooded clamp/ gold pltd. contact & body
	48150	Kel-F	3/4	3/8	.255	jacket clamp
	53500	nylon	3/4	3/8	.255	hooded clamp
	53525	Kel-F	3/4	3/8	.255	hooded clamp
174	45775	Kel-F	3/4	3/8	.104	crimp
174, 179, 187 188	44925	Kel-F	3/4	3/8	.126	crimp/silver-plated body
	48800	Kel-F	3/4	3/8	.119	crimp/silver-plated body
	58900	Kel-F	3/4	3/8	.119	crimp
	68700	Teflon	3/4	3/8	.126	crimp/silver-plated body
178, 196	45400	Kel-F	3/4	3/8	.091	crimp
	45875	Kel-F	3/4	3/8	.091	crimp/silver-plated body
180, 195	48875	Kel-F	3/4	3/8	.158	crimp/silver-plated body
	49600	Kel-F	3/4	3/8	.158	crimp
	47450	Kel-F	3/4	3/8	.146	crimp
	49800	Kel-F	3/4	3/8	.150	jacket clamp/ gold pltd. body

BULKHEAD RECEPTACLES

Part No.	Insulation	Terminal	Dimensions Inches Length	O.D.	Max. Panel Thickness	Notes
44875	glass-Teflon	flat & pierce	19/32	5/16	.125	hermetically sealed/ solder mtd.
45925	Kel-F	turret	11/16	5/16	.125	silver-plated body
45975	glass-Teflon	flat & pierce	29/32	7/16	.156	hermetically sealed
46000	nylon	turret	11/16	5/16	.140	nickel pltd. body
46025	Kel-F	turret	11/16	5/16	.125	—
46025-1002	Kel-F	turret	11/16	5/16	.125	gold-pltd. contact, albaloy finish outer parts
46150	Kel-F	turret	25/32	23/32	.156	angle/"b" dim. overall width
46175	nylon	turret	11/16	5/16	.140	silver-plated body
47625	Teflon	—	7/16	7/16	—	printed circuit
53475	Teflon	turret	11/16	5/16	.125	—

STRAIGHT JACKS

RG/U Cable	Part No.	Insulation	Dimensions Inches Length	O.D.	Cable Diam.	Notes
55, 58, 141, 142	49825	Kel-F	13/16	5/16	.214	jacket clamp/ sil.-pltd. body
58, 141	46700	Kel-F	3/4	5/16	.203	standard clamp/ sil.-pltd. body
59, 62, 140, 210	46775	Kel-F	1 5/64	5/16	.255	hooded clamp
174, 179, 187, 188	48950	Kel-F	3/4	5/16	.119	crimp/sil.-pltd. body
180,195, 21-597	48975	Kel-F	3/4	5/16	.157	crimp/sil.-pltd. body

BULKHEAD JACKS

RG/U Cable	Part No.	Insulation	Dimensions Inches Length	O.D.	Cable Diam.	Notes
55, 58, 141, 142	44675	Kel-F	13/16	5/16	.214	jacket clamp
	49300	Kel-F	1 5/64	7/16	.214	jacket clamp/ sil.-pltd. body
	46200	nylon	25/32	5/16	.203	standard clamp/ sil.-pltd. body
	46300	nylon	25/32	5/16	.203	standard clamp/ split mounting
59, 62, 140, 210	46325	nylon	31/32	5/16	.255	hooded clamp/ nickel-plated contact/ split mounting
	46875	Kel-F	1 5/64	11/32	.255	jacket clamp/ sil.-pltd. body
122, 180, 195 21-597	46375	nylon	25/32	5/16	.177	standard clamp/ split mounting
174	46625	Kel-F	25/32	5/16	.104	crimp/gold-pltd. contac
178, 196	46400	nylon	37/64	5/16	.091	crimp/nickel-plated contact/split mounting
	46475	Kel-F	37/64	5/16	.091	crimp split mounting
180	49775	Kel-F	25/32	7/16	.148	crimp/gold-pltd. contac
174, 179, 187, 188	46425	nylon	25/32	5/16	.126	crimp/split mounting
	48925	Kel-F	13/16	9/32	.119	crimp/silver-plated body capt. cont.
180, 195	48900	Kel-F	25/32	5/16	.158	crimp/silver-pltd. contac
	49700	Kel-F	27/32	7/16	.158	crimp/silver-plated body

STRAIGHT/BULKHEAD ADAPTERS

Part No.	Insulation	Adapter Ends	Dimensions Inches Length	O.D.	Chain Length	Notes
47225	nylon	jack-jack	13/16	5/16		—
47300	glass-Teflon	jack-jack	13/16	9/16		bikh adapt./ hermetically sealed .170 max. panel thickne

TEE ADAPTERS

47325	Kel-F	jack-plug-jack	1 1/32	3/4		—
47425	Kel-F	jack-plug-jack	1 1/32	3/4		silver-plated body

RESISTOR TERMINATED CAPS • male contacts • non-weatherproof

To order without resistor, add —1 to part number; to order with resistor, ad resistor value to part number. ½ watt ± 5% resistor values (ohms) stocked 47, 51, 68, 75, 82, 91, 100, 120, 130, 150, 180, 240, 270, 300, 470, 510, 56 680, 750, 820, 1000, 1500, 3900, 4700, 10000, 100000, 150000.

48600	Kel-F		1 1/32	3/8		chain-length 3¼ inches

MALE CAPS

48225			9/16	3/8	1½	—
48250			23/32	3/8	1½	shorting male contact

FEMALE CAPS

47550			½	3/8	1½	—

BNC/TNC

BNC's are small, lightweight, quick-disconnect bayonet lock coupling connectors. MIL-Crimp BNC's are recommended as the optimum BNC, giving optimum operating performance at low installed cost. Using standard crimping tools, these units can be assembled in a fraction of the time usually required for braid-clamp type connectors by eliminating critical assembly and soldering operations and reducing the parts to handle. Captivated center contacts prevent circuit discontinuity under environmental or mechanical stress. MIL-Crimps are weatherproof; their constant 50-ohm impedance provides excellent performance through X-band frequencies.

Quick-Crimp: gold-plated semi-captivated contacts, classed as weather proof. Heat shrink tubing for severe environmental conditions. *Original-Crimp:* gold-plated contacts, classed as weatherproof. Each has a silcone rubber boot.

STRAIGHT PLUGS

RG/U Cable	Part No.	UG/U No.	Insulation	Clamp Gasket	Dimensions, Inches Length	O.D.	Cable Diam.	Notes
6	9350	—	Rexolite	syn. rubber	1¼	9/16	.348	—
8.9	6775	959	Teflon	syn. rubber	1 23/32	1 1/16	.437	—
55, 142, 223	31-326	M23329/ 3-02-04	Teflon	—	1 13/64	9/16	.220	MIL-Crimp ■
55, 58, 141, 142, 223	31-002‡	88	Teflon	syn. rubber	31/32	9/16	.212	—
	14525	88A	Teflon	syn. rubber	1	9/16	.212	—
	14625	—	Teflon	syn. rubber	1	9/16	.212	female contact/polarized
	31-018‡	88B	Teflon	—	31/32	9/16	.212	non-weatherproof
	31-202▲‡	88C	Teflon	sil. rubber	1 1/16	9/16	.224	improved
	31-301▲	—	Teflon	sil. rubber	1 5/32	9/16	.219	improved/captivated contact
	31-2202▲	88D	Teflon	sil. rubber	1 3/32	9/16	.224	improved/beryl. outer contact
	31-3202▲	88E	Teflon	sil. rubber	1 3/32	9/16	.224	improved/beryl. outer contact
	84800▲		Teflon	sil. rubber	1 1/16	9/16	.224	improved/captivated contact
58C	31-3301	88G						MIL-C-39012/16-0001
58, 141	31-320	M23329/ 3-01-03	Teflon	—	1 13/64	9/16	.206	MIL-Crimp ■
59, 62, 71, 140, 210	31-321	M23329/ 3-05	Teflon	—	1 13/64	9/16	.261	MIL-Crimp ■
	31-012‡	260	Rexolite	sil. rubber	31/32	9/16	.258	—
	31-021‡	260A	Rexolite	—	1	9/16	.258	non-weatherproof
	31212▲‡	260B	Teflon	sil. rubber	1 1/16	9/16	.255	improved
	31-304▲	—	Teflon	sil. rubber	1 5/32	9/16	.255	improved/captivated contact

CONTINUED

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RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

C/TNC CONTINUED

s were developed by Amphenol for ft, missile and other applications in h extreme vibration may be encoun-. The TNC threaded coupling mech- eliminates "rock" under vibration characteristic of bayonet coupled ectors such as BNC that introduces into the system and causes erratic rmance. Other than coupling, TNC's imensionally and electrically similar NC, and have a constant impedance ohms.

rugged mechanical construction s them an excellent choice for ap- tions requiring a high degree of tion.

C-3012A

a complete listing of BNC Standard, MIL-Crimp, N Standard, N MIL- p, N MIL-Clamp and SMA Connec- to the latest revision of MIL-C- 2/A, refer to your Distributor or henol.

CHARACTERISTICS

RICAL: Impedance: unimproved BNC; non-con- all others: 50 ohms. **Frequency range:** 0-10 **oltage rating:** 500 volts peak. **Dielectric With- ng Voltage:** 1500 volts rms. **SWR:** improved: IL-Crimps: 1.2 (solder), 1.3 per spec. **Other:** t resistance: 2.1 mv; RF leakage: —55 db; on loss: .04 db; insulation resistance: 5000 ms.

IRONMENTAL: Thermal Limits: Teflon insula- s —67° to 390°F (—55° to 199°C); Rexolite tors: —67° to 185°F (—55° to 85°C). **Weather-** standards with clamp gaskets; MIL-Crimps eat-shrink tubing. **Hermetic Seals:** pass helium test of $2x10^{-8}$ cc/sec. **Shock:** MIL-Std-202 d 202. **Vibration:** MIL-Std-202 method 204 cond. D). **Moisture Resistance:** MIL-Std-202 d 106. **Corrosion:** MIL-Std-202 method 101 cond. B). **Temperature Cycling:** MIL-Std-202 d 102 (test cond. D). **Altitude:** MIL-Std-202 d 105 (test cond. C).

CHANICAL: Mating: BNC: 2-stud bayonet lock; 7/16-28 thread cplg. **Cable Affixment (Braid or):** standards: screw-thread nut and braid clamp: rimps: hex braid crimp. **Cable Affixment (Cen- nductor):** MIL-Crimps: 4 indent crimp or solder; : solder only. **Captivated Contact:** all MIL- s; others: where specified. **Cable Retention:** ards: 20 to 50 lbs; crimps: 80 to 100 lbs.

TERIAL: Contacts (Center): male: brass; fe- l beryllium copper or phosphor bronze (all MIL- s). **Contacts (Outer):** MIL-Crimps: phosphor e; others: brass or beryllium copper where ied. **Other Metal Parts:** brass. **Plating:** center ts, MIL-Crimps: .0001" gold over .0001" cop- all others: .0002" silver. **Insulators:** Teflon (all s); Rexolite; glass-Teflon (hermetically sealed). **Gaskets:** synthetic rubber; silicone rubber. **Shrink Tubing:** MIL-Crimps: Thermofit plastic. **Ferrule:** copper.

ITARY SPECIFICATIONS: MIL-Crimps: MIL-C- A; Standard BNC: MIL-C-3608.

31-320

31-002

31-334

STRAIGHT PLUGS continued

RG/U Cable	Part No.	UG/U No.	Insulation	Clamp Gasket	Dimensions, Inches Length	O.D.	Cable Diam.	Notes
59, 62, 71, 140, 210	31-2212▲	260C	Teflon	sil. rubber	1 3/32	5/16	.255	improved/beryl. outer contact
	31-3212▲‡	260D	Teflon	sil. rubber	1 3/32	5/16	.255	improved/beryl. outer contact
	70000	—	Teflon	syn. rubber	1	5/16	.258	female contact/polarized
	86475▲	—	Teflon	sil. rubber	1 1/16	5/16	.257	improved/75 ohm
59, 62	31-3302	260F						MIL-C-39012/16-0002
71	31-322	—	Teflon	—	1 13/64	5/16	.275	MIL-Crimp ■
114A	17400	—	Teflon	syn. rubber	1 21/32	1 1/16	.437	"b" dim. is body od
122	31-324	M23329/3-06	Teflon	—	1 13/64	5/16	.175	MIL-Crimp ■
122, 180, 195,	31-323	M23329/3-07	Teflon	—	1 13/64	5/16	.175	MIL-Crimp ■
	12000	—	Teflon	syn. rubber	1	5/16	.177	
	84975	1033	Teflon	sil. rubber	1 1/16	5/16	.177	improved
122	31-3303	1033G						MIL-C-39012/16-0003
174, 179, 187, 188	31-242	—	Teflon	—	1 13/64	5/16	.115	MIL-Crimp ■
	31-315	—	Teflon	—	1 13/64	5/16	.115	MIL-Crimp ■
	69475	—	Teflon	sil. rubber	1 1/16	5/16	.116	improved
178, 196	15875	—	Teflon	syn. rubber	1	5/16	.094	—
180	16300	—	Teflon	syn. rubber	1	5/16	.150	—
	31-325	—	Teflon	—	1 13/64	5/16	.175	MIL-Crimp ■
#18, 20, 22 H.V. wire, shielded & unshielded	13925	—	Teflon	syn. rubber	1	5/16	.123	—

ANGLE PLUGS

55, 142, 223	31-334	—	Teflon	—	1 3/16	5/16	.220	MIL-Crimp ■
55, 58, 141, 142, 223	31-204	913	Teflon	sil. rubber	1 3/32	5/16	.224	
	31-2204▲	913A	Teflon	sil. rubber	1 3/32	5/16	.224	
	31-3361*	913B						
	8525	—	Teflon	syn. rubber	1 1/4	5/16	.212	MIL-C-39012/20-0001*
	38250	—	Teflon	syn. rubber	29/32	5/16	.214	
58, 141	31-335	—	Teflon	—	1 3/16	5/16	.206	MIL-Crimp ■
59, 62, 71, 140, 210	31-336	—	Teflon	—	1 3/16	5/16	.261	MIL-Crimp ■
	31-850	—	Rexolite	syn. rubber	1 1/4	5/16	.258	
	8575	—	Teflon	syn. rubber	1 1/4	5/16	.259	
	33750	—	Teflon	syn. rubber	29/32	5/16	.259	
	86225▲	—	Teflon	sil. rubber	1 1/16	5/16	.257	improved
71	31-337	—	Teflon	—	1 3/16	5/16	.275	MIL-Crimp ■
122	31-339	—	Teflon	—	1 3/16	5/16	.175	MIL-Crimp ■
122, 180, 195,	31-338	—	Teflon	—	1 3/16	5/16	.175	MIL-Crimp ■
	33775	—	Teflon	syn. rubber	1 1/4	5/16	.177	—
174, 179, 187, 188	31-243	—	Teflon	—	1 3/16	5/16	.115	MIL-Crimp ■
	31-316	—	Teflon	—	1 3/16	5/16	.115	MIL-Crimp ■
	33275	—	Teflon	sil. rubber	1 1/4	5/16	.115	—
178, 196	21975	—	Teflon	syn. rubber	1 1/4	5/16	.096	—
180	16975	—	Teflon	syn. rubber	1 1/4	5/16	.150	—
	31-340	—	Teflon	—	1 3/16	5/16	.175	MIL-Crimp ■

STRAIGHT JACKS

55, 142, 223	31-333	M23329/3-09	Teflon	—	1 25/64	5/16	.220	MIL-Crimp ■
	31-305▲	—	Teflon	sil. rubber	1 13/64	5/16	.258	improved/captivated contact
	31-2215▲	261C	Teflon	sil. rubber	1 9/64	5/16	.258	improved
59B, 62A, 71B	31-3320	261D						MIL-C-39012/17-0002
71	31-329	—	Teflon	—	1 25/64	5/16	.275	MIL-Crimp ■
122	31-331	M23329/3-13	Teflon	—	1 25/64	5/16	.175	MIL-Crimp ■
122, 180, 195	31-330	M23329/3-14	Teflon	—	1 25/64	5/16	.175	MIL-Crimp ■
	84650	1056	Teflon	sil. rubber	1 9/64	5/16	.177	improved
174, 179, 187, 188	31-244	—	Teflon	—	1 25/64	5/16	.115	MIL-Crimp ■
	31-317	—	Teflon	—	1 25/64	5/16	.115	MIL-Crimp ■
180	16925	—	Teflon	syn. rubber	1 9/64	5/16	.150	
	31-332	—	Teflon	—	1 25/64	5/16	.175	MIL-Crimp ■
55, 58, 141, 142, 223	31-005	89	Teflon	syn. rubber	1 1/8	5/16	.212	
	31-019	89A	Teflon	—	1 9/64	5/16	.212	non-weatherproof
	31-205▲	89B	Teflon	sil. rubber	1 9/64	5/16	.224	improved
	31-302▲		Teflon	sil. rubber	1 13/64	5/16	.221	improved/captivated contact
	31-2205▲	89C	Teflon	sil. rubber	1 9/64	5/16	.224	improved
55B, 58C, 223	31-3314	89D						MIL-C-39012/17-0001
58, 141	31-327	M23329/3-08	Teflon	—	1 25/64	5/16	.206	MIL-Crimp ■
59, 62, 71, 140, 210	31-328	M23329/3-12	Teflon	—	1 25/64	5/16	.261	MIL-Crimp ■
	31-015	261	Rexolite	sil. rubber	1 1/8	5/16	.258	70 ohm resistance
	31-022	261A	Rexolite	—	1 9/64	5/16	.258	non-weatherproof/70 ohm
	31-215▲	261B	Teflon	sil. rubber	1 9/64	5/16	.258	improved

BULKHEAD JACKS

55, 142, 223	31-341	M23329/3-16	Teflon	—	1 3/8	1 1/16	.220	MIL-Crimp ■
55, 58, 141, 142, 223	31-206▲	909	Teflon	sil. rubber	1 1/8	1 1/16	.212	improved
	2475	—	Teflon	syn. rubber	1 1/16	5/8	.212	front mounting
	2575	—	Teflon	syn. rubber	1 9/64	5/8	.212	—
	31-2206▲	909A	Teflon	sil. rubber	1 9/64	1 1/16	.224	improved
	31-3206▲	909B	Teflon	sil. rubber	1 9/64	3/4	.224	improved
	17725▲	—	Teflon	sil. rubber	1 49/64	5/8	.219	improved/herm. sealed
55B, 58C, 223	31-3347	909C						MIL-C-39012/19-0001
58. 141	31-342	M23329/3-15	Teflon	—	1 25/64	1 1/16	.206	MIL-Crimp ■
59, 62, 71, 140, 210	31-343	M23329/3-19	Teflon	—	1 25/64	1 1/16	.261	MIL-Crimp ■
	31-207▲	910	Teflon	sil. rubber	1 1/8	1 1/16	.258	improved
	31-2207▲	910A	Teflon	sil. rubber	1 9/64	1 1/16	.258	improved
	31-3207▲	910B	Teflon	sil. rubber	1 9/64	1 1/16	.258	improved
	2075	624	Rexolite	syn. rubber	1 1/16	5/8	.258	front mounting
	2675	—	Rexolite	syn. rubber	1 9/64	5/8	.258	—

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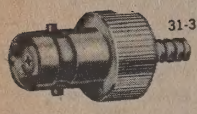
RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

BNC CONTINUED

33275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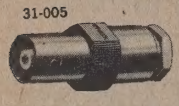
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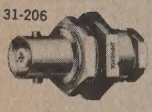
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BULKHEAD JACKS CONTINUED

RG/U Cable	Part No.	UG/U No.	Insulation	Clamp Gasket	Dimensions, Inches Length	O.D.	Cable Diam.	Notes
59B, 62A, 71B	31-3348	910C						MIL-C-39012/19-0002
71	31-344	—	Teflon	—	$1\frac{25}{64}$	$1\frac{1}{16}$	.275	MIL-Crimp ■
122	31-346	M23329/3-20	Teflon	—	$1\frac{3}{8}$	$1\frac{1}{16}$	.175	MIL-Crimp ■
122, 180, 195	31-345	M23329/3-21	Teflon	—	$1\frac{3}{8}$	$1\frac{1}{16}$	.175	MIL-Crimp ■
	84725	—	Teflon	sil. rubber	$1\frac{3}{64}$	$1\frac{1}{16}$	.177	improved
174, 179, 187, 188	31-245	—	Teflon	—	$1\frac{3}{8}$	$1\frac{1}{16}$	.115	MIL-Crimp ■
	31-318	—	Teflon	—	$1\frac{3}{8}$	$1\frac{1}{16}$	.115	MIL-Crimp ■
178, 196	86850	—	Teflon	sil. rubber	$1\frac{3}{64}$	$1\frac{1}{16}$	.098	improved
	31-347	—	Teflon	—	$1\frac{3}{8}$	$1\frac{1}{16}$	.175	MIL-Crimp ■

ANGLE BULKHEAD JACKS

RG/U Cable	Part No.	UG/U No.	Insulation	Clamp Gasket	Dimensions, Inches Length	O.D.	Cable Diam.	Notes
55, 58, 141, 142, 223	14325	—	—	syn. rubber	$1\frac{11}{32}$	$\frac{31}{64}$	.212	—
59, 62, 71, 140, 210	14225	—	—	sil. rubber	$1\frac{11}{32}$	$\frac{31}{64}$	.258	—

PANEL JACKS

RG/U Cable	Part No.	UG/U No.	Insulation	Clamp Gasket	Dimensions, Inches Length	Flange (Sq.)	Cable Diam.	Notes
8	6750	—	Teflon	syn. rubber	$1\frac{15}{32}$	1	.438	.125 dia. flange holes
55, 58, 141, 142	31-001	291	Teflon	syn. rubber	$1\frac{1}{8}$	$1\frac{1}{16}$	.214	△
223	31-020	291A	Teflon	—	$1\frac{5}{64}$	$1\frac{1}{16}$	.214	non-weatherproof/△
	31-201▲	291B	Teflon	sil. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.214	improved
	31-300▲	—	Teflon	sil. rubber	$1\frac{13}{64}$	$1\frac{1}{16}$	.221	improved/captivated cont
	31-2201▲	291C	Teflon	sil. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.221	improved
	1300	90	Teflon	syn. rubber	$1\frac{3}{64}$	$\frac{3}{4}$	.214	.136 dia. flange holes
55B, 58C, 141A, 142B, 223	31-3333	291D						MIL-C-39012/18-0002
59, 62, 71, 140,	31-011	262	Rexolite	sil. rubber	$1\frac{1}{8}$	$1\frac{1}{16}$	.259	△
210	31-023	262A	Rexolite	—	$1\frac{5}{64}$	$1\frac{1}{16}$	.259	non-weatherproof/△
	31-211▲	262B	Teflon	sil. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.258	improved
	31-303▲	—	Teflon	sil. rubber	$1\frac{13}{64}$	$1\frac{1}{16}$	.258	improved/captivated cont
	31-2211▲	262C	Teflon	sil. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.258	improved
	71000	—	Teflon	syn. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.259	male contact/polarized/△
59B, 62A, 71B	31-3334	262D						MIL-C-39012/18-0001
122	31-3335	1055						MIL-C-39012/18-0003
122, 180, 195,	16475	—	Rexolite	syn. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.177	△
	86400	—	Teflon	sil. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.160	improved
174, 179, 187, 188	86425	—	Teflon	sil. rubber	$1\frac{5}{64}$	$1\frac{1}{16}$	.117	improved

● Accommodates cable diameter

▲ To adapt connector for use with Amphenol CUJAK cable 421-668 specify accessory adapter kit 31-885.

△ May be front or rear mounted using "S" mounting hole, "R" hole for rear mounting only.

† Non-tarnish Astroplate finish available. To order: add suffix 1050 to part number. Other numbers also availa on special order from factory.

PANEL RECEPTACLES

Part No.	UG/U No.	Insulation	Dimensions Inches Length	Flange (Sq.)	Notes
31-003‡	290	Rexolite	$1\frac{1}{32}$	$1\frac{1}{16}$	
31-104	—	Polystyrene	$1\frac{5}{32}$	$\frac{3}{4}$	.140 dia. flange holes
31-105	—	Rexolite	$1\frac{1}{32}$	$1\frac{1}{16}$	.120 dia. flange holes
31-203‡	290A	Teflon	$1\frac{1}{16}$	$1\frac{1}{16}$	improved
31-3377	290B	—	—	—	MIL-C-39012/22-0001
31-817	447	Rexolite	$1\frac{1}{32}$	$1\frac{1}{16}$	.109 dia. flange holes
31-842	—	Teflon	$1\frac{1}{32}$	$1\frac{1}{16}$	
1100	928	Rexolite	$\frac{27}{32}$	$\frac{3}{4}$	spade term.
2775	—	Teflon	$1\frac{1}{16}$	$1\frac{1}{16}$	turret terminal
3150	—	Teflon	$1\frac{1}{4}$	$\frac{3}{4}$	male recept./.136 dia. flange holes
4500	185	Rexolite	$1\frac{5}{64}$	$\frac{3}{4}$	turret term/.136 dia. flange holes
13550	—	Teflon	$1\frac{5}{64}$	$\frac{3}{4}$	turret term/.136 dia. flange holes
14275	—	Rexolite	$1\frac{1}{32}$	$\frac{3}{4}$	.136 dia. flange holes
14375	—	Rexolite	$1\frac{1}{32}$	$1\frac{1}{16}$	.136 dia. flange holes
18225	—	Teflon	$\frac{25}{32}$	$1\frac{1}{16}$	printed cir./.092 dia. flange holes

STRAIGHT ADAPTERS

Part No.	UG/U No.	Insulation	Adapter Ends	Dimensions, In. Length	O.D.	Notes
31-218	491A	Teflon	plug-plug	$1\frac{1}{4}$	$\frac{9}{16}$	improved
31-219‡	914	Teflon	jack-jack	$1\frac{9}{32}$	$\frac{7}{16}$	improved
31-2218	491B	Teflon	plug-plug	$1\frac{1}{4}$	$\frac{9}{16}$	improved/beryl outer cont.
8425	491	Teflon	plug-plug	$1\frac{1}{4}$	$\frac{9}{16}$	—
21925	—	Teflon	plug-jack	$1\frac{17}{32}$	$\frac{9}{16}$	—
75000	—	Teflon	jack-jack	$1\frac{9}{32}$	$\frac{7}{16}$	—

ANGLE ADAPTERS

31-009	306	Teflon	jack-plug	1	$\frac{9}{16}$	—
31-209	306A	Teflon	jack-plug	$1\frac{1}{16}$	$\frac{9}{16}$	improved/beryl outer cont.
31-2209	306B	Teflon	jack-plug	$1\frac{1}{16}$	$\frac{9}{16}$	improved/beryl outer cont.

BULKHEAD RECEPTACLES

Part No.	UG/U No.	Insulation	Dimensions, Inches Length	O.D.	Max. Panel Thickness	Notes
5575‡	625	Rexolite	$1\frac{1}{32}$	$\frac{1}{2}$	.155	□
31-236‡	625B	Teflon	$1\frac{1}{16}$	$\frac{1}{2}$	.125	improved/□
31-3375	625C	—	—	—	—	MIL-C-39012/21-0001
31-102‡	657	Rexolite	$1\frac{19}{64}$	$\frac{37}{64}$	.200	pressurized/□
31-239	657A	Teflon	$1\frac{19}{64}$	$\frac{37}{64}$	.234	pressurized/□
31-238	912	glass-Teflon	$1\frac{13}{64}$	$\frac{19}{32}$	.250	improved/herm. sealed/ lug term./□
31-2238	912A	glass-Teflon	$1\frac{13}{64}$	$\frac{19}{32}$	.250	improved/herm. sealed/ lug term./□
31-221‡	1094	Teflon	$1\frac{1}{16}$	$\frac{1}{2}$	.104	improved/□
31-2221	1094A	Teflon	$1\frac{3}{16}$	$\frac{1}{2}$	.155	improved/□
31-3376	1094B	—	—	—	—	MIL-C-39012/21-0002
11300	—	Teflon	$1\frac{1}{32}$	$\frac{1}{2}$	.155	□
11325	—	Teflon	$1\frac{1}{32}$	$\frac{1}{2}$	.155	male contact/polarized/□
78725	—	glass-Teflon	$1\frac{7}{64}$	$\frac{19}{32}$	.145	improved/herm. sealed/ gold plt. cont.
86250	—	glass-Teflon	$1\frac{13}{32}$	$\frac{9}{16}$	.148	herm. seal./polarized/ plug (male) receptacle/□
87225	—	glass-Teflon	$1\frac{13}{32}$	$\frac{3}{4}$	.323	herm. sealed/ lug terminal/□
31-016	254A	Rexolite	$1\frac{15}{32}$	$\frac{13}{16}$	.152	pressurized
31-237	911A	glass-Teflon	$1\frac{13}{64}$	$1\frac{1}{16}$	.250	improved/lug term./ herm. sealed

ANGLE RECEPTACLES

31-222	1098	Teflon	$\frac{29}{32}$	$\frac{19}{32}$	.168	improved/□
31-2222	1098A	Teflon	$\frac{29}{32}$	$\frac{19}{32}$	.313	improved/□
5075	—	Teflon	$1\frac{1}{16}$	$1\frac{1}{16}$	.150	#3-56 flange holes
5675	535	Teflon	$1\frac{9}{32}$	$\frac{3}{4}$	.150	.140 dia. flange holes

BNC CONTINUE

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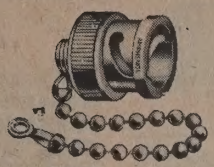
RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

TNC CONTINUED

31-220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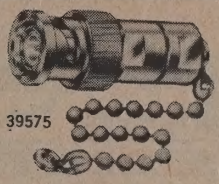
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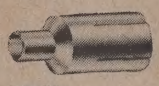
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31-759

BULKHEAD & PANEL ADAPTERS

Pt	UG/U No.	Insulation	Adapter Ends	Dimensions, Inches Length	O.D.	Max. Panel Thickness	Notes
0‡	492A	glass-Teflon	jack-jack	1 13/32	1 1/16	.181	improved/herm seal
20	492B	glass-Teflon	jack-jack	1 25/64	1 1/16	.163	improved/herm seal/O ring
20	492D	glass-Teflon	jack-jack	1 17/32	1 1/16	.275	improved/herm seal/O ring
52	—	Teflon	jack-jack	1 13/32	1 1/16	.170	—
70	414	Teflon	jack-jack	1 3/32	1 1/16	.250	panel mount
70	414A	Teflon	jack-jack	1 3/32	1 1/16	.260	improved/panel mount
50	—	glass-Teflon	plug-plug	1 11/16	1 3/16	.185	hermetically sealed

ADAPTERS

Pt	UG/U No.	Insulation	Adapter Ends	Dimensions, Inches Length	O.D.	Notes
08‡	274	Rexolite	jack-plug-jack	1 3/32	5/16	—
08	274A	Teflon	jack-plug-jack	1 3/32	5/16	improved/beryl outer cont.
08	274B	Teflon	jack-plug-jack	1 3/32	5/16	improved/beryl outer cont.
7	—	Teflon	plug-plug-plug	1 13/16	5/16	—
70	—	Rexolite	jack-jack-jack	1 3/32	1 1/16	panel mt, mtg hole R
0	—	Teflon	plug-jack-jack	1 17/32	3/8	—
70	—	Teflon	plug-jack-plug	1 13/16	7/16	—
35	—	Teflon	cable-plug-cable	1 3/4	5/16	RG-58/U cable/syn rubber clamps

RESISTOR TERMINATED CAPS

art o.	MX No.	Insulation	Dimensions, Inches Length	O.D.	Chain Length	Notes
7) □	554 (100 OHM)	Rexolite	1 1/4	5/16	3 1/2	—
95	554A	Teflon	1 1/4	5/16	3 1/2	100 ohm resistor
50 □	—	Teflon	1 1/4	5/16	3 1/2	—
25 □	—	Teflon	1 13/64	5/16	—	—
00 □	—	Rexolite	1 3/64	5/16	—	—
50	—	Teflon	1 1/2	5/16	—	51 or 75 ohm 1 watt resistor

order without resistor, add 1 to part number; to order with resistor, add sistor value to part number. ½ watt 5% resistor values (ohms) stocked: , 51, 68, 75, 82, 91, 100, 120, 130, 150, 180, 240, 270, 300, 470, 510, 0, 680, 750, 820, 1000, 1500, 3900, 4700, 10000, 100000, 150000.

MALE CAPS

Part No.	CW No.	Dimensions, Inches Length	O.D.	Chain Length	Notes
31-006	123	1 1/16	5/16	2 1/4	—
31-007	155	37/64	5/16	2 1/2	—
31-017	159	1 1/16	5/16	2 1/4	shorting male contact
31-026‡	123A	45/64	5/16	2 1/4	improved
31-027	155A	37/64	5/16	—	improved
900	—	23/32	5/16	3 1/2	—
5275	—	19/32	5/16	—	shorting male contact
87300	—	23/32	5/16	2 1/2	solder lug

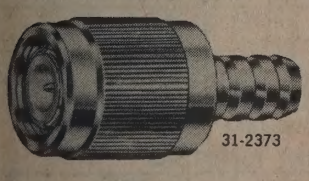
FEMALE CAPS

31-210	282	1 1/16	1/2	3	improved
1550	—	5/8	7/16	—	shorting female contact
1750	—	25/32	9/16	—	—
2025	—	25/32	5/16	3 1/2	—
15300	—	25/32	5/16	—	shorting female contact

HOODS & ACCESSORIES

Part No.	MIL No.	Length Inches	Notes
HOODS			
10900	MX-195	7/8	RG-55, 58/U cable, square flange
10925	MX-367	7/8	RG-55, 62/U cable square flange
87175	MX-195A	13/16	RG-55, 58, 59, 62/U cables, plug-in
NUT STRAP			
1600	MT-412	3/4	4 holes with no. 4-40 NC-2B thds
SHIELD GROUNDING LUG			
31-759‡	—	29/32	used on front-mount receptacles

L-Crimp TNC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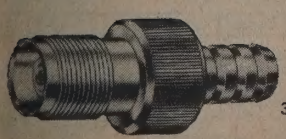
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STRAIGHT PLUGS

For RG-/U Cable	No.	MIL. No. M23329/	Ins.	Notes	Length
55, 142, 223	31-2373	4-02-04	T	GC	1 7/32
58, 141	31-2367	4-01-03	T	GC	1 7/32
59, 62, 140, 210	31-2368	4-05	T	GC	1 7/32
71	31-2369	—	T	GC	1 7/32
122	31-2371	—	T	GC	1 7/32
174, 188	31-2315	—	T	GC	1 7/32
179, 187	31-2242	—	T	GC	1 7/32
180, 195	31-2370	4-06	T	GC	1 7/32
A 21-597	31-2372	—	T	GC	1 7/32

STRAIGHT JACKS

55, 142, 223	31-2380	4-08	T	GC	1 3/8
58, 141	31-2374	4-07	T	GC	1 3/8
59, 62, 140, 210	31-2375	4-11	T	GC	1 3/8
71	31-2376	—	T	GC	1 3/8
122	31-2378	—	T	GC	1 3/8
179, 187	31-2244	—	T	GC	1 3/8
174, 188	31-2317	—	T	GC	1 3/8
180, 195	31-2377	4-12	T	GC	1 3/8
A 21-597	31-2379	—	T	GC	1 3/8

ANGLE PLUGS

For RG-/U Cable	No.	MIL. No. M23329/	Ins.	Notes	Length
55, 142, 223	31-2381	—	T	GC	1 3/16
58, 141	31-2382	—	T	GC	1 3/16
59, 62, 140, 210	31-2383	—	T	GC	1 3/16
71	31-2384	—	T	GC	1 3/16
122	31-2386	—	T	GC	1 3/16
179, 187	31-2243	—	T	GC	1 3/16
174, 188	31-2316	—	T	GC	1 3/16
180, 195	31-2385	—	T	GC	1 3/16
A 21-597	31-2387	—	T	GC	1 3/16

BULKHEAD JACKS

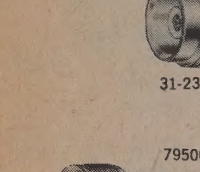
55, 142, 223	31-2388	4-14	T	GC	1 3/16
58, 141	31-2389	4-13	T	GC	1 3/16
59, 62, 140, 210	31-2390	4-17	T	GC	1 3/16
71	31-2391	—	T	GC	1 3/16
122	31-2393	—	T	GC	1 3/16
179, 187	31-2245	—	T	GC	1 3/16
174, 188	31-2318	—	T	GC	1 3/16
180, 195	31-2392	4-18	T	GC	1 3/16
A 21-597	31-2394	—	T	GC	1 3/16

TNC CONTINUED

RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

TNC continued — Standard Type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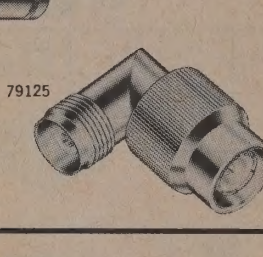
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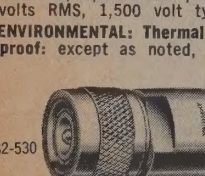
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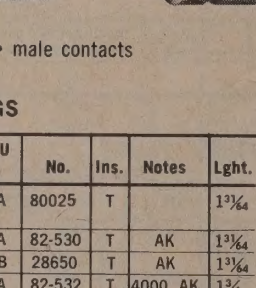

79125

50 ohm impedance • male contacts • weatherproof

STRAIGHT PLUGS

For RG-/U Cable	No.*	Ins.	Notes	Lgth.
55, 58, 141, 142, 223	77175	T	BOC	1 1/8
	79050	T	PF, BOC	1 1/8
	79875	T		1 1/16
	76175	T	GC, SW, BOC	1 1/8
59, 62, 71, 140, 210	79475	T	PF, BOC	1 1/8
	79525	T		1 1/8
122, 180, 195, 21-597	79725	T	BOC	1 1/8
180	78625	T		1
	79375	T	BOC	1 1/8
174, 179, 187, 188	73475	T		1 1/16

ANGLE PLUGS

55, 58, 141, 142, 223	79075	T	BOC	1 1/8
	79550	T	BOC	1 3/16
59, 62, 71, 140, 210	79400	T	BOC	1 3/32

*Add—1000 to part number to order connectors with safety wiring holes.

STRAIGHT JACKS

55, 58, 141, 142, 223	79600	T	GC	1 1/4
59, 62, 71, 140, 210	79450	T	PM	1 3/64
180, 195	7705C	T		1 7/64

BULKHEAD JACKS

55, 58, 141, 142, 223	77425	T	GC	1 7/64
59, 62, 71, 140, 210	77350	GT	H	1 27/32
180	77100	T		1 27/32

50 ohm impedance • female contacts non-weatherproof

PANEL RECEPTACLES

No.	Ins.	Notes	Lgt
31-2300	T	GC	1
78200	T	GC, PM	1
79650	T	GC	1
79750	GT	GC, H	2

BULKHEAD RECEPTACLES

31-2301	T	GC, FM	1
77300	T	GC, *FM	2
79775	T	GC, FM	2
79800	GT	H, FM	1

*Gold Plated

50 ohm impedance • non-weatherproof

ANGLE ADAPTERS

No.	Ins.	Adapter Ends	Lgth.
79125	T	PJ	1 1/32

BULKHEAD ADAPTERS (Hermetically Seal

79100	GT	JJ	1 13/32

TEE ADAPTERS

79700	T	JPJ	1 9/32

MALE CAPS non-weatherpr

No.	Lgth.
78750	3/8

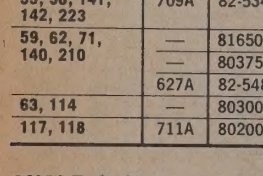
FEMALE CAPS

78400	37/64

Series C

CHARACTERISTICS

ELECTRICAL: Impedance: 50 ohm constant. **Frequency Range:** 0-10 GHz, 1,500 volt type; 0-2 GHx, 4,000 volt type. **Voltage Rating:** 1,500 volts peak—standard; 4,000 volts peak as noted. **Dielectric Withstanding Voltage:** 3,000 volts RMS, 1,500 volt type; 6,000 volts RMS, 4,000 volt type. **SWR:** 1.25.
ENVIRONMENTAL: Thermal Limits: —67° to 390°F (—55° to 199°C). **Weatherproof:** except as noted, all C Series connectors are Weatherproof. **Hermetic Seals:** pass helium leak test of 2x10-8 cc/sec. **Pressurized:** compression se
MECHANICAL: Mating: 2-stud bay net lock. **Cable Affixment:** Improved: scr thread nut and braid clamp.
MATERIAL: Contacts: male: brass; female and outer: beryllium copper. Ot **Metal Parts:** brass. **Plating:** .0002" silver min. **Insulators:** Teflon, gla Teflon (herm. sealed). **Weatherproof Gaskets:** silicone rubber.
MILITARY SPECIFICATIONS: Meet applicable sections of MIL-C-3989.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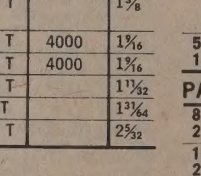
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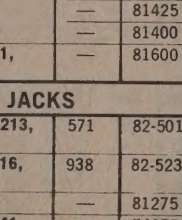
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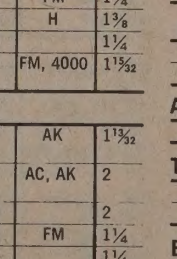
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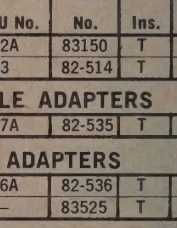
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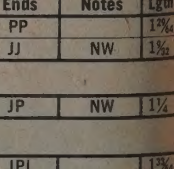
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50 ohm impedance • male contacts weatherproof

STRAIGHT PLUGS

For RG-/U Cable	UG-/U No.	No.	Ins.	Notes	Lght.
5, 21, 143, 212, 222	626A	80025	T		1 31/64
8, 9, 87, 213, 214, 225	573A	82-530	T	AK	1 31/64
	573B	28650	T	AK	1 31/64
	628A	82-532	T	4000, AK	1 3/4
	—	79150	T	4000, PF	1 3/4
10, 12, 116, 215, 227	943A	82-538	T	AC, AK	2 1/8
14, 217	707A	82-533	T		1 7/16
17, 218	708A	80075	T		2 5/32
55, 58, 141, 142, 223	709A	82-534	T		1 3/8
59, 62, 71, 140, 210	—	81650	T	4000	1 7/16
	—	80375	T	4000	1 7/16
	627A	82-548	T		1 11/32
63, 114	—	80300	T		1 31/64
117, 118	711A	80200	T		2 5/32

ANGLE PLUGS

8, 9, 87, 213, 214, 225	710A	82-531	T		1 3/8
55, 58, 141 142, 223	—	80775	T		1 5/16

STRAIGHT JACKS

For RG-/U Cable	UG-/U No.	No.	Ins.	Notes	Lght.
8, 9, 87, 213, 214, 225	572	82-503	T		1 13/32
55, 58, 141, 142, 223	—	81575	T		1 1/4
59, 62, 71, 140, 210	—	81550	T		1 1/4

BULKHEAD JACKS

8, 9, 87, 213, 214, 225	570	82-502	T	AK	1 19/32
	570A	82-614	T		1 19/32
	632	82-521	T	4000, AK	1 1/16
10, 12, 116, 215, 227	937	82-522	T		2
55, 58, 141, 142	704	81175	T		1 1/4
	704A	74475	T	FM	1 1/4
	—	81425	gT	H	1 3/8
	—	81400	T		1 1/4
59, 62, 71, 140, 210	—	81600	T	FM, 4000	1 13/32

PANEL JACKS

8, 9, 87, 213, 214, 225	571	82-501	T	AK	1 13/32
10, 12, 116, 215, 227	938	82-523	T	AC, AK	2
	—	81275	T		2
55, 58, 141, 142	—	74675	T	FM	1 1/4
	—	81150	T		1 1/4
59, 62, 71, 140, 210	—	81100	T	FM	1 1/4

female contacts • 50 ohm impedance weatherproof

PANEL RECEPTACLES

UG-/U No.	No.	Ins.	Notes	Lgth.
568	82-504	T		1 3/32
—	82275	T		1 5/16

BULKHEAD RECEPTACLES

569	82-505	T		1 3/32
634	82-515	T	4000	1 5/16
705	82-511	GT	H	1 7/16
706	82125	T	FM	1 5/32

50 ohm impedance • weatherproof

STRAIGHT ADAPTERS

UG-/U No.	No.	Ins.	Adapter Ends	Notes	Lgth
642A	83150	T	PP		1 3/4
643	82-514	T	JJ	NW	1 3/4

ANGLE ADAPTERS

567A	82-535	T	JP	NW	1 1/4

TEE ADAPTERS

566A	82-536	T	JPJ		1 3/4
—	83525	T	CJC	RG-13/U	2 3/4

BULKHEAD ADAPTERS

701	83050	GT	JJ	H,	1 1/8
—	82250	GT	JJ	H, 4000	2 1/32

SERIES C CONTINU

© United Technical Publication

RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

ies C CONTINUED

contact • weatherproof

STOR TERMINATED CAP

(No.	No.	Notes	Length
—	83925	*	1 5/16

resistor value (ohms) to part no. when ordering: 51, 75, 82, 91, 100, 120, 130, 150, 180, 240, 300, 470, 510, 560, 680, 750, 820, 1000, 1500, , 4700, 10000, 150000.

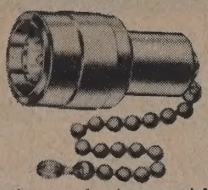
E CAPS weatherproof

142	82-512	—	5/64
—	83675	SMC	7/8

ALE CAPS

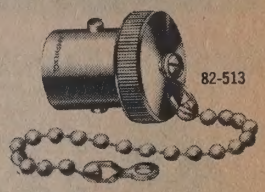
143	82-513	—	27/32
—	83700	SFC	1 3/16

83925



82-512

82-513

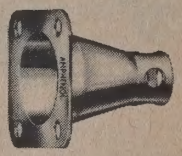


weatherproof • improved N type

ARMOR CLAMPS

For RG-/U Cable	MX No.	No.	Length
10, 12, 79, 116, 215, 227	1286	82-517	1 1/8
18, 219	1441	92100	1 3/8
74, 224	1462	16850	1 3/16

82-510



82-517

HOODS non-weatherproof

MX No.	No.	Notes	Length
—	82-510	—	3/4

ries N

ium-size, weatherproof, threaded coupling units that may sed in systems up to microwave. This series was the orig- microwave connector developed during World War II and R is consistently low across this broad frequency spectrum. ilable in Regular, Improved and Improved/Captivated tact constructions and have the MIL-Crimp/MIL-Clamp ns to MIL-C-39012. For further information, request *xial Connectors Catalog CC-6*, or contact your distributor.

HRACTERISTICS

TRICAL: Impedance: as noted, 50 or 70 ohms. **Frequency Range:** 0-10 GHz. **ge Rating:** 1,500 volts peak (1,000 v ■). **Dielectric Withstanding Voltage:** volts rms (2,500 and 1,500 vrms at 50 MHz■). **SWR:** MIL-Crimp/MIL-Clamp: (solder) 1.35 per spec; others; 1.25. **Other:** contact resistance 1.0 mv, RF ge —90db, insertion loss .15 db, insulation resistance 5,000 megohms.

VIRONMENTAL: Thermal Limits: Teflon: —67°F to 390°F (—55° to 199°C); ite: —67°F to 185°F (—55° to 85°C). **Weatherproof:** all Series N with gas- are weatherproof. **Hermetic Seals:** pass helium leak test of 2 x 10^{-8} cc/sec.

Pressurized: compression seal. **Shock:** MIL-Std. 202 method 202. **Vibration:** MIL-Std. 202 method 204 (test cond. B). **Moisture Resistance:** MIL-Std. 202 method 106. **Corrosion:** MIL-Std. 202 method 101 (test cond. B). **Temperature:** MIL-Std. 202 method 102 (test cond. C). **Altitude:** MIL-Std. 202 method 105 (test cond. C).

MECHANICAL: Mating: 5/8-24 threaded coupling. **Cable Affixment (Braid or Jacket):** MIL-Crimp: hex crimp; all others: screw-thread nut and braid clamp. **Cable Affixment (Center Conductor):** MIL-Crimp/MIL-Clamp: 4 indent crimp, hex crimp or solder. All others: solder. **Captivated Contact:** all MIL-Crimp/MIL-Clamp; others, where specified. **Cable Retention:** MIL-Crimp/MIL-Clamp 90-120 lbs. (70 lb. per MIL-Spec). All others 30-70 lbs.

MATERIAL: Contacts: male: brass; female: MIL-Crimp/MIL-Clamp phosphor bronze; all others: beryllium copper; Outer: MIL-Crimp/MIL-Clamp. Improved phosphor bronze, all others: brass or phosphor bronze. **Other Metal Parts:** brass. **Plating:** center contacts, MIL-Crimp/MIL-Clamp: .0001" gold over .0001" copper, all other: .0002" silver. **Insulators:** Teflon (all MIL-Crimp/MIL-Clamp) Rexolite, glass-Teflon (herm. seal). **Weatherproof Gaskets:** silicone rubber (all MIL-Clamp) synthetic rubber. **Crimp Ferrule:** copper.

MILITARY SPECIFICATIONS: MIL-Crimp/MIL-Clamp: MIL-C-39012; Standards: MIL-C-71B.

■ Per MIL-C-39012 Spec. (applied to MIL-Crimp/MIL-Clamp connectors).

L-Crimp N

weatherproof • captivated center contact
50 ohms impedance • male contacts

82-340

82-349

82-343

82-337

82-346

STRAIGHT PLUGS

For RG-/U Cable	No.	MIL. No. M39012/	UG-/U No.	Ins.	Lgth.
5, 21, 143, 212, 222	82-341	01-0006	1680	T	1 31/64
8, 213	82-340	01-0007	1681	T	1 31/64
9, 214	82-332	01-0008	1682	T	1 31/64
11, 149	82-342	01-0013	1695	T	1 31/64
55, 142, 223	82-5370	—	—	T	1 31/64
58, 141	82-5375	—	—	T	1 31/64
59, 62, 71, 140, 210	82-5380	—	—	T	—

ANGLE PLUGS

5, 21, 143, 212, 222	82-5350	—	—	T	1 5/16
8, 213	82-349	05-0002	1707	T	1 5/16
9, 214	82-336	05-0003	1708	T	1 5/16
11, 149	82-5351	—	—	T	1 5/16
55, 142, 223	82-5374	—	—	T	1 5/16
58, 141	82-5379	—	—	T	1 5/16

female contacts

STRAIGHT JACKS

5, 21, 143, 212, 222	82-338	02-0007	1687	T	1 5/16
8, 213	82-337	02-0008	1688	T	1 5/16
9, 214	82-333	02-0009	1689	T	1 5/16
11, 149	82-339	02-0014	1694	T	1 5/16
55, 142, 223	82-5371	—	—	T	1 5/16
58, 141	82-5376	—	—	T	1 5/16

PANEL JACKS

5, 21, 143, 212, 222	82-344	02-0015	1696	T	1 5/16
8, 213	82-343	02-0016	1697	T	1 5/16
9, 214	82-334	02-0017	1698	T	1 5/16
11, 149	82-5345	—	—	T	1 5/16
55, 142, 223	82-5372	—	—	T	1 5/16
58, 141	82-5377	—	—	T	1 5/16

BULKHEAD JACKS

5, 21, 143, 212, 222	82-347	03-0003	1699	T	1 27/32
8, 213	82-346	03-0004	1700	T	1 27/32
9, 214	82-335	03-0005	1701	T	1 27/32
11, 149	82-348	03-0010	1706	T	1 27/32
55, 142, 223	82-5373	—	—	T	1 27/32
58, 141	82-5378	—	—	T	1 27/32

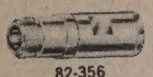
MIL-Clamp N

weatherproof • captivated center contact
50 ohm impedance • male contacts

82-357

82-360

82-356



32-364

STRAIGHT PLUGS

For RG-/U Cable	No.	MIL. No. M39012/	UG-/U No.	Ins.	Lgth.
5, 21, 143, 212, 222	82-354	01-0001	18F	T	1 25/32
8, 9, 213, 214	82-352	01-0005	1185B	T	1 25/32
	82-352-1	01-0002	21H	T	1 25/32
11, 13, 149, 216	82-5355	—	—	T	1 25/32
55, 58, 141, 142, 223	82-5381	—	—	T	1 25/32
59, 62, 71, 140, 210	82-5386	—	—	T	1 25/32

ANGLE PLUGS

5, 21, 143, 212, 222	82-5361	—	—	T	1 1/2
8, 9, 213, 214	82-357	05-0001	594C	T	1 1/2
11, 13, 149, 216	82-5353	—	—	T	1 1/2
55, 58, 141, 142, 223	82-5385	—	—	T	1 1/2

female contacts

STRAIGHT JACKS

5, 21, 143, 212, 222	82-358	02-0001	20F	T	1 7/8
8, 9, 213, 214	82-356	02-0003	1186B	T	1 7/8
	82-356-1	02-0002	23G	T	1 7/8
11, 13, 149, 216	82-5359	—	—	T	1 7/8
55, 58, 141, 142, 223	82-5382	—	—	T	1 7/8

PANEL JACKS

5, 21, 143, 212, 222	82-362	02-0004	19F	T	1 17/32
8, 9, 213, 214	82-360	02-0006	1187B	T	1 17/32
	82-360-1	02-0005	22G	T	1 17/32
11, 13, 149, 216	82-5363	—	—	T	1 17/32
55, 58, 141, 142, 223	82-5383	—	—	T	1 17/32

BULKHEAD JACKS

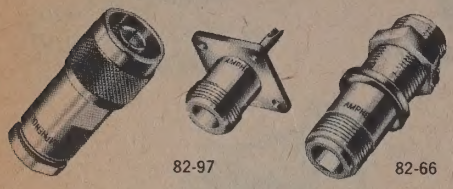
5, 21, 143, 212, 222	82-366	03-0001	159D	T	1 51/64
8, 9, 213, 214	82-364	03-0002	160E	T	1 51/64
11, 13, 149, 216	82-5365	—	—	T	1 51/64
55, 58, 141, 142, 223	82-5384	—	—	T	1 51/64

SERIES N CONTINUED

RF COAXIAL CONNECTORS

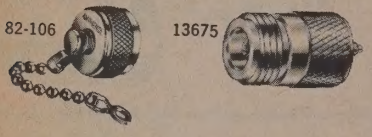
AMPHENOL
THE BUNKER-RAMO CORPORATION

Standard Type N

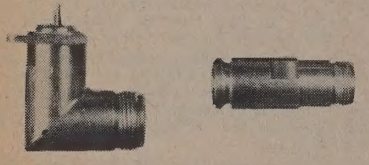


82-97 82-66

82-86



82-106 13675



male contacts • weatherproof

STRAIGHT PLUGS

For RG-/U Cable	UG-/U No.	No.	Imp. Ohms.	Ins.	Notes	Lgth.
5, 21, 143 212, 222	18	3400	50	R	NW	2
	18B	82-86	50	T		1 7/8
	18C	82-203	50	T	I	1 1/2
	18D	82-3203	50	T	I, SW	1 1/2
6	91A	7200	70	T		1 3/4
8, 9, 213, 214	21	3900	50	R		2
8, 9, 87, 213, 214, 225	21B	82-61	50	T	AK	1 7/8
	21C	82-96	50	T	AK	1 7/8
	21D	82-202	50	T	I, SW, AK	1 1/2
	21E	82-3202	50	T	I, SW, AK	1 1/2
	1185	82-312	50	T	I, CC, AK	1 1/2
	1185A	82-3312	50	T	I, CC, AK	1 1/2
10, 12, 116, 215, 227	941A	82-204	50	T	I, AC, AK	2 1/8
	941B	82-3204	50	T	I, AC, AK	2 1/8
11, 13. 149, 216	94A	82-84	70	T	AK	1 7/8
	—	91150	75	T	I	1 1/2
14, 217	204A	82-105	50	R		2
	204C	82-214	50	T	I	1 31/32
17, 218	167A	82-104	50	T		2 3/8
	167D	82-215	50	T	I, SW	2 1/8
	167F	82-3215	50	T	I, SW	2 1/8
18, 219	982	92125	50	T	I	3
55, 58, 141, 142	188	23250	50	R	NW	1 3/4
	536	34000	50	R		2 1/8
	536B	24025	50	T	I	1 3/8
35	—	82-113	70	T		2 3/8
59, 62, 71, 140, 210	603	34500	50	R		1 23/32
	603A	34525	50	T	I	1 3/8
	—	34750	70	T	I	1 5/8
	—	91300	70	T	I	1 3/8
63, 114	1003	12400	50	T		1 3/4

ANGLE PLUGS

5, 21, 143, 212, 222	—	15950	50	T	I	1 3/8
8, 9, 87, 213, 214, 225	594A	15425	50	T		1 7/16
	—	82-326	50	T	I, CC	1 11/64
	—	82-835	50	T		1 7/16
	—	6875	50	T		1 5/8
	—	15975	50	T	I	1 9/32
11, 13, 149, 216	—	17025	70	T		1 5/8

ANGLE PLUGS CONTINUED

For RG-/U Cable	UG-/U No.	No.	Imp. Ohms.	Ins.	Notes	Lgth.
55, 58, 141, 142	—	18750	50	T		1 5/8
59, 62, 71, 140, 210	—	19250	50	T		1 5/8

female contacts • weatherproof

STRAIGHT JACKS

5, 21, 143, 212, 222	20	42000	50	R		2
	20B	82-88	50	T		1 15/16
	20C	82-210	50	T	I	1 7/16
	20D	82-3210	50	T	I	1 7/16
6	92A	7700	70	T		1 7/8
	—	91225	75	T	I	1 7/16
8, 9, 213, 214	23	48000	50	R	NW	2
8, 9, 87, 213, 214, 225	23A	7600	50	R		1 7/8
	23B	82-63	50	T		1 15/16
	23C	82-94	50	T	I	1 13/16
	23D	82-209	50	T	I	1 7/16
	23E	82-3209	50	T	I	1 7/16
	1186	82-313	50	T	I, CC	1 7/16
10, 12, 116, 215, 227	940A	82-212	50	T	I, AC	2 1/4
	940B	82-3212	50	T	I, AC	2 1/4
11, 13, 149, 216	95A	82-89	70	T		1 15/16
17	—	14850	50	T		2 3/16
55, 58, 141 142	—	35000	50	R		1 13/16
	—	35025	50	T	I	1 1/2
59, 62, 71, 140, 210	602	36500	50	R		1 5/8

PANEL JACKS

5, 21, 143, 212, 222	19	3500	50	R		2
	19B	82-87	50	T		1 13/16
	19C	82-207	50	T		1 7/16
	19D	82-3207	50	T	I	1 7/16
6	93A	7800	70	T		1 7/8
8, 9, 87, 213, 214, 225	22B	82-62	50	T		1 13/16
	22C	82-95	50	T		1 13/16
	22D	82-208	50	T		1 7/16
	22E		50	T	I	1 7/16
	1187	82-314	50	T	I, CC	1 7/16
10, 12, 116, 215, 227	935A	82-211	50	T	I	2 1/4
	935B	82-3211	50	T	I	2 1/4
11, 13, 149, 216	96A	82-90	70	T		1 13/16
55, 58, 141, 142	1052	36000	50	R		1 13/16
55, 58, 141, 142, 223	1095A	36250	50	T	I	1 1/2
59, 62, 71, 140, 210	593	35500	50	R		1 13/16
	—	35550	70	T		1 13/16
	—	91250	70	T	I	1 1/2

BULKHEAD JACKS

5, 21, 143, 212, 222	159B	15550	50	T	I	1 3/4
8, 9, 87, 213, 214, 225	160A	82-67	50	T		1 13/16
	160B	82-93	50	T		1 13/16
	160D	91025	50	T	I	1 3/4
8, 9, 213, 214	—	23025	50	gT	H	2 5/32
55, 58, 141, 142	556	35250	50	T		1 13/16
55, 58, 141, 142, 223	556B	35275	50	T	I	1 43/64
59, 62, 71, 140, 210	—	18250	50	R		1 27/32

male • male contact • weatherproof

PANEL RECEPTACLES

UG-/U No.	No.	Imp. Ohms	Ins.	Notes	Lgth.
—	49000	50	R	FM	1 3/32

PANEL RECEPTACLES CONTINUED

female • female contacts • weatherproof

UG-/U No.	No.	Imp. Ohms	Ins.	Notes	Lg
58	82-24	50	T		1
58A	82-97	50	T		1
58B	82-368	50	T	M39012/ 04-0002	1
231	2750	50	R	RG-58/U	1
—	82-112	70	T		1
—	9575	50	T		1

BULKHEAD RECEPTACLES

680	82-811	50	GT	H, FM	1
680B	82-369	50	G	M39012/ 04-0001	1
—	13275	50	gT	H, FM	1
—	31150	50	T	W, FM	1
—	19550	50	GT	H, FM	1

ANGLE RECEPTACLES

997A	8975	50	T		1
—	23775	50	T		1

weatherproof

STRAIGHT ADAPTERS

UG-/U No.	-No.	Imp. Ohms.	Ins.	Notes	Adapter Ends	Lg
29	15000	50	R		JJ	1
29A	82-65	50	T		JJ	1
29B	82-101	50	T		JJ	1
57A	45250	50	T		PP	1
57B	82-100	50	T		PP	1
—	17075	70	T		PP	1
—	21650	70	T		JJ	1

ANGLE ADAPTERS

27A	82-64	50	T		JP	1
27B	82-98	50	T		JP	1
27C	82-213	50	T		JP	1

BULKHEAD ADAPTERS

30	82-66	50	R	P	JJ	1
30C	82-201	50	G	H	JJ	1
30D	91100	50	G	H	JJ	1
—	82-849	50	T	P	JJ	1
—	90950	50	G	H	JJ	1

TEE ADAPTERS

28A	82-99	50	T		JJJ	1
107	4800	50	R		JPJ	3
107A	82-36	50	T		JPJ	2
107B	82-102	50	T		JPJ	1
—	4850	50	R		PPP	3

CROSS ADAPTERS

—	17125	50	T		JJJJ	2

weatherproof

MALE CAPS

MX No.	No.	Notes	Length
913	82-106		5/16
—	9225		5/16
—	13700	SMC	27/32
—	18575		5/16

FEMALE CAPS

—	6950		31/32
—	13675	SFC	1

non-weatherproof

ARMOR CLAMPS

For RG-/U Cable	MX No.	No.	Notes	Lgth
10, 12, 79, 116, 215, 227	564	82-48	N or HN	7/16
	564A	82-109	N or HN	1 1/16
	1286	82-517	I	1 1/4
18, 219	1441	92100	I	1 3/4
74, 224	1462	16850	I, W	1 1/16

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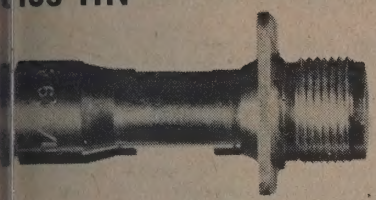
RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

ies HN



henol HN Series are constant 50 ohm im-nce connectors designed for high voltage ap-ctions. Connectors are weatherproof and are able in Regular, Improved and Improved/ ivated Contact constructions.

nphenol's patented Captivated Contact Design ents possible contact recession under tempera-extremes. Contacts are fixed within the con-or body by front and rear contact insulators butt against metal body parts.

RACTERISTICS, TYPICAL

RICAL: Frequency range: 0 — 4GHz. **Voltage rating:** 1,500 peak; **dielectric withstanding voltage:** 5,000 volts rms. 1.3.

IRONMENTAL: Thermal limits: Teflon insulation: —67° to (—55° to 199°C); Rexolite insulation: —67° to 185°F to 85°C). **Weatherproof:** all HN Series are weatherproof. tic seals: pass helium lead test of 2×10^{-8} cc/sec. urized: Compression seal.

CHANICAL: Mating: ¾ —20 threaded coupling. **Cable affix-** screw-thread nut and braid clamp.

TERIALS: Contacts: male: brass; female: beryllium copper; brass; **other metal parts:** brass. **Plating:** .0002" silver min. tors: Teflon, Rexolite, glass-Teflon (hermetic seal). **Weather-** gaskets: synthetic rubber; silicone rubber.

ITARY SPECIFICATIONS: HN Connectors meet applicable ns of MIL-C-3643.

STRAIGHT JACKS

RG/U Cable	Part No.	UG/U No.	Insulation	Clamp Gasket	Dimensions, Inches Length	O.D.	Diam.	Notes
8, 9, 87, 213, 214, 225	82-39	60A△	Rexolite	syn. rubber	2½	1 3/16	.444	—
	82-814	60B△	Teflon	sil. rubber	2½	1 1/16	.444	modified cable clamp
	82-321	1214△	Teflon	sil. rubber	2⅞	1 1/16	.444	improved/captivated contact
10, 12, 116, 215, 227	33250	927	Teflon	sil. rubber	3	¾	—	armor clamp
17, 218	82-107	333A	Rexolite	syn. rubber	2 7/16	1 5/16	.900	modified cable clamp
	44025	333B	Teflon	sil. rubber	2½	1 5/16	.900	improved
18	82-56	333	Rexolite	syn. rubber	2¾	1⅜	.900	armor clamp
	82-175	—	Teflon	nat. rubber	2½	¾	.333	82-887 kit clamping

PANEL JACKS

8, 9, 87, 213, 214, 225	82-40	61A△	Rexolite	syn. rubber	2½	1 3/16	.444	—
	11150	61C△	Teflon	sil. rubber	2 5/16	1 3/16	.444	improved
	82-815	61B△	Teflon	sil. rubber	2½	1 3/16	.444	modified cable clamp
	82-324	1215△	Teflon	sil. rubber	2 15/16	1 3/16	.444	improved/captivated contact
17	82-108	334A	Rexolite	syn. rubber	2 7/16	1 5/16	.960	modified cable clamp
18	82-57	334	Rexolite	syn. rubber	2¾	2	.984	armor clamp/.257 dia. flange holes

△ Amphenol adapter kit 82-887 will adapt connector for use with ALJAK/CUJAK metal jacketed cables.

STRAIGHT PLUGS

8, 9, 87, 213 214, 225	82-38	59A△	Rexolite	syn. rubber	2⅜	⅞	.444	—
	82-804	59B△	Teflon	sil. rubber	2⅜	⅞	.444	modified cable clamp
	82-320	1213△	Teflon	sil. rubber	2¾	⅞	.444	improved/captivated contact
	17900	59D△	Teflon	sil. rubber	2 1/32	⅞	.444	improved/beryl. outer contact
10, 12, 116, 215, 227	9375	925	Teflon	sil. rubber	2 49/64	2 1/32	.511	armor clamp
14, 217	8125	494	Rexolite	sil. rubber	2	1	.562	—
17, 218	82-111	495A	Rexolite	syn. rubber	2 11/16	1 5/16	.900	—
	82-325	—	Rexolite	syn. rubber	2 11/16	1 5/16	.900	captivated contact
	30350	495D	Teflon	sil. rubber	2 13/32	1 5/16	.900	improved/beryl. outer contact
54A	82-816	—	Teflon	sil. rubber	1 13/16	⅞	.257	—
55, 58, 141 142	16750	—	Teflon	syn. rubber	1 13/16	2 1/32	.214	—

ANGLE PLUGS

RG/U Cable	Part No.	Insulation	Cable Clamp	Dimensions, Inches Length	O.D.	Cable Diam.	Notes
8, 9, 87, 213, 214, 225	82-833	Rexolite	sil. rubber	1½	⅞	.444	—
	82-856	Teflon	sil. rubber	1½	⅞	.444	—
55, 58, 141 142	19625	Teflon	syn. rubber	1⅜	⅞	.214	1500 VRMS

EL RECEPTACLES

t No.	UG/U No.	Insulation	Dimensions, Inches Length	O.D.	Max. Panel Thickness
-92	496	Rexolite	1 17/32	1 3/16	—
-805	560	Teflon	1⅞	1 3/16	—
750	—	Teflon	1½	1 3/16	—

le contacts • hermetically sealed

LKHEAD RECEPTACLES

-836	—	glass-Teflon	1¾	1 3/16	.187
-843	—	glass-Teflon	1 49/64	1¼	.187

ends • weatherproof • 50 ohm impedance

AIGHT ADAPTER

800	—	Teflon	2⅛	⅞	—

GLE ADAPTERS

t No.	UG/U No.	Insulation	Adapter Ends	Dimensions, Inches Length	O.D.	Notes
-91	212A	Rexolite	jack-plug	1 15/32	⅞	—
-115	212C	Teflon	jack-plug	1 15/32	⅞	beryl. outer contact
100	212B	Teflon	jack-plug	1 7/16	⅞	modified const.

LKHEAD ADAPTER

rt No.	UG/U No.	Insulation	Dimensions, Inches Length	O.D.	Max. Panel Thickness
1050	1019	Teflon	1 31/32	1	.343

TEE ADAPTERS

Part No.	UG/U No.	Insulation	Length In Inches
9950	413	Rexolite	1 15/16
11950	—	Teflon	1 15/16

ARMOR CLAMPS

RG/U Cable	Part No.	MX No.	Dimensions, Inches Length	O.D.	Cable Diam.	Notes
10, 12, 79, 116, 215, 227	82-48	564	⅞	1 1/16	.470	use with regular const.
	82-109	564A	1 1/16	1 1/16	.511	use with regular const.
	82-517	1286	1⅛	¾	.511	use with improved connectors
18, 219	92100	1441	1⅜	1 5/16	.963	use with improved connectors
74, 224	16850	1462	1 3/16	⅞	.625	use with improved connectors

male contact • weatherproof • ½ watt ± 5% resistor • 48 ohms impedance

RESISTOR TERMINATED CAP

Part No.	DA No.	Insulation	Dimensions, Inches Length	O.D.	Chain Length
9550	12A	Rexolite	1¼	2 1/32	2¼

MALE CAPS • weatherproof

Part No.	Dimensions, Inches Length	O.D.	Chain Length	Notes
82-130	19/32	⅞	2 1/16	—
9900	7/16	⅞	—	cap only
10250	7/16	⅞	2¼	—

FEMALE CAPS

13650	29/32	⅞	4	—

RF COAXIAL CONNECTORS

AMPHENOL
THE BUNKER-RAMO CORPORATION

Series UHF

Series UHF are low-cost, general purpose connectors for use in a wide variety of lower frequency applications (up to 300 mc) where constant impedance is not necessarily required. Available in small and large body sizes, they have a peak voltage rating of 500 volts.

While most UHF connectors have conventional solder-type cable affixment, Quick-Crimp UHF feature Amphenol's patented hex crimp design which permits faster, easier and more reliable assembly.

The 83-850 and 83-851 plugs eliminate one or both of two common soldering operations in assembly. The 83-850 has completely solderless braid and contact assembly; the 83-851 has solderless braid assembly.

CHARACTERISTICS

ELECTRICAL: Impedance: non-constant. **Frequency range:** 0-300 MHz. **Volt rating:** 500v. peak.

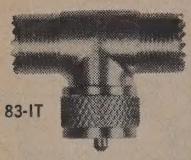
ENVIRONMENTAL: Thermal limits: Teflon: —67°F to 390°F; Rexolite and po styrene: —67°F to 185°F; mica-filled Bakelite: —67°F to 300°F. **Non-weath proof,** except as noted.

MECHANICAL: Mating: 5/8-24 thrd. coupling (small body), 1-20 thrd. coupli (large body). **Cable affixment:** braid solder, Quick Crimp or Solderless.

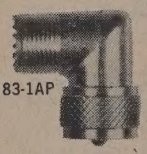
MATERIAL: Contacts: male: brass; female: beryllium copper. **Bodies:** die c zinc or brass. **Plating:** .0002" silver min. **Insulators:** Teflon, Rexolite, po styrene or mica-filled Bakelite.

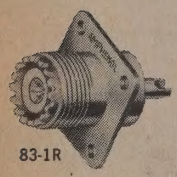
OTHER DATA: small and large body types do not intermate. UHF connect ordered will be small size body unless large is specified.

83-ISP


83-IT

83-1J


83-1AP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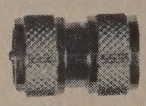
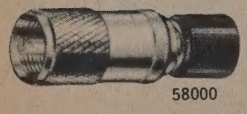

83-877

83-1AC

83-1BC


58000

non-constant impedance • male contacts
non-weatherproof
small body, except as noted

STRAIGHT PLUGS

For RG-/U Cable	MIL No.	No.	Ins.	Notes	Lgth.
8, 9, 11, 13,	PL-259	83-822 †	T		1½
63, 87, 149,	PL-259	83-ISP †	FB		1½
213, 214, 216,	PL-259A	83-756	T		1 9/16
225	PL-259A	83-ISPN †	FB		1 9/16
	—	83-ISP-1002	FB		1½
	—	83-851	FB	SBC	1 43/64
8, 11, 149, 213	—	83-87	B	QC	1 23/32
11, 149	—	83-850	FB	SC, SBC	1 43/64
17, 218	—	83-86	T		2 1/8
	—	10450	R		2 1/8
34	UG-358/U	83-21SP	FB	LB, W	1 13/16
55, 142, 223	—	83-90	B	QC	1 23/32
58, 141	UG-203/U	83-776	FB		1 9/16
	—	83-89	B	QC	1 23/32
59, 62, 71,	UG-111/U	83-750	FB		1 11/16
140, 210	—	83-88	B	QC	1 23/32

small body

ANGLE PLUGS

For RG-/U Cable	MIL No.	No.	Ins.	Notes	Lgth.
8, 9,11 13, 63	—	83-67	T		1 3/8
87, 149, 213, 214, 216, 225	—	83-59	PST		1 3/8

non-constant impedance
female contact • non-weatherproof
small body, except as noted

PANEL RECEPTACLES

MIL No.	No.	Ins.	Notes	Lgth.
SO-239	83-1R†	FB		1 1/16
SO-239A	83-798	T		1 1/16
UG-357/U	83-21R	FB	LB	1 3/64
—	83-716	C	P	1 3/16
—	83-876	B	—	1 1/16
—	83-878†	—	Single Hole	—

small body

BULKHEAD RECEPTACLES

UG-266/U	4575	R	P	1 13/32
—	83-875	R, T	FM	1 3/32
—	71525	GT	H, RM	1 13/32
—	83-875-1002	RT	FM	1 3/32

non-constant impedance • non-weatherproof
small body, except as noted
adapter ends are Jack-Jack

STRAIGHT ADAPTERS

UG-/U No.	No.	Ins.	Notes	Lgth.
224	29500	R		1 3/8
PL-258	83-1J†	PST		1 3/8
360	83-21J	PST	LB	1 1/4
363	83-1F†	PST		2
—	11850	T		1 3/8
—	13725	T		1 3/8
—	A3877†	—	Double Male	—

small body

ANGLE ADAPTERS

MIL No.	No.	Ins. Adapter Ends		Lgth.
M-359A	83-58	PST	JP	1 27/32
UG-646/U	83-1AP†	PST	PJ	1 9/32

small body

TEE ADAPTERS

M-358	83-1T	PST	JPJ	1 5/8

small body

REDUCING ADAPTERS

For RG-/U Cable	UG-/U No.	No.	Length
55, 58, 141, 142	175	83-185†	1
59, 62, 71, 140, 210	176	83-168†	1

non-weatherproof • small body

HOODS

For RG-/U Cable	MIL No.	No.	Lgth.
8, 9, 10, 11, 12,	MX-543	5475	1
63, 79, 87, 115,	UG-106/U	83-1H	3/4
149, 213, 215	UG-372/U	83-1HP	7/8
58, 141	UG-177/U	83-765	3/4
55, 59, 140, 142, 223	MX-539	5375	1

weatherproof • small body

MALE CAPS

No.	Length
83-1AC	15/32

FEMALE CAPS

83-1BC	11/16

non-weatherproof • male contact

BINDING POST

UG-/U No.	No.	Ins.	Length
332	58000	R	1 7/8

†Non-tarnish Astroplate finish available. To order: add suffix 1050 to part number. Other numbers also available on special order from factory.

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RF COAXIAL CONNECTORS/ADAPTERS

AMPHENOL
THE BUNKER-RAMO CORPORATION

...etween Series Adapters

...HARACTERISTICS

...ECTRICAL: **Impedance:** non-constant. **Frequency:** per ...ble used. **Voltage:** per cable used. **ENVIRONMENTAL: Thermal Limits:** Teflon: —67°F to ...0°F; Rexolite: —67°F to 185°F; Kel-F: —67° to ...0°F; mica-filled; Bakelite: —67°F to 300°F; poly-...ylene: —67°F to 185°F. **Weatherproof:** except as noted. **Hermetic Seals:** pass helium leakage test of 2×10^{-8} cc/sec.

MECHANICAL: Mating: per series. **MATERIAL: Contacts:** male: brass; female: beryllium copper. **Other Metal Parts:** brass. **Plating:** .0002" silver min. **Insulators:** Teflon, Rexolite, Kel-F, mica-filled Bakelite, polyethylene or glass-Teflon.

...NC TO C ...atherproof

83175

...-/U ...o.	No.	Ins.	Imp. Ohms/Notes	BNC	C	Lgth.
...5	83175	T	50	Plug	Jack	1 3/32
...6A	83200	T	50	Jack	Plug	1 15/64

...NC TO N ...atherproof

31-217

...-/U ...o.	No.	Ins.	Imp. Ohms/Notes	BNC	N	Lgth.
...1	31-830	T	—	Jack	Plug	1 13/32
...1A	31-216	T	—/I	Jack	Plug	1 5/16
...5	3025	T-R	50	Plug	Jack	1 3/4
...9	2975	T-R	50	Plug	Jack	1 3/4
...9A	31-217	T	—/I	Plug	Jack	1 5/16
...34	5225	T	50	Plug	Plug	1 1/2
—	2800	T	50/AN	Jack	Jack	1 5/16
—	4250	T	70	Jack	Plug	1 5/16
—	4900	T	50	Plug	Plug	1 1/2
—	5850	T-R	50/P	Jack	Jack	1 27/32
—	21850	T	50	Jack	Jack	1 1/2
—	93075	GT	—/H	Jack	Jack	1 11/16

... TO LC ...eatherproof

82350

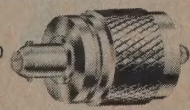
...-/U ...o.	No.	Ins.	Imp. Ohms/Notes	C	LC	Lgth.
—	82350	T	—	Jack	Jack	3 29/64

... TO N ...eatherproof

82-508

...G-/U ...o.	No.	Ins.	Imp. Ohms/Notes	C	N	Lgth.
...64	82-508	T	50	Jack	Plug	1 3/8
...65A	82-540	T	50	Plug	Jack	1 17/32
—	83875	T	50/AN	Jack	Plug	1 9/32

...B TO UHF ...on-weatherproof

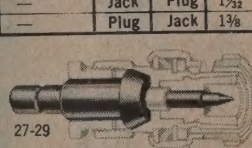

47400

...G-/U ...o.	No.	Ins.	Imp. Ohms/Notes	MB	UHF	Lgth.
—	47400	T	—	Jack	Plug	1 1/32

...MHV TO UHF weatherproof

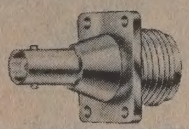
...G-/U ...o.	No.	Ins.	Imp. Ohms/Notes	MHV	UHF	Lgth.
—	28050	T	—	Jack	Plug	1 3/32
—	28075	T	—	Plug	Jack	1 3/8

BNC TO SUBMINAX 27 non-weatherproof


27-29

No.	Ins.	Imp. Ohms/ Notes	Mates With Sub. 27 Plug	Used In BNC UG-/U	Lgth.
27-28	T	50	50 ohm, Screw-On	88	1 5/16
27-29	T	50	50 ohm, Push-On	88	1 5/16
27-40	T	50/GC	50 ohm, Screw-on	89, 291	1 5/16
27-41	T	75	75 ohm, Push-On	260B	1 1/4
27-42	T	75	75 ohm, Screw-On	261B, 262B	1.355
27-805	T	75	75 ohm, Screw-On	260B	1 17/64

BNC TO HN weatherproof



UG-/U No.	No.	Ins.	Imp. Ohms/Notes	BNC	HN	Lgth.
309	8900	T	50	Jack	Plug	1 1/2
559	17750	R	50/AN	Plug	Jack	1 1/2
—	32750	T-R	—	Plug	Jack	1 3/8
—	35050	T	50	Jack	Jack	1 3/8

BNC TO SM non-weatherproof

UG-/U No.	No.	Ins.	Imp. Ohms/Notes	BNC	SM	Lgth.
691	89250	GT	—/H	Jack	Jack	1 1/8

BNC TO UHF non-weatherproof

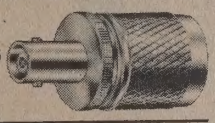
UG-/U No.	No.	Ins.	Imp. Ohms/Notes	BNC	UHF	Lgth.
255	2900	R	50	Plug	Jack	1 5/16
273	31-028	R	—	Jack	Plug	1 3/16
—	2925	T	50	Plug	Jack	1 5/16
—	12025	T	50	Jack	Plug	1 9/32

C TO MB weatherproof

83950

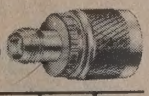
UG-/U No.	No.	Ins.	Imp. Ohms/Notes	C	MB	Lgth.
—	83950	gT	—/H	Jack	Jack	1 7/32

HN TO MHV weatherproof


20625

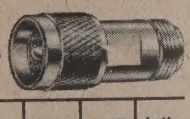
UG-/U No.	No.	Ins.	Imp. Ohms/Notes	HN	MHV	Lgth.
—	20625	T	50	Plug	Jack	1 1/2

N TO TNC non-weatherproof


78800

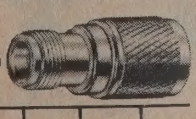
UG-/U No.	No.	Ins.	Imp. Ohms/Notes	N	TNC	Lgth.
—	78800	T	50	Plug	Jack	1 5/16
—	78825	T	50	Jack	Jack	1 25/64
—	78875	T	50/W	Plug	Plug	1 9/32
—	79825	T	50	Jack	Plug	1 21/32
—	79850	T	50/W	Plug	Plug	1 9/32

N TO UHF weatherproof


34125

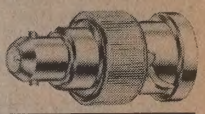
UG-/U No.	No.	Ins.	Imp. Ohms/Notes	N	UHF	Lgth.
83	14000	T-R	—	Jack	Plug	1 5/16
83B	34125	T	—	Jack	Plug	1 13/16
146	4400	R	—/NW	Plug	Jack	1 13/32
318	26700	R	—	Plug	Plug	1 47/64
—	14650	T	—/NW	Plug	Jack	1 13/32

HN TO N weatherproof


16050

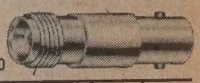
UG-/U No.	No.	Ins.	Imp. Ohms/Notes	HN	N	Lgth.
—	16050	T	50	Plug	Jack	1 5/16
—	16075	T	50	Jack	Plug	1 5/16
—	16100	T-R	50	Jack	Jack	1 49/64

BNC TO MB weatherproof


47275

UG-/U No.	No.	Ins.	Imp. Ohms/Notes	BNC	MB	Lgth.
—	33200	T-K	50	Jack	Jack	1 9/32
—	47200	GT	50/H	Jack	Jack	1 1/8
—	47250	T-K	50	Jack	Plug	1 5/16
—	47275	T-K	50	Plug	Jack	1

BNC TO TNC non-weatherproof


76400

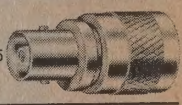
UG-/U No.	No.	Ins.	Imp. Ohms/Notes	BNC	TNC	Lgth.
—	76400	T	50	Jack	Jack	1 9/32
—	79025	T	50	Plug	Jack	1 1/4
—	79675	T	50	Jack	Plug	1 1/4

C TO HN non-weatherproof

83350

UG-/U No.	No.	Ins.	Imp. Ohms/Notes	C	HN	Lgth.
702	83350	T	—	Jack	Plug	1 1/2
703A	83400	T	—	Plug	Jack	1 1/2

C TO UHF non-weatherproof


83225

UG-/U No.	No.	Ins.	Imp. Ohms/Notes	C	UHF	Lgth.
637	83225	T	—	Jack	Plug	1 3/8

Precision Adapters For APC-7

	Part No.	Maximum SWR For a Single Adapter	Dimensions, Inches A	B
APC-7 TO N				
female	131-1025	1.03 @ 4 GHz	1 43/64	13/16
male	131-1035	1.04 @ 9 GHz	1 13/16	13/16
		1.08 @ 18 GHz		
APC-7 TO BNC				
female	131-1027	1.035@ 4 GHz	1 39/64	13/16
male	131-1037	1.045@ 9 GHz	1 23/32	13/16
		1.08 @ 12 GHz		
		1.12 @ 18 GHz		
APC-7 TO TNC				
female	131-1026	same as BNC	1 39/64	13/16
male	131-1036		1 3/4	13/16
APC-7 TO OSM				
female	131-1028 or OSM 21250*	1.07 @12.4 GHz	1 1/32	13/16
male	131-1038 or OSM 21260*	1.15 @ 18 GHz	1 3/8	13/16
APC-7 TO GR				
874	131-1022 or GR874-QAP7L‡	1.04 @4 GHz 1.06 @9 GHz	2 1/16	1
900	131-1023 or GR900-QAP7‡	1.011@4 GHz 1.021@8.5 GHz	2 3/16	1 1/16

‡ Available from General Radio and Amphenol.
* Available from Omni Spectra and Amphenol.

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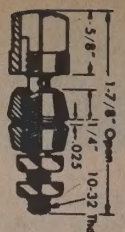
BINDING POSTS

BINDING POST

"Standard" Type

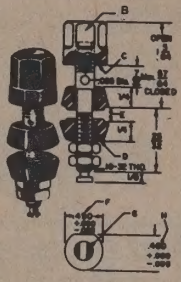


DESCRIPTION: Banana Plug Receptacle, .161 I.D.; Head non-removable from Stud; Molded in Brass Bushing in Head; Molded in Brass Bushing in Washers; For Panels 1/16" to 1/4" thick; Drill 1/2" hole for mounting washers; Wire Hole is at right angle to Flat on insulated Washers; Production Punch for keyed Slot for mounting Washers.

Cat. No. 274 Standard Brass Red or Black

BINDING POST

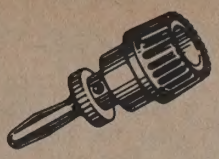
30 Amp. 2000 VDC


B
C
.25 DIA CLOSED
.25 DIA OPEN
.5
.5
.5

BINDING POSTS

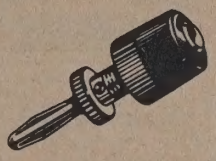
OMBINATION POST-PLUG

id: CAPTIVE, Molded Butyrate. ly: Brass, nickel plated. Spring: ir-leaved phosphor bronze, nic- plated. Rating: 15 Amps AC for C Temp. rise, continuous duty. verts any panel-mounted ba- a jack into a five-way binding t termination. Accepts phone spade lug, banana plug, alliga- clip, or solid or stranded wire.



Cat. No. 283 Red, Black

ad: Molded Nylon, SPECIFY LOR. Body: Brass, nickel plated. ing: Four - leaved phosphor nze, nickel plated. Rating: 15 ps AC for 10°C Temp. rise, con- uous duty.



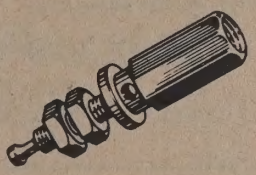
verts any panel-mounted ba- a jack into a nylon five-way ding post terminatiion. Accepts one tips, spade lugs, banana g, alligator clips, or solid or anded wires.

t. No. 284 Red, Black, Yellow, Green, Blue, White.

BINDING POST

Metal Five-Way

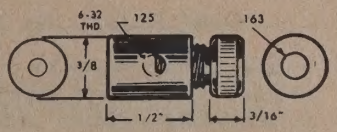
ad: CAPTIVE, Hex brass nickel ted. Body: Brass, nickel plated. cepts: Phone tip, spade lug, nana plug, alligator clip or wire and.



Cat. No. 285 Wrap-around

METAL BINDING POST

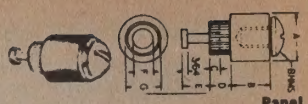
ad: BRASS nickel plated. Body: lass nickel plated. cepts standard phone tips or nana plugs.



Cat. No. 286

COMBINATION TERMINALS

Material: BRASS, nickel plated. Combination Screw and Turret Terminal. Knurled shank prevents turning.

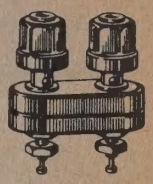


Cat. No.	A	B	C	D	E	F	G	Bhms	Panel Thk.
187	5/16	1/4	1/16	3/64	11/64	1/8	.220	6-32	3/32
188	3/8	3/8	3/32	15/64	13/64	5/32	.257	10-32	3/16

DUAL ASSEMBLY

Nylon

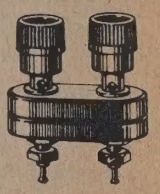
MOLDED black STYRENE, cross slotted (+) to accept standard phone tips in post either forward or sideways. **Body:** Brass, nickel plated. **Head:** Captive: MOLDED NYLON, with molded in brass insert. **Rating:** 15 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 mmfd. between conductors, 3.0 mmfd. to panel. Mounts in two 1/2" holes on 3/4" mounting centers in panels up to 1/4" thick. Accommodates single or dual banana plugs. Supplied with 4 hex nuts, 2 flat washers.



Cat. No. 188BB Two Black Heads
Cat. No. 188RR Two Red Heads
Cat. No. 188RB One Red, One Black Head

DUAL BINDING POST

MOLDED black STYRENE, cross slotted (+) to accept standard phone tips in post either forward or sideways. **Body:** Brass, nickel plated. **Head:** Captive: MOLDED BUTYRATE, Red, Black. **Rating:** 15 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 mmfd. between conductors, 3.0 mmfd. to panel. Mounts in two 1/2" holes on 3/4" mounting centers in panels up to 1/4" thick. Accommodates single or dual banana plugs. Supplied with 4 hex nuts, 2 flat washers.



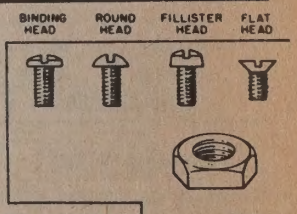
Cat. No. 189BB Two Black Heads
Cat. No. 189RR Two Red Heads
Cat. No. 189RB One Red, One Black Head

BLACK STYRENE INSULATOR

Insul: STYRENE. **Rating:** 2 K Volts 60 cycle AC continuous working voltage.
Mounts in two 1/2" holes on 3/4" mounting centers in panels up to 1/4" thick.

Cat. No. 190

ALL-NYLON FASTENINGS — Screws and Nuts - Washers - Standoffs



Zytel 101 per MIL P 20693 Spec., MIL S 7742 Spec. Birnbach All-Nylon Fastenings are made of Zytel 101*, a Polymide plastic of the Nylon 6.6 Type. They offer outstanding insulating properties plus resistance to heat, shock, vibration and chemical solvents plus lightness elasticity and superior torque strength. In most cases, because of their high dielectric strength, they eliminate the need of bushings, washers or other insulation. They are corrosion resistant, non-magnetic and good torque strength thru a wide temperature range. Continuous service temperature to 300°F (150°C). Stock color: Natural. Additional colors & types available to order. Zytel 101 per MIL-D-7019B. — All parts are manufactured to American Thread Standards to a class 2A or 2B fit. B 18.2 (hex nuts), B 18.6 (machine screws), B 1.1 (thread specs.)

*Reg. T.M. of DuPont

ALL NYLON MACHINE SCREWS

STANDARD PKG.: 100, 1000

Cat. No.	Size	Type
640	2-56x1/4"	Round Head
640A	2-56x1/4"	Fillister Head
640B	2-56x1/4"	Binding Head
641	2-56x3/8"	Round Head
641A	2-56x3/8"	Fillister Head
641B	2-56x3/8"	Binding Head
550	2-56x1/2"	Round Head
551	2-56x1/2"	Fillister Head
551A	2-56x1/2"	Binding Head
643	4-40x1/4"	Round Head
643A	4-40x1/4"	Fillister Head
643B	4-40x1/4"	Binding Head
644	4-40x3/8"	Round Head
644A	4-40x3/8"	Fillister Head
644B	4-40x3/8"	Binding Head
552	4-40x1/2"	Round Head
552A	4-40x1/2"	Fillister Head
552B	4-40x1/2"	Binding Head
646	6-32x1/4"	Round Head
646A	6-32x1/4"	Fillister Head
646B	6-32x1/4"	Binding Head
553	6-32x3/8"	Round Head
554	6-32x3/8"	Binding Head
555	6-32x"3/8	Fillister Head
556	6-32x3/4"	Flat Head
557	6-32x1/8"	Round Head
558	6-32x1/2"	Binding Head

ALL NYLON MACHINE SCREWS

STANDARD PKG.: 100, 1000

Cat. No.	Size	Type
6559	6-32x1/2"	Fillister Head
6560	6-32x1/2"	Flat Head
6648	6-32x3/4"	Round Head
6648A	6-32x3/4"	Fillister Head
6648B	6-32x3/4"	Binding Head
6561	6-32x 1"	Round Head
6561C	6-32x 1"	Flat Head
6650	8-32x1/4"	Round Head
6650A	8-32x1/4"	Fillister Head
6650B	8-32x1/4"	Binding Head
6562	8-32x3/8"	Round Head
6563	8-32x3/8"	Binding Head
6564	8-32x3/8"	Flat Head
6565	8-32x3/8"	Fillister Head
6566	8-32x1/2"	Round Head
6567	8-32x1/2"	Binding Head
6568	8-32x1/2"	Flat Head
6569	8-32x1/2"	Fillister Head
6570	8-32x5/8"	Round Head
6571	8-32x5/8"	Fillister Head
6572	8-32x3/4"	Round Head
6572A	8-32x3/4"	Fillister Head
6572B	8-32x3/4"	Binding Head
6573	8-32x 1"	Flat Head
6573A	8-32x 1"	Fillister Head
6574	10-32x3/8"	Round Head
6575	10-32x1/2"	Round Head
6576	10-32x1/2"	Flat Head
6577	10-32x5/8"	Round Head
6578	10-32x 1"	Round Head
6579	10-32x 1"	Flat Head

BIRNBACH NYLON BUSHINGS AND SPACERS

Designed with wide flanges to completely isolate screw from mounting surface, useful where hi tensile and torque requirements require high strength non-insulating screws Natural color.

Cat. No.	Used with Screw Size	I	W	T	H	D
6549A	#6	.140"	.290"	3/4"	1/4"	.170"
6549B	#8	.173"	.344"	1/4"	3/4"	.205"
6549C	#10	.200"	.399"	1/16"	3/4"	.260"
6549D	1/4"	.260"	.513"	1/4"	3/4"	.312"
6549	#4	.115"	.235"	3/4"	1/4"	.146"

Birnbach All-Nylon Hex Nuts

STANDARD PKG.: 100, 1000

Cat. No.	Size	Cat. No.	Size
6585	2-56	6588	8-32
6586	4-40	6589	10-32
6587	6-32	6590	1/4-20

Birnbach All-Nylon Washers

STANDARD PKG.: 100, 1000

Cat. No.	Fits Screw No.	O.D.	I.D.	Thickness
6592	2	1/4"	3/32"	.016"
6593	4	1/4"	1/8"	.016"
6594	6	5/16"	5/32"	.031"
6595	8	3/8"	.170"	.031"
6596	10	3/8"	.195"	.031"
6597	1/4"	5/16"	3/16"	.063"

BIRNBACH COMPANY INC.

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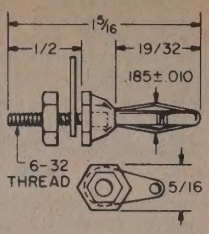
NON-INSULATED BANANA PLUGS

Variations of Standard Plugs Available to Order. Plated to Gov't. Specs.

BANANA PLUG No. 400

Hexed brass nickel plated. Fits all standard banana plugs. Complete with hex brass n.pl. nut and tinned copper lug. Spring is four-leaved nickel plated. Rated at 5 amps.

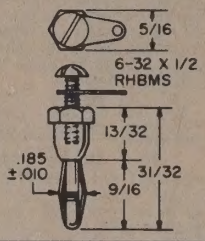
Cat. No.	Spring	Dim. "A"
400	Phos. Bronze	1/2"
400A	Phos. Bronze	3/8"
400B	Beryl. Copper	1/2"



BANANA PLUG No. 401

Hexed brass nickel plated. One-piece four-leaved spring. Complete with brass n.pl. screw and tinned copper lug. Rated at 5 amps. Fits all standard banana jacks.

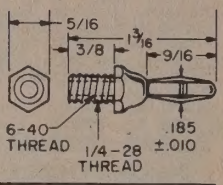
Cat. No.	Spring
401	Phos. Bronze
401B	Beryl. Copper



BANANA PLUG No. 404A

Hexed brass and four-leaved phosphor bronze spring all nickel plated. Rated at 5 amps. Fits all standard banana jacks.

Cat. No.	Spring
404A	Banana Plug

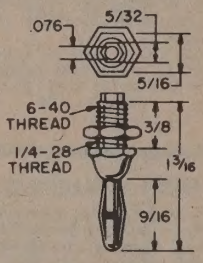


BANANA PLUG No. 404S

Hexed brass nickel pl. Complete with hex brass n.pl. nut. Has solderless Scrulok connection. Fits all standard banana plugs. Spring is four-leaved phosphor bronze nickel plated. Rated at 5 amps.

Cat. No.	Spring
404S	Phos. Bronze
404SB	Beryl. Copper

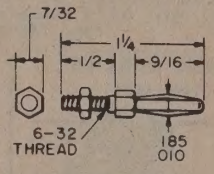
Scrulok Banana Plug



BANANA PLUG No. 414

Hexed brass, nickel plated. One-piece construction. Four - leaved phosphor bronze spring. Complete with brass hexed nut n.pl. Rated at 5 amps. Fits all standard banana jacks.

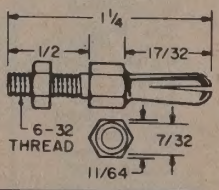
Cat. No.	Spring
414	Phos. Bronze



BANANA PLUG No. 416

Hexed brass nickel plated. Cross slotted for positive contact. One-piece construction. Fits all standard banana jacks. Complete with hexed brass n.pl. nut.

Cat. No.	
416	Banana Plug

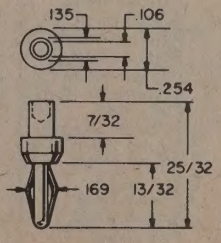


MIDGET BANANA PLUG
Rivet Type — No. 426

Brass silver plated body. One-piece four-leaved phosphor bronze spring silver plated. Also made to Rigid Jan specs.

Cat. No.	"A"
426	7/32"
426A	5/32"

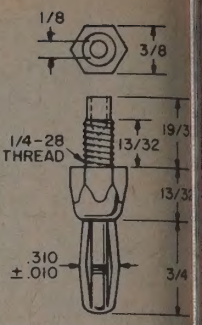
Midget Banana Plug Rivet Type



GIANT PLUG No. 392A

Body is hexed brass nickel plated. Rated at 25 amps. Has large soldering well in threaded shank. Fits all Giant Banana Jacks.

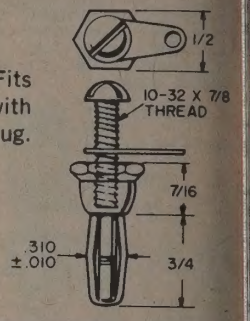
Cat. No.	Spring
392A	Phos. Bronze



GIANT PLUG No. 396

Body is hexed brass, nickel plated. Fits all giant banana jacks. Complete with nickel plated screw and soldering lug. Rated at 25 amps.

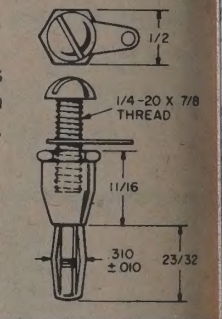
Cat. No.	Spring
396	Phos. Bronze
396B	Beryl. Copper



GIANT PLUG No. 397

Body is hexed brass, nickel plated. Fits all giant banana jacks. Complete with nickel plated screw and soldering lug. Heavy duty, 25 amp. rating.

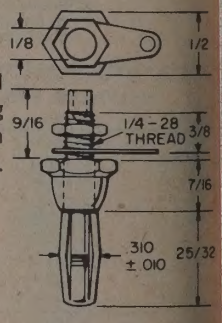
Cat. No.	Spring
397	Phos. Bronze
397B	Beryl. Copper



GIANT PLUG No. 398

Body is hexed brass, n.pl. nut and tinned copper lug. Has large soldering well in threaded shank. Used in high amperage circuits rated at 25 amps. Fits all giant banana jacks.

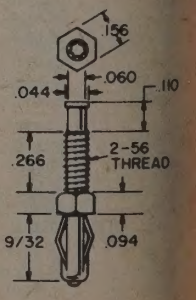
Cat. No.	Spring
398	Phos. Bronze
398B	Beryl. Copper



SUB MINIATURE BANANA PLUGS

One piece beryllium copper springs insure positive and lasting contact. Silver plated overall.

Cat. No.	Description
590	Rivet Type Plug
591	Screw Type Plug



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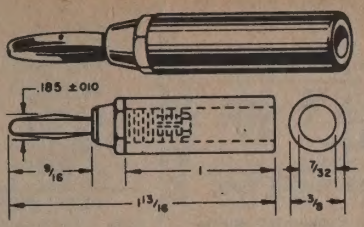
INSULATED BANANA PLUGS

ISULATED BANANA PLUG

ed brass n.pl. spring . Fits standard banana s. Scrulok solderless nection. Molded han-

rs: Red, Black, Yellow, , Green, White.

No.	Spring	Plating
	Phos. Brz.	Nickel
B	Beryl. Cop.	Nickel
P	Phos. Brz.	Silver
B-SP	Beryl. Cop.	Silver

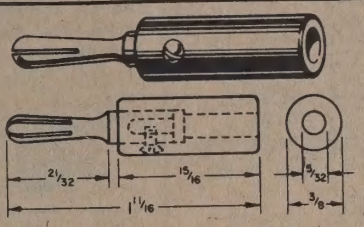


NSULATED BANANA PLUG

t type plug brass n.pl. standard banana jacks. screw. Solderless con- tion. Molded handle.

rs: Red, Black, Yellow, e, Green, White.

Cat. No.	
604	Banana Plug

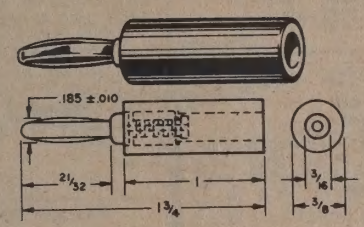


NSULATED BANANA PLUG

s n.pl. plug. Fits stand- banana jacks. Spring . Scrulok solderless nection. Molded handle.

rs: Red, Black, Yellow, e, Green, White.

No.	Spring	Plating
	Phos. Brz.	Nickel
B	Beryl. Cop.	Nickel
SP	Phos. Brz.	Silver
B-SP	Beryl. Cop.	Silver

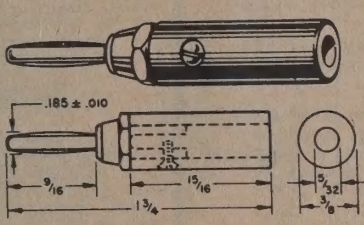


SPRING BANANA PLUG

ed brass n.pl. plug. Set ew solderless connec- 404BC Beryllium ings, highly resilient. ded handle.

rs: Red, Black Yellow, e, Green, White.

Cat. No.	Spring
404B	Phos. Brz.
404BC	Beryl. Cop.

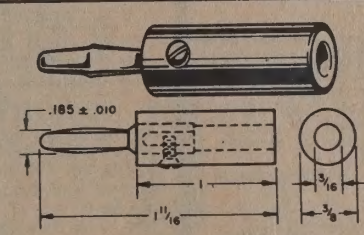


NSULATED BANANA PLUG

g brass n.pl. set screw derless connection. ring type. Fits standard ana jacks. Molded han- .

lors: Red, Black, Yellow, ue, Green, White.

No.	Hdl.	Spring
	1"	Ph. Brz.
A	1½"	Ph. Brz.

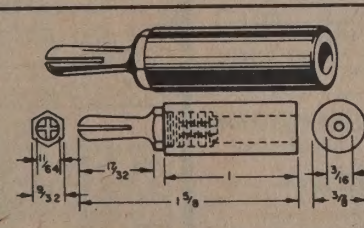


INSULATED BANANA PLUG

lit type, brass n.pl. Scru- solderless connection. s standard jacks. Molded handle.

lors: Red, Black, Yellow, ue, Green, White.

Cat. No.	
606	Banana Plug

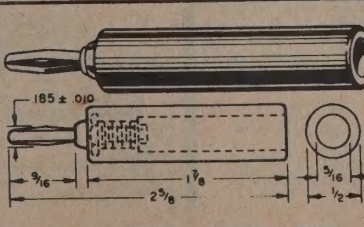


INSULATED BANANA PLUG

ug brass n.pl. Scrulok derless connection. ring type. Fits standard cks. Plastic handle.

lors: Red, Black.

Cat. No.	Spring
341	Phos. Brz.
341B	Beryl. Cop.

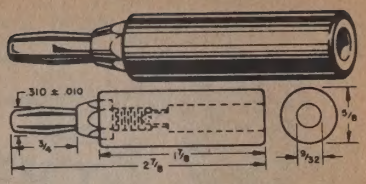


INSULATED GIANT PLUG

Plug brass n.pl. Wire can be soldered to plug. Spring type. Fits giant banana jacks. Plastic handle.

Colors: Red, Black.

Cat. No.	Spring
392	Phos. Brz.
392B	Beryl. Cop.

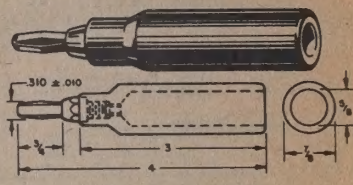


INSULATED GIANT PLUG

Plug brass n.pl. Wire can be soldered to plug. Spring type. Fits giant banana jacks. Polished giant hard rubber handle.

Colors: Red, Black.

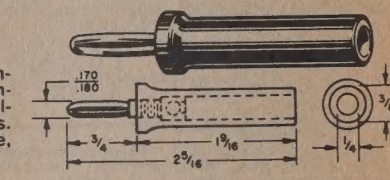
Cat. No.	Spring
342	Phos. Brz.
342B	Beryl. Cop.



Long Shoulder Handle INSULATED BANANA PLUG

Long shoulder handle insulated banana plug. Handle made of bakelite. Available in various colors. Red, Black, Yellow, Blue, Green, White.

Cat. No.	
424	

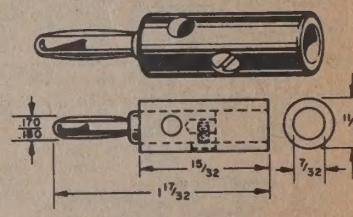


STACK BANANA PLUG Solderless

Brass, nickel plated, solderless connection. Accepts standard banana plugs in top and side. Interconnects unlimited amount of multiple circuits.

Colors: Red, Black, Yellow, Green.

Cat. No.	Spring
425	Phos. Brz.
425A	Bery. Cop.

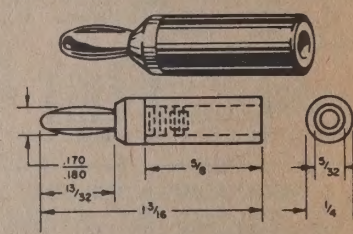


INSULATED MIDGET BANANA PLUG

Spring type. Fits all standard Banana jacks. Beryllium spring retains resiliency after thousands of insertions. Wire soldered directly into plug.

Colors: Red, Black.

Cat. No.	Spring	Plating
455	Phos. Brz.	Nickel
455BC	Beryl. Cop.	Silver
455A	Phos. Brz.	Silver
455A-BC	Beryl. Cop.	Nickel

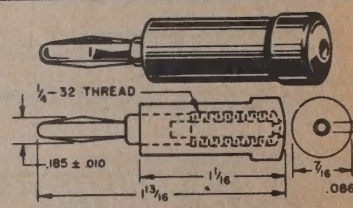


TIP PLUG TO BANANA PLUG ADAPTER

Fits standard banana jacks. Adapter for phone tip to banana plug. Molded handle.

Colors: Red, Black, Yellow, Blue, Green, White.

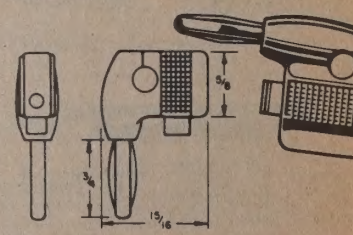
Cat. No.	Spring
467	Phos. Brz.
467B	Beryl. Cop.



PUSH BUTTON BANANA PLUG

Wire is fastened easily, speedily, and securely without soldering. Simply by pressing the push buttons the bare wire can be inserted into the opening of the plug.

Cat. No. 122 Push Button Banana Plug, Red, Black, Yellow, Green, White.
No. 122 Banana Plug will fit all Standard Banana Jacks.



BIRNBACH COMPANY INC. FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.

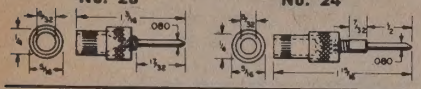
INSULATED PHONE TIPS, TEST PRODS

SOLDERLESS PHONE TIPS

Brass, nickel plated. Wire fits thru body of tip, tightened around screw with nickel plated knurled nut. Fits all standard phone tip jacks.

Cat. No.
23 Junior Solderless Phone Tip
24 Senior Solderless Phone Tip

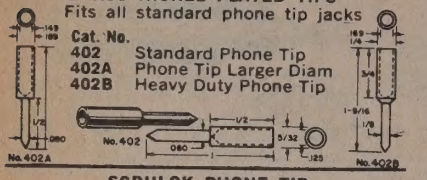
No. 23 No. 24



BRASS NICKEL PLATED TIPS

Fits all standard phone tip jacks

Cat. No.
402 Standard Phone Tip
402A Phone Tip Larger Diam
402B Heavy Duty Phone Tip

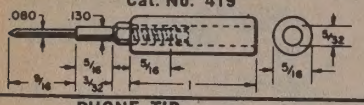


SCRULOK PHONE TIP

Fits standard phone tip jacks. Plug is brass, nickel plated. Has Scrulok solderless connection. Molded handle.

Colors: Red, Black, Yellow, Blue, Green, White.

Cat. No. 419

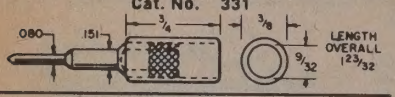


PHONE TIP

Plugs into standard phone tip jacks. Brass nickel plated plug. Accommodates standard banana plug in molded plastic handle.

Colors: Red, Black, Yellow, Blue, Green, White.

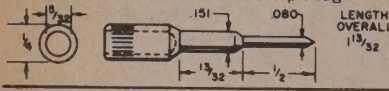
Cat. No. 331



PHONE TIP PLUG No. 331A

Plugs into all standard phone tip jacks. Barrel of plug accommodates all standard banana jacks. Brass, nickel plated.

Cat. No. 331A Phone Tip Plug

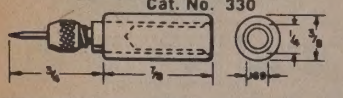


NEEDLE POINT PLUG

Brass nickel plated body. Needle point tip. Accommodates standard banana plug in molded plastic handle.

Colors: Red, Black.

Cat. No. 330

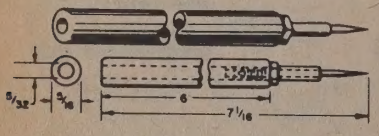


BAKELITE PENCIL TEST PROD

Body is brass nickel plated with steel n.pl. needle. Has Scrulok solderless connection. Bakelite handle.

Colors: Red, Black.

Cat. No. 411 Bakelite Pencil Test Prod

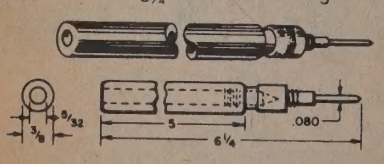


SOLDERLESS TEST PRODS

Body is brass nickel plated with solderless knurled nut connection. Heavy duty needle-point, nickel plated.

Colors: Red, Black.

Cat. No.	(A) Overall	(B) Handle Length
410	5⅛"	4"
343	6¼"	5"

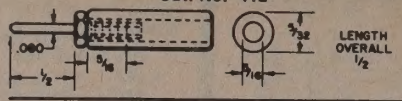


SCRULOK PHONE TIP

Brass nickel plated. Fits standard phone tip jacks. Scrulok solderless connection. Molded handle.

Colors: Red, Black, Yellow, Blue, Green, White.

Cat. No. 412

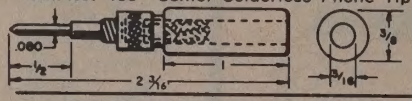


INSULATED SOLDERLESS PHONE TIPS No. 409

Insulated handles, fitted to solderless phone tips. Made of Brass, Nickel Plated. Wire easily attached by threading through hole in handle and tightening knurled nut.

Colors: Red, Black, Yellow, Blue, Green, White

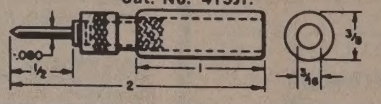
Cat. No. 409 Senior Solderless Phone Tip



JUNIOR SOLDERLESS PHONE TIP

Same as above except 2" overall length. Specify colors.

Cat. No. 415Jr.



HEAVY DUTY TIP PLUG
Threaded

BODY: Brass, nickel plated.

DESCR.: Extra large well for soldering. Rear of plug accepts standard banana plugs. Fits standard phone tip jacks. Threaded for easy assembly in plastic handle.

No. 349A

INSULATED TIP PLUG
Heavy Duty Type

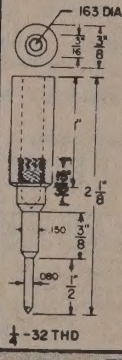
HANDLE: plastic, Red Yellow, Green, Blue, White and Black

SPECIFY COLOR

PLUG: Brass, nickel plated.

DESCR.: Large diameter well enables soldering of heavy duty wire directly into plug. Fits standard phone tip jacks

No. 349



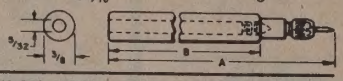
TEST PRODS

NEEDLEPOINT TEST PRODS

Brass nickel plated body with steel nickel plated needle. Chuck threaded in end of handle is removable for replacing needles. Polished cast phenolic handle.

Cat. No.	(A) Overall	(B) Handle Length
344	4 13/16"	4"
345	5 13/16"	5"

Colors: Red, Black.

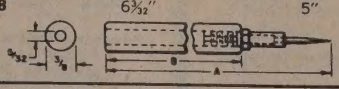


SCRULOK NEEDLEPOINT TEST PRODS

Phenolic insulated prod, has Scrulok solderless connection. Body is brass nickel plated with steel n.pl. needle.

Colors: Red, Black.

Cat. No.	(A) Overall	(B) Handle Length
417	5 3/32"	4"
418	6 3/32"	5"

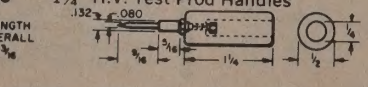


HEAVY DUTY HIGH VOLTAGE TEST PROD HANDLES No. 558

These bakelite prods are the same as used on the meter end of high voltage test leads Cat. No. 562. Tips are heavy brass with nickel plating.

Colors: Red, Black.

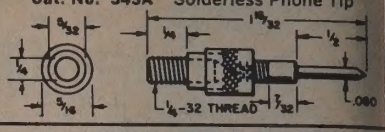
Cat. No.
558 1¼" H.V. Test Prod Handles



SOLDERLESS PHONE TIP No. 343A

Brass, nickel plated. Wire easily attached by threading thru hole provided, and tightening knurled nut. Threaded to take plastic handle

Cat. No. 343A Solderless Phone Tip

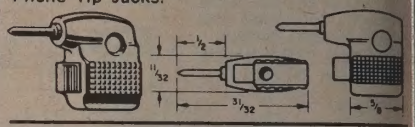


PUSH BUTTON PHONE TIP PLUGS

Wire is fastened easily, speedily, and securely without soldering. Simply by pressing the push buttons the bare wire can be inserted into the opening of the plug.

Colors: Red, Black.

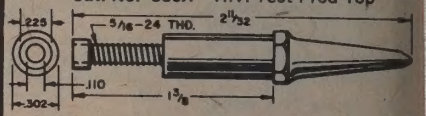
Cat. No. 121 Push Button Phone Tip Plug. No. 121 Phone Tip Plug will fit all Standard Phone Tip Jacks.



HIGH VOLTAGE TEST PROD TIP No. 559A

Heavy brass, nickel plated. Large solder well accommodates heavy wires. As used on Birnbach High Voltage Test prod Handle. No. 559 and 562 Test Leads.

Cat. No. 559A H.V. Test Prod Top

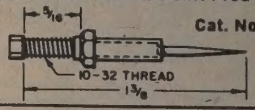


NEEDLE POINT PROD TIP No. 439

Extra heavy needle point for piercing insulations or plating. Solderless Scrulok wire connection. Brass, nickel plated body; needle point, steel, nickel plated. Replacement tip for No. 408 Leads.

Replacement Needle Point Prod Tip

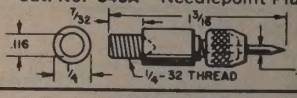
Cat. No. 439



NEEDLE POINT PLUG No. 345A

Has a brass, nickel plated body, steel nickel plated needle. Sharp point will pierce insulation or plating. Has removable chuck for replacing needle. Threaded to take handle.

Cat. No. 345A Needlepoint Plug

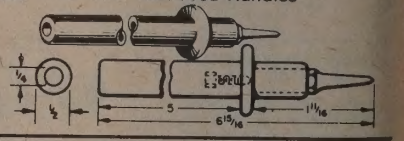


HEAVY DUTY HI-VOLTAGE TEST PROD HANDLE

Tip is heavy brass nickel plated. Bakelite finger guard. Accommodates IN-34 diode and condenser for use as RF Probe.

Colors: Red, Black.

Cat. No.
559 6" H.V. Test Prod Handles

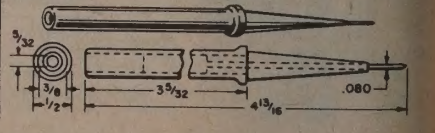


TEST PROD No. 424A

Shouldered insulated handle made of bake lite. Tip made of nickel-plated brass has set screw in side for securing conductor and thus making a solderless connection. Tip screw into handle. Available in Red and Black. Indicate color.

TEST PROD No. 424B with Banana Plug Adapter

Same as No. 424A except with a banana plug adapter in back of handle.



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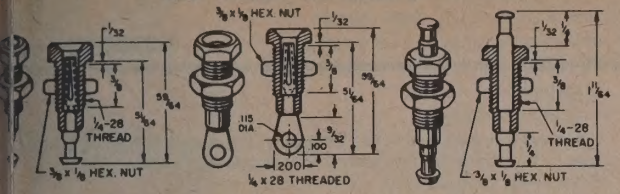
NYLON TIP JACKS AND PLUGS

ALL NYLON TIP JACKS



No. 1180 No. 1182 No. 1184

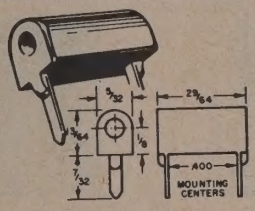
pletely Molded Nylon Jack. Fits all standard phone tip plugs. Con- recessed in head for safe contact. Hexagon head for grip in tight- g. Mounts in ¼" hole in panels up to ¼" thick. Meets following irements:

lt Spray Test — Withstands 100 hours ● Rated Voltage & Current 00 volts peak at 5 amps max. ● Test Voltage — 9000 volts DC ● Insulation Resistance — 5000 megohms ● Operating Tem- ture — 55 to +150C ● Nominal Capacity — 2.0 mmf. ● Material ifications — A. Body: Nylon Grade FM 10001; A. Center Contact: bers 1180 and 1182 Heat Treated Beryllium Copper Silver plated Spec 72-53. Number 1184 Brass Tin Pl.; Hex Nut: Brass Nickel Pl.

olors: Red, Black, Orange, Green, Blue, White, Brown, Yellow, & Purple. Specify Color.

No. 1180 Wrap Around **Cat. No. 1182** Spade Terminal
Cat. No. 1184 Feed Through

RINTED CIRCUIT TEST JACKS

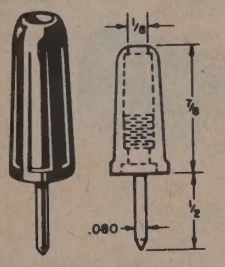


gned for permanent, soldered assem- o printed circuit boards. Nylon bodies. gold over silver plated Beryllium cop- contacts which provide low resistance act. Takes standard .080" diameter probes.

rs: Red, Black, Green, Brown, Yellow, , Purple, Grey, Orange, White.

Cat. No. 1177 Printed Circuit Jack
PER MIL-F-14072, M301

NYLON INSULATED PLUG



ded of tough low-loss Nylon — provides voltage insulation. Withstands ex- e temperature changes without chip- or cracking. This series fits all stand- Banana Jacks and standard Phone Tip ks.

on Solderless Short Tip Plug. Molded n handle, recessed metal head pro- s flush contact without metal exposure ny standard tip jack brass nickel plated g. Solderless wire fits thru handle.

NYLON PER MIL-P-20693A
Cat. No. 1169
Specify color as indicated below.

LON BANANA PLUG — MIDGET

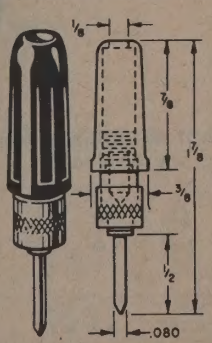
NYLON PER MIL-P-20693A

ded Nylon Handle Brass N.Pl. Wire be soldered directly into stud. Fits all ndard Banana Jacks.

Cat. No.	Spring Material	Plating
72	Phospor	Nickel Bronze
73	Phospor	Silver Bronze
74	Berylium	Nickel Copper
75	Berylium	Silver

ify color as indicated in Color Code below.

NYLON SOLDERLESS TIP PLUG

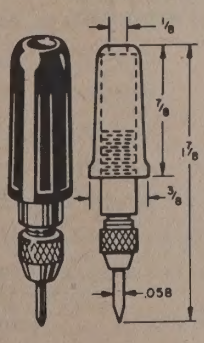


ded Nylon handle, ss N.Pl. Solderless g. Wire fits thru ly of tip and is pped around ew portion and n tightened. Fits standard tip jacks.

Cat. No. 1170

Specify color as ndicated above.

PHONE NEEDLE TIP PLUG



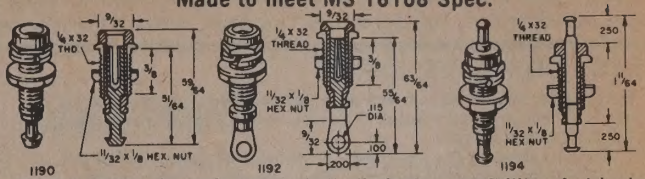
Molded Nylon Handle, Brass N.Pl. Plug. Has removable chuck for easy replacement of needles. Needle makes positive contact thru insulation or corrosion.

Cat. No. 1171
NYLON PER MIL-P-20693A

Specify color as indicated above.

NYLON TIP JACK WITH METAL SHELL

Made to meet MS 16108 Spec.



Molded Nylon Tip Jack. Metal shell eliminates possibility of stripping threads during assembly. Meets following requirements: ● Salt Spray Test—Withstands 100 hours. ● Rated Voltage & Current—1000 volt peak @ 5 amps. maximum.

● Test Voltage—2500 peak. ● Insulation Resistance—5000 megohms.

● Operating Conditions—A. Continuous; 23 hours on, 1 hour off; B. Elevation: Up to 15,000 feet; C. Temperature: —55 to +85 C; D. Humidity: Up to 95%.

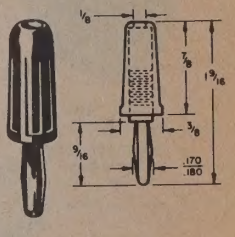
● Material Specifications—A. Insulator: Nylon, Grade FM 10001; B. Shell & Nut: Brass Nickel Plated Per Spec 72-53; C. Lockwasher: Phosphor Bronze Nickel Plated Per Spec 72-53; D. Center Contact. Numbers 1190 and 1192 Heat Treated Bery. Copper Silver Plated per Spec 72-53. Number 1194 Brass, Tin Plated.

● Non-Operating Conditions—A. Elevation: Up to 50,000 feet; B. Temperature: Continuous exposure for 72 hours @ +160 F and 240 hours @ —80 F; C. Humidity: Up to 100%.

● **Colors:** Red, Black, Orange, Green, Blue, White, Brown, Yellow, Grey and Purple. Specify Color.

Cat. No. 1190 Wrap Around **Cat. No. 1192** Spade Terminal
Cat. No. 1194 Feed Through

NYLON BANANA PLUG



Molded Nylon handle, Brass N.Pl. plug. Springs Phosphor Bronze or Berylium Copper. Nickel or Silver plated. Wire can be soldered into plug or brass stud.

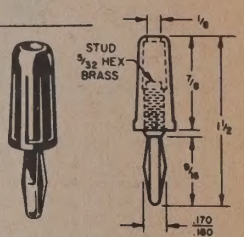
NYLON PER MIL-P-20693A

Cat. No.	Spring	Plating
1160	Phos. Brz.	Nickel
1161	Phos. Brz.	Silver
1162	Beryl. Cop.	Nickel
1163	Beryl. Cop.	Silver

Specify color as indicated in color code below.

Same as above with Solderless Scrulock Connection

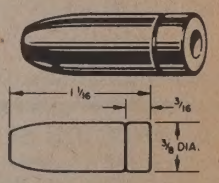
MIL-P-20693A



Cat. No.	Spring	Plating
1164	Phos. Brz.	Nickel
1165	Phos. Brz.	Silver
1166	Beryl. Cop.	Nickel
1167	Beryl. Cop.	Silver

Specify color as indicated in color code below.

NYLON HANDLE JACK

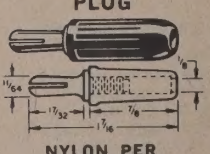


Made with our Nylon Tip Jack #1180 without mounting nut inside of threaded molded nylon insulated sleeve.

Cat. No.
1179 Nylon Handle Jack

Specify color as indicated below.
NYLON PER MIL-P-20693A

NYLON BANANA PLUG



NYLON PER MIL-P-20693A

Molded Nylon handle, brass N.P. plug, split type with solderless scrulock connection.

Cat. No. 1168
Specify color as indicated above.

Color Code For NYLON HANDLE PLUGS

Add to Catalog Numbers

—01 White
—02 Red
—03 Black
—04 Dk. Green
—05 Lt. Blue
—06 Orange
—07 Yellow
—08 Brown
—09 Lt. Green
—10 Dk. Blue
—11 Ivory
—12 Violet (Purple)
—13 Grey

BIRNBACH COMPANY INC. FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.

CANNON® AUDIO CONNECTORS for low level circuit applications

ITT Cannon Audio Connectors are designed for use on audio/video and other low level circuit applications in the electronic/industrial fields where reliability, quiet operation and the elimination of mechanical interference are necessary. Some common uses are: microphones, tape recorders, hi-fi equipment, medical instruments, cameras, test instrumentation and computers.

CANNON PLUGS

XLR CONNECTOR SERIES

The XLR incorporates the most advanced audio/electronic design concepts. Small and compact, it features resilient insulators on the socket side plus resilient ribs for shock protection and quiet operation.

Shells are aluminum alloy (receptacles), or steel or aluminum alloy (plugs), with satin nickel finish. Insulators are rigid molded plastic (pin side), or resilient polychloroprene (socket side). Contacts are brass, silver plated. Coupling is by the latch-lock method.

FEATURES

• QUIET OPERATION

Thick aluminum cross sections for shell strength, plus resilient insulators and resilient ribs on the socket side, insure elimination of mechanical interference from shock.

• EASY TO WORK WITH

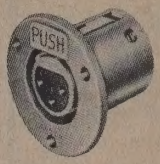
Finger grips for positive handling.

Integral cable clamp with two clamping positions for positive grip on cable sizes from 7/32 to 5/16 of an inch.

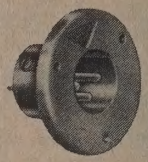
Large internal space for ease of wiring.

XLR-*-11C
XLR-*-11SC (steel shell)
SOCKET
Straight Cord Plug

XLR-*-12C
XLR-*-12SC (steel shell)
PIN
Straight Cord Plug

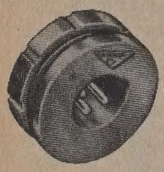


XLR-*-13
SOCKET
Wall Mounting Receptacle



XLR-*-14
PIN
Wall Mounting Receptacle

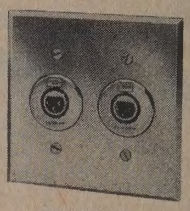
XLR-*-13N
SOCKET
Panel Mounting Receptacle



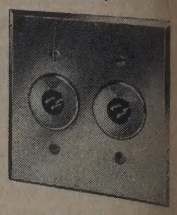
XLR-*-14N
PIN
Panel Mounting Receptacle

XLR-*-35
SOCKET
Wall Mounting Receptacle

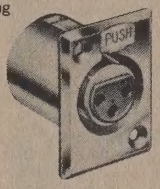
XLR-*-36
PIN
Wall Mounting Receptacle



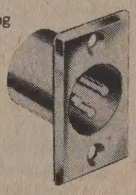
XLR-*-35-2G
SOCKET
Wall Mounting Receptacle



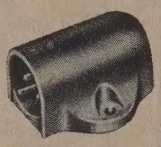
XLR-*-36-2G
PIN
Wall Mounting Receptacle



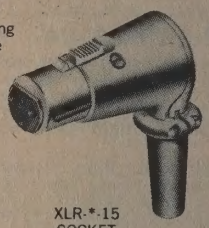
XLR-*-31
SOCKET
Wall Mounting Receptacle



XLR-*-32
PIN
Wall Mounting Receptacle



XLR-*-42
PIN
90° Wall or Microphone Receptacle



XLR-*-15
SOCKET
90° Cord Plug

Adapter Receptacles

XLR*-50 (with plain shell)
XLRC*-50N (with coupling nut)
XLR*-50T (with threaded barrel)

*Add contact arrangement to complete part number. Example XLR-4-12C

CONTACT ARRANGEMENTS

FACE VIEW OF PIN INSERTS

3
3-15 AMP CONTACTS

4
4-10 AMP CONTACTS

5
5-7½ AMP CONTACTS

P CONNECTOR SERIES

The ITT Cannon P is a versatile connector in terms of the wide range of contact arrangements offered. It is a proven connector and has been the standard of quality in the audio field for many years. Socket contacts are full floating and precision-made from milled bar stock.

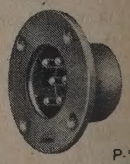
Shells are zinc (receptacles), or steel or zinc (plugs), with satin chrome finish. Insulators are phenolic. Contacts are brass, silver plated. Coupling is by the latch-lock method.

Other P Series connectors not shown.

P*-CG-12S	Straight cord plug. (Pin)
P*-13	Flush panel receptacle. (Socket)
P*-CG-15	90° angle cord plug. (Socket)
P*-CG-16	90° angle cord plug. (Pin)
P*-17	Surface panel receptacle. (Socket)
P*-18	Surface panel receptacle. (Pin)
P*-23	Straight cord plug. (Socket)
P*-24	Straight cord plug. (Pin)
P*-35-2G	Two gang wall receptacle. (Socket)
P*-36-2G	Two gang wall receptacle. (Pin)
P*-41	Microphone mounting receptacle. (Socket)
P*-42	Microphone mounting receptacle. (Pin)

*Add contact arrangement to complete part number. Example P2-CG-12S

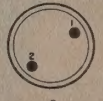
P-*-CG-11S
SOCKET
Straight Cord Plug



P-*-14
PIN
Wall Mounting Receptacle

CONTACT ARRANGEMENTS

FACE VIEW OF PIN INSERTS



2
2-30 AMP CONTACTS

3
3-30 AMP CONTACTS

4
4-30 AMP CONTACTS

5
5-30 AMP CONTACTS

6
6-30 AMP CONTACTS

8
8-15 AMP CONTACTS

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CANNON ITT

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CINCH

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CONDENSED CONNECTOR SPECIFICATIONS CHART

TYPE	NO. OF CONTACTS	CONTACT DENSITY/ sq. in.***	INSULATOR	CONTACTS	MAX. CURRENT AMPS	MAX. DC VOLTS	PAGE
NTENNA	1 **, 2	6	Phenolic	Cadmium plated brass	—	—	530
UDIO	1 **	10	Phenolic	Nickel, cadmium or silver plated brass	—	—	530
ATTERY PLUGS	1-7	5	Phenolic	Nickel plated brass	5	500	531
-SUBMINIATURE	9-50	130	Diallyl phthalate or Nylon	Gold plated phosphor bronze & copper	5	1200	510
LUE RIBBON	8-32	8	Diallyl phthalate	Gold & silver plated copper & phosphor bronze	5	800	513
DGE, BIFURCATED	6-50	16	Glass filled diallyl phthalate	Gold plated beryllium copper	5	1270	508
DGE, TYKON	6-50	50	Glass filled diallyl phthalate	Gold & copper plated beryllium copper	.5	730	509
INGE	20-100	13	Phenolic	Cadmium plated phosphor bronze	4.5	1300	512
ONES 300	2-33	5	Phenolic	Cadmium plated brass	7.5	730	515
ONES 400	2-12	4	Phenolic	Cadmium plated brass	10-15	1200	518
ONES 2400	2-12	4	Phenolic	Cadmium plated brass	10-15	1700	518
ONES 500	2-12	.6	Phenolic	Cadmium plated brass & phosphor bronze	25	3000	519
OW POWER	2-11	5	Phenolic	Cadmium or nickel plated or solder coated brass	5	500	531
ICRO RIBBON	14-50	33	Diallyl phthalate	Gold & Silver plated cadmium bronze	5	700	513
INI-JONES	19-68	25	Phenolic	Phosphor Bronze (tinned in strip)	4	1230	514

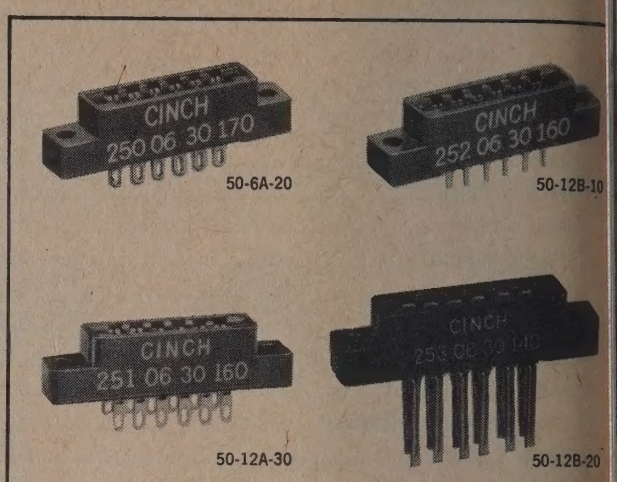
C Volts
lus shield
ased on approximate area of mating surface of plug and socket

CINCH
DIVISION OF UNITED-CARR

PRINTED CIRCUIT EDGE CONNECTORS

PRECISION MILITARY AND COMMERCIAL PRINTED CIRCUIT BOARD EDGE CONNECTORS

These Cinch printed circuit connectors are designed for minimum printed circuit card wear, low insertion force and positive contact with the printed circuit board. Insulation is glass-filled diallyl phthalate, type SDG-F per MIL-M-14. Contacts are of phosphor bronze with a minimum of 30 micro-inches thickness gold plate. Units with solder tab or dip solder terminations utilize bifurcated contacts permitting two flexing surfaces instead of one for positive contact. Bifurcated contacts are especially recommended for added contact reliability where vibration or printed circuit board irregularities would otherwise cause trouble. Types meeting Military Specification MIL-C-21097B are also available as indicated. These connectors have beryllium copper contacts with 50 micro-inches gold finish.



COMMERCIAL TYPES Without Bushings

SINGLE READOUT			DOUBLE READOUT					
CONTACT POSITIONS	CINCH PART NO.	FACTORY NO.	CONTACT POSITIONS	CINCH PART NO.	FACTORY NO.	CONTACT POSITIONS	CINCH PART NO.	FACTORY NO.
CONVENTIONAL SOLDER TAILS			CONVENTIONAL SOLDER TAILS			WIRE WRAP POST		
6	50-6A-20	250-06-30-170	6	50-12A-30	251-06-30-160	6	50-12B-20	253-06-30-140
10	50-10A-20	250-10-30-170	10	50-20A-30	251-10-30-160	10	50-20B-20	253-10-30-140
12	50-12A-20	250-12-30-170	12	50-24A-30	251-12-30-160	12	50-24B-20	253-12-30-140
15	50-15A-20	250-15-30-170	15	50-30A-30	251-15-30-160	15	50-30B-20	253-15-30-140
18	50-18A-20	250-18-30-170	18	50-36A-30	251-18-30-160	18	50-36B-20	253-18-30-140
22	50-22A-20	250-22-30-170	22	50-44A-30	251-22-30-160	22	50-44B-20	253-22-30-140
25	50-25A-20	250-25-30-170	25	50-50A-30	251-25-30-160			
DIP SOLDER TAILS			DIP SOLDER TAILS					
6	50-6B-10	252-06-30-240	6	50-12B-10	252-06-30-160			
10	50-10B-10	252-10-30-240	10	50-20B-10	252-10-30-160			
12	50-12B-10	252-12-30-240	12	50-24B-10	252-12-30-160			
15	50-15B-10	252-15-30-240	15	50-30B-10	252-15-30-160			
18	50-18B-10	252-18-30-240	18	50-36B-10	252-18-30-160			
22	50-22B-10	252-22-30-240	22	50-44B-10	252-22-30-160			
25	50-25B-10	252-25-30-240						

POLARIZING KEYS		
PART NO.	DESCRIPTION	FACTORY NO.
50-PK-2	Between-Contact Type	456-07-35-003
50-PK-1	In-Contact Type	474-11-54-200

MILITARY PC CONNECTORS (Per MIL-C-21097B) With Conventional Wiring Tails

SINGLE READOUT				DOUBLE READOUT			
CONTACT POSITIONS	CINCH PART NO.	MIL PART NO.	FACTORY NO.	CONTACT POSITIONS	CINCH PART NO.	MIL PART NO.	FACTORY NO.
NO BUSHINGS				NO BUSHINGS			
6	50-6A-20M	M21097/1-001	250-06-30-220	6	50-12A-30M	M21097/1-019	251-06-30-270
10	50-10A-20M	M21097/1-037	250-10-30-220	10	50-20A-30M	M21097/1-055	251-10-30-270
15	50-15A-20M	M21097/1-073	250-15-30-220	15	50-30A-30M	M21097/1-091	251-15-30-270
18	50-18A-20M	M21097/1-109	250-18-30-220	18	50-36A-30M	M21097/1-127	251-18-30-270
22	50-22A-20M	M21097/1-145	250-22-30-220	22	50-44A-30M	M21097/1-163	251-22-30-270
MOLDED-IN BUSHINGS				MOLDED-IN BUSHINGS			
6	50-6A-20-MB	M21097/1-004	250-06-30-230	6	50-12A-30MB	M21097/1-022	251-06-30-280
10	50-10A-20MB	M21097/1-040	250-10-30-230	10	50-20A-30MB	M21097/1-058	251-10-30-280
15	50-15A-20MB	M21097/1-076	250-15-30-230	15	50-30A-30MB	M21097/1-094	251-15-30-280
18	50-18A-20MB	M21097/1-112	250-18-30-230	18	50-36A-30MB	M21097/1-130	251-18-30-280
22	50-22A-20MB	M21097/1-148	250-22-30-230	22	50-44A-30MB	M21097/1-166	251-22-30-280
FLOATING BUSHINGS				FLOATING BUSHINGS			
6	50-6A-20MFB	M21097/1-007	250-06-30-240	6	50-12A-30MFB	M21097/1-025	251-06-30-290
10	50-10A-20MFB	M21097/1-043	250-10-30-240	10	50-20A-30MFB	M21097/1-061	251-10-30-290
15	50-15A-20MFB	M21097/1-079	250-15-30-240	15	50-30A-30MFB	M21097/1-097	251-15-30-290
18	50-18A-20MFB	M21097/1-115	250-18-30-240	18	50-36A-30MFB	M21097/1-133	251-18-30-290
22	50-22A-20MFB	M21097/1-151	250-22-30-240	22	50-44A-30MFB	M21097/1-169	251-22-30-290

DOUBLE READOUT WITH DIP SOLDER TAILS — No Bushings

CONTACT POSITIONS	CINCH PART NO.	MIL PART NO.	FACTORY NO.
6	50-12B-10M	M21097/1-028	252-06-30-220
10	50-20B-10M	M21097/1-064	252-10-30-220
15	50-30B-10M	M21097/1-100	252-15-30-220
18	50-36B-10M	M21097/1-136	252-18-30-220
22	50-44B-10M	M21097/1-172	252-22-30-220

ELECTRICAL SPECIFICATIONS

VOLTAGE RATING (AC RMS, adj. terminals): 830 (Sea Level); 300 (3.4 Hg, 50,000 Feet); 200 (1.3 Hg, 70,000 Feet); CURRENT: 5.0 Amps; CONTACT RESISTANCE: .005 Ohms at Rated Current; INSULATION RESISTANCE: 5000 Megohms.

ENVIRONMENTAL SPECIFICATIONS (Per MIL-C-21097 and MIL-STD-202, latest versions.) SHOCK: 3 blows of 50G, Method 202B; TEMPERATURE CYCLING: 5 continuous cycles per Method 107B, Test Condition B; Beryllium copper, −65°C to 125°C; Phosphor bronze, −65°C to 105°C; SALT SPRAY: 48 hrs. per Method 101B, Condition B; VIBRATION: Per Method 204A, Condition B for bifurcated contacts; Method 201A for non-bifurcated contacts; HUMIDITY: Per Method 103B, Condition B.

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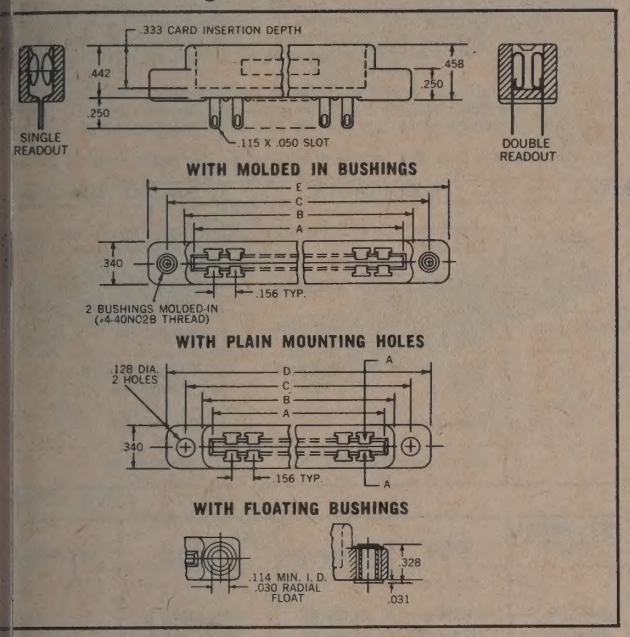
CINCH

ISION OF UNITED-CARR

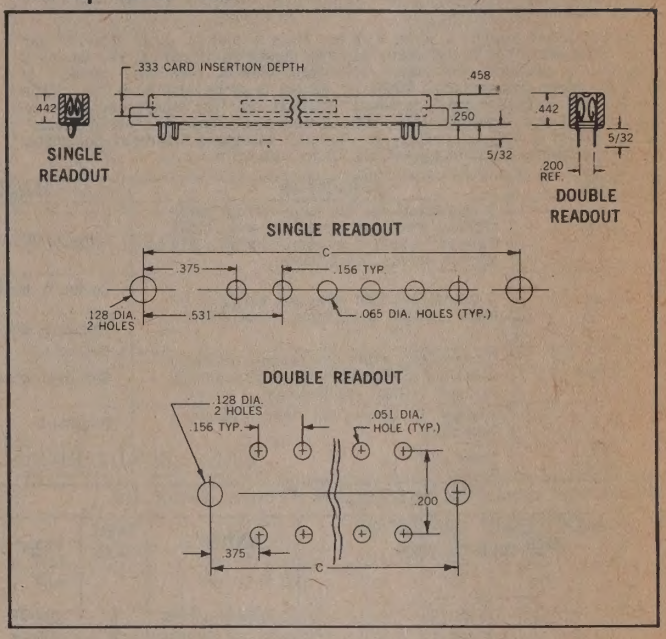
PRINTED CIRCUIT EDGE CONNECTORS (Cont'd.)

DIMENSIONS:

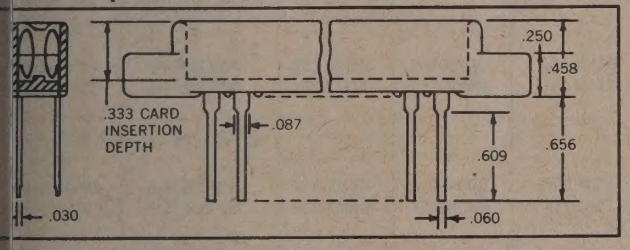
Conventional Wiring Tails



With Dip Solder Tails



Wire Wrap Tails



NO. OF CONTACT POSITIONS	DIMENSIONS A	B	C	D	E
6	1.100	1.239	1.531	1.785	1.937
10	1.724	1.864	2.156	2.410	2.562
12	2.036	2.177	2.469	2.723	2.875
15	2.504	2.645	2.937	3.191	3.343
18	2.972	3.114	3.406	3.660	3.812
22	3.596	3.739	4.031	4.285	4.437
25	4.067	4.208	4.500	4.754	4.906

TYKON® HIGH DENSITY EDGE CONNECTORS*

High density edge connectors with .050" centers for use with double sided .062" pc boards. Furnished with conventional wiring tails suitable for welding or soldering. Insulator is glass filled diallyl phthalate per MIL-M-14F, Type SDG-F. Contacts are ium copper with finish of copper flash plus .00003 gold plate IL-G-45204 Type II. Available in 6, 10, 15, 20 or 25-position sizes.

t Pending

RICAL SPECIFICATIONS

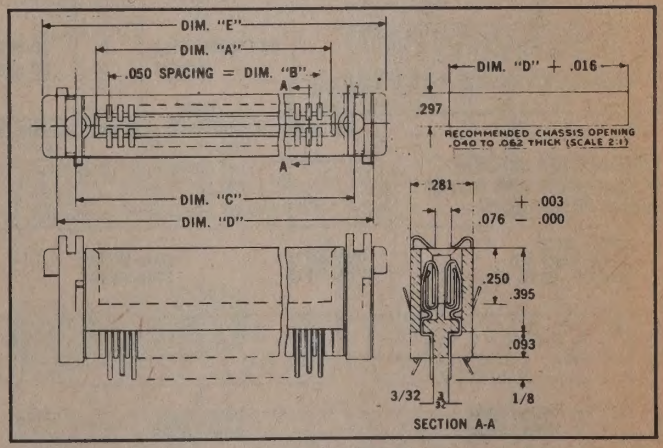
GE RATINGS: a.) At sea level (adj. terminals) 500 Volts AC RMS, 730 DC, b.) At sea level (to ground) 1160 Volts AC RMS, 1660 Volts DC, an altitude of 60,000 ft. (adj. terminals) 165 Volts AC RMS, 230 Volts) At an altitude of 60,000 ft. (to ground) 300 Volts AC RMS, 400 Volts DC; NT RATING: .050 amps; CONTACT RESISTANCE at 20 Millivolts: .040 maximum, .020 ohms average; MILLIVOLT DROP at 0.50 amps: 20 lts maximum; INSULATION RESISTANCE (As received): 5000 megohms um.

N MOUNTING CLIP

se in semi-flush pc board mounting. Separate item. Made of carbon with cadmium-plate plus yellow chromate finish. Part No. 50-MC.

N POLARIZING KEY

haped cellulose acetate. Part No. 50-PK.



PART NUMBERS

ITEM	PART NO.	CONTACT POSITIONS	DIMENSIONS A	B	C	D	E
6-position connector	50-12A-40	6	.350	.250	.550	.725	.850
10-position connector	50-20A-40	10	.550	.450	.750	.925	1.050
15-position connector	50-30A-40	15	.800	.700	1.000	1.175	1.300
20-position connector	50-40A-40	20	1.050	.950	1.250	1.425	1.550
25-position connector	50-50A-40	25	1.300	1.200	1.500	1.675	1.800
Mounting Clip	50-MC						
Polarizing Key	50-PK						

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D-SUBMINIATURE CONNECTORS†

The Cinch D Subminiature Connectors are designed for applications where space and weight are prime considerations. These high contact density connectors are especially well-suited for aircraft, missile and ground support installations. Although designed essentially for rack-and-panel installations, D series connectors may be adapted for cable attachment by means of accessory junction shells with integral clamps.

In addition to the original D series with two-piece insulators, Cinch offers Golden D and MARK III ROYAL D connectors utilizing monobloc insulators. The Golden D connector is available with either crimp-type, snap-in, removable contacts or standard solder pot contacts. MARK III ROYAL D connectors have the "Little Caesar" rear release contact assembly. Contacts are inserted by hand and extracted at the rear of the connector with a simple plastic tool. The "Little Caesar" contact assembly was selected by the National Aerospace Standards Committee for vital programs demanding great operational reliability.

All D Subminiature connectors will inter-mate if insert arrangements correspo These connectors are designed to meet or exceed most of the requirements MIL-C-8384 Rev. B.

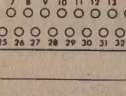
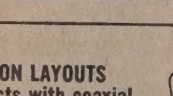
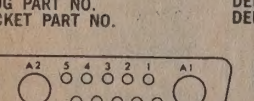
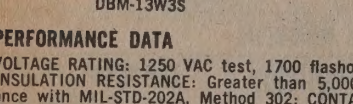
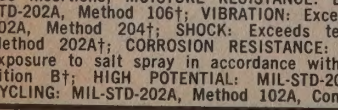
Combination layouts are supplied with unfilled coaxial and/or HV contact cavit Coaxial and HV contacts must be ordered separately, and may be used in changeably in any of the layouts listed. HV contacts accommodate wire sizes to #20. Coaxial contacts (with crimp or solder type terminations) and HV conta are snap-in and removable. Solder type coaxial and HV contacts have captiva center contacts.

Royal D, Mark III and Golden D, Mark II contacts use crimp tool MS-3191 Extraction tool 599-11-11-150 is supplied with each Royal D, Mark III commerc connectors; insertion-extraction tool 599-11-11-165 is supplied with each milit connector.

For detailed test data and technical information see Cinch Catalog CM-46.

TYPE	DESCRIPTION	COMMON NAME	INSULATOR TYPE	CONTACT TERMINATION
D*MA	D connectors for the most critical applications. Monobloc insulators and "Little Caesar" contact assemblies Military version meets MIL-C-24308.	Mark III ROYAL D	Monobloc diallyl, thalate, GD-1-30F	Crimp insert by hand, remove with small tool.
D*M	D connectors with monobloc insulator for more critical application requirements.	Golden D, Mark I	Monobloc, diallyl phthalate, SDG	Solder pot
		Golden D, Mark I Combination	Monobloc, diallyl phthalate, SDG	Solder pot with coaxial and/or HV
D*SM	D connectors with crimp, snap-in contacts in monobloc insulators for quick assembly in more critical applications.	Golden D, Mark II	Monobloc, diallyl phthalate, MDG	Crimp, snap-in removable
D*	Original D connectors with two-piece insulators.	Original D	Two-piece, zytel	Solder pot
DATA-PHONE	Same as D*	—	Diallyl phthalate, GDI-30	Same as D*

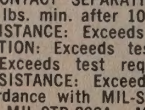
†Manufactured under license agreement with ITT Cannon Electric, Inc.

BASIC LAYOUT CONNECTORS (#20 contacts only)	LAYOUT	SHELL SIZE	PART NUMBER D*	PART NUMBER D*M	PART NUMBER D*SM	Commercial D*MA	Military D*MA	DATAPHONE**
	9 Contact Plug	E	DE-9P	DEM-9P	DESM-9P	DEMA-9P	M24308/4-1	—
	Socket	E	DE-9S	DEM-9S	DESM-9S	DEMA-9S	M24308/2-1	—
	15 Contact Plug	A	DA-15P	DASM-15P	DASM-15P	DEMA-15P	M24308/4-2	DA-19603-403
	Socket	A	DA-15S	DASM-15S	DASM-15S	DEMA-15S	M24308/2-2	DA-19603-404
	25 Contact Plug	B	DB-25P	DBM-25P	DBSM-25P	DEMA-25P	M24308/4-3	DB-19604-432
	Socket	B	DB-25S	DBM-25S	DBSM-25S	DEMA-25S	M24308/2-3	DB-19604-433
	37 Contact Plug	C	DC-37P	DCM-37P	DCSM-37P	DEMA-37P	M24308/4-4	—
	Socket	C	DC-37S	DCM-37S	DCSM-37S	DEMA-37S	M24308/2-4	—
	50 Contact Plug	D	DD-50P	DDM-50P	DDSM-50P	DEMA-50P	M24308/4-5	—
	Socket	D	DD-50S	DDM-50S	DDSM-50S	DEMA-50S	M24308/2-5	—

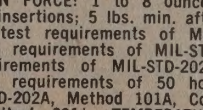
Add suffix "F" for shell with float mounts, as DEF, DEMF, etc. ** Require Dataphone Hoods.

COMBINATION LAYOUTS (#20 contacts with coaxial and/or HV cavities*)

SHELL SIZE
PLUG PART NO.
SOCKET PART NO.

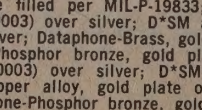


E
DEM-5W1P
DEM-5W1S

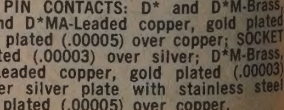


A
DAM-3W3P
DAM-3W3S

A
DAM-7W2P
DAM-7W2S



A
DAM-11W1P
DAM-11W1S



B
DBM-9W4P
DBM-9W4S

B
DBM-13W3P
DBM-13W3S

B
DBM-17W2P
DBM-17W2S

B
DBM-21W1P
DBM-21W1S

C
DCM-13W6P
DCM-13W6S

PERFORMANCE DATA

VOLTAGE RATING: 1250 VAC test, 1700 flashover; CURRENT RATING: 5 Amperes; INSULATION RESISTANCE: Greater than 5,000 megohms, determined in accordance with MIL-STD-202A, Method 302; CONTACT VOLTAGE DROP: (#20 contacts) 2.67 millivolts maximum per amp when tested in accordance with MIL-C-8384B, Paragraph 4.6.4; INDIVIDUAL CONTACT SEPARATION FORCE: 1 to 8 ounces; CONTACT RETENTION FORCE: 10 lbs. min. after 10 insertions; 5 lbs. min. after 100 insertions; MOISTURE RESISTANCE: Exceeds test requirements of MIL-STD-202A, Method 106†; VIBRATION: Exceeds test requirements of MIL-STD-202A, Method 204†; SHOCK: Exceeds test requirements of MIL-STD-202A, Method 202A†; CORROSION RESISTANCE: Exceeds requirements of 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B†; HIGH POTENTIAL: MIL-STD-202A, Method 301†; TEMPERATURE CYCLING: MIL-STD-202A, Method 102A, Condition D.†

MATERIALS

SHELLS: Steel cadmium plated with yellow chromate coating, except Dataphone connectors have clear chromate coating; INSULATORS: D*-Zytel; D*M and Dataphone-Diallyl phthalate, glass filled per MIL-M-14F, Type SDG; D*SM-Diallyl phthalate asbestos filled per MIL-M-14F, Type MDG; D*MA-Diallyl phthalate, glass fibre filled per MIL-P-19833; PIN CONTACTS: D* and D*M-Brass, gold plated (.00003) over silver; D*SM and D*MA-Leaded copper, gold plated (.00003) over silver; Dataphone-Brass, gold plated (.00005) over copper; SOCKET CONTACTS: D*-Phosphor bronze, gold plated (.00003) over silver; D*M-Brass, gold plated (.00003) over silver; D*SM-Leaded copper, gold plated (.00003) over silver; Copper alloy, gold plate over silver plate with stainless steel sleeves. Dataphone-Phosphor bronze, gold plated (.00005) over copper.

† As referenced in MIL-C-24308.

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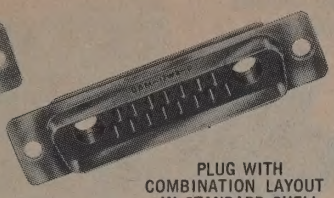
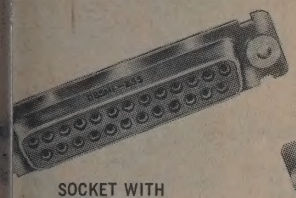
D-SUBMINIATURE CONNECTORS (Cont'd.)

PLUG WITH BASIC LAYOUT IN STANDARD SHELL

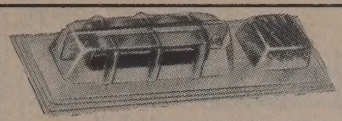


PLUG WITH COMBINATION LAYOUT IN STANDARD SHELL



SOCKET WITH BASIC LAYOUT IN SHELL WITH FLOAT MOUNTS

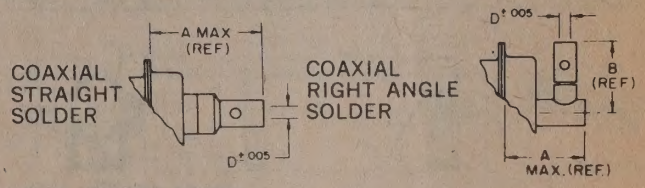
SOCKET WITH COMBINATION LAYOUT IN SHELL WITH FLOAT MOUNTSt



Connectors Individually Packed in Heat-Sealed Containers to Assure Extended Shelf Life

To protect D-Subminiature connectors from contamination and other corrosive elements in the air, Cinch individually packs each connector in heat-sealed polyvinyl-chloride containers (as shown) with an inert gas, oxygen-free atmosphere. This assures every customer of extended shelf life. A separate compartment is also provided in each container for the loose crimp-type contacts supplied with the Golden D, Mark II connector.

CONTACT TERMINATIONS



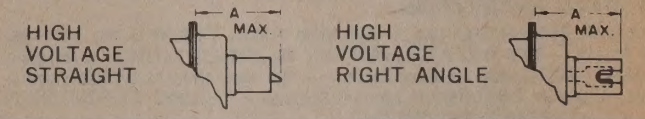
COAXIAL STRAIGHT SOLDER

	Order Number	Contact Ext. from Rear of Flange A	Dielectric Entry D	Overall Length	RG Cables
Plug	DM-53740-5008	.739	.040	.929	196/U
Plug	DM-53740-5001	.739	.067	.929	187/U 188/U
Plug	DM-53740-5002	.847	.110	1.037	195/U
Plug (Short Type)	DM-53740-5000	.670	.040	.860	196/U
Receptacle	DM-53742-5001	.739	.067	.929	187/U 188/U
Receptacle	DM-53742-5002	.847	.110	1.037	195/U
Receptacle	DM-53742-5004	.847	.125	1.037	58/U

COAXIAL RIGHT ANGLE SOLDER

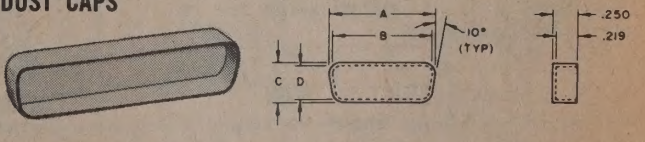
	Order Number	Contact Ext. from Rear of Flange A	B	Dielectric Entry D	Overall Length	RG Cables
Plug	DM-53741-5000	.530	.492	.040	.734	196/U
Plug	DM-53741-5001	.530	.492	.067	.734	187/U 188/U
Receptacle	DM-53743-5003	.530	.601	.110	.734	195/U
Receptacle	DM-53743-5004	.530	.601	.125	.734	58/U

HIGH VOLTAGE COMBINATIONS



	Order Number	Contact Ext. from Rear of Flange A	Wire Size	Overall Length
Plug	DM-53745-0000	.539	#20	.734
Receptacle	DM-53744-0000	.539	#20	.734
Plug	DM-53745-5000	.491	#20	.697
Receptacle	DM-53744-5000	.491	#20	.697

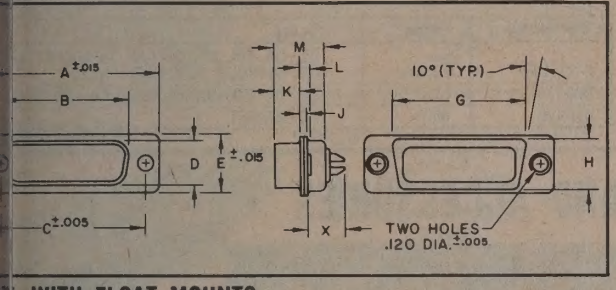
DUST CAPS



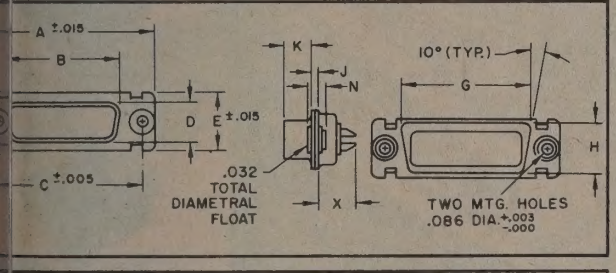
Order Number by Shell Size	For Use with	A	B	C	D
DE-59-20	DE-9S	.694	.627	.362	.295
DE-60-20	DE-9P	.749	.682	.412	.345
DA-59-20	DA-15S	1.022	.955	.362	.295
DA-60-20	DA-15P	1.077	1.010	.412	.345
DB-59-20	DB-25S	1.562	1.495	.362	.295
DB-60-20	DB-25P	1.635	1.568	.430	.363
DC-59-20	DC-37S	2.210	2.143	.362	.295
DC-60-20	DC-37P	2.283	2.216	.430	.363
DD-59-20	DD-50S	2.116	2.049	.474	.407
DD-60-20	DD50P	2.179	2.112	.536	.469

MATERIAL: Polyethylene (red)

DARD SHELL



L WITH FLOAT MOUNTS



LL SIZE	A	B	C	D	E	G
E Plug	1.213	.697	.984	.360	.494	.759
E Socket	1.213	.640	.984	.308	.494	.759
A Plug	1.541	1.025	1.312	.360	.494	1.083
A Socket	1.541	.968	1.312	.308	.494	1.083
B Plug	2.088	1.583	1.852	.378	.494	1.625
B Socket	2.088	1.508	1.852	.308	.494	1.625
C Plug	2.729	2.231	2.500	.378	.494	2.272
C Socket	2.729	2.156	2.500	.308	.494	2.272
D Plug	2.635	2.127	2.406	.484	.605	2.178
D Socket	2.635	2.026	2.406	.420	.605	2.178

LL SIZE	H	J	K	L	M	N	X†
E Plug	.422	.030	.236	.045	.422	.120	.422
E Socket	.422	.030	.243	.045	.429	.120	.390
A Plug	.422	.030	.236	.045	.422	.120	.422
A Socket	.422	.030	.243	.045	.429	.120	.390
B Plug	.422	.039	.231	.060	.426	.129	.422
B Socket	.422	.030	.243	.045	.429	.120	.390
C Plug	.422	.039	.231	.060	.426	.129	.422
C Socket	.422	.030	.243	.045	.429	.120	.390
D Plug	.534	.039	.231	.060	.426	.129	.422
D Socket	.534	.030	.243	.045	.429	.120	.390

† to Part Nos. in the above table for Float Mounts (Ex. DEMF-5WIP).
erances are ± .010 unless noted otherwise.
sions B and D are measured as outside dimensions at the bottom of the draw.
1 only; D* dimension is .312, D*M dimension is .390 for all plugs and sockets.

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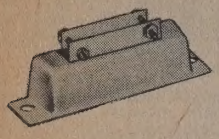
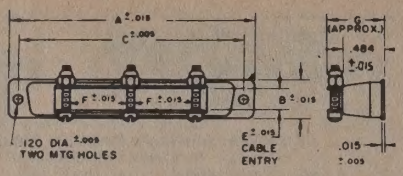
D-SUBMINIATURE CONNECTORS (Cont'd.)

JUNCTION SHELLS

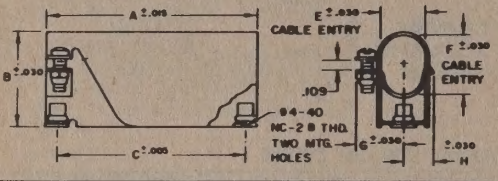




STRAIGHT CLAMP

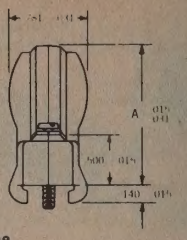
Order Number by Shell Size	No. of Cable Locking Screws Required	A	B	C	E	F	G
DA-19678-1	2	1.531	.500	1.312	.296	.312	.640
DB-19678-2	2	2.078	.500	1.852	.296	.796	.640
DC-19678-3	3	2.718	.500	2.500	.296	.687	.640
DD-19678-4	3	2.625	.609	2.406	.390	.687	.703

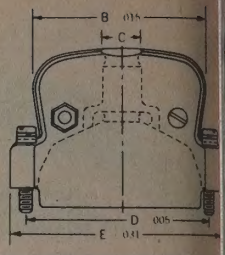
RIGHT ANGLE



Order Number by Shell Size	A	B	C	E	F	G	H
DE-19977-5	1.203	.718	.984	.437	.437	.468	.281
DA-19977-1	1.531	.718	1.312	.437	.437	.468	.281
DB-19977-2	2.078	.968	1.852	.437	.625	.468	.281
DC-19977-3	2.718	1.187	2.500	.437	.812	.468	.281
DD-19977-4	2.625	1.250	2.406	.562	.906	.531	.343

DATAPHONE HOODS

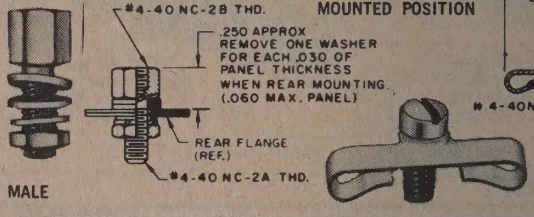




MATERIAL: Gray Melamine

Part No.	Contacts	A	B	C	D	E
DA-51225-1	15	1.297	1.219	.266	1.312	1.641
DA-51226-1	25	1.406	1.797	.328	1.852	2.203

SCREW LOCK ASSEMBLIES



Order Number	Type	Usage
D-20418-2	Female	DE, DA, DB, DC, DD PIN OR SOCKET WITH OR WITHOUT JUNCTION SHELL
D20419	Male	DA, DE PIN OR SOCKET; DB, DC SOCKET
D20420	Male	DD SOCKET

HINGE CONNECTORS AND ACCESSORIES

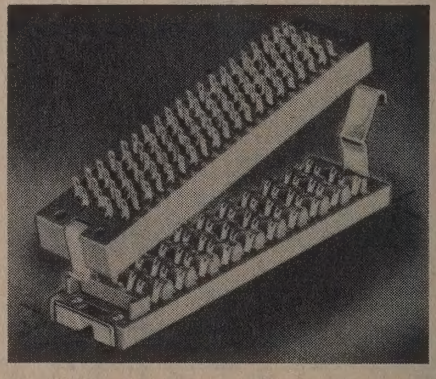
Cinch hinge connectors eliminate contact damage caused by high insertion and extraction forces.

Caps are available, furnished with liners and cable clamps. For more secure locking, an alternate lock with a hook fits into a cutout in the cap. If the alternate lock is required, order Part No. 37AL.

The castings are black phenolic, type CFG. Contacts are phosphor bronze, cadmium-plated (.0001). Caps are finished in black wrinkle and the cable clamps are nickel-plated. Liners are formed fibre.

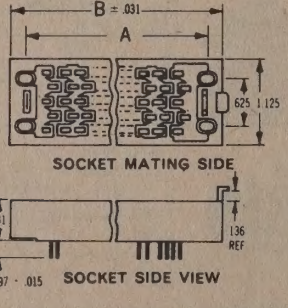
ELECTRICAL SPECIFICATIONS

VOLTAGE: Adjacent Terminals — 930 Volts R.M.S., 1300 Volts DC; VOLTAGE: to Ground — 1400 Volts R.M.S., 2000 Volts DC; CURRENT RATING: 4.5 Amperes; CONTACT RESISTANCE: at Rated Current — .020 ohm; INSULATION RESISTANCE: 1000 megohms; CAPACITANCE: Adjacent Contacts — .75 MMF.



STANDARD LOCK

ALTERNATE LOCK



PART NUMBERS

No. Contacts	Plug W.O. Lock	Skt. W. Lock	Skt. W.O. Lock	Plug W. Lock	Mtg. Dim.	Overall Dim.	Plug Cap Part No.	Hole Size
20	37M20	37F20L	37F20	37M20L	1.375	1.750	37C20	¾"
30	37M30	37F30L	37F30	37M30L	1.812	2.187	37C30	13/16"x1"
40	37M40	37F40L	37F40	37M40L	2.250	2.625	37C40	13/16"x1"
50	37M50	37F50L	37F50	37M50L	2.687	3.062	37C50	13/16"x1"
60	37M60	37F60L	37F60	37M60L	3.125	3.500	37C60	13/16"x1½"
70	37M70	37F70L	37F70	37M70L	3.562	3.937	37C70	13/16"x1½"
80	37M80	37F80L	37F80	37M80L	4.000	4.375	37C80	13/16"x1½"
90	37M90	37F90L	37F90	37M90L	4.438	4.812	37C90	13/16"x1½"
100	37M100	37F100L	37F100	37M100L	4.875	5.250	37C100	13/16"x1½"

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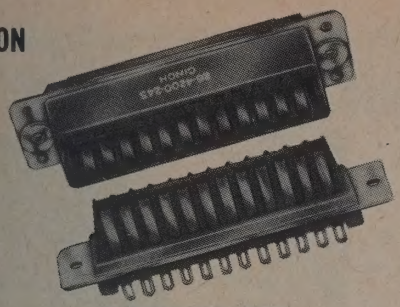
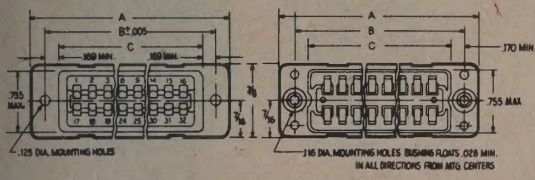
BLUE RIBBON* and MICRO RIBBON* RACK and PANEL CONNECTORS

RIBBON

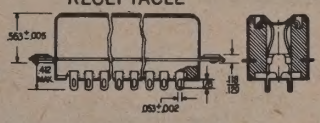


DIMENSIONAL DATA



PLUG

RECEPTACLE



ELECTRICAL SPECIFICATIONS

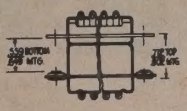
VOLTAGE RATINGS: (a) At Sea Level 800 VDC, (b) At 70,000 Feet 300 VDC; CONTACT CURRENT RATING: 5 Amperes; CONTACT RESISTANCE: .003 Ohms Maximum; INSULATION RESISTANCE (As Received): 100,000 Megohms Minimum.

MECHANICAL SPECIFICATIONS

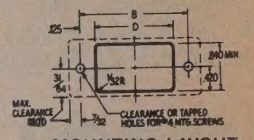
CONTACTS: Plug, Copper, ASTM-B-152, Type ETP, Socket, Phosphor bronze, ASTM-B-103, MIL-B-892, Grade A; FINISH: .0002 "Silver under .00002" gold per MIL-G-14204; MOUNTING PLATE: Passivated stainless steel.

No. of Contacts	Part Numbers Plug	Part Numbers Socket	A	Dimensions B	Dimensions C	D (Min.)
8	26-4100-8P	26-4200-8S	1 23/32	1.375	1 1/32	1.120
16	26-4100-16P	26-4200-16S	2 15/32	2.125	1 25/32	1.868
24	26-4100-24P	26-4200-24S	3 7/32	2.875	2 17/32	2.620
32	26-4100-32P	26-4200-32S	3 31/32	3.625	3 9/32	3.370

*Tolerances: Fractions ± 1/64
Decimals ± .005



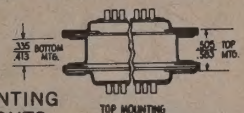
MATING PLUG & RECEPTACLE



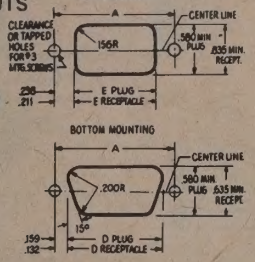
MOUNTING LAYOUT

MICRO-RIBBON

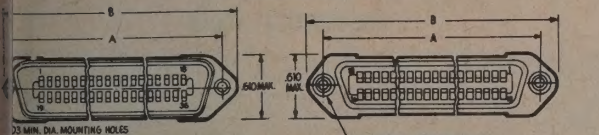
MATING PLUG & RECEPTACLE



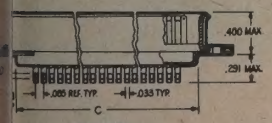
MOUNTING LAYOUTS



DIMENSIONAL DATA

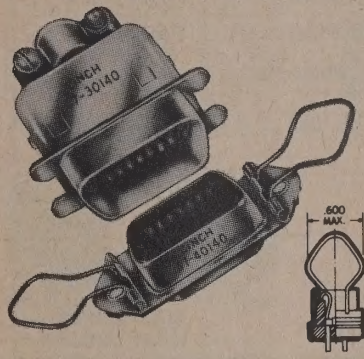


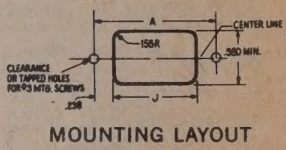
PLUG



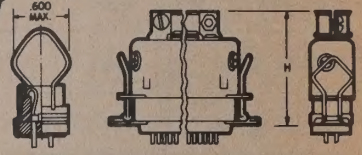
RECEPTACLE

MICRO-RIBBON CABLE-TO-CHASSIS



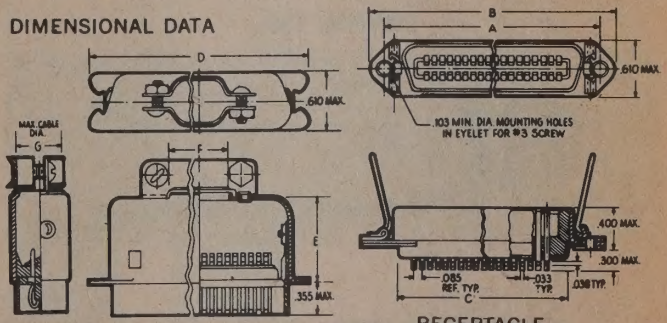


MOUNTING LAYOUT



MATING PLUG AND RECEPTACLE

DIMENSIONAL DATA



RECEPTACLE

No. of Contacts	Socket No.	Plug No.	Socket No.	Plug No.	A	B	C	D	D min.	E	E min.	F	G	H	J min.
4	57-20140	57-10140	57-40140	57-30140	1.417	1.750	.910	1.495	1.098	.843	.940	.306	.422	1.668	.940
4	57-20240	57-10240	57-40240	57-30240	1.842	2.175	1.335	1.920	1.523	.825	1.365	.473	.473	1.668	1.365
3	57-20360	57-10360	57-40360	57-30360	2.352	2.685	1.845	2.431	2.033	.905	1.875	.640	.473	1.730	1.875
0	57-20500	57-10500	57-40500	57-30500	2.947	3.270	2.440	3.025	2.628	.995	2.472	.766	.473	1.825	2.472

TRICAL SPECIFICATIONS

GE RATINGS: (a) At Sea Level 500 VRMS, 700 VDC, (b) At 70,000 Feet RMS, 200 VDC; CONTACT CURRENT RATING: 5 Amperes; CONTACT RESIS- .003 Ohms Average; INSULATION RESISTANCE (As Received): 5000 Meg- Minimum.

MECHANICAL SPECIFICATIONS

CONTACTS: Cadmium bronze, ASTM-B-105; FINISH: .0002 "Silver under .00002" gold per MIL-G-14204; HOUSINGS: Brass alloy with .0002 to .0004 zinc.

*Manufactured under license from Bunker-Ramo, Inc.

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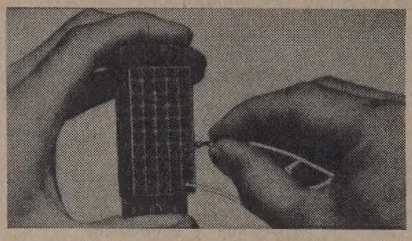
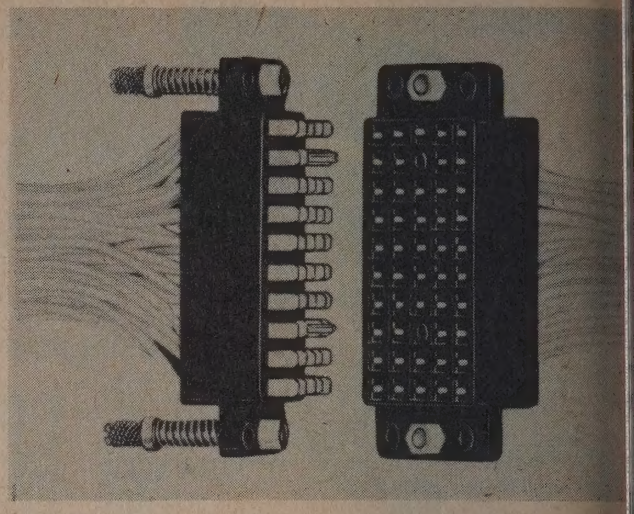
MINI-JONES CRIMP-ON, SNAP-IN CONNECTORS

The "MINI-JONES" contact density of 25 contacts per square inch results in a space saving of 40% compared to conventional connectors. No tools are required for inserting contacts.

Pin and contact terminations will accommodate either one AWG 18, 20, 22 or 24; or two AWG 22 or 24.

Supplied unassembled with loose contacts and insulators.





ELECTRICAL SPECIFICATIONS

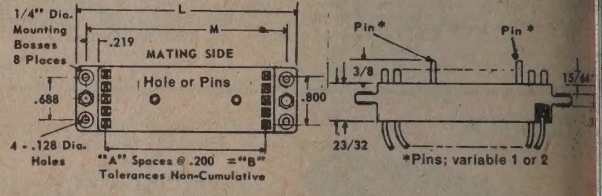
VOLTAGE RATING: 830 VRMS, 1230 VDC; CURRENT RATING: 4.0 amperes; CONTACT RESISTANCE: .0065 ohms maximum; LOW LEVEL CONTACT RESISTANCE: current flow at 0.1 micro volts, no variation of contact resistance at 6.5 ma and 16.25 ma; INSULATION RESISTANCE: 1000 megohms.

MATERIALS and FINISHES

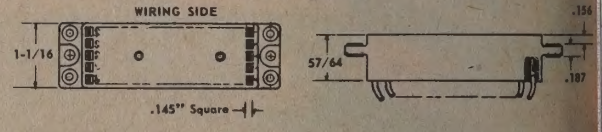
Component	Material	Finish
Male contacts	Phosphor Bronze	Tinned in strip
Female contacts	Phosphor Bronze	Tinned in strip
Insulators	General purpose black phenolic	
Polarizing pins	Brass	.0003 cadmium + yellow chromate
Lock nuts	Brass	.0003 cadmium + yellow chromate
Locking screw	Steel	.0003 cadmium + yellow chromate
Locking spring	Music Wire	.0003 cadmium + yellow chromate

DIMENSIONS

TYPE 1 PLUG



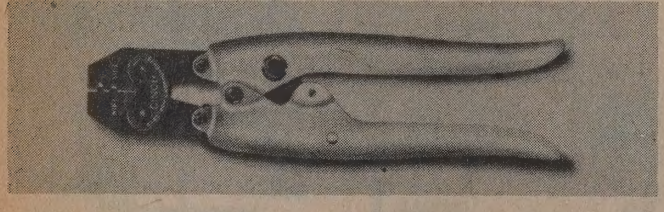
TYPE 2 SOCKET



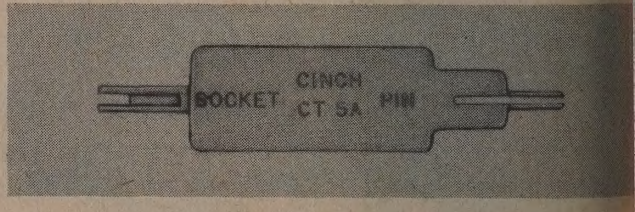
TYPE 2 PLUG OR SOCKET

Shown with Lock Screw in Place. Lock Screw Fits Plug & Socket Interchangeably

CRIMPING TOOL



PIN-REMOVAL TOOL



PART NUMBERS

NO OF CONTACTS	STANDARD CONNECTORS (TYPE 1) PLUG	SOCKET	CONNECTORS WITH PROVISION FOR LOCKS (TYPE 2) PLUG	SOCKET	NO. OF "A" SPACES	"B"	DIMENSIONS "M"	"L"
19	MJP-19	MJS-19	MJP-2-19	MJS-2-19	3	.600	1.288	1.600
29	MJP-29	MJS-29	MJP-2-29	MJS-2-29	5	1.000	1.688	2.000
39	MJP-39	MJS-39	MJP-2-39	MJS-2-39	7	1.400	2.088	2.400
48	MJP-48	MJS-48	MJP-2-48	MJS-2-48	9	1.800	2.488	2.800
58	MJP-58	MJS-58	MJP-2-58	MJS-2-58	11	2.200	2.888	3.200
68	MJP-68	MJS-68	MJP-2-68	MJS-2-68	13	2.600	3.288	3.600

Screw lock and spring to complete lock for Type 2	MJ-SL	Crimping tool	CT-5B
Plug pin, bulk	MJP-P	Pin removal tool	CT-5A
Socket pin, bulk	MJS-C		

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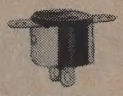
"JONES" PLUGS and SOCKETS — 300 SERIES

300 series plugs and sockets feature MONOBLOCK uction. S-302-AB socket (two-contact plugs and ts are round, and all others are rectangular). eliminates internal moisture traps. MONOBLOCK's atented* snap-in socket contacts permit external ring, plus removal and replacement of individual ts if necessary. Contacts are "locked-in" to and wiring stress. MONOBLOCK plugs and sockets mpatible with the old two-piece types.

atent nos. 2688123 and 2980881.

P-302-CCT



S-302-AB

ELECTRICAL SPECIFICATIONS

All connector ratings are based on a continuously mated condition. "Rated Voltage" is ⅓ of Voltage Breakdown.

Rated Voltage ..... 730 Volts rms. Contact Resistance ..... .016 Ohms max.

Under most normal operating conditions where not all contacts are carrying substantially full rated current, maximum current per contact is rated at 10 amperes. The Jones 300 series plugs and sockets are recognized under the Component Program of Underwriters' Laboratories, Inc. In accordance with UL Standard #498, the Underwriters' Laboratories ratings are derived from the condition whereby all contacts are carrying "rated" current simultaneously. The resultant ratings are as follows:

Rated Current	Rated Wattage
(2-12 contacts) ..... 7.5 amperes	(2-12 contacts) .....1875 watts
(15-33 contacts) ..... 4.5 amperes	(15-33 contacts) .....1125 watts

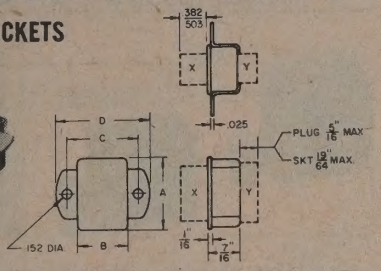
MECHANICAL SPECIFICATIONS

INSULATOR: Molded phenolic;; CONTACTS: Phosphor bronze, cadmium plated; HOUSING: Formed metal, black wrinkle finish.

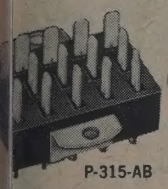
AB WITH ANGLE BRACKETS

P-306-AB

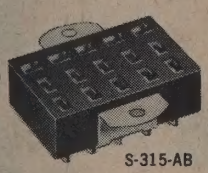
S-306-AB



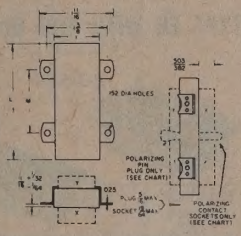
No. of cts	Plug Part Nos.	Socket Part Nos.	Dimensions in Inches A	B	C	D
	P-302-AB	S-302-AB	21/32 Dia.	—	31/32	1 1/32
	P-303-AB	S-303-AB	1	7/16	3/4	1 1/16
	P-304-AB	S-304-AB	3/4	11/16	1	1 5/16
	P-306-AB	S-306-AB	1	11/16	1	1 5/16
	P-308-AB	S-308-AB	1 1/4	11/16	1	1 5/16
	P-310-AB	S-310-AB	1 9/16	11/16	1	1 5/16
	P-312-AB	S-312-AB	1 1/4	1 5/16	1 1/4	1 9/16



P-315-AB



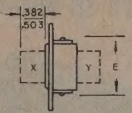
S-315-AB

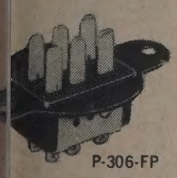


No. of acts	Plug Part Nos.	Socket Part Nos.	Dimensions in Inches L	M	Polarizing Pin†
	P-315-AB	S-315-AB	1 5/8	See Note	NO
	P-318-AB	S-318-AB	1 13/16	1 1/4	NO
	P-321-AB	S-321-AB	2 1/4	1 5/16	NO
	P-324-AB	S-324-AB	2 9/16	1 1/4	14
	P-327-AB	S-327-AB	2 7/8	1 9/16	14
	P-330-AB	S-330-AB	3 3/16	1 7/8	14
	P-333-AB	S-333-AB	3 1/2	2 3/16	17

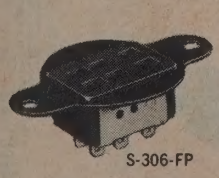
P-315-AB and S-315-AB require only two mounting brackets, mounted on center of connector.

E FP WITH FLUSH PLATE

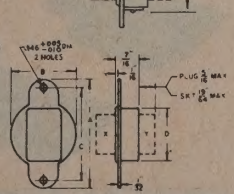




P-306-FP

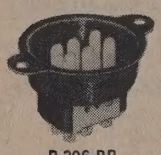


S-306-FP

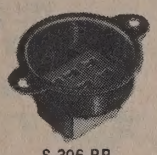


of acts	Plug Part Nos.	Socket Part Nos.	Dimensions in Inches A	B	C	D	E (Max.)
2	P-302-FP	S-302-FP	2 1/16	1 1/4	1 3/4	—	23/32
3	P-303-FP	S-303-FP	2 1/16	1 1/4	1 3/4	1 5/16	1/2
4	P-304-FP	S-304-FP	2 1/16	1 1/4	1 3/4	1 1/16	3/4
6	P-306-FP	S-306-FP	2 1/16	1 1/4	1 3/4	1 5/16	3/4
8	P-308-FP	S-308-FP	2 1/16	1 3/4	2 1/4	1 1/16	3/4
0	P-310-FP	S-310-FP	2 1/16	1 3/4	2 1/4	1 13/64	3/4
2	P-312-FP	S-312-FP	2 1/16	1 3/4	2 1/4	1 3/16	1

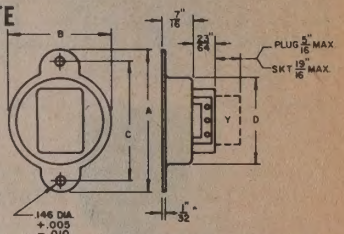
TYPE RP WITH RECESSED PLATE



P-306-RP

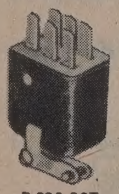


S-306-RP



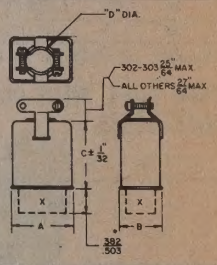
No. of Contacts	Plug Part Nos.	Socket Part Nos.	Dimensions in Inches A	B	C	D (Max.)
2	P-302-RP	S-302-RP	2 1/16	1 1/2	1 3/4	1.350
3	P-303-RP	S-303-RP	2 1/16	1 1/2	1 3/4	1.350
4	P-304-RP	S-304-RP	2 1/16	1 1/2	1 3/4	1.350
6	P-306-RP	S-306-RP	2 1/16	1 1/2	1 3/4	1.350
8	P-308-RP	S-308-RP	2 3/16	2	2 1/4	1.850
10	P-310-RP	S-310-RP	2 3/16	2	2 1/4	1.850
12	P-312-RP	S-312-RP	2 3/16	2	2 1/4	1.850

TYPE CCT WITH CABLE CLAMP IN TOP

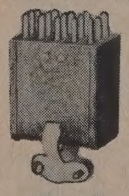


P-306-CCT

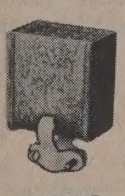
S-306-CCT



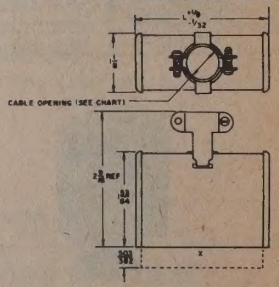
No. of Contacts	Plug Part Nos.	Socket Part Nos.	Dimensions in Inches A	B	C	D
2	P-302-CCT	S-302-CCT	2 1/32 Dia.	—	61/64	3/8
3	P-303-CCT	S-303-CCT	1	7/16	61/64	5/16
4	P-304-CCT	S-304-CCT	3/4	11/16	61/64	3/8
6	P-306-CCT	S-306-CCT	1	11/16	1 5/64	7/16
8	P-308-CCT	S-308-CCT	1 1/4	11/16	1 5/64	1/2
10	P-310-CCT	S-310-CCT	1 9/16	11/16	1 13/64	1/2
12	P-312-CCT	S-312-CCT	1 1/4	1 5/16	1 13/64	9/16



P-315-CCT



S-315-CCT



No. of Contacts	Plug Part Nos.	Socket Part Nos.	L +1/8 —1/32	Cable Opening Standard	Cable Opening Max.	Polarizing Pin†
15	P-315-CCT	S-315-CCT	1 11/16	5/16	7/8	NO
18	P-318-CCT	S-318-CCT	2	5/16	7/8	NO
21	P-321-CCT	S-321-CCT	2 5/16	5/8	7/8	NO
24	P-324-CCT	S-324-CCT	2 5/8	5/8	7/8	14
27	P-327-CCT	S-327-CCT	2 15/16	5/8	7/8	14
30	P-330-CCT	S-330-CCT	3 1/4	3/4	7/8	14
33	P-333-CCT	S-333-CCT	3 5/16	3/4	7/8	17

†See Polarizing Chart on Page

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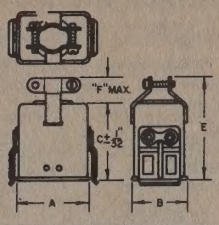
"JONES" PLUGS AND SOCKETS — 300 SERIES (Cont'd.)

TYPE CCT-K WITH CABLE CLAMP IN TOP OF CAP AND WITH KEEPERS

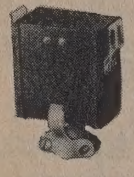
SOCKETS

S-306-CCT-K

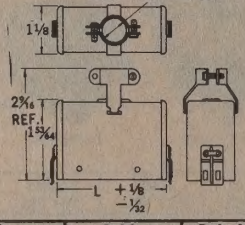


No. of Contacts	Socket Part Nos.	Dimensions in Inches A	B	C	E	F	Cable Opening
2	S-302-CCT-K	21/32 Dia.	—	61/64	1 3/8	25/64	3/8
3	S-303-CCT-K	1	7/16	61/64	1 3/8	25/64	5/16
4	S-304-CCT-K	3/4	11/16	61/64	1 13/32	27/64	3/8
6	S-306-CCT-K	1	11/16	15/64	1 1/2	27/64	7/16
8	S-308-CCT-K	1 1/4	11/16	15/64	1 5/8	27/64	1/2
10	S-310-CCT-K	1 9/16	11/16	1 13/64	1 21/32	27/64	1/2
12	S-312-CCT-K	1 1/4	15/16	1 13/64	1 5/8	27/64	9/16

CABLE OPENING (SEE CHART)



S-315-CCT-K

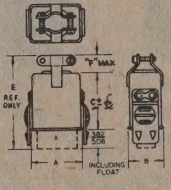


No. of Contacts	Socket Part Nos.	L +1/8 −1/32	Cable Opening	Polarizing Pin†
15	S-315-CCT-K	1 11/16	7/16	NO
18	S-318-CCT-K	2	7/16	NO
21	S-321-CCT-K	2 5/16	5/8	NO
24	S-324-CCT-K	2 5/8	5/8	14
27	S-327-CCT-K‡	2 15/16	5/8	14
30	S-330-CCT-K‡	3 1/4	3/4	14
33	S-333-CCT-K‡	3 9/16	3/4	17

‡Keepers are centered on each side, not on each end as shown.

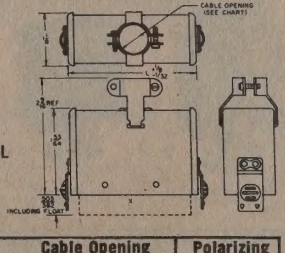
TYPE CCT-L WITH CABLE CLAMP IN TOP OF CAP AND WITH LOCKS

P-306-CCT-L



No. of Contacts	Plug Part Nos.	Dimensions in Inches A	B	C	E	F	Cable Opening
2	P-302-CCT-L	21/32 Dia.	—	61/64	1 13/16	25/64	3/8
3	P-303-CCT-L	1	7/16	61/64	1 13/16	25/64	5/16
4	P-304-CCT-L	3/4	11/16	61/64	1 27/32	27/64	3/8
6	P-306-CCT-L	1	11/16	15/64	1 15/16	27/64	7/16
8	P-308-CCT-L	1 1/4	11/16	15/64	2 1/16	27/64	1/2
10	P-310-CCT-L	1 9/16	11/16	1 13/64	2 3/32	27/64	1/2
12	P-312-CCT-L	1 1/4	15/16	1 13/64	2 1/16	27/64	9/16

P-315-CCT-L

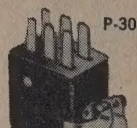


No. of Contacts	Plug Part Nos.	L +1/8 −1/32	Cable Opening Standard	Cable Opening Max.	Polarizing Pin†
15	P-315-CCT-L	1 11/16	7/16	7/8	NO
18	P-318-CCT-L	2	7/16	7/8	NO
21	P-321-CCT-L	2 5/16	5/8	7/8	NO
24	P-324-CCT-L	2 5/8	5/8	7/8	14
27	P-327-CCT-L‡	2 15/16	5/8	7/8	14
30	P-330-CCT-L‡	3 1/4	3/4	7/8	14
33	P-333-CCT-L‡	3 9/16	3/4	7/8	17

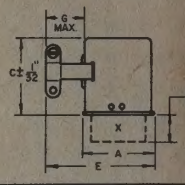
‡Locks are centered on each side, not on each end as shown.

TYPE CCE WITH CABLE CLAMP IN END

P-306-CCE



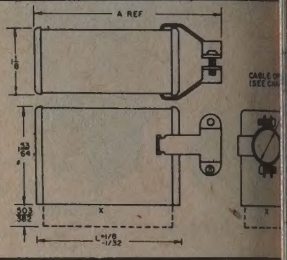
S-306-CCE



No. of Contacts	Plug Part Nos.	Socket Part Nos.	Dimensions in Inches A	B	C	E	G	Cable Opening
6	P-306-CCE	S-306-CCE	1	11/16	1 1/16	1 1/16	27/64	7/16
8	P-308-CCE	S-308-CCE	1 1/4	11/16	1 1/16	1 13/16	27/64	1/2
10	P-310-CCE	S-310-CCE	1 9/16	11/16	1 3/16	2 3/32	27/64	1/2
12	P-312-CCE	S-312-CCE	1 1/4	15/16	1 3/16	1 3/4	27/64	9/16

P-315-CCE

S-315-CCE

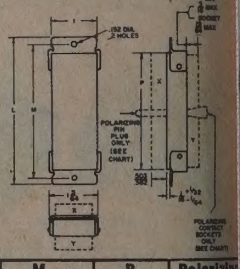


No. of Contacts	Plug Part Nos.	Socket Part Nos.	A (Ref.)	L +1/8 −1/32	Cable Opening Standard	Cable Opening Max.	Polarizing Pin†
15	P-315-CCE	S-315-CCE	2 7/16	1 11/16	7/16	13/16	NO
18	P-318-CCE	S-318-CCE	2 3/4	2	7/16	13/16	NO
21	P-321-CCE	S-321-CCE	3 1/16	2 5/16	5/8	13/16	NO
24	P-324-CCE	S-324-CCE	3 3/8	2 5/8	5/8	13/16	14
27	P-327-CCE	S-327-CCE	3 11/16	2 15/16	5/8	13/16	14
30	P-330-CCE	S-330-CCE	4	3 1/4	3/4	13/16	14
33	P-333-CCE	S-333-CCE	4 5/16	3 9/16	3/4	13/16	17

TYPE EB WITH END BRACKETS

P-315-EB

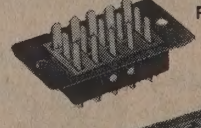
S-315-EB



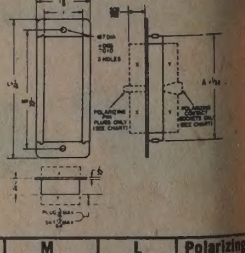
No. of Contacts	Plug Part Nos.	Socket Part Nos.	L ± 1/32"	M ± 1/32"	P ± 1/16"	Polarizing Pin†
15	P-315-EB	S-315-EB	2 5/16	2	1 5/8	NO
18	P-318-EB	S-318-EB	2 5/8	2 5/16	1 15/16	NO
21	P-321-EB	S-321-EB	2 15/16	2 5/8	2 1/4	NO
24	P-324-EB	S-324-EB	3 1/4	2 15/16	2 5/16	14
27	P-327-EB	S-327-EB	3 5/16	3 1/4	2 7/8	14
30	P-330-EB	S-330-EB	3 7/8	3 5/16	3 5/16	14
33	P-333-EB	S-333-EB	4 5/16	3 7/8	3 1/2	17

TYPE SB WITH SHALLOW BRACKETS FOR FLUSH MOUNTING

P-315-SB



S-315-SB



No. of Contacts	Plug Part Nos.	Socket Part Nos.	A ± 1/32"	M ± 1/32"	L ± 1/16"	Polarizing Pin†
15	P-315-SB	S-315-SB	1 11/16	2 1/8	2 35/64	NO
18	P-318-SB	S-318-SB	2	2 1/16	2 35/64	NO
21	P-321-SB	S-321-SB	2 5/16	2 3/4	3 11/64	NO
24	P-324-SB	S-324-SB	2 5/8	3 1/16	3 31/64	14
27	P-327-SB	S-327-SB	2 15/16	3 3/8	3 51/64	14
30	P-330-SB	S-330-SB	3 1/4	3 11/16	4 3/64	14
33	P-333-SB	S-333-SB	3 9/16	4	4 27/64	17

†See Polarizing Chart on page 518

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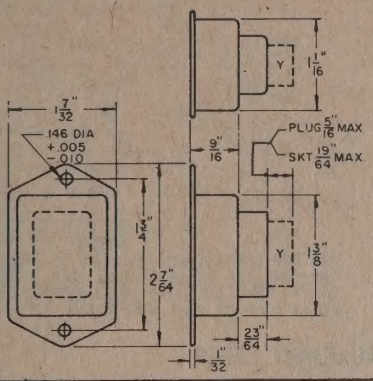
"JONES" PLUGS and SOCKETS — 300 SERIES (Cont'd.)

DB WITH DEEP BRACKET FOR RECESSED MOUNTING

P-306-DB

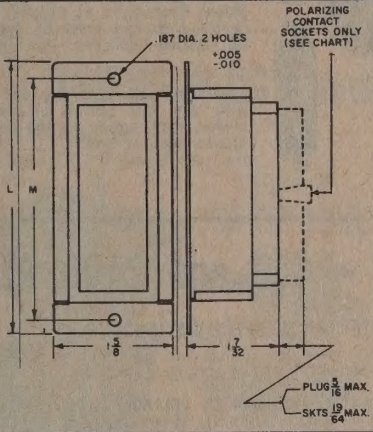
S-306-DB



of cts	Plug Part Nos.	Socket Part Nos.	TYPE DB With Deep Bracket for Recessed Mounting
	P-302-DB	S-302-DB	See Dimensions On Diagram
	P-303-DB	S-303-DB	
	P-304-DB	S-304-DB	
	P-306-DB	S-306-DB	
	P-308-DB	S-308-DB	
	P-312-DB	S-312-DB	

P-315-DB

S-315-DB



of cts	Plug Part Nos.	Socket Part Nos.	Dimensions in Inches L ±1/16"	Dimensions in Inches M ±1/32"	Polarizing Contact Pins†
	P-315-DB	S-315-DB	2 13/16	2 3/8	NO
	P-318-DB	S-318-DB	3 1/16	2 11/16	NO
	P-321-DB	S-321-DB	3 7/16	3	NO
	P-324-DB	S-324-DB	3 3/4	3 5/16	14
	P-327-DB	S-327-DB	4 1/16	3 5/8	14
	P-330-DB	S-330-DB	4 3/8	3 15/16	14
	P-333-DB	S-333-DB	4 11/16	4 1/4	17

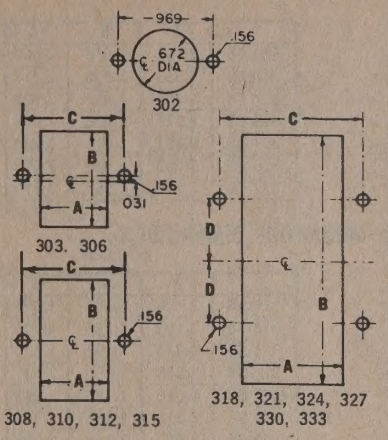
Polarizing Chart on page 16.
he dimension for contact tail extension.

ACEMENT DRIVE PINS FOR 300 SERIES CAP-TYPE S AND SOCKETS

ontact size and 15 thru 33-contact sizes require 2 pins per unit; all r sizes require only 1.

NO. OF CONTACTS	PART NOS.	DIM. L ± .005
2	302-R	.687
3	303-R	.468
4, 6, 8, 10*	304-R	.718
12	312-R	.953
15-33*	333-R	1.125

TYPE AB (Angle Bracket) MOUNTING DIMENSIONS

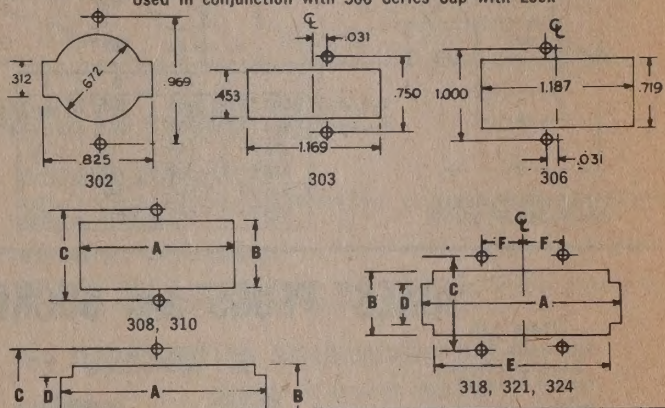


For 300 Series 2-33 contact Angle Bracket Connectors (type AB).

	A	B	C	D
303	.719	1.016	.750	—
304	.719	.781	1.000	—
306	.719	1.031	1.000	—
308	.719	1.281	1.000	—
310	.719	1.578	1.000	—
312	.953	1.266	1.250	—
315	1.016	1.641	1.375	—
318	1.016	1.953	1.375	.625
321	1.016	2.266	1.375	.469
324	1.016	2.578	1.375	.625
327	1.016	2.891	1.375	.781
330	1.016	3.203	1.375	.938
333	1.016	3.516	1.375	1.094

TYPE AB PANEL CUT-OUTS

For 300 Series 2-33 contact Angle Bracket Connectors (type AB) Used in conjunction with 300 Series Cap with Lock

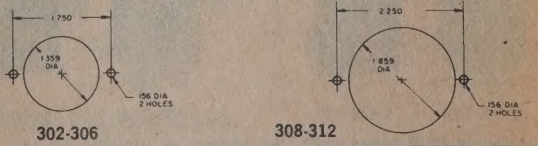


	A	B	C	D	E	F
304	.919	.719	1.000	.312	—	—
308	1.437	.719	1.000	—	—	—
310	1.763	.719	1.000	—	—	—
312	1.437	.953	1.250	.625	—	—
315	1.877	1.016	1.375	.625	1.641	—
318	2.190	1.016	1.375	.625	1.963	.625
321	2.502	1.016	1.375	.625	2.266	.468
324	2.815	1.016	1.375	.625	2.578	.625
327	2.891	1.252	1.375	1.016	.625	.781
330	3.203	1.252	1.375	1.016	.625	.937
333	3.516	1.252	1.375	1.016	.625	1.093

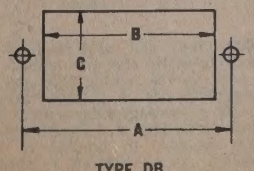
ALL MOUNTING HOLES .156" DIA. MAXIMUM CHASSIS THICKNESS 1/16" FOR BOTTOM MOUNTING
Mounting holes to be located on center line unless otherwise shown.

TYPE RP RECESSED PLATE MOUNTING

For 300 Series 2-12 contact Recessed Plate Connectors (type RP)



TYPE DB (Deep Bracket) MOUNTING DIMENSIONS



	A	B	C
302-312 DB	1.375	1.0625	.625
315 DB	2.000	1.438	1.188
318 DB	2.313	1.438	1.344
321 DB	2.625	1.438	1.500
324 DB	2.938	1.438	1.656
327 DB	3.250	1.438	1.813
330 DB	3.562	1.438	1.969
333 DB	3.875	1.438	2.125

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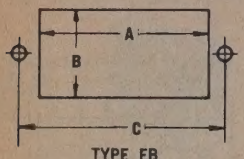
"JONES PLUGS AND SOCKETS — 300 SERIES (Cont'd.)

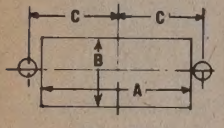
TYPE EB (End Bracket) MOUNTING DIMENSIONS



TYPE EB

	A	B	C
315 EB	1.641	1.016	2.000
318 EB	1.953	1.016	2.313
321 EB	2.266	1.016	2.625
324 EB	2.578	1.016	2.938
327 EB	2.891	1.016	3.250
330 EB	3.203	1.016	3.563
333 EB	3.516	1.016	3.875

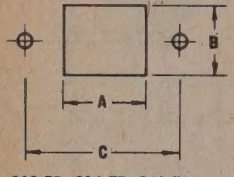
TYPE SB (Shallow Bracket) MOUNTING DIMENSIONS



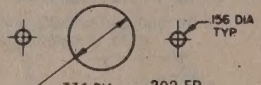
TYPE SB

	A	B	C
315 SB	1.750	1.156	1.063
318 SB	2.063	1.156	1.219
321 SB	2.375	1.156	1.375
324 SB	2.688	1.156	1.531
327 SB	3.000	1.156	1.688
330 SB	3.313	1.156	1.844
333 SB	3.625	1.156	2.000

TYPE FP (Flush Plate) MOUNTING DIMENSIONS



303 FP, 304 FP, 306 FP,
308 FP, 310 FP, 312 FP

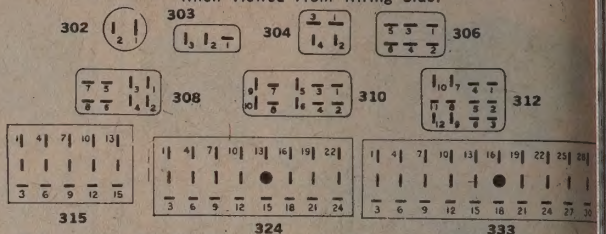


302 FP

	A	B	C
303 FP	.953	.516	—
304 FP	.703	.766	—
306 FP	.953	.766	1.750
308 FP	1.203	.766	—
310 FP	1.516	.766	—
312 FP	1.203	1.016	2.250

POLARIZING POSITION DATA

Polarization and Numbering of Contacts on Socket Units When Viewed From Wiring Side.



The 318 and 321 are the same as the 315 with additional contacts. The 324, 327 and 330 plugs have a round locating pin in position No. 14. This pin is in position No. 17 on the 333 plug. All of the series contacts start with number 1.

AUXILIARY LOCKS

For securing 300, 400 and 2400 Series Plugs and Sockets.

Spring Lock for Use With 400 Series Panel Mounted Connector Can be used with type AB or SB. Proper operation requir that the mounted plug or socket body be flush with the s of the panel. The standard screws must be replaced by filis head screws.
Part No.

Spring Lock For Use With 300 Series 15-33 Contact Pan Mount Connectors as follows: For Type EB or SB, mating co nector with cap must be type CT (or CCE-63A-SB). For ty DB, mating connector with cap must be CCT-63A-DB.
Part No. 6

Extension-Cable Lock For Use With 400 Series: Can be use with any 400 Series unmounted (cap-type) connector. Th binder head screws in the socket cap must be replaced wi filister head screws.
Part No. 9

"JONES" PLUGS and SOCKETS — 400 and 2400 SERIES

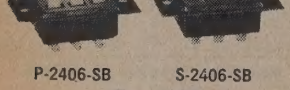
[1]Type LAB
Less Angle Brackets
Drilled and Tapped
Except in 2-contact Size

P-2406-LAB S-2406-LAB

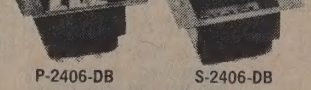
[2]Type AB
With Angle Brackets

P-406-AB S-406-AB

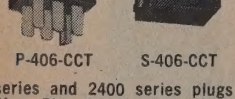
[3]Type SB
With Shallow Bracket
for Flush Mounting


P-2406-SB S-2406-SB

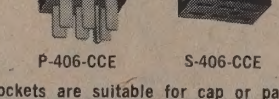
[4]Type DB
With Deep Bracket
for Recessed Mounting


P-2406-DB S-2406-DB

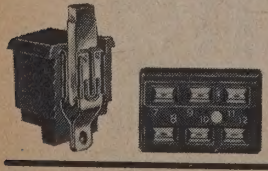
[5]Type CCT
With Cable Clamp in Top


P-406-CCT S-406-CCT

[6]Type CCE
With Cable Clamp in End


P-406-CCE S-406-CCE

400 series and 2400 series plugs and sockets are suitable for cap or panel mounting. Plug prongs are cadmium plated brass. Caps are finished in black wrinkle and equipped with a fibre lining. 400 series and 2400 series plugs and sockets are intermatable.
A special bracket, Type 46, is supplied for mounting the 2-contact angle bracket (AB) type socket to a panel or chassis.



Series 2400 plugs and sockets have recessed pockets with barriers around the contacts, both on the mating side and the solder connecting side. A shoulder extends around the face (mating) side of both plug and socket presenting a finished appearance when mounted in bracket or cap. Angle brackets can be ordered as specials for the 2400 Series.

ELECTRICAL SPECIFICATIONS

All connector ratings are based on a continuously mated condition. "Rate Voltage" is 1/3 of voltage breakdown.

SERIES 400 — RATED VOLTAGE: 1200; CONTACT RESISTANCE (Average): .00 ohm; RATED CURRENT: 15 amps; RATED WATTAGE PER CONTACT: 3750.

SERIES 2400 — RATED VOLTAGE 1700; CONTACT RESISTANCE (Average): .00 ohm; RATED CURRENT: *15 amps, **10 amps; RATED WATTAGE PER CONTACT 3750, 2500.

*Standard Commercial Service. **As rated by U.L. to U.L. Standard No. 498

400 SERIES PART NUMBERS

No. of Contacts	Type LAB[1] Part Nos.*	Type AB[2] Part Nos.*	Type SB[3] Part Nos.*	Type DB[4] Part Nos.*	Type CCT[5] Part Nos.*	Type CCE[6] Part Nos.*
2	P-402-LAB S-402-LAB	P-402-AB S-402-AB	P-402-SB S-402-SB	P-402-DB S-402-DB	P-402-CCT S-402-CCT	P-402-CCE S-402-CCE
4	P-404-LAB S-404-LAB	P-404-AB S-404-AB	P-404-SB S-404-SB	P-404-DB S-404-DB	P-404-CCT S-404-CCT	P-404-CCE S-404-CCE
6	P-406-LAB S-406-LAB	P-406-AB S-406-AB	P-406-SB S-406-SB	P-406-DB S-406-DB	P-406-CCT S-406-CCT	P-406-CCE S-406-CCE
8	P-408-LAB S-408-LAB	P-408-AB S-408-AB	P-408-SB S-408-SB	P-408-DB S-408-DB	P-408-CCT S-408-CCT	P-408-CCE S-408-CCE
10	P-410-LAB S-410-LAB	P-410-AB S-410-AB	P-410-SB S-410-SB	P-410-DB S-410-DB	P-410-CCT S-410-CCT	P-410-CCE S-410-CCE
12	P-412-LAB S-412-LAB	P-412-AB S-412-AB	P-412-SB S-412-SB	P-412-DB S-412-DB	P-412-CCT S-412-CCT	P-412-CCE S-412-CCE

2400 SERIES PART NUMBERS

No. of Contacts	Type LAB[1] Part Nos.*	Type SB[2] Part Nos.*	Type DB[3] Part Nos.*
2	P-2402-LAB S-2402-LAB	P-2402-SB S-2402-SB	P-2402-DB S-2402-DB
4	P-2404-LAB S-2404-LAB	P-2404-SB S-2404-SB	P-2404-DB S-2404-DB
6	P-2406-LAB S-2406-LAB	P-2406-SB S-2406-SB	P-2406-DB S-2406-DB
8	P-2408-LAB S-2408-LAB	P-2408-SB S-2408-SB	P-2408-DB S-2408-DB
10	P-2410-LAB S-2410-LAB	P-2410-SB S-2410-SB	P-2410-DB S-2410-DB
12	P-2412-LAB S-2412-LAB	P-2412-SB S-2412-SB	P-2412-DB S-2412-DB

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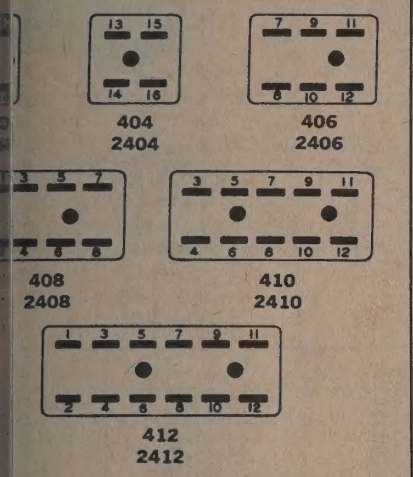
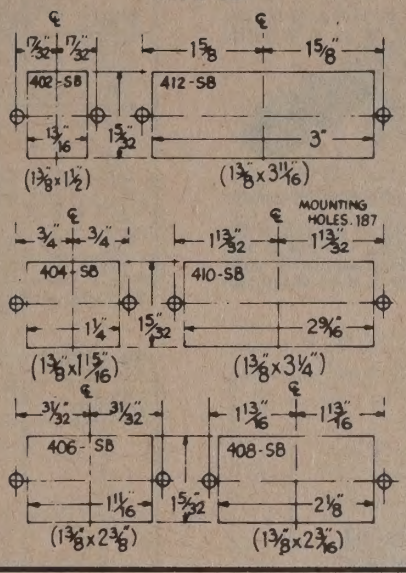
"JONES" PLUGS AND SOCKETS—400 AND 2400 SERIES (Cont'd.)

RIZING POSITION DATA

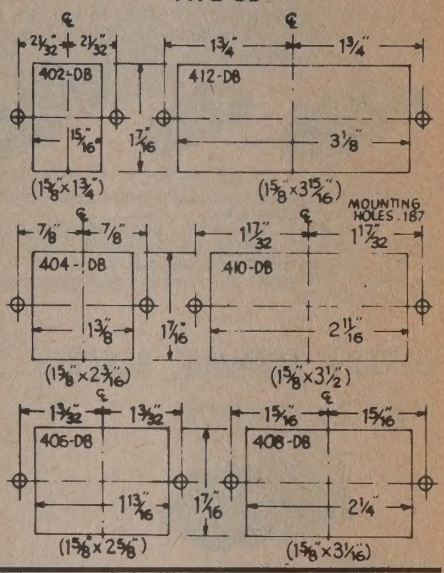


MOUNTING SPECIFICATIONS

TYPE SB



TYPE DB

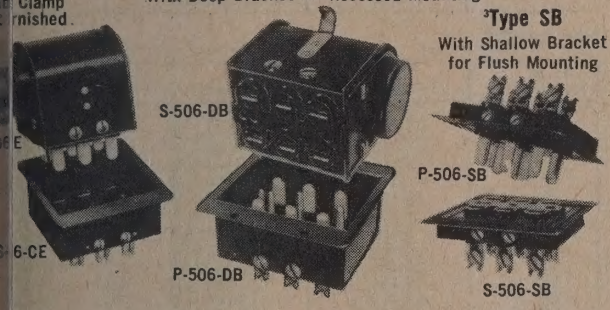


"JONES" PLUGS and SOCKETS—500 SERIES

²Type CE
ble Clamp in End
Clamp
rnished.

¹Type DB
With Deep Bracket for Recessed Mounting

³Type SB
With Shallow Bracket for Flush Mounting



ELECTRICAL SPECIFICATIONS

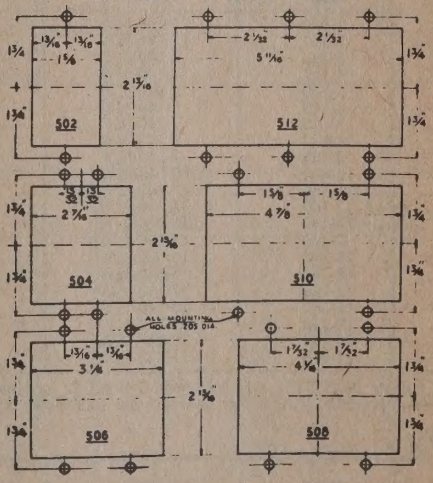
RATED VOLTAGE: 3 KV max; RATED CURRENT: 25 amperes per contact; POWER CAPACITY: 5 KW max.

MECHANICAL SPECIFICATIONS

CONTACTS: MALE — Cadmium plated brass; FEMALE — Cadmium plated phosphor; CAPS AND BRACKETS: Parkerized steel.

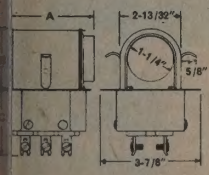
500 SERIES MOUNTING SPECIFICATIONS

FOR DEEP OR SHALLOW BRACKETS



S FOR 500 SERIES PLUGS AND SOCKETS

No. 500-L LOCKS fit any deep bracket and cap combination. They hold securely, but can be released instantly. The locks are fastened by the same screws or rivets that hold the deep brackets to the panel. Locks are sold in pairs only and cannot be used on shallow brackets.



DIMENSIONS

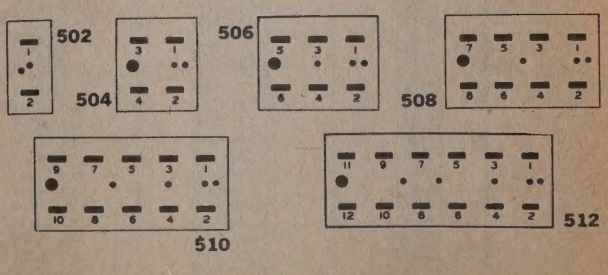
For type DB connectors, dimension B is 2¼" and dimension C is 2⅝" reference on the socket and 2⁷⁄₁₆" reference on the plug. For type SB connectors, dimension C is 1⅛", cap height is 2⁵⁄₆₄".

PART NUMBERS

No. of Contacts	Type DB¹ Part Nos.*	Type CE² Part Nos.*	Type SB³ Part Nos.*	Dimension "A"
2	P-502-DB S-502-DB	P-502-CE S-502-CE	P-502-SB S-502-SB	1¹¹⁄₁₆"
4	P-504-DB S-504-DB	P-504-CE S-504-CE	P-504-SB S-504-SB	2½"
6	P-506-DB S-506-DB	P-506-CE S-506-CE	P-506-SB S-506-SB	3⅜"
8	P-508-DB S-508-DB	P-508-CE S-508-CE	P-508-SB S-508-SB	4⅛"
10	P-510-DB S-510-DB	P-510-CE S-510-CE	P-510-SB S-510-SB	4⅝"
12	P-512-DB S-512-DB	P-512-CE S-512-CE	P-512-SB S-512-SB	5¾"

P — Indicates Plug S — Indicates Socket

POLARIZING POSITION DATA



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TERMINAL BLOCKS and ACCESSORIES

The Jones barrier terminal blocks are made of molded phenolic. Eyelets and screws are nickel-plated brass and terminals are hot solder dipped brass. Fibre or phenolic marker strips are available for all barrier blocks. Barrier blocks are available in standard terminal configurations as shown. Optional terminals are available as indicated by the Y, W, or ¾ W suffix on the part numbers in the charts.

2-140

2-142-W

2-164¾-W

2-164-Y

The standard terminal block with binder head screws can be used for wire or special terminal attachment.
¾ W terminals are available for solder attachment of wires on one side of the terminal block. W terminals are available for solder connection of wires to both sides of the terminal block. (Available as standard on 172 series; special order on others.) Y terminals are available for solder connection of wires underneath the terminal block.

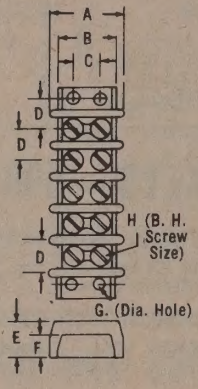
ELECTRICAL SPECIFICATIONS

Series	Max. Volts r.m.s. Without Marker Strip	Max. Volts r.m.s. With Marker Strip	Max. Current In Amps.	Max. W per Termi
140	1100	1200	15	3,75
141	1100	1600	20	5,00
142	1600	2500	30	7,50
150	1700	2600	50	12,50
151	1800	3400	70	17,50
152	2100	3800	90	54,00
164	1100	1200	15	3,75
171	1000	—*	5	62
172	1000	2000	5	62
173	1000	2000	5	62
174	1000	2000	5	62

*No marker strip available.

BARRIER TERMINAL BLOCKS

SERIES 140/141/142/164



DIMENSIONS

	140	141	142	164
A	7/8"	1 1/8"	1 5/16"	7/8"
B	1 1/16"	7/8"	1 1/16"	1 1/16"
C	5/16"	27/64"	1/2"	5/16"
D	3/8"	7/16"	9/16"	3/8"
E	13/32"	1/2"	5/8"	13/32"
F	1/4"	5/16"	3/8"	1/4"
G	.160"	.175/ .185"	.209"	.171/ .175"
H	5/40 x 3/16	6/32 x 1/4	8/32 x 5/16	6/32 x 1/4

140 SERIES

No. of Terminals	Std.*	¾W	Y
1	1-140	1-140-¾W	1-140-Y
2	2-140	2-140-¾W	2-140-Y
3	3-140	3-140-¾W	3-140-Y
4	4-140	4-140-¾W	4-140-Y
5	5-140	5-140-¾W	5-140-Y
6	6-140	6-140-¾W	6-140-Y
7	7-140	7-140-¾W	7-140-Y
8	8-140	8-140-¾W	8-140-Y
9	9-140	9-140-¾W	9-140-Y
10	10-140	10-140-¾W	10-140-Y
11	11-140	11-140-¾W	11-140-Y
12	12-140	12-140-¾W	12-140-Y
13	13-140	13-140-¾W	13-140-Y
14	14-140	14-140-¾W	14-140-Y
15	15-140	15-140-¾W	15-140-Y
16	16-140	16-140-¾W	16-140-Y
17	17-140	17-140-¾W	17-140-Y
18	18-140	18-140-¾W	18-140-Y
19	19-140	19-140-¾W	19-140-Y
20	20-140	20-140-¾W	20-140-Y
21	21-140	21-140-¾W	21-140-Y

*140 series barrier blocks are available with up to 25 terminal positions on special order. Part Nos. follow the conventional numbering system.

141 SERIES

No. of Terminals	Std.	¾W	Y
1	1-141	1-141-¾W	1-141-Y
2	2-141	2-141-¾W	2-141-Y
3	3-141	3-141-¾W.	3-141-Y
4	4-141	4-141-¾W	4-141-Y
5	5-141	5-141-¾W	5-141-Y
6	6-141	6-141-¾W	6-141-Y
7	7-141	7-141-¾W	7-141-Y
8	8-141	8-141-¾W	8-141-Y
9	9-141	9-141-¾W	9-141-Y
10	10-141	10-141-¾W	10-141-Y
11	11-141	11-141-¾W	11-141-Y
12	12-141	12-141-¾W	12-141-Y
13	13-141	13-141-¾W	13-141-Y
14	14-141	14-141-¾W	14-141-Y
15	15-141	15-141-¾W	15-141-Y
16	16-141	16-141-¾W	16-141-Y
17	17-141	17-141-¾W	17-141-Y
18	18-141	18-141-¾W	18-141-Y
19	19-141	19-141-¾W	19-141-Y
20	20-141	20-141-¾W	20-141-Y

142 SERIES

No. of Terminals	Std.	¾W	Y
1	1-142	1-142-¾W	1-142-Y
2	2-142	2-142-¾W	2-142-Y
3	3-142	3-142-¾W	3-142-Y
4	4-142	4-142-¾W	4-142-Y
5	5-142	5-142-¾W	5-142-Y
6	6-142	6-142-¾W	6-142-Y
7	7-142	7-142-¾W	7-142-Y
8	8-142	8-142-¾W	8-142-Y
9	9-142	9-142-¾W	9-142-Y
10	10-142	10-142-¾W	10-142-Y
11	11-142	11-142-¾W	11-142-Y
12	12-142	12-142-¾W	12-142-Y
13	13-142	13-142-¾W	13-142-Y
14	14-142	14-142-¾W	14-142-Y
15	15-142	15-142-¾W	15-142-Y
16	16-142	16-142-¾W	16-142-Y
17	17-142	17-142-¾W	17-142-Y

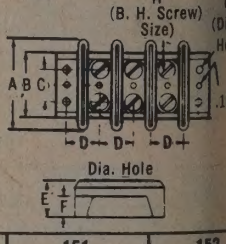
164 SERIES

No. of Terminals	Std.	¾W	Y
1	1-164	1-164-¾W	1-164-Y
2	2-164	2-164-¾W	2-164-Y
3	3-164	3-164-¾W	3-164-Y
4	4-164	4-164-¾W	4-164-Y
5	5-164	5-164-¾W	5-164-Y
6	6-164	6-164-¾W	6-164-Y
7	7-164	7-164-¾W	7-164-Y
8	8-164	8-164-¾W	8-164-Y
9	9-164	9-164-¾W	9-164-Y
10	10-164	10-164-¾W	10-164-Y
11	11-164	11-164-¾W	11-164-Y
12	12-164	12-164-¾W	12-164-Y
13	13-164	13-164-¾W	13-164-Y
14	14-164	14-164-¾W	14-164-Y
15	15-164	15-164-¾W	15-164-Y
16	16-164	16-164-¾W	16-164-Y
17	17-164	17-164-¾W	17-164-Y
18	18-164	18-164-¾W	18-164-Y
19	19-164	19-164-¾W	19-164-Y
20	20-164	20-164-¾W	20-164-Y
21	21-164	21-164-¾W	21-164-Y

SERIES 150/151/152

DIMENSIONS

	150	151	152
A	1 13/16"	2"	2 1/2"
B	1 3/16"	1 1/2"	1 13/16"
C	5/8"	3/4"	7/8"
D	1 1/16"	7/8"	1 1/8"
E	3/4"	15/16"	1 1/8"
F	7/16"	1/2"	5/8"
G	.160"	.180"	.209"
H	10/32 x 3/16	12/32 x 3/8	1/4/28 x 1/2



No. of Terminals	150 SERIES Std.	150 SERIES Y	151 SERIES Std.	152 SERIES Std.
1	1-150	1-150-Y	1-151	1-152
2	2-150	2-150-Y	2-151	2-152
3	3-150	3-150-Y	3-151	3-152
4	4-150	4-150-Y	4-151	4-152
5	5-150	5-150-Y	5-151	5-152
6	6-150	6-150-Y	6-151	6-152
7	7-150	7-150-Y	7-151	
8	8-150	8-150-Y	8-151	
9	9-150	9-150-Y		
10	10-150	10-150-Y		

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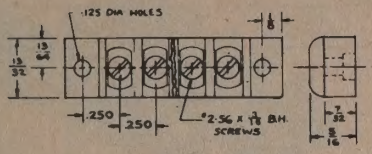
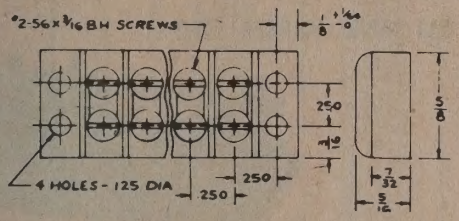
BARRIER TERMINAL BLOCKS (Cont'd.)

ES 171



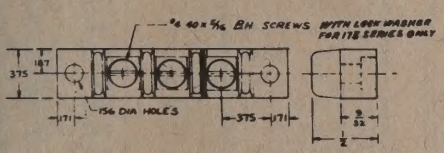
No. of Terminals	Std.
1	—
2	2-171
3	3-171
4	4-171
5	5-171
6	6-171
7	7-171
8	8-171

ES 172



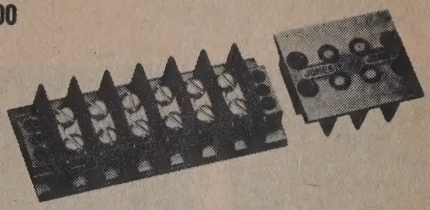
No. of Terminals	Std.	W	¾W	Y
1	—	—	—	—
2	2-172	2-172-W	2-172-¾W	2-172-Y
3	3-172	3-172-W	3-172-¾W	3-172-Y
4	4-172	4-172-W	4-172-¾W	4-172-Y
5	5-172	5-172-W	5-172-¾W	5-172-Y
6	6-172	6-172-W	6-172-¾W	6-172-Y
7	7-172	7-172-W	7-172-¾W	7-172-Y
8	8-172	8-172-W	8-172-¾W	8-172-Y
9	9-172	9-172-W	9-172-¾W	9-172-Y
10	10-172	10-172-W	10-172-¾W	10-172-Y
11	11-172	11-172-W	11-172-¾W	11-172-Y
12	12-172	12-172-W	12-172-¾W	12-172-Y
13	13-172	13-172-W	13-172-¾W	13-172-Y
14	14-172	14-172-W	14-172-¾W	14-172-Y

IES 173-174



No. of Terminals	173 SERIES w. Lock Washer	174 SERIES w.o. Lock Washer
1	—	—
2	2-173	2-174
3	3-173	3-174
4	4-173	4-174
5	5-173	5-174
6	6-173	6-174
7	7-173	7-174
8	8-173	8-174
9	9-173	9-174
10	10-173	10-174

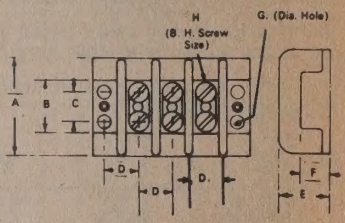
SERIES 500



The new 500 series Jones Barrier Terminal Blocks are designed for applications where electrical and mechanical performance requirements are especially critical. Bottoms are closed so that insulating strips are not required. Knockouts are molded into the base so that Y terminals can be accommodated if desired. A top-mounted marker strip can be furnished as described on page 522.

SERIES DIMENSIONS

	540	541	542
A	1⅛"	1⅜"	1⅝"
B	19/32"	¾"	⅞"
C	5/16"	27/64"	½"
D	⅜"	7/16"	9/16"
E	39/64"	11/16"	⅞"
F	21/64"	⅜"	½"
G	.160"	.175/.185"	.209"
H	5/40 x 3/16	6/32 x ¼	8/32 x 5/16



SERIES 540

Creepage Distance: ½ inch. **Max. Voltage:** 2300 volts r.m.s. **Max. Current:** 15 amps.

No. of Terminals	Part No.	No. of Terminals	Part No.	No. of Terminals	Part No.
2	2-540	12	12-540	23	23-540
3	3-540	13	13-540	24	24-540
4	4-540	14	14-540	25	25-540
5	5-540	15	15-540	26	26-540
6	6-540	16	16-540	27	27-540
7	7-540	18	18-540	28	28-540
8	8-540	19	19-540	29	29-540
9	9-540	20	20-540	30	30-540
10	10-540	21	21-540	31	31-540
11	11-540	22	22-540		

SERIES 541

Creepage Distance: ⅝ inch. **Max. Voltage:** 2800 volts r.m.s. **Max. Current:** 20 amps.

No. of Terminals	Part No.	No. of Terminals	Part No.	No. of Terminals	Part No.
2	2-541	12	12-541	22	22-541
3	3-541	13	13-541	23	23-541
4	4-541	14	14-541	24	24-541
5	5-541	15	15-541	25	25-541
6	6-541	16	16-541	26	26-541
7	7-541	17	17-541	27	27-541
8	8-541	18	18-541	28	28-541
9	9-541	19	19-541	29	29-541
10	10-541	20	20-541	30	30-541
11	11-541	21	21-541		

SERIES 542

Creepage Distance: ¾ inch. **Max. Voltage:** 4000 volts r.m.s. **Max. Current:** 30 amps.

No. of Terminals	Part No.	No. of Terminals	Part No.	No. of Terminals	Part No.
2	2-542	10	10-542	19	19-542
3	3-542	11	11-542	20	20-542
4	4-542	12	12-542	21	21-542
5	5-542	13	13-542	22	22-542
6	6-542	14	14-542	23	23-542
7	7-542	16	16-542	24	24-542
8	8-542	17	17-542	25	25-542
9	9-542	18	18-542	26	26-542

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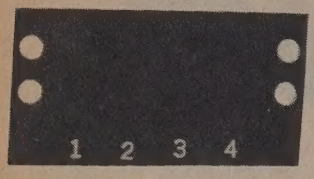
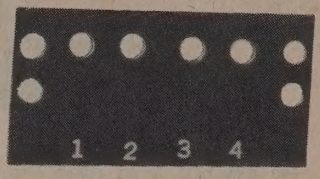
BARRIER BLOCK ACCESSORIES

MARKER STRIPS



FOR STANDARD "W" OR "¾W" TERMINAL BLOCKS



FOR "Y" TERMINAL BLOCKS

Marker strips identify terminal positions on barrier terminal blocks and insulate exposed portions of terminals from a conductive mounting surface. Marker strips for Series 140 thru 152 are 1/32 inch thick vulcanized fibre and mount under the terminal strip.

Marker strips for 500 Series blocks are made of Bakelite 1/16 inch thick and mount on top with drive screws that are provided.

One-eighth inch white numerals standard. Also available unmarked for insulating purposes only.

NO. 140 / NO. 140-Y

No. of Terminals	No. 140	No. of Terminals	No. 140-Y
2	MS- 2-140	2	MS- 2-140-Y
3	MS- 3-140	3	MS- 3-140-Y
4	MS- 4-140	4	MS- 4-140-Y
5	MS- 5-140	5	MS- 5-140-Y
6	MS- 6-140	6	MS- 6-140-Y
7	MS- 7-140	7	MS- 7-140-Y
8	MS- 8-140	8	MS- 8-140-Y
9	MS- 9-140	9	MS- 9-140-Y
10	MS-10-140	10	MS-10-140-Y
11	MS-11-140	11	MS-11-140-Y
12	MS-12-140	12	MS-12-140-Y
13	MS-13-140	13	MS-13-140-Y
14	MS-14-140	14	MS-14-140-Y
15	MS-15-140	15	MS-15-140-Y
16	MS-16-140	16	MS-16-140-Y
17	MS-17-140	17	MS-17-140-Y
18	MS-18-140	18	MS-18-140-Y
19	MS-19-140	19	MS-19-140-Y
20	MS-20-140	20	MS-20-140-Y
21	MS-21-140	21	MS-21-140-Y

NO. 141 / NO. 141-Y

No. of Terminals	No. 141	No. of Terminals	No. 141-Y
2	MS- 2-141	2	MS- 2-141-Y
3	MS- 3-141	3	MS- 3-141-Y
4	MS- 4-141	4	MS- 4-141-Y
5	MS- 5-141	5	MS- 5-141-Y
6	MS- 6-141	6	MS- 6-141-Y
7	MS- 7-141	7	MS- 7-141-Y
8	MS- 8-141	8	MS- 8-141-Y
9	MS- 9-141	9	MS- 9-141-Y
10	MS-10-141	10	MS-10-141-Y
11	MS-11-141	11	MS-11-141-Y
12	MS-12-141	12	MS-12-141-Y
13	MS-13-141	13	MS-13-141-Y
14	MS-14-141	14	MS-14-141-Y
15	MS-15-141	15	MS-15-141-Y
16	MS-16-141	16	MS-16-141-Y
17	MS-17-141	17	MS-17-141-Y
18	MS-18-141	18	MS-18-141-Y
19	MS-19-141	19	MS-19-141-Y
20	MS-20-141	20	MS-20-141-Y

NO. 142 / NO. 142-Y

No. of Terminals	No. 142	No. of Terminals	No. 142-Y
2	MS- 2-142	2	MS- 2-142-Y
3	MS- 3-142	3	MS- 3-142-Y
4	MS- 4-142	4	MS- 4-142-Y
5	MS- 5-142	5	MS- 5-142-Y
6	MS- 6-142	6	MS -6-142-Y
7	MS- 7-142	7	MS- 7-142-Y
8	MS- 8-142	8	MS- 8-142-Y
9	MS- 9-142	9	MS- 9-142-Y
10	MS-10-142	10	MS-10-142-Y
11	MS-11-142	11	MS-11-142-Y
12	MS-12-142	12	MS-12-142-Y
13	MS-13-142	13	MS-13-142-Y
14	MS-14-142	14	MS-14-142-Y
15	MS-15-142	15	MS-15-142-Y
16	MS-16-142	16	MS-16-142-Y
17	MS-17-142	17	MS-17-142-Y

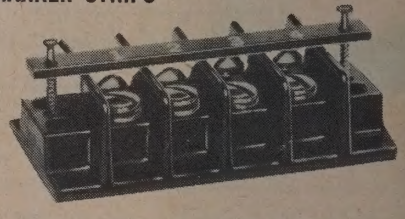
NO. 150 / NO. 150-Y

No. of Terminals	No. 150	No. of Terminals	No. 150-Y
2	MS- 2-150	2	MS- 2-150-Y
3	MS- 3-150	3	MS- 3-150-Y
4	MS- 4-150	4	MS- 4-150-Y
5	MS- 5-150	5	MS- 5-150-Y
6	MS- 6-150	6	MS- 6-150-Y
7	MS- 7-150	7	MS- 7-150-Y
8	MS- 8-150	8	MS- 8-150-Y
9	MS- 9-150	9	MS- 9-150-Y
10	MS-10-150	10	MS-10-150-Y

NO. 151 / NO. 152

No. of Terminals	No. 151	No. of Terminals	No. 152
2	MS-2-151	2	MS-2-152
3	MS-3-151	3	MS-3-152
4	MS-4-151	4	MS-4-152
5	MS-5-151	5	MS-5-152
6	MS-6-151	6	MS-6-152
7	MS-7-151		
8	MS-8-151		

500 SERIES MARKER STRIPS



NO. 540

No. of Terminals	Part No.	No. of Terminals	Part No.	No. of Terminals	Part No.
2	MSX- 2-540	12	MSX-12-540	22	MSX-22-540
3	MSX- 3-540	13	MSX-13-540	23	MSX-23-540
4	MSX- 4-540	14	MSX-14-540	24	MSX-24-540
5	MSX- 5-540	15	MSX-15-540	25	MSX-25-540
6	MSX- 6-540	16	MSX-16-540	26	MSX-26-540
7	MSX- 7-540	17	MSX-17-540	27	MSX-27-540
8	MSX- 8-540	18	MSX-18-540	28	MSX-28-540
9	MSX- 9-540	19	MSX-19-540	29	MSX-29-540
10	MSX-10-540	20	MSX-20-540	30	MSX-30-540
11	MSX-11-540	21	MSX-21-540	31	MSX-31-540

NO. 541

No. of Terminals	Part No.	No. of Terminals	Part No.	No. of Terminals	Part No.
2	MSX- 2-541	12	MSX-12-541	22	MSX-22-541
3	MSX- 3-541	13	MSX-13-541	23	MSX-23-541
4	MSX- 4-541	14	MSX-14-541	24	MSX-24-541
5	MSX- 5-541	15	MSX-15-541	25	MSX-25-541
6	MSX- 6-541	16	MSX-16-541	26	MSX-26-541
7	MSX- 7-541	17	MSX-17-541	27	MSX-27-541
8	MSX- 8-541	18	MSX-18-541	28	MSX-28-541
9	MSX- 9-541	19	MSX-19-541	29	MSX-29-541
10	MSX-10-541	20	MSX-20-541	30	MSX-30-541
11	MSX-11-541	21	MSX-21-541		

NO. 542

No. of Terminals	Part No.	No. of Terminals	Part No.	No. of Terminals	Part No.
2	MSX- 2-542	11	MSX-11-542	19	MSX-19-542
3	MSX- 3-542	12	MSX-12-542	20	MSX-20-542
4	MSX- 4-542	13	MSX-13-542	21	MSX-21-542
5	MSX- 5-542	14	MSX-14-542	22	MSX-22-542
6	MSX- 6-542	15	MSX-15-542	23	MSX-23-542
7	MSX- 7-542	16	MSX-16-542	24	MSX-24-542
8	MSX- 8-542	17	MSX-17-542	25	MSX-25-542
9	MSX- 9-542	18	MSX-18-542	26	MSX-26-542
10	MSX-10-542				

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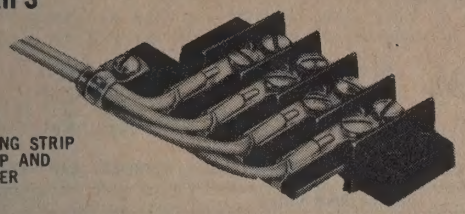
BARRIER BLOCK ACCESSORIES (Cont'd.)

ING STRIPS



IES FANNING STRIP
ABLE CLAMP AND
IES BARRIER
AL BLOCK

strips facilitate cable or harness wiring and minimize the ility of subsequent wiring errors. Both straight and angle type strips are available. Terminals are made of .032" brass, m-plated. XP black phenolic mounts are 3/32" thick, 1/2" wide ed with a hole, in either the right or left side, for securing the with lacing twine. A cable clamp as shown on page 16 is nended for larger sizes.

GHT TYPE 160 ERIES

2-160-L
Fits 140 Series
Barrier Blocks
3/8" Terminal Centers

No. of Terminals	C.C. Hole on Left	C.C. Hole on Right
2	2-160-L	2-160-R
3	3-160-L	3-160-R
4	4-160-L	4-160-R
5	5-160-L	5-160-R
6	6-160-L	6-160-R
7	7-160-L	7-160-R
8	8-160-L	8-160-R
9	9-160-L	9-160-R
10	10-160-L	10-160-R
11	11-160-L	11-160-R
12	12-160-L	12-160-R
13	13-160-L	13-160-R
14	14-160-L	14-160-R
15	15-160-L	15-160-R
16	16-160-L	16-160-R
17	17-160-L	17-160-R
18	18-160-L	18-160-R
19	19-160-L	19-160-R
20	20-160-L	20-160-R
21	21-160-L	21-160-R

SERIES

2-160B-R
Fits 140 Series
Barrier Blocks
3/8" Terminal Centers

2	2-160B-L	2-160B-R
3	3-160B-L	3-160B-R
4	4-160B-L	4-160B-R
5	5-160B-L	5-160B-R
6	6-160B-L	6-160B-R
7	7-160B-L	7-160B-R
8	8-160B-L	8-160B-R
9	9-160B-L	9-160B-R
10	10-160B-L	10-160B-R
11	11-160B-L	11-160B-R
12	12-160B-L	12-160B-R
13	13-160B-L	13-160B-R
14	14-160B-L	14-160B-R
15	15-160B-L	15-160B-R
16	16-160B-L	16-160B-R
17	17-160B-L	17-160B-R
18	18-160B-L	18-160B-R
19	19-160B-L	19-160B-R
20	20-160B-L	20-160B-R
21	21-160B-L	21-160B-R

ERIES

2-161-L
Fits 141 Series
Barrier Blocks
7/16" Terminal Centers

2	2-161-L	2-161-R
3	3-161-L	3-161-R
4	4-161-L	4-161-R
5	5-161-L	5-161-R
6	6-161-L	6-161-R
7	7-161-L	7-161-R
8	8-161-L	8-161-R
9	9-161-L	9-161-R
10	10-161-L	10-161-R
11	11-161-L	11-161-R
12	12-161-L	12-161-R
13	13-161-L	13-161-R
14	14-161-L	14-161-R
15	15-161-L	15-161-R
16	16-161-L	16-161-R
17	17-161-L	17-161-R
18	18-161-L	18-161-R
19	19-161-L	19-161-R
20	20-161-L	20-161-R

SERIES

2-162-R
Fits 142 Series
Barrier Blocks
7/16" Terminal Centers

2	2-162-L	2-162-R
3	3-162-L	3-162-R
4	4-162-L	4-162-R
5	5-162-L	5-162-R
6	6-162-L	6-162-R
7	7-162-L	7-162-R
8	8-162-L	8-162-R
9	9-162-L	9-162-R
10	10-162-L	10-162-R
11	11-162-L	11-162-R
12	12-162-L	12-162-R
13	13-162-L	13-162-R
14	14-162-L	14-162-R
15	15-162-L	15-162-R
16	16-162-L	16-162-R
17	17-162-L	17-162-R

ANGLE TYPE 160A SERIES

2-160-AR
Fits 140 Series
Barrier Blocks
3/8" Terminal Centers

No. of Terminals	C.C. Hole on Left	C.C. Hole on Right
2	2-160-AL	2-160-AR
3	3-160-AL	3-160-AR
4	4-160-AL	4-160-AR
5	5-160-AL	5-160-AR
6	6-160-AL	6-160-AR
7	7-160-AL	7-160-AR
8	8-160-AL	8-160-AR
9	9-160-AL	9-160-AR
10	10-160-AL	10-160-AR
11	11-160-AL	11-160-AR
12	12-160-AL	12-160-AR
13	13-160-AL	13-160-AR
14	14-160-AL	14-160-AR
15	15-160-AL	15-160-AR
16	16-160-AL	16-160-AR
17	17-160-AL	17-160-AR
18	18-160-AL	18-160-AR
19	19-160-AL	19-160-AR
20	20-160-AL	20-160-AR
21	21-160-AL	21-160-AR

160BA SERIES

2-160B-AL
Fits 140 Series
Barrier Blocks
3/8" Terminal Centers

2	2-160B-AL	2-160B-AR
3	3-160B-AL	3-160B-AR
4	4-160B-AL	4-160B-AR
5	5-160B-AL	5-160B-AR
6	6-160B-AL	6-160B-AR
7	7-160B-AL	7-160B-AR
8	8-160B-AL	8-160B-AR
9	9-160B-AL	9-160B-AR
10	10-160B-AL	10-160B-AR
11	11-160B-AL	11-160B-AR
12	12-160B-AL	12-160B-AR
13	13-160B-AL	13-160B-AR
14	14-160B-AL	14-160B-AR
15	15-160B-AL	15-160B-AR
16	16-160B-AL	16-160B-AR
17	17-160B-AL	17-160B-AR
18	18-160B-AL	18-160B-AR
19	19-160B-AL	19-160B-AR
20	20-160B-AL	20-160B-AR
21	21-160B-AL	21-160B-AR

161A SERIES

2-161A-R
Fits 141 Series
Barrier Blocks
7/16" Terminal Centers

2	2-161-AL	2-161-AR
3	3-161-AL	3-161-AR
4	4-161-AL	4-161-AR
5	5-161-AL	5-161-AR
6	6-161-AL	6-161-AR
7	7-161-AL	7-161-AR
8	8-161-AL	8-161-AR
9	9-161-AL	9-161-AR
10	10-161-AL	10-161-AR
11	11-161-AL	11-161-AR
12	12-161-AL	12-161-AR
13	13-161-AL	13-161-AR
14	14-161-AL	14-161-AR
15	15-161-AL	15-161-AR
16	16-161-AL	16-161-AR
17	17-161-AL	17-161-AR
18	18-161-AL	18-161-AR
19	19-161-AL	19-161-AR
20	20-161-AL	20-161-AR

162A SERIES

2-162A-L
Fits 142 Series
Barrier Blocks
7/16" Terminal Centers

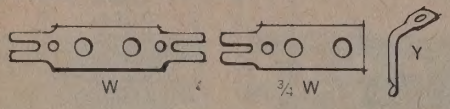
2	2-162-AL	2-162-AR
3	3-162-AL	3-162-AR
4	4-162-AL	4-162-AR
5	5-162-AL	5-162-AR
6	6-162-AL	6-162-AR
7	7-162-AL	7-162-AR
8	8-162-AL	8-162-AR
9	9-162-AL	9-162-AR
10	10-162-AL	10-162-AR
11	11-162-AL	11-162-AR
12	12-162-AL	12-162-AR
13	13-162-AL	13-162AR
14	14-162-AL	14-162-AR
15	15-162-AL	15-162-AR
16	16-162-AL	16-162-AR
17	17-162-AL	17-162-AR

CINCH
DIVISION OF UNITED-CARR

MISCELLANEOUS TERMINAL STRIPS and HARDWA

TERMINALS, JUMPERS, CABLE CLAMPS

SOLDER TERMINALS: "W," "¾W" AND "Y"



Optional terminals for use with 140, 141 and 142 series barrier blocks as indicated in the chart below. "W" terminals are also available for use with 150, 151 and 152 series barrier blocks. Part numbers for ordering separate terminals are listed in the chart.

	W-Type	¾W-Type	Y-Type
For 140 series	W-140	¾W-140	Y-140
For 141 series	W-141	¾W-141	Y-141
For 142 series	W-142	¾W-142	Y-142
For 150 series	W-150	—	—
For 151 series	W-151	—	—
For 152 series	W-152	—	—

QUICK-CLAMP* TERMINALS

Simplifies engaging of wires to barrier blocks. Set includes two mating clamps and one screw.

Barries Block Series	Part No.	Wire Gauge Accommodated	Screw Size
141, 541	QC-1	14 thru 22	6-32x5/16"
142, 542	QC-2	8 thru 16	8-32x3/8"

*Patent pending.

JUMPERS

For permanent connections. 142-1 connects two alternate termi

Barrier Block Series	Part No.
140, 141	141-J
142	95-B
140	140J-1
141	141J-1
142, 542	142J-1
142, 542	142J-2
540	540-J
541	541-J
542	542-J

CABLE CLAMPS

Inner Diameter	Part No.
1/4"	CC-161-4
3/8"	CC-161-6
1/2"	CC-161-8
5/8"	CC-161-10
3/4"	CC-161-12
7/8"	CC-161-14

MISCELLANEOUS TERMINAL STRIPS

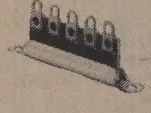
SCREW-TYPE

Terminals are cadmium plated brass on 7/16" centers. Mounting holes are 0.136" dia. Screws are cadmium plated brass, captivated.

Part No.	No. of Terminals	Mounting Centers
17-1	1	7/8"
17-2	2	1 5/16"
17-3	3	1 3/4"
17-4	4	2 3/16"
17-5	5	2 5/8"
17-6	6	3 1/16"
17-7	7	3 1/2"
17-8	8	3 15/16"
17-9	9	4 3/8"
17-10	10	4 13/16"

NO. 170 (SOLDER TYPE)

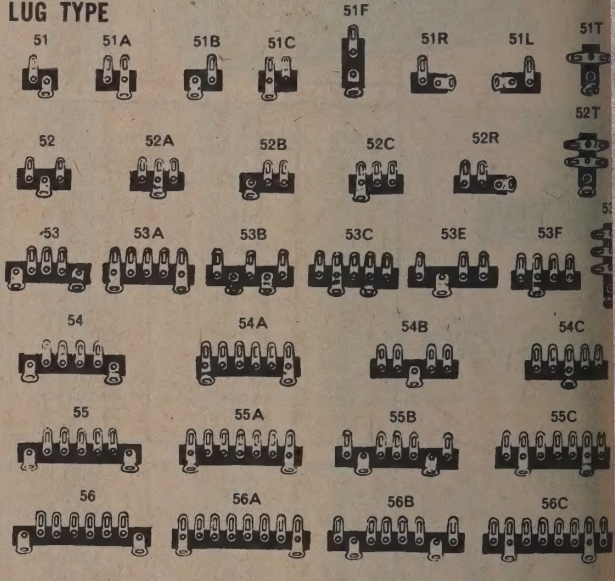
NO. 2000



Terminals are 0.019" brass, pre-tinned, mounted on a phenolic insulator. 5/16" spacing. Mounting holes are 0.140" dia.

Part No.	No. of Terminals	Mounting Centers
1-170	1	3/4"
2-170	2	1 1/16"
3-170	3	1 1/2"
4-170	4	1 7/8"
5-170	5	2 1/4"
6-170	6	2 5/8"
7-170	7	3"
8-170	8	3 3/8"
9-170	9	3 3/4"
10-170	10	4 1/8"
2002	2	1"
2003	3	1 5/16"
2004	4	1 5/8"
2005	5	1 15/16"
2006	6	2 1/4"
2007	7	2 9/16"
2008	8	2 7/8"
2009	9	3 3/16"
2010	10	3 1/2"
2011	11	3 13/16"
2012	12	4 1/8"
2013	13	4 7/16"

LUG TYPE



Cadmium-plated steel lugs are spaced on 3/8" centers with .1 diameter mounting holes. Dark brown strips are 1/16" thick and 3/8" wi

Part No.	Mtg. Centers	Part No.	Mtg. Centers
51		53E	
51A		53F	
51B		53T	
51C		54	1 7/8"
51F		54A	1 7/8"
51L		54B	
51R		54C	
51T		55	2 1/4"
52		55A	2 1/4"
52A		55B	1 1/2"
52B		55C	1 1/2"
52C		56	2 5/8"
52R		56A	2 5/8"
52T		56B	1 7/8"
53	1 1/2"	56C	1 7/8"
53A	1 1/2"		
53B	3/4"		
53C	"3/4		

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CINCH

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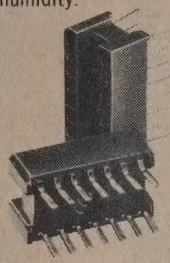
INTEGRATED CIRCUIT SOCKETS

n IC sockets are ideal for testing and prototype purposes as well as production applications. Convenient and dependable, these sockets reduce ossibility of damage to leads and hermetic seals. Cinch IC sockets provide positive electrical contact and low contact resistance. They offer lent resistance to corrosive atmosphere and to extremes in temperature and humidity.

CISION D.I.P. SOCKETS

sockets combine high contact retention with low contact resistance and nvironmental stability. They accept standard 14, 16 and 24-pin dual-inline ges having round or flat leads. (Standard spacing is .300" between lead rows 00" between lead centers.) Socket leads are on the same centers as the itself. This feature allows easy installation of the socket in PC boards de- for direct insertion of the D.I.P. Choose between diallyl phthalate insul- with gold plated beryllium copper contacts or GP black phenolic insulators lectro-tin plated beryllium copper contacts.



Part No.	Contacts	Materials
14-DIP	14	GP Black Phenolic
16-DIP	16	Insulator with Electro-tin
24-DIP	24	Plated Leads
14-DIP-1	14	Diallyl Phthalate
16-DIP-1	16	Insulator with gold
24-DIP-1	24	Plated Leads

RIALS

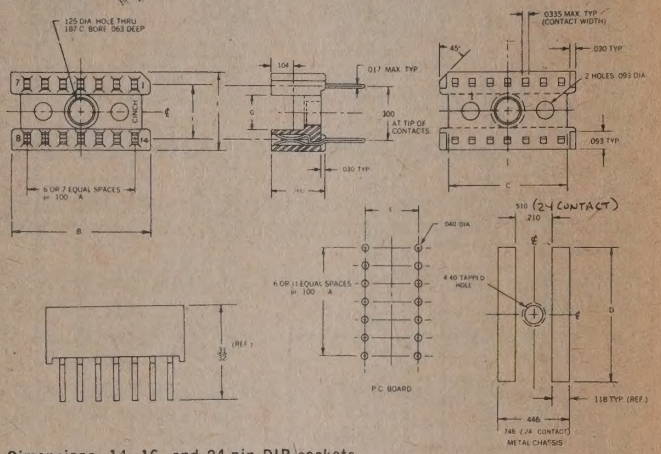
LATORS: GP Black Phenolic per MIL-M-14, type CFG Diallyl Phthalate per -14, type SDG; CONTACTS: Beryllium copper with gold or electro-tin i. **RECOMMENDED MOUNTING METHODS:** CHASSIS: 4-40 x ¼" Fillister crew; P. C. BOARD: Solder in.

RICAL SPECIFICATIONS

RENT RATING: 1.0 ampere; CONTACT RESISTANCE: 6 milliohms (at 1 am- CAPACITANCE PER MIL-STD-202: Method 305 at 100 KHz between adjacent cts: 0.33 pfd average (phenolic), 0.28 pfd average (diallyl phthalate), ven opposing contacts: 0.12 pfd average (phenolic), 0.10 pfd average l phthalate); WITHSTANDING VOLTAGE BETWEEN ADJACENT CONTACTS: VRMS; INSULATION RESISTANCE: 1.0 x 10^6 megohms minimum (phenolic); 10^6 megohms minimum (diallyl phthalate).

ANICAL SPECIFICATIONS

TION: Per MIL-STD-202C, Condition D, Method 204A, 10-2000 C.P.S. at s or .060" double amplitude. No continuity interruptions of 1 micro- d or longer. No damage to contact or insulator. No disengagement of odule from the socket; SHOCK: Per MIL-STD-202C, Method 202B/3 blows ch of 3 mutually perpendicular planes. Shock level of 150 G's. No con- y interruptions of 1 microsecond or longer. No damage to contact or tor. No disengagement of DIP module from the socket; TEMPERATURE E: Phenolic: −65° to 150°C.

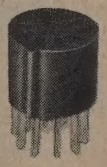


Dimensions, 14, 16, and 24-pin DIP sockets

RECOMMENDED MOUNTING LAYOUTS

No. of Contacts	A	B	C	D	E	F	G	H ±.015	J
14	.600	.770	.690	.796	.300	.424	.187	.300	.043
16	.700	.870	.790	.896	.300	.424	.187	.300	.093
24	1.100	1.270	1.190	1.296	.600	.724	.488	.600	.125

5 CASE SOCKETS



Part No.	No. of Leads
6-ICS	6
8-ICS	8
10-ICS	10

miniature sockets mount directly to the printed circuit board and are ially convenient for in-circuit testing and maintenance. Models are avail- for 6, 8 and 10-lead ICs which can be inserted without lead bending or undue strain.

RIALS

LATOR: Diallyl Phthalate type SDG per MIL-M-18794; CONTACTS: Beryllium r, copper flash plus .00003 gold plate.

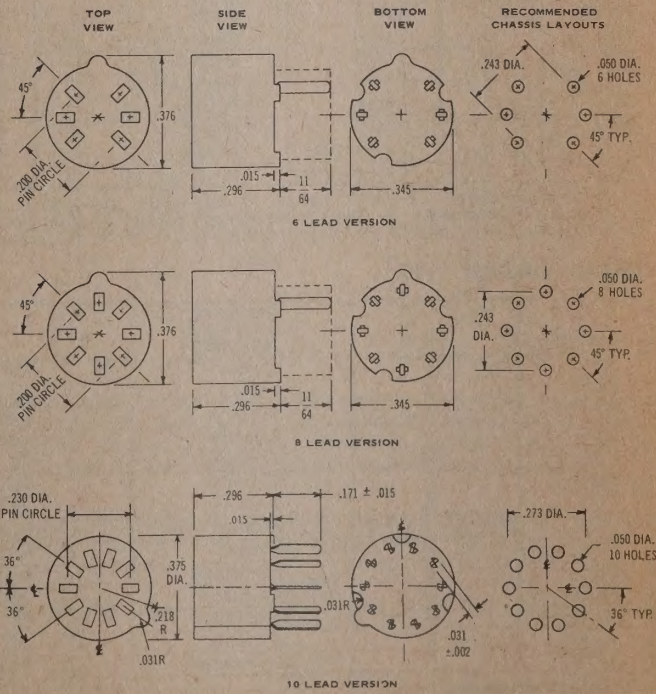
ANICAL SPECIFICATIONS

RTION FORCE: 16 lbs. maximum; WITHDRAWAL FORCE: 3 lbs. minimum.

TRICAL SPECIFICATIONS

AGE RATINGS: (a) At sea level (adj. terminals), (b) At an altitude of 50,000 dj. terminals): VOLTS: AC RMS 1020, 350, DC 1560, 465; CURRENT RATING: pere; CONTACT RESISTANCE: .050 ohms maximum; INSULATION RESISTANCE eceived): 50,000 megohms minimum.

DIMENSIONAL DATA



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TUBE SOCKETS

STANDARD TYPE

Part Nos.	Fig.	Number of Contacts and Tube Group	Type	Insulator Material[1]	Contact Material[2]	Top or Bottom Mount	Mounting Centers	Chassis Hole Diameter	MIL-S-12883A Number
7W2A	A	7 miniature	wafer	A	A	B	⅞"	⅝"	—
7WL2	A	7 miniature	wafer	A	A	B	1 "	⅝"	—
7WL4	A	7 miniature	wafer	A	A	T, B	1 5/16"	⅝"	—
7EB	B	7 miniature	saddle	B	A	B	⅞"	⅝"	—
7EC	B	7 miniature	saddle	D	A	B	⅞"	⅝"	—
7EM	B	7 miniature	saddle	C	A	B	⅞"	⅝"	—
7AB1	B	7 miniature	saddle	B	A	T	⅞"	⅝"	—
7AM1	B	7 miniature	saddle	C	A	T	⅞"	⅝"	—
7JM-3	B	7 miniature	saddle	C	B	B	⅞"	⅝"	TS102P03
7C-3	B	7 miniature	saddle	D	B	B	⅞"	⅝"	TS102C03
7JMN-1	B	7 miniature	saddle	C	B	T	⅞"	⅝"	TS102P02
7JMN-2	B	7 miniature	saddle	C	B	T	⅞"	⅝"	TS102P02
7JCN-1	B	7 miniature	saddle	D	B	T	⅞"	⅝"	TS102C02
7JCN-2	B	7 miniature	saddle	D	B	T	⅞"	⅝"	TS102C02
7JM-2	C	7 miniature	shield base	C	B	T	⅞"	⅝"	TS102P01
7XB1	C	7 miniature	shield base	B	A	T	⅞"	⅝"	—
7XM1	C	7 miniature	shield base	C	A	T	⅞"	⅝"	—
7XC	C	7 miniature	shield base	D	A	T	⅞"	⅝"	—
7JC-2	C	7 miniature	shield base	D	B	T	⅞"	⅝"	TS102C01
8AB	D	8 octal	saddle	F	A	B	1 5/16"	1 "	—
8AM	D	8 octal	saddle	C	A	B	1 5/16"	1 "	—
8EB	E	8 octal	saddle	E	A	B	1½"	1⅛"	—
8EM	E	8 octal	saddle	C	A	B	1½"	1⅛"	—
8XM	F	8 octal	all-molded	C	A	T, B	1 5/16"	1⅛"	—
8XB	F	8 octal	all-molded	B	A	T, B	1 5/16"	1⅛"	—
8R1	G	8 octal	ring mount*	E	A	T	1/16"	1 11/64"	—
8R2	G	8 octal	ring mount*	E	A	T	⅛"	1 11/64"	—
8R3	G	8 octal	ring mount*	C	A	T	1/16"	1 11/64"	—
8R4	G	8 octal	ring mount*	E	A	T	3/32"	1 11/64"	—
8R5	G	8 octal	ring mount*	C	A	T	3/32"	1 11/64"	—
8R6	G	8 octal	ring mount*	C	A	T	⅛"	1 11/64"	—
8CS-B	H	8 compactron	all-molded	E	A	T, B	1 5/16"	1⅛"	—
8CS-M	H	8 compactron	all-molded	C	A	T, B	1 5/16"	1⅛"	—
9NS-B	I	9 novar	saddle	E	A	B	1½"	1⅛"	—
9NS-B1	I	9 novar	saddle	E	A	T	1½"	1⅛"	—
9NS-M	I	9 novar	saddle	C	A	B	1½"	1⅛"	—
9NS-M1	I	9 novar	saddle	C	A	T	1½"	1⅛"	—
9W1	A	9 noval	wafer	A	A	B	1⅛"	¾"	—
9W2	A	9 noval	wafer	A	A	T, B	1 5/16"	¾"	—
9AB	B	9 noval	saddle	B	A	T	1⅛"	¾"	—
9AM	B	9 noval	saddle	C	A	T	1⅛"	¾"	—
9EB	B	9 noval	saddle	B	A	B	1⅛"	¾"	—
9EM	B	9 noval	saddle	C	A	B	1⅛"	¾"	—
9JM-3	B	9 noval	saddle	C	B	B	1⅛"	¾"	TS103P03
9JM-4	B	9 noval	saddle	C	B	B	1⅛"	¾"	TS103P03
9JC-3	B	9 noval	saddle	D	B	B	1⅛"	¾"	TS103C03
9JCN-1	B	9 noval	saddle	D	B	T	1⅛"	¾"	TS103C02
9JMN-1	B	9 noval	saddle	C	B	T	1⅛"	¾"	TS103P02
9JMN-2	B	9 noval	saddle	C	B	T	1⅛"	¾"	TS103P02
9XB	C	9 noval	shield base	B	A	T	1⅛"	¾"	—
9XM	C	9 noval	shield base	C	A	T	1⅛"	¾"	—
9XC	C	9 noval	shield base	D	A	T	1⅛"	¾"	—
9JM-2	C	9 noval	shield base	C	B	T	1⅛"	¾"	TS103P01
9JC-2	C	9 noval	shield base	D	B	T	1⅛"	¾"	TS103C01
12CS-B	H	12 compactron	all-molded	E	A	T, B	1 5/16"	1⅛"	—
12CS-M	H	12 compactron	all-molded	C	A	T, B	1 5/16"	1⅛"	—

1. A—Chocolate phenolic B—Black phenolic C—MFE plastic D—Ceramic E—High Dielectric black phenolic (CFG) F—MAI-60 Alkyd Glass Fiber
2. A—Cadmium plated brass B—Silver plated phosphor bronze C—Silver plated beryllium copper

*Crimped retainer ring furnished; mounting centers dimensions column lists chassis thickness accommodated.

SPECIAL PURPOSE TYPE

Part Nos.	Fig.	Number of Contacts and Tube Group	Type	Insulator Material[1]	Contact Material[2]
2B2**	J	2 cetron.	for CE701, CE702	B	A
2M2**	J	2 cetron	for CE701, CE702	C	A
5NS	K	5 nuvistor	crimp tab mount	C	A
5NS-1	L	5 nuvistor	saddle	C	A
5NS-2	M	5 nuvistor	P.C. standoff	C	A
5NS-3	N	5 nuvistor	heat dissipating	C	A
7 VT	O	7 vidicon	for RCA vidicon	C	B
8-VT	O	8 vidicon	for RCA vidicon	C	B
3M11**	P	11 magnal	for 5BP1, etc.	C	C
3B12	Q	12 duodecal	for 10BP4, etc.	B	C
3M12	Q	12 duodecal	same as 3B12	C	C
3B14**	R	14 diheptal	CRT	B	C
3M14**	R	14 diheptal	CRT	C	C
20-PM	S	20 photomult	for RCA 6810, etc.	F	A

**Mounting ring required.

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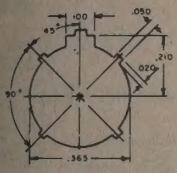
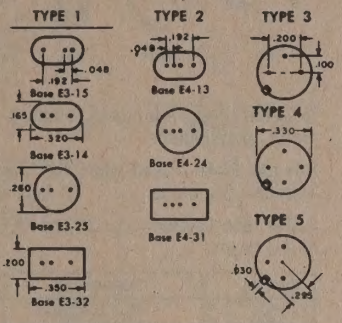
RELAY, TRANSISTOR SOCKETS and ACCESSORIES

:RSAL TRANSISTOR SOCKETS

sal transistor sockets for all transistor base described. Use with either one or two-sided 1/16" tl circuit boards.





art o.	Base Types	Tabs Used (See Diag.)	Cont. Pos. Used
TS	All	A, B, C. D, E	1, 3, 4, 7
TS-1	1 & 3	C, D, E	1, 3, 4, 7
TS-3	3	C, D, E	1, 4, 7
TS-4	4	A, B, C, D, E	1, 4, 5, 6, 7
TS-5	5	B, D, E	1, 6, 7
TS-6	1 & 3	C, D, E	1, 3, 4, 7

R TRANSITOR SOCKETS

To Fit TO-3 Outline Transistors

2TS-1

2TS-2

2TS3

ated Type. Plates of natural XP phenolic, vacuum wax impregnated. d thread for 6-20 screw provides easy attachment to a heat sink. ing holes. .136 diameter. **Part No. 2TS-1**

cal to 2TS-1 except equipped with integral eyelets for assembly to s. **Part No. 2TS-2**

d Type. GP phenolic. Contacts are phosphor bronze, cadmium-plated. ing holes .098" dia.; mounting centers .425/.435".

:R TRANSISTOR WAFERS

2W-1

2W-2

2W-3

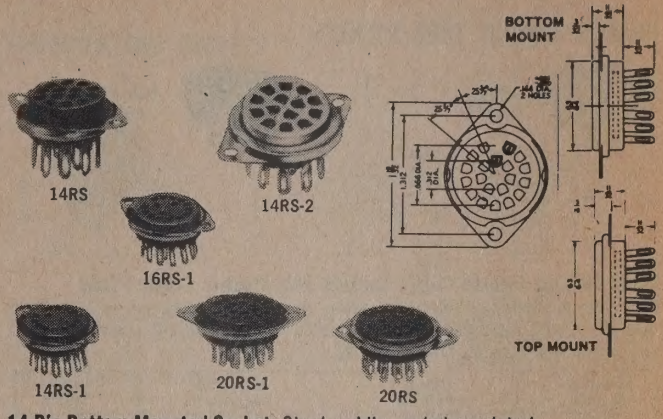
hard anodized aluminum insulator wafers have high thermal con- ity, high dielectric resistance, high abrasion resistance and high ion resistance.

Part No.	Description
2W-1	For Motorola transistor 2N-179, 2N-176 and 2N-554
2W-2	For Delco Transistor 2N-174
2W-3	For Texas Instrument transistor 2N-389

RAL PURPOSE TRANSISTOR SOCKET

2TS-4

iangular base layout .2"x.1" (JETEC-30) contact centers, and three- ct in-line (.048"x.192" contact centers). For television, industrial, unications, test equipment, bread-board circuits, etc. GP phenolic; cts are phosphor bronze, cadmium-plated. Used with EIA base nations: E3-14, E3-15, E3-25, E3-32, E3-38, E3-39, E3-42, E3-43, E3-44, E3-53, E4-13, E4-24, E4-31, E4-43, E4-52, ET 103-D.
Part No. 2TS-4



14-Pin Bottom-Mounted Socket: Steel saddle, cadmium-plated.
Part No. 14RS

14-Pin Top-Mounted Socket: Same as above except top mount.
Part No. 14RS-2

20-Pin Bottom-Mounted Socket: Casting is mica-filled low loss phenolic. Contacts are of beryllium copper, silver-plated with hot tinned tails.
Part No. 20RS-1

20-Pin Top-Mounted Socket: 20-contact socket. Same as above except top mount. **Part No. 20RS**

14-Pin Bottom-Mounted Socket: Same as above except only contacts 15 to 20 omitted. **Part No. 14RS-1**

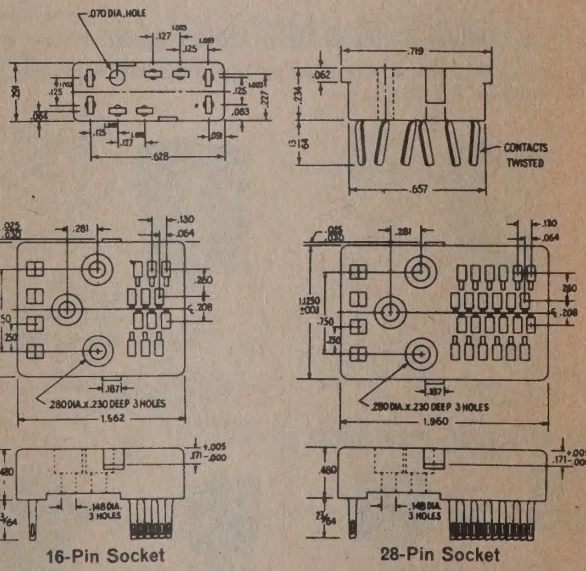
16-Pin Bottom-Mounted Socket: Same as above, except contacts 15, 17, 18 and 20 are omitted. **Part No. 16RS-1**

RECTANGULAR RELAY SOCKETS

8RS

16RS-2

28RS



8-Pin Socket: Contacts are beryllium copper, silver-plated. Mounting clip furnished with each socket. This socket fits Advance MV-2C, AEMCO 95-3274, Brubaker K110A, Filtors P.26.A1.P. 6A, G.E. D200A & G-203A, Potter & Brumfield SL and Ace Relay No. 50-6A (single contact type).
Part No. 8RS

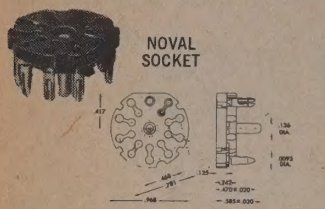
16 and 28 Pin Sockets: Molded of high dielectric black phenolic. Mate with Automatic Electric EIN type relays and C.P. Clare J type relays.

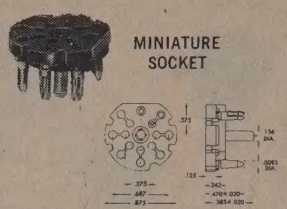
No. of Contacts	Contact Plating	Part No.
16	Cadmium	16RS-2
16	Gold	16RS-3
28	Cadmium	28RS
28	Gold	28RS-1

CINCH
DIVISION OF UNITED-CARR

MISCELLANEOUS SOCKETS and ACCESSORIES

PRINTED CIRCUIT TUBE SOCKETS



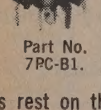


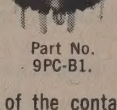
Stand-Off Type Printed Circuit Sockets with Press-In Contact Tails
Provides mechanical retention prior to dip soldering in 1/16" printed circuit board. Available with or without center shield. Center shield and contacts are brass, hot tin dipped.

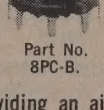
Miniature Part No.	Noval Part No.	Insulator Material*	Center Shield
7PC-B4	9PC-B4	Black	No
7PC-M4	9PC-M4	Mica-Filled	No
7PC-B5	9PC-B5	Black	Yes
7PC-M5	9PC-M5	Mica-Filled	Yes

*Phenolic

CONVENTIONAL STAND-OFF TYPE PRINTED CIRCUIT SOCKETS


Part No. 7PC-B1.


Part No. 9PC-B1.

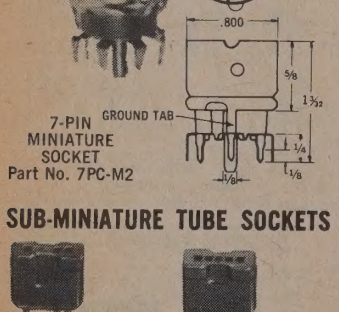

Part No. 8PC-B.

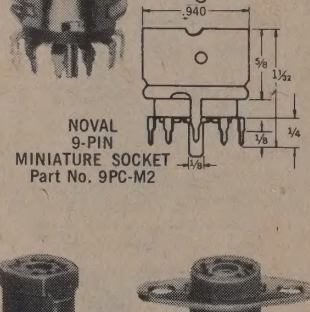
Sockets rest on the shoulder of the contact tail, providing an air gap for cooling and eliminating the possibility of a moisture trap. For 1/16" printed circuit boards with bottom circuitry.

7-Pin Socket ..... **Part No. 7 PC-B**
7-Pin Socket similar to 7PC-B without center shield and tab. (Not shown) **Part No. 7PC-B1**
Noval Socket ..... **Part No. 9PC-B**
Noval Socket similar to 9PC-B without center shield and tab (not shown). **Part No. 9PC-B1**
Octal Socket ..... **Part No. 8PC-B**

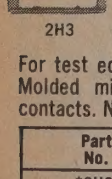
PRINTED CIRCUIT SOCKETS WITH SHIELD BASES

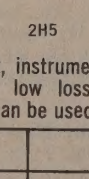
Stand-off sockets with attached bayonet-type shield base with ground tab. For use with 1/16" P.C. boards.

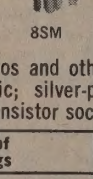


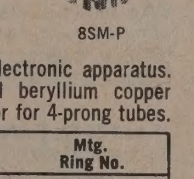


SUB-MINIATURE TUBE SOCKETS


2H3


2H5


8SM

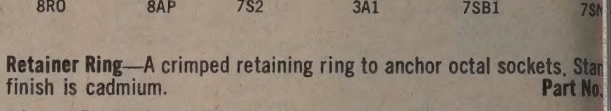

8SM-P

For test equipment, instruments, radios and other electronic apparatus. Molded mica-filled low loss Phenolic; silver-plated beryllium copper contacts. No. 2H5 can be used as a transistor socket or for 4-prong tubes.

Part No.	No. of Prongs	Mtg. Ring No.
*2H3	3	18516
*2H5	5	12446
*2H6	6	12447
*2H7	7	12448
*8SM	8	2MR
8SM-P	8	—

*Mtg. Ring Included.

TUBE SOCKET ACCESSORIES


8RO 8AP 7S2 3A1 7SB1 7SN

Retainer Ring—A crimped retaining ring to anchor octal sockets. Stan finish is cadmium. **Part No.**

Adaptor Plate—Used when the chassis hole is too large to use the retainer ring alone. **Part No.**

J-Slot Tube Shields—For 7X and 9X series sockets and 7SB and 9SB-1 shield bases.

Part No.	Description	Part No.	Description
7S2	1⅜" Length	9S1	1 ½" Length
7S3	1¾" Length	9S2	1 15/16" Length
7S4	2¼" Length	9S3	2 ⅜" Length

Shield Bases—For J-Slot type shields.

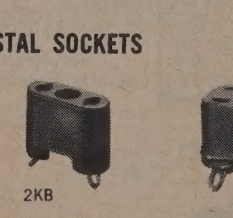
Part No.	Mtg. Ctrs.	Material
7SB1	⅞"	Steel
7SB2	⅞"	Brass
9SB1	1½"	Steel

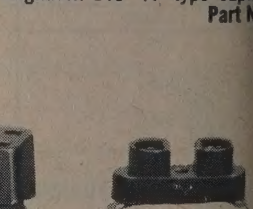
Strap Nuts—For mounting sockets with saddles or shield bases in p of two conventional type nuts.
For 7-contact sockets—**Part No. 7SN** For 9-contact sockets—**Part No.**
Second Anode Connector **Part No.**

Tube Socket Mounting Rings—(Not illustrated). Fit Cinch sockets:

Socket Part No.	Ring Part No.
2B2, 2M2, 3M11, 3B14, 3M14	2MR, 3R11, 3R14

CAPACITOR SOCKETS


2C5


2C7

For Mallory and Magnavox 1" FP type capacitors. Molded from high die tric black phenolic. Steel saddle, with 4 ground lugs, hot-solder-coat 1½" mounting centers. Has 3 recessed center contacts for exten prongs of capacitor and two outer contacts flush with surface for sh prongs of capacitor. All contacts are cadmium-plated. **Part No.**

Same as above, but for Mallory and Magnavox 1⅜" FP type capacito 1 27/32" mounting centers. **Part No.**

CRYSTAL SOCKETS

2KB 2K4 2K2B

2-Prong 31/64" Centers: Molded from high dielectric black bakelite or m filled low loss phenolic. Silver-plated beryllium copper contacts on centers. .120" diameter recessed mounting hole. Socket body is 25/32" lo 5/16" thick, and 35/64" high. For use with FT243 type crystal.

PART NO.	MATERIAL
2KB	Black
2KM	Mica-Filled

4-Prong: Same as above, but for two No. FT243 type crystals. **Part No.**

2-Prong .486" Centers: Ceramic material. Silver-plated beryllium cop contacts with hot tinned tails, mounted on .486" center. ⅛" mount hole, ⅞" long, ⅜" wide and ⅝" high overall. For No. CR-7 and B crystals. **Part No.**

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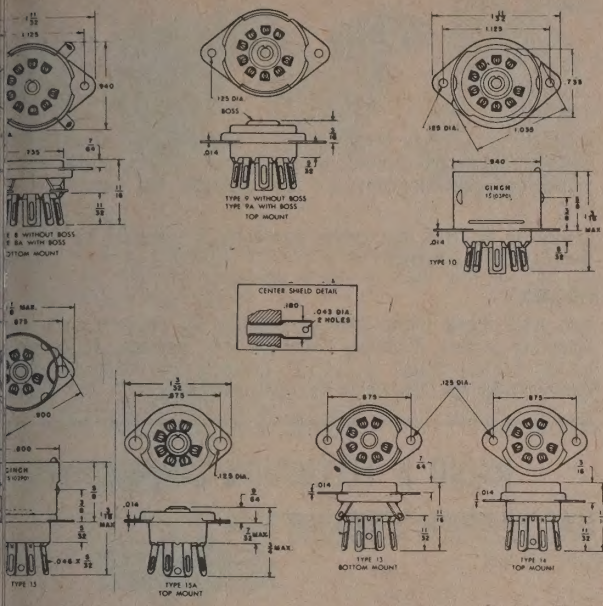
MILITARY-TYPE TUBE SOCKETS



Part No.	Type, Per MIL-S-12883A	Casting Material	Type (See Diag.)
	7-PIN		
.02P01	7JM-2	MFE	15
.02C01	7JC-2	Ceramic	15
.02P02	7JMN-1	MFE	14
.02P02	7JMN-2	MFE	15A
.02C02	7JCN-2	Ceramic	14
.02C02	7JCN-1	Ceramic	15A
.02P03	7JM-3	MFE	13
.02C03	7JC-3	Ceramic	13
	9-PIN		
L03P01	9JM-2	MFE	10
L03C01	9JC-2	Ceramic	10
L03P02	9JMN-2	MFE	9
L03P02	9JMN-1	MFE	9A
L03C02	9JCN-1	Ceramic	9A
L03P03	9JM-4	MFE	8
L03P03	9JM-3	MFE	8A
L03C03	9JC-3	Ceramic	8A

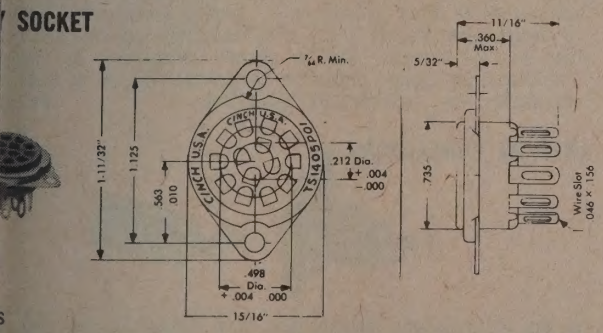
ICAL SPECIFICATIONS

E RATING (absolute maximum): Sea Level and 50,000 ft. 500 V. AC CURRENT: 1 ampere; OPERATING TEMPERATURE: 100°C; CHASSIS OPEN- ⅜" dia., 7-pin, ¾" 9-pin; INSULATION RESISTANCE: 1,000 megohms, m; WITHSTANDING VOLTAGE: 2,000 V. AC minimum without breakdown lation or flashover; INDIVIDUAL CONTACT RETENTION: 3 ounces mini- AVERAGE INITIAL INSERTION FORCE: 12 lbs. max. 7-pin, 15 lbs. max. NDIVIDUAL INITIAL INSERTION FORCE: 15 lbs. max. 7-pin, 20 lbs. 9-pin; UAL INITIAL WITHDRAWAL FORCE: 4 lbs. to 12 lbs. 7-pin, 4 lbs. to 9-pin.

NICAL SPECIFICATIONS

TORS: Mica filled Phenolic—MIL-M-14F, Type MFE; Steatite Ceramic— 0, Grade 14; CONTACTS: Phosphor bronze—QQP-330, Beryllium copper— 23; SADDLES, BASES, STRAP NUTS, CENTER SHIELDS, TUBE SHIELDS QQ-B-626 or QQ-B-613; TUBE SHIELD SPRINGS: Stainless steel—QQ-W- NISHES: Cadmium—QQ-P-416a, Silver—QQ-S-365, Nickel—QQ-N-290, Pas- —MIL-STD-171.

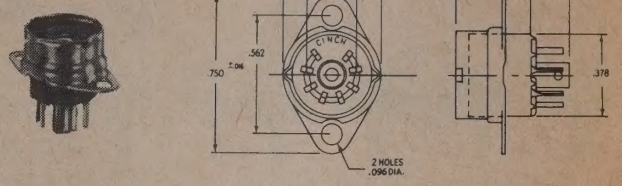
SOCKET



sting material used is type MFE. The saddle of this relay socket is of brass, hot-solder-coated. Phosphor bronze contacts are silver- and tails are hot tin dipped. Type TS1405P01 per MIL-S-12883A.

Part No. 14JRS

SUB-MINIATURE SOCKETS

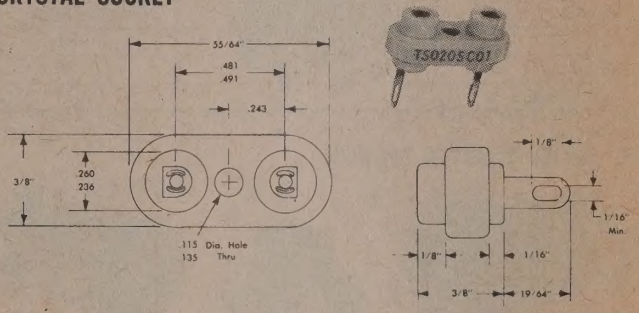


For use in equipment subject to high temperature, humidity or vibration conditions. Shield bases are brass, nickel plated. Contacts are heat-treated beryllium copper and silver-plated; tails are hot tin dipped. Molded castings are type MFE material.

Mil Ttd. No.	Part No.	Casting Material (See Text)	Type (See Diag.)
MS-35407-1	8SD*	Dia. Ph.	1
MS-35407-2	8SM-1*	MFE	1
MS-35408-1	7SD*	Dia. Ph.	2

*A U.S. Government contract number is required when ordering.

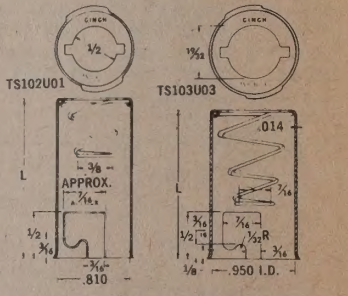
CRYSTAL SOCKET



The casting material used is Steatite ceramic, grade L5 or better. Phosphor bronze contacts are silver-plated and tails are hot tin dipped. Type TS0205C01 per MIL-S-12833A.

Part No. 2JKC

SHIELDS



Cinch MIL shields are made of brass, nickel-plated. Springs are non-magnetic stainless steel.

FOR MINIATURE SOCKETS			FOR NOVAL SOCKETS		
Type, Per JAN-S-28A	Part No.	Dimension L In Inches	Type, Per JAN-S-28A	Part No.	Dimension L In Inches
TS102U01	7SJ2-1	1⅜	TS103U01	9SJ1-1	1½
TS102U02	7SJ3-1	1¾	TS103U02	9SJ2-1	1 15/16
TS102U03	7SJ4-1	2¼	TS103U03	9SJ3-1	2⅜

STRAP NUTS

Cinch strap nuts are brass, cadmium-plated with a chromate treatment. Mounting holes have a No. 4-40 NC-2B tap after plating. Ground lugs are hot-solder-dipped.

Type, Per MIL-S-12883A	Part No.	Dimensions In Inches A	B	C	D
TS102NO1	7JSN	1 3/32	.875	7/16	21/64
TS103NO1	9JSN	1 11/32	1.125	17/32	13/32
TS102NO2	7JSN-1	1 ¼	.875	15/32	11/32

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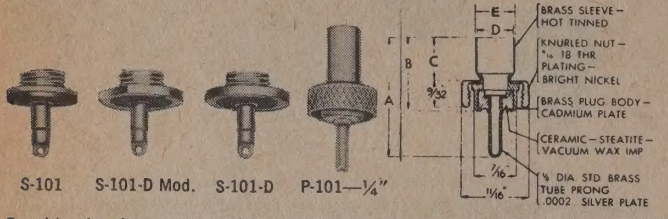
AUDIO, RADIO and TELEVISION CONNECTORS

AUDIO CONNECTORS

101 SERIES PLUGS & SOCKETS



S-101 S-101-D Mod. S-101-D P-101—¼"

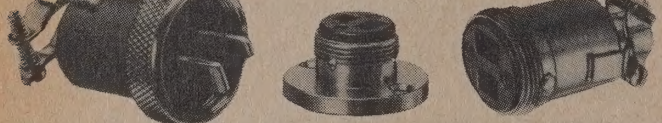
Provide low-loss connections, even at high frequencies. Units are identical except for diameter of cable ferrule. One-piece cadmium plated body and ferrule. All metal parts are brass.

Part No.	Dimensions In Inches A	B	C	D	E
P-101-¼"	1¼	¾	7/16	¼	9/32
P-101-.290	1¼	¾	7/16	.290	.319

The No. 101 series sockets are furnished in three types as shown below. Base is of brass, bright nickel finish. Brass contact is silver-plated. Insulation is of low-loss natural color XXX phenolic. The S-101-D has recessed base. S-101-D Mod. is milled as shown.

Part No.	Mounting Centers	Drill Size For Mounting Holes
S-101	11/16"	41
S-101-D	13/16"	30
S-101-D Mod.	13/16"	30

202 SERIES PLUGS & SOCKETS

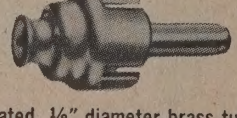


P-202-CCT S-202-B S-202-CCT-THR

Metal parts are brass with bright nickel finish. Insulation is molded phenolic. Phosphor bronze "knife switch" type socket contacts engage both sides of flat brass plug contacts. Formed fibre linings in caps. Knurled nut has ¾" -27 thread. S-202-CCT-THR and P-202-CCT make ideal microphone cable connectors.

Part No.	Type
P-202-CCT (as shown above)	Plug with Cable Clamps.
S-202-CCT	Socket with Cable Clamps.
S-202-B (as shown above)	Socket with Mounting Base.
P-202-B	Plug with Mounting Base.
S-202-CCT-THR (as shown above)	Socket with Cable Clamps and threaded body, for attaching to a P-202-CCT.

PHONO PLUGS



Standard Type nickel-plated. ⅛" diameter brass tube pin.

Part No.	Pin Length	For Jack Type
13A	9/16"	81A, 81B
13E	11/16"	81E

SHIELDED EXTENSION JACK

For use with No. 13E Phono plug. **Part No. 81E**

PHONO JACKS

SINGLE

Mounted on 1/16" dark brown phenolic disc with 11/16" mounting cen Contacts are cadmium-plated brass. Ceramic bushing. Shield is cadm plated steel. Mounting holes are .136" diameter. Use Cinch No. 13A p plug. **Part No**

Similar to No. 81A, but center conductor is grounded to shield ex when a plug is inserted. **Part No.**

DOUBLE

Two positive grip phono jacks mounted on 1/16" phenolic panel with mounting centers. Mounting holes are .140 diameter. Jacks are sp on 7/16" centers. Panel is 1½"x1". Contacts are cadmium-plated b Ceramic bushings. Use Cinch No. 13A phono plug. **Part No.**

RADIO & TELEVISION CONNECTORS

FLAT MOUNTING CONNECTOR PLUG

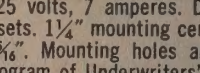
Two cadmium-plated brass pins mounted on a piece of phenolic. Moun plate is of 1/16" natural XP phenolic 1⅜"x¾". The .135/.140 moun holes are 1¼" centers. **Part No.**

RECESSED PLUG

Nominal rating is for 125 volts, 7 amperes. Designed as input volt connector for television sets. 1¼" mounting centers. Overall length 1 Width ⅝" Body depth 7/16". Mounting holes are .140/.145. Recogni under the Component Program of Underwriters' Laboratories, Inc., re ence No. 15M13056. **Part No.**

Same as above with one-piece contact. **Part No. 2R**

ANTENNA PLUG

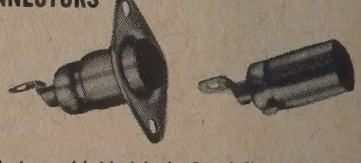


Standard Type. Nickel-plated brass ⅛" tube pin extends 7/32" from ca mium-plated split brass shell. Use with Cinch No. 81C or 81F connect **Part No.**

110-250 VOLT 2 PRONG SOCKET

Rated at 15 Amp., 110 V. Molded from high dielectric black phenol Cadmium-plated brass contacts on ½" centers accept any 2 prong sta ard electric plug. Mounts in 25/64" x 25/32" hole. Has .144 diameter mounti holes on 1⅛" centers. Ideal for chassis connections and many oth applications. Recognized under the Component Program of Underwrite Laboratories, Inc., reference No. 54A12844. **Part No.**

ANTENNA CONNECTORS



Flanged. Motorola-type shielded jack. Steel flange with 15/16" mtg. cente with .136 dia. mtg. holes. Mounts with screws or rivets. Use Cinch N 13B antenna plug. **Part No.**

Shell Type: Same as above except without flange. Solder into positio Accepts No. 13B plug. **Part No.**

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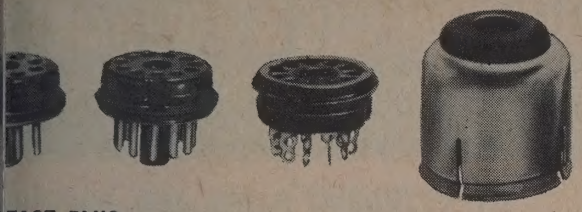
MISCELLANEOUS PLUGS, SOCKETS, CAPS, SHELLS & HARDWARE



TACT PLUG

lielectric black Phenolic. Pins are nickel-plated. Mounts on 1/16" s using No. 8RO retaining ring, or can be used with No. 16F cap. t any standard octal socket. **Part No. 8PB**

NTACT PLUG

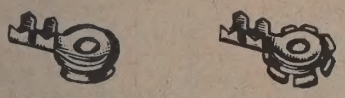
l from high dielectric black Phenolic. Pins are nickel-plated. Mounts chassis using No. 8RO retaining ring or can be used with No. 16F ill fit No. 11RB socket shown below. **Part No. 11PB**

NTACT SOCKET

l from high dielectric black Phenolic. Solder coated brass contacts. s on 1/16" chassis using No. 8RO retaining ring. Can be used with No. p. Used with No. 11PB plug. **Part No. 11RB**

of cadmium-plated steel to snap on 8 and 11 prong sockets which oved for a 1/16" chassis. Also fits 8PB, 11PB and 11RB plugs. Rubber et has a 25/64" dia. hole. **Part No. 16F**

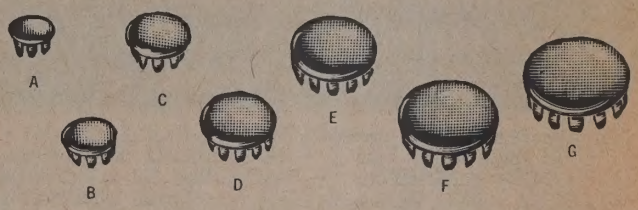
ERY PLUGS



-plated brass tube pins mounted on high-grade dark brown phenolic. s. at 500 V DC.

	Voltage	For Burgess No.	For Eveready No.	For R.C.A. No.	For Ray-O-Vac No.
	67½ "B"	P6, D5, P6M, M6, XX30, XX45, XX50	455, 467	VS016, VS300A, VS322, VS315	P4367
	67½ "B"	K45, P45, D6, 4D4, P45M, P60, N60X, C62	455, 467	VS306, VS316, VS055, VSH7, VS082, VS218, VS215, VS219	P4367

PLUG BUTTONS



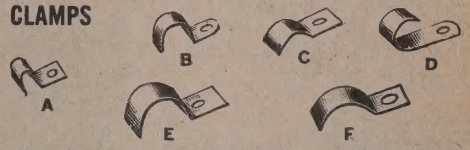
Nickel plated steel plug buttons for eight popular size holes. Spring tension prongs hold plug firmly in position.

For Hole Diameter	Part No.	Cup Diameter
1/4"	41A	13/32"
3/8"	41B	1/2"
1/2"	41C	21/32"
5/8"	41D	51/64"
3/4"	41E	15/16"
7/8"	41F	1 1/16"
1"	41G	1 5/32"
1 1/4"	41H	1 7/16"

SCREEN-TYPE PLUG BUTTON

Provides ventilation wherever required. Bright zinc plated steel button snaps in 1" diam. hole. **Part No. 41V**

CABLE CLAMPS



Cadmium-plated sturdy steel cable clamps for cables 1/16" to 5/8" in dia.

Part No.	Dia. of Arc	Hole Dia.	Over-all Width	Over-all Length	Hole Str. To Arc Center
85A	1/8"	.149	11/32"	15/32"	1/4"
85B	5/16"	.140	5/16"	23/32"	3/4"
85C	5/16"	.144	3/8"	21/32"	3/8"
85D	5/16"	.136	5/16"	27/32"	1/2"
85E	1/2"	.147	1/2"	15/16"	7/16"
85F	5/8"	.171	3/8"	1"	1/2"

AVAILABLE FROM STOCK

OUR COMPLETE LINE OF

STANDARD SOLDER-TYPE & INSULATED TERMINALS & HARDWARE

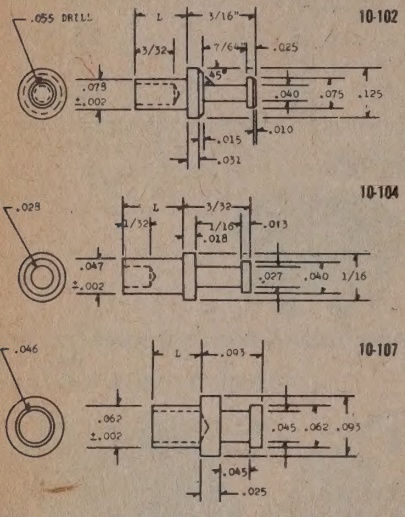
WE MAINTAIN THE MOST PRECISE, UP-TO-DATE HIGH SPEED SWISS AUTOMATIC SCREW MACHINERY AVAILABLE

MIL Spec. Platings Available: Silver: MIL-F-14072, QQ-S-365 • Electro-Tin: MIL-T-10727, Type 1 • Electro-Tin-Lead (Electro-Solder): MIL-F-14072 • Hot-Solder-Dip: MIL-F-14072, Type 221 • Hot-Tin-Dip: MIL-T-10727 • Gold: MIL-G-45204, Type II • Nickel: QQ-N-290, Type VI • Cadmium: QQ-P-416A, Type II, Class B, Clear Chromate • Bright Alloy: MIL Spec. • Copper: MIL Spec.

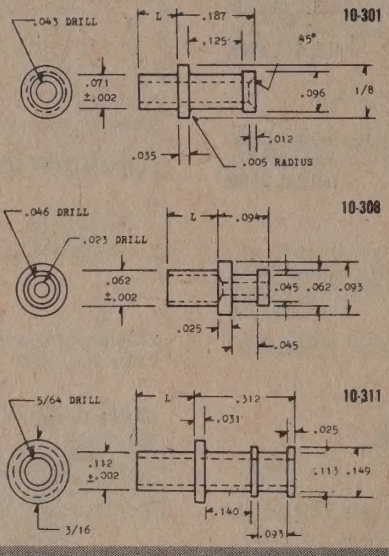
ALL STANDARD PANEL AND CHASSIS HARDWARE AVAILABLE

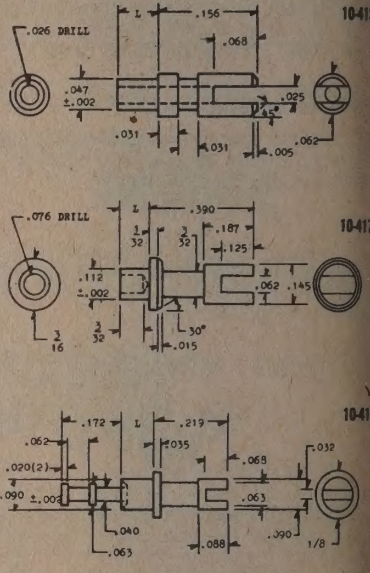
THESE ARE ONLY 36 OF THE HUNDREDS OF STYLES OF TERMINALS WE PRODUCE

SINGLE TURRET TERMINALS, SERIES 10-100

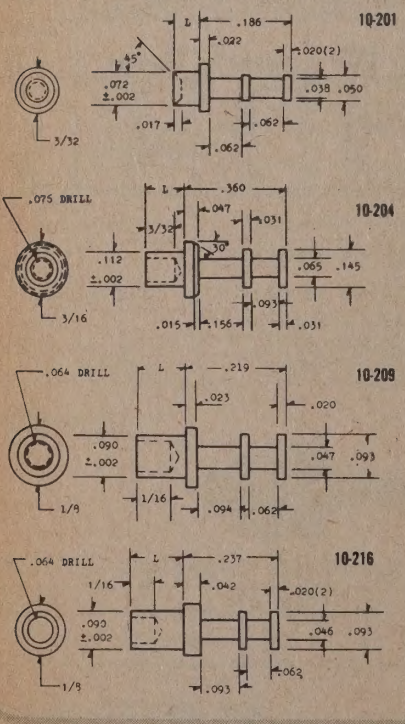


TUBULAR TERMINALS, SERIES 10-300

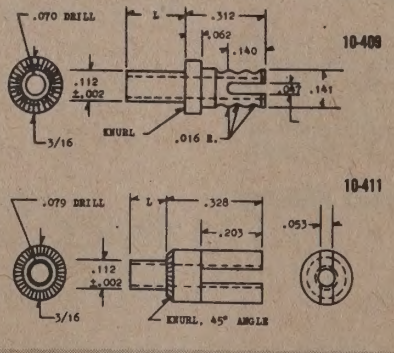




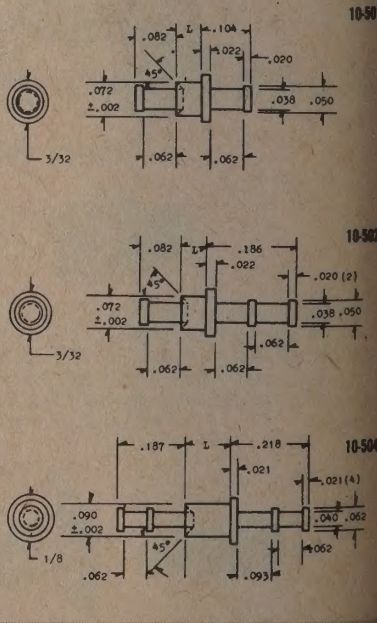
DOUBLE TURRET TERMINALS, SERIES 10-200



PRECISION-MADE
MODULE PINS
CONNECTOR PINS
PRINTED CIRCUIT PINS
ANY & ALL SIZES TO YOUR SPECS
SEND DRAWINGS FOR PROMPT QUOTATION



DOUBLE END TERMINALS, SERIES 10-500



CALL OR WRITE FOR FREE CATALOG • BE SURE TO SPECIFY SHANK LENGTH & BOARD THICKNESS

CONCORD ELECTRONICS CORPORATION

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AVAILABLE FROM STOCK

OUR COMPLETE LINE OF

STANDARD SOLDER-TYPE & INSULATED TERMINALS & HARDWARE

WE MAINTAIN THE MOST PRECISE, UP-TO-DATE HIGH SPEED SWISS AUTOMATIC SCREW MACHINERY AVAILABLE

QUOTATIONS GIVEN ON CUSTOM DESIGNS

TERMINAL MATERIALS:

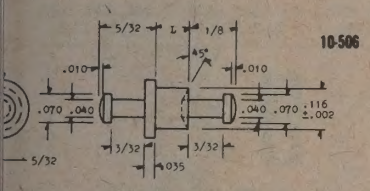
- **BRASS** QQ-B-626, Comp. 22, ½ hard. Brass tubing for hollow terminals is ASTM-B 135 grade.
- **BRONZE** to ASTM-B 140-58, Alloy B (leaded commercial bronze).

TERMINALS TO THE FOLLOWING SPECIFICATIONS:

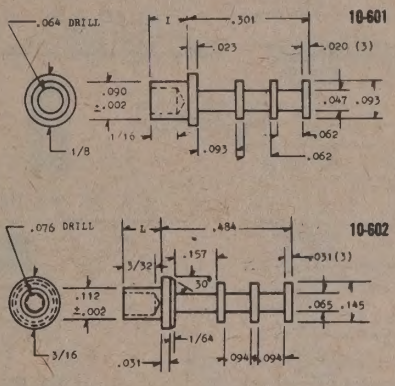
- NASA
- NATIONAL AEROSPACE
- MIL-T-55155
- FEDERAL SPEC. NUMBERS
- MS MILITARY STANDARDS

THESE ARE ONLY 36 OF THE HUNDREDS OF STYLES OF TERMINALS WE PRODUCE

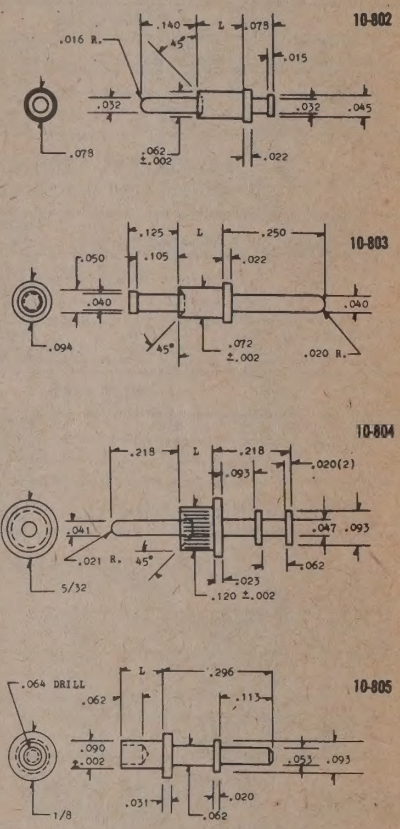
DOUBLE END TERMINALS, SERIES 10-500



TRIPLE TURRET TERMINALS, SERIES 10-600



PIN TYPE TERMINALS, SERIES 10-800



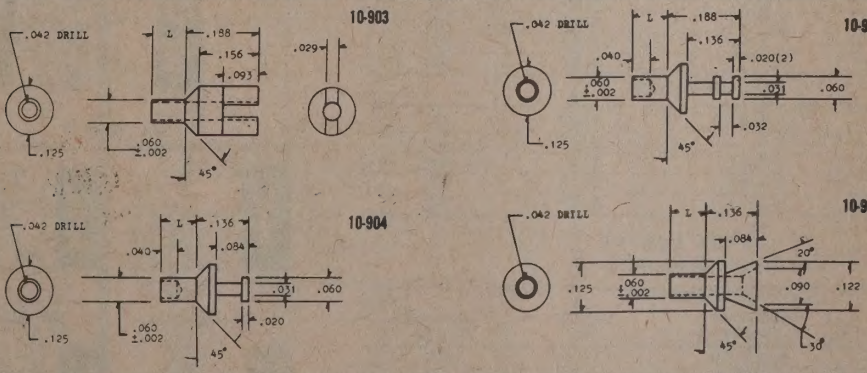
PRECISION-MADE

MODULE PINS
CONNECTOR PINS
PRINTED CIRCUIT PINS

ANY & ALL SIZES TO YOUR SPECS

SEND DRAWINGS FOR PROMPT QUOTATION

PRINTED CIRCUIT TERMINALS SERIES 10-900



CALL OR WRITE FOR FREE CATALOG • BE SURE TO SPECIFY SHANK LENGTH & BOARD THICKNESS

CONCORD ELECTRONICS CORPORATION

DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

DABURN SOLDERLESS TERMINALS

Material is pure electrolytic copper with heavy cadmium plating, chromate finish resists corrosion and assures long shelf life — one piece design for maximum conductivity and strength. Beveled edges to facilitate wire insertion, barrels are full ¼" length, "V" grooves for wire protection.

NON INSULATED • QUICK DISCONNECT TERMINALS

COLOR CODE: For matching to wire sizes.

RED: For 22-16 wire, .160" I.D. **BLUE:** For 16-14 wire, .185" I.D.
YELLOW: For 12-10 wire, .260" I.D.

Female disconnect terminals are .020" brass, cadmium plated. Male disconnect terminals are .032" copper, cadmium plated. Beveled mouth and "V" grooves plus full ¼" length barrels for all.

INSULATED TERMINALS • QUICK DISCONNECT TERMINALS

The insulated terminals have strong, permanently attached rigid vinyl insulating sleeves for increased vibration resistance.

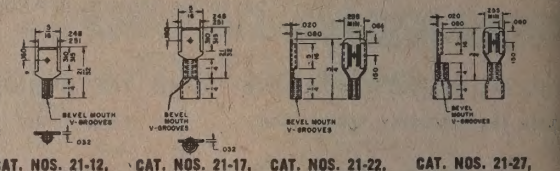
QUICK DISCONNECT TERMINALS

NON-INSULATED

Wire Size Range	Male Catalog No.	Female Catalog No.	Standard Package
22-16	21-12	21-22	100
16-14	21-13	21-23	100
12-10	21-14	21-24	100

INSULATED

Wire Size Range	Male Catalog No.	Female Catalog No.	Standard Package
22-16	21-17	21-27	100
16-14	21-18	21-28	100
12-10	21-19	21-29	100



CAT. NOS. 21-12, 21-13, 21-14 | CAT. NOS. 21-17, 21-18, 21-19 | CAT. NOS. 21-22, 21-23, 21-24 | CAT. NOS. 21-27, 21-28, 21-29

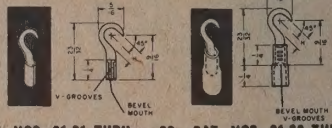
SOLDERLESS TERMINALS

NON-INSULATED — HOOK TONGUE

Wire Size Range	Stud Size	Catalog No.	Standard Package
22-16	6	21-31	100
	8	21-32	100
16-14	6	21-34	100
	8	21-35	100
	10	21-36	100

INSULATED

Wire Size Range	Stud Size	Catalog No.	Standard Package
22-16	6	21-38	100
	8	21-39	100
16-14	6	21-41	100
	8	21-42	100
	10	21-43	100



CAT. NOS. 21-31 THRU — 36 | CAT. NOS. 21-38 THRU — 43

CAT. NOS. 21-47, 21-48 | CAT. NOS. 21-51, 21-52

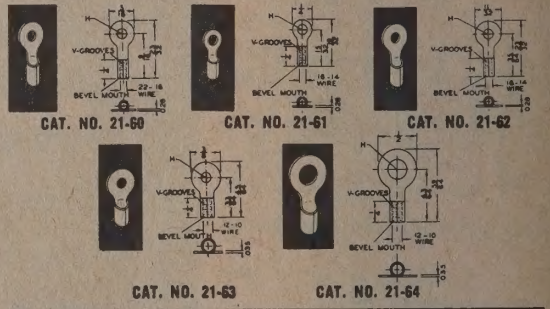
BUTT CONNECTORS

NON-INSULATED

Wire Size Range	Catalog No.	I.D.	Stub Clearance	Standard Package
22-16	21-47	.140"	37/64	100
16-14	21-48	.170"	37/64	100

INSULATED

22-16	21-51	.140"	37/64	100
16-14	21-52	.170"	37/64	100



CAT. NO. 21-60 | CAT. NO. 21-61 | CAT. NO. 21-62

CAT. NO. 21-63 | CAT. NO. 21-64

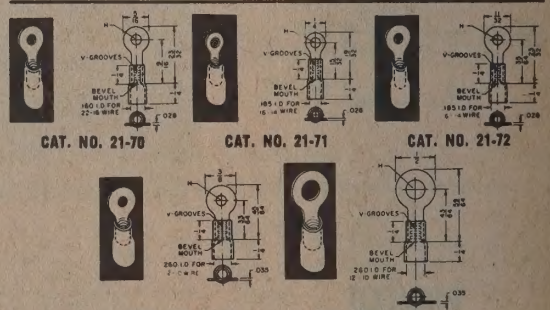
RING TONGUE

NON-INSULATED

Wire Size Range	Specify Stud Sizes	Catalog No.	Standard Package
22-16	4, 6, 8, 10	21-60	100
16-14	4, 6	21-61	100
16-14	6, 8, 10	21-62	100
12-10	6, 8, 10	21-63	100
12-10	¼	21-64	100

INSULATED

22-16	4, 6, 8, 10	21-70	100
16-14	4, 6	21-71	100
16-14	6, 8, 10	21-72	100
12-10	6, 8, 10	21-73	100
12-10	¼	21-74	100



CAT. NO. 21-70 | CAT. NO. 21-71 | CAT. NO. 21-72

CAT. NO. 21-73 | CAT. NO. 21-74

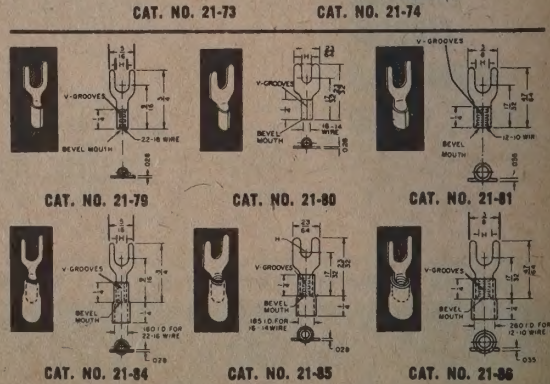
SPADE TONGUE

NON-INSULATED

Wire Size Range	"H" Stud Sizes Specify	Catalog No.	Standard Package
22-16	4, 6, 8, 10	21-79	100
16-14	4, 6, 8, 10	21-80	100
12-10	6, 8, 10	21-81	100

INSULATED

22-16	4, 6, 8, 10	21-84	100
16-14	4, 6, 8, 10	21-85	100
12-10	6, 8, 10	21-86	100



CAT. NO. 21-79 | CAT. NO. 21-80 | CAT. NO. 21-81

CAT. NO. 21-84 | CAT. NO. 21-85 | CAT. NO. 21-86

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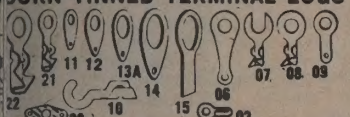
LUGS — TERMINAL BOARDS, STRIPS BEARINGS • BUSHINGS • SPACERS

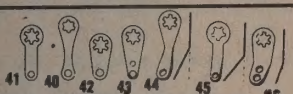
BURN TINNED TERMINAL LUGS



Hole Size	Material	L'gth	Thick-ness
6	Tinned Copper	17/32"	.015"
10	Tinned Copper	5/8"	.016"
.252	Tinned Copper	17/32"	.015"
A 1/4	Tinned Copper	13/16"	.015"
3/8	Tinned Copper	7/8"	.016"
1/2	Hot Tin. Copper	1 3/16"	.024"
10	Hot Tin. Copper	3/16"	.020"
1/4	Hot Tin. Copper	1 1/16"	.025"
8	Brass Hot Tin.	7/8"	.015"
10	Brass Hot Tin.	25/32"	.020"
6	Brass Hot Tin.	5/8"	.020"
4-6-8-10	Brass Hot Tin.	7/8"	.020"
8	Tinned Copper	5/8"	.016"
4-6-8-10	Brass Hot Tin.	1 1/16"	.020"
4-6-8-10	Brass Hot Tin.	1 1/16"	.020"
10	Brass Hot Tin.	7/8"	.020"

Std. Pkg. 1000

IINAL GS

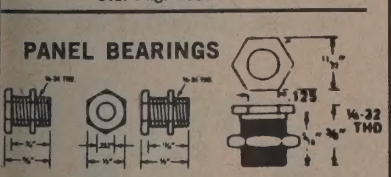


CKWASHER - BRASS - HOT TINNED

urn o.	Hole	Thickness	Length
-40-4	4	.018"	7/8"
-40-6	6	.018"	7/8"
-40-8	8	.018"	7/8"
-40-10	10	.018"	5/64"
-40-14	1/4"	.018"	13/16"
-41-4	4	.018"	47/64"
-41-6	6	.018"	47/64"
-41-8	8	.018"	47/64"
-42-4	4	.018"	5/8"
-42-6	6	.018"	5/8"
-42-8	8	.018"	5/8"
-43-4	4	.018"	23/32"
-43-6	6	.018"	23/32"
-43-8	8	.018"	23/32"
-44-4	4	.018"	13/16"
-44-6	6	.018"	13/16"
-44-8	8	.018"	13/16"
-44-10	10	.018"	53/64"
-45-4	4	.018"	23/32"
-45-6	6	.018"	23/32"
-45-8	8	.018"	23/32"
-46-4	4	.018"	41/64"
-46-6	6	.018"	41/64"
-46-8	8	.018"	41/64"

Std. Pkg. 1000

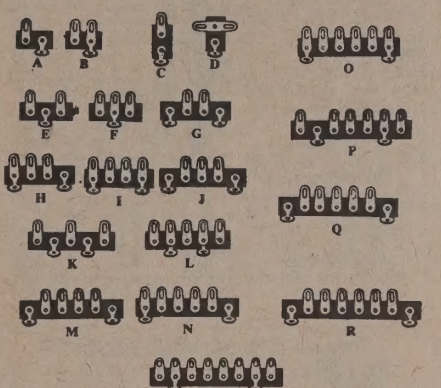
PANEL BEARINGS



nickel plated. Same as used on the above g assemblies.

rn No.	Description	Std. Pkg.
370	3/16" Threaded Length	50
370A	13/32" Threaded Length	50
370B	3/8-32 Thread, 7/16" Threaded Length, 21/32" O.L.	50
370C	Miniature — 1/4-32 Thd., Threaded L'gth. 5/16", 3/8" O.L., .125" 11/32" Hex.	50

LUG TERMINAL STRIPS



STANDARD TYPE

Lugs are 3/8" centers with .140 diam. mounting holes. Lugs are 1/16" (.062") thick XP bakelite by 3/8" wide lugs. Special combinations available. Mount: .140 I.D. for no.6 screw.

MINIATURE TYPE

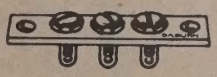
Lugs are 1/4" centers. Lugs are .062" thick XP bakelite x 5/16" wide. Steel cadmium plated. Mount: .096 I.D. for 3/32" rivet or No. 3 screw.

Std. Pkg. 100

Daburn No.	Illus-tration	Daburn No.
15-82	A	15-52
15-82A	B	15-52A
15-82B	C	15-52B
15-82C	D	15-52C
15-83	E	15-53
15-83A	F	15-53A
15-84	G	15-54
15-84A	H	15-54A
15-84B	I	15-54B
15-85	J	15-55
15-85A	K	15-55A
15-85B	L	15-55B
15-86	M	15-56
15-86A	N	15-56A
15-86B	O	15-56B
15-87	P	15-57
15-88	Q	15-58
15-89	R	15-59
15-90	S	15-60

BAKELITE TERMINAL BOARD
Screw Type

Terminals made of brass hot tinnned, mounted on X.P. Bakelite 5/8" wide x 1/16" thick, spaced 7/16" centers. Screws are 6-32 x 3/8" steel, cadmium plated.



Daburn No.	Termi-nals	Mtg. Center	Std. Pkg.
15-72	2	1 7/16"	50
15-73	3	1 3/4"	50
15-74	4	2 1/16"	50
15-75	5	2 5/8"	50
15-76	6	3 1/16"	50
15-77	7	3 1/2"	50
15-81	SHORTING LINK		100

DABURN TERMINAL BOARD
Heavy Duty

Terminals made of brass, cadmium plated .042" thick, spaced 1/2" centers. Mounted on XP bakelite 7/8" wide x 3/32" thick. Screws are 8-32 x 5/16" brass, nickel plated.

Daburn No.	Termi-nals	Mtg. Center	Std. Pkg.
15-61A	2	1 1/2"	25
15-61	3	2"	25
15-62	4	2 1/2"	25
15-63	5	3"	25
15-64	6	3 1/2"	25
15-65	7	4"	25
15-66	8	4 1/2"	25
15-67	9	5"	25
15-68	10	5 1/2"	25
15-69	11	6"	25
15-70	12	6 1/2"	25

DABURN BRASS BUSHINGS AND SPACERS

Suitable for raising sub panels, condensers, transformers, chassis, etc. Bushing hole accommodates a No. 4, No. 6 or No. 8 screw.

1/4" O.D.

Length	For No. 8 Screw Cat. No.	For No. 6 Screw Cat. No.	For No. 4 Screw Cat. No.
1/4"	14-320	14-315	14-310
3/8"	14-321	14-316	14-311
1/2"	14-322	14-317	14-312
3/4"	14-323	14-318	14-313
1"	14-324	14-319	14-314

Std. Pkg. 100

3/8" O.D.

1/4"	14-330	14-325	14-305
3/8"	14-331	14-326	14-306
1/2"	14-332	14-327	14-307
3/4"	14-333	14-328	14-308
1"	14-334	14-329	14-309

Std. Pkg. 100

THREADED BRASS SPACERS

Threaded spacers for 4-40, 6-32 and 8-32 application.

1/4" O.D.

Length	For 8-32 Cat. No.	For 6-32 Cat. No.	For 4-40 Cat. No.
1/4"	14-340	14-335	14-300
3/8"	14-341	14-336	14-301
1/2"	14-342	14-337	14-302
3/4"	14-343	14-338	14-303
1"	14-344	14-339	14-304

Std. Pkg. 100

DABURN FIBRE SPACERS

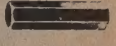
Fibre material per MIL-F-1148A, Grade CH.

1/4" O.D.

Length	For No. 8 Screw Cat. No.	For No. 6 Screw Cat. No.	For No. 4 Screw Cat. No.
1/4"	14-365	14-360	14-355
3/8"	14-366	14-361	14-356
1/2"	14-367	14-362	14-357
3/4"	14-368	14-363	14-358
1"	14-369	14-364	14-359

Std. Pkg. 100

DABURN HEX SPACERS
Brass Cadmium Plated
1/4" Hex



Length	For No. 8 Screw Cat. No.	For No. 6 Screw Cat. No.	For No. 4 Screw Cat. No.
1/4"	14-410	14-405	14-400
3/8"	14-411	14-406	14-401
1/2"	14-412	14-407	14-402
3/4"	14-413	14-408	14-403
1"	14-414	14-409	14-404

Std. Pkg. 100

3/8" Hex

1/4"	14-430	14-425	14-420
3/8"	14-431	14-426	14-421
1/2"	14-432	14-427	14-422
3/4"	14-433	14-428	14-423
1"	14-434	14-429	14-424

Std. Pkg. 100

THREADED BRASS HEX SPACERS
1/4" Hex

Length	Thread For 8-32 Cat. No.	Thread For 6-32 Cat. No.	Thread For 4-40 Cat. No.
1/4"	14-450	14-445	14-440
3/8"	14-451	14-446	14-441
1/2"	14-452	14-447	14-442
3/4"	14-453	14-448	14-443
1"	14-454	14-449	14-444

Std. Pkg. 100

DABURN

DABURN ELECTRONICS & CABLE CORP.

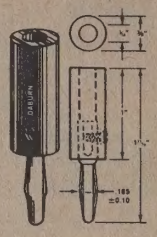
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

BANANA, PHONE PLUGS & TIPS

INSULATED BANANA PLUG
SOLDERLESS

Fits standard banana jacks. Plug is brass nickel plated. Spring is four leaf phosphor bronze, nickel plated. Side set screw holds wire without soldering. Molded plastic handle.

COLORS
Red, Black, Yellow, Green, Blue (Specify)

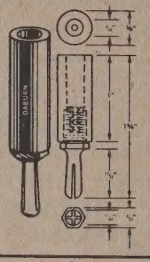


DABURN No.	SPRING	Std. Pkg.
19-46	Phosphor Bronze N.P.	50
19-46A	Beryllium Copper N.P.	50

INSULATED BANANA PLUG
SOLDERLESS

This split plug, brass N. PL., has internal brass N. PL., stud for solderless connection. Fits standard banana jacks. Molded plastic handle.

COLORS
Red, Black, Yellow, Green, Blue. (Specify)

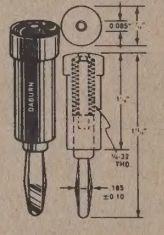


DABURN No.	Std. Pkg.
19-47 BANANA PLUG	50

ADAPTER
TIP PLUG TO BANANA PLUG

Fits standard banana jacks, accepts standard phone tips. Plug is brass nickel plated. Spring is four leaf phosphor bronze, nickel plated. Phone tip jack is phosphor bronze molded plastic handle and cap.

COLORS
Red, Black (Specify)

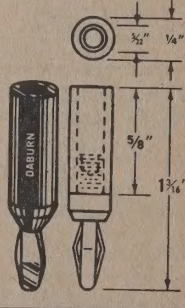


DABURN No.	Std. Pkg.
19-67 ADAPTER	50

INSULATED MIDGET BANANA PLUG
SOLDERLESS

Spring is four leaf phosphor bronze, or beryllium copper, nickel plated. Wire can be soldered directly into plug. Molded plastic handle. Fits standard banana jacks.

COLORS
Red, Black. (Specify)

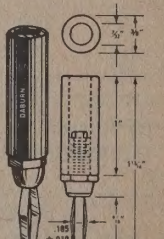


SPRING DABURN No.	Std. Pkg.
19-55 Phosphor Bronze N.P.	50
19-55B Beryllium Copper S.P.	50

INSULATED BANANA PLUG
SOLDERLESS

Fits standard banana jacks. Plug is hex brass, Nickel plated. Spring is four leaf phosphor bronze nickel plated. Molded plastic handle.
For solderless connection: wire can be passed thru hex brass N.P. stud and spread, which locks wire to plug. Wire can also be soldered directly to plug.

COLORS
Red, Black, Yellow, Green, Blue. (Specify)

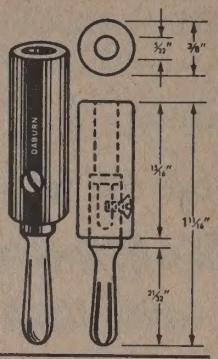


DABURN No.	SPRING	Std. Pkg.
19-04	Phosphor Bronze N.P.	50
19-04B	Beryllium Copper S.P.	50

INSULATED BANANA PLUG
SOLDERLESS

Split plug, brass N. PL., with side screw fits standard banana jacks. Plug is slotted, set screw holds wire without soldering. Molded plastic handles.

COLORS
Red, Black, Yellow, Green, Blue. (Specify)



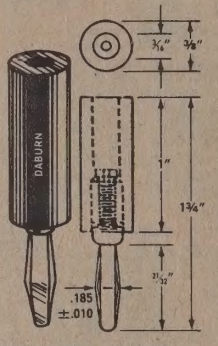
DABURN No.	Std. Pkg.
19-44 BANANA PLUG	50

INSULATED BANANA PLUG
SOLDERLESS

Fits standard banana jacks. Plug is brass nickel plated. Spring is four leaf phosphor bronze nickel plated. Molded plastic handle.

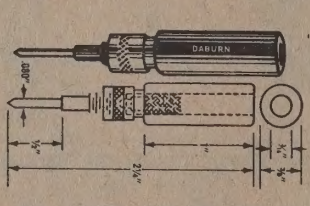
COLORS
Red, Black, Yellow, Green, Blue. (Specify)

For solderless connection same as our No. 19-04.



SPRING DABURN No.	Std. Pkg.
19-65 Phos. Bronze N.P.	50
19-65B Beryllium Copper S.P.	50

INSULATED PHONE TIP
SOLDERLESS — SENIOR

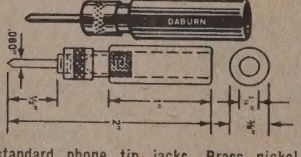


Fits standard phone tip jacks. Brass nickel plated. Solderless connection for wire which fits thru body of tip and fastens under knurled nut. Molded plastic handle.

COLORS: Red, Black, Yellow, Green, Blue. (Specify)

Daburn No.		Std. Pkg.
19-09	Senior	50

INSULATED PHONE TIP
SOLDERLESS — JUNIOR



Fits standard phone tip jacks. Brass nickel plated. Solderless connection for wire which fits thru body of tip and fastens under knurled nut. Molded plastic handle.

COLORS: Red, Black, Yellow, Green, Blue. (Specify)

Daburn No.		Std. Pkg.
19-15	Junior	50

BANANA PLUG — No. 17-40

Fits all standard banana jacks. Hex brass, nickel plated. Comes thru with hex N. PL. nut and tinned copper lug. Spring is four leaf phosphor bronze, nickel plated.

RATED: 15 Amps. AC.

DABURN No.	Spring	Dim. A	Std.
17-40	Phosphor Bronze	1/2"	10
17-40A	Phosphor Bronze	3/8"	10
17-40B	Beryllium Copper	1/2"	10

BANANA PLUG — No. 17-14

Nickel plated hex brass; spring is four leaf phosphor bronze, nickel plated Comes thru with hex nut, nickel plated. Fits all standard banana jacks.

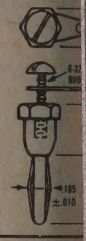
RATED: 15 Amps. AC.

DABURN No.	Spring	Std. Pkg.
17-14	Phosphor Bronze	100

BANANA PLUG — No. 17-41

Body is hex brass, nickel plated, comes thru complete with N. PL. screw and tinned copper lug; spring is four leaf phosphor bronze or beryllium copper, nickel plated. Fits all standard banana jacks.

RATED: 15 Amps. AC.

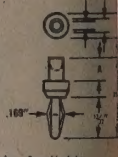


DABURN No.	Spring	Std. Pkg.
17-41	Phosphor Bronze	100
17-41B	Beryllium Copper	100

MIDGET BANANA PLUG
RIVET TYPE

Brass silver plated body. Spring is four leaf phosphor bronze, silver plated.

RATED: 10 Amps. AC.

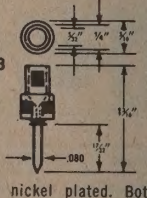


DABURN No.	Std. Pkg.
17-26 Rivet Type Midget Plug	100

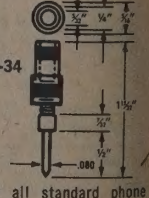
Additional Midget Plugs & Jacks Available. Also Sub-Miniature Plugs & Jacks.

SOLDERLESS PHONE TIP PLUG

17-33



17-34



Brass nickel plated. Both fit all standard phone t jacks. Slipping the wire thru body of tip, then wr ping same around screw, is tightened by knurled colla

DABURN No.	Description Type	Std. Pk
17-33	Junior	100
17-34	Senior	100

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ABURN

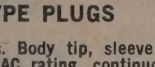
DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

TELEPHONE PLUGS • JACKS • PRINTED CIRCUIT JACK

TELEPHONE TYPE PLUGS

standard phone jacks. Body tip, sleeve is nickel plated. 5 amp. AC rating, continuous 50V. 60 cycle AC. Specify red or black barrel.

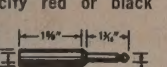
Cir-cuit	Termi-nals	Std. Pkg.
2	Solder	100
2	Screw	100
3	Solder	100
3	Screw	100



Additional types available.

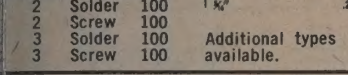
MINIATURE PHONE PLUGS

ed, molded plastic handle; brass nickel plated solder terminals; 5 amp. rating continuous



	Standard Package
Solder Term.	50
Shielded	50

SHIELDED PHONE PLUG



d phone plug. Barrel-brass, nickel plated bular insulator.

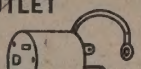
URN No.	Circuit	Terminals	Standard Package
2	2	Solder	100
2A	2	Screw	100
4	3	Solder	100
4A	3	Screw	100

RUBBER MALE PLUG

N	Standard Package
2 Prong Male Plug — Brass	100

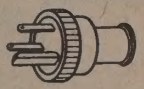
ted: 15 Amps, 125V.

DAPTER FOR 3 PRONG PLUG FOR STANDARD OUTLET



N	Standard Package
Adapter	50

RONG MALE PLUG



N	Standard Package
3 Parallel Blades and Ground Pin	50

IALE CONNECTOR

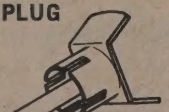
N	Standard Package
Mate to 9-17	50

PHONO PLUGS
NDARD PHONO PLUGS

ype — useful with record ; recording equipment. arge hole in cap .175" for cable.

N	Standard Package
Long Pin 1" Overall	100
S Short Pin 13/16" Overall	100

RCA TYPE PHONO PLUG



N	Standard Package
Long Pin 1" Overall	100
S hort Pin 13/16" Overall	100

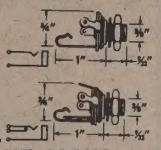
OROLA TYPE PLUGS

plated 1/8" tube pin ex- from split brass shell um plated.

N	Standard Package
	100
S For Smaller Cable	100

TELEPHONE TYPE JACK

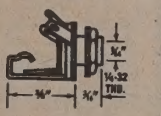
Body is brass nickel plated. Designed for long life. Nickel Silver alloy spring. Rated 10 amp. AC continuous duty. Mounts in 3/8" hole in panels up to 5/32" thick.



DABURN Cat. No.		Standard Package
19-157	2 Cond., Open	50
19-158	2 Cond., Closed	50
19-159	3 Cond., Open	50
19-160	3 Cond., Closed	50

MINIATURE TELEPHONE JACKS

Brass, nickel plated, mounts in 1/4" hole in panels up to 1/8" thick.



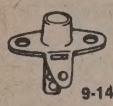
DABURN Cat. No.		Standard Package
19-132	2 Cond., Open	50
19-133	2 Cond., Closed	50

PHONO JACKS

Female for our Nos. 9-148, 9-147. Positive grip, single prong 1/16" bakelite, 11/16" mounting center.

9-149

DABURN Cat. No.	Standard Package
9-149	100
9-149-1 Insulating Washer	100



9-149A

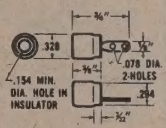
Miniature Phono Jack

Small, compact 11/16" mounting centers.

9-149A	100

Phono Input Jack

Where space is at a premium. Mounts in 13/64" hole. Rivets and grounds to chassis.

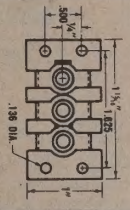


9-149B	100

9-149B

PHONO JACKS

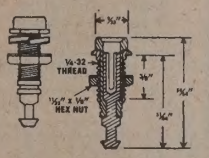
Used on recording equipment, phonographs, etc.



DABURN Cat. No.		Standard Package
9-150	Double Phono Jack	50
9-150A	Triple Phono Jack	50
9-150B	Quadruple Phono Jack	50
9-150-1	Insulating Washer for 9-150	50

NYLON TIP JACK WITH METAL SHELL
MADE TO MEET MS-16108 Spec — WRAP AROUND

Molded nylon tip jack with metal shell eliminates possibility of threads stripping during assembly. Made to meet the requirements of MS-16108 specification. Contact recessed in head for safety. Nylon, grade FM 10001, brass N.P. Shell and nut per Spec. 72-53. Tough and rugged. Fits all standard phone tip plugs.



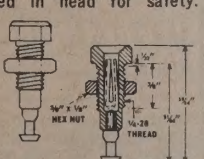
CENTER CONTACT: Heat treated beryllium copper, silver plated.

COLORS: Red, Black, Yellow, Green, Blue, White. (Specify Color)

Daburn No.		Std. Pkg.
19-90	Wrap Around	25

ALL NYLON TIP JACK
WRAP AROUND

All nylon molded tip jack. Takes all standard phone tip plugs. Contact recessed in head for safety. Hex head for ease in tightening. Mounts in 1/4" hole in panels up to 1/4". Body is nylon, grade FM 10001. Tough and rugged. Complete with brass nickel plated hex nut. Center contact. Heat treated beryllium copper, silver plated.

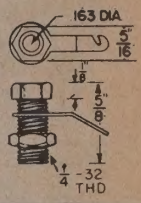


COLORS: Red, Black, Yellow, Green, Blue, White. (Specify Color)

Daburn No.		Std. Pkg.
19-80	Wrap Around	25

BANANA JACK

Hexed brass nickel plated hex nut and tinned copper lug. Has recessed head. Mounts in 1/4" hole in panels up to 5/16" thick. Fits all standard banana plugs.

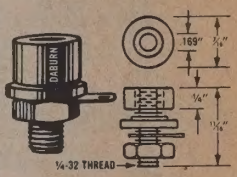


Rated: 15 amps AC.

Daburn No.		Std. Pkg.
17-03	Banana Jack	100

INSULATED BANANA JACK

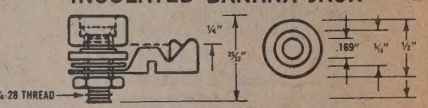
Body is brass nickel plated, mounts in 5/16" hole in panels up to 3/8" thick. Comes thru with hex nut, tinned copper lug and fibre washer. Takes all standard banana plugs. Molded plastic head.



COLORS
Red, Black, Yellow, Green, Blue, (Specify)

DABURN No.	Description	Std. Pkg.
19-06	Insulated Jack	50

INSULATED BANANA JACK



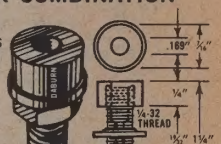
Body is brass nickel plated. Mounts in 5/16" hole in panels up to 3/8" thick. Comes thru with hex nut, tinned copper lug, lockwasher, fibre washer. Takes all standard banana plugs. Jack body is recessed for tight contact. Molded plastic head.

COLORS: Red, Black, Yellow, Green, Blue. (Specify)

DABURN No.	Description	Std. Pkg.
19-91	Insulated Jack	50

INSULATED JACK COMBINATION

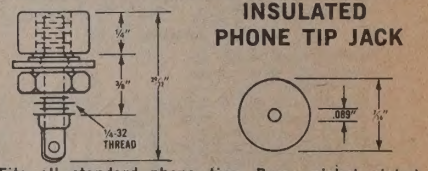
Will take senior phone tips or standard banana plugs Body is brass, nickel plated. Mounts in 5/16" hole in panels up to 1/2" thick. Springs are phosphor bronze. Comes thru with hex nut and fibre washer.



COLORS:
Red, Black, Yellow, Green, Blue. (Specify)

DABURN No.	Description	Std. Pkg.
19-33	Insulated Combination Jack	50

INSULATED PHONE TIP JACK



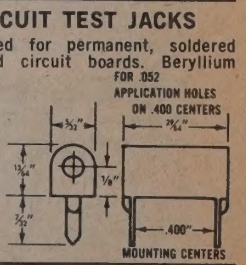
Fits all standard phone tips. Brass nickel plated body. Phosphor bronze spring provides positive contact. Comes thru complete with hex nut and fibre washer. Molded plastic head.

COLORS: Red, Black, Yellow, Green, Blue. (Specify)

DABURN No.		Std. Pkg.
19-07	Insulated Phone Tip Jack	50

PRINTED CIRCUIT TEST JACKS

Nylon bodies, designed for permanent, soldered connection to printed circuit boards. Beryllium copper contacts have gold over silver plate. Accepts .080" diameter per MIL F-14072, M301 test probes. For .052 application holes on .400 centers.



COLORS: Red, Black, Green, Yellow, Blue. Additional colors available.

DABURN No.		Std. Pkg.
19-77	Printed Circuit Jacket	25

DABURN

DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

POSTS • PRODS • CAPTIVE HARDWARE

COMBINATION POST — BANANA PLUG

Molded fluted nylon captive head rated at 15 amps AC. Body is brass nickel plated: spring — N.P.L. phosphor bronze. Converts a standard banana jack into a five way binding post.

Cat. No.		Std. Pkg.
18-40	Combination plug	100

COLORS: Red, Black.

COMBINATION POST — BANANA PLUG

Molded hex head nylon captive head. Rated at 15 amps AC. Body is brass nickel plated; spring — N.P.L. Phosphor bronze. Converts a standard banana jack into a five way binding post.

Cat. No.		Std. Pkg.
18-42	Combination plug	100

COLORS: Red, Black.

COMBINATION TERMINAL METAL BINDING POST

Brass nickel plated turret terminal screw head. Knurled shank. Knurled end. For 3/16" thick panel. 10-32 x 1/4" long BHM screw.

Cat. No.		Std. Pkg.
18-30	Combination terminal	100

COMBINATION TERMINAL METAL BINDING POST

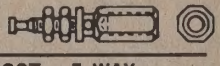
Brass nickel plated turret terminal screw head. Knurled shank. Knurled end. 8-32 x 1/4" long BHM screw. For 1/8" thick panel.

Cat. No.		Std. Pkg.
18-32	Combination terminal	100

METAL BINDING POST — 5 WAY

Hex brass, nickel plated. Wrap around terminal. Captive head.

Cat. No.		Std. Pkg.
18-34	Binding post	100

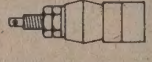


BINDING POST — 5 WAY

Hex head molded nylon with spade lug. Brass nickel plated.

COLORS: Red, Black.

Cat. No.		Std. Pkg.
18-77	Binding post	100



STANDARD DUTY BINDING POST

Colors: Red, black.

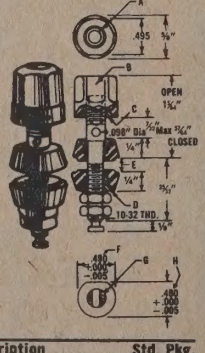
Molded-in brass bushings similar as above. Rated at 15 Amps. AC, capacitance 3.0 MMFD. Body is brass nickel plated. Mounts in 5/16" hole for locking. Has milled slot complete with two hex nuts.

DABURN No.	Description	Std. Pkg.
18-78	All Insulated Type	100
18-79	Grounding Type	100

BINDING POSTS — MULTI-PURPOSE Wrap Around Type

Molded nylon body. Accepts tip plug, spade lug, banana plug, wire alligator clip and direct solder connection. Has molded-in brass insetrs in head and washer. Rated at 30 amps. AC. capacitance 5.0 MMFD. Banana plug receptacle .161" I.D. head non-removable from stud and washer completely insulates post from panel. For panels 1/16" to 1/4" thick; drill 1/2" hole for mounting washers. Wire hole is at right angle to flat on insulated washer.

COLORS: Red Black, (Specify)

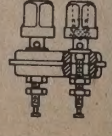


DABURN No.	Description	Std. Pkg.
18-72	Nylon Fluted Head Post	100
18-75	Nylon Binding Post	100

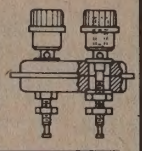
DUAL BINDING POSTS NYLON — 5 WAYS

Hex nylon captive head. Brass nickel plated. Turret terminals wrap around 15 amp rating AC. Mounts in 3/4" centers. Available in red or black combinations. Specify.

Cat. No.		Std. Pkg.
18-50	Dual Binding Post	100



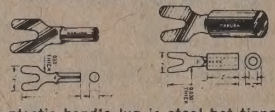
DUAL BINDING POSTS NYLON — 5 WAYS



Fluted nylon captive head. Brass nickel plated. Turret terminals — wrap around. 15 amp rating AC. Mounts in 3/4" centers. Available in red or black combinations. Specify

Cat. No.		Std. Pkg.
18-52	Dual Binding Post	100

INSULATED SPADE LUG



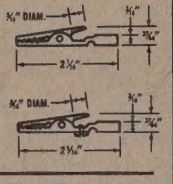
Molded plastic handle lug is steel hot tinned. Rated at 25 amps. AC. Rear barrel accommodates all standard banana plugs.

COLORS — Insulated Spade: Red, Black.

DABURN No.		Std. Pkg.
19-32	Insulated Spade Lug	50
19-32A	Spade Lug Only	50

ALLIGATOR CLIPS

Steel, cadmium plated. 5 amp continuous duty. 1/2" jaw opening. Jaws match accurately, grips securely. Accepts standard banana plugs.



DABURN Cat. No.		Std. Pkg.
20-3	Clip (no screw)	50
20-3S	Clip (with screw)	50

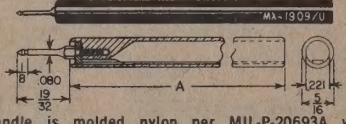
ALLIGATOR CLIP ALL INSULATED

Fully insulated. Cadmium plated sharp steel jaws. Accepts banana plug in rear.

COLORS: Red, Black.

Cat. No.		Std. Pkg.
20-25	Insulated Clip	100

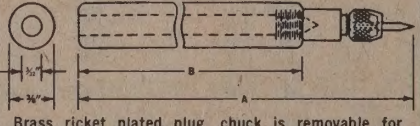
NYLON HANDLE PRODS AND TIPS



Handle is molded nylon per MIL-P-20693A with brass, silver plated tip. Solderless prods made to meet Signal Corps Drawing SC-C-82761.
Rated at 10 amps AC for 10° temperature rise, continuous duty.

DABURN Cat. No.	Sig. Corps. Drawing & Part No.	Size "A"	Color	Std. Pkg.
19-57	MX-1906/U	1"	Red	25
19-58	MX-1907/U	1"	Black	25
19-59	MX-1909/U	4"	Red	25
19-60	MX-1910/U	4"	Black	25

NEEDLEPOINT TEST PROD

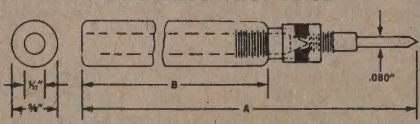


Brass ricket plated plug, chuck is removable for replacement of broken needles. Sharp needle pierces insulation or corrosion for testing purposes. Molded plastic handle.

COLORS: Red, Black. (Specify)

DABURN No.	Handle (B)	Overall L'gth (A)	Std. Pkg.
19-20	4"	4 7/8"	50
19-21	5"	6 3/8"	50

SOLDERLESS TEST PROD

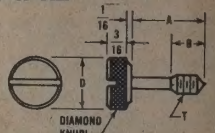


Body is brass nickel plated with molded plastic handle. Solderless connection, for wire fits thru handle and plug body and wraps under knurled nut.

COLORS: Red, Black. (Specify)

DABURN No.	Handle (B)	Overall L'gth (A)	Std. Pkg.
10-10	4"	5 1/16"	50
19-43	5"	6 1/2"	50

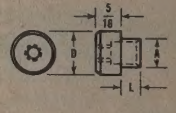
CAPTIVE SCREW



Cat. No.	A	B	D	T	Material
14-555	3/4	5/16	7/16	6-32	Brass
14-555SS	3/4	5/16	7/16	6-32	St. St.
14-556	3/4	3/8	7/16	8-32	Brass
14-556SS	3/4	3/8	7/16	8-32	St. St.
14-557	7/8	3/8	5/8	10-32	Brass
14-557SS	7/8	3/8	7/16	10-32	St. St.
14-558	7/8	3/8	5/8	1/4-20	Brass
14-558SS	7/8	3/8	1/2	1/4-20	St. St.

MATERIAL: Brass per QQB-626A, Comp. 22, 1/2 Hard.
FINISH: Nickel Plate and Polish per MIL-QQN-290, Type VI.
Stainless Steel per QQS-763, Class 7, Type A available
Standard Package 100

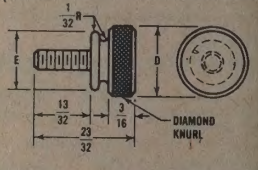
CAPTIVE BUSHING



Cat. No.	D	A	L	T	Panel Thickness
14-560	3/8	5/16	3/32	6-32	1/8
14-561	3/8	3/16	3/32	8-32	1/8
14-562	5/16	13/32	3/32	10-32	1/8
14-563	5/16	13/32	3/32	1/4-20	1/8
14-564	3/8	5/16	7/32	6-32	3/16
14-565	3/8	5/16	7/32	8-32	3/16
14-566	5/16	13/32	7/32	10-32	3/16
14-567	5/16	13/32	7/32	1/4-20	3/16
14-568	3/8	5/16	9/32	6-32	1/4
14-569	3/8	5/16	9/32	8-32	1/4
14-570	5/16	13/32	9/32	10-32	1/4
14-571	5/16	13/32	9/32	1/4-20	1/4

MATERIAL: Brass per QQB-626A, Comp. 22, 1/2 Hard.
FINISH: Nickel Plate per MIL-QQN-290, Type VI.
Available in Stainless Steel, add suffix -S to part number.
Special Sizes Also Available. **Standard Package 100**

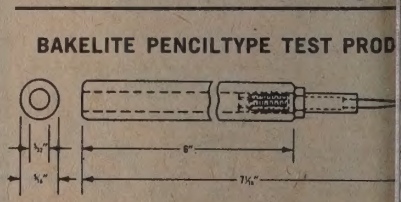
THUMB SCREW



Cat. No.	D	E	Thread
14-501	3/8	5/16	6-32
14-502	3/8	5/16	8-32
14-503	3/8	5/16	10-32
14-504	7/16	3/8	6-32
14-505	7/16	3/8	8-32
14-506	7/16	3/8	10-32
14-507	1/2	7/16	6-32
14-508	1/2	7/16	8-32
14-509	1/2	7/16	10-32

MATERIAL: Brass per QQB-626A, Comp. 22, 1/2 Hard.
FINISH: Nickel Plate per MIL-QQN-290, Type VI.
Standard Package 10

BAKELITE PENCILTYPE TEST PROD



Body is brass nickel plated with heavy steel phor needle in tip. Handle is XX bakelite per MIL-P-7 Spec. Wire threaded thru stud and tightened allov for solderless connection.

COLOR: Red, Black. (Specify)

DABURN No.		Std. Pk
19-11	Bakelite Pencil Type Prod	25

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E-Z-HOOK®

EST AND PRODUCTION CONNECTORS

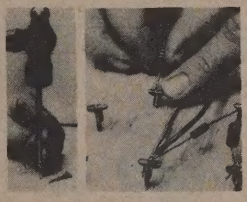
CLIPS • ADAPTERS • TEST LEADS • PROBES

- Instantly connects anywhere — Won't cut or nick.
- Won't short or jump off — Leaves your hands free.
- *Cost* pennies — *Saves* DOLLARS

ESS BOARD CLIPS

Up to 30% in Board Construction Time!

ds wiring... Improves Quality



E-Z-HOOK "Nail" Clips

o waste valuable time drilling holes, pla- ws, nuts, & washers. The "Nail" Clip dri- vood like a nail! Pulls out as easy. Make nges in seconds. Use them to speed Pro- Save Construction & Production time.

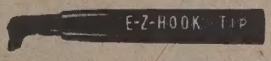
ger-tip operation speeds wire placing — easier. Patented E-Z-HOOK holds firmly ut nick or damage wire ends. L. 1 3-16". tough Stainless Steel and Durable Nylon.

r 62,000 used by Company X...

E-Z-HOOK "Nail" Clip (Use T-20 Tool)	24¢ ea.	10 for 1.98
OT-1 "Nail" Clip Kit (50 Clips, Tool & Instr.) Wt. 2 oz.	ea.	8.95
E-Z-HOOK "Nail" Clip Driving Tool Wt. 1-3 oz.	ea.	.35

PROD TIP ADAPTERS

testing as you like it



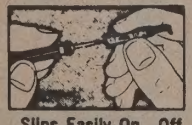
p point to an HOOK in seconds

t, most trouble-free adapter you can get. Con- E-Z-HOOK Tip slips easily on, or off, — in sec- oubles regular test prod utility, 1. as a sharp r probing, 2. as an extra hand when needed.

ol... remote connections made easily while nd stays out in the clear — safe from shock.

investment in trouble-free design. Exclusive huck eliminates loose, wobbly fit on Prod... pleasant, irritation-free performance.

r 12,300 used by Company Y...



Slips Easily On—Off

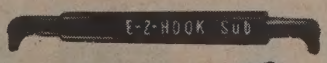
Trouble Eliminator
4 springs insure firm grip

rust-proof Stainless Steel, Brass, and tough Zytel Nylon in Red, Black, een, Orange, and Yellow. Lgth. 2 1-16", O.D. 19-64", Wt. 1-8 oz.

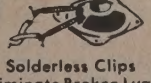
	E-Z-HOOK	Tip	(Needle—.060")	ea. .69
	E-Z-HOOK	Tip	(Standard—.080")	ea. .69
Q	E-Z-HOOK	Tip	(Tec—10-32 female thread)	ea. .94
	E-Z-HOOK	Tip	(Banana—Standard.)	ea. .69

SUBSTITUTION CLIPS

inate Guessing



an be sure!—when you sub- e, and this E-Z-H Sub is just ing to use... quick, easy, orary connections in seconds... no lead twisting der tacking to damage parts or wiring. Speeds le-shooting, makes it easier... saves hours and rs in valuable production time and material.

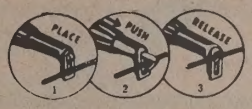


Solderless Clips
Eliminate Broken Lugs

lasting Zytel Nylon and tough Stainless Steel. In colors for easy lead iden- tion: Red, Black, Blue, Green, Orange, and Yellow. Length 2 1-2", O.D. ", Weight. 1-12th oz.

E-Z-HOOK Sub	ea.	.49

E-Z-HOOK TEST PRODUCTS

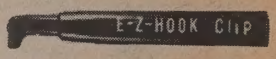


Patented hook tip connects anywhere. 1. Push to connect. 2. Push again to remove.

U.S. PATENT No. 2702892

JUMPER - METER CLIPS

- **Convert needless delays... to pleasant productive checks**



Let carefree E-Z-HOOK Clips help speed your checks... make it easier. They quickly pay for themselves in savings.

Easy slip-on design saves in assembly and maintenance... safe solder connection and strain relief assures longer trouble-free lead life.

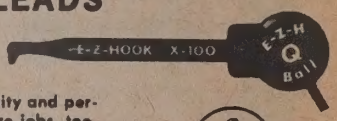
... Over 37,000 used by Company Z...

Made of tough Stainless, durable Nylon in colors for easy lead identification: Red, Black, Blue, Green, Orange, Yellow. Lgth. 2 1-8", OD 5-8", Wt. 1-13 oz.

No. 61-1	E-Z-HOOK	Clip	(Standard)	ea. .39
No. 61-2	E-Z-HOOK	Clip	(Gold Plated)	ea. .59

Miniature CLIP & LEADS

- **Make Impossible Connections... Easy**



Now enjoy famous E-Z-HOOK reliability and performance on your small, sub-miniature jobs, too. Easily make test connections never before possible.

Tiny E-Z-HOOK with the new "Hypo Action" gives you the small size and positive control needed to make such tedious work easier, more efficient, pleasant and profitable.

FULL SIZE

Use "Q" Balls two ways—1, as a versatile low voltage test connector, 2. as a tiny mechanical hand to handle small parts. Will save you hours of unnecessary delays and aggravation.

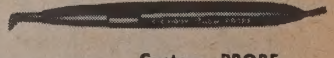
Durably constructed of the finest materials— Nylon in Red, Black, Orange, Blue, Green, and Yellow. Stainless Steel spring, & Beryllium Copper conductor to assure reliable performance. Over all length 2 1-4". Maximum width at hook only .079". Wt. 1-6th oz.

Also available on 32" —Ready-to-Plug-In—Test Leads of striped, 24 AWG (19-36) thermoplastic wire—Standard or Banana Tip.

No. X-100	E-Z-HOOK 'Q' Ball Mini-HOOK	(No lead)	ea. .49
No. AX-1	E-Z-HOOK 'Q' Ball Test Lead	(32"—Std. Tip)	ea. .89
No. BX-1	E-Z-HOOK 'Q' Ball Test Lead	(32"—Ban. Tip)	ea. .94

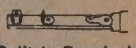
SCOPE - METER PROBES

- **Now—Special Probes assembled in minutes**



Custom PROBE

Never before such efficiency and convenience in a replacement probe... SPECIAL TERMINALS speeds assembly, makes it easier... E-Z-HOOK for easy time-saving care-free connections... SCREW-ON COVER for ready access and repair... STRAIN-RELIEF prolongs life of single or shielded leads.



Built-In Terminals
For easy assembly

For Professional or Production use. Finest streamlined feather-weight construction of rust proof Stainless, durable Zytel Nylon (slide), tough Tenite (body) in Red, Black, Blue, Green, Orange, & Silver. Lgth. 4 3-4", O.D. 15-32", Wt. 1-3 oz.

No. 54-1	E-Z-HOOK	Custom PROBE		ea. .89
No. 54-2	E-Z-HOOK	Custom PROBE	(Gold Plated)	ea. 1.09

LET THEM HELP YOU CUT YOUR COSTS

To Order:- Order E-Z-HOOKs from your convenient Parts Distributor.
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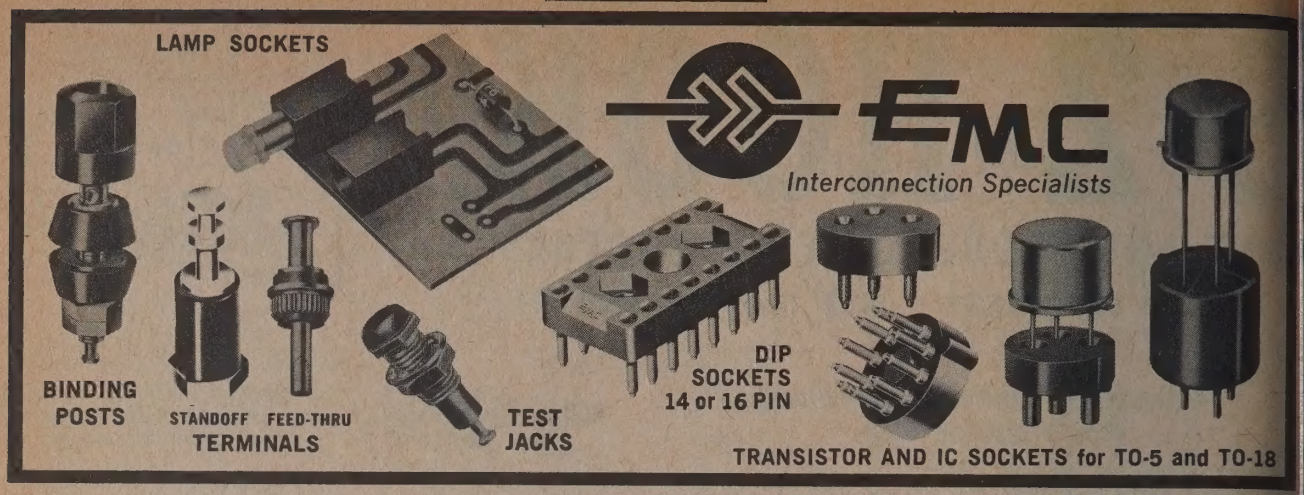
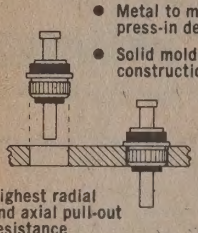
E-Z-HOOK Test Products

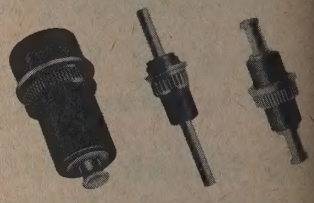




- Metal to metal press-in design
- Solid molded construction
- Highest radial and axial pull-out resistance

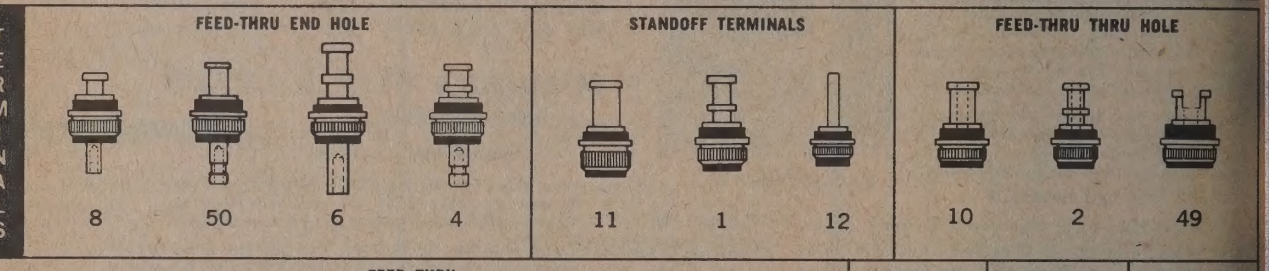
NURL-LOC DESIGN – TERMINALS AND TEST JACKS

Electronic Molding offers the largest variety of molded insulated terminals and test jacks available anywhere. The metal inserts are molded into high-temperature Diallyl Phthalate, (500°F) forming a strong integral unit that will not crack while soldering. The metal to metal Nurl-Loc press-in feature (shown left) assures highest radial and axial pullout resistance of any terminal of this type. Ten colors are available, in a wide range of types for various applications, many designed to meet military specifications, plus mounting tools.

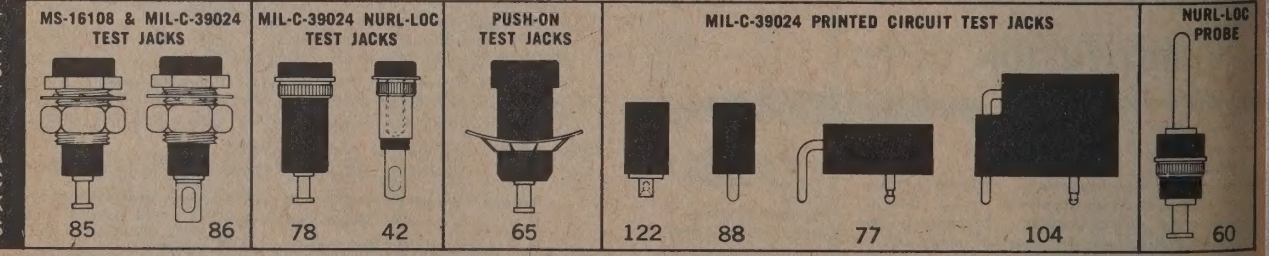


WRITE FOR COMPLETE CATALOG

TERMINALS



TEST JACKS



ELECTRONIC MOLDING CORPORATION

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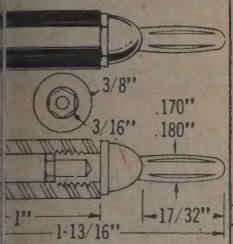
ELECTROCRAFT ELECTRONIC COMPONENTS

BANANA PLUGS

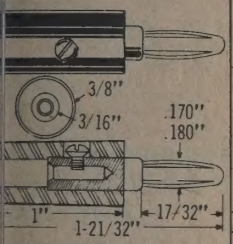
ILLUSTRATIONS | DESCRIPTION



BANANA PLUG

DESC: Hex brass body, separate internal brass stud for solderless or soldered connection.
RATING: 15 amps AC for 10 degrees C Temp. rise continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Four leaved, phosphor bronze nickel plated spring.

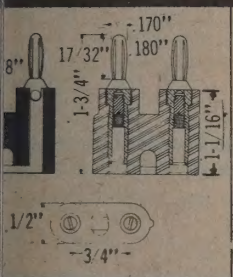
		Net per C 25.00	
No.	Color	No.	Color
33-000	Red	33-002	Blk



BANANA PLUG

DESC: Lead wire connection with set screw through plastic handle.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Four leaved, phosphor bronze nickel plated spring.

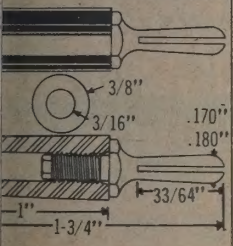
		Net per C 20.00	
No.	Color	No.	Color
33-006	Red	33-008	Blk



DUAL BANANA PLUG

DESC: Brass, nickel plated plug. Mates with standard dual binding posts.
RATING: 15 amps AC for 10 degrees C Temp. rise, continuous duty.
BODY: Molded cycoloc plastic, per MIL-M-22544, type 4.
TIPS: Four leaved, phosphor bronze nickel plated springs.

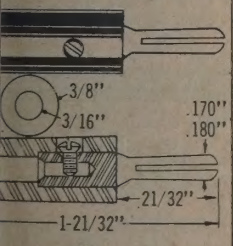
		Net per C 72.00	
No.			
33-010			



BANANA PLUG

DESC: Separate internal brass stud for solderless or soldered connection.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Cross slotted, nickel plated brass.

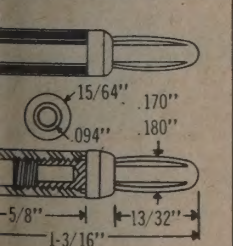
		Net per C 22.00	
No.	Color	No.	Color
33-012	Red	33-014	Blk



BANANA PLUG

DESC: Lead wire connection with set screw through plastic handle.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Cross slotted, nickel plated brass..

		Net per C 18.00	
No.	Color	No.	Color
33-018	Red	33-020-BU	Blk

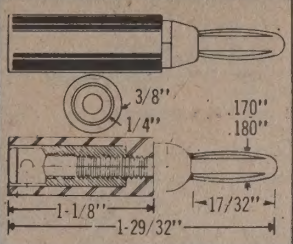


BANANA PLUG

DESC: Midget type; lead wire connection solders to drilled body.
RATING: 10 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Four leaved, phosphor bronze, nickel plated spring.

		Net per C 20.00	
No.	Color	No.	Color
33-024	Red	33-026	Blk

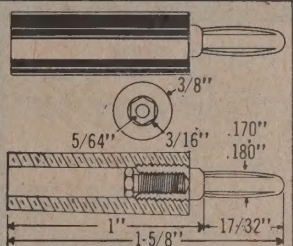
ILLUSTRATIONS | DESCRIPTION



BANANA PLUG

DESC: Lead wire connection with set screw through plastic handle.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Four leaved, nickel plated phosphor bronze spring.

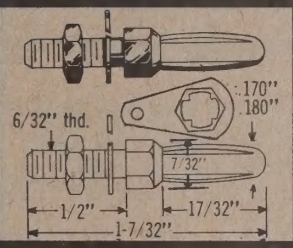
		Net per C 40.00	
No.	Color	No.	Color
33-028-1	Red	33-028-2	Blk



BANANA PLUG

DESC: Wire solders to stud; or brass stud locks wire in place for solderless connection.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Four leaved, nickel plated, phosphor bronze spring.

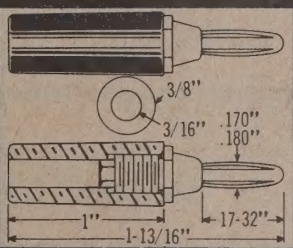
		Net per C 20.00	
No.	Color	No.	Color
33-032-1	Red	33-032-2	Blk



BANANA PLUG

DESC: Threaded shank type, supplied with terminal lug and hex nut.
BODY: Brass, nickel plated.
TIP: Four leaved, phosphor bronze nickel plated spring.

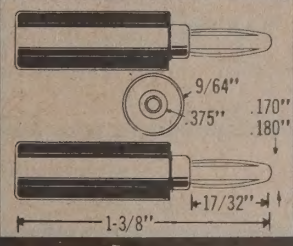
		Net per C 20.00	
No.			
33-034-			



INSULATED BANANA PLUG

DESC: Nickel plated brass plug, fits standard Banana Jack.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
TIP: Four leaved beryllium copper, nickel plated spring.

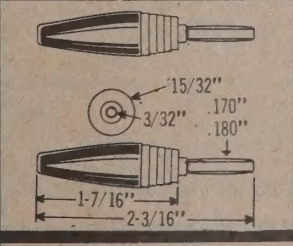
		Net per C 30.00	
No.	Color	No.	Color
33-036-1	Red	33-036-2	Blk



INSULATED BANANA PLUG

DESC: Solderless connection, nickel plated brass plug. Fits standard Banana Jack.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Nylon, per MIL-P-20693A.
TIP: Four leaved beryllium copper nickel plated spring.

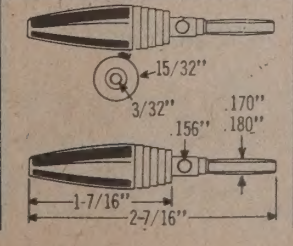
		Net per C 29.00	
No.	Color	No.	Color
33-037-1	Red	33-037-2	Blk



BANANA PLUG

DESC: Flexible handle type.
HANDLE: Unbreakable, shockproof plastic.
TIP: Phosphor bronze, nickel plated spring.

		Net per C 21.00	
No.	Color	No.	Color
33-040-1	Red	33-040-2	Blk



BANANA PLUG

DESC: Flexible handle, stack type.
HANDLE: Unbreakable, shockproof plastic
TIP: Phosphor bronze, nickel plated spring.

		Net per C 23.00	
No..	Color	No.	Color
33-042-1	Red	33-042-2	Blk

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GC ELECTRONICS

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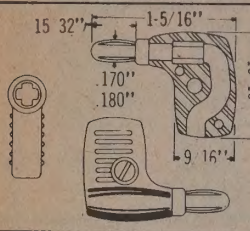
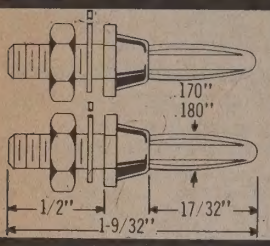
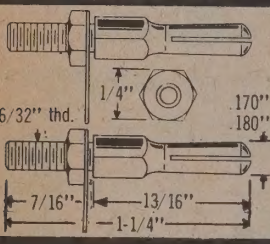
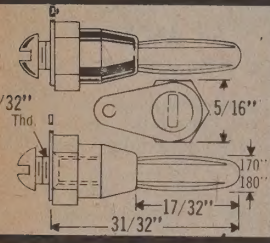
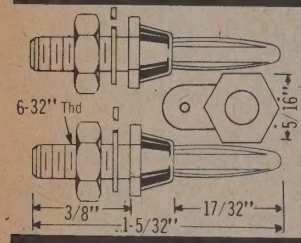
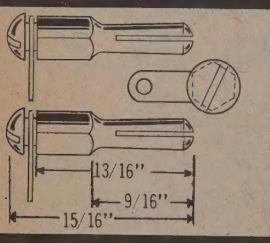
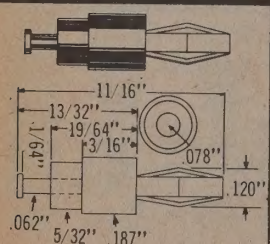
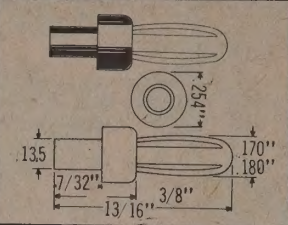
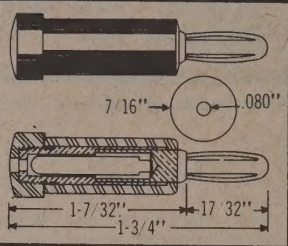
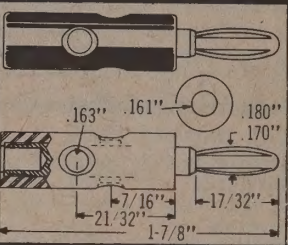
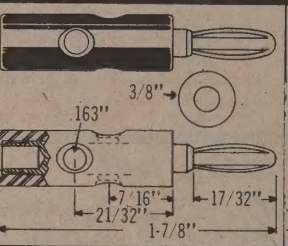
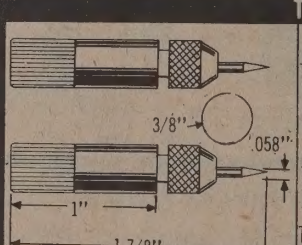
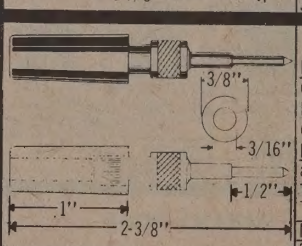
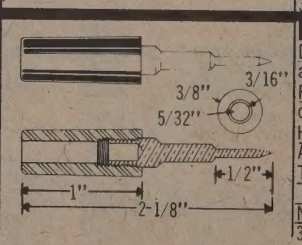
BANANA PLUGS

ILLUSTRATIONS	DESCRIPTION
	**BANANA PLUG** DESC: Right angle "Gun" Tip (meter plug), lead wire solders to body. RATING: 10 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Molded plastic, per MIL-P-14 CFG. TIP: Four leaved, phosphor bronze, nickel plated springs. Net per C 40.00 No. 33-046 Color Red — No. 33-048 Color Blk
	**BANANA PLUG** DESC: All metal, threaded shank type, with terminal lug and hex nut. BODY: Brass, nickel plated. TIP: Four leaved, nickel plated phosphor bronze spring. Net per C 20.00 No. 33-058
	**BANANA PLUG** DESC: Threaded shank type, supplied with terminal lug and hex nut. BODY: Brass, nickel plated. TIP: Cross slotted, brass, nickel plated. Net per C 17.00 No. 33-060
	**BANANA PLUG** DESC: Panel mounting type, number 6-32 tapped body, with screw and terminal lug. BODY: Brass, nickel plated. TIP: Four leaved, phosphor bronze, nickel plated spring. Net per C 20.00 No. 33-062
	**BANANA PLUG** DESC: Threaded shank type, with terminal lug and hex nut. BODY: Brass, nickel plated. TIP: Four leaved, phosphor bronze, nickel plated spring. Net per C 20.00 No. 33-064
	**BANANA PLUG** DESC: Panel mounting type, tapped number 6-32, with screw and terminal lug. BODY: Brass, nickel plated. TIP: Cross slotted, brass, nickel plated. Net per C 15.00 No. 33-066
	**BANANA PLUG** DESC: Printed circuit, sub-miniature rivet type, solder connection, fits jacks with .104 I.D. TIP: Four leaved, beryllium copper, silver plated spring. Net per C 15.00 No. 33-068

ILLUSTRATIONS	DESCRIPTION
	**MIDGET BANANA PLUG** DESC: Rivet type, fits all standard Banana Ja TIP: Four leaved phosphor bronze silver pl spring. Net per C 1 No. 33-069
	**BANANA PLUG ADAPTOR** DESC: Adapts tip plug to banana plug, ends standard tip jack and banana plug. RATING: 15 amps AC for 10 degree C Temp. r continuous duty. HANDLE: Molded Butyrate, per MIL-LP-3 and ASESA letter QUD4-59-4820 type 3. TIP: Standard tip jack one end; other end leaved banana plug. Net per C 35 No. 33-072 Color Red — No. 33-074 Color Blk
	**STACK BANANA PLUG** DESC: Stack type, fits standard banana plugs top and side. RATING: 15 amps AC for 10 degree C Temp. r continuous duty. HANDLE: Molded Butyrate, per MIL-LP-349-A ASESA letter QUD4-59-4820 type 3. TIP: Four leaved phosphor bronze, nickel pla spring. Net per C 35 No. 33-084-1 Color Red — No. 33-084-2 Color Blk
	**STACK BANANA PLUG** DESC: Stack type, fits standard banana plugs top and side. RATING: 15 amps AC for 10 degree C Temp. ris continuous duty. HANDLE: Molded Butyrate, per MIL-LP-349-A a ASESA letter QUD4-59-4820 type 3. TIP: Four leaved beryllium copper, nickel pla spring. Net per C 36 No. 33-086-1 Color Red — No. 33-086-2 Color Blk

TIP PLUGS

	**PHONO NEEDLE TIP PLUG** DESC: Nickel plated brass body, chuck design hold .058 replaceable phono needle. Wire solde to body. RATING: 12 amps AC for 10 degree C Temp. ris continuous duty. HANDLE: Molded Butyrate, per MIL-LP-349-A a ASESA letter QUD4-59-4820 type 3. TIP: Phono needle, brass alloy. Net per C 20 No. 33-100 Color Red — No. 33-102 Color Blk
	**INSULATED TIP PLUG** DESC: Solderless type, wire tightens under knurl collar; machined brass body, nickel plated. RATING: 12 amps AC for 10 degree C Temp. ris continuous duty. HANDLE: Molded Butyrate per MIL-LP-349- and ASESA letter QUD4-59-4820 type 3. TIP: Phono needle, brass alloy. Net per C 17.0 No. 33-106 Color Red — No. 33-108 Color Blk
	**HEAVY DUTY PHONE TIP PLUG** DESC: Standard tip, large diameter body f accepting heavy duty wire solder type. RATING: 12 amps AC for 10 degree C Temp. rise continuous duty. HANDLE: Molded Butyrate. per MIL-LP-349-A an ASESA letter QUD4-59-4820 type 3. TIP: Brass, nickel plated phono needle. Net per C 15.0 No. 33-110-1 Color Red — No. 33-110-2 Color Blk

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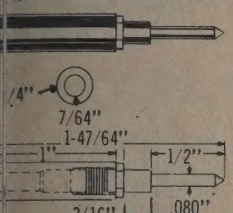
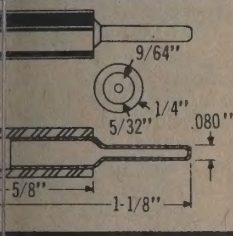
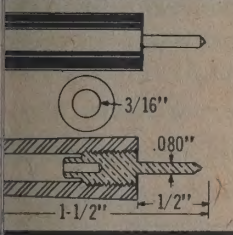
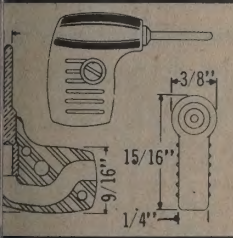
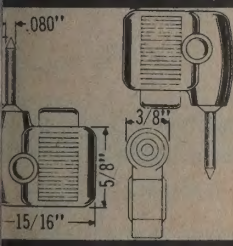
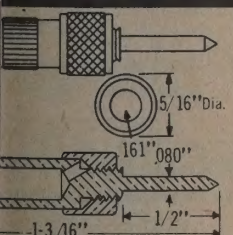
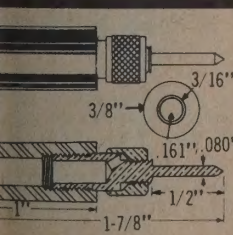
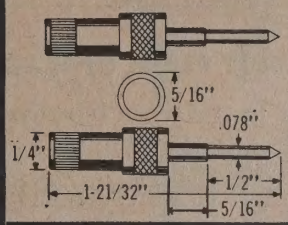
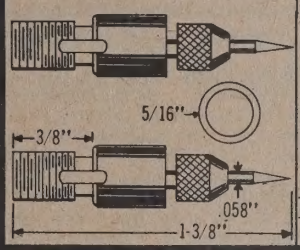
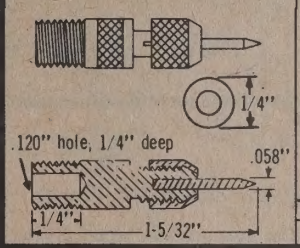
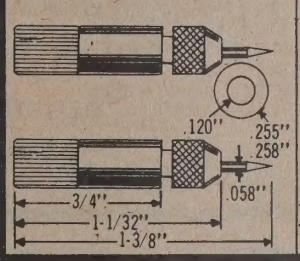
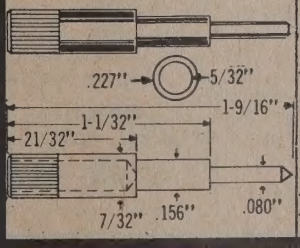
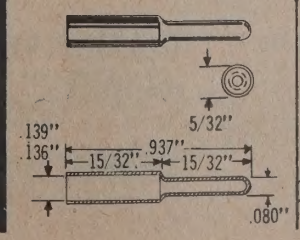
ELECTROCRAFT ELECTRONIC COMPONENTS

TIP PLUGS

ILLUSTRATIONS	DESCRIPTION
	**SUBMINIATURE PHONE TIP PLUG** DESC: Standard tip, extra-small diameter, nickel plated, brass body. Solder-type. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Fibre, Per MIL-F-1148-A type BH. TIP: Brass, nickel plated Net per C 20.00 No. 33-112 Color Red — No. 33-114 Color Blk
	**INSULATED HOLLOW PHONETIP** DESC: Drawn brass, nickel plated, solder type. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3. TIP: Hollow, brass, nickel plated. Net per C 12.00 No. 33-116-1 Color Red — No. 33-116-2 Color Blk
	**INSULATED SHORT TIP PLUG** DESC: Specially designed where minimum amount of metal can be exposed. Solder type.. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3. TIP: Brass, nickel plated, Net per C 13.20 No. 33-118 Color Red — No. 33-120 Color Blk
	**RIGHT ANGLE TIP PLUG** DESC: Right angle "gun" tip (meter plug). Lead wire solders to body. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Molded Plastic, per MIL-P-14 CFG. TIP: Brass, nickel plated. Net per C 30.00 No. 33-128 Color Red — No. 33-130 Color Blk
	**"TRIGGER-QUIK" TIP PLUG** DESC: Right angle plug, spring loaded solderless wire connection. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Molded Plastic, per MIL-P-14 CFG. TIP: Brass, nickel plated Net per C 39.00 No. 33-132 Color Red — No. 33-134 Color Blk
	**"JR." SOLDERLESS PHONE TIP** DESC: Press fit, nickel plated brass body; wire fastens under knurled collar. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. TIP: Brass, nickel plated.. Net per C 15.00 No. 33-142
	**"JR." SOLDERLESS PHONE TIP** DESC: Threaded nickel plated brass body. Wire fastens under knurled collar. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3. TIP: Brass, nickel plated. Net per C 17.00 No. 33-144-1 Color Red — No. 33-144-2 Color Blk

ILLUSTRATIONS	DESCRIPTION
	**SOLDERLESS TIP PLUG** DESC: All metal;wire fastens under knurled collar. BODY: Precision machined brass, nickel plated. TIP: Brass, nickel plated. Net per C 15.00 No. 33-146
	**PHONO NEEDLE TIP PLUG** DESC: Threaded shank type with ¼-20 thread; chuck to hold phono needle. BODY: Brass, nickel plated. TIP: Steel, nickel plated phono needle. Net per C 14.00 No. 33-148
	**NEEDLE TIP AND CHUCK** DESC: Threaded shank type..Tip is removable for quick replacement. BODY: Brass, nickel plated TIP: Steel, nickel plated phono needle. Net per C 19.00 No. 33-149
	**PUSH-ON NEEDLE CHUCK** DESC: Knurled body for press fit into Test Prod handles drilled with ¼" hole. BODY: Brass, nickel plated, solder connection. TIP: Steel, nickel plated phono needle. Net per C 13.20 No. 33-150
	**HEAVY DUTY PHONE TIP PLUG** DESC: Knurled shank for press fit into Test Prod handles, drilled with 7/32" hole; extra large well for lead wires up to No. 10 gauge; solder connection. BODY: Brass, nickel plated. TIP: Brass, nickel plated phone tip. Net per C 13.00 No. 33-152
	**STANDARD HOLLOW PHONE TIP** DESC: Solder type, hollow design. BODY: Drawn brass, nickel plated. TIP: Hollow, brass, nickel plated. Net per C 1.70 No. 33-154

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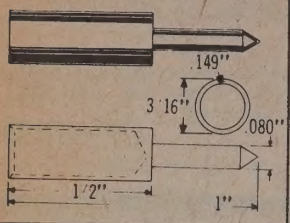
ELECTROCRAFT ELECTRONIC COMPONENTS

TIP PLUGS

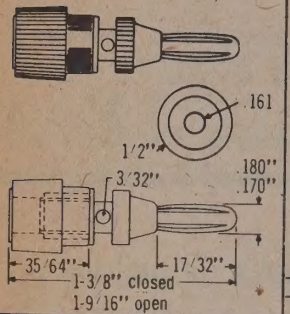
ILLUSTRATIONS | DESCRIPTION



HEAVY DUTY PHONE TIP PLUG

DESC: Solder type. Solid metal tip for heavy duty applications.
BODY: Brass, nickel plated.
TIP: Solid, brass, nickel plated.

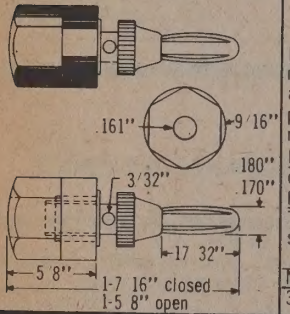
		Net per C 3.50
No.		
33-158		



COMBINATION POST-PLUG

DESC: Captive head, type; for converting panel-mounted banana jack to 5-way binding post termination. Accepts solid or standard wire, spade lug, phone tip, banana plug or alligator clip. Brass, nickel plated body.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Nylon - Dupont Zytel No. 101, per MIL-M-20693A.
TIP: Four leaved, phosphor bronze, nickel plated spring.

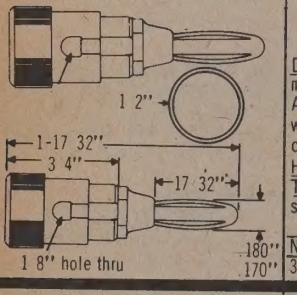
			Net per C 30.00
No.	Color	No.	Color
33-165-1	Red	33-165-2	Blk



COMBINATION POST-PLUG

DESC: Captive head, type; for converting panel-mounted banana jack to 5-way binding post termination. Accepts solid or standard wire, spade lug, phone tip, banana plug or alligator clip. Brass, nickel plated body.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: Molded nylon, per MIL-M-20693A.
TIP: Four leaved, phosphor bronze, nickel plated spring.

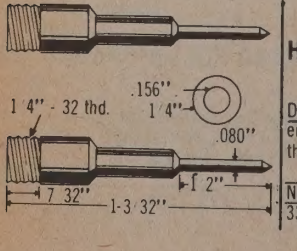
			Net per C 30.00
No.	Color	No.	Color
33-166-1	Red	33-166-2	Blk



COMBINATION POST-PLUG

DESC: Captive head type. For converting panel-mounted banana jack to a spring-loaded push post. Accepts solid or stranded wire, standard phone tip which locks in place upon release of pressure on cap. Brass, nickel plated body.
HEAD: Molded styrene cap per MIL-L-416, type 1.
TIP: Four leaved phosphor bronze, nickel plated spring.

		Net per C 74.97
No.		
33-167		

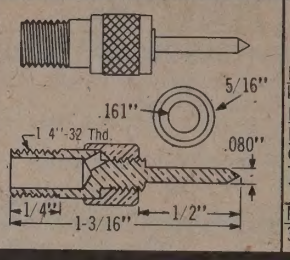


HEAVY DUTY PHONE TIP PLUG

DESC: All metal, nickel plated brass body is large enough to accept standard banana plug. Body is threaded to fit into plastic handle.

		Net per C 15.00
No.		
33-170		

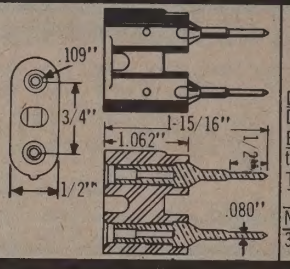
ILLUSTRATIONS | DESCRIPTION



"JR" SOLDERLESS PHONE T "THREADED"

DESC: Threaded shank type. Wire fastens u knurled collar.
BODY: Brass, nickel plated.
RATING: 12 amps AC for 10 degree C Temp. r continuous duty.
TIP: Brass, nickel plated phone tip.

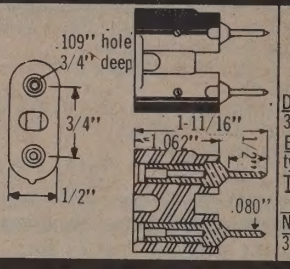
		Net per C 15
No.		
33-172		



DUAL STANDARD TIP PLUG

DESC: Solderless type; brass, nickel plated b Designed mates with No. 33-206.
BODY: Molded Cycolac plastic, per MIL-M-225 type 4.
TIPS: 2 brass, nickel plated tips on ¾" cente

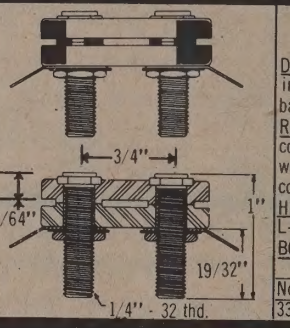
		Net per C 74
No.		
33-174		



DUAL SHORT TIP PLUG SOLDERLESS TYPE

DESC: Brass, nickel plated body. Mates with N 33-206.
BODY: Molded Cycolac plastic, per MIL-M-225 type 4.
TIPS: 2 brass, nickel plated tips on ¾" cente

		Net per C 72.
No.		
33-176		

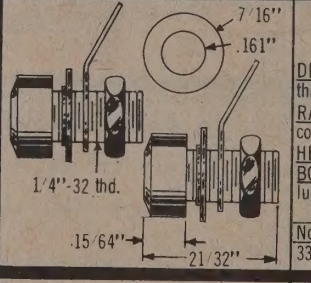


DUAL BANANA JACK

DESC: Mounts in 2 - 3/8" holes on 3/4" cente in panel up 1/4" thick. Accepts standard and du banana plugs. Solder connection.
RATING: 15 amps AC for 10 degree C Temp. rise continuous duty. 2 K Volts 60 cycle AC continuou working voltage. Capacitance 2.0 mmfd. betwee conductors, 4.0 mmfd. to panel.
HEAD: Insulated, molded black styrene, per MIL L-P416, type 1.
BODY: Brass, nickel plated.

		Net per C 50.0
No.		
33-179		

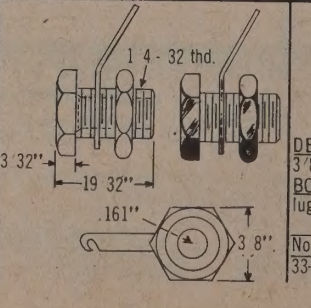
BANANA & TIP PLUG JACKS



BANANA JACK

DESC: Mounts in 5/16" hole. Fits panel up to 3/ thick. Accepts Standard Banana Plug.
RATING: 15 amps AC for 10 degree C Temp. rise continuous duty.
HEAD: Melamine MIL-14F, type CMC.
BODY: Brass, nickel plated; with tinned solde lug.

			Net per C 15.0
No.	Color	No.	Color
33-180	Red	33-182	Blk



BANANA JACK

DESC: Mounts in 1/4" hole and fits panel up to 3/8" thick. Accepts standard banana plugs.
BODY: Brass, nickel plated; with tinned solder lug.

		Net per C 13.00
No.		
33-184		

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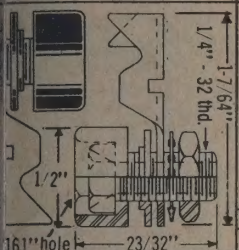
ELECTROCRAFT ELECTRONIC COMPONENTS

BANANA & TIP PLUG JACKS

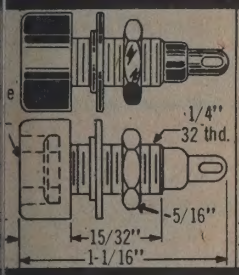
ILLUSTRATIONS | DESCRIPTION



HEAVY DUTY BANANA JACK

DESC: Exclusive hex design prevents turning in assembly; with fibre insulating washer.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: Molded plastic per MIL-P-14 CFG.
BODY: Brass, nickel plated; with heavy duty solder lug.

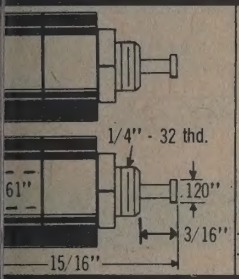
		Net per C 18.00	
No.	Color	No.	Color
33-186	Red	33-188 BU	Blk



TIP JACK

DESC: Positive-hold hex lock between molded head and jack body. Exclusive hex design prevents turning in assembly. Insulated.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: Molded plastic, per MIL-P-14 CFG.
BODY: Brass, nickel plated.

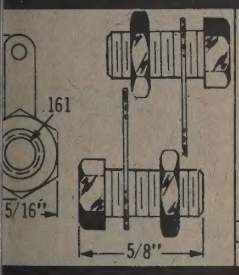
		Net per C 23.00	
No.	Color	No.	Color
33-190-1	Red	33-190-2	Blk



HIGH VOLTAGE NYLON BANANA JACK

DESC: High voltage flashover to panel prevented by heavy molded nylon body and cup washer.
HANDLE: Molded nylon per MIL-P-20693A.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty. 5KV 60 cycle continuous working voltage. Millivolt drop per MIL-J-6751.
BODY: Brass, bright nickel plated per QQ-N-290, type V(FC).

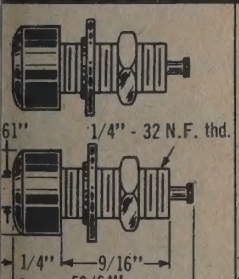
		Net per C 45.00	
No.	Color	No.	Color
33-191-1	Red	33-191-2	Blk



BANANA JACK

DESC: All metal body, with hex mounting nut. Mounts in 1/4" hole; fits panel up to 3/8".
BODY: Brass, nickel plated with tinned solder lug.

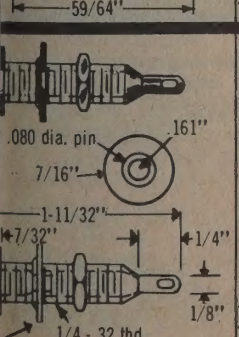
		Net per C 13.00	
No.			
33-192			



INSULATED BANANA JACK

DESC: Mounts in 5/16" hole in panels up to 3/8" thick, solder direct to turret terminal. Supplied with hex nut and fibre washer. Accepts standard banana plugs.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: TB-30 Melamine-MIL-14F type CMG - red and black. Urea - LU-671 type 1 - colors.
BODY: Brass, nickel plated.

		Net per C 17.00	
No.	Color	No.	Color
33-193-1	Red	33-193-2	Blk

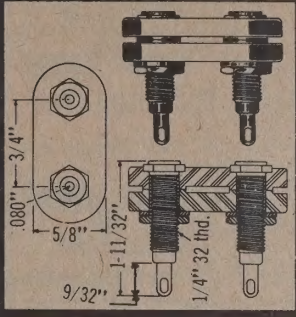


BANANA-TIP JACK COMBINATION

DESC: Accepts both Banana Plug and Standard Tip Plug; with extruded fibre washer and mounting nut. Mounts in 5/16" hole; fits panel up to 5/8" thick.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: TB-30 Melamine-MIL-14F type CMG - red and black. Urea - LU-671 type 1 - colors.
BODY: Brass, nickel plated; phosphor bronze contact..

		Net per C 20.00	
No.	Color	No.	Color
33-194-	Red	33-196	Blk

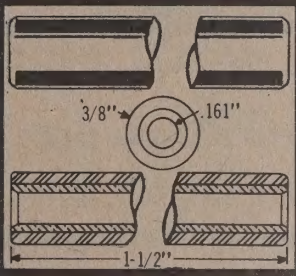
ILLUSTRATIONS | DESCRIPTION



DUAL BANANA AND STANDARD TIP PLUG

DESC: Mounts in two 3/8" holes on 3/4" centers on panels up to 5/16" thick. Mates with dual banana plug No. 33-010 and dual tip plug 33-174; with two hex nuts and washers.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: Molded black styrene body, per MIL-L-P 416, type 1.
BODY: Brass, nickel plated; phosphor bronze contacts.

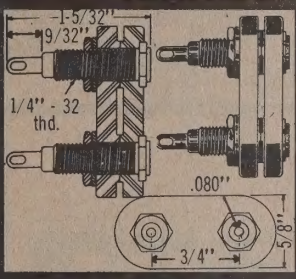
		Net per C 73.00	
No.			
33-197			



BANANA PLUG SPLICE

DESC: For coupling 2 standard Banana Plugs. For extending test leads, etc.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.
BODY: Brass

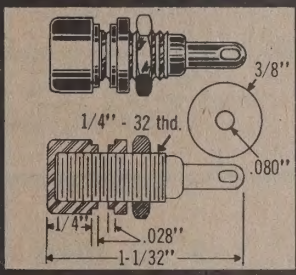
		Net per C 25.00	
No.	Color	No.	Color
33-200	Red	33-202	Blk



DUAL TIP JACK ASSEMBLY

DESC: Mounts in two 3/8" holes on 3/4" centers in panels up to 1/4" thick. Accepts phone tip plugs; with two hex nuts..
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD AND WASHER: Molded black styrene body, per MIL-L-P416, type 1..

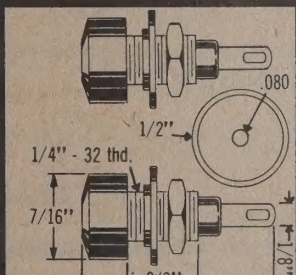
		Net per C 55.00	
No.			
33-206			



INSULATED TIP JACK

DESC: Requires 5/16" hole; fits panels up to 1/4" thick; with hex nut.
HEAD: Dupont Nylon, per MIL-M-20693A.
BODY: Brass, nickel plated.

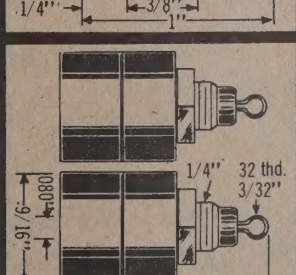
		Net per C 27.00	
No.	Color	No.	Color
33-208-1	Red	33-208-2	Blk



STANDARD TIP JACK

DESC: Requires 5/16" mounting hole; fits panels up to 1/4" thick with insulating washer & hex nut.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: Molded plastic, red and black per MIL-M-14F type CMG. Yellow, green and blue per LU-671 type 1.
BODY: Brass, nickel plated; phosphor bronze contact.

		Net per C 15.00	
No.	Color	No.	Color
33-210	Red	33-212	Blk



HIGH VOLTAGE NYLON PHONE TIP JACK

DESC: High voltage flashover to panel prevented by heavy molded nylon body and cup washer. Colors conform to Federal Standard 595. Hex nuts and insert shell are nickel plated brass per QQ-N-290 type V (FC). Phosphor bronze contact, silver plated per QQ-S-365, overall gold plated. Withstands 100 hours salt spray test.
HANDLE: Molded nylon body per MIL-P-20693A.

		Net per C 45.00	
No.	Color	No.	Color
33-214-1	Red	33-214-2	Blk

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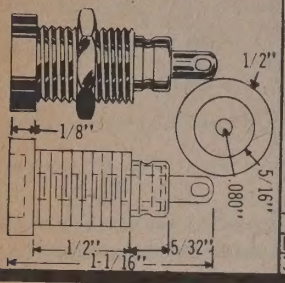
GC ELECTRONICS

ELECTROCRAFT ELECTRONIC COMPONENTS

BANANA & TIP PLUG JACKS

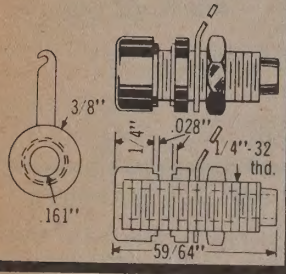
ILLUSTRATIONS | DESCRIPTION



TIP JACK, ALL-INSULATED

DESC: Mounts in 3/8" hole; fits panel up to 5/16" thick; with mounting nut.
RATING: 10 amps AC for 10 degree C Temp. rise, continuous duty. 5K Volts 60 cycle AC continuous working voltage. Capacitance 3.0 mmfd.
BODY: Molded of nylon per MIL-M-20693A.
CONTACT: Phosphor bronze.

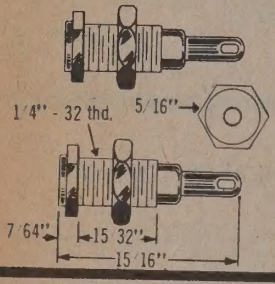
		Net per C 20.00	
No.	Color	No.	Color
33-216	Red	33-218	Blk



MINIATURE BANANA JACK

DESC: Insulating washer provides isolation from panel. Fits 5/16" mounting hole; for panels up to 1/4" thick.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.
BODY: Brass, nickel plated body; tinned solder lug.

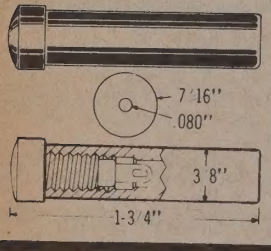
		Net per C 25.00	
No.	Color	No.	Color
33-220-1	Red	33-220-2	Blk



TIP JACK, ALL-METAL

DESC: Brass nickel plated body; mounts in 1/4" hole; fits panels up to 3/8" thick.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
TIP: Phosphor bronze contact.

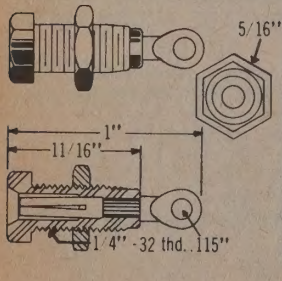
		Net per C 15.00	
No.			
33-226			



TIP JACK, IN-LINE STYLE

DESC: Brass nickel plated body; mounts on end of cords. For test lead extensions, etc.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349-A and ASESA letter, QUD4-59-4820 type 3.
CONTACT: Phosphor bronze.

		Net per C 21.00	
No.	Color	No.	Color
33-228	Red	33-230	Blk

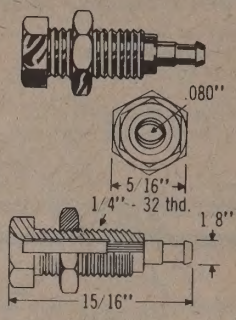


NYLON TIP JACK WITH SPADE TERMINAL

DESC: Fits phone tip plugs. Mounts in 1/4" hole in panel up to 1/4" thick with hex nut.
BODY: Insulated molded nylon per MIL-M-20693A.
CONTACT: Spade terminal..

		Net per C 30.00	
No.	Color	No.	Color
33-245-1	Red	33-245-2	Blk

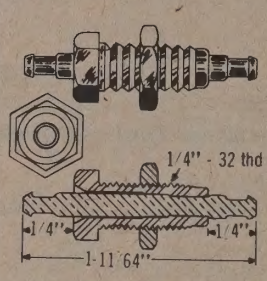
ILLUSTRATIONS | DESCRIPTION



NYLON TIP JACK (WRAP AROUND TYPE)

DESC: Hex head for sure grip tightening. Ma in 1/4" hole in panels up to 1/4" thick
SALT SPRAY TEST: 100 hours.
INSULATION RESISTANCE: 5000 Meg. Resist Ohms.
RATED VOLTAGE & CURRENT: 1000 volts at 5 amp max.
OPERATING TEMPERATURE: -55 degree to 150C
NOMINAL CAPACITY: -2.0 mmf
TEST VOLTAGE: 9000 volts DC peak.
BODY: Nylon per MIL-M-20693A.

		Net per C 2	
No.	Color	No.	Color
33-240	Red	33-242	Blk

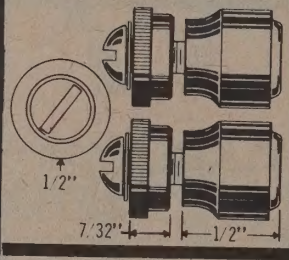


NYLON FEED-THRU JACK

DESC: Feed-thru type. Fits all standard ph tip plugs. Mounts in 1/4" hole in panel up to 1 thick with hex nut.
BODY: Insulated nylon per MIL-M-20693A.
CONTACT: Brass, silver plated.

		Net per C 28	
No.	Color	No.	Color
33-247-1	Red	33-247-2	Blk

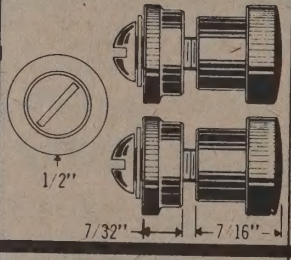
BINDING POSTS



BINDING POST

DESC: Brass nickel plated body, supplied wi 8-32 mounting screw and lock washer.
RATING: 15 amps AC for 10 degree C Temp. ris continuous duty.
HEAD: Molded plastic.

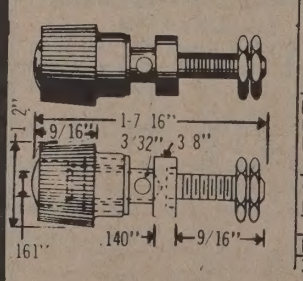
		Net per C 24.	
No.	Color	No.	Color
33-250	Red	33-252	Blk



BINDING POST

DESC: Brass, nickel plated body, comes complet with 8-32 threaded screw- 1/2" long, nickel plate brass lockwasher. Head diameter 1/2"
RATING: 15 amps AC for 10 degree C Temp. rise continuous duty.
HEAD: Molded bakelite.

		Net per C 24.0	
No.	Color	No.	Color
33-254	Red	33-255	Blk



BINDING POST COMBINATION TYPE

DESC: Brass nickel plated body. Accepts banana plug, tip plug, bare wire, or spade lug. Threaded No. 8-32 mounting stud 1/2" long; supplied with 2 hex nuts.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD: Molded nylon per MIL-M-20693A.

		Net per C 22.0	
No.	Color	No.	Color
33-256	Red	33-258	Blk

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Net

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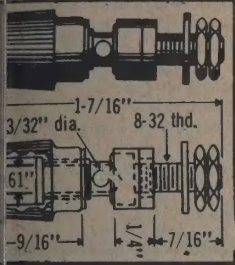
ELECTROCRAFT ELECTRONIC COMPONENTS

BINDING POSTS

ILLUSTRATIONS	DESCRIPTION

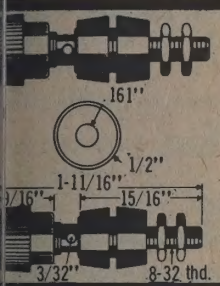
BINDING POST COMBINATION TYPE



DESC: Similar in design and construction as 33-256/8, except, supplied with molded shoulder-type plastic washers to insulate post from chassis.
RATING: 15 amps AC for 10 degree C Temp..rise, continuous duty.
HEAD: Molded nylon per MIL-M-20693A.

		Net per C 25.00	
No.	Color	No.	Color
33-260	Red	33-262	Blk

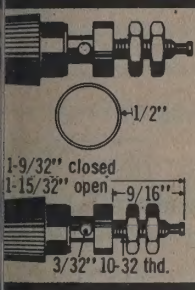
BINDING POST INSULATED UNIVERSAL TYPE



DESC: Brass, nickel-plated body with threaded No.8-32 mounting stud; accepts banana plug, tip plug, needle tip, spade lug, alligator clip or bare wire. Heavy duty spacers insulate post from chassis. Mounts in 5/16" hole.
RATING: 15 amps AC for 10 degree C Temp. rise continuous duty.
HEAD: Molded nylon per MIL-M-20693A.

		Net per C 45.00	
No.	Color	No.	Color
33-264	Red	33-266	Blk

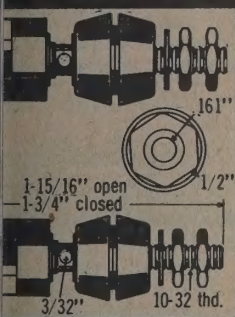
BINDING POST



DESC: Brass, nickel plated body with insulating washer and two hex nuts. 8-32 threaded stud. Accepts phone tip plug, spade lug, alligator clip, banana plug or stranded wire.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.

		Net per C 30.00	
No.	Color	No.	Color
33-265	Red	33-267	Blk

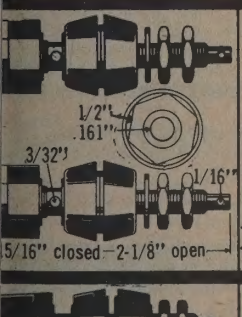
HEAVY DUTY BINDING POST



DESC: Brass, nickel plated body; accepts standard banana or tip plug, spade lug alligator clip or bare wire; supplied with a thick molded insulating spacer; punched, keyed slot for mounting washers; spacer has "D" shaped shoulder; shoulder keys into chassis mounting hole and prevents post from turning; supplied with two hex nuts.
RATING: (Maximum) 30 amps...2000 RMS Volt.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.

		Net per C 42.00	
No.	Color	No.	Color
33-268	Red	33-270	Blk

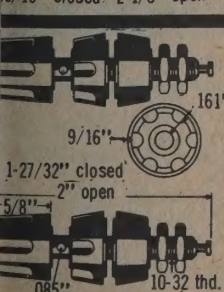
HEAVY DUTY BINDING POST



DESC: Identical in design to binding post No. 33-268/270, except, that end of stud is milled flat and drilled for solder connection.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.

		Net per C 42.00	
No.	Color	No.	Color
33-272	Red	33-274	Blk

BINDING POST

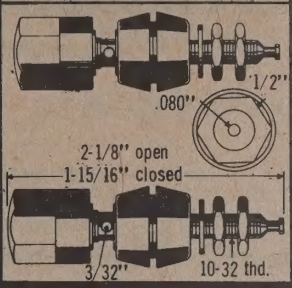


DESC: 5-way, nylon. Fluted style, insulated, Banana adapter type. Wrap around tips, brass nickel plated.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.

		Net per C 8.00	
No.	Color	No.	Color
33-279-1	Red	33-279-2	Blk

ILLUSTRATIONS	DESCRIPTION

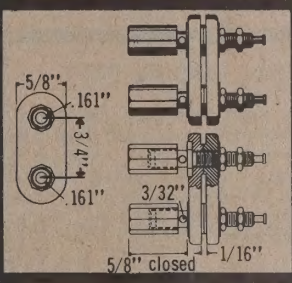
NYLON BINDING POST



DESC: Tip plug receptacle .080" I.D. Wire hole at right angle to flat on insulated washers. Punched keyed slot for mounting washers. Mounts in 3/8" hole in panels up to 1/4" thick. Solder connection to stud. Body and inserts are brass, bright nickel plated.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.

		Net per C 42.00	
No.	Color	No.	Color
33-275-1	Red	33-275-2	Blk

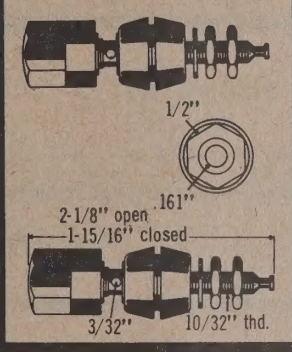
DUAL BINDING POST



DESC: Accepts standard dual banana plug and wire, etc. Mounts in two 3/8" holes on 3/4" centers in 1/16" to 1/4" panels. With wrap-around solder studs.
RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty.
BODY: Black plastic.

		Net per C 75.00	
No.			
33-276			

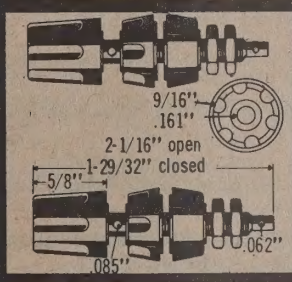
HEAVY DUTY BINDING POST



DESC: Brass nickel plated body; accepts banana or tip plug, spade lug, alligator clip or bare wire; supplied with a thick molded insulating spacer with "D" shaped shoulder; shoulder keys into chassis mounting hole and prevents post from turning; maximum rating 30 amps...2000 RMS volts; with 2 hex nuts.
RATING: 30 amps AC for 10 degree C Temp. rise, continuous duty.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.

		Net per C 36.00	
No.	Color	No.	Color
33-278	Red	33-280	Blk

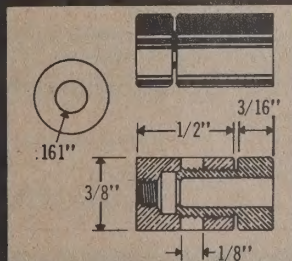
BINDING POST



DESC: 5-way, nylon. Fluted style, insulated, banana adapter type. Spade type tip...brass nickel plated.
HEAD AND WASHER: Molded nylon per MIL-M-20693A.

		Net per C 30.00	
No.	Color	No.	Color
33-281-1	Red	33-281-2	Blk

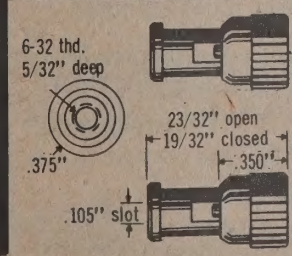
BINDING POST, ALL METAL



DESC: Knurled cap; accepts banana plug, phone tip or wire. Mounts to panel with No. 6-32 screw (not supplied).
BODY: Brass, nickel plated..

		Net per C 23.00	
No.			
33-282			

BINDING POST



DESC: Compression type, captive brass, nickel plated knurled head. Screw head down to tighten wire between body and sliding contact. Threaded internally for No.6-32 mounting screw.
BODY: Brass, nickel plated.

		Net per C 15.00	
No.			
33-283			

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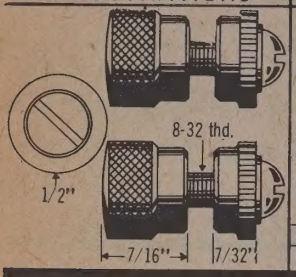
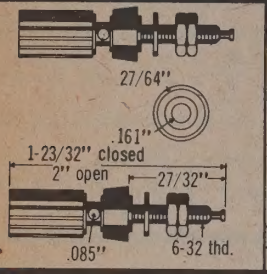
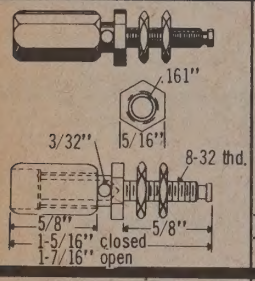
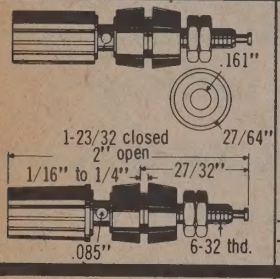
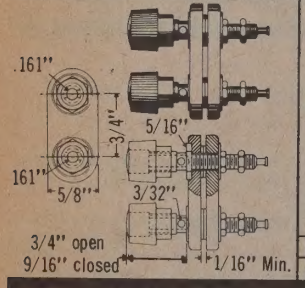
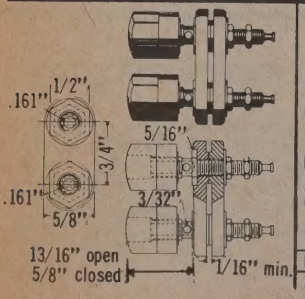
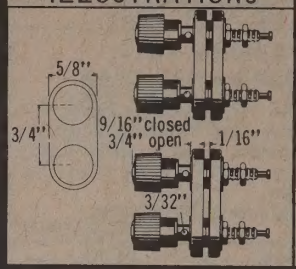
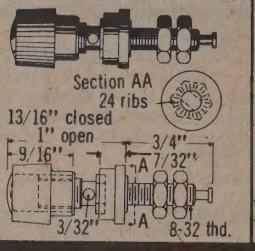
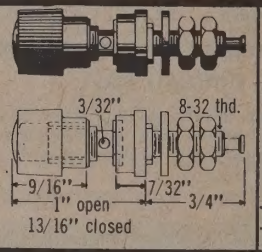
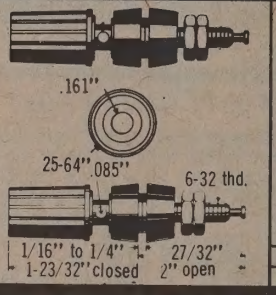
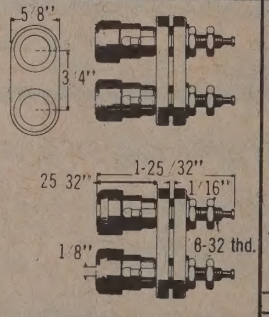
GC ELECTRONICS

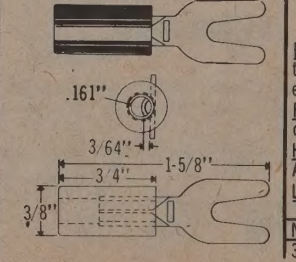
ELECTROCRAFT ELECTRONIC COMPONENTS

BINDING POSTS

ILLUSTRATIONS	DESCRIPTION
	**BINDING POST, ALL METAL** DESC: Knurled cap; designed for connection of bare wires or spade lugs; No.8-32 x 1/2" mounting screw and lock washer supplied. BODY: Heavy brass, nickel plated. Net per C 70.00 No. 33-284
	**METAL BINDING POST** DESC: Gold plated, fluted brass, captive head. Molded black nylon washer with gold plated brass insert. Use where direct ground connection is made to panel or chassis. Complete with gold plated brass flat washer for grounding. Accepts phone tip plug, spade lug, banana plug, alligator clip or stranded wire. Net per C 45.00 No. 33-285
	**BINDING POST** DESC: 5-way metal binding post. Can accept banana plug. Mounts in .171" hole in 1/16" to 3/8" panels. Has wrap-around solder stud 8-32 thread. Net per C 33.00 No. 33-286
	**METAL BINDING POST** DESC: Gold plated, fluted brass, captive head, molded black nylon washer with gold plated brass insert. Use where internal ground circuit is isolated from chassis or panel. Accepts phone tip plug, spade lug, banana plug, alligator clip or wire strand. Net per C 55.00 No. 33-287
	**DUAL BINDING POST INSULATED** DESC: 5-way binding post with fluted heads. Accepts Dual Banana Plug. Mounts in two 3/8" holes, on 3/4" centers in panels from 1/16" to 1/4". Has soldered studs. With four hex nuts, black styrene washers. RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty. HEAD: Molded nylon per MIL-M-20693A. Net per C 70.00 No. 33-288
	**DUAL BINDING POST** DESC: Accepts standard phone tips, forward or sideways. Brass, nickel plated body. Mounts in two 3/8" holes on 3/4" centers in panels up to 1/4" thick. Accommodates single or dual banana plugs. RATING: 15 amps AC for 10 degree C Temp. rise, continuous duty. HEAD: Molded nylon per MIL-M-20693A. Net per C 75.00 No. 33-290 Color Blk — No. 33-299 Color Red

ILLUSTRATIONS	DESCRIPTION
	**DUAL BINDING POST** DESC: Brass, nickel plated body. Molded sty... washer; cross slot accommodates phone ti... ward, back or sideways. With hex nuts ... washers. Mounts in two 3/8" holes on ... centers on panels up to 1/4" thick. RATING: 15 amps AC for 10 degree C Temp. ... continuous duty. HEAD: Nylon heads per MIL-M-20693A. Net per C No. 33-291 Color Blk — No. 33-293 Color Red
	**NYLON BINDING POST** DESC: Grounding type, with molded nylon, ... removable head takes direct dolder connectio... stud. RATING: 15 amps AC for 10 desgree C Temp. ... continuous duty. HEAD AND WASHER: Molded nylon per MI... 20693A. Net per C 3... No. 33-294-1 Color Red — No. 33-294-2 Color Blk
	**NYLON BINDING POST** DESC: Brass, nickel plated body. Takes d... solder connection to stud. RATING: 15 amps AC for 10 degree C Temp. ... continuous duty. HEAD AND WASHER: Molded nylon per MI... 20693A. Net per C 3... No. 33-296-1 Color Red — No. 33-296-2 Color Blk
	**NYLON BINDING POST** DESC: Gold plated body Miniature washers ... narrow head require minimum mounting spac... Requires 5/16" round or "D" hole in panel. W... around solder terminal. Accepts phone tip p... banana plug, spade lug, alligator clip or stran... wire. RATING: 15 amps AC for 10 degree C Temp. ri... continuous duty. HEAD: Molded nylon per MIL-M-20693A. Net per C 4... No. 33-297-1 Color Red — No. 33-297-2 Color Blk
	**DUAL SPRING LOADED BINDING POST** DESC: Cross-slotted to accept standard phone t... or wire either forward or sideways. Molded bla... styrene cap; nickel plated brass body. Requi... 2-3/8" holes on 3/4" centers for mounting ... panels up to 1/4" thick. Accommodates phone t... or wires in side holes and secures them when pr... sure on cap is released. With hex nuts and f... washers. RATING: 15 amps AC for 10 degree C Temp. ris... continuous duty. 5 KV 60 cycle AC continuo... working voltage. Net per C 20... No. 33-298

SPADE LUGS, ALLIGATOR & BATTERY CLIPS

ILLUSTRATIONS	DESCRIPTION
	**SPADE LUG, INSULATED** DESC: Tapered "fork" fits binding posts a... terminal screws up to No. 10 size. Accepts solde... ed wire or banana plug. RATING: 25 amps AC for 10 degree C Temp. ris... continuous duty. HANDLE: Molded Butyrate, per MIL-LP-349A a... ASESA letter QUD4-59-4820 type 3. LUG: Brass, nickel plated. Net per C 11.6... No. 33-300 Color Red — No. 33-302 Color Blk

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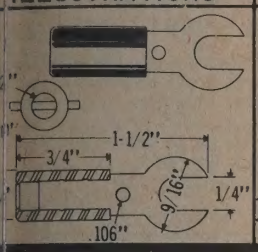
ELECTROCRAFT ELECTRONIC COMPONENTS

SPADE LUGS, ALLIGATOR & BATTERY CLIPS

ILLUSTRATIONS | DESCRIPTION

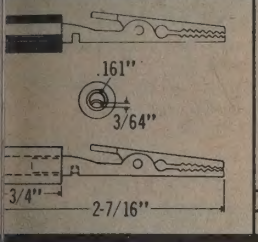


INSULATED SPADE LUG

DESC: Fits all standard multi-purpose binding posts. Wire up to No. 10 solders in front hole.
RATING: 30 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3.
LUG: Brass, nickel plated.

Net per C 13.00

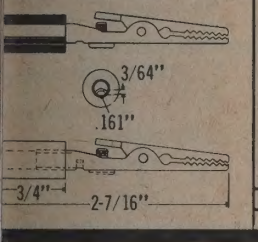
No.	Color	No.	Color
33-304-1	Red	33-304-2	Blk



DESC: 3/8" jaw opening; made of cadmium plated steel, accepts banana plug or wires. May be soldered to clip.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3.

Net per C 8.50

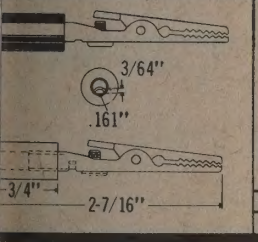
No.	Color	No.	Color
33-310	Red	33-312	Blk



DESC: Molded plastic handle; cadmium plated steel jaws with 3/8" opening. Wire fastens with screw or soldered to clip.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3.

Net per C 9.50

No.	Color	No.	Color
33-314	Red	33-316	Blk

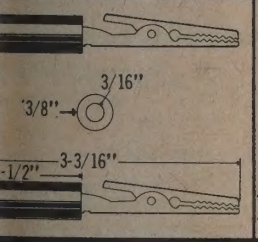


ALLIGATOR CLIP SOLID COPPER

DESC: Identical to No. 33-314/16, except, made of solid coppér for higher current carrying capacity.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Molded Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3.

Net per C 13.67

No.	Color	No.	Color
33-318	Red	33-320	Blk

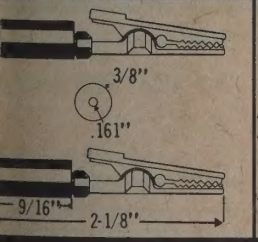


ALLIGATOR CLIP

DESC: With extra long insulated handle; cadmium plated steel jaws; 3/8" opening, wire solders to clip.
HANDLE: Molded Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3.

Net per C 12.50

No.	Color	No.	Color
33-322	Red	33-324	Blk



DESC: Completely insulated with black molded plastic to insure against shock or grounding. Accepts banana plug in receptacle end.

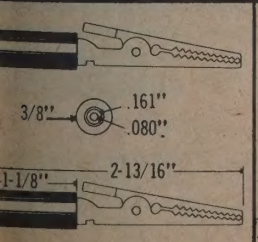
Net per C 24.00

No.	Color	No.	Color
33-326-1	Red	33-326	Blk

Accepts tip plug in receptacle end.

Net per C 36.00

No.	Color	No.	Color
33-328-1	Red	33-328	Blk



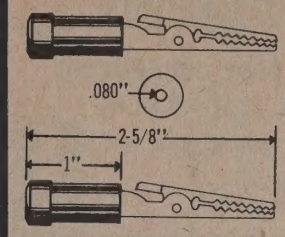
ALLIGATOR CLIP ADAPTOR

DESC: Accommodates standard tip plug, or banana plug; steel cadmium plated jaws.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty..
HANDLE: Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3.

Net per C 39.00

No.	Color	No.	Color
33-330	Red	33-332	Blk

ILLUSTRATIONS | DESCRIPTION

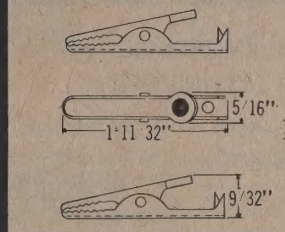


ALLIGATOR CLIP ADAPTOR

DESC: Adapts standard tip plug to alligator clips; steel cadmium plated jaws.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3.

Net per C 33.00

No.	Color	No.	Color
33-334	Red	33-336	Blk



MINI-GATOR CLIP (MUELLER)

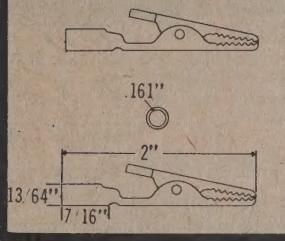
DESC: Miniature alligator clip. For use where space is a factor; wires solder to clip.

Net per C 5.16

No.	
33-342	Steel

Net per C 6.80

No.	
33-344	Copper

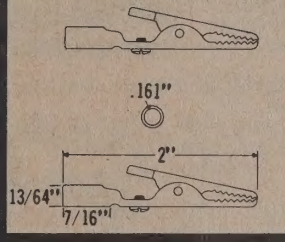


ALLIGATOR CLIP ALL METAL

DESC: Cadmium plated jaws with 3/8" opening accepts standard banana plug or wires may be soldered directly onto clip.

Net per C 5.50

No.	
33-346	



ALLIGATOR CLIP-ALL METAL

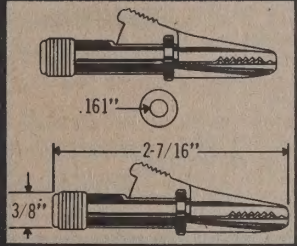
DESC: For solderless connection of wire by means of a No. 6-32 binding head screw; also accepts banana plug.

Net per C 7.00

No.	
33-348	Steel

Net per C 11.00

No.	
33-350	Copper

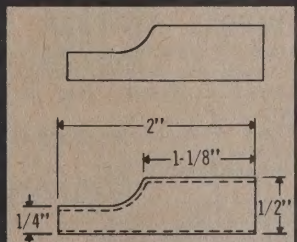


ALLIGATOR CLIP

DESC: All insulated with standard Banana Plug adaptor. Molded plastic over steel jaws and clips.

Net per C 41.00

No.	Color	No.	Color
33-352-1	Red	33-352-2	Blk

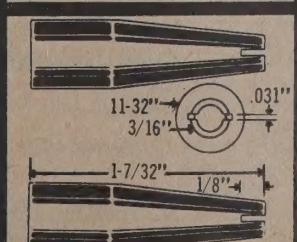


ALLIGATOR CLIP INSULATOR

DESC: Flexible molded vinyl insulator which fits over most standard alligator clips. It completely insulates. Permits maximum jaw opening.

Net per C 4.80

No.	Color	No.	Color
33-360	Red	33-362	Blk



MINIATURE ALLIGATOR CLIP BOOTS

DESC: Molded vinyl plastic; allow maximum jaw opening of clip while still insulating clip. Miniature size.

Net per C 4.00

No.	Color	No.	Color
33-363-1	Red	33-363-2	Blk.

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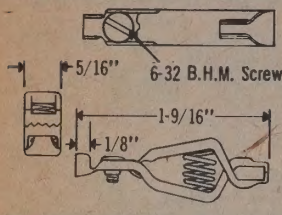
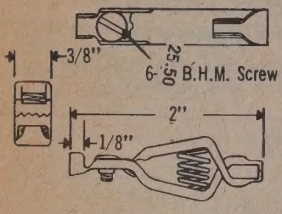
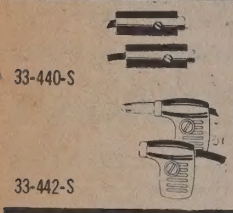
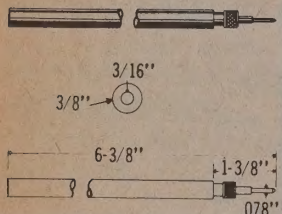
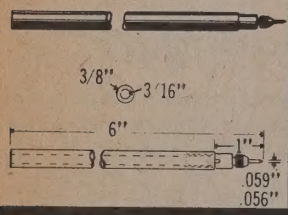
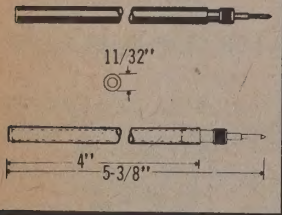
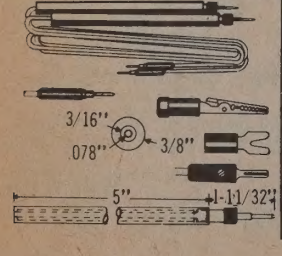
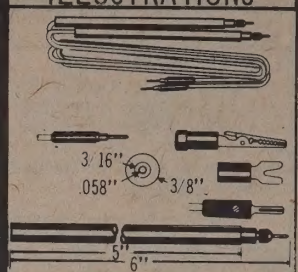
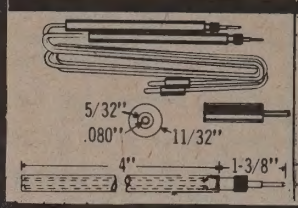
GC ELECTRONICS ELECTROCRAFT ELECTRONIC COMPONENTS

SPADE LUGS, ALLIGATOR & BATTERY CLIPS

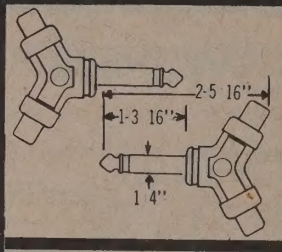
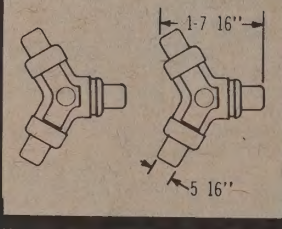
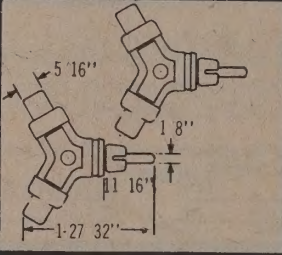
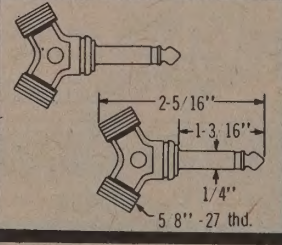
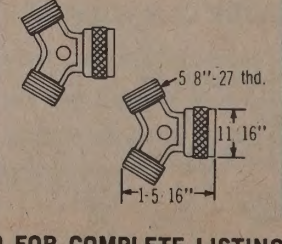
ILLUSTRATIONS	DESCRIPTION
	**BATTERY CONNECTING & TESTING CLIP** DESC: Steel cadmium plated jaws with 1/2" spread. RATING: 5 amps Net per C 8.50 No. 33-370
	**BATTERY CONNECTING & TESTING CLIP** DESC: Steel cadmium plated jaws with 9/16" spread. RATING: 10 amps Net per C 9.50 No. 33-372

TEST PRODS, LEADS & ADAPTORS

	**HEAVY DUTY TEST LEAD SETS** DESC: 2 New heavy duty Test Lead sets. Both sets have 5" long solderless Phone Tip Test Prods - other ends have right angle or straight Banana Plugs. Net per pair 1.74 No. 33-440-S Straight Banana Plugs Net per pair 2.27 No. 33-442-S Right Angle Banana Plugs
	**DELUXE TEST PROD** DESC: Solderless design; wire fits through handle and is fastened to tip with knurled collar. 6-3/8" long. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3. TIP: Brass, nickel plated. Net per C 30.00 No. 33-380 Color Red; No. 33-382 Color Blk
	**NEEDLE POINT TEST PROD** DESC: Extra safe, long handle; wire solders to nickel plated brass chuck. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 2. TIP: Replaceable Phone Needle. Net per C 33.00 No. 33-384 Color Red; No. 33-386 Color Blk
	**THIN HANDLE TEST PROD** DESC: Solderless wire connection; slim type for hard-to-reach places. Ideal for portable testers. RATING: 12 amps AC for 10 degree C Temp. rise, continuous duty. HANDLE: Butyrate, per MIL-LP-349A and ASESA letter QUD4-59-4820 type 3. TIP: Brass, nickel plated. Net per C 30.00 No. 33-392 Color Red; No. 33-394 Color Blk
	**UNIVERSAL TEST LEADS** DESC: Interchangeable tips; one end solderless tip plug; other end banana plug; includes alligator clips, spade lugs and phono tip plugs, which fit on banana plug end. HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3. CABLE: 50" flexible Net per pair 1.88 No. 33-450-S One pair, red and black

ILLUSTRATIONS	DESCRIPTION
	**UNIVERSAL "NEEDLEPOINT" TEST LEA** DESC: Interchangeable tips, one end interch able Phono needle type test prod,other end ba plug; includes spade lugs, alligator clips phono tip plugs, which fit on banana plug HANDLE: Butyrate, per MIL-LP-349A and A letter QUD4-59-4820 type 3. CABLE: 50" flexible Net per pair No. 33-452-S One pair, red and black
	**"THRIFTY" TEST LEADS** DESC: One end 4" test prods, other end termi in standard phone tip. HANDLE: Butyrate, per MIL-LP-349-A and A letter QUD4-59-4820 type 3. CABLE: 50" flexible Net per pai No. 33-454-S One pair, red and black

SPECIAL CONNECTORS & ADAPTORS

	**"Y" ADAPTOR** DESC: Input - 2 phono jacks (in parallel); ou phone plug. Net per C 33 No. 33-880
	**"Y" ADAPTOR** DESC: Input - 2 phono jacks (in parallel); outp single phono jack. Net per C 3 No. 33-882
	**"Y" ADAPTOR** DESC: Input - 2 phono jacks (in parallel); outp - standard phono pin plug. Net per C 16. No. 33-884
	**"Y" ADAPTOR** DESC: Input - 2 male microphone connectors parallel); output standard phone plug. Net per C 13. No. 33-886
	**"Y" ADAPTOR** DESC: Input - 2 male microphone connectors parallel); output - female microphone connect Net per C 30. No. 33-888

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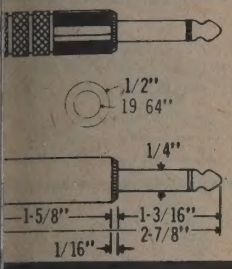
ELECTROCRAFT ELECTRONIC COMPONENTS

PHONE PLUGS

ILLUSTRATIONS | DESCRIPTION

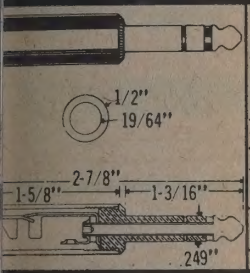


2-COND., SCREW TERMINALS

RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty. 750 volts 60 cycle AC continuous working voltage.
HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 50.98

No.	
33-600	with black plastic handle.
	Net per C 50.98
33-602	with red plastic handle.
	Net per C 70.81
33-604	with metal (shielded) handle.

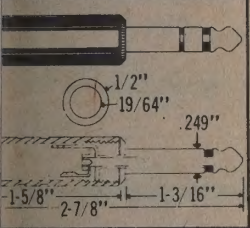


2-COND., CLAMP OR SOLDER

DESC: Standard size plug, with large "grounding" terminals which clamps around cable insulation or shield, and acts as strain relief.
HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 48.15

No.	
33-606	With black plastic handle.
	Net per C 48.15
33-608	with red plastic handle.
	Net per C 67.97
33-610	with metal (shielded) handle.

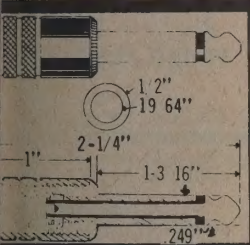


TWO-CONDUCTOR PHONE PLUG, PLAIN SOLDER LUGS

DESC: Standard size plug.
HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 42.48

No.	Color	No.	Color
33-612-1	Red	33-612-2	Black

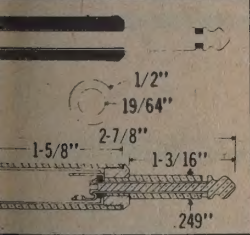


"STUBBY" SHIELDED TWO-CONDUCTOR PHONE PLUG

DESC: Standard phone plug with special, short metal handle; plain solder lugs.

Net per C 53.81

No.	
33-614	

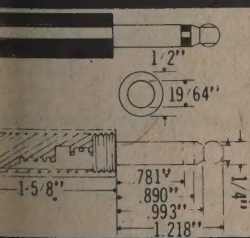


STANDARD SHIELD TWO-CONDUCTOR PHONE PLUG

DESC: Regular plug with metal (shielded) handle, plain solder lugs.

Net per C 84.97

No.	
33-616	

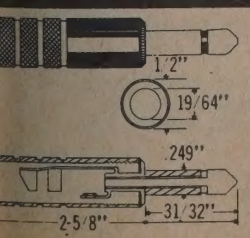


TWO-CONDUCTOR PHONE PLUG TYPE PJ-055B

DESC: Solder terminal and screw connection; supplied with black, break-resistant molded shell.

Net per C 84.97

No.	
33-618	



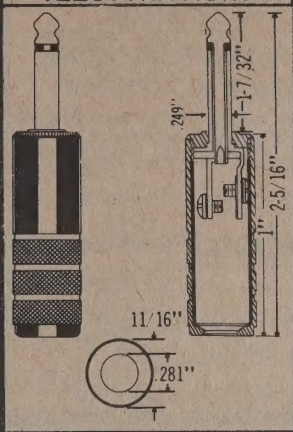
SHORT FINGER, 2-COND. PHONE PLUG

DESC: Special short finger (barrel) type plug to connect microphone or telephone pickup to Revere Wollensack tape recorders. Combination clamp and solder lug connection; metal shielded handle.

Net per C 87.80

No.	
33-620	

ILLUSTRATIONS | DESCRIPTION

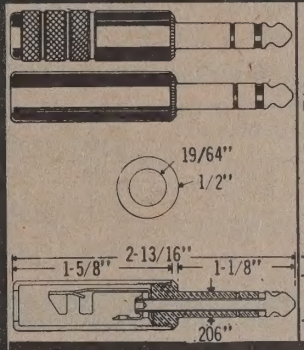


LARGE HANDLE 2-COND. PHONE PLUG

DESC: Standard size plugs with sturdy large handles where space is no factor; all supplied with screw type terminals.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty. 750 volts 60 cycles AC working voltage.
HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 53.81

No.	
33-622	with black plastic handle, 1-1/2" long
	Net per C 53.81
33-624	with red plastic handle, 1-1/2" long.
	Net per C 67.97
33-626	with metal (shielded) handle, 1" long
	Net per C 84.97
33-628	with metal (shielded) handle, 2-1/16"

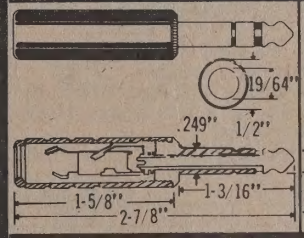


"THIN-FINGER" 2-COND. PHONE PLUGS

DESC: Special plugs, with undersize barrel diameter of .206", for applications where polarized input is desired to distinguish between different connections. Plugs have combination clamp and solder lug connection and mate with jacks No. 33-700/2.
HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 50.98

No.	Color	No.	Color
33-630-1	Red	33-630-2BU	Blk
		Net per C 67.97	
33-632	with metal (shielded) handle.		

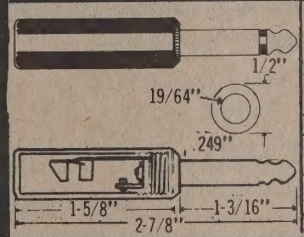


3-CONDUCTOR PHONE PLUG: COMB. CLAMP AND SOLDER LUG TERMINALS

HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 70.81

No.	Color	No.	Color
33-640-1	Red	33-640-2BU	Blk
		Net per C 87.80	
33-642	Metal		

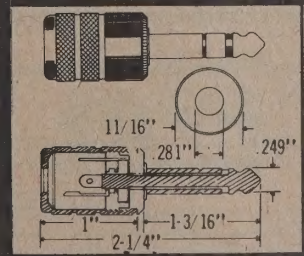


SCREW TERMINALS 3-CONDUCTOR PHONE PLUG

HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 79.30

No.	
33-644	with black plastic handle
	Net per C 79.30
33-646	with red plastic handle
	Net per C 93.46
33-648	with metal (shielded) handle

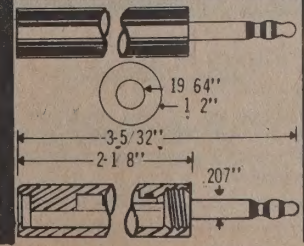


LARGE HANDLE 3-CONDUCTOR PHONE PLUG

DESC: For heavy duty applicator; can accommodate large diameter cables, with room in handle for wired-in resistors or capacitors; with 1" long metal (shielded) handle.

Net per C 90.63

No.	
33-650	



3-CONDUCTOR PHONE PLUG, TYPE PJ-068B

DESC: With solder terminal and screw connection; made in accordance with military specifications.

Net per C 203.25

No.	
33-654	

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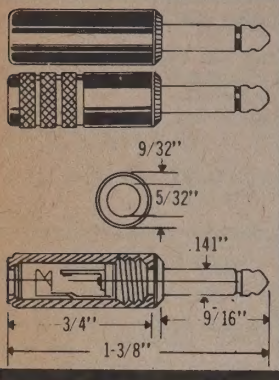
GC ELECTRONICS

ELECTROCRAFT ELECTRONIC COMPONENTS

PHONE PLUGS

ILLUSTRATIONS | DESCRIPTION

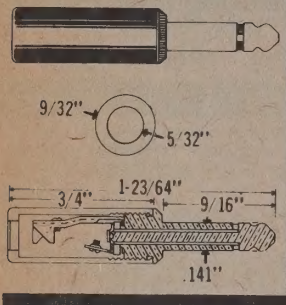


MIN. PHONE PLUGS COMB. CLAMP & SOLDER TER.

DESC: These small plugs are designed for use with hearing aids, pocket radios, portable recorders, etc. Two-conductor style; tested for 500 V breakdown.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty.
HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 65.14

No.	
33-660	with metal (shielded) handle
	Net per C 48.15
33-662	with black plastic handle
	Net per C 48.15
33-664	with red plastic handle



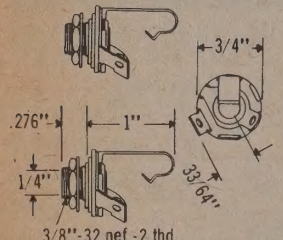
MIN. PHONE PLUGS COMB. CLAMP & SOLDER TER.

DESC: Same plug as 33-660 except for different style terminals.
HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3.

Net per C 67.97

No.	
33-666	with metal (shielded) handle.
	Net per C 50.98
33-668	with black plastic handle.
	Net per C 50.98
33-670	with red plastic handle.

PHONE JACKS

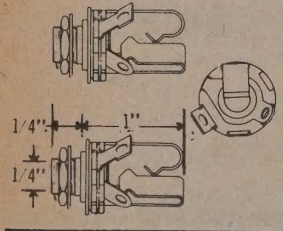


PANEL MOUNTING TWO-CONDUCTOR PHONE JACKS

DESC: Open circuit, 2-conductor.
RATING: 10 amps AC for 10 degree C Temp. rise, continuous duty. 1.2 K Volts 60 cycle AC continuous working voltage.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709 type 1.

Net per C 28.32

No.	
33-690	

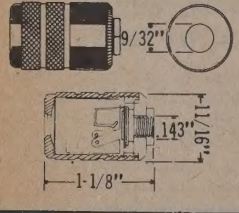


PANEL MOUNTING TWO- CONDUCTOR PHONE JACKS

DESC: Panel mounting - two conductor Phone Jack. Use with Revere/Wollensach type. Will accommodate 33-620 phone plug.

Net per C 31.51

No.	
33-691	



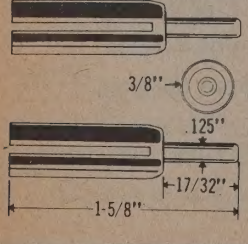
MINIATURE CORD MOUNTED JACKS

DESC: Miniature type, mates with plugs No. 33-660 through 33-670, with solder lugs and metal (shielded) handle.

Net per C 79.30

No.	
33-746	

PHONO PIN PLUGS & JACKS



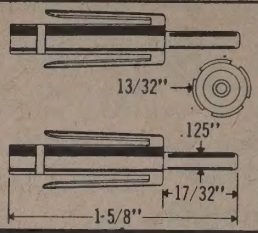
PHONO PLUGS

DESC: Motorola type, tube pin nickel plated-1/8". Pin extends from split brass, cadmium plated shell. Provides positive ground connection when inserted into connector.

Net per C 10.35

No.	
33-765	

ILLUSTRATIONS | DESCRIPTION

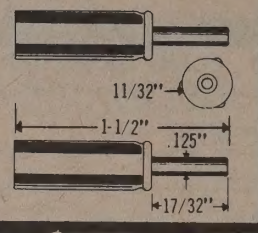


PHONO PLUG

DESC: Motorola type, tube pin nickel plated- Pin extends from split brass shell, designe use with small dismeter cable. Shell is cad plated.

Net per C

No.	
33-766	

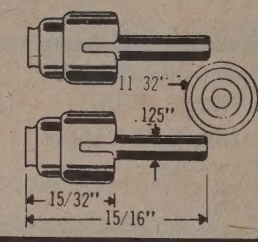


PHONO PLUG

DESC: Motorola type 1/8" tube pin extends solid brase, cadmium plated shell, small ri

Net per C

No.	
33-767	

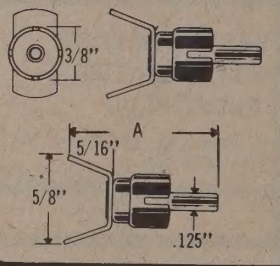


PHONO PLUG

DESC: Solder type.

Net per C

No.	
33-768	15/16" overall
	Net per C
No.	
33-770	13/16" overall

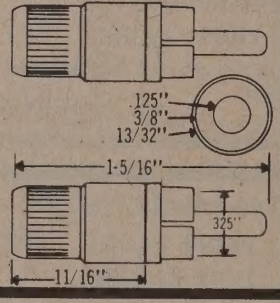


PHONO PLUG

DESC: New RCA type, 1/8" tube pin, ni plated, brass, cadmium plated shell. Elimin damaging shielded cable when connecting. S Pin (13/16" overall) Long Pin (1" overall)

Net per C

No.	A
33-769	short 1-1/16"

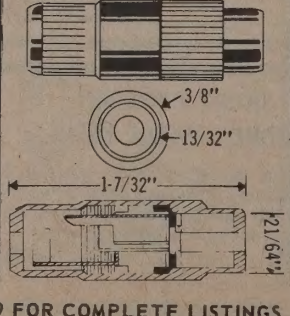


PHONO PLUG

DESC: Combination clamp, solder type, with movable metal (shielded) handle. Much easier attach than the standard phono plug, and provi "finished" appearance. Mates with 33-774.

Net per C 28

No.	
33-772	



PHONO JACK, CORD MOUNTED

DESC: Also known as "extension" or "inlin jacks. Combination clamp and solder termin removable metal (shielded) handle. Mates w 33-772.

Net per C 36.

No.	
33-774	

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Net

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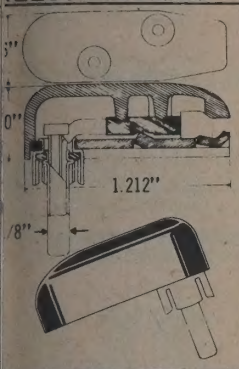
ELECTROCRAFT ELECTRONIC COMPONENTS

PHONO PIN PLUGS & JACKS

SOLDERLESS PHONO PLUGS



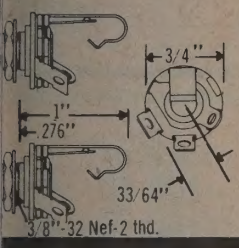
DESC: Completely new design, requires only stripping of cable, inserting in plastic shell, and tightening of assembly with 2 screws. Positive, noise-free pressure connection without soldering. Right-angle style, designed for regular shielded cable with approximately 3/16" OD.

Net per C 23.32

No.	
33-776	grey plastic shell
33-778	black plastic shell
33-780	red plastic shell
33-782	yellow plastic shell
33-784	blue plastic shell

PHONE JACKS

PANEL MOUNTING 2-CONDUCTOR PHONE JACKS

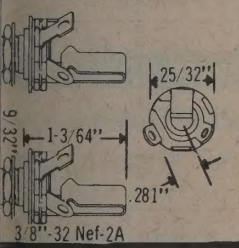


DESC: Closed circuit, 2-conductor.
RATING: 10 amps AC for 10 degree C Temp. rise, continuous duty. 1.2 K Volts 60 cycle AC continuous working voltage.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709 type 1.

Net per C 31.15

No.	
33-692	

PANEL MOUNTING TWO-CONDUCTOR PHONE JACKS

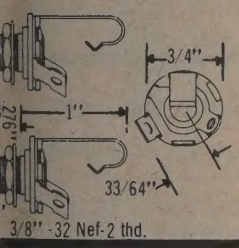


DESC: Open circuit, 2-conductor.
WASHER: Per MIL type, JJ-034.

Net per C 42.48

No.	
33-694	

PANEL MOUNTING TWO-CONDUCTOR PHONE JACKS

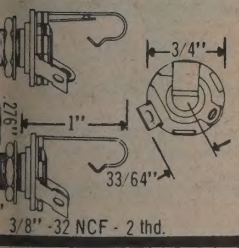


DESC: Open circuit, 2-conductor .210" I.D. sleeve fit plugs No. 33-630/2.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709, Washers type 1.

Net per C 31.15

No.	
33-700	

PANEL MOUNTING TWO-CONDUCTOR PHONE JACKS

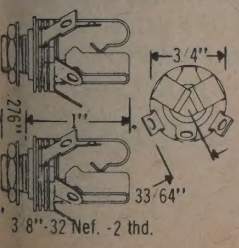


DESC: Closed circuit, 2-conductor .210" I.D. sleeve...fits plugs No. 33-630/2.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709 type 1.

Net per C 36.82

No.	
33-702	

PANEL MOUNTING 3-COND. PHONE JACKS

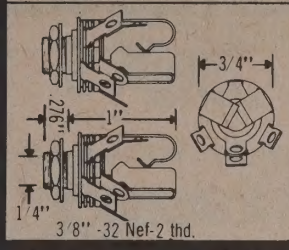


DESC: Open circuit, 3-conductor..
RATING: 10 amps AC for 10 degree C Temp. rise, continuous duty. 1.2 K Volts 60 cycle AC continuous working voltage.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709 type 1.

Net per C 36.82

No.	
33-708	

PANEL MOUNTING 3-COND. PHONE JACKS

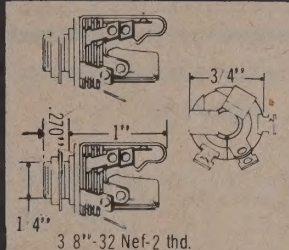


DESC: Single closed circuit, 3-conductor.
RATING: 10 amps AC for 10 degree C Temp. rise, continuous duty. 1.2 K Volts 60 cycle AC continuous working voltage.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709 type 1.

Net per C 48.15

No.	
33-710	

STEREO TELEPHONE JACK

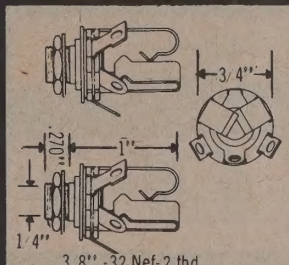


DESC: New Jack designed for switching out speakers when connecting stereo headphones and for switching three stereo input circuits. Normally closed dual switch contacts open both stereo circuits separately when three circuit plug is inserted.
WASHER: Phenolic per MIL-LL-31 and ASTMD-709 type 1.

Net per C 54.00

No.	
33-711	

STEREO TELEPHONE JACK

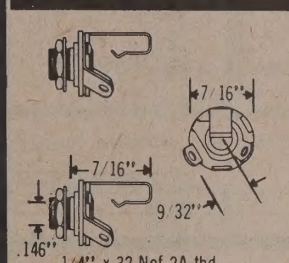


DESC: New jack designed for switching out speakers when connecting stereo headphones and for switching three wire stereo input circuits. Open circuit, 3-conductor, MIL-type JJ-033.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709 type 1.

Net per C 59.14

No.	
33-712	

MINIATURE PANEL MOUNTING JACKS

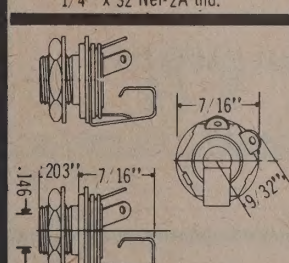


DESC: These jacks mate with plugs No. 33-660 through 33-670. Open circuit, 2-conductor.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty. 500 Volts 60 cycle AC continuous working voltage.
WASHER: Phenolic, per MIL-LL-31 and ASTMD-709 type 1.

Net per C 28.32

No.	
33-720	

MINIATURE PANEL MOUNTING JACKS

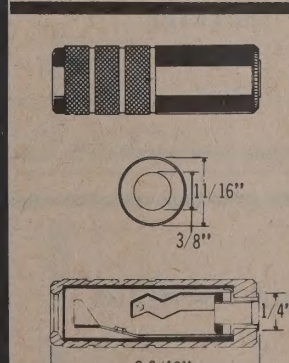


DESC: These jacks mate with plugs No. 33-660 through 33-670- Closed circuit, 2-conductor.
RATING: 5 amps AC for 10 degree C Temp. rise, continuous duty. 500 Volts 60 cycle AC continuous working voltage.
WASHER: Phenolic per MIL-LL-31 and ASTMD-709 type 1.

Net per C 31.15

No.	
33-722	

CORD MOUNTED JACKS



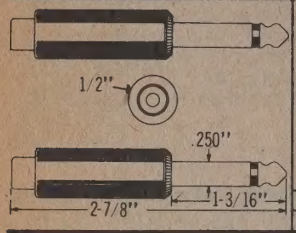
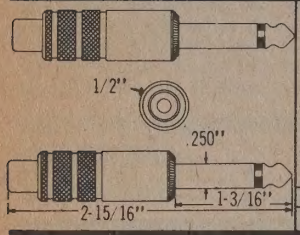
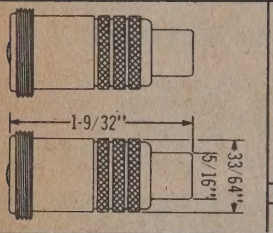
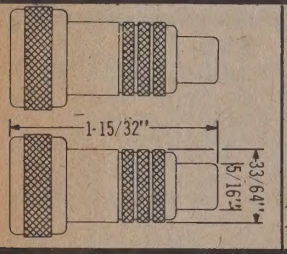
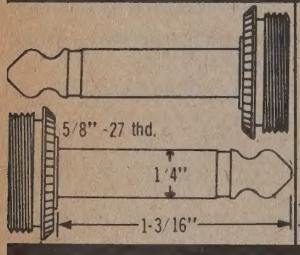
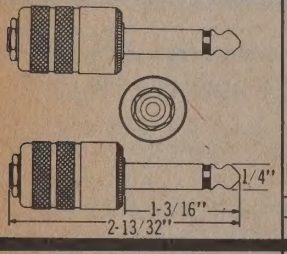
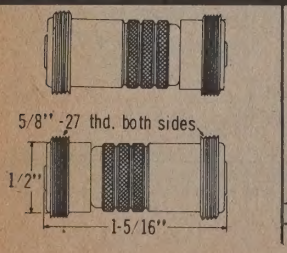
DESC: Often referred to as "extension jacks" or "inline jacks", available in 2 or 3 conductor types.

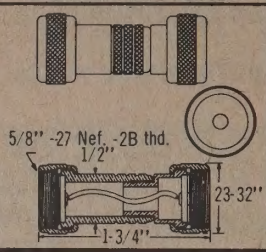
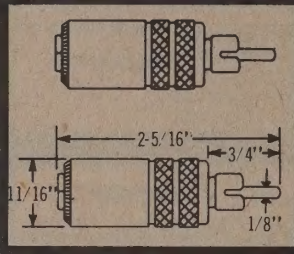
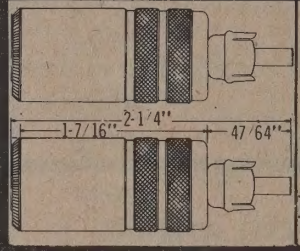
No.		Net per C
2-conductor, open circuit style, with solder lug terminals.		
33-730	metal	93.46
33-732	plastic	67.97
2-conductor, open circuit style, with screw type terminals.		
33-734	metal	101.96
33-736	plastic	76.47
3-conductor, open circuit style, with screw or solder type terminals, and metal (shielded) handle.		
33-740	solder	118.95
33-742	screw	130.29

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

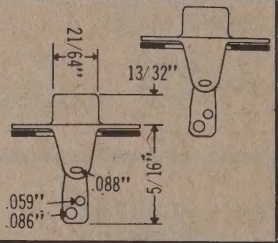
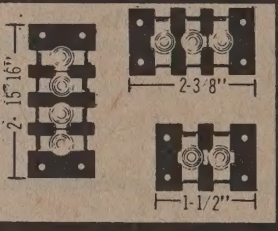
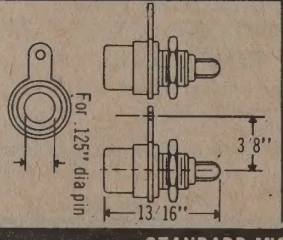
GC ELECTRONICS ELECTROCRAFT ELECTRONIC COMPONENTS

SPECIAL CONNECTORS & ADAPTORS

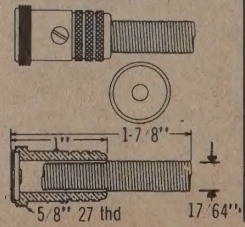
ILLUSTRATIONS	DESCRIPTION
	**ADAPTOR** DESC: Phono jack input, standard phone plug output. HANDLE: Butyrate, per MIL-LP-349-A and ASESA letter QUD4-59-4820 type 3. Net per C 82.13 No. 33-850
	**ADAPTOR** DESC: Phono jack input, standard phone plug output, heavy duty metal shielded type. Net per C 89.13 No. 33-852
	**MALE ADAPTOR** DESC: Phone jack input, microphone connector output. Net per C 84.97 No. 33-854
	**FEMALE ADAPTOR** DESC: Phono jack input, microphone connector output. Net per C 93.46 No. 33-856
	**MALE ADAPTOR** DESC: Microphone connector input, standard phone plug output. Net per C 33.99 No. 33-858
	**ADAPTOR** DESC: Miniature phone jack input, standard phone plug output. Net per C 99.13 No. 33-860
	**MALE CONNECTOR** DESC: Connects 2 female microphone connectors. Net per C 84.97 No. 33-862

ILLUSTRATIONS	DESCRIPTION
	**FEMALE CONNECTOR** DESC: Connects 2 male microphone connector Net per C 8 No. 33-864
	**ADAPTOR** DESC: Miniature phone jack input, standard ph plug output. Net per C 78 No. 33-865
	**ADAPTOR** DESC: Standard phone jack input, phono plug put. Net per C 113 No. 33-866

PHONO PIN PLUGS & JACKS

	**PHONO JACKS** DESC: Fastens to chassis with 2 rivets screws. Net per C 7 No. 33-792 W/oval, space saving metal mounting plate. Net per C 8 No. 33-796 W/regular, round mounting plate.
	**PHONO PIN JACKS** No. | | Net pe 33-798 single phono pin jack 7 33-800 double phono pin jack 12 33-802 triple phono pin jack 15 33-803 quadruple phono pin jack 24
	**SINGLE HOLE PANEL PHONO JACK** DESC: Mounts in 9/32" hole, requires only hole drilled. Comes equipped with nut, washer solder lug for ground. Net per C 19 No. 33-804

STANDARD MICROPHONE CONNECTORS

	**CORD MOUNTED MALE MICROPHONE CONNECTOR** DESC: With flexible spring to protect cable; ce conductor solders to contact; braid is clam securely by set screw. Net per C 3 No. 33-810

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Net

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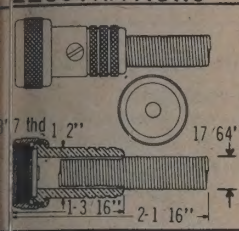
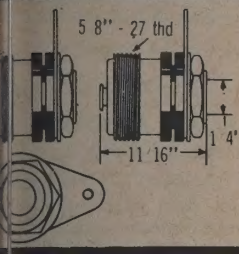
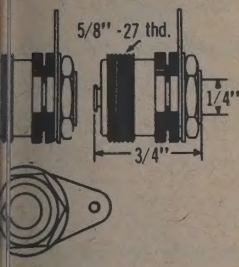
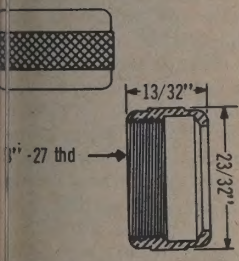
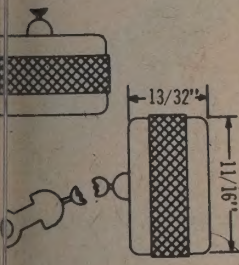
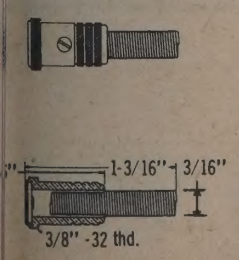
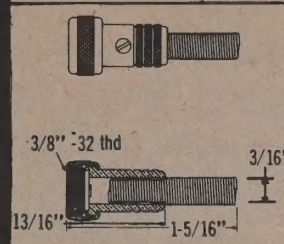
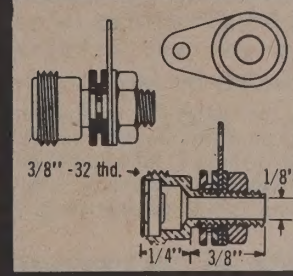
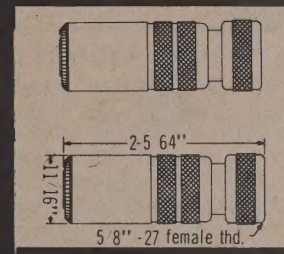
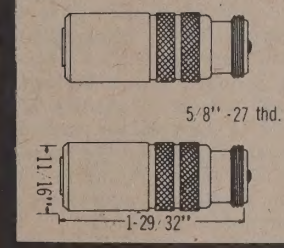
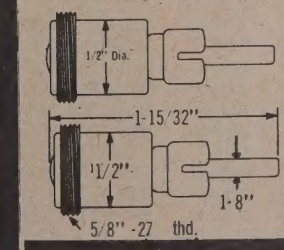
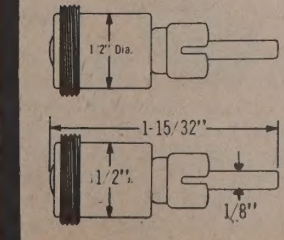
ELECTROCRAFT ELECTRONIC COMPONENTS

STANDARD MICROPHONE CONNECTORS

ILLUSTRATIONS	DESCRIPTION
	**CORD MOUNTED FEMALE MICROPHONE CONNECTOR** DESC: With flexible spring to protect cable; center conductor solders to contact; braid is clamped securely by set screw. Net per C 42.48 No. 33-812
	**PANEL MOUNTED MICROPHONE CONNECTOR** DESC: Requires 3 8" hole when grounded to chassis; or 7 16" hole if insulated with fibre washers; mates with No. 33-812 connector. Single contact connector. Net per C 31.15 No. 33-814
	**MICROPHONE AND CHASSIS CONNECTOR** DESC: Closed circuit type which grounds center contact when cable connector removed, thus eliminating noise. Net per C 39.65 No. 33-816
	**COUPLING NUT** DESC: Converts No. 33-810 male connector to No. 33-812 female type, and No. 33-872 adapter to female No. 33-874. Net per C 8.33 No. 33-818
	**CAP FOR PANEL CONNECTORS** DESC: Protects unused connectors from mechanical damage and dust. Net per C 42.48 No. 33-820
	**MINIATURE MALE MICROPHONE CONNECTOR** DESC: These connectors are only about one-half the size of the standard microphone connectors. Particularly useful for portable equipment, lapel microphone, musical instruments, recorders, etc. Made to the same specifications and of same materials as standard size connectors. Net per C 26.00 No. 33-826

ILLUSTRATIONS	DESCRIPTION
	**MINIATURE FEMALE MICROPHONE CONNECTOR** DESC: These connectors are only about one-half the size of the standard microphone connectors. Particularly useful for portable equipment, lapel microphone, musical instruments, recorders, etc. Made to the same specifications and of same materials as standard size connectors. Net per C 42.48 No. 33-828
	**MINIATURE MIKE CONNECTOR** DESC: These connectors are only about one-half the size of the standard microphone connectors. Particularly useful for portable equipment, lapel microphones, musical instruments, recorders, etc. Made to the same specifications and of same materials as standard size connectors. Panel mounted connector. Net per C 31.15 No. 33-830

SPECIAL CONNECTORS & ADAPTORS

	**FEMALE ADAPTOR** DESC: Standard phone jack input, microphone connector output. Net per C 99 No. 33-868
	**MALE ADAPTOR** DESC: Standard phone jack input, microphone connector output. Net per C 97.96 No. 33-870
	**MALE ADAPTOR** DESC: Microphone connector input, phono plug output. Net per C 70.81 No. 33-872
	**FEMALE ADAPTOR** DESC: Microphone connector input, phono plug output. Net per C 99.17 No. 33-872-1

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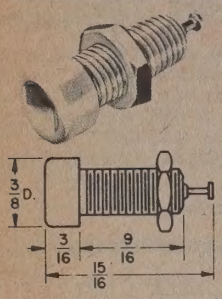
E. F. JOHNSON COMPANY

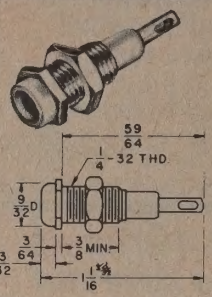
Tip jacks



DELUXE TIP JACK
(U.S. Patent No. 2,704,357)

Molded body with recessed closed entry design contact. Silver-plated beryllium copper contact spring. Brass solder terminal is hot tin dipped. Current rating: 10 amps. Voltage breakdown: 11,000 VDC. Capacity to ⅛" panel: 2.0 pf. ¼-32 nut furnished.

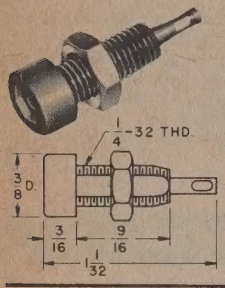
Cat. No.105-0600-001 . . Net Price $0.15
(See color chart below)



METAL-CLAD TIP JACKS—STANDARD

Molded body, nickel-plated machine brass jacket. Formed, silver-plated phos phor bronze contact. Current rating: 1 amps. Voltage breakdown: 7,000 volt DC. Capacity to ⅛" panel: 3.8 pf. ¼"-3 nut furnished.

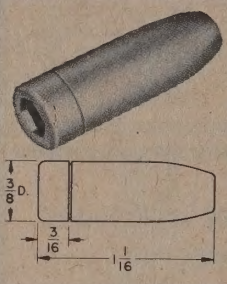
Cat. No.105-0250-001 Net Price $0.18
(See color chart below)



STANDARD TIP JACK

Molded body with recessed, cadmium-plated formed phosphor bronze contact. Current rating: 10 amps. Voltage breakdown: 9,000 volts DC. Capacity to ⅛" panels: 2.0 mmf. ¼"-32 nut furnished.

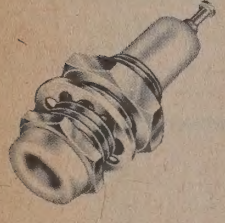
Cat. No.105-0800-001 . . Net Price $0.13
(See color chart below)



JACK AND SLEEVE ASSEMBLY
(U.S. Pat. No. 2,704,357)

Includes Deluxe Tip Jack (105-0601-00 to 105-0613-001), less mounting nu with inside threaded molded sleeve. Idea for patch cords, or insulated rear connec tion of panel mounted tip jack.

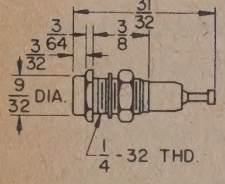
Cat. No.105-0700-001 . . Net Price $0.2
(See color chart below)



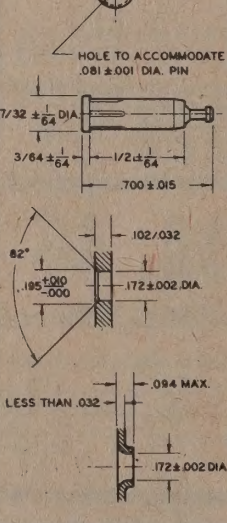
METAL-CLAD TIP JACKS—MILITARY

High reliability tip jack for military use or demanding industrial applications. Highest quality materials — withstand severe environmental temperature, vibration and salt spray conditions. Complies with MS-16108, Rev. F of MIL-STD-242A. Closed entry contact design prohibits entry of tip plug .085" or larger—prevents accidental contact damage by careless probe insertion. Heavy nickel-plated brass jacket. Gold-plated beryllium copper contact spring greatly exceeds minimum insertion/withdrawal cycle requirements of MS-16108. Current rating: 5 amps. Voltage breakdown: 8,000 volts DC. Capacity to ⅛" panel: 3.8 pf. ¼"-32 nut and lock washer furnished. Terminal Style: "A". (Terminal Style "C" per MS-16108 available on special order in production quantities.) Brass solder terminal is gold-plated.

Cat. No.105-0200-200 . . Net Price $0.30



Mil. Std. Number	Color	E. F. Johnson Number
MS16108-1A	White	105-0201-200
MS16108-2A	Red	105-0202-200
MS16108-3A	Black	105-0203-200
MS16108-4A	Brown	105-0208-200
MS16108-5A	Green	105-0204-200
MS16108-6A	Orange	105-0206-200
MS16108-7A	Blue	105-0210-200
MS16108-8A	Yellow	105-0207-200
MS16108-9A	Gray	105-0213-200
MS16108-10A	Violet	105-0212-200



RIB-LOC™ PRESS-IN TIP JACKS

Johnson Rib-Loc design permits substan tial production line savings—no mountin hardware to handle and assemble. Rib Loc tip jacks install by pressing into prope size chassis hole. Accept .080" tip plug i recessed, closed-entry type contact tha rejects plugs .085" or larger to preven accidental contact damage. Silver-plate beryllium copper contact spring. Brass solder terminal silver-plated and Iridite for good solderability. Insulating body molded of low-loss polyamide. Current rat ing: 10 amps. Voltage breakdown: 5,00 VDC. Capacity to ⅛" panel: 1.4 pf nominal

Cat. No.105-1040-001 . . Net Price $0.12
(See color chart below)

COLOR CHART

NOTE: Connectors, unless otherwise specified, are available in 6 molded colors to Federal Standard 595. Other colors listed are available as specials. Catalog number for color desired is determined by adding color numbers on chart below to 6th and 7th digits of catalog number listed for series. EXAMPLE: 105-0800-001 in Violet, add color number for Violet (12) to 6th and 7th digits of series number, and order 105-0812-001. To order 105-1040-001 in Violet, add 12 to 6th and 7th digits of series number and order 105-1052-001.

Color	No.	Color	No.	Color	No.
White*	01	Orange	06	Violet	12
Red*	02	Yellow*	07	Grey	13
Black*	03	Brown	08		
Green*	04	Blue*	10		

*Indicates colors available from stock. Other colors listed are for some items, available as specials.

Net
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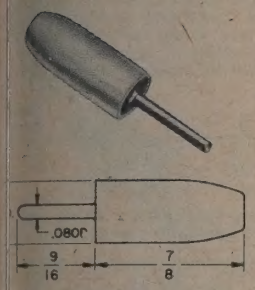
E. F. JOHNSON COMPANY

Tip plugs and Printed circuit connectors

Tip plugs

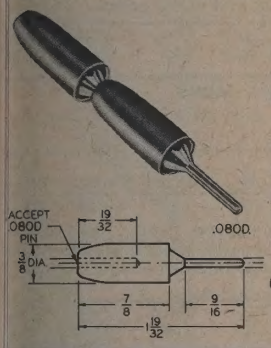


SOLDERLESS TIP PLUG

Completely insulated, molded sleeve. Recessed metal head prevents exposure of metal surfaces when engaged in any standard tip jack. All metal parts are nickel-plated brass. Designed for solderless connection of up to 16 gauge stranded wire. Fits all standard tip jacks. Current rating: 10 amps.

Cat. No. 105-0300-001 Net $0.15

(See color chart under Tip Jacks)

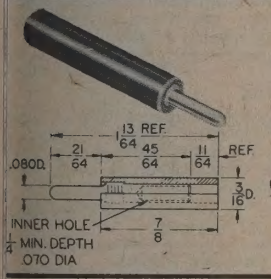


STACKING TYPE TIP PLUG

Stacking feature provides flexibility by permitting several tip plugs to be terminated in the same .080" diameter jack. Designed for solderless connection of up to 16 gauge stranded wire. Body containing both jack and plug machined from solid brass, nickel plated. Insulating sleeve. Current rating: 10 amps.

Cat. No. 105-0900-001 Net $0.40

(See color chart under Tip Jacks)



SUB-MINIATURE TIP PLUG

For use with miniature jack, .080" dia. tip. Nickel-plated machined brass body, solder type lead connection.

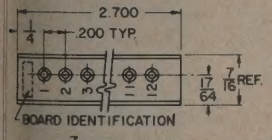
Cat. No. 105-0770-001 Net $0.18

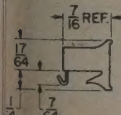
(See color chart under Tip Jacks)

PRINTED CIRCUIT BOARD TEST POINT STRIP HANDLE

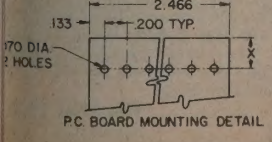
This unique component offers ready access to desired portions of the circuit, without the use of jumper cables, for fast, efficient testing and trouble shooting. Rapid mounting accomplished by manual positioning; secured permanently in the wave solder operation.

Low-loss polyamide body provides insulation resistance greater than 200 megohms after MIL-T-5422B humidity test. Individual test points rated at 5 amperes maximum current capacity. Operating voltage 1500 volts RMS at sea level and 350 volts RMS at 50,000 feet. Contact resistance less than 2 milliohms. Capacitance between two adjacent jacks less than 1 pF. at 1 MHz.





Board thickness	X dim.
1/32	.336
3/64	.302
1/16	.269



Standard model has 12 contacts. Available as specials in production quantities with up to 24 contacts.

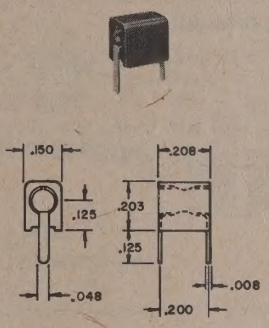
Cat. No. 266-0402-001 Net $1.20

(Red)

Printed circuit connectors

These tiny sub-miniature Tip Jacks and Tip Plugs described below are ideally suited for use in printed circuit or limited space applications! Extremely compact, tip jacks are available in horizontal or vertical contact types—all occupy a minimum amount of board area, yet provide easy access and positive electrical contact. Rated at 5 amperes maximum current capacity. Operating voltage is 1500 volts RMS at sea level and 350 volts RMS at 50,000 feet. Contact resistance is less than 2 milliohms; capacitance between two adjacent jacks less than one pF. at 1 MHz. Body material is made of tough, low-loss polyamide per MIL-M-20693A; able to stand extremely hard usage. Tip Plugs have a one-piece machined contact which provides maximum reliability and achieves minimum contact resistance—jacks equipped with beryllium copper contacts, designed for firm, positive contact as well as fast, easy insertion and withdrawal. Jack contacts and terminals are silver-plated.

NEW!

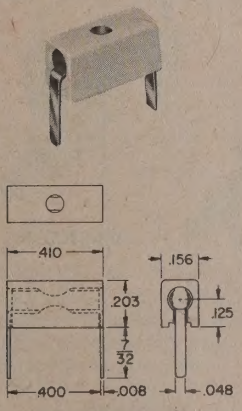


NEW HORIZONTAL JACK

New design accepts 0.080" diameter tip plug in either end. Silver-plated and irridited beryllium-copper formed contact. Two terminals. Approximately one-half size of standard Tip Jack.

Cat. No. 105-1100-001 Net $0.06

(See color chart under Tip Jacks)



HORIZONTAL JACK

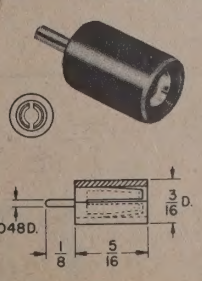
(U.S. Patent No. 3,208,027)

Unique design accepts .080" dia. tip plug in either end, or from top or bottom! Silver-plated beryllium copper formed contact. Two terminals.

Note: Available as a special in production quantities without cross hole.

Cat. No. 105-0750-001 Net $0.07

(See color chart under Tip Jacks)



VERTICAL JACK

Mounts through single .052" hole, requires minimum mounting area. Silver-plated, machined beryllium copper contact.

Cat. No. 105-0850-001 Net $0.12

(See color chart under Tip Jacks)

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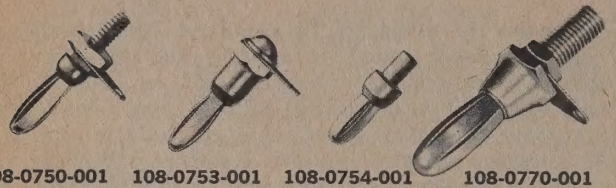
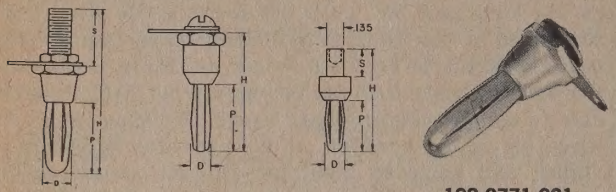
Banana jacks and plugs



108-0750-001 108-0753-001 108-0754-001 108-0770-001



108-0771-001

A B C

STANDARD BANANA PLUGS

This group of standard banana plugs has accurately machined bra studs which extend the full length of the plugs, providing extra strengt Springs are nickel-silver—highly resistant to corrosion. Bodies and har ware .0001 nickel-plated. All banana plugs listed below are availab with beryllium copper springs and nickel, cadmium, or silver platin when desired. A wide selection of miniature solder-type plugs is al available on special order—however, quantities in special platings plugs should be sufficiently large for economical production runs. Sold terminal and nut or screw furnished.

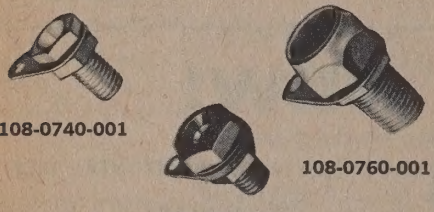
Cat. No.	Dwg.	S	P	D	H	Thread	Net Price
108-0750-001	A	3/8"	17/32"	.175"	1 1/8"	6-32	$0.1
108-0750-002	A	3/4"	17/32"	.175"	1 1/2"	6-32	.2
108-0753-001	B	—	17/32"	.175"	1 5/16"	6-32	.1

This banana plug is similar to the standard types listed above, exce that it is designed for riveting. Springs are beryllium copper, cadmiu plated.

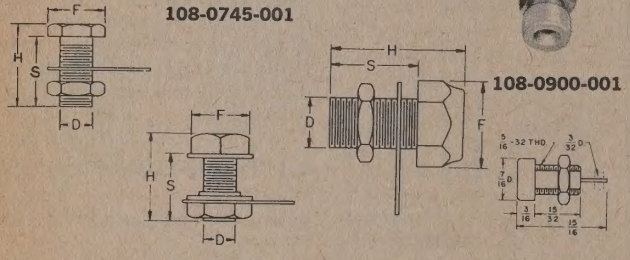
108-0754-001	C	7/32"	13/32"	.155"	13/16"	—	$0.1

Jumbo type banana plugs with accurately machined brass studs e tending full length of the pins. Nickel-silver springs. Bodies and har ware .0001 nickel-plated. With solder lug and nut or screw.

108-0770-001	A	5/8"	3/4"	.300"	1 25/32"	1/4"-28	$0.3
108-0771-001	B	—	3/4"	.300"	1 1/8"	10-32	.6



108-0740-001 108-0760-001 108-0745-001



108-0900-001

STANDARD BANANA JACKS

High quality, machined brass banana jack. Nickel-plated. Furnishe complete with solder terminal and nut.

Cat. No.	F	D	S	H	Hole Dia.	Thread	Net Price
108-0740-001	3/8"	1/4"	17/32"	5/8"	.166"	1/4"-28	$0.1

High quality machined brass banana jacks with plastic head molde to body. Nickel-plated. Furnished complete with solder terminal and nut The 108-0745-001 is equipped with red plastic head—the 108-0745 002 is equipped with black plastic head.

108-0745-001	7/16"	1/4"	32/64"	21/32"	.166"	1/4"-28	$0.3
108-0745-002	7/16"	1/4"	32/64"	21/32"	.166"	1/4"-28	.3

This jumbo banana jack will accommodate plugs such as the 108-0770 001 and the 108-0771-001 listed above. Machined brass, nickel plated. Furnished complete with solder terminal and nut.

108-0760-001	9/16"	3/8"	21/32"	1"	.277"	3/8"-32	$0.4

BANANA JACK

Completely insulated molded body with cadmium-plated insert. Accom modates banana plugs of nominal .175" diameter. Voltage breakdown 10,000 volts DC. Capacity to 1/16" panel: 2.4 mmf. nominal. Mounts i 21/64" diameter circular, "D", or double flat hole (1/4" across flats). Singl nut furnished for mounting—no other mounting hardware needed.

Cat. No. 108-0900-001 ..... **Net Price $0.1**

(See Color Chart under tip jacks)

108-0752-001 108-0772-001 108-0300-001

STANDARD INSULATED BANANA PLUGS

These standard insulated banana plugs are equipped with plastic han dles, brass nickel-plated bodies, and nickel-silver springs. The 108 0752-001 has a black plastic handle—the 108-0752-002, red.

Cat. No.	S	P	D	H	G	O	Net Price
108-0752-001	1 3/8"	17/32"	.175"	2 1/8"	7/32"	7/16"	$0.30
108-0752-002	1 3/8"	17/32"	.175"	2 1/8"	7/32"	7/16"	.30

JUMBO INSULATED BANANA PLUGS

These jumbo size insulated banana plugs are similar in design to the standard types listed above, but are somewhat larger in size. With brass nickel-plated bodies, and nickel-silver springs. The 108-0772-001 ha a black plastic handle—the 108-0772-002 has a red plastic handle.

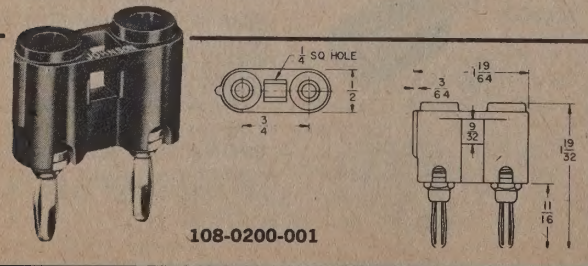
Cat. No.	S	P	D	H	G	O	Net Price
108-0772-001	1 3/4"	3/4"	.300"	2 25/32"	3/8"	5/8"	$0.7
108-0772-002	1 3/4"	3/4"	.300"	2 25/32"	3/8"	5/8"	.7

SOLDERLESS BANANA PLUGS

Compact, high voltage insulated plug for a wide variety of applications Designed for fast, solderless connection of up to 16 gauge stranded wire Body and pin are constructed of one-piece, nickel-plated brass with hig grade nickel-silver springs. Sleeve is molded. Current rating: 15 amps

Cat. No. 108-0300-001 ..... **Net Price $0.1**

(See Color Chart under tip jacks)



108-0200-001

DUAL BANANA PLUGS

Extremely versatile dual banana plug available for either solderless o set screw connection. Molded body incorporates polarity indication and strain relief hole for wire leads. Springs are high quality nickel-silver— bodies are nickel plated. Accurately machined brass studs extend ful length of pins for extra strength. Voltage breakdown: 10,000 VDC Capacity plug to plug: 1.3 pf. Current rating: 15 amps.

Cat. No. 108-0200-001 (solderless) ..... **Net Price $0.7**

Cat. No. 108-0250-001 (with set screws) ..... **Net Price .7**

(See Color Chart under tip jacks)

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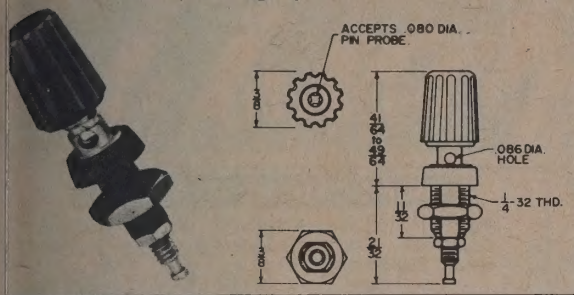
E. F. JOHNSON COMPANY®

Binding posts

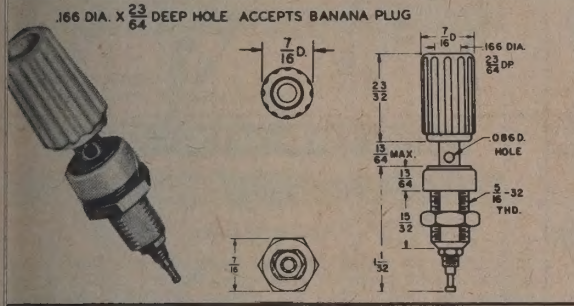
Compact, insulated, pre-assembled binding posts with molded body and silver-plated shank. Fluted thumb nut self-captivated. Connection made at solder stud, or lug may be slipped over threaded portion and secured with a nut. Single tip plug fits hole in top of miniature binding post; banana plug accepted by two larger binding posts. Insulation resistance greater than 200 meg. after MIL-T-5422B humidity test. (U.S. Pat. No. 2,806,999.)



New miniature binding post designed for compact test equipment applications. Rated at 15 amps. thumb nut to terminal, 5 amps. tip jack to terminal. Voltage breakdown: 5,000 volts DC. Capacitance to 1/8" panel; 3 pf. Mounts in 17/64" diameter circular hole; "D" or double flat hole—.219" across flats. Equipped with single 1/4"-32 nut for fast mounting—no time-consuming spacers or mounting hardware required.

Available in 6 colors: white, red, black, green, yellow, and blue.

Cat. No. 111-0200-001 ..... **Net Price $0.25**

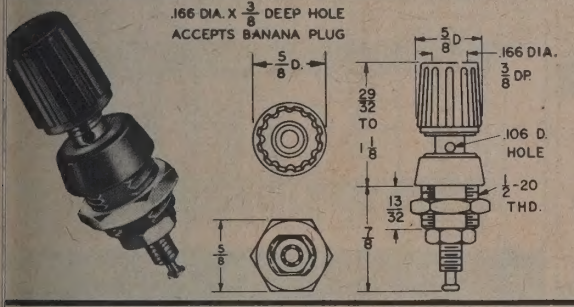


Rated at 15 amps. Current carrying capacity. Voltage breakdown: 8,000 volts DC. Capacitance to 1/8 panel: 3.3 pf. Mounts in 21/64" diameter circular hole; "D" or double flat hole—1/4" across flats. Single 5/16-32 mounting nut furnished—no other hardware required.

Cat. No. 111-0100-001 ..... **Net Price $0.30**
(10 colors available—see color chart)

Mounting plate—Pre-punched, etched aluminum mounting plate for accurate mounting of two 111-0100-001 binding posts, or 108-0900-001 banana jacks 21/64" diameter holes on exact 3/4" centers.

Cat. No. 111-0020-001 ..... **Net Price $0.03**

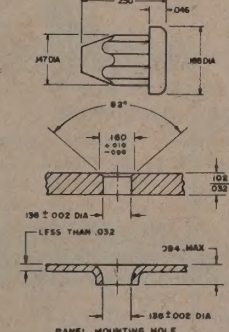


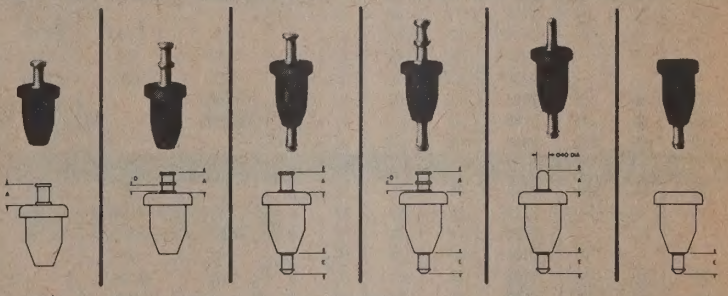
Rated at 40 amps. current carrying capacity. Voltage breakdown: 7,000 volts DC. Capacitance to 1/8" panel: 3.5 pf. Mounts in 1/2" diameter circular hole; "D" or double flat hole—.422 across flats. Single 1/2-20 mounting nut furnished—no other hardware needed. Available in six colors: white, red, black, green, yellow, and blue.

Cat No. 111-0300-001 ..... **Net Price $0.40**

Rib-Loc™ terminals and jacks

With Johnson Rib-Loc insulated components, commercial equipment designs can reflect size reductions formerly limited to military equipment applications because of high cost. "Rib-Loc" design offers excellent retention — considerably better than the most widely used TFE insulated types. Terminals are brass, silver-plated and ridited for good solderability.





Specifications, all "Rib-Loc" components:

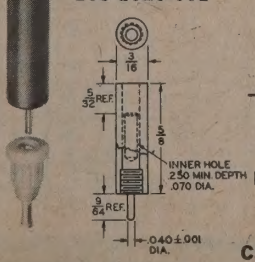
Pullout force 21 lbs.; turning torque 18 oz. in.; capacitance, .050" thick panel at 1 mc., 1.00 pf.; flashover voltage (DC) 5300; max. service temperature 250° F.; leakage current at 3500 VDC, .01 ua. These are typical test measurements, not necessarily limit values.

Series Number	Description	A	D	E	Net Price
260-0000-001	Single turret stand-off	0.125			$0.05
260-0100-001	Double turret stand-off	0.187	0.068		0.05
260-0200-001	Single turret feed-thru	0.125		0.140	0.06
260-0300-001	Double turret feed-thru	0.187	0.068	0.140	0.06
260-0400-001	Tip plug, 0.040" dia.	0.140		0.140	0.06
264-0000-001	Tip jack for 0.040" dia. plug			0.140	0.08

Color	No.	Color	No.
White	01	Green	04
Red	02	Yellow	07
Black	03	Blue	10

Note: Part number for color desired is determined by adding color number to 6th and 7th digits of part number listed for each item above.

105-1020-001



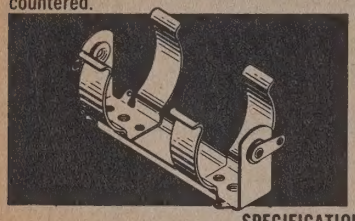
TIP PLUG FOR .040" RIB-LOC TIP JACK

Cat. No. 105-1020-001

KEYSTONE ALL STEEL BATTERY HOLDERS

STANDARDIZED ALL STEEL BATTERY HOLDERS

An important advance in design that has gained wide acceptance for military and commercial usage. Battery when installed is held under spring tension at a constant pressure assuring low resistance contact will hold up to 4 cells in series in sturdy insulating tube. Retainer clips available to lock battery securely. This prevents shifting or loosening of battery in holder. Recommended for use where shock or severe vibration is encountered.



- CORROSION RESISTANT NICKEL PLATED
- STAINLESS STEEL CONTACTS
- MOISTURE PROOF INSULATING WASHERS
- IDEAL FOR NI-CAD AND ALKALINE CELLS

SPECIFICATIONS

Made of SAE 1065 Carbon Steel to MIL Spec. 17919, heat treated to spring temper and nickel plated .0002 thick. Contact assembly consists of a stainless steel eyelet, moisture proof vulcoid washers and a coated copper solder lug. Ribbed carbon steel base for added support is nickel plated and has 2 mounting holes for ease in mounting.

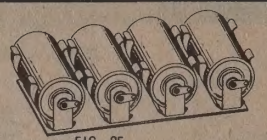


FIG. 25

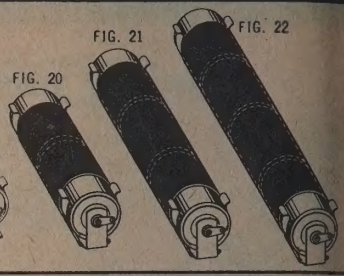


FIG. 20 FIG. 21 FIG. 22

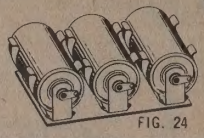


FIG. 24

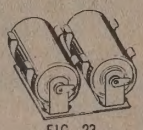
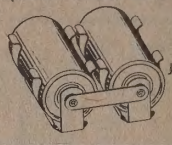


FIG. 23

FIG. 19

MODIFICATIONS AVAILABLE

Variety of stock parts permits fast delivery on special requirements. Use our engineering service for your special custom-built holders.


JUMPERS

SPECIAL LUGS

POLARIZED CONTACTS

SPACE SAVER BATTERY CLIPS

DIMPLE AND INSULATED CONTACTS

Std. Pkg. 10 Pieces

These holders are available insulated contact or with a dimple contact. Provides positive contact in either case. They are compact and economical. The "AA", "C", "D", Mercury and Ni-Cad batteries are accommodated. Made of SAE 1065 steel heat treated to spring temper and nickel plated. Insulated type has steel nickel plated eyelet and resin impregnated vulcanized fibre insulation. Snap-on washer for polarization will be supplied upon request.

Cat. No.	Battery Types	Min. to max. Diameter	Net Each 5-19	Net Each 20-99
92*	AA	.531- .660	.05	.04
99*	AA	.531- .660	.05	.04
100†	AA	.531- .660	.09	.08
86*	C	.875-1.125	.08	.08
87†	C	.875-1.125	.12	.11
88†	D	1.187-1.375	.13	.12
89*	D	1.187-1.375	.10	.09

*Non-Insulated †Insulated

1100 SERIES

DIMPLE CONTACT INSULATED CONTACT

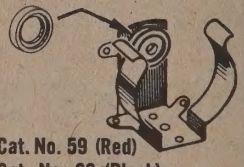
2100 SERIES

INSULATED CONTACTS

One Insulated Contact	Net Each 5-19	Net Each 20-99	All Contacts Insulated	Net Each 5-19	Net Each 20-99	Fig. No.	Holds No. of Cells	All Batteries in the Group are of Similar Size and Fit Holders Listed Burgess	Eveready	RCA
PENCELL HOLDERS										
Cat. No.			Cat. No.							
1139	.25	.23	2139	.30	.26	19	1	Z, HG9	E9, E12	VS034A
	—	—	2140*	.45	.43	23	2	CD6, 9R	E91, E133	VS144
	—	—	2171*	.70	.68	24	3	HG12R	E502, N46	VS149
	—	—	2182*	.80	.75	25	4	H133	515, 915	VS313A
1189	.40	.38	2189	.40	.38	20	2	HG502R	1015	VS334
1191	.45	.41	2191	.45	.40	21	3	920		
1194	.50	.48	2194	.55	.51	22	4	930		
"C" CELL HOLDERS										
1173	.35	.30	2173	.35	.33	19	1	1		VS035A
	—	—	2174*	.60	.59	23	2	P6	E233	VS300
	—	—	2187*	.80	.75	24	3	120	635	VS335
	—	—	2188*	1.05	.95	25	4	130	935	VS400
1185	.50	.45	2185	.50	.49	20	2	H233		
1195	.50	.48	2195	.55	.51	21	3	302599		
1198	.55	.51	2198	.60	.57	22	4			
"D" CELL HOLDERS										
1175	.35	.30	2175	.35	.33	19	1	2	E42	VS036
	—	—	2176*	.60	.59	23	2	2R	N56	VS036A
	—	—	2190*	.85	.80	24	3	CD7	E95	VS336
	—	—	2192*	1.05	.95	25	4	210	D99	
1186	.48	.44	2186	.50	.49	20	2	230	A100	
1199	.55	.51	2199	.60	.56	21	3		950	
1162	.60	.54	2162	.65	.62	22	4		1050	
1179	.35	.30	2179	.35	.34	19	1		E94	

*Clips mounted on phenolic 1/16" thick Mil Spec 3115B

INSULATED POLARIZING WASHERS



Cat. No. 59 (Red)
Cat. No. 60 (Black)

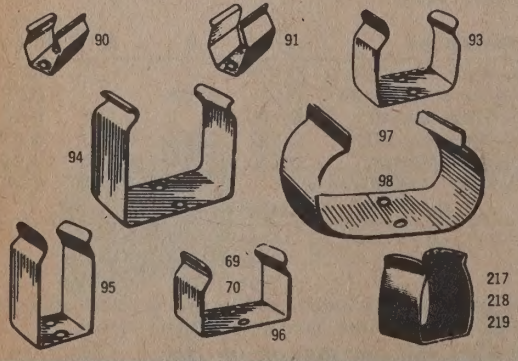
Molded Insulated Polarizing Washers. The washers hold securely when snapped over the eyelets used on our standardized battery holders.

POLARITY LABELS

Cat. No. 58

- PRESSURE SENSITIVE
- WILL ADHERE TO ANY SURFACE
- NO GLUE OR DAMPING REQUIRED
- ECONOMICAL

Wherever circuit polarity is to be shown labels colored Blue and Red.



BATTERY AND COMPONENT HOLDERS

Cat. No.	Battery Types	Min. to Max. Diameters	NET EACH 5-19	NET EACH 20-99	Cat. No.	Battery Types	Min. to Max. Diameters	NET EACH 5-19	NET EACH 20-99
69	2U6 or (2) AA	5/8 x 1 1/8	.07	.06	96	(1) K 20	5/8 x 1 13/64	.08	.07
70	(2) RM 12	5/8 x 1 5/16	.09	.08	97	(2) "C"	(2) 1 1/64 Dia.	.09	.08
90	#7	3/8 to 2 3/64	.06	.04	98	(2) D	(2) 1 21/64 Dia.	.11	.10
91	(1) AA	17/32 to 21/32	.07	.05	217	1 3/8 Dia.	1 3/8 Dia.	.18	.14
93	(1) C	7/8 to 1 1/8	.07	.06	218	1 1/2 Dia.	1 1/2 Dia.	.20	.15
94	(1) D	1 3/16 to 1 3/8	.08	.07	219	2" Dia.	2" Dia.	.22	.16
95	(1) U-15	5/8 x 1 1/32	.07	.06					

Clips are made of Aluminum except Nos. 69, 217, 218, 219 are made of Steel.

KEYSTONE ELECTRONICS CORP.

Net

© United Technical Publicatio

KEYSTONE BATTERY HOLDERS

NET EACH 5-19	NET EACH 20-99	Holds No. of Cells	Fig. No.	ALL BATTERIES LISTED WITHIN BOXES ARE IN THE SAME SIZE GROUP BATTERY CROSS REFERENCE Burgess	Eveready	RCA
NIATURE CELL HOLDERS						
.23	.21	1	1	7	912	VS074
.38	.34	2	2			
.55	.51	3	3			
.64	.57	4	4			
NCELL HOLDERS						
.23	.21	1	1	CD6	E9, E12	VS034A
.38	.34	2	2	9R, Z	E91	VS144
.50	.45	3	3	HC9	E133	VS149
.64	.57	4	4	HG12R	333	VS313A
.45	.36	2	5	H133	E502	VS334
.49	.44	3	6	HG502R	515	
.64	.54	4	7	920	915, 1015	
.93	.81	6	8	930	N46	
" CELL HOLDERS						
.30	.26	1	1	1	226	VS035A
.38	.34	2	2	P6	E233	VS300
.45	.36	3	3	120	635	VS335
.45	.36	2	5	130	935	VS400
.49	.44	3	6	H233		
.64	.54	4	7	302599		
.93	.81	6	8			
" CELL HOLDERS						
.30	.26	1	1	2	E42	VS036A
.38	.34	2	2	2R	N56	VS036
.65	.62	3	3	CD7	E95	VS336
.46	.37	2	5	210	D99	
.50	.45	3	6	230	A100	
.65	.55	4	7		950	
.95	.85	6	8		1050	
.95	.85	6	12			
½ VOLT CELL HOLDERS						
.21	.20	1	1	N	E340	VS073
.35	.32	2	2		E400	
.49	.44	3	3		E401	
.49	.44	1	1	21R	964	VS236
.30	.26	1	1		E94	
½ VOLT CELL HOLDERS						
.23	.21	1	1		333	VS1149
VOLT CELL HOLDERS						
.26	.24	1	1		206	VS327
.44	.30	1	14	2U6	216	VS323
.30	.29	1	1	P6M	226	VS300A
VOLT CELL HOLDERS						
.30	.26	1	11	K10	417	
.30	.26	1	11	U10	411	VS083
.30	.26	1	9			
.38	.34	2	10			
.21	.20	1	1	Y10	504	
.35	.32	2	2			
½ VOLT CELL HOLDERS						
.30	.26	1	11	K15		
.30	.26	1	11		420	
.30	.26	1	9	U15	412	VS084
.38	.34	2	10			
.26	.24	1	1	Y15	505	
.41	.37	2	2			
.52	.47	3	3			
.67	.60	4	4			
VOLT CELL HOLDERS						
.30	.26	1	14	Y20	506	
.30	.26	1	11	K20	430	
.30	.26	1	9	U20	413	VS085
.38	.34	2	10			
.38	.34	1	1	Y20S	507	

INSULATED POLARIZING WASHERS

lated Polarizing Washers eliminate the er of damage and short circuit to ex- ive transistor equipment. The washers securely when snapped over the eyelets on our standardized battery holders. erial: Precision molded of plastic.

. No.	NET COST EACH 5-19	20-99
59	.04	.03

A standard line of battery holders available for immediate shipment from stock. Low cost, lightweight and sturdily constructed of quality materials. Good electrical contact, low leakage current and snap-fit clips are the outstanding features.

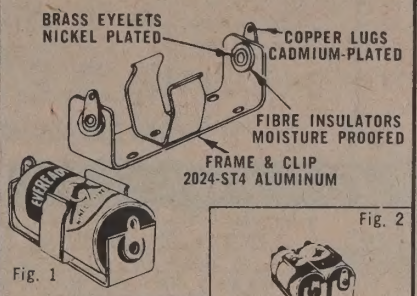


Fig. 1

Fig. 2

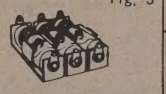


Fig. 3

Fig. 4

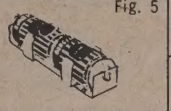


Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

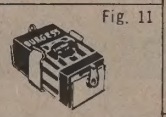


Fig. 11

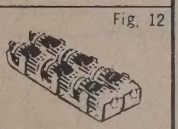
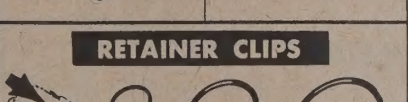


Fig. 12

Fig. 14

RETAINER CLIPS



These retainers prevent the battery from shifting or loosening in the holder. Made of high carbon steel, heat treated to spring temper and nickel plated.

Cat. No. 61—Retainer for "A" or Mercury cells with diameters of 17/32" to 9/16" when used with Keystone #91, 92, 99 or 100 clips also clip #95 for rectangular battery.

Cat. No. 62—Retainer for C cells or other batteries with maximum diameter of 1 1/32" when used with Keystone #93, 86 or 87 clips.

Cat. No. 63—Retainer for D cells or other batteries with maximum diameter of 1 11/32" when used with Keystone #94, 88 or 89 clips.

Cat. No. 66—Retainer for mercury cells with .650 dia. when used with our #91 clips.

Any above, Net Each (5-19) .05; (20-99) .04

MERCURY BATTERY HOLDERS

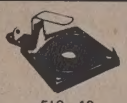


FIG. 13

FIG. 15

FIG. 16

FIG 17

FIG 18

FIG. 19

Mallory Mercury Battery Listing	Aluminum and Phenolic Base Holders Cat. No.	Fig. No.	All Steel Holders One Insulated Contact Cat. No.	Fig. No.	All Steel Holders All Contacts Insulated Cat. No.	Fig. No.
RM1R	101*	13	1101	15	2101	16
RM3R	103*	13	1103	15	2103	16
RM4R	104*	13	1104	15	2104	16
ZM9	139	1	1139	19	2139	19
RM12R	139	1	1139	19	2139	19
RM42	175	1	1175	19	2175	19
TR113			1113	15	2113	16
TR114			1114	15	2114	16
TR115	132	1	1132	15	2132	16
TR132	132	1	1132	15	2132	16
TR133	139	1	1139	19	2139	19
TR134	134	1	1134	19	2134	19
TR135	135	5	1135	19	2135	19
TR136	189	5	1189	19	2189	19
TR137			1125	19	2125	19
TR145			1145	15	2145	16
TR152	124**	1				
TR153	106**	1				
TR162			1113	15	2113	16
TR163	132	1	1132	15	2132	16
TR164	109	1	1109	19	2109	19
TR165	110	1	1110	19	2110	19
TR169	189	5	1189	19	2189	19
TR175	124**	1				
TR177			1142	19	2142	19
TR233	173	1	1173	19	2173	19
TR234			1144	19	2144	19
RM400	111*	18				
RM401	124**	1				
RM411	166**	9				
RM412	177**	9				
RM413	183**	9				
RM450	112*	17				
RM502	139	1	1139	19	2139	19
RM601			1116	15	2116	16
RM625	117*	17				
RM630	126*	18				
RM640	118*	13				
RM675	127*	18				
302351	119	1	1119	19	2119	19
302478	120	5	1120	19	2120	19
302642	121	1	1121	19	2121	19
302435	122**	1				
302437	139	1	1139	19	2139	19
302599	173	1	1173	19	2173	19

*Bakelite Base Holders
**Available Only in Aluminum

NET EACH PRICE LIST
MERCURY BATTERY HOLDERS

No.	5-19	20-99	No.	5-19	20-99	No.	5-19	20-99
101	.35	.31	175	.30	.26	1175	.35	.30
103	.37	.33	177	.30	.26	1189	.40	.38
104	.38	.34	183	.30	.26	2101	.35	.34
106	.30	.26	189	.45	.36	2103	.35	.34
109	.30	.26	1101	.35	.30	2104	.35	.34
110	.38	.34	1103	.35	.30	2109	.35	.34
111	.35	.31	1104	.35	.30	2110	.35	.34
112	.35	.31	1109	.35	.30	2113	.35	.34
117	.35	.31	1110	.35	.30	2114	.35	.34
118	.35	.31	1113	.35	.30	2116	.35	.34
119	.38	.34	1114	.35	.30	2119	.35	.34
120	.38	.34	1116	.35	.30	2120	.45	.41
121	.38	.34	1119	.35	.30	2121	.45	.41
122	.38	.34	1120	.40	.38	2125	.35	.34
124	.23	.21	1121	.40	.38	2132	.35	.34
126	.35	.31	1125	.35	.30	2134	.35	.34
127	.35	.31	1132	.35	.30	2135	.40	.37
132	.30	.26	1134	.35	.30	2139	.30	.26
134	.38	.34	1135	.35	.30	2142	.30	.26
135	.38	.34	1139	.25	.23	2144	.30	.26
139	.23	.21	1142	.25	.23	2145	.35	.34
166	.30	.26	1144	.25	.23	2173	.35	.33
173	.30	.26	1145	.35	.30	2175	.35	.33
			1173	.35	.30	2189	.40	.38

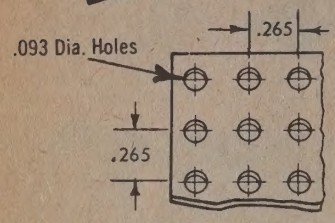
KEYSTONE ELECTRONICS CORP.

KEYSTONE ELECTRONICS CORP. DESIGNER MANUFACTURER

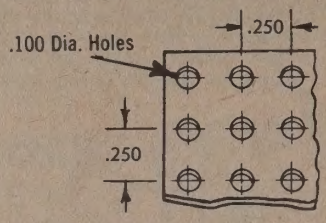
KEYBOARDS

PRE-PUNCHED TERMINAL BOARDS

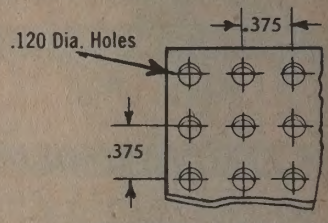
- COMPLETE RANGE OF SIZES AND SUITABLE HARDWARE
- "DO IT YOURSELF" STAKING TOOLS
- COPPER CLAD FOR PRINTED CIRCUITS
- UNCLAD TYPE FOR WIRED CIRCUITS
- STANDARD AND CUSTOM-MADE



"A" PATTERN .093 DIA. HOLES



"E" PATTERN .100 DIA. HOLES



"H" PATTERN .120 DIA. HOLES

"A" PATTERN .093 DIA. HOLES .265 x .265 C to C

Size Width & Length	No. of Holes W & L	XXXP Natural	Glass Epoxy	Paper Base Epoxy
		1/16" THICK		
		Cat. No.	Cat. No.	Cat. No.
.82 x 8.50	3 x 32	1731	1790	1796EP
1.88 x 8.50	7 x 32	1737	1791	1797EP
2.44 x 8.50	9 x 32	1738	1788	1798EP
3.25 x 8.50	13 x 32	1785	1789	1801EP
3.25 x 17.00	13 x 64	1786	1787	1802EP
4.88 x 4.88	18 x 18	1806	1807	1803EP
4.88 x 8.50	18 x 32	1784	1792	1804EP
4.88 x 17.00	18 x 64	1739	1793	1805EP
8.50 x 8.50	32 x 32	1732	1794	1808EP
8.50 x 17.00	32 x 64	1733	1795	1809EP
		3/32" THICK		
1.38 x 1.88	5 x 7	1758	—	1758EP
1.38 x 4.00	5 x 15	1760	—	1760EP
1.38 x 8.50	5 x 32	1749	—	1749EP
1.88 x 2.94	7 x 11	1759	—	1759EP
1.88 x 8.50	7 x 32	1740	—	1740EP
2.44 x 8.50	9 x 32	1741	—	1741EP
3.25 x 8.50	13 x 32	1814	—	1814EP
3.25 x 17.00	13 x 64	1816	—	1816EP
4.88 x 8.50	18 x 32	1756	—	1756EP
4.88 x 17.00	18 x 64	1742	—	1742EP
8.50 x 8.50	32 x 32	1817	—	1817EP
8.50 x 17.00	32 x 64	1757	—	1757EP

"E" PATTERN .100 DIA. HOLES .250 x .250 C to C

Size Width & Length	No. of Holes W & L	XXXP Natural
	1/16" THICK	
		Cat. No.
2.13 x 4.00	8 x 16	1750
2.13 x 8.50	8 x 34	1765
3.63 x 8.50	14 x 34	1766
8.50 x 8.50	34 x 34	1767
8.50 x 17.00	34 x 68	1768
	3/32" THICK	
2.13 x 8.50	8 x 34	1770
8.50 x 8.50	34 x 34	1771
8.50 x 17.00	34 x 68	1772

"H" PATTERN .120 DIA. HOLES .375 x .375 C to C

Size Width & Length	No. of Holes W & L	XXXP Natural	Paper Base Epoxy
	1/16" THICK		
		Cat. No.	Cat. No.
1.88 x 8.25	5 x 22	1743	—
2.25 x 8.25	6 x 22	1744	—
4.13 x 8.25	11 x 22	1782	—
4.13 x 16.50	11 x 44	1745	—
	3/32" THICK		
1.88 x 8.25	5 x 22	1746	1746EP
2.25 x 8.25	6 x 22	1747	1747EP
4.13 x 8.25	11 x 22	1783	1783EP
4.13 x 16.50	11 x 44	1748	1748EP
6.00 x 8.25	16 x 22	1941	1941EP
6.00 x 16.50	16 x 44	1942	1942EP
8.25 x 8.25	22 x 22	1943	1943EP
8.25 x 16.50	22 x 44	1939	1939EP

TERMINALS AND EYELETS For Boards with .093-.100 dia. Holes

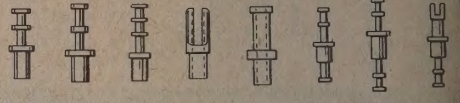
TERMINALS

Brass (Mil Spec QQ626) and Silver Plated.

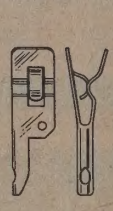
NOTE: When ordering Turret Terminals **BE SURE TO SPECIFY No. of Terminal** and add **—2 for 1/16" thick Board —3 for 3/32" thick Board**

I.E. **1598-2** for 1/16" thick Board and **1598-3** for 3/32" thick

ALL TERMINAL DRAWINGS ARE ACTUAL SIZE.



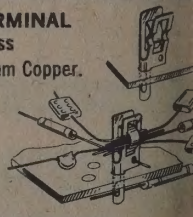
1502 1514 1598 1511 1540 1530 1512 1634



PUSH-IN TERMINAL
SOLDERLESS
Made of Beryllium Copper.

Cat. No. 1498-CP (cadmium plate)

Cat. No. 1498-SP (silver plate)



PRECISION MADE EYELETS

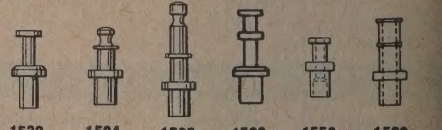
Made of Brass and Hot Tinned for easy solderability

Specify **Cat. No. 33** for 1/16" thick Board
Cat. No. 34 for 3/32" thick Board

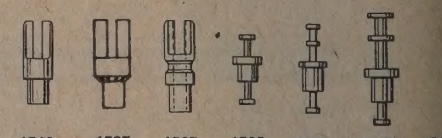
TERMINALS AND EYELETS For Boards with .120 dia. Holes

TERMINALS

ALL TERMINAL DRAWINGS ARE ACTUAL SIZE.



1532 1504 1505 1503 1553 1509



1510 1507 1525 1522 1542 1551 1545

PRECISION MADE EYELETS

Specify **Cat. No. 43** eyelet for 1/16" thick Boa
Cat. No. 44 eyelet for 3/32" thick Boa

KEYSTONE ELECTRONICS CORP.

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KEYBOARDS

PRE-PUNCHED TERMINAL BOARDS

KEYSTONE ELECTRONICS CORP. DESIGNERS MANUFACTURERS

THE PRACTICAL APPROACH TO SIMPLE OR COMPLEX CIRCUITRY

LOW COST — IMMEDIATE DELIVERY — CHOICE OF SIX POPULAR PATTERNS AND MATERIALS

ANDARDIZED KEYBOARDS: Permits time saving, low cost, assembly of components. ed extensively in development of prototype breadboarding, test design or produc- n runs. A large selection of sizes and materials offers the designer the flexibility d convenience needed to create special circuitry on short notice.

ECTRONIC HARDWARE: A large selection of turret, push-in and stamped terminals, ckets, eyelets, etc. available from stock.

AKING TOOLS: Inexpensive tooling supplied for staking eyelets, bushings, turret minals, etc. You can do an entire assembly at your bench with ease, using our act tool. Other tools for arbor, kickpress, drill press. See Staking Tool page

ECIAL SERVICES: We will install eyelets or terminals to suit your application. invite inquiries for special sizes or additional holes drilled. Prompt quotations dered at no cost to you.

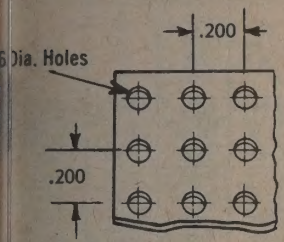
MATERIAL SPECIFICATIONS & TOLERANCES

XXXP Type PBE (Paper Base Elect.) Mil-P-3115C Temp. 250° F Max.
XXXPC Type PP Copper Clad Mil-P-13949 Temp. 250° F Max.
PAPER BASE EPOXY Mil-P-22324 (Type PEE) Temp. 250° F Max.
GLASS EPOXY UNCLAD Mil-P-18177 G-10 (GEE) Temp. 300° F. Max.
GLASS EPOXY Copper Clad Mil-P-13949B (GE) Temp. 300° F Max.

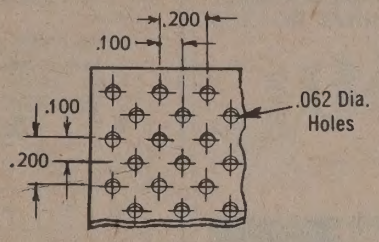
TOLERANCE: Length and width overall dimension after fabrication Plus or Minus .015.

HOLE SIZE: Plus or Minus .003.

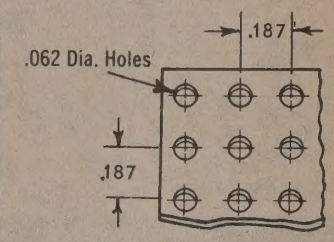
Thickness of standard sheet varies Plus or Minus .008 for 1/16 or .010 for 3/32" thick.



"F" PATTERN .062 DIA. HOLES



"G" PATTERN .062 DIA. HOLES



"B" PATTERN .062 DIA. HOLES

"F" PATTERN .062 DIA. HOLES .200 x .200 C to C

ze th & gth	No. of Holes W & L	XXXP Natural	Glass Epoxy	Paper Base Epoxy	Glass Epoxy Cop. Clad (1 Side)	Glass Epoxy Cop. Clad (2 Sides)	XXXP Cop. Clad (1 Side)	XXXP Cop. Clad (2 Sides)
		1/16" THICK						
		Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
8.50	8 x 42	1730	1844	1730EP	1846	1847	1848	1853
4.50	14 x 20	1835	1845	1835EP	1836	1837	1838	1839
8.50	18 x 42	1773	1854	1773EP	1855	1856	1857	1858
17.00	18 x 85	1775	1859	1775EP	1864	1865	1866	1867
6.50	22 x 30	1868	1870	1868EP	1876	1877	1878	1879
8.50	22 x 42	1869	1871	1869EP	1881	1886	1887	1888
8.50	24 x 42	1774	1872	1774EP	1882	1889	1894	1899
17.00	24 x 85	1776	1873	1776EP	1883	1891	1895	1902
8.50	42 x 42	1777	1874	1777EP	1884	1892	1896	1903
17.00	42 x 85	1778	1875	1778EP	1885	1893	1897	1904

"G" PATTERN .062 DIA. HOLES .100 GRID ALTERNATES

Size & Length	No. of Holes W & L	XXXP Natural	Glass Epoxy	Paper Base Epoxy	Glass Epoxy Copper Clad (1 Side)	Glass Epoxy Copper Clad (2 Sides)
		1/16" THICK				
		Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
x 4.00	(8 x 19) x 2	1752	1909	1752EP	1919	1920
x 8.50	(11 x 42) x 2	1754	1910	1754EP	1921	1922
x 4.00	(17 x 19) x 2	1753	1911	1753EP	1923	1924
x 8.50	(17 x 42) x 2	1905	1912	1905EP	1925	1926
x 17.00	(17 x 85) x 2	1906	1913	1906EP	1927	1928
x 8.50	(19 x 42) x 2	1907	1914	1907EP	1929	1930
x 8.50	(24 x 42) x 2	1908	1915	1908EP	1931	1932
x 17.00	(24 x 85) x 2	1779	1916	1779EP	1933	1934
x 8.50	(42 x 42) x 2	1780	1917	1780EP	1935	1936
x 17.00	(42 x 85) x 2	1781	1918	1781EP	1937	1938

"B" PATTERN .062 DIA. HOLES .187 x .187 C to C

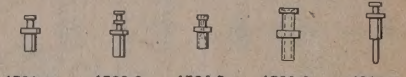
Size Width & Length	No. of Holes W & L	XXXP Natural	XXXP Copper Clad (1 Side)
		1/16" THICK	
		Cat. No.	Cat. No.
1.38 x 8.50	6 x 45	1761	1818
1.88 x 8.50	8 x 45	1734	1819
2.44 x 3.38	12 x 17	1812	1813
2.84 x 8.50	15 x 45	1735	1820
3.66 x 6.75	19 x 35	1824	1825
5.69 x 8.50	30 x 45	1762	1834
5.69 x 17.00	30 x 90	1736	1831
6.75 x 7.31	19 x 35	1826	1827
7.31 x 10.50	38 x 56	1828	1829
7.31 x 18.00	38 x 95	1832	1830
8.50 x 17.00	45 x 90	1763	1833

TERMINALS AND EYELETS
For Boards with .062 dia. Holes

TERMINALS

Brass, (Mil Spec QQ626) and Silver Plated.

ALL TERMINAL DRAWINGS ARE ACTUAL SIZE.

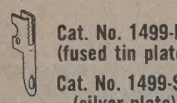


1508-2 1593-2 1584-2 1562-2 1633-2

1613-2 1592-2 1526-2 1631-2 1632-2

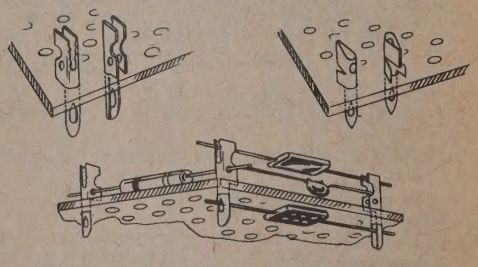
PUSH-IN TERMINALS

Made of Beryllium Copper.



Cat. No. 1499-FT (fused tin plate)
Cat. No. 1499-SP (silver plate)

Cat. No. 1500 (silver plate)



PRECISION MADE EYELETS

Made of Brass and Hot Tinned for easy solderability.

Cat. No. 23 For 1/16" thick Board

We welcome your inquiries for special boards and assemblies.

KEYSTONE ELECTRONICS CORP. DESIGNERS MANUFACTURERS

STANDARDIZED TERMINAL BOARDS

STANDARDIZED TURRET TERMINAL BOARDS

Cut your production cost by eliminating the tooling and setup charge usually applied to nonstandardized boards. Terminals are securely riveted and hot tinned for easy soldering.

TERMINALS: Your choice of most popular types.
Made of Brass: QQ-626, comp. 22, ½ hard.
Hot Dip Solder finish: Mil-F-14072 Type 221.

Material: Your choice of either PBE or GEE Phenolic.

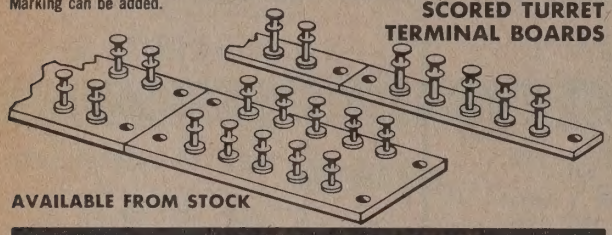
PBE: Paper base electrical, Mil-P-3115C, Temp. 250° F max. Type XXXP.

GEE: Glass Epoxy, Mil-P-18177, Temp. 300° F max. Type G-10.

Five sections **SCORED** for easy **separation** M'tg. holes in each section.

These boards **CAN BE MODIFIED** with terminals staked in all holes, scoring eliminated. Marking can be added.

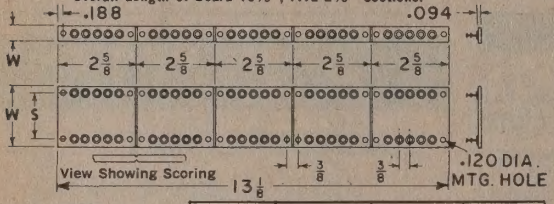
SCORED TURRET TERMINAL BOARDS



AVAILABLE FROM STOCK

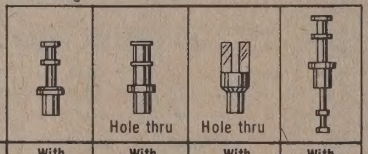
3/8" SPACING AND SCORED

3/32" THICK PHENOLIC — Choice of 4 Types of Terminals
Overall Length of Board 13⅛", FIVE 2⅝" Sections.



Five sections **SCORED** for easy operation.
M'tg. holes in each section.

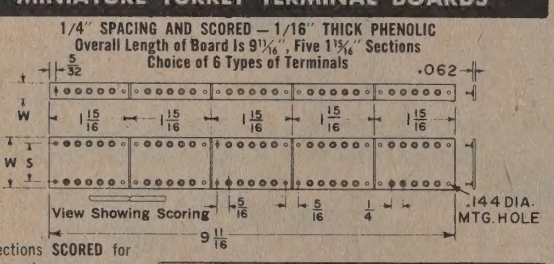
CHOICE OF TERMINALS



W	S	No. of Terms.	Material	With 1503 Term. Cat. No.	With 1509 Term. Cat. No.	With 1507 Term. Cat. No.	With 1545 Term. Cat. No.
½	Single Row	25	PBE	15031	15091	15071	15041
			GEE	15231	15291	15271	15241
1½	1	50	PBE	15032	15092	15072	15042
			GEE	15232	15292	15272	15242
1½	1 3/16	50	PBE	15036	15096	15076	15046
			GEE	15236	15296	15276	15246
2	1½	50	PBE	15033	15093	15073	15043
			GEE	15233	15293	15273	15243
2½	2	50	PBE	15034	15094	15074	15044
			GEE	15234	15294	15274	15244
3	2½	50	PBE	15035	15095	15075	15045
			GEE	15235	15295	15275	15245

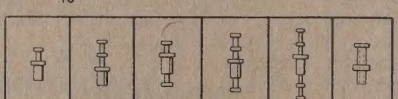
MINIATURE TURRET TERMINAL BOARDS

1/4" SPACING AND SCORED — 1/16" THICK PHENOLIC
Overall Length of Board Is 9 11/16", Five 1 15/16" Sections
Choice of 6 Types of Terminals



Five sections **SCORED** for easy operation.
M'tg. holes in each section.

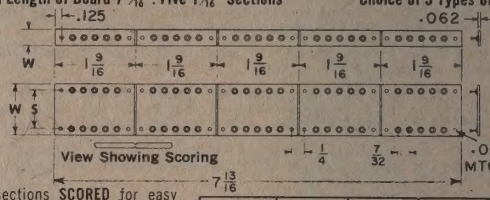
CHOICE OF TERMINALS



W	S	No. of Terms.	Material	With 1572 Term. Cat. No.	With 1573 Term. Cat. No.	With 1574 Term. Cat. No.	With 1578 Term. Cat. No.	With 1583 Term. Cat. No.	With 1559 Term. Cat. No.
5/16	Single Row	25	PBE	15047	15057	15067	15077	15087	15097
			GEE	15247	15257	15267	15277	15287	15297
7/8	9/16	50	PBE	15048	15058	15068	15078	15088	15098
			GEE	15248	15258	15268	15278	15288	15298
1⅛	13/16	50	PBE	15049	15059	15069	15079	15089	15099
			GEE	15249	15259	15269	15279	15289	15299

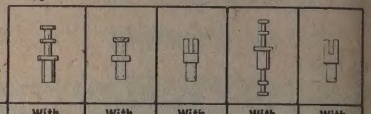
MINIATURE TURRET TERMINAL BOARDS

7/32" SPACING AND SCORED — 1/16" THICK PHENOLIC
Overall Length of Board 7 13/16". Five 1 9/16" Sections
Choice of 5 Types of Terminals



Five sections **SCORED** for easy operation.
M'tg. holes in each section.

CHOICE OF TERMINALS



W	S	No. of Terms.	Material	With 1502 Term. Cat. No.	With 1562 Term. Cat. No.	With 1526 Term. Cat. No.	With 1512 Term. Cat. No.	With 1533 Term. Cat. No.
5/16	Single Row	25	PBE	15021	15023	15025	15063	15053
			GEE	15221	15223	15225	15263	15253
3/4	½	50	PBE	15028	15029	15026	15064	15054
			GEE	15228	15229	15226	15264	15254
1	3/4	50	PBE	15022	15024	15030	15065	15056
			GEE	15222	15224	15230	15265	15256

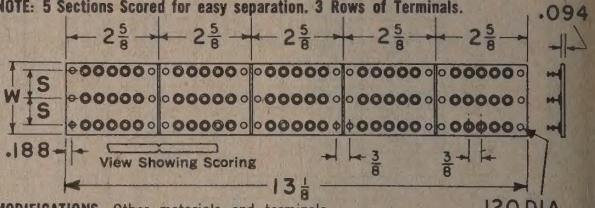
UNIVERSAL TERMINAL BOARDS

Designed for production or experimental use, these **standardized boards** are well suited for any electronic application requiring a sturdy mounting surface for resistors, condensers and components.

TERMINAL: 1503-3 HOT TIN DIP finish for easier soldering and infinite shelf life.

MATERIALS: **PBE** (Paper Base Elect. Mil-P-3115C type XXXP) or
GEE (Glass Epoxy Mil-P-18177 type G-10)

NOTE: 5 Sections Scored for easy separation. 3 Rows of Terminals.



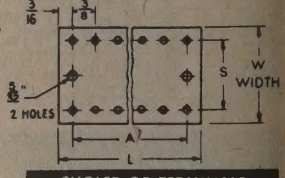
MODIFICATIONS: Other materials and terminals of your choice supplied. Marking may be added.

Assembled. with **TERMINAL** 1503-3

W	S	Total No. of Terms.	Material	Cat. No.
2½	1	75	PBE	15332
			GEE	15342
3½	1½	75	PBE	15333
			GEE	15343

READI-MADE TERMINAL BOARDS

• ECONOMICAL • SAVE TOOLING COST
• DELIVERY FROM STOCK • RANGE OF SIZES • APPROVED MATERIALS



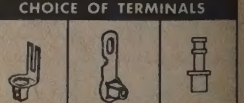
Readi-Made Terminal Boards are ideal for General Use. Excellent for mounting resistors, condensers, etc. Choice of Terminals.

MATERIAL: 1/16" thick Bakelite (Mil Spec 3115C-Pbe-P grade).

TERMINALS: 1204 and 1268 are stamped from .023 thick brass. 1539 is turned from 3/16" dia. brass rod.

PLATING: 1204 is Cadmium plated. 1268 and 1539 are Hot Tinned for easy soldering.

CHOICE OF TERMINALS



W	L	S	A	Terminals Each Side	With 1268 Term. Cat. No.	With 1204 Term. Cat. No.	With 1539 Term. Cat. No.
1	1⅛	11/16	1½	5	1268-10	1204-10	1239-10
1	2¼	11/16	1⅞	6	1268-12	1204-12	1239-12
1	5¼	11/16	4⅞	14	1268-28	1204-28	1239-28
1¼	3¾	1¼	3⅜	10	1268-20	1204-20	1239-20
1¼	4¼	1¼	3¾	11	1268-22	1204-22	1239-22
1¼	7⅛	1¼	6¾	19	1268-38	1204-38	1239-38
½	7⅛	Single Row	6¾	19	1268-19	1204-19	1239-19

KEYSTONE ELECTRONICS CORP.

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STANDARDIZED TERMINAL BOARDS AND BRACKETS

STANDARDIZED TURRET TERMINAL BOARDS

- SAVE TOOLING
- COMPLETE RANGE OF SIZES
- ECONOMICAL
- DELIVERY FROM STOCK

READI-MADE TERMINAL BOARDS are low cost and meet commercial and military specifications. They are produced in large quantities, making it possible to eliminate tooling and setup charges usually applied to non-standardized boards.

TERMINALS: Made of BRASS, QQ-B-626, COMP. 22, ½ HARD. Terminals are staked in all holes except end mounting holes.

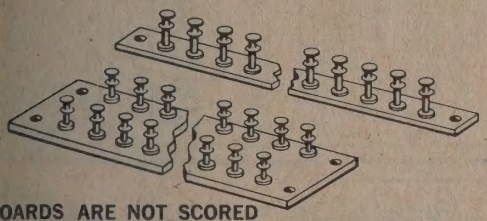
PLATING: HOT DIP SOLDER finish, MIL-F-14072. Recommended for longer shelf life and better solderability. Other platings can be furnished.

MATERIAL: Your choice of either PBE or GEE phenolic.

PBE: Paper base electrical, MIL-P-3115C, Type XXXP natural, Temp. 250 deg. F max.

GEE: Glass epoxy, MIL-P-18177, Type G-10, Temp. 300 deg. F max.

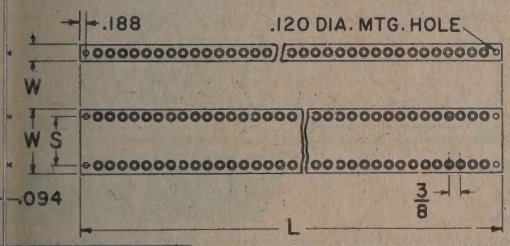
MODIFICATIONS: Other materials and terminals of your choice supplied. Marking may be added.



BOARDS ARE NOT SCORED

TERMINAL: 1503-3 HTD*used on these boards. Height above board 23/64" (MIL-T-55155 — SE12-X-C-08 style SE12-8).

MATERIAL: Choice of **PBE** or **GEE** 3/32" thick.



3/8" SPACING

Terminals are staked in all holes except end mounting holes.

S	L	No. of Terms. Each Side	Material PBE Cat. No.	Material GEE Cat. No.
Single Row	2⅝	5	15101	15301
	5¼	12	15102	15302
	7⅞	19	15103	15303
	10½	26	15104	15304
	13⅛	33	15105	15305
¾	2⅝	5	15106	15306
	5¼	12	15107	15307
	7⅞	19	15108	15308
	10½	26	15109	15309
	13⅛	33	15110	15310
1	2⅝	5	15111	15311
	5¼	12	15112	15312
	7⅞	19	15113	15313
	10½	26	15114	15314
	13⅛	33	15115	15315
1½	2⅝	5	15116	15316
	5¼	12	15117	15317
	7⅞	19	15118	15318
	10½	26	15119	15319
	13⅛	33	15120	15320
2	2⅝	5	15121	15321
	5¼	12	15122	15322
	7⅞	19	15123	15323
	10½	26	15124	15324
	13⅛	33	15125	15325
2½	2⅝	5	15126	15326
	5¼	12	15127	15327
	7⅞	19	15128	15328
	10½	26	15129	15329
	13⅛	33	15130	15330

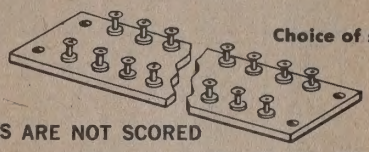
MINIATURE TURRET TERMINAL BOARDS

7/32" SPACING

These **GENERAL USE TERMINAL BOARDS** are made of certified materials to **JAN** and **MIL** specs. can be supplied in other grades of materials and with terminals of your choice; also marking when requested.

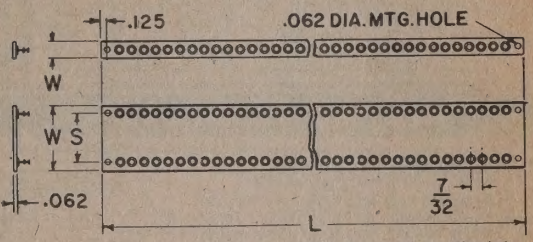
TERMINAL: Made of BRASS, QQ-B-626, COMP. 22, ½ Hard. HOT DIP SOLDER finish MIL-F-14072. Mounting holes in board at each end.

The **1562** terminal is often specified for support and connection of transistors, resistors and small component parts. There is a .043 dia. hole thru the terminal and it stands 5/32" above the board.



BOARDS ARE NOT SCORED

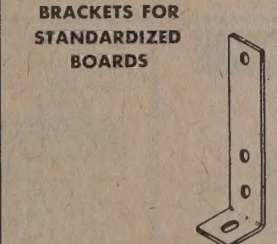
MATERIAL: Choice of **PBE** or **GEE** 1/16" thick.

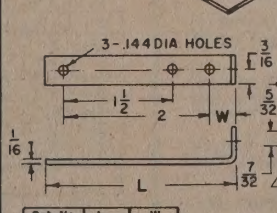


Terminals are staked in all holes except end mounting holes.

W	S	L	No. of Terms. Each Side	Material PBE Cat. No.	Material GEE Cat. No.
5/16	Single Row	1⅜	5	15401	15501
		3⅜	12	15402	15502
		4⅝	19	15403	15503
		6⅝	26	15404	15504
		7¹⁵⁄₁₆	33	15405	15505
3/4	1/2	1⅜	5	15406	15506
		3⅜	12	15407	15507
		4⅝	19	15408	15508
		6⅝	26	15409	15509
		7¹⁵⁄₁₆	33	15410	15510
1	3/4	1⅜	5	15411	15511
		3⅜	12	15412	15512
		4⅝	19	15413	15513
		6⅝	26	15414	15514
		7¹⁵⁄₁₆	33	15415	15515

BRACKETS FOR STANDARDIZED BOARDS



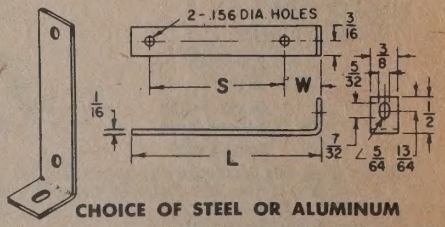


Cat. No.	L	W
1565	2⅝	3/8
1566	2¹³⁄₁₆	9/16

.062 THICK CADMIUM PLATED

BRACKETS FOR STANDARDIZED BOARDS

Originally designed for our line of standardized terminal boards; these brackets will find many uses for a variety of applications. Available in both steel with cad. plate finish or aluminum.



CHOICE OF STEEL OR ALUMINUM

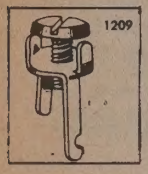
.062 thick Steel — Per Mil Spec. QQ-S 633 B Grade FS-1010 cadmium plated per QQ P-416 A Type II, Class B.
.062 thick Aluminum — Per QQ-A-318.

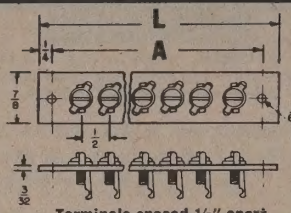
Cat. No. Steel	Cat. No. Alum.	W	L	S	FOR BOARDS Cat. Nos.		
1556	622	3/8	1⅜	1	15032	15072	15092
1567	623	3/8	2⅛	1½	15033	15073	15093
1568	624	3/8	2⅝	2	15034	15074	15094
1569	625	3/8	3⅛	2½	15035	15075	15095
1570	626	9/32	1¹¹⁄₁₆	¾	15022	15024	15030
1571	627	9/32	1⅝	1¹¹⁄₁₆	15036	15076	15096

KEYSTONE TERMINAL BOARDS

BINDING POST STRIPS

Terminal supplied on these boards is **No. 1209**





Terminals spaced ½" apart

- Available from Stock
- Eliminate Costly Setup Charges

MATERIAL SPECIFICATIONS:

LOW COST TAN COLORED FIBERGLASS — Nema Grade GPO-1 a glass polyester rated for 300°F.

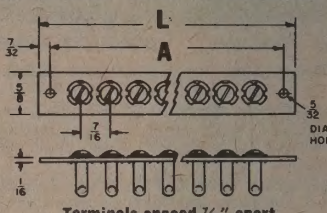
OR

GEE:
GLASS EPOXY: MIL-P-18177 temp., 300°F. MAX. Type G-10.

HEAVY DUTY 3/32" THICK MATERIAL 7/8" WIDE

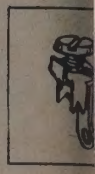
Glass Epoxy Cat. No.	Fiber-glass Cat. No.	L Length	A Mtg. C'trs	No. Term.
4147	4157	1½	1	1
4148	4158	2	1½	2
4149	4159	2½	2	3
4150	4160	3	2½	4
4151	4161	3½	3	5
4152	4162	4	3½	6
4153	4163	4½	4	7
4154	4164	5	4½	8
4155	4165	5½	5	9
4156	4166	6	5½	10

YOUR CHOICE OF GLASS EPOXY OR FIBERGLASS MATERIALS



Terminals spaced 7/16" apart

Terminal su on these boa **No. 124**



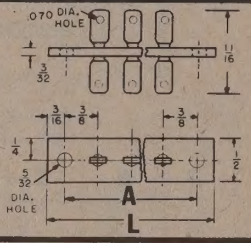
STANDARD 1/16" THICK MATERIAL 5/8" WIDE

Glass Epoxy Cat. No.	Fiber-glass Cat. No.	L Length	A Mtg. C'trs	No. Term.
4177	4167	1¼	⅞	1
4178	4168	1 11/16	1 5/16	2
4179	4169	2⅛	1¾	3
4180	4170	2 3/16	2 3/16	4
4181	4171	3	2⅝	5
4182	4172	3 3/16	3 1/16	6
4183	4173	3⅞	3½	7
4184	4174	4 3/16	3 15/16	8
4185	4175	4¾	4⅜	9
4186	4176	5 3/16	4 13/16	10

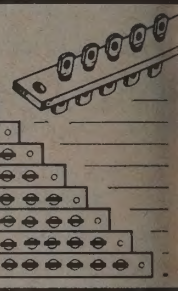
FEED-THRU TERMINAL BOARDS

- **Low Cost Feed-Thru Terminations**
- **For Light or Heavy Duty Applications**

Copper pins are forced into hole of the phenolic, then flattened and pierced. Terminals are hot tin dipped for good solderability.



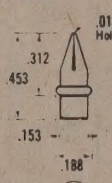
Cat. No.	No. Lugs	A Mtg. Ctr.	L Length
1220-1	1	¾	1⅛
1220-2	2	1⅛	1½
1220-3	3	1½	1⅞
1220-4	4	1⅞	2¼
1220-5	5	2¼	2⅝
1220-6	6	2⅝	3
1220-7	7	3	3⅜
1220-8	8	3⅜	3¾
1220-9	9	3¾	4⅛
1220-10	10	4⅛	4½



CONICAL GRIP BOARDS

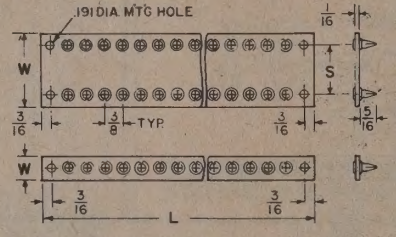
W	S	L	No. of Term. Each Side	Cat. No.
½	Single Row	2⅝	5	4500
		5¼	12	4501
		7⅞	19	4502
		10½	26	4503
		13⅛	33	4504
1½	1	2⅝	5	4505
		5¼	12	4506
		7⅞	19	4507
		10½	33	4509
		13⅛	33	4509
2	1½	2⅝	5	4510
		5¼	12	4511
		7⅞	19	4512
		10½	26	4513
		13⅛	33	4514

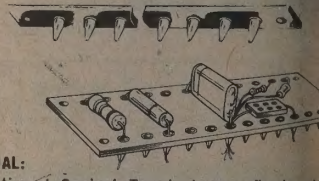
- **Spring Action Fingers Hold Leads**
- **Eliminates Time-consuming Wrapping of Wires**



CAT. NO. 1641

- **More Reliable**
- **Less Costly**
- **Time Saving**
- **Easily Serviced**

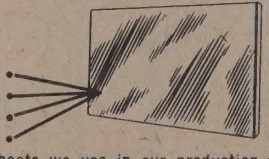




MATERIAL:
Brass, tinned Conical Terminals are firmly st to 1/16" **thick fiberglass insulator** that will withs temperatures to 300 degrees F. Wire leads retained until ready to multiple dip solder.

STANDARD LAMINATED PHENOLIC MATERIAL

- **RANGE OF SIZES**
- **CERTIFIED MATERIAL**
- **CHOICE OF —**
  - **XXXP**
  - **GLASS EPOXY**
  - **COPPER CLAD**
  - **FIBERGLASS**



The finest grade laminated phenolic sheets we use in our production fabrication are available to you in a range of standard sizes or special sizes cut to order; and in a variety of types.

NEMA GRADE XXXP-MIL-P-3115C, paper base electrical-color natural. Most commonly used for panels and terminal boards. Excellent electrical grade and dimensional stability. Max. operating temp. continuous 250 deg. F.

NEMA GRADE G-10, MIL-P-18177B-GEE, color green **GLASS CLOTH EPOXY.** Superior chemical resistance, excellent mechanical and electrical properties. Max. operating temp. continuous 300 deg. F.

COPPER CLAD LAMINATES, XXXP MIL-P-13949 TYPE PP and **GLASS EPOXY MIL-P-13949B TYPE FL-GE,** are used mainly for printed circuitry. The copper foil serves as the conductor and the laminate provides the insulating support. 2-ounce copper foil is laminated to one or both sides of the insulator. We **catalog both types in XXXP and G-10.**

FIBERGLASS REINFORCED POLYESTER NEMA GRADE GPO-1 with a class 155C (300°F) rating. Color is Tan. Excellent mechanical and electrical properties. Fabricates similar to Phenolic and can be punched cold.

- **SPECIFIED SIZES CUT TO ORDER**

Size Width & Length	XXXP Natural	Glass Epoxy	XXXP Cop. Clad (1 Side)	XXXP Cop. Clad (2 Sides)	Glass Epoxy Cop. Clad (1 Side)	Glass Epoxy Cop. Clad (2 Sides)	Fibe glas Polye
1/16 THICK MATERIALS							
	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat.
5/16 x 7 13/16	2006	2022	—	—	—	—	23
¾ x 7 13/16	2020	2023	—	—	—	—	23
1 x 7 13/16	2021	2024	—	—	—	—	23
2 x 4½	1970	1978	1985	1992	1999	2013	23
2¼ x 3	1971	1979	1986	1993	2007	2014	23
3 x 4½	1972	1980	1987	1994	2008	2015	23
4½ x 6½	1973	1981	1988	1995	2009	2016	23
4½ x 8½	1974	1982	1989	1996	2010	2017	23
8½ x 17	1975	1983	1990	1997	2011	2018	23
9 x 12	1976	1984	1991	1998	2012	2019	23
3/32 THICK MATERIALS							
	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat.
½ x 13⅛	2025	2031					23
1 3/16 x 13⅛	2026	2032					23
1½ x 13⅛	2027	2033	NOT SUPPLIED IN THESE TYPES				23
2 x 13⅛	2028	2034					23
2½ x 13⅛	2029	2035					23
3 x 13⅛	2030	2036					23

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STANDARDIZED PLUG-IN HOUSINGS

PLUG IN HOUSINGS

nce the appearance and give that professional look to your products using e molded housings. Ideally suited for packaging relays, logic packages, net- s and miniature circuitry. Durable, lightweight covers that will withstand tions and rough usage. A most popular size metal cover is included in this g of stock items.

ERS: Molded of G.P. black phenolic and fit standard sockets.

r are Brass, Nickel Plated. Guide hole tapped 8-32 for terminal board o ting stud.

ARIETY OF MOLDED MATERIALS
OOD CHEMICAL RESISTANCE
OW WATER ABSORPTION

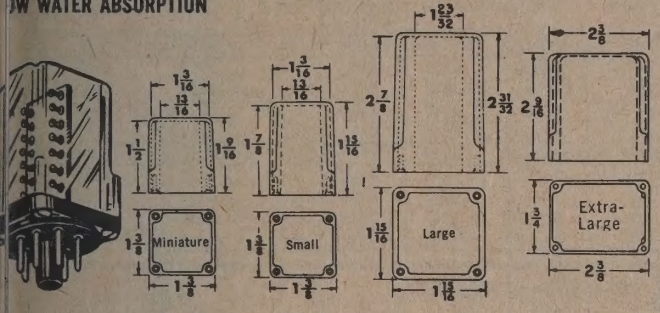


FIG. 1 FIG. 2 FIG. 3 FIG. 4 FIG. 5

MATERIAL CHARACTERISTICS:

POLYSTYRENE: For general purpose use where high impact strength is not required and temperature would not exceed 170°F.

BUTYRATE: 3 times the impact strength of Polystyrene and excellent electrical properties, use wherever temperatures of 210°F exist.

NYLON: Impact strength slightly less than Butyrate but recommended for use where temperatures are as high as 300°F.

Housing with Octal Header & 4 Screws CAT. NO.	Housing Only CAT. NO.	Fig. No.	Type	Material	Color
660	670	1	Mini	Butyrate	Clear
661	671	1	Mini	Nylon	White
662	672	1	Mini	Polystyrene	Clear
641	645	1	Mini	Polystyrene	Opaque Black
642	646	1	Mini	Polystyrene	Transp. Red
663	673	2	Small	Butyrate	Clear
664	674	2	Small	Nylon	White
665	676	2	Small	Polystyrene	Clear
643	647	2	Small	Polystyrene	Opaque Black
644	648	2	Small	Polystyrene	Transp. Red
650	649	3	Large	Butyrate	Clear
668	679	3	Large	Polystyrene	Clear
677	666	3	Large	Polystyrene	Opaque Black
678	667	3	Large	Polystyrene	Transp. Red
639	640	4	Extra-Large	Polystyrene	Clear
669	680	5	Small	Steel	Electro Tin Plate

HEADERS

ERS: Headers are available in two sizes and a variety of pin configurations fit standard sockets. Molded of general purpose phenolic with brass nickel d pins sturdily staked. Guide hole tapped 8-32 for terminal board mounting

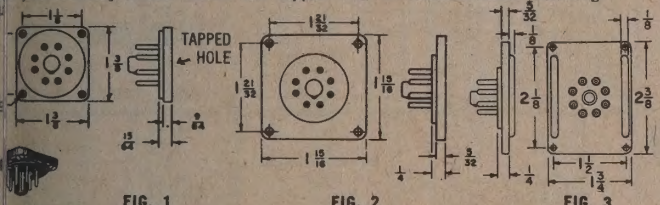


FIG. 1 FIG. 2 FIG. 3

1⅜ Sq. Headers for Mini & Small Housing (FIG. 1) CAT. NO.	Pin Configuration	1 15/16 Sq. Headers for Large Housing (FIG. 2) CAT. NO.	1¾ x 2⅜ Headers for Extra Large Housing (FIG. 3) CAT. NO.
681	Octal	685	690
682	Nine Pin	Not Available	Not Available
683	Eleven Pin	686	Not Available
684	Twenty Pin	687	691

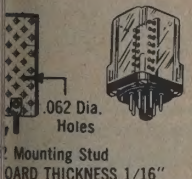
SELF-TAPPING SCREWS

CAT. NO. 688 — For miniature & small covers #4 x ⅜"
CAT. NO. 689 — For large covers #4 x ½"

TERMINAL BOARDS

(FOR USE WITH ABOVE HOUSINGS)

E BOARDS ARE STOCKED IN XXXP PAPERBASE AND GLASS EPOXY MATERIAL. ING OF HOLES IS .100 and .200 ALTERNATES. AN 8-32 THREADED STUD IS LY EYELETTED TO THE BOARD AND IS EASILY ASSEMBLED INTO THE ED HOLE OF THE HEADERS.

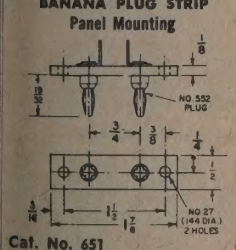


XXX PBE MIL-P-3115C Bakelite Cat. No.	Glass Epoxy G-10, GEE MIL-P-18177B Cat. No.	Size of Board with Stud	For Covers Listed Above
692	696	1 x 1 5/16	Miniature
693	697	1⅛ x 1¾	Small
694	698	1½ x 2¾	Large
695	699	1⅛ x 1 7/16	Metal Case
637	638	1 5/16 x 2⅜	Xtra Large

BANANA PLUG AND JACK STRIP

3/4" Centers — Mate with all Stack-Up Plugs

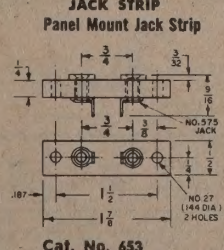
BANANA PLUG STRIP
Panel Mounting



Cat. No. 651

n needed accessory for patch- boards and stack-up plugs. esistance banana plugs are d on ¾" centers, staked into thick black bakelite and plugs.

JACK STRIP
Panel Mount Jack Strip



Cat. No. 653

These panel mounting strips mate with any ¾" spaced stack-up plug or individual patchcords. Silver plated jacks are staked into ¼" thick black bakelite with solder lugs. Multiples can be supplied in most instances without tooling or setup charges.

BANANA PLUG IN MODULES

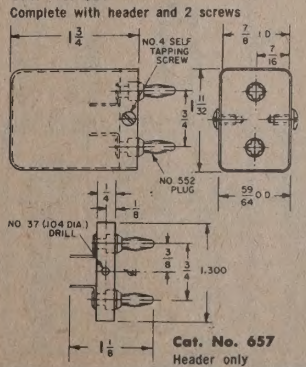
- Suitable for test adaptors, modules, filters, etc.
- Low resistance Beryllium Copper spring plugs
- Shielded or molded hi-impact Butyrate cover
- Mates with all standard patch board plugs

BANANA PLUG SPRINGS: One piece Beryllium Copper per QQ-C-533 and heat treated to 15N, 73-79.

PLUG BODY: Brass QQ-626 Comp. 22½ H; silver plated, MIL-P-14072 per QQ S-365.

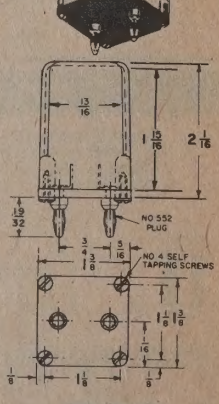
ALUMINUM SHELL

Cat. No. 659
Complete with header and 2 screws

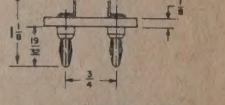


Cat. No. 657
Header only

PLASTIC HOUSING



Cat. No. 658
Complete with header and 4 screws



Cat. No. 656
Header only

KEYBOARDS, STANDOFFS & SPACERS

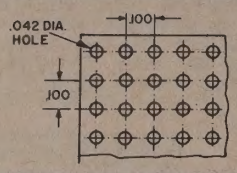
MICRO-MINIATURE KEYBOARDS

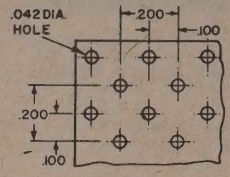
WITH .042 DIA. HOLES

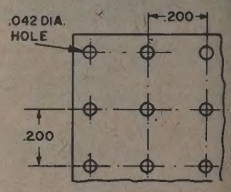
- PERMITS HIGHER COMPONENT DENSITY FOR SUBMINIATURE CIRCUITRY
- FOR MODULE STACKS
- SMALLER PLUG-IN CARDS POSSIBLE

Material:
GLASS EPOXY UNCLAD Mil-P-18177 G-10 (GEE) Temp. 300°F. Max.
GLASS EPOXY Copper Clad Mil-P-13949B (GE) Temp. 300°F. Max.

Tolerance: Length and width overall dimension after fabrication Plus or Minus .015







"P" PATTERN .042 HOLES .100 x .100				"M" PATTERN .042 HOLES .100 x .200				"J" PATTERN .042 HOLES .200 x .200			
Width & Length	No. Holes W & L	Glass Epoxy	Glass Epoxy Cop. Clad (1 Side)	Width & Length	No. Holes W & L	Glass Epoxy	Glass Epoxy Cop. Clad (1 Side)	Width & Length	No. Holes W & L	Glass Epoxy	Glass Epoxy Cop. Cl (1 Sid
1/32" Thick Material		Cat. No.	Cat. No.	1/32" Thick Material		Cat. No.	Cat. No.	1/32" Thick Material		Cat. No.	Cat. N
2x4½	19x44	4225	4234	2x4½	9x22x2	4242	4250	2x4½	9x22	4258	4266
2x6	19x59	4226	4235	2x6	9x29x2	4243	4251	2x6	9x29	4259	4267
4½x6	44x59	4227	4236	4½x6	22x29x2	4244	4252	4½x6	22x29	4260	4268
6x17	59x169	4228	4237	6x17	29x84x2	4245	4253	6x17	29x84	4261	4269
3/64" Thick Material		Cat. No.	Cat. No.	3/64" Thick Material		Cat. No.	Cat. No.	3/64" Thick Material		Cat. No.	Cat. N
2x4½	19x44	4229	4238	2x4½	9x22x2	4246	4254	2x4½	9x22	4262	4270
2x6	19x59	4230	4239	2x6	9x29x2	4247	4255	2x6	9x29	4263	4271
4½x6	44x59	4231	4240	4½x6	22x29x2	4248	4256	4½x6	22x29	4264	4272
6x17	59x169	4232	4241	6x17	29x84x2	4249	4257	6x17	29x84	4265	4273

EYELET KEYBOARDS

An essential building block that will assist the designer and engineer in planning and layout of electronic circuitry. Eyelets are tinned for each soldering. Boards can be stored indefinitely and will retain soldering characteristics.

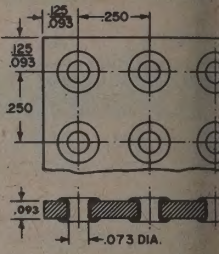
- Replaces Costly Terminal Board Assemblies
- For Lab or Production Use

Material: PBE XXXP Phenolic MIL-P-3115C.
Eyelets: Brass QQ626 Comp. 22 — ¼" Spacing in Both Directions
Finish: Tinned, Mil-P-14072, Type 221.

FOR MINIATURE CIRCUITRY

- Available from Stock
- Construct Modules—Bridge Circuits—Printed Circuit Layout

Cat. No.	No. of Holes W & L	Width	Length	No. of Eyelets
4283	5x5	1¼	1¼	25
4284	6x10	1½	2½	60
4285	10x13	2½	3¼	130
4286	13x18	3¼	4½	234
4287	14x16	3½	4	224
4288	16x24	4	6	384



Eyelets Installed in all Ho

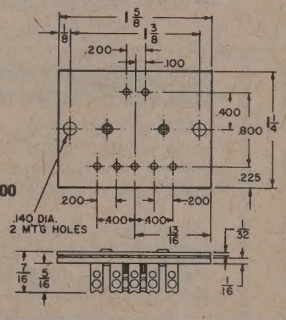
MODULE WAFER SOCKETS FOR .040 PINS

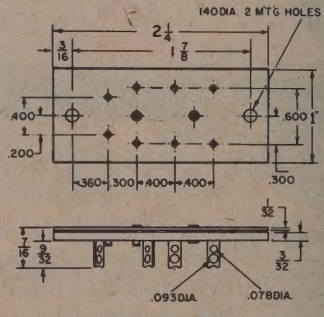
Precision drilled wafers hold contacts in perfect alignment. Insertion is easy and pins are grasped firmly.

Most Standard Encapsulated Operational Amplifiers and Module Circuits

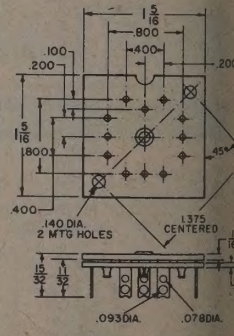
Material:
1400 and 1401 made with G-10 Glass Epoxy Bakelite
1402 is made with PBE Phenolic Natural color

Cat. No. 1400





Cat. No. 1401

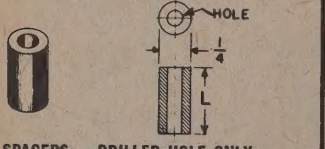


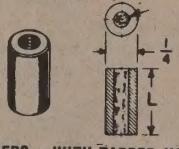
Cat. No. 1402

PHENOLIC SPACERS

- Good Mechanical Strength
- Resists Abrasions & Chemicals
- Excellent Dielectric
- Low Moisture Absorption

Material: PBE Grade MIL-P-79A Natural Color Phenolic — Special Sizes Made to Order — Promptly Quoted





	SPACERS — DRILLED HOLE ONLY			SPACERS — WITH TAPPED HOLE		
Length Inches	For #4 Screw .120 Hole Cat. No.	For #6 Screw .140 Hole Cat. No.	For #8 Screw .171 Hole Cat. No.	4-40 Thread Cat. No.	6-32 Thread Cat. No.	8-32 Thread Cat. No.
¼ (250)	360	367	1490	376	383	390
⅜ (.375)	361	368	1491	377	384	391
½ (.500)	362	369	1492	378	385	392
¾ (.750)	363	370	1493	379	386	393
1 (1.000)	364	371	1494	380	387	394
1½ (1.500)	365	372	374	381	389	395
2 (2.000)	366	373	375	382	389	396

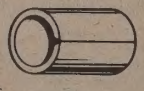
1.500 and 2" are tapped ⅜ deep each end

ALUMINUM ECONOMY SPACERS

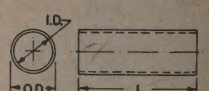
FOR No. 4, 6 or 8 SCREWS

- Precision Formed
- No Burrs

Made of flat strip aluminum and rolled on precision equipment. Assures maximum bearing surface, square ends.



Tight Joint on Outside Diameter



Spacer For	Description and Tol. I.D. ±.005	D.D. ±.00
#4	.125	.167
#6	.151	.193
#8	.178	.232

L Length Inches	For #4 Cat. No.	For #6 Cat. No.	For #8 Cat. No.	L Length Inches	For #4 Cat. No.	For #6 Cat. No.	For # Cat. N
3/16	397	—	—	¾	418	425	432
¼	398	405	412	⅞	419	426	433
5/16	399	406	413	1	420	427	434
⅜	400	407	414	1¼	421	428	435
7/16	401	408	415	1½	422	429	436
½	402	409	416	1¾	—	430	437
5/8	403	410	417	2	—	—	438

KEYSTONE ELECTRONICS CORP.

Net

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STANDOFFS & SPACERS

SWAGE TYPE THREADED STANDOFFS

TIAL: ALL HARDWARE ON THIS PAGE IS MADE OF: BRASS MIL SPEC. QQ-B-
COMP. 22—½ HARD.

ROUND

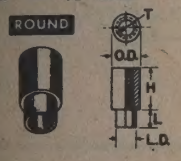


Plate Mil-F-14072
290 Type V

HEX

Cadmium plate per QQ-P-416 Type 2
Class B and clear chromate.

ND kel ed No.	H Height Above Panel	L	For Panel Thickness	LD	OD	T Thread	HEX Cadmium Plated Cat. No.
9-2	1/8	.109	1/16	.125	5/32	2-56	—
9-3	1/8	.140	3/32	.125	5/32	2-56	—
0-2	3/16	.109	1/16	.125	5/32	2-56	—
0-3	3/16	.140	3/32	.125	5/32	2-56	—
1-2	1/4	.109	1/16	.125	5/32	2-56	—
1-3	1/4	.140	3/32	.125	5/32	2-56	—
6-2	3/8	.109	1/16	.125	5/32	2-56	—
6-3	3/8	.140	3/32	.125	5/32	2-56	—
0 A	1/8	.109	1/16	.187	1/4	4-40	1653-2
0 F	1/8	.140	3/32	.187	1/4	4-40	1653-3
0-2	1/4	.109	1/16	.187	1/4	4-40	1627-2
0-3	1/4	.140	3/32	.187	1/4	4-40	1627-3
1-2	3/8	.109	1/16	.187	1/4	4-40	1628-2
1-3	3/8	.140	3/32	.187	1/4	4-40	1628-3
3-2	1/2	.109	1/16	.187	1/4	4-40	1629-2
3-3	1/2	.140	3/32	.187	1/4	4-40	1629-3
4-2	5/8	.109	1/16	.187	1/4	4-40	1654-2
4-3	5/8	.140	3/32	.187	1/4	4-40	1654-3
5-2	3/4	.109	1/16	.187	1/4	4-40	1655-2
5-3	3/4	.140	3/32	.187	1/4	4-40	1655-3
2-2	1	.109	1/16	.187	1/4	4-40	1630-2
2-3	1	.140	3/32	.187	1/4	4-40	1630-3
0 B	1/8	.109	1/16	.187	1/4	6-32	1620-2
0 C	1/8	.140	3/32	.187	1/4	6-32	1620-3
0 D	1/8	.171	1/8	.187	1/4	6-32	1620-4
2-2	3/16	.109	1/16	.187	1/4	6-32	—
2-3	3/16	.140	3/32	.187	1/4	6-32	—
2-4	3/16	.171	1/8	.187	1/4	6-32	—
6	1/4	.109	1/16	.187	1/4	6-32	1621-2
6 B	1/4	.140	3/32	.187	1/4	6-32	1621-3
6 D	1/4	.171	1/8	.187	1/4	6-32	1621-4
1 B	3/8	.109	1/16	.187	1/4	6-32	1622-2
1 C	3/8	.140	3/32	.187	1/4	6-32	1622-3
1 D	3/8	.171	1/8	.187	1/4	6-32	1622-4
4-2	1/2	.109	1/16	.187	1/4	6-32	—
4-3	1/2	.140	3/32	.187	1/4	6-32	—
4-4	1/2	.171	1/8	.187	1/4	6-32	—
5-2	5/8	.109	1/16	.187	1/4	6-32	—
5-3	5/8	.140	3/32	.187	1/4	6-32	—
5-4	5/8	.171	1/8	.187	1/4	6-32	—
8-2	3/4	.109	1/16	.187	1/4	6-32	—
8-3	3/4	.140	3/32	.187	1/4	6-32	—
8-4	3/4	.171	1/8	.187	1/4	6-32	—
9-2	1	.109	1/16	.187	1/4	6-32	—
9-3	1	.140	3/32	.187	1/4	6-32	—
9-4	1	.171	1/8	.187	1/4	6-32	—

ING TOOLS FOR ABOVE STAND-OFFS

sion made tools—heat treated and plated. Will give your job the pro-
nal appearance. Set of tools consist of: Top Staking Tool and Anvil.

Cat. No.	
TL-19	For Bushing 5/32 OD with 2-56 Thd.
TL-20	For Bushing 1/4 OD with 4-40 Thd.
TL-21	For Bushing 1/4 OD with 6-32 Thd.

CUT COST OF SERVICING • SPACE SAVER
INTERCONNECT CIRCUITS OR SERVICES
WITHOUT DANGER OF SHORTING
WIRING EXPOSED FOR EASY TEST

Material: Made of Brass
Finish: Nickel Plate

These standoffs mount at front of the board.

T Thread	D Diam.	L Length	U	M	P	Standoff Only Cat. No.
4-40	.187	3/4	.172	.375	.375	1657A
4-40	.187	1	.250	.375	.625	1657B
6-32	.250	3/4	.172	.375	.375	1548E
6-32	.250	1	.250	.375	.625	1548F
8-32	.250	3/4	.172	.375	.375	1692D
8-32	.250	1	.250	.375	.625	1692E

THREADED SPACERS

THREADED SPACERS 1/4" O.D. THREADED 4-40, 6-32, 8-32 AVAILABLE EITHER IN ROUND OR HEX. ROUND TYPE IS NICKEL PLATED, HEX TYPE IS CADMIUM.

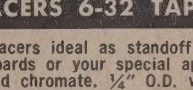
Cadmium plate per QQ-P-416 Type 2
Class B and clear chromate.

Nickel Plate Mil-F-14072
QQ-N-290 Type V

HEX Cadmium Plated Cat. No.	D	L	T Thread	ROUND Nickel Plated Cat. No.
1450	3/16	1/4	4-40	1547
1656	3/16	1/2	4-40	1657
1656A	3/16	3/4	4-40	1657A
1656B	3/16	1	4-40	1657B
1450A	1/4	1/4	4-40	1547A
1450B	1/4	3/8	4-40	1547B
1450C	1/4	1/2	4-40	1547C
1450D	1/4	3/4	4-40	1547D
1450E	1/4	1	4-40	1547E
1451A	1/4	1/4	6-32	1548A
1451B	1/4	3/8	6-32	1548B
1451C	1/4	1/2	6-32	1548C
1451D	1/4	5/8	6-32	1548D
1451E	1/4	3/4	6-32	1548E
1635	1/4	1	6-32	1548F
1474A	1/4	1/4	8-32	1692A
1474B	1/4	3/8	8-32	1692B
1474C	1/4	1/2	8-32	1692C
1474D	1/4	3/4	8-32	1692D
1474E	1/4	1	8-32	1692E
1452A	3/8	3/8	8-32	1549A
1452B	3/8	1/2	8-32	1549B
1452C	3/8	5/8	8-32	1549C
1452D	3/8	3/4	8-32	1549D
1452E	3/8	1	8-32	1549E

HEX SPACERS 6-32 TAPPED BOTH ENDS

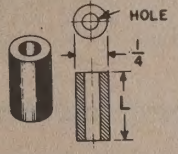
Extra long length spacers ideal as standoff legs for Keystone pre-punched boards or your special application. Brass cad. plated and chromate. 1/4" O.D. with 6-32 x 3/8" deep tapped holes both ends.



Cat. No.	Length
1635	1
1636	1 1/4
1637	1 1/2
1638	1 3/4
1639	2
1642	2 1/4
1643	2 1/2

ROUND BRASS SPACERS

Made of Brass MIL Spec. QQ-2-626A Comb. 22 ½ Hard.
Finishes: Nickel Plate Mil-F-14072 QQ-N-233 Type V.

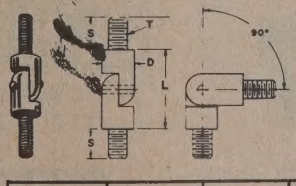


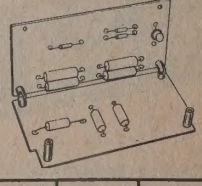
Length Inches	For #4 Sc'R .120 I.D. Cat. No.	For #6 Sc'R .140 I.D. Cat. No.	For #8 Sc'R .171 I.D. Cat. No.
1/4	1454A	1457A	1480
3/8	1454B	1457B	1481
1/2	1454C	1457C	1482
3/4	1457D	1457D	1483
1	1454E	1457E	1484

HINGED STANDOFFS FOR TERMINAL BOARDS

- APPLICATIONS UNLIMITED
- TIME SAVING

Only 2 screws used to fasten board in place or open the hinged board.





Hinge Cat. No.	T Thread	L Length	D Diam.	S	P	Standoff Only For Front of Board Cat. No.
357	4-40	1/2	.187	1/4	1/4	1657
—	—	—	—	—	—	—
358	6-32	1/2	.250	5/16	1/4	1548C
—	—	—	—	—	—	—
359	8-32	1/2	.250	5/16	1/4	1692C
—	—	—	—	—	—	—

KEYSTONE ELECTRONICS CORP.

Kulka TERMINAL BOARDS

MOLDED MATERIALS:
General Purpose Phenolic (commercial grade) unless otherwise specified.

Military Code	Kulka Code	Description
—	—	Commercial Grade Phenolic
CFG	C	Cellulose Filled Phenolic
MFE	M	Mineral Filled Phenolic
MME	GMF	Mineral Filled Melamine
MDG	B	Mineral Filled Diallyl Phthalate
MAI-60	D	Glass Fibre Filled Alkyd
GDI-30F	JJ	Glass Fibre Filled Diallyl Phthalate, Flame Retardant

ORDERING CODE For convenience and accuracy in ordering please specify catalog numbers as shown:

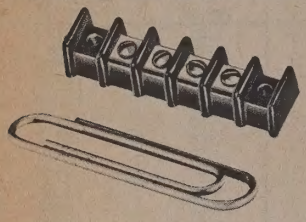
CODE EXAMPLE

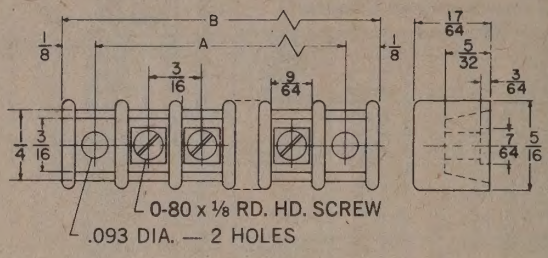
Series	Material Code*	Lug Type*	Number of Terminals	Special Hardware*	Service*
409	C	3/4ST	21	SS	F

409-C-3/4ST-21-SSF

*Omit if not applicable

409 SERIES





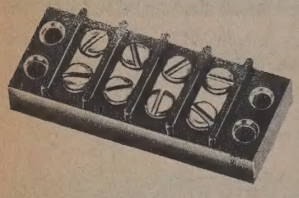
HARDWARE:
SCREWS & TERMINALS: Brass, with a silver and gold flash.
SOLDER TERMINALS: Brass, hot-tinned

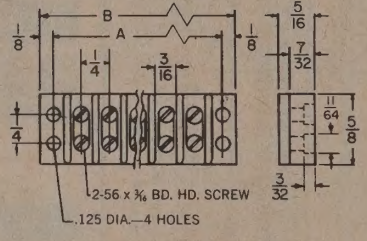
WIRE SIZES:
Will accommodate lugs for wire sizes: AWG #26 to 22.

ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 750 Volts RMS.
WITH Marker Strip: 1500 Volts RMS.
CURRENT RATING: 2 Amps.

Number of Terminals	Dimensi A	
1	3/8	
2	9/16	
3	3/4	1
4	15/16	1
5	1 1/8	1
6	1 5/16	1
7	1 1/2	1
8	1 11/16	1
9	1 7/8	2
10	2 1/16	2
11	2 1/4	2
12	2 7/16	2
13	2 5/8	2
14	2 13/16	3
15	3	3
16	3 3/16	3
17	3 3/8	3
18	3 5/16	3
19	3 3/4	4
20	3 15/16	4
21	4 1/8	4

410 SERIES





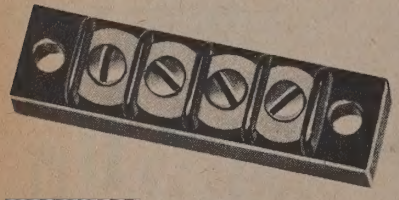
HARDWARE:
SCREWS & TERMINALS: Brass, nickel plated.
SOLDER TERMINALS: Brass, hot-tinned

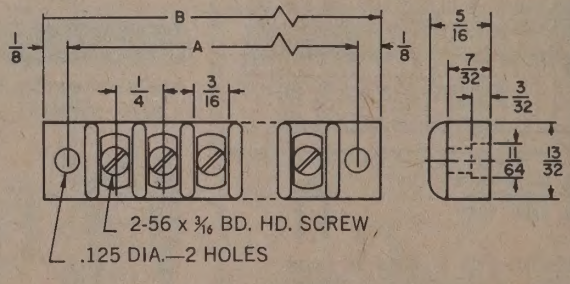
WIRE SIZES
Will accommodate lugs for wire sizes: AWG #20 to #18.

ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1000 Volts RMS.
WITH Marker Strip: 2000 Volts RMS.
CURRENT RATING: 5 Amps.

Number of Terminals	Dimensi A	
1	½	
2	¾	1
3	1	1
4	1¼	1
5	1½	1
6	1¾	2
7	2	2
8	2¼	2
9	2½	2
10	2¾	3
11	3	3
12	3¼	3
13	3½	3
14	3¾	4
15	4	4
16	4¼	4
17	4½	4
18	4¾	5
19	5	5
20	5¼	5
21	5½	5
22	5¾	6

411 SERIES





HARDWARE:
SCREWS & TERMINALS: Brass, nickel plated.
SOLDER TERMINALS: Brass, hot-tinned

WIRE SIZES
Will accommodate lugs for wire sizes: AWG #20 to #18.

ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1000 Volts RMS.
WITH Marker Strip: 2000 Volts RMS.
CURRENT RATING: 5 Amps.

Number of Terminals	Dimension A	B
1	½	¾
2	¾	1
3	1	1½
4	1¼	1½
5	1½	1¾
6	1¾	2
7	2	2½
8	2¼	2½
9	2½	2¾
10	2¾	3
11	3	3½
12	3¼	3½
13	3½	3¾
14	3¾	4
15	4	4½
16	4¼	4½
17	4½	4¾
18	4¾	5
19	5	5½
20	5¼	5½
21	5½	5¾
22	5¾	6

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KULKA COMPLETE TERMINAL BOARD CATALOG 17A ON REQUEST

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Kulka TERMINAL BOARDS

CDED MATERIALS:
nal Purpose Phenolic (commercial grade) unless otherwise spec-
d

tary Code	Kulka Code	Description
-	—	Commercial Grade Phenolic
FG	C	Cellulose Filled Phenolic
FE	M	Mineral Filled Phenolic
ME	GMF	Mineral Filled Melamine
DG	B	Mineral Filled Diallyl Phthalate
AI-60	D	Glass Fibre Filled Alkyd
DI-30F	JJ	Glass Fibre Filled Diallyl Phthalate, Flame Retardant

ORDERING CODE For convenience and accuracy in ordering, please specify catalog numbers as shown:

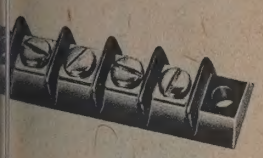
CODE EXAMPLE

Series	Material Code*	Lug Type*	Number of Terminals	Special Hardware*	Service*
699	C	3/4ST	23	SI	F

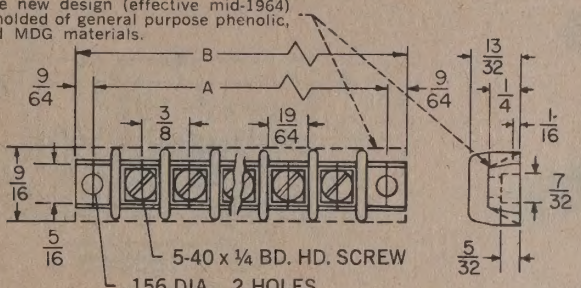
*Omit If not applicable

699-C-3/4ST-23SIF

99 SERIES



Dashed lines indicate new design (effective mid-1964) for terminal boards molded of general purpose phenolic, CFG, MFE, MME and MDG materials.



DWARE:
VS & TERMINALS: Brass, nickel plated.
R TERMINALS: Brass, hot-tinned

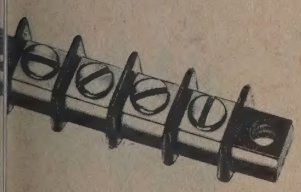
E SIZES
commodate lugs for wire sizes: AWG #22 to 16.

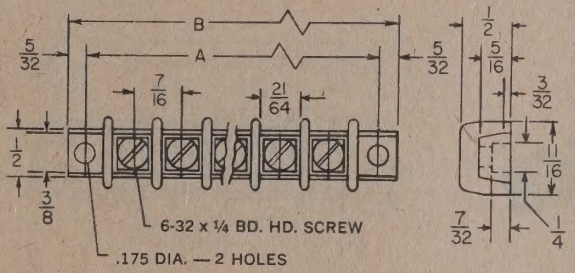
ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1100 Volts RMS.
WITH Marker Strip: 2500 Volts RMS.
CURRENT RATING: 15 Amps.

Number of Terminals†	Dimensions A	B
1	¾	1 1/32
2	1 1/8	1 13/32
3	1 1/2	1 25/32
4	1 7/8	2 5/32
5	2 1/4	2 17/32
6	2 5/8	2 29/32
7	3	3 9/32
8	3 3/8	3 21/32
9	3 3/4	4 1/32
10	4 1/8	4 13/32
11	4 1/2	4 25/32
12	4 7/8	5 5/32
13	5 1/4	5 17/32
14	5 5/8	5 29/32
15	6	6 5/32
16	6 3/8	6 21/32
17	6 3/4	7 1/32
18	7 1/8	7 13/32
19	7 1/2	7 25/32
20	7 7/8	8 5/32
21	8 1/4	8 17/32
22	8 5/8	8 29/32

†New design will have up to thirty terminals in general purpose phenolic, CFG, MFE, MME and MDG materials.

99 SERIES





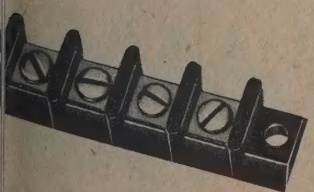
DWARE:
VS & TERMINALS: Brass, nickel plated.
R TERMINALS: Brass, hot-tinned

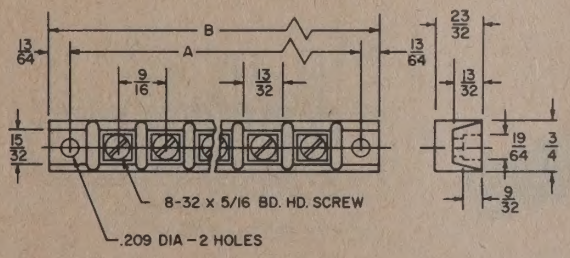
E SIZES
commodate lugs for wire sizes: AWG #16 to 14.

ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1100 Volts RMS.
WITH Marker Strip: 3000 Volts RMS.
CURRENT RATING: 20 Amps.

Number of Terminals	Dimensions A	B
1	7/8	1 3/16
2	1 3/16	1 5/8
3	1 3/4	2 1/16
4	2 3/16	2 1/2
5	2 5/8	2 15/16
6	3 1/16	3 3/8
7	3 1/2	3 13/16
8	3 15/16	4 1/4
9	4 3/8	4 11/16
10	4 13/16	5 1/8
11	5 1/4	5 5/8
12	5 11/16	6
13	6 1/8	6 7/16
14	6 5/16	6 7/8
15	7	7 5/16
16	7 7/16	7 3/4
17	7 7/8	8 3/16
18	8 5/16	8 5/8
19	8 3/4	9 1/16
20	9 3/16	9 1/2
21	9 5/8	9 15/16
22	10 1/16	10 3/8
23	10 1/2	10 13/16

2 SERIES





DWARE:
S & TERMINALS: Brass, nickel plated.
R TERMINALS: Brass, hot-tinned

SIZES
commodate lugs for wire sizes: AWG #14 to 12.

ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1600 Volts RMS.
WITH Marker Strip: 3300 Volts RMS.
CURRENT RATING: 30 Amps.

Number of Terminals	Dimensions A	B
1	1 1/8	1 17/32
2	1 11/16	2 3/32
3	2 1/4	2 21/32
4	2 13/16	3 7/32
5	3 3/8	3 25/32
6	3 15/16	4 11/32
7	4 1/2	4 29/32
8	5 1/16	5 15/32
9	5 5/8	6 1/32
10	6 3/16	6 19/32
11	6 3/4	7 3/32
12	7 5/16	7 23/32
13	7 7/8	8 9/32
14	8 7/16	8 27/32
15	9	9 13/32
16	9 9/16	9 31/32
17	10 1/8	10 17/32
18	10 11/16	11 3/32

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Kulka TERMINAL BOARDS

MOLDED MATERIALS:

General Purpose Phenolic (commercial grade) unless otherwise specified.

Military Code	Kulka Code	Description
—	—	Commercial Grade Phenolic
CFG	C	Cellulose Filled Phenolic
MFE	M	Mineral Filled Phenolic
MME	GMF	Mineral Filled Melamine
MDG	B	Mineral Filled Diallyl Phthalate
MAI-60	D	Glass Fibre Filled Alkyd
GDI-30F	JJ	Glass Fibre Filled Diallyl Phthalate, Flame Retardant

ORDERING CODE

For convenience and accuracy in ord please specify catalog numbers as shown:

CODE EXAMPLE

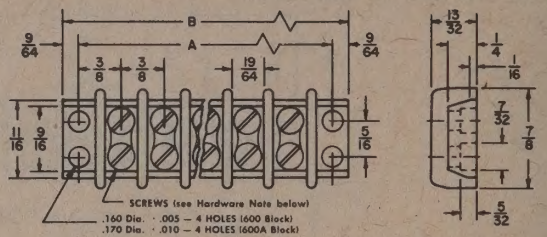
Series**	Material Code*	Lug Type*	Number of Terminals	Special Hardware*	Service
600	C	¾ST	22	SI	F

600C—¾ST—22SIF

*Omit if not applicable

**Specify 600A for blocks with .170 dia. mounting holes and screws.

600 SERIES



Number of Terminals	Dimension A
1	¾
2	1⅛
3	1½
4	1⅞
5	2¼
6	2⅝
7	3
8	3⅜
9	3¾
10	4⅛
11	4½
12	4⅞
13	5¼
14	5⅝
15	6
16	6⅜
17	6¾
18	7⅛
19	7½
20	7⅞
21	8¼
22	8⅝

HARDWARE:

SCREWS & TERMINALS: Brass, nickel plated.
SOLDER TERMINALS: Brass, hot-tinned

600 Series Screws: 5-40 x ¼"
600A Series Screws: 6-32 x ¼"

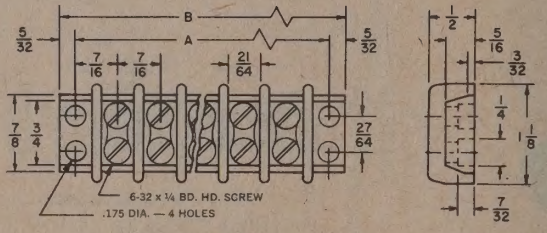
WIRE SIZES

Will accommodate lugs for wire sizes: AWG #22 to 16.

ELECTRICAL RATING

RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1100 Volts RMS.
WITH Marker Strip: 2500 Volts RMS.
CURRENT RATING: 15 Amps.

601 SERIES



Number of Terminals	Dimension A
1	⅞
2	1 3/16
3	1¼
4	2 3/16
5	2⅝
6	3 1/16
7	3½
8	3 15/16
9	4⅜
10	4 13/16
11	5¼
12	5 11/16
13	6⅛
14	6⅝
15	7
16	7 7/16
17	7⅞
18	8 5/16
19	8¾
20	9 3/16
21	9⅝
22	10 1/16
23	10½

HARDWARE:

SCREWS & TERMINALS: Brass, nickel plated.
SOLDER TERMINALS: Brass, hot-tinned

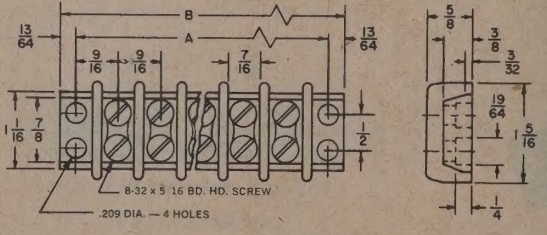
WIRE SIZES

Will accommodate lugs for wire sizes: AWG #16 to 14.

ELECTRICAL RATING

RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1100 Volts RMS.
WITH Marker Strip: 3000 Volts RMS.
CURRENT RATING: 20 Amps.

602 SERIES



Number of Terminals	Dimension A
1	1⅛
2	1 11/16
3	2¼
4	2 13/16
5	3⅜
6	3 15/16
7	4½
8	5 1/16
9	5⅝
10	6 3/16
11	6¾
12	7 5/16
13	7⅞
14	8 7/16
15	9
16	9 9/16
17	10 1/16
18	10 11/16
19	11¼
20	11 13/16
21	12⅜
22	12 15/16
23	13½
24	14 1/16
25	14 5/8
26	15 3/16

HARDWARE:

SCREWS & TERMINALS: Brass, nickel plated.
SOLDER TERMINALS: Brass, hot-tinned

WIRE SIZES

Will accommodate lugs for wire sizes: AWG #14 to 12.

ELECTRICAL RATING

RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1600 Volts RMS.
WITH Marker Strip: 3300 Volts RMS.
CURRENT RATING: 30 Amps.

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Kulka TERMINAL BOARDS

)ED MATERIALS:
l Purpose Phenolic (commercial grade) unless otherwise spec-

ary Code	Kulka Code	Description
	—	Commercial Grade Phenolic
G	C	Cellulose Filled Phenolic
E	M	Mineral Filled Phenolic
AE	GMF	Mineral Filled Melamine
DG	B	Mineral Filled Diallyl Phthalate
AI-60	D	Glass Fibre Filled Alkyd
I-30F	JJ	Glass Fibre Filled Diallyl Phthalate, Flame Retardant

ORDERING CODE For convenience and accuracy in ordering, please specify catalog numbers as shown:

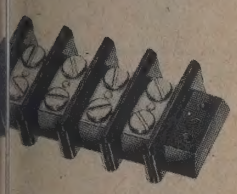
CODE EXAMPLE

Series	Material Code*	Lug Type*	Number of Terminals	Special Hardware*	Service*
603	C	¾ST	12	SI	F

603C-3/4ST-12SIF

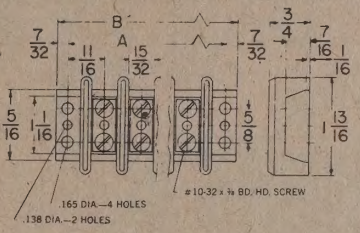
*Omit If not applicable

)03 SERIES



)WARE:
'S & TERMINALS: Brass, nickel plated.
R TERMINALS: Brass, hot-tinned

SIZES
commodate lugs for wire sizes: AWG #6.



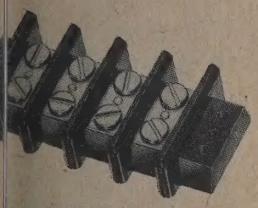
ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1700 Volts RMS.
WITH Marker Strip: 3000 Volts RMS.
CURRENT RATING: 50 Amps.

603 SERIES TERMINAL BLOCKS and MARKER STRIPS

Number of Terminals	Dimensions A	B
1	1⅜	1 3/16
2	2 1/16	2 1/2
3	2¾	3 3/16
4	3 1/16	3⅞
5	4⅛	4 9/16
6	4 13/16	5¼
7	5½	5 15/16
8	6 3/16	6 5/8
9	6⅞	7 5/16
10	7 9/16	8
11**	8¼	8 1/16
12**	8 15/16	9⅜

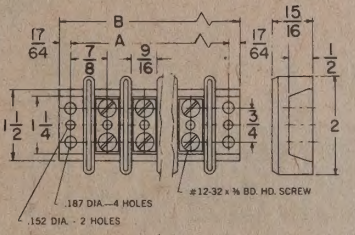
**Not available in MAI-60, GDI-30 and GDI-30F materials.

)04 SERIES



)WARE:
'S & TERMINALS: Brass, nickel plated.
R TERMINALS: Brass, hot-tinned

SIZES
commodate lugs for wire sizes: AWG #4.



ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 1800 Volts RMS.
WITH Marker Strip: 3400 Volts RMS.
CURRENT RATING: 70 Amps.

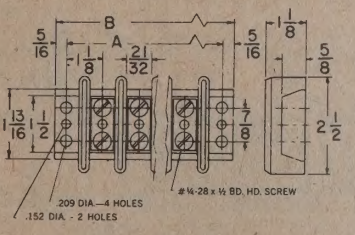
604 SERIES TERMINAL BLOCKS and MARKER STRIPS

Number of Terminals	Dimensions A	B
1	1¾	2 3/32
2	2 5/8	3 3/32
3	3 1/2	4 1/32
4	4 3/8	4 29/32
5	5¼	5 25/32
6	6⅛	6 31/32
7	7	7 1/32
8	7⅞	8 13/32

)05 SERIES

)WARE:
'S & TERMINALS: Brass, nickel plated.
R TERMINALS: Brass, hot-tinned

SIZES
commodate lugs for wire sizes: AWG #2.



ELECTRICAL RATING
RATED VOLTAGE (⅓ breakdown voltage)
WITHOUT Marker Strip: 2100 Volts RMS.
WITH Marker Strip: 3800 Volts RMS.
CURRENT RATING: 90 Amps.

605 SERIES TERMINAL BLOCKS and MARKER STRIPS

Number of Terminals	Dimensions A	B
1	2¼	2⅞
2	3 3/8	4
3	4½	5 1/8
4	5 5/8	6¼
5	6¾	7 3/4
6	7⅞	8½

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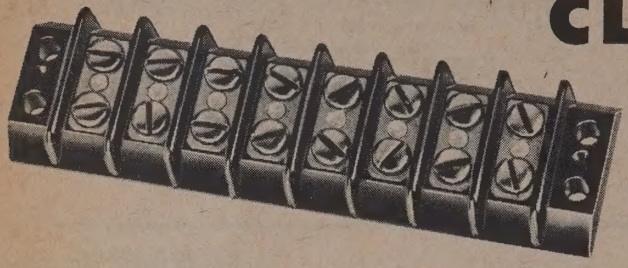
Kulka TERMINAL BOARD

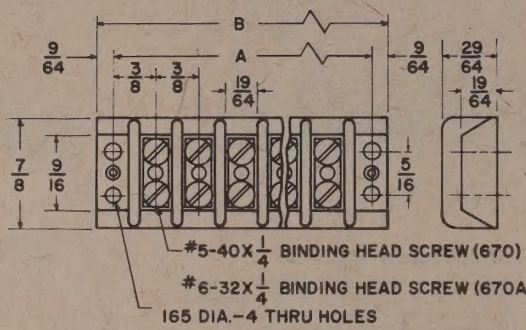
CLOSED BACK



MOLDED MATERIALS:
General Purpose Phenolic, mercial grade) unless oth specified.

HARDWARE:
SCREWS & TERMINALS: Nickel Plated.
SOLDER TERMINALS: Brass, tinned.

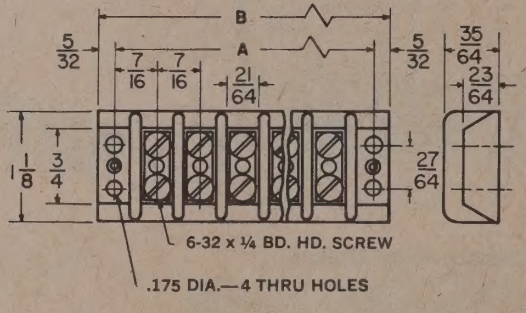
670, 670A SERIES



Number of Terminals	Dimensions A	B
1	3/4	1 1/32
2	1 1/8	1 13/32
3	1 1/2	1 25/32
4	1 7/8	2 5/32
5	2 1/4	2 17/32
6	2 5/8	2 29/32
7	3 3/32	3 1/32
8	3 3/8	3 21/32
9	3 3/4	4 1/32
10	4 1/8	4 13/32
11	4 1/2	4 25/32
12	4 7/8	5 5/32
13	5 1/4	5 17/32
14	5 5/8	5 29/32
15	6	6 5/32
16	6 3/8	6 21/32
17	6 3/4	7 5/32
18	7 1/8	7 13/32
19	7 1/2	7 25/32
20	7 7/8	8 5/32
21	8 1/4	8 17/32
22	8 5/8	8 29/32
23	9	9 5/32
24	9 3/8	9 21/32
25	9 3/4	10 1/32
26	10 1/8	10 13/32
27	10 1/2	10 25/32
28	10 7/8	11 5/32
29	11 1/4	11 17/32
30	11 5/8	11 29/32

WIRE SIZES: Will accommodate lugs for wire sizes: AWG #22 to 16.
ELECTRICAL RATING: RATED VOLTAGE (1/3 breakdown voltage) 2500 Volts RMS.
CURRENT RATING: 15 Amps.

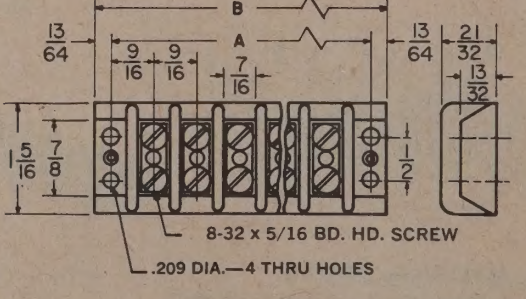
671 SERIES



Number of Terminals	Dimensions A	B
1	7/8	1 3/16
2	1 3/16	1 5/8
3	1 3/4	2 1/16
4	2 3/16	2 1/2
5	2 5/8	2 15/16
6	3 1/16	3 3/8
7	3 1/2	3 13/16
8	3 15/16	4 1/4
9	4 3/8	4 11/16
10	4 13/16	5 1/8
11	5 1/4	5 5/16
12	5 11/16	6
13	6 1/8	6 7/16
14	6 9/16	6 7/8
15	7	7 5/16
16	7 7/16	7 3/4
17	7 7/8	8 3/16
18	8 5/16	8 5/8
19	8 3/4	9 1/16
20	9 3/16	9 1/2
21	9 5/8	9 15/16
22	10 1/16	10 3/8
23	10 1/2	10 13/16
24	10 15/16	11 1/4
25	11 3/8	11 11/16
26	11 13/16	12 1/8
27	12 1/4	12 5/16
28	12 11/16	13
29	13 1/8	13 7/16
30	13 5/8	13 7/8

WIRE SIZES: Will accommodate lugs for wire sizes: AWG #16 to 14.
ELECTRICAL RATING: RATED VOLTAGE (1/3 breakdown voltage) 3000 Volts RMS.
CURRENT RATING: 20 Amps.

672 SERIES



Number of Terminals	Dimensions A	B
1	1 1/8	1 17/32
2	1 11/16	2 3/32
3	2 1/4	2 21/32
4	2 13/16	3 5/32
5	3 3/8	3 25/32
6	3 15/16	4 11/32
7	4 1/2	4 29/32
8	5 1/16	5 5/32
9	5 5/8	6 1/32
10	6 3/16	6 13/32
11	6 3/4	7 1/32
12	7 5/16	7 23/32
13	7 7/8	8 5/32
14	8 7/16	8 27/32
15	9	9 5/32
16	9 9/16	9 31/32
17	10 1/8	10 17/32
18	10 11/16	11 5/32
19	11 1/4	11 21/32
20	11 13/16	12 1/32
21	12 3/8	12 25/32
22	12 15/16	13 13/32
23	13 1/2	13 29/32
24	14 1/16	14 13/32
25	14 5/8	15 1/32
26	15 3/16	15 17/32

WIRE SIZES: Will accommodate lugs for wire sizes: AWG #14 to 12.
ELECTRICAL RATING: RATED VOLTAGE (1/3 breakdown voltage) 3300 Volts RMS.
CURRENT RATING: 30 Amps.

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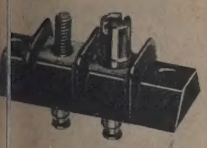
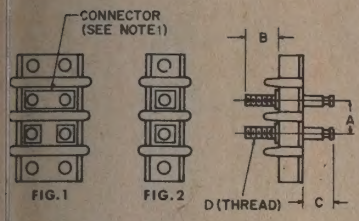
Kulka TERMINAL BOARDS

TUD & TURRET TERMINAL BOARDS



THREADED STUD WITH FEED-THRU SOLDER TERMINAL



See Note 1)

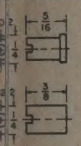
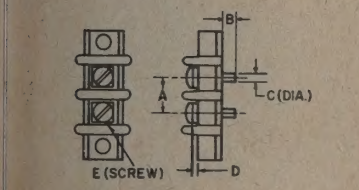


Fig.	Part	A	B	C	D
1	600-2000-*	3/8	5/64	5/16	5-40 NC
1	601-2100-*	3/16	7/64	3/8	6-32 NC
2	599-2000-*	3/8	5/64	5/16	5-40 NC
2	699-2100-*	3/16	7/64	3/8	6-32 NC

*Indicate Number of Terminals

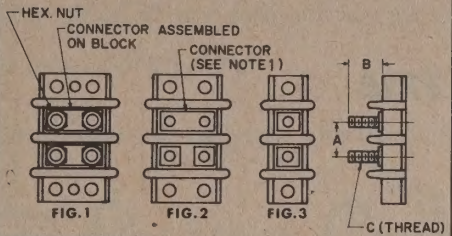
SCREW TERMINAL WITH SOLDER PIN FOR PRINTED CIRCUIT BOARD CONNECTION



Part	A	B	C	D	E
599-2020-*	3/8	1/8	.093	.093	5-40 NC x 1/4
599-2021-*	3/8	1/8	.093	.031	5-40 NC x 3/4
599-2120-*	7/16	3/16	.093	.040	6-32 NC x 1/4

*Indicate number of terminals

THREADED STUD



NUTS (See Note 1)

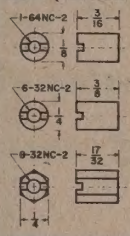
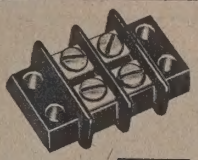
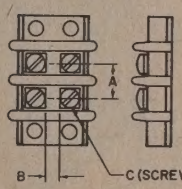


Fig.	Part	A	B	C
3	409-1802-*	3/16	3/16	1-64 NC
3	599-2002-*	3/8	5/16	6-32 NC
2	600-2002-*	3/8	5/16	6-32 NC
2	601-2102-*	3/16	7/16	6-32 NC
2	602-2202-*	7/16	1/2	8-32 NC
1	603-2302-*	11/16	17/32	10-32 NF
1	604-2402-*	7/8	5/16	10-32 NF
1	605-2502-*	1 1/8	3/4	1/4-28 NF
3	609-2902-*	3/8	11/32	6-32 NC
3	699-2102-*	3/16	7/16	6-32 NC
3	812-2202-*	7/16	1/2	8-32 NC

*Indicate Number of Terminals

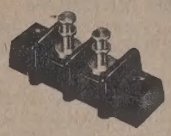


INDIVIDUAL SCREW TERMINALS



Part	A	B	C
601-2108-*	3/16	3/32	6-32 NC x 1/4

*Indicate Number of Terminals



SOLDER TURRET

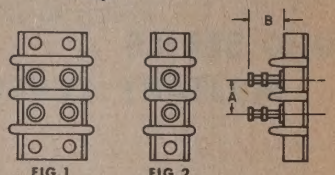
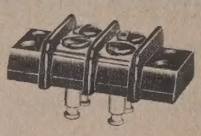


Fig.	Part	A	B
1	410-1903-*	1/4	1/4
1	600-2003-*	3/8	5/16
1	602-2203-*	3/8	5/16
2	409-1803-*	3/16	15/64
2	411-1903-*	1/4	1/4
2	599-2003-*	3/8	5/16
2	812-2203-*	3/8	5/16

*Indicate Number of Terminals



SCREW TERMINAL WITH FEED-THRU SOLDER TERMINAL

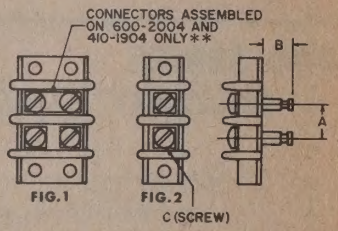


Fig.	Part	A	B	C
1	410-1904-*	1/4	3/32	2-56 NC x 3/16
2	411-1904-*	1/4	3/32	2-56 NC x 3/16
2	599-2004-*	3/8	5/16	5-40 NC x 3/16
1	600-2004-*	3/8	5/16	5-40 NC x 3/16
1	601-2104-*	7/16	3/8	6-32 NC x 1/4
2	699-2104-*	7/16	3/8	6-32 NC x 1/4

*Indicate Number of Terminals

**Connectors also available on special order with #601-2104.

NOTES: 1. Standard with block but packed separately.

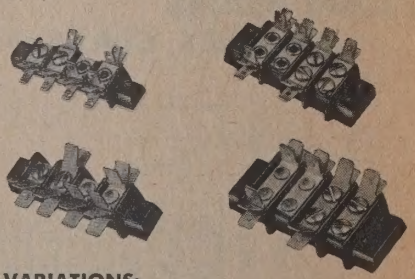
2. Catalog Code Example:

Terminal Block Series	Terminal Style	No. of Terminals
599	2003	22

UICK CONNECT—DISCONNECT TERMINAL BOARDS

"KLIPTITE"

- Just clip on wire terminal fast — for a tight connection.
- Disconnect just as fast.
- Available on KULKA'S full line of molded barrier terminal blocks, plus switches and convenience outlets.
- Up to six connections per stage.
- Vari-angled tabs.
- Available riveted to terminal hardware or with screw assembly.



ED MATERIALS:

al Purpose Black Bakelite is supplied otherwise specified.

ite" terminals are supplied rivetted unless assembly is specified. Where more than six on connections are required on a terminal Kulka Jumpers can be supplied.

HARDWARE:

Kliptite male tabs are brass, electro-tinned. Can be rigidly rivetted to terminal block or can be assembled under screws where replacement may be required or where a screw termination is also needed.

VARIATIONS:

- Flat, 45°, 90°
- Both Sides
- One Side
- Three tabs per stage (Flat, 45° and 90°)
- Screws one side, tab other side
- Stacked in combination with solder lugs Y, 3/4ST, ST, etc.

Available thru Nationwide Network of Authorized Industrial Distributors

Kulka Electric Corporation

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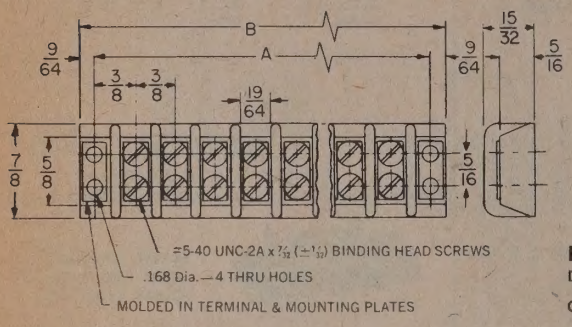
Kulka MILITARY TERMINAL BOARDS MIL-T-55164

MOLDED MATERIAL:
PLASTIC: Diallyl Phthalate, Type GDI-30F per MIL-M-19833
SCREWS: Brass per QQ-W-321, Nickel Plate per QQ-N-290
TERMINAL PLATES: Brass per QQ-B-613. Plates are Nickel Plated per QQ-N-290

MARKER STRIPS AVAILABLE IN MILITARY-APPROVED LAMINATED MATERIALS

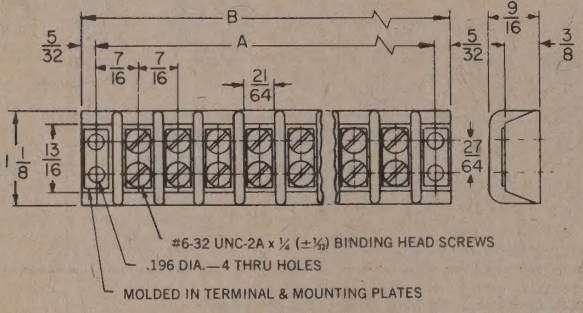
20000 SERIES
MILITARY CLASS — 37TB



ELECTRICAL RATING:
Dielectric Withstanding Voltage: 3000 V. RMS.
Current Rating: 15 Amps.

No. of Terminals	Kulka No.	Military Part No.	Dimensions "A"	Dimensions "B"
1	20001	—	3/4	1-3/64
2	20002	37TB-2	1-1/8	1-27/64
3	20003	37TB-3	1-1/2	1-51/64
4	20004	37TB-4	1-7/8	2-11/64
5	20005	37TB-5	2-1/4	2-9/16
6	20006	37TB-6	2-5/8	2-15/16
7	20007	37TB-7	3	3-5/16
8	20008	37TB-8	3-3/8	3-11/16
9	20009	37TB-9	3-49/64	4-1/16
10	20010	37TB-10	4-9/64	4-7/16
11	20011	37TB-11	4-33/64	4-13/16
12	20012	37TB-12	4-57/64	5-3/16
13	20013	37TB-13	5-17/64	5-9/16
14	20014	37TB-14	5-41/64	5-15/16
15	20015	37TB-15	6-1/64	6-5/16
16	20016	37TB-16	6-25/64	6-11/16
17	20017	37TB-17	6-49/64	7-1/16
18	20018	37TB-18	7-9/64	7-7/16
19	20019	37TB-19	7-33/64	7-53/64
20	20020	37TB-20	7-29/32	8-13/64
21	20021	37TB-21	8-9/32	8-37/64
22	20022	37TB-22	8-21/32	8-61/64
23	20023	37TB-23	9-1/32	9-21/64
24	20024	37TB-24	9-13/32	9-45/64
25	20025	37TB-25	9-25/32	10-5/64
26	20026	37TB-26	10-5/32	10-29/64
27	20027	37TB-27	10-17/32	10-53/64
28	20028	37TB-28	10-29/32	11-7/32
29	20029	37TB-29	11-9/32	11-19/32
30	20030	37TB-30	11-43/64	11-31/32
31	20031	37TB-31	12-1/32	12-23/64

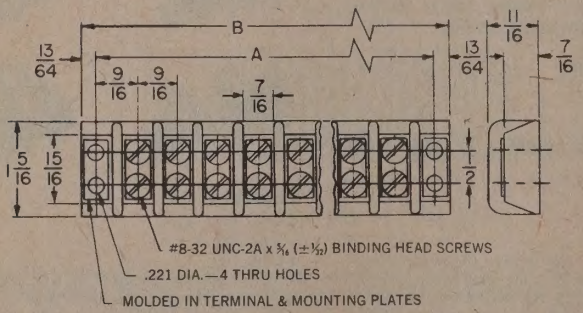
21000 SERIES
MILITARY CLASS — 38TB



ELECTRICAL RATING:
Dielectric Withstanding Voltage: 3400 V. RMS.
Current Rating: 20 Amps.

No. of Terminals	Kulka No.	Military Part No.	Dimensions "A"	Dimensions "B"
1	21001	—	7/8	1-13/64
2	21002	38TB-2	1-5/16	1-41/64
3	21003	38TB-3	1-3/4	2-5/64
4	21004	38TB-4	2-3/16	2-33/64
5	21005	38TB-5	2-5/8	2-61/64
6	21006	38TB-6	3-1/16	3-25/64
7	21007	38TB-7	3-1/2	3-53/64
8	21008	38TB-8	3-61/64	4-17/64
9	21009	38TB-9	4-25/64	4-45/64
10	21010	38TB-10	4-53/64	5-9/64
11	21011	38TB-11	5-17/64	5-19/32
12	21012	38TB-12	5-45/64	6-1/32
13	21013	38TB-13	6-9/64	6-15/32
14	21014	38TB-14	6-37/64	6-29/32
15	21015	38TB-15	7-1/64	7-11/32
16	21016	38TB-16	7-29/64	7-25/32
17	21017	38TB-17	7-57/64	8-7/32
18	21018	38TB-18	8-21/64	8-21/32
19	21019	38TB-19	8-25/32	9-7/64
20	21020	38TB-20	9-7/32	9-35/64
21	21021	38TB-21	9-21/32	9-63/64
22	21022	38TB-22	10-3/32	10-27/64
23	21023	38TB-23	10-17/32	10-55/64

22000 SERIES
MILITARY CLASS — 39TB



No. of Terminals	Kulka No.	Military Part No.	Dimensions "A"	Dimensions "B"
1	22001	—	1-1/8	1-35/64
2	22002	39TB-2	1-11/16	2-7/64
3	22003	39TB-3	2-1/4	2-11/16
4	22004	39TB-4	2-13/16	3-1/4
5	22005	39TB-5	3-3/8	3-13/16
6	22006	39TB-6	3-15/16	4-3/8
7	22007	39TB-7	4-1/2	4-15/16
8	22008	39TB-8	5-1/16	5-1/2
9	22009	39TB-9	5-41/64	6-1/16
10	22010	39TB-10	6-13/64	6-5/8
11	22011	39TB-11	6-3/4	7-3/16
12	22012	39TB-12	7-21/64	7-3/4
13	22014	39TB-13	7-57/64	8-5/16
14	22014	39TB-14	8-29/64	8-7/8
15	22015	39TB-15	9-1/64	9-7/16
16	22016	39TB-16	9-37/64	10
17	22017	39TB-17	10-9/64	10-9/16
18	22018	39TB-18	10-45/64	11-9/64

ELECTRICAL RATING:
Dielectric Withstanding Voltage: 4000 V. RMS.
Current Rating: 30 Amps.

Available thru Nationwide Network of Authorized Industrial Distributors

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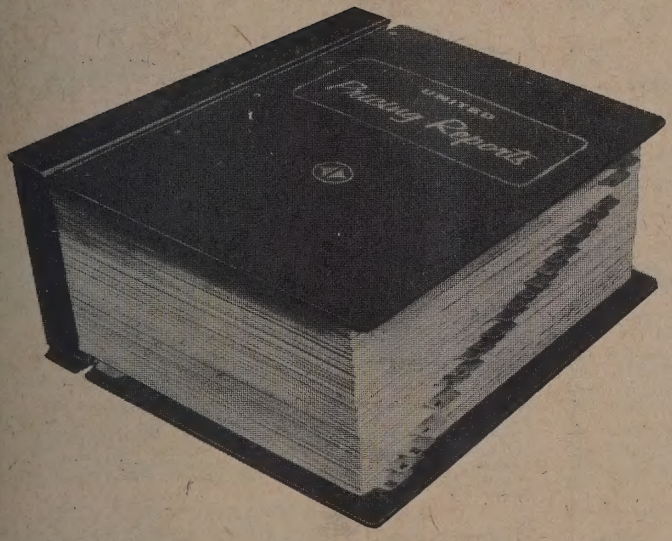

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mueller clips

a complete line of

ALLIGATOR TEST & BATTERY CLIPS

Mueller Electric Co.

"60 SERIES" ALLIGATOR CLIPS

U.S. Patent No. 3,321,736

No. 60—CONVENTIONAL TYPE

New slim design with full-meshing teeth. Convenient, round thumb grip, barrel connection for banana plug. Equipped with small soldering lip. Strong spring with a hard bite. Cadmium plated. 2" long.

EACH NET.....$0.08 LOTS OF 10.....$0.054

No. 60-S—SCREW CONNECTION

Eliminates necessity for soldering. Otherwise same as No. 60.

EACH NET....$0.09 LOTS OF 10....$0.063

No. 60-CS—COPPER ALLIGATOR CLIP

Solid copper version of No. 60-S. Screw connection. 2" long. 10 per box.

EACH NET.....$0.14 LOTS OF 10.....$0.096

No. 60PR-2—SPECIAL BARREL FOR TEST PROD OR PHONE TIP

Barrel crimped to provide friction fit on standard test prod or phone tip. Holds prod on test, frees hand for other work.

EACH NET.....$0.11 LOTS OF 10.....$0.078

No. 62 FLEXIBLE VINYL INSULATOR

Red and black insulators for Alligator Clips 60, 60-S, 60-CS, 60PR-2

EACH NET.....$0.06 LOTS OF 10.....$0.04

No. 60-HS—STEEL ALLIGATOR CLIP WITH INSULATED HANDLE

Same as No. 60-S except equipped with red and black insulating sleeves on end. Very convenient for distinguishing leads. Has screw connection also. Cadmium plated. 2 11/32" long. Shipped half red, half black.

EACH NET.....$0.13 LOTS OF 10.....$0.089

No. 60-CHS—COPPER ALLIGATOR CLIP, INSULATED HANDLE

Solid copper version of No. 60-HS. Screw connection. Shipped with half red, half black insulating sleeves. 10 per box.

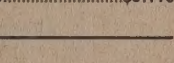
EACH NET.....$0.17 LOTS OF 10.....$0.118

"70 SERIES" ALLIGATOR CLIPS

U.S. Patent No. 2,762,028

A trim, modern Alligator Clip.
Features simplified design, fast connection of wire with cord strain relief ears, patented hinge construction and lower cost.
Mueller's traditionally snappy spring, full jaw spread, fine meshing teeth, round thumb grip and trim shape give most wanted features for test work in close quarters.

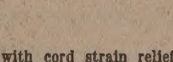
No. 70—FOR SOLDERED CONNECTION



Steel, cadmium plated. 1 1/4" long.

EACH NET.....$0.07 LOTS OF 10.....$0.045

No. 70-S—SCREW CONNECTION



Otherwise same as No. 70.

EACH NET.....$0.08 LOTS OF 10.....$0.054

No. 70-CS—COPPER SCREW CONNECTION

Solid copper version of No. 70-S.

EACH NET.....$0.12 LOTS OF 10.....$0.085

No. 72— SKIN-TIGHT INSULATOR FOR 70 SERIES ALLIGATOR CLIPS!

For the first time complete, skin-tight, one-piece insulation for a standard size Alligator Clip! Covers entire clip right down to nose. Special tip slot permits full jaw opening without exposing teeth.

EACH NET.....$0.06 LOTS OF 10.....$0.04

MICRO-GATOR CLIP

(Smallest Insulated Clip Ever Made)

U.S. Patent No. 2,762,028 Trademark R

Micro-Gator

Micro-Gator with Insulator

The alligator clip with the microscopic tip! This is alligator clip you now can use where no other clip do . . . on printed circuits, in tight spots and on terminals too crowded for anything but its microsco tip. Including separate skin-tight insulator the tip is bigger than the head of a pin! Yet the Micro-gator ample thumb grip, and plenty of bite to stand up strai on the smallest terminals. Ample 7/32" jaw spread, 1 long. Solder connection. Skin-tight flexible vinyl insula (sold separately) has "lip-action" tip slot so that ja stay covered whether open or closed.

No. 34 (Steel, cadmium plated)

EACH NET.....$0.06 LOTS OF 10.....$0.0

No. 34-C (Solid Copper)

EACH NET.....$0.08 LOTS OF 10.....$0.0

No. 36 (Insulator for Nos. 34 and 34-C)

EACH NET.....$0.05 LOTS OF 10.....$0.0

MINI-GATOR CLIP

U.S. Patent No. 3,321,736
Trademark Reg.

Mini-gator

Mini-gator with Insulator

Indispensable for testing or incorporation into min turized equipment. New design features rivet hinge greater strength, full-meshing teeth to grip finest wi Skin-tight flexible Vinyl insulator (sold separately) co completely — has slotted "lip action" tip. Clip we 1/20th oz., has tiny 1 1/64" O.D. nose, but ample 3/16 spread 1 1/16" long. Crimping ears. Solder connection. S prisingly strong bite penetrates corrosion and coatings.

No. 30 (Steel, cadmium plated)

EACH NET.....$0.07 LOTS OF 10.....$0.

No. 30-C (Solid Copper)

EACH NET.....$0.09 LOTS OF 10.....$0.0

No. 32 (Insulator for Nos. 30 and 30-C)

EACH NET.....$0.05 LOTS OF 10.....$0.0

COMPLETELY INSULATED ALLIGATOR CLIPS

Patent Pending

No. 63 or 63-C Clip

Sold only as a unit, w factory-applied insulators.

Completely insulated right down to the nose. Flexible 2-piece skin-t vinyl insulator of high dielectric strength, with "lip action" slotted that permits opening of clip without exposing metal. Insulator nose is o 13/64" O.D. The tight fitting sheath preserves all the slimness of Alligator Clip, still giving complete protection against shorts in even tightest spots. Screw connection easily made by slipping insulator fo ward. 2 1/8" long.

No. 63—INSULATED ALLIGATOR CLIP (STEEL)

Composed of Mueller No. 60-S Alligator Clip steel, cadmium plated, scr connection, complete with 2-piece vinyl insulator. Shipped half with r insulators, half black. 10 per box.

EACH NET.....$0.19 LOTS OF 10.....$0.

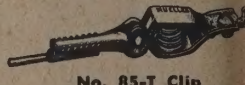
No. 63-C—INSULATED ALLIGATOR CLIP (COPPER)

Composed of Mueller No. 60-CS Alligator Clip solid copper, screw conne tion. Shipped half with red insulators, half black. 10 per box.

EACH NET.....$0.22 LOTS OF 10.....$0.

CROCODILE CLIPS

No. 85 or 85-C Clip with No. 87 Insulator



No. 85-T Clip

No. 85—A very small clip with slender, elongated jaws for getting in tight places in radio or electrical test work. Screw connection. 2 1/8" lon

EACH NET.....$0.11 LOTS OF 10.....$0.0

No. 85-C—Same as No. 85,, except solid copper with phosphor bron spring, brass screw. A radio frequency, entirely non-ferrous test cli 10 per box.

EACH NET.....$0.21 LOTS OF 10.....$0.1

No. 85-T—Crocodile "Tip-Clip"—equipped with standard phone tip on o jaw, otherwise same as No. 85. Ideal for use as a prod, for ordinary cl connections and for connections to insulated binding posts having no removale heads. 2 5/8" long. 10 per box.

EACH NET.....$0.27 LOTS OF 10.....$0.1

Use No. 87 Insulators for clips 85, 85-C and 85-T. Red and Black. Cov entire clip except nose. Protect against short and shock. Help to distinguis leads.

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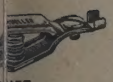
mueller clips

a complete line of

ALLIGATOR TEST & BATTERY CLIPS

Mueller Electric Co.

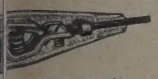
TEST CLIPS



No. 45 PEE WEE

A very small test clip for radio, ignition, meter and similar work. 1½" long. Jaw spread 5/16". Steel, cadmium plated.

NET.....$0.09 LOTS OF 10.....$0.061



No. 45-C Clip
No. 47 Insulator

No. 45-C
Solid Copper R.F. Test Clip

Solid copper radio frequency test clip. Phosphor bronze spring, brass screw. Will not heat up in high frequency test work, entirely non-ferrous. 1½" long. 10 per box.

NET.....$0.15 LOTS OF 10.....$0.107

Use No. 47 Insulator for clips 45 and 45-C.

No. 48-B

A small test and battery clip for radio use and general testing purposes. 2" long. Jaw spread ½". Steel, cadmium plated. 10 per box.

EACH NET.....$0.13 LOTS OF 10.....$0.09

No. 48C—Solid Copper. Same size as 48-B.

NET.....$0.20 LOTS OF 10.....$0.139

No. 50-C Needle Clip

Solid bronze. Needle pierces insulation of wire for quick test contact. 2¼" long. 10 per box.

EACH NET....$0.32 LOTS OF 10....$0.22

No. 51-C—Large crocodile clip. Same as 50-C but without needle. 10 per box.

EACH NET....$0.22 LOTS OF 10..$0.153

Use No. 49 insulator for Clips 48-B, 48-C, 50-C and 51-C.

No. 27

A high grade test clip with meshing teeth on three sides of jaws. For laboratory and shop test work 2 7/8" long. Jaw spread 5/8". Steel, cadmium plated. 10 per box.

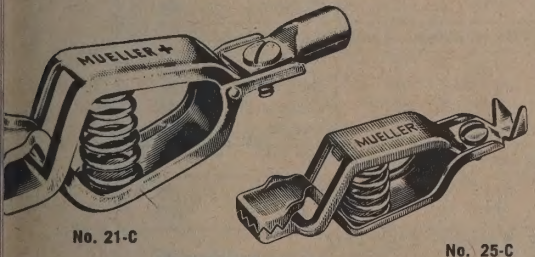
NET.....$0.16 LOTS OF 10.....$0.107

No. 27-C—Solid copper. Same size as No. 27. 10 per box.

NET.....$0.27 LOTS OF 10.....$0.187

Use No. 29 Insulator for clips 27 and 27-C.

LARGER SIZES OF CLIPS



No. 21-C

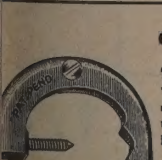
No. 25-C

All packed 10 per box.

	Each Net	Lots of 10
-A — 25 Amp. Steel, lead plated, 2⅞" long	$0.26	$0.177
— 40 Amp. Steel, cadmium plated, 3" long	.24	.165
-C — 75 Amp. Solid Copper, 2" long	.49	.34
-A — 50 Amp. Steel, lead plated, 4" long	.46	.32
-C*—100 Amp. Solid Copper, 4½" long	1.20	.84
-A*—100 Amp. Steel, lead plated, 6" long	1.27	.89
-C*—200 Amp. Solid Copper, 6" long	2.34	1.64
-C*—300 Amp. Solid Copper, 7¾" long	4.48	3.14

(*Furnished with detachable lug connection for easy securing to large cables.)

GROUND CLAMP



CLAMPIPE
No. 58

The ClamPipe will not spread, bend or lop over when applied. Point of large screw bites through corrosion into clean metal to insure good contact. Applicable to pipe ⅜" to 1⅜" O.D. The best ground clamp on the market!

EACH NET....$0.22 LOTS OF 10....$0.153

FLEXIBLE INSULATORS FOR CLIPS

A convenient protection against short circuit and electric shock. Colors help to distinguish leads. Packed half red and half black to indicate polarity. Long tail prevents breakage of wire. Constructed so that clip is held in firmly. NOW AVAILABLE also in blue, white, yellow and green at 10% above regular price are insulators marked * below.

Insulator No.	For Use with Clip No.	Each Net	Lots of 10
13*	11-A, 11-C	$0.81	$0.57
23*	21-A, 21-C	.41	.287
26*	24-A, 25, 25-C	.23	.16
29*	27, 27-C	.17	.12
32*	30, 30-C	.05	.033
35	33-C	3.48	2.43
36*	34, 34-C	.05	.033
47*	45, 45-C	.07	.05
49*	48-B, 48-C, 50-C, 51-C	.10	.069
62*	60, 60-S, 60-CS, 60PR-2 (also 70 Series)	.06	.04
72*	70, 70-S, 70-CS	.06	.04
87*	85, 85-C, 85-T	.07	.05

*Also available in blue, white, yellow and green.

MUELLER *QUALITY* BATTERY BOOSTER CABLES

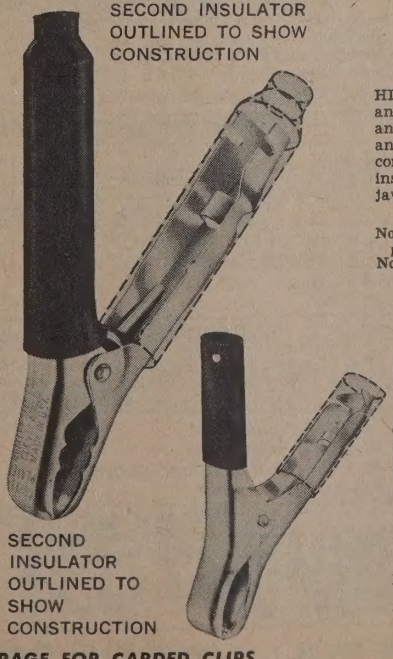
Highest quality cables, equipped with famous Hippo-Clips, for boosting "dead" 6 or 12-volt vehicle batteries with an external battery. Cables are pure copper, finely stranded for high flexibility and covered with rubber insulation which stays flexible in the coldest weather and resists oil, grease and acid. 413 strands of No. 30 wire in the 4-gauge cable and 259 strands of No. 30 wire in the 6-gauge cable. The many fine features of the Hippo-Clips alone are listed elsewhere on this page. The clips are both soldered to the cable and clinched around the cable insulation by means of clinching ears.

Packaged: pair of cables with clips in a bright, attractive display carton. Standard shipping container 10 cartons.

No. 8A6—8 ft., 6-gauge, with No. 41A Hippo-Clips (Steel, bright copper plated)
NET PRICE PER PAIR.....$7.20

No. 12A6—12 ft., 6-gauge, with No. 41A Hippo-Clips (Steel, bright copper plated)
NET PRICE PER PAIR.....$9.60

No. 12C4—12 ft., 4-gauge, with No. 41C Hippo-Clips (Solid Copper)
NET PRICE PER PAIR.....$14.70



HIPPO-CLIP

HIPPO-CLIP—For battery booster cables and fast chargers. Proved higher quality and superior design. Built-in solder strap and clinching ears for fast, sure cable connection. Supplied with vinyl handle insulators in red or black. Full 1-9/16" jaw spread. 6" long.

Net price ea.

No. 41-A Steel, bright copper plated, 100 amp. .....$ .51
No. 41-C Solid Copper, 200 amp..... 1.35

PIGMY HIPPO-CLIP

PIGMY HIPPO-CLIP—A new small plier clip for battery operated equipment and automotive test. Flat, wide handle allows positive grip. Won't "squirt away". Built-in solder strap and wire clinching ears. Supplied with vinyl handle insulators in red or black. Ample 1⅛" jaw spread. 3" long.

Net price ea.

No. 46-A Steel, bright copper plated, 50 amp. .....$ .17
No. 46-C Solid Copper, 75 amp..... .27

SEE FOLLOWING PAGE FOR CARDED CLIPS

mueller clips

a complete line of

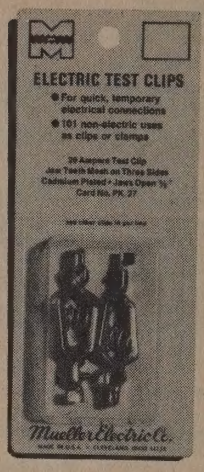
ALLIGATOR TEST & BATTERY CLIPS

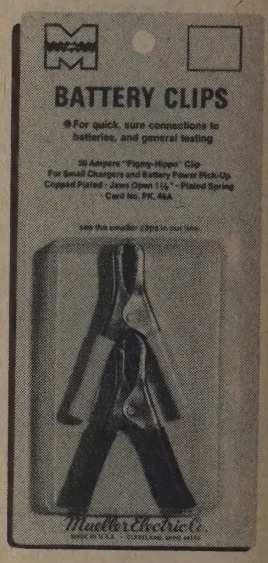
Mueller Electric Co.

BUBBLE PACKED CLIPS AND INSULATORS

The most popular Mueller clips and insulators attractively packaged on display cards. Clean design and concise copy invite attention. Bright pumpkin colored background makes these cards an eye-catching standout on pegboard or similar display panels.

Only three card sizes. Most items packaged on smallest card (2″ x 7″). Where included, insulators are half red, half black. Standard package ten cards.





Card No.	Description and Quantity of Merchandise on Each Card (See Preceding Pages for Additional Information)	Length of Clip	Clip Jaws Open	Amp. Capacity	Clips Made Of	CARD PRICE Suggested USA List
ALLIGATOR CLIPS						
PK60S	4 No. 60-S Clips, Screw Connection	2″	5/16″	5	Steel	$ .65
PK60S62	2 No. 60-S Clips and 2 No. 62 Insulators	2″	5/16″	5	Steel	.56
PK60CS	4 No. 60-CS Clips, Screw Connection	2″	5/16″	5	Copper	.78
PK60CS62	2 No. 60-CS Clips and 2 No. 62 Insulators	2″	5/16″	5	Copper	.63
PK60HS	4 No. 60-HS Clips with Insulated Handles 2 Red, 2 Black. Screw Connection	2-11/32″	5/16″	5	Steel	.79
PK60CHS	4 No. 60-CHS Clips with Insulated Handles 2 Red, 2 Black. Screw Connection	2-11/32″	5/16″	5	Copper	.93
PK63	2 No. 63 Completely Insulated Clips, 1 Red, 1 Black. Screw Connection	2-1/8″	5/16″	5	Steel	.58
MINI-GATOR CLIPS (Very Small Alligators)						
PK30	4 No. 30 Clips	1-1/16″	3/16″	5	Steel	.58
PK3032	2 No. 30 Clips and 2 No. 32 Insulators	1-1/16″	3/16″	5	Steel	.51
PK30C	4 No. 30-C Clips	1-1/16″	3/16″	5	Copper	.65
PK30C32	2 No. 30-C Clips and 2 No. 32 Insulators	1-1/16″	3/16″	5	Copper	.54
MICRO-GATOR CLIPS (Very Small Alligators with Tiny, Flat Jaws)						
PK34	4 No. 34 Clips	1-3/32″	7/32″	5	Steel	.53
PK3436	2 No. 34 Clips and 2 No. 36 Insulators	1-3/32″	7/32″	5	Steel	.48
PK34C	4 No. 34-C Clips	1-3/32″	7/32″	5	Copper	.60
PK34C36	2 No. 34-C Clips and 2 No. 36 Insulators	1-3/32″	7/32″	5	Copper	.52
CROCODILE CLIPS (Long Jaws With Nesting Teeth)						
PK85	4 No. 85 Clips	2-1/8″	5/16″	5	Steel	.73
PK8587	2 No. 85 Clips and 2 No. 87 Insulators	2-1/8″	5/16″	5	Steel	.63
GENERAL PURPOSE TEST CLIPS						
PK45	4 No. 45 Clips	1-1/2″	5/16″	5	Steel	.64
PK4547	2 No. 45 Clips and 2 No. 47 Insulators	1-1/2″	5/16″	5	Steel	.59
PK48B	4 No. 48-B Clips	2″	1/2″	10	Steel	.79
PK27	2 No. 27 Clips	2-7/16″	5/8″	20	Steel	.56
NEEDLE CLIP (Piercing Contact Thru Wire Insulation)						
PK50C49	2 No. 50-C Clips and 2 No. 49 Insulators	2-1/4″	1/2″	20	Copper	1.08
BATTERY CLIPS						
PK24A	2 No. 24-A Clips, Lead Plated	2-7/8″	3/4″	25	Steel	.77
PK21A	2 No. 21-A Clips, Lead Plated	4″	1-1/16″	50	Steel	1.28
PK46A	2 No. 46-A Plier-Type Clips, Bright Copper Plated, 1 Red, 1 Black.	3″	1-1/8″	50	Steel	.80
BATTERY BOOSTER CLIPS (In Poly Bags)						
PK41A	2 No. 41-A Plier-Type Clips, Bright Copper Plated, 1 Red, 1 Black.	6″	1-9/16″	100	Steel	2.08
PK41C	2 No. 41-C Plier-Type Clips, Solid Copper, 1 Red, 1 Black.	6″	1-9/16″	200	Copper	4.88

SEE FULL LINE ON PRECEDING PAGES.

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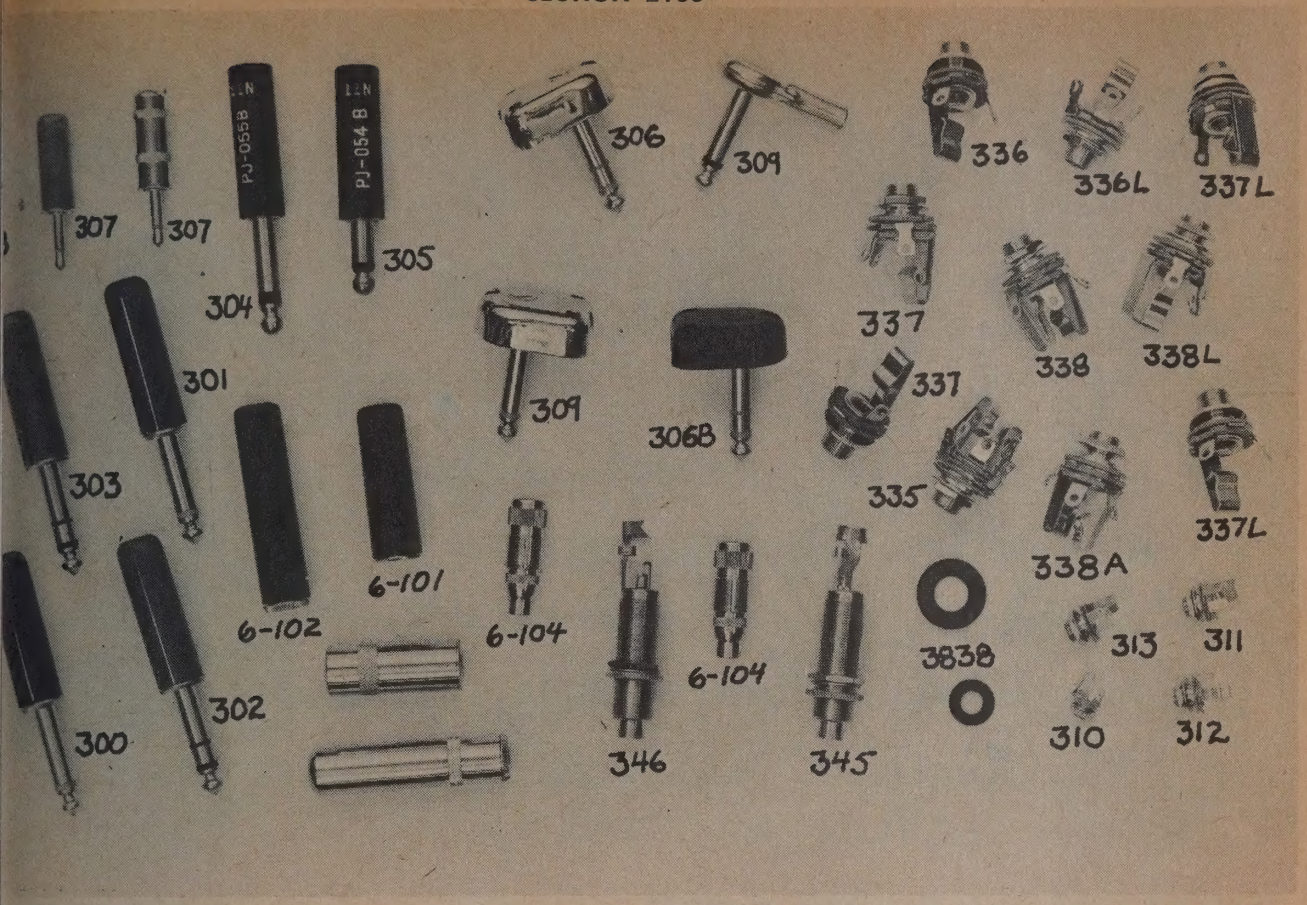

NE PLUGS

ned to highest standards and tolerances. Metal parts rass, nickel plated. Solder type terminals are tinned asy solderability. Exclusive NT.T Delrin insulator pro- long trouble free performance.

CONDUCTOR Screw Type No. 300B, Black; No. 300R, 54¢ ea. No. 300M, Metal .75¢.

CONDUCTOR Solder Type No. 301B, Black; No. 301R, .51¢ ea. No. 301M, Metal .72¢.

EE CONDUCTOR Solder Type No. 302B, Black; No. 302R, 75¢ ea. No. 302M, Metal .93¢.

EE CONDUCTOR Screw Type No. 303B, Black; No. 303R, .84¢ ea. No. 303M, Metal .99¢.

CONDUCTOR Type PJ055 Made to military specifica- No. 304B, Black; No. 304R, Red .90¢ ea.

CONDUCTOR Type PJ054 Made to military specifica- No. 305B, Black; No. 305R, Red .90¢ ea.

IT ANGLE — THREE CONDUCTOR Solderless No. 306B, ; No. 306R, .96¢ ea. No. 306M, Metal $1.05.

ATURE TWO CONDUCTOR Solder Type No. 307B, Black; 307R, Red .51¢ ea. No. 307M, Metal .69¢.

RA-MINIATURE, TWO CONDUCTOR Solder Type No. , Black; No. 308R, Red; No. 308T, Beige .48¢.

IT ANGLE — TWO CONDUCTOR Solderless No. 309B, ; No. 309R, Red .78¢ ea. No. 309M, Metal .87¢.

EE CONDUCTOR Type PJ068 320B, Black $2.16.

ONE JACKS

special nickel plated, spring brass springs are designed tain their tension throughout unlimited use. Standard s mount in ⅜" holes.

RA-MINIATURE JACK Two conductor closed circuit. No. .36¢.

MINIATURE JACKS Two conductor closed circuit. No. 311, .33¢.

MINIATURE JACKS Two conductor open circuit. No. 313, .30¢.

STEREO PHONE JACK Automatically switches speakers out and headphones in. No. 335, .72¢.

TWO CONDUCTOR Open Circuit. No. 336, .30¢.

TWO CONDUCTOR Open Circuit Similar to 336 except with ⅜" bushing length. No. 336L, .36¢.

TWO CONDUCTOR Closed Circuit. No. 337, .33¢.

TWO CONDUCTOR Closed Circuit. Similar to 337 except with ⅜" bushing length. No. 337L, .39¢.

THREE CONDUCTOR Open Circuit. No. 338, .39¢.

THREE CONDUCTOR Open Circuit. Will accommodate plug #PJ068. No. 338-A, .51¢.

THREE CONDUCTOR Open Circuit. Similar to 338 except with ⅜" bushing length. No. 338L, .51¢.

THREE CONDUCTOR Closed Circuit. No. 339, .57¢.

THICK PANEL JACK — TWO CONDUCTOR Open Circuit. For use on thick panels, walls, stage platforms, etc. No. 345, .93¢.

THICK PANEL JACK THREE CONDUCTOR Open Circuit. No. 346, $1.02.

SHOULDER AND FLAT WASHERS Natural Fiber No. SW-3838, $1.20 per 100. No. FW-3838, $1.09 per 100.

EXTENSION JACKS

TWO CONDUCTOR JACK No. 6-100, Black .66¢. No. 6-101, Metal .90¢.

THREE CONDUCTOR JACK No. 6-102, Black .90¢. No. 6-103, Metal $1.05.

TWO CONDUCTOR MINIATURE JACK No. 6-104, Black .78¢. No. 6-105, Metal .84¢.

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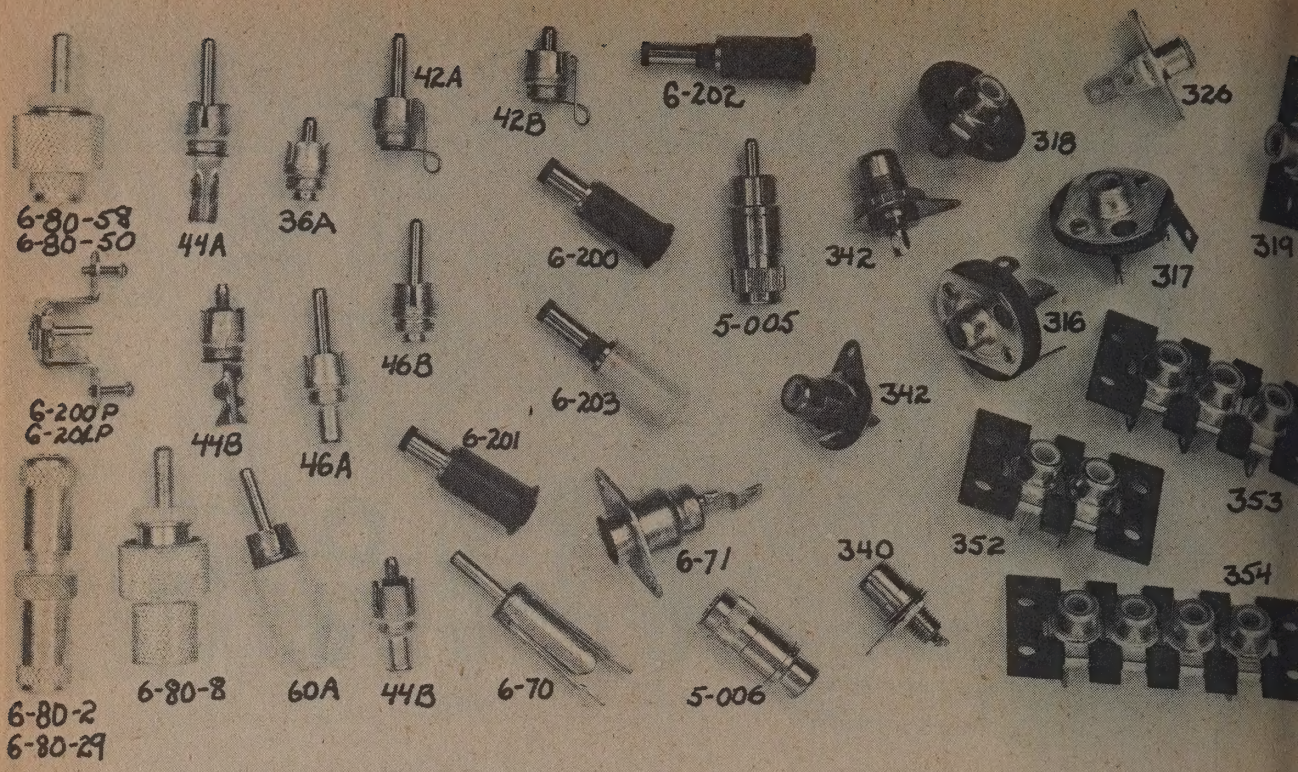

SOLDERLESS COAXIAL CONNECTORS

SOLDERLESS INLINE SPLICER Completely solderless PL-258 coaxial connector which requires no special tools for installation. Provides positive contact and maintains wire impedance. Delrin insulator. Replaces the PL-258. Far superior: faster, cheaper and easier to use. No. 6-80-2 splices RG-58, No. 6-80-29 splices RG-59 coaxial cable. Metal $1.20.

SOLDERLESS COAXIAL CONNECTOR Completely solderless PL-259 coaxial connector which requires no special tools for installation. Provides positive contact and maintains wire impedance. Delrin insulator. Accommodates RG-8 coaxial cable. 6-80-8, Metal .72¢

SOLDERLESS COAXIAL CONNECTOR Completely solderless PL-259 coaxial connector which requires no special tools for installation. Provides positive contact and maintains wire impedance. Delrin insulator. The No. 6-80-58 accommodates RG-58 and the No. 6-80-59 accommodates RG-59 coaxial cable. Metal .72¢.

COAXIAL ANTENNA PLUGS & JACK

COAXIAL ANTENNA PLUG Used extensively in automobile radios, and for CATV and MATV applications. Tinned brass with ceramic insulator. No. 6-70, Metal .102¢.

COAXIAL ANTENNA JACK Receptacle for 6-70 plug. Tinned to facilitate soldering. No. 6-71, Metal .18¢.

COAXIAL PLUGS & JACK

Used extensively on AC adaptors, and battery chargers for transistorized tape recorders, television receivers and radios.

COAXIAL JACK .080 I.D. .218 O.D. No. 6-200, Green .39¢.

COAXIAL JACK .097 I.D. .218 O.D. No. 6-201, Red .39¢.

COAXIAL JACK .080 I.D. .195 O.D. No. 6-202, Blue .45¢.

COAXIAL JACK .097 I.D. .195 O.D. No 6-203, Tan. 45¢.

COAXIAL SWITCHING PLUGS Switching plugs used 6-200, 6-201, 6-202, and 6-203 coaxial jacks. No. 6-2 No. 6-200P fits 6-200 and 6-202 jacks. No. 6-20IP 6-201 and 6-203. .39¢.

PHONO PLUGS

Shells are .016 Brass or Steel, Cadmium Plated, designe have a wiping action with mating part for good ground. are drawn brass, bright nickel plated. Insulating washe .062.

No. 36A .06¢: No. 36B .06¢: No. 42A .21¢: No. 42B No. 44A .09¢: No. 44B .09¢: CRIMP TYPE Standard No. .108¢: CRIMP TYPE Short Pin No. 46B .108¢: PLA HANDLE Standard No. 60A Red, Black, Gray, or white ea.: PLASTIC HANDLE Short Pin No. 60B Red, Black, or White .21¢ ea.: SHIELDED HANDLE PLUG Extremely to solder. Has a neat appearance and provides finger gri easy removal. No. 5-005 .36¢.

PHONO JACKS

Insulator discs are XP laminated phenolic with ceramic sulator bushings except for 5-006 which is XP. Shells steel cadmium plated, and the contacts are spring b cadmium plated. Solder lugs: brass, cadmium plated.

ROUND TYPE JACK No. 318 .05¢: RECTANGULAR JACK 319 .09¢. OVAL TYPE JACK No. 326 .09¢: SINGLE H JACK Front Mount No. 340 .36¢: SINGLE HOLE JACK Mount No. 342 .39¢: DUAL PHONO JACK No. 352 TRIPLE PHONO JACK No. 353 .18¢: QUADRUPLE PH JACK No. 354 .21¢: SWITCHING JACKS 317 is a two ductor closed and 316 is a three conductor closed Used as stereo, phonograph, or amplifier input. No. 316 No. 317 .27¢: INLINE PHONO JACK No. 5-006 .42¢.

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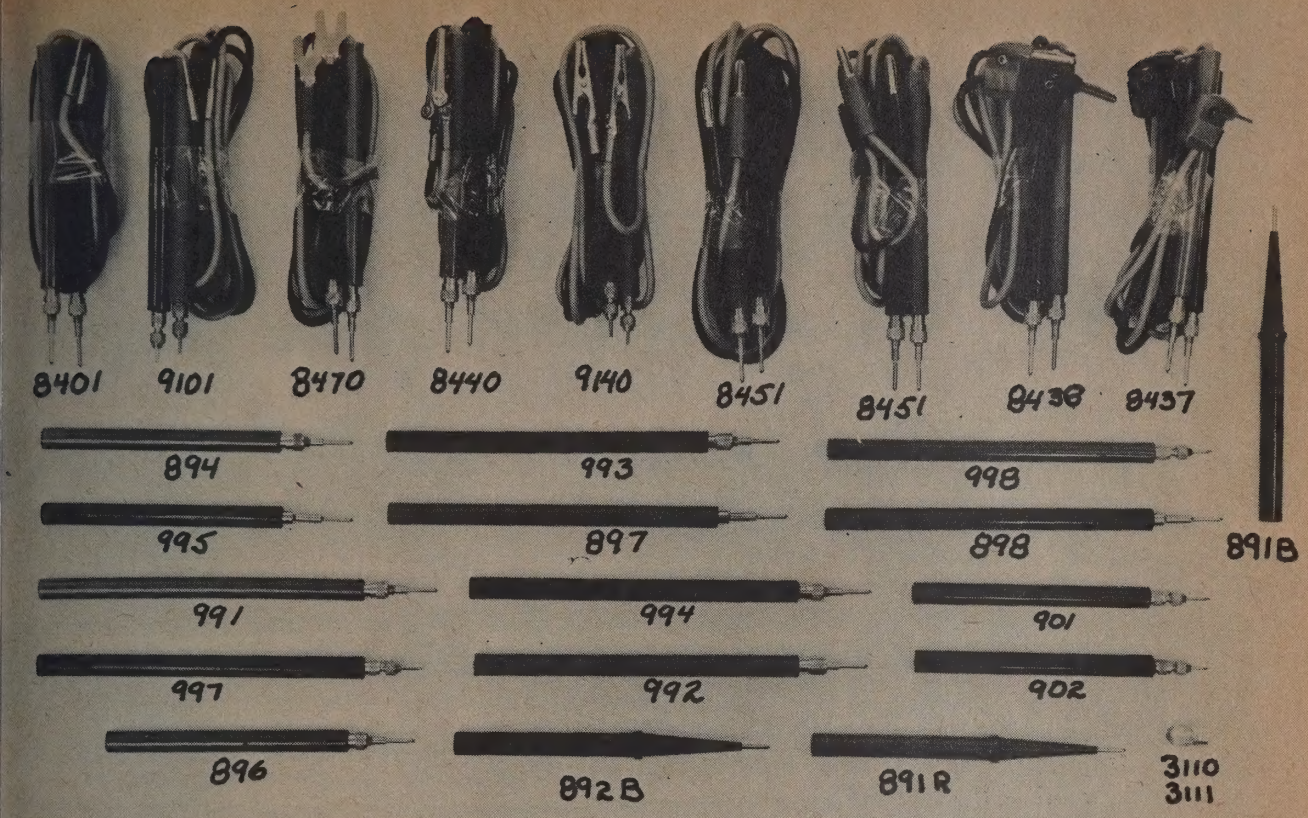

T LIGHT SHIELDS

SHIELDS No. 3110, Brass cadmium plated .036¢. 111, Bright brass dip .003¢.

PRODS

PROD Shouldered insulated handle made of Bakelite. ade of nickel-plated brass has set screw in side for ng conductor and thus making a solderless connection. crews into handle. Red and black. No. 891R, Red No. Black. .60¢.

PROD Same as No. 891 except with a banana plug or in back of handle. No. 892R, Red. No. 892B, Black.

PROD Solderless Threaded Type. Four Types. Handle: d Plastic, red or black. #805 solderless tip: Wire fits gh body and then wraps around threaded portion and ed collar tightened. No. 894: 5¼" overall length, 3/16" 94R = Red. 894B = Black. .30¢. No. 895: 5¼" overall , ¼" I.D., 859R = Red. 895B = Black. .24¢. No. 991: overall length, 3/16" I.D., 991R = Red. 991B = Black. No. 992: 6⅞" overall length, ¼" I.D., 992R = Red. = Black. .27¢.

ERLESS TEST PROD Force Fit Type Four Types. e: Molded plastic, red or black. #806 solderless tip; fit nickel plated brass tip plug. Solderless wire fits gh tip body and then wraps around screw portion. No. 5¼" overall length, 3/16" I.D., 896R = Red. 896B = .24¢. No. 904: 5¼" overall length, ¼" I.D., 904R = 904B = Black. .24¢. No. 993: 6⅞" overall length, 3/16" 93R = Red. 993B = Black. .27¢. No. 994: 6⅞" overall , ¼" I.D., 994R = Red. 994B = Black. .27¢.

PROD Heavy Duty Solder Type Four Types. Handle: d plastic, red or black. #802 solder tip; heavy duty plated brass with exceptionally large well for solder- Threaded for easy assembly in handle. No. 897: 5 3/16" l length, 3/16" I.D., 897R = Red. 897B = Black. .30¢. No. 898: 5 3/16" overall length, ¼" I.D., 898R = Red. 898B = Black. .30¢. No. 995: 6 1/16" overall length, 3/16" I.D., 995 = Red. 995B = Black. .33¢. No. 966: 6 1/16" overall length, ¼" I.D., 966R = Red. 966B = Black. .33¢.

TEST PROD Phono Needle Type Handle: Molded plastic, red or black #866 tip; phono needle type with nickel plated steel needle. Needle pierces plating or corrosion. No. 901: 4⅞" overall length, 3/16" I.D., 901R = Red. 901B = Black. .30¢. No. 902: 4⅞" overall length, ¼" I.D., 902R = Red. 902B = Black. .30¢. No. 997: 6⅜" overall length, 3/16" I.D., 997R = Red. 997B = Black. .33¢. No. 998: 6⅜" overall length, ¼" I.D., 998R = Red. 998B = Black. .33¢.

TEST LEAD SETS

50 Ft. of rubber covered, 5000 volt, kinkless wire.

TIP PLUG TYPE Solderless test prod #894 with #801 tip plug. No. 8401 .87¢.

SOLDERLESS RIGHT ANGLE Banana Plug Type Solderless test prod #894 with #836 solderless right angle banana plug. No. 8436 $1.50.

SOLDERLESS RIGHT ANGLE Tip Plug Type Solderless test prod #894 with #837 solderless right angle banana plug. No. 8437 $1.35.

ALLIGATOR CLIP TYPE Solderless test prod #894 with #740 alligator clip. No. 8440 .93¢.

BANANA PLUG TYPE Solderless test prod #894 with #851 banana plug. No. 8451 $1.50.

TIP PLUG TYPE Solderless test prod #894 with #855 tip plug. No. 8455 $1.25.

SPADE LUG TYPE Solderless test prod #894 with #870 spade lug. No. 8470 .87¢.

TIP PLUG TYPE Phono needle test prod #901 with #801 tip plug. No. 9101 .87¢.

ALLIGATOR CLIP TYPE Phono needle test prod #901 with #740 alligator clip. No. 9140 .93¢.

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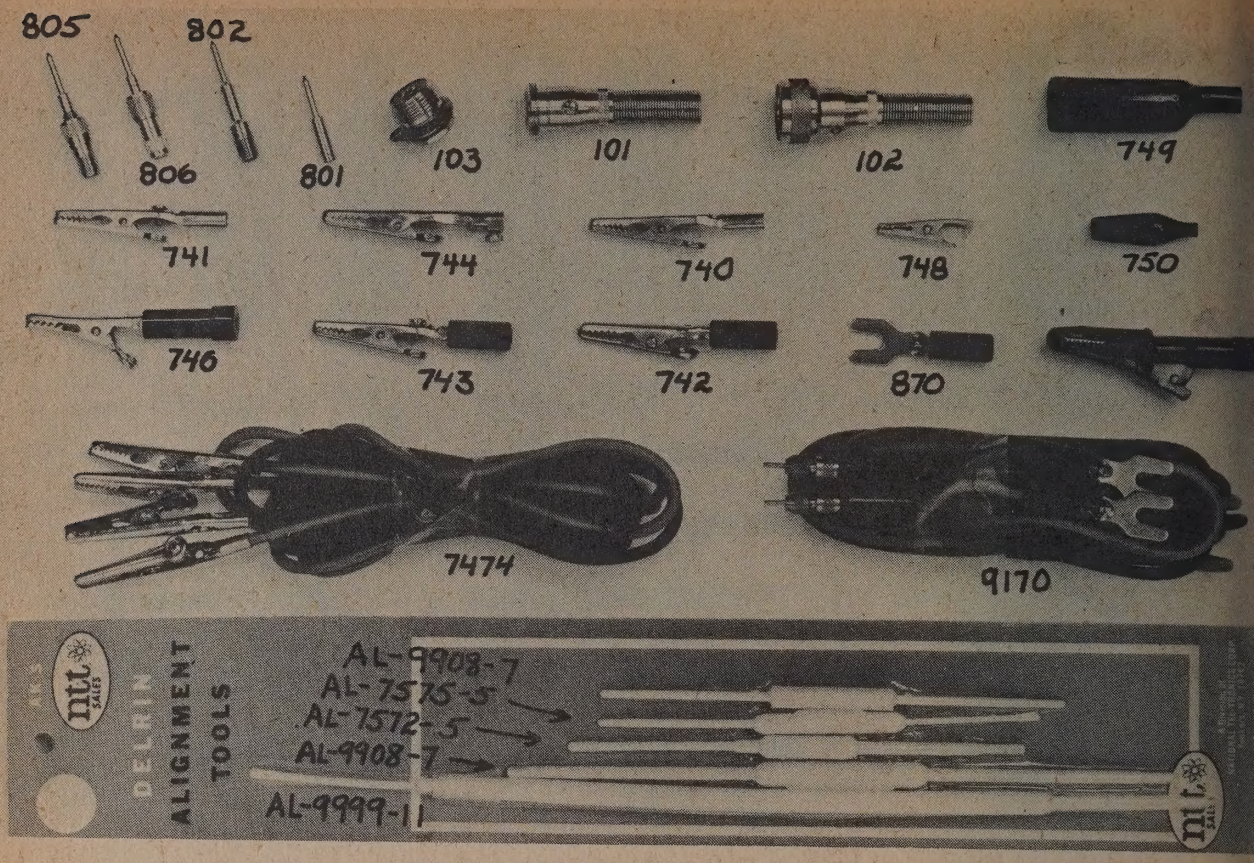

SPADE TYPE LUG Phono needle test prod #901 with #870 spade lug. No. 9170 .87¢.

ALLIGATOR CLIP TYPE One #740 Alligator clip on each end. No. 7474. .78¢.

ALIGNMENT TOOLS

No. AL7572-5 Double ended alignment tool for use in adjusting coil slugs. .075" hex on both ends 5" long. Molded of delrin. One end undercut so that hex head can pass through and not disturb a top slug in order to adjust a second, lower slug. .45¢.

No. AL7575-5 Double ended alignment tool for use in adjusting coil slugs. .075" hex on both ends 5" long. Molded of Delrin. Not undercut. .45¢.

No. AL9908-7 Double ended alignment tool for use in adjusting hex and slot type controls. .099 hex on one end. Screwdriver tip on other end. 7" long. Molded of Delrin. .70¢.

No. AL9999-5 Double ended alignment tool for use in adjusting Admiral, Zenith, and other television sets. .099 hex on both ends. 5" long. Molded of Delrin. One end undercut so that hex head can pass through and not disturb a top slug in order to adjust a second, lower slug. .45¢.

AL9999-11 Double ended alignment tool for use in adjusting Admiral, Zenith, and other television sets. .099 hex on both ends. 11" long. Molded of Delrin. One end undercut so that hex can pass through and not disturb a top slug in order to adjust a second, lower slug. .60¢.

MICROPHONE CONNECTORS

Use with single conductor, shielded microphone cable. Bodies are brass, nickel plated with phenolic insulators.

CORD MOUNTED Male No. 101 .36¢: CORD MOUNTED Female No. 102 .45¢: PANEL MOUNT Single Conductor No. 103 .33¢.

SPADE LUGS

INSULATED SPADE LUG No. 870B, Black; No. 870R, .108¢.

ALLIGATOR CLIPS

ALLIGATOR CLIP Solder Type No. 740, Steel .08¢; No. 7 Copper .16¢.

ALLIGATOR CLIP Screw Type No. 741, Steel .09¢; No. 7 Copper .18¢.

INSULATED ALLIGATOR CLIP Solder Type No. 742B, B No. 742R, Red .12¢ ea.

INSULATED ALLIGATOR CLIP Screw Type No. 743B, B No. 742R, Red .15¢ ea.

ALLIGATOR CLIP Special Screw Type No. 744, Steel .14

ALLIGATOR CLIP Fully Insulated Type Accepts stan banana plug in back. No. 745B, Black, No. 745R, Red ea.

TIP PLUG ADAPTOR Rear of handle accepts tip plug. 746B, Black; No. 746R, Red .33¢ ea. B-C, R-C, Copper .3

MINIATURE CLIP No. 748, Steel .06¢; No. 748C, Co .08¢.

STANDARD INSULATORS Insulators for clips #740 #741. Made of flexible polyvinyl. Allows for full jaw ope No. 749B, Black; No. 749R, Red .05¢ ea.

MINIATURE INSULATORS Insulators for clips #748. 750B, Black; No. 750R, Red .05¢ ea.

TIP PLUGS

PHONE TIPS Solder Type No. 801 .021¢

TIP PLUG Threaded, Heavy Duty No. 802 .12¢.

SOLDERLESS TIP PLUG Large, Threaded No. 805 .12¢.

SOLDERLESS TIP PLUG Large, Knurled No. 806 .11¢.

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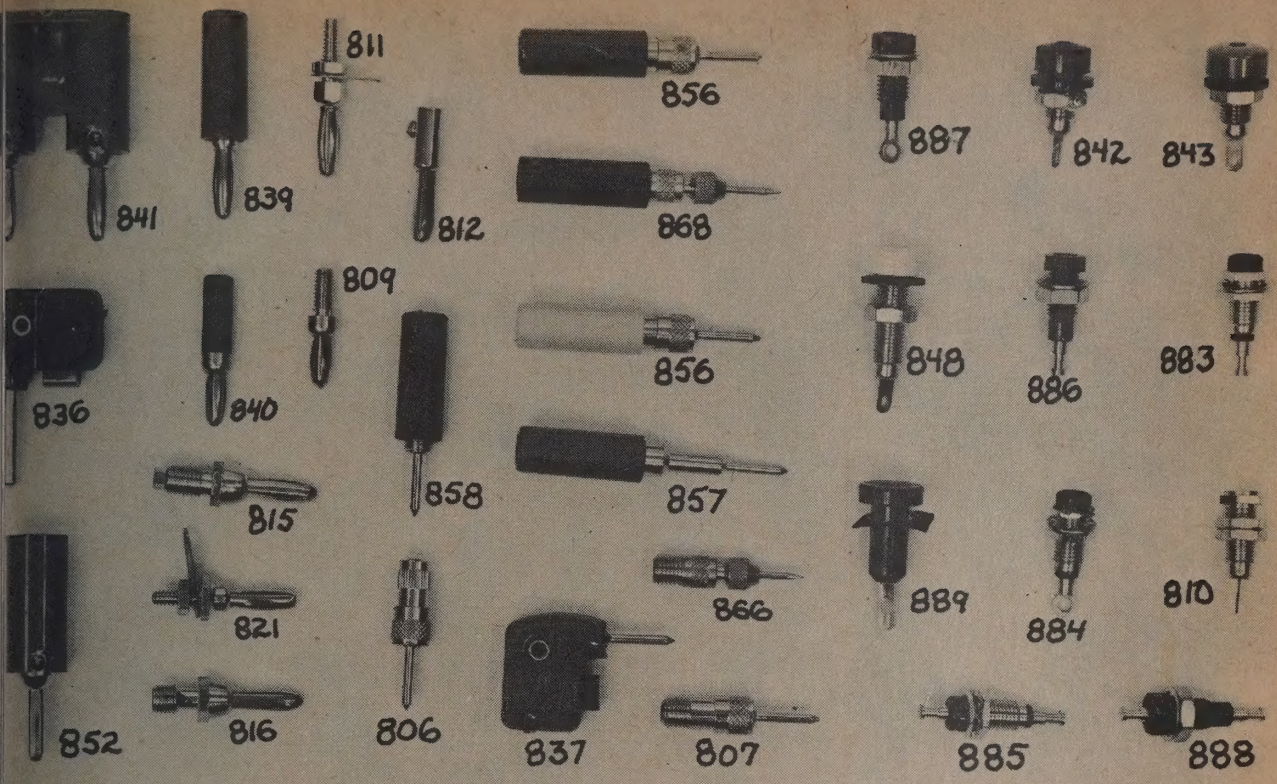

DERLESS TIP PLUG Small, Threaded No. 807 .12¢.
DERLESS TIP PLUG Small, Knurled No. 808 .11¢.
JLATED TIP PLUG Meter Type, Push Button Solderless 837, Black or Red .30¢.
DERLESS TIP PLUG Large Type No. 855, Black, Blue, n, Yellow, Red or White .15¢ ea.
DERLESS TIP PLUG Small Type No. 856 Black, Blue, n, Yellow, Red or White .15¢ ea.
PLUG Heavy Duty, Insulated No. 857 Black, Blue, Green, Yellow or White .15¢ ea.
JLATED TIP PLUG No. 858, Black or Red .12¢.
DLE TIP AND CHUCK No. 866 .14¢.
ULATED NEEDLE TIP PLUG No. 868, Black, Blue, Green, Yellow or White .18¢.

JACKS

NE TIP JACK Non-Insulated Type No. 810 .11¢.
NE TIP JACK Insulated Type No. 842, Black, Blue, Green, Yellow or White .14¢ ea.
DIAMETER HEAD No. 843, Black or Red .21¢ ea.
ULATED JACK Combination Type No. 848, Black, Blue, en, Red, Yellow or White .17¢ ea.

LON TIP JACKS

LON TIP JACK Wrap-Around Type with Metal Shell No. , Black, Blue, Green, Orange, Yellow, Red or White .288¢

LON TIP JACK Spade Terminal Type with Metal Shell No. , Black, Blue, Green, Orange, Yellow, Red or White .42¢

LON TIP JACK Feed-Through Type with Metal Shell No. , Black, Blue, Green, Orange, Yellow, Red or White .39¢

ALL NYLON TIP JACK Wrap-Around Type No. 886, Black, Blue, Green, Orange, Yellow, Red or White .21¢ ea.
ALL NYLON TIP JACK Spade Terminal Type No. 887, Black, Blue, Green, Orange, Yellow, Red or White .30¢ ea.
ALL NYLON TIP JACK Feed-Through Type No. 888, Black, Blue, Green, Orange, Yellow, Red or White .282¢ ea.
ALL NYLON TIP JACK Speed Clip Type No. 889, Black or Red .066¢ ea.

BANANA PLUGS

MIDGET BANANA PLUG Rivet Type No. 809 .162¢.
BANANA PLUGS No. 811 .18¢.
BANANA PLUG Solderless No. 812 .18¢.
MIDGET BANANA PLUG Threaded Type No. 814 .162¢.
BANANA PLUG Solderless No. 815 .18¢.
BANANA PLUGS Wire can be soldered to brass stud. No. 816 .18¢.
BANANA PLUG Threaded Hole, Panel Mount No. 819 .18¢.
BANANA PLUG Threaded Hole, Panel Mount Standard banana jack. Four-leaf, nickel-plated phosphor bronze spring. A hex nut and phosphor bronze lug are supplied. Stud is threaded for panel mounting. No. 821 .18¢.
INSULATED BANANA PLUG Molded Bakelite handle in Red or Black. Push button, then feed conductor through hole. Release button, conductor is locked in position. No. 836 .36¢ ea.
STACKING INSULATED BANANA PLUG Molded polystyrene handle. Colors red or black. The set screw is for phone tip or wire connections. No. 839 .48¢ ea.
INSULATED BANANA PLUG Miniature Type Red or Black No. 840 .19¢ ea.
STACKING DUAL BANANA PLUGS No. 841, Black or Red .72¢ ea.
INSULATED BANANA PLUG No. 851, Black, Blue or Red .19¢ ea.

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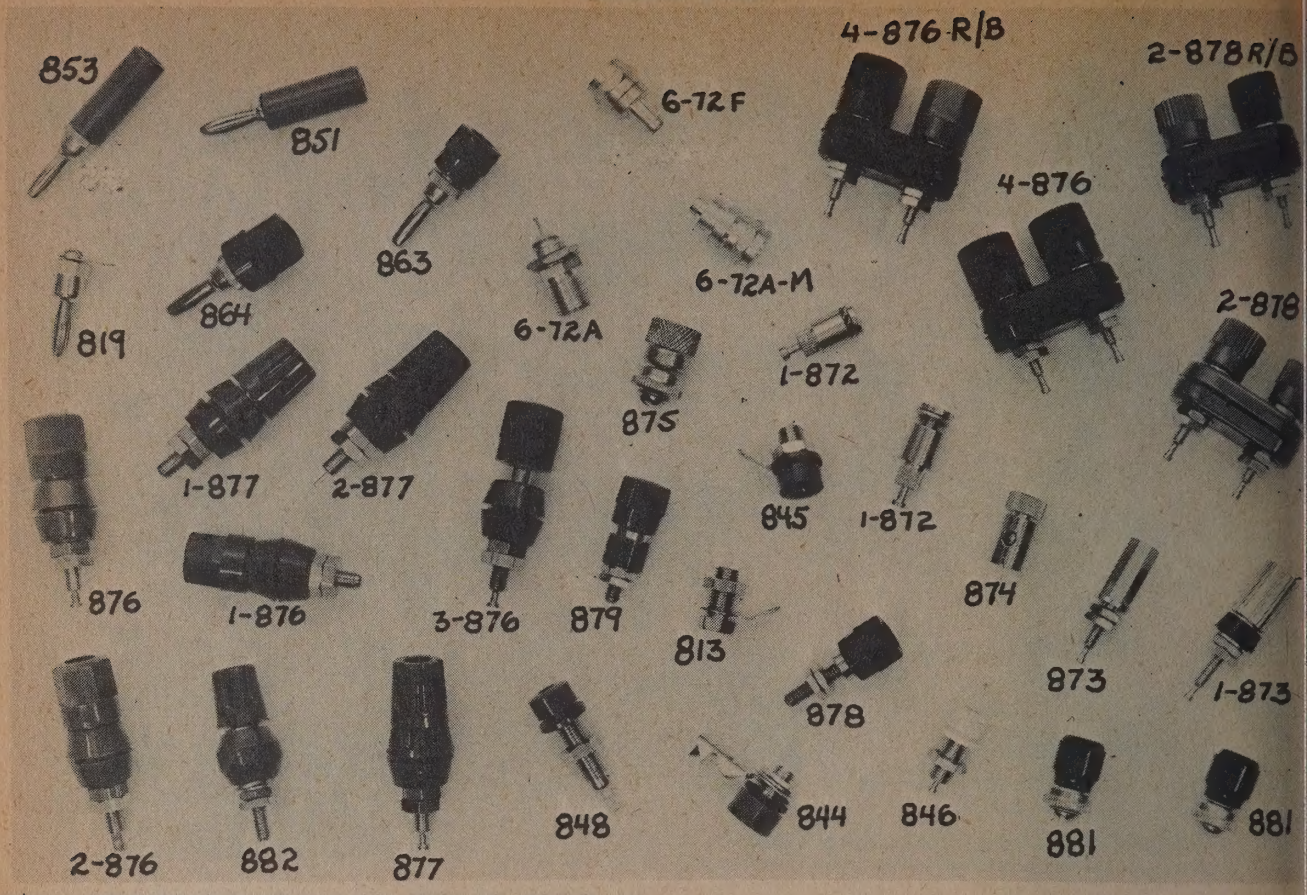

INSULATED BANANA PLUG With Side Screw No. 852, Black, Blue, Green, Yellow, Red or White .19¢ ea.

INSULATED BANANA PLUG No. 853, Black, Blue, Green, Yellow, Red or White .22¢ ea.

BANANA JACKS

BANANA JACK Non-Insulated Type No. 813 .11¢.

BANANA JACK Insulated Type No. 844, Black, Blue, Red .16¢.

BANANA JACK Insulated Type No. 845, Black, Blue, Green, Red, Yellow, White .14¢.

BANANA JACK Insulated Type No. 846, Black, Blue, Green, Red, Yellow, or White .15¢ ea.

INSULATED JACK Combination Type No. 848, Black, Blue, Green, Red, Yellow, or White .17¢ ea.

BINDING POSTS

COMBINATION BINDING POST AND BANANA PLUG No. 863, Black, or Red .30¢ ea.

COMBINATION BINDING POST AND BANANA PLUG No. 864, Black or Red .30¢ ea.

METAL BINDING POST Combination Terminal Stake-In Binding Post No. 872 .114¢

METAL BINDING POST Combination Terminal Stake-In Binding Post No. 1-872 .114¢.

METAL BINDING POST No. 873 .25¢.

METAL BINDING POST No. 1-873 .30¢.

METAL BINDING POST No. 874 .15¢.

METAL BINDING POST No. 875 .18¢.

5-WAY BINDING POST Hexagonal Head, Wrap around terminal. No. 876, Black, Red, Blue, Green, Yellow, or White .36¢ ea.

5-WAY BINDING POST Hexagonal Head. Screw-end No. 1-876, Black, or Red .40¢ ea.

5-WAY BINDING POST Hexagonal Head. Spade lug end 2-876, Black, or Red .42¢ ea.

5-WAY BINDING POST Hexagonal Head. Wrap around terminal No. 3-876, Black, Red, Blue, Green, Yellow, or W .42¢ ea.

DUAL 5-WAY BINDING POST Hexagonal Head. Wrap aro type. No. 4-876, Black, Red, or Black/Red .66¢ ea.

5-WAY BINDING POST Fluted Head. Wrap-around end. 877, Black, or Red .49¢ ea.

5-WAY BINDING POST Fluted Head. Screw end. No. 1-87 Black; No. 1-877R, Red .45¢ ea.

5-WAY BINDING POST Fluted Head. Spade end. No. 2-87 Black; No. 2-877R, Red .52¢ ea.

5-WAY GROUNDING TYPE No. 878R, Red; No. 878R, Bl .18¢ ea.

DUAL 5-WAY BINDING POST Nylon Head. Wrap around t No. 2-878B, Black; No. 2-878R, Red; No. 2-878RB, Red Black .54¢ ea.

FULLY INSULATED TYPE No. 879R, Red; No. 879B, Bl .25¢ ea.

FULLY INSULATED TYPE No. 879R, Red; No. 879B, Bl .25¢ ea.

BINDING POST No. 880R, Red; No. 880B, Black .18¢ ea.

BINDING POST No. 881R, Red; No. 881B, Black .18¢ ea.

4-WAY BINDING POST No. 882B, Black; No. 882R, Red ea.

"F" TYPE COAXIAL CONNECTORS

SOLDERLESS, FEMALE, Chassis or panel mount. For 59/U cable. No. 6-72-F .54¢.

SOLDERLESS, MALE. Built-on Ferrule. For RG-59/U ca No. 6-72A-M .36¢.

SOLDERLESS, MALE. External type Ferrule. For RG-5 cable 6-72M .36¢.

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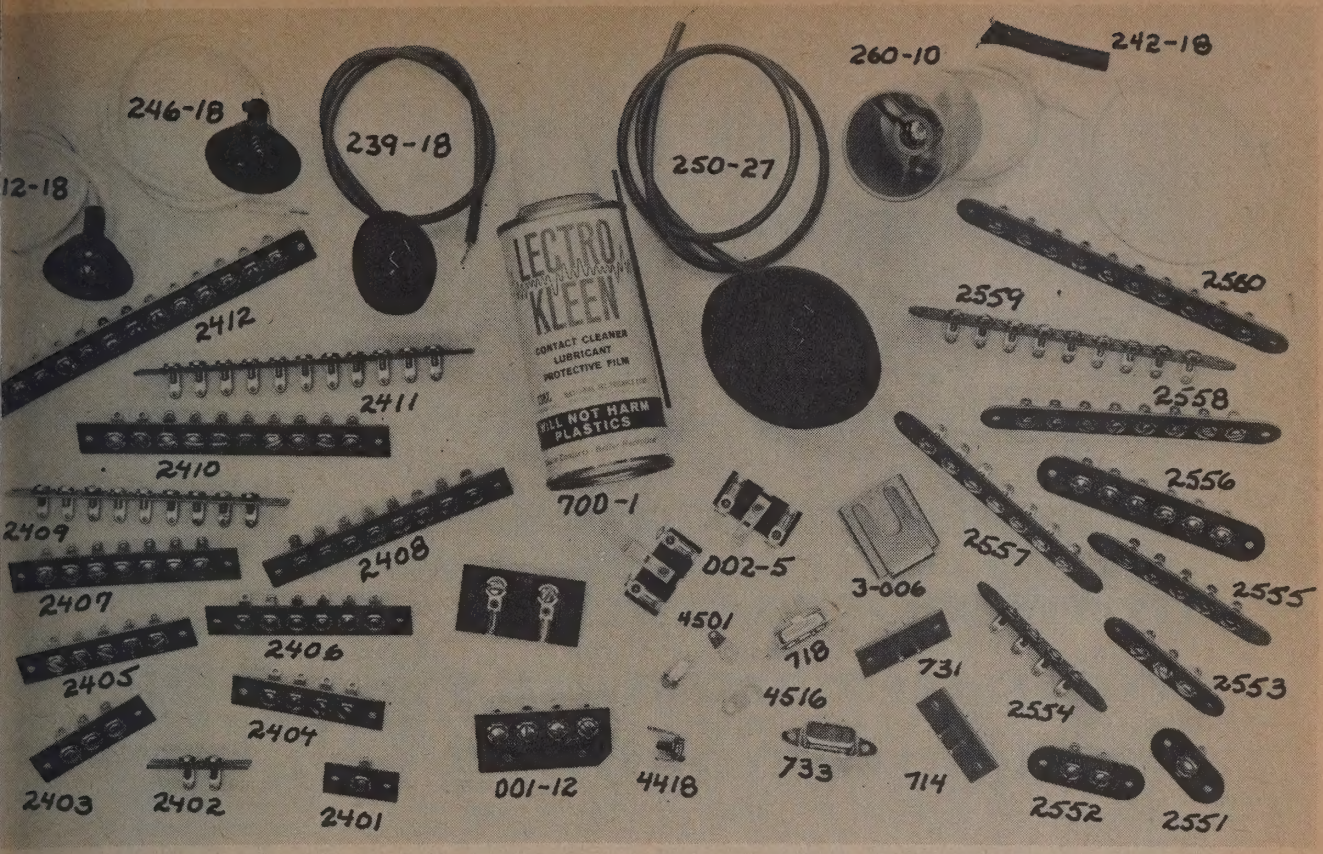

ODE CONNECTORS

ANDARD CONNECTOR No. 212—18" .45¢.
LOR CONNECTOR No. 239—18" .42¢.
ANDARD CONNECTOR No. 242—18" .33¢.
ANDARD CONNECTOR No. 246—18" .37¢.
LOR CONNECTOR No. 250—27" .57¢.

GH VOLTAGE PLATE CAP

GH VOLTAGE PLATE CAP No. 260—10" $1.20.

TERLOCK RECEPTACLES

USH RECEPTACLE Standard. No. 714 .054¢
CESSED RECEPTACLE Standard. No. 718 .078¢.
USH RECEPTACLE Polarized. No. 731 .054¢.
CESSED RECEPTACLE Polarized. No. 733 .078¢.

NDING POST TERMINALS

2 BRASS 6-32 x 5/16 **SCREW** No. 4403 .0396¢.
ORTING LINK 7/16" Centers No. 4515 .018¢.
ORTING LINK 1/2" Centers No. 4516 .018¢.
0 BRASS 8-32 x 3/8 **SCREW** No. 4418 .054¢.

NDING POST BOARDS

rds are 1/16" thick XP Laminated Phenolic. Terminals are thick, brass, cadmium plated. Screws are steel nickel-ed.

0 SERIES 1 terminal No. 2401, .05¢; 2 terminals No. 2, .073¢; 3 terminals No. 2403, .10¢; 4 terminals No. 4, .125¢; 5 terminals No. 2405, .15¢; 6 terminals No. 6, .175¢; 7 terminals No. 2407, .20¢; 8 terminals No. 8, .225¢; 9 terminals No. 2409, .25¢; 10 terminals No. 2410, .275¢; 11 terminals No. 2411, .30¢; 12 terminals No. 2412, .325¢.

2551 SERIES 1 terminal No. 2551, .052¢; 2 terminals No. 2552, .08¢; 3 terminals No. 2553, .107¢; 4 terminals No. 2554, .133¢; 5 terminals No. 2555, .16¢; 6 terminals No. 2556, .18¢; 7 terminals No. 2557, .215¢; 8 terminals No. 2558, .24¢; 9 terminals No. 2559, .27¢; 10 terminals No. 2560, .29¢.

ANTENNA BINDING POSTS

UHF CONVERTER STRIP No. 001-3, .36¢.
STANDARD VHF STRIP No. 001-4, .18¢.
UHF-VHF STRIP No. 001-12, .28¢.

CONTACT CONNECTORS

TWO CONTACT STRIP No. 02-5, .066¢.

CHEMICALS

LECTRO-KLEEN Tuner-Contact Cleaner specially for color TV. There is no longer a need to stock a special contact cleaner for controls and another type for tuners. LECTRO-KLEEN will do all of your electronic cleaing jobs. LECTRO-KLEEN cleans, lubricates, and protects at the same time. No. 7-001, $1.17.

MAGNETIC MICROPHONE HOLDER

Ideal for mobile communication. No more fumbling to find the microphone holder. NT-T's Magnetic Microphone holds to surfaces such as dash boards, and the sides of set. No. 3-006, .99¢.

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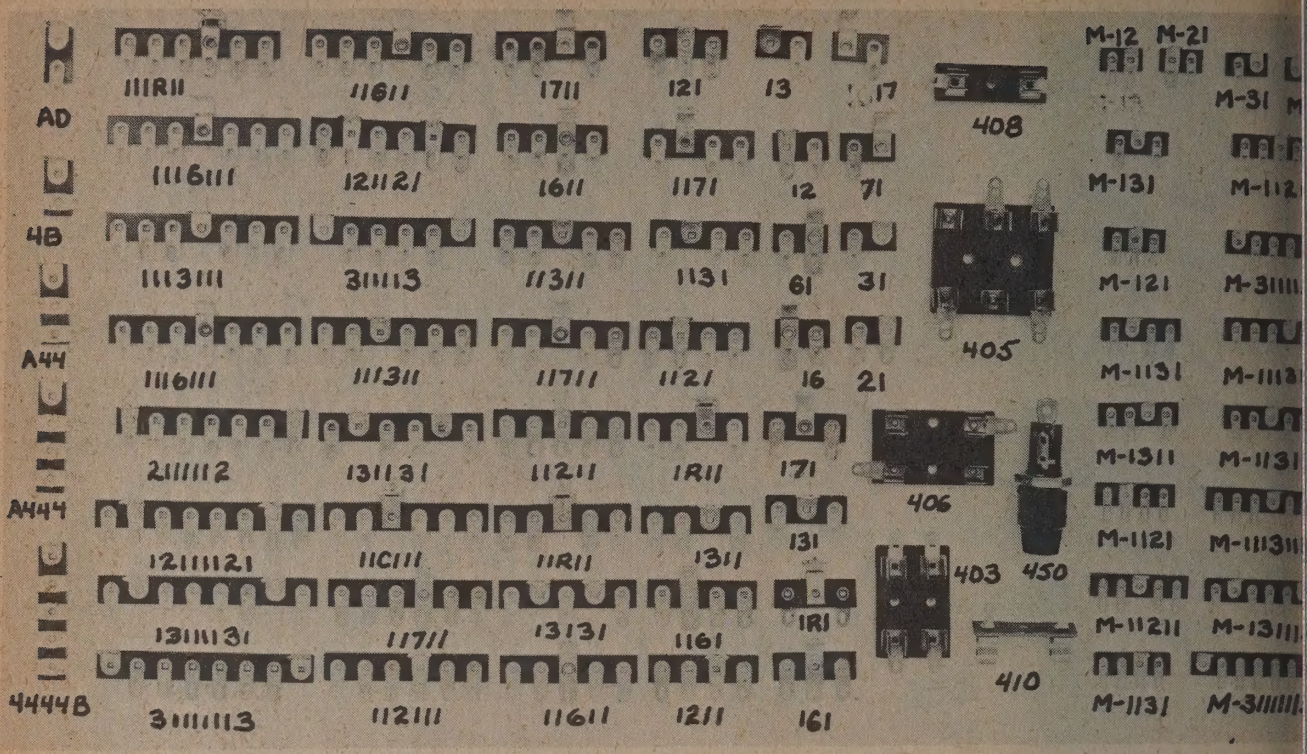

FUSE MOUNTING BASES

3AG fuse mounting assemblies are used throughout industry. Fuse blocks available in one, two, and three pole assemblies.

2 FUSE HOLDER No. 403, Black .24¢

3 FUSE HOLDER No. 405, Black .48¢.

2 FUSE HOLDER No. 406, Black .36¢.

SINGLE FUSE HOLDER No. 408, Black .13¢.

SINGLE FUSE HOLDER No. 410, Black .13¢.

NYLON INLINE FUSE HOLDER with 20" lead No. 449, White .35¢.

PANEL MOUNTED HOLDERS 3AG Type Fuses No. 450, Black .35¢.

PANEL MOUNTED RIGHT ANGLE HOLDERS 3AG Type Fuses No. 451, Black .45¢.

SOLDERING LUGS

Brass soldering lugs are utilized extensively for grounding or combining wires at one spot. All are tinned-brass for more efficient soldering. Available in bulk only.

3 Types: 4501, 4502, and 4504.

TERMINAL STRIPS

Strips are 1/16" by 3/8" NEMA grade XP laminated phenolic with brass or steel lugs. All are securely eyeletted in position. Lug spacing is .38". NT•T's vast assortment of strips allows for the most complete coverage and applications. Identification numbers are next to pictures.

Price per each in standard pack of 10. No. AD, .0246¢; 4B, .0256¢; No. 12, .0246¢; No. 13, .0246¢; No. 16, .02 No. 17, .0246¢; No. 21, .0246¢; No. 31, .0246¢; No. .0267¢; No. 61, .0267¢; No. 71, .0246¢; No. 121, .02 No. 131, .0267¢; No. 161, .0267¢; No. 171, .0267¢; No. A .0474¢; No. 1121, .031¢; No. 1131, .031¢; No. 1161, .0 No. 1171, .031¢; No. 1211, .031¢; No. 1311, .031¢; No. 1 .031¢; No. 1711, .031¢; No. 4444B, .0577¢; No. 11 .0402¢; No. 11311, .0402¢; No. 116111, .0402¢; No. 11 .0402¢; No. 13131, .0474¢; No. 111311, .0433¢; No. 112 .0453¢; No. 116111, .0453¢; No. 117111, .0453¢; No. 121 .0525¢; No. 131131, .0525¢; No. 311113, .0525¢; 1113111, .0505¢; No. 1116111, .0505¢; No. 1117111, .05 No. 2111112, .0577¢; No. 3111113, .0577¢; No. 12111 .0628¢; No. 13111131, .0628¢; No. 31111113, .0628¢.

MINIATURE TERMINAL STRIPS

Strips are 1/16" by 5/16" NEMA grade XP laminated phenolic brass or steel lugs. All are securely eyeletted in posit Lug spacing is 1/4". NT•T's vast assortment of strips all for the most complete coverage and applications. Identif tion numbers are next to pictures.

Price per each 10 pack. M-12, .0246¢ M-13, .0246¢ No. M .0246¢; No. M-31, .0246¢; No. M-121, .035¢; No. M-1 .035¢; No. M-1121, .0412¢; No. M-1131, .0412¢; No. M-12 .0412¢; No. M-1311, .0412¢; No. M-11211, .0474¢; M-11311, .0474¢; No. M-111311, .0556¢; No. M-1131 .0556¢; No. M-311113, .0618¢; No. M-1113111, .0618¢; M-1311131, .068¢; No. M-31111113, .0783¢; No. R1, .024 No. 1R1, .031¢; No. 1R11, .035¢; No. 11R11, .0433¢; 11C111, .0536¢; No. 111R11, .0536¢.

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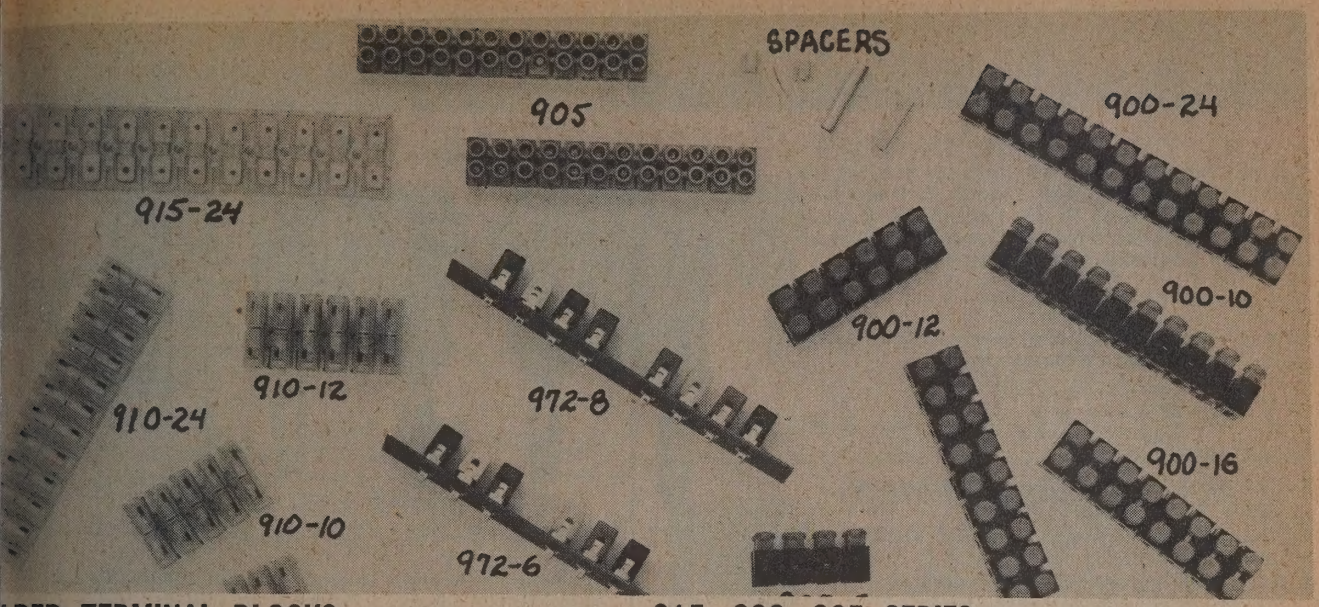

LDED TERMINAL BLOCKS

No. 900 terminal block is solderless, and is molded of black polyvinylchloride. Push buttons are molded of polyvinylchloride. These terminal blocks have extremely dielectric properties and are approved to resist 440 or 500 volts when mounted on insulated surface. Maxi- current 27 amperes, maximum heat capacity 70°C. imum wire size applicable AWG #12. Maximum contact sure: 13.22 lbs. Connection of conductor is extremely Press the red button and insert the wire. Release pres- for locking. The beryllium copper contacts are molded the block. Type 900 is available for 24 pairs of wires. ay be cut to smaller size if required.

SERIES Push Button No. 900-4, 2-Pairs, .498¢; No. -6, 3-Pairs, .66¢; No. 900-8, 4-Pairs, .846¢; No. 900-10, irs, $1.02; No. 900-12, 6 Pairs, $1.23; No. 900-14, 7- s, $1.44; No. 900-16, 8-Pairs, $1.59; No. 900-18, 9- s, $1.77; No. 900-20, 10-Pairs, $1.95; No. 900-24, 12- s, $2.31.

5 SERIES FLEXIBLE

No. 905 Solderless Terminal Blocks are specially de- ed for applications where space and weight conservation important factors. Because they are molded of flexible vinylchloride material they may be bent in any direc- to fit contours and sharp angles. Typical applications hese terminal blocks include missile guidance systems, puters, aircraft communications, underwater detecting pment, etc. The shortest distance between the live parts ype No. 905 Terminal Block is 3/8". Its brass terminals accommodate a #10 wire as a maximum. The polyester erial of which the blocks are made is rated at max. of 30 s, 380 volts, or 440 volts if mounted on insulated sur- . Maximum heat capacity: 60°C. Insert conductor in k and tighten the set screw. Flexible Terminal Block No. measures 3 5/64" long, 5/8" wide, 1/2" high and 11/32" be- n terminal centers. It may be cut to smaller sizes as ired. No. 905, $1.21.

0 SERIES

erless, flexible, Thermoplastic Terminal Block. Accepts nded or solid wire to 13 AWG. Just press wire into open- No wrapping, no soldering. Place small blade screw r in top slot and press to release wire. Contacts are per nickel-plated. Maximum operating temperature 212°F. sit resistance 0.7 Ohms. Units are rated at 380-440 s D.C. Ideal for labs, schools, and hobbyists. Type 910 is lable up to 12 pairs and may be cut down as desired. e per each standard 10 pack. No. 910-4, 2-Pairs .444¢; 910-6, 3-pairs .594¢; No. 910-8, 4-Pairs .762¢; No. 910- 5-Pairs .924¢; No. 910-12, 6-Pairs $1.08; No. 910-14, 7 s $1.26; No. 910-16, 8-pairs $1.44; No. 910-18, 9 Pairs 6; No. 910-20, 10-airs $1.74; No. 910-24, 12 Pairs $2.57.

915, 920, 925 SERIES

Unique terminal block for use with quick-disconnect 1/4" width terminals. Ideal for breadboarding, test strips, and simplifying installations. Solderless, exceptionally flexible. Available in 12 and 24 cell (6 and 12 pairs) that may be easily cut to fit, and in three widths. Molded from transparent Polyvinyl chloride. Rated at 250 VDC, 20A, 80°C. No. 915-12, .52¢; No. 915-24, $1.03; No. 920-12, .52¢; No. 920-24, $1.02; No. 925-12, .56¢; No. 925-4, $1.11.

COMPRESSION TYPE TERMINAL BLOCKS

927 SERIES Series 927 push button terminal blocks are unique. They firmly graps stripped wire in a spring loaded grip. Top of push button is pressed down and wire is inserted into hole. Releasing push button permits top to rise and clamp wire securely. Push buttons are available singly or in strips to your order in single or multiple rows. The buttons are cadmium plated steel. Springs are phosphor bronze. Button is molded of styrene plastic in red, yellow, blue, black, white, or green. COLOR CODE: R = Red, Y = Yellow, BL = Blue, B = Black, W = White, G = Green. No. 927-2, 2 buttons B-R .60¢; No. 927-4, 4 buttons B-R-Y-BL $1.14; No. 927-6, 6 buttons B-R-Y-BL-W-G $1.70; No. 927-8, 8 buttons B-R-Y-BL-W-G $2.25.

SPACERS

BRASS HEX HEAD SPACERS Cadmium Plated 1/4" Hex.

Length "L"	Thread 4-40	Thread 6-32	Thread 8-32	NET Per C
.250	H2525-440	H2525-632	H2525-832	$ 4.40
.375	H2537-440	H2537-632	H2537-832	$ 5.25
.500	H2550-440	H2550-632	H2550-832	$ 6.30
.750	H2575-440	H2575-632	H2575-832	$ 9.20
1.000	H2510-440	H2510-632	H2510-832	$11.20

BRASS SPACERS Cadmium Plated 1/4" O.D.

Length "L"	For #4 Screw	For #6 Screw	For #8 Screw	NET Per C
.250	R2525-4	R2525-6	R2525-8	$ 3.30
.375	R2537-4	R2537-6	R2537-8	$ 4.35
.500	R2550-4	R2550-6	R2550-8	$ 5.28
.750	R2575-4	R2575-6	R2575-8	$ 6.30
1.000	R2510-4	R2510-6	R2510-9	$ 7.20
		3/8" O.D.		
.500			R3750-8	$ 8.00
.750			R3775-8	$10.90

BRASS THREADED SPACERS Cadmium Plated 1/4" O.D.

Length "L"	Thread 4-40	Thread 6-32	Thread 8-32	NET Per C
.250	R2525-440	R2525-632	R2525-832	$ 3.90
.375	R2537-440	R2537-632	R2537-832	$ 4.95
.500	R2550-440	R2550-632	R2550-832	$ 6.00
.750	R2575-440	R2575-632	R2575-832	$ 8.40
1.000	R2510-440	R2510-632	R2510-832	$10.40

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POMONA ELECTRONICS

¾" SPACED MOLDED BANANA PLUGS

Pomona Banana Plug and stack-up accessories are of the highest quality — tough thermoplastic — molded directly on to the metal body of plugs and connectors for maximum strength, moisture resistance and insulative properties:

General Specifications listed below apply to items using banana plugs in this catalog.

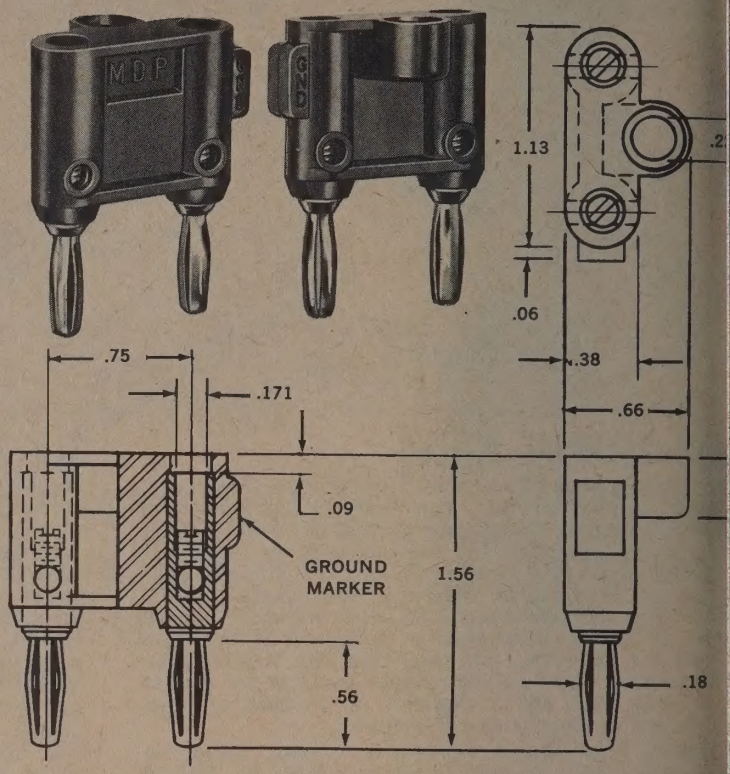
FEATURES . . .

- One piece beryllium copper heat treated spring for maximum long life.
- Rounded spring design results in maximum contact area.
- STACK-UP feature allows an unlimited number of connections at the same electrical point.

SPECIFICATIONS . . .

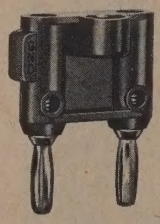
- Fits standard 0.166 dia. banana jacks.
- Spring, beryllium copper alloy 170 per QQ-C-533.
- Plug body, Brass per QQ-B-626. Comp. 22.
- Nickel plated per QQ-N-290, Class 2.
- Contact resistance less than 0.001 ohms per banana plug.

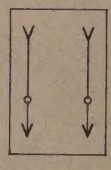
ACTUAL SIZE



RATINGS	Models: MDP; MDP-ST; 1330; 1330-ST; 2970
■ Capacity :	0.8 pf to 10 MC
■ Current :	15 Amps. Cont., 30 Amps. Int.
■ Voltage :	5000 W.V. D.C.
■ Temperature :	—25°C to +85°C, operating temp.

DOUBLE BANANA PLUG



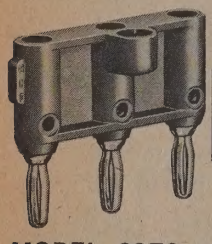


Double banana plug on ¾" centers; set secure leads; simplifies cable construct component mounting; banana jacks perm Stack-Up for multiple connections.

COLORS: Black, Brown, Red, Orange, Y Green, Blue, Violet, Gray, White.

MODEL MDP (Specify Color) QUANTITY DISC. CODE **A** NET

TRIPLE BANANA PLUG

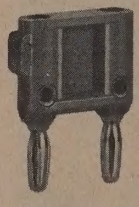


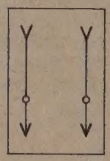
Triple banana plug on ¾" centers; set screws secure leads. Ideal for balanced line 2 conductor shielded cable assemblies. Banana jacks permit top Stack-up for multiple connections.

COLORS: Black, Red.

MODEL 2970 (Specify Color) QUANTITY DISC. CODE **A** NET 1.25

COMPONENT MOUNTING DOUBLE BANANA PI



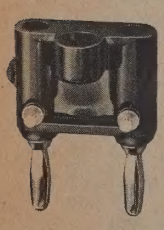


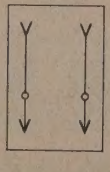
Double banana plug on ¾" centers; set secure leads; features recess for mounting components; banana jacks permit top St for multiple connections.

COLORS: Black, Red

MODEL 1330 (Specify Color) QUANTITY DISC. CODE **A** NET

DOUBLE BANANA PLUG WITH SOLDER TURRET TERMINALS



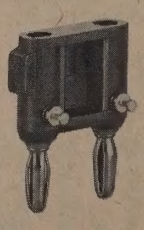


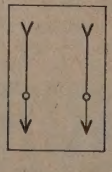
Similar to Model MDP, except has solder turret terminals for permanent noise-free connections of cables and components. Double banana plug on ¾" centers; banana jacks permit top Stack-Up for multiple connections.

COLOR: Black

MODEL MDP-ST QUANTITY DISC. CODE **A** NET .85

COMPONENT PLUG WITH SOLI TURRET TERMINALS





Similar to Model 1330, except has solder terminals for permanent noise-free conne of components, etc. Double banana plug o centers: Banana jacks permit top Stack-U multiple connections.

COLORS: Black, Red.

MODEL 1330-ST (Specify Color) QUANTITY DISC. CODE NET

Net

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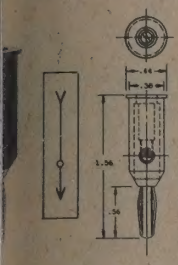
POMONA ELECTRONICS

BANANA PLUG ACCESSORIES

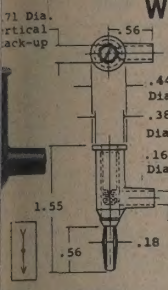
SOLDERLESS BANANA PLUG —STACK-UP



Wire firmly held in place with internal set screw, eliminating soldering. Assembly of test leads simplified.
UPPER: Banana jack, .171 dia.; Brass, nickel plated.
LOWER: Banana plug, one piece nickel plated beryllium copper spring for use with standard 0.166 dia. banana jack.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

DEL 1325 (Specify color) QUANTITY DISC. CODE A NET .50

SOLDERLESS BANANA PLUG WITH SAFETY COLLAR —STACK-UP



Features: Integral safety collar insulates exposed wire leads. Wire firmly held in place with internal set screw, eliminating soldering. Assembly of test leads simplified.
UPPER: Banana jack, .166 dia.; Brass, nickel plated.
LOWER: Banana plug, one piece nickel plated beryllium copper spring for use with standard 0.166 dia. banana jack.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

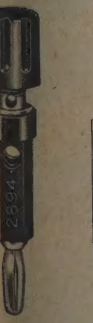
DEL 1825 (Specify Color) QUANTITY DISC. CODE A NET .50

BINDING POSTS TO DOUBLE BANANA PLUG

Features insulated binding posts on ¾" centers for rapid mounting and interchangeability of components. Binding posts allow top Stack-Up for multiple connections. Side Stack-Up provided by thru-holes in plug body.
UPPER: Insulated double binding posts, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: Double banana plug, on ¾" centers.
COLORS: Body, Black. Binding Posts, Black/Red.

DEL 1286 QUANTITY DISC. CODE A NET 2.50

BINDING POST TO SINGLE BANANA PLUG



Features insulated binding post. Binding post allows top Stack-Up for multiple connections. Side Stack-Up provided by thru-hole in plug body.
UPPER: Insulated binding post. Cross hole (.166 dia.) in body provides side Stack-Up connections.
LOWER: Single banana plug, one piece nickel plated beryllium copper spring for use with standard 0.166 dia. banana jack.
COLORS: Black, Red.

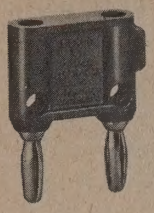
DEL 2894 (Specify color) QUANTITY DISC. CODE A NET 1.50

METAL SHORTING BAR

Low profile, nickel plated brass shorting bar. Double banana plugs on ¾" centers swaged to 3/32" thick brass bar. Resistance, less than 1.5 milliohms installed. Current rating: 15 Amps. Cont., 30 Amps. Int.

DEL 1855 QUANTITY DISC. CODE A NET .75

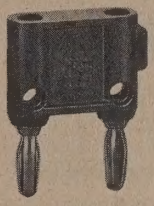
INSULATED SHORTING BAR



Ideal as a connecting link for use with ¾" spaced banana jacks. Banana plugs internally solder-bonded with #14 AWG wire. Banana jacks provide top Stack-Up. Cross holes (.166 dia.) in body provide side Stack-Up connections. Resistance less than 1.5 milliohms installed. Current rating 15 Amps. Cont., 30 Amps. Int. "Shorting Bar" marked on top of plug.
COLORS: Natural, Black, Red.

MODEL MDP-S (Specify Color) QUANTITY DISC. CODE A NET 1.25

MOLDED PRECISION RESISTOR

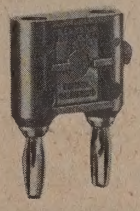


Ideal where rapid interchange of resistance values is required. Used in breadboarding, R & D labs., Standards, Terminations, etc. Deposited carbon 1% resistor, ½ watt, molded internally. Resistor soldered to double banana plug, on ¾" centers. Top Stack-Up provided for multiple connections. Cross holes (.166 dia.) in body provide side Stack-Up connections. Resistance value stamped on top of plug.

(OHMS)				
50	200	1K	100K	1 Meg.
75	250	5K	200K	2 Meg.
120	500	10K	250K	5 Meg.
130	600	20K	500K	10 Meg.
150	900	50K		

MODEL MDP-R (Specify Value) QUANTITY DISC. CODE A NET 2.75

ADAPTER — .080 TIP JACKS TO DOUBLE BANANA PLUG

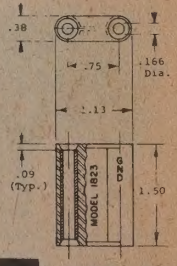


Permits .080 Tip plugs to be used with equipment having banana jacks.
UPPER: Tip jacks, beryllium copper, gold flashed; spaced on ¾" centers to accept .080 dia. pin tip plugs.
LOWER: Double banana plug, on ¾" centers, nickel plated. Cross holes (.166 dia.) in body provide side Stack-Up connections.
COLOR: Black.

MODEL 1845 QUANTITY DISC. CODE A NET .85

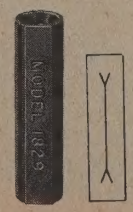
DOUBLE BANANA PLUG SPLICE

Provides rapid method for splicing cables. Reduces necessity of storing extra long cables. Molded thermoplastic body eliminates shock hazard by completely enclosing banana plug contact. Brass, nickel plated banana jacks. .166 dia., on ¾" centers.
COLORS: Black, Red.

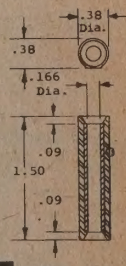


MODEL 1823 (Specify color) QUANTITY DISC. CODE A NET .50

SINGLE BANANA PLUG SPLICE



Provides rapid method for splicing single banana plug patch cords. Reduces the necessity of storing extra long patch cords. Molded thermo-plastic body eliminates shock hazard by completely enclosing banana plug contact. Brass, nickel plated banana jack, .166 dia.
COLORS: Black, Red.
Standard Package: 10 (per color)

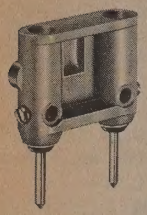


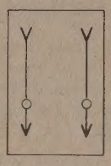
MODEL 1829 (Specify color) QUANTITY DISC. CODE A NET .25 ea.

POMONA ELECTRONICS

.080 PIN TIP PLUG ACCESSORIES

COMPONENT MOUNTING — TIP JACKS TO DOUBLE PIN TIP PLUG — SET SCREWS

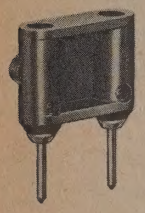


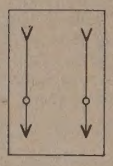


Features set screws on side of body to secure leads or components. Recess permits mounting of small component parts.
UPPER: Tip jacks, beryllium copper, gold flashed, spaced on ¾" centers, to accept .080 dia. pin tip plugs.
LOWER: Pin tips, .080 dia. on ¾" centers. Brass, nickel plated.
COLORS: Black, Red.

MODEL 2192 (Specify color) QUANTITY DISC. CODE **A** **NET 1.85**

COMPONENT MOUNTING PLUG— BANANA JACKS TO DOUBLE PIN TIP —SET SCREWS

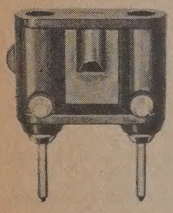


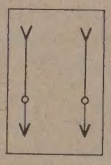


Permits single or double banana plugs to be used in equipment having tip jacks. Features recess for component mounting. Internal set screws firmly secure wire leads.
UPPER: Banana jacks, .166 dia., on ¾" centers. Brass, nickel plated.
LOWER: Pin tips .080 dia. on ¾" centers. Brass, nickel plated.
COLOR: Black.

MODEL 1858 QUANTITY DISC. CODE **A** **NET .75**

PLUG — COMPONENT MOUNTING — DOUBLE PIN TIP PLUG—SOLDER TURRETS

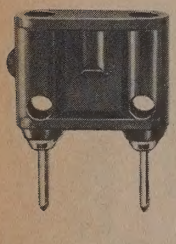


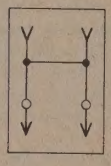


Features recess for mounting components. Gold flashed solder turrent terminals for permanent noise-free connections.
UPPER: Tip jacks, beryllium copper, gold flashed; spaced on ¾" centers to accept .080 dia. pin tip plugs.
LOWER: Pin tips, .080 dia. brass, nickel plated.
COLORS: Black, Red.

MODEL 1904 (Specify color) QUANTITY DISC. CODE **A** **NET .85**

INSULATED SHORTING BAR

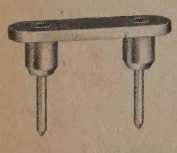


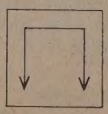


Used as a connecting link with equipment having tip jacks. Plugs internally solder bonded with 14 AWG wire. Top stack-up feature.
Current rating: 5 AMPS. cont., 10 AMPS. int. "Shorting Bar" marked on top of plug.
UPPER: Banana jacks, .166 dia. on ¾" centers. Brass, nickel plated.
LOWER: Pin tips, .080 dia. on ¾" centers. Brass, nickel plated. Cross holes (.166 dia.) in body provide side Stack-Up connections.
COLORS: Black, Red.

MODEL 1730 (Specify color) QUANTITY DISC. CODE **A** **NET .75**

METAL SHORTING BAR

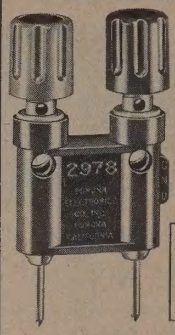


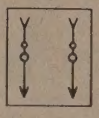


Used as a connecting link with equipment having tip jacks. Low profile, nickel plated brass shorting bar. Double pin tip plugs on ¾" centers swaged to 3/32" thick brass bar.
RESISTANCE: Less than 1.5 milliohms installed.
CURRENT RATING: 5 Amps Cont., 10 Amps Int.

MODEL 2072 QUANTITY DISC. CODE **A** **NET .75**

BINDING POSTS TO DOUBLE PIN TIP PLUG





Features insulated binding posts on ¾" for rapid mounting and interchangeability ponents. Binding posts allow top Stack multiple connections. Side Stack-Up prov thru-holes in plug body.
UPPER: Insulated double binding posts on ters. Top and side stack-up connectors (.1 Cross holes (.166 dia.) in body provide sid Up connections.
LOWER: Pin tips, .080 dia. on ¾" centers nickel plated.
COLORS: Body, Black, Binding Posts, Black

MODEL 2978 QUANTITY DISC. CODE **A** **NET**

BINDING POST TO SINGLE PIN TIP PLUG

Features insulated binding post. Binding lows top Stack-Up for multiple connection Stack-Up provided by thru-holes in plug bo
UPPER: Insulated binding post. Top and side Up connectors (.166 dia.). Cross hole (.166 body provide side Stack-Up connections.
LOWER: Pin tip, .080 dia. brass, nickel pla
COLORS: Black, Red.

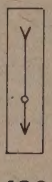
MODEL 2953 (Specify color) QUANTITY DISC. CODE **A** **NET**

SOLDERLESS PIN TIP PLUG—STACK

Wire firmly held in place with internal set screw inating soldering. Assembly of test leads simpli
UPPER: Tip jack, beryllium copper, gold flashe cepts .080 dia. pin.
LOWER: Pin tip, .080 dia., brass, nickel plate
COLORS: Black, Brown, Red, Orange, Yellow, Blue, Violet, Gray, White.

MODEL 1922 (Specify color) QUANTITY DISC. CODE **A** **NET**

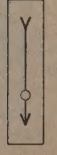
ADAPTER — BANANA JACK TO PIN TI



Permits standard single banana plug patch to be used with equipment having tip jack
UPPER: Banana jack, .166 dia. Brass, plated.
LOWER: Pin tip, .080 dia. Brass, nickel Cross hole (.166 dia.) in body provides side Up connection.
COLORS: Black, Red.
Standard Pac 10 (per

MODEL 1432 (Specify Color) QUANTITY DISC. CODE **A** **NET .1**

ADAPTER — .080 TIP JACK TO BANANA PLUG



Permits .080 dia. pin tip patch cords to be used with ment having banana jacks. Insulation molded to plug b
UPPER: Tip jack, beryllium copper, gold flashed. Accept dia. pin.
LOWER: Banana plug, one piece nickel plated beryllium per spring for use with standard 0.166 dia. banana jack. hole (.166 dia.) in body provides side Stack-Up connecti
COLORS: Black, Red.

MODEL 1809 (Specify Color) QUANTITY DISC. CODE **A** **NET**

Net

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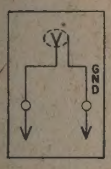
POMONA ELECTRONICS

BNC ADAPTERS

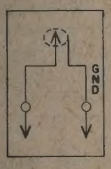
ADAPTER — BNC RECEPTACLE TO DOUBLE BANANA PLUG



Permits BNC plug to be used with equipment having banana jacks. Excellent for adapting laboratory VTVM, oscilloscopes and signal generator inputs to readily available coaxial cables.
UPPER: BNC receptacle.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up connections.
COLOR: Black.

EL 1269 QUANTITY DISC. CODE **A** **NET 2.85**

ADAPTER — BNC PLUG TO DOUBLE BANANA PLUG



Permits BNC receptacle to be used with equipment having banana jacks. Minimizes number of coaxial connections for maximum efficiency.
UPPER: BNC plug.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up connections.
COLOR: Black.

EL 1270 QUANTITY DISC. CODE **A** **NET 3.85**

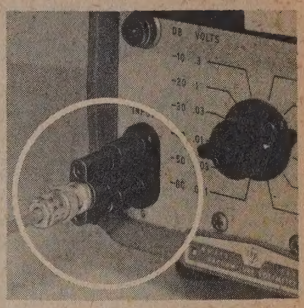
Now! Increase the flexibility of your laboratory with the use of POMONA molded test accessories.

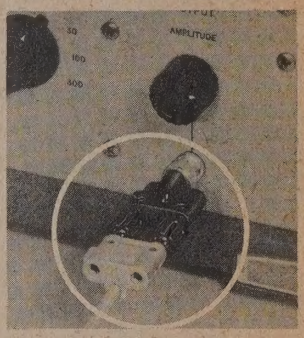
Minimize the necessity of stocking a large quantity and variety of coaxial cables by using POMONA molded adapters.

Tough thermo-plastic material molded to plug body or connectors insures maximum strength, moisture resistance and excellent insulative properties.

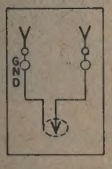
POMONA ELECTRONICS adapters are designed and engineered with you in mind, from the selection of the best in materials, incorporated with a quality control program that enables us to offer to you, products that are unequalled in reliability and quality.

Complete engineering facilities are offered to our customers for special adapter problems that may arise.





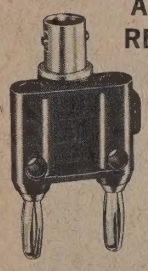
ADAPTER — BINDING POSTS TO BNC PLUG

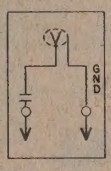


Permits single or double banana plugs to be used with equipment having BNC receptacle. Excellent for use with laboratory oscilloscopes.
UPPER: Insulated binding posts, on ¾" centers with .166 dia. banana jacks. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: BNC plug.
COLOR: Body, Black. Binding Posts: Black/Red.

EL 1296 QUANTITY DISC. CODE **A** **NET 4.85**

ADAPTER — SIGNAL ISOLATOR — BNC RECEPTACLE TO DOUBLE BANANA PLUG

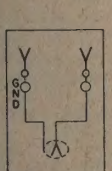




Permits BNC male connector to be used with equipment having banana jacks. General purpose ceramic capacitor molded internally. Rated @ .01 mfd ±20%, 200 WVDC. Insulation resistance 10,000 megohms min. Ideal for isolating DC signals from VTVM inputs and signal generator outputs.
UPPER: BNC receptacle.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up connections.
COLOR: Blue.

MODEL 1868 QUANTITY DISC. CODE **A** **NET 7.85**

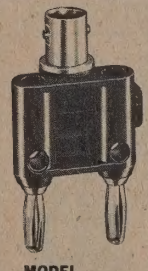
ADAPTER — BINDING POSTS TO BNC RECEPTACLE

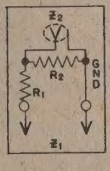


Permits single or double banana plugs to be used with equipment having BNC plug.
UPPER: Insulated binding posts, on ¾" centers with .166 dia. banana jacks. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: BNC receptacle.
COLOR: Body, Black. Binding Posts: Black/Red.

EL 1452 QUANTITY DISC. CODE **A** **NET 4.85**

ADAPTER — BNC MATCHING PAD

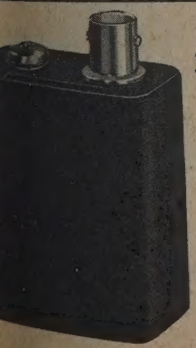


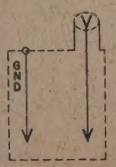


Adapts 600 OHM sources to 50, 75 or 93 OHM cables. Excellent for matching signal generators and VTVM's to standard coaxial cables. Ideal for receiver alignment. Molded in deposited carbon resistors 1%, ¼W.
UPPER: BNC receptacle.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up connections.

MODEL	COLOR	RANGE — OHMS	NET	QUANTITY DISC. CODE
1656-1	Yellow	600 to 50	10.85	A
1656-2	Red	600 to 75	10.85	
1656-3	White	600 to 93	10.85	
1656-4	Blue	300 to 50	10.85	

ADAPTER — BNC RECEPTACLE TO SHIELDED BANANA PLUGS



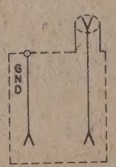


Permits BNC plug to be used with equipment having banana jack binding posts. Black anodized aluminum shield reduces noise Pick-up more than 70 DB. Ideal for low level inputs to oscilloscopes, wave analyzers, etc.
UPPER: BNC receptacle.
LOWER: Shielded double banana plug, on ¾" centers.

QUANTITY DISC. CODE **A**

DEL 1645 **NET 3.45**

ADAPTER — BNC RECEPTACLE TO SHIELDED BANANA JACKS

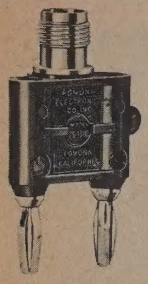


Permits BNC plug to be used with equipment having banana plugs. Black anodized aluminum shield reduces noise pick-up more than 70 DB. Ideal for low level inputs to oscilloscopes, wave analyzers, etc.
UPPER: BNC receptacle.
LOWER: Shielded double banana jacks, on ¾" centers.
COLOR: Black.

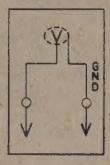
MODEL 1681 QUANTITY DISC. CODE **A** **NET 3.45**

POMONA ELECTRONICS

TNC & "N" ADAPTERS

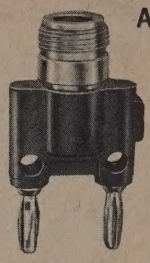


ADAPTER — TNC RECEPTACLE TO DOUBLE BANANA PLUG

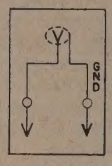


Permits TNC plug to be used with equipment having banana jacks. Perfect for connecting modern control systems to laboratory test equipment.
UPPER: TNC receptacle.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up connections.
COLOR: Black.

MODEL 1340 QUANTITY DISC. CODE **A** **NET 5.85**

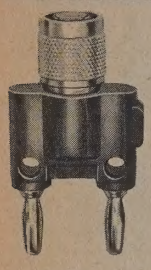


ADAPTER — TYPE "N" RECEPTAC TO DOUBLE BANANA PLUG

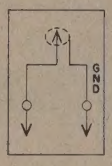


Permits Type "N" plug to be us equipment having banana jacks. I connecting R.F. equipment to com test equipment.
UPPER: Type "N" receptacle.
LOWER: Double banana plug, on ¾ ters. Cross holes (.166 dia.) in body side Stack-Up connections.
COLOR: Black.

MODEL 1740 QUANTITY DISC. CODE **A** **NET**

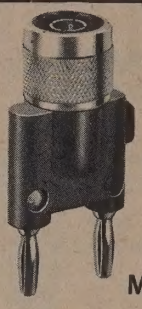


ADAPTER — TNC PLUG TO DOUBLE BANANA PLUG

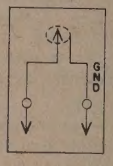


Permits TNC receptacle to be used with equipment having banana jacks. Minimizes your stock of coaxial cables.
UPPER: TNC plug.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up connections.
COLOR: Black.

MODEL 1981 QUANTITY DISC. CODE **A** **NET 6.85**

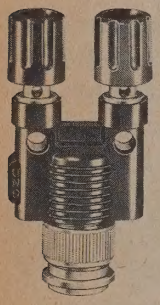


ADAPTER — TYPE "N" PLUG TO DOUBLE BANANA PLUG

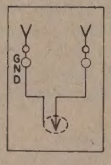


Permits type "N" receptacle to be u equipment having banana jacks.
UPPER: Type "N" plug.
LOWER: Double banana plug, on ¾" Cross holes (.166 dia.) in body prov Stack-Up connections.
COLOR: Black.

MODEL 1770 QUANTITY DISC. CODE **A** **NET**

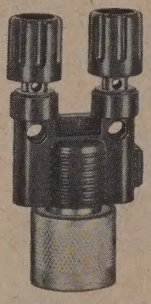


ADAPTER — BINDING POSTS TO TNC PLUG

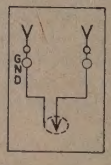


Permits single or double banana plugs to be used with equipment having a TNC receptacle. Exceptional for signal insertion with rapid interchangeability of terminations.
UPPER: Insulated binding posts, on ¾" centers with .166 dia. banana jacks. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: TNC plug.
COLOR: Body, Black. Binding Posts: Black/Red.

MODEL 1982 QUANTITY DISC. CODE **A** **NET 6.85**

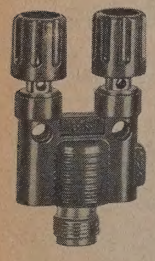


ADAPTER — BINDING POSTS TO TYPE "N" PLUG

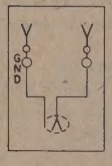


Permits single or double banana plugs to be us equipment having Type "N" receptacle. Bindin allow component insertion.
UPPER: Insulated binding posts, on ¾" ters with .166 dia. banana jacks. holes (.166 dia.) in body provide side S Up connections.
LOWER: Type "N" plug.
COLOR: Black. Binding Posts: Black/R

MODEL 1796 QUANTITY DISC. CODE **A** **NET**

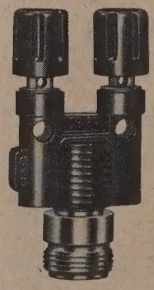


ADAPTER — BINDING POSTS TO TNC RECEPTACLE

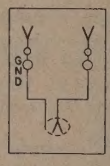


Permits single or double banana plugs to be used with equipment having TNC plug. Useful for rapid interconnection of systems and components.
UPPER: Insulated binding posts, on ¾" centers with .166 dia. banana jacks. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: TNC receptacle.
COLOR: Body, Black. Binding Posts: Black/Red.

MODEL 1976 QUANTITY DISC. CODE **A** **NET 5.85**



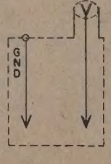
ADAPTER — BINDING POSTS TO TYPE "N" RECEPTACLE



Permits single or double banana pl be used with equipment having typ plug. Useful for rapid interconnec systems and components.
UPPER: Insulated binding posts, o centers with .166 dia. banana jacks. holes (.166 dia.) in body provide side Up connections.
LOWER: Type "N" receptacle.
COLOR: Body, Black. Binding Posts: Red.

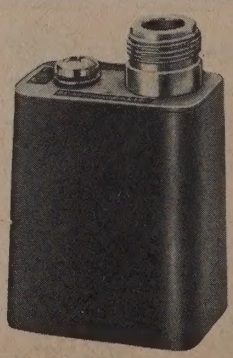
MODEL 1992 QUANTITY DISC. CODE **A** **NET**

ADAPTER — TNC RECEPTACLE TO SHIELDED BANANA PLUGS

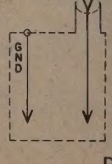


Permits TNC plug to be used with equipment having banana jack binding posts. Black anodized aluminum shield reduces noise pick-up more than 70 DB.
UPPER: TNC receptacle.
LOWER: Double banana plug, on ¾" centers.
COLOR: Black.

MODEL 1975 QUANTITY DISC. CODE **A** **NET 4.85**



ADAPTER — TYPE "N" RECEPTA TO SHIELDED BANANA PLUG



Permits type "N" plug to be used with ment having banana jack binding posts. Anodized aluminum shield noise pick-up more than 7
UPPER: Type "N" receptacle
LOWER: Double banana pl ¾" centers.
COLOR: Black.

MODEL 1983 QUANTITY DISC. CODE **A** **NET**

Net

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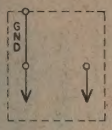
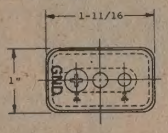
POMONA ELECTRONICS

SHIELDED BANANA PLUGS UHF ADAPTERS

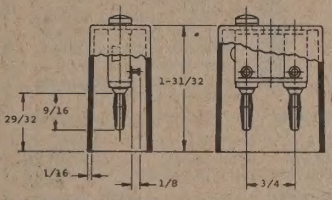
SHIELDED DOUBLE BANANA PLUG IN-LINE CABLE ENTRY



RATED: 15A CONTINUOUS
1200 WVDC
3400 VDC BREAKDOWN
2.5 PF @ 1 MC

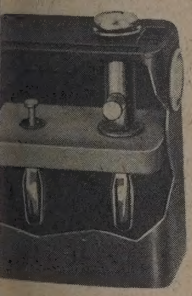


ded double plug ¾" spaced
cast aluminum shell, black
zed
pick-up reduced 70 DB
flashed solder turret terminals for
ive reliable cable connections
piece nickel plated beryllium copper
gs for use with standard 0.166 dia.
na jack binding posts.
ded banana spring design results in
mum contact area and minimum
ct resistance
clearly molded in shell
e opening, 7/32" diameter



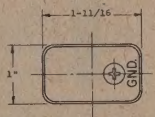
DEL 1433

QUANTITY DISC. CODE **A** NET 2.25

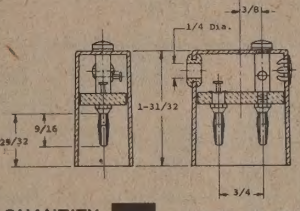


SHIELDED DOUBLE BANANA PLUG RIGHT ANGLE CABLE ENTRY

RATED: 15A CONTINUOUS
2800 PEAK WV
5000 VDC BREAKDOWN
2.0 PF @ 1 MC.



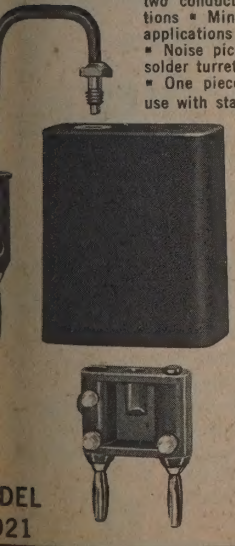
lded double plug, ¾" spaced
mic insulating base
cast aluminum shell, black
lized
clearly molded in shell
e pick-up reduced 70 DB
piece nickel plated beryllium copper
gs for use with 0.166 diameter
na jack binding posts.
nded banana spring design results in
imum contact area and minimum
act resistance
l grommet and nickel plated
button supplied



DEL 1791

QUANTITY DISC. CODE **A** NET 3.45

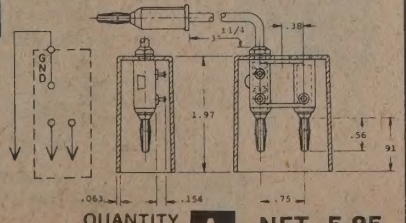
BALANCED LINE SHIELDED DOUBLE BANANA PLUG



- Unique 3 terminal design allows connection to shielded two conductor cable while maintaining balanced conditions
- Minimizes ground loop errors in low signal level applications
- Die cast aluminum shell, black anodized
- Noise pick-up reduced at least 70 DB
- Gold flashed solder turret terminals for reliable noise free connections
- One piece nickel plated beryllium copper springs for use with standard 0.166 dia. banana jack binding posts.

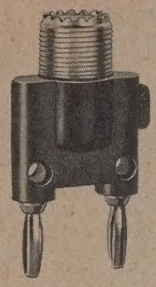
RATED:

15A Continuous	5000 V peak breakdown, line to line
1000 WV Peak; line to shield	2.0 pf @ 1 MC Capacity; line to line
2000 WV peak; line to line	3.0 pf @ 1 MC. capacity; both lines to shield.
2500 V peak breakdown; line to shield	

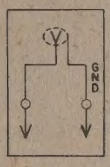


DEL 021

QUANTITY DISC. CODE **A** NET 5.85



ADAPTER — UHF RECEPTACLE TO DOUBLE BANANA PLUG

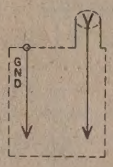


Permits UHF plug to be used with equipment having banana jacks.
UPPER: UHF receptacle, ⅝" dia.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide side Stack-Up cannections.
COLOR: Black.

MODEL 1707

QUANTITY DISC. CODE **A** NET 4.85

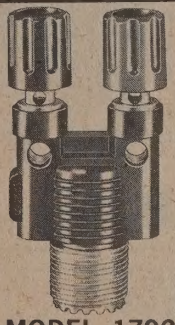
ADAPTER — UHF RECEPTACLE TO SHIELDED BANANA PLUGS



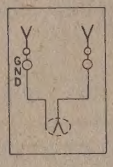
Permits UHF plug to be used with equipment having banana binding posts. Black anodized shield reduces noise pick-up at least 70 DB.
UPPER: UHF receptacle, ⅝" dia.
LOWER: Double banana plug on ¾" centers.
COLOR: Black.

MODEL 1708

QUANTITY DISC. CODE **A** NET 4.85



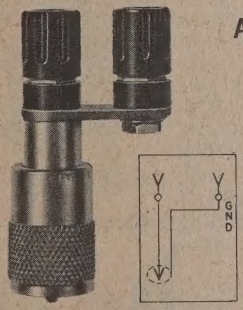
ADAPTER — BINDING POSTS TO UHF RECEPTACLE



Permits single or double banana plugs to be used with equipment having UHF plug.
UPPER: Insulated binding posts, on ¾" centers with .166 dia. jacks. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: UHF receptacle, ⅝" dia.
COLOR: Body, Black. Binding posts: Black/Red.

MODEL 1792

QUANTITY DISC. CODE **A** NET 5.85



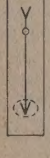
ADAPTER — BINDING POSTS TO UHF PLUG

Permits single or double banana plugs to be used with equipment having a UHF receptacle, ⅝" dia. Convenient for use with modern oscilloscopes. Center conductor binding post Red; Ground, Black.
UPPER: Insulated binding posts, on ¾" centers with .166 dia. jacks.
LOWER: UHF plug.

MODEL 1699

QUANTITY DISC. CODE **A** NET 4.85

ADAPTER — BINDING POST TO UHF PLUG



Permits single banana plug to be used with equipment having a UHF receptacle, ⅝" dia. Adds flexibility to your oscilloscope.
UPPER: Insulated binding post with .166 dia. banana jack.
LOWER: UHF plug.

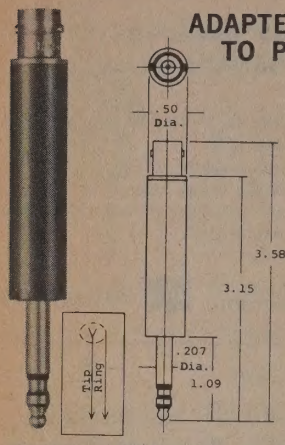
MODEL 1698

QUANTITY DISC. CODE **A** NET 3.85

POMONA ELECTRONICS

MISCELLANEOUS ADAPTERS

ADAPTER — BNC RECEPTACLE TO PJ-068 PHONE PLUG

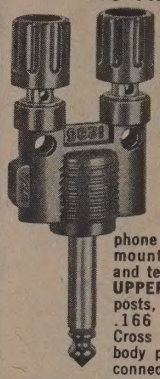


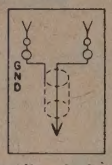
Permits BNC plug to be used with equipment having three circuit phone jacks for .206 dia. phone plugs. Readily adapts equipment to available BNC coaxial cables. Tip connected to inner contact of connector and Ring connected to shell. Sleeve, no connection.

UPPER: BNC receptacle, UG1094/U.
LOWER: Phone Plug, PJ-068.
COLOR: Black.

MODEL 1794 QUANTITY DISC. CODE **A** **NET 6.85**

ADAPTER — BINDING POSTS TO PHONE PLUG





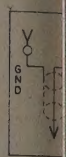
Permits single or double banana plug to be used with equipment having phone jacks. Ideal for rapid mounting of components and test leads.

UPPER: Insulated binding posts, on ¾" centers with .166 dia. banana jacks. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: ¼" dia. phone plug, 1-3/16" long.
COLOR: Body, Black. Binding Posts: Black/Red.

QUANTITY DISC. CODE **A**

MODEL 1285 NET 4.85

ADAPTER — BANANA J TO PHONE PLUG



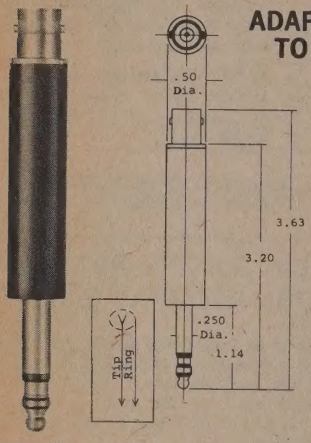
Permits single or banana plugs to with equipment phone jacks.

UPPER: Double jack, on ¾" Cross holes (.166 body provide side Up connections.
LOWER: Standard ¼" dia. ph plug, 1-3/16" long.
COLOR: Black.

QUANTITY DISC. CODE

MODEL 1980 NET

ADAPTER — BNC RECEPTACLE TO PJ-051* PHONE PLUG

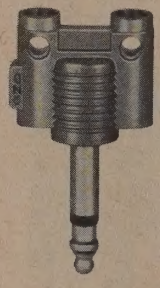


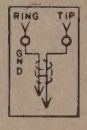
Permits BNC plug to be used with equipment having three circuit phone jacks for .250 dia. phone plugs. Readily adapts equipment to available BNC coaxial cables. Tip connected to inner contact of connector and Ring connected to shell. Sleeve, no connection.

UPPER: BNC receptacle, UG1094/U.
LOWER: Phone Plug, PJ-051*
*PJ-051 Interchangeable with WE 310

MODEL 2798 QUANTITY DISC. CODE **A** **NET 6.85**

ADAPTER-BANANA JACKS TO PJ-051* PHONE PLUG



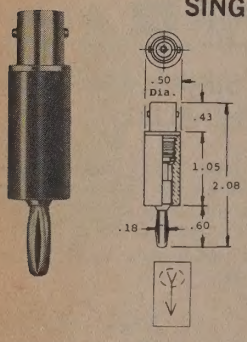


Permits single or double banana plugs used with equipment having three phone jacks for .250 dia. phone plug connected to hot side of adapter and connected to ground side. Sleev connection.

UPPER: Double banana jack, on ¾" ce Crossholes (.166 dia.) in body provid Stack-up connection.
LOWER: Phone Plug, PJ-051*
COLOR: Black
*PJ-051 Interchangeable with WE310

MODEL 2112 QUANTITY DISC. CODE **A** **NET 5**

ADAPTER—BNC RECEPTACLE TO SINGLE BANANA PLUG

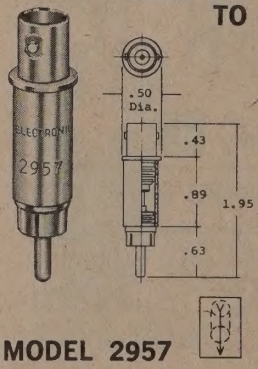


Permits BNC plug to be used with equipment having banana jacks. Inner conductor connected only. Excellent for adapting laboratory VTVM, oscilloscopes and signal generator inputs to readily available coaxial cables.

UPPER: BNC receptacle, UG1094/U.
LOWER: Single Banana Plug.
COLOR: Black.

MODEL 1894 QUANTITY DISC. CODE **A** **NET 2.50**

ADAPTER — BNC RECEPTACLE TO PHONO PLUG

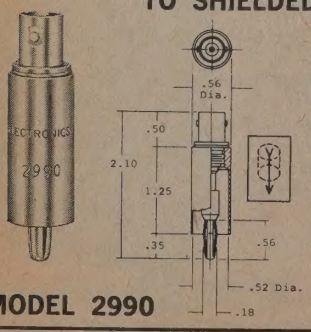


Permits BNC plug to be used equipment having phono jacks. R ily adapts equipment to avail BNC coaxial cables. All metal struction reduces pick-up more 70 DB. to insure proper shiel

UPPER: BNC receptacle UG1094/U.
LOWER: Phono plug.

MODEL 2957 QUANTITY DISC. CODE **A** **NET 2**

ADAPTER — BNC RECEPTACLE TO SHIELDED BANANA PLUG

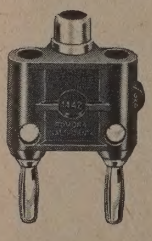


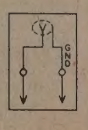
Permits BNC plug to be used with equipment having banana jacks or binding posts. Ideal for use when shielding of single banana jack is needed. Nickel plated brass shield reduces pick-up more than 70 DB.

UPPER: BNC Receptacle, UG1094/U.
LOWER: Shielded single banana plug.

MODEL 2990 QUANTITY DISC. CODE **A** **NET 2.50**

ADAPTER — PHONO JACK TO DOUBLE BANANA PLUG





Permits Phono plug to be used equipment having banana jacks binding posts. Quickly convert cable with a phono plug to a dou banana plug.

UPPER: Phono jack.
LOWER: Double Banana plug, on ¾" centers. Cross holes (.166 dia.) in body provide Side Stack connections.
COLOR: Black.

MODEL 1442 QUANTITY DISC. CODE **A** **NET 2**

Net

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POMONA ELECTRONICS

ISOLATION PLUGS — COMPONENT MOUNTINGS

CREATE passive and active networks, voltage dividers, isolation networks or attenuators with the Split-Terminal isolation plugs described below.

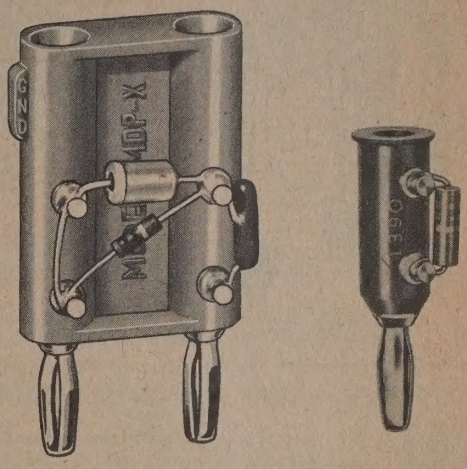
Gold flashed solder turret terminals provide permanent, reliable noise-free connections for component mounting.

Tough thermo-plastic material molded to plug body and connectors insures maximum strength, moisture resistance and excellent insulative properties.

Specifications for MDP-X, 1390, 1837, 1468:

- Fits standard 0.166 dia. banana jack.
- Spring, heat treated beryllium copper alloy 170 per QQ-C-533.
- Plug body, Brass per QQ-B-626 Comp. 22.
- Nickel plated per QQ-N-290, Class 2.
- Contact resistance less than 0.001 ohms per banana plug.

TYPICAL APPLICATION



ACTUAL SIZE

MODEL MDP-X **MODEL 1390**

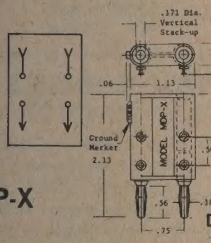
DOUBLE BANANA PLUG, FOUR TERMINAL ISOLATION

Provides four terminal isolation. Top Stack-Up receptacles isolated from lower plugs. Ideal for insertion of matching networks in laboratory VTVM's, signal generators, etc. Gold flashed solder turret terminals for permanent noise-free connections.

UPPER: Double banana jacks, .166 dia., on ¾" centers.

LOWER: Double banana plug on ¾" centers.

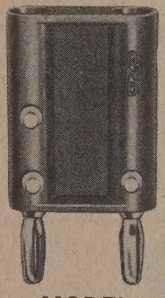
COLOR: Red.



DEL MDP-X

QUANTITY DISC. CODE **A** **NET 3.25**

DOUBLE BANANA PLUG, THREE TERMINAL ISOLATION

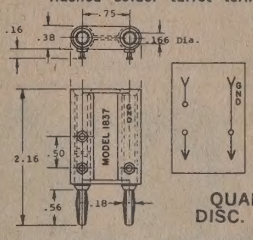


Provides three terminal isolation. Excellent for "L" and "Pi" networks. Plug and receptacle nickel plated. Gold flashed solder turret terminals for permanent noise-free connections. "Ground" is straight feed-thru. Hot side isolated.

UPPER: Banana jacks, .166 dia. on ¾" centers.

LOWER: Double banana plug on ¾" centers.

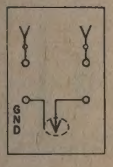
COLOR: Blue.



MODEL 1837

QUANTITY DISC. CODE **A** **NET 2.50**

ADAPTER — BINDING POSTS TO BNC PLUG, ISOLATION



Permits single or double banana plugs to be used with equipment having BNC receptacle. Provides isolation for a four terminal network. Binding posts facilitate connections of test leads or additional components. Gold flashed solder turret terminals provide permanent noise-free connections.

UPPER: Insulated binding posts, on ¾" centers with .166 dia. jacks.

LOWER: BNC plug.

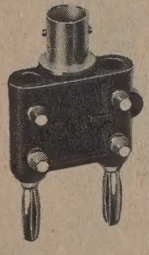
COLOR: Body, Black.

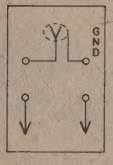
Binding Posts: Black/Red.

DEL 1469

QUANTITY DISC. CODE **A** **NET 10.85**

ADAPTER — BNC RECEPTACLE TO DOUBLE BANANA PLUG, ISOLATION





Permits BNC plug to be used with equipment having banana jacks. Provides isolation for a four terminal network. Excellent for matching pad networks. Gold flashed solder turret terminals for permanent noise-free connnections.

UPPER: BNC receptacle.

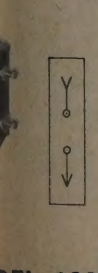
LOWER: Double banana plug, on ¾" centers.

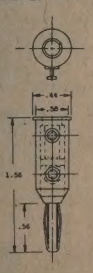
COLOR: Black.

MODEL 1468

QUANTITY DISC. CODE **A** **NET 9.85**

PLUG — SINGLE BANANA, ISOLATION





Provides two terminal isolation. Top Stack-Up receptacle is isolated from lower plug to permit addition of series resistors, diodes, etc. Ideal for computers, lab. circuit design and testing. Gold flashed solder turret terminals for permanent noise-free connections.

UPPER: Banana jack, .166 dia.

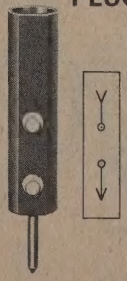
LOWER: Banana plug.

COLORS: Black, Red.

DEL 1390 (Specify color)

QUANTITY DISC. CODE **A** **NET .95**

PLUG — PIN TIP, ISOLATION

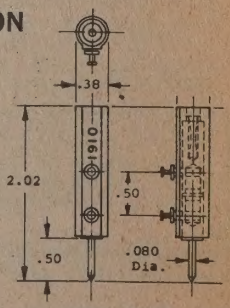


Pin tip jack is isolated from .080 pin tip plug. Provides for addition of series components. Ideal for use with computer boards, lab circuit designs, etc. Gold flashed solder turret terminals for permanent noise-free connections.

UPPER: Tip jack, beryllium copper, gold flashed; accepts .080 dia. pin.

LOWER: Pin tip, .080 dia. Brass, nickel plated.

COLORS: Black Red.

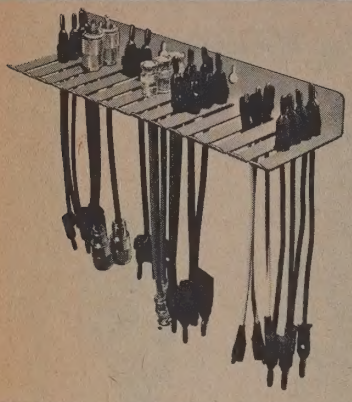


MODEL 1910 (Specify color)

QUANTITY DISC. CODE **A** **NET .95**

POMONA ELECTRONICS

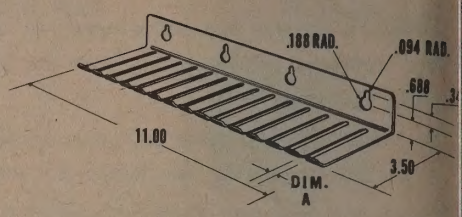
MISCELLANEOUS ACCESSORIES



TEST LEAD HOLDER

No need to spend time searching for a particular test lead. With this new rack, all of your patch cords and cable assemblies can be conveniently filed for instant selection — within easy reach. Holder mounts quickly on any vertical surface. Test leads are easy to store, easy to remove. Two models to choose from for different size cables.

MATERIAL: Cold Rolled Steel.
FINISH: Baked Enamel.

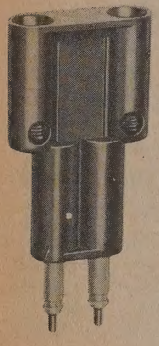


	MAX. CABLE DIA. (DIM. A)	COLOR	NET
MODEL 1508	.210"	Orange	2.95
MODEL 2708	.450"	Blue	2.95

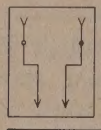
QUANTITY DISC. CODE

SEE PAGE 41 FOR TEST SOCKET ADAPTER HOLDER

ADAPTER — AMP PROGRAM BOARD



Permits single or double banana plugs to be used with AMP program boards having ¼" or ⅜" center to center spacing. Ideal for mounting components. Internal set screws secure leads. Useful in analog computer applications, etc.

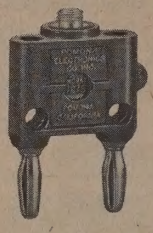


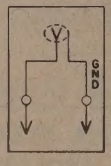
UPPER: Banana jacks, on ¾" centers. Brass, nickel plated.
LOWER: Dual AMP pins, on ¼" or ⅜" centers.

QUANTITY DISC. CODE **A**

MODEL	PIN SPACING	COLOR	NET
1977	⅜"	Black	3.85
1991	¼"	Gray	3.85

ADAPTER — MICRODOT RECEPTAC TO DOUBLE BANANA PLUG

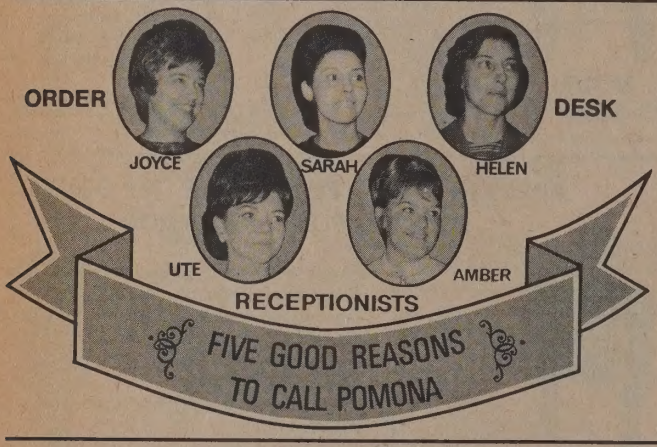




Permits Microdot miniature coaxial plu be used with equipment having banana j Cross holes in body provide side Sta connections.

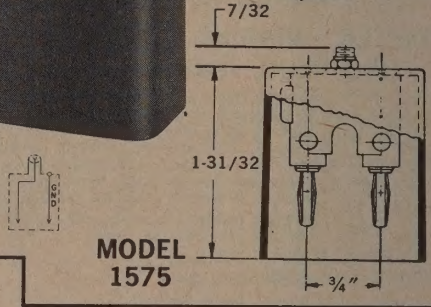
UPPER: Microdot receptacle, Screw-On
LOWER: Double banana plug, on ¾" ters. Cross holes (.166 dia.) in body vide side Stack-Up connections.

MODEL	TYPE (Ohms)	BODY COLOR	RECEPTACLE TYPE	NET	QUAN DIS COI
1275	50	Green	10-32 thread	6.85	
1276	50	Black	Slide-on	9.85	
1277	70	Violet	12-32 thread	9.85	A
1279	93	White	¼-32 thread	9.85	



ADAPTER—MICRODOT RECEPTACLE TO SHIELDED BANANA PL

Permits Microdot miniature coaxial plug, 50 ohi be used with equipment having banana jack bi posts. Black anodized aluminum shiel duces noise pick-up more than 70 DB. for noise reduction in low level acceler systems.



UPPER: Microdo Receptacle, Scre Type, Receptacle Thread 10-32.
LOWER: Shielde Double banana p on ¾" centers.
COLOR: Black.

MODEL 1575

QUANTITY DISC. CODE

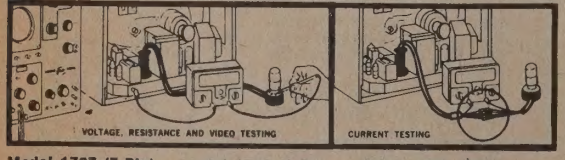
NET 6.

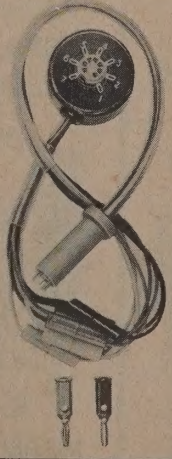
Universal Harness

TESTING ADAPTER

Takes the Trouble out of Trouble Shooting!

TEST SOCKET: Extended test tabs, phosphor bronze contacts, heavy duty molded phenolic base with easy-to-read socket connections. **CURRENT MEASUREMENT CONNECTIONS:** Fully insulated, molded .080 phone tip plugs. **INSULATED PLUG:** Fits either shielded or unshielded tube sockets.

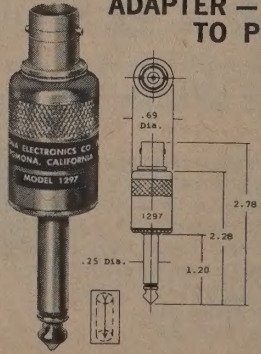




Model 1737 (7 Pin) Model 1738 (8 Pin) Model 1739 (9 Pin)

QUANTITY DISC. CODE **D** NET 9.95

ADAPTER — BNC RECEPTACLE TO PHONE PLUG



Permits BNC plug to be used equipment having standard ¼" phone jacks. Readily adapts eq ment to available BNC coa cables. All metal construction insure proper shielding.

UPPER: BNC receptacle, UG1094/U.
LOWER: Standard ¼" dia. ph plug, 1 3/16" Long.

MODEL 1297

QUANTITY DISC. CODE **A** NET 5.

★ Various lengths may be aggregated for best quantity price.

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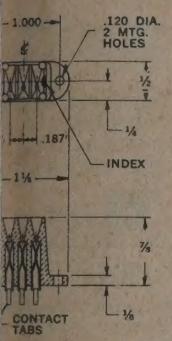
POMONA ELECTRONICS — TEST ACCESSORIES

TRANSISTOR SOCKET



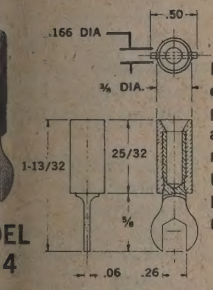
For use in testing 3 lead transistors with .017 dia. leads. Beryllium copper springs for long life. Ideal for aging racks, incoming inspection, life testing, etc.

MODEL TS-187

QUANTITY DISC. CODE **A**

EL	TEMP. RANGE	INSULATION RESISTANCE	COLOR	NET
7	—100°C To +200°C.	1 x 10^5 Megohms Min. @ 500 V.D.C. @ 40% R.H., 24°C.	Black	1.75

INSULATED SPADE LUG ADAPTER



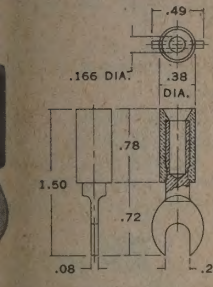
Permits single banana plug to be used with equipment having binding posts. Tough thermoplastic molded to body for maximum reliability and low shock hazard. Spade lug body, one piece machined brass, nickel plated.

UPPER: Banana jack, .166 dia.
LOWER: Spade lug, .26 opening.
COLORS: Black, Red.

QUANTITY DISC. CODE **A**

EL 4 (Specify color) NET .35

TELLURIUM COPPER INSULATED SPADE LUG ADAPTER



Permits single banana plug to be used with equipment having binding posts. Tough thermoplastic molded to body for maximum reliability and low shock hazard. Spade lug body, one piece machined tellurium copper, gold plated per MIL-G-45204, Type 11, Class 1.

UPPER: Banana jack, .166 dia.
LOWER: Spade lug, .26 opening.
COLORS: Black, Red.

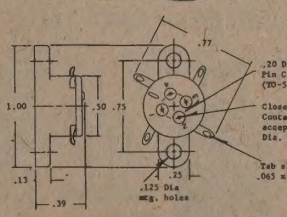
EL 2305 (Specify Color) QUANTITY DISC. CODE **A** NET .95

TRANSISTOR BREADBOARD SOCKET

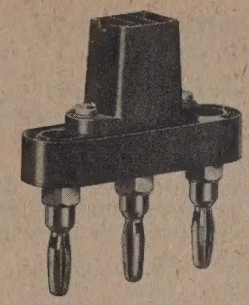
For Transistors with TO-5, and TO-12 Lead Arrangement

nt for breadboarding. All connections n top of breadboard for quick ible test points.

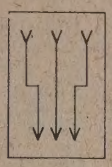
URES:
sed entry contacts accept 6—.019 dia. leads.
yllium copper contacts er plated.
tact numbers on top of ket.
ket molded of low loss a filled phenolic.
ily mounted with two screws.



DEL XS-T4 QUANTITY DISC. CODE **C** NET .75



ADAPTER — TRANSISTOR TEST SOCKET

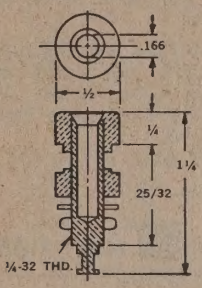


Permits the insertion of transistors with .017 dia. leads into equipment having banana jacks on ¾" centers. Ideal for incoming inspection. Transistor socket contact and banana spring made of beryllium copper. Heavy duty phenolic construction. Insulation resistance: 1 x 10^5 megohms min. @ 500 V.D.C., at 40% R.H., 24°C.

MODEL 1472 QUANTITY DISC. CODE **A** NET 5.85

INSULATED BANANA JACK ASSEMBLY

Used with standard banana plug. Body, one piece brass, silver plated. Heavy duty shouldered ceramic insulator. Nickel plated lockwasher and hex nut included.



FEATURES:
- Closed entry receptacle, .166 dia.
- Insulator head molded to body
- Mounts in ⅜" dia. hole, panels from .035" to .375" thick
- Solder turret terminal
- Rated: 2,500 WVDC

1581 — Black	1581-5 — Green
1581-1 — Brown	1581-6 — Blue
1581-2 — Red	1581-7 — Violet
1581-3 — Orange	1581-8 — Gray
1581-4 — Yellow	1581-9 — White

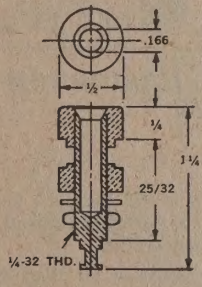
Standard Package: 10 (per color) Unassembled

MODEL 1581 QUANTITY DISC. CODE **A** NET .25 ea.

INSULATED BANANA JACK ASSEMBLY GOLD PLATED

NEW

Used with standard banana plug. Body, one piece brass, gold plated. Head insulation and panel insulator are molded of tough Polycarbonate thermoplastic. Nickel plated lockwasher and hex nut included.



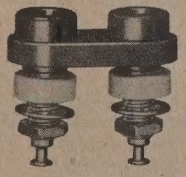
FEATURES:
- Closed entry receptacle, .166 dia.
- Insulator head molded to body
- Mounts in ⅜" dia. hole, panels from .035" to .375" thick
- Solder turret terminal
- Rated: 2,500 WVDC

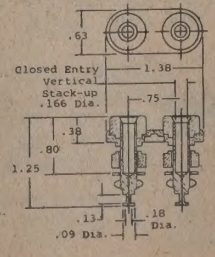
2854 — Black	2854-5 — Green
2854-1 — Brown	2854-6 — Blue
2854-2 — Red	2854-7 — Violet
2854-3 — Orange	2854-8 — Gray
2854-4 — Yellow	2854-9 — White

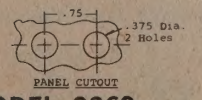
Standard Package: 10 (per color) Unassembled

MODEL 2854 QUANTITY DISC. CODE **A** NET .35 ea.

INSULATED DOUBLE BANANA JACK ASSEMBLY







Double banana jack silver plated on ¾" centers with one red and one black jack. Choice of Black or Red plate.

Mounts in panels from .035" to .275" thick.

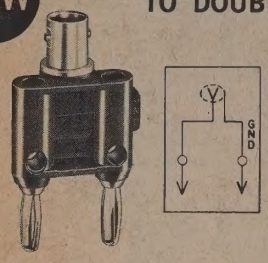
MODEL 2269 Black Plate
MODEL 2269-2 Red Plate

MODEL 2269 QUANTITY DISC. CODE **A** NET .75

POMONA ELECTRONICS — TEST ACCESSORIES

NEW

ADAPTER—MHV RECEPTACLE TO DOUBLE BANANA PLUG



This adapter allows an MHV Plug to be used with equipment having ¾" spaced banana jacks.

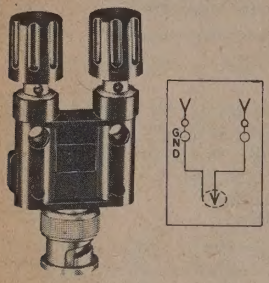
UPPER: MHV receptacle.
LOWER: Double banana plug, on ¾" centers. Cross holes (.166 Dia.) in body provide side Stack-Up connections.

COLOR: Black.

MODEL 3290 QUANTITY DISC. CODE **A** **NET 5.85**

NEW

ADAPTER—BINDING POSTS TO MHV PLUG



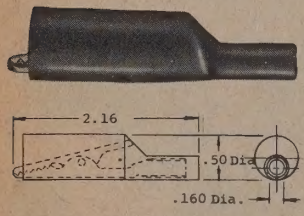
This adapter converts a MHV Receptacle to standard ¾" 5 way binding posts.

UPPER: Insulated binding posts on ¾" centers with (.166 dia.) banana jacks. Cross holes (.166 dia.) in body provide side Stack-Up connections.
LOWER: MHV plug.

COLOR: Black.

MODEL 3291 QUANTITY DISC. CODE **A** **NET 7.85**

INSULATED ALLIGATOR CLIP TO BANANA JACK



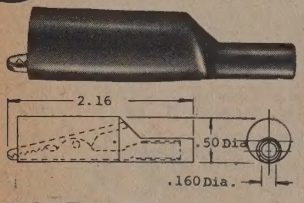
Clip, No. 60 Mueller, Steel, Cadmium Plated Vinyl insulators, No. 62 (5 Red, 5 Black). Unassembled.

Standard Package of 10 clips and 10 insulators.

MODEL 2240 QUANTITY DISC. CODE **A** **NET .15 ea.**

NEW

GOLD PLATED—INSULATED ALLIGATOR CLIP TO BANANA JACK

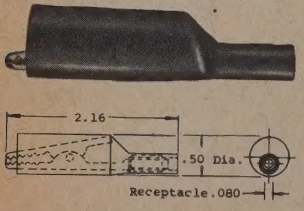


Alligator Clip, solid Copper, Gold plated. Vinyl insulators (5 Red, 5 Black). Unassembled.

Standard Package of 10 clips and 10 insulators.

MODEL 3289 QUANTITY DISC. CODE **A** **NET .50 ea.**

INSULATED ALLIGATOR CLIP TO PIN TIP JACK

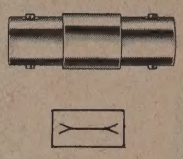


Alligator Clip, Steel, Cadmium Plated. Tip Jack, Beryllium Copper, Gold Flashed, eccepts 0.80 dia. Pin tip plug. Vinyl insulators (5 Red, 5 Black). Unassembled.

Standard Package of 10 clips and 10 insulators.

MODEL 1437 QUANTITY DISC. CODE **A** **NET .50 ea.**

ADAPTER — BNC JACK TO JACK

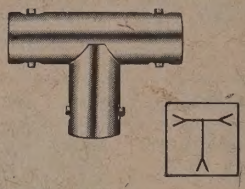


Allows the interconnection coaxial cables with BNC plu

FEATURES:
- Non-Tarnish finish.
- 50 Ohm impedance.
- Teflon insulation.
- Gold flashed beryllium c contacts.

MODEL 3283 QUANTITY DISC. CODE **A** **NET 1.**

ADAPTER — BNC "T" — 3 JACKS

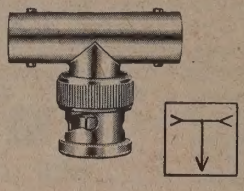


This adapter allows the inte nection of three coaxial c with BNC Plugs.

FEATURES:
- Non-Tarnish finish.
- 50 Ohm impedance.
- Teflon insulation.
- Gold flashed beryllium c contacts.

MODEL 3284 QUANTITY DISC. CODE **A** **NET 4.**

ADAPTER — BNC "T" JACK — PLUG — JACK

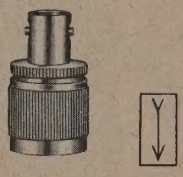


With this adapter, equipme coaxial cables having a single jack are changed to two BNC

FEATURES:
- Non-Tarnish finish.
- 50 Ohm impedance.
- Teflon insulation.
- Gold flashed beryllium c female and outer male cor

MODEL 3285 QUANTITY DISC. CODE **A** **NET 3.**

ADAPTER — BNC JACK TO UHF PLUG

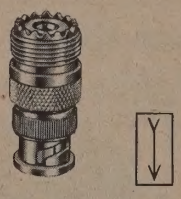


Allows the use of a BNC plu equipment having a UHF Ja

FEATURES:
- Non-Tarnish finish.
- Rexolite insulation.
- Gold flashed beryllium copper female contact.
- Gold flashed male contact.

MODEL 3286 QUANTITY DISC. CODE **A** **NET 1.**

ADAPTER — UHF JACK TO BNC PLUG

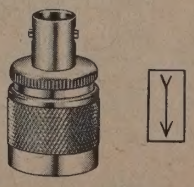


Allows the use of a UHF Plu equipment having a BNC Jac

FEATURES:
- Non-Tarnish finish.
- 50 Ohm impedance.
- Rexolite insulation.
- Gold flashed Phosphor Br female UHF and male contacts.

MODEL 3287 QUANTITY DISC. CODE **A** **NET 2.**

ADAPTER — BNC JACK TO TYPE "N" PLUG



Allows the use of a BNC Plu equipment having a type "N"

FEATURES:
- Non-Tarnish finish.
- Teflon insulation.
- Gold flashed contacts.

MODEL 3288 QUANTITY DISC. CODE **A** **NET 1.**

Net

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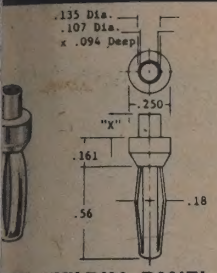
POMONA ELECTRONICS

STANDARD AND MINIATURE BANANA PLUGS

RIVET TYPE BANANA PLUG



Excellent for riveting to panels or boards. Used with standard .166 dia. banana jacks.

- Spring, one piece heat treated beryllium copper, alloy 170 per QQ-C-533.
- Jack body, Brass Per QQ-B-626 comp. 22.
- Plating, Nickel per QQ-N-290, class 2.
- Rated, 15A. Cont., 30A. Int.

DEL	"X" DIM.	PANEL
57	.094	1/16"
58	.125	3/32"
59	.156	1/8"

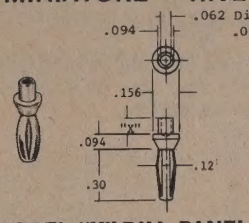
Standard Package 10

QUANTITY DISC. CODE **A**

NET .22 ea.

MINIATURE — RIVET TYPE BANANA PLUG

NEW



Excellent for riveting to panels or boards. Used with miniature .104 dia. banana jacks.

- Spring, one piece heat treated beryllium copper, alloy 170 per QQ-C-533.
- Plug body, Brass per QQ-B-626 comp. 22.
- Plating, Gold flashed per MIL-G-45204 Type II (.00002/.00003).
- Rated, 5A. Cont., 10A. Int.

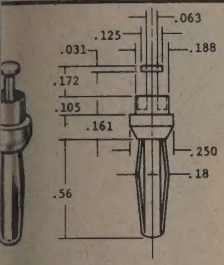
MODEL	"X" DIM.	PANEL
3268	.094	1/16"
3271	.125	3/32"
3272	.156	1/8"

Standard Package 10

QUANTITY DISC. CODE **A**

NET .22 ea.

RIVET TYPE BANANA PLUG WITH TURRET



Excellent for riveting to panels or boards. Solder turret for rapid attachment of wires. Used with standard .166 dia. banana jacks.

- Spring, one piece heat treated beryllium copper, alloy 170 per QQ-C-533.
- Jack body, Brass Per QQ-B-626 comp. 22.
- Plating, Nickel per QQ-N-290, class 2.
- Rated, 15A. Cont., 30A. Int.

DEL	"X" DIM.	PANEL
260	.105	1/16"
261	.135	3/32"
262	.165	1/8"

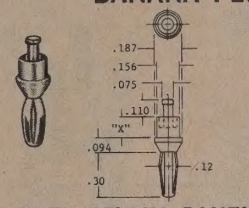
Standard Package 10

QUANTITY DISC. CODE **A**

NET .25 ea.

MINIATURE — RIVET TYPE BANANA PLUG WITH TURRET

NEW



Excellent for riveting to panels or boards. Solder turret for rapid attachment of wires. Used with miniature .104 dia. banana jacks.

- Spring, one piece heat treated beryllium copper, alloy 170 per QQ-C-533.
- Plug body, Brass per QQ-B-626 comp. 22.
- Plating, Gold flashed per MIL-G-45204 Type II (.00002/.00003).
- Rated, 5A. Cont., 10A. Int.

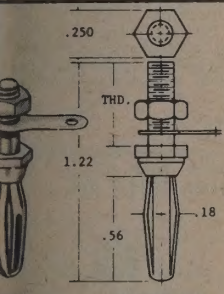
MODEL	"X" DIM.	PANEL
3273	.105	1/16"
3274	.135	3/32"
3275	.165	1/8"

Standard Package 10

QUANTITY DISC. CODE **A**

NET .25 ea.

BANANA PLUG WITH THREADED STUD



Threaded stud for rapid mounting. Used with standard .166 dia. banana jacks. Furnished with hex nut and solder lug.

- Spring, one piece heat treated beryllium copper, alloy 170 per QQ-C-533.
- Plug body, Hex brass per QQ-B-626 comp. 22.
- Plating, Nickel per QQ-N-290, class 2.
- Rated, 15A. Cont., 30A. Int.

Standard Package 10
Unassembled

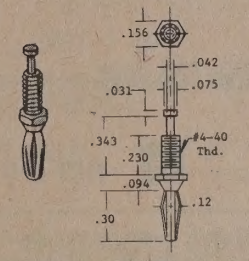
DEL	THREAD
263	6-32 x 1/2"
264	8-32 x 1/2"

QUANTITY DISC. CODE **A**

NET .29 ea.

MINIATURE — BANANA PLUG WITH THREADED STUD

NEW



Threaded stud for rapid mounting. Solder turret for attachment of wires. Used with .104 dia. miniature banana jacks.

- Spring, one piece heat treated beryllium copper, alloy 170 per QQ-C-533.
- Plug body, Brass per QQ-B-626 comp. 22.
- Plating, Gold flashed per MIL-G-45204 Type II (.00002/.00003).
- Rated, 5A. Cont., 10A. Int.

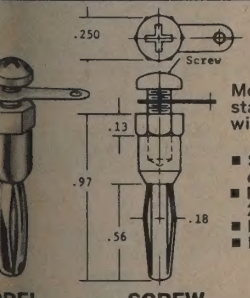
Standard Package 10

MODEL 3276

QUANTITY DISC. CODE **A**

NET .25 ea.

BANANA PLUG WITH SCREW



Mounts to various size panels. Used with standard .166 dia. banana jacks. Furnished with screw and solder lug.

- Spring, one piece heat treated beryllium copper, alloy 170 per QQ-C-533.
- Plug body, Hex brass per QQ-B-626 comp. 22.
- Plating, Nickel per QQ-N-290, class 2.
- Rated, 15A. Cont., 30A. Int.

Standard Package 10
Unassembled

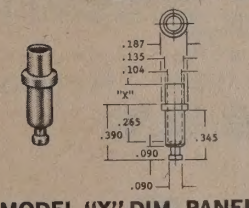
DEL	SCREW
265	6-32 x 1/4"
266	8-32 x 1/4"

QUANTITY DISC. CODE **A**

NET .29 ea.

MINIATURE — RIVET TYPE BANANA JACK WITH TURRET

NEW



Excellent for riveting to panels or boards. Solder turret for rapid attachment of wires. .104 dia. jack accepts miniature banana plug.

- Jack body, Brass per QQ-B-626 comp. 22.
- Plating, Gold flashed per MIL-G-45204 Type II (.00002/.00003).
- Rated, 5A. Cont., 10A. Int.

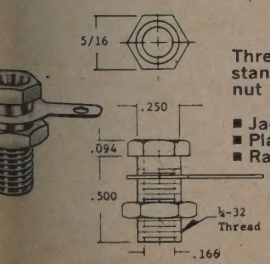
MODEL	"X" DIM.	PANEL
3277	.105	1/16"
3278	.135	3/32"
3279	.165	1/8"

Standard Package 10

QUANTITY DISC. CODE **A**

NET .15 ea.

UNINSULATED—BANANA JACK



Threaded for rapid mounting. Used with standard banana plugs. Furnished with hex nut and solder lug.

- Jack body, Brass per QQ-B-626 comp. 22.
- Plating, Nickel per QQ-N-290, class 2.
- Rated, 15A. Cont., 30A. Int.

Standard Package 10
Unassembled

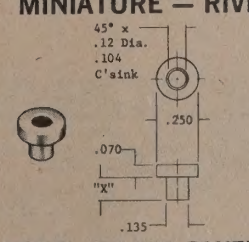
ODEL 3267

QUANTITY DISC. CODE **A**

NET .15 ea.

MINIATURE — RIVET TYPE BANANA JACK

NEW



Excellent for riveting to panels or boards. .104 dia. jack accepts miniature banana plug.

- Jack body, Brass per QQ-B-626 comp. 22.
- Plating, Gold flashed per MIL-G-45204 Type II (.00002/.00003).
- Rated, 5A. Cont., 10A. Int.

MODEL	"X" DIM.	PANEL
3280	.105	1/16"
3281	.135	3/32"
3282	.165	1/8"

Standard Package 10

QUANTITY DISC. CODE **A**

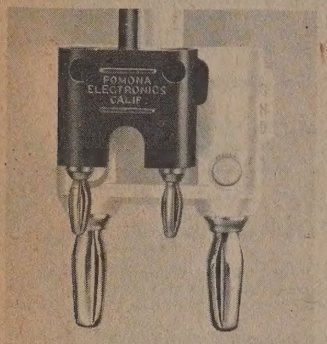
NET .10 ea.

POMONA ELECTRONICS

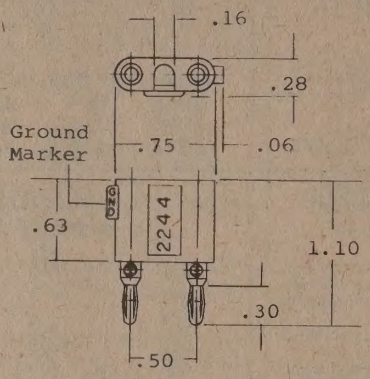
½" SPACED MINIATURE BANANA PLUGS AND ACCESSORIES

ONE-THIRD SMALLER Miniature Banana Plugs, a state-of-the-art development for the ever increasing demand for miniaturized test equipment.

Banana plug springs are precision formed of one-piece beryllium copper, heat treated for maximum life and low contact resistance. Tough thermoplastic molded to plug bodies.



ACTUAL SIZE

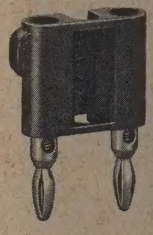


SPECIFICATIONS:

- Fits 0.104 dia. miniature banana jacks.
- Plug body brass, per QQ-B-626, Comp. #
- Gold flashed per MIL-G-45204 Type 11 (.00002/.00003).
- Spring, beryllium copper alloy 170 per QQ-C-533.

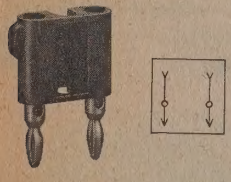
RATINGS:

- Operating temp.: —25°C to +85°C.
- Working voltage: 2500 VDC.
- Current: 5 amps cont., 10 amps. int.



ACTUAL SIZE

MINIATURE—DOUBLE BANANA PLUG WITH SET SCREWS



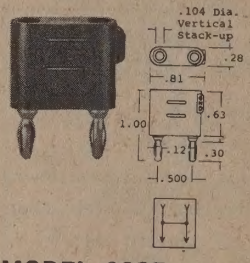
Miniature double banana plug on ½" centers. Internal set screws to secure cable or component leads. .104 dia. banana jacks on ½" centers permit top Stack-Up for multiple connections.

COLORS: Black, Red.

MODEL 2244 Black
MODEL 2244-2 Red

MODEL 2244 QUANTITY DISC. CODE **A** **NET .75**

MINIATURE—DOUBLE BANANA PLUG WITH SHORTING BAR



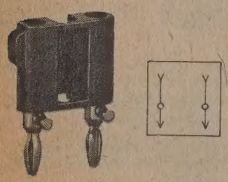
Ideal as a connecting link for use ½" spaced banana jacks. .104 dia. nana jacks on ½" centers permit Stack-Up for multiple connections. nana plugs internally solder-bonded #18 AWG wire. "Shorting Bar" stam on plug.

COLORS: Black, Red.

MODEL 2035 Black
MODEL 2035-2 Red

MODEL 2035 QUANTITY DISC. CODE **A** **NET**

MINIATURE—DOUBLE BANANA PLUG WITH SOLDER TURRET TERMINALS



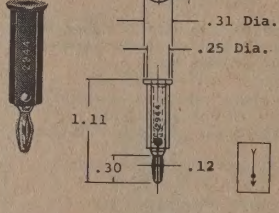
Miniature double banana plug on ½" centers. Solder turret terminals for permanent noise-free connections of cables or components. .104 dia. banana jacks on ½" centers permit top Stack-Up for multiple connections.

COLORS: Black, Red

MODEL 2245 Black
MODEL 2245-2 Red

MODEL 2245 QUANTITY DISC. CODE **A** **NET .85**

MINIATURE SOLDERLESS BANANA PLUG-STACK-



Miniature banana plug for rapid ass bly of test leads. For use with miniat binding posts or banana jacks. W firmly held in place with internal screw, eliminating soldering.

UPPER: Miniature banana jack .104 Brass, gold flashed.

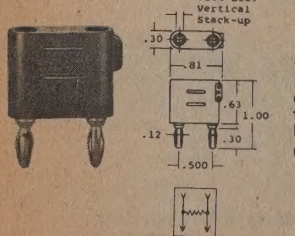
LOWER: Miniature banana plug, piece gold flashed beryllium cop spring for use with .104 dia. miniat banana jacks.

COLORS: Black, Red.

MODEL 2944-0 Black
MODEL 2944-2 Red

MODEL 2944 QUANTITY DISC. CODE **A** **NET**

MINIATURE—DOUBLE BANANA PLUG WITH MOLDED PRECISION RESISTOR

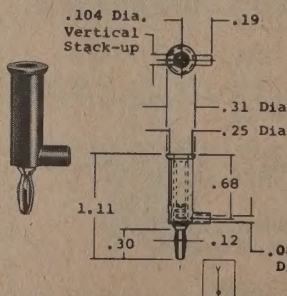


Ideal where rapid interchange of resistance values is required. Deposited carbon 1% ¼ watt, molded internally. .104 dia. banana jacks on ½" centers permit top Stack-Up for multiple connections. Resistance value stamped on plug.

COLOR: Blue (OHMS) 50 10K 600 50K 1K 100K

MODEL 2246 (Specify Value) QUANTITY DISC. CODE **A** **NET 2.75**

MINIATURE SOLDERLESS BANANA PLUG WITH SAFETY COLLAR-STACK-UP



This integral collar insulates expo wire leads and acts as a strain relief preventing the flexing of the lead at set screw. Wire firmly held in place w internal set screw, eliminating solderi

UPPER: Miniature banana jack. .104 Brass, gold flashed.

LOWER: Miniature banana plug, piece gold flashed beryllium cop spring for use with .104 dia. miniat banana jacks.

COLORS: Black, Red.

MODEL 2945-0 Black
MODEL 2945-2 Red

MODEL 2945 QUANTITY DISC. CODE **A** **NET**

Net

© United Technical Publicatio

POMONA ELECTRONICS

MINIATURE BINDING POSTS
MINIATURE BANANA JACKS

MINIATURE BINDING POSTS

nplete 5-way Binding Post in "Miniature." Captive Thumb Nut and Binding Post Body, machined brass; gold or nickel plated. b Nut and Mounting Base molded of High Impact Polycarbonate Thermoplastic. Heavy Duty Shouldered Ceramic Insulator. vasher and hex nut included, unassembled, nickel plated.

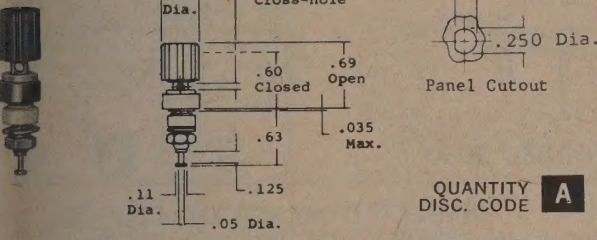
IFICATIONS:

way Binding Post ■ Mounts ¼" dia. "D" hole ■ Panels up to 3/16" thick ■ Captive b Nut ■ .082 dia. Cross hole ■ Thumb Nut and Binding Post Body — Gold ed per MIL-G-45204 Type 2 OR Nickel Plated per QQ-N-290 Class 2.

RATINGS:

- Operating Temp.: —65°C to +150°C.
- Working Voltage: 1500 VDC.
- Current: 5 Amps Cont., 10 Amps Int.

MINIATURE—INSULATED BINDING POST



QUANTITY DISC. CODE **A**

DEL 2382-* (Specify Color) Gold Flashed Assembly — **NET .90**

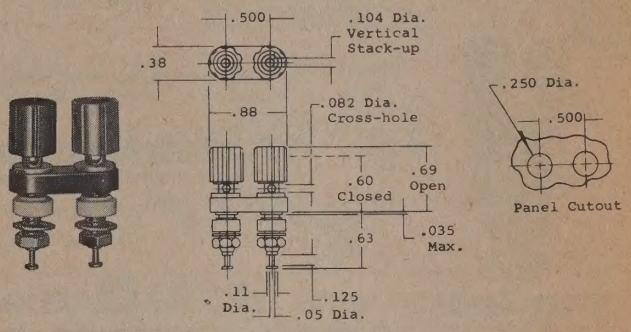
MODEL 2439-* *(Specify Color) Nickel Plated Assembly — **NET .75**

(*) COLORS

-0 Black	-5 Green
-1 Brown	-6 Blue
-2 Red	-7 Violet
-3 Orange	-8 Gray
-4 Yellow	-9 White

MINIATURE—INSULATED DOUBLE BINDING POST

Double binding post body on ½" centers with one Red and one Black binding post. Choice of Black or Red plate.



MODEL 2383-* *(Specify Color) Gold Flashed Assembly — **NET 1.80**

MODEL 2440-* *(Specify Color) Nickel Plated Assembly — **NET 1.50**

QUANTITY DISC. CODE **A**

(*) COLORS

-0 Black Plate
-2 Red Plate

MINIATURE BANANA JACKS

oped by the need for miniaturization of test equipment and test panels. The new generation of test jacks. Built to Pomona ronics high standard of quality.

selection of colors available.

ed of High Impact Polycarbonate Thermoplastic Banana Jack body, one piece machined brass, gold flashed. Heavy duty ldered ceramic insulator. Lockwasher and hex nut included, unassembled, nickel plated.

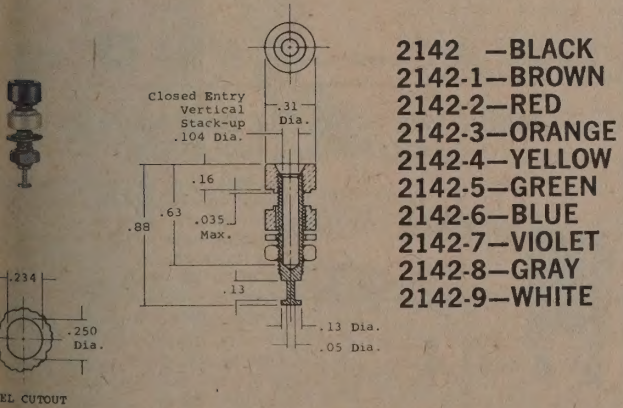
IFICATIONS:

osed entry jack .104 dia. ■ Insulator head molded to body. ■ Mounts in ¼" dia., Model 2142, Panels up to ¼" thick. Model 2143, Panels up to 3/16" thick. ■ Solder t terminal.

RATINGS:

- Operating Temp.: —65°C to +150°C.
- Working Voltage: 1500 VDC.
- Current: 5 Amps Cont., 10 Amps Int.

MINIATURE—INSULATED BANANA JACK

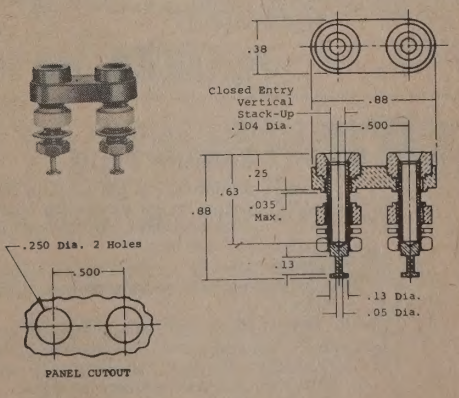


2142 —BLACK
2142-1—BROWN
2142-2—RED
2142-3—ORANGE
2142-4—YELLOW
2142-5—GREEN
2142-6—BLUE
2142-7—VIOLET
2142-8—GRAY
2142-9—WHITE

DEL 2142 — **Standard Package: 10 (per color)** — QUANTITY DISC. CODE **A** — **NET .25 ea.**

MINIATURE—INSULATED DOUBLE BANANA JACK

Double banana jack on ½" centers with one red and one black jack. Choice of Black or Red plate.



MODEL 2143 (Black Plate)

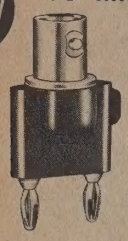
MODEL 2143-2 (Red Plate)

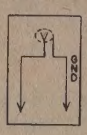
MODEL 2143 — QUANTITY DISC. CODE **A** — **NET .75**

POMONA ELECTRONICS

½" SPACED MINIATURE BANANA PLUG ADAPTERS AND ACCESSORIES

NEW ADAPTER — BNC RECEPTACLE TO MINIATURE DOUBLE BANANA PLUG





This adapter allows a BNC plug to be used with equipment having ½" spaced miniature .104 dia. banana jacks. Excellent for adapting test equipment to standard coaxial cables.

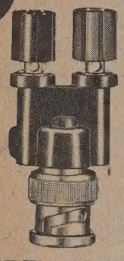
UPPER: BNC receptacle, UG 1094/U.

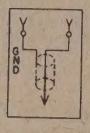
LOWER: Miniature double banana plug on ½" centers, for use with .104 dia. miniature jacks. Gold flashed one piece heat treated beryllium copper springs.

COLOR: Black.

MODEL 3269 QUANTITY DISC. CODE **A** NET 3.25

NEW ADAPTER — MINIATURE BINDING POSTS TO BNC PLUG





This adapter converts a BNC receptacle to miniature ½" spaced 5 way binding posts.

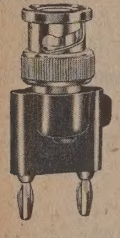
UPPER: Insulated, gold flashed miniature 5 way binding posts on ½" centers with .104 dia. miniature banana jacks.

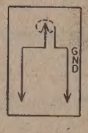
LOWER: BNC plug.

COLOR: Black.

MODEL 3296 QUANTITY DISC. CODE **A** NET 4.85

NEW ADAPTER — BNC PLUG TO MINIATURE DOUBLE BANANA PLUG





Allows a BNC cable jack to be used on equipment having ½" spaced .104 dia. banana jacks.

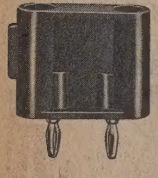
UPPER: BNC plug.

LOWER: Miniature double banana plug on ½" centers, for use with .104 dia. miniature jacks. Gold flashed one piece heat treated beryllium copper springs.

COLOR: Black.

MODEL 3270 QUANTITY DISC. CODE **A** NET 4.25

ADAPTER — STANDARD DOUBLE BANANA JACK TO MINIATURE DOUBLE BANANA PLUG



Permits standard double banana plug on ¾" centers to be used with equipment having miniature double banana jacks on ½" centers.

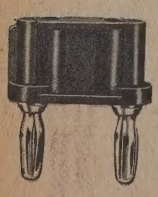
UPPER: Standard double banana jacks .166 dia. on ¾" centers. Brass, nickel plated.

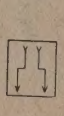
LOWER: Miniature double banana plug on ½" centers. One piece nickel plated beryllium copper spring for use with .104 dia. miniature banana jacks.

COLOR: Black.

MODEL 2952 QUANTITY DISC. CODE **A** NET .95

ADAPTER — MINIATURE DOUBLE BANANA JACK TO STANDARD DOUBLE BANANA PLUG





Permits miniature double banana plug on ½" centers to be used with equipment having standard double banana jacks on ¾" centers.

UPPER: Miniature double banana jacks, .104 dia. on ½" centers. Brass, nickel plated.

LOWER: Standard double banana plug on ¾" centers. One piece nickel plated beryllium copper spring for use with .166 dia. standard banana jacks.

COLOR: Black.

MODEL 2943 QUANTITY DISC. CODE **A** NET .95

ADAPTER — STANDARD BANANA JACK TO MINIATURE BANANA PLUG

Permits standard banana plug to be used with equipment having miniature banana jacks.

UPPER: Banana jack, .166 dia.; Brass, nickel plated.

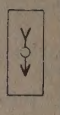
LOWER: Miniature banana plug, one piece nickel plated beryllium copper spring for use with .104 dia. miniature banana jacks.

COLORS: Black, Red.

MODEL 2138 2138-0 Black, 2138-2 Red NET .50

QUANTITY DISC. CODE **A**

ADAPTER — MINIATURE BANANA JACK TO STANDARD BANANA PL



Permits mini banana plugs used with equi having standar nana jacks.

UPPER: Miniatu nana jack, .104 Brass, nickel p

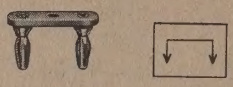
LOWER: Standard ba plug, one piece nickel beryllium copper sprin use with .166 dia. b jacks.

COLORS: Black, Red.

MODEL 2477 2477-0 Black, 2477-2 Red

QUANTITY DISC. CODE **A**

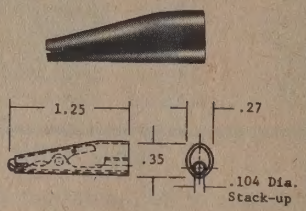
MINIATURE — METAL SHORTING BAR



Low profile, gold flashed, brass s ing bar. Miniature banana plugs o centers swaged to 1/16" thick brass Center hole accepts #4-40 screw easy removal. Current rating 5 A cont., 10 Amps INT.

MODEL 3030 QUANTITY DISC. CODE **A** NET

INSULATED MINIGATOR CLIP TO MINIATURE BANANA JACK

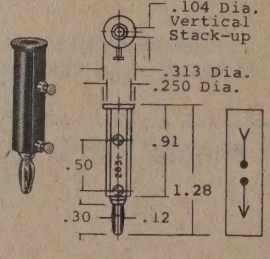


This Minigator clip accepts a minia banana plug in the rear. Clip is s cadmium plated. Pinned hinge struction with full-meshing jaws small wires. Vinyl insulators (5 re black). Unassembled.

Standard Package of 10 clips and insulators.

MODEL 3217 QUANTITY DISC. CODE **A** NET .20

MINIATURE — SINGLE BANANA PLUG ISOLATION



Provides two terminal isolation. All for addition of series components. cellent for circuit design and test Gold flashed solder turret terminals permanent noise-free connections.

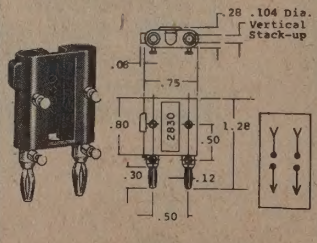
UPPER: Miniature banana jack, dia. Brass, gold flashed.

LOWER: Miniature banana plug, piece gold flashed beryllium cop spring.
Colvinimed

COLOR: Black, Red.

MODEL 2831 (specify color) QUANTITY DISC. CODE **A** NET 1.

MINIATURE — DOUBLE BANANA PLUG — 4 TERMINAL ISOLATION



Provides four terminal isolation. Stack-up receptacles isolated fr lower plugs. Ideal for insertion matching networks in computer boa circuit design and testing. Gold flash solder turret terminals for perman noise-free connections.

UPPER: Miniature double banana ja .104 dia. Brass, gold flashed.

LOWER: Miniature double banana p on ½" centers. Gold flashed one pi beryllium copper spring.

COLOR: Red.

MODEL 2830 QUANTITY DISC. CODE **A** NET 3.

Net

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POMONA ELECTRONICS

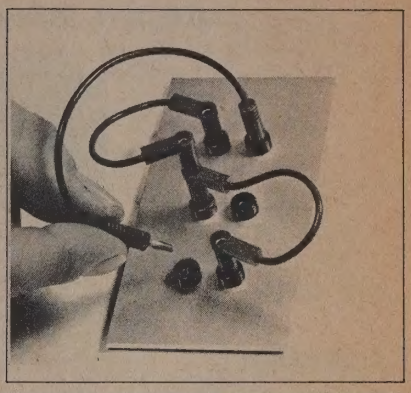
MINIATURE PATCH CORDS

ture patch cords for use with .104 dia. miniature banana jacks. Excellent for mini-ation of test equipment and high density packaging for patch systems.

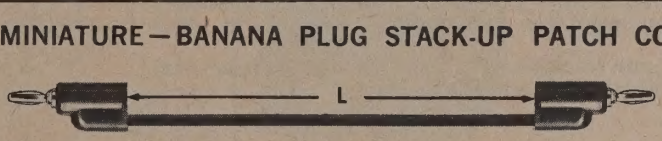
na plug springs precision formed of one piece beryllium copper, heat treated for num life and low contact resistance. Tough thermoplastic molded to plug body ire.

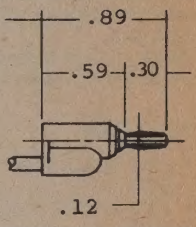
URES:
s .104 dia. miniature banana jacks ■ Plug body brass, per QQ-B-626, Comp. #22 ld flashed per MIL-G-45204 Type II (.00002/.00003) ■ Spring, one piece heat d beryllium copper, alloy 170 per QQ-C-533.

FICATIONS:
RE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation .087" O.D.
TED: 5 A. Cont., 10 A. Int., 5,000 V.D.C. ■ OPERATING TEMP.: —0°C to +105 C°



MINIATURE—BANANA PLUG STACK-UP PATCH CORD



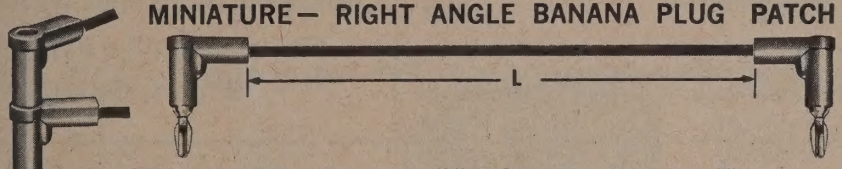


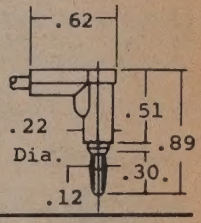
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

MODEL 1081 (Specify Color) ★QUANTITY DISC. CODE **A**

L	LENGTH	NET
4	4"	1.50
8	8"	1.50
12	12"	1.50
18	18"	1.50
24	24"	1.50
36	36"	1.50
48	48"	1.55
60	60"	1.60

MINIATURE— RIGHT ANGLE BANANA PLUG PATCH CORD STACK-UP



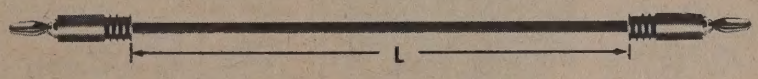


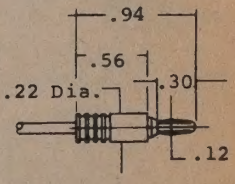
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

MODEL 2860 (Specify Color) ★QUANTITY DISC. CODE **A**

L	LENGTH	NET
4	4"	1.50
8	8"	1.50
12	12"	1.50
18	18"	1.50
24	24"	1.50
36	36"	1.50
48	48"	1.55
60	60"	1.60

MINIATURE—BANANA PLUG PATCH CORD



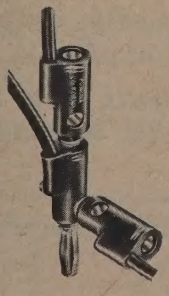


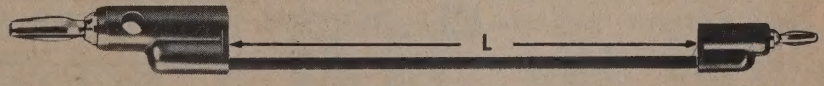
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

MODEL 2842 (Specify Color) ★QUANTITY DISC. CODE **A**

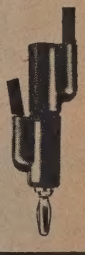
L	LENGTH	NET
4	4"	1.00
8	8"	1.00
12	12"	1.00
18	18"	1.00
24	24"	1.00
36	36"	1.00
48	48"	1.05
60	60"	1.10

STANDARD BANANA PLUG TO MINIATURE BANANA PLUG PATCH CORD





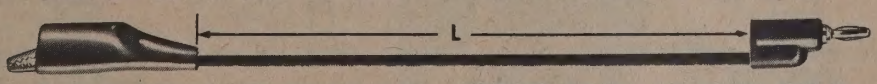
A patch cord for rapid interconnection of equipment having standard and miniature banana jacks. Both plugs have a stack-up feature.
STANDARD BANANA PLUG: Spring, one piece beryllium copper, heat treated, nickel plated. Tough thermoplastic molded to plug body and wire.
WIRE: 20 AWG, Strand. 41 x 36 T.C. extra flexible polyvinyl insulation .087" O.D.
MINIATURE BANANA PLUG: Spring, one piece beryllium copper, heat treated, gold flashed. Tough thermoplastic molded to plug body and wire.
RATED: 5 A. Cont., 10 A Int. 5,000 W.V.D.C.
OPERATING TEMP.: —25° C to +105° C.
COLORS: Black, Red.



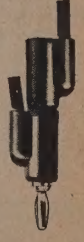
MODEL 3014 (Specify Color) ★QUANTITY DISC. CODE **A**

L	LENGTH	NET
4	4"	1.50
8	8"	1.50
12	12"	1.50
18	18"	1.50
24	24"	1.50
36	36"	1.50
48	48"	1.55
60	60"	1.60

INSULATED MINIGATOR CLIP TO MINIATURE BANANA PLUG



Adapts to equipment using miniature banana jacks.
CLIP: Minigator, Steel, cadmium plated.
MINIATURE BANANA PLUG: Spring, one piece beryllium copper, heat treated, gold flashed. Tough thermoplastic molded to plug body and wire.
INSULATOR: Red vinyl with red wire. Black on black wire.
WIRE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation, .087" O.D.
OPERATING TEMP.: —25° C to +105° C.
COLORS: Black, Red



MODEL 3222 (Specify Color) ★QUANTITY DISC. CODE **A**

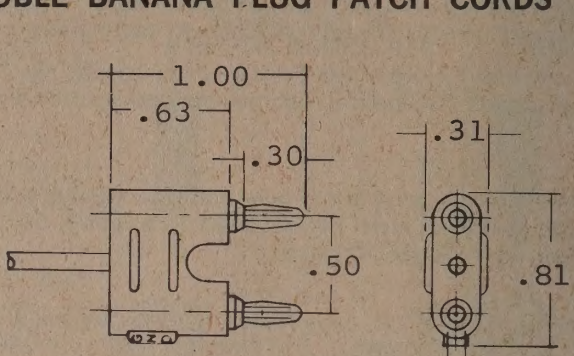
L	LENGTH	NET
4	4"	1.00
8	8"	1.00
12	12"	1.00
18	18"	1.00
24	24"	1.00
36	36"	1.00
48	48"	1.05
60	60"	1.10

POMONA ELECTRONICS

½" SPACED MINIATURE DOUBL BANANA PLUG PATCH CORDS

MOLDED MINIATURE DOUBLE BANANA PLUG PATCH CORDS

ACTUAL SIZE



STACK-UP

⅓ smaller...

A miniature double banana plug on ½" centers. This patch cord enables miniaturization of test equipment and high density packaging for patch systems.
Banana plug springs precision formed of one piece beryllium copper, heat treated for maximum life and low contact resistance.

FEATURES...

- One piece beryllium copper heat treated spring for long life.
- Rounded spring design results in maximum contact area.
- GND., clearly molded on plug body and shell.
- Solder-bonded noise-free connections.

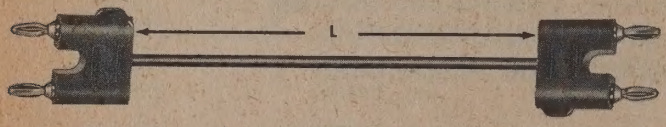
SPECIFICATIONS . . .

- Fits standard 0.104 dia. banana jacks, on ½" centers.
- Spring beryllium copper alloy 170 per QQ-C-533.
- Plug body brass per QQ-B-626, Comp. 22.
- Gold flashed per MIL-G-45204, type II.

CABLE DESCRIPTION:
Shielded coax., RG174/U. Polyethylene insulation, Vinyl jacket. Nom. cap. 29.5 pf/ft. Nom. Imp. 50 Ohms. Nom. O.D. .100". **Color: Black.**

NOTE: Molded double plug matches color of ca

MINIATURE — DOUBLE BANANA PLUG BOTH ENDS



CONN: 1st END Miniature Double Banana plug on ½" centers.

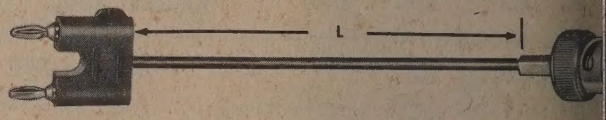
CABLE: Shielded Coax., RG174/U.

CONN: 2nd END Miniature double banana plug on ½" centers.

MODEL	LENGTH
2247-K-12	12"
2247-K-24	24"
2247-K-36	36"
2247-K-48	48"
2247-K-60	60"

MODEL 2247 ★ QUANTITY DISC. CODE **B** **NET 4.95**

MINIATURE–DOUBLE BANANA PLUG TO BNC MA



CONN: 1st END Miniature Double Banana Plug on ½" centers

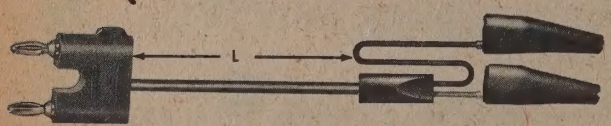
CABLE: Shielded Coax., RG174/U

CONN: 2nd END Male

MODEL	LENGTH
2248-K-12	12"
2248-K-24	24"
2248-K-36	36"
2248-K-48	48"
2248-K-60	60"

MODEL 2248 ★ QUANTITY DISC. CODE **B** **NET 5.**

MINIATURE — DOUBLE BANANA PLUG TO MINIGATOR CLIPS



CONN: 1st END Miniature Double Banana plug on ½" centers.

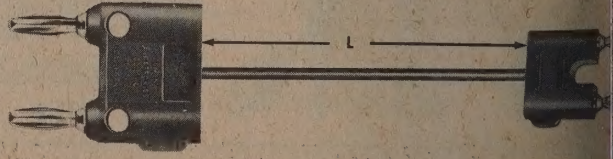
CABLE: Shielded Coax., RG174/U.

CONN: 2nd END Minigator Clips, Steel, cad plated Insulators, Vinyl: Black/Red.

MODEL	LENGTH
3027-K-12	12"
3027-K-24	24"
3027-K-36	36"
3027-K-48	48"
3027-K-60	60"

MODEL 3027 ★ QUANTITY DISC. CODE **B** **NET 5.95**

DOUBLE BANANA PLUG TO MINIATURE DOUBLE BANANA PLUG



CONN: 1st END Double Banana Plug, on ¾" Centers.

CABLE: Shielded Coax., RG174/U.

CONN: 2nd END Miniature do banana plug ½" Centers.

MODEL	LENGTH
2443-K-12	12"
2443-K-24	24"
2443-K-36	36"
2443-K-48	48"
2443-K-60	60"

MODEL 2443 ★ QUANTITY DISC. CODE **B** **NET 4.**

Net

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POMONA ELECTRONICS — "BLACK BOXES"

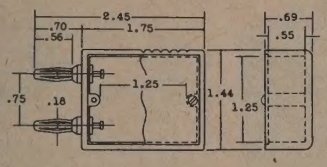
TE passive and active networks, voltage dividers, isola- ıetworks or attenuators with these units. Solder turret ıals for permanent noise-free connection of components, ntire unit may be potted or encapsulated.

Housing molded of thermosetting electrical grade phenolic. Cover, punched XXP laminated paper base phenolic. Color, housing and cover, BLACK. Cover plate and 2 each #2-56 cover screws included.

LICABLE SPECIFICATIONS:

ting Temp: —25°C to +125°C. Working Voltage: 5000 VDC. Current: 15 Amps Cont., 30 Amps Int.

COMPONENT MOUNTING—ACROSS BANANA PLUGS

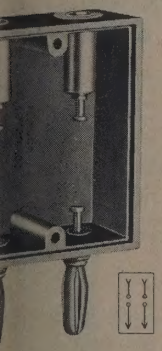


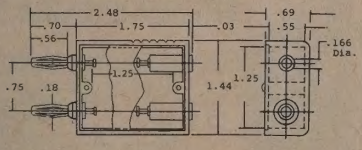
UPPER: No Connection.

LOWER: Banana plugs on ¾" centers. One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

EL 2096 — QUANTITY DISC. CODE **A** — **NET 1.95**

COMPONENT MOUNTING—BANANA JACKS TO DOUBLE BANANA PLUG—JUNIOR SIZE



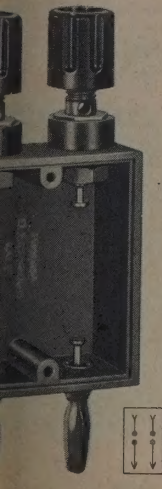


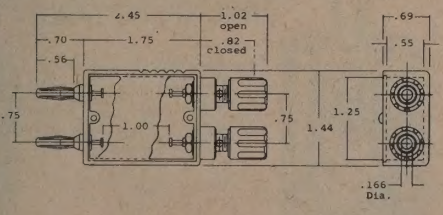
UPPER: Banana jacks, .166" dia. and solder turret terminals on ¾" centers. Brass, nickel plated. Polarity indicator on top, color, RED.

LOWER: Banana plugs on ¾" centers. One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

EL 2098 — QUANTITY DISC. CODE **A** — **NET 3.45**

COMPONENT MOUNTING—BINDING POSTS TO DOUBLE BANANA PLUG—JUNIOR SIZE

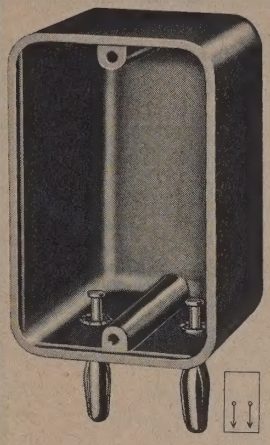




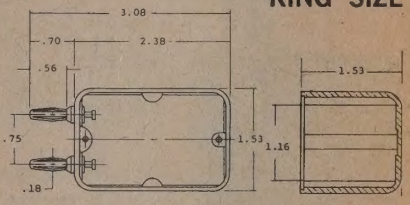
UPPER: Banana jack binding posts with solder turret terminals, on ¾" centers. Red and Black.

LOWER: Banana plugs on ¾" centers. One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

EL 2259 — QUANTITY DISC. CODE **A** — **NET 4.85**



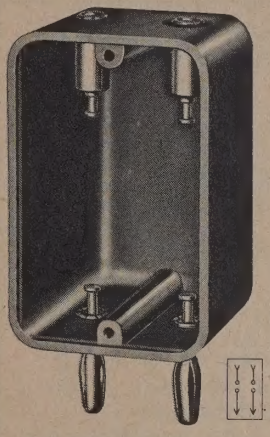
COMPONENT MOUNTING—ACROSS BANANA PLUGS—KING SIZE



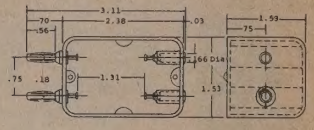
UPPER: No Connection.

LOWER: Banana plugs on ¾" centers. One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

MODEL 1177 — QUANTITY DISC. CODE **A** — **NET 1.95**



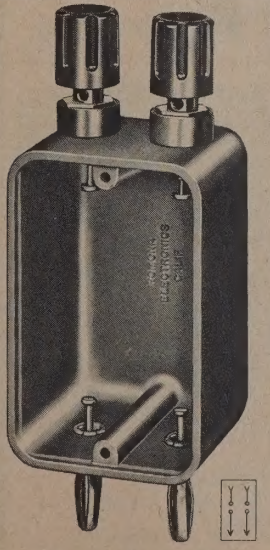
COMPONENT MOUNTING—BANANA JACKS TO DOUBLE BANANA PLUG—KING SIZE



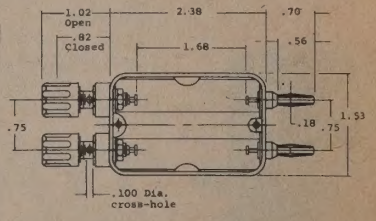
UPPER: Banana jacks, .166" dia. and solder turret terminals on ¾" centers. Brass, nickel plated. Polarity indicator on top, color, RED.

LOWER: Banana plugs on ¾" centers. One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

MODEL 2224 — QUANTITY DISC. CODE **A** — **NET 3.45**



COMPONENT MOUNTING—BINDING POSTS TO DOUBLE BANANA PLUG—KING SIZE



UPPER: Banana jack binding posts with solder turret terminals, on ¾" centers. Red and Black.

LOWER: Banana plugs on ¾" centers. One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

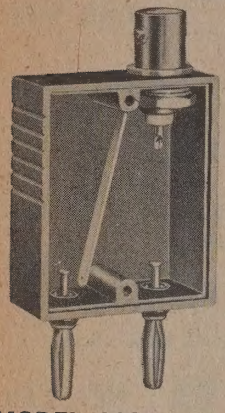
MODEL 2262 — QUANTITY DISC. CODE **A** — **NET 4.85**

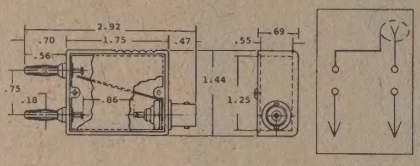
POMONA ELECTRONICS — "BLACK BOXES"

CREATE passive and active networks, voltage dividers, isolation networks or attenuators with these units. Solder turret terminals for permanent noise-free connection of components, etc. Entire unit may be potted or encapsulated.

Housing molded of thermosetting electrical gra phenolic. Cover, punched XXP laminated paper ba phenolic. Color, housing and cover, BLACK. Co plate and 2 each #2-56 cover screws included.

COMPONENT MOUNTING—BNC RECEPTACLE TO DOUBLE BANANA PLUG





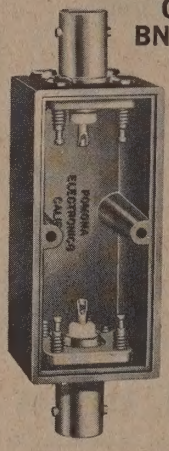
UPPER: BNC Receptacle UG1094/U

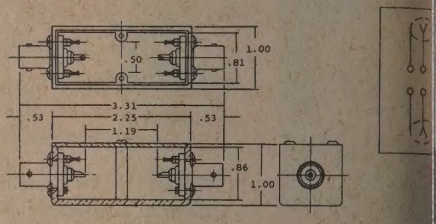
LOWER: Banana plugs on ¾" centers. One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

APPLICABLE SPECIFICATIONS:
Operating Temp: −25°C to +125°C.
Working Voltage: 500 V Peak.

MODEL 2097 QUANTITY DISC. CODE **A** **NET 3.85**

COMPONENT MOUNTING—BNC RECEPTACLE BOTH ENDS





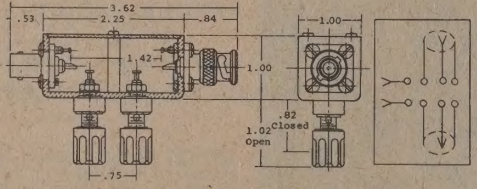
UPPER: BNC Receptacle UG290A/U

LOWER: BNC Receptacle UG290A/U

APPLICABLE SPECIFICATIONS:
Operating Temp: −25°C to +125°C.
Working Voltage: 500 V Peak.

MODEL 2101 QUANTITY DISC. CODE **A** **NET 4.**

COMPONENT MOUNTING—BNC RECEPTACLE TO BNC PLUG WITH BINDING POSTS



UPPER: BNC Receptacle UG290A/U

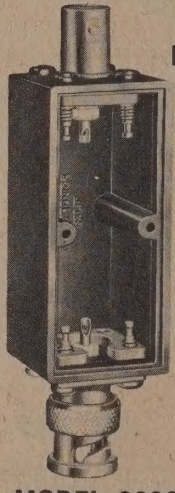
CENTER: Banana jack binding posts with solder turret terminals. Red and Black.

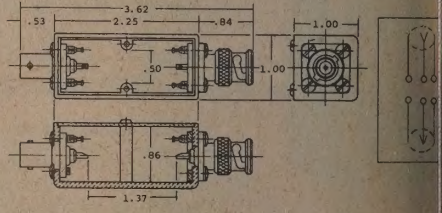
LOWER: BNC Plug. UG1104A/U.

APPLICABLE SPECIFICATIONS:
Operating Temp: −25°C to +125°C.
Working Voltage: 500 V Peak.

MODEL 2100 QUANTITY DISC. CODE **A** **NET 8.95**

COMPONENT MOUNTING—BNC RECEPTACLE TO BNC PLUG





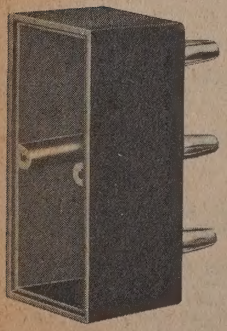
UPPER: BNC Receptacle UG290A/U

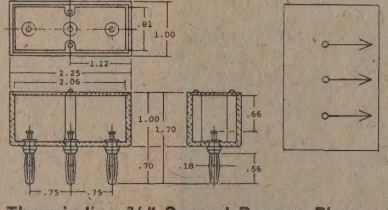
LOWER: BNC Plug UG1104A/U

APPLICABLE SPECIFICATIONS:
Operating Temp: −25°C to +125°C.
Working Voltage: 500 V Peak.

MODEL 2099 QUANTITY DISC. CODE **A** **NET 6.**

COMPONENT MOUNTING—(3) ¾" SPACED BANANA PLUGS





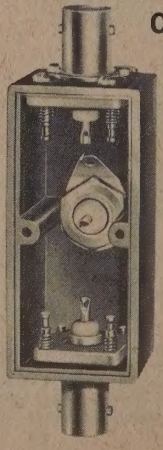
Three-in-line ¾" Spaced Banana Plugs.

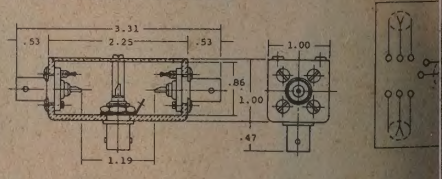
One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

APPLICABLE SPECIFICATIONS:
Operating Temp: −25°C to +125°C.
Working Voltage: 5000 VDC.
Current: 15 Amps Cont., 30 Amps Int.

MODEL 2095 QUANTITY DISC. CODE **A** **NET 2.75**

COMPONENT MOUNTING—BNC RECEPTACLE "T"





UPPER: BNC Receptacle UG290A/U

CENTER: BNC Receptacle UG1094/U

LOWER: BNC Receptacle UG290A/U

APPLICABLE SPECIFICATIONS:
Operating Temp: −25°C to +125°C.
Working Voltage: 500 V Peak.

MODEL 2102 QUANTITY DISC. CODE **A** **NET 7.8**

Net

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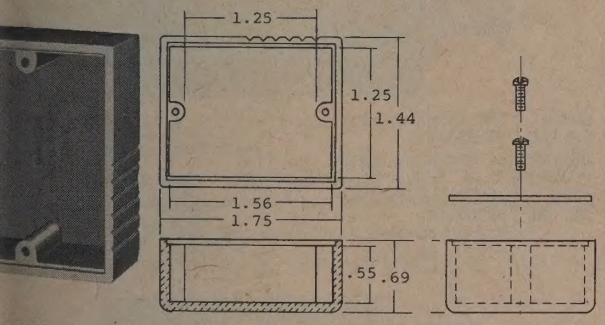
POMONA ELECTRONICS

"BLACK BOXES"

s of unlimited uses for packaging of components ircuitry. Also ideal for potting and encapsulating. able in three sizes as shown below. Housing ed of thermosetting electrical grade phenolic. r, punched XXP laminated paper base phenolic. , Housing and cover, Black. Cover plate and 2 #2-56 cover screws included.

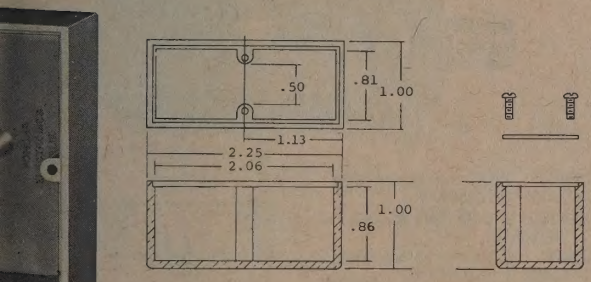
ating Temperature: —25°C to +125°C.

BLACK BOX—JUNIOR SIZE



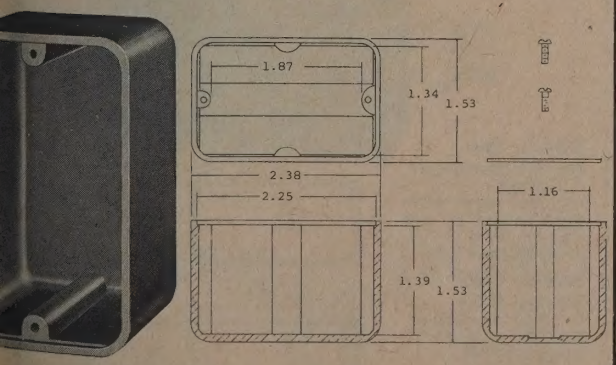
EL 2105 QUANTITY DISC. CODE A NET .75

BLACK BOX—QUEEN SIZE



EL 2103 QUANTITY DISC. CODE A NET .75

BLACK BOX—KING SIZE

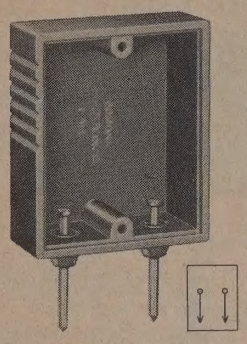


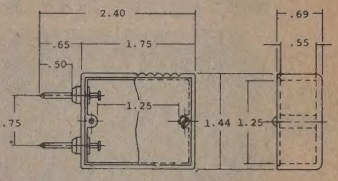
EL 2104 QUANTITY DISC. CODE A NET .75

CREATE passive and active networks, voltage dividers, isolation networks or attenuators with these units. Solder turret terminals for permanent noise-free connection of components, etc. Entire unit may be potted or encapsulated.

Housing molded of thermosetting electrical grade phenolic. Cover, punched XXP laminated paper base phenolic. Color, housing and cover, BLACK. Cover plate and 2 each #2-56 cover screws included.

COMPONENT MOUNTING—ACROSS PIN TIP PLUGS





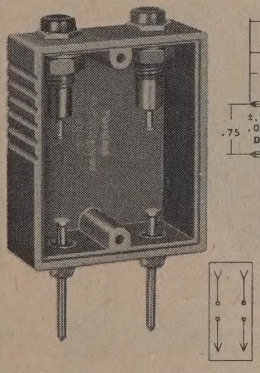
UPPER: No Connection.

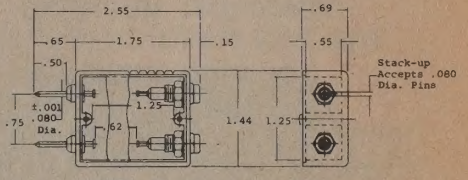
LOWER: Pin tip plugs, .080 dia. on ¾" centers. Plug bodies and solder turret terminals, brass, nickel plated.

APPLICABLE SPECIFICATIONS:
Operating Temp.: —25°C to +125°C
Working Voltage: 5000 VDC.
Current: 5 Amps Cont., 10 Amps Int.

MODEL 2268 QUANTITY DISC. CODE A **NET 1.95**

COMPONENT MOUNTING—PIN TIP JACKS TO DOUBLE PIN TIP PLUG—JUNIOR SIZE





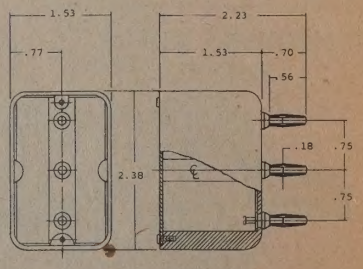
UPPER: Tip jacks, on ¾" centers, per MS-16108. One Red, one Black.

LOWER: Pin tip plugs, .080 dia. on ¾" centers. Plug bodies and solder turret terminals, brass, nickel plated.

APPLICABLE SPECIFICATIONS:
Operating Temp.: —25°C to +125°C.
Working Voltage: 5000 VDC.
Current: 5 Amps Cont., 10 Amps Int.

MODEL 2260 QUANTITY DISC. CODE A **NET 4.85**

COMPONENT MOUNTING — (3) ¾" SPACED BANANA PLUGS — KING SIZE



Three-in-line ¾" Spaced Banana Plugs.

One piece beryllium copper spring, heat treated, nickel plated. Plug body and solder turret terminals, brass, nickel plated. For use with standard .166" dia. banana jacks.

APPLICABLE SPECIFICATIONS:
Operating Temp: —25°C to +125°C.
Working Voltage: 5000 VDC.
Current: 15 Amps Cont., 30 Amps In.

MODEL 1943 QUANTITY DISC. CODE A **NET 2.75**

POMONA ELECTRONICS

SHIELDED "BLACK BOXES" SIZE "A"

NOW AVAILABLE, *SHIELDED* "BLACK BOXES." Boxes that fulfill the requirement for RF applications.

Ideal for compact packaging, eg., voltage dividers, isolation networks, impedance matching networks, and other varied uses.

Cover and self-tapping screws included.

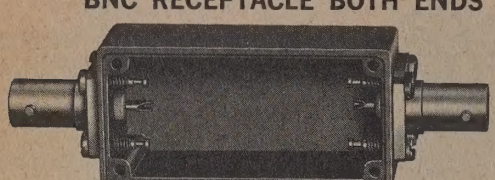
APPLICABLE SPECIFICATIONS: (ALL MODELS)

Operating Temp.: −55°C to +150°C.
Working Voltage: 500 V Peak (Model 2415, 1500 V Peak).
Noise Rejection: Greater than 70DB.

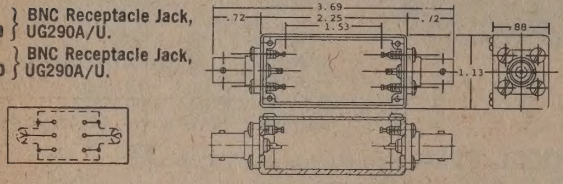
FEATURES:

- SHIELDED HOUSING; Die Cast Aluminum. FINISH: B baked enamel per Federal Standard 595 #25109 over p phoric etch per MIL-C-15328A.
- COVER; .040 Thick Aluminum #6061-T6 with clear dized finish per MIL-A-8625A.
- Four screws secure cover for proper shielding.
- Solder turret terminals for permanent noise free con tion of components.

COMPONENT MOUNTING— BNC RECEPTACLE BOTH ENDS

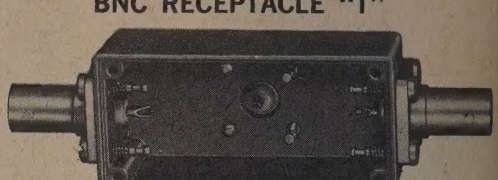


CONN: } BNC Receptacle Jack, 1st END } UG290A/U.
CONN: } BNC Receptacle Jack, 2nd END } UG290A/U.

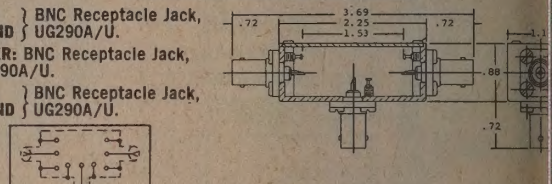


MODEL 2390 QUANTITY DISC. CODE **A** **NET 6.85**

COMPONENT MOUNTING— BNC RECEPTACLE "T"

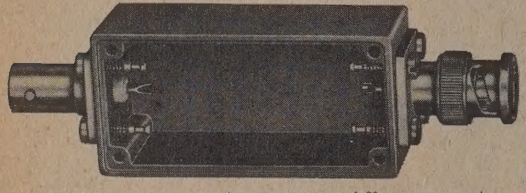


CONN: } BNC Receptacle Jack, 1st END } UG290A/U.
CENTER: BNC Receptacle Jack, UG290A/U.
CONN: } BNC Receptacle Jack, 2nd END } UG290A/U.

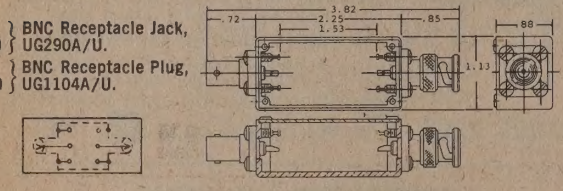


MODEL 2392 QUANTITY DISC. CODE **A** **NET 9.**

COMPONENT MOUNTING— BNC RECEPTACLE TO BNC PLUG

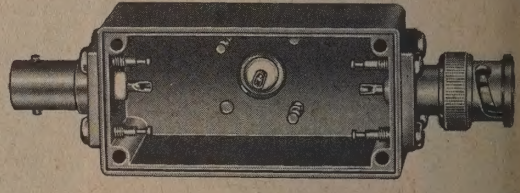


CONN: } BNC Receptacle Jack, 1st END } UG290A/U.
CONN: } BNC Receptacle Plug, 2nd END } UG1104A/U.

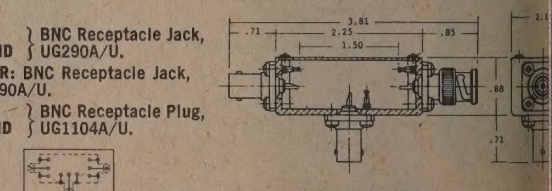


MODEL 2391 QUANTITY DISC. CODE **A** **NET 7.85**

COMPONENT MOUNTING — "T" TWO BNC RECEPTACLES TO BNC PLUG

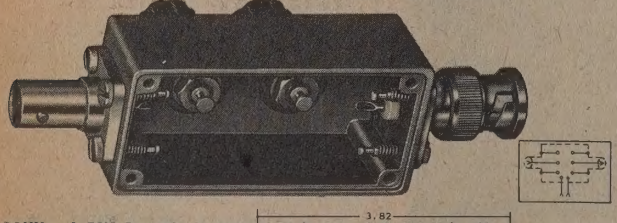


CONN: } BNC Receptacle Jack, 1st. END } UG290A/U.
CENTER: BNC Receptacle Jack, UG290A/U.
CONN: } BNC Receptacle Plug, 2nd END } UG1104A/U.

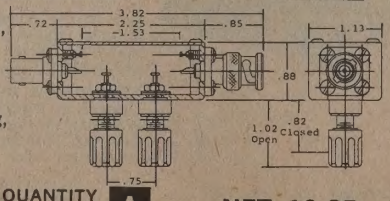


MODEL 2401 QUANTITY DISC. CODE **A** **NET 10.**

COMPONENT MOUNTING—BNC RECEPTACLE TO BNC PLUG WITH BINDING POSTS



CONN: } BNC Receptacle Jack, 1st END } UG290A/U.
CENTER: Banana jack binding posts with solder turret terminals. Red and Black.
CONN: } BNC Receptacle Plug, 2nd END } UG1104A/U.



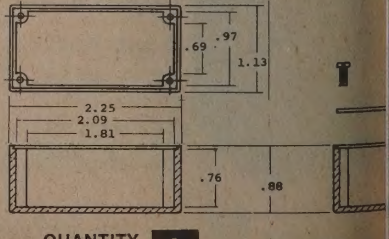
MODEL 2393 QUANTITY DISC. CODE **A** **NET 10.85**

EMPTY — SHIELDED "BLACK BOX"

SIZE "A

MODEL 2397
FINISH: Blue Baked Enamel.
Includes cover with part number on cover and four cover screws.

MODEL 2400
FINISH: None
Includes unmarked cover and four cover screws.



MODEL 2397
MODEL 2400 QUANTITY DISC. CODE **A** **NET 1.**

Net
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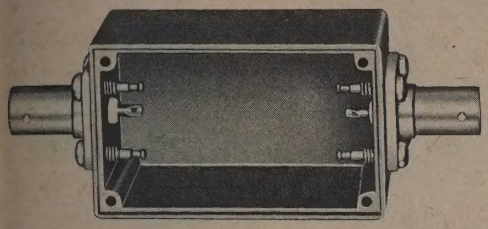
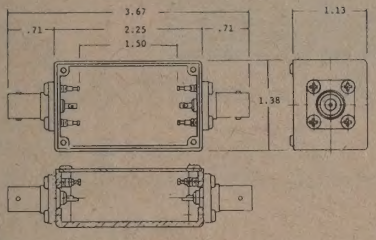
POMONA ELECTRONICS

SHIELDED "BLACK BOXES" SIZE "B"

COMPONENT MOUNTING — BNC RECEPTACLE BOTH ENDS



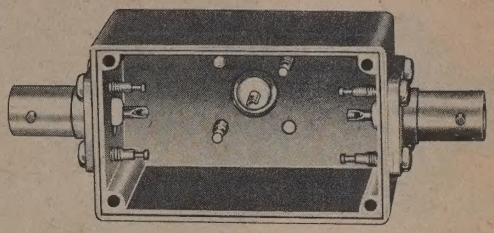


} BNC Receptacle Jack, { UG290A/U.
} BNC Receptacle Jack, { UG290A/U.

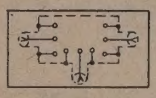
L 3230 QUANTITY DISC. CODE **A** **NET 6.85**

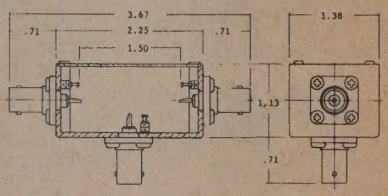
COMPONENT MOUNTING — BNC RECEPTACLE "T"

NEW



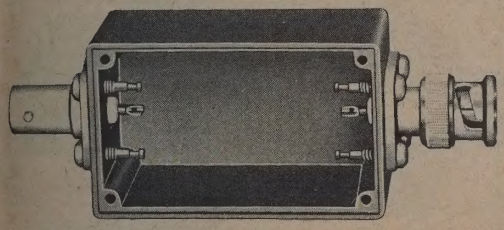
CONN: } BNC Receptacle Jack, 1st. END { UG290A/U.
CENTER: BNC Receptacle Jack, UG290A/U.
CONN: } BNC Receptacle Jack, 2nd END { UG290A/U.

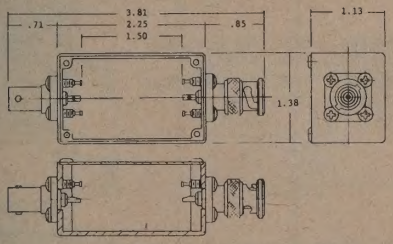




MODEL 3232 QUANTITY DISC. CODE **A** **NET 9.50**

COMPONENT MOUNTING — BNC RECEPTACLE TO BNC PLUG



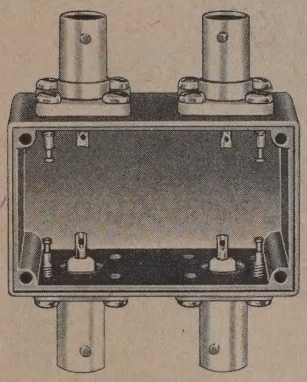


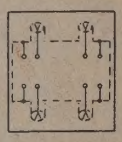
} BNC Receptacle Jack, { UG290A/U.
} BNC Receptacle Plug, { UG1104A/U.

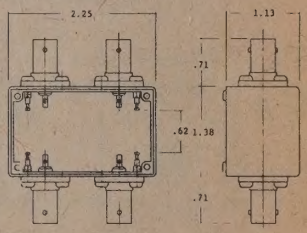
L 3231 QUANTITY DISC. CODE **A** **NET 7.85**

COMPONENT MOUNTING — CROSS CONNECTIONS

NEW



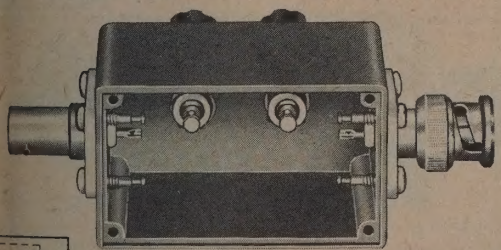


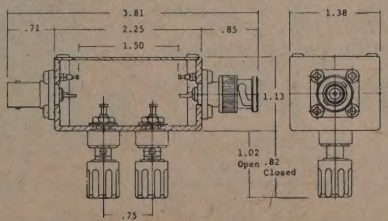


CONN: 4 each BNC Receptacle Jacks, UG290A/U.

MODEL 3234 QUANTITY DISC. CODE **A** **NET 11.75**

MPONENT MOUNTING — BNC RECEPTACLE TO BNC PLUG WITH BINDING POSTS

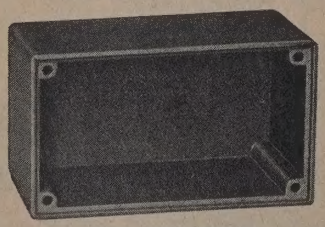




} BNC Receptacle Jack, { UG290A/U.
Banana jack binding with solder turret als. Red and Black.
} BNC Receptacle Plug, { UG1104A/U.

L 3233 QUANTITY DISC. CODE **A** **NET 10.85**

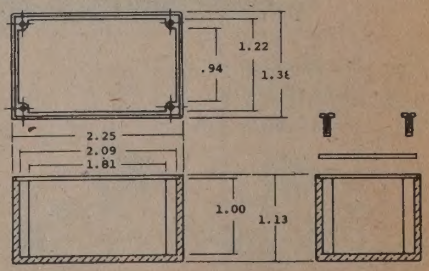
EMPTY — SHIELDED "BLACK BOX"



SIZE "B"

MODEL 2417
FINISH: Blue Baked Enamel.
Includes cover with part number on cover and four cover screws.

MODEL 2428
FINISH: None
Includes unmarked cover and four cover screws.

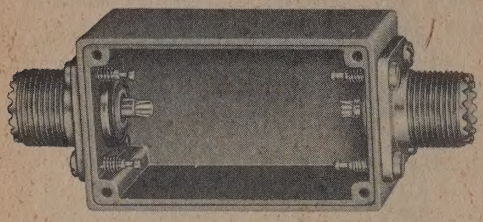


MODEL 2417
MODEL 2428 QUANTITY DISC. CODE **A** **NET 1.50**

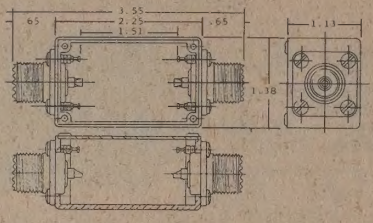
POMONA ELECTRONICS

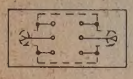
SHIELDED "BLACK BOXES" SIZE "B"

COMPONENT MOUNTING— UHF RECEPTACLE BOTH ENDS



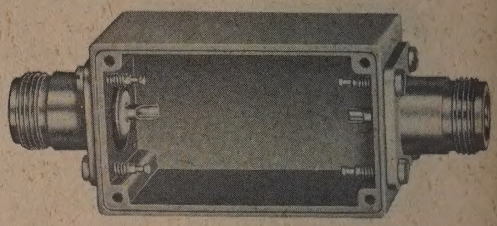
CONN: 1st END } UHF Receptacle Jack.
CONN: 2nd END } UHF Receptacle Jack.



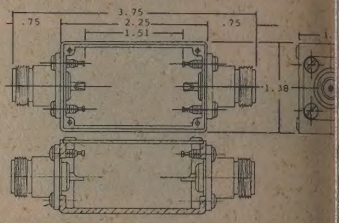


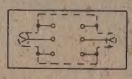
MODEL 2412 QUANTITY DISC. CODE A NET 7.85

COMPONENT MOUNTING— TYPE "N" RECEPTACLE BOTH ENDS



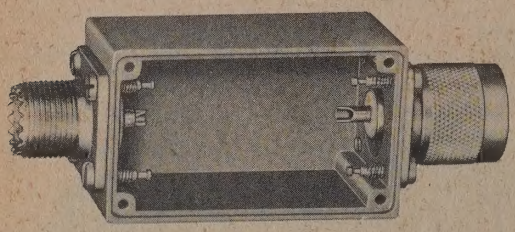
CONN: 1st END } Type "N" Receptacle Jack, UG58A/U.
CONN: 2nd END } Type "N" Receptacle Jack, UG58A/U.



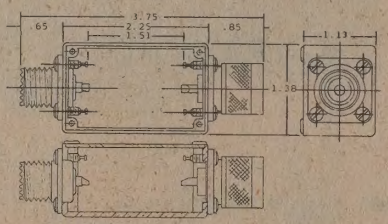


MODEL 2410 QUANTITY DISC. CODE A NET 6.

COMPONENT MOUNTING— UHF RECEPTACLE TO UHF PLUG

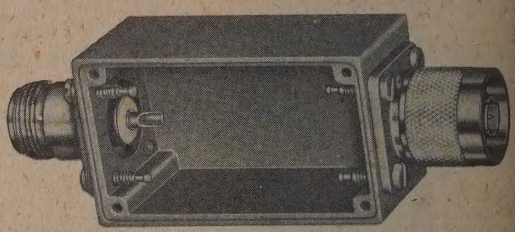


CONN: 1st END } UHF Receptacle Jack.
CONN: 2nd END } UHF Receptacle Plug.

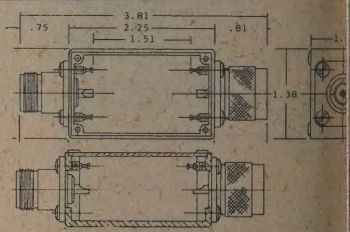


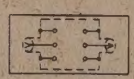
MODEL 2413 QUANTITY DISC. CODE A NET 10.85

COMPONENT MOUNTING— TYPE "N" RECEPTACLE TO TYPE "N" PLUG



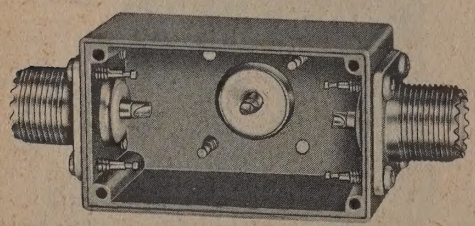
CONN: 1st END } Type "N" Receptacle Jack, UG58A/U.
CONN: 2nd END } Type "N" Receptacle Plug.



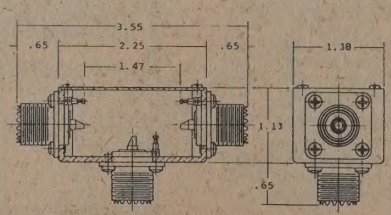


MODEL 2411 QUANTITY DISC. CODE A NET 9.

COMPONENT MOUNTING— UHF RECEPTACLE "T"

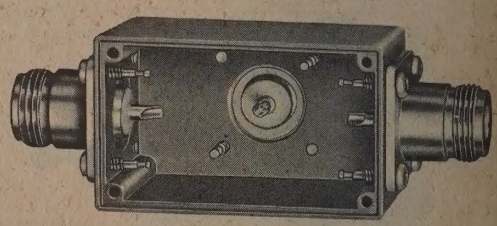


CONN: 1st END } UHF Receptacle Jack.
CENTER: UHF Receptacle Jack.
CONN: 2nd END } UHF Receptacle Jack.

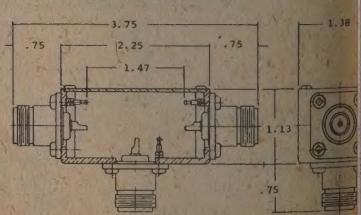


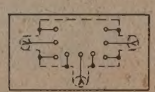
MODEL 2418 QUANTITY DISC. CODE A NET 10.85

COMPONENT MOUNTING— TYPE "N" RECEPTACLE "T"



CONN: 1st END } Type "N" Receptacle Jack, UG58A/U.
CENTER: Type "N" Receptacle Jack, UG58A/U.
CONN: 2nd END } Type "N" Receptacle Jack, UG58A/U.





MODEL 2419 QUANTITY DISC. CODE A NET 9.

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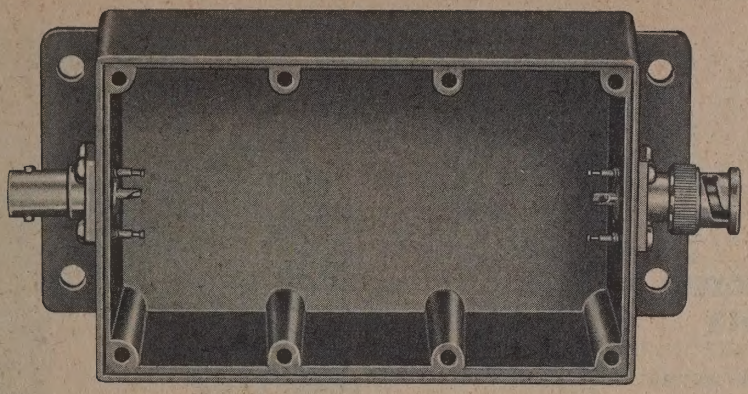
LARGER SHIELDED "BLACK BOXES" SIZE "C"



MODEL 2903

(Shown 2/3 actual size)

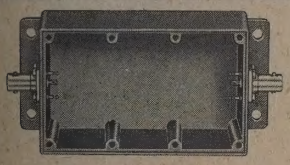
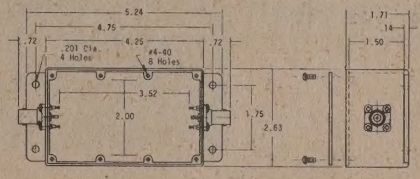
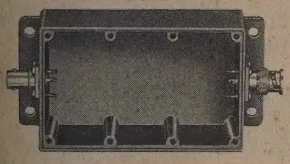
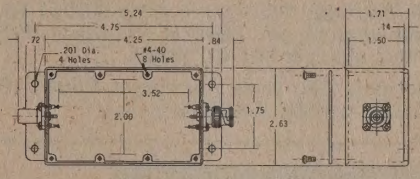
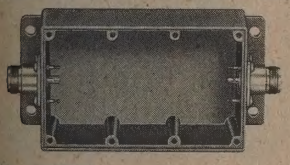
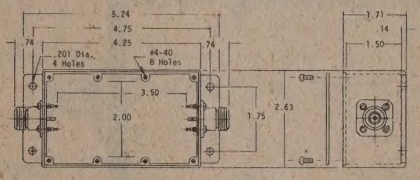
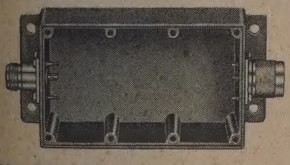
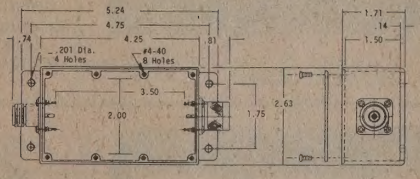
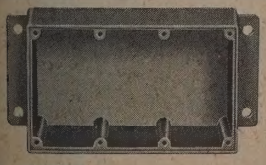
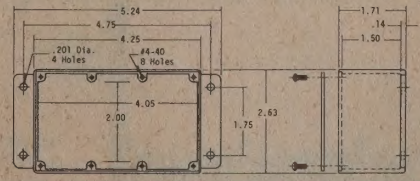
W Series of **LARGER** shielded "BLACK BOXES."

e larger boxes are excellent for compact packaging of volt-dividers, isolation networks and many other applications.

ICABLE SPECIFICATIONS: (All Models)
ating Temp.: —55°C to +150°C.
ing Voltage: 500 Peak.
e Rejection: Greater than 70DB

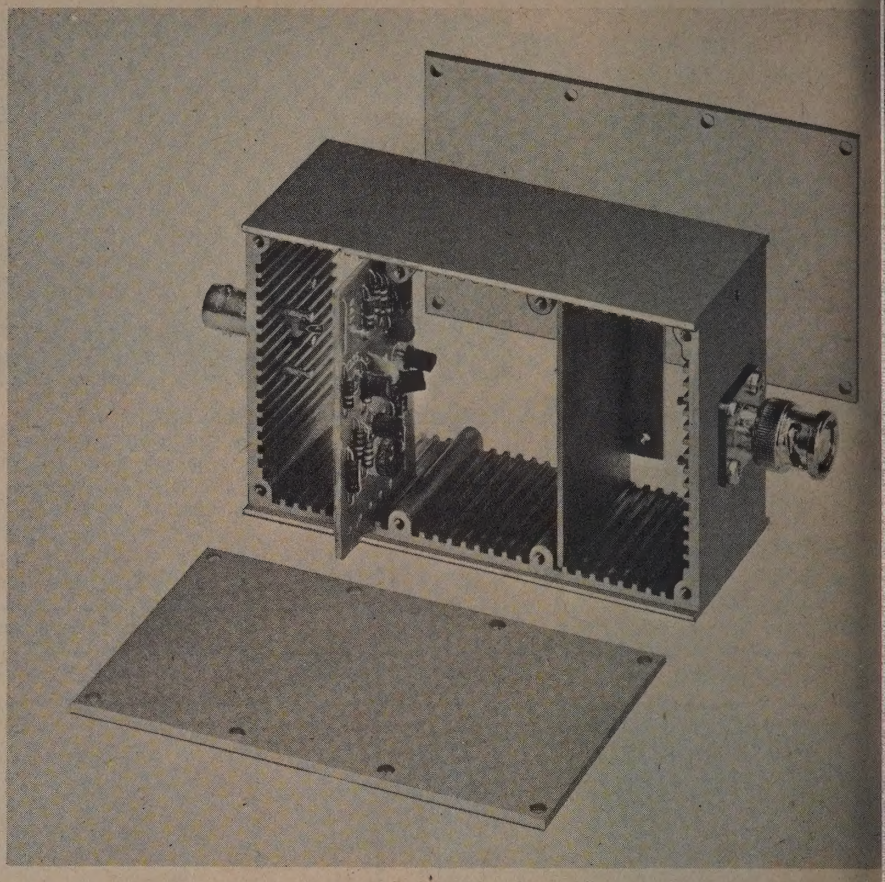
FEATURES:

- SHIELDED HOUSING; Die Cast Aluminum, Alloy #A380, FINISH: BLUE baked enamel per Federal Standard 595 #25109 over phosphoric etch per MIL-C-15328A.
- COVER: .080 Thick Aluminum #6061-T6 with clear anodized finish per MIL-A-8625A.
- 8 ea. #4-40 x 1/4" screws secure cover for proper shielding.
- Solder turret terminals for permanent noise free connection of components.
- 2 flanges for easy mounting of box.

MODEL	CONN. 1st END	CONN. 2nd END		QUANTITY DISC. CODE	NET
 EL 2902	BNC Receptacle Jack UG290A/U	BNC Receptacle Jack UG290A/U		A	9.85
 EL 2903	BNC Receptacle Jack UG290A/U	BNC Receptacle Plug UG1104A/U		A	10.85
 EL 2904	TYPE "N" Receptacle Jack UG58A/U	TYPE "N" Receptacle Jack UG58A/U		A	9.85
 EL 2905	TYPE "N" Receptacle Jack UG58A/U	TYPE "N" Receptacle Plug		A	12.85
 EL 2901	NONE	NONE		A	5.85
MODEL 2906 SEE 2901	NONE	NONE	Same as Model 2901 except box is unpainted and cover is unmarked.	A	5.85

POMONA ELECTRONICS

SHIELDED "BLACK BOXES" WITH CARD GUIDES



SHIELDED "BLACK BOXES" WITH CARD GUIDES

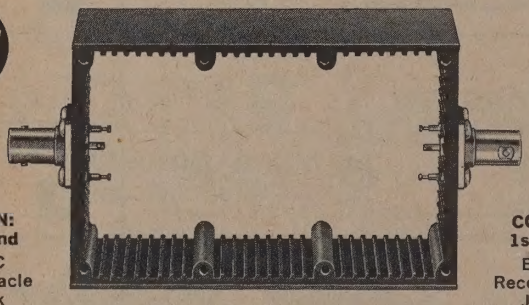
Aluminum boxes, slotted to accept 1/16" circuit boards and shielding dividers. Excellent for packaging electronic circuitry. Boxes have removable top and bottom covers. Useable inside space: 4"x2"x1½".

APPLICABLE SPECIFICATIONS:
(All Models)
Operating Temp.: —55°C to +150°C.
Working Voltage: 500 Peak.
Noise Rejection: Greater than 70DB

FEATURES:

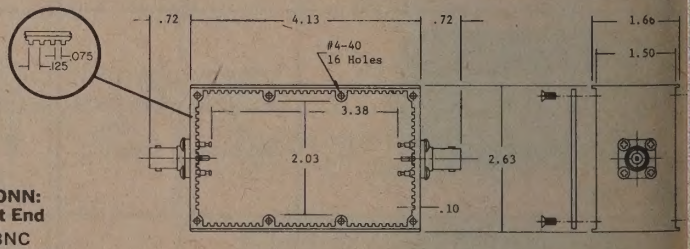
- **SHIELDED HOUSING:** Extruded Aluminum, Alloy #6061-T6. FINISH: BLUE baked enamel per Federal Standard 595 #25109 over phosphoric etch per MIL-C-15328A.
- **COVERS:** Top and bottom, .080 thick Aluminum #6061-T6 with clear anodized Finish per MIL-A-8625A.
- **COVER SCREWS:** 16 EA #4-40x1/4" screws secure top bottom cover for proper shielding.
- Solder turret terminals for permanent noise free connec of components.

NEW



CONN: 1st End BNC Receptacle Jack UG290A/U

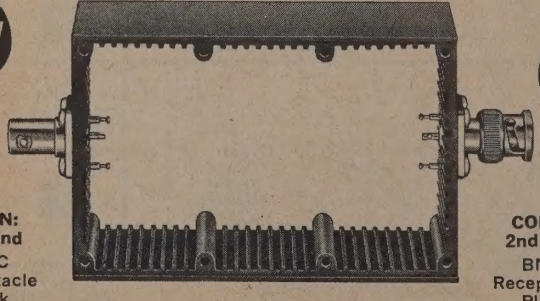
CONN: 1st End BNC Receptacle Jack UG290A/U



MODEL 3302

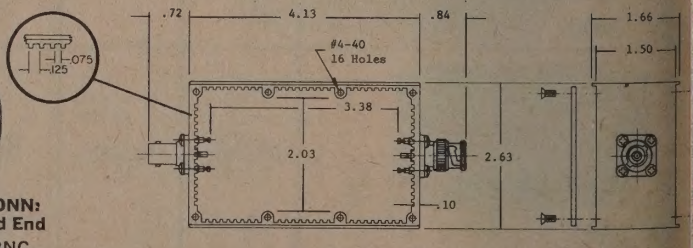
QUANTITY DISC. CODE A NET 9

NEW



CONN: 1st End BNC Receptacle Jack UG290A/U

CONN: 2nd End BNC Receptacle Plug UG1104A/U



MODEL 3303

QUANTITY DISC. CODE A NET 10

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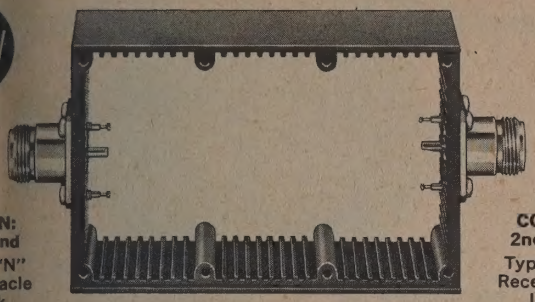
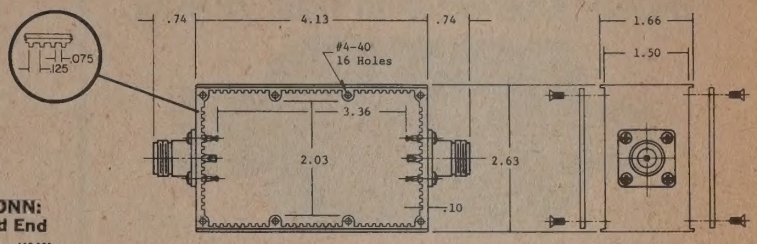
POMONA ELECTRONICS

SHIELDED "BLACK BOXES" WITH CARD GUIDES

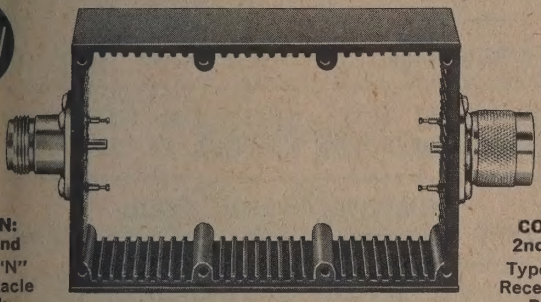


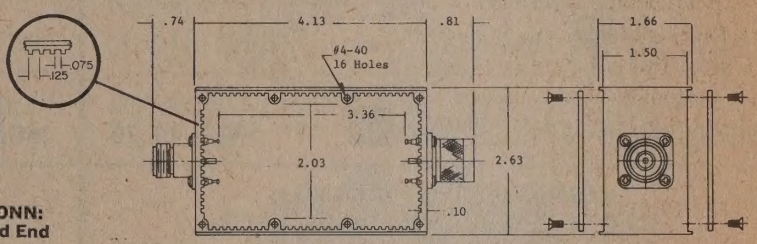


CONN:
2nd End
Type "N"
Receptacle
Jack
UG58A/U

MODEL 3304

QUANTITY DISC. CODE **A** **NET 9.85**

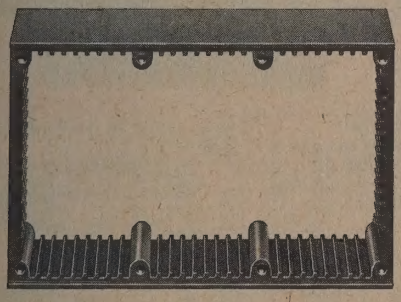


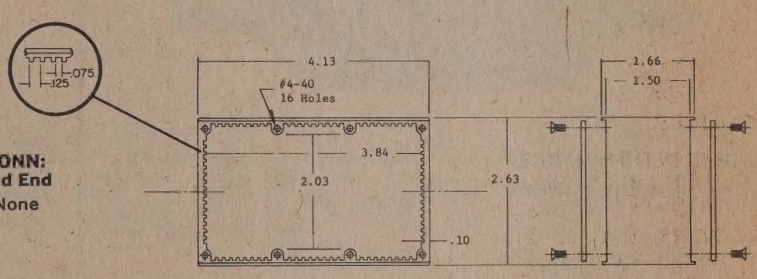


CONN:
2nd End
Type "N"
Receptacle
Plug

MODEL 3305

QUANTITY DISC. CODE **A** **NET 12.85**





CONN:
2nd End
None

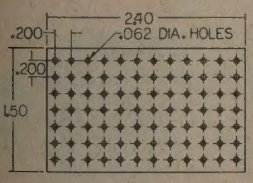
MODEL 3301
Blue Baked Enamel. Includes bottom covers with part on one and 16 cover screws.

MODEL 3306
FINISH: None. Includes unmarked top and bottom covers with 16 cover screws.

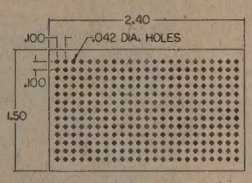
QUANTITY DISC. CODE **A** **NET 6.85**

CIRCUIT MOUNTING BOARDS

s Types of punched and blank Circuit boards for rapid assembly ponents. Pre-cut to the proper size. Boards slide easily into the rd guides. All boards are 1/16" thick.



BOARD A



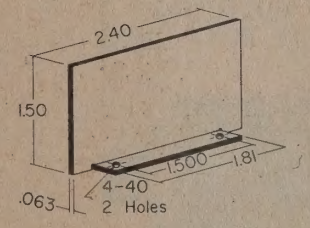
BOARD B

	MODEL	NO. OF HOLES	MATERIAL	NET EA.
	3321	12 x 7	Paper-Epoxy (PEE)	.50
	3322	NONE	Paper-Epoxy (PEE)	.35
	3323	12 x 7	Glass-Epoxy (GEE)	.65
	3324	NONE	Glass-Epoxy (GEE)	.45
	3325	12 x 7	Glass-Epoxy (GEE) COP. CLAD 1 Side	.75
	3326	23 x 13	Glass-Epoxy (GEE)	.85

QUANTITY DISC. CODE **A**

SHIELDING DIVIDER

NEW

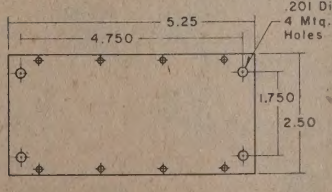


This Aluminum divider is excellent for dividing the box into shielded compartments. MATERIAL: .063 Aluminum, clear anodized per MIL-A-8625A.

MODEL 3327 QUANTITY DISC. CODE **A** **NET .75**

LARGER BOTTOM PLATE FOR MOUNTING

NEW



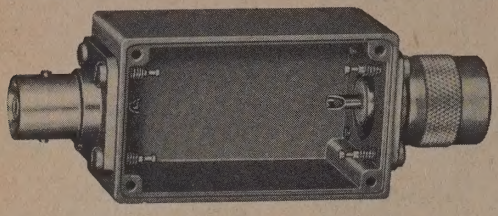
This larger plate, when attached to the box, provides flanges for mounting.
MATERIAL: .080 Aluminum #6061-T6, clear anodized per MIL-A-8625A.

MODEL 3328 (Plate only) QUANTITY DISC. CODE **A** **NET 1.25**

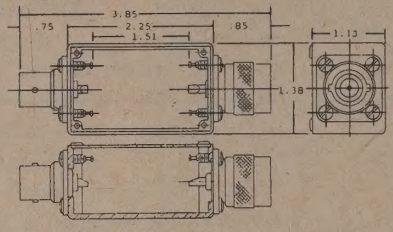
POMONA ELECTRONICS

SHIELDED "BLACK BOXES"

COMPONENT MOUNTING— TYPE "C" RECEPTACLE TO TYPE "C" PLUG

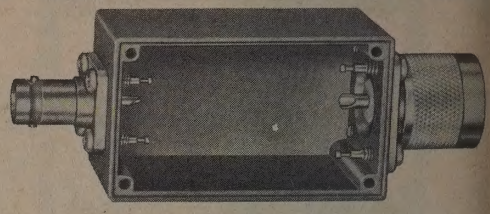


CONN: 1st END } Type "C" Receptacle Jack, UG568/U.
CONN: 2nd END } Type "C" Receptacle Plug.

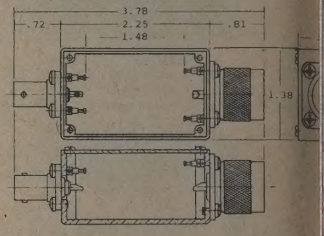


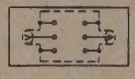
MODEL 2415 QUANTITY DISC. CODE A NET 11.75

COMPONENT MOUNTING— BNC RECEPTACLE TO TYPE "N" PLUG



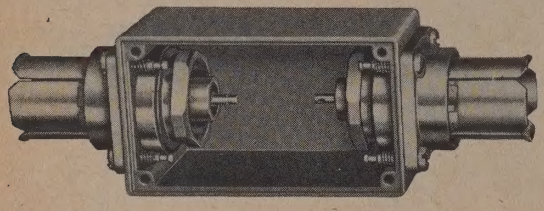
CONN: 1st END } BNC Receptacle Jack, UG290A/U.
CONN: 2nd END } Type "N" Receptacle Plug.



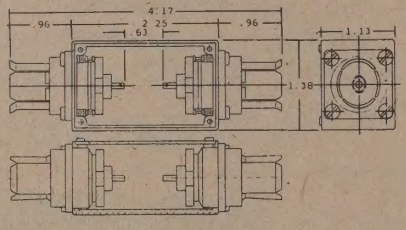


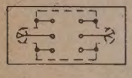
MODEL 2420 QUANTITY DISC. CODE A NET

COMPONENT MOUNTING— GR-874 CONNECTOR BOTH ENDS



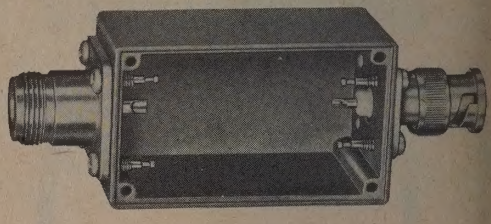
CONN: 1st END } Type GR-874 Connector.
CONN: 2nd END } Type GR-874 Connector.



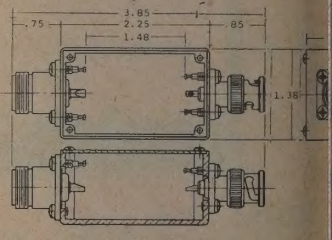


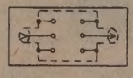
MODEL 2416 QUANTITY DISC. CODE A NET 24.75

COMPONENT MOUNTING— TYPE "N" RECEPTACLE TO BNC PLUG



CONN: 1st END } Type "N" Receptacle Jack, UG58A/U.
CONN: 2nd END } BNC Receptacle Plug, UG1104A/U.

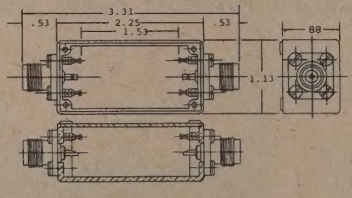


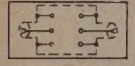


MODEL 2421 QUANTITY DISC. CODE A NET

COMPONENT MOUNTING— TNC RECEPTACLE BOTH ENDS

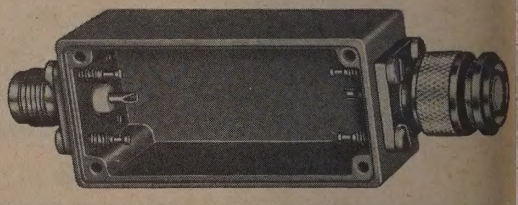
CONN: 1st END } TNC Receptacle Jack.
CONN: 2nd END } TNC Receptacle Jack.



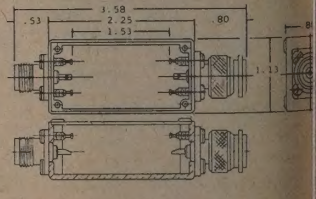


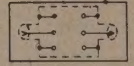
MODEL 2396 QUANTITY DISC. CODE A NET 7.85

COMPONENT MOUNTING— TNC RECEPTACLE TO TNC PLUG



CONN: 1st END } TNC Receptacle Jack.
CONN: 2nd END } TNC Receptacle Plug.





MODEL 2395 QUANTITY DISC. CODE A NET

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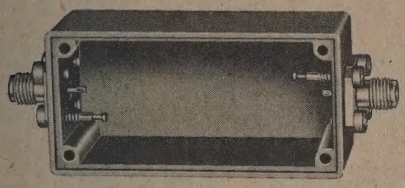
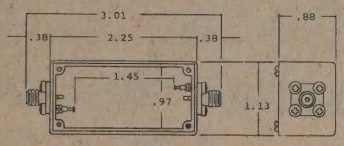
POMONA ELECTRONICS — SHIELDED "BLACK BOXES"

COMPONENT MOUNTING — OSM* RECEPTACLE BOTH ENDS

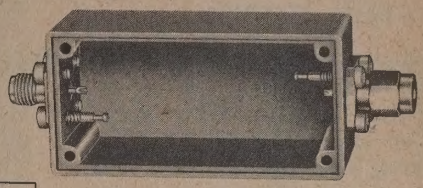


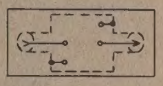


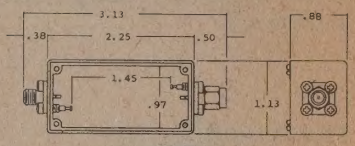
ND } OSM Receptacle Jack.
ND } OSM Receptacle Jack.

EL 2399 QUANTITY DISC. CODE A NET 17.95

COMPONENT MOUNTING — OSM* RECEPTACLE TO OSM* PLUG



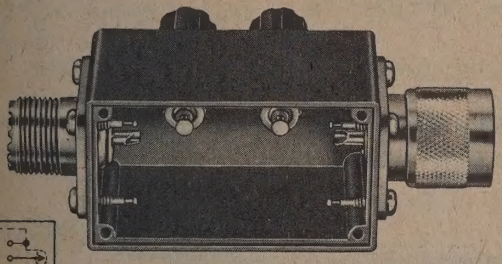


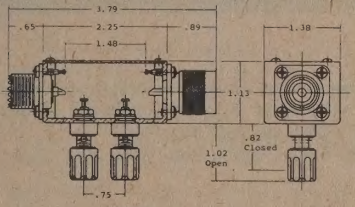


CONN: 1st END } OSM Receptacle Jack.
CONN: 2nd END } OSM Receptacle Plug.

MODEL 2398 QUANTITY DISC. CODE A NET 22.95

COMPONENT MOUNTING — UHF RECEPTACLE TO UHF PLUG WITH BINDING POSTS

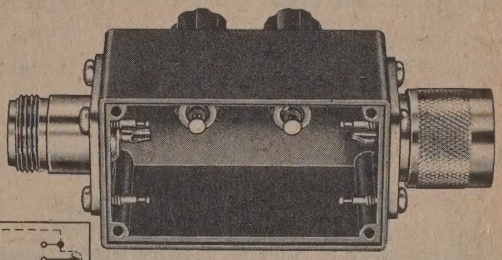


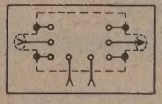


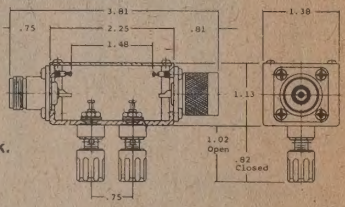
ID } UHF Receptacle Jack.
ER: Banana jack binding posts with solder turret terminals. Red and Black.
ND } UHF Receptacle Plug.

EL 2422 QUANTITY DISC. CODE A NET 13.85

COMPONENT MOUNTING TYPE "N" RECEPTACLE TO TYPE "N" PLUG WITH BINDING POSTS



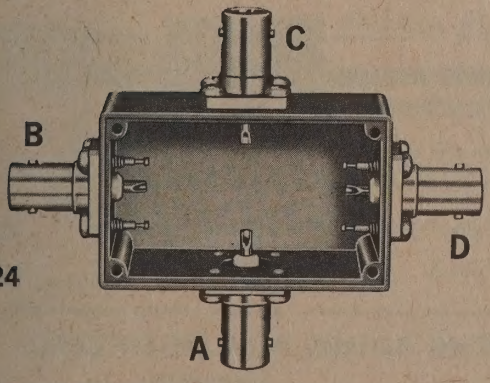




CONN: 1st END } Type "N" Receptacle Jack, UG58A/U.
CENTER: Banana jack binding posts with solder turret terminals. Red and Black.
CONN: 2nd END } Type "N" Receptacle Plug.

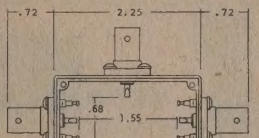
MODEL 2423 QUANTITY DISC. CODE A NET 12.85

COMPONENT MOUNTING — CROSS CONNECTIONS

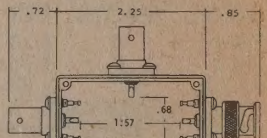


EL 2424

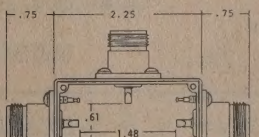
EL	CONNECTION A, B AND C	CONNECTION D	Quantity Disc. Code	NET
4	BNC Receptacle Jack, UG290A/U.	BNC Receptacle Jack, UG290A/U.	A	11.75
5	Type "N" Receptacle Jack, UG58A/U.	Type "N" Receptacle Jack, UG58A/U.	A	11.75
6	BNC Receptacle Jack, UG290A/U.	BNC Receptacle Plug, UG1104A/U.	A	12.85
7	Type "N" Receptacle Jack, UG58A/U.	Type "N" Receptacle Plug.	A	12.85



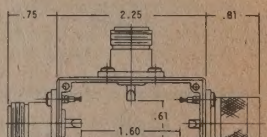
2424



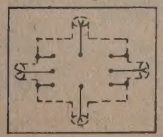
2426



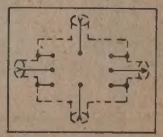
2425



2427



2424, 2425



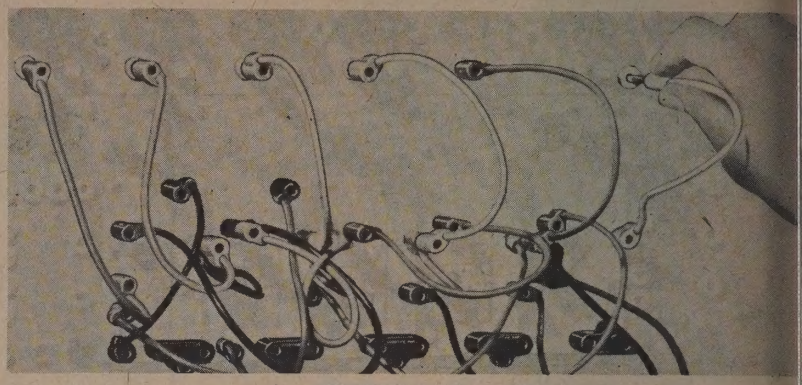
2426, 2427

POMONA ELECTRONICS

PATCH CORDS BANANA PLUGS

POMONA BANANA PLUG PATCH CORDS

Tough thermoplastic insulation molds the plug and leads into a strong moisture resistant integral unit. Excellent for computer board and test equipment applications. Used by leading industries in applications where extreme reliability is of prime importance.



FEATURES

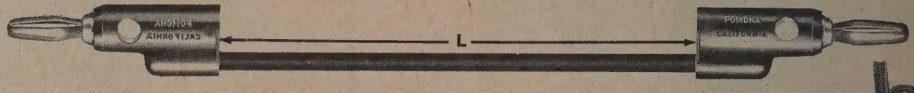
- One piece beryllium copper heat treated spring for maximum long life.
- Rounded spring design results in maximum contact area.
- Extra flexible polyvinyl insulation used on all leads.

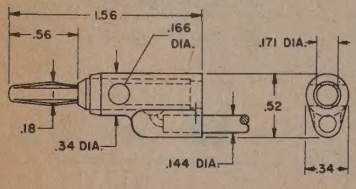
SPECIFICATIONS

- Fits standard 0.166 dia. banana jacks.
- Spring, beryllium copper alloy 170 per QQ-C-533.
- Plug body, brass per QQ-B-626, Comp. 22.
- Nickel plated per QQ-N-290, Class 2.
- Contact resistance less than 0 ohms per banana plug.
- Operating Temp.: −0°C to +10
- Wire, 18 AWG, stranding 65 x 36
- Insulation, polyvinyl .144" O.D.
- Ratings: 15 A. Cont., 30 A. Int. 10,000 W.V.D.C.

STACK-UP BANANA PLUG PATCH CORD

MODEL	LENGTH	NET
B-4	4"	1.50
B-8	8"	1.50
B-12	12"	1.50
B-18	18"	1.50
B-24	24"	1.50
B-36	36"	1.50
B-48	48"	1.55
B-60	60"	1.60



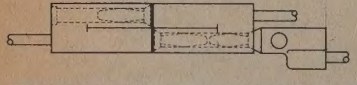


Multiple stacking feature accommodates the most complex stacking; keeps circuitry neater. Greatly simplifies circuit connections and changes. Reliable solder-bonded connections withstand pull test in excess of 50 lbs. Banana plugs both ends.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

MODEL B (Specify Color) QUANTITY DISC. CODE **A** ★

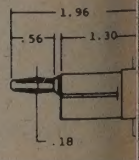
EXTENSION STACKING BANANA PLUG PATCH CORD

MODEL	LENGTH	NET
HB-4	4"	1.75
HB-8	8"	1.75
HB-12	12"	1.75
HB-18	18"	1.75
HB-24	24"	1.75
HB-36	36"	1.75
HB-48	48"	1.80
HB-60	60"	1.85



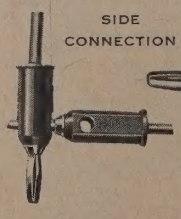
Dual purpose. Insulates all hot leads when used as an extension cord. Endless extension couplings possible with any banana plug patch cord. Provides vertical stacking from any jack. Reliable solder-bonded connections withstand pull test in excess of 50 lbs. Banana plugs both ends.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

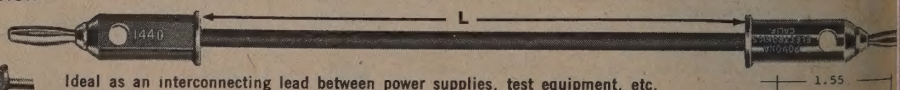
MODEL HB (Specify Color) QUANTITY DISC. CODE **A** ★



HORIZONTAL STACKING BANANA PLUG PATCH CORD

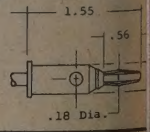
MODEL	LENGTH	NET
1440-4	4"	1.00
1440-8	8"	1.00
1440-12	12"	1.00
1440-18	18"	1.00
1440-24	24"	1.00
1440-36	36"	1.00
1440-48	48"	1.05
1440-60	60"	1.10





Ideal as an interconnecting lead between power supplies, test equipment, etc. Horizontal stacking feature. Banana plugs on both ends.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

MODEL 1440 (Specify Color) QUANTITY DISC. CODE **A** ★



★ Various lengths may be aggregated for best quantity price.

OTHER LENGTHS AVAILABLE TO O

Net

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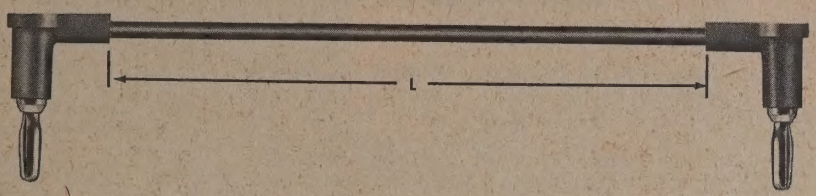
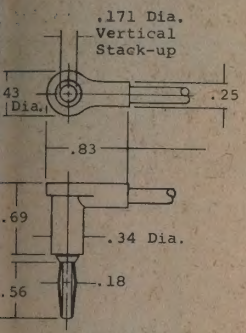
POMONA ELECTRONICS — PATCH CORDS BANANA PLUGS

STACK-UP RIGHT ANGLE BANANA PLUG PATCH CORD

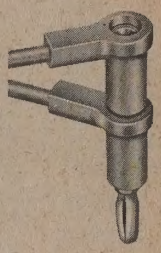
EL	LENGTH	NET
4	4"	1.50
8	8"	1.50
12	12"	1.50
18	18"	1.50
24	24"	1.50
36	36"	1.50
48	48"	1.55
60	60"	1.60





Vertical Stacking feature allows endless circuit connections and the right angle design keeps wires close to the chassis. An oversize shoulder allows easy connect and disconnect.

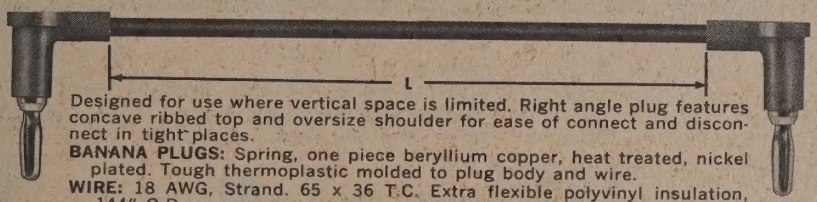
BANANA PLUGS: Spring, one piece beryllium copper, heat treated, nickel plated. Tough thermoplastic molded to plug body and wire.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation, .144" O.D.
OPERATING TEMP.: —0°C to +105°C.
RATED: 15 A. Cont., 30 A. Int. 10,000 W.V.D.C.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.



EL 2864 (Specify Color) QUANTITY DISC. CODE A ★

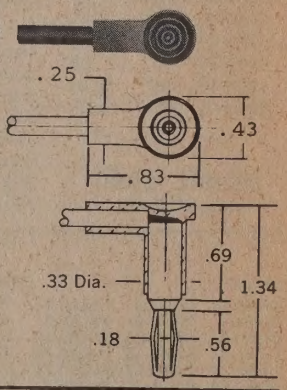
RIGHT ANGLE BANANA PLUG PATCH CORD

L	LENGTH	NET
4	4"	1.00
8	8"	1.00
12	12"	1.00
18	18"	1.00
24	24"	1.00
36	36"	1.00
48	48"	1.05
60	60"	1.10



Designed for use where vertical space is limited. Right angle plug features concave ribbed top and oversize shoulder for ease of connect and disconnect in tight places.

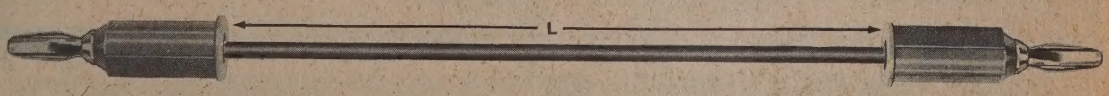
BANANA PLUGS: Spring, one piece beryllium copper, heat treated, nickel plated. Tough thermoplastic molded to plug body and wire.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation, .144" O.D.
OPERATING TEMP.: —0°C to +105°C.
RATED: 15 A. Cont., 30 A. Int. 10,000 W.V.D.C.
COLORS: Black, Red



EL 2700 (Specify Color) QUANTITY DISC. CODE A ★

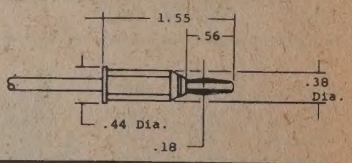
BANANA PLUG PATCH CORD

.	LENGTH	NET
	4"	.95
	8"	.95
2	12"	.95
8	18"	.95
4	24"	.95
6	36"	.95
8	48"	1.00
0	60"	1.05



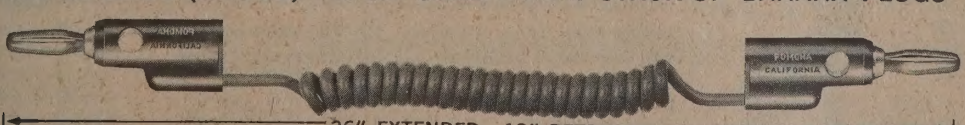
Excellent for general lab work. Permits interconnection between test instruments, etc. Banana plugs both ends.

COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.



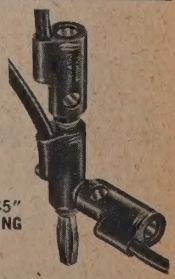
L 1985 (Specify Color) QUANTITY DISC. CODE ★

RETRACTILE (COILED) PATCH CORD—WITH STACK-UP BANANA PLUGS



36" EXTENDED—12" RETRACTED

Permits the use of one size patch cord in place of many various lengths. **BANANA PLUGS:** Spring, one piece beryllium copper heat treated, nickel plated. Tough thermoplastic molded to body and wire. **WIRE:** 20 AWG; Stranding 41 x 36 tinned copper; rubber insulation .145" O.D. **RATED:** 4 A. Cont., 10 A Int./5000 WVDC. **OPERATING TEMP.:** —20°C to +60°C. **COLOR:** Black, Red.



L 2484-36 (Specify Color) QUANTITY DISC. CODE A

NET 2.50

POMONA ELECTRONICS

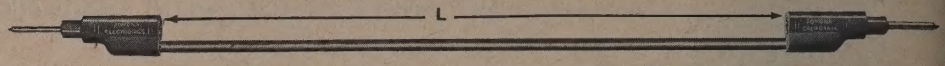
PATCH CORDS .080 TIP

PIN TIP VERTICAL STACKING PATCH CORD

MODEL	LENGTH	NET
P-4	4″	1.75
P-8	8″	1.75
P-12	12″	1.75
P-18	18″	1.75
P-24	24″	1.75
P-36	36″	1.75
P-48	48″	1.80
P-60	60″	1.85

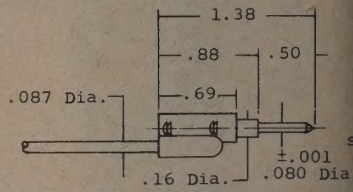
MODEL P
(Specify Color)

★QUANTITY DISC. CODE **A**



A must in circuit designing and testing, with instruments that utilize tip jacks.
PIN TIP: .080 dia., ½″ long, brass, gold flashed.
TIP JACK, STACK-UP: Beryllium copper, gold flashed. Accepts .080 dia. pin.

WIRE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation .087″ O.D.
RATED: 5 A. Cont., 10 A. Int. 5,000 W.V.D.C.
OPERATING TEMP.: —0°C to +105°C.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

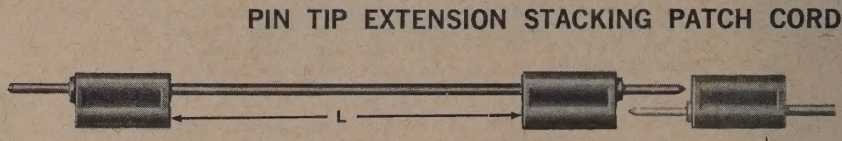


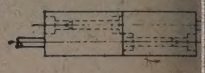
PIN TIP EXTENSION STACKING PATCH CORD

MODEL	LENGTH	NET
1727-4	4″	1.85
1727-8	8″	1.85
1727-12	12″	1.85
1727-18	18″	1.85
1727-24	24″	1.85
1727-36	36″	1.85
1727-48	48″	1.90
1727-60	60″	1.95

MODEL 1727
(Specify Color)

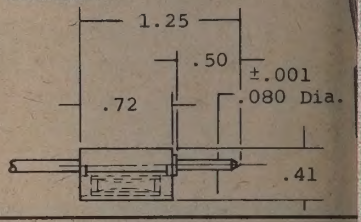
★QUANTITY DISC. CODE **A**





Dual purpose, insulates exposed leads when used as an extension cord. Endless extension coupling possible. Also provides stacking from .080 jack.
PIN TIP: .080 dia., ½″ long, brass, gold flashed.
TIP JACK: Beryllium copper, gold flashed. Accepts .080 dia. pin.

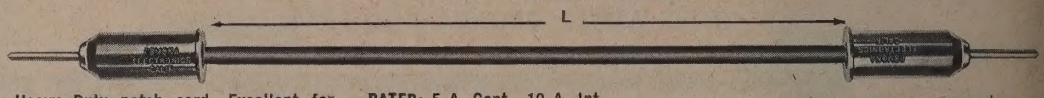
WIRE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation .087″ O.D.
RATED: 5 A. Cont., 10 A. Int. 5,000 W.V.D.C.
OPERATING TEMP.: —0°C to +105°C.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.



PIN TIP PATCH CORD

MODEL	LENGTH	NET
1990-4	4″	.95
1990-8	8″	.95
1990-12	12″	.95
1990-18	18″	.95
1990-24	24″	.95
1990-36	36″	.95
1990-48	48″	1.00
1990-60	60″	1.05

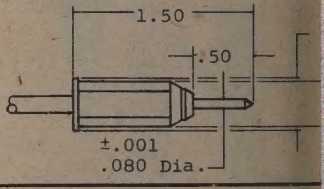
MODEL 1990
(Specify Color)



Heavy Duty patch cord. Excellent for general lab work. Permits interconnection between test instruments that utilize tip jacks.
PIN TIP: .080 dia., ½″ long, brass, nickel plated.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation .144″ O.D.

RATED: 5 A. Cont., 10 A. Int. 10,000 W.V.D.C.
OPERATING TEMP.: —0°C to +105°C.
COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

★QUANTITY DISC. CODE **A**



PIN TIP PATCH CORD

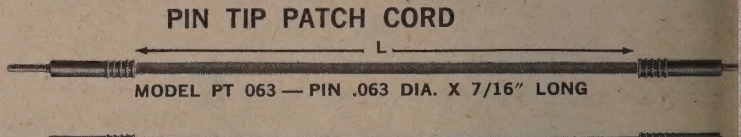
MODEL			LENGTH	NET
PT063-4	PT080-4	PM080-4	4″	.85
PT063-8	PT080-8	PM080-8	8″	.85
PT063-12	PT080-12	PM080-12	12″	.85
PT063-18	P8080-18	PM080-18	18″	.85
PT063-24	PT080-24	PM080-24	24″	.85
PT063-36	PT080-36	PM080-36	36″	.85
PT063-48	PT080-48	PM080-48	48″	.90
PT063-60	PT080-60	PM080-60	60″	.95

COLORS: PT063 and PM080—Red and Black only.
PT080 — Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.

MODEL PT & PM
(Specify Color)

PIN TIP: Brass, gold flashed.
WIRE: 22 AWG, Strand. 19 x 34 T.C. Insulation, polyvinyl .064″ O.D.
RATED: 3 A. Cont., 7.5 A. Int. 1,000 W.V.D.C.
OPERATING TEMP.: —0°C to +105°C.

★QUANTITY DISC. CODE **A**



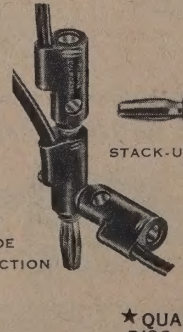
Small body style permits usage in equipment having receptacles spaced closely together. Three models shown.

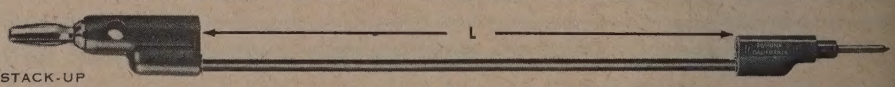
BANANA PLUG TO PIN TIP STACK-UP PATCH CORD

Adapts to equipment using banana jacks and pin jacks. Banana plug and pin tip allow vertical stack-up.

MODEL	LENGTH	NET
1126-4	4″	1.75
1126-8	8″	1.75
1126-12	12″	1.75
1126-18	18″	1.75
1126-24	24″	1.75
1126-36	36″	1.75
1126-48	48″	1.80
1126-60	60″	1.85

MODEL 1126
(Specify Color)





BANANA PLUG: Spring, one piece beryllium copper, heat treated, nickel plated.
PIN TIP: .080 dia. ½″ long, brass, gold flashed.

TIP JACK, STACK-UP: Beryllium copper, gold flashed. Accepts .080 Dia. pin.
WIRE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation .087″ O.D.
RATED: 5 A. Cont., 10 A. Int. 5,000 W.V.D.C.
OPERATING TEMP.: —0°C to +1
COLORS: Black, Red.

★QUANTITY DISC. CODE **A**

★ Various lengths may be aggregated for best quantity price.

OTHER LENGTHS AVAILABLE TO

Net

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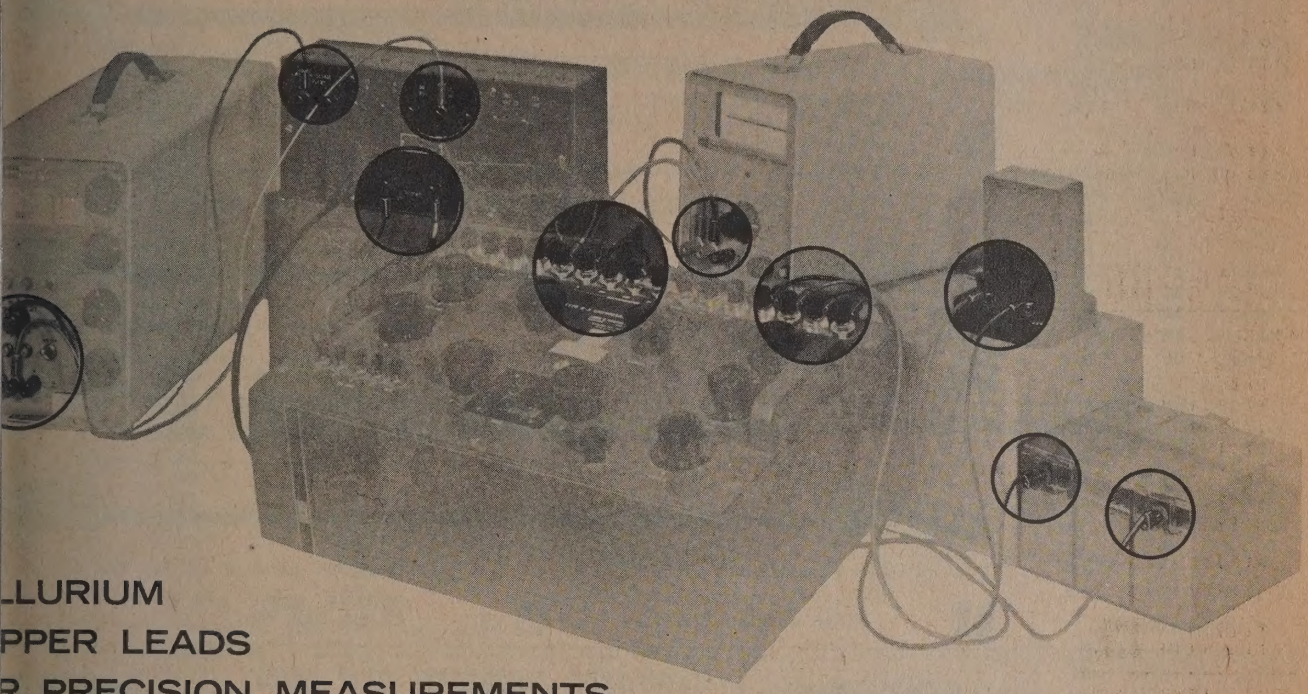
POMONA ELECTRONICS

JUMPERS — LOW THERMAL E.M.F.



LLURIUM
PPER LEADS
R PRECISION MEASUREMENTS

ONA ELECTRONICS has advanced the state of the n measurements where Thermoelectric Effects ignificant sources of error. Comparators designed se with the Kelvin-Varley voltage divider and ovolt leads were tested with Primary Standards ratory equipment.

moelectric voltages were not detected until the sensitive galvanometer range was used.

RMOELECTRIC PROPERTIES—Tellurium copper plated spade lugs cold-staked to multi-stranded 12 gauge COPPER wire minimize thermoelectric effects—an absolute necessity for low voltage, high precision measurements.

LOW RESISTANCE—12 gauge multi-stranded COPPER wire results in extremely low cable resistance. Spade lugs plated with 50 micro inches gold for minimum contact resistance and minimum thermal EMF when using copper binding posts. (Less than 0.01 μv/c°).

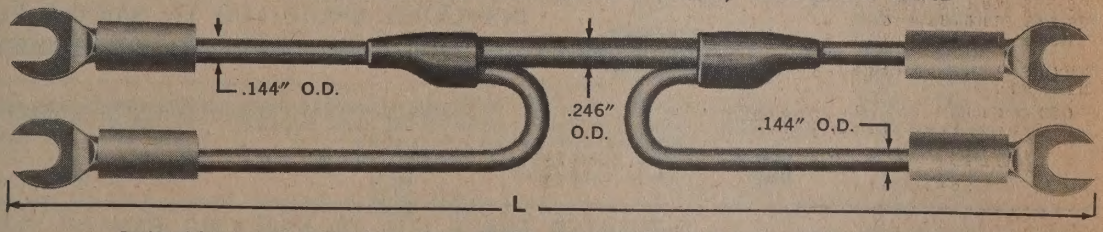
TELLURIUM COPPER SPADE LUGS, SHIELDED LEAD

EL	LENGTH
56-24	24"
56-48	48"

DEL 1756
ecify Length)

UANTITY
C. CODE **A**

ET 9.85

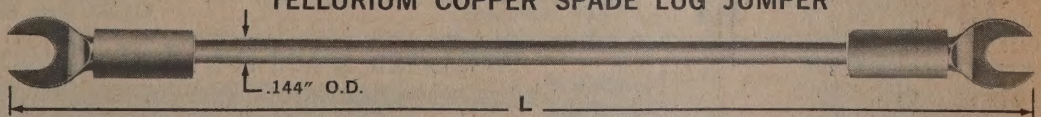


Designed for use with Kelvin Varley voltage dividers where extreme precision is required for low voltage measurements. Features guard shield to effectively reduce shunt resistance. Tough thermo-plastic molded to spade lug body, color; center conductor lug red, shield lug black. Tellurium copper heavy duty one piece machined spade lug gold plated per MIL-G-45204, Type II, Class I. Center conductor 12 AWG multi-stranded bare copper, shield lead wire, 18 AWG, stranded. Polyethylene primary insulation. Braided shield bare copper. Polyvinyl jacket, color black, per MIL-C-17C Type IIA.

TELLURIUM COPPER SPADE LUG JUMPER

EL	LENGTH	NET
93-12	12"	2.75
93-18	18"	2.75
93-24	24"	2.75
93-36	36"	2.75
93-48	48"	2.75
93-60	60"	2.75

EL 1693 (Specify Color) ★ QUANTITY DISC. CODE **A**



Single conductor tellurium copper spade lug jumper used in applications where guard shield is not required. Tough thermo-plastic molded to spade lug body. Color matches wire. Tellurium Copper heavy duty one piece machined spade lug gold plated per MIL-G-45204. Type II, Class I. Conductor, 12 AWG multi-stranded bare copper. Insulation polyvinyl, 105°C, .144" O.D.
COLORS: Black, Red, Green.

★ lengths may be aggregated for best quantity price.

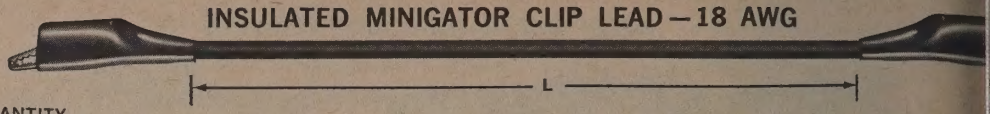
POMONA ELECTRONICS

JUMPERS — CLIP LEADS

INSULATED MINIGATOR CLIP LEAD — 18 AWG

MODEL	LENGTH	NET
MG-B-4	4″	.95
MG-B-8	8″	.95
MG-B-12	12″	.95
MG-B-24	24″	.95
MG-B-36	36″	.95
MG-B-48	48″	1.00
MG-B-60	60″	1.05

(Specify Color)



QUANTITY DISC. CODE **A** ★

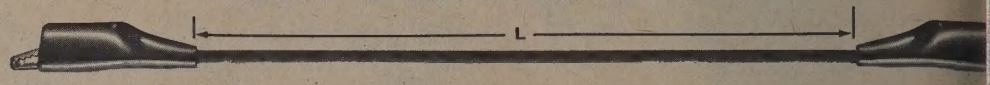
CLIP: Minigator, steel, cad plated.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation .144″ O.D.

INSULATOR: Red vinyl with red wire. Black on all othe
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red.

INSULATED MINIGATOR CLIP LEAD — 20 AWG

MODEL	LENGTH	NET
1236-4	4″	.95
1236-8	8″	.95
1236-12	12″	.95
1236-24	24″	.95
1236-36	36″	.95
1236-48	48″	1.00
1236-60	60″	1.05

(Specify Color)



QUANTITY DISC. CODE **A** ★

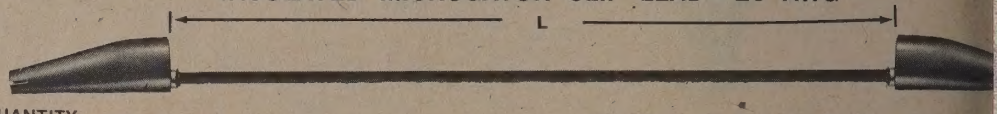
CLIP: Minigator, steel, cad. plated.
WIRE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation, .087″ O.D.

INSULATOR: Red Vinyl with Red Wire. Black on al colors.
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red.

INSULATED MICROGATOR CLIP LEAD — 20 AWG

MODEL	LENGTH	NET
1613-4	4″	.95
1613-8	8″	.95
1613-12	12″	.95
1613-24	24″	.95
1613-36	36″	.95
1613-48	48″	1.00
1613-60	60″	1.05

(Specify Color)



QUANTITY DISC. CODE **A** ★

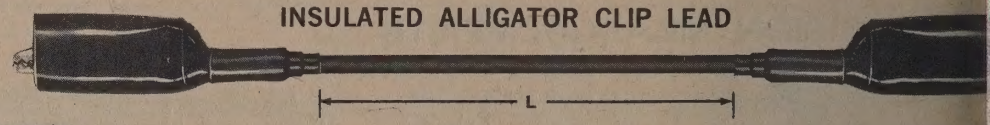
CLIP: Microgator, solid copper.
WIRE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation, .087″ O.D.

INSULATOR: Red Vinyl with Red Wire. Black on al colors.
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red.

INSULATED ALLIGATOR CLIP LEAD

MODEL	LENGTH	NET
AL-B-4	4″	.95
AL-B-8	8″	.95
AL-B-12	12″	.95
AL-B-24	24″	.95
AL-B-36	36″	.95
AL-B-48	48″	1.00
AL-B-60	60″	1.05

(Specify Color)



QUANTITY DISC. CODE **A** ★

CLIP: Alligator, steel, cad plated.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation .144″ O.D.

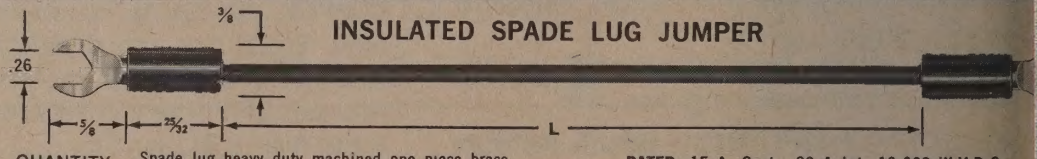
INSULATOR: Red vinyl with red wire. Black on all other
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red.

INSULATED SPADE LUG JUMPER

MODEL	LENGTH	NET
1743-12	12″	.95
1743-24	24″	.95
1743-36	36″	.95
1743-48	48″	1.00
1743-60	60″	1.05

(Typical Dimensions spade lug)

(Specify Color)



QUANTITY DISC. CODE **A** ★

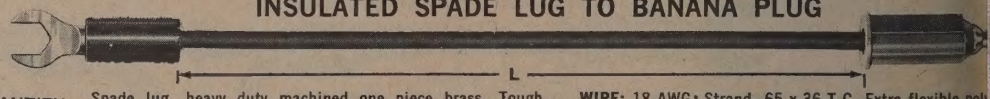
Spade lug heavy duty machined one piece brass. Tough thermo-plastic molded to spade lug body.
SPADE LUGS: Brass 1/16″ thick, nickel plated.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation .144″ O.D.

RATED: 15 A. Cont., 30 A Int. 10,000 W.V.D.C.
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red, Green, White.

INSULATED SPADE LUG TO BANANA PLUG

MODEL	LENGTH	NET
1987-12	12″	1.00
1987-24	24″	1.00
1987-36	36″	1.00
1987-48	48″	1.05
1987-60	60″	1.10

(Specify Color)



QUANTITY DISC. CODE **A** ★

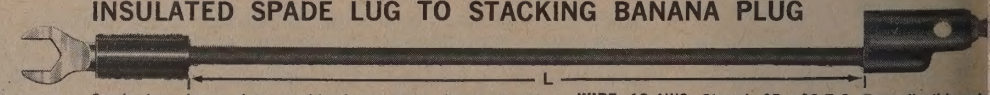
Spade lug, heavy duty machined one piece brass. Tough thermo-plastic molded to spade lug and banana plug body.
SPADE LUG: Brass 1/16″ thick, nickel plated.
BANANA PLUG: Spring one piece beryllium copper heat treated, nickel plated.

WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible poly insulation .144″ O.D.
RATED: 15 A. Cont., 30 A. Int. 10,000 W.V.D.C.
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red

INSULATED SPADE LUG TO STACKING BANANA PLUG

MODEL	LENGTH	NET
1370-12	12″	1.00
1370-24	24″	1.00
1370-36	36″	1.00
1370-48	48″	1.05
1370-60	60″	1.10

(Specify Color)



QUANTITY DISC. CODE **A** ★

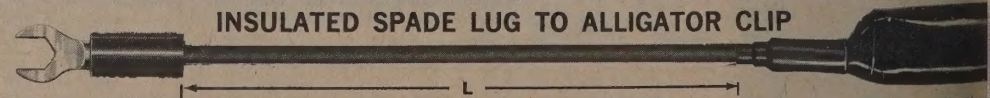
Spade lug, heavy duty machined one piece brass. Tough thermo-plastic molded to spade lug and banana plug body.
SPADE LUG: Brass 1/16″ thick, nickel plated.
BANANA PLUG: Spring one piece beryllium copper heat treated, nickel plated.

WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible poly insulation .144″ O.D.
RATED: 15 A. Cont., 30 A. Int. 10,000 W.V.D.C.
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red, Green, White.

INSULATED SPADE LUG TO ALLIGATOR CLIP

MODEL	LENGTH	NET
1960-12	12″	.95
1960-24	24″	.95
1960-36	36″	.95
1960-48	48″	1.00
1960-60	60″	1.05

(Specify Color)



QUANTITY DISC. CODE **A** ★

Spade lug, heavy duty machined one piece brass. Tough thermo-plastic molded to spade lug body.
SPADE LUG: Brass 1/16″ thick, nickel plated.
CLIP: Alligator, steel, cad plated.

INSULATOR: Red vinyl with red wire. Black on all othe
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible insulation .144″ O.D.
OPERATING TEMP.: —25°C to +105°C.
COLORS: Black, Red

★ Various lengths may be aggregated for best quantity price.

OTHER LENGTHS AVAILABLE TO

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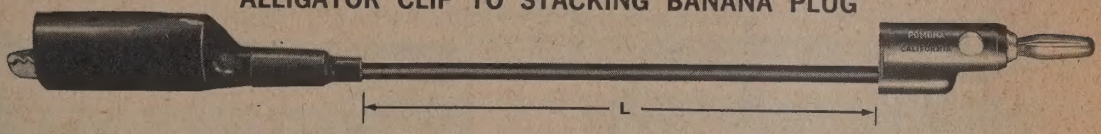
POMONA ELECTRONICS

CLIP LEADS TEST PROBES

ALLIGATOR CLIP TO STACKING BANANA PLUG



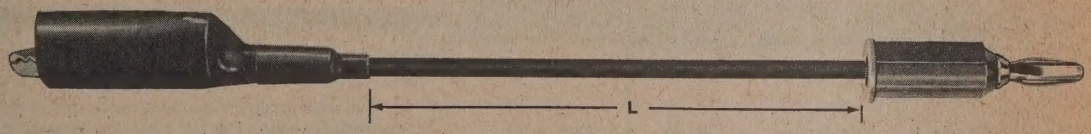
EL	LENGTH	NET
4	4″	1.00
8	8″	1.00
12	12″	1.00
24	24″	1.00
36	36″	1.00
48	48″	1.05
60	60″	1.10

Adapts to equipment using standard banana jacks.
CLIP: Alligator, Steel, cadmium plated
BANANA PLUG: Spring, one piece beryllium copper, heat treated, nickel plated. Tough thermoplastic molded to plug body and wire.

INSULATOR: Red vinyl with red wire. Black on all other colors.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation .144″ O.D.
OPERATING TEMP.: −25°C to +105°C.
COLORS: Black, Red.

EL 1166 (Specify Color) QUANTITY DISC. CODE A ★

ALLIGATOR CLIP LEAD TO BANANA PLUG



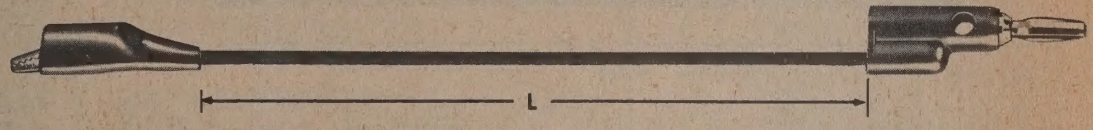
L	LENGTH	NET
4	4″	1.00
8	8″	1.00
12	12″	1.00
24	24″	1.00
36	36″	1.00
48	48″	1.05
60	60″	1.10

Adapts to equipment using standard banana jacks.
CLIP: Alligator, Steel, cadmium plated
BANANA PLUG: Spring, one piece beryllium copper, heat treated, nickel plated. Tough thermoplastic molded to plug body.

INSULATOR: Red vinyl with red wire. Black on all other colors.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation .144″ O.D.
OPERATING TEMP.: −25°C to +105°C.
COLORS: Black, Red.

EL 1959 (Specify Color) QUANTITY DISC. CODE A ★

MINIGATOR CLIP TO STACKING BANANA PLUG



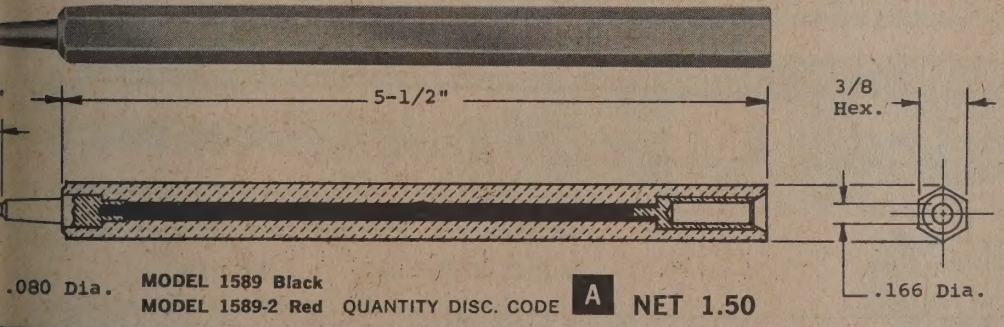
EL	LENGTH	NET
4	4″	1.00
8	8″	1.00
12	12″	1.00
24	24″	1.00
36	36″	1.00
48	48″	1.05
60	60″	1.10

Adapts to equipment using standard banana jacks.
CLIP: Minigator, Steel, cadmium plated.
BANANA PLUG: Spring, one piece beryllium copper, heat treated, nickel plated. Tough thermoplastic molded to plug body and wire.

INSULATOR: Red vinyl with red wire. Black on all other colors.
WIRE: 20 AWG, Strand. 41 x 36 T.C. Extra flexible polyvinyl insulation .087″ O.D.
OPERATING TEMP.: −25°C to +105°C.
COLORS: Black, Red.

EL 3220 (Specify Color) QUANTITY DISC. CODE A ★

TEST PROBE TO BANANA JACK



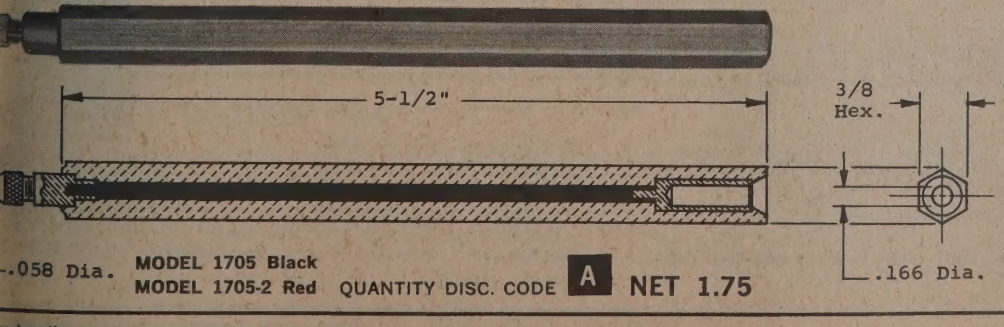
MODEL 1589 Black
MODEL 1589-2 Red QUANTITY DISC. CODE A **NET 1.50**

Banana jack in handle connected to tip. Permits use of standard banana plugs for circuit testing as a test prod. Heavy duty insulated handle molded to banana jack and tip.

PIN TIP: .080 dia. x ½″ long, brass nickel plated.

BANANA JACK: .166 dia. Brass nickel plated. Accepts standard banana plug.

NEEDLE TIP PROBE TO BANANA JACK



MODEL 1705 Black
MODEL 1705-2 Red QUANTITY DISC. CODE A **NET 1.75**

Sharp replaceable needle tip allows testing of encapsulated circuits. Banana jack in handle connected to tip. Permits use of standard banana plugs for circuit testing as a test prod. Heavy duty insulated handle molded to banana jack and tip.

PIN TIP: Replaceable needle tip, steel nickel plated.

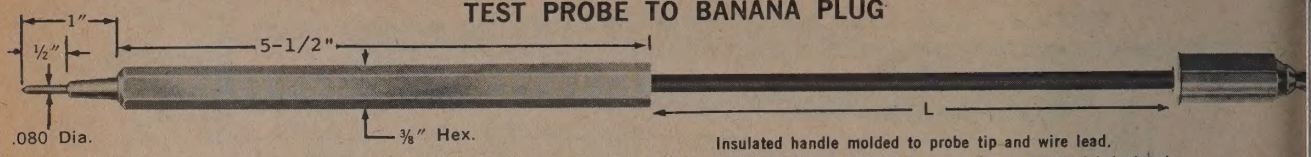
BANANA JACK: .166 dia. Brass nickel plated. Accepts standard banana plug.

s lengths may be aggregated for best quantity price.

OTHER LENGTHS AVAILABLE TO ORDER

POMONA ELECTRONICS — TEST PROBES

TEST PROBE TO BANANA PLUG

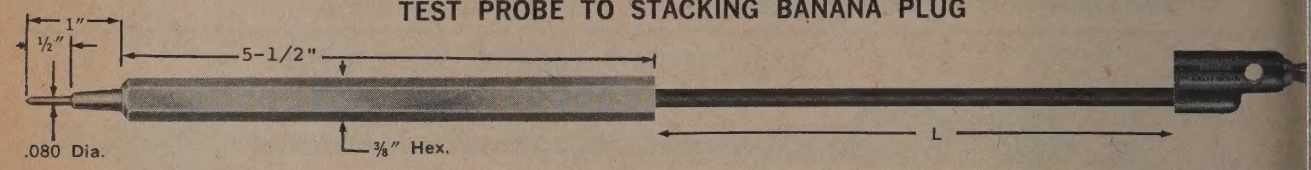


MODEL 1986-48-B	48" Long	Black	NET 1.75
MODEL 1986-48-R	48" Long	Red	NET 1.75

QUANTITY DISC. CODE **A**

Insulated handle molded to probe tip and wire lead.
PROBE PIN TIP: .080 dia. x ½" long. Brass nickel plated.
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation, .144"
BANANA PLUG: Spring, one piece beryllium copper, heat treated, nickel plated. thermo-plastic molded to body.
COLORS: Black, Red.

TEST PROBE TO STACKING BANANA PLUG

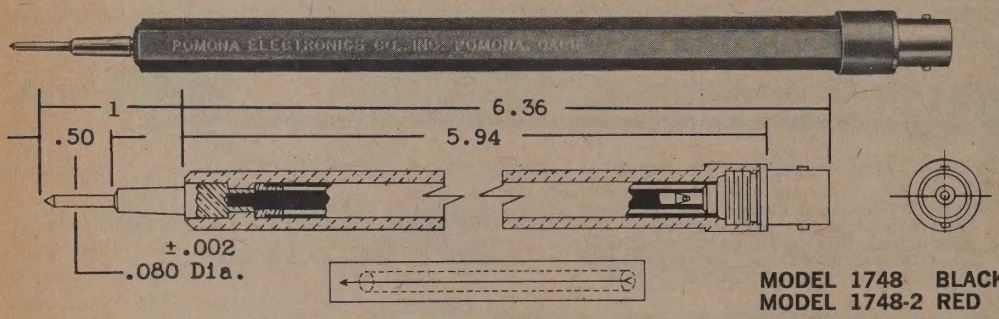


MODEL 1382-48B	48" Long	Black	NET 1.95
MODEL 1382-48R	48" Long	Red	NET 1.95

QUANTITY DISC. CODE **A**

Insulated handle molded to probe tip and wire lead.
PROBE PIN TIP: .080 dia. x ½" long. Brass nickel plated
WIRE: 18 AWG, Strand. 65 x 36 T.C. Extra flexible polyvinyl insulation, .144
BANANA PLUG: Spring, one piece beryllium copper, heat treated, nickel p
Tough thermo-plastic molded to plug body and wire.
COLORS: Black, Red.

TEST PROBE TO BNC RECEPTACLE

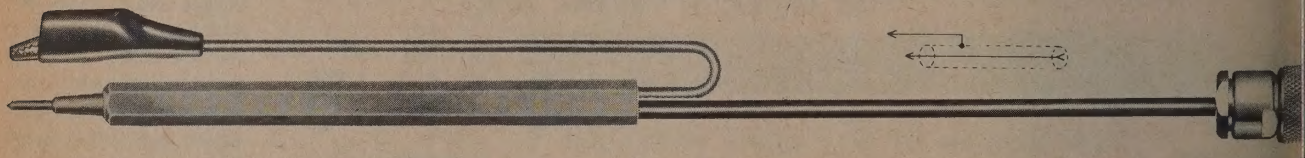


MODEL 1748 BLACK
MODEL 1748-2 RED

QUANTITY DISC. CODE **A** NET 5

BNC receptacle in handle conn
to tip. Permits the use of c
cables with BNC plug for c
testing as a test prod. Tough
moplastic molded to BNC recep
and tip. Shield extends to
1½" of the probe tip end.
PIN TIP: .080" dia. x ½"
brass, nickel plated.
RECEPTACLE: BNC, UG1094/

SHIELDED TEST PROBE TO BNC MALE



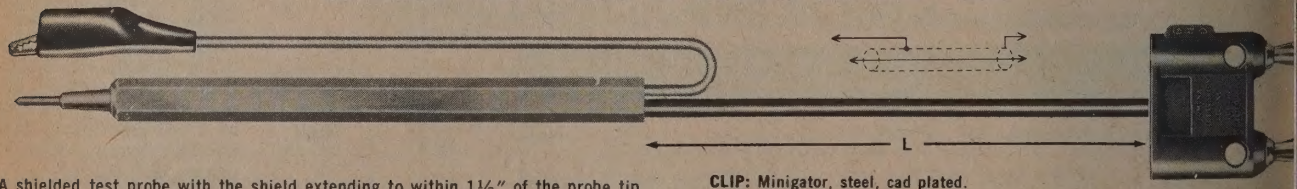
A shielded test probe with the shield extending to within 1½" of the probe tip end. One piece molded construction. Insulated handle molded to probe tip and cable. Insulated minigator clip connected to shield lead.
PROBE PIN TIP: .080 dia. x ½" long. Brass, nickel plated.
CONNECTOR: BNC Male, UG88E/U.

CLIP: Minigator, steel, cad. plated.
INSULATOR, VINYL: Color, Black.
CABLE: Shielded coax., RG58C/U, Polyethylene insulation. Vinyl jacket, O.D., Nom. Cap. 28.5 pf/ft.
HANDLE: Color, red, molded of tough thermo-plastic.

QUANTITY DISC. CODE

MODEL 2739-C-48 . . . . . 48" long NET

SHIELDED TEST PROBE TO DOUBLE BANANA PLUG



A shielded test probe with the shield extending to within 1½" of the probe tip end. One piece molded construction. Insulated handle molded to probe tip and cable. Insulated minigator clip connected to shield lead.

PROBE PIN TIP: .080 dia. x ½" long. Brass nickel plated.

DOUBLE BANANA PLUG: On ¾" centers. Spring, one piece beryllium copper, heat treated, nickel plated. Tough thermo-plastic molded to double plug body. Color, Gray.

CLIP: Minigator, steel, cad plated.
INSULATOR, VINYL: Color, Black.
CABLE: Shielded microphone cable: Polyethylene insulation. Vinyl jacket. Nom. capacity 25 pf./ft. .205" O.D. Color, Gray.
HANDLE: Color, red, molded of tough thermo-plastic.

QUANTITY DISC. CODE

MODEL 1569-B-48 ..... 48" Long NET

OTHER LENGTHS AVAILABLE TO

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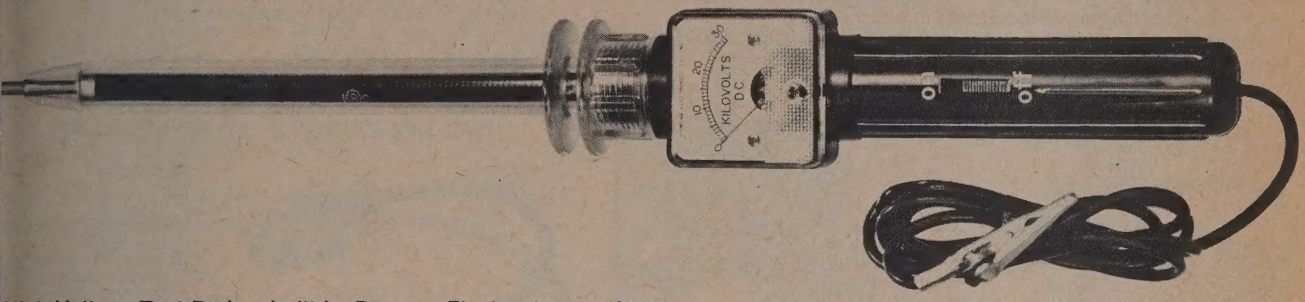
POMONA ELECTRONICS

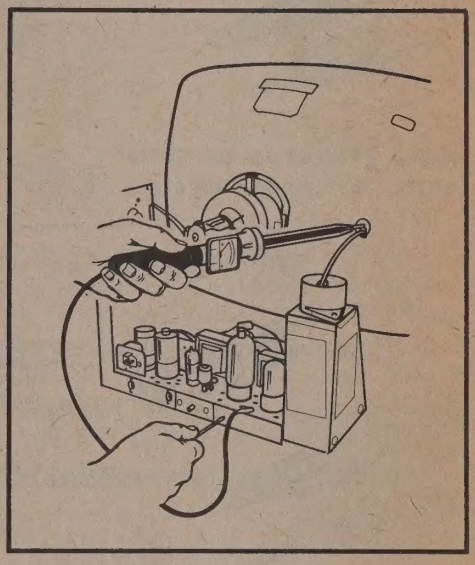
HIGH VOLTAGE TEST PROBES

DC HIGH VOLTAGE TEST PROBES WITH BUILT-IN METER



High Voltage Test Probes built by Pomona Electronics are the dvanced instruments of their kind on the market; the only test featuring a built-in voltmeter. The Test Probes are self-con-, portable test instruments for rapid measurements of high es.

o operate! Just ground the test probe instrument by attaching or clip to chassis, contact test probe tip to high voltage being red and read voltage from the built-in meter. No warm-up No batteries.



PATENT PENDING

SPECIFICATIONS:

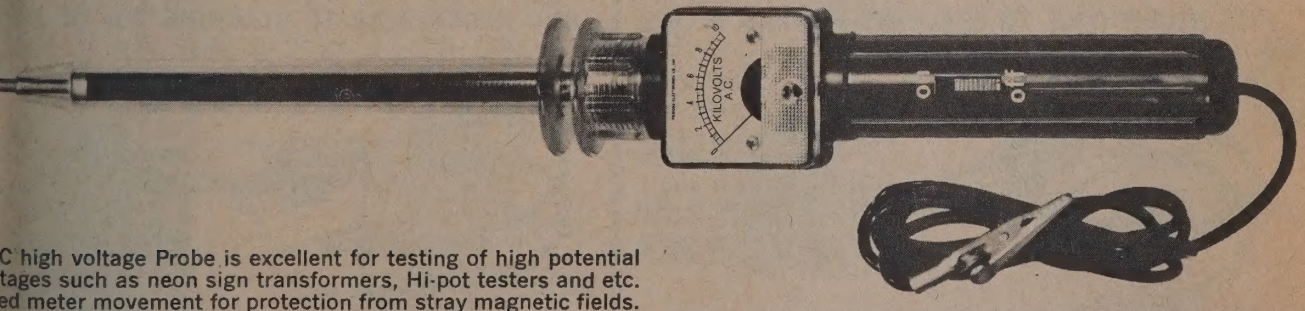
E: See below. **SENSITIVITY:** 20,000 ohms/volt (50 ua) move- **ACCURACY:** ± 3% full scale. **MULTIPLIER RESISTANCE:** See **MATERIAL:** Handle—high impact thermoplastic. Probe—high polystyrene. **LENGTH:** 14¾" overall. **WEIGHT:** 8 ounces.

EL	VOLTS Full Scale	MULTIPLIER RESISTANCE	NET
)	30,000	600 Megohm	19.95
(*)	15,000	300 Megohm	29.95
(*)	6,000	120 Megohm	29.95

s 3157 and 3163 are supplied with Model 3295 carrying case.

QUANTITY DISC. CODE **C**

10 KV AC HIGH VOLTAGE TEST PROBE WITH BUILT-IN METER



C high voltage Probe is excellent for testing of high potential tages such as neon sign transformers, Hi-pot testers and etc. ed meter movement for protection from stray magnetic fields. E IS SUPPLIED WITH MODEL 3295 CARRYING CASE.

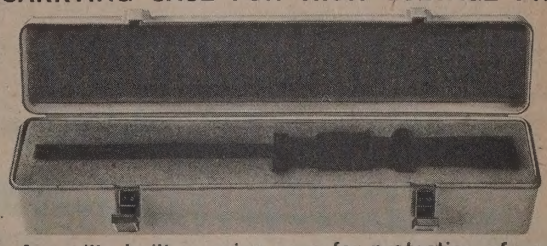
o operate! Just ground the test probe instrument by attaching or clip to chassis, contact test probe tip to high voltage being red and read voltage from the built-in meter. No warm-up No batteries.

SPECIFICATIONS:

E: 10,000 Volts AC. **SENSITIVITY:** 2,000 Ohms/Volt (500 UA) ent. **ACCURACY:** ± 3% 30 cps to 1000 cps. **MULTIPLIER TANCE:** 20 Megohm ± 2%. **MATERIAL:** Handle—high impact plastic. Probe — high impact polystyrene. **LENGTH:** 14¾" **WEIGHT:** 8 ounces.

EL 3200 QUANTITY DISC. CODE **C** NET 29.95

CARRYING CASE FOR HIGH VOLTAGE PROBES



NEW

A quality built carrying case for protection of your high voltage probe. The case is made of tough thermoplastic. The inside is lined with soft, shock absorbing material.

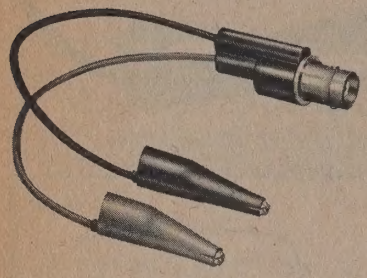
MODEL 3295 QUANTITY DISC. CODE **D** NET 5.95

POMONA ELECTRONICS — MOLDED BREAKOUTS

A new series of "Breakouts", designed to convert standard coaxial cables to test cables.
By connecting proper Breakout receptacle or plug to corresponding cable plug or receptacle, any standard coaxial cable becomes a test cable equipped with clip leads.
All connections feature a non-tarnish finish, and tough molded thermoplastic insulation molded to connector and wire.

APPLICABLE SPECIFICATIONS:
Wire: (With Alligator Clips) 18 AWG, Strand. 65 x 36 T.C
Extra flexible polyvinyl insulation, .144" O.D.
Wire: (With Minigator Clips) 20 AWG, Strand. 41 x 36 T.C
Extra flexible polyvinyl insulation, .087" O.D.
Operating Temp.: —25°C to +85°C.
Working Voltage: 500 V Peak.

BNC RECEPTACLE TO TEST CLIPS

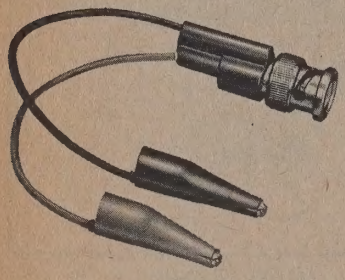


CONNECTOR: BNC Receptacle, UG1094/U.
INSULATION: Tough thermoplastic molded to connector and wire.
WIRE: See above.
TEST CLIPS: Minigator or Alligator, Steel, cad. plated. Insulators, Vinyl: 1 Black, 1 Red.

OVERALL LENGTH 7"

MODEL 2630 (ALLIGATOR CLIPS)
MODEL 2631 (MINIGATOR CLIPS) QUANTITY DISC. CODE **A** **NET 3.45**

BNC PLUG TO TEST CLIPS



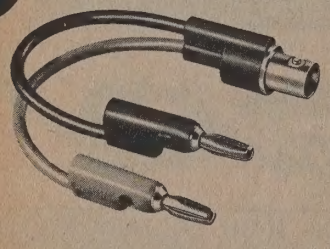
CONNECTOR: BNC Plug.
INSULATION: Tough thermoplastic molded to connector and wire.
WIRE: See above.
TEST CLIPS: Minigator or Alligator, Steel, cad. plated. Insulators, Vinyl: 1 Black, 1 Red.

OVERALL LENGTH 7"

MODEL 2885 (ALLIGATOR CLIPS)
MODEL 2886 (MINIGATOR CLIPS) QUANTITY DISC. CODE **A** **NET 4.50**

BNC RECEPTACLE TO STACKING BANANA PLUGS

NEW

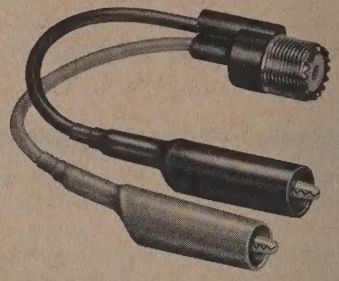


CONNECTOR: BNC Receptacle, UG1094/U.
INSULATION: Tough thermoplastic molded to connector and wire.
WIRE: See above, 18 AWG.
STACKING BANANA PLUGS: Spring, one piece heat-treated beryllium copper, nickel plated: 1 Black, 1 Red.

OVERALL LENGTH 7"

MODEL 3073 QUANTITY DISC. CODE **A** **NET 3.85**

UHF RECEPTACLE TO TEST CLIPS

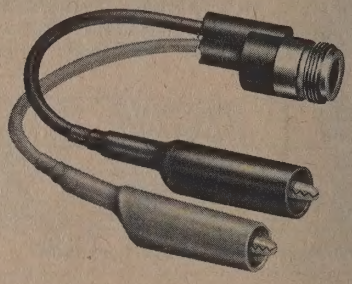


CONNECTOR: UHF Re
cle Jack.
INSULATION: Tough th
plastic molded to c
tor and wire.
WIRE: See above.
TEST CLIPS: Minigat
Alligator, Steel,
plated. Insulators,
1 Black, 1 Red.

OVERALL LENGTH

MODEL 2632 (ALLIGATOR CLIPS)
MODEL 2633 (MINIGATOR CLIPS) QUANTITY DISC. CODE **A** **NET**

TYPE "N" RECEPTACLE TO TEST CLIPS

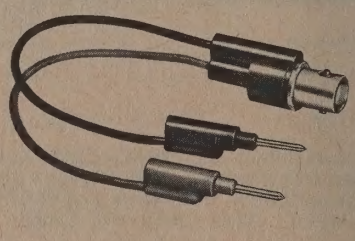


CONNECTOR: Type "N
ceptacle, UG58A/U.
INSULATION: Tough th
plastic molded to co
tor and wire.
WIRE: See above.
TEST CLIPS: Minigat
Alligator, Steel,
plated. Insulators,
1 Black, 1 Red.

OVERALL LENGTH

MODEL 2636 (ALLIGATOR CLIPS)
MODEL 2637 (MINIGATOR CLIPS) QUANTITY DISC. CODE **A** **NET**

BNC RECEPTACLE TO STACKING PIN TIP PLUG

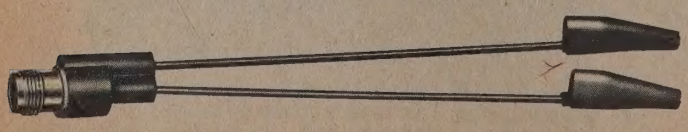


CONNECTOR: BNC Rec
cle, UG1094/U.
INSULATION: Tough th
plastic molded to co
tor and wire.
WIRE: See above, 20 A
STACKING PIN TIP PL
2 single plugs, .080
1 Black, 1 Red.

OVERALL LENGTH

MODEL 3221 QUANTITY DISC. CODE **A** **NET**

TNC RECEPTACLE TO TEST CLIPS



OVERALL LENGTH 7"

CONNECTOR: TNC Receptacle Jack.
INSULATION: Tough thermoplastic molded to connector and wire.
WIRE: See above.
TEST CLIPS: Minigator or
gator, Steel, cad. plated.
lators, Vinyl: 1 Black, 1 Re

MODEL 2634 (ALLIGATOR CLIPS)
MODEL 2635 (MINIGATOR CLIPS) QUANTITY DISC. CODE **A** **NET**

Net
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POMONA ELECTRONICS

PATCH CORDS DOUBLE BANANA PLUGS

POMONA MOLDED DOUBLE BANANA PLUG PATCH CORDS AND TEST LEADS

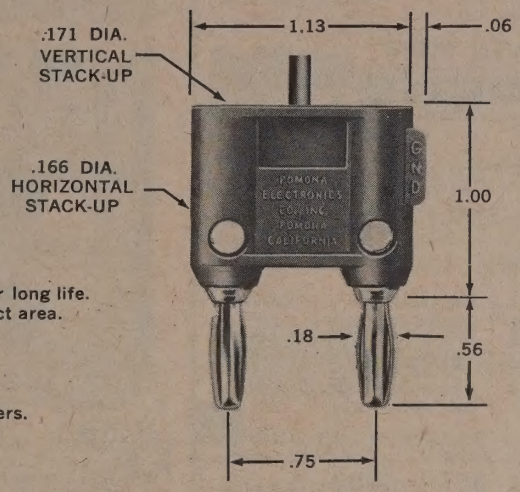
ispensable for bridge transformer
ctions, three terminal capacitor
rements and general hook-up for
re systems. They are horizontally
rtically stackable in parallel.
thermo-plastic material molded to
ody and cable insures maximum
th, moisture resistance and excel-
sulative properties.
by leading industries in applica-
where extreme reliability is of
importance.

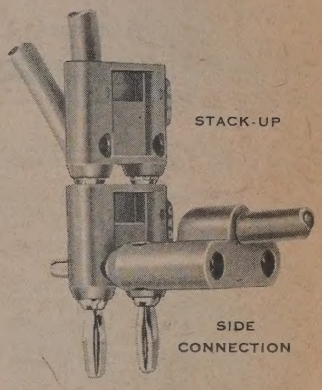
RES . . .

piece beryllium copper heat treated spring for long life.
nded spring design results in maximum contact area.
D., clearly molded on plug body and shell.
ler-bonded noise-free connections.

FICATIONS . . .

standard 0.166 dia. banana jacks, on ¾" centers.
tact resistance less than 0.001 ohms per plug.
ng beryllium copper alloy 170 per QQ-C-533.
body brass per QQ-B-625, Comp. 22.
kel plated per QQ-N-290, Class 2.





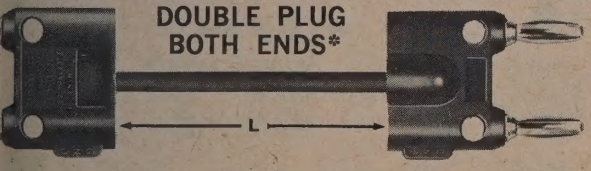
CABLE TYPE DESCRIPTION

TWO COND. TWISTED PAIR
18 AWG, Strand. 65 x 36 T.C.
yl insulation. Vinyl jacket, .250" O.D. Nom. Cap. 30 pf/ft.
COLOR: Gray.

SHIELDED MICROPHONE CABLE
Polyethylene insulation. Vinyl jacket, .205" O.D. Nom. Cap. 25 pf/ft.
COLOR: Gray.

SHIELDED COAXIAL CABLE
RG58C/U Polyethylene insulation. Vinyl jacket, .195" O.D. Nom. Cap. 28.5 pf/ft. **COLOR:** Black.

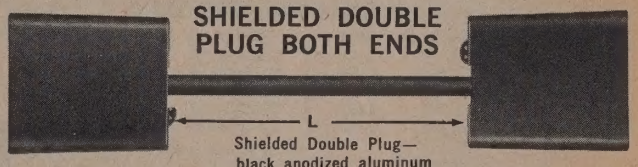
DOUBLE PLUG BOTH ENDS*



ND. PR.	SHIELDED MIC. CABLE	RG58C/U	RG59B/U	LENGTH	NET
8	2BB-18	2BC-18	2BE-18	18"	4.95
4	2BB-24	2BC-24	2BE-24	24"	4.95
0	2BB-30	2BC-30	2BE-30	30"	4.95
6	2BB-36	2BC-36	2BE-36	36"	4.95
8	2BB-48	2BC-48	2BE-48	48"	4.95
0	2BB-60	2BC-60	2BE-60	60"	4.95

★ QUANTITY DISC. CODE **B**

SHIELDED DOUBLE PLUG BOTH ENDS

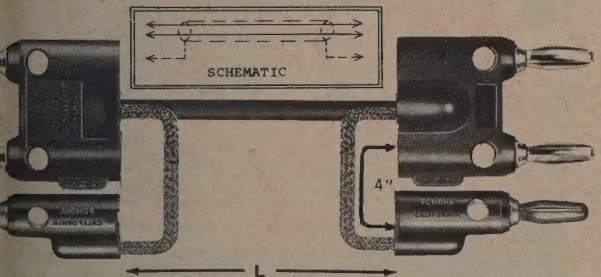


Shielded Double Plug—
black anodized aluminum

SHIELDED COAX. CABLE	LENGTH	NET
1550-C-18	18"	5.95
1550-C-24	24"	5.95
1550-C-30	30"	5.95
1550-C-36	36"	5.95
1550-C-48	48"	5.95
1550-C-60	60"	5.95

★ QUANTITY DISC. CODE **B**

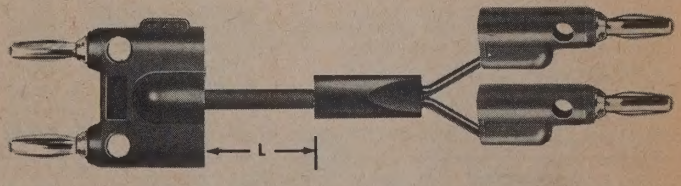
TWO COND. SHIELDED BALANCED LINE



DESCRIPTION	MODEL	LENGTH	NET
shielded mic. cable. Polyethylene insu- Vinyl jacket, .231" O.D. Nom. Cap. cond. 18 pf./ft. Nom. Cap. between d. and remaining cond. connected to 32 pf./ft. COLOR: Cable and double ay. Single ground plug, Green.	1167-18	18"	7.95
	1167-24	24"	7.95
	1167-30	30"	7.95
	1167-36	36"	7.95
	1167-48	48"	7.95
	1167-60	60"	7.95

★ QUANTITY DISC. CODE **B**

DOUBLE PLUG TO SINGLE BANANA PLUGS



CABLE DESCRIPTION		MODEL	LENGTH	NET
TWO COND. TWISTED PAIR	18 AWG, Strand. 65 x 36 T.C. Vinyl insulation. Vinyl jacket, .250" O.D. Nom. Cap. 30 pf/ft. **COLOR:** Double Plug: Gray Single Plugs: Red, Black	1368-A-18	18"	5.95
		1368-A-24	24"	5.95
		1368-A-30	30"	5.95
		1368-A-36	36"	5.95
		1368-A-48	48"	5.95
		1368-A-60	60"	5.95

★ QUANTITY DISC. CODE **B**

Molded double plug matches color of cable.
Two cond. Twisted pair, GRAY. Shielded mic. cable, GRAY.
Coaxial RG58C/U Cable, BLACK.

ous lengths may be aggregated for best quantity price.

1. Other cable colors available to order on the Two Cond. Twisted Pair and Shielded Mic. cable models with plug to match.
   COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White.
2. Other lengths and cable types available to order.

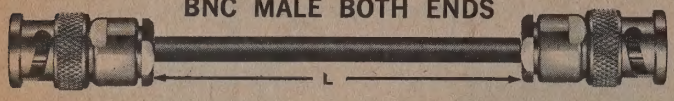
POMONA ELECTRONICS

PATCH CORDS BNC CONNECTING LEADS

CABLE TYPES

SHIELDED MICROPHONE CABLE	Polyethylene insulation, Vinyl jacket, .205" O.D. Nom. Cap. 25 pf.ft. COLOR: Gray.	SHIELDED COAXIAL CABLE	RG58C/U RG59B/U RG62A/U

BNC MALE BOTH ENDS



CONN: 1st END } UG88E/U Male BNC — CABLE: Shielded Coax., RG58C/U — CONN: 2nd END } UG88E/U Male BNC

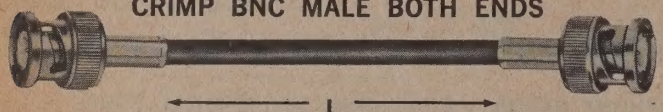
CONN: 1st END } UG260B/U Male BNC — CABLE: Shielded Coax., RG59B/U or RG62A/U — CONN: 2nd END } UG260B/U Male BNC

CABLE TYPES

SHIELDED MIC. CABLE	RG58C/U	RG59B/U	NET	RG62A/U	NET	LENGTH
BNC-B-18	BNC-C-18	BNC-E-18	5.95	BNC-M-18	6.95	18"
BNC-B-24	BNC-C-24	BNC-E-24	5.95	BNC-M-24	6.95	24"
BNC-B-30	BNC-C-30	BNC-E-30	5.95	BNC-M-30	6.95	30"
BNC-B-36	BNC-C-36	BNC-E-36	5.95	BNC-M-36	6.95	36"
BNC-B-48	BNC-C-48	BNC-E-48	5.95	BNC-M-48	6.95	48"
BNC-B-60	BNC-C-60	BNC-E-60	5.95	BNC-M-60	6.95	60"

★QUANTITY DISC. CODE B

CRIMP BNC MALE BOTH ENDS



CONN: 1st END } Crimp Male BNC (Comparable to UG88E/U) — CABLE: Shielded Coax., RG58C/U. — CONN: 2nd END } Crimp Male BNC (Comparable to UG88E/U)

CONN: 1st END } Crimp Male BNC (Comparable to UG260B/U) — Cable: Shielded Coax., RG59B/U or RG62A/U — CONN: 2nd END } Crimp Male BNC (Comparable to UG260B/U)

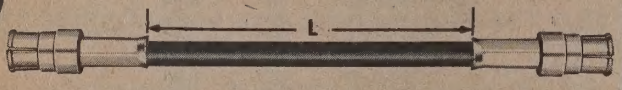
CABLE TYPES

RG58C/U	RG59B/U	NET	RG62A/U	NET	LENGTH
2249-C-12	2249-E-12	4.60	2249-M-12	5.95	12"
2249-C-24	2249-E-24	4.60	2249-M-24	5.95	24"
2249-C-36	2249-E-36	4.60	2249-M-36	5.95	36"
2249-C-48	2249-E-48	4.60	2249-M-48	5.95	48"
2249-C-60	2249-E-60	4.60	2249-M-60	5.95	60"

★ QUANTITY DISC. CODE B

NEW

"PUSH ON" BNC MALE BOTH ENDS



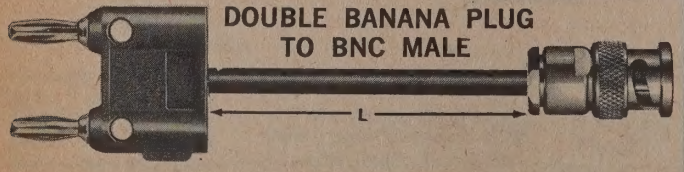
CONN: 1st END } Crimp "PUSH ON" BNC, Male. — CABLE: Shielded Coax., RG58C/U. — CONN: 2nd END } Crimp "PUSH ON" BNC, Male.

A test cable for rapid interconnection of equipment. Connector is pushed on and requires no twisting. Beryllium copper outer fingers maintain continuity of shield. Excellent for those hard to get at places.

MODEL	LENGTH
3199-C-12	12"
3199-C-24	24"
3199-C-36	36"
3199-C-48	48"
3199-C-60	60"

MODEL 3199 ★QUANTITY DISC. CODE B NET 4.60

DOUBLE BANANA PLUG TO BNC MALE



CONN.: 1ST END } Double Banana Plug, on ¾" Centers. — CABLE: Shielded coax., RG58C/U — CONN.: 2ND END } UG88E/U, Male BNC

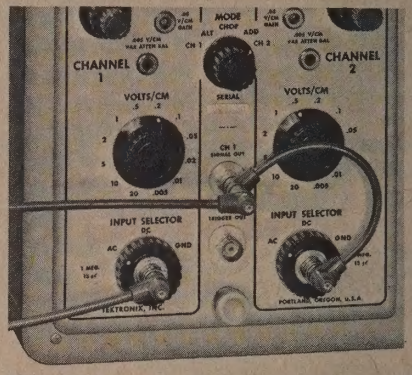
SHIELDED MIC. CABLE	SHIELDED COAX. CABLE	LENGTH	NET
2BB-BNC-18	2BC-BNC-18	18"	5.95
2BB-BNC-24	2BC-BNC-24	24"	5.95
2BB-BNC-30	2BC-BNC-30	30"	5.95
2BB-BNC-36	2BC-BNC-36	36"	5.95
2BB-BNC-48	2BC-BNC-48	48"	5.95
2BB-BNC-60	2BC-BNC-60	60"	5.95

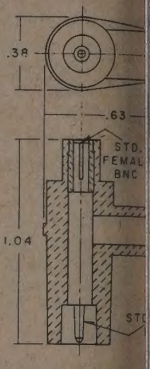
★QUANTITY DISC. CODE B

★ Various lengths may be aggregated for best quantity price.

"PUSH ON" STACKING BNC PATCH CORD

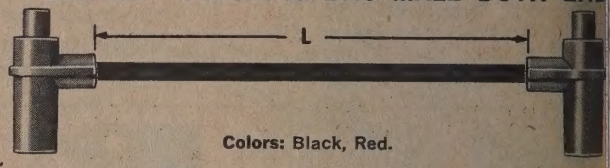
These multiple stacking patch cords connect the center conduct BNC jacks having a common chassis. Excellent for use with ments such as oscilloscopes. Stacking feature enables an e number of connections to the same point.





FEATURES:
- **CONTACT:** Male and Female, one piece heat treated beryllium per, gold flashed.
- **WIRE:** 18 AWG., stranded 65 x 36 T.C., polyvinyl insulation.
- **INSULATION:** Tough thermoplastic, polypropylene, molded a contact and wire.
- **OPERATING TEMP.:** —25° C to + 125° C.

"PUSH ON" STACKING BNC MALE BOTH END



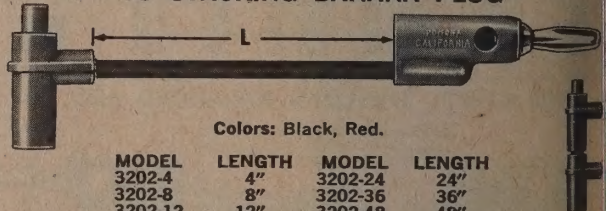
Colors: Black, Red.

MODEL	LENGTH	MODEL	LENGTH
3201-4	4"	3201-24	24"
3201-8	8"	3201-36	36"
3201-12	12"	3201-48	48"
3201-18	18"	3201-60	60"

★ QUANTITY DISC. CODE

MODEL 3201 (Specify Color) NET

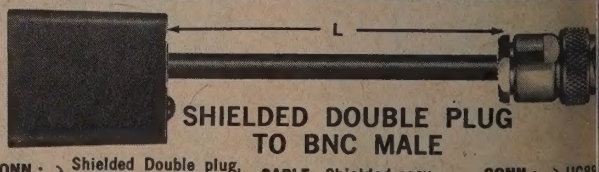
"PUSH ON" STACKING BNC MALE TO STACKING BANANA PLUG



Colors: Black, Red.

MODEL	LENGTH	MODEL	LENGTH
3202-4	4"	3202-24	24"
3202-8	8"	3202-36	36"
3202-12	12"	3202-48	48"
3202-18	18"	3202-60	60"

MODEL 3202 (Specify Color) ★QUANTITY DISC. CODE B NET



SHIELDED DOUBLE PLUG TO BNC MALE

CONN.: 1ST END } Shielded Double plug, on ¾" centers. Black anodized aluminum. — CABLE: Shielded coax., RG58C/U — CONN.: 2ND END } UG88 Male

SHIELDED COAX. CABLE	LENGTH	NET
1555-C-18	18"	6.95
1555-C-24	24"	6.95
1555-C-30	30"	6.95
1555-C-36	36"	6.95
1555-C-48	48"	6.95
1555-C-60	60"	6.95

★QUANTITY DISC. CODE

OTHER LENGTHS AND CABLE TYPES AVAILABLE TO O

Net

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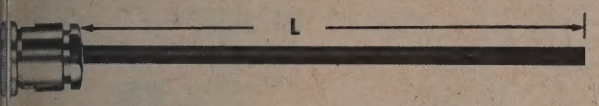
POMONA ELECTRONICS

PATCH CORDS
BNC CONNECTING LEADS

na Electronics cable assemblies and patch cords are
n applications where extreme reliability is of prime
tance.

BNC MALE ONE END ONLY



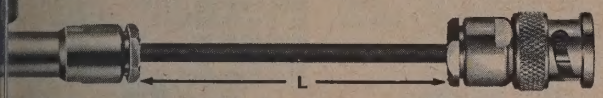
} UG88E/U Male BNC — **CABLE:** Shielded Coax., RG58C/U — **CONN:** 2nd END } None

} UG260B/U Male BNC — **Cable:** Shielded Coax., RG59B/U or RG62A/U — **CONN:** 2nd END } None

/U	RG59B/U	NET	RG62A/U	NET	LENGTH
12	1661-E-12	3.95	1661-M-12	4.60	12″
24	1661-E-24	3.95	1661-M-24	4.60	24″
36	1661-E-36	3.95	1661-M-36	4.60	36″
48	1661-E-48	3.95	1661-M-48	4.60	48″
60	1661-E-60	3.95	1661-M-60	4.60	60″

★QUANTITY DISC. CODE **B**

RIGHT ANGLE BNC TO BNC MALE

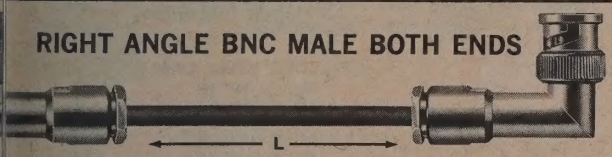


} UG913A/U, Angle Male BNC — **CABLE:** Shielded Coax., RG58C/U — **CONN.:** 2ND END } UG88E/U, Male BNC

SHIELDED COAX. CABLE	LENGTH	NET
1383-C-18	18″	7.95
1383-C-24	24″	7.95
1383-C-30	30″	7.95
1383-C-36	36″	7.95
1383-C-48	48″	7.95
1383-C-60	60″	7.95

★QUANTITY DISC. CODE **B**

RIGHT ANGLE BNC MALE BOTH ENDS

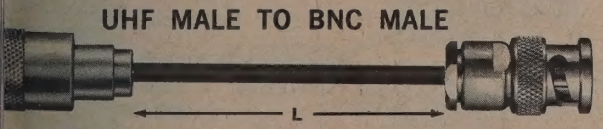


} UG913A/U, Angle Male BNC — **CABLE:** Shielded Coax., RG58C/U — **CONN.:** 2ND END } UG913A/U, Angle Male BNC

SHIELDED COAX. CABLE	LENGTH	NET
1155-C-18	18″	10.95
1155-C-24	24″	10.95
1155-C-30	30″	10.95
1155-C-36	36″	10.95
1155-C-48	48″	10.95
1155-C-60	60″	10.95

★QUANTITY DISC. CODE **B**

UHF MALE TO BNC MALE

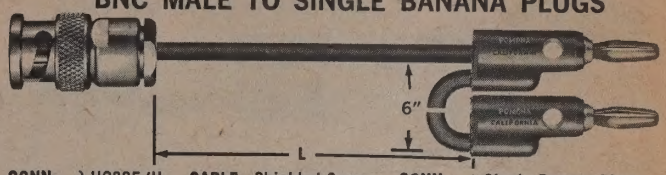


} PL259, UHF Male — **CABLE:** Shielded Coax., RG58C/U. — **CONN.:** 2ND END } UG88E/U, Male BNC

SHIELDED COAX. CABLE	LENGTH	NET
1367-C-18	18″	5.95
1367-C-24	24″	5.95
1367-C-30	30″	5.95
1367-C-36	36″	5.95
1367-C-48	48″	5.95
1367-C-60	60″	5.95

★QUANTITY DISC. CODE **B**

BNC MALE TO SINGLE BANANA PLUGS



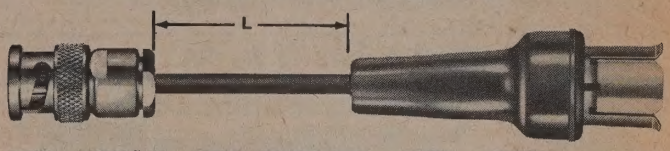
CONN: 1st END } UG88E/U Male BNC — **CABLE:** Shielded Coax., RG58C/U — **CONN:** 2nd END } Single Banana Plugs Color: 1 Black, 1 Red.

CABLE DESCRIPTION:
Shielded coax., RG58C/U, Polyethylene insulation. Vinyl jacket, .195" O.D. Nom. Cap. 28.5 pf/ft.

★QUANTITY DISC. CODE **B**

MODEL	LENGTH	NET
2241-C-18	18″	5.95
2241-C-24	24″	5.95
2241-C-36	36″	5.95
2241-C-48	48″	5.95

BNC MALE TO GR-874



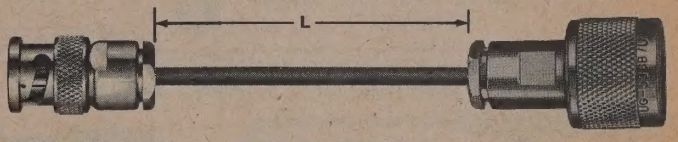
CONN: 1st END } UG88 E/U Male BNC — **CABLE:** Shielded Coax., RG58C/U — **CONN:** 2nd END } GR-874

CABLE DESCRIPTION:
Shielded coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.

★QUANTITY DISC. CODE **B**

MODEL	LENGTH	NET
1703-C-24	24″	9.95
1703-C-36	36″	9.95
1703-C-48	48″	9.95

BNC MALE TO SERIES "N" MALE



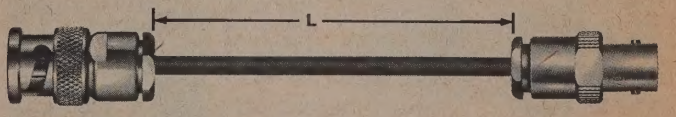
CONN: 1st END } UG88E/U Male BNC — **CABLE:** Shielded coax., RG58C/U — **CONN:** 2nd END } UG536B/U "N" Male

CABLE DESCRIPTION:
Shielded coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.

★QUANTITY DISC. CODE **B**

MODEL	LENGTH	NET
1366-C-24	24″	6.95
1366-C-36	36″	6.95
1366-C-48	48″	6.95

BNC MALE TO BNC FEMALE



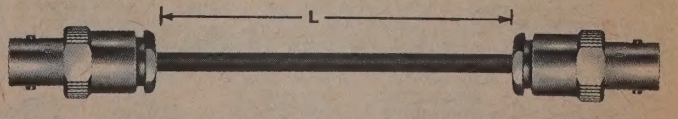
CONN: 1st END } UG88E/U Male BNC — **CABLE:** Shielded coax., RG58C/U — **CONN:** 2nd END } UG89C/U Female BNC

CABLE DESCRIPTION:
Shielded Coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.

★QUANTITY DISC. CODE **B**

MODEL	LENGTH	NET
2223-C-12	12″	6.95
2223-C-24	24″	6.95
2223-C-36	36″	6.95
2223-C-48	48″	6.95
2223-C-60	60″	6.95

BNC FEMALE BOTH ENDS



CONN: 1st END } UG89C/U Female BNC — **CABLE:** Shielded Coax., RG58C/U — **CONN:** 2nd END } UG89C/U Female BNC

CABLE DESCRIPTION:
Shielded coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.

★QUANTITY DISC. CODE **B**

MODEL	LENGTH	NET
1808-C-12	12″	6.95
1808-C-24	24″	6.95
1808-C-36	36″	6.95
1808-C-48	48″	6.95
1808-C-60	60″	6.95

us lengths may be aggregated for best quantity price.

OTHER LENGTHS AVAILABLE TO ORDER

POMONA ELECTRONICS

PATCH CORDS CONNECTING LEADS

ALLIGATOR CLIPS TO BNC MALE

CONN.: 1ST END { Alligator Clips, Steel, cad plated. Insulators, Vinyl: Black/Red.

CABLE: Shielded Mic. or Shielded Coax, RG58C/U.

CONN.: 2ND END { UG88E/U, BNC, Male.

SHIELDED MIC. CABLE	SHIELDED COAX. CABLE	LENGTH	NET
AL-B-BNC-18	AL-C-BNC-18	18″	5.95
AL-B-BNC-24	AL-C-BNC-24	24″	5.95
AL-B-BNC-30	AL-C-BNC-30	30″	5.95
AL-B-BNC-36	AL-C-BNC-36	36″	5.95
AL-B-BNC-48	AL-C-BNC-48	48″	5.95
AL-B-BNC-60	AL-C-BNC-60	60″	5.95

★ QUANTITY DISC. CODE **B**

MINIGATOR CLIPS TO BNC MALE

CONN.: 1ST END { Minigator Clips, Steel, cad plated Insulators, Vinyl: Black/Red.

CABLE: Shielded Mic. or Shielded Coax, RG58C/U.

CONN.: 2ND END { UG88E/U, BNC, Male

SHIELDED MIC. CABLE	SHIELDED COAX. CABLE	LENGTH	NET
MG-B-BNC-18	MG-C-BNC-18	18″	5.95
MG-B-BNC-24	MG-C-BNC-24	24″	5.95
MG-B-BNC-30	MG-C-BNC-30	30″	5.95
MG-B-BNC-36	MG-C-BNC-36	36″	5.95
MG-B-BNC-48	MG-C-BNC-48	48″	5.95
MG-B-BNC-60	MG-C-BNC-60	60″	5.95

★ QUANTITY DISC. CODE **B**

ALLIGATOR CLIPS TO DOUBLE BANANA PLUG*

CONN.: 1ST END { Alligator Clips, Steel, cad plated Insulators, Vinyl: Black/Red.

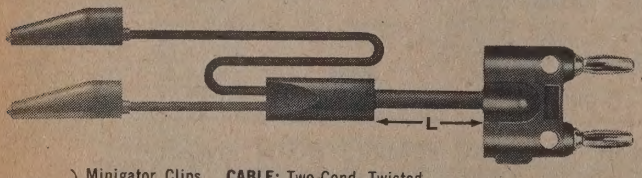
CABLE: Two Cond. Twisted Pair, Shielded Mic. or Shielded Coax, RG58C/U.

CONN.: 2ND END { Double Banana Plug, on ¾″ centers.

TWO COND. TWISTED PAIR	SHIELDED MIC. CABLE	SHIELDED COAX. CABLE	LENGTH	NET
2BA-AL-18	2BB-AL-18	2BC-AL-18	18″	5.95
2BA-AL-24	2BB-AL-24	2BC-AL-24	24″	5.95
2BA-AL-30	2BB-AL-30	2BC-AL-30	30″	5.95
2BA-AL-36	2BB-AL-36	2BC-AL-36	36″	5.95
2BA-AL-48	2BB-AL-48	2BC-AL-48	48″	5.95
2BA-AL-60	2BB-AL-60	2BC-AL-60	60″	5.95

★ QUANTITY DISC. CODE **B**

MINIGATOR CLIPS TO DOUBLE BANANA PLUG*



CONN.: 1ST END { Minigator Clips, Steel, cad plated Insulators, Vinyl: Black/Red.

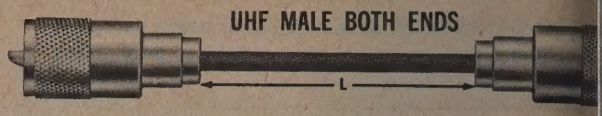
CABLE: Two Cond. Twisted pair, Shielded Mic. or Shielded Coax, RG58C/U.

CONN.: 2ND END { Double Banana Plug, on ¾″ centers.

TWO COND. TWISTED PAIR	SHIELDED MIC. CABLE	SHIELDED COAX. CABLE	LENGTH	NET
2BA-MG-18	2BB-MG-18	2BC-MG-18	18″	5.95
2BA-MG-24	2BB-MG-24	2BC-MG-24	24″	5.95
2BA-MG-30	2BB-MG-30	2BC-MG-30	30″	5.95
2BA-MG-36	2BB-MG-36	2BC-MG-36	36″	5.95
2BA-MG-48	2BB-MG-48	2BC-MG-48	48″	5.95
2BA-MG-60	2BB-MG-60	2BC-MG-60	60″	5.95

★ QUANTITY DISC. CODE **B**

UHF MALE BOTH ENDS



CONN.: 1ST END { PL259, UHF, Male

CABLE: Shielded coax., RG58C/U

CONN.: 2ND END { PL2 UH

SHIELDED COAX. CABLE	LENGTH
UHF-C-18	18″
UHF-C-24	24″
UHF-C-30	30″
UHF-C-36	36″
UHF-C-48	48″
UHF-C-60	60″

★ QUANTITY DISC. CODE **B**

ALLIGATOR CLIPS TO UHF MALE

CONN.: 1ST END { Alligator Clips, Steel, cad plated Insulators, Vinyl: Black/Red.

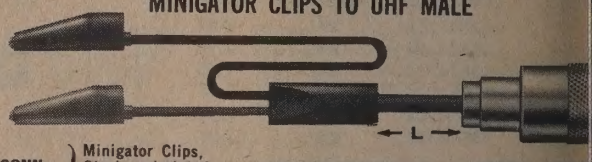
CABLE: Shielded coax., RG58C/U

CONN.: 2ND END { PL2 UHF

SHIELDED COAX. CABLE	LENGTH
AL-C-UHF-18	18″
AL-C-UHF-24	24″
AL-C-UHF-30	30″
AL-C-UHF-36	36″
AL-C-UHF-48	48″
AL-C-UHF-60	60″

★ QUANTITY DISC. CODE **B**

MINIGATOR CLIPS TO UHF MALE



CONN.: 1ST END { Minigator Clips, Steel, cad plated Insulators, Vinyl: Black/Red.

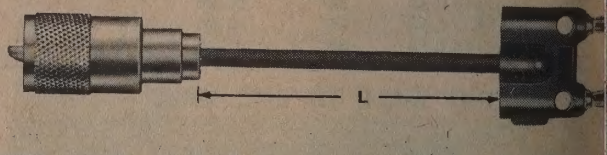
CABLE: Shielded Coax., RG58C/U

CONN.: 2ND END { PL25 UHF,

SHIELDED COAX. CABLE	LENGTH	N
MG-C-UHF-18	18″	5
MG-C-UHF-24	24″	5
MG-C-UHF-30	30″	5
MG-C-UHF-36	36″	5
MG-C-UHF-48	48″	5
MG-C-UHF-60	60″	5

★ QUANTITY DISC. CODE **B**

UHF MALE TO DOUBLE BANANA PLUG*



CONN.: 1ST END { PL259 UHF, Male

CABLE: Shielded Coax., RG58C/U

CONN.: 2ND END { Double Banana on ¾″ centers.

SHIELDED COAX. CABLE	LENGTH	N
2BC-UHF-18	18″	5
2BC-UHF-24	24″	5
2BC-UHF-30	30″	5
2BC-UHF-36	36″	5
2BC-UHF-48	48″	5
2BC-UHF-60	60″	5

★ QUANTITY DISC. CODE **B**

*NOTE: Molded double plug matches color of cable. Two cond. Twisted pair, GRAY. Shielded mic. cable, GRAY. Coaxial RG58C/U cable, BLACK.

1. Other CABLE COLORS available to order on the Two Cond. Twisted Pair and Shielded Mic. cable models, with plug to match. COLORS: Black, Brown, Red, Orange, Yellow, G Blue, Violet, Gray, White.
2. Other lengths and cable types available to o

★ Various lengths may be aggregated for best quantity price.

Net

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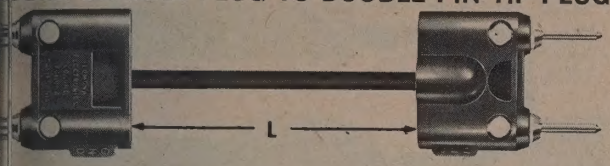
POMONA ELECTRONICS

PATCH CORDS CONNECTING LEADS

UBLE BANANA PLUG TO DOUBLE PIN TIP PLUG

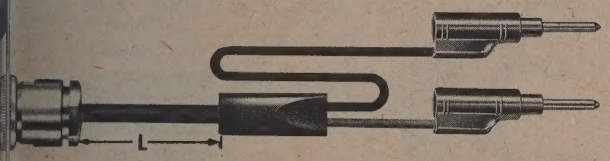


CONN: 1st END: Double Banana Plug, on ¾" Centers | CABLE: Shielded Coax., RG58C/U | CONN: 2nd END: Double Pin Tip Plug, .080 Dia. on ¾" Centers

DESCRIPTION:	MODEL	LENGTH
d coax., RG58C/U, Polyeth- nsulation. Vinyl jacket, .195" lom. Cap. 28.5 pf/ft.	2288-C-18	18"
	2288-C-24	24"
	2288-C-36	36"
	2288-C-48	48"
	2288-C-60	60"

EL 2288 ★QUANTITY DISC. CODE B NET 4.95

BNC MALE TO STACK-UP PIN TIPS

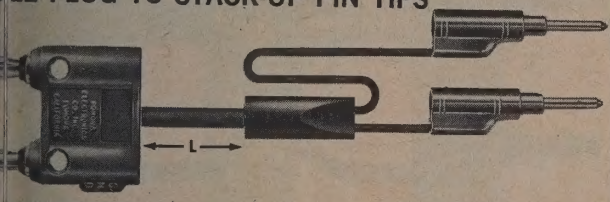


CONN: 1st END: UG88E/U Male BNC | CABLE: Shielded Coax., RG58C/U | CONN: 2nd END: Single Stack-Up Pin Tip Plugs, .080 Dia.; Color: 1 Black, 1 Red.

DESCRIPTION:	MODEL	LENGTH
d coax., RG58C/U, Polyeth- sulation. Vinyl jacket, .195" om. Cap. 28.5 pf/ft.	2882-C-18	18"
	2882-C-24	24"
	2882-C-36	36"
	2882-C-48	48"
	2882-C-60	60"

EL 2882 ★QUANTITY DISC. CODE B NET 7.50

LE PLUG TO STACK-UP PIN TIPS

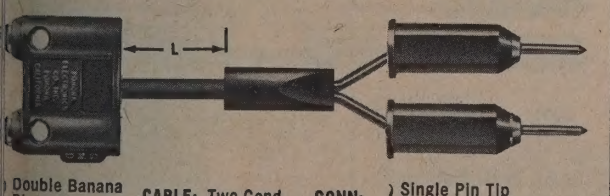


Double Banana Plug, on ¾" Centers. | CABLE: Shielded Coax., RG58C/U | CONN: 2nd END: Single Stack-Up Pin Tip Plugs, .080 Dia. Color: 1 Black, 1 Red.

DESCRIPTION	MODEL	LENGTH	NET
coax., RG58C/U, Polyethylene n. Vinyl jacket, .195" O.D., Nom. pf/ft.	2BC-PP-18	18"	7.50
	2BC-PP-24	24"	7.50
	2BC-PP-36	36"	7.50
able and Double Plug, Black.	2BC-PP-48	48"	7.50
	2BC-PP-60	60"	7.50

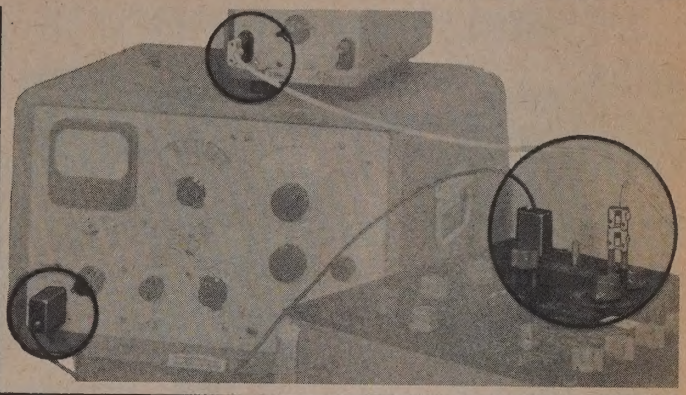
★QUANTITY DISC. CODE B

DOUBLE PLUG TO SINGLE PIN TIPS

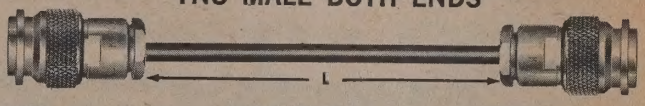


Double Banana Plug, on ¾" Centers. | CABLE: Two Cond. Twisted Pair | CONN: 2nd END: Single Pin Tip Plugs, .080 Dia. Color: 1 Black, 1 Red

DESCRIPTION	MODEL	LENGTH	NET
. Twisted pair. 18 AWG, Strand. C. Vinyl insulation, vinyl jacket, . Nom. Cap. 30 pf/ft.	2184-A-24	24"	5.95
	2184-A-36	36"	5.95
	2184-A-48	48"	5.95
	2184-A-60	60"	5.95
able and Double plug, Gray.	★QUANTITY DISC. CODE		B



TNC MALE BOTH ENDS

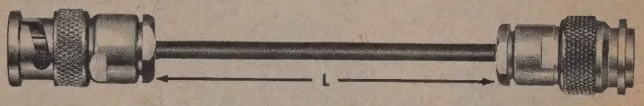


CONN: 1st END: Male TNC | CABLE: Shielded coax., RG58C/U | CONN: 2nd END: Male TNC

CABLE DESCRIPTION	MODEL	LENGTH	NET
Shielded coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.	1944-C-12	12"	7.95
	1944-C-24	24"	7.95
	1944-C-36	36"	7.95
	1944-C-48	48"	7.95
	1944-C-60	60"	7.95

★QUANTITY DISC. CODE B

BNC MALE TO TNC MALE

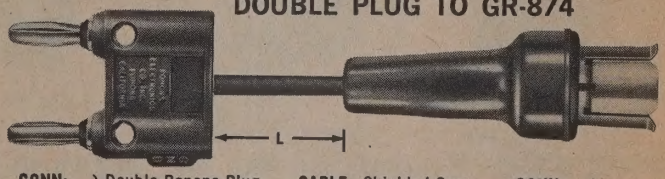


CONN: 1st END: UG88E/U Male BNC | CABLE: Shielded coax., RG58C/U | CONN: 2nd END: Male TNC

CABLE DESCRIPTION:	MODEL	LENGTH	NET
Shielded Coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.	1948-C-12	12"	6.95
	1948-C-24	24"	6.95
	1948-C-36	36"	6.95
	1948-C-48	48"	6.95
	1948-C-60	60"	6.95

★QUANTITY DISC. CODE B

DOUBLE PLUG TO GR-874



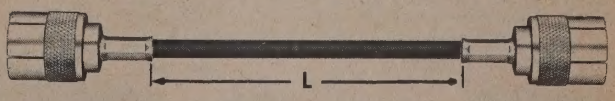
CONN: 1st END: Double Banana Plug, on ¾" Centers. | CABLE: Shielded Coax., RG58C/U | CONN: 2nd END: GR-874

CABLE DESCRIPTION	MODEL	LENGTH	NET
Shielded coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.	2243-C-24	24"	9.50
	2243-C-36	36"	9.50
	2243-C-48	48"	9.50

COLOR: Cable and double plug, Black. ★QUANTITY DISC. CODE B

PUSH ON UHF MALE BOTH ENDS

NEW



CONN: 1st END: Crimp Push on UHF, Male. | CABLE: Shielded Coax., RG58C/U | CONN: 2nd END: Crimp Push on UHF, Male.

A test cable for rapid interconnection of equipment. Connector is pushed on and requires no screwing on of shell. Continuity of shield is maintained. Excellent for those hard to get at places.

MODEL	LENGTH
3137-C-12	12"
3137-C-24	24"
3137-C-36	36"
3137-C-48	48"
3137-C-60	60"

MODEL 3137 ★QUANTITY DISC. CODE B NET 5.95

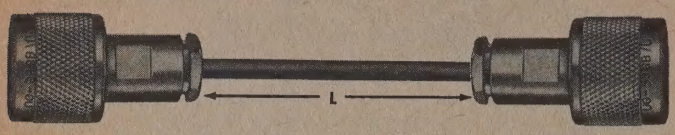
: lengths may be aggregated for best quantity price.

OTHER LENGTHS AVAILABLE TO ORDER

POMONA ELECTRONICS

PATCH CORDS CONNECTING LEADS

SERIES "N" MALE BOTH ENDS



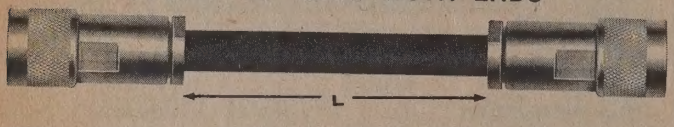
CONN: 1st END: UG536B/U "N" Male — **CABLE:** Shielded Coax., RG58C/U. — **CONN:** 2nd END: UG536B/U "N" Male

CABLE DESCRIPTION: Sheilded coax., RG58C/U, Polyethylene insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.

MODEL	LENGTH
2256-C-24	24"
2256-C-36	36"
2256-C-48	48"
2256-C-60	60"

MODEL 2256 ★ QUANTITY DISC. CODE **B** **NET 7.95**

SERIES "N" MALE BOTH ENDS



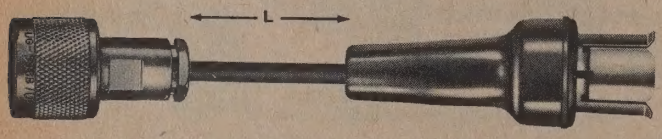
CONN: 1st END: UG21E/U "N" Male — **CABLE:** Coax., RG213/U or RG214/U — **CONN:** 2nd END: UG21E/U "N" Male

CABLE TYPES

RG213/U	NET	LENGTH	RG214/U	NET
1658-S-18	10.85	18"	1658-T-18	12.85
1658-S-24	10.85	24"	1658-T-24	12.85
1658-S-36	10.85	36"	1658-T-36	12.85
1658-S-48	11.35	48"	1658-T-48	13.60
1658-S-60	11.85	60"	1658-T-60	14.35

MODEL 1658 ★ QUANTITY DISC. CODE **B**

SERIES "N" MALE TO GR-874



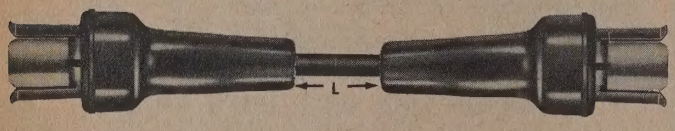
CONN: 1st END: UG536B/U "N" Male — **CABLE:** Shielded Coax., RG58C/U — **CONN:** 2nd END: GR-874

CABLE DESCRIPTION: Shielded coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.

MODEL	LENGTH
2438-C-24	24"
2438-C-36	36"
2438-C-48	48"
2438-C-60	60"

MODEL 2438 ★ QUANTITY DISC. CODE **B** **NET 10.95**

GR-874 TO GR-874



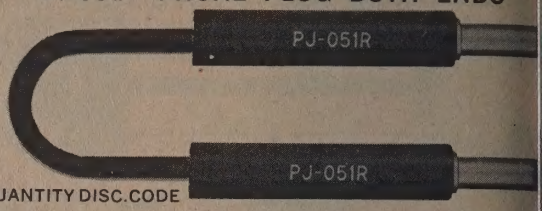
CONN: 1st END: GR-874 — **CABLE:** Shielded coax., RG58C/U — **CONN:** 2nd END: GR-874

CABLE DESCRIPTION: Shielded coax., RG58C/U, Polyethylene Insulation. Vinyl jacket, .195" O.D., Nom. Cap. 28.5 pf/ft.

MODEL	LENGTH
2316-C-24	24"
2316-C-36	36"
2316-C-48	48"
2316-C-60	60"

MODEL 2316 ★ QUANTITY DISC. CODE **B** **NET 16.95**

PJ-051* PHONE PLUG BOTH ENDS



★ **B** QUANTITY DISC. CODE

CONN.: 1ST END: PJ-051* — **CABLE: TWO COND. TWISTED PAIR** — **CONN.:** 2ND END: PJ-

*PJ-051 Interchangeable with WE310.

Patch Cord is wired tip to tip, and ring to ring. No sleeve connec

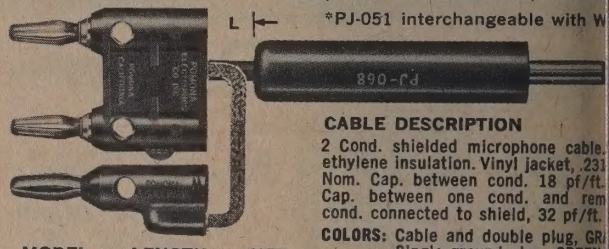
CABLE DESCRIPTION: Two Cond. Twisted pair, 18 AWG, Strand. 65 x 36 T.C. Vinyl Insulation, Vinyl jacket .250" O.D., Nom. Cap. 30 pf/ft. **COLOR:** Cable, Gray. Phone Plug Handle, Red.

MODEL	LENGTH
2524-A-18	18"
2524-A-24	24"
2524-A-36	36"
2524-A-48	48"
2524-A-60	60"

DOUBLE PLUG BALANCED LINE TO PJ-068 OR PJ-051

CONN: 1st END: Double and Single Banana Plug — **CABLE:** 2 Cond. Shielded Microphone — **CONN:** 2nd END: PJ-068 o Phone Pl

*PJ-051 interchangeable with W



CABLE DESCRIPTION

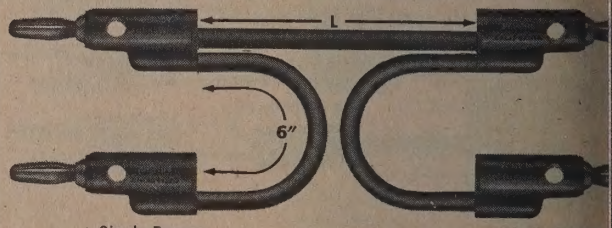
2 Cond. shielded microphone cable. ethylene insulation. Vinyl jacket, .23 Nom. Cap. between cond. 18 pf/ft. Cap. between one cond. and rem cond. connected to shield, 32 pf/ft.

COLORS: Cable and double plug, GR Single ground plug, GREEN.

MODEL	LENGTH	NET
2174-36	36"	9.85 (PJ-068)
2977-J-36	36"	9.85 (PJ-051)

★ QUANTITY DISC. CODE

SINGLE BANANA PLUGS BOTH ENDS



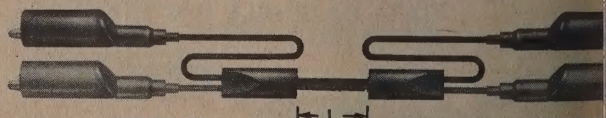
CONN: 1st END: Single Banana Plugs Colors: Inner Conductor plug, Red. Ground Plug, Black. — **CABLE:** Shielded Coax., RG122/U — **CONN:** 2nd END: Single Banana Colors: Inner Conductor Plug Red. Ground Plug, Black.

CABLE DESCRIPTION: Shielded coax., RG122/U polyethylene insulation. Vinyl jacket, .160" O.D., Nom. Cap. 29.5 pf/ft.

MODEL	LENGTH
2239-R-24	24"
2239-R-36	36"
2239-R-48	48"
2239-R-60	60"

MODEL 2239 ★ QUANTITY DISC. CODE **B** **NET**

ALLIGATOR CLIPS BOTH ENDS



CONN: 1st END: Alligator Clips, Steel, cad plated Insulators, Vinyl: Black/Red. — **CABLE:** Shielded Coax., RG58C/U — **CONN:** 2nd END: Alligator Cl Steel, cad p Insulators, Black/Red.

CABLE DESCRIPTION: Shielded coax., RG58C/U, Polyethylene Insulation Vinyl jacket, .195" O.D. Nom. Cap. 28.5 pf/ft.

MODEL	LENGTH
1152-C-12	12"
1152-C-24	24"
1152-C-36	36"
1152-C-48	48"
1152-C-60	60"

MODEL 1152 ★ QUANTITY DISC. CODE **B** **NET**

*NOTE: Molded double plug matches color of cable. Two cond. Twisted pair, GRAY. Shielded mic. cable, GRAY. Coaxial RG58C/U cable, BLACK.

1. Other CABLE COLORS available to order on the Two Cond. Twisted Pair and Shielded Mic. cable models, with plug to match.

COLORS: Black, Brown, Red, Orange, Yellow, G Blue, Violet, Gray, White.

2. Other lengths and cable types available to

★Various lengths may be aggregated for best quantity price.

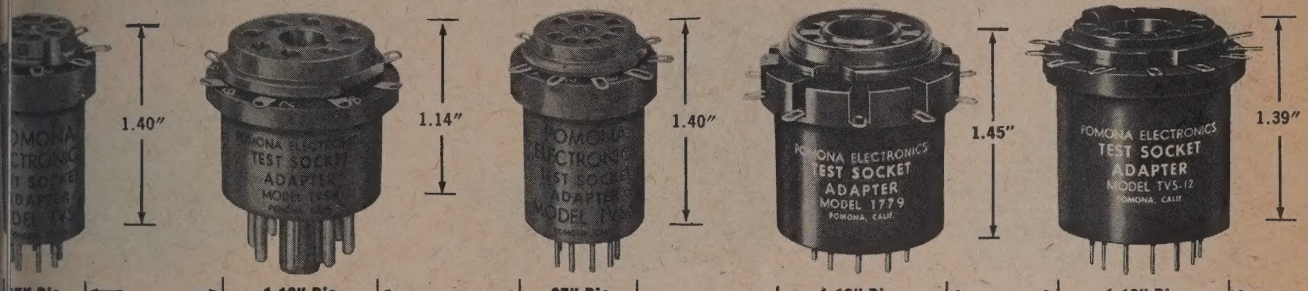
Net

© United Technical Publicat

POMONA ELECTRONICS

TEST SOCKET TUBE ADAPTERS
TEST SOCKET ADAPTER HOLDER

Test Socket Tube Adapters are ideal for making measurements of resistance, audio and video without tracing complicated circuits e bottom of the chassis. They feature: Extended test tabs for easy h either alligator clips or test prods; Low loss MICA-FILLED molded c construction per MIL-M-14, MFE. Power factor less than 0.010 at 10 Mc; high insulation resistance, the I.R. exceeds 500,000 megohms at 40% R.H., at 24°C; Distributed capacity, inter-element approximately 1 micro-micro farad; high voltage operation, voltage breakdown elements exceeds 1700 volts AC or DC Model TVS-12 and 1779 molded of electrical grade Black phenolic.



EL TVS-7
IN MIN.
T 1.85

MODEL TVS-8
8 PIN OCTAL
NET 1.95

MODEL TVS-9
9 PIN MIN.
NET 1.95

MODEL 1779
9 PIN NOVAR
NET 2.25

MODEL TVS-12
12 PIN COMPACTRON
NET 2.55

TVS-789 KIT SET OF THREE 5.75
(TVS-7, TVS-8, TVS-9)

QUANTITY DISC. CODE **C**

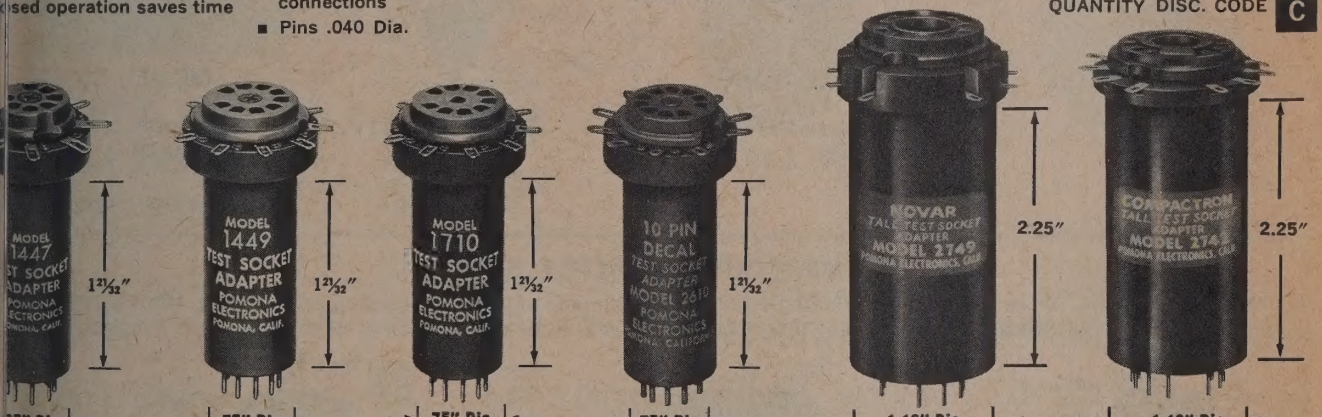
TALL TEST SOCKET TUBE ADAPTERS

OCKETS HAVING CAPTIVE OR TELESCOPING TUBE SHIELDS

- height — clears shields
- sed operation saves time
- Ready access to socket connections
- Pins .040 Dia.

These adapters rise above the shield and place testing in the open. Shields or tuner covers do not have to be removed. All construction is the highest quality. Interelement distributed capacity is approximately 1.5 micro-micro farad. Voltage breakdown elements exceed 1800 V. AC or DC.

QUANTITY DISC. CODE **C**



EL 1447
PIN MIN.
T 1.95

MODEL 1449
9 PIN MIN.
NET 2.15

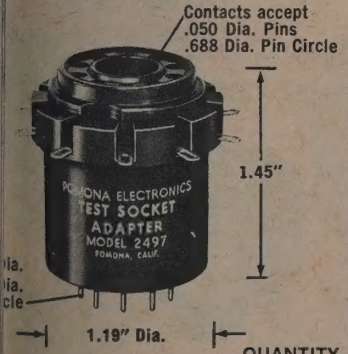
MODEL 1710
10 PIN MIN.
NET 2.25

MODEL 2610
10 PIN DECAL
NET 2.55

MODEL 2749
9 PIN NOVAR
NET 3.25

MODEL 2742
12 PIN COMPACTRON
NET 3.55

MAGNOVAL TEST ADAPTER

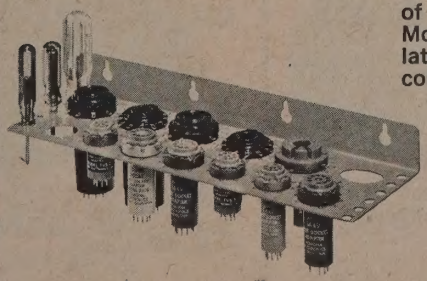


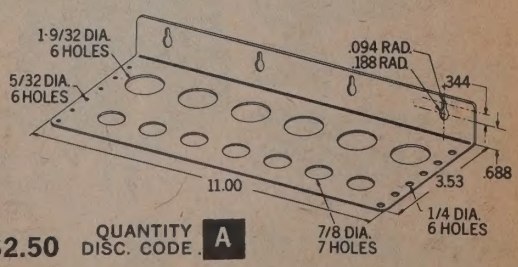
MODEL 2497
9 PIN MAGNOVAL
NET 2.75

QUANTITY DISC. CODE **C**

TEST SOCKET ADAPTER HOLDER

The holder accepts up to seven socket adapters of 7/8" in diameter or less, and six adapters of 1 3/32" in diameter or less. Holes at both ends of the rack accommodate 12 service tools. Mounting holes are provided for easy installation on any vertical surface. Fabricated from cold rolled steel with baked enamel finish.





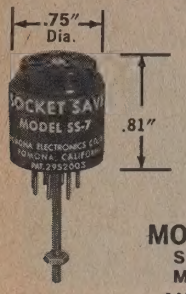
MODEL 2898 Color: Green **NET $2.50**

QUANTITY DISC. CODE **A**

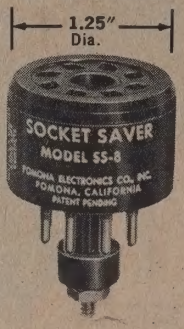
POMONA ELECTRONICS

SOCKET SAVERS CRT CONVERSION ADAPTERS

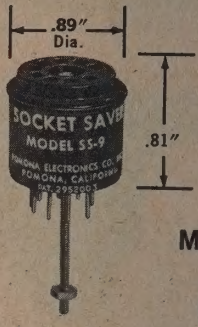
The Socket Saver® is designed to be installed on tube checkers and other electronic equipment to prevent wear and tear of sockets on original equipment. They are easy to install and remove. This eliminates the necessity of replacing and rewiring sockets on original equipment. Built of materials. BERYLLIUM COPPER LONG LIFE CONTACTS to give ma service.



MODEL SS-7
SEVEN PIN
MINIATURE
NET 1.75



MODEL SS-8
EIGHT PIN
OCTAL
NET 1.95

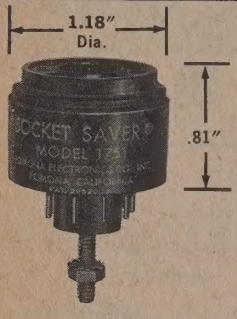


MODEL SS-9
NINE PIN
MINIATURE
NET 1.75

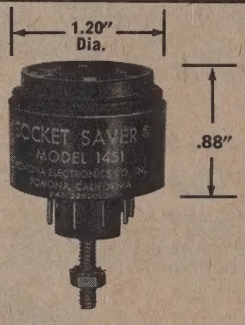
U.S. PAT. NO. 2952003

MODEL SS-789 KIT SET OF THREE 5.45
(SS-7, SS-8, SS-9)

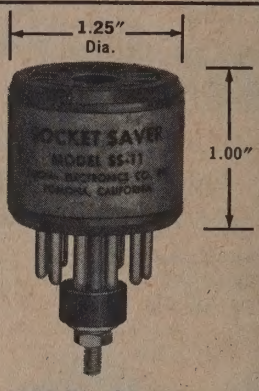
QUANTITY DISC. CODE



MODEL 1751
9 PIN
NOVAR
NET 2.25



MODEL 1451
9 PIN
MAGNOVAL
NET 2.25



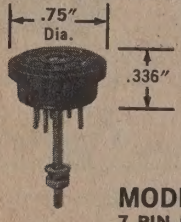
MODEL SS-11
11 PIN
OCTAL STYLE
NET 2.50

MODEL SS-12
12 PIN
COMPACTRON
NET 2.25

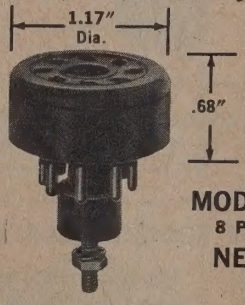
QUANTITY DISC. CODE

MINIATURIZED SOCKET SAVERS®

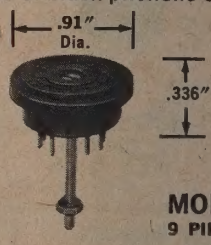
For use in applications where vertical height is restricted. Contacts made of beryllium copper, heat treated. Models 1847 and 1 closed entry receptacles, contact and pin one piece formed beryllium copper, molded of black phenolic electrical grade.



MODEL 1847
7 PIN MINIATURE
NET 1.95



MODEL 1848
8 PIN OCTAL
NET 1.95

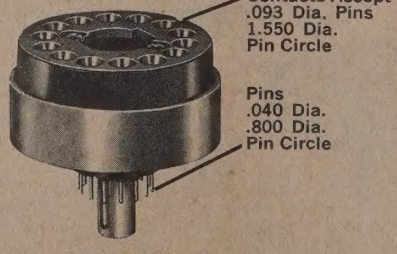


MODEL 1849
9 PIN MINIATURE
NET 1.95

QUANTITY DISC. CODE

COLOR-TUBE SOCKET CONVERSION ADAPTER

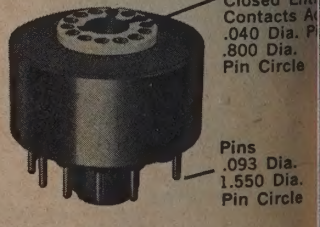
Converts Color 70° 21AXP22A CRT base to 90° 25AP22A CRT base.
Socket End: Neo-Diheptal Socket, 14AL/AU Basing.
Plug End: Miniature Diheptal Plug, 14BE Basing.



MODEL 3020 QUANTITY DISC. CODE **D** **NET 5.95**

COLOR — TUBE SOCKET CONVERSION ADAPTE

Converts color 90° 25AP22A CRT base to 70° color 21-AXP22A CRT base. Provision for accepting bases equipped with spark gaps.
Socket End: Miniature Diheptal Socket, 14BE Basing.
Plug End: Neo-Diheptal Base, 14AL/AU Basing.



MODEL 2276 QUANTITY DISC. CODE **D** **NET 5.9**

Net

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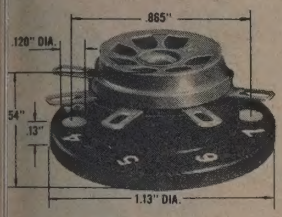
POMONA ELECTRONICS

CRT TEST ADAPTERS BREADBOARD SOCKETS

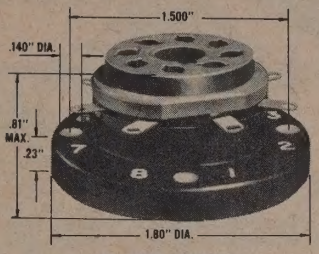
SURFACE MOUNTED BREADBOARD SOCKETS

OR EXPERIMENTAL CIRCUIT DESIGN, portable and enclosed units, and packaged assemblies. They feature: An insulated base to pre- nnections from shorting to chassis; Eliminates double chassis Circuits may be wired in an enclosed unit; The base connections nbered for easy identification; Grade-A phosphor bronze spring contacts; Standard center to center mounting holes; For ease of installation the 7 and 9 Pin Miniatures may be mounted either in the center or on the sides, the 8 Pin Octal is mounted on the sides; Small mounting holes permits the re-use of experimental chassis.

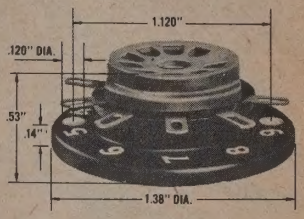
QUANTITY DISC. CODE **C**



7 PIN MINIATURE
MODEL XS-7 NET .65

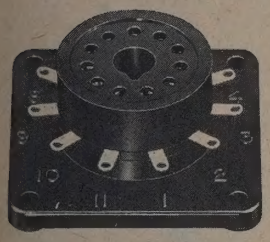


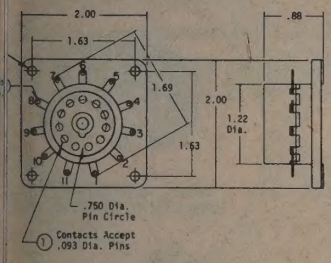
8 PIN OCTAL
MODEL XS-8 NET .85



9 PIN MINIATURE
MODEL XS-9 NET .75

11 CONTACT RELAY SOCKET





Ideal for use in Industrial Control equipment requiring a rugged compact 11 contact configuration.

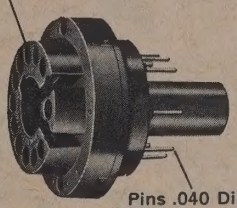
FEATURES:

- Simplified above chassis mounting.
- Socket and Base molded of diallyl phthalate.
- Socket connections numbered for easy identification.
- Socket may be gang mounted.
- Heat treated Beryllium copper contacts.
- 600 VRMS at 10 amps.

EL 2811 QUANTITY DISC. CODE **A** **NET 2.75**

PIN SAVER- COLOR CRT

Closed Entry
Contacts Accept
.040 Dia. Pins
.800 Dia. Pin Circle



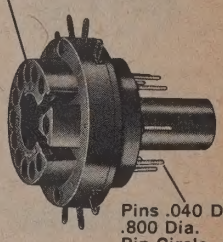
MINIATURE DIHEPTAL
For Color Television
Picture Tubes
Provision for spark gaps.

MODEL 2887

QUANTITY DISC. CODE **D** **NET 4.95**

COLOR—TEST ADAPTER MINIATURE DIHEPTAL

Closed Entry
Contacts Accept
.040 Dia. Pins
.800 Dia. Pin Circle



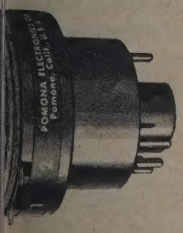
MINIATURE DIHEPTAL
For Color Television
Picture Tubes
Provision for spark gaps.

IMPROVED MODEL 2380

QUANTITY DISC. CODE **D** **NET 4.95**

CATHODE RAY TUBE TEST ADAPTERS

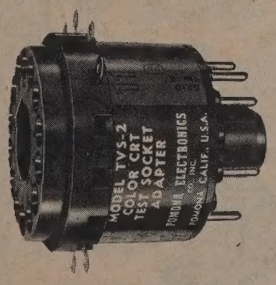
ONA Test Socket Adapters are ideal for making measurements of , resistance, and video from the base of the picture tube. The test adapter is inserted between the CR Tube base and its socket. This completes the circuit and makes all connections readily accessible. Measurements can be made without tracing circuit wiring to test points below the chassis, thereby saving valuable time and increasing efficiency in trouble shooting.



ODEL TVS-1

DUO DECAL
or Television
picture tubes

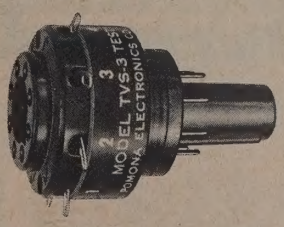
NET 2.55
ANTITY DISC. CODE **D**



MODEL TVS-2

NEO-DIHEPTAL
For color Television
picture tubes

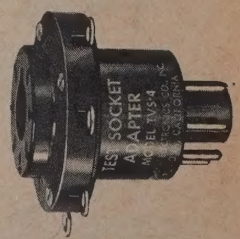
NET 7.45
QUANTITY DISC. CODE **D**



MODEL TVS-3

EIGHTAR (.040 PINS)
For 110° Television
picture tubes

NET 2.95
QUANTITY DISC. CODE **D**

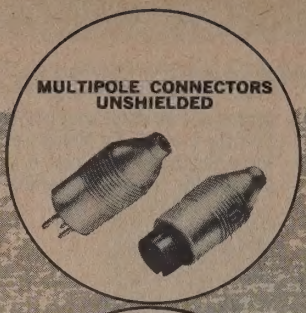


MODEL TVS-4

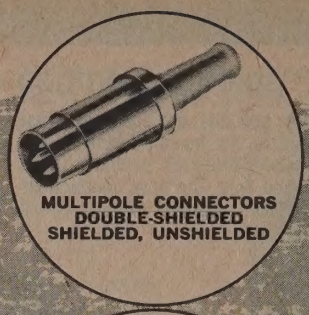
7 PIN (.093 PINS)
For 110° Television
picture tubes

NET 2.95
QUANTITY DISC. CODE **D**

MULTIPOLE PLUGS SOCKETS & CONNECTORS UP TO 36 POLES



MULTIPOLE CONNECTORS UNSHIELDED



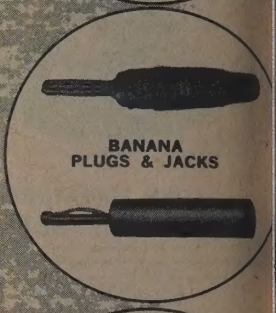
MULTIPOLE CONNECTORS DOUBLE-SHIELDED SHIELDED, UNSHIELDED

MINIATURE SOCKETS SHIELDED AND UNSHIELDED

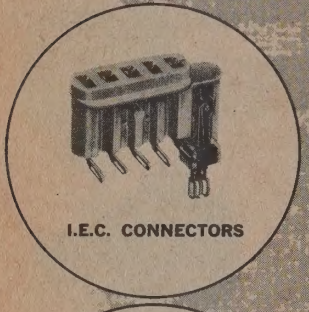
TEST PRODS THIRD HAND PROBES

PHONO PLUGS, SOCKETS AND ADAPTERS

BANANA PLUGS & JACKS
More than a hundred configurations. Bunch pin, transverse slot, leaf spring, rigid handles, unbreakable handles, quick-acting, with or without strain-relief. Available in over 20 colors.



BANANA PLUGS & JACKS



I.E.C. CONNECTORS

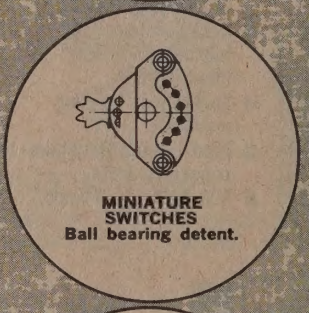
MULTI-WAY BINDING POSTS AND TERMINALS

ALLIGATOR CLIPS STAINLESS OR PLATED

ULTRA-MINIATURE AND MICRO-MESH ALLIGATOR CLIPS

ALLIGATOR CLIPS INSULATED, QUICK-ACTING

UNDER THE CHIN HEADSETS



MINIATURE SWITCHES
Ball bearing detent.

HIGH PERFORMANCE MINIATURE EARPHONES

THROAT AND HEARTBEAT MICROPHONES

rye INDUSTRIES

LANGUAGE LAB TRANSDUCERS

COMMUNICATION MICROPHONES

PROFESSIONAL MICROPHONES

Request:
☐ Plug, socket connector, test prod catalog. ☐ General catalog, including miniature switches. ☐ Professional and consumer microphones, headsets, transformers.

ACOUSTIC CONTROL BOX

Sound control boxes. Complete with volume control and driver units. With acoustical headset. As engineered and manufactured for a major American airline.

RYE INDUSTRIES INC. • Coroplast-Danavox-Hirschmann-Schneider

© United Technical Publicati

5-way® BINDING POSTS

5 WAYS TO CONNECT • GOLD-PLATED BRASS PARTS • RANGE OF COLORS

FLUTED NUT TYPES

Plastic parts of standard (not miniature) size types molded of Lexan polycarbonate resin; brass parts are gold-plated. Rated for 30 amperes, 1000 volts working. Nickel-plated brass types available on special order.

HEX NUT TYPES

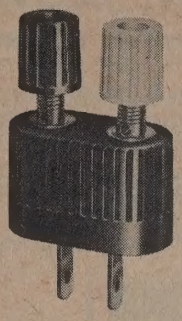
Rated for 30 amperes, 1000 volts working. Brass parts are gold-plated; plastic parts are of nylon compounded to meet military specifications MIL-M-20693A, Type IV. Nickel-plated brass types available on order.

GROUNDING TYPE

For making rapid connections to ground. Made of finely machined brass nickel-plated and polished. Panel grounding collar frozen to shaft has "D" type shoulder for locking in keyed panel hole.

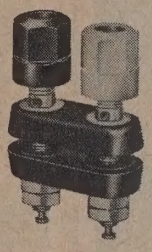
MINIATURE TYPES

Fluted nut design only. Rated for 15 amperes, 1000 volts working. Gold-plated brass parts; nylon plastic parts compounded to meet military specification MIL-P-20693A, Type IV. Types with nickel-plated brass available also.



DUAL ADAPTER TYPE

Designed to facilitate line voltage connections from output receptacles to binding posts. Has integral parallel-blade plug. Rating is 15 amperes, 125 volts. Body is black; captive black and white thumbnuts are mounted on ¾" centers. Brass parts are gold-plated. Ideal for safe, rigid connections to equipment lacking a parallel-blade plug and cord assembly.



DOUBLE ASSEMBLY TYPES

For instrument and equipment panels requiring binding posts mounted on ¾" centers. Rated for a current capacity of 30 amperes and a working voltage of 1000 volts. Brass parts are gold-plated; panel insulators in black only. Rugged, self-contained assembly makes mounting more accurate, faster and easier than two individual binding posts and gives maximum strength where connections are frequently made.

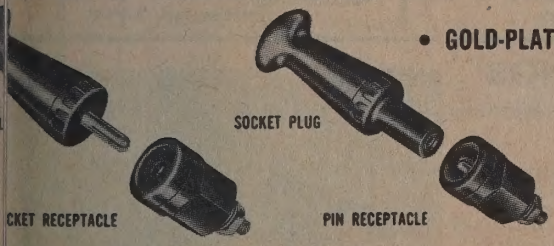
STYLE	TYPE
BINDING POSTS	
FLUTED NUT — STANDARD	DF31*
HEX NUT — STANDARD	DF30*
GROUNDING — ALL METAL	GP30NC
FLUTED NUT — MINIATURE	DF21*

STYLE	TYPE
DUAL ADAPTER TYPE	
BLACK & WHITE FLUTED NUTS	DAP15BWC
DOUBLE ASSEMBLY TYPES	
BLACK & WHITE HEX NUTS	DF30-2-BWTC
TWO BLACK HEX NUTS	DF30-2-BBC
BLACK & RED HEX NUTS	DF30-2-BRC

*Add desired color suffix to series designation number: BC (black), BLC (blue), RC (red), WTC (white), YC (yellow), GNC (green). For example: DF21BLC.

SUPERCON® ELECTRICAL CONNECTORS

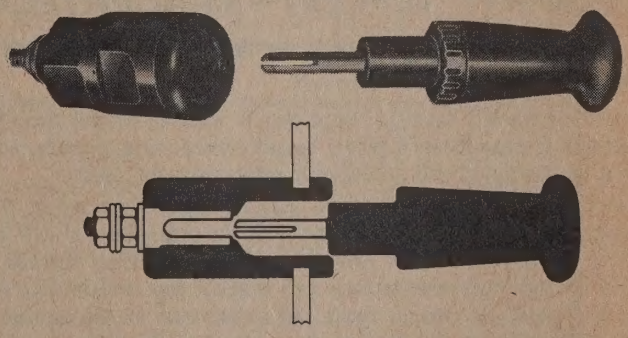
• GOLD-PLATED CURRENT CARRYING PARTS • SIMPLIFIED, QUICK ASSEMBLY



n plastic parts, gold-plated brass current-carrying parts. s accomodate either soldered or solderless connections wide range of cable sizes. Plug grips are of a simple, piece threaded construction for quick assembly. Recep- s have color-matched nylon caps and bodies. 25, 50 100 ampere types are rated 125-250 volts a-c or d-c cur- rupturing, 600 volts disconnect use only. 250 ampere s are rated 600 volts disconnect use only.

S	PIN PLUGS TYPE†	SOCKET RECEPTACLES TYPE†	SOCKET PLUGS TYPE†	PIN RECEPTACLES TYPE†
	PP25G	RS25G	PS25G	RP25G
	PP50G	RS50G	PS50G	RP50G
	PP100G	RS100G	PS100G	RP100G
	PP250G	RS250G	PS250G	RP250G

sired color suffix to series designation number: B (black), BL (blue), WT (white), Y (yellow), GN (green). For example: PS25GWT.



EXTRA-SAFE "L" TYPE

"L" types have all current-carrying parts insulated to remove any possibility of physical contact when making connections. Rated same as 50 ampere conventional types. When ordering, add available color suffix to type number: B (black), R (red), WT (white).

SOCKET RECEPTACLES	PIN PLUGS
LSR50G	LPP50G

THE SUPERIOR ELECTRIC COMPANY

SEE OTHER SUPERIOR ELECTRIC PRODUCT PAGES IN SECTIONS 3500, 4000, AND 5600

SEALECTRO PRESS-FIT® TEFLON* TERMINALS

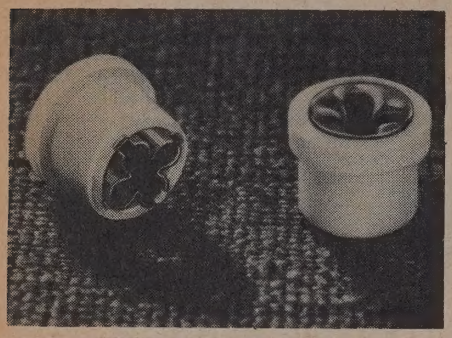
†Reg. Trademark, E. I. Du Pont de Nemours &

PRESS-FIT® TEFLON* CLOVERLEAF® RECEPTACLES

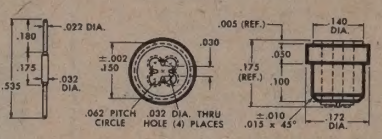
. . . providing the economies of dip-soldering with the inherent reliability of wired chassis construction

The "Press-Fit" Cloverleaf Receptacle provides economical yet uniformly perfect solder joints by means of dip soldering on a metal chassis. The unique Cloverleaf configuration permits insertion of four or more wire leads, plus an optional center post for mounting additional components after the dip-soldering operation. This design provides an encompassing hold on the leads, while providing for excellent capillary flow of solder. The Cloverleaf receptacle is a Sealectro "Press-Fit" design. Virgin Teflon insulation, precisely machined to "Press-Fit" into the chassis provi fast, positive and economical installation.

The reliability of dip solder joints made with the Cloverleaf recepta combined with the inherent dependability and repairability of m chassis construction makes it ideal for use in high density, com electronic instrumentation packaging, while the low cost of the term and its simple installation provides a new and outstanding assen technique for premium quality radio and television manufacturing.



*FT-E-12



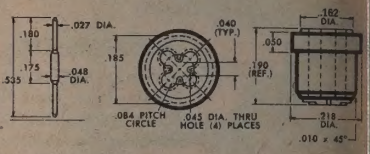
INSTALLATION DATA:

Break Installation Edge .136 $^{\pm.002}_{-.000}$ Dia. Hole with $^{+.010}$

60° C'Sink to a .160 Dia. in .040 or Thicker Chassis. Use 82° C'Sink Under .040 Chassis. Teflon Should Protrude a Min. of .040 Beneath Chassis.

Insertion Tool: B-9-4

*FT-E-15



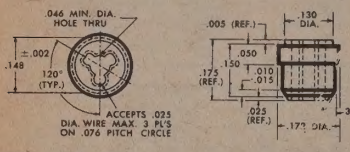
INSTALLATION DATA:

Break Installation Edge .172 $^{\pm.002}_{-.000}$ Dia. Hole wi $^{+.010}$

60° C'Sink to a .195 Dia. in .040 Thicker Chassis. Use 82° C'Sink Under .0 Chassis. Teflon Should Protrude a Min. of .0 Beneath Chassis.

Insertion Tool: B-9-5

*FT-E-16



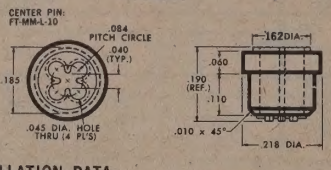
INSTALLATION DATA:

Break Installation Edge .136 $^{\pm.002}_{-.000}$ Dia. Hole with $^{+.010}$

60° C'Sink to a .160 Dia. in .040 or Thicker Chassis. Use 82° C'Sink Under .040 Chassis. Teflon Should Protrude a Min. of .040 Beneath Chassis.

Insertion Tool: T-8800020 and B-8X-1

*FT-E-17



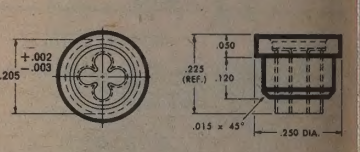
INSTALLATION DATA:

Break Installation Edge .172 $^{\pm.002}_{-.000}$ Dia. Hole with $^{+.010}$

60° C'Sink to a .195 Dia. in .040 or Thicker Chassis. Use 82° C'Sink Under .040 Chassis. Teflon Should Protrude a Min. of .040 Beneath Chassis.

Insertion Tool: B-18-X3

*FT-E-19



INSTALLATION DATA:

Break Installation Edge .197 $^{\pm.002}_{-.000}$ Dia. Hole wi $^{+.010}$

60° C'Sink to a .230 Dia. in .040 Thicker Chassis. Use 82° C'Sink Under .0 Chassis. Teflon Should Protrude a Min. of .0 Beneath Chassis.

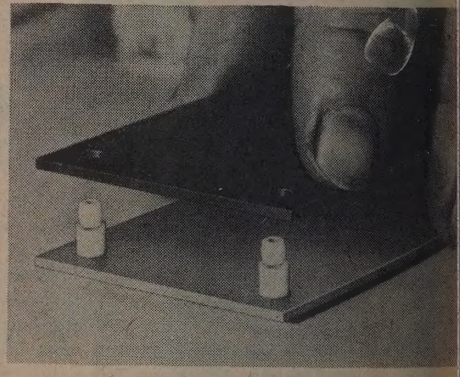
Insertion Tool: B-22-X1

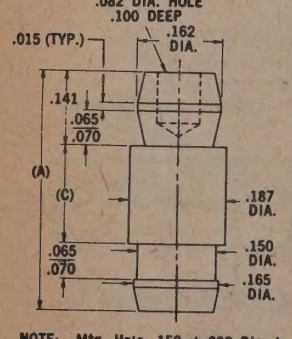
PRESS-FIT® TEFLON** SPACER/BUSHINGS

The Newest and Best Way to Mount P.C. Boards to Metal Panels and Chassis

Mount and insulate P.C. boards on metal chassis or panels without nuts, bolts, or lock washers. The new Press-Fit Teflon* Spacer/Bushings save assembly time while providing an economical and mechanically secure mounting device.

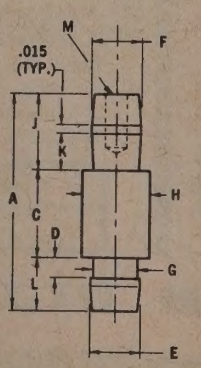
Machined from pure Teflon*, these new units are designed for various thickness P.C. boards and chassis or panels. Insertion in the chassis is a simple, one-step operation. The grommet end of each Spacer/Bushing is simply snapped in pre-drilled or punched metal chassis holes with entrance edge broken. Once inserted, they're in for good. P.C. boards require only mating holes for the opposite end of the Spacer/Bushing and may be snapped on and off of the mother board at will.





NOTE: Mtg. Hole .152 ±.002 Dia. in .062 ±.006 thick chassis.

*Part No.	A	C
227298	1.021	.750
227294	.958	.687
227290	.896	.625
227286	.833	.562
227282	.771	.500
227278	.708	.437
227274	.646	.375
227270	.583	.312
227266	.521	.250
227262	.458	.187
227258	.396	.125



*Part No.	A	C	D	E	F	G	H	J	K	L	M
228004	.782	.500	.045	.151	.151	.136	.187	.175	.098	.107	.082 Dia .130 de
228006	.674	.375	.093	.165	.162	.150	.187	.141	.065	.050	.082 Dia .100 de
228005	.657	.375	.045	.151	.151	.136	.187	.175	.098	.107	.082 Dia .100 de
228007	.544	.250	.055	.165	.162	.150	.187	.177	.098	.047	.082 Dia .100 de
228002	.490	.250	.030	.098	.100	.084	.125	.140	.068	.100	.041 Dia .100 de
228000	.400	.160	.036	.092	.092	.084	.125	.140	.068	.100	.041 Dia .100 de
228009	.400	.093	.065	.165	.162	.150	.187	.177	.098	.040	.082 Dia .100 de
228001	.392	.160	.028	.092	.092	.084	.125	.140	.068	.100	.082 Dia .100 de

* Available off-the-shelf from Authorized Local Sealectro Distributors (white only).

** Registered Trademark, E. I. DuPont deNemours &

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SEALECTRO PRESS-FIT® TEFLON* TERMINALS

*Reg. Trademark, E. I. Du Pont de Nemours & Co.

PRESS-FIT® Performance, whether measured in function, reliability, life or costs, cannot exceed the performance parameters of the components involved in the equipment. This basic fact was recognized by Sealectro in 1952 and led to the design, development, and introduction of the Teflon insulated "Press-Fit" terminal as a superior performance component, providing greater reliability, better electrical connections, and improved cost factors on the production line. These outstanding features have established Sealectro as the leading supplier of Teflon insulated terminals throughout the world.

The units described in this catalog are available for the off-the-shelf delivery from your local authorized Sealectro distributor to provide you with the fastest possible delivery and shortest lead time requirements. If additional information or terminal configurations other than those listed are required, Sealectro's distributor, field representative, and factory personnel are at your service.

'AND-OFFS Subminiature

(Standard Plating P-47: .0003 Solder over .0001 Copper)

Fig.	Part No.	Part Number Description	Tool No.	Cap. mmf	V, RMS Nom. Rating	60 CPS Flash-over Sea Level	A	B	B_1	B_2	C	D	E Dia.	E_1	F Dia.	$^{+.002}_{-.000}$ G Dia.
1	003-1009	ST-SM-16	B3-1	0.60	1000	3000	.350	.210			.040	.100	.040		.125	.093
1	003-1000	ST-SM-1	B-8	0.45	1000	3000	.350	.210			.040	.160	.040		.172	.148
1	013-1001	ST-SM-1C2	B-8	0.50	1000	3000	.410	.210			.040	.160	.040		.172	.148
3	003-2000	ST-MM-10-TUR	B3-2C	0.40	1000	3000	.310	.170	.020	.060	.040	.100	.030	.060	.125	.093
3	003-2003	ST-SM-16-TUR	B3-2B	0.60	1000	3000	.350	.210	.020	.100	.040	.100	.040	.080	.125	.093
3	013-2001	ST-SM-1-TUR	B-8	0.40	1000	3000	.350	.210	.020	.100	.040	.100	.040	.080	.172	.148
3	013-2003	ST-SM-1-TUR-C2	B-8	0.50	1000	3000	.375	.210	.020	.100	.040	.125	.040	.080	.172	.148
3	013-2004	ST-SM-1-TUR-C4	B-8	0.40	1000	3000	.360	.210	.020	.100	.040	.110	.040	.080	.172	.148
3	013-2007	ST-SM-19-TUR-C2	B-8	0.55	1000	3000	.500	.210	.020	.100	.040	.250	.040	.080	.172	.148
3	013-2011	ST-SM-22-TUR	B-8	0.50	1700	4500	.428	.210	.020	.100	.093	.125	.040	.080	.172	.148
3	013-2016	ST-SM-25-TUR	B8-A	0.50	1000	3000	.334	.154	.020	.046	.040	.140	.046	.093	.172	.148
3	013-2019	ST-SM-29-TUR	B8-A	0.50	1000	3000	.455	.250	.020	.093	.040	.165	.040	.093	.172	.148
3	013-2020	ST-SM-29-TUR-C2	B8-A	0.60	1000	3000	.540	.250	.020	.093	.040	.250	.040	.093	.172	.148
3	013-2009	ST-SM-21-TUR	B-18	0.40	1000	3000	.375	.210	.020	.100	.040	.125	.040	.080	.218	185
6	013-2028	ST-SM-47-TUR-C2	B-8	0.40	1000	3000	.350	.210	.020	.120	.040	.100	.040	.080	.172	.148
51	004-1007	RST-SM-16	B3-2X	0.40	1000	3000	.350	.210			.040	.100	.040		.125	.093
51	014-1000	RST-SM-1	B8-X-1	0.40	1200	3500	.350	.210			.040	.100	.040		.172	.148
51	014-1001	RST-SM-1B2	B8-G	0.40	1200	3500	.330	.210			.020	.100	.040		.172	.148
54	004-2000	RST-MM-10-TUR	B1-2	0.40	500	2000	.310	.170	.020	.060	.040	.100	.030	.060	.125	.093
54	014-2001	RST-SM-1-TUR	B8-X-1	0.40	1200	3500	.350	.210	.020	.100	.040	.100	.040	.080	.172	.148
54	014-2009	RST-SM-25-TUR-C4	B8-X-1	0.40	1500	4000	.295	.156	.020	.046	.040	.100	.046	.093	.172	.148
54	014-2015	RST-SM-38-TUR	B10	0.40	1500	4000	.405	.210	.020	.100	.040	.155	.040	.080	.188	.171
54	014-2007	RST-SM-21-TUR	B18	0.30	1700	4500	.375	.210	.020	.100	.040	.125	.040	.080	.218	.185
55	014-2011	RST-SM-31-TUR	B8-X-1	0.50	1700	4500	.455	.227	.020	.187	.040	.187	.040	.080	.172	.148

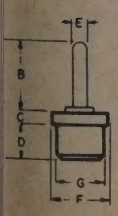

Fig. 1

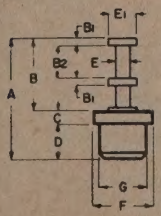

Fig. 3

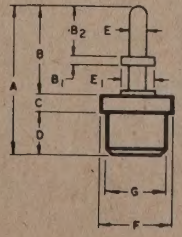

Fig. 6

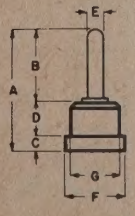

Fig. 51

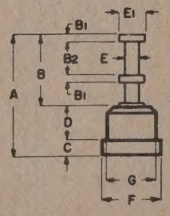

Fig. 54

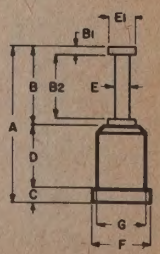

Fig. 55

SEALECTRO PRESS-FIT® TEFLON* TERMINAL

†Reg. Trademark, E. I. Du Pont de Nemours &

STAND-OFFS Miniature

(Standard Plating P-60: .0003 Silver over Copper Flash)

Fig.	Part No.	Part Number Description	Tool No.	Cap. mmf	V, RMS Nom. Rating	60 CPS Flash-over Sea Level	A	B	B_1	B_2	C	D	E Dia.	E_1	F Dia.	G Dia. +.002 −.000	J Dia.	K	K
101	013-2046	ST-250	B12	0.30	2500	6000	.431	.156	.020	.046	.125	.150	.046	.093	.187	.165			
101	013-2058	ST-1000	B13	0.20	2800	6700	.493	.156	.020	.046	.187	.150	.046	.093	.187	.165			
101	013-2060	ST-1000L2	B13	0.30	2800	6700	.584	.250	.020	.093	.187	.150	.040	.093	.187	.165			
101	013-2051	ST-250L4	B12-2	0.60	2000	5000	.556	.281	.031	.093	.125	.150	.062	.125	.187	.171			
105	013-3005	ST-250SL	B11	0.70	2000	5000	.478	.203			.125	.150	.148		.187	.171	.078		.15
105	013-2058	ST-1000SL	B11	0.70	2300	5600	.540	.203			.187	.150	.148		.187	.171	.078		.15
105	013-3013	ST-1500SL	B11	0.45	2700	6500	.603	.203			.250	.150	.148		.187	.171	.078		.15
105	013-3016	ST-2000SL	B11	0.30	4200	9500	.753	.203			.400	.150	.148		.187	.171	.078		.15
151	014-2020	RST-1	B18-1B	0.40	3000	7000	.487	.154	.020	.046	.046	.287	.046	.093	.218	.185			
151	014-2021	RST-1L2	B18-1B	0.20	3000	7000	.583	.250	.020	.093	.046	.287	.046	.093	.218	.185			
203	015-2002	DST-1000	B13	0.20	2500	6000	.819	.210	.020	.100	.187	.212	.040	.080	.187	.171			
203	025-2003	DST-1015	B20	0.20	2700	6500	.819	.210	.020	.100	.187	.212	.040	.080	.218	.187			

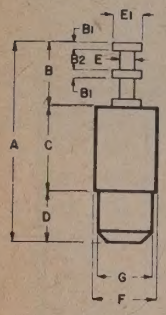

Fig. 101

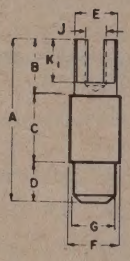

Fig. 105

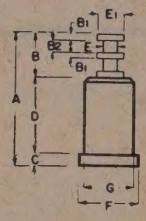

Fig. 151

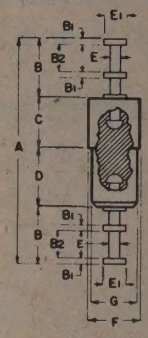

Fig. 203

FEED-THRUS Subminiature

(Standard Plating P-47: .0003 Solder over .0001 Copper)

Fig.	Part No.	Part Number Description	Tool No.	Cap. mmf	V, RMS Nom. Rating	60 CPS Flash-over Sea Level	A	B	B_1	B_2	C	D	E	E_1	F Dia.	G Dia. +.002 −.000	J Dia.	K	K_1
302	001-2013	FT-MM-5-TUR	B0	0.70	400	1800	.510	.100	.020	.060	.040	.100	.040	.060	.093	.075			
304	001-6021	FT-MM-7	B0-1	0.70	400	1800	.588	.125			.040	.100	.030	.060	.093	.075	.040		.080
351	001-1007	FT-SM-16	B3-1	0.75	500	2000	.515	.210			.040	.100	.040		.125	.093			
351	011-1001	FT-SM-022	B8-A	0.65	1000	3000	.630	.210			.040	.170	.040		.172	.148			
351	011-1004	FT-SM-1	B8-16	0.50	1000	3000	.515	.210			.040	.100	.040		.172	.148			
351	011-1008	FT-SM-1L2	B8-16	0.50	1000	3000	.443	.210			.040	.100	.040		.172	.148			
351	011-4021	FT-SM-14	B8-16	0.50	1000	3000	.375	.125			.040	.100	.040		.172	.148			
351	011-1038	FT-SM-19	B8-16	0.60	1000	3000	.535	.210			.040	.160	.040		.172	.148			
360	001-2004	FT-SM-16-TUR	B-3-2B	0.70	500	2000	.500	.210	.020	.100	.040	.100	.040	.080	.125	.093			
360	011-2004	FT-SM-1-TUR	B8	0.50	1000	3000	.500	.210	.020	.100	.040	.100	.040	.080	.172	.148			
360	011-2007	FT-SM-1-TUR-C4	B8	0.50	1000	3000	.500	.210	.020	.100	.040	.165	.040	.080	.172	.148			
360	011-2010	FT-SM-1-TUR-L2	B8	0.50	1000	3000	.438	.210	.020	.100	.040	.100	.040	.080	.172	.148			
361	011-2000	FT-SM-025-TUR	B8	0.65	1000	3000	.609	.210	.020	.100	.040	.165	.040	.080	.172	.148			
361	011-2013	FT-SM-2-TUR	B8	0.70	1000	3000	.531	.210	.020	.100	.040	.100	.040	.080	.172	.148			
361	011-2014	FT-SM-2-TUR-C2	B8	0.70	1000	3000	.531	.210	.020	.100	.040	.125	.040	.080	.172	.148			
361	011-2023	FT-SM-22-TUR	B9	0.65	1200	3500	.609	.210	.020	.100	.093	.125	.040	.080	.172	.148			
361	011-2024	FT-SM-22-TUR-C2	B9	0.65	1200	3500	.609	.210	.020	.100	.093	.125	.040	.080	.172	.148			
361	011-2022	FT-SM-21-TUR	B18	0.65	1200	3500	.531	.210	.020	.100	.040	.125	.040	.080	.218	.185			

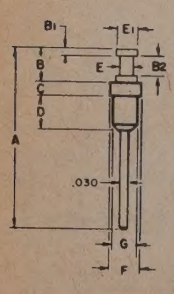

Fig. 302

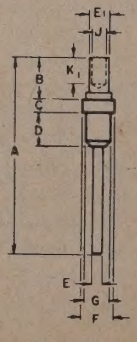

Fig. 304

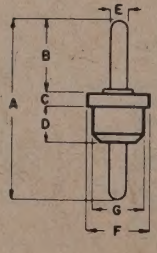

Fig. 351

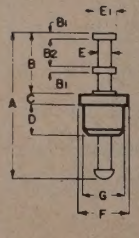

Fig. 360

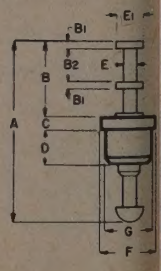

Fig. 361

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†Reg. Trademark, E. I. Du Pont de Nemours & Co.

D-THRUS Subminiature (Cont.)

(Standard Plating P-47: .0003 Solder over .0001 Copper)

ig.	Part No.	Part Number Description	Tool No.	Cap. mmf	V, RMS Nom. Rating	60 CPS Flash-over Sea Level	A	B	B_1	B_2	C	D	E	E_1	F Dia.	G Dia. $^{+.002}_{-.000}$	J
54	011-2025	FT-SM-32-TUR	B8	0.50	1000	3000	.350	.125	.020	.095	.040	.100	.040	.080	.172	.148	
01	001-6033	FT-SM-59	B3-1	0.40	500	2000	.225	.125			.040	.060	.040		.125	.093	
10	011-6033	FT-SM-74	B9-1	0.75	1000	3000	.351	.133	.020	.093	.093	.125	.082	.125	.172	.148	.062
11	011-6022	FT-SM-71	B8-A	0.50	1000	3000	.303	.133	.020	.093	.040	.100	.060	.090	.172	.148	.030
52	012-1000	RFT-SM-1	B8	0.50	1000	3000	.515	.210			.040	.100	.040		.172	.148	
54	012-2000	RFT-SM-1-TUR	B8	0.50	1000	3000	.500	.210	.020	.100	.040	.100	.040	.080	.172	.148	

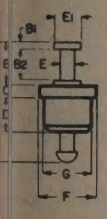


Fig. 364

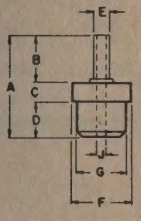


Fig. 501

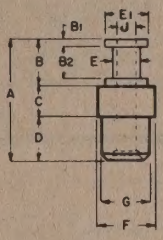


Fig. 510

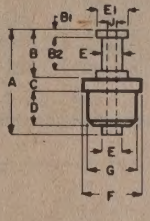


Fig. 511

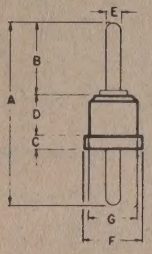


Fig. 452

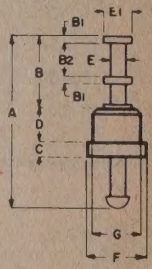
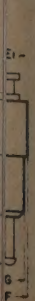


Fig. 454

D-THRUS Miniature

(Standard Plating P-60: .0003 Silver over Copper Flash)

Part No.	Part Number Description	Tool No.	Cap. mmf	V, RMS Nom. Rating	60 CPS Flash-over Sea Level	A	B	B_1	B_2	C	D	E	E_1	F Dia.	G Dia. $^{+.002}_{-.000}$	J	K	K_1
011-2062	FT-1000	B13	0.70	2200	5500	.740	.125	.031	.062	.187	.212	.050	.093	.187	.171			
011-2067	FT-1100	B12-3	0.70	2500	6000	.740	.125	.031	.062	.250	.150	.050	.093	.187	.171			
011-2072	FT-1500	B12-3	0.70	3000	7000	.865	.125	.031	.062	.250	.275	.050	.093	.187	.171			
011-2061	FT-995-DTUR	B9-3	0.85	1500	4000	.836	.250	.020	.093	.125	.230	.050	.093	.172	.148			
011-2064	FT-1000-DTUR	B13-3B	0.80	2000	5000	.836	.250	.020	.093	.187	.212	.050	.093	.187	.171			
011-2057	FT-950-DTUR	B12	1.00	1500	4000	.828	.281	.031	.093	.125	.200	.062	.125	.187	.171			
021-2010	FT-1550-DTUR	B24-A	1.25	3000	7000	1.187	.281	.031	.093	.250	.375	.062	.125	.250	.218			
011-3014	FT-1000SL	B11	0.80	2000	5000	.821	.203			.187	.212	.148		.187	.171	.078		
011-2072	FT-1500SL	B13-X-3	0.90	2500	6000	.947	.203			.250	.275	.148		.187	.171	.078		
011-3028	FT-900SL	B11	0.90	1000	3000	.593	.203			.150	.100	.148		.187	.171	.078		.156



607

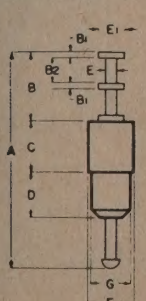


Fig. 608

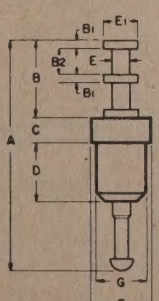


Fig. 609

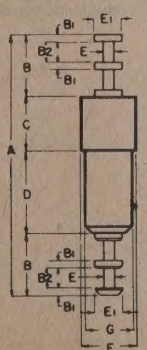


Fig. 610

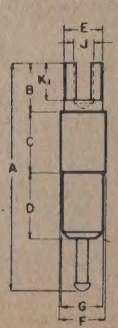


Fig. 615

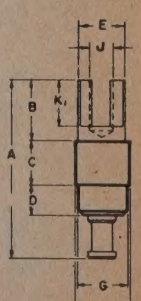


Fig. 616

SEALECTRO PRESS-FIT® TEFLON* TERMINAL

†Reg. Trademark, E. I. Du Pont de Nemours

TEST POINT JACKS

(Standard Plating P-20: .000005 Gold over .0003 Silver)

Fig.	Part No.	Part Number Desc.	Tool No.	Cap. mmf	V,RMS Nom. Rating	60 CPS Flash-over Sea Level	Ref. A	B	B_1	B_2	C	D	E Dia.	E_1 Dia.	F Dia.	G +.002 −.000	J Probe Dia.	J_1 Probe Lngth.	K	K_1
701	016-2008	SKT-14	S5	0.35	1000	3000	.345	.120	.023	.077	.046	.179	.040	.060	.172	.148	.040	.140		
701	016-2004	SKT-12	S7	0.70	1000	3000	.375	.060	.010	.040	.046	.269	.046	.078	.218	.170	.090	.250		
701	016-2025	SKT-2BC	S2	0.70	1000	3000	.437	.120	.037	.053	.046	.271	.054	.074	.218	.185	.090	.195		
701	016-2000	SKT-5BC	S2	0.60	1000	3000	.437	.120	.037	.053	.046	.271	.054	.074	.218	.185	.080	.195		
701	016-2003	SKT-10	S1	0.70	1200	3500	.640	.187	.037	.104	.050	.400	.054	.074	.218	.185	.080	.287		
701	016-2015	SKT-37C1	S12	0.55	1000	3000	.340	.120	.023	.077	.046	.174	.054	.074	.218	.185	.090	.140		
701	016-2016	SKT-41	S2	0.55	1200	3500	.467	.120	.035	.047	.046	.301	.054	.074	.218	.185	.080	.225		
701	026-2000	SKT-3BC	S2	0.60	1000	3000	.437	.120	.037	.053	.046	.271	.054	.074	.250	.204	.080	.195		
703	016-8000	SKT-1	S31	0.55	1200	3500	.687	.354			.046	.287	.115		.218	.185	.050	.250	.140	.042
713	016-6600	SKT-400	S17	0.50	1000	3000	.359	.140			.065	.154			.187	.148	.040	.125		
732	026-4005	SKT-103PC		0.50	1200	3500	.400	.140	.125			.378	.050	.080	.218	.187	.080	.250		
715	016-8010	SKT-0804	S38				.637	.412			.050	.175	.075		.218	.185	.080	.312	.116	.055

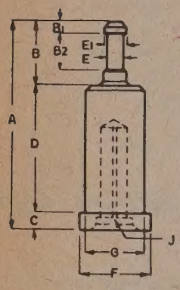


Fig. 701

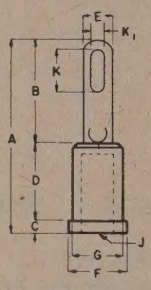


Fig. 703

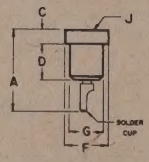


Fig. 713

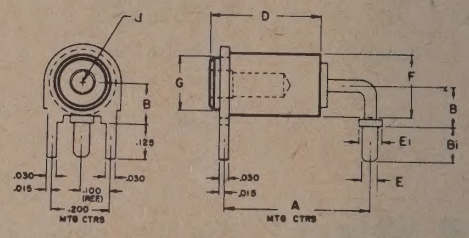


Fig. 732

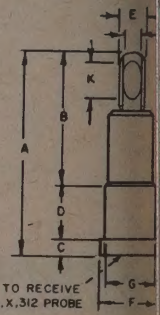


Fig. 715

PROBES

(Standard Plating P-20: .000005 Gold over .0003 Silver)

Fig.	Part No.	Part Number Desc.	Tool No.	Cap. mmf	V,RMS Nom. Rating	60 CPS Flash-over Sea Level	Ref. A	B	B_1	B_2	C	D	E Dia.	E_1 Dia.	F Dia.	G +.002 −.000	J Probe Dia.	J_1 Probe Lngth.	K	K_1
801	011-4034	FT-M-9	B18-1B	1.0	1000	3000	1.937	.250			.046	.165	.050		.172	.148				
804	011-4029	FT-M-7	B18-1B	0.80	1000	3000	.739	.281			.046	.287	.081		.218	.185				
804	011-4031	FT-M-8	B18-1B	0.90	1000	3000	.562	.250			.046	.141	.050		.218	.185				
808	011-4013	PR-800	B-23A	0.70	1200	3500	.559	.187			.065	.169	080		.250	.185				
809	021-4002	PR-300					.645	.270			.375		.080		.218		.062	.218		

*Plating P-90: .0003 Nickel over Copper Flash.

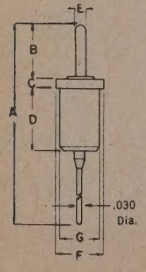


Fig. 801

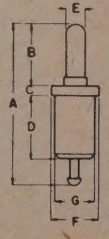


Fig. 804

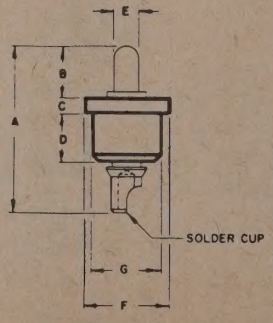


Fig. 808

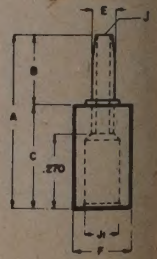


Fig. 809

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*Reg. Trademark, E. I. Du Pont de Nemours & Co.

EW! For chamfered or non-chamfered holes

Riv-Loc™

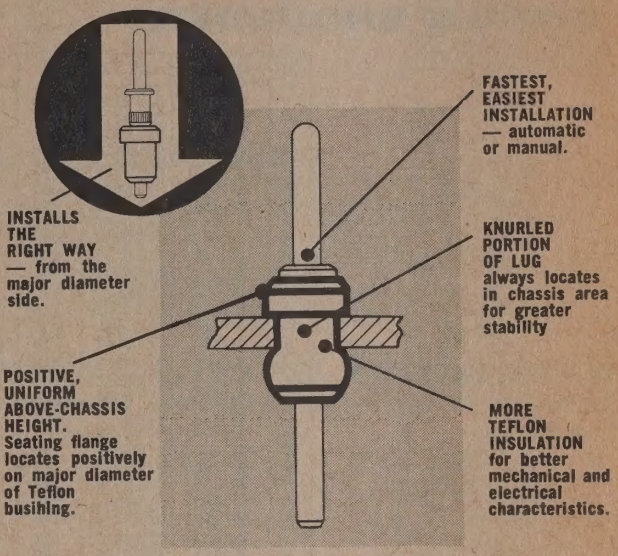
FLON* INSULATED TERMINALS

terminals overcome all the inherent shortcomings of the older sembled design which assembles by pushing the metal lug into the iameter of the Teflon bushing. Whereas the original semi-assembled depended upon the mass of the metal lug displacing the Teflon, -Loc employs a simple **Riveting** and **Locking** of the Teflon bushing g a better finished installation.

is installed in one simple, smooth operation with all insertion working together, instead of against each other as in the case of vious semi-assembled design. Thus, the final seating and locking terminal in the chassis is uniform, even with wide parameters of ttings.

in millions of installations, Riv-Loc not only offers far superior nical characteristics, it also has proved more dependable electrically. haller metal lug mass in proportion to the Teflon bushing provides ter dielectric strength. This extra protection of pure virgin Teflon es the dependability and performance of your equipment.

mbers listed here are currently considered standard. However, new rs are being added constantly. Virtually any terminal configuration uirement can be met with the Riv-Loc concept. Submit your re- ents to Sealectro.



ED-THRUS Riv-Loc

Part No.	Insertion Tool Number	A	B	C	D	E Dia.	F Dia.	±.002 G Dia.	±.015 R	Insertion Hole ±.002
007-6000	2R-36	.387	.140	.040	.125	.040	.130	.107	.045	.109
007-6010	2R-36	.434	.140	.040	.172	.040	.130	.107	.075	.109
007-6011	2R-38	.515	.210	.040	.125	.040	.125	.084	.045	.086
007-6050	2R-39	.656	.235	.040	.125	.030	.135	.113	.040	.117
007-6005	2R-40	.687	.265	.075	.160	.050	.172	.134	.045	.136
007-6006	2R-41	.887	.465	.075	.160	.050	.172	.134	.045	.136
007-6007	2R-41	.730	.465	.075	.160	.050	.172	.134	.045	.136
007-6016	2R-42	.570	.210	.040	.150	.040	.172	.134	.045	.136
007-6017	2R-42	.515	.210	.040	.180	.040	.172	.134	.075	.136
007-6012	2R-43	.500	.210	.040	.150	.040	.172	.134	.045	.136
007-6013	2R-43	.530	.210	.040	.180	.040	.172	.134	.075	.136
007-6014	2R-43	.458	.210	.040	.150	.040	.172	.134	.045	.136

g: Bright electro-tin a smooth finish featuring extraordinary soldering characteristics and shelf life is standard. Other finishes including all MIL-Spec numbers, are available upon special order.
, E. I. Dupont DeNemours & Co.

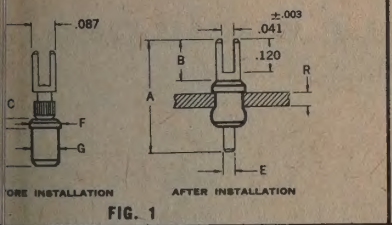


FIG. 1

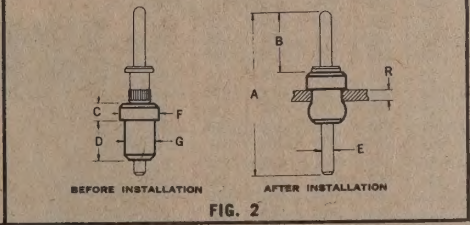


FIG. 2

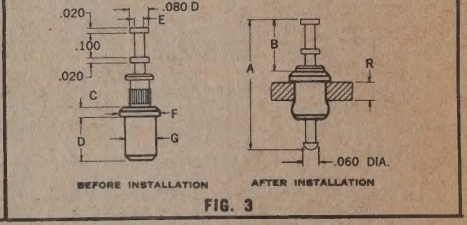


FIG. 3

AND-OFFS Riv-Loc

Part No.	Insertion Tool Number	A	B	C	D	E Dia.	F Dia.	±.002 G Dia.	±.015 R	Insertion Hole ±.002
003-6000	2R-45	.275	.140	.040	.125	.087	.130	.107	.075	.109
003-6010	2R-45	.322	.140	.040	.172	.087	.130	.107	.075	.109
003-6011	2R-47	.345	.210	.040	.125	.040	.125	.084	.045	.086
003-6016	2R-46	.370	.210	.040	.150	.040	.172	.134	.045	.136
003-6017	2R-46	.405	.210	.040	.180	.040	.172	.134	.075	.136
003-6012	2R-48	.370	.210	.040	.150	.040	.172	.134	.045	.136
003-6013	2R-48	.400	.210	.040	.180	.040	.172	.134	.075	.136

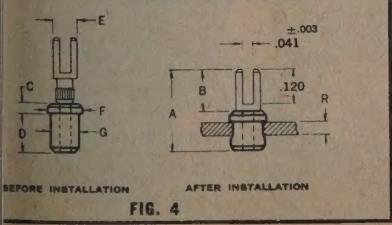


FIG. 4

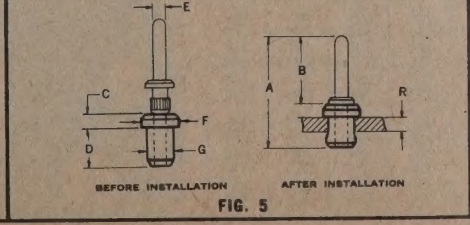


FIG. 5

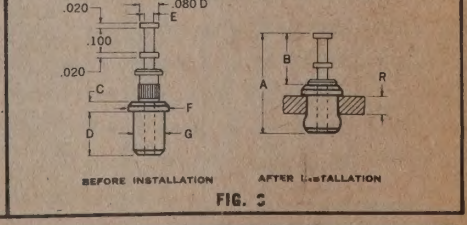


FIG. 6

SEALECTRO PRESS-FIT® TEFLON* TERMINAL

†Reg. Trademark, E. I. Du Pont de Nemours

TEFLON BUSHINGS*

SINGLE SHOULDER

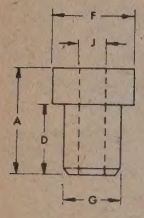


FIGURE A

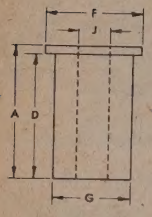


FIGURE B

Fig.	Description	Part No.	G	A	D	J	F
A	B-1555	019-0157	.045	.106	.075	.025	.080
A	B-1519	019-0121	.067	.120	.080	.031	.093
A	B-1516	019-0118	.075	.140	.100	.042	.093
A	B-1520	019-0122	.075	.140	.100	.025	.095
A	B-1440	019-0040	.093	.140	.100	.040	.125
A	B-1440-1	019-0041	.093	.140	.100	.035	.125
A	B-1441	019-0042	.093	.100	.060	.037	.125
A	B-1464	019-0066	.093	.100	.080	.038	.125
A	B-1553	019-0155	.093	.100	.080	.048	.125
A	B-1576	019-0178	.095	.060	.040	.038	.125
A	B-1461	019-0063	.109	.085	.059	.032	.128
A	B-1422	019-0022	.120	.103	.053	.040	.130
A	B-1410	019-0009	.125	.060	.040	.030	.150
A	B-1448	019-0049	.125	.120	.095	.080	.145
A	B-1477	019-0080	.136	.140	.100	.060	.169
A	B-1460	019-0062	.140	.100	.080	.089	.160
A	B-1414	019-0014	.148	.140	.100	.060	.172
A	B-1435	019-0034	.148	.140	.100	.040	.172
A	B-1439	019-0039	.148	.160	.120	.073	.172
A	B-1455	019-0057	.148	.165	.125	.084	.172
A	B-1465-1	019-0067	.148	.140	.100	.060	.220
A	B-1465-2	019-0068	.148	.140	.100	.090	.220
A	B-1475	019-0078	.148	.140	.100	.073	.172
A	B-1485	019-0087	.148	.140	.100	.065	.172
A	B-1498	019-0100	.148	.140	.100	.030	.172
A	B-1508	019-0110	.148	.150	.125	.024	.172
A	B-1543	019-0145	.148	.140	.100	.052	.172
A	B-1539	019-0141	.148	.220	.125	.052	.172
A	B-1573	019-0175	.148	.170	.100	.059	.172
A	B-1404	019-0003	.157	.093	.078	.089	.172
A	B-1405	019-0004	.157	.074	.059	.089	.172
A	B-1478	019-0081	.165	.140	.100	.060	.186
A	B-1456	019-0058	.171	.160	.110	.063	.218
A	B-1474	019-0077	.172	.200	.125	.089	.200
A	B-1489	019-0091	.172	.140	.100	.051	.195

Fig.	Description	Part No.	G	A	D	J
A	B-1514	019-0116	.172	.200	.125	.071
A	B-1487	019-0089	.175	.312	.250	.093
A	B-1445	019-0133	.179	.140	.100	.085
A	B-1423	019-0023	.185	.333	.287	.041
A	B-1434	019-0033	.185	.380	.287	.050
A	B-1447	019-0046	.185	.225	.185	.120
A	B-1447-1	019-0047	.185	.130	.090	.120
A	B-1451-1	019-0053	.185	.327	.140	.128
A	B-1469	019-0072	.185	.303	.210	.046
A	B-1473	019-0076	.185	.450	.400	.150
A	B-1486	019-0088	.185	.333	.287	.093
A	B-1490	019-0092	.185	.330	.250	.074
A	B-1598	019-0227	.188	.170	.130	.080
A	B-1590	019-0192	.188	.130	.100	.080
A	B-1442	019-0043	.200	.195	.155	.125
A	B-1479	019-0228	.203	.140	.100	.060
A	B-1428	019-0028	.214	.437	.375	.090
A	B-1412	019-0012	.241	.150	.110	.187
A	B-1512	019-0114	.245	.250	.157	.156
A	B-1480	019-0082	.250	.140	.100	.060
A	B-1552	019-0154	.265	.312	.250	.136
A	B-1483	019-0085	.287	.140	.100	.060
A	B-1549	019-0151	.395	.170	.130	.312
B	B-1563	019-0165	.120	.120	.060	.060
B	B-1578	019-0180	.120	.118	.058	.050
B	B-1575	019-0177	.123	.124	.093	.086
B	B-1567	019-0169	.150	.221	.175	.118
B	B-1597	019-0226	.150	.091	.045	.118
B	B-1606	019-0231	.184	.045	.025	.150
B	B-1585	019-0187	.203	.062	.031	.144
B	B-1506	019-0108	.242	.093	.046	.157
B	B-1556	019-0158	.247	.178	.128	.140
B	B-1429	019-0029	.296	.500	.469	.120
B	B-1430	019-0030	.296	.500	.469	.210
B	B-1568	019-0170	.304	.045	.015	.204

GROMMET TYPE

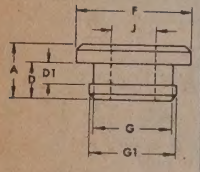


FIGURE C

Fig.	Description	Part No.	G	A	D	D1	G1	F	J
C	B-1453	019-0055	.103	.080	.040	.017	.115	.145	.067
C	B-1449	019-0050	.123	.070	.040	.020	.143	.187	.052
C	B-1401	019-0000	.154	.104	.054	.025	.164	.218	.085
C	B-1403	019-0002	.154	.104	.069	.040	.164	.218	.120
C	B-1406	019-0005	.154	.094	.044	.015	.164	.218	.099
C	B-1407	019-0006	.154	.104	.069	.040	.164	.218	.085
C	B-1408	019-0007	.154	.094	.044	.015	.164	.218	.085
C	B-1413	019-0013	.154	.094	.044	.015	.164	.218	.120
C	B-1416	019-0016	.154	.104	.069	.040	.164	.218	.099
C	B-1418	019-0018	.154	.085	.035	.015	.164	.195	.085
C	B-1419	019-0019	.154	.134	.099	.070	.164	.218	.120
C	B-1420	019-0020	.154	.104	.054	.025	.164	.218	.099
C	B-1421	019-0021	.154	.104	.069	.040	.164	.218	.120
C	B-1424	019-0024	.154	.094	.044	.025	.164	.195	.085
C	B-1432	019-0032	.154	.104	.054	.025	.164	.218	.120
C	B-1437	019-0036	.154	.125	.075	.060	.164	.218	.120
C	B-1463	019-0065	.154	.104	.054	.035	.164	.218	.099
C	B-1466	019-0069	.154	.140	.105	.075	.164	.218	.120
C	B-1472	019-0075	.154	.135	.085	.060	.164	.218	.085
C	B-1482	019-0084	.154	.104	.054	.035	.164	.218	.128
C	B-1462	019-0064	.168	.156	.106	.076	.178	.218	.089
C	B-1431	019-0031	.184	.104	.069	.040	.194	.248	.150
C	B-1467	019-0070	.190	.104	.054	.035	.200	.250	.157
C	B-1467-1	019-0140	.190	.104	.054	.035	.200	.250	.120
C	B-1436	019-0035	.199	.104	.069	.040	.210	.260	.128
C	B-1450	019-0051	.199	.190	.140	.120	.210	.230	.128
C	B-1459	019-0060	.204	.104	.069	.040	.214	.268	.170
C	B-1459-1	019-0061	.204	.104	.069	.040	.214	.268	.125
C	B-1545	019-0147	.204	.124	.089	.060	.214	.268	.099
C	B-1558	019-0160	.204	.124	.089	.060	.214	.268	.170

WASHER

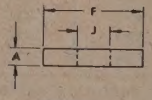


FIGURE J

Description	Part No.	F	A
B-1481	019-0083	.132	.031
B-1515	019-0117	.132	.031
B-1493	019-0095	.170	.125
B-1497	019-0099	.187	.031
B-1588	019-0190	.280	.125
B-1600	019-0229	.280	.090
B-1587	019-0189	.281	.062
B-1594	019-0196	.437	.062

SINGLE SHOULDER, NO HOLE

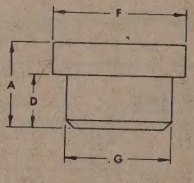


FIGURE E

Description	Part No.	G	A	D
B-1452	019-0054	.148	.125	.075
B-1484	019-0086	.148	.193	.100
B-1604	019-0230	.148	.190	.150
B-1457	019-0059	.165	.275	.150
B-1446	019-0045	.185	.330	.250
B-1451	019-0052	.185	.327	.140
B-1541	019-0143	.185	.672	.626
B-1491	019-0093	.200	.160	.100
B-1443	019-0044	.218	.140	.075
B-1454	019-0056	.218	.240	.200
B-1415	019-0015	.204	.317	.271
B-1592	019-0194	.264	.140	.100
B-1513	019-0115	.290	.155	.115

SINGLE SHOULDER, COUNTER-SUNK HOLE

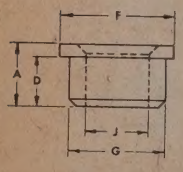


FIGURE D

Fig.	Description	Part No.	G	A	D	J	F
D	B-1409	019-0008	.148	.080	.060	.030	.172
D	B-1402	019-0001	.183	.250	.204	.140	.250
D	B-1447-2	019-0048	.185	.130	.090	.120	.218
D	B-1507	019-0109	.185	.116	.094	.120	.218
D	B-1522	019-0124	.185	.250	.204	.140	.250
D	B-1582	019-0184	.185	.053	.031	.120	.218
D	B-1565	019-0167	.185	.108	.083	.120	.218
D	B-1411	019-0010	.232	.265	.140	.088	.260
D	B-1433	019-0135	.232	.188	.093	.088	.260
D	B-1433-1	019-0142	.232	.188	.093	.117	.260
D	B-1560	019-0162	.232	.188	.120	.098	.262
D	B-1411-1	019-0011	.234	.265	.125	.093	.260

SINGLE SHOULDER, TAPERED HOLE

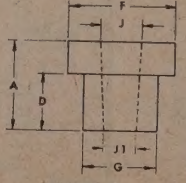


FIGURE F

Description	Part No.	G	A	D	F	J
B-1528	019-0130	.141	.167	.105	.203	.078
B-1529	019-0131	.141	.200	.138	.203	.078
B-1505	019-0107	.156	.153	.108	.200	.102

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SEALECTRO PRESS-FIT® TEFLON* TERMINALS

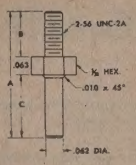
†Reg. Trademark, E. I. Du Pont de Nemours & Co.

VAGE TYPE

Part No.	L	A	B Dia.	C Dia.	±.002 D Dia.	E Dia. Deep
029-1003	.165	.173	.040	.093	.072	.046 x 1/16
029-1025	.135	.173	.040	.093	.072	.046 x 1/16
029-1002	.105	.173	.040	.093	.072	.046 x 1/16
029-1001	.075	.173	.040	.093	.072	.046 x 1/16
029-6019	.135	.173	.040	.125	.090	.063 x 1/16
029-6018	.105	.173	.040	.125	.090	.063 x 1/16
029-6017	.075	.173	.040	.125	.090	.063 x 1/16
029-6004	.165	.173	.040	.125	.090	.063 x 1/16
029-6016	.105	.218	.072	.125	.090	.063 x 1/16

METAL LUGS

Shown are but two typical types of metal lugs from Sealectro's standard line which includes hundreds of other screw, swedge, and knurled types. Write for complete listing.



SCREW TYPE

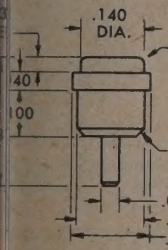
Part No.	A	B	C
029-5005	.375	.156	.156
029-5006	.437	.156	.218
029-5011	.437	.218	.156

MIL-T-55155 CROSS-REFERENCE

MIL Part No.	Sealectro Part No.	MIL Part No.	Sealectro Part No.	MIL Part No.	Sealectro Part No.
SE-12 x C01A	029-2018	SE-13 x C06A	029-2035	SE-15 x C07A	029-2048
SE-12 x C02A	029-2019			SE-15 x C08A	029-2049
SE-12 x C03A	029-2020	SE-14 x C01A	029-2036	SE-15 x C09A	029-2050
SE-12 x C04A	029-2021	SE-14 x C02A	029-2037		
SE-12 x C05A	029-2022	SE-14 x C03A	029-2038	SE-16 x C01A	029-6006
SE-12 x C06A	029-2023	SE-14 x C04A	029-2039	SE-16 x C02A	029-6010
SE-12 x C07A	029-2024	SE-14 x C05A	029-2040	SE-16 x C03A	029-6011
		SE-14 x C06A	029-2041		

MIL Part No.	Sealectro Part No.	MIL Part No.	Sealectro Part No.	MIL Part No.	Sealectro Part No.
SE-12 x C08A	029-2025				
SE-12 x C09A	029-2026	SE-15 x C01A	209-2042	SE-17 x C01A	029-6012
		SE-15 x C02A	029-2043	SE-17 x C02A	029-6013
SE-13 x C01A	029-2030	SE-15 x C03A	029-2044	SE-17 x C03A	029-6014
SE-13 x C02A	029-2031	SE-15 x C04A	029-2045		
SE-13 x C03A	029-2032	SE-15 x C05A	029-2046	SE-23 x C01	029-2027
SE-13 x C04A	029-2033	SE-15 x C06A	029-2047	SE-23 x C02	029-2014
SE-13 x C05A	029-2034			SE-23 x C03	029-2028
				SE-23 x C04	029-2029

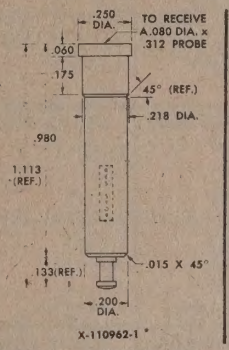
TEFLON*-INSULATED CONTACTS



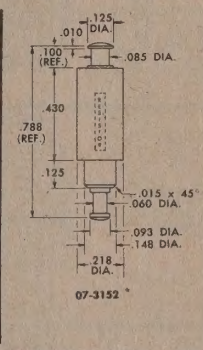
In many electro-mechanical assemblies, reliable switch contactors are required as an integral part of the unit. Sealectro manufactures a wide assortment of Press-Fit terminal designs specifically for these applications. They are designed for fast, Press-Fit installation and provide an extremely reliable electrical contact assembly while offering all of the advantages of Teflon* insulation.

RESISTIVE-TYPE TERMINALS

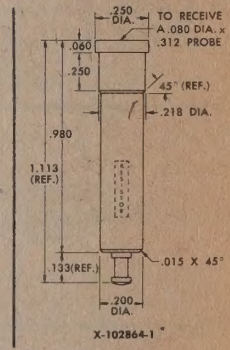
AVAILABLE WITH ALL STANDARD E.I.A. ¼ WATT ±5% RESISTOR VALUES



X-110962-1 *



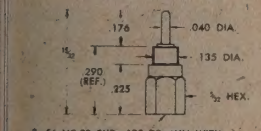
07-3152 *



X-102864-1 *

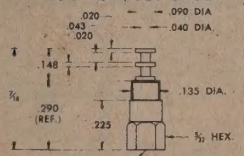
METAL BASE TEFLON* INSULATED STAND-OFFS

TF-300/013-5700



2-56 NC-2B THD. .125 DP. MIN WITH 82° C'SINK TO .125 D. AT ENTRANCE

TF-301-TUR/013-5701



#2-56NC-2B THD. .125 DP. MIN. WITH 82° C'SINK

TECHNICAL SPECIFICATIONS

MATERIAL:
- Insulation: Teflon
- Lug: Brass
- Plating: Lug — Solder Finish, (40 to 70% Tin Content) Electroplated.
- Base: Brass Cadmium with Chromate Coating.

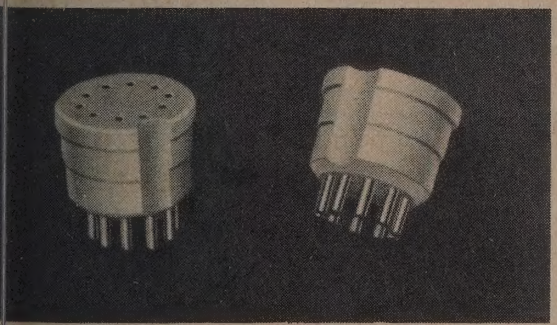
CURRENT RATING:
- 5.5 Amps. Continuous Duty.

TEMPERATURE RANGE:
- −65°C to 200°C

COLOR CODING:
- Available in Red, Blue, Yellow, Green, Brown, Orange, Gray, Violet, Black and White.

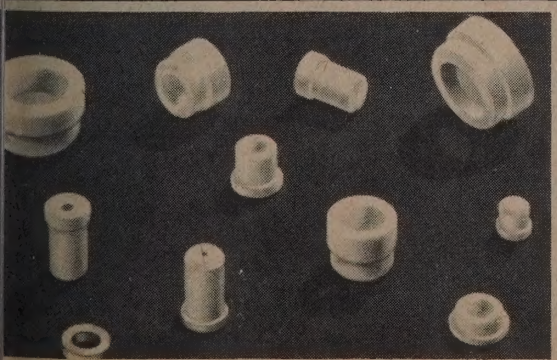
Sealectro maintains a complete line of metal based Teflon-insulated stand-offs to meet every application requirement. Two typical units are illustrated. Write for details on the complete Sealectro line.

RANSISTORS AND IC HARDWARE



SOCKETS AND HOLDERS

Low cost, high precision sockets and holders for transistors and integrated circuit packages are now available with virgin Teflon bodies that Press-Fit into chassis. The Sealectro Series 60 Sockets permit you to plug-in and remove various TO-18, TO-5 can and I.C. packages at will. The precise contact design provides a positive mechanical grip while making electrical contact with minimum resistance. Sealectro offers a complete off-the-shelf line. Write for catalog.



BUSHINGS AND PADS

Included in the Press-Fit line of Transistor and I.C. Hardware is a complete selection of Teflon bushings and pads to fit virtually every transistor and I.C. package. Press-Fit or grommet style bushings which provide support for transistor can or thru chassis hole for leads are offered. Pads to relieve strain on glass seals are also available. They are designed for use where semiconductor units are wired directly into the circuit and to insulate it from the mounting surface. Write for complete catalogs.

SEALECTRO CONHEX®

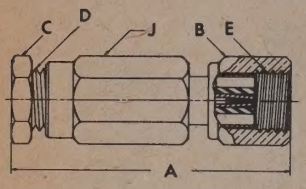
SUB-MINIATURE R. F. CONNECTORS

PLATING: 0.0001 Gold
0.0001 Copper.

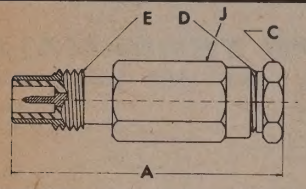
MATING CONNECTORS: All S
On (Snap-On) plugs will
with all Screw-On (Snap
jacks & receptacles of the
resistance rating.

U. S. Pat. No. 2,937,360

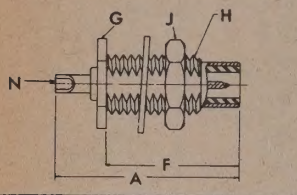
See listing on following page for typical cables.



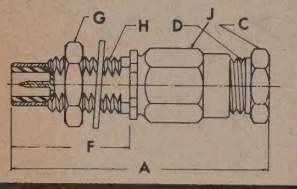
	50 OHM	75 OHM
	50-007-0000	50-107-0000
A	7/8 approx.	13/16 approx.
B	15/64 HEX	11/32 HEX
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40 UNS-2A
E	#10-32, UNF-2B	#5/16-32, UNEF-2B
J	15/64 HEX	5/16 HEX



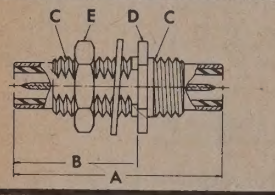
	50-008-0000	50-108-0000
A	27/32 approx.	51/64 approx.
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40, UNS-2A
E	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	15/64 HEX	5/16 HEX



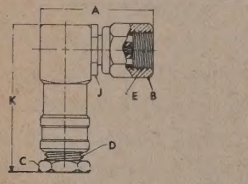
	50-043-0000	50-143-0000
A	19/32	19/32
F	.426	.426
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	1/4 HEX	3/8 HEX
N	.060 O.D. x .040 I.D. x .078 Deep	.060 O.D. x .040 I.D. x .078 Deep



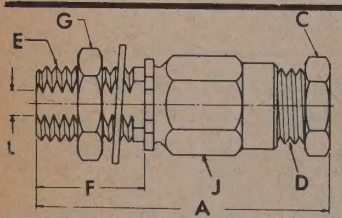
	50-010-0000	50-110-0000
A	7/8 approx.	7/8 approx.
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40, UNS-2A
F	.425	.425
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	15/64 HEX	11/32 HEX



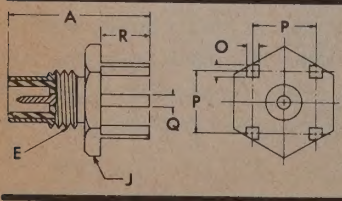
	50-075-0000	50-175-0000
A	.671	.671
B	.397	.397
C	#10-32, UNF-2A	#5/16-32, UNEF-2A
D	1/4 HEX	3/8 HEX
E	1/4 HEX	3/8 HEX



	50-011-0000	50-111-0000
A	39/64 approx.	23/32 approx.
B	15/64 HEX	11/32 HEX
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40, UNS-2A
E	#10-32, UNF-2B	#5/16-32, UNEF-2B
J	15/64 HEX	11/32 HEX
K	3/4 approx.	27/32 approx.

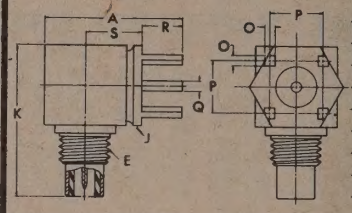


	55-013-0000	50-113-0000
A	49/64 approx.	3/4 approx.
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40, UNS-2A
E	#10-32, UNF-2A	#5/16-32, UNEF-2A
F	.277	.277
G	1/4 HEX	3/8 HEX
J	15/64 HEX	11/32 HEX
L	.067D.	.111D.

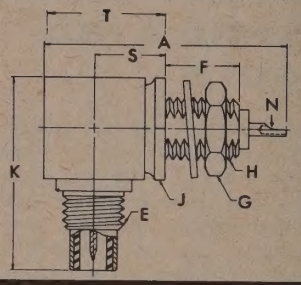


	50-051-0000	50-151-0000
A	.448	.448
E	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	5/16 HEX	3/8 HEX
O	.040 (Typ.)	.040 (Typ.)
P	.200	.200
O	.038D.	.038D.
R	.155	.155

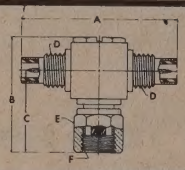
See listing on following page for typical cables.



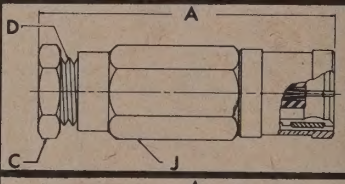
	50 OHM	75 OH
	50-053-0000	50-153-00
A	17/32 approx.	19/32 approx.
E	#10-32, UNF-2A	#5/16-32, UNE
J	5/16 HEX	3/8 HEX
K	19/32	21/32
O	.040 (Typ.)	.040 (Typ.)
P	.200	.200
Q	.038D	.038D
R	.155	.155
S	3/8	13/32



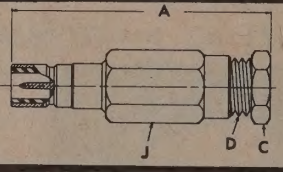
	50-047-0000	50-147-00
A	3/4 approx.	13/16 approx.
E	#10-32, UNF-2A	#5/16-32, UNE
F	.228	.228
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNE
J	5/16 HEX	3/8 HEX
K	19/32	21/32
N	.038 O.D. x .025 I.D. x .078 Deep	.038 O.D. x .025 I.D. x .078 Deep
S	.215	.247
T	3/8	.435



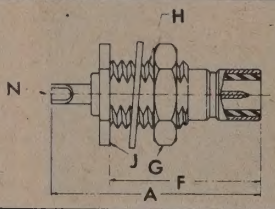
	50-085-0000	50-185-00
A	.860	.923
B	21/32 approx.	23/32 approx.
C	15/32 approx.	1/2 approx.
D	#10-32, UNF-2A	#5/16-32, UNE
E	15/64 HEX	11/32 HEX
F	#10-32, UNF-2B	#5/16-32, UNE



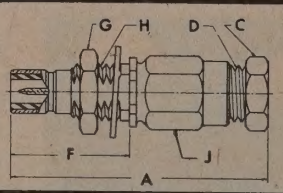
	51-007-0000	51-107-00
A	7/8 approx.	27/32 approx.
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40, UNS-
J	15/64 HEX	11/32 HEX



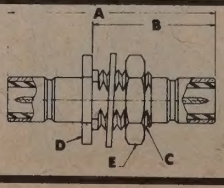
	51-008-0000	51-108-00
A	7/8 approx.	51/64 approx.
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40, UNS-
J	15/64 HEX	5/16 HEX



	51-043-0000	51-143-00
A	19/32	19/32
F	.426	.426
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNEF
J	1/4 HEX	3/8 HEX
N	.060 O.D. x .040 I.D. x .078 Deep	.060 O.D. x .040 I.D. x .078 Deep



	51-010-0000	51-110-00
A	7/8 approx.	7/8 approx.
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9-32-40, UNS-2
F	.425	.425
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNEF-
J	15/64 HEX	11/32 HEX



	51-075-0000	51-175-0000
A	.671	.671
B	.430	.430
C	#10-32, UNF-2A	#5/16-32, UNEF-
D	1/4 HEX	3/8 HEX
E	1/4 HEX	3/8 HEX

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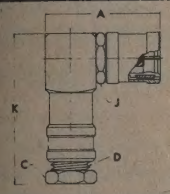
SEALECTRO CONHEX®

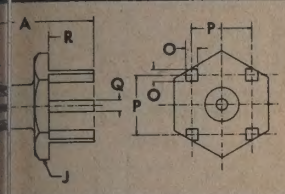
SUB-MINIATURE R. F. CONNECTORS

See listing below for typical cables.

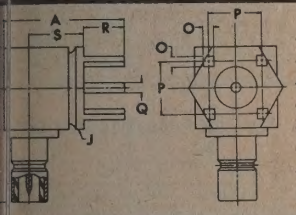
50 OHM / 75 OHM



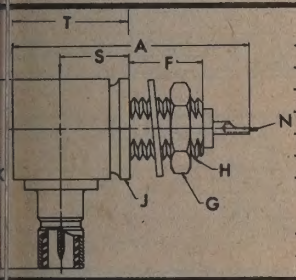
	51-011-0000	51-111-0000
A	19/32	11/16
C	15/64 HEX	5/16 HEX
D	#10-32, UNF-2A	#9/32-40, UNS-2A
J	15/64 HEX	11/32 HEX
K	3/4 approx.	27/32 approx.



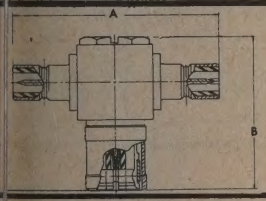
	51-051-0000	51-151-0000
A	.448	.448
J	5/16 HEX	3/8 HEX
O	.040 (Typ.)	.040 (Typ.)
P	.200	.200
Q	.038D	.038D
R	.155	.155



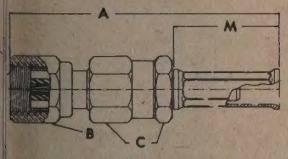
	51-053-0000	51-153-0000
A	17/32 approx.	19/32 approx.
J	5/16 HEX	3/8 HEX
K	19/32	21/32
O	.040 (Typ.)	.040 (Typ.)
P	.200	.200
Q	.038D	.038D
R	.155	.155
S	.215	.247



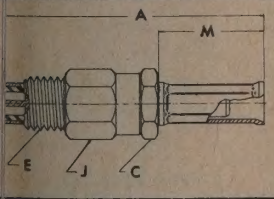
	51-047-0000	51-147-0000
A	3/4 approx.	13/16 approx.
F	.228	.228
G	1/4 HEX	3/8 HEX
H	#10-32, UNEF-2A	#5/16-32, UNEF-2A
J	5/16 HEX	3/8 HEX
K	19/32	21/32
N	.038 O.D. x .025 I.D. x .078 Deep	.038 O.D. x .025 I.D. x .078 Deep
S	.215	.247
T	.372	.435



	51-085-0000	51-185-0000
A	.860	.923
B	41/64	45/64
C	.456	.488



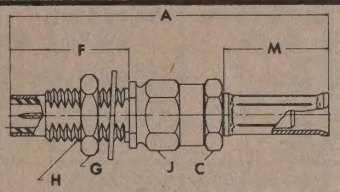
	50-024-0000	50-124-0000
A	1-1/32 approx.	1-1/16 approx.
B	15/64 HEX	11/32 HEX
C	7/32 HEX	5/16 HEX
E	#10-32, UNF-2B	#5/16-32, UNEF-2B
M	3/8	13/32



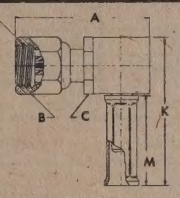
	50-025-0000	50-125-0000
A	63/64 approx.	1-1/64 approx.
C	7/32 HEX	5/16 HEX
E	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	7/32 HEX	5/16 HEX
M	3/8	13/32

See listing below for typical cables.

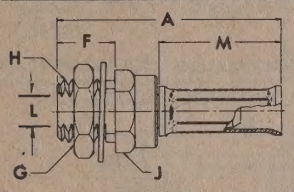
50 OHM / 75 OHM



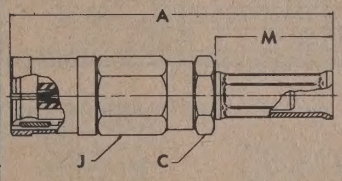
	50-027-0000	50-127-0000
A	1-1/8 approx.	1-5/32 approx.
C	7/32 HEX	5/16 HEX
F	.425	.425
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	7/32 approx.	11/32 HEX
M	3/8	13/32



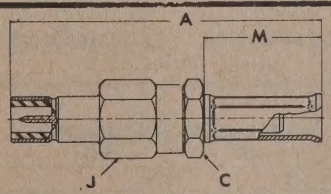
	50-028-0000	50-128-0000
A	39/64 approx.	21/32 approx.
B	15/64 HEX	11/32 HEX
C	15/64 HEX	11/32 HEX
E	#10-32, UNF-2B	#5/16-32, UNEF-2B
K	5/8 approx.	23/32 approx.
M	3/8	13/32



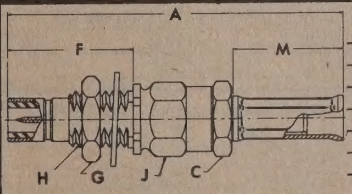
	55-031-0000	55-131-0000
A	47/64 approx	51/64 approx.
F	.228	.228
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	7/32 HEX	11/32 HEX
L	.067D	.111D
M	3/8	13/32



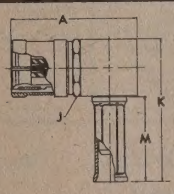
	51-024-0000	50-124-0000
A	1-1/64 approx.	1-3/64 approx.
C	7/32 HEX	5/16 HEX
J	7/32 HEX	11/32 HEX
M	3/8	13/32



	51-025-0000	51-125-0000
A	63/64 approx.	1-1/64 approx.
C	7/32 HEX	5/16 HEX
J	7/32 HEX	5/16 HEX
M	3/8	13/32



	51-027-0000	51-127-0000
A	1-1/8 approx.	1-5/32 approx.
C	7/32 HEX	5/16 HEX
F	.425	.425
G	1/4 HEX	3/8 HEX
H	#10-32, UNF-2A	#5/16-32, UNEF-2A
J	7/32 HEX	11/32 HEX
M	3/8	13/32



	51-028-0000	51-128-0000
A	19/32	41/64
J	15/64 HEX	11/32 HEX
K	5/8 approx.	23/32 approx.
M	3/8	13/32

CRIMP-ON ASSEMBLY TOOL— Part No. CT-6

TYPICAL SPEC CABLES FOR USE WITH "CONHEX" CONNECTORS

Standard 50 ohm **clamp-type** connectors accept:
RG-161/U, 174/U, 179/U, 188/U and 316/U cables.

Standard 50 ohm **crimp-type** connectors accept:
RG-161/U, 174/U, 179/U, 187/U, 188/U and 316/U cables.

Standard 75 ohm **clamp-type** connectors accept:
RG-180/U and 195/U cables.

Standard 75 ohm **crimp-type** connectors accept:
RG-180/U and 195/U cables.

Other cables having the same component diameters as those listed can also be used in the same series of connectors.

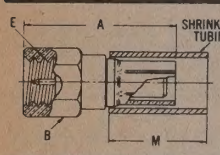
SEALECTRO® MICRO-MINIATURE R.F. CONNECTORS

MICRO HEX®

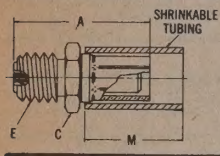
VSWR: Better than 1.15:1 to
Impedance: 50 ohms
Dielectric Withstanding Volta
450 volts RMS @ Sea Leve
Contact Current Rating:
1.0 amps DC max.
Contact Voltage Drop:
4 mv max. @ 1 amp

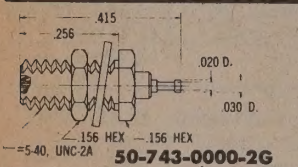
*For use with RG-196/U and RG-178/U cables

	FLEXIBLE CABLE*	SEMI-RIGID CABLE**
	50-724-0000-2G	50-724-3701-2G
A	.39	.37
B	.156 Hex	.156 Hex
E	#5-40, UNC-2B	#5-40, UNC-2B
M	.31	.31



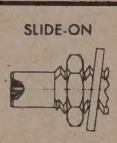
	50-725-0000-2G	50-725-3701-2G
A	.34	.32
C	.156 Hex	.156 Hex
E	#5-40, UNC-2A	#5-40, UNC-2A
M	.31	.31





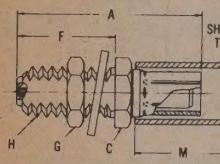
50-743-0000-2G

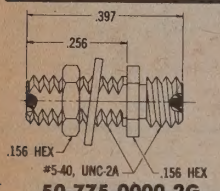
51-743-0000-2G



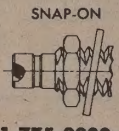
52-743-0000-2G

	50-727-0000-2G	50-727-3701-2G
A	.48	.46
C	.156 Hex	.156 Hex
F	.256	.256
G	.156 Hex	.156 Hex
H	#5-40, UNC-2A	#5-40, UNC-2A
M	.31	.31





50-775-0000-2G



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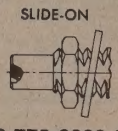
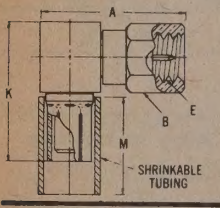


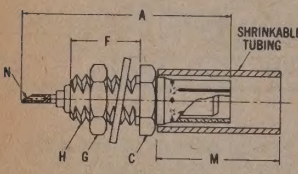
52-775-0000-2G

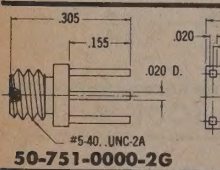
Designed for .062" thick panel.

	50-728-0000-2G	50-728-3701-2G
A	.38	.38
B	.156 Hex	.156 Hex
E	#5-40, UNC-2B	#5-40, UNC-2B
K	.36	.34
M	.31	.31

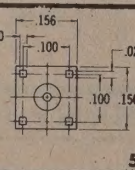


	55-736-0000-2G	55-736-3701-2G
A	.53	.51
C	.156 Hex	.156 Hex
F	.177	.177
G	.156 Hex	.156 Hex
H	#5-40, UNC-2A	#5-40, UNC-2A
M	.31	.31
N	.013 I.D. x .020 O.D.	.013 I.D.x.020 O.D.





50-751-0000-2G



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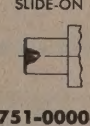

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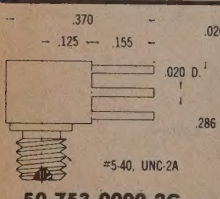

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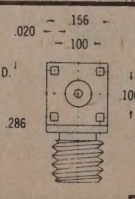

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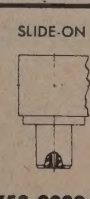
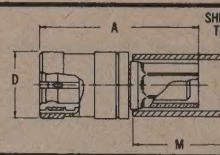


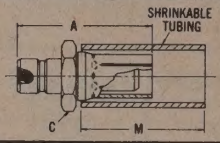
52-753-0000-2G

**For use with .056" diameter cable

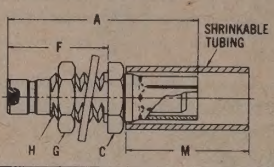
	51-724-0000-2G	51-724-3701-2G
A	.40	.38
D	.168 D.	.168 D.
M	.31	.31



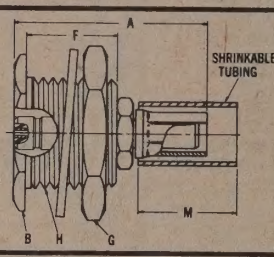
	51-725-0000-2G	51-725-3701-2G
A	.34	.32
C	.156 Hex	.156 Hex
M	.31	.31



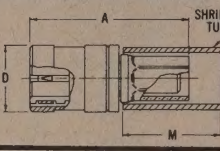
	51-727-0000-2G	51-727-3701-2G
A	.48	.46
C	.156 Hex	.156 Hex
F	.256	.256
G	.156 Hex	.156 Hex
H	#5-40, UNC-2A	#5-40, UNC-2A
M	.31	.31



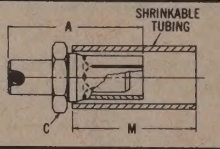
	51-733-0000-2G	51-733-3701-2G
A	.49	.47
B	.343 Hex	.343 Hex
F	.228	.228
G	.375 Hex	.375 Hex
H	#9/32-40, UNS-2A	#9/32-40, UNS-2A
M	.31	.31

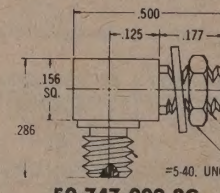


	52-724-0000-2G	52-724-3701-2G
A	.40	.38
D	.168 D.	.168 D
M	.31	.31



	52-725-0000-2G	52-725-3701-2G
A	.34	.32
C	.156 Hex	.156 Hex
M	.31	.31

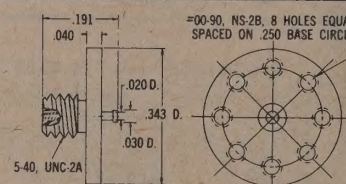




50-747-000-2G

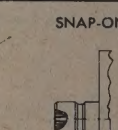
51-747-0000-2G

52-747-0000-

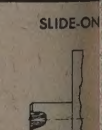


50-756-2210-2G

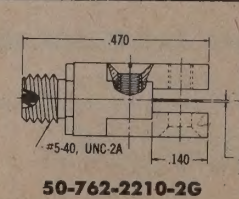
Designed for ¼" ground plain spacing.

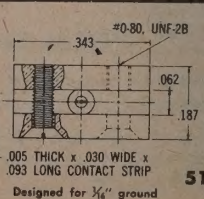


51-756-2210-2G



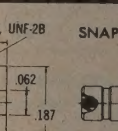
52-756-2210-



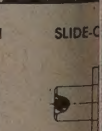


50-762-2210-2G

Designed for ¼" ground plane spacing.



51-762-2210-2G



52-762-2210-

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SEALECTRO SRM

MINIATURE R.F. CONNECTORS

MIL-C-39012

GOLD PLATED ...AINLESS STEEL

...ealectro SRM Series of miniature ...onnectors has been specifically de... to meet the most stringent re...ents of sophisticated Space, Avia... Military, and Industrial systems. ...DC to 18 GHz, they combine high ...mance with assembly ease. All of ...able connectors illustrated feature ...ated gold-plated contacts. They are ...ompletely compatible with all simi... ...es of miniature connectors which ...m to MIL-C-39012.

• LOW V.S.W.R. ...BROADBAND

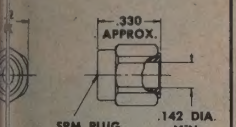
In addition to the distributor-stocked connectors shown, Sealectro offers many additional units including:

- Removable contacts
- Captivated contacts
- Tapped mounting holes
- Plating variations
- Slotted or milled contacts
- Intraseries Adaptors
- Interseries Adaptors
  - Conhex-MIL-C-22557
  - N, TNC, BNC
  - APC-7, GR-874, GR900

• HIGH PERFORMANCE

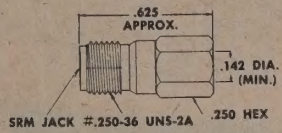
Sealectro also offers a complete custom cable assembly facility to service your needs. All assemblies are tested 100% for continuity and mateability. This enables the user to realize a 100% yield without having to consider shrinkage, instruction of personnel, or in-house testing and reworking. To assure the fastest possible delivery on prototype connectors, Sealectro maintains a complete staff of application and design engineers as well as an extensive prototype development facility.

...IGHT CABLE PLUG ...D SEMI-RIGID ...LDER-TYPE



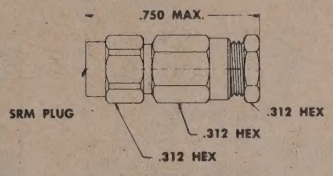
55-607-3703-31

STRAIGHT CABLE JACK .141D SEMI-RIGID SOLDER-TYPE



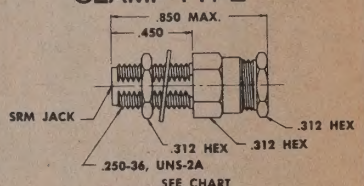
55-608-3703-31

STRAIGHT CABLE PLUG CLAMP-TYPE



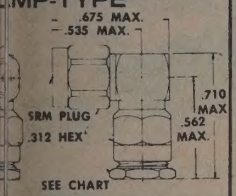
50-607-XXXX-31

STRAIGHT BULKHEAD CABLE JACK CLAMP-TYPE



50-610-XXXX-31

...T ANGLE ...E PLUG ...MP-TYPE

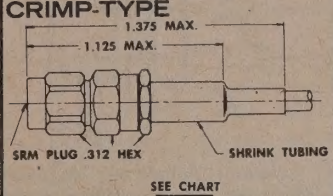


50-611-XXXX-31

CABLE SELECTION CHART
CLAMP-TYPE

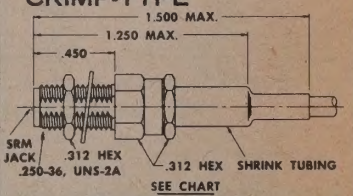
PART NO.	CABLE
-3188-	RG-174/U, -179/U, -187/U, -188/U, & -316/U
-3141-	RG-55/U, -58/U, -141/U, -142/U, -223/U
-3703-	.141 DIA. SEMI-RIGID CABLE

STRAIGHT CABLE PLUG CRIMP-TYPE



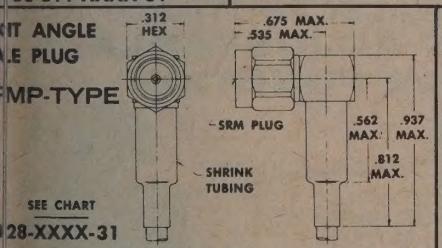
50-624-XXXX-31

STRAIGHT BULKHEAD CABLE JACK CRIMP-TYPE



50-627-XXXX-31

...IT ANGLE ...E PLUG ...MP-TYPE

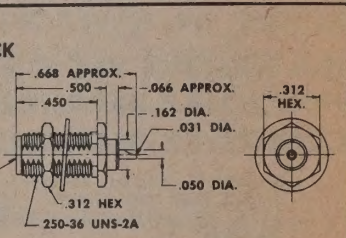


28-XXXX-31

CABLE SELECTION CHART
CRIMP-TYPE

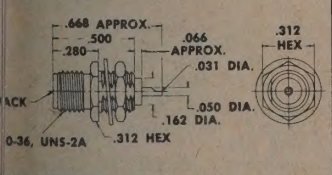
PART NO.	CABLE
-3188-	RG-174/U, -179/U, 187/U, -188/U, & -316/U
-3141-	RG-58/U, & -141/U,
-3142-	RG-55/U, -142/U, & -223/U

BULKHEAD JACK RECEPTACLE (Captivated Contact)



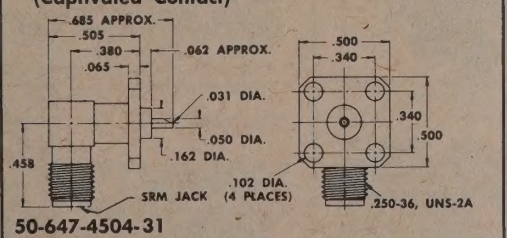
50-643-0000-31

...HEAD JACK ...PTACLE ...tivated Contact)



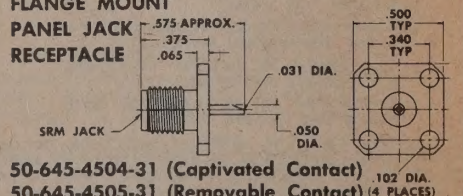
...45-0000-31

RIGHT ANGLE PANEL JACK RECEPTACLE (Captivated Contact)



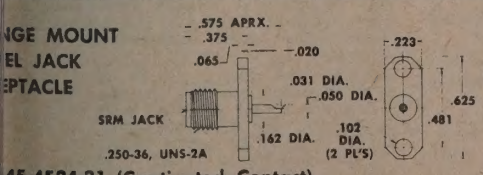
50-647-4504-31

FLANGE MOUNT PANEL JACK RECEPTACLE



50-645-4504-31 (Captivated Contact)
50-645-4505-31 (Removable Contact)

...NGE MOUNT ...EL JACK ...PTACLE



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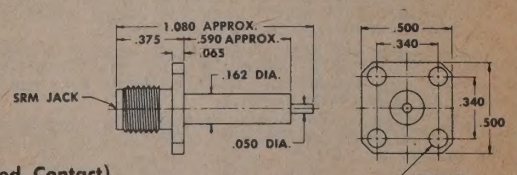
...45-4525-31 (Removable Contact)

FLANGE MOUNT PANEL JACK RECEPTACLE



50-645-4520-31 (Captivated Contact)
50-645-4521-31 (Removable Contact)

SEALECTRO PROGRAMMING DEVICE

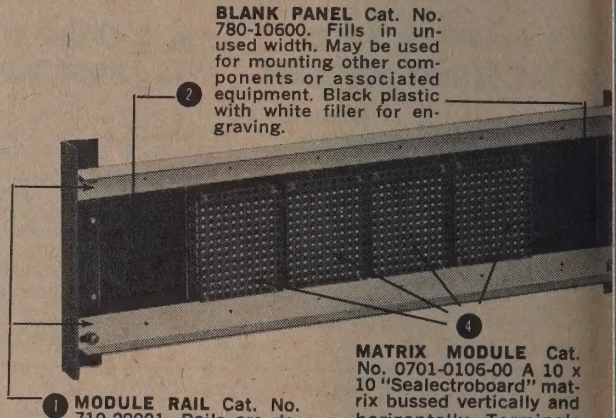
SEALECTRO PROGRAM SWITCHING

SEALECTROBOARD ™ MODULAR CORDLESS PROGRAM BOARD

"Sealectroboard" programming and switching provides complete ease and simplicity of operation with drastic reductions in hardware and space. The units consist of two decks of bussed contacts running at right angles to each other in the X and Y directions, forming an electrical matrix. A single shorting or component holding pin is used to complete the program circuit . . . move the pin to a new location and a new program function is generated.

The "Modular Sealectroboard" provides an extremely flexible means of program system expansion with a built-in appearance. The system consists of only four standard component assemblies, designed such that when installed in a standard E.I.A. 19" relay rack, or bench cabinet, they result in a very attractive unit.

The "Modular Sealectroboard" can be expanded from a 10 x 10 hole matrix to a 10 x 60 hole matrix in one standard 5 7/32" x 19" rack panel. Additional panels can be added and interwired to expand program capacity as system requirements dictate.



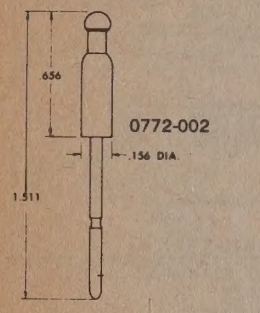
BLANK PANEL Cat. No. 780-10600. Fills in unused width. May be used for mounting other components or associated equipment. Black plastic with white filler for engraving.

MATRIX MODULE Cat. No. 0701-0106-00 A 10 x 10 "Sealectroboard" matrix bussed vertically and horizontally. Terminals are combination solder and Klip-on. Contact strips are silver plated.

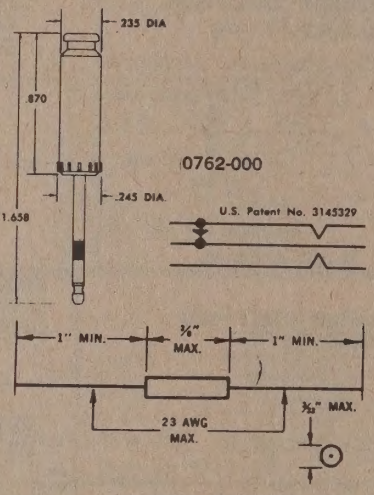
MODULE RAIL Cat. No. 710-20001. Rails are designed for mounting on standard 19" relay racks. Offset is provided for flush panel installation. Mounting holes are provided for any combination (up to 6) of blank panels and "Sealectroboard" modules.

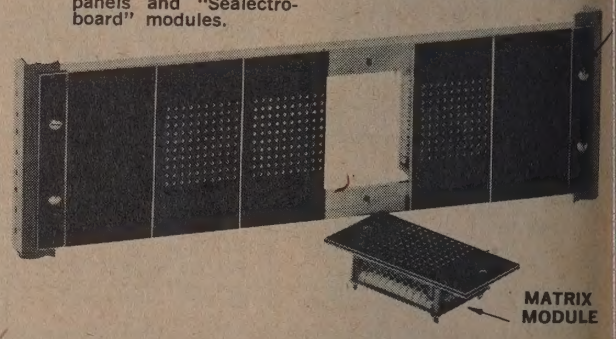
SIDE PLATE Cat. No. 708-70005. Provides dressing, or return to lay rack frame.

SHORTING PIN



COMPONENT PIN





* Available off-the-shelf from Authorized Local Sealectro Distributors.

SLIDE 'N SWITCH

RANDOM ACCESS PROGRAMMING CIRCUIT SELECTOR

- **Exclusive random access to any circuit from any circuit.**
- **Up to 10 times as fas thumbwheel switches.**
- **Modular expandable design.**
- **Compact. 2⅝" high. Each switch module 1/32" wide.**
- **Economical. Costs far less than average thumbwheel switch.**
- **Guaranteed for 250,000 operations per contact minimum.****
- **Terminates in standard PC card connector, or hard wire.**

An entirely new and different switching concept with maximum versatility built-in, Slide 'n Switch provides **direct choice** of output circuit without switching electrically through intermediate points. While in transit, the common side connected through a termination on the rear of the unit to indicate the "in transit" situation or it can be used as an electrical interlock.

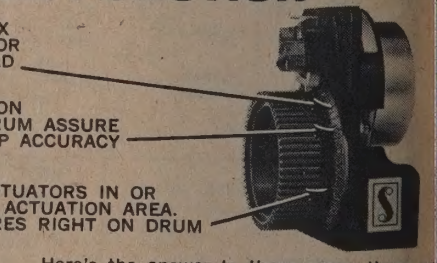
This precision switch can be set in a fraction of the time required for thumbwhell units, as the handle is simply pulled out and swung in a single movement to the desired circuit.

Terminations on the rear of the switch module are printed circuit, spaced .125" center to center, and will mate with standard edge-mount pc card connectors. Terminal holes are also provided for hard-wiring with solder joints.

Completely modular, the switch modules are mounted on a threaded rod in any number desired. End caps complete the bezel for front panel mounting.

*Pat. Pend.
**At 250 MA Switching.

"LCT*" SEALECTROTIMER ...FIELD ADJUSTABLE, MULTIPLE FUNCTION



- **Economical, precise programming**
- **Sets up in seconds with 100% repeatability**
- **Up to 60 ON/OFF functions per revolution**
- **15 Amp contact rating**

Here's the answer to those many timer ar programming problems. A unique combin tion of complete field adjustability, 100 repeatable, and multiple ON/OFF function No loose parts. No changing of cams. Ever thing required for complete flexibility in single, compact, economical unit designe for extra-long life.

60 drum positions, precisely fabricated in factory, permit up to 60 ON/OFF function in a single 360° operation on a single cor tact. The drum is indexed, eliminating guess work in set-ups, and also guaranteeing 100 repeatability when re-setting to a forme program.

Actuators are merely slid by hand, to or ou of operational position. In seconds, set u a complex timing program with varying tim dwells for ON/OFF functions. In seconds set up a pulse generator capable for supply ing precisely timed pulses in various groups

And all this costs no more than ordinar overlap type cam timers that provide single ON/OFF function.

*Low Cost Timer

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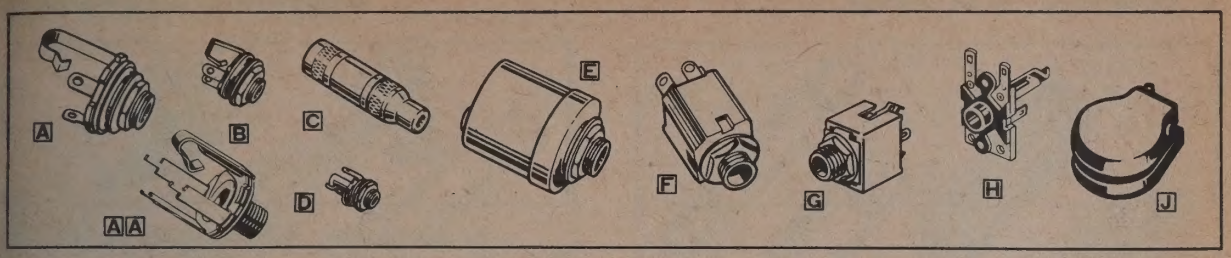
SWITCHCRAFT INC.

Phone Jacks



"LITTEL-JAX" PHONE JACKS

A Quality phone jacks that mate with standard ¼" phone plugs. Notched insulating washers mechanically interlock springs and solder lugs. **"V"** bend in tip spring firmly "holds" mating plug. Minimum space requirements. Economical. Mounts in single ⅜" hole, panels up to 5/32" thick, except **L-11** and **L-12A** in panels up to ¼" thick.

Nos. **C-11** and **C-12A** mate with No. **440 (PJ-055B)** Plug; **C-12B, S-12B** and **S-13B** mate with No. **480 (JAN-PJ-068)** or No. **484 (W.E. No. 309)** Plug. Nos. **C-11** and **C-12B** have locating pins (non-turn devices). No. **S-11** similar to No. 11 except .210" I.D. sleeve. **C-11, C-12B** and **C-12A** per **JAN-J-641.** All others mate with standard ¼" dia. plugs.

AA New "Littel-Jax" PC-12A for printed circuit mounting. Std. ¼" dia. jack with all the construction features of standard "Littel-Jax". Same circuit as in No. **12A.**

No. **14B** Stereo "Littel-Jax", switches-out speakers when connecting stereo headphones. Dual, N.O. switch contacts, open both stereo circuits independently when a 3-conductor plug is inserted.

TWO-CONDUCTOR TYPES

Part No.	Schematic No.	Typical Mating Plug	Mil-Type	U.S.A. List Price
11	I	250	—	$0.50
C-11	I	440	JJ-034	.75
L-11	I	250	—	.60
S-11	I	S-250	—	.55
12A	III	250	—	.55
C-12A	III	440	JJ-089	.90
L-12A	III	250	—	.65
S-12A	III	480	—	.65
PC-12A	III	250	—	.65
13	V	250	—	1.10
13A	VI	250	—	1.00
13E	IX	250	—	1.10
THREE CONDUCTOR TYPES				
12B	IV	267	—	.65
C-12B	IV	480	JJ-033	1.15
L-12B	IV	267	—	.85
S-12B	IV	480	—	.85
13B	VIII	267	—	.95
S-13B	VIII	480	—	1.15
14B	XII	267	—	1.20

"TINI-JAX" MINIATURE PHONE JACKS

B Miniature 2-conductor Jacks, approximately ⅓ the size of the "Littel-Jax"; otherwise similar in construction. Mount in ¼" dia. hole; panel up to ⅛" thick. No. 43A has a unique spring design that requires a pear shaped tip, such as Switchcraft "Tini-Plug" No. 750.

Part No.	Schematic No.	Typical Mating Plug	Conductors	U.S.A. List Price
41	I	750	2	$0.50
42A	III	750	2	.55
43A	VI	750	2	.85

"TINI-EXTENSION JAX"

C An extension or cable jack to mate with "Tini-Plug". Two-conductor. Metal housing for ruggedness and electrical shielding. Solder lug terminals.

Switchcraft Part No. 125 ..... U.S.A. List Price **$1.40**

"MICRO-JAX" SUB MINIATURE PHONE JACK

D Precision manufactured jack for miniaturized applications. Two-conductor, single closed circuit. See Schematic Circuit III. Silver plating on special tempered nickel silver springs. Internally keyed nylon insulation interlocks springs and solder lugs to eliminate shorts. Fits .190" dia. hole in panels to 3/32" thick. Only 1/25th the size of standard phone jacks. Mates with "Micro-Plug", Series 850, 880.

Switchcraft Part No. TR-2A ..... U.S.A. List Price **$0.60**

"SHIELDED JAX"

E A unique modification of the "Littel-Jax". The shield is assembled into and made part of the jack. Ideal for high impedance circuits.

Part No.	Schematic No.	Typical Mating Plug	Conductors	U.S.A. List Price
CN-11	I	250	2	$1.00
CN-12A	III	250	2	1.05
CN-12B	IV	267	3	1.15

"HI-D JAX" PHONE JACKS

F New smaller, more compact phone jacks, mate with std. ¼" phone plugs. Molded box body protects integral silver-plated, nickel silver springs. Low contact resistance and electrical leakage with little capacity between the springs. Mount on ⅝" centers in single ⅜" hole in panels up to 5/32" thick, depth behind panel 13/32". All part Nos. with **"L"** prefix mount in panels up to ¼" thick; part Nos. with **"N"** prefix feature a threaded nylon bushing to provide complete insulation of jack sleeve from mtg. panel. Part Nos. with **"NL"** prefix feature a ⅜" long threaded nylon bushing (same as **"N"** series) and mount in panels up to ¼" thick. Stereo **"HI-D Jax"**, Nos. **114B, L-114B** and **N-114B,** switches out speakers when connecting stereo headphones. Dual N.O. switch contacts open both stereo circuits independently when a 3-cond. plug is inserted.

TWO CONDUCTOR TYPES

Part No.	Schematic	Typical Mating Plug	U.S.A. List Price
111	I	250	$0.50
L-111	I	250	.65
N-111	I	250	.65
NL-111	I	250	.70
112A	III	250	.55
L-112A	III	250	.70
N-112A	III	250	.70
NL-112A	III	250	.75
113	V	250	1.05
113D	VI	250	1.05
113E	IX	250	1.05
THREE CONDUCTOR TYPES			
112B	IV	267	.60
L-112B	IV	267	.75
N-112B	IV	267	.75
113B	VIII	267	.80
L-113B	VIII	267	.85
N-113B	VIII	267	.85
NL-113B	VIII	267	.90
113F	VII	267	.80
114B	XII	267	.90
L-114B	XII	267	1.00
N-114B	XII	267	1.00
NL-114B	XII	267	1.05

"TINI-D JAX" MINIATURE PHONE JACK

G New, small completely enclosed, molded phone jack. Mate with Switchcraft **"Tini-Plug"**, No. **750** etc. Phenolic housing protects the bifurcated beryllium copper springs from being bent during mounting. No. **142A** has threaded bushing for conventional mtg. Tip spring terminals that "snap-in" P.C. boards. Mount on ⅜" centers, in ¼" dia. hole in panels up to ⅛" thick. Depth behind panel 7/16".

Part No.	Conductors	Schematic	Typical Mating Plug	U.S.A. List Price
142A	2	III	750	$0.60

"R-JAX" ECONOMY PHONE JACKS

H Radically new jack design. Simple mounting needs only two (2) 3/32" dia. rivets to fasten securely to mounting panel. Accept standard ¼" dia. phone plugs.

Part No.	Schematic No.	Typical Mating Plug	Conductors	U.S.A. List Price
2A	II	250	2	$0.50
2B	IV	267	3	.55
3E	IX	250	2	.85
4B	XII	267	3	.75

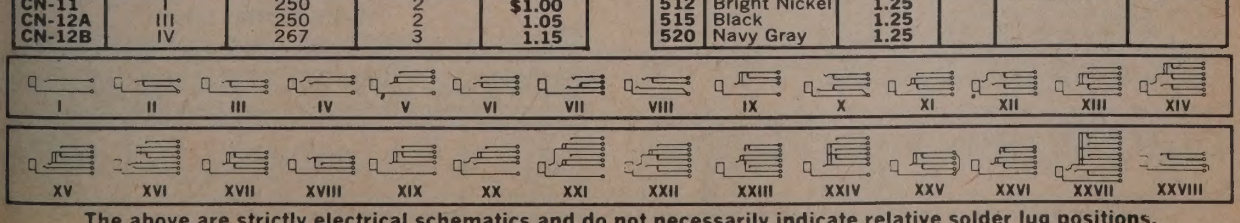
JACK COVERS

J Handy, rugged, spring-load phone jack covers. Covers jack openings when phone plug is removed. Protects against dust and moisture.

Series 500—Use with standard ⅜"-32 threaded bushing type phone jacks.

Series 600—Use with certain type tip jacks with ¼" mounting; height of tip jack head ⅛" to 3/16". Also used as covers for "Tini-Jax."

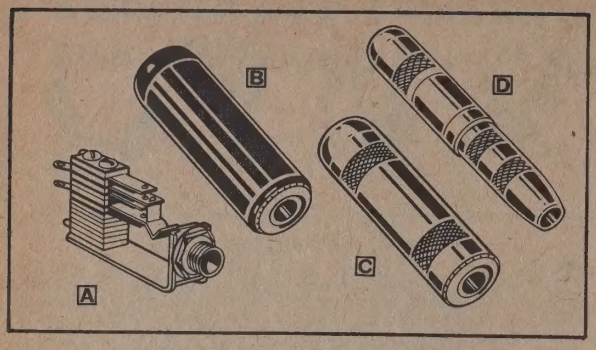
Part No.	Color	U.S.A. List Price	Part No.	Color	U.S.A. List Price
510	Olive Drab	$1.25	620	Navy Gray	$1.10
512	Bright Nickel	1.25			
515	Black	1.25			
520	Navy Gray	1.25			



The above are strictly electrical schematics and do not necessarily indicate relative solder lug positions.

Phone Jacks

SWITCHCRAFT INC



"LF-JAX" LONG FRAME JACKS

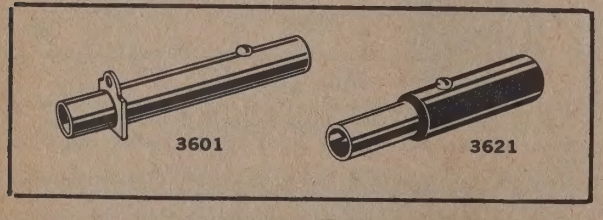
A Quality long frame phone jacks with a ground lug that is an integral part of the frame. Fine silver contacts rated at 3 amp., 300 watts, A.C., non-inductive load. Frame also available with a non-turn device, prefix **Part No.** with letter **"R"**. Standard types mount in single ⅜" dia. hole in panels up to 5/16" thick. Depth behind panel, only 2 25/32".

Part No.	Schematic No.	Typical Mating Plug	Conductors	U.S.A. List Price
31	I	250	2	$0.90
32	II	250	2	1.15
32A	III	250	2	1.15
32B	IV	267	3	1.15
33	V	250	2	1.25
33A	VI	250	2	1.25
33B	VIII	267	3	1.25
33C	XXVIII	267	3	1.25
33E	IX	250	2	1.25
34	X	267	3	1.40
34A	XI	250	2	1.40
34B	XII	267	3	1.40
35	XIII	250	2	1.70
36	XIV	267	3	1.95

"EXTENSION JAX" CABLE EXTENSION JACKS

Standard ¼", 2 and 3-conductor extension phone jacks with solder lugs or screw type terminals. Size 11/16" O.D., 2 25/32" long; 121 and 131 ½" O.D., 2½" long. Black handles are durable plastic. Shielded handles are brass, bright nickel plated.

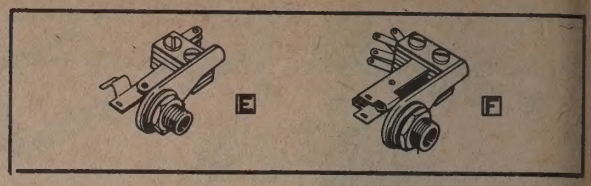
Part No.	Fig.	Cond.	Typical Mating Plug	Term.	Handle	U.S.A. List Price
80	B	2	250	Screw	Black	$1.35
88	B	2	250	Solder	Black	1.20
120	C	2	270	Screw	Shielded	1.80
121	D	2	270	Solder	Shielded	1.90
126	C	2	R-280	Solder	Shielded	2.00
128	C	2	270	Solder	Shielded	1.65
S-128	C	2	S-250	Solder	Shielded	1.75
131	D	3	290	Solder	Shielded	2.35
830	B	3	267	Screw	Black	1.80
S-830	B	3	480	Screw	Black	2.35
838	B	3	267	Solder	Black	1.65
1230	C	3	290	Screw	Shielded	2.30
S-1230	C	3	480	Screw	Shielded	2.85
1238	C	3	290	Solder	Shielded	2.10



"CV-JAX" AND PLUGS

High quality **coaxial-video jacks** and **plugs** designed for use in patching high frequency signals, microwave, telemetry and data transmitting applications. Jacks are made for **50** and **70 ohm** circuits and use standard **RG** cables. No. **3601** accepts RG59/U. Mount in single 7/16" hole; Depth behind panel is 2 29/64". No. **3621**, terminating plug with **75 ohm** ± 1% ½ watt resistor; No. **3622**, feed through plug; No. **3623** same as **3621** but with tip jack for incircuit testing.

JACKS		PLUGS	
Part No.	U.S.A. List Price	Part No.	U.S.A. List Price
3601	$10.00	3621	$ 4.75
		3622	4.25
		3623	5.75



"SF-JAX" SHORT FRAME PHONE JACKS

E **Series 20**—High quality commercial jacks, solder lugs parallel to mounting surface. Mount in ⅜" dia. holes, panels up to 5/16" thick.

F **Series 50**—Similar to Series 20, except solder lug location necessitates more depth but requires less panel space. Mount in panels up to ¼" thick.

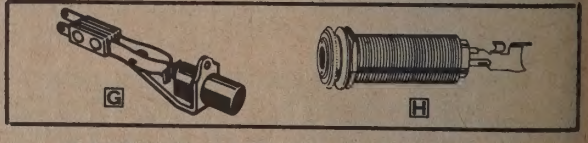
Series C-20 and C-50—MIL Types with Military insulation and finishes, otherwise similar to commercial Series 20 and 50; both will mount in panels up to ¼" thick.

SERIES 20 and C-20

Part No.	Schematic No.	Typical Mating Plug	Mil-Type	U.S.A. List Price
21	I	250	—	$0.80
22	II	250	—	1.00
22A	III	250	—	1.00
22B	IV	267	—	1.00
23	V	250	—	1.15
C-23	V	440	JJ-099	1.60
23A	VI	250	—	1.15
C-23A	VI	440	JJ-098	1.60
23B	VIII	267	—	1.15
23C	XXVIII	267	—	1.15
23E	IX	250	—	1.15
C-23E	IX	440	JJ-102	1.60
24	X	267	—	1.20
24A	XI	250	—	1.30
24B	XII	267	—	1.30
25	XIII	250	—	1.55
26	XIV	267	—	1.65

SERIES 50 and C-50

51	I	250	—	$0.80
C-51	I	440	JJ-096	1.40
52	II	250	—	1.00
52A	III	250	—	1.00
C-52A	III	440	JJ-097	1.55
52B	IV	267	—	1.00
C-52B	IV	482	JJ-103	1.55
53	V	250	—	1.15
53A	VI	250	—	1.15
C-53A	VI	440	JJ-092	1.80
53B	VIII	267	—	1.15
53C	XXVIII	267	—	1.15
53E	IX	250	—	1.15
54	X	267	—	1.20
54A	XI	250	—	1.30
C-54A	XI	440	JJ-093	1.85
54B	XII	267	—	1.30
C-54B	XII	482	JJ-101	1.85
55	XIII	250	—	1.55
C-55B	XV	482	JJ-095	2.15
56	XIV	267	—	1.65



"LAMP-JAX" SWITCHBOARD PANEL TYPE

G Quality long frame panel type lamp jacks. No. **LT-47**, black nylon lamp housing completely insulates lamp from frame. Interchangeable with W.E. Nos. 47A, 47B. Accepts std. lamps and lamp caps, W.E. Nos. 2, 72, etc. No. **LT-48**, new Ballast Lamp-Jax for use in circuits subjected to increasing temperature and wattage. Steel frame and bushing, Teflon sleeve. Accepts std. telephone lamps or ballast lamp No. 60XA. Both lamp jacks mount in std. Switchcraft jack panels.

Switchcraft Part No. LT-47 ..... U.S.A. List Price **$1.50**

Switchcraft Part No. LT-48 ..... U.S.A. List Price **$2.25**

"THICK-PANEL JAX"

H Phone jacks with long bushing. Mount in single 15/32" dia. hole in panels up to 1¼" thick. Solder lug terminals. Ideal for use with microphones; extra shielding virtually eliminates audio hum. No. 151, 2-conductor mates with 240, 245, 250, 255, 270 and 280 Plugs. No. 152B, 3-conductor mates with 260, 267, 269 and 297 Plugs.

Part No.	Description	U.S.A. List Price
151	2-cond. Brass Nickel Plated	$1.55
152B	3-cond. Brass Nickel Plated	1.70

Trade Discount Applies To List Prices Only

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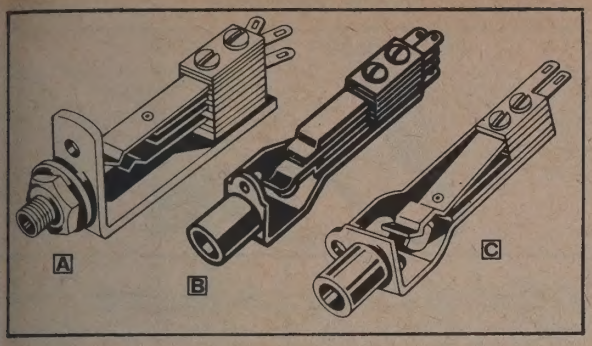
SWITCHCRAFT INC.

Phone Jacks and Plugs

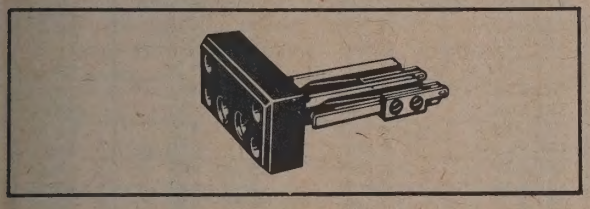


"T-JAX" TELEPHONE TYPE PHONE JACKS

C Long frame, switchboard type, phone jacks. For high quality communication equipment. Springs of nickel silver alloy for maximum life and corrosion resistance. Fine silver contacts are standard. Available in two frame designs. Part numbers in chart cover "A" frame design as shown in **Fig. C.** For frame design "C" as shown in **Fig. B,** add prefix letter "C" to part numbers. All jacks listed mate with standard ¼" dia. phone plugs.

Part No.	Schematic No.	Typical Mating Plug	Conductors	U.S.A. List Price
T-331	I	250	2	**$1.15**
T-332A	III	250	2	**1.30**
T-332B	IV	267	3	**1.30**
T-334B	XII	267	3	**1.60**

"DUAL-JAX BLOCK"



Molded black phenolic jack blocks for mounting "MT-Jax" and "T-JAX" long frame phone jacks, on ⅝" centers. Can be rack panel mounted individually or in multiples. Blocks are 2¾" W. x 1¼" H. x ⅝" D. Mount with four No. 8-32 flat head screws.

Part No.	Description	U.S.A. List Price
2300	Jack Block, less jacks	**$1.60**
2331	Two MT-331 jacks	**4.20**
2332A	Two MT-332A jacks	**4.60**
2332B	Two MT-332B jacks	**4.60**
2333	Two MT-333 jacks	**5.15**

"LOCK-PLUG" AND "EXTENSION JAX"

Standard size ¼", 3 conductor phone plug and mating cable extension jacks, with built-in device. Plug has coupling ring that can be threaded to the bushing of a "Littel-Jax" or to the mating end of the "Lock-Extension Jax". Lock Plug handle, 1$^{51}/_{64}$" long; ½" dia. "Lock-Extension Jax", ½" O.D.; 2½" long. Solder lug terminals. Available in 2-cond. types on special order.

Part No.	Description	U.S.A. List Price
298	3-Conductor Lock Plug	**$2.05**
133	3-Conductor Extension Jax	**2.60**

"M-JAX" MILITARY TYPE PHONE JACKS

A Very heavy long frame jacks often referred to as the **Navy Jack.** Ideal for industrial and Military equipment. Long heavy duty springs with fine silver contacts. Mounts on single ⅜" hole, in panels up to ¼" thick.

Part No.	Schematic No.	Adjusted for Plug	Mil-Type No.	U.S.A. List Price
M-441	I	250	—	**$1.65**
M-443B	VIII	482	JJ-106	**2.25**
M-444*	XII	484 & 480	JJ-083	**2.45**
M-444B	XII	482	JJ-082	**2.35**
M-445	XIII	440	JJ-104	**2.90**
M-446A	XVI	482	JJ-081	**4.05**

*Bushing, .2085".

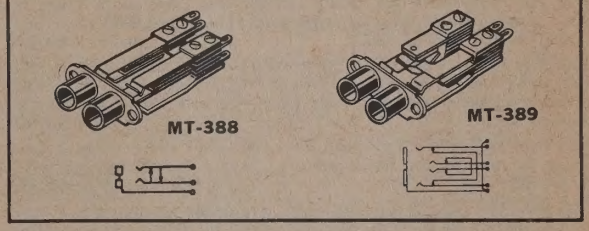
"MT-JAX" MILITARY TELEPHONE JACKS

C Long frame, telephone switchboard jacks designed for high quality communication and military equipment. Springs are of a special nickel silver alloy with welded cross bar palladium contacts. "MT-Jax" are available in two frame designs, namely "A" & "C". Part numbers in chart cover "A" frame design as shown in **Fig. C.** For frame design "C" as shown in **Fig. B,** add prefix letter "C" to part numbers.

Part No.	Schematic No.	Adjusted for Plug	Mil-Type No.	U.S.A. List Price
MT-331	I	440*	JJ-086	**$1.30**
MT-332	I	440	—	—
MT-332A	III	440	JJ-024	**1.50**
MT-332B	IV	482†	JJ-022	**1.50**
MT-332C	XVIII	440	JJ-016	**1.75**
MT-333	V	440	JJ-084	**1.70**
MT-333B	VIII	482	—	**1.75**
MT-333E	IX	440	—	**1.75**
MT-334A	XI	440	—	**1.80**
MT-334B	XII	482	JJ-042	**1.80**
MT-334C	XVII	440	JJ-072	**1.80**
MT-334E	XXV	440	JJ-085	**1.80**
MT-334F	XIX	440	JJ-035	**1.80**
MT-335A	XXVI	440	JJ-017	**2.05**
MT-336A	XIV	482	JJ-075	**2.55**
MT-336B	XXI	482	JJ-077	**2.55**
MT-336C	XXII	482	JJ-073	**2.55**
CMT-336E	XXIII	440	JJ-019	**2.55**
MT-342B§	IV	480‡	—	**1.75**
MT-344B§	XII	480	—	**2.05**

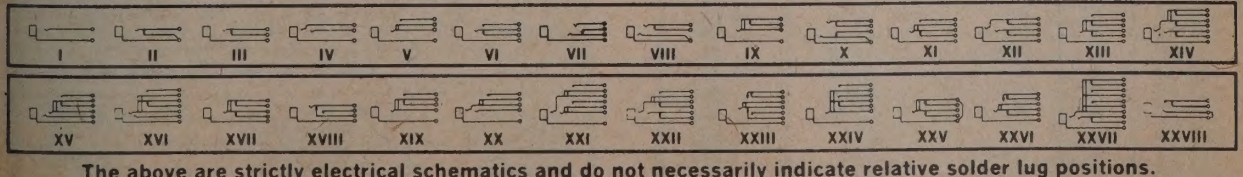
*MIL Type PJ-055.
†MIL Type PJ-051B.
‡MIL Type PJ-068.
§Bushing, .2085".

"TWIN-JAX" DUAL MILITARY JACKS



Similar in design to "MT-Jax" except frame is double width, with two mounting ears on 1⅜" centers; bushings are on ⅝" centers. MT-388, MIL-Type No. **JJ-088,** mates with Nos. 411, 412, 413, 420 and 425 plugs. MT-389 has two 3-conductor jacks interconnected; mates with No. 482 Plug.

Switchcraft Part No. MT-388 ..... U.S.A. List Price **$4.55**
Switchcraft Part No. MT-389 ..... U.S.A. List Price **5.05**

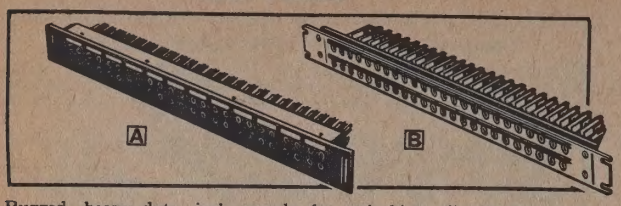


The above are strictly electrical schematics and do not necessarily indicate relative solder lug positions.

Jack Panels, Plugs, Patch Cords

SWITCHCRAFT INC.

JACK PANELS



Rugged, heavy-duty jack panels for switching, distribution and control of audio signals in broadcasting stations, theaters, P. A. systems installations, etc. **Series 1200,** Fig. A, black phenolic panels reinforced with steel for the utmost rigidity. Mounting brackets slotted to fit all standard 19" relay racks. Panel includes plastic covered designation strips. **Series 2800,** Fig. B, clear anodized aluminum panel. Extremely rugged, yet lightweight. Includes new narrow designation strip for each row. Add Prefix "X" to part numbers to indicate offset ground lugs on jacks. Aluminum panels available only with offset lugs.

Part No.	Fig.	Rows	Number of Jacks	Size, In. W x D x H	U.S.A. List Price
1200	A	Single	24 *	19x1¼x1¾	$15.25
1232A	A	Single	24 T-332A	19x1¼x1¾	42.00
1332A	A	Single	24 MT-332A	19x1¼x1¾	47.25
1400	A	Single	26 *	19x ⅝x1¾	15.25
1432A	A	Single	26 T-332A	19x ⅝x1¾	45.25
1532A	A	Single	26 MT-332A	19x ⅝x1¾	51.50
2400	A	Double	48 *	19x1¼x2⅛	15.75
2432A	A	Double	48 T-332A	19x1¼x2⅛	73.50
2532A	A	Double	48 MT-332A	19x1¼x2⅛	87.25
2600	A	Double	52 *	19x ⅝x1¾	19.00
2632A	A	Double	52 T-332A	19x ⅝x1¾	83.00
2732A	A	Double	52 MT-332A	19x ⅝x1¾	96.50
2800	B	Double	48 *	19x ⅝x1¾	42.00
X2832A	B	Double	48 T-332A	19x ⅝x1¾	99.75
X2932A	B	Double	48 MT-332A	19x ⅝x1¾	113.50

*Supplied less jacks.

MILITARY TYPE "TWIN-PLUG"

412

Meet exact industrial and military requirements. **No. 411,** both design and materials, is manufactured in accordance with MIL-P-642(A) specs. **Nos. 412 and 413,** use identical materials. "Twin-Plug" sleeves spaced ⅝" center to center with self-aligning feature.

Part No. 411—Two electrically independent 2-conductor plugs in black plastic handle. Has provision for Cord Clamp No. S-2674. Military Type **PJ-327** (Old Navy No. 491242). Interchangeable with W.E. 327.....U.S.A. List Price **$5.25**

Part No. 412—Two electrically independent 2-conductor plugs in black plastic handle. Has external cord clamp. Old Military Type PJ-289. Similar to W.E. 289B.....U.S.A. List Price **$4.90**

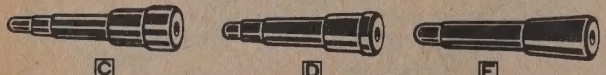
Part No. 413—Three circuit plug with two electrically independent tip circuits in heavy duty die cast frame. Molded black phenolic handle notched to indicate polarity. Interchangeable with MIL-Type PJ-421 and W.E. 241.....U.S.A. List Price **$4.90**

Part No. 414—Six circuit plug. Two electrically independent 3 conductor ¼" dia. fingers. Black polarized handle. Interchangeable with WE-338A.....U.S.A. List Price **$9.25**

Part No. 415—Six circuit plug. Two electrically independent 3 conductor fingers. One ¼" dia. finger, one .206" dia. For automatic polarization. Black handle.....U.S.A. List Price **$10.25**

Part No. S-2674—Strain relief clamp, natural brass. For use with Nos. 411, 414, 415 "Twin-Plug". Pkg. of 10...U.S.A. List Price **$0.60**

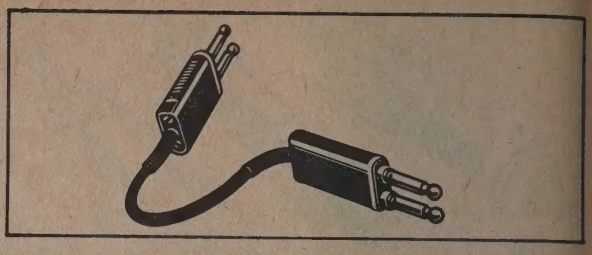
"DUMMY-PLUG"



Low cost, 2- and 3-conductor molded plastic, dummy plugs for use in switchboards, jack panels. Inserts in jack as does a phone plug to switch circuits, but can not couple incoming signals. Can also be used to plug up unused phone jacks to prevent accidental insertion of a phone plug. Series 491, 3-conductor, .207" dia. finger. Series 492, 3-conductor, .250" dia. finger. Series 493, 2-conductor, .250" dia.

Part No.	Fig.	Handle	Typical Mating Jack	U.S.A. List Price
491-01	C	Red	MT-342B	$0.55
491-02	C	Black	MT-342B	.55
491-05	C	White	MT-342B	.55
492-01	D	Red	MT-332B	.55
492-02	D	Black	MT-332B	.55
492-05	D	White	MT-332B	.55
493-01	E	Red	MT-331	.55
493-02	E	Black	MT-331	.55
493-05	E	White	MT-331	.55

PATCH CORD SETS



All patch cords are constructed of bronze tinsel conductors, insulated and shielded, with a heavy black nylon braid overall.

Series 17Q—2-conductor patch cords have No. 413 "Twin-Plug" at each end with shields grounded both ends.

Series 17P—Same as 17Q, except shield grounded one plug only.

Series 18Q—2-conductor patch cords use Military Plug **PJ-051** (Switchcraft Part No. 482) at each end with shields grounded both ends.

Series 19Q—Single conductor patch cords utilize Military Plug **PJ-047B** (Switchcraft Part No. 420) connected to each end with shield grounded both ends.

Part No.	Length	Plugs Used	U.S.A. List Price
17QA17	6 inch	413	$12.10
17QB17	1 foot	413	12.40
17QD17	2 feet	413	12.65
17QF17	3 feet	413	12.95
17QH17	4 feet	413	13.40
17QK17	6 feet	413	14.30
17QN17	10 feet	413	15.15
17PA17	6 inch	413	12.10
17PB17	1 foot	413	12.40
17PD17	2 feet	413	12.65
17PF17	3 feet	413	13.00
17PH17	4 feet	413	13.40
17PK17	6 feet	413	14.30
17PN17	10 feet	413	15.15
18QA18	6 inch	482	12.65
18QB18	1 foot	482	13.20
18QD18	2 feet	482	13.75
18QF18	3 feet	482	14.30
18QH18	4 feet	482	14.85
18QK18	6 feet	482	15.95
18QN18	10 feet	482	18.15
19QA19	6 inch	420	6.60
19QB19	1 foot	420	6.90
19QD19	2 feet	420	7.45
19QF19	3 feet	420	8.00
19QH19	4 feet	420	8.55
19QK19	6 feet	420	10.00
19QN19	10 feet	420	11.55

REPLACEMENT PATCH CORDS

Patch cords are made of bronze tinsel conductors, insulated and shielded, with a heavy black nylon braid overall. Cords designed for use with Switchcraft plugs 413, 420 and 482 or equivalents. When used with No. 420, clip off unnecessary lead.

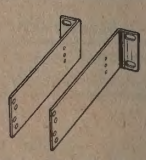
Series 89Q—2-conductor shielded cord with shield termination at both ends.

Series 89P—2-conductor shielded cord with shield termination at one end only.

Part No.		Length	U.S.A. List Price
Both Ends Shielded	One End Shielded		
89QA89	89PA89	6 inch	$2.50
89QB89	89PB89	1 foot	3.05
89QD89	89PD89	2 feet	3.30
89QF89	89PF89	3 feet	3.70
89QH89	89PH89	4 feet	3.85
89QK89	89PK89	6 feet	4.95
89QN89	89PN89	10 feet	7.15

JACK PANEL ACCESSORIES

HOLE PLUG



BRACKET KIT

Hole Plug, P-1801, molded nylon, fits all Switchcraft jack panels, Series 1200, 1400, 2400, 2600, 2800. Designed to plug unused holes in jack panels. Bracket Kit, K-107, consists of 2 long L-shaped steel, stand-off brackets and eight No. 6-32 self-tapping screws. To hold jack panels, Series 1400, 2600, 7" in front of mounting rack.

Part No.	Description	U.S.A. List Price
P-1801	Hole Plug	$0.30
K-107	Bracket Kit	4.50

Trade Discount Applies To List Prices Only

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SWITCHCRAFT® INC.

Phone Plugs

"LITTEL-PLUG" PHONE PLUGS

Small size phone plugs fit standard ¼" phone jacks except *Nos. S-250, S-260, S-280 and S-290 which have a .206" dia. sleeve. **Nos. C-240, C-245 and C-270 feature an integral cable clamp with screw terminals. †No. R-280 has short sleeve or Revere Recorders. ‡No. 288 has a wide insulator between tip and sleeve for use in a 3-conductor jack to perform a 2-conductor function without shorting. Plugs with solder terminals have built-in cable clamp. Shielded metal handles are nickel plated brass; others are molded of durable plastic; ⅝" long x ½" dia.

TWO-CONDUCTOR TYPE

Part No.	Fig.	Typical Mating "Littel-Jax"	Handle	Ter-minals	U.S.A. List Price
240	A	11	Black	Screw	$0.90
C-240**	A	11	Black	Screw	1.05
245	A	11	Red	Screw	.90
C-245**	A	11	Red	Screw	1.05
250	A	11	Black	Solder	.85
255	A	11	Red	Solder	.85
270	B	11	Shielded	Screw	1.25
C-270**	B	11	Shielded	Screw	1.40
280	B	11	Shielded	Solder	1.20
288‡	B	11	Shielded	Solder	1.25
S-250	A	S-11	Black	Solder	.90
S-280	B	S-11	Shielded	Solder	1.20
R-280†	B	—	Shielded	Solder	1.55

THREE-CONDUCTOR TYPE

260	A	12B	Black	Screw	$1.40
S-260*	A	S-12B	Black	Screw	1.95
267	A	12B	Black	Solder	1.25
269	A	12B	Red	Solder	1.25
290	B	12B	Shielded	Screw	1.65
297	B	12B	Shielded	Solder	1.55

STANDARD ¼" PHONE PLUGS

Available with phenolic or shielded, nickel plated over brass handle.

TWO-CONDUCTOR TYPE—SCREW TERMINALS

Typical mating jack "Littel-Jax" No. 11. No. 169 features circuit closing device. No. 170 has a two-piece handle with built-in clamp for ¼" cable.

Part No.	Fig.	Handle	Length & Dia.	U.S.A. List Price
40	A	Black	2 1/16 x ¾	$0.95
45	A	Red	2 1/16 x ¾	.95
70	B	Shielded	2 1/16 x 1 1/16	1.50
160	C	Shielded	1 x 1 1/16	1.20
169	C	Shielded	1 x ¾	2.50
170	D	Shielded	2 1/16 x 1 1/16	1.95

THREE-CONDUCTOR TYPE—SOLDER TERMINALS

Typical mating jack "Little-Jax" No. 12B. No. 190A has two-piece handle with built-in cable clamp for ¼" cable.

60	A	Black	2 1/16 x 1 1/16	$1.25
90	C	Shielded	1 x 1 1/16	1.60
190	B	Shielded	2 1/16 x 1 1/16	1.85
190A	D	Shielded	2 1/16 x 1 1/16	2.30

"LUG-PLUG" PHONE PLUGS

Low cost, two-conductor phone plugs. Fit all ¼" phone jacks.

No. 385 Plug has a .206" dia. sleeve and mates with S-11 "Littel-Jax". All have solder lug terminals. Handle: Shielded metal or phenolic.

Part No.	Fig.	Typical Mating "Littel-Jax"	Handle	Length & Dia.	U.S.A. List Price
350	A	11	Black	1 5/8 x ½	$0.75
355	A	11	Red	1 5/8 x ½	.75
380	—	11	Shielded	1 x ½	.95

"TINI-PLUG" MINIATURE PHONE PLUGS

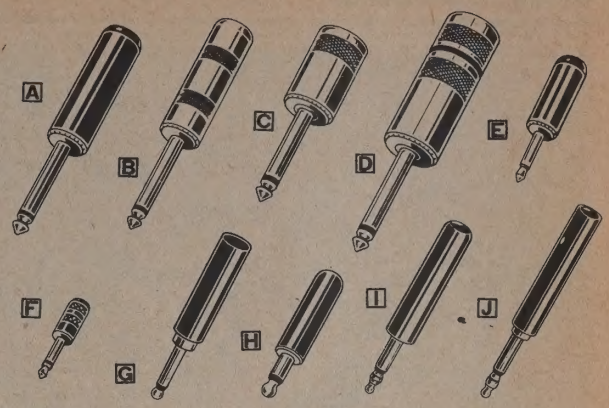
Miniature 2-conductor phone plugs for use with "TINI-JAX" only 1/3 the size of standard phone plugs. Handle 1⅝" overall length, are plastic or brass, nickel plated.

Part No.	Fig.	Terminal	Handle	U.S.A. List Price
740	E	Screw	Black	$0.90
745	E	Screw	Red	.90
750	E	Solder	Black	.85
755	E	Solder	Red	.85
770	E	Screw	Shielded	1.20
780	E	Solder	Shielded	1.20

"MICRO-PLUG"® SUB-MINIATURE PHONE PLUGS

Sub-miniature 2-conductor phone plugs, only 1¼" long; ¼" O.D., .097" dia. sleeve. Mate with No. TR-2A. Have screw on handles in black, red or natural anodized aluminum; accommodates cables up to ⅛" dia. All plugs have integral cable clamps.

Part No.	Fig.	Description	U.S.A. List Price
850	F	Black Handle	$0.80
855	F	Red Handle	.80
880	F	Natural Handle	.80



MILITARY TYPE "LITTEL-PLUG" AND "EXTENSION JAX"

Designed to meet exact industrial and military requirements. Plugs are made in accordance with MIL-P-642(A) specifications. One-piece tip rod and one-piece sleeve and plug body provide internal interlock to prevent parts shifting in position. Type 820 Extension Jack meets MIL-J-641A specifications and mates with "Littel-Plug" No. 430. No. 470 has shielded handle; all others plastic: †Red; ‡Black. All plugs have screw terminals.

Part No.	Fig.	Mil-Type No.	Typical Mating Jack	Cond.	U.S.A. List Price
420‡	G	PJ-047B	MT-388	2	$1.75
425†	G	PJ-047R	MT-388	2	1.75
430‡	H	PJ-054B	820	2	1.50
435†	H	PJ-054R	820	2	1.50
440‡	—	PJ-055B	MT-331	2	1.50
445†	—	PJ-055R	MT-331	2	1.50
450‡	H	PJ-540B	820	2	1.50
455†	H	PJ-540R	820	2	1.50
470	—	PJ-055M	MT-331	2	2.10
480‡	I	PJ-068	MT-342B	3	3.60
482†	J	PJ-051R	MT-332B	3	4.00
483‡	J	PJ-051B	MT-332B	3	4.00
484†	J	PJ-309	M-444	3	3.60
820‡	—	JJ-026	430 Plug	2	2.10

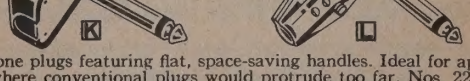
Switchcraft Part No. P-1074-1—Strain Relief Clamp. Nickel Plate Brass. Package of 25.....U.S.A. List Price **$0.85**

TYPE 410 PLUG AND TYPE 810 JACK

Miniature 2-conductor extension jack and mating plug; often referred to as "Throat Microphone Plug and Jack". Plug is Military Type PJ-291; jack is Type JJ-048. Each is of two-piece molded construction. Plug has solder-cup terminals; jack has solder lugs. After wiring, shells must be cemented and clamped till dry. Overall size (engaged), 2⅝" x 17/32" x ⅜".

Switchcraft Part No. 410 Plug.....U.S.A. List Price **$1.00**
Switchcraft Part No. 810 Jack.....U.S.A. List Price **1.30**

"FLAT-PLUG" PHONE PLUGS



¼" phone plugs featuring flat, space-saving handles. Ideal for applications where conventional plugs would protrude too far. Nos. 220, 225 have adapter clips which make them convenient to clamp standard phone tips to terminals. Shielded flat plugs, Nos. 228 and 238 have nickel plated steel handles; all others have red or black plastic handles. Nos. S-230 and S-235 have .206" dia. sleeve.

TWO-CONDUCTOR TYPE

Part No.	Fig.	Typical Mating Jack	Handle	Terminals	U.S.A. List Price
220	K	11	Black	Screw	$1.30
225	K	11	Red	Screw	1.30
227	K	11	Black	Solder	1.05
228	L	11	Shielded	Solder	1.15
229	K	11	Red	Solder	1.05

THREE-CONDUCTOR TYPE

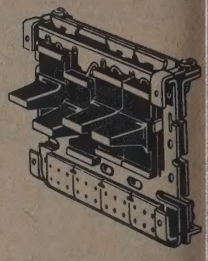
230	K	12B	Black	Screw	$1.60
S-230	K	S-12B	Black	Screw	2.05
235	K	12B	Red	Screw	1.60
237	K	12B	Black	Solder	1.55
238	L	12B	Shielded	Solder	1.70
239	K	12B	Red	Solder	1.55

Switches

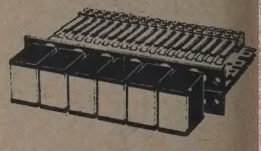
SWITCHCRAFT INC

Switchcraft switches give you unlimited latitude in the selection of switching functions and actuations for customizing your equipment designs. Whether you choose pushbutton, slide or lever actuated switches, Switchcraft Authorized "Multi-Switch"® Specialists can aid you in the selection and specification of the proper switch to fill your particular requirements. All "Multi-Switch"® switches are factory-assembled to your specifications at Switchcraft. Factory assembly, plus rigorous inspection and testing is your assurance of optimum performance and dependability. Fully assembled "Multi-Switch"® switches are sold only through Switchcraft Authorized "Multi-Switch"® Specialists. Write Switchcraft for name of your local Specialist.

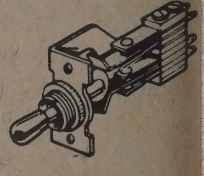
Only Switchcraft offers 3 complete lines o slide, multiple station pushbutton, and leve switches . . . 3 proven solutions to man-machine interface problems.



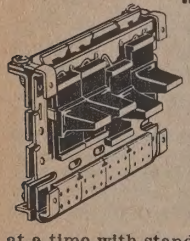
SLIDE ACTION . . . Series 39000 "Multi-Slide" switches provide design engineers with an entirely new switching method to solve man-machine system problems. "Multi-Slide" switches help eliminate operating confusion inherent in constant manipulation of pushbutton matrixes by providing slide-switch variety. **Series 39000 Switches** offer 3 types of actuation: interlock, all-lock, non-lock.



PUSHBUTTON ACTION . . . Whatever your requirements for switching, you will find Switchcraft "Multi-Switch" switches enable you to design a cybernetically correct, error-reducing panel. Both illuminated and non-illuminated types are available with non-lock, all-lock, interlock, push-to-lock, push-to-release functions. Illuminated types offer single or multiple lighting effects. **Series 7000 and 21000** frames are available from 1 to 37 stations in a row. Littel "Multi-Switch" **Series 35000, 36000, 37000,** are compact switching units offering 1 to 18 stations in a row.



LEVER ACTION . . . Switchcraft offers the largest selection of illuminated and non-illuminated lever-type switches in the industry. They come in a wide choice of sizes, 2 or 3 position, locking and non-locking types. They range in size and style from miniaturized **"Feather Lever"**, featuring changeable push-on color knobs to **"Lever-Lite"**, a 3-color illuminated type lever switch; to the industry standard **"Telever"**, a telephone type switch featuring field changeable functions.



"MULTI-SLIDE" SWITCHES

SERIES 39000

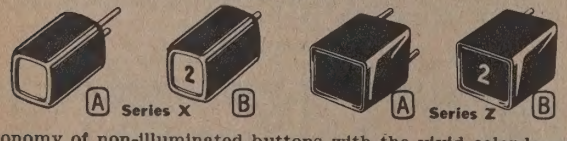
Revolutionary compact switching method provides versatile multiple station slide switching. Allows 1 to 18 stations per row standard on all but all-lock function which is limited to 12 stations. Requires only ¾" depth behind panel. Narrow frame design permits mounting on compact electronic equipment without sacrificing versatility or function. Three standard functions available: **Interlock:** actuating slidebutton automatically restores previously actuated station to normal. Only one slidebutton can be actuated at a time with standard interlock function. **Nonlock:** each station has momentary action with no interaction between stations. **All-lock:** all stations, except release, lock when depressed—restore to normal when release button is actuated. Special slide-to-release cancelling feature in interlock and all-lock frames permits immediate correction of switching error without cancelling actuated switches. Slidebuttons are on ⅝" centers. Up to 3 miniature switch stacks, rated at 3 amps; 300 watts max., AC non-inductive load, can be mounted at each station for a minimum of 1-A (SPDT) to a max. of 3-C (3PDT) per station. To order, refer to "SWITCH STACKS", Series 80P, 800P. For power switching, snap switch modules can be mounted to each station. Refer to "PIGGY BACK" SNAP-SWITCH MODULES, Series SA, SC and SD under littel "Multi-Switch" listing. Switch frames mount on panels up to ⅛" thick. End brackets have four 6-32 tapped mtg. holes. A black slidebutton is furnished for each station and a red slidebutton is supplied when switch requires a release. A kit of chromatic legend tabs, **Part No. K-120,** is available for positive color coding of an actuated station. Kit consists of 10 tabs each of 6 colors: Red, black, green, blue, white and yellow. Pressure sensitive tabs mount easily in recess of slidebutton; can be hot-stamped for identification. The following part numbers cover basic frame only. To complete assembly, order switch stacks for each station and/or snap-switch modules, as required. Only the most commonly used frames are listed here. For complete engineering information on Series 39000 switches, request Switchcraft Bulletin 158a.

Part No. For Functions			No. of Stations	Part No. For Functions			No. of Stations
Inter-Lock*	Non-Lock	All-Lock		Inter-Lock*	Non-Lock	All-Lock	
39021	39022	39023	2	39081	39082	39083	8
39041	39042	39043	4	39101	39102	39103	10
39061	39062	39063	6	39121	39122	39123	12

*With lock-out feature.

"GLO-BUTTON" PUSHBUTTONS

SERIES X, Y, Z



Economy of non-illuminated buttons with the vivid color-legend display of illuminated buttons. "Glo-Buttons" look and function like an illuminated button, but require no lamp or power. Mount on all pushbutton switches with std. .050" x .187" plungers, as Switchcraft Series 7000, 8000, and 35000 "Multi-Switch", and other switches having maintained plunger action with a max. of 1/16" **fallback.** "Glo-Buttons" have a translucent front screen on which a legend is marked in an opaque color. The opaque color provides a background for the legend while the legend itself remains clear **(Figs. A).** An internal fluorescent illuminator is carried on a pusher which has two legs extending from the rear. When the button is depressed, the rear legs of the pusher bring the fluorescent illuminator flush with the screen which then lights up due to reflected ambient light, and projects a clearly visible legend, see **Figs. B.** All "Glo-Buttons" have black button housings and are available with std. legends: **"A"** thru **"Z"**, **"0"** thru **"50"**, and **"ON"**, **"OFF".** Eight basic types of buttons are offered: To order, specify part number and add suffix letter or numeral to part number which describes desired legend. Example: To order ½" sq. "Glo-Button" with black screen, orange-red illuminator and numeral "7", part number would read X21248-7.

Series No.	Size	Screen Color	Illuminator Color
X21248	½" square	Black	Orange-Red
X51248	½" square	White	Orange-Red
Y21248	¾" h. x ⅝" w.	Black	Orange-Red
Y28248	¾" h. x ⅝" w.	Black	Chartreuse
Y51248	¾" h. x ⅝" w.	White	Orange-Red
Z21248	⅝" h. x ¾" w.	Black	Orange-Red
Z28248	⅝" h. x ¾" w.	Black	Chartreuse
Z51248	⅝" h. x ¾" w.	White	Orange-Red

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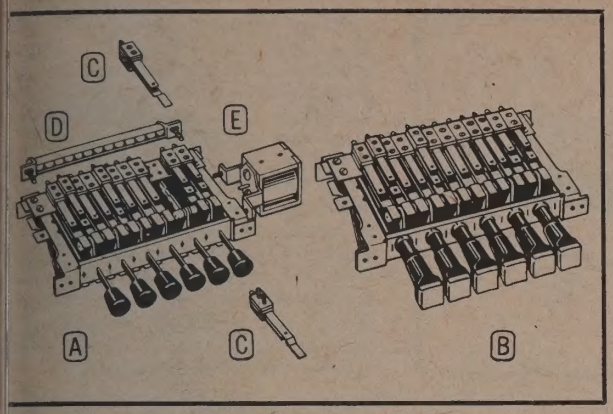
SWITCHCRAFT® INC. "Multi-Switch"® Switches



Basic design simplicity provides a unique multiple station push-button switch that's rugged, compact, versatile and completely flexible in switching functions. Hundreds of circuit and function combinations are possible as **all switching components**—frame, switch stacks, lamps and other accessories **are changeable.** Order the "Multi-Switch" you now require, from stock, and later change circuits and/or functions in the field by simple positioning adjustments of stop plate, latch bar spring, and/or interchanging or adding-on switch stacks. **For a complete multiple station assembly, you must order the proper frame and the necessary switch stacks, for each station on the frame.** Optional accessories include: **Lock-out bar** which prevents operation of more than one station at a time, and a **solenoid release** to provide automatic remote release of activated stations. Standard "Multi-Switch" frames are available with these functions: **Interlock,** restores to normal any previously actuated station when another station is actuated. **Non-Lock,** momentary action of each station. **All-Lock,** accumulative locking of all stations with restoration of all stations to normal when release station is depressed. **Specify switching function when ordering frames listed below.**

SERIES 7000 NON-ILLUMINATED FRAMES

(A) Heavy gauge steel switch frames mount on panels up to ⅜" thick, with 3 1/16" depth behind the panel. Rugged, welded end-mounting brackets have four 8-32 tapped holes for ease of panel mounting. Attractive, round brown push-on-buttons supplied for each station, plus extra red button for use when switch requires a release station. Center-to-center distance between buttons is ⅝". Steel plunger .050" x .187" accepts standard push-on-buttons and "Glo-Buttons". Standard plunger is 1⅛" long, but can be supplied up to 5¾" long on special order. Switch frames with buttons on ¾" centers are available in Series 8000 which has all the same features as Series 7000. **Series 7000** "Multi-Switch" frames are available with from 1 to 37 stations; **Series 8000** from 1 to 31 stations. When ordering Series 8000 add 10% to prices. Only the most commonly used frames are listed below. For more detailed information, request Switchcraft catalog S-306.

Part No.	No. of Stations	Part No.	No. of Stations	Part No.	No. of Stations
7100	1	**7500**	5	**7900**	9
7200	2	**7600**	6	**71000**	10
7300	3	**7700**	7	**71100**	11
7400	4	**7800**	8	**71200**	12

SERIES 21000 ILLUMINATED FRAMES

(B) Similar in switching functions and characteristics to non-illuminated "Multi-Switch", but, with these outstanding features: modern square button design with bright uniform front and side illumination provided by lamp diffusers; knurled retaining collar for quick easy front-of-panel lamp replacement. Two lamp voltages: 6 V and 28 V. Buttons with white jewels and white diffusers are furnished for switching and release stations. Standard frames listed below provide **"L"** type lighting (pushbuttons light in "IN" position). To have pushbutton light in "OUT" position, prefix part No. with **M** (e.g., **M**21100). To have them light in both the "IN" and "OUT" positions, prefix with **N.** To avoid ordering "specials", order lighting stacks listed in next column to provide "M" and "N" lighting. Center-to-center distance between buttons is ⅝" on **Series 21000,** available with up to 37 stations in a row; **Series 22000,** buttons on ¾" centers, available up to 31 stations only. Add 10% to price of Series 21000 when ordering Series 22000. Only the most commonly used frames are listed below. For more detailed information request Switchcraft catalog S-306. All frames are supplied less lamps and stack switches.

Part No.	No. of Stations	Part No.	No. of Stations	Part No.	No. of Stations
21100	1	**21500**	5	**21900**	9
21200	2	**21600**	6	**211000**	10
21300	3	**21700**	7	**211100**	11
21400	4	**21800**	8	**211200**	12

LAMPS FOR "MULTI-SWITCH"® SWITCHES

Lamps are not furnished with **Series 21000** switches. For initial order or replacement specify **Part No. P-1593-1,** 28 V flange base lamp, Ind. No. 327; or, **Part No. P-1593-2,** 6 V flange base lamp, Ind. No. 328.

SWITCH STACKS

(C) Interchangeable switch stacks for mounting to "Multi-Switch" frames. Two types listed: **Series 70** stacks, fine silver contacts; **Series 70P,** welded cross-bar palladium contacts. Use where the switching circuits of a released station will return to normal before contacts of a newly operated station are actuated. Both series are rated at 3 amps, 300 watts, max., AC non-inductive load. Should more than one circuit be required, specify two (or more) stacks in order to balance the load on the plunger. With each switch, two mounting screws and one pressure plate is furnished. In addition to Series 70 and Series 70P Switch Stacks, four other Series are available, from stock.

SERIES 70—SILVER CONTACTS

Part No.	Circuits	Part No.	Circuits	Part No.	Circuits
71	1-A	**73D**	1-D	**76**	2-C
72	1-B	**74**	2-A	**76D**	2-D
73	1-C	**75**	2-B		

SERIES 70P—PALLADIUM CONTACTS

Part No.	Circuits	Part No.	Circuits	Part No.	Circuits
71P	1-A	**73PD**	1-D	**76P**	2-C
72P	1-B	**74P**	2-A	**76PD**	2-D
73P	1-C	**75P**	2-B		

LOCK-OUT BAR "K" SERIES

(D) Prevents operation of more than one switching station at a time. Mounts on back of standard "Multi-Switch" Series 7000, 8000, 21000 and 22000 frames with two screws (furnished). Available from 2 to 37 stations for a single frame. Lock-Out Bars listed are for ⅝" center plunger only; for ¾" centers, order special.

Part No.	Stations	Part No.	Stations	Part No.	Stations
K-02	2	**K-06**	6	**K-10**	10
K-03	3	**K-07**	7	**K-11**	11
K-04	4	**K-08**	8	**K-12**	12
K-05	5	**K-09**	9		

SOLENOID RELEASE—"J" SERIES

(E) Two, simple solenoid assemblies are available that can be easily added on the end of a standard frame assembly by two screws. **Part No. J-1** is for use on interlocked switches; **Part No. J-3,** for use on all-lock switches with up to 12 stations. Both are for use in 115 volt, 60 cycle AC circuits. Complete with mounting bracket and screws.

LIGHTING STACKS

Prepackaged lighting stacks convert standard stock **Series 21000** frames from **"L"** type lighting to **"M"** or **"N"** lighting in the field. Use **"NB"** type stack to complete lighting circuit with all three types of lighting **"L", "M", "N".** All mount easily to frame. Two mounting screws and one pressure plate furnished with each switch. Order one stack for each station.

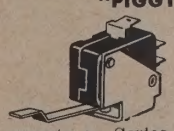
Part No.	Type of Lighting
LL	"L" —light on in "IN" position
MM	"M"—light on in "OUT" position
NN	"N"—light on in "IN" and "OUT" positions
NB	Completes lighting circuit

COMBINATION SWITCH STACKS

Consists of a lighting stack with a switching stack in a single pre-assembled pile-up. Designed to provide additional switching circuitry on **Series 21000** frames. Replaces original lighting stacks as furnished with frames. Available in all three lighting arrangements with fine silver contacts, **Series 70;** or, with welded cross-bar palladium contacts, **Series 70P.** Both rated at 3 amps, 300 watts, max., AC non-inductive load. Supplied with mounting screws and pressure plate.

Part No.	Circuits	Lighting	Part No.	Circuits	Lighting
LL71	1-A	L	**LL71P**	1-A	L
MM71	1-A	M	**MM71P**	1-A	M
NN71	1-A	N	**NN71P**	1-A	N
NB71	1-A	.....	**NB71P**	1-A	.....
LL73	1-C	L	**LL73P**	1-C	L
MM73	1-C	M	**MM73P**	1-C	M
NN73	1-C	N	**NN73P**	1-C	N
NB73	1-C	.....	**NB73P**	1-C	.....

"PIGGY-BACK" SNAP SWITCH MODULES



Two snap switch modules **Part Nos. 73SA** and **73SB** provide power switching for "Multi-Switch" and "Push-Push" Switches. Module consists of snap-action switch, actuator, mounting bracket and screws. **No. 73SA** mounts on Series 7000, 8000, 21000, 22000 frames and Series 5000 "Push-Push" Switch. **No. 73SB** mounts on Series 15000 "Push-Push" Switch. Both rated at 15 amps, ½ HP, 125/250 VAC. Each module provides a 1-C circuit. Supplied with mounting hardware and instruction sheet.

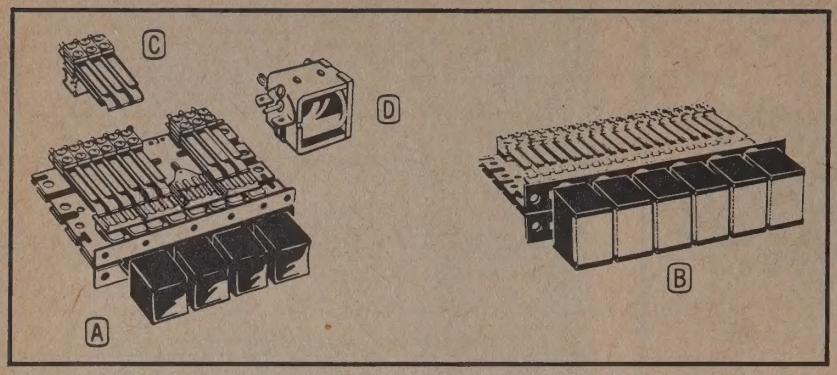
ESCUTCHEON PLATES

Attractive escutcheon plates for **Series 7000** non-illuminated "Multi-Switch". Black satin finish over a 1/32" thick aluminum plate; back side has paper backing, which when removed exposes a pressure sensitive adhesive which "sticks" plate to panel. Listed below are standard lengths.

Part No.	Stations	Part No.	Stations
ES-04	4	**ES-12**	12
ES-06	6	**ES-18**	18
ES-08	8		

littel "Multi-Switch"® Switches

SWITCHCRAFT INC.



Compact, versatile, low-cost multiple st tion pushbutton switches. Four standa functions available: **Interlock**—actuati a button automatically restores to norm the button previously actuated. **Lock-O** —prevents operation of more than o button at a time. This feature is include on all interlock frames. **Non-Lock**—ea button has momentary action. **All-Lock** all buttons, except release, lock when d pressed. All buttons restored to normal b actuating release button. **Push-to-Loc Push-to-Release**—button locks when d pressed and is released when again d pressed. Buttons on ⅝″ centers. **Fram available from 1 to 18 stations.**

SERIES 35000 NON-ILLUMINATED FRAMES

(A) Switch frames mount on panels up to ⅛″ thick. Permits 6 PDT switching in .6 sq. in. Narrow rectangular silhouette permits stacking in parallel rows on ¾″ centers. Only 2⁵⁄₁₆″ depth behind panel. End brackets have four 6-32 tapped mounting holes. A square black pushbutton is furnished for each station and an extra red button is supplied for use when switch requires a release. The following part numbers cover basic frames only. To complete assembly, order switch stacks for each station, solenoid releases, and snap-switch modules if required. Only the most commonly used frames are listed here:

Part Numbers For Functions				
Interlock	Non-Lock	All-Lock	Push-to-Lock, Push-to-Release	No. of Stations
35021	35022	35023	35027	2
35041	35042	35043	35047	4
35061	35062	35063	35067	6
35081	35082	35083	35087	8
35101	35102	35103	35107	10
35121	35122	35123	35127	12

SERIES 37000 SINGLE LAMP ILLUMINATED FRAMES

(B) Identical in switching functions and characteristics as non-illuminated Series 35000, but feature large rectangular shaped pushbuttons which serve as a color or legend coded panel indicator light which actuates up to 6 PDT switching. Switch frames mount in parallel rows from **1″ centers** and up. Depth behind panel 2⁵⁄₁₆″. Pushbuttons with large transparent clear display screen and white legend insert, which can be hot stamped or engraved, are furnished for switching and release stations. A single **6 V** or **28 V** lamp can be used at each station. Lighting, such as **"L"**—pushbuttons light in "IN" position; **"M"**—pushbuttons light in "OUT" position; and **"N"**—pushbuttons light in both "IN" and "OUT" positions, can be effected by direct wiring to the lamp terminals or through the use of **Series H** Lighting Stacks. The following part numbers cover basic frames only. To complete assembly, order switch stacks, lighting stacks, and lamps for each station. Only the most commonly used frames are listed here:

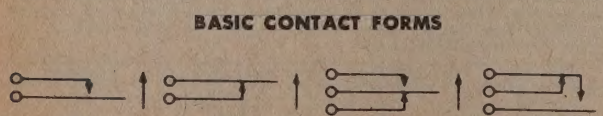
Part Numbers For Functions				
Interlock	Non-Lock	All-Lock	Push-to-Lock, Push-to-Release	No. of Stations
37021	37022	37023	37027	2
37041	37042	37043	37047	4
37061	37062	37063	37067	6
37081	37082	37083	37087	8
37101	37102	37103	37107	10
37121	37122	37123	37127	12

SERIES 38000 TWIN LAMP ILLUMINATED FRAMES

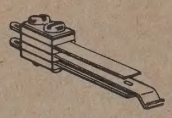
(B) Same compact assembly and versatility as Series 37000, except features twin lamp illumination at each station for redundant or two color, split-face lighting. Uses **Series H** lighting stacks and two long life Part No. **P-1890**, 6 V lamps for choice of **"L"**, **"M"**, or **"N"** lighting. Each button serves as a color legend coded indicator light which actuates up to 3 PDT switching where Series H lighting stacks are used. Switches can be stacked in parallel rows on 1″ centers with only 2⁵⁄₁₆″ depth behind panel. The following part numbers cover basic frames only. For complete switch assembly order switch stacks, lighting stacks, lamps for each station, plus solenoid release, if needed. Only the most commonly used frames are listed here:

Part Numbers For Functions				
Interlock	Non-Lock	All-Lock	Push-to-Lock, Push-to-Release	No. of Stations
38021	38022	38023	38027	2
38041	38042	38043	38047	4
38061	38062	38063	38067	6
38081	38082	38083	38087	8
38101	38102	38103	38107	10
38121	38122	38123	38127	12

BASIC CONTACT FORMS



SWITCH STACKS



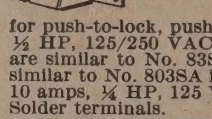
(C) Interchangeable switch stacks fo littel "Multi-Switch" switches, **Serie 35000, 37000, 38000. Series 80P,** construc ted with cross-bar welded palladium con tacts. For use where switch contacts of released station will return to normal be fore contacts of a newly operated statio are actuated. **Series 800P,** same as 80P, except designed to be use on push-to-lock, push-to-release function. Both Series rated amps, 300 watts max., AC non-inductive load. Switch stack fasten direct to removable switch mounting brackets. Supplie with two mounting screws and one pressure plate.

Series 80P Part No.	Series 800P Part No.	Circuits	Series 80P Part No.	Series 800P Part No.	Circuits
81P	801P	1-A	83P	803P	1-C
82P	802P	1-B	83PD	803PD	1-D

LIGHTING SWITCH STACKS

Two lighting switch stacks, **Part Nos H-83P** and **H-803P** are available for con venient rear-of-frame lamp circuit wiring on **Series 37000** and **38000** frames. Stacks consist of standard Series 80P and 800P switch stacks with an extra long contact leaf spring on top. Use **No. H-83P** for all functions except push-to lock, push-to-release; **No. H-803P** for push-to-lock, push-to-re lease. Each provide 1-C circuitry. Furnished with two screws and pressure plate.

"PIGGY-BACK" SNAP-SWITCH MODULES



Increases the switching load capacity of littel "Multi-Switch" switches from 3 amps to 15 amps. Module consists of snap-action switch, actuator and mounting bracket. Two types available: Miniature types **No. 83SA,** for all switching functions except push-to-lock, push-to-release; **No. 803SA** for push-to-lock, push-to-release function. Both rated at 15 amps, ½ HP, 125/250 VAC. Subminiature types **Nos. 83SC** and **83SD** are similar to No. 83SA in function, and **Nos. 803SC, 803SD** are similar to No. 803SA in function. Subminiature types are rated at 10 amps, ¼ HP, 125 VAC. All supplied with mounting hardware. Solder terminals.

Part No.	SPDT Circuits	Part No.	SPDT Circuits	Part No.	SPDT Circuits
83SA	1	83SC	1	803SC	1
803SA	1	83SD	2	803SD	2

SERIES NJ SOLENOID RELEASE

(D) A simple solenoid assembly which can be added to the end of a standard **Series 35000, 37000,** or **38000,** littel "Multi-Switch" frame to provide electrical release of activated stations. **No. NJ-1** designed for use with up to 18 interlock stations; **No. NJ-3** will handle up to 12 all-lock stations. Both are for use in 115 V, 60 cycle AC circuits. Mounting instructions and hardware furnished with each solenoid.

LAMP ADAPTER

Lamp Adapter, **Part No. T-1,** converts Series 21000 and 37000 lamp sockets that accommodate P-1593-2, -1 lamps, to accept the **P-1890** subminiature lamps. Order a **Part No. T-1** lamp adapter for each station of a Series 21000 and 37000 if long-life P-1890 lamp is specified.

LAMPS FOR littel "MULTI-SWITCH" SWITCHES

Lamps are not furnished with **Series 37000,** or **38000** switches. Series 37000 will accept lamps P-1593-2 (6 V) and P-1593-1 (28 V). Series 37000 uses long life P-1890 (6 V) lamp when used with **T-1** lamp adapter. Series 38000 accepts only the **P-1890 lamp.** For initial order or replacement, specify: **Part No. P-1593-2,** 6 V flange base lamp—Ind. No. 328; **Part No. P-1890,** subminiature 6 V flange base lamp—Ind. No. 718; **Part No. P-1593-1,** 28 V flange base lamp—Ind. No. 327.

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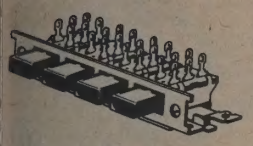
SWITCHCRAFT® INC. Pushbutton Switches

DW "MULTI-SWITCH"® SWITCHES



New, economy multiple station pushbutton switch. The **DW** (double-wipe) **"Multi-Switch"®** is available up to 18 stations in a single row depending on switch function. Maximum switching per station is 2-C (DPDT). Each station of the **DW "Multi-Switch"®** switch utilizes specially designed switching modules with U-shaped, highly reliable bifurcated contacts. Four standard functions available: **Interlock**—actuating a button automatically restores to normal the button previously actuated. **Lock-Out**—prevents operation of more than one button at a time. This feature is included on all interlock frames. **Non-Lock**—each pushbutton has momentary action. **All-Lock**—all pushbuttons, except release, lock when depressed. All pushbuttons restored to normal by actuating release button which has momentary action. **Push-to-Lock, Push-to-Release**—pushbuttons lock when depressed and are released when again depressed. Pushbuttons on ⅝" centers. **DW "Multi-Switch"®** switches available in single row assemblies with interlock and all-lock functions from one to twelve stations; with non-lock and push-to-lock, push-to-release functions up to eighteen stations.

SERIES 65000 DW "MULTI-SWITCH"®

Series 65000 switches are completely assembled and tested at the factory. All standard assemblies have 2-C switch modules with black pushbutton actuators at each station. Assemblies, from 1 to 18 stations mount with only two No. 6 screws (not furnished). Series 65000 switches require only 1 1/16" depth behind mounting panel. Overall switch height 1 7/16". The following part numbers cover a completed switch assembly; however, only the most commonly used switches are listed here:

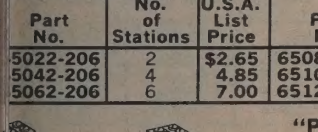
Part Numbers For Functions

Interlock with Lock-Out	All-Lock	Push-to-Lock Push-to-Release	No. of Stations	U.S.A. List Price
65021K-206	65023-206	65027-206	2	$ 2.80
65041K-206	65043-206	65047-206	4	5.00
65061K-206	65063-206	65067-206	6	7.20
65081K-206	65083-206	65087-206	8	9.40
65101K-206	65103-206	65107-206	10	11.55
65121K-206	65123-206	65127-206	12	13.75

Non-Lock Function:

Part No.	No. of Stations	U.S.A. List Price	Part No.	No. of Stations	U.S.A. List Price
65022-206	2	$2.65	65082-206	8	$ 9.20
65042-206	4	4.85	65102-206	10	11.30
65062-206	6	7.00	65122-206	12	13.50

"PUSH-PUSH" SWITCHES



C D

Push-to-lock, push-to-release or momentary action pushbutton switches. Welded cross-bar palladium contacts rated at 3 amps, 300 watts, max., non-inductive load. Mount with two 3-48 screws (not supplied) on ⅝" centers. Depth behind panel, 2 7/8". **Series 5000, Fig. C,** non-illuminated, supplied with square brown button. **Series 15000, Fig. D,** illuminated; available three lighting arrangements, **"L"** button lights in "IN" position; **"M"** button lights in "OUT" position; **"N"** button lights in "IN" and "OUT" positions. Series 15000 part numbers listed below provide "L" type lighting. For "M" type prefix part no. with "M"; for "N" type prefix part no. with "N". Series 15000 supplied less lamp. 6V or 28V lamps can be used.

Add suffix letter "L" to part number to indicate locking type.

NON-ILLUMINATED SERIES 5000

Part Number Non-locking*	Action	Schematic Circuit	U.S.A. List Price
5006	D.P.D.T.	2-C	$ 6.85
5012	4 P.D.T.	4-C	9.10
ILLUMINATED SERIES 15000			
15003	S.P.D.T.	1-C	$ 8.60
15006	D.P.D.T.	2-C	9.35
15012	4 P.D.T.	4-C	11.60

LAMPS FOR ILLUMINATED SWITCHES

The **"NF-Lite"**, **"Littel-Lite"** and **"Push-Push"** Switches are not supplied with lamps. When ordering these switches, be sure to specify:

Part No.	Used with Switch	Voltage	Lamp Base	Ind. No.	U.S.A. List Price
-1217	NF-Lite Littel-Lite	6	Screw	1768	$1.35
-1218	NF-Lite Littel-Lite	28	Screw	335	2.00
-1593-1	Push-Push	28	Flange	327	1.50
-1593-2	Push-Push	6	Flange	328	1.20

"TINY-SWITCH" PUSHBUTTON SWITCHES

Series 950, red button, and **Series 960,** black button, subminiature pushbutton switches for limited space applications. Integral contacts suitable for low level circuits where contact resistance is not important. Mounts in ¼" hole in panels up to ⅛" thick; depth behind panel ⅜".

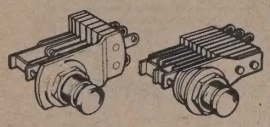
Part Number Red Button	Part Number Black Button	Action	Schematic Circuit	U.S.A. List Price
951	961	S.P.S.T.n.o.	1-A	$1.00
952	962	S.P.S.T.n.c.	1-B	1.00
953	963	S.P.D.T.	1-C	1.15

ILLUMINATED "LITTEL-LITE" SWITCHES

Series 210 "Littel-Lite" Switches are unusually small, momentary contact, illuminated pushbutton types. Requires minimum panel space; ideal for limited space applications and press-to-test circuits. One-piece, clear plastic button and shaft is illuminated by a single miniature lamp, 6V or 28V. Lamps are **not** furnished, see lamp listing below. Includes kit of 4 color chips (red, amber, green, and yellow), can be inserted in switch at any time. Nickel silver spring contacts are recommended for low lever circuits where contact resistance is not important. Also available, fine silver contacts (Part No: suffix "S") rated at 3 amps, 300 watts, max., A.C. non-inductive load. Lighting circuit is independent of switching circuit. Mounts in single ⅜" hole in panels up to ¼" thick; depth behind panel 1 3/16".

Part Number	Action	Schematic Circuit	U.S.A. List Price
211	S.P.S.T.n.o.	1-A	$1.85
213	S.P.D.T.	1-C	2.25
211S	S.P.S.T.n.o.	1-A	2.10
213S	S.P.D.T.	1-C	2.50

NON-LOCKING FLAT FRAME SWITCHES



E F

FF Switches. Fig. E, Series 1000. Flat frame construction provides multiple pole switching with minimum depth behind panel. Fine silver contacts rated at 3 amps, 300 Watts Max., A.C., non-inductive load. One piece black button and shaft. ⅜" diameter threaded shank; mounts in panels up to ¼" thick.

NF Switches. Fig. F, Series 4000, same as FF Switches, except smaller spring design, ideal for mounting in ultra-compact equipment. Only ½" W.; 1 5/8" L.; mounts in ⅜" hole in panels up to 5/32" thick.

Part Numbers Series 1000	Part Numbers Series 4000	Action	Schematic Circuit	U.S.A. List Price
1001	4001	S.P.S.T.n.o.	1-A	$1.30
1003	4003	S.P.D.T.	1-C	1.45
1004	4004	D.P.S.T.n.o.	2-A	1.60
1006	4006	D.P.D.T.	2-C	1.85
1009	4009	3 P.D.T.	3-C	2.65

"BUTTON-SWITCH" SWITCHES

G H

Series 903, 923. Unusually small, momentary action push button switches. Enclosed in metal housing; black or red plastic button. **Series 903, Fig. G.** back panel mounting; 15/32" hole, mounts in panels up to 19/64" thick. **Series 923, Fig. H.** front panel mounting; ¼" hole, mounts in panels up to 5/32" thick. Both rated at 250 mils, AC, non-inductive load, 30 watts max.

Part Nos. Red Button	Part Nos. Black Button	Action	Schematic Circuit	U.S.A. List Price
903	913	S.P.D.T. "Break-Make"	1-C	$1.45
903D	913D	S.P.D.T. "Make-Break"	1-D	1.45
923	933	S.P.D.T. "Break-Make"	1-C	1.55
923D	933D	S.P.D.T. "Make-Break"	1-D	1.55

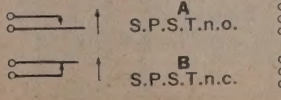
"LITTEL-SWITCH" SWITCHES

Series 100, 200, tiny momentary contact push button switches. Rugged, dependable action. All contacts insulated from panel bushing with interlocking phenolic washers. Series 100 and 200, springs are of nickel silver, recommended only for low level circuits where contact resistance is unimportant. **Series 100S and 200S** have fine silver contacts rated at 3 amps or 300 watts max., A.C., non-inductive load. One-piece plastic button and shaft in red or black. Mounts in ⅜" hole in panels up to ¼".

Part Nos. Red Button	Part Nos. Black Button	Action	Schematic Circuit	U.S.A. List Price
101	201	S.P.S.T. n.o.	1-A	$1.00
101S	201S	S.P.S.T. n.o.	1-A	1.25
102	202	S.P.S.T. n.c.	1-B	1.00
102S	202S	S.P.S.T. n.c.	1-B	1.25
103	203	S.P.D.T.	1-C	1.15
103S	203S	S.P.D.T.	1-C	1.45

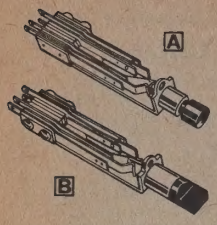
BASIC SCHEMATIC CIRCUITS

Switch circuitry can be described as combinations of basic schematic circuits as shown below. N.O. means normally open; N.C. means normally closed.



Pushbutton Switches

SWITCHCRAFT INC.

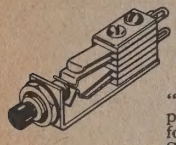


"T-SWITCH" SWITCHES

Rugged, long frame switches for quality communication equipment. Welded cross bar palladium contacts rated at 3 amps, 300 watts max., A.C., non-inductive load. Requires minimum of panel space, only 9/16"x13/16"; 2 1/8" depth behind panel. **Series 11000, Fig. A,** push button T-Switch. Available in momentary action and push-to-lock, pull-to-release action. **Series 11200, Fig. B,** two position turn button T-Switch. Available in non-locking and locking action. Black button with white arrow to indicate switching position.
*Add Suffix "L" to Part Numbers to Indicate Locking Type.

A PUSHBUTTON—SERIES 11000

Part No. Non-Locking*	Action	Schematic Circuit	U.S.A. List Price
11003	S.P.D.T.	1-C	$4.40
11006	D.P.D.T.	2-C	5.50
11006D	D.P.D.T.	2-D	5.50
11012	4 P.D.T.	4-C	7.50
B TURN BUTTON—SERIES 11200			
11203	S.P.D.T.	1-C	$4.40
11206	D.P.D.T.	2-C	5.50
11206D	D.P.D.T.	2-D	5.50
11212	4 P.D.T.	4-C	7.50



MINIATURE "TF" BUTTON SWITCHES

"Tiny Frame" switches. Small, sturdily constructed, provides simple, direct acting pushbutton switching for use where space is at a premium. Available in **Series 970L** push-to-lock, pull-to-release; or **Series 970,** momentary action. Nickel silver springs, integral contacts, recommended for low level circuits where contact resistance is unimportant. Requires only 1 19/32" depth behind panel; mounts in single 1/4" hole in panels up to 3/32" thick.

SERIES 970—NON-LOCKING

Part No.	Action	Schematic Circuit	U.S.A. List Price
976	D.P.D.T.	2-C	$1.60
SERIES 970L—LOCKING			
976L	D.P.D.T.	2-C	$1.85

"CordMASTER" PENDANT SWITCH

Fig. A

Fig. B

Extremely versatile pendant (cord) switch with top or edge operated pushbutton operation, illuminated and non-illuminated. Attractively patterned stainless steel sheath fits over white shock resistant thermoplastic switch housing to provide greater strength. **Series 42000, Fig. A,** has top operated pushbutton action. Three standard functions available: **non-lock**—momentary action; **locking**—button locks when depressed, releases when side button is depressed; **push-to-lock, push-to-release**—button locks when depressed and is released when depressed again. **Series 42000E, Fig. B,** has edge operation; supplied with **"L"** type illumination (top jewel lights when button is depressed). Illumination supplied by Ind. No. 377, 6 V miniature, T-1 3/4 flange base lamp (not supplied with switch). Part No. listed has locking function with front button release. Both Series have spring tempered nickel silver contact springs with cross-bar welded palladium contacts rated at 2 amps, 200 watts, max. A.C., non-inductive load. This switch is not recommended for 120 V A.C. line switching. Switches accept cables up to .270" dia. Overall dimensions: 1 3/4"W. x 3 11/16"L. x 5/8"H.

Part No.	Function	Action	Schematic	U.S.A. List Price
42206	Non-Lock	DPDT	2-C	$ 9.00
42306	Locking	DPDT	2-C	9.50
42706	Push-to-Lock, Push-to-Release	DPDT	2-C	10.00
42306E	Locking	DPDT	2-C	10.50

"CORD-SWITCH" SWITCHES

Attractive cord mounted switch for remote control applications. Momentary action. Rated at 250 mils, A.C., non-inductive load, 30 watts max. Part Nos. E-903 and E-913 have bright nickel plated brass housing. Part Nos. EP-903 and EP-913 feature a molded black plastic housing. Housing dia. 11/16", length 2 3/16".

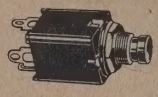
Part Nos. Red Button	Part Nos. Black Button	Action	Schematic Circuit	U.S.A. List Price
E-903	E-913	S.P.D.T. "Break-Make"	1-C	$2.35
EP-903	EP-913			2.10

"CORDETTE" PENDANT SWITCHES

Small lightweight pendant, momentary action (cord) switches provide remote switching of industrial and commercial instrumentation and control devices. Attractive one-piece grey molded body protects switching controls from dirt and dust. Switch has 1-A (S.P.S.T.) circuit. Integral brass, hard gold contacts rated at 500 MA., 50 watts max., A.C. non-inductive load. Not recommended for use in high voltage circuits. **Part No. 921** has phono jax termination molded to body. Mates with Switchcraft molded cable assemblies with phono plug terminations such as **3501, 3501MC,** etc. or industry standard phono plugs. **Part No. 921K** same as **921** except 6' of 2-cond. unshielded cable molded to switch body. Stripped and tinned cable termination. Overall dimensions 1 3/16" wide by 2 15/16" long (not including cable).

Switchcraft Part No. 921.....U.S.A. List Price **$4.25**
Switchcraft Part No. 921K.....U.S.A. List Price **$5.00**

"HI-D SWITCH" SWITCHES



Series H-100, H-200—compact momentary action switches. Molded box body protects contact springs. Low electrical leakage, low capacity. Integral fine-silver plated contacts for use in circuits where contact resistance is not critical. One piece plastic button and shaft in Red—**Series H-100,** and Black—**Series H-200.** Mounts on 5/8" **centers** in either of two planes; in a single 3/8" hole in panels up to 1/32" thick. Depth behind panel 1 1/32".

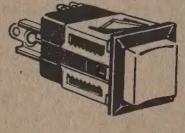
Part Nos. Red Button	Part Nos. Black Button	Action	Schematic Circuit	U.S.A. List Price
H-101	H-201	S.P.S.T.n.o.	1-A	$1.10
H-102	H-202	S.P.S.T.n.c.	1-B	1.10
H-103	H-203	S.P.D.T.	1-C	1.25

SERIES "DA-SWITCH"

Series DA. Completely enclosed, momentary action push-button switch. Anodized aluminum body protects switch contacts from dirt, dust and from being bent. **A-B contact** arrangement provides a 1-A, 1-B or 1-C circuit when externally wired. Integral hard gold plated contacts rated at 500 MA., 50 watts max., A.C., non-inductive load. Terminals accept AMP Series 53 taper pins. Mount in 3/8" hole on 1 1/2" centers. Depth behind panel 15/16".

Part No.	Button Color	Part No.	Button Color	U.S.A. List Price
DA-01-3	Red	DA-04-3	Blue	$2.50
DA-02-3	Black	DA-05-3	White	2.50
DA-03-3	Green	DA-08-3	Yellow	2.50

"UNISWITCH" SWITCH

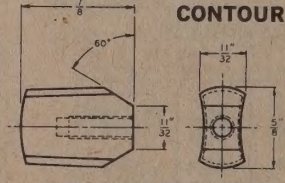


New, low cost, momentary action pushbutton switches. Only 11/16" sq. and mount in a single panel cutout, .615" sq., from front of panel. Contacts rated at 250 ma., 30 watts max., A.C. non-inductive load. Part No. US-05-1, non-illuminated, with white button. Part No. LUS-05-1 is illuminated. Uses one 6V., 1/2 watt, T-1 3/4 bi-pin lamp. (Not supplied with switch.) Lamps replaced from front of panel.

Both switches incorporate a special "Adjusto-Clip" which allows simple, "snap-lock" mounting. The "Uniswitch" switches mount in panels 13/64" min. to 17/64" max. thick in .615" sq. holes. Depth behind panel only 1 5/16" max.

Part No.	Description	Action	Schematic	U.S.A. List Price
LUS-05-1	Illuminated	S.P.S.T. n.o.	1-A	$1.80
US-05-1	Non-illuminated	S.P.S.T. n.o.	1-A	1.40
P-2290	Ind. No. 7377 6V. Bi-Pin Lamp			1.50

CONTOUR KNOBS FOR LEVER SWITCHES



Attractive contour knobs designed for today's modern equipment. Series M-1177 knobs, 8-32" tapped hole for use with "LEV-R" switches **Series 3000, 12000 and 13000.** Series M-1178 knobs, 6-32" tapped hole for use with "TEL-EVER" switches **Series 6000 and 16000.**

Part No. Series 1177	Part No. Series 1178	Color	U.S.A. List Price Per Pkg. of 10
M-1177-1	M-1178-1	Red	$4.00
M-1177-2	M-1178-2	Black	4.00
M-1177-15	M-1178-15	White	4.00

SPECIAL WRENCHES

Special Switchcraft wrenches designed to assemble knurled locknuts normally furnished with lever and button switches and jacks. A-1070 wrench fits 15/32"-32 locknuts; A-1071 for use with 1/4"-32 knurled locknuts.

Part No. A-1070.....U.S.A. List Price **$7.50**
Part No. A-1071.....U.S.A. List Price **7.50**

Trade Discount Applies To List Prices Only
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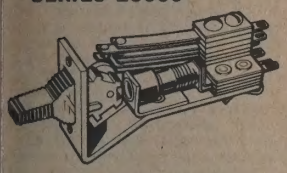
SWITCHCRAFT® INC. Lever Switches & Annunciators

3-COLOR ILLUMINATED LEVER SWITCHES

"LEVER-LITE" SWITCHES SERIES 25000



"Lever-Lite", Series 25000. Illuminated switches indicate positions at a glance. Individual color chips can be inserted in each switch position. Available in 2 or 3 positions, locking and non-locking types. Reduces panel space; minimizes costly wiring. Supplied with 6V miniature screw base lamp and six color chips, Red, Green, Amber, Yellow, Blue and White; 28V lamp also available. See lamp listing below. Nickel-silver springs, silver contacts rated 3 amps, 300 watts max., A.C., non-inductive load. Requires only 2¼" depth behind panel, can be mounted on ⅝" centers in panels up to ³⁄₁₆" thick.
Size: 2¼" L. x ³⁹⁄₆₄" W. x 1½" H. *Add suffix letter "L" to Part No. to indicate locking type.

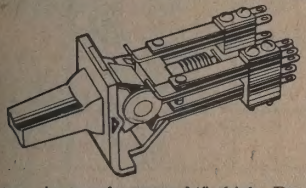
TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
25201	S.P.S.T. n.o.	1-A		$4.60
25203	S.P.D.T.	1-C		4.90
25206	D.P.D.T.	2-C		5.75
25209	3 P.D.T.	3-C		6.60

THREE POSITION TYPES

25304	S.P.S.T. n.o. Ea. Sec.	1-A	1-A	$5.20
25306	S.P.D.T. Ea. Sec.	1-C	1-C	5.75
25308	D.P.S.T. n.o. Ea. Sec.	2-A	2-A	6.35
25312	D.P.D.T. Ea. Sec.	2-C	2-C	6.90

"LEVER-LITE" SWITCHES SERIES 27000



"Lever-Lite," Series 27000 illuminated lever switch, three color lighting identical to Series 25000, but utilizes a larger, contoured lever and larger, factory installed color filters. Available in 2 or 3 position, locking and non-locking types. Mounts on ¾" centers, in panels up to ³⁄₁₆" thick. Depth behind panel 2³⁄₁₆". Nickel silver springs with fine silver contacts rated at 3 amps, 300 watts, max., A.C., non-inductive load. On standard 2 position type AMBER lights in the "NEUTRAL" position; GREEN lights in the "DOWN" position. On 3 position types, RED lights in the "UP" position, AMBER in "NEUTRAL" position and GREEN in the "DOWN" position. Supplied with a 6 V lamp. † n. o. center position off. *Add suffix "L" to part number to indicate locking type.

TWO POSITION TYPES

Part No. Non-locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
27206	D.P.D.T.	2-C		$7.50
27212	4 P.D.T.	4-C		9.20

THREE POSITION TYPES

27306	S.P.D.T. ea. sec.	1-C	1-C	7.50
27307	S.P.D.T. n.o. ea. sec.	1-C†	1-C†	7.65
27312	D.P.D.T. ea. sec.	2-C	2-C	9.20

LAMPS FOR "LEVER-LITE" SWITCHES

Lamps are mounted in a "snap-out" frame assembly. A 6V lamp is furnished with each of the above listed switches. Specify the following part numbers when ordering replacement lamps:

Part No.	Voltage	Base	Ind. No.	U.S.A. List Price
P-1217	6V	Screw	1768	$1.35
P-1218	28V	Screw	Hudson 369	2.00

ESCUTCHEON PLATES FOR "LEVER-LITE" SWITCHES

For easy and convenient mounting of Series 25000 and 27000 Switches. Satin black finish. Eliminates punching rectangular hole in mounting panel. **Part No. 531 for Series 25000,** complete with two No. 3-48 black machine screws. **Part No. 532 for Series 27000,** complete with two No. 2-56 machine screws.

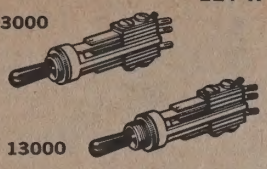
Switchcraft Part No. 531_____U.S.A. List Price **$0.20**
Switchcraft Part No. 532_____U.S.A. List Price **0.30**

AMBIENT LIGHT SHIELD

For use where **"LEVER-LITE" Series 27000** switches are mounted on minimum centers. Shield gives positive separation of lighting between switches. Shield is placed between panel and switch, held in place by mounting screws. Two shields can be used per switch if desired.

Switchcraft Part No. P-1864_____U.S.A List. Price **$0.15**

"LEV-R" SWITCHES



Small lever action switches in two and three position types, locking and non-locking action. Requires half the space usually needed for a lever switch; frame bushing and shaft nickel plated brass. Supplied with locknut and screw-on black knob. Fine silver contacts rated at 3 amps, 300 watts, max. A.C. non-inductive load. Non-locking types have spring return. **Series 3000** mounts in panels up to ³⁄₁₆" thick; **Series 13000** mounts in panels up to ¼" thick. Both Series are ⅝" wide; requires 2¼" behind panel; mounts in single ½" dia. hole. †n.o. center position off. ‡Inter-communications "Talk-Listen" switches, lever locks on one side of neutral and operates non-locking on the other side. *Add suffix letter "L" to Part No. to indicte locking type.

SERIES 3000
TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
3001	S.P.S.T. n.o.	1-A		$2.25
3003	S.P.D.T.	1-C		2.70
3004	D.P.S.T. n.o.	2-A		2.95
3006	D.P.D.T.	2-C		3.25
3006D	D.P.D.T.	2-D		3.50
3009	3 P.D.T.	3-C		4.20

THREE POSITION TYPES

3033	S.P.D.T. n.o.	1-C†		$2.95
3034	S.P.S.T. n.o. Ea. Sec.	1-A	1-A	3.05
3036	S.P.D.T. Ea. Sec.	1-C	1-C	3.40
3036D	S.P.D.T. Ea. Sec.	1-D	1-D	3.85
3037	S.P.D.T. n.o. Ea. Sec.	1-C†	1-C†	3.50
30312	D.P.D.T. Ea. Sec.	2-C	2-C	4.60
30313	D.P.D.T. n.o. Ea. Sec.	2-C†	2-C†	4.60

SERIES 13000
TWO POSITION TYPES

13001	S.P.S.T. n.o.	1-A		$2.45
13003	S.P.D.T.	1-C		2.85
13004	D.P.S.T. n.o.	2-A		3.10
13006	D.P.D.T.	2-C		3.40
13006D	D.P.D.T.	2-D		3.65
13009	3 P.D.T.	3-C		4.55

THREE POSITION TYPES

13033	S.P.D.T. n.o.	1-C†		$3.10
13034	S.P.S.T. n.o. Ea. Sec.	1-A	1-A	3.20
13036	S.P.D.T. Ea. Sec.	1-C	1-C	3.75
13036D	S.P.D.T. Ea. Sec.	1-D	1-D	4.00
13037	S.P.D.T. n.o. Ea. Sec.	1-C†	1-C†	3.75
130312	D.P.D.T. Ea. Sec.	2-C	2-C	4.85
13013	D.P.D.T. n.o. Ea. Sec.	2-C†	2-C†	4.85

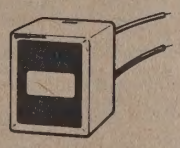
INTER-COM SWITCHES‡
SERIES 3000

Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
3033T	S.P.D.T. n.o.	1-C†		$2.95
3037T	S.P.D.T. n.o. Ea. Sec.	1-C†	1-C†	3.50

SERIES 13000

13033T	S.P.D.T. n.o.	1-C†		$3.10
13037T	S.P.D.T. n.o. Ea. Sec.	1-C†	1-C†	3.75

"GLO-ANNUNCIATOR"* MINIATURE ANNUNCIATORS



Series GA. New, electro-magnetically operated indicating device with infinite-life characteristics. Provides a highly visible color-legend display without costly, heat producing lamps. Because no lamps are needed, power requirements are minimized. Each **Series GA** annunciator has a matte black display screen with a ⅜" x ⅝" translucent display area. The display area appears to "glow" when a bright fluorescent material, carried on a magnet-operated indicator, is presented on the display area. Unlimited variety in display indication is available through the use of various colors and legend data on the annunciator display screen or indicator assembly. **Series GA** annunciators may be easily flush or sub panel mounted in either vertical or horizontal planes as well as in matrixes. Actual size is ⅝" x ¾" x ¹³⁄₁₆" L. Two #2-56 extruded and tapped mounting holes are provided on the frame for simple mounting. Standard housing color is gray; display screen black; indicators—black and fluorescent orange-red. Other colors for housing, display screen and indicators are available on special order.

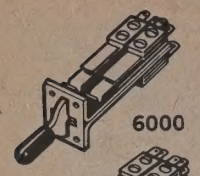
Part No.	Description	U.S.A. List Price
GA-0612S-001	6 V DC Single wound coil. 6" leads.	$5.00
GA-1212D-001	12 V DC each section, double wound coil. 6" leads.	5.50
GA-1212S-001	12 V DC single wound coil. 6" leads.	5.25
GA-2412S-001	24 V DC single wound coil. 6" leads.	5.50

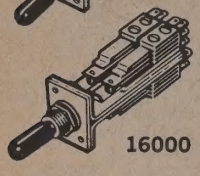
*Patent applied for.

Lever and Pushbutton Switches

SWITCHCRAFT INC.

"TELEVER" SWITCHES


6000


16000

Series 6000 and 16000. Rugged telephone type lever switches featuring **"T-Beam"** frame construction which results in a relatively light construction with sturdiness of a structural "T-Beam". Available in two and three positions, locking and non-locking types. **Nylon rollers** on the lever actuate the special nickel silver springs, providing smooth action; assures long dependable spring life. Welded cross bar palladium contacts are standard, rated at 3 amps, 300 watts max., A.C., non-inductive load. **Series 6000** mounts with four No. 3-48 machine screws. Mounting centers $^{17}/_{32}$" x $^{13}/_{16}$", mounts in panels up to ¼" thick. **Series 16000** features single hole mounting; $^{15}/_{32}$"-32 threaded bushing. Mounts in ½" dia. hole in panels up to ¼" thick. **Part No. 545, "Stop Plate"** provides positive "stops" for two position action. **Part No. 540, "Stop Plate"** provides non-locking or momentary action. The "Stop Plates" can be changed in the field. Both Series switches supplied with black insulated knob. All have tinned solder lug terminals. *Add suffix letter **"L"** to Part No. to indicate locking type. **Series 16000 non-locking type** can be converted to **locking type** by removing **"Stop Plate".**

SERIES 6000
TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
6006	D.P.D.T.	2-C		$5.25
60012	4 P.D.T.	4-C		7.05
60012D	4 P.D.T.	4-D		7.90
60024	8 P.D.T.	8-C		10.75

THREE POSITION TYPES

6036	S.P.D.T. Ea. Sec.	1-C	1-C	$5.25
6038	D.P.S.T. n.o. Ea. Sec.	2-A	2-A	5.85
60312	D.P.D.T. Ea. Sec.	2-C	2-C	7.05
60312D	D.P.D.T. Ea. Sec.	2-D	2-D	7.95
60316	4 P.S.T. n.o. Ea. Sec.	4-A	4-A	9.25
60324	4 P.D.T. Ea. Sec.	4-C	4-C	10.75

SERIES 16000
TWO POSITION TYPES

16006	D.P.D.T.	2-C	$5.50
16006D	D.P.D.T.	2-D	6.15
16008	4 P.S.T. n.o.	4-A	6.15
16009	3 P.D.T.	3-C	6.60
160012	4 P.D.T.	4-C	7.50
160012D	4 P.D.T.	4-D	8.25
160024	8 P.D.T.	8-C	11.00

THREE POSITION TYPES

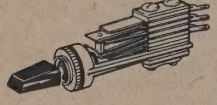
16036	S.P.D.T. Ea. Sec.	1-C	1-C	$5.50
16036D	S.P.D.T. Ea. Sec.	1-D	1-D	6.15
16038	D.P.S.T. n.o. Ea. Sec.	2-A	2-A	6.15
160312	D.P.D.T. Ea. Sec.	2-C	2-C	7.50
160312D	D.P.D.T. Ea. Sec.	2-D	2-D	8.25
160316	4 P.S.T. n.o. Ea. Sec.	4-A	4-A	9.70
160324	4 P.D.T. Ea. Sec.	4-C	4-C	11.00

Part No. 530 Escutcheon Plate. For Series 6000 Telever switches with 4 mounting screws.....U.S.A. List Price **$1.00**

Part No. 540 Stop Plate. For Series 16000 Telever switches. To convert from locking to non-locking action. Includes two mounting screws.....U.S.A. List Price **$0.30**

Part No. 545 Stop Plate. For Series 16000 Telever switches. To convert from 3-position to 2-position. Includes two mounting screws.....U.S.A. List Price **$0.30**

"LEV-R" SWITCHES



"LEV-R Switches." Series 28000. Compact, lever action switch in two and three position, locking and non-locking types. Smooth, easier lever action assured with special nylon roller. Supplied with locknut, non-turn ring (slips over slotted bushing to prevent switch from turning in mounting hole), and a black knob which is molded directly to the lever. Eliminates loose or lost knobs. Fine silver contacts rated at 3 amps, 300 watts, max., A.C., non-inductive load. Mounts on ⅝" centers in panels up to ⅛" thick. Requires only one $^{15}/_{32}$" dia. mounting hole for bushing and one ⅛" dia. hole for non-turn device; depth behind panel, 2¼". *Add suffix letter "L" to Part No. to indicate locking type. †Center position open (OFF).

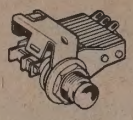
TWO POSITION TYPES

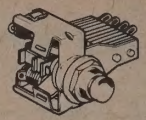
Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
28201	S.P.S.T. n.o.	1-A		$3.05
28203	S.P.D.T.	1-C		3.60
28206	D.P.D.T.	2-C		4.15

THREE POSITION TYPES

28304	S.P.S.T. n.o. ea. sec.	1-A	1-A	$3.95
28306	S.P.D.T. ea. sec.	1-C	1-C	4.30
28307	S.P.D.T. n.o. ea. sec.	1-C†	1-C†	4.40
28312	D.P.D.T. ea. sec.	2-C	2-C	5.35

ILLUMINATED "NF-LITE" SWITCHES

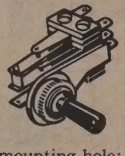

A


B

Series 4100 and 4200 "NF-LITE" illuminated switches indicate switching and circuit functions at a glance. Flat frame construction provides multiple pole momentary action switching. Lighting circuit is independent of switching circuit. Ideal for control panel or press-to-test applications. Contacts are fine silver rated at 3 amps, 300 watts max., A.C., non-inductive load. **Series 4100, Fig. A,** uses single miniature lamp, 6V or 28V. Light from lamp is filtered through color chip to clear plastic pushbutton. Various colored chips can be inserted at any time. **Series 4200, Fig. B,** same as Series 4100, except utilizes two lamps for greater illumination or color coding of two circuit conditions. Both series require $^{11}/_{16}$" min., $1^{5}/_{16}$" max., depth behind panel depending on size of stack; mounts in ⅝" hole in panels up to ¼" thick. **Series 4100** furnished with **one kit of 4 color chips** (red, amber, green, and yellow). **Series 4200** furnished with two **kits. Lamps** must be **purchased separately.** See lamp listing on page 9.

SERIES 4100

Part Number	Action	Schematic Circuit	U.S.A. List Price
4106	D.P.D.T.	2-C	$2.60
4109	D.P.D.T.	3-C	3.35
	SERIES 4200		
4201	S.P.S.T.n.o.	1-A	$3.20
4206	D.P.D.T.	2-C	3.70
4209	3 P.D.T.	3-C	4.25



"LEV-R" SWITCHES, SERIES 12000

Small **right-angle** action switches requiring minimum of depth behind panel. Available in two and three position, locking and non-locking types. Long leaf-type springs insure long switch life. Fine silver contacts rated at 3 amps, 300 watts max., A.C. non-inductive load. Requires only $^{7}/_{16}$" depth behind panel; single ½" dia. mounting hole; mounts in panels up to $^{3}/_{32}$" thick. Supplied with nickel plated locknut and removable black plastic knob. †n.o. center position off. *Add suffix letter **"L"** to Part No. to indicate locking type.

TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
12003	S.P.D.T.	1-C		$2.30
12006	D.P.D.T.	2-C		2.90
12006D	D.P.D.T.	2-D		3.15

THREE POSITION TYPES

12033	S.P.D.T. n.o.	1-C†		$2.60
12034	S.P.S.T. n.o. Ea. Sec.	1-A	1-A	2.70
12035	S.P.S.T. n.c. Ea. Sec.	1-B	1-B	2.70
12036	S.P.D.T. Ea. Sec.	1-C	1-C	3.05
12036D	S.P.D.T. Ea. Sec.	1-D	1-D	3.25
12037	S.P.D.T. Ea. Sec.	1-C†	1-C†	3.15

THREE POSITION TYPES
LOCKING ONE SIDE—NON-LOCKING OTHER SIDE

12033T	S.P.D.T. n.o.	1-C†		$2.60
12037T	S.P.D.T. Ea. Sec.	1-C†	1-C†	3.15

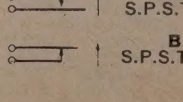
"BOX SWITCH"

Series BX. Miniature, momentary action, push-button switch offers broad switching capabilities in minimum panel space. $^{11}/_{16}$" square switch requires $^{55}/_{64}$" min. to $1^{5}/_{64}$" max. depth behind panel. Molded plastic body protects against damaging dust and dirt and prevents bending or disfiguring of contacts caused by excessive handling. Attractive bezel frames pushbutton and acts as built-in escutcheon plate. Unique **"Adjusto-Clips"** provide snap-in, front of panel, mounting in panels from $^{3}/_{64}$" to $^{17}/_{64}$" thick in .615" sq. holes. Red, black, green, or white pushbuttons. $^{7}/_{16}$" button stroke. Integral slide contacts of special spring tempered phosphor bronze, silver plated, rated at: 250 ma., 30 watts max., A.C. non-inductive load. Evenly spaced solder lug terminals are clearly identified for ease of wiring.

Part Nos. Red Button	Black Button	Green Button	White Button	Action	Schematic Circuit	U.S.A. List Price
BX-01-1	BX-02-1	BX-03-1	BX-05-1	S.P.S.T. n.o.	1-A	$3.25
BX-01-3	BX-02-3	BX-03-3	BX-05-3	S.P.D.T.	1-C	$3.40
BX-01-6	BX-02-6	BX-03-6	BX-05-6	D.P.D.T.	2-C	$3.75
BX-01-10	BX-02-10	BX-03-10	BX-05-10	D.P.D.T.- D.P.S.T. n.o.	2-C & 2-A	$4.25

BASIC SCHEMATIC CIRCUITS

Switch circuitry can be described as combinations of basic schematic circuits as shown below. N.O. means normally open; N.C. means normally closed.



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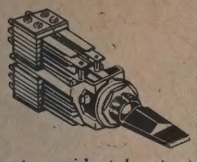
SWITCHCRAFT® INC.

Lever Switches

"LT SWITCH"



Series 41000. Smallest, high-quality, telephone type lever switch available. Two or three position types with positive locking and/or non-locking action. Special damping block guards against transient leaf bounce. **"Can't-Cheat"** detent guide prevents accidental actuator by-pass of switching positions. Switch has rigid **"U"-shaped,** twin girder frame. Its parallel steel members terminate in an interlocked box where spring combinations are mounted. The special long life, nickel-silver springs can be individually fastened to any one of the frame's four switch stacks mounting positions. Welded cross bar palladium contacts rated at 3 amps, 200 watts max., AC, non-inductive load are standard. Series 41000 mounts on $^{25}/_{32}$" centers in a $^{15}/_{32}$" dia. hole in panels up to ¼" thick. Requires only 2⅛" depth behind panel. The bushing includes a keyway to accept the non-turn ring which prevents switch turning or twisting in panel. *Add suffix **"L"** to Part No. to indicate locking type.

SERIES 41000
TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuits Pos. 1	Pos. 2	U.S.A. List Price
41203	S.P.D.T.	1-C		$4.20
41206	D.P.D.T.	2-C		5.25
41208	4 P.S.T. n.o.	4-A		5.80
41212	4 P.S.T.	4-C		7.10

THREE POSITION TYPES

41306	S.P.D.T. Ea. Sec.	1-C	1-C	$5.25
41308	D.P.S.T. n.o. Ea. Sec.	2-A	2-A	5.80
41312	D.P.D.T. Ea. Sec.	2-C	2-C	7.10
41324	4 P.D.T. Ea. Sec.	4-C	4-C	10.50

"LK" LITTEL-KEY SWITCHES

Series 23000. Short frame lever-type switches available in 2 or 3 positions, locking or non-locking types. Ideal for applications where panel mounting space and depth behind panel is at a premium. Fine silver contacts, rated at 3 amps, 300 watts max., A.C., non-inductive load. Frame has 2 tapped No. 3-48 holes for easy mounting. Mounts in panels up to ⅛" thick. Depth behind panel only $2^{3}/_{32}$". Series 23000 switches are available in circuit combinations from 1-A up to 4-A. We invite your inquiries. Samples and/or quotations will be handled promptly.

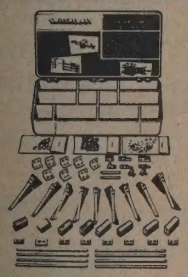
STACK SWITCHES

General purpose stack switch assemblies made from a pile-up of various actuator springs, contact springs and lifters. These stack switch assemblies can be used on manually operated devices where switching is operated by cams, levers, pushbuttons and other mechanical devices. General purpose stack switches are available with a **"Flat"** or **"V"** actuator spring. Fine silver or palladium cross bar welded contacts are standard, rated at 3 amps., 300 watts max., A.C., non-inductive load. Supplied with pressure plate and two No. 5-40 screws; mount on ⅜" centers. Height of stack depends on switching circuit; 1-B circuit $^{21}/_{64}$" H., min.; 2-C circuit $^{45}/_{64}$" H., max. Only the most commonly used **"Flat"** actuator stack switches are listed below. Contact Switchcraft for price and delivery information on **"V"** actuator spring stack switches.

FLAT ACTUATOR SPRING

Part No.	Contact Material	Action	Schematic Circuit	U.S.A. List Price
AA01AA	Silver	S.P.S.T. n.o.	1-A	$0.90
AA01AB	Palladium	S.P.S.T. n.o.	1-A	1.00
AA03AA	Silver	S.P.D.T.	1-C	1.10
AA03AB	Palladium	S.P.D.T.	1-C	1.30
AA06AA	Silver	D.P.D.T.	2-C	1.60
AA06AB	Palladium	D.P.D.T.	2-C	1.90

STACK SWITCH KITS



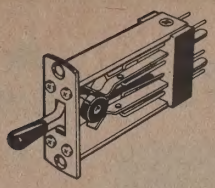
Experimental kits of component parts for assembling switch stacks. Designed to speed the assembly of engineering samples in the lab, aid maintenance men in the field and save time in general replacement. Ideal for mechanical engineers and coin machine servicing; used in relays, electronic organs, etc. Each kit consists of **136 springs** in different thicknesses, over **152 phenolic spacers** and insulators in various sizes, hard-rubber insulating tubing, two sets of stack assembling pins, two roller assemblies, assorted contacts, etc. **Kit No. K-119,** consisting of **"Tini-Stack"** components, are miniature variations of standard switch stack springs, spacers, etc. All in compartmented plastic box.

Kit No. K-101. Assorted ¼" and ⅜" mtg. center contact springs and associated parts.....NET **$12.00**

Kit No. K-102. Assorted ¼" mtg. center contact springs and associated parts.....NET **12.00**

Kit No. K-103. Assorted ⅜" mtg. center contact springs and associated parts.....NET **12.00**

Kit No. K-119. "Tini-Stack". Assorted 3/16" mtg. center contact springs and associated parts.....NET **12.00**



"LO-CAP" SWITCHES

Series 10000. Low-capacity lever actuated switches, previously referred to as **Federal Anti-Capacity switches.** Specially designed flat actuator springs and round contact springs are wide spaced in a large molded insulating block. This construction eliminates the build-up of induced alternating current between springs. Rugged "U" shaped aluminum frame. Roller actuation for easy lever operation. Available in 2 and 3 position models, locking and non-locking types. Actuator springs have fine silver contacts rated at 1 amp, 100 watts, max., A.C., non-inductive load. Supplied with polished chrome escutcheon plate. Mounts with two No. 6-32 flat head screws (not supplied). Mounting centers $1^{15}/_{16}$". Depth behind panel $3^{1}/_{16}$". †n.o. center position off.
*Add suffix letter **"L"** to Part No. to indicate locking type.

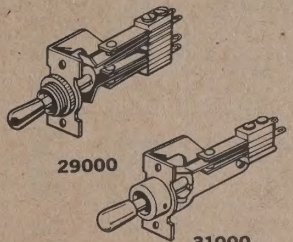
TWO POSITION TYPES

Part No. Non-Locking*	Old Federal No.**	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
10206	—	D.P.D.T.	2-C		$8.00

THREE POSITION TYPES

10307	1425	S.P.D.T.n.o.Ea.Sec.	1-C†	1-C†	8.00
10313	1424	D.P.D.T.n.o.Ea.Sec.	2-C†	2-C†	8.75
10325	12494	4P.D.T.n.o.Ea.Sec.	4-C†	4-C†	20.00

**Old Federal Part No. refer to locking type switches only.



"FEATHER-LEVER" SWITCHES

Miniature lever switches, lightweight, compact, mount on $^{1}/_{16}$" centers. Available in 2 and 3 position, locking and non-locking types. Actuator designed with nylon roller for smoother, easy lever operation over entire life of switch. Rugged steel frame withstands rough usage, shock and vibration. Nickel silver springs with fine silver contacts, rated at 2 amperes, 200 watts, max., A.C., non-inductive load. Supplied with black plastic push-on knob. Other push-on knobs, available in 10 colors. See listing below. **Series 29000,** with bushing, mounts in $^{5}/_{16}$" O.D. panel hole. Supplied with locknut. **Series 31000,** is available on **"SPECIAL"** order in all circuit combinations offered in Series 29000. Contact Switchcraft for price and delivery information. **Series 31000,** mounts with 2 No. 2-56 machine screws. Both Series supplied with black push-on knob. Require only $1^{3}/_{32}$" depth behind panel, mount in panels up to ⅛" thick. †n.o., center position off. ‡Inter-communications "Talk-Listen" swithces, lever locks on one side of neutral and operates non-locking on the other side. *Add suffix letter "L" to Part No. to indicate Locking type.

TWO POSITION TYPES

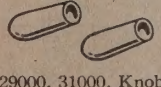
Part No. Non-Locking	Part No. Locking	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
29201	29201L	S.P.S.T. n.o.	1-A		$2.15
29203	29203L	S.P.D.T.	1-C		2.50
29206	29206L	D.P.D.T.	2-C		3.05

THREE POSITION TYPES

29303	29303L	S.P.D.T. n.o. ea. sec.	1-C†		$2.75
29304	29304L	S.P.S.T. n.o. ea. sec.	1-A	1-A	2.85
29306	29306L	S.P.D.T. ea. sec.	1-C	1-C	3.20
29307	29307L	S.P.D.T. n.o. ea. sec.	1-C†	1-C†	3.25
29312	29312L	D.P.D.T. ea. sec.	2-C	2-C	4.15

‡INTER-COMM SWITCHES

29303T	S.P.D.T. n.o.	1-C†		$2.75
29307T	S.P.D.T. n.o. ea. sec.	1-C	1-C	3.25



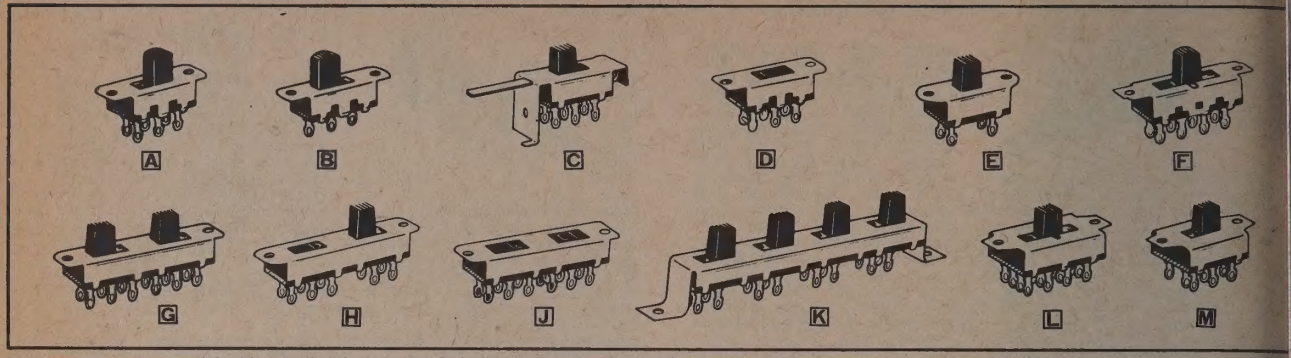
PUSH-ON COLOR KNOBS

Kit of molded plastic knobs. Available in 10 colors. For "Feather-Lever" Switches, Series 29000, 31000. Knobs can be changed quickly—simply pull off present knob and push-on new one. For permanence, use plastic cement.

Part No.	Color	Part No.	Color	U.S.A. List Price Per Pkg. of 10
K-108	One of ea. color	K-114	Brown	$0.90
K-109	Red	K-115	Orange	0.90
K-110	Black	K-116	Yellow	0.90
K-111	Green	K-117	Ivory	0.90
K-112	Blue	K-118	Gray	0.90
K-113	White	—	—	0.90

"double-wipe" Slide Switches

SWITCHCRAF INC.



New low-cost, precision "double-wipe" slide switches. Switches use special U-shaped, bifurcated sliders to assure continuous wiping action. Contacts rated at 0.5 a D.C., 3 amps. A.C., 125 volts non-inductive load. Standard solder lug terminals have a 5/64" dia. center hole and wrap-around notch for wiring ease. Most swite furnished with black 11/32" knob and .140" (9/64") dia. mounting holes. **Nos. 46206LFR, 46256LFR** and **47227LF** flush screwdriver actuated knob. All slide and roc switches are U.L. approved unless otherwise noted. **See next page for slide switch contact arrangement.**

SERIES 46000R AND 46000H 2 AND 3 POSITION GENERAL PURPOSE TYPE

Series 46000R rated at 3 amps, A.C., 0.5 amp. D.C. 125 volts, non-inductive load; except shorting types **46203LRS** and **46206LRS,** rated at 0.5 amp., 125 volts, D.C. only. **No. 46206MP,** 2 position momentary switch with 1 1/8" plunger and extruded and tapped 6-32 mounting holes. **Nos. 46206LFR** and **46256LFR** feature a flush screwdriver slotted knob. **No. 46204MBR** pushbutton switch with 5/16" knob. **Series 46000R** U.L. listed as approval.

Series 46000H rated at 6 amps., A.C., 0.5 amp. D.C., 125 volts, non-inductive load. **Series 46000H** has not as yet received U.L. approval.

Part No.	Action	Schematic	Fig.	U.S.A. List Price
46201MH	SPST Momentary	I	B	$0.45
46201MR				.40
46202LH	SPST Locking	II	A	.40
46202LR				.35
46202MH	SPST Momentary	I	B	.45
46202MR				.40
46203LH	SPDT Locking	III	A	.45
46203LR				.40
46203LSR	SPDT Locking	III	A	.45
46203MH	SPDT Momentary	III	B	.50
46203MR				.45
46204LH	DPST Locking	2-II	A	.50
46204LR				.45
46204MH	DPST Momentary	2-I	B	.55
46204MR				.50
46206LH	DPDT Locking	2-III	A	.55
46206LR				.50
46206LSR	DPDT Locking	2-III	A	.55
46206MH	DPDT Momentary	2-III	B	.65
46206MR				.60
46206MP	DPDT Momentary	2-III	C	.75
46206LFH	DPDT Locking	2-III	D	.70
46206LFR				.65
46256LFH	DPDT Locking	V	D	.75
46256LFR				.70
46204MBR	DPST Momentary	IV	E	.65

SERIES 47000 TANDEM SLIDE SWITCHES

Compact, two-gang, slide switches. **Series 47000L** two independent knobs; **Series 47000LC,** single knob construction with coupling link between knobs. One knob 11/32" other flush screwdriver operated. **No. 47227LF** two knobs flush with switch housing, one knob screwdriver actuated. Knobs are coupled. Shorting bar each section. Rated at 0.5 amp. D.C., 3 amps. A.C., 125 volts non-inductive load. U.L. listed as approved.

47202L	SPST-SPST Locking	II II	G	.65
47202LC			H	.65
47203L	SPDT-SPDT Locking	III III	G	.75
47203LC			H	.75
47204L	DPST-DPST Locking	2-II 2-II	G	.85
47204LC			H	.85
47206L	DPDT-DPDT Locking	2-III 2-III	G	.90
47206LC			H	.90
47215L	SPST-SPDT Locking	II III	G	.70
47215LC			H	.70
47217L	SPST-DPST Locking	II 2-II	G	.75
47217LC			H	.75
47219L	SPST-DPDT Locking	II 2-III	G	.80
47219LC			H	.80
47221L	SPDT-DPST Locking	III 2-II	G	.80
47221LC			H	.80
47223L	SPDT-DPDT Locking	III 2-III	G	.85
47223LC			H	.85
47225L	DPST-DPDT Locking	2-II 2-III	G	.90
47225LC			H	.90
47227LF	DPDT-DPDT Locking	V V	J	1.40

Three position types with positive center detent action. All have shutt type dust cover to prevent dirt and dust from contaminating switch contac **Series 46300LDR** or **LDH** types—locking in all positions. **Series 46300MI** or **MDH** types—momentary action on either side of center. Center positi OFF. **Series 46300TDR** or **TDH** types—momentary one side of center (lockin position, locking other side.

Part No.	Circuitry	Action Positions #1 Center #2 Locking		Schematic Fig.		U.S.A. List Price
46311LDH	SPTT	L	L	VI	F	$0.65
46311LDR						.60
46311MDH	SPTT	M	M	VI	F	.75
46311MDR						.70
46311TDH	SPTT	L	M	VI	F	.70
46311TDR						.65
46313LDH	DPTT	L	L	2-VI	F	.70
46313LDR						.65
46313MDH	DPTT	M	M	2-VI	F	.80
46313MDR						.75
46313TDH	DPTT	L	M	2-VI	F	.75
46313TDR						.70

SERIES 48000 QUADRUM SLIDE SWITCHES

Four-gang slide switches with independent knob operation. 11/32" knob heig and .153 mounting holes.

Part No.	Action	Schematic	Fig.	U.S.A. List Price
48208L*	4-SPST Locking	4-II	K	$1.20
48212L*	4-SPDT Locking	4-III	K	1.40
48214L	4-DPST	8-II	K	1.60
48224L*	4-DPDT Locking	8-III	K	1.80

*Not submitted for U.L. approval.

SERIES 49000 3 POSITION GENERAL PURPOSE TYPE

Large, heavy duty 3 and 4 pole slide switches. Knob height 1/2". Mountir holes 9/64". **Series 49000L,** non-shorting; **Series 49000LS,** with shorting contact U.L. listed as approved.

49309L	3PDT Locking	3-III	L	.85
49309LS				.90
49329L	3PTT Locking	3-VI	L	.90
49329LS				.95
49312L	4PDT Locking	4-III	L	.90
49312LS				.95
49331L	4PTT Locking	4-VI	L	.95
49331LS				1.00

SERIES 50000 2 POSITION GENERAL PURPOSE TYPE

Series 50000L and **M,** non-shorting; **Series 50000LS** and **MS;** with shortin contacts. U.L. listed as approved.

50207L	3PST Locking	3-II	M	.60
50207M	3PST Momentary	3-II	M	.75
50208L	4PST Locking	4-II	M	.65
50209L	3PDT Locking	3-III	M	.70
50209LS				.75
50209M	3PDT Momentary	3-III	M	.85
50209MS				.90
50212L	4PDT Locking	4-III	M	.75
50212LS				.80

Trade Discount Applies To List Prices Only

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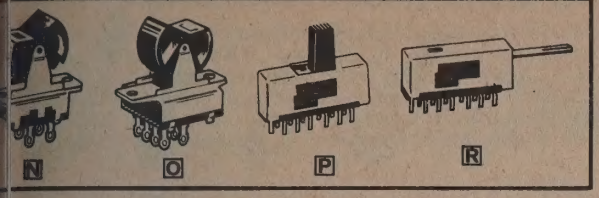
Switches



SERIES 51000 2 POSITION ROCKER SWITCHES

t rocker switches offer same quality and dependability as standard itches. Rugged rocker bracket is precision welded to standard slide ousing. Rocket pivots between bracket members to allow free actuation h mechanism. Black rocker.

t No.	Action	Schematic	Fig.	U.S.A. List Price
51MH	SPST n.o. Momentary	I	N	$0.80
51MR				.75
52MH	SPST n.c. Locking	II	N	.75
52LR				.70
52MH	SPST n.c. Momentary	II	N	.80
52MR				.75
53LH	SPDT Locking	III	N	.80
53LR				.75
53MH	SPDT Momentary	III	N	.85
53MR				.80
54LH	DPST Locking	2-I	N	.85
54LR				.80
54MH	DPST Momentary	2-I	N	.90
54MR				.85
56LH	DPDT Locking	2-III	N	.90
56LR				.85
56MH	DPDT Momentary	2-III	N	.95
56MR				.90

SERIES 52000 2 POSITION ROCKER SWITCHES

han Series 51000, offering 3 and 4 poles of switching. Series 52000L, ting; Series 52000LS with shorting contacts. U.L. listed as approved.

7L	3PST Locking	3-II	O	.90
8L	4PST Locking	4-II	O	.95
9L	3PDT Locking	3-III	O	1.00
9LS				1.05
2L	4PDT Locking	4-III	O	1.05
2LS				1.10

ES 53000 2 POSITION MINIATURE SLIDE SWITCHES

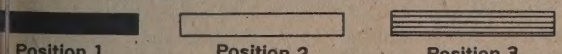
circuit terminals snap easily in P.C. boards. Nos. 53206L, 53212L " knobs, plunger. No. 53212MP is constructed with a momentary

t No.	Action	Schematic	Fig.	U.S.A. List Price
6L*	DPDT Locking	2-III	P	$ .90
2L*	4PDT Locking	4-III	P	1.20
2MP*	4PDT Momentary	4-III	R	1.40

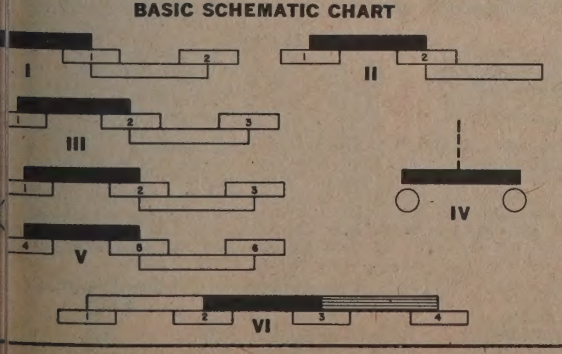
ubmitted for U.L. approval.

"DW" SLIDE SWITCH CONTACT ARRANGEMENT

ndard "break" before "make" (non-shorting). "Make" ore "break" (shorting) switches are available in some dels, refer to Series 46000, 49000, 50000 and 52000.



BASIC SCHEMATIC CHART

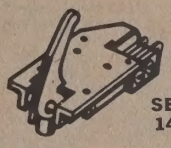


"CRADLE-SWITCH"

High quality Cradle Switch holds W.E. and other standard telephone industry handsets. Housing is sturdy, yet flexible enough to withstand shocks and vibrations. Housing includes specially designed Hook Switch with a 4C (4PDT) contact arrangement. Switch has long silver springs with gold alloy contacts rated at 1 amp., 100 watts max., A.C., non-inductive load. Ideal for use in critical low level audio circuits such as in communication and instrumentation applications.

Part No.	Description	U.S.A. List Price
14412G	Handset Cradle Switch. Black housing. 4-C (4P.D.T.) circuit.	$8.00
14512G	As above, except beige.	8.00
14612G	As above, except white.	8.00

"HOOK SWITCH" SWITCHES



SERIES 14000

Quality constructed leaf-type switches actuated by a hook (or hanger) such as designed in **Series 14000**; or by a nylon actuator as in **Series 14100G**. Ideal for equipment where it is necessary to actuate a circuit by hanging an accessory on a "hook," as a headset, telephone handset or microphone. **Series 14000** utilizes five silver contacts rated at 3 amps, 300 watts max., A.C. non-inductive load. **Series 14100G** features welded cross-bar gold alloy contacts rated at 1 amp., 100 watts max., A.C., non-inductive load.

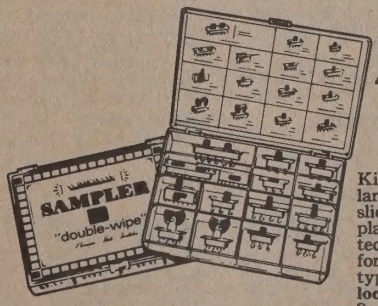
Part No.	Action	Schematic Circuit	U.S.A. List Price
14006	D.P.D.T.	2-C	$3.30
14106G	D.P.D.T.	2-C	3.65

"RS" SWITCHES

Rugged rotary switches, available in various multiple circuits, two and three position types, locking or non-locking action. Ideal for communication, musical and test equipment applications. **Fibre cam** actuates long, leaf-type springs resulting in easy action; good wiping action of contacts. Fine silver contacts rated at 3 amps, 300 watts max., AC, non-inductive load. Requires only ⅞" depth behind panel, mounts in single ⅜" hole in panels up to ¼" thick.
*Add suffix letter "L" to part number to indicate locking type.

TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	U.S.A. List Price
2003	S.P.D.T.	1-C		$1.95
2006	D.P.D.T.	2-C		2.60
THREE POSITION TYPES				
2036	S.P.D.T. Ea. Sec.	1-C	1-C	2.60



"double-wipe" SLIDE SWITCH SAMPLER

Kit consisting of 15 of the most popular and frequently used **"double-wipe"** slide switches in a handy reusable plastic case. Offers the engineer or technician a complete line of switches for immediate use or evaluation. All types of slide switches represented—**locking** and **non-locking** action; 2 and 3 position types; one and two knobs; knob, rocker, plunger and screwdriver actuated switches; circuitry from **SPDT** to **4 PTT**. Kit No. K-122A contains one each of the following: **46203LSR, 46203MR, 46206LR, 46256LFR, 46313LDR, 46313MDR, 46313TDR, 47206L, 47227LF, 49331L, 50212L, 51206LR, 52212L, 53212L,** and **53212MP.**

Switchcraft Part No. K-122A.....U.S.A. List Price $12.70

Q-G* Audio Connectors

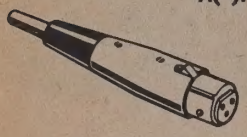
SWITCHCRAFT INC.

U.S. Patent No. 3,219,961
Canadian Patent No. 761114

AUDIO CONNECTORS WITH COMPLETE GROUNDING PROVISIONS!

Switchcraft's* "Quick-Ground" connectors feature a separate "Ground-Terminal" electrically integral with the connector shell. Ground continuity between mating plugs automatically accomplished through the exclusive "Ground Contactors." Possible loss of insert screw is eliminated by new "Captive Design" Insert Screw. Socket and pin assemblies utilize "wedge-action" to insure firm, reliable positioning in connector shell. Q-G* Series 3 and 4-contact audio connectors, offer 4 and 5-contact versatility when "Ground Terminal" is utilized. Can be used interchangeably with Cannon type XLR-3, XLR-4 and Amphenol type 91-850 Series. ***Number of insert contacts or pins must be specified to complete Part Number.**

A(*)F CORD PLUGS



Fresh, streamlined design includes rugged, diecast zinc body, satin nickel finish, high-impact resistant thermo-setting plastic socket insert, molded latchlock, dual pressure plates, keyed neoprene relief bushing. Features "Ground Terminal" and "Ground Contactors" offers 4 and 5-contact versatility. Mates with Switchcraft A(*)M and other connectors with similar contact arrangements. Takes 1/2" O.D. cable. Overall length 3 1/32"; dia. 3/4".

Part No.	Insert Contacts	U.S.A. List Price
A3F	3	$2.45
A4F	4	3.05

A(*)M CORD PLUGS

Has "Captive Design" insert screw, one-piece pin insert assembly easily removable for fast soldering. Polarizing groove. Die-cast zinc shell, satin nickel finish. Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Brass, silver plated chromate dipped pins to resist tarnishing. Overall length 2 25/32"; dia. 3/4".

Part No.	Insert Pins	U.S.A. List Price
A3M	3	$2.10
A4M	4	2.25

B(*)M RECEPTACLES

For panel or chassis mounting; locknut accommodates panels up to 1/4" thick. Single hole mounting, can be keyed by using "D" shaped panel hole or S-3519 mounting adapter. Pin insert features "Captive Design" insert screw and "Ground Terminal." Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Diecast zinc shell, satin nickel finish. Dimensions: Flange 1 7/64" dia.; Barrel 13/16" overall; pin extensions 9/32".

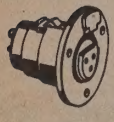
Part No.	Insert Pins	U.S.A. List Price
B3M	3	$3.00
B4M	4	3.15

C(*)M RECEPTACLES

Mounts on wall, panel or chassis with three .136" dia. mounting holes. High impact thermosetting plastic pin insert. "Captive Design" insert screw, "Ground Terminal." Pins, brass, silver plated, chromate dipped; resists tarnishing. Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Dimensions: Flange 1 7/16" dia.; Barrel 13/16" overall; pin extensions 9/32".

Part No.	Insert Pins	U.S.A. List Price
C3M	3	$1.60
C4M	4	1.75

C(*)F RECEPTACLES



For panel or chassis mounting; has socket insert, push-type latch locking device. Flange has three .136" holes for mounting screws. Mates with Switchcraft A(*)M and other connectors with similar contact arrangements. Dimensions: Flange 1 7/16" dia.; Barrel 1 13/16" overall; pin extension 1/4".

Part No.	Insert Pins	U.S.A. List Price
C3F	3	$3.20
C4F	4	3.35

D(*)F RECEPTACLES

Rectangular flange design receptacle permits close mounting on crowded panel or chassis. Features "Captive Design" loss-proof insert screw, positive latch locking device and high impact thermo-setting socket insert. Mates with Switchcraft A(*)M and other connectors with similar contact arrangements. Dimensions: Flange 1 1/16" x 1 7/16"; Barrel 1 13/64" overall; pin extension 1/4".

Part No.	Insert Contacts	U.S.A. List Price
D3F	3	$3.30
D4F	4	3.45

D(*)M RECEPTACLES

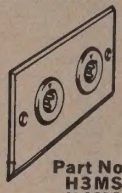
Narrow, rectangular flange design receptacle for mounting on compact panel or chassis. Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Dimensions: Flange 3/8" x 1 7/16"; Barrel 13/16" overall; pin extension 9/32".

Part No.	Insert Pins	U.S.A. List Price
D3M	3	$2.00
D4M	4	2.15

G(*)M TYPE WALL PLATES

Single gang wall plates with a B(*)M male receptacle. Fits standard electrical outlet box. Wall plates available in brushed stainless steel as standard or brushed brass on special order. Dimensions: Wall Plate 4 1/2" H. x 2 3/4" W.

Part No.	Finish	Insert Pins	U.S.A. List Price
G3MS	Stainless Steel	3	$5.20
G4MS	Stainless Steel	4	5.50



H(*)M TYPE WALL PLATES

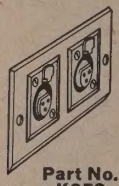
Two gang wall plates with two B(*)M male receptacles. Mounts in standard electrical switch box (single). Wall plates available in brushed stainless steel as standard or brushed brass on special order. Dimensions: Wall Plate 4 1/2" H. x 2 3/4" W. Six contacts.

Part No.	Finish	Insert Pins	U.S.A. List Price
H3MS	Stainless Steel	3 ea.	$7.30
H4MS	Stainless Steel	4 ea.	7.90

J(*)F TYPE WALL PLATES

Single gang wall plates with a D(*)F female receptacle. Fits standard electrical outlet box. Wall plates available in brushed stainless steel as standard or brushed brass on special order. Dimensions: 4 1/2" H. x 2 3/4" W.

Part No.	Finish	Insert Contacts	U.S.A. List Price
J3FS	Stainless Steel	3	$5.40
J4FS	Stainless Steel	4	5.70



K(*)F TYPE WALL PLATES

Two gang wall plates with two D(*)F female receptacles. Mounts in standard electrical outlet junction box. Wall plates available in stainless steel as standard or brushed brass on special order. Dimensions: 4 1/2" H. x 2 3/4" W.

Part No.	Finish	Insert Contacts	U.S.A. List Price
K3FS	Stainless Steel	4 ea.	$7.70
K4FS	Stainless Steel	4 ea.	8.30

MOUNTING ADAPTER

For use with B3M panel and chassis receptacle. Eliminates necessity of providing a flatted "D" shaped hole in panel to prevent turning of receptacle.

Switchcraft Part No. S-3519.....U.S.A. List Price **$0.45**

"SLIM-LINE" CONNECTORS

New, small 4-contact connectors for audio and communication equipment. Barrel insert assembly of high-impact thermo-plastic. **No. 2504M, Fig. A,** 4-pin male plug with coupling ring. "D-shaped" barrel assembly polarized for proper mating. Large, husky cable clamp. **No. 2504FP, Fig. B,** 4-contact female receptacle, only 49/64" dia., 3/4" depth behind panel. For front panel mount. No. 2504FR, same as 2504FP, except rear panel mount. All "Slim-Line" connectors bright nickel plated.

Switchcraft Part No. 2504M.....U.S.A. List Price **$2.50**
Switchcraft Part No. 2504FP.....U.S.A. List Price **$2.50**
Switchcraft Part No. 2504FR.....U.S.A. List Price **$2.50**

AC RECEPTACLES

Highly dependable 3-pin receptacles for use in all electrical/electronic equipment. "Chassis hugging" recessed type mounting. Brass contact pins are silver plated, chromate dipped. Part Nos. **AC3** and **LAC3** (ungrounded) and Part Nos. **AC3G** and **LAC3G** (grounded), include a self-aligning feature which allows movement of pins **No. 1** and **No. 3** in the shell to take up any slight off centering of the mating plug contacts. The center pin **No. 2,** is stationary and serves as a guide. Receptacles **AC3** and **AC3G** have .122" dia. pins and mate with custom AC line cords such as **Belden PH-243.** Receptacles **LAC3** and **LAC3G** have .24" dia. pins and mate with std. AC line cords such as **Belden 17258.** All types are U.L. approved. Rating: 115 V, 7 amps.

Part No.	Description	U.S.A. List Price
AC3	Ungrounded	$0.80
AC3G	Grounded	.75
LAC3	Ungrounded	.80
LAC3G	Grounded	.75

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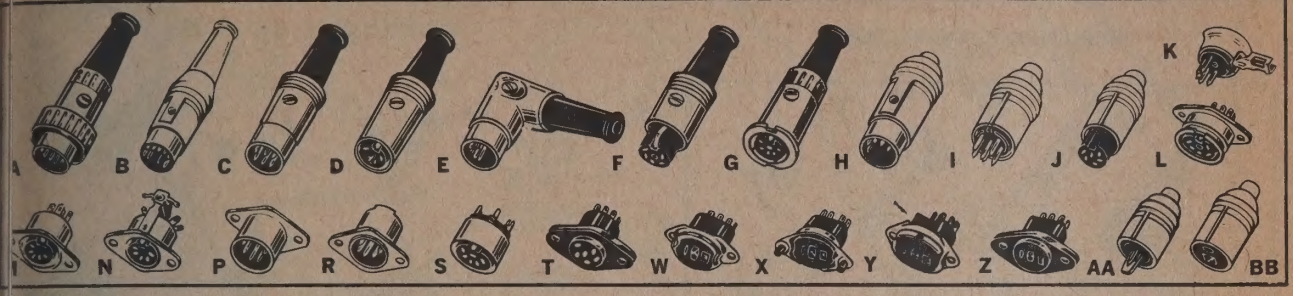
SWITCHCRAFT INC. Preh

Audio Connectors



is the most complete low-cost family of miniature audio connectors available today. Exact replacements for plugs and receptacles used on most foreign built recorders, radios and dictation equipment. Switchcraft/Preh 2 to 7 contact connectors include male and female plugs and receptacles with bright nickel-plated s and plastic snap-on shells. Check these outstanding features . . . lock-ring coupling, silver plated contact pins for low contact resistance, contact friction coupling ow mechanical interference noise, exclusive "automatic" grounding and polarization provisions. Thirteen receptacles offer some form of internal switching. tioning "Ground Key-Rib" or "Ground Contact"—electrically integral with the connector shell—is provided in each plug and receptacle (except those with plastic ings or shells) to ground or shield the connector shell. Designed for low level circuitry, they have unlimited use in commercial, industrial, consumer and military ications.

PLUGS

TRAIGHT CORD PLUGS with 30° Lock Ring

rt No.	Fig.	Description	Pin or Contact arrangement	U.S.A. List Price
CL2M	A	2 pins, ins. sw. actuator.	1	$1.75
CL3M	A	3 pins at 180°	2	1.75
CL5M	A	5 pins at 180°	5	1.95
CL4M	A	4 pins at 210°	3	1.85
CL5M	A	5 pins at 240°	4	1.95

TRAIGHT CORD PLUG with Shielded Barrel

GM3M	B	3 pins at 180°. Gray	2	1.10
GM5M	B	5 pins at 180°. Gray	5	1.30
GM4M	B	4 pins at 210°. Gray	3	1.20
GM5M	B	5 pins at 240°. Gray	4	1.30
GM6M	B	6 pins at 240°. Gray	6	1.40
1N5M	B	5 pins at 240°. Gray	4	1.30
GM7M	B	7 pins at 270°. Gray	7	1.50

TRAIGHT CORD PLUG with Extended Barrel

BL2M	C	2 pins, ins. sw. actuator	1	1.65
BL3M	C	3 pins at 180°	2	1.65
BL5M	C	5 pins at 180°	5	1.85
BL4M	C	4 pins at 210°	3	1.75
BL5M	C	5 pins at 240°	4	1.85
BL6M	C	6 pins at 240°	6	1.95

TRAIGHT CORD PLUG with Flush Socket Insert

AL2F	D	2 cont., cl. ckt. sw. Ckt. #4	A	1.65
AL3F	D	3 contacts at 180°	B	1.65
AL5F	D	5 contacts at 180°	F	1.85
AL4F	D	4 contacts at 210°	D	1.75
AL5F	D	5 contacts at 240°	E	1.85
AL6F	D	6 contacts at 240°	G	1.95

TRAIGHT CORD PLUG with 8 Position Barrel

DL2M	E	2 pins, ins. sw. actuator	1	2.00
DL3M	E	3 pins at 180°	2	2.00
DL5M	E	5 pins at 180°	5	2.20
DL4M	E	4 pins at 210°	3	2.10
DL5M	E	5 pins at 240°	4	2.20

TRAIGHT CORD PLUG with Extended Socket

FL3F	F	3 contacts at 180°	B	1.60
FL4F	F	4 contacts at 210°	D	1.70
FL5F	F	5 contacts at 240°	E	1.80

TRAIGHT CORD PLUG with Lock Flange

EL3F	G	3 contacts at 180°	B	1.65
EL5F	G	5 contacts at 180°	F	1.85
EL4F	G	4 contacts at 210°	D	1.75
EL5F	G	5 contacts at 210°	E	1.85

TRAIGHT CORD PLUG with Snap-Lock Plastic Shell

LK3M	H	3 pins at 180°	2	.90
LK5M	H	5 pins at 180°	5	1.10
LK4M	H	4 pins at 210°	3	1.00
LK5M	H	5 pins at 240°	4	1.10

STRAIGHT CORD PLUG with Short Plastic Shell

Part No.	Fig.	Description	Pin or Contact arrangement	U.S.A. List Price
05QK3M	I	3 pins at 180°	2	$ .60
05QK5M	I	5 pins at 180°	5	.80
09QK4M	I	4 pins at 210°	3	.70
12QK5M	I	5 pins at 240°	4	.80
12QK6M	I	6 pins at 240°	6	.90

STRAIGHT CORD PLUG with Ext. Socket and Shell

07QK3F	J	3 contacts at 180°	B	.60
07QK5F	J	5 contacts at 180°	F	.80
08QK3F	J	3 cont.—180°, 2 blanks	C	.60
11QK4F	J	4 contacts at 210°	D	.70
14QK5F	J	5 contacts at 240°	E	.80
14QK6F	J	6 contacts at 240°	G	.90

RIGHT ANGLE CORD PLUG with Ins. Plastic Shell

05UK3M	K	3 pins at 180°	2	.60
05UK5M	K	5 pins at 180°	5	.80

RECEPTACLE for Lockring Plugs

55HA2F	L	2 cont., clsd. ckt. sw. Ckt. #4	A	1.00
57HA3F	L	3 contacts at 180°	B	1.00
57HA5F	L	5 contacts at 180°	F	1.20
60HA4F	L	4 contacts at 210°	D	1.10
61HA5F	L	5 contacts at 240°	E	1.20

RECEPTACLE for Shielded and Extended Barrel Plugs

55GA2F	M	2 cont. plus clsd. ckt. sw. Ckt. #4	A	.70
57GA3F	M	3 contacts at 180°	B	.70
57B5F	M	5 contacts at 180°	F	.90
57NC5F	N	5 cont.—180°, P.C. term.	F	.80
58GB3F	M	3 cont.—180°, 2 blanks	B	.75
58NC3F	N	3 cont.—180°, 2 blanks. P.C. term.	C	.60
59GB3F	P	3 cont.—180°, clsd. ckt. sw. Ckt. #5	B	1.30
59GB5F	P	5 cont.—180°, clsd. ckt. sw. Ckt. #5	F	1.50
60GA4F	M	4 contacts at 210°	D	.80
61GA5F	M	5 contacts at 240°	E	.90
61GA6F	M	6 contacts at 240°	G	1.00
62GB7F	M	7 contacts at 270°	H	1.00

RECEPTACLE for Flush and Extended Socket Plugs

56KD2M	R	2 pins, ins. sw. actuator.	1	1.00
57KD3M	R	3 pins at 180°	2	1.00
57KD5M	R	5 pins at 180°	5	1.20
60KD4M	R	4 pins at 210°	3	1.10
61KD5M	R	5 pins at 240°	4	1.20

RECEPTACLE with Recessed Mounting for Extended Socket Plugs

57JD3M	S	3 pins at 180°	2	1.00
60JD4M	S	4 pins at 210°	3	1.10
61JD5M	S	5 pins at 240°	4	1.20

RECEPTACLE for Short and Right Angle Plastic Shell Plugs

Part No.	Fig.	Description	Pin or Contact arrangement	U.S.A. List Price
57LA3F	T	3 contacts at 180°	C	$ .40
60LA4F	T	4 contacts at 210°	D	.50
61LA5F	T	5 contacts at 240°	E	.60
61LA6F	T	6 contacts at 240°	G	.70

CONTROL AND SWITCHING RECEPTACLES FOR 01QK2M PLUG

Each receptacle includes an elongated center contact for positive polarization. When inserting mating plug, contact is made to terminals 1 and 2. Receptacle's built-in closed-circuit switch is not actuated. Plug may then be turned 180°, without a polarity change, and re-inserted to open switch and make contact to terminal 2. Convertible feature available in **Nos. 51DA2F, 52BA2F, 52CA2F and 52DA2F.**

RECEPTACLE with Metal Mounting Flange

52DA2F	W	2 cont. clsd. ckt. sw. Ckt. #2. Conv't.	J	.65
53DA2F	W	2 contacts	K	.55
54DA2F	W	2 cont. clsd. ckt. sw. Ckt. #3. Not Conv't.	L	.60

RECEPTACLE with Metal Rivet Mounting Flange

52BA2F	X	2 cont. clsd. ckt. sw. Ckt. #2. Conv't.	J	.70
53BA2F	X	2 contacts	K	.60
54BA2F	X	2 cont. clsd. ckt. sw. Ckt. #3. Not Conv't.	L	.65

RECEPTACLE with 1-C Circuit

51DA2F	Y	2 cont. Make-break. Ckt. #2. Conv't.	M	.80

RECEPTACLE with Insulated Plastic Body

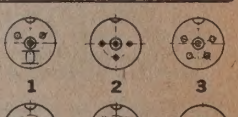
52CA2F	Z	2 cont. clsd. ckt. sw. Ckt. #2. Conv't.	J	.60
53CA2F	Z	2 contacts	K	.50
54CA2F	Z	2 cont. clsd. ckt. sw. Ckt. #3. Not Conv't.	L	.55

CONTROL AND SWITCHING PLUGS

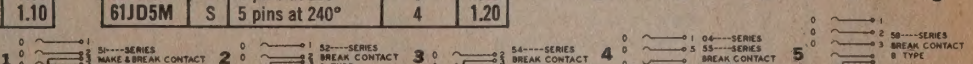
PLUGS with Snap-On Plastic Shells

01QK2M	AA	Male plug. 2 cont.	8	.40
02QK2F	BB	Female plug. 2 cont.	K	.50

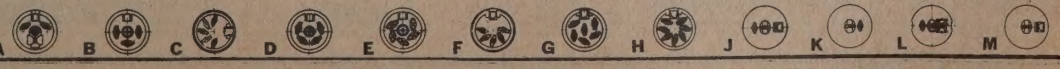
PIN ARRANGEMENTS



SCHEMATIC CIRCUITS



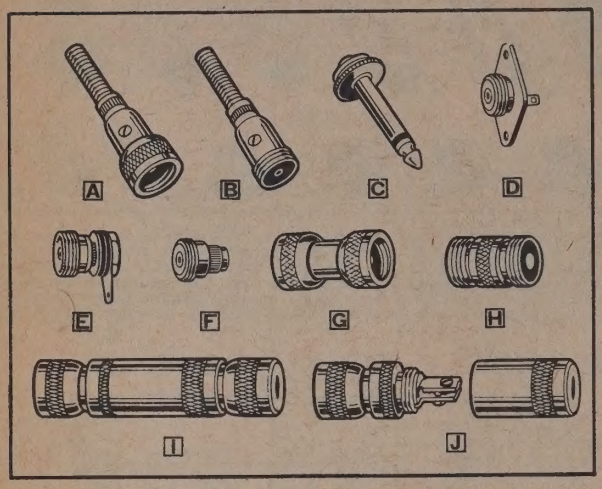
CONTACT ARRANGEMENTS



Connector and Cable Assemblies

SWITCHCRAFT INC.

MICROPHONE CONNECTORS



Standard connectors with 5/8"-27 threads. Designed for use with single conductor microphone cable with 9/32" max. O.D. **Coupling ring** on 2501F removable for fast change of female to male type. Spring assembled into body, cable braid and spring clamped by hollow set screw. **No. 44** adapts 2501F to fit standard 2-cond. phone jack. No. 2501MP mounts in .385" dia. hole. ***No. 2501MPC** same as 2501MP except closed circuit type. **No. 2501FT,** coupler, two female connectors at each end. **No. 2501MT,** coupler, two male connectors at each end. **Nos. 2501FL, 2501FS,** for attaching cable to female connector without soldering; screw terminals. **No. 2501MBL,** insulated male panel receptacle. **No. 2501MPF,** male panel receptacle for PRESS-FIT mounting. **Cable clamp.

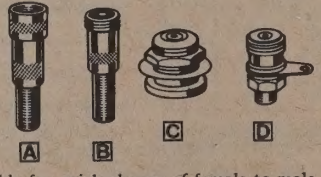
Part No.	Fig.	Description	U.S.A. List Price
2501F	A	Female Connector	$0.75
2501M	B	Male Connector	.60
44	C	Phone Plug Adapter	.60
2501MBL	D	Panel Receptacle	.65
2501MP	E	Panel Receptacle	.55
*2501MPC	E	Panel Receptacle	.70
2501MPF	F	Panel Receptacle	.55
2501FT	G	Double Female Connector	1.50
2501MT	H	Double Male Connector	1.50
**2501FL	I	Screw Term. Female Connector	2.75
2501FS	J	Screw Term. Female Connector	2.00

RF-JACKS AND RF-PLUGS

Standard phono jacks and plugs with nylon insulation. For use in radio frequency applications—low cost, max. insulation resistance. **No. 3504M,** 3/8" O.D. **No. 3505F** mounts front of panel in 3/8" hole—fits panel up to 11/64" thick. **No. 3507** has 13/32" O.D. shielded, screw-on handle with cable clamp.

Part No.	Fig.	Description	U.S.A. List Price
3504M	L	Plug	$0.20
3505F	M	Chassis jack	.60
3507	N	Plug	.80

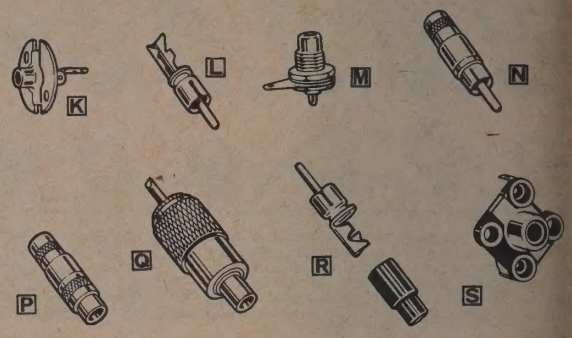
"MINI-CON" MINIATURE CONNECTORS



Popular "Mini-Con" microphone-type connectors used with miniaturized audio equipment, lapel microphones, musical instruments, etc. About 1/2 the size of standard microphone connectors. Accepts single conductor shielded cables up to 3/16" O.D. Nickel plated brass bodies. Coupling ring on 5501F removable for quick change of female to male type. Cable-braid spring clamped to body by hollow point set screw. 5501MF mounts by lock-nut front side of panel, in 3/8" dia. hole. 5501MP mounts back side of panel in 3/16" dia. hole. 5501MPC same as 5501MP except shorting type

Part Number	Fig.	Description	U.S.A. List Price
5501F	A	Female Cord Connector	$0.75
5501M	B	Male Cord Connector	.60
5501MF	C	Panel Connector, Male	.55
5501MP	D	Panel Connector, Male	.55
5501MPC	D	Panel Connector, Male	.90

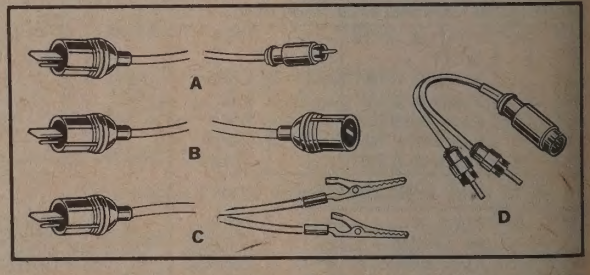
PHONO JACKS AND PLUGS



Low cost 2-cond. jacks and plugs for record players, FM-AM tuners, tape recorders, test equipment, etc. **3501MC** has 3/8" O.D. shell and cable clamp. **3501FP** for front panel mount in 1/4" hole, in panels up to 1/8" thick. **3501FR** for rear panel mount in 3/8" hole, in panels up to 13/64" thick. **3502** has unique cable clamp with 13/32" O.D. shielded removable handle. 3503 ext. jack has shielded removable handle, 13/32" O.D. with cable clamp. **3508 Series,** new color coded phono plugs with cable clamp and **"snap-on"** plastic handles in Red, Black, and White. **Series 3511 "4-Leaf Clover" Jax.** Molded phono Jack with dual contact surfaces for minimum shunt resistance, greater reliability. Open and closed circuit types. Mate with all Switchcraft phono plugs.

Part No.	Fig.	Description	U.S.A. List Price
3501F	K	Chassis jack	$0.15
3501M	—	Plug, less cable clamp	.10
3501MC	L	Plug with cable clamp	.15
3501FP	M	Chassis jack	.35
3501FR	—	As above, chassis jack	.45
3502	N	Plug	.50
3503	P	Extension jack	.65
3508-1	R	Plug, Red handle	.25
3508-2	R	Plug, Black handle	.25
3508-5	R	Plug, White handle	.25
3511	S	Chassis jack, open circuit	.30
3511A	S	Chassis jack, open circuit, grounded	.30
3512	S	Chassis jack, closed circuit	.35
3512A	S	Chassis jack, closed circuit, grounded	.35

EUROPEAN-TYPE ADAPTERS AND CABLE ASSEMBLIES



Switchcraft offers a complete line of European-type, multi-pin adapters and cable assemblies. These quality cables and adapters are designed to mate with multi-pin inputs and outputs on tape or cassette recorders, amplifiers, speakers, etc.

Part No.	Fig.	Description	U.S.A. List Price
25DK32	A	European-type 2 pin male cord plug to phono plug. 6' shielded cable.	$2.10
32ZN36	B	Speaker ext. cable. European-type 2 pin male cord plug to 2-contact female cord plug. 10' parallel cable.	2.85
32ZR36	—	As above, except 15'.	3.20
32ZK86	C	European-type 2 contact female cord plug to 2 alligator clips. 6' parallel cable.	2.20
32ZN86	—	Same as above, except 10'.	2.50
33FK25	D	Stereo Hi-Fi Cable. European-type 3 pin (at 180°) male cord plug to 2 color coded phono plugs. 6' parallel cable.	4.05
33FN25	—	Same as above, except 10'.	4.65

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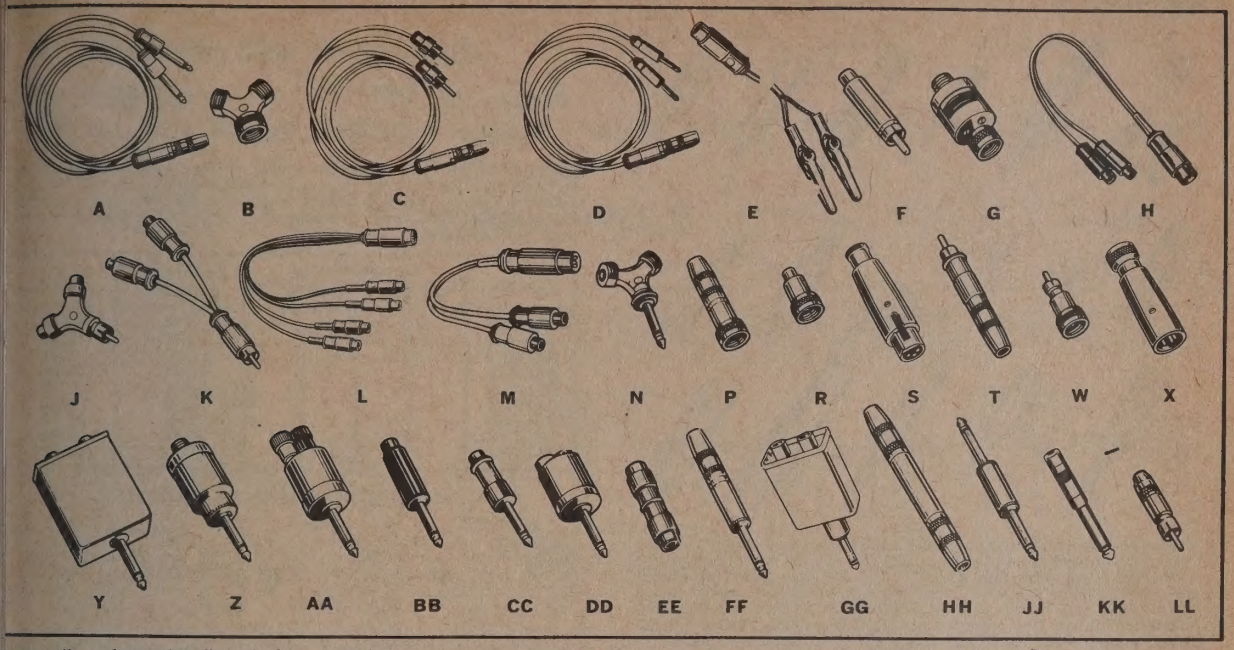
SWITCHCRAFT® INC.

Adapters

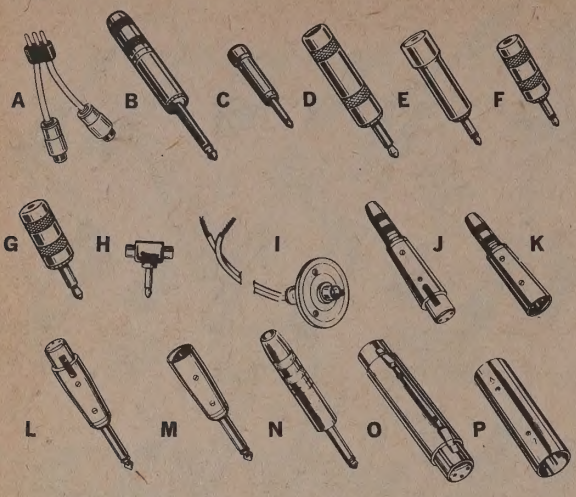


A versatile and complete line of adapters for interconnecting components that do not have mating jacks and/or plugs. For hi-fi stereo, phonographs, tuners, tape recorders, amplifiers, P.A. systems, etc. Positive mating contacts of high quality material prevent resistive line-losses. **Nickel plated finish for long life. No. 328A,** audio equalizer, converts ceramic phono cartridge to magnetic input. **No. 329** Volume Control Adapter for use in high impedance circuits. **No. 330G** adapts European-type 5-contact sockets to standard Switchcraft phono plugs, color coded. Fits Norelco, Korting, Grundig, Sony, Elber tape recorders; Grundig radios. **No. 330H,** adapts 3-pin European type plug to standard Switchcraft phono plugs. **No. 335A** has unsoldered internal wire at one end to permit user to convert terminal needed. **No. 341,** silent plug adapter, includes a circuit closing device to eliminate amplifier "squeals" when disconnecting. **No. 352,** converts stereo headphones and/or microphones to a monaural input. **No. 353** adapts stereo recorder for two headphones. **Nos. 332A, 334A, 338B** can be used as male or female connector; coupling ring screws back, converting to male mike connector.

Part No.	Fig.	Description	U.S.A. List Price
05FH81	A	Stereo Headphone Adapter Cable. Two std. 2-cond. phone plugs wired to a 3-cond. phone jack. Shielded, 4 ft. stereo cable.	$5.30
25YP1	B	Y-Adapter, two male mike connectors in parallel to one female mike connector.	2.45
25FH81	C	Std. 3-cond. extension phone jack to two phono plugs. Shielded 4' gray stereo cable. Color coded.	4.30
45FH81	D	Stereo Headphone Adapter Cable. Similar to 05FH81, except two 2-cond. "Tini-Plug" wired to a 3-cond. std. ¼" phone jack. Shielded.	4.75
32AB86	E	Speaker Adapter Cable. Two alligator clips to a molded phono extension jack. 12" cable. Shielded.	1.30
328AP1	F	Audio Equalizer. Phone jack input to phone plug output.	3.40
329P1	G	Volume Control, female mike connector to male mike connector.	6.95
330CP1	H	Stereo Adapter. European-type 5 pin (at 180°) plug to two Switchcraft color coded phono extension jacks. 8" shielded cable.	3.90
330FP1	J	Y-Adapter. Two phono jacks in parallel to a phono plug. Shielded.	2.20
330F1P1	K	Flexible Y-Adapter, phono plug in parallel to 2 phono jacks. Shielded 4" cable.	2.50
330F2P1	—	Same as above, but phono plug and phono jack to a phono plug.	2.50
330F3P1	—	Same as above, but 2 phono plugs to 1 phono plug.	2.50
330GP1	L	Stereo Adapter Cable. 5-pin European-type plug to four phono jacks. Shielded stereo cables, each 1 ft.	6.75
330HP1	M	Flexible Y-Adapter. 3-pin European-type plug to 2 phono jacks. Shielded 5" cable.	4.00
330MP1	N	Y-Adapter, two male mike connectors in parallel to a 2-cond. phone plug.	2.50
330PJP1	—	Y-Adapter, as above, except two phono jacks in parallel to a 2-cond. phone plug. Shielded.	2.50
332AP1	P	Phone jack input to female mike connector output.	2.15
334AP1	R	Phono jack input to female mike connector output. Shielded.	1.80
334BP1	—	Same as above, but phono jack input to male mike connector output. Shielded.	1.65
335AP1	S	2-cond. input has Switchcraft 2501MP1 to output connector Cannon XLR.	$3.50
336AP1	T	2-cond. phone jack input to phono plug output. Shielded.	2.15
336BP1	—	Same as above, but 2-cond. phone jack input to phono jack output.	2.15
338AP1	—	Phono plug input to male mike connector output. Shielded. Similar to 338BP1.	1.40
338BP1	W	Phono plug input to female mike connector output. Shielded.	1.60
339AP1	X	Same as 335AP1, but output connector Switchcraft 2501FP1 to input connector Cannon XLR.	3.50
340P1	Y	Two 2-cond. phone jack inputs in parallel to a 2-cond. phone plug output. Shielded.	4.25
341P1	Z	Silent-Plug Adapter. 2-cond. phone jack input to 2-cond. phone plug output.	4.15
342P1	AA	Dual purpose binding post/banana jack input to 2-cond. phone plug output.	2.95
343P1	BB	Phono jack input to phone plug output. Built-in limiting resistor for Webcor tape recorders.	2.25
345AP1	CC	Phone plug output to phono jack input.	1.60
346P1	DD	Tip jack input to 2-cond. phone plug output.	2.75
349AP1	EE	Phono plug coupler, mates with phono plug at each end. Shielded.	1.35
352P1	FF	Stereo to monaural adapter. 3-cond. phone jack to 2-cond. phone plug output. Shielded.	2.50
353P1	GG	Stereo headphone adapter. 3-circuit plug wired to two 3-circuit jacks. Housed in shielded, metal case, tan finish.	5.00
361P1	HH	Coupler. 2-cond. phone jack at each end. Shielded.	2.75
362P1	—	Same as above, but 3-cond. phone jack at each end.	3.25
363P1	JJ	Coupler, 2-cond. phone plug at each end. Shielded.	2.50
364AP1	KK	2-cond. "Tini-Jax" 9/64" dia. sleeve, to 2-cond. ¼" O.D. phone plug. Shielded.	1.90
365P1	LL	2-cond. "Tini-Jax" (as above) input to phono jack output. Shielded.	1.90

Adapters and Cable Assemblies

SWITCHCRAFT INC.



Versatile adapters for interconnecting components and cables that do not have mating jacks and/or plugs. Positive mating contacts prevent resistive line-losses. **Nos. 369, 374, 375, 376, 377,** have shielded, nickel plated brass handles. **No. 378,** "Tini-Tee", provides dual output jacks for two separate earphones. Allows two to listen at once from a single transistorized radio, tape recorder, etc. **Part No. 330B,** Special Stereo Adapter, adapts Lear Jet Model HSA-900 tape recorder to RCA, or other stereo units with a three contact in-line socket assembly. Two single conductor color coded phono jack outputs to one 3 pin in-line input. Completely shielded. 4″ long.

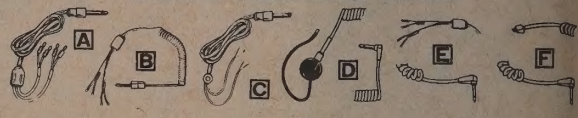
Part No.	Fig.	Description	U.S.A. List Price
330BP1	A	Two single conductor, color coded phono jack outputs to one 3-pin in-line input. Completely shielded. 4″ long.	$2.50
369P1	B	2-cond. Revere/Wollensak phone jack input to a standard 2-cond. phone plug output. Shielded.	2.50
370P1	C	Phono jack input to a 2-cond. "Tini-Plug" (9/64″ dia. finger) output. Shielded.	1.50
374P1	D	Phone jack input to a 2-cond. "Tini-Plug" (9/64″ dia. finger) output.	2.15
375P1	E	Phono jack input to a 2-cond. "Micro-Plug" (.097 dia. finger) output.	1.95
376P1	F	"Tini-Jax" input to a 2-cond. "Micro-Plug" (.097″ dia. finger) output.	1.95
377P1	G	"Micro-Jax" input to a 2-cond. "Tini-Plug" (9/64″ dia. finger) output.	1.95
378P1	H	"Tini-Tee" Adapter. 2-cond. "Tini-Plug" input to two 2-cond. "Tini-Jax" outputs.	2.50
379P1	I	Speaker enclosure phono jack. Molded flanged phono jack to stripped and tinned leads. 24″ cable.	1.50
381	—	Adapter Cable. 11′ 2-cond. shielded cable from 3-cond. right angle phone plug to "Y" junction. Two single cond. shielded 1′ cables from "Y" junction to two 2-cond. phone plugs.	7.00
383P1	J	3 Contact Switchcraft A3F female microphone input to 2-cond. extension phone jack output.	4.75
384P1	K	Three Pin A3M male microphone input to 2-cond. extension phone jack output.	4.25
386P1	L	3 Contact Switchcraft A3F female microphone input to a std. 2-cond. phone plug output.	4.65
387P1	M	3 Pin Switchcraft A3M male microphone input to a std. 2-cond. phone plug output.	4.15
388P1	N	2-cond., .206″ dia. finger phone plug input to a 2-cond. ¼″ dia. phone jack output. Shielded.	2.75
389P1	O	Coupler. 3-pin audio connector (Switchcraft A3M) at each end. Shielded.	4.90
390P1	P	Coupler. 3-pin male audio connector (Switchcraft A3M) at each end. Shielded.	4.15

MOLDED COILED CORD ASSEMBLIES

Shielded, coiled cord assemblies with molded terminations and/or stripped and tinned ends. Various extended lengths from **4 ft. to 20 ft.** extended lengths. Single conductor shielded cable with black neoprene jacket. Coiled cord flexes to maximum length and retracts positively each time it is used.

Part No.	Terminations		Extended Length	U.S.A. List Price
	End No. 1	End No. 2		
05LH84	A	C	4 ft.	$3.15
15LH84	B	C	4 ft.	3.15
87LH84	D	C	4 ft.	3.25
05LP05	A	A	12 ft.	6.50
05LP15	A	B	12 ft.	6.50
05LP87	A	D	12 ft.	6.50
05LT05	A	A	20 ft.	8.95
05LT15	A	B	20 ft.	8.95
05LT87	A	D	20 ft.	8.95

MOLDED HEADPHONE CABLES



Replace worn-out headphone cords with new molded cords from Switchcraft. **Part Nos. 05NJ88, 05NN88, 05KF88, 05KJ88, 13NJ88 and 13NN88** are direct replacements for cords used on Brush BA-200, BA-205, BA-206 headphones; RCA MI-38107B headphone. Standard Switchcraft straight or right angle 2-cond. phone plugs to color coded eyelet lugs. **Part No. 50MJ74** ideal for earphones used on dictation and office equipment. **Part No. 10FJ84** is a direct replacement for cords used on JENSEN HS-10, KNIGHT KN-840, SHARPE HA-8 and HA-10 Stereo Headphones.

Part No.	Fig.	Description	U.S.A. List Price
05KF88	A	Molded Headphone Cord. 2′ 2-cond. cable from phone plug to "Y" junction. 1′ cable from "Y" junction to eyelet plugs. Parallel wired.	$3.65
05KJ88	A	Same as above, except 4′ cable from phone plug to "Y" junction.	3.85
05NJ88	B	Straight 2-cond. phone plug to eyelet lugs. 5′ (extended) coiled cord.	4.50
05NN88	B	Same as above except 10′ (extended).	5.60
10FJ84	C	Molded Stereo Headphone Cord. 4′ cable from phone plug to "molded band" 1′ cable from bond to stripped and tinned leads.	3.60
13NJ78	—	Right angle 2-cond. phone plug to a "Micro-Extension Jax". 5′ extended coiled cord.	4.10
13NN78	—	Same as above, except 10′ extended coiled cord.	4.50
13NJ88	E	Right angle 2-cond. phone plug to eyelet lugs. 5′ (extended) coiled cord.	4.50
13NN88	E	As above, but 10′ (extended).	5.60
15KF88	—	Molded headphone cord. 2′ cable from std. 2-cond. right angle phone plug to "Y" junction. 1′ cable from "Y" junction to color coded eyelet lugs. Parallel cable.	3.65
50MJ74	F	Right angle "Tini-Plug" 2-cond. output (9/64″ dia. finger), to 2-cond. polarized ear receiver plug. Tinsel coiled cord extends to 5′.	3.95
3843P1	D	Personal Earphone Kit. Consists of dynamic type earphone, earpiece and 5′ (extended) coil cord. Cord has 2-cond. "Tini-Plug" one end to 2-cond. polarized ear receiver other end.	9.35

HEAVY DUTY SPEAKER EXTENSION CORD

Specially designed speaker extension cord for use on loudspeaker applications where low loss in frequency response is required.

Part No.	Fig.	Description	U.S.A. List Price
05VU85	A	2-cond. ¼″ dia. finger phone plug to 25′ of SV type, 18 ga. cable with spade lugs on other end.	$6.00

Trade Discount Applies To List Prices Only

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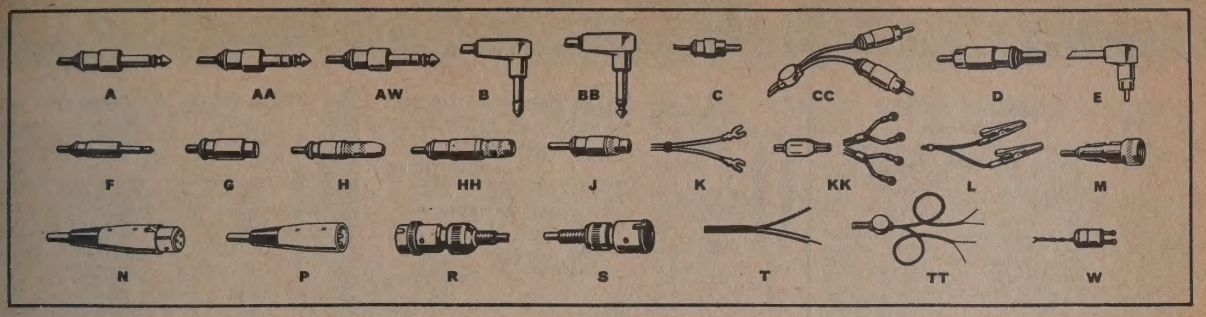
SWITCHCRAFT INC. HI-FI MOLDED CABLES



Only Switchcraft quality molded cable assemblies offer built-in cable clamps to support cable and eliminate strain—functionally designed handles to provide an easy grip. Cable is chrome grey (unless otherwise specified) with matching plastic handles. **Fig. AW** Phone Plug with Resistor. 3-Conductor. **Fig. M** Microphone Connector—Female. **Fig. N** Switchcraft Q-G 3-Pin Audio Connector—Female. **Fig. P** Switchcraft Q-G 3-Pin Audio Connector—Male. **Fig. R** Amphenol 3-Pin Connector—Female. **Fig. S** Amphenol 3-Pin Connector—Male. **Fig. W** Ear-Receiver Plug.

Part Number	Terminations End No. 1 Fig.	End No. 2 Fig.	Length	U.S.A. List Price
STRAIGHT 2-CONDUCTOR PHONE PLUG TO VARIOUS CONNECTIONS				
05AC05	A	A	18″	$1.95
05AD05	A	A	24″	2.15
05AK05	A	A	6′	3.15
05AN05	A	A	10′	4.25
05AR05	A	A	15′	4.80
05AU05	A	A	25′	5.60
05AK15	A	BB	6′	3.15
05AN15	A	BB	10′	4.25
05AR15	A	BB	15′	4.80
05AK25	A	C	6′	2.40
05AN25	A	C	10′	3.30
05AR25	A	C	15′	3.65
05AK30	A	E	6′	2.40
05AN30	A	E	10′	3.30
05AK80	A	H	6′	3.15
05AN80	A	H	10′	4.25
05AR80	A	H	15′	4.85
05AU80	A	H	25′	5.60
05AK82	A	G	6′	2.65
05AN82	A	G	10′	3.65
05AR82	A	G	15′	3.95
05AK87	A	M	6′	3.15
05AN87	A	M	10′	4.25
05AR87	A	M	15′	4.80
05AU87	A	M	25′	5.60
05AK84	A	T	6′	2.15
05AN84	A	T	10′	2.75
05AR84	A	T	15′	3.30
05CK84*	A	T	6′	1.70
05CN84*	A	T	10′	2.30
05CK85*	A	K	6′	1.80
05CN85*	A	K	10′	2.40
05CT85*	A	K	20′	2.85
05CU85*	A	K	25′	3.75
05CK86*	A	L	6′	2.30
05CN86*	A	L	10′	2.90
05CR86*	A	L	15′	3.20
05CT86*	A	L	20′	3.65
STRAIGHT 3-CONDUCTOR PHONE PLUG TO VARIOUS CONNECTIONS				
10BD10	AA	AA	24″	3.95
10BF10	AA	AA	36″	4.40
10BK10	AA	AA	6′	5.85
10BN10	AA	AA	10′	7.25
10BU10	AA	AA	25′	10.60
10BK81	AA	H	6′	5.85
10BN81	AA	H	10′	7.25
10BU81	AA	H	25′	10.60
Stereo Cable Assembly for use with stereo tape recorders using 3-conductor dual microphone inputs—Norelco, Webcor, Revere, Wollensak.				
10FK25	AA	CC	6′	4.85
Special stereo cable assembly for use with 3-cond. dual mic inputs.				
10FH80	AA	H	4′	$5.75
Webcor cable assembly. 3-cond. phone plug with internal resistor.				
11AK26	AW	D	6′	$4.00
2-conductor Revere and Wollensak cable with R. A. phone plug.				
12HK25	B	B	6′	$3.05
RIGHT ANGLE 2-CONDUCTOR PHONE PLUG TO VARIOUS CONNECTIONS				
15AK15	BB	BB	6′	3.15
15AN15	BB	BB	10′	4.25
15AU15	BB	BB	25′	5.60
15AK25	BB	C	6′	2.40
15AN25	BB	C	10′	3.30
15AR25	BB	C	15′	3.65
15AK30	BB	E	6′	2.40
15AN30	BB	E	10′	3.30
15AK80	BB	H	6′	3.15
15AN80	BB	H	10′	4.25
15AU80	BB	H	25′	5.60
15AK82	BB	G	6′	2.65
15AN82	BB	G	10′	3.65
15AK87	BB	R	6′	3.15
15AN87	BB	R	10′	4.25
15AN84	BB	T	10′	2.75
15AR84	BB	T	15′	3.30
15CN84*	BB	T	10′	2.30
15CK85*	BB	K	6′	1.80
15CN85*	BB	K	10′	2.40
15CK86	BB	L	6′	2.30
15CN86*	BB	L	10′	2.90
STRAIGHT PHONO PLUG TO VARIOUS CONNECTIONS				
25AC25	C	C	18″	$1.30
25AF25	C	C	36″	1.45
25AH25	C	C	4′	1.65
25AK25	C	C	6′	1.80
25AN25	C	C	10′	2.45
25AR25	C	C	15′	3.05
25AT25	C	C	20′	3.65
25AU25	C	C	25′	4.25
25AC30	C	E	18″	1.30
25AF30	C	E	36″	1.45
25AK30	C	E	6′	1.80
25AN30	C	E	10′	2.45
25AU30	C	E	25′	4.25
25AK80	C	H	6′	2.40
25AN80	C	H	10′	3.30
25AR80	C	H	15′	3.95
25AC82	C	G	18″	1.45
25AF82	C	G	36″	1.65
25AH82	C	G	4′	1.95
25AK82	C	G	6′	2.15
25AN82	C	G	10′	2.45
25AR82	C	G	15′	3.05
25AT82	C	G	20′	3.65
25AU82	C	G	25′	4.25
25AC84	C	T	18″	1.00
25AF84	C	T	36″	1.15
25AH84	C	T	4′	1.20
25AK84	C	T	6′	1.40
25AN84	C	T	10′	2.00
25AR84	C	T	15′	2.75
25AT84	C	T	20′	3.30
25AU84	C	T	25′	3.95
25CF84*	C	T	36″	.95
25CK84*	C	T	6′	1.10
25CN84*	C	T	10′	1.70
25CK85*	C	K	6′	1.20
25CN85*	C	K	10′	1.80
25CR85	C	K	15′	2.40
25CT85*	C	K	20′	2.65
25CU85	C	K	25′	3.05
25CK86*	C	L	6′	2.15
25CN86*	C	L	10′	2.75
25CR86*	C	L	15′	2.85
25CT86*	C	L	25′	3.15
25AK87	C	M	6′	3.00
25AN87	C	M	10′	4.10
25AU87	C	M	25′	5.60
Special Stereo Cables. Two shielded insulated cables inside a common grey plastic jacket. Provides two isolated channels for all stereo applications. Phono plugs color coded.				
25FF25	CC	CC	36″	$3.95
25FK25	CC	CC	6′	4.55
25FN25	CC	CC	10′	5.45
25FF82	CC	H	36″	3.60
25FK82	CC	H	6′	4.15
25FN82	CC	H	10′	4.95
25FF84	CC	TT	36″	3.50
25FK84	CC	TT	6′	3.95
25FN84	CC	TT	10′	4.55
STRAIGHT PHONO PLUG (LONG HANDLE) TO VARIOUS CONNECTIONS				
26AF26	D	D	36″	$1.60
26AK26	D	D	6′	1.95
26AN26	D	D	10′	2.55
26AR26	D	D	15′	3.15
26AK05	D	A	6′	2.65
26AN05	D	A	10′	3.30
26AF82	D	G	36″	1.80
26AK82	D	G	6′	$2.35
26AN82	D	G	10′	2.75
26AR82	D	G	15′	3.30
26AF84	D	T	36″	1.30
26AK84	D	T	6′	1.60
26AN84	D	T	10′	2.20
RIGHT ANGLE PHONO PLUG TO VARIOUS CONNECTIONS				
30AC30	E	E	18″	$1.25
30AF30	E	E	36″	1.45
30AH30	E	E	4′	1.65
30AK30	E	E	6′	1.80
30AN30	E	E	10′	2.40
30AR30	E	E	15′	3.05
30AT30	E	E	20′	3.65
30AU30	E	E	25′	4.25
30AK80	E	H	6′	2.40
30AN80	E	H	10′	3.30
30AC82	E	G	18″	1.55
30AF82	E	G	36″	1.65
30AK82	E	G	6′	2.15
30AN82	E	G	10′	2.40
30AR82	E	G	15′	3.05
30AT82	E	G	20′	3.65
30AU82	E	G	25′	4.25
30AF84	E	T	36″	1.15
30AK84	E	T	6′	1.40
30AN84	E	T	10′	2.00
30CF84*	E	T	36″	.95
30CK84*	E	T	6′	1.10
30CN85*	E	K	10′	1.80
30CK86*	E	L	6′	2.15
30CN86*	E	L	10′	2.75
STRAIGHT TINI-PLUG TO VARIOUS CON.				
40DF05	F	A	36″	$2.85
40DK05	F	A	6′	3.30
40DN05	F	A	10′	3.65
40DF25	F	C	36″	2.55
40DK25	F	C	6′	3.05
40DN25	F	C	10′	3.45
40DK40	F	F	6′	2.30
40DK80	F	H	6′	3.30
40DF82	F	G	6′	2.10
40DK82	F	G	6′	3.05
40DN82	F	G	10′	3.50
40DK83	F	J	6′	3.30
40DN83	F	J	10′	3.95
40DF84	F	T	36″	2.15
40DK84	F	T	6′	2.40
40DN84	F	T	10′	3.05
40DN86	F	W	10′	3.05
41EF75‡	F	W	36″	2.40
41EH75‡	F	W	4′	2.75
45AN25	F	C	10′	3.30
45AR25	F	C	15′	3.95
45AU25	F	C	25′	5.20
EXTENSION JACK CORDS				
82AC82	G	G	18″	$1.80
82AF82	G	G	36″	2.00
82AK82	G	G	6′	2.35
83DK05	J	A	6′	3.30
CORDS w/SPADE LUGS, ALLIGATOR CLIPS				
85CN85*	K	K	10′	$1.10
85CT85*	K	K	20′	1.80
85CU85*	K	K	25′	2.20
86CN86*	L	L	10′	2.15
86CU86*	L	L	25′	3.10
MICROPHONE CONNECTOR TO VARIOUS CONNECTIONS				
87AF84	M	T	36″	$1.80
87AK84	M	T	6′	2.20
87AN84	M	T	10′	2.75
87AU84	M	T	25′	5.20
87AF87	M	M	36″	2.40
87AK87	M	M	6′	3.05
87AP87	M	M	12′	4.25
87AU87	M	M	25′	6.05
91BU92	N	P	25′	14.50
93BU94	R	S	25′	11.25

*Parallel unshielded cable.

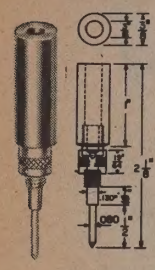
‡Hearing Aid Tinsel Cord. All other cables shielded.

specify SMITH

HERMAN H. SMITH, INC.

ELECT
COMPO

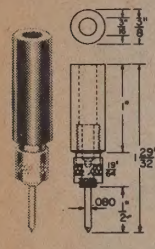
INSULATED TIP PLUG
Solderless



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless: wire fits through body of tip then wrapped around screw portion and tightened with knurled collar. Threaded type. Fits standard phone tip jacks.
Std. Pkg. 100

No.	Type	NET Per C
200	Senior	$17.00

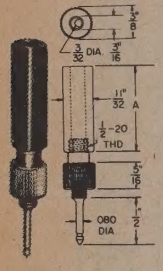
INSULATED TIP PLUG
Solderless



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless: wire fits through body of tip then wrapped around screw portion and tightened with knurled collar. Threaded type. Fits standard phone tip jacks.
Std. Pkg. 100

No.	Type	NET Per C
201	Junior	$17.00

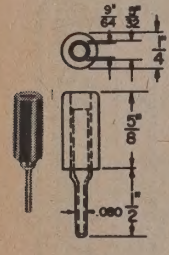
INSULATED TIP PLUG
Made to Meet Signal Corps Spec.



HANDLE: ETHYL CELLULOSE, Red or Black. SPECIFY COLOR
PLUG: Steel, case hardened to Signal Corps specs.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Recess at end of prod tip holds plugs firmly in jack spring. Prevents tip from falling out when in an inverted position.

No.	Handle (A)	Overall (B)	Std. Pkg.	NET Per C
250	1 inch	2⅛"	50	$60.00
358	3 inch	4⅛"	25	90.00

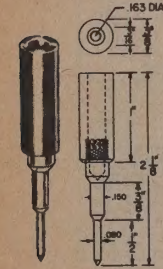
INSULATED TIP PLUG
Solder Type



HANDLE: MOLDED BUTYRATE, per FED. SPEC. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR
BODY: Brass, nickel plated our No. 158.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Drawn hollow tip for easy soldering. Fits standard phone tip jack. Std. Pkg. 100

No.	NET Per C
297	$12.00

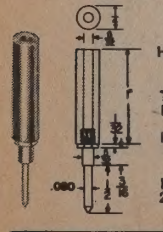
INSULATED TIP PLUG
Heavy Duty Type



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Large diameter well enables soldering of heavy duty wire directly into plug. Fits standard phone tip jacks. Std. Pkg. 100

No.	NET Per C
229	$17.00

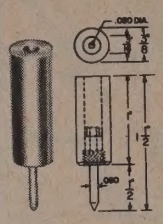
SUB-MINIATURE TIP PLUG



HANDLE: FIBRE, per MIL-F-1148A Grade CH. Red, Black. SPECIFY COLOR
TIP: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Ideally suited for checking sub-miniature equipment. Fits standard phone tip jacks. Std. Pkg. 100

No.	NET Per C
270	$20.00

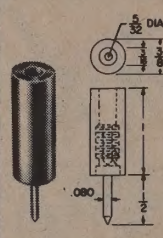
INSULATED SHORT TIP PLUG



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Inserts flush to insulated handle, no metal exposed; eliminates possibility of shock or grounding. Fits standard phone
Std. Pkg. 100

No.	NET Per C
203	$13.20

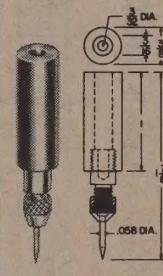
INSULATED SHORT TIP PLUG
Solderless



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR: Solderless: wire fits through handle and body of tip then wrapped around screw portion. Inserts flush to insulated handle, no metal exposed, eliminates possibility of shock or grounding. Fits standard phone tip jacks. Std. pkg. 100

No.	NET Per C
283	$15.00

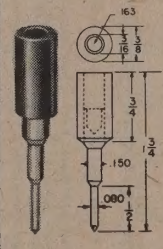
INSULATED TIP PLUG
Photo Needle



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Removable chuck for easy replacement of broken needle. Needle pierces corrosion or plating for positive reading.
Std. Pkg. 100

No.	NET Per C
216	$25.00

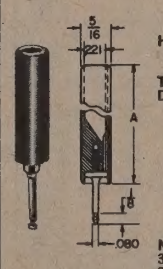
ADAPTER
Banana Plug to Tip Plug



HANDLE: MOLDED BUTYRATE, per FED. SPEC. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR
BODY: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Accepts standard banana plugs, adapts to standard tip plug. Std. Pkg. 100

No.	NET Per C
215	$17.00

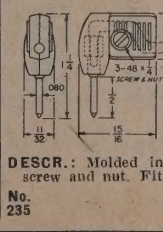
SUB-MINIATURE TIP PLUG
AND TEST PROD



HANDLE: Molded Nylon, per MIL-P-20693A. Available in Red or Black. SPECIFY COLOR
TIP: Brass, Silver plated.
DESCR.: Solderless assembly. Ideal for use with sub-miniature printed-circuit tip jacks. Sharp tip breaks flux or oxide coating on printed-circuit pattern for positive contact when used as prod. Grooved head or prod makes positive contact when laid across wires. Fits all standard .080" tip jacks.

No.	Handle (A)	Overall (B)	Std. Pkg.	NET Per C
348	1 inch	1-5/16"	100	$35.00
349	4 inches	4-5/16"	25	40.00

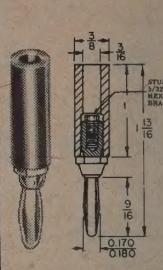
METER TIP PLUG



HANDLE: MOLDED PHENOLIC plastic, Red and Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Molded in two halves for easy assembly with screw and nut. Fits standard phone tip jacks.

No.	NET Per C
235	$30.00

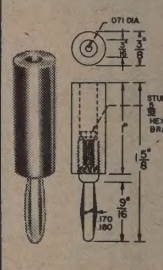
INSULATED BANANA



HANDLE: MOLDED PH plastic, Red, Black, Green, Blue, White. SPECIFY
PLUG: Hex brass, nickel plated.
SPRING: Four-leaved bronze or beryllium copp or silver plated.
RATING: 15 Amps AC Temp. rise, continuous
DESCR.: Wire can be so brass stud or directly itself. Stud also locks plug for solderless co Fits standard banana j
Std.

No.	Spring Material	Plating
212	Phosphor Bronze	Nickel
232	Phosphor Bronze	Silver
242	Beryllium Copper	Nickel
262	Beryllium Copper	Silver

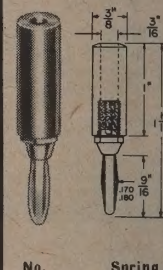
INSULATED BANANA



HANDLE: MOLDED PH plastic, Red, Black, Green, Blue, White. SPECIFY
PLUG: Brass, nickel plated.
SPRING: Four-leaved bronze or beryllium copp or silver plated.
RATING: 15 Amps AC Temp. rise, continuous
DESCR.: Wire can be so brass stud or directly itself. Stud also locks plug for solderless co Fits standard banana j
Std.

No.	Spring Material	Plating
211	Phosphor Bronze	Nickel
261	Phosphor Bronze	Silver
271	Beryllium Copper	Nickel
281	Beryllium Copper	Silver

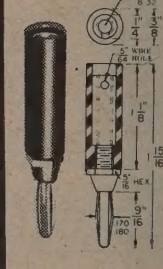
INSULATED BANANA
Solderless



HANDLE: MOLDED PH plastic, Red, Black, Green, Blue, White. SPECIFY
PLUG: Hex brass, nickel plated.
SPRING: Four-leaved bronze or beryllium copp or silver plated.
RATING: 15 Amps AC Temp. rise, continuous
DESCR.: Solderless: through handle and bo then wrapped around tion. Fits standard ban
Std.

No.	Spring Material	Plating
295	Phosphor Bronze	Nickel
296	Phosphor Bronze	Silver
297	Beryllium Copper	Nickel
298	Beryllium Copper	Silver

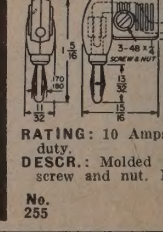
INSULATED BANANA P
Solderless



HANDLE: MACHINED B ATE, per MIL-P-10408 I, Class II. Red, Blac SPECIFY
BODY: Hex brass, nickel with mating brass spacer.
SPRING: Four-leaved p bronze, nickel plated.
RATING: 15 Amps AC fo Temp. rise, continuous du
DESCR.: Cross drilled spacer enables quick so connection of wire to plu standard banana jacks.
Std.

No.	NET
236	

METER BANANA P



HANDLE: MOLDED P IC plastic, Red and SPECIFY
PLUG: Brass, nickel p
SPRING: Four-leaved bronze, nickel plated.
RATING: 10 Amps AC for 10°C Temp. rise, c duty.
DESCR.: Molded in two halves for easy assem screw and nut. Fits standard banana jacks.
Std

No.	N
255	

© United Technic

Specify SMITH

HERMAN H. SMITH, INC.

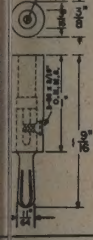
ELECTRONIC COMPONENTS

INSULATED BANANA PLUG With Side Screw

HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
SPRING: Four-leaved phosphor bronze or beryllium copper, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Set screw secures wire without soldering. Fits standard banana jacks. **Std. Pkg. 100**

No.	Spring	NET Per C
204	Phosphor Bronze	$20.00
254	Beryllium Copper	27.00

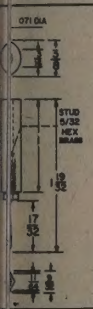
INSULATED BANANA PLUG Split Type With Side Screw



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Cross-slotted for spring tension. Set screw secures wire, without soldering. Fits standard banana jacks. **Std. Pkg. 100**

No.	NET Per C
213	$18.00

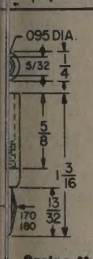
INSULATED BANANA PLUG Split Type With Internal Stud



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Cross-slotted for spring tension. Wire can be soldered to brass stud or directly into plug itself. Stud also locks wire to plug for solderless connection. Fits standard banana jacks. **Std. Pkg. 100**

No.	NET Per C
253	$22.00

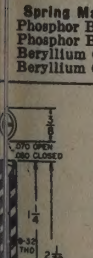
INSULATED BANANA PLUG Midget Type



HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black. SPECIFY COLOR
PLUG: Brass, nickel or silver plated.
SPRING: Phosphor bronze or beryllium copper, nickel or silver plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Wire soldered directly into stud. Fits standard banana jacks. **Std. Pkg. 100**

Spring Material	Plating	NET Per C
Phosphor Bronze	Nickel	$20.00
Phosphor Bronze	Silver	22.00
Beryllium Copper	Nickel	27.00
Beryllium Copper	Silver	30.00

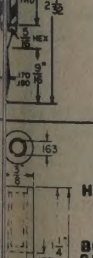
INSULATED BANANA PLUG With Internal Spring Collett



HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red or Black. SPECIFY COLOR
BODY: Hex brass, nickel plated.
SPRING: Four-leaved phosphor bronze, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless: Spring collett provides quick connect and disconnect of wire. Tin wire for secure contact. Fits standard banana jack. **Std. Pkg. 100**

No.	NET Per C
239	$45.00

STACK BANANA PLUG Solderless



HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black, Yellow or Green. SPECIFY COLOR
BODY: Brass, nickel plated.
SPRING: Four-leaved phosphor bronze or beryllium copper, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless connection. Accepts standard banana plugs in top and side. Interconnects unlimited amount of multiple circuits. **Std. Pkg. 50**

Spring Material	NET Per C
Phosphor Bronze	$35.00
Beryllium Copper	44.00

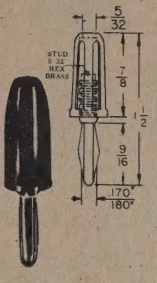
NYLON PLUGS COLOR CODE SUFFIX

Add to Catalog Number as required

— 101 WHITE	— 104 GREEN	— 106 ORANGE	— 112 PURPLE
— 102 RED	— 105 BLUE	— 107 YELLOW	— 113 GREY
— 103 BLACK		— 108 BROWN	

BANANA PLUG TYPE

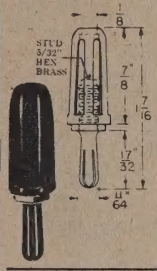
NYLON BANANA PLUG



HANDLE: MOLDED NYLON, per MIL-P-20693A.
COLORS: Available in 10 std. colors as coded above. SPECIFY COLOR
PLUG: Brass, nickel plated.
SPRING: Phosphor bronze or beryllium copper nickel or silver plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Wire can be soldered to brass stud or directly into plug itself. Stud also locks wire to plug for solderless connection. Fits standard banana jacks. **Std. Pkg. 100**

No.	Spring Material	Plating	NET Per C
476	Phosphor Bronze	Nickel	$22.00
477	Phosphor Bronze	Silver	24.00
478	Beryllium Copper	Nickel	29.00
479	Beryllium Copper	Silver	32.00

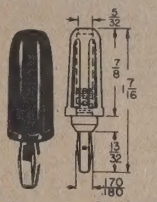
NYLON BANANA PLUG Split Type



HANDLE: MOLDED NYLON, per MIL-P-20693A.
COLORS: Available in 10 std. colors as coded above. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Cross-slotted for spring tension. Wire can be soldered to brass stud or directly into plug itself. Stud also locks wire to plug for solderless connection. Fits standard banana jacks. **Std. Pkg. 100**

No.	NET Per C
494	$22.00

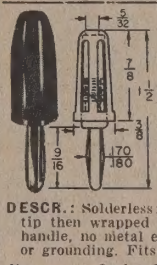
NYLON BANANA PLUG Short Spring



HANDLE: MOLDED NYLON, per MIL-P-20693A.
COLORS: Available in 10 std. colors as coded above. SPECIFY COLOR
PLUG: Brass, nickel or silver plated.
SPRING: Phosphor bronze or, beryllium copper nickel or silver plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Wire soldered directly into stud. Fits standard banana jacks. **Std. Pkg. 100**

No.	Spring Material	Plating	NET Per C
426	Phosphor Bronze	Nickel	$20.00
427	Phosphor Bronze	Silver	22.00
428	Beryllium Copper	Nickel	27.00
429	Beryllium Copper	Silver	30.00

NYLON BANANA PLUG Solderless

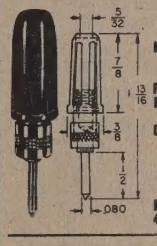


HANDLE: MOLDED NYLON, per MIL-P-20693A.
COLORS: Available in 10 std. colors as coded above. SPECIFY COLOR
PLUG: Brass, nickel or silver plated.
SPRING: Phosphor bronze or beryllium copper nickel or silver plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless: Wire fits through handle and body of tip then wrapped around screw portion. Inserts flush to handle, no metal exposed, eliminates possibility of shock or grounding. Fits standard banana jacks. **Std. Pkg. 100**

No.	Spring Material	Plating	NET Per C
455	Phosphor Bronze	Nickel	$22.00
456	Phosphor Bronze	Silver	24.00
457	Beryllium Copper	Nickel	29.00
458	Beryllium Copper	Silver	31.00

PIN TIP TYPE

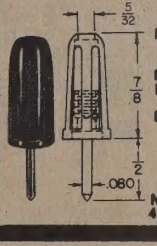
NYLON TIP PLUG Solderless



HANDLE: MOLDED NYLON, per MIL-P-20693A. Specify color as coded above.
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless: wire fits through body of tip then wrapped around screw portions and tightened with knurled collar. Threaded type. Fits standard phone tip jacks. **Std. Pkg. 100**

No.	NET Per C
490	$17.00

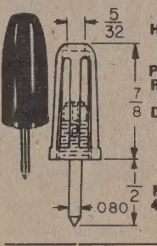
NYLON SHORT TIP PLUG Solderless



HANDLE: MOLDED NYLON, per MIL-P-20693A. Specify color as coded above.
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless: Wire fits through handle and body of tip then wrapped around screw portion. Inserts flush to handle, no metal exposed, eliminates possibility of shock or grounding. Fits standard phone tip jacks. **Std. Pkg. 100**

No.	NET Per C
492	$20.00

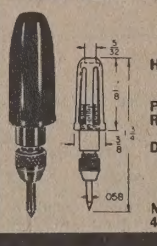
NYLON SHORT TIP PLUG



HANDLE: MOLDED NYLON, per MIL-P-20693A. Specify color as coded above.
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Inserts flush to insulated handle, no metal exposed; eliminates possibility of shock or grounding. Fits standard phone tip jacks. **Std. Pkg. 100**

No.	NET Per C
491	$15.00

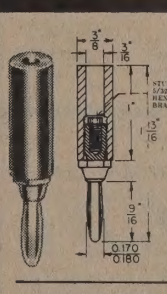
NYLON TIP PLUG Phono Needle



HANDLE: MOLDED NYLON, per MIL-P-20693A. Specify color as coded above.
PLUG: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Removable chuck for easy replacement of broken needles. Needle pierces corrosion or plating for positive reading. **Std. Pkg. 100**

No.	NET Per C
493	$25.00

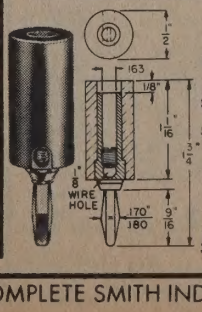
HIGH TEMPERATURE BANANA PLUG



HANDLE: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Hex brass, nickel plated.
SPRING: Four-leaved, INCONEL.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Withstands temperature to 1200 degrees F. Full resiliency—non-oxidizing. Excellent for thermo-couple connection on plastic extruding die heads. **Std. Pkg. 10**

No.	NET Per C
388	$80.00

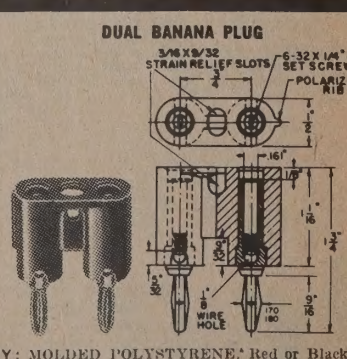
STACK BANANA PLUG



BODY: MOLDED POLYSTYRENE, Red or Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
SPRING: Four-leaved phosphor bronze, nickel plated.
SCREW: Steel, cadmium plated
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Internal set screw for wire or phone tip connection. Can be stacked for multiple connections. **Std. Pkg. 50**

No.	NET Per C
324	$48.00

DUAL BANANA PLUG



BODY: MOLDED POLYSTYRENE, Red or Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
SPRING: Four-leaved phosphor bronze, nickel plated.
SCREW: Steel, cadmium plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 5K Volts 60 cycle AC continuous working voltage. CAPACITANCE 1.0 pf. between conductors.
DESCR.: Mates with standard dual binding post ¾" centers. Polarity indicated on top and side. Wire held with internal set screw. Can be stacked for multiple connections. **Std. Pkg. 25**

No.	NET Per C
210	$72.00

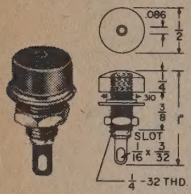
specify SMITH

HERMAN H. SMITH, INC.

INSULATED PHONE TIP JACK

HEAD: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
BODY: Brass, nickel plated.
CONTACT: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 750 Volts 60 cycle AC continuous working voltage. CAPACITANCE 4.0 pf.
DESCR.: Positive contact with standard phone tip plugs. Supplied complete with hex nut and fibre washer. Mounts in 5/16" hole in panels up to 3/8" thick. Accepts standard phone tip plugs. **Std. Pkg. 100**

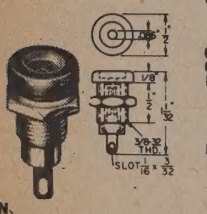
No.	NET Per C
202	$15.00



INSULATED PHONE TIP JACK

HEAD: MACHINED BUTYRATE, per Fed. Spec. L-P344, Type I, class MH. Red, Black, Yellow, Green. SPECIFY COLOR
BODY: Brass, nickel plated.
CONTACT: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise continuous duty. 750 Volts 60 cycle AC Continuous working voltage. CAPACITANCE 4.0 pf.
DESCR.: Complete with hex nut & fibre washer. Mounts in 5/16" hole in panels up to 3/8" thick. Accepts standard phone tip plugs. **Std. pkg. 100**

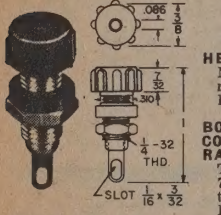
No.	NET Per C
223	$23.00



MOLDED NYLON TIP JACK

BODY: MOLDED NYLON, per MIL-P-20693A, Red, Black, Yellow, Green, Blue. SPECIFY COLOR
CONTACT: Phosphor bronze.
CAP: Brass, nickel plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty. 5 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 3.0 pf.
DESCR.: Mounts in 3/8" hole in panels up to 5/16" thick. Accepts standard phone tip plugs. **Std. Pkg. 100**

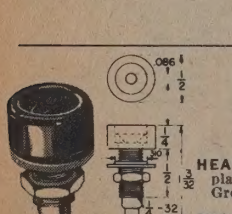
No.	NET Per C
240	$20.00



NYLON PHONE TIP JACK

HEAD: MOLDED NYLON, per MIL-P-20693A. With molded nylon washer. Red, Black, Yellow, Green, Blue. SPECIFY COLOR
BODY: Brass, nickel plated.
CONTACT: Phosphor bronze.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty. 750 Volts 60 cycle AC continuous working voltage. CAPACITANCE 4.0 pf.
DESCR.: Extruded portion of head and washer provides excellent insulation from panel. Supplied with hex nut. Mounts in 5/16" hole in panels up to 1/4" thick. Accepts standard tip plugs. **Std. Pkg. 100**

No.	NET Per C
241	$27.00

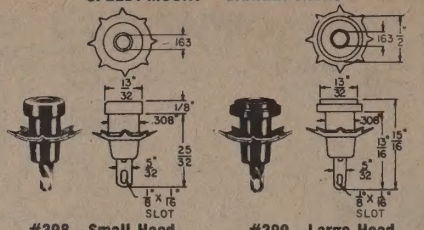


INSULATED TIP JACK
Meter Type

HEAD: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
BODY: Brass, nickel plated.
CONTACT: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 750 Volts 60 cycle AC continuous working voltage. CAPACITANCE 4.0 pf.
DESCR.: Supplied complete with hex nut and fibre washer. Mounts in 5/16" hole in panels up to 3/8" thick. Recessed jack body prevents possibility of shock or grounding. Accepts standard phone tip plugs. **Std. Pkg. 100**

No.	NET Per C
282	$23.00

"SPEEDI-MOUNT" BANANA JACKS



#398—Small Head #399—Large Head

BODY: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
CONTACT: Brass, cadmium plated.
WASHER: Steel cadmium plated, internal and external tooth.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty. 3 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 4.0 pf.
DESCR.: Unusual dished lockwasher permits fast assembly. Teeth embed into jack and panels, prevent pulling out and turning. Mounts in 5/16" hole in panels up to 3/16" thick. Accepts standard banana plug.

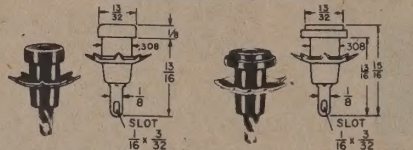
Small Head **Std. Pkg. 100**

No.	Head Dia.	NET Per C
398	13/32"	$8.00

Large Head

No.	Head Dia.	Net Per C
399	1/2"	$8.00

"SPEEDI-MOUNT" TIP JACKS

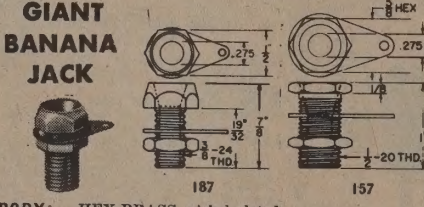


#279—Small Head #299—Large Head

BODY: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
CONTACT: Phosphor bronze.
WASHER: Steel cadmium plated, internal and external tooth.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty. 3 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 3.0 pf.
DESCR: Unusual dished lockwasher permits fast assembly. Teeth embed into jack and panels, prevents pulling out and turning. Mounts in 5/16" hole in panels up to 3/16" thick. Accepts standard phone tip plugs. **Std. Pkg. 100**

No.	Description	NET Per C
279	Small Head 13/32" Dia.	$8.00
299	Large Head 1/2" Dia.	8.00

GIANT BANANA JACK



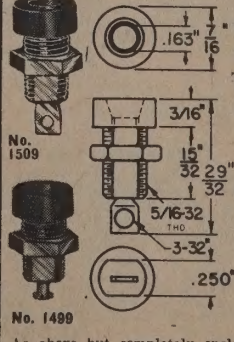
187 157

BODY: HEX BRASS, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and brass tinned lug.

Std. Pkg. 25

No.	Mtg. Hole	Panel	Net Per C
187	3/8"	1/2"	$40.00
157	1/2"	5/8"	40.00

NYLON BANANA JACKS



"DOUBLE-D" BODY

No. 1509

No. 1499

BODY: MOLDED NYLON, Per MIL-P-20693A.
COLORS: Available in 10 colors as coded above.
CONTACT: Brass, electro-tin plated.
RATING: 15 Amps, A.C. for 10° C. Temp. rise, continuous duty. 1 Kv 60 cycle A.C. continuous Working Voltage Capacitance 5.5 Pf.
DESCR.: Mounts in 5/16" round, single, or double "D" holes in panels up to 5/16" thick. Accepts standard banana plugs. One-piece turret terminal contact allows sealed panel entry hole. **Std. Pkg. 100**

No.	NET Per C
1509	$12.00

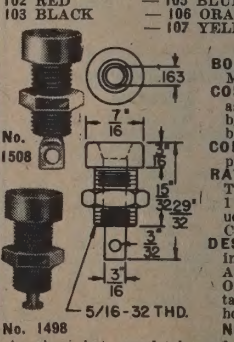
As above but completely enclosed jack with solder turret terminals.

No.	NET Per C
1499	$15.00

COLOR CODE SUFFIX — Add to Catalog Number as

— 101 WHITE — 104 GREEN
— 102 RED — 105 BLUE — 108 BR
— 103 BLACK — 106 ORANGE — 112 PU
— 107 YELLOW — 113 GR

Full Round Bo



No. 1508

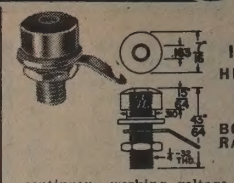
No. 1498

BODY: MOLDED NY MIL-P-20693A.
COLORS: Available in as coded above. Spe by adding color code basic catalog number.
CONTACT: Brass, plated.
RATING: 15 Amps AC Temp. rise, continuo 1 Kv., 60 cycle A.C uous Working Voltage CITANCE 5.0 Pf.
DESCR.: Mounts in 5/ in panels up to 5/1 Accepts standard bana One-piece turret term tact allows sealed pa hole.

No. 1508 NET Per C

As above but completely enclosed jack with solde terminals.

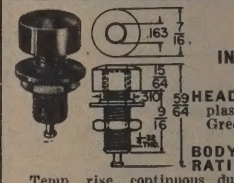
No. 1498 NET Per C



INSULATED BANAN

HEAD: MOLDED P IC plastic, Red, Bl low, Green, Blue SPECIFY
BODY: Brass, nicke
RATING: 15 Amps 10°C Temp. rise, duty. 750 Volts 60 continuous working voltage. CAPACITANCE
DESCR.: Supplied with hex nut, fibre washer, tinned lug. Mounts in 5/16" hole in panels thick. Accepts standard banana plugs. Std.

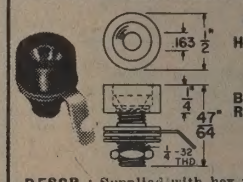
No. 205 N



INSULATED BANANA
With Turret Termi

HEAD: MOLDED PH plastic, Red, Black, Green, Blue, White. SPECIFY
BODY: Brass, nickel pl
RATING: 15 Amps AC Temp. rise, continuous duty. 750 Volts 60 continuous working voltage. CAPACITANCE
DESCR.: Supplied with hex nut & fibre washer in 5/16" hole in panels up to 3/8" thick. Solder turret terminal. Accepts standard banana plug Std.

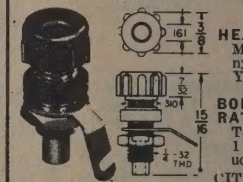
No. 256 NET Per C



INSULATED BANAN

HEAD: MOLDED P IC plastic, Red, Bl low, Green, Blue SPECIFY
BODY: Brass, nicke
RATING: 15 Amps 10°C Temp. rise, duty. 750 Volts 60 continuous working CAPACITANCE 4.
DESCR.: Supplied with hex nut, fibre washer, and brass tinned lug. Mounts in 5/16" hole up to 3/8" thick. Jack body recessed for snug Accepts standard banana plugs. Std.

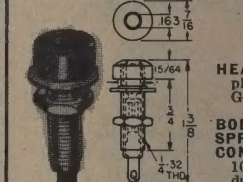
No. 219 N



NYLON BANANA J

HEAD: MOLDED NY MIL-P-20693A. Wit nylon washer. Red Yellow, Green, Blue SPECIFY
BODY: Brass, nickel
RATING: 15 Amps AC Temp. rise, continuo 1 K Volts 60 cycle A uous working voltage CITANCE 4.0 pf.
DESCR.: Extruded portion of head and washer excellent insulation from panel. Supplied with brass tinned lug. Mounts in 5/16" hole in pan 1/4" thick. Accepts standard banana plugs.

No. 221 NET Per C $25.00 Std.



INSULATED JAC
Combination Ty

HEAD: MOLDED PH plastic, Red, Black, Green, Blue, White. SPECIFY
BODY: Brass, nickel
SPRING: Phosphor bro
CONTACT: 12 Amps 10°C Temp. rise, duty. 750 Volts 60 continuous working CAPACITANCE 4.0
DESCR.: Supplied with hex nut & fibre washer, standard phone tip plugs or standard banan Mounts in 5/16" hole in panels up to 1/2" thic Std.

No. 206 NET Per

pecify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

NYLON TIP JACKS

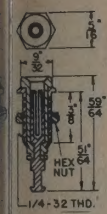
With Metal Shell

Made to Meet MS-16108 Spec.

COLOR CODE SUFFIX

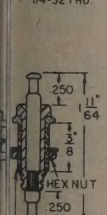
(Add to Catalog Number as Required)

WHITE	— 105 BLUE	— 108 BROWN
RED	— 106 ORANGE	— 112 PURPLE
BLACK	— 107 YELLOW	— 113 GREY
GREEN		



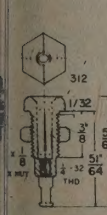
Molded Nylon Tip Jack. Metal shell eliminates possibility of stripping threads during assembly. Meets following requirements:

1. Salt Spray Test — Withstands 100 hours.
2. Rating — 15 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 10.0 pf.
3. Insulation Resistance — 5,000 megohms.
4. Operating Conditions —
   - A. Continuous: 23 hours on, 1 hour off.
   - B. Elevation: Up to 5,000 ft.
   - C. Temperature: −55 to +85°C.
   - D. Humidity: Up to 95%.
5. Material Specifications —
   - A. Insulator: Molded Nylon, per MIL-P-20693A. Specify color as coded above.
   - B. Shell and Nut: Brass Nickel Plated per QQ-N-290, type V (FC).
   - C. Lockwasher: Phosphor Bronze Nickel Plated per Spec. QQ-N-290, type V (FC).
   - D. Center Contact: Heat Treated Bery. Copper, Silver plated per QQ-S-365, Gold plated overall.
6. Non-Operating Conditions —
   - A. Elevation: Up to 50,000 ft.
   - B. Temperature: Continuous exposure for 72 hours at +160°F and 240 hours at −80°F.
   - C. Humidity: Up to 100%.



No.	Type	Std. Pkg.	NET Per C
1501	Wrap Around	25	$30.00
1502	Spade Terminal	25	42.00
1503	Feed Through	25	39.00

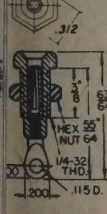
ALL NYLON TIP JACK



Completely Molded Nylon Jack. Fits all standard phone tip plugs. Contact recessed in head for safe contact. Hexagon head for grip in tightening. Mounts in ¼" hole in panels up to ¼" thick. Meets following requirements:

1. Salt Spray Test — Withstands 100 hours.
2. Rating: 15 Amps AC for 10°C Temp. rise, continuous duty. 5 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 3.0 pf.
3. Insulation Resistance — 5,000 megohms.
4. Operating Temperature— −55 to +85°C.
5. Material Specifications —
   - A. Body: Molded Nylon, per MIL-P-20693A. Specify Color as coded above.
   - B. Center contact: Heat treated Phosphor Bronze, Silver plated per QQ-S-365, Gold plated overall. No. 1507 Brass, per QQ-B-626, Comp. 22, plated as above.
   - C. Hex Nut: Brass Nickel Plated.

COLORS: Available in White, Red, Black, Green, Blue, Orange, Yellow, Brown, Purple and Grey. Specify color as coded above.



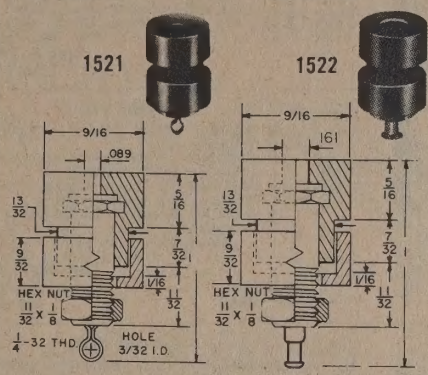
No.	Type	Pkg.	Per C
1505	Wrap Around	25	$21.00
1506	Spade Terminal	25	30.00
1507	Feed Through	25	28.20

HIGH VOLTAGE NYLON JACKS

Color Code Suffix

Add to Catalog Number as Required

— 101 WHITE	— 105 BLUE
— 102 RED	— 106 ORANGE
— 103 BLACK	— 107 YELLOW
— 104 GREEN	— 108 BROWN



HIGH VOLTAGE NYLON JACKS

Made to meet MS-16107 Spec.

Heavy molded nylon body and cup washer prevent high-voltage flashover to panel. Meets following requirements:

1. Salt Spray Test—Withstands 100 hours.
2. Electrical Rating—15 Amps AC for 10°C Temp. rise, continuous duty. 5 KV 60 cycle AC continuous working voltage. Millivolt drop per MIL-J-6751. CAPACITANCE 2.0 pf.
3. Material Specifications.
   - A. Insulator and Washer: — Molded Nylon, per MIL-P-20693A. Colors to Fed. Std. 595. Specify color as coded above.
   - B. Insert Shell and Nut: Brass, Nickel plated per QQ-N-290, type V (FC).
   - C. Contact: Phosphor bronze, Silver plated .0002" per QQ-S-365, Gold plated overall.

Specify color as coded above, 10 colors.

No.		NET Per C
1522	BANANA	$45.00
1521	PHONE TIP	$45.00

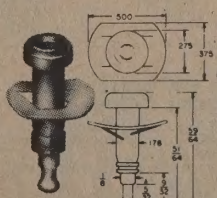
RIGHT ANGLE PRINTED CIRCUIT TEST JACK

BODY: MOLDED NYLON, PER MIL-P-20693A. Specify color as coded above. 10 colors.
SPRING: Beryllium Copper, per QQ-C-533.
FINISH: Silver underplate, .0002" min., per QQ-S-365, Type I, with .00003" Gold overplate; per MIL-F-14072, M310.
RATINGS: 5 Amps AC for 10°C Temp. rise, continuous duty. 1.5 KV. 60 cycle AC continuous working voltage. Contact resistance 5 milliohms max. at rated current. Capacitance less than 5 pf. at 1 MHz.
MOUNTING: Mounts in .052" dia. holes, on .400" centers, in boards up to 3/16" thick. Can be spaced side-by-side .60" on centers min.
MECHANICAL DATA: Thermal shock, vibration, humidity, insulation resistance, and salt spray tests per MIL-STD-202B. Solderability per MIL-S-6872. Insertion and withdrawal force: 8 oz. min., 5 lbs. max. with .080" (±.001") dia. probe.
DECR.: Double-entry design probe inserts from either end of jack. Closed entry construction will not accept probes larger than .084", will contact probes down to .074". Closed bottom construction keeps jack from fouling with solder or flux. Locking ears hold jack firmly in board until soldered. Precise dimensions allow for automated assembly on boards. **Std. Pkg. 100**

No.	NET per C
430	$10.00

COMMERCIAL TYPE

499	Spring—gold flash over .0002 silver.	$9.00

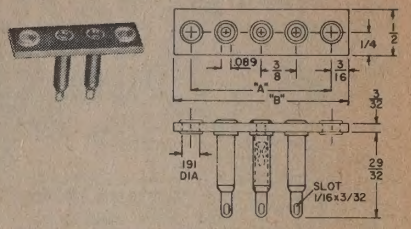


NYLON TEST TIP JACK

BODY: Nylon, Grade FM 10001. Specify color as coded above, 10 colors.
CONTACT: Phosphor bronze, gold plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 3 KV 60 cycle AC continuous working voltage. CAPACITANCE 4.0 pf.
DESCR.: Mounts in 5/16" hole, with Tinnerman Speed Nut for fast permanent assembly. Teeth embed into jack body, preventing pulling out and turning. Accepts standard phone tip plugs. **Std. Pkg. 25**

No.	NET Per C
1598	$15.00

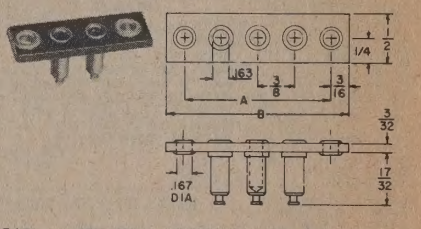
PIN JACK STRIPS



STRIP: LAMINATED PHENOLIC, XP, Black.
BODY: Brass, nickel plated.
SPRING: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 KV, 60 cycle AC continuous working voltage.
DESCR.: From 2 to 10 pin jacks assembled on ¾" centers on a heavy-duty board. Provides positive contact with standard phone tip plugs. Mounting holes accept screws up to #8. **Std. Pkg. 25**

No.	Jacks	Mtg. Ctrs. ("A")	Length ("B")	NET Per C
1982	2	1⅛"	1½"	$25.00
1983	3	1½"	1⅞"	32.00
1984	4	1⅞"	2¼"	42.00
1985	5	2¼"	2⅝"	52.00
1986	6	2⅝"	3"	58.00
1987	7	3"	3⅜"	68.00
1988	8	3⅜"	3¾"	78.00
1989	9	3¾"	4⅛"	84.00
1990	10	4⅛"	4½"	94.00

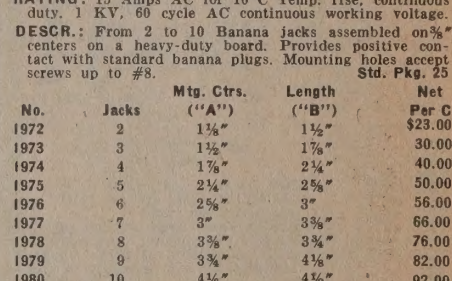
BANANA JACK STRIPS



STRIP: LAMINATED PHENOLIC, XP, Black.
BODY: Brass, nickle plated.
SPRING: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 KV, 60 cycle AC continuous working voltage.
DESCR.: From 2 to 10 Banana jacks assembled on ¾" centers on a heavy-duty board. Provides positive contact with standard banana plugs. Mounting holes accept screws up to #8. **Std. Pkg. 25**

No.	Jacks	Mtg. Ctrs. ("A")	Length ("B")	Net Per C
1972	2	1⅛"	1½"	$23.00
1973	3	1½"	1⅞"	30.00
1974	4	1⅞"	2¼"	40.00
1975	5	2¼"	2⅝"	50.00
1976	6	2⅝"	3"	56.00
1977	7	3"	3⅜"	66.00
1978	8	3⅜"	3¾"	76.00
1979	9	3¾"	4⅛"	82.00
1980	10	4⅛"	4½"	92.00

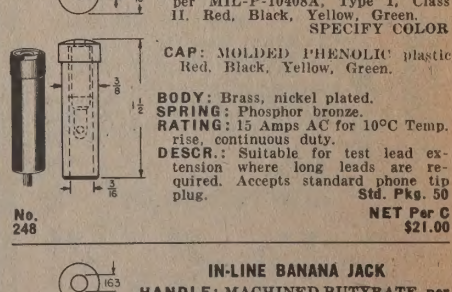
IN-LINE PHONE TIP JACK



HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black, Yellow, Green. SPECIFY COLOR
CAP: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green.
BODY: Brass, nickel plated.
SPRING: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Suitable for test lead extension where long leads are required. Accepts standard phone tip plug. **Std. Pkg. 50**

No.	NET Per C
248	$21.00

IN-LINE BANANA JACK



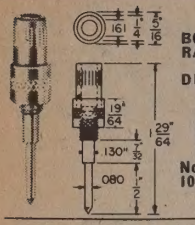
HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black, Yellow, Green. SPECIFY COLOR
CAP: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green.
BODY: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Suitable for test lead extension where long leads are required. Accepts standard banana plugs. **Std. Pkg. 50**

No.	NET Per C
251	$21.00

specify SMITH

HERMAN H. SMITH, INC.

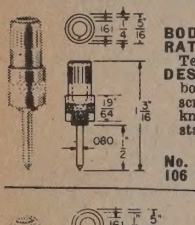
SOLDERLESS TIP PLUG



BODY: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless; wire fits through body of tip then wraps around screw portion and tightened with knurled collar. Force fit type. Fits standard phone tip jacks. Std. Pkg. 100

No.	Type	NET Per C
105	Senior	$15.00

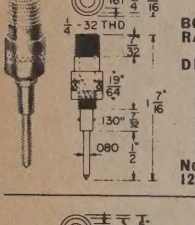
SOLDERLESS TIP PLUG



BODY: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless; wire fits through body of tip then wraps around screw portion and tightened with knurled collar. Force fit type. Fits standard phone tip jacks. Std. Pkg. 100

No.	Type	NET Per C
106	Junior	$15.00

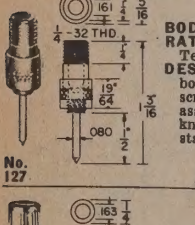
SOLDERLESS TIP PLUG Threaded Sr.



BODY: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless; wire fits through body of tip, then wrapped around screw portion and tightened with knurled collar. Threaded for easy assembly in plastic handle. Fits standard phone tip jacks. Std. Pkg. 100

No.	Type	NET Per C
124	Senior	$15.00

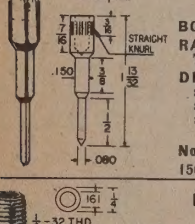
SOLDERLESS TIP PLUG Threaded Jr.



BODY: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless; wire fits through body of tip, then wrapped around screw portion and tightened with assembly in plastic handle. Fits knurled collar. Threaded for easy standard phone tip jacks. Std. Pkg.100

No.	Type	NET Per C
127	Junior	$15.00

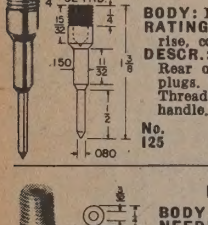
HEAVY DUTY TIP PLUG Force-Fit



BODY: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise continuous duty.
DESCR.: Extra large well for soldering. Rear of plug accepts standard banana plugs. Fits all standard phone tip jacks. Std. Pkg. 25

No.	Type	NET Per C
156	Force Fit	$13.00

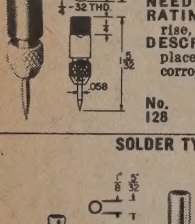
HEAVY DUTY TIP PLUG Threaded



BODY: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Extra large well for soldering. Rear of plug accepts standard banana plugs. Fits standard phone tip jacks. Threaded for easy assembly in plastic handle. Std. Pkg.100

No.	Type	NET Per C
125	Threaded	$15.00

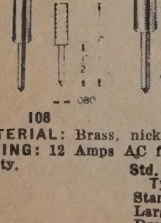
NEEDLE TIP AND CHUCK

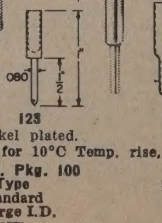


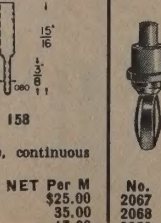
BODY: Brass, nickel plated.
NEEDLE: Steel, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Removable chuck for easy replacement. Needle pierces plating or corrosion for positive reading. Std. Pkg.100

No.	NET Per C
128	$22.00

SOLDER TYPE PHONE TIPS





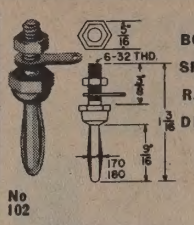


108 123 158

MATERIAL: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty. Std. Pkg. 100

No.	Type	NET Per M
108	Standard	$25.00
123	Large I.D.	35.00
158	Drawn	17.00

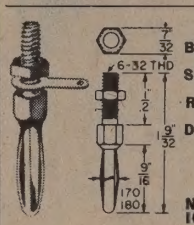
BANANA PLUG



BODY: HEX BRASS, nickel plated.
SPRING: Four-leaved phosphor bronze, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and phosphor bronze tinned lug. Threaded stud for panel mounting. Fits standard banana jacks. Std. Pkg. 100

No	NET Per C
102	$20.00

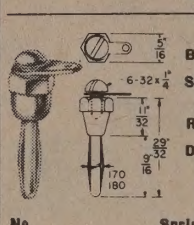
BANANA PLUG



BODY: HEX BRASS, nickel plated.
SPRING: Four-leaved phosphor bronze, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and phosphor bronze tinned lug. Threaded stud. for panel mounting. Fits standard banana jacks. Std. Pkg. 100

No.	NET Per C
103	$20.00

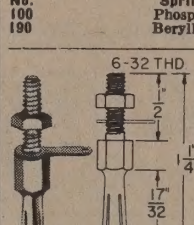
BANANA PLUG



BODY: HEX BRASS, nickel plated.
SPRING: Four-leaved phosphor bronze or beryllium copper, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with screw and phosphor bronze tinned lug. Internal female permits use on all size panels. Fits standard banana jacks. Std. Pkg. 100

No.	Spring Material	NET Per C
100	Phosphor Bronze	$20.00
190	Beryllium Copper	$27.00

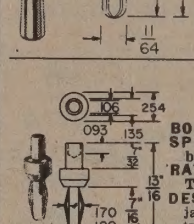
BANANA PLUG Split Type



BODY: HEX BRASS, nickel plated, cross-slotted.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Fits all standard banana jacks. Supplied with hex nut and phosphor bronze lug, threaded stud for panel mounting. Fits standard banana jacks. Std. Pkg. 100

No.	NET Per C
104	$17.00

MIDGET BANANA PLUG Rivet Type



BODY: BRASS, silver plated.
SPRING: Four-leaved phosphor bronze, silver plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Fits all standard banana jacks. Can be furnished in varying types to meet Jan specs. Std. Pkg. 100

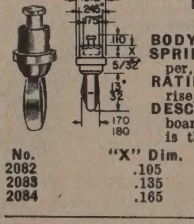
No.	NET Per C
121	$18.00
No. 3875 Staking Tool	Net Ea. $1.50

MIL-SPEC. TYPE

Same as above, made to meet Signal Corps Drawings SC-C2231. Std. Pkg. 100

No.	NET Per C
122	$20.00
No. 3875 Staking Tool	Net Ea. $1.50

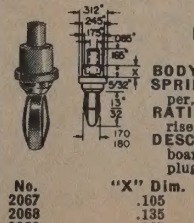
RIVET TYPE BANANA PLUG Wrap Around Type



BODY: BRASS, nickel plated.
SPRING: Four leaved, beryllium copper, nickel plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Rivets to panel or bakelite board. Wire wraps around stud and is then soldered. Std. Pkg. 100

No.	"X" Dim.	Panel	NET Per C
2082	.105	1/16"	$20.00
2083	.135	3/32"	20.00
2084	.165	1/8"	20.00

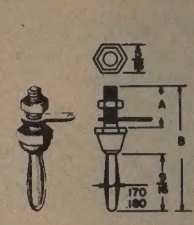
RIVET TYPE BANANA PLUG Solder Well Type



BODY: BRASS, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Rivets to panel or bakelite board. Wire solders to well in rear of plug. Std. Pkg. 100

No.	"X" Dim.	Panel	NET Per C
2067	.105	1/16"	$20.00
2068	.135	3/32"	20.00
2069	.165	1/8"	20.00

BANANA PLUG

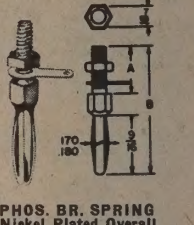


BODY: HEX BRASS or silver plated.
SPRING: Phosphor b beryllium copper, or silver plated.
RATING: 15 Amps 10°C Temp. rise, co duty.
DESCR.: Supplied w nut and tinned bronze lug threaded panel mounting. Fit ard banana jacks. Std.

No.	PHOS. BR. SPRING Nickel Plated Overall NET Per C	A	B	BERYL. COP. Nickel Plated No.
431	$20.00	6-32x3/8"	1 7/32"	443
432	20.00	6-32x1/2"	1 11/32"	444
433	20.00	6-32x5/8"	1 13/32"	445
434	20.00	8-32x3/8"	1 7/32"	446
435	20.00	8-32x1/2"	1 11/32"	447
436	20.00	8-32x3/4"	1 13/32"	448

No.	PHOS. BR. SPRING Silver Plated Overall NET Per C	A	B	BERYL. COP. Silver Plated No.
437	$23.00	6-32x3/8"	1 7/32"	449
438	23.00	6-32x1/2"	1 11/32"	450
439	23.00	6-32x5/8"	1 13/32"	451
440	23.00	8-32x3/8"	1 7/32"	452
441	23.00	8-32x1/2"	1 11/32"	454
442	23.00	8-32x3/4"	1 13/32"	455

BANANA PLUG

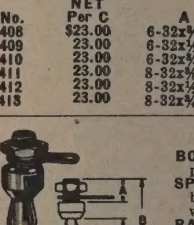


BODY: HEX BRAS or silver plated.
SPRING: Phosphor b beryllium copper, or silver plated.
RATING: 15 Amps 10°C Temp. rise, co duty.
DESCR.: Supplied w nut and tinned bronze lug threaded panel mounting. Fi ard banana jacks. Std

No.	PHOS. BR. SPRING Nickel Plated Overall NET Per C	A	B	BERYL. COP. Nickel Plated No.
401	$20.00	6-32x3/8"	1 7/32"	414
403	20.00	6-32x1/2"	1 11/32"	415
404	20.00	6-32x5/8"	1 13/32"	416
405	20.00	8-32x3/8"	1 7/32"	417
406	20.00	8-32x1/2"	1 11/32"	418
407	20.00	8-32x3/4"	1 13/32"	419

No.	PHOS. BR. SPRING Silver Plated Overall NET Per C	A	B	BERYL. COP. Silver Plated No.
408	$23.00	6-32x3/8"	1 7/32"	420
409	23.00	6-32x1/2"	1 11/32"	421
410	23.00	6-32x5/8"	1 13/32"	422
411	23.00	8-32x3/8"	1 7/32"	423
412	23.00	8-32x1/2"	1 11/32"	424
413	23.00	8-32x3/4"	1 13/32"	425

MIDGET BANANA PL

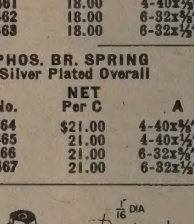


BODY: BRASS, nickel plated.
SPRING: Phosphor br beryllium copper. Nicke ver plated.
RATING: 10 Amps AC Temp. rise, continuous
DESCR.: Supplied with and tinned phosphor br threaded stud for panel mounting. Fits standar jacks. Std

No.	PHOS. BR. SPRING Nickel Plated Overall NET Per C	A	B	BERYL. COP. Nickel Plated No.
460	$18.00	4-40x3/8"	15/16"	468
461	18.00	4-40x1/2"	1 1/16"	469
462	18.00	6-32x3/8"	15/16"	470
463	18.00	6-32x1/2"	1 1/16"	471

No.	PHOS. BR. SPRING Silver Plated Overall NET Per C	A	B	BERYL. COP. Silver Plated No.
464	$21.00	4-40x3/8"	15/16"	472
465	21.00	4-40x1/2"	1 1/16"	473
466	21.00	6-32x3/8"	15/16"	474
467	21.00	6-32x1/2"	1 1/16"	475

BANANA PLUG



BODY: HEX BRASS plated.
SPRING: Phosphor br beryllium copper, nicke
RATING: 15 Amps AC Temp. rise, continuous
DESCR.: Supplied with Wire can be soldered stud or directly into self. Stud also locks plug for solderless co Std.

No.	Spring Material	NE
145	Phosphor Bronze	
135	Beryllium Copper	

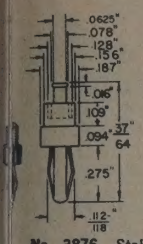
 © United Tec

Specify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

SUBMINIATURE PLUGS & JACKS

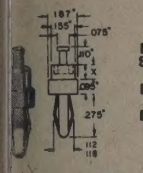


MINIATURE BANANA PLUG
Rivet Type

BODY: BRASS, silver plated.
SPRING: Four leaved beryllium copper, silver plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: One piece beryllium copper spring insures positive and lasting contact. Std. Pkg. 100

No.	NET Per C
191	$15.00

No. 3876 Staking Tool Kit — Net Ea. $3.00

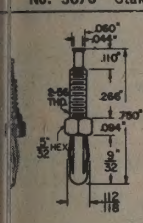


Rivet Type MINIATURE BANANA PLUG

BODY: BRASS, silver plated.
SPRING: Four leaved beryllium copper, silver plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: One piece beryllium copper spring insures positive and lasting contact. Std. Pkg. 100

"X" Dim.	Panel	NET Per C
.105	1/16"	$15.00
.135	5/32"	15.00
.165	1/8"	15.00

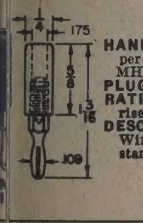
No. 3876 Staking Tool Kit — Net Ea. $3.00



MINIATURE BANANA PLUG

BODY: BRASS, silver plated.
SPRING: Four leaved beryllium copper, silver plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: One piece beryllium copper spring insures positive and lasting contact. Std. Pkg. 100

No.	NET Per C
192	$15.00



INSULATED BANANA PLUG
Sub Miniature

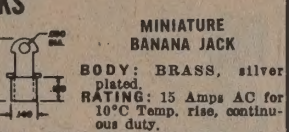
HANDLE: MACHINED BUTYRATE, per Fed. Spec. L-P344, Type I, Class MH, Red or Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Cross-slotted for spring tension. Wire solders directly into plug. Fits standard midget banana jacks. Std. Pkg. 100

NET Per C $18.00

INSULATED BANANA JACK
Sub Miniature

HEAD: MACHINED BUTYRATE, per Fed. Spec. L-P344, Type I, Class MH, Red or Black. SPECIFY COLOR
BODY: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 750 volts 60 cycle AC continuous working voltage. CAPACITANCE 6.0 pf.
DESCR.: Supplied with hex nut, fibre washer and tinned lug. Mounts in ¼" hole in panels up to ⅜" thick. Accepts standard midget banana plugs. Std. Pkg. 100

NET Per C $20.00

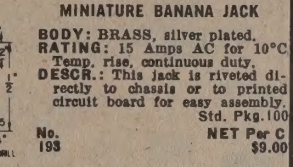


MINIATURE BANANA JACK

BODY: BRASS, silver plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: This jack is riveted directly to chassis or to printed circuit board for easy assembly. Std. Pkg. 100

No.	NET Per C
194	$1.30

No. 3875 Staking Tool — Net Ea. $1.50

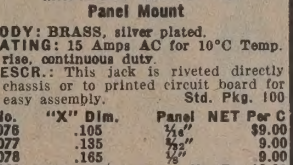


MINIATURE BANANA JACK

BODY: BRASS, silver plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: This jack is riveted directly to chassis or to printed circuit board for easy assembly. Std. Pkg. 100

No.	NET Per C
193	$9.00

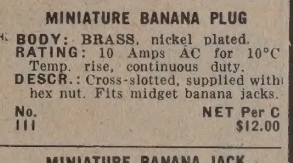
No. 2860 Staking Tool Kit — Net Ea. $3.00



MINIATURE BANANA JACK
Panel Mount

BODY: BRASS, silver plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: This jack is riveted directly chassis or to printed circuit board for easy assembly. Std. Pkg. 100

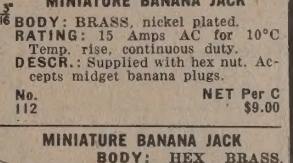
No.	"X" Dim.	Panel	NET Per C
2076	.105	1/16"	$9.00
2077	.135	5/32"	9.00
2078	.165	1/8"	9.00
3860	Staking Tool Kit		Net Ea. $3.00



MINIATURE BANANA PLUG

BODY: BRASS, nickel plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Cross-slotted, supplied with hex nut. Fits midget banana jacks.

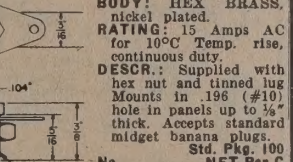
No.	NET Per C
111	$12.00



MINIATURE BANANA JACK

BODY: BRASS, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut. Accepts midget banana plugs.

No.	NET Per C
112	$9.00

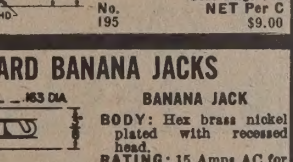


MINIATURE BANANA JACK

BODY: HEX BRASS, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and tinned lug Mounts in .196 (#10) hole in panels up to ⅛" thick. Accepts standard midget banana plugs. Std. Pkg. 100

No.	NET Per C
195	$9.00

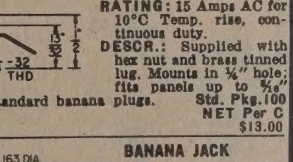
STANDARD BANANA JACKS



BANANA JACK

BODY: Hex brass nickel plated with recessed head.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and brass tinned lug. Mounts in ¼" hole; fits panels up to ⅝" thick. Accepts standard banana plugs. Std. Pkg. 100

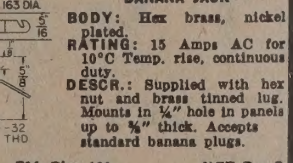
No.	NET Per C
101	$13.00



BANANA JACK

BODY: Hex brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and brass tinned lug. Mounts in ¼" hole in panels up to ⅜" thick. Accepts standard banana plugs.

No.	Std. Pkg.	NET Per C
109	100	$13.00

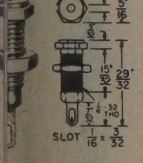


PANEL MOUNT BANANA JACK

BODY: BRASS, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Accepts all standard banana plugs. These jacks are riveted directly to chassis or bakelite board. Std. Pkg. 100

No.	"X" Dim.	Panel	NET Per C
2079	.105	1/16"	$11.00
2080	.135	5/32"	11.00
2081	.165	1/8"	11.00

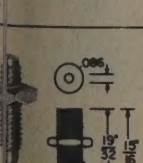
STANDARD TIP JACKS



PHONE TIP JACK

BODY: Brass, nickel plated.
SPRING: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Positive contact with standard phone tip plugs. Supplied with hex nut. Mounts in ¼" hole in panels up to ⅜" thick. Std. Pkg. 100

No.	NET Per C
107	$15.00

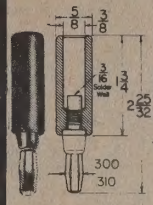


HEADLESS PHONE TIP JACK

BODY: Brass, nickel plated.
SPRING: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut. Used with plastic molded instrument cases, where jack body is screwed into case. Accepts standard phone tip plugs. Std. Pkg. 100

NET Per C $12.00

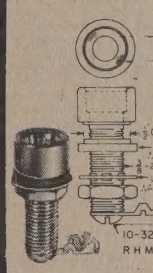
GIANT BANANA PLUGS & JACKS



INS. GIANT BANANA PLUG

HANDLE: MACHINED PHENOLIC plastic. Red or Black. SPECIFY COLOR
BODY: Hex brass, nickel plated.
SPRING: Six-leaved, phosphor bronze, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Large deep internal well for soldering heavy duty wire. Recessed so that no metal portions are exposed when plugged into mating jack, in order to prevent shocks or grounding. Std. Pkg. 50

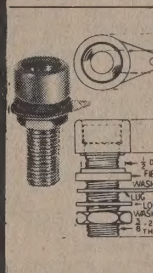
No.	NET Per C
285	$75.00



INS. GIANT BANANA JACK

HEAD: MACHINED BUTYRATE, per Fed. Spec. L-P344, Type I, class MH. Red or Black.
SPECIFY COLOR
BODY: Hex brass, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 7.0 pf.
DESCR.: Supplied with hex nut, fibre washer, lockwasher, screw and tinned copper lug. Jack body recessed for snug contact. Mounts in ½" hole in panel up to ¾" thick. Std. Pkg. 50

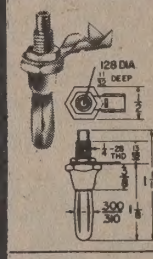
No.	NET Per C
286	$50.00



INS. GIANT BANANA JACK

HEAD: MACHINED BUTYRATE, per Fed. Spec. L-P344, Type I, class MH, Red or Black.
SPECIFY COLOR
BODY: Brass, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 7.0 pf.
DESCR.: Supplied with hex nut, fibre washer, lockwasher, and brass tinned lug. Jack body recessed for snug contact. Mounts in ½" hole in panel up to ¾" thick. Std. Pkg. 50

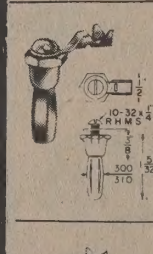
No.	NET Per C
287	$50.00



GIANT BANANA PLUG

BODY: HEX BRASS, nickel plated.
SPRING: Six-leaved phosphor bronze, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and brass tinned lug. Large deep internal well for soldering heavy duty wire. Std. Pkg. 50

No.	NET Per C
185	$50.00



GIANT BANANA PLUG

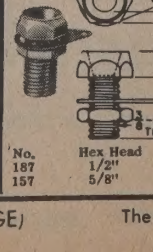
BODY: HEX BRASS, nickel plated.
SPRING: Six-leaved phosphor bronze, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with screw and brass tinned lug. Internal female permits use on all size panels. Std. Pkg. 50

No.	NET Per C
186	$40.00

GIANT BANANA PLUG

BODY: HEX BRASS, nickel plated.
SPRING: Six-leaved phosphor bronze, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with screw and brass tinned lug. Internal female thread permits use on all size panels. Std. Pkg. 50

No.	NET Per C
188	$40.00



GIANT BANANA JACK

BODY: HEX BRASS, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied with hex nut and brass tinned lug. Std. Pkg. 50

No.	Hex Head	Mtg. Hole	Panel	NET Per C
187	1/2"	3/8"	1/2"	$40.00
157	5/8"	1/2"	5/8"	40.00

specify SMITH
HERMAN H. SMITH, INC.

NYLON BINDING POST HEX HEAD

NOTES:
- A Banana Plug Receptacle, .161 I. D.
- B Head non-removable from stud.
- C Molded-in Brass Bushing in Head.
- D Molded-in Brass Bushing in Washers.
- E For Panels 1/16" to 1/4" thick.
- F Drill ½" hole for mounting washers.
- G Wire Hole is at right angle to Flat on Insulated Washers.
- H Production Punch for keyed Slot for mounting Washers. (Sample Washer Sent on Request.)

RATING: 30 Amps AC for 10°C temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 5.0 pf.

ACCEPTS: Phone tip plug, spade lug, banana plug, alligator clip or wire strand.

DESCR: MOLDED NYLON, per MIL-P-20693A, head and washer completely insulates post from panel. Mounts in ½" or keyed hole as indicated. Wrap around type—direct solder connection to stud. BODY & INSERTS: Brass, per QQ-B-626, Comp. 22, Gold Plated Overall.

COLORS: Red, Black, Yellow, Green, Blue, White. Specify color.

Std. Pkg. 100

No. 257 — NET Per C $40.00

MIL-SPEC BINDING POST

Same as our #257 above, made to meet MIL-P-55149/1, Type PB01FA01 & PB01FA02.

Std. Pkg. 100

No. 267 — NET Per C $55.00

PIN JACK TYPE

Same as above, with Beryllium copper, gold plated pin tip receptacle replacing Note "A" above. All other specifications apply. Std. Pkg. 100

No. 258 — NET per C $50.00

All Metal Parts Nickel Plated

Same as No. 257 above except all metal parts NICKEL PLATED instead of gold plated. Supplied in Red and Black only.

Std. Pkg. 100

No.	Color	Net Per C
899-102	Red	$35.00
899-103	Black	35.00

NYLON BINDING POST Insulated

HEAD: CAPTIVE, MOLDED NYLON, per MIL-P-20693A, with brass Gold-Plated Insert.

BODY: Brass, Gold Plated

WASHERS: MOLDED NYLON, per MIL-P-20693A, with brass Gold-plated inserts.

ACCEPTS: Phone tip plug, spade lug, banana plug, alligator clip, or wire strand.

RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 3.0 pf

DESCR.: Molded washers completely insulate post from panel. Miniature washers and narrow fluted head require minimum panel space. Mounts in 3/8" round or "D" hole in panel as indicated. Wrap-around solder terminal on stud for direct connection.

COLORS: Red, Black, Yellow, Green, Blue, White.

SPECIFY COLOR

Std. Pkg. 100

No. 1517 — NET Per C $40.00

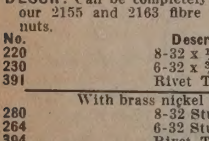
MIL-SPEC BINDING POST

Same as our #1517 above, but made to meet MIL-P-55149/1, Type PB01FA01 & PB01FA02.

Std. Pkg. 100

No. 1514 — Net Per C $55.00

BINDING POST Grounded



HEAD: CAPTIVE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS, Red or Black.

SPECIFY COLOR

BODY: Brass, nickel plated.

ACCEPTS: Phone tip plug, spade lug, banana plug, alligator clip or wire strand.

220 391

RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage, when insulated from panel as recommended. CAPACITANCE 5.0 pf.

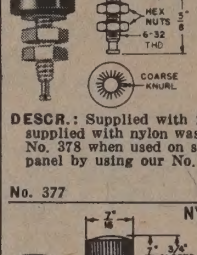
DESCR: Can be completely insulated from panel by using our 2155 and 2163 fibre washers. Supplied with 2 hex nuts.

Std. Pkg. 100

No.	Description	NET Per C
220	8-32 x ½ Stud	$22.00
230	6-32 x ⅜ Stud	22.00
391	Rivet Type	17.00
	With brass nickel plated insert in head	
280	8-32 Stud	$27.00
264	6-32 Stud	27.00
394	Rivet Type	21.00
3875	Staking Tool	Net Ea. 1.50

SEE ADDITIONAL BINDING POST LISTING ON SMITH PAGE 25.

NYLON BINDING POST Grounded



HEAD: CAPTIVE: MOLDED NYLON, per MIL-P-20693A. Red or Black with brass nickel plated insert.

SPECIFY COLOR

WASHER: Molded nylon with brass nickel plated insert.

BODY: Brass, nickel plated.

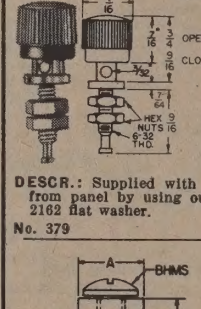
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage, when insulated from panel as recommended. CAPACITANCE 6.0 pf.

DESCR.: Supplied with 2 hex nuts. Grounds to panel but supplied with nylon washer for uniformity of height with No. 378 when used on same panel. Can be insulated from panel by using our No. 2150 shoulder washer.

Std. Pkg. 100

No. 377 — NET Per C $35.00

NYLON BINDING POST Insulated



HEAD: CAPTIVE: MOLDED NYLON, per MIL-P-20693A. Red or Black with brass nickel plated insert.

SPECIFY COLOR

WASHER: Molded nylon with brass nickel plated insert.

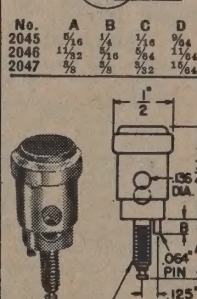
BODY: Brass, nickel plated.

RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 4.0 pf.

DESCR.: Supplied with two hex nuts. Boss washer insulates post from chassis when used with bakelite washer supplied.

No.	Min. Panel Thickness	Std. Pkg. 100 NET Per C
378	1/16"	$35.00
198	1/32"	35.00

NYLON BINDING POST Grounded



HEAD: CAPTIVE: MOLDED NYLON, per MIL-P-20693A. Red or Black with brass nickel plated insert.

SPECIFY COLOR

BODY: Brass, nickel plated.

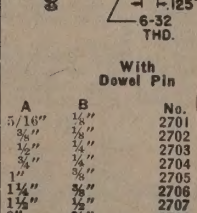
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage, when insulated from panel as recommended. CAPACITANCE 7.0 pf.

DESCR.: Supplied with two hex nuts. Can be insulated from panel by using our No. 2150 shoulder washer and 2162 flat washer.

Std. Pkg. 100

No. 379 — NET Per C $30.00

COMBINATION TERMINALS



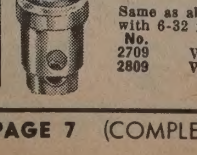
MATERIAL: BRASS, alloy plate.

DESCR.: Combination Screw and Turret Terminal. Knurled shank prevents turning. Supplied complete with BHMS and Internal Tooth Lockwasher, unassembled.

Std. Pkg. 100

No.	A	B	C	D	E	F	G	BHMS	Net Panel Per Thk	C
2045	5/16	1/4	1/16	9/64	11/64	1/8	.220	6-32	3/32	$11.40
2046	11/32	5/16	5/64	11/64	13/64	9/64	.250	8-32	1/8	11.40
2047	5/8	3/8	5/32	15/64	15/64	5/32	.257	10-32	5/16	11.40

BINDING POST Spring Loaded



HEAD: Captive, Brass nickel plated.

CAP: STYRENE, black.

BODY: Brass, nickel plated.

PIN: Nickel Silver.

ACCEPTS: Standard phone tip or wire in side hole and locks them in place on release of pressure on cap.

RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.

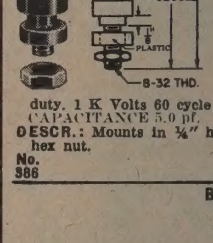
DESCR.: Side dowel pin locates and prevents post from turning when mounted in panel.

A	B	With Dowel Pin No.	NET Per C	Less Dowel Pin No.	NET Per C
5/16"	⅛"	2701	$45.00	2801	$41.00
⅜"	⅛"	2702	47.00	2802	43.00
½"	⅛"	2703	49.00	2803	45.00
⅜"	¼"	2704	50.00	2804	46.00
1"	⅜"	2705	52.00	2805	48.00
1¼"	⅜"	2706	55.00	2806	51.00
1⅝"	½"	2707	58.00	2807	54.00
2"	¾"	2708	60.00	2808	56.00

Same as above less threaded stud. Supplied with 6-32 internal mounting thread.

No.	Description	NET Per C
2709	With ⅜" lg. Dowel Pin	$40.00
2809	Without Dowel Pin	36.00

BINDING POST Insulated



HEAD: CAPTIVE: M... BUTYRATE, per Fe... L-P349A, Type 3, ... MS. Red or Black. SPECIFY ...

BODY: Brass, nickel ...

WASHERS: MOLDE... TYRATE, per Fed... L-P349A, Type 3, ... MS.

ACCEPTS: Phone tip ... spade lug, banana plu... gator clip or wire str...

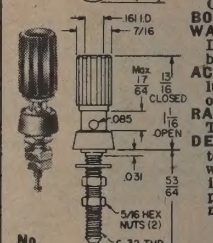
RATING: 15 Amps ... 10°C Temp. rise, co... duty. 1 K Volts 60 cycle AC continuous working ... CAPACITANCE 5.0 pf.

DESCR.: Mounts in ¼" hole in panel. Supplied w... hex nut.

Std. P...

No. 386 — NE...

BINDING POST Grounded



HEAD: CAPTIVE: M... BUTYRATE, per Fe... L-P349A, Type 3, ... MS. Red or Black. SPECIFY ...

BODY: Brass, nickel pl...

WASHERS: MOLDE... TYRATE, per Fed... L-P349A, Type 3, ... MS. Mounting Was... Molded plastic. ... Washer — Brass, ... plated.

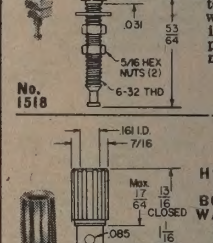
RATING: 15 Amps ... 10°C Temp. rise, con... duty.

DESCR.: Mounts in ¼... in panel. Grounded ... by back-up washer. S... with one hex nut.

Std. P...

No. 387 — NE...

METAL BINDING POS... Grounded



HEAD: CAPTIVE, Fluted ... Gold-plated.

BODY: Brass, Gold-plated.

WASHER: MOLDED BLA... LON, per MIL-P-20693... brass Gold-plated insert.

ACCEPTS: Phone tip plug ... lug, banana plug, alligat... or wire strand.

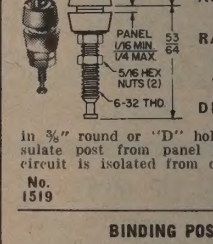
RATING: 15 Amps AC fo... Temp. rise, continuous du...

DESCR.: Fluted-head met... to match our No. 1517. ... where direct ground con... is made to panel or chassi... plied with brass, gold-pla... metal washer for groundi...

Std. P...

No. 1518 — NE...

METAL BINDING PO... Insulated



HEAD: CAPTIVE, Flute... Gold-plated.

BODY: Brass, Gold-plated...

WASHER: MOLDED BLA... LON, per MIL-P-20693... brass Gold-plated insert...

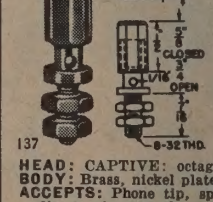
ACCEPTS: Phone tip plu... lug, banana plug, alliga... or wire strand.

RATING: 15 Amps AC f... temp. rise, continuous du... Volts, 60 cycle AC co... working voltage. CAPACI... 3.0 pf.

DESCR.: Fluted-head me... to match our No. 1517. ... in ⅜" round or "D" hole in panel. Molded was... sulate post from panel for use where internal ... circuit is isolated from chassis or panel. Std. P...

No. 1519 — NE...

BINDING POST - Metal Five-Way



HEAD: CAPTIVE: octagonal brass, nickel plate...

BODY: Brass, nickel plated.

ACCEPTS: Phone tip, spade lug, banana plug, ... clip or wire strand.

RATING: 15 Amps AC for 10°C Temp. rise, co... duty. 1 K Volts 60 cycle AC continuous working ... when insulated from panel as recommended. CA... TANCE 5.0 mmfd.

DESCR.: Can be completely insulated from panel b... our 2155 and 2163 fibre washers. Supplied with ... nuts.

Std. P...

No.	Description
137	Standard
208	Wrap-around

NE...

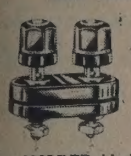
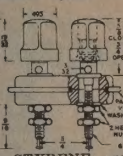
© United Technic...

Specify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

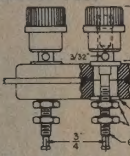
DUAL ASSEMBLY Nylon

INSUL.: MOLDED black STYRENE, cross slotted (+) accept standard phone tips in post either forward, sideways.
BODY: Brass, nickel plated.
HEAD: Captive: MOLDED NYLON, per MIL-P-20693A, th molded in brass insert.
RATING: 15 Amps AC for 10°C Temp., rise, continuous uty. 2 K Volts 60 cycle AC continuous working voltage. APACITANCE 2.0 pf. between conductors, 3.0 pf. to anel.
DESCR.: Mounts in two ⅛" holes on ¾" mounting centers panels up to ¼" thick. Accommodates single or dual anana plugs. Supplied with 4 hex nuts, 2 flat washers.
Std. Pkg. 25

N	Description	NET PER C
3BB	Two Black Heads	$75.00
3RR	Two Red Heads	75.00
3RB	One Red, One Black Head	75.00

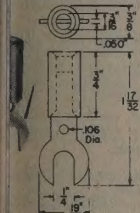
DUAL BINDING POST



INSUL.: MOLDED black STYRENE, cross slotted (+) accept standard phone tips in post either forward, sideways.
BODY: Brass, nickel plated.
HEAD: CAPTIVE: MOLDED BUTYRATE, per Fed. spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR
RATING: 15 Amps AC for 10°C Temp. rise, continuous uty. 2 K Volts 60 cycle AC continuous working voltage. APACITANCE 2.0 pf. between conductors, 3.0 pf. to anel.
DESCR.: Mounts in two ⅛" holes on ¾" mounting centers n panels up to ¼" thick. Accommodates single or dual anana plugs. Supplied with 4 hex nuts, 2 flat washers.
Std. Pkg. 25

	Description	NET Per C
2BB	Two Black Heads	$70.00
2RR	Two Red Heads	70.00
2RB	One Red, One Black Head	70.00
	Same as above with brass nickel plated insert in head	
2BB	Two Black Heads	$80.00
2RR	Two Red Heads	80.00
2RB	One Red, One Black Head	80.00

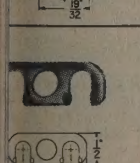
INSULATED SPADE LUG



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR
LUG: Brass, .050 thick, nickel plated.
RATING: 30 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ¼" I.D. fits all standard Multi-purpose binding posts. Accepts up to #10 insulated wire, which solders in front hole.
Std. Pkg. 100

No.	NET Per C
400	$13.00

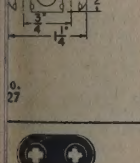
SHORTING LINK



MATERIAL: Spring brass, nickel plated. .033"thick.
RATING: 50 Amps. AC continuous duty, for 10°C Temp. rise.
DESCR.: Snaps over contact barrels of dual binding posts with standard ¾" mounting centers for positive shorting. Snap-in feature allows use in any position without falling off. Rotates on either post for open-circuit use, retaining snap-in feature. Center hole allows easy insertion or removal. Std. Pkg. 100

o.	NET Per C
27	$6.00

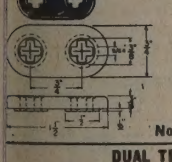
BLACK STYRENE INSULATOR



INSUL.: STYRENE, black. Spec. L-P416, Type I.
RATING: 2 K Volts 60 cycle AC continuous working voltage.
DESCR.: Mounts in two 1/2" holes on 3/4" mounting centers in panels up to 1/4" thick.
Std. Pkg. 100

No. 207	NET Per C $3.00

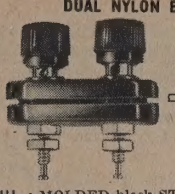
DUAL TIP JACK ASSEMBLY



ASHER: MOLDED black STYRENE,
ODY: Recessed, brass, nickel plated.
ATING: 15 Amps AC for 10°C Temp. rise, continuous duty, 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 pf. between conductors, 4.0 pf. to panel.
ESCR.: Mounts in two ⅛" holes on ¾" mounting centers in panels up to ¼" thick. Accommodates standard phone tip plugs. Supplied with two hex nuts. Std. Pkg. 10

o. 488	NET Per C

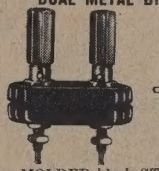
DUAL NYLON BINDING POST



INSUL.: MOLDED black STYRENE, cross slotted (+) to accept standard phone tips in post either forward, or sideways.
BODY: Brass, nickel plated.
HEAD: Captive: MOLDED NYLON, per MIL-P-20693A, with molded in brass insert.
RATING: 15 Amps AC for 10°C Temp., rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 pf. between conductors, 3.0 pf. to panel.
DESCR.: Mounts in two ⅛" holes on ¾" mounting centers in panels up to ¼" thick. Accommodates single or dual banana plugs. Supplied with 4 hex nuts, 2 flat washers.
Std. Pkg. 25

No.		Net Per C
284BB	Two Black Heads	$70.00
284RR	Two Red Heads	70.00
284RB	One Red, One Black Head	70.00

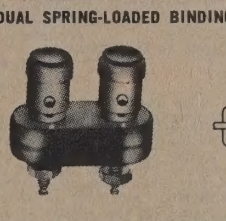
DUAL METAL BINDING POST



INSUL.: MOLDED black STYRENE, cross slotted (+) to accept standard phone tips in post either forward, or sideways.
BODY: Brass, nickel plated.
HEAD: Captive: Hex brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 pf. between conductors, 3.0 pf. to panel.
DESCR: Mounts in two ⅛" holes on ¾" mounting centers in panels up to ¼" thick. Accommodates single or dual banana plugs. Supplied with 4 hex nuts, 2 flat washers.
Std. Pkg. 25

No.	NET Per C
209	$75.00

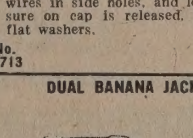
DUAL SPRING-LOADED BINDING POST



INSUL.: MOLDED black STYRENE, cross slotted (+) to accept standard phone tips in post either forward, or sideways. Supplied in colors on special order.
HEAD: Captive, brass, nickel plated.
CAP: Moldel black styrene.
BODY: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 5 KV 60 cycle AC continuous working voltage. CAPACITANCE 4.0 pf. between conductors, 3.0 pf. to panel.
DESCR: Mounts in two ⅛" holes on ¾" mounting centers in panels up to ¼" thick. Accepts standard phone tips or wires in side holes, and locks them in place when pressure on cap is released. Supplied with 4 hex nuts, 2 flat washers.
Std. Pkg. 25

No.	NET Per C
2713	$120.00

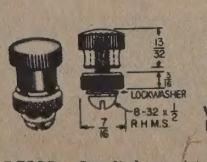
DUAL BANANA JACK ASSEMBLY



INSULA.: MOLDED black STYRENE.
BODY: Brass,nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 pf. between conductors, 4.0 pf. to panel.
DESCR.: Mounts in two ⅛" holes on ¾" mounting centers in panels up to ¼" thick. Accommodates standard and dual banana plugs. Supplied with two hex nuts, 4 flat washers and brass tinned lugs.
Std. Pkg. 10

No.	NET Per C
489	$50.00

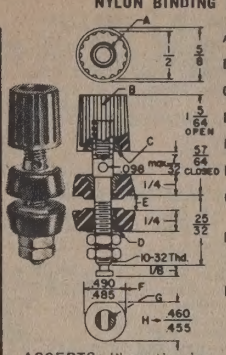
BINDING POST



HEAD: MOLDED PHENOLIC plastic, with molded-in brass threaded insert, Red or Black. SPECIFY COLOR
WASHER: Brass, nickel plated
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied complete with screw and lockwasher.
Std. Pkg. 100

No. 265	NET Per C $24.00

NYLON BINDING POST FLUTED HEAD



NOTES:
A Banana Plug Receptacle. .161 I.D.
B Head non-removable from stud.
C Molded-in Brass Bushing in Head.
D Molded-in Brass Bushing in Washers.
E For Panels 1/16" to ¼" thick.
F Drill ½" hole for mounting washers.
G Wire Hole is at right angle to Flat on insulated Washers.
H Production Punch for keyed Slot for mounting Washers. (Sample Washer Sent on Request.)

RATING: 30 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 5.0 pf.
ACCEPTS: Phone tip plug, spade lug, banana plug, alligator clip or wire strand.
DESCR.: MOLDED NYLON, per MIL-P-20693A, head and washer completely insulates post from panel. Mounts in ½" or keyed hole as indicated. Wrap around type—direct solder connection to stud. BODY & INSERTS: Brass, per QQ-B-626, Comp. 22, Gold Plated Overall.
COLORS: Red, Black, Yellow, Green, Blue, White. Specify color.
Std. Pkg. 100

No. 459	NET Per C $40.00

MIL-SPEC BINDING POST

Same as our #459 above, made to meet MIL-P-55149/1; PB01FA03 & PB01FA04.
Std. Pkg. 100

No. 495	NET Per C $55.00

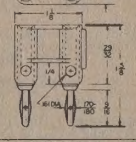
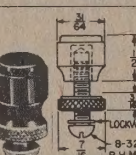
PIN JACK TYPE

Same as above, with Beryllium copper, gold plated pin tip receptacle replacing Note "A" above. All other specifications apply.
Std. Pkg. 100

No. 497	NET Per C $50.00

MOLDED-IN SHORTING TYPE

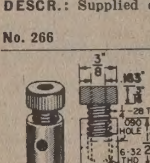
Dual Banana Plug

REAR: Dual banana jacks on ¾" centers for stacking.
INTERNAL: Busbar shorted across line.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.
COLORS: Available in Red, Black, Yellow, and Green. SPECIFY COLOR
Std. Pkg. 25

No.	NET Ea.
1516	$.72

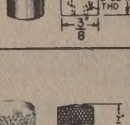
BINDING POST



HEAD: MOLDED PHENOLIC plastic, with molded-in brass threaded insert, Red or Black. SPECIFY COLOR
WASHER: Brass, nickel plated
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied complete with screw and lockwasher.
Std. Pkg. 100

No. 266	NET Per C $24.00

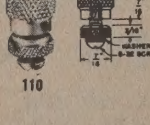
METAL BINDING POST



HEAD: BRASS, nickel plated.
BODY: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Accepts standard phone tips or banana plugs.
Std. Pkg. 100

No.	NET Per C
136	$21.00

METAL BINDING POST



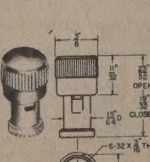
HEAD: BRASS, nickel plated.
WASHER: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Supplied complete with screw and lockwasher.

110

Std. Pkg. 100

No. 110	NET Per C $24.00

BINDING POST
Compression Type



HEAD: Captive, brass nickel plated. Straight knurled for finger grip.
BODY: Brass, nickel plated.
ACCEPTS: Phone tips or wire (up to #10 gauge).
DESCR.: Head screws down to compress wire between body and sliding contact. Internally threaded for 6-32 mounting screw. Base knurled for positive grip to panel.
Std. pkg. 100

No. 159	NET Per C $23.00

specify SMITH

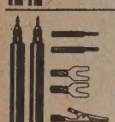
HERMAN H. SMITH, INC.

SOLDERLESS TIP TEST LEAD

HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
TIP: Solderless: Brass, nickel plated.
Std. Pkg.12

No.	Meter End	NET Per Pr.
600	Phone Tips	$1.05
601	Spade Lugs	1.05
602	Alligator Clips	1.10

PHONO NEEDLE TEST LEAD



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
BODY: Brass, nickel plated.
NEEDLE: Steel, nickel plated. Std. Pkg.12

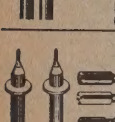
No.	Meter End	NET Per. Pr.
613	Phone Tips	$1.05
614	Spade Lugs	1.05
615	Alligator Clips	1.10

ALL SOLDERLESS TEST LEAD

HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
PLUG: MOLDED THERMOSETTING plastic, Red and Black per MIL-M-14 CFG.
TIP: Solderless: Brass, nickel plated.
Std. Pkg.12

No.	NET Per Pr.
603	1.35

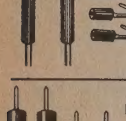
HIGH TENSION TEST LEAD



HANDLE: FIBRE, per MIL-F-1148A, Grade CH. Red and Black.
PLUG: FIBRE, per MIL-F-1148A, Grade CH. Red and Black.
TIP: Brass, nickel plated.
Std. Pkg. 6

No.	Meter End	NET Per Pr.
620	Ins. Phone Tips	$2.20
621	Ins. Spade Lugs	2.20
622	Ins. Alligator Clips	2.40

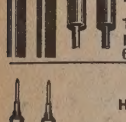
SHORT TIP TEST LEAD



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
PLUG: MOLDED PHENOLIC plastic, Red and Black.
TIP: Brass, nickel plated. Std. Pkg. 12

No.	NET Per Pr.
624	$1.10

SLIM HANDLE TEST LEAD



HANDLES: MACHINED BUTYRATE, per MIL-P-10408A, type 1, class 2. Red and Black 5/16" O.D.
TIPS: Prod: Brass, Nickel Plated. Meter End: Drawn Brass Nickel Plated.
Std. Pkg. 12

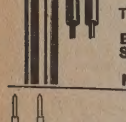
No.	NET Per Pr.
670	$.85

BANANA PLUG TEST LEAD

HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
PLUG: MOLDED PHENOLIC plastic, Red and Black.
TIP PLUG: Solderless: Brass, nickel plated.
BODY: Brass, nickel plated.
SPRING: Four leaved phosphor bronze, nickel plated. Std. Pkg.12

No.	NET Per Pr.
623	$1.50

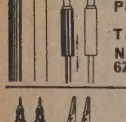
SLIM HANDLE TEST LEAD



HANDLE: FIBRE, per MIL-F-1148A, Grade CH. Red, Black. ¼" O.D.
PLUG: FIBRE, per MIL-F-1148A, Grade CH. Red, Black. ¼" O.D.
TIPS: Brass, nickel plated Std. Pkg. 12

No.	NET Per Pr.
678	$1.26

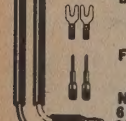
TEST LEAD KIT



DESCR.: Each kit is supplied with one pair of test leads. One end test prods, other end ins. banana plugs.
FITTINGS: Two each: Phone tips, alligator clips, spade lugs. Std. Pkg. 6

No.	Type	NET Ea.
610	Solderless Prods	$1.90
611	Needle Tip Prods	1.90

SHIELDED TEST LEADS



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
TIP: Prod tip brass, nickel plated. Meter end, see type.
DESCR.: Plugs insert flush to insulated handle. Prods have retractable cover leaving no metal exposed. Eliminates possibility of shock or grounding. Supplied with either phone tip or banana plug meter ends. Other variations on special order. Std. Pkg. 6

No.	Type	NET Per Pr.
616	Phone Tip End	$1.90
617	Banana Plug End	2.00

ALLIGATOR CLIP TEST LEAD

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black .
TIPS: Solderless: Brass, nickel plated.
CLIPS: Steel, cadmium plated.
BOOT: Vinyl Plastic. Red and Black
Std. Pkg.12

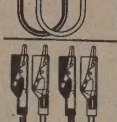
No.	NET Per Pr.
672	$1.26

ALLIGATOR CLIP TEST LEAD

CLIPS: STEEL, cadmium plated.
Std. Pkg.12

No.	Wire	NET Per Pr.
604	12 inches	$.72
605	24 inches	.75
606	36 inches	.78
607	48 inches	.81

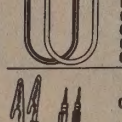
ALLIGATOR CLIP TEST LEAD
With Boots



CLIPS: Steel, Cadmium Plated
BOOTS: Vinyl plastic Red and Black. Std. Pkg.12

No.	Wire	NET Per Pr.
629	12 inches	$.92
657	24 inches	.96
658	36 inches	.99
659	48 inches	1.02

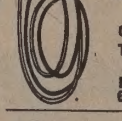
ALLIGATOR CLIP TEST LEAD



CLIP HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS, Red and Black
PLUG HANDLES: MOLDED PHENOLIC PLASTIC, Red and Black.
CLIPS: Steel, cadmium plated
TIPS: Solderless: Brass, nickel plated.
Std. Pkg.12

No.	NET Per Pr.
627	$.99

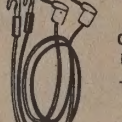
ALLIGATOR CLIP TEST LEAD



CLIP HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS, Red and Black
CLIPS: Steel, cadmium plated .
ELBOWS: MOLDED PHENOLIC plastic, Red and Black.
TIPS: Brass, Nickel Plated.
Std. Pkg.12

No.	NET Per Pr.
628	$1.20

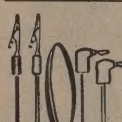
ALLIGATOR CLIP TEST LEAD



CLIP HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
CLIPS: Steel, Cadmium Plated.
ELBOWS: MOLDED PHENOLIC plastic, Red and Black.
SPRING: Four-leaved phosphor bronze, nickel plated. Std. Pkg. 12

No.	NET Per Pr.
647	$1.30

ALLIGATOR CLIP TEST LEAD



CLIP HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-349A, Type 3, Class MS, Red and Black
CLIPS: Steel, cadmium plated
LUGS: Brass, Nickel Plated.
Std. Pkg. 12

No.	NET Per Pr.
649	$1.20

CROCODILE CLIP TEST LEAD

CLIPS: STEEL, Cadmium Plated.
BOOT: Vinyl Plastic, Red and Black.
HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black.
LUG: Brass, Nickel Plated.
Std. Pkg. 12

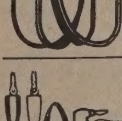
No.	NET Per Pr.
671	$1.20

CROCODILE CLIP TEST LEAD

CLIPS: Steel, Cadmium plated.
BOOTS: Vinyl plastic, Red and Black.
ELBOWS: MOLDED PHENOLIC plastic, Red and Black.
TIPS: Brass, Nickel Plated.
SPRING: Four-leaved phosphor bronze, nickel plated. Std. Pkg. 25

No.	NET Per Pr.
648	$1.30

CROCODILE CLIP TEST LEAD



CLIPS: STEEL, cadmium p'ated.
BOOT: Vinyl plastic. Red and Black.
ELBOWS: MOLDED PHENOLIC plastic, Red and Black.
TIPS: Brass, Nickel Plated.
SPRING: Four-leaved phosphor bronze, nickel plated. Std. Pkg. 12

No.	NET Per Pr.
675	$1.20

"UNIVERSAL TEST
Completely Interch

Fifty Leads In One lead can make a quired test lead co tion. All parts ada prod handle or tip Complete as shown plastic kit. Std.
WIRE: 5 KV rubbe ered, 26 strands copper, #20 AWG lated to an O.D. of

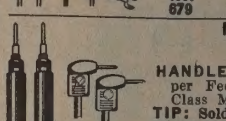
No.
699

"UNIVERSAL TEST LE
Completely Interchange

Fifty Leads In One. One make any required test lead tion. All parts adapt into pr or meter tip. Supplied with tips, clips, banana plugs a tips. Complete as shown. Wit kit. **WIRE:** 5 KV rubber St covered, 26 strands #34 copp AWG insulated to an O.D. of

No.	Description
679	Miniature

METER TEST LEADS
Solderless Prod



HANDLE: MOLDED BUT per Fed. Spec. L-P349A, Class MS. Red and Black.
TIP: Solderless: Brass, nickel
ELBOW: MOLDED THER TING plastic, per MIL-M-1 Red and Black.
BODY: Brass, nickel plated.
SPRING: Four leaved, phosphor nickel plated. Std

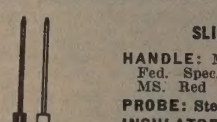
No.	Type	NET
625	Phone Tip Meter Tip	
685	Banana Meter Tip	

NEEDLE PROD

HANDLE: MOLDED BUT per Fed. Spec. L-P349A, Class MS. Red and Black.
NEEDLE: Steel, nickel plated.
ELBOW: MOLDED PHE PLASTIC, Red and Black.
BODY: Brass, nickel plated.
SPRING: Four leaved, phosphor nickel plated. Std.

No.	Type	NET
626	Phone Tip Meter Tip	
686	Banana Meter Tip	

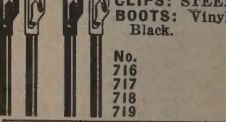
SLIM JIM TEST LEAD



HANDLE: MOLDED BUTYRAT Fed. Spec. L-P349A, Type 3, MS. Red and Black.
PROBE: Steel, cadmium plated.
INSULATOR: Vinyl spaghetti Red and Black.
ELBOWS: MOLDED PHENOLIC Red and Black.
TIPS: Brass, nickel plated. Std.

No.	NET
698	

MIDGET ALLIGATOR CLIP TEST LEAD



CLIPS: STEEL, Cadmium plated
BOOTS: Vinyl plastic Re Black.
Std.

No.	Wire	NET
716	12 inches	
717	18 inches	
718	24 inches	
719	36 inches	

RETRACTILE ALL SOLDERLESS TEST

HANDLE: MOLDED BUTYRATE Fed. Spec. L-P349A, Type 3, MS. Red and Black.
PLUG: MOLDED PHENOLIC pl Red and Black.
MIL-M-14 CFG.
TIP: Solderless brass, nickel pl
WIRE #20 gauge, 41/36 strand, volt, nom. O.D. .165. Retract 12". Extends to 6 ft. Std. Pkg

No.
618

TEST LEAD WIRE SPECIFICATIONS

All test leads on this page supplied with extra-flexible rubber-cover kinkless wire, 50-in. long, unless specif otherwise. **#20 wire, 26/34 strands, 50 Volts, .125" O.D.**

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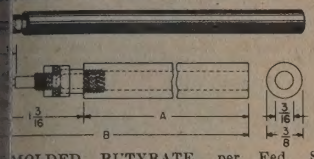
ecify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

ERLESS TEST PROD—Threaded Type



MOLDED BUTYRATE, per Fed. Spec. Type 3, Class MS. Red or Black. SPECIFY COLOR

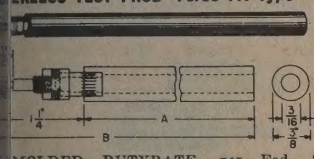
, nickel plated.

Amps AC for 10°C Temp. rise, continuous duty.

derless: Wire fits through handle and body of wrapped around screw portion and tightened d collar. Std. Pkg. 25

Handle (A)	Overall (B)	NET Per C
4"	5¼"	$30.00
5½"	6¾"	33.00

ERLESS TEST PROD—Force Fit Type



MOLDED BUTYRATE, per Fed. Spec. Type 3, Class MS. Red or Black. SPECIFY COLOR

s, nickel plated.

Amps AC for 10°C Temp. rise, continuous duty.

derless: Wire fits through handle and body of wrapped around screw portion and tightened d collar. Std. Pkg. 25

Handle (A)	Overall (B)	NET Per C
4"	5¼"	$30.00
5½"	6¾"	33.00

ERLESS TEST PROD—Force Fit Type Large Inside Diameter

MOLDED BUTYRATE, per Fed. Spec. Type 3, Class MS. Red or Black. SPECIFY COLOR

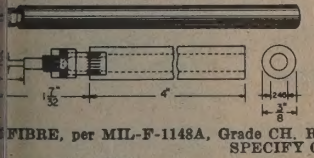
ss, nickel plated.

Amps AC for 10°C Temp. rise, continuous duty.

derless: Wire fits through handle and body of wrapped around screw portion and tightened ed collar. Extra large I.D. for heavy duty Std. Pkg. 25

Handle (A)	Overall (B)	NET Per C
4"	5¼"	$30.00
5½"	6¾"	33.00

SOLDERLESS FIBRE TEST PROD Large Inside Diameter



FIBRE, per MIL-F-1148A, Grade CH. Red or SPECIFY CLOR

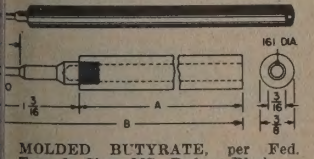
ss, nickel plated.

2 Amps AC for 10°C Temp. rise, continuous

olderless: Wire fits through handle and body of wrapped around screw portion and tightened led collar. Large I.D. permits use of heavy duty Std. Pkg. 25

NET Per C $35.00

VY DUTY TEST PROD—Threaded Type



MOLDED BUTYRATE, per Fed. Spec. Type 3, Class MS. Red or Black. SPECIFY COLOR

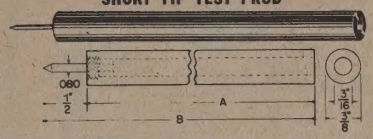
ass, nickel plated.

2 Amps AC for 10°C Temp. rise, continuous duty.

Large diameter well enables soldering of heavy e directly into plug. Fits standard phone tip Std. Pkg. 25

Handle (A)	Overall (B)	NET Per C
4"	5¾"	$30.00
5½"	6 11/16"	33.00

SHORT TIP TEST PROD

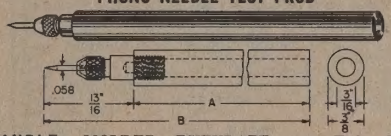


HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR

PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Inserts flush with insulated handle, no metal exposed; eliminates possibility of shock or grounding. Fits standard phone tip jacks. Std. Pkg. 25

No.	Handle (A)	Overall (B)	NET Per C
363	4"	4½"	$25.00
364	5½"	6"	28.00

PHONO NEEDLE TEST PROD

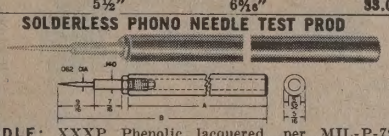


HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR

PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, cont. duty.
DESCR.: Removable chuck for easy replacement or broken needles. Needle pierces corrosion or plating for positive reading. Std. Pkg. 25

No.	Handle (A)	Overall (B)	NET Per C
317	4"	4 13/16"	$30.00
318	5½"	6 13/16"	33.00

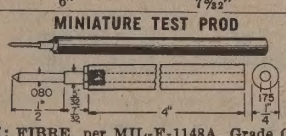
SOLDERLESS PHONO NEEDLE TEST PROD



HANDLE: XXXP Phenolic lacquered, per MIL-P-79, Form TR. Red or Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
NEEDLE: Phono needle, steel.
RATING: 12 Amps AC for 10°C Temp. rise, cont. duty.
DESCR.: Wire can be soldered to brass stud or directly into plug itself. Stud also locks wire to pellet for solderless connections. Std. Pkg. 25

No.	Handle (A)	Overall (B)	NET Per C
314	4"	5 3/32"	$75.00
313	6"	7 3/32"	81.00

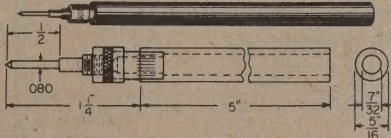
MINIATURE TEST PROD



HANDLE: FIBRE, per MIL-F-1148A, Grade CH. Red or Black SPECIFY CLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, cont. duty.
DESCR.: Threaded for easy assembly. Ideally suited for checking all types sub-miniature equipment. Std. Pkg. 25

No.	NET Per C
322	$35.00

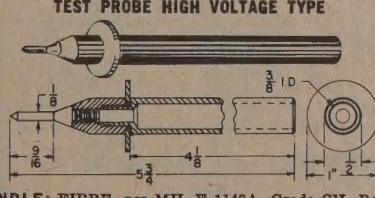
PENCIL TYPE SOLDERLESS TEST PROD



HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class 2. Red or Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless: Wire fits through handle and body of plug, then wraps around screw portion and is tightened with knurled collar. Std. Pkg. 25

No.		NET Per C
384	Force Fit Type	$30.00

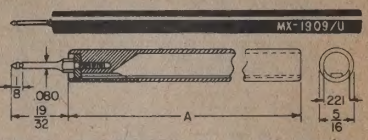
TEST PROBE HIGH VOLTAGE TYPE



HANDLE: FIBRE, per MIL-F-1148A, Grade CH. Red or Black. SPECIFY COLOR
PROBE: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty. 15 KV 60 cycle AC continuous working voltage.
DESCR.: Heavy insulated fibre probe with flash-over shield for high-voltage applications. Large internal I.D. accommodates shielded cable or R.F. networks. Heavy duty removal tip. Std. Pkg. 10

No.	NET Ea.
630	$.79

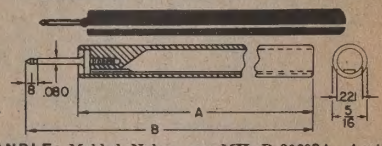
NYLON HANDLE PRODS AND TIPS



HANDLE: MOLDED NYLON, per MIL-P20693A. Specify color.
TIP: Brass, silver plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Solderless. Made to meet Signal Corps Drawing SC-C-82761. Std. Pkg. 25

No.	Sig. Corps. Drawing and Part No.	Size ("A")	Color	NET Per C
176	MX-1906/U	1"	Red	$60.00
177	MX-1907/U	1"	Black	60.00
178	MX-1909/U	4"	Red	70.00
179	MX-1910/U	4"	Black	70.00

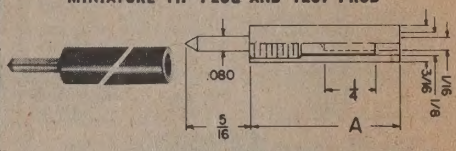
MINIATURE TIP PLUG AND TEST PROD



HANDLE: Molded Nylon, per MIL-P-20693A. Available in Red or Black, SPECIFY COLOR
TIP: Brass, Silver plated.
DESCR.: Solderless assembly. Ideal for use with sub-miniature printed-circuit tip jacks. Sharp tip breaks flux or oxide coating on printed-circuit pattern for positive contact when used as prod. Grooved head of prod makes positive contact when laid across wires. Fits all standard .080" tip jacks. Std. Pkg. 25

No.	Handle (A)	Overall (B)	NET Per C
348	1"	1 5/16"	$35.00
349	4"	4 5/16"	45.00

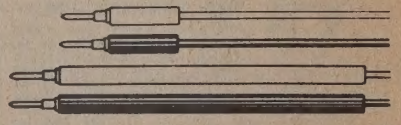
MINIATURE TIP PLUG AND TEST PROD



HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red or Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 2 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Ideally suited for checking sub-miniature equipment. Fits standard phone tip jacks. Std. Pkg. 100

No.	Std. Pkg.	Length (A)	NET Per C
244	100	¾"	$18.00
666	25	3"	30.00

MINIATURE TEST LEAD



HANDLE: MACHINED BUTYRATE, 3/16" O.D., 4" long, per MIL-P-10408A, Type I, Class II, Red and Black.
PLUG: MACHINED BUTYRATE, 3/16" O.D., ¾" long, per MIL-P-10408A, Type I, Class II.
TIPS: Brass, nickel plated. Std. Pkg. 6

No.	NET Per C
660	$1.26

BATTERY CONNECTING STRIPS

Std. Pkg. 50

No.	Spacing	Eveready	Burgess	RCA	NET Per C
1205	1-1/2"	455,467, 457,468	XX30,XX45 K45,V451	VS055, VS016, VS082, VS125	$23.00
1206	2-1/2"	490	N60	VS090	24.00
1210	15/16"	437,495, 477,2356, 479	XX50,N60X, P45,C6X,	VS217, VS316, VS218, VS219	24.00
1217	1-1/4"	707	D5	VS315	24.00
1218	1-3/8"	274,276	4D4,D6	VS306	24.00
1219	15/16"	243	2Z3	VS324	24.00
1234	1/2"	E126,415, 216,416 246	H126,U30, 2U6,UX45, 2N6	VS328, VS086, VS323, VS318, VS305	24.00

		CONNECTOR SNAPS		Std. Pkg. 100	
1296	Female	226,228	P6,PM8	VS300A, VS329	6.00
1297	Male	2709		VS326	6.00

specify SMITH

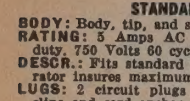
HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

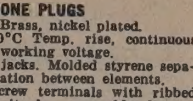
STANDARD PHONE PLUGS

BODY: Body, tip, and sleeve—Brass, nickel plated.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 750 Volts 60 cycle AC working voltage.
DESCR.: Fits standard phone jacks. Molded styrene separator insures maximum insulation between elements.
LUGS: 2 circuit plugs are screw terminals with ribbed clips and cord anchor. 3 circuit plugs are solder lugs.

Std. Pkg. 50

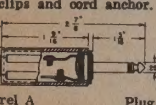


Barrel A

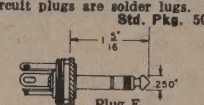


Plug D

Plug E

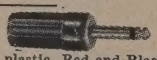


Barrel B



Barrel C

Phenolic Barrel

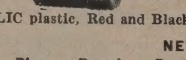


BARREL: MOLDED PHENOLIC plastic, Red and Black. SPECIFY COLOR

Std. Pkg. 50

No.	Circuit	Terminals	Plug	Barrel	NET Per C
222	2	Screw	D	A	$51.00
227	3	Solder	E	A	90.00

Shielded Barrel

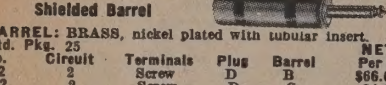


BARREL: BRASS, nickel plated with tubular insert.

Std. Pkg. 25

No.	Circuit	Terminals	Plug	Barrel	NET Per C
252	2	Screw	D	B	$66.00
272	2	Screw	D	C	84.00
228	3	Solder	E	B	90.00
288	3	Solder	E	C	105.00

STANDARD PHONE PLUG
Baby Phenolic Barrel



BARREL: MOLDED PHENOLIC plastic, Red and Black. SPECIFY COLOR
BODY: Body, tip, sleeve—Brass, nickel plated.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 750 Volts 60 cycle AC continuous working voltage.
DESCR.: Molded styrene separator insures maximum insulation between conductors. Fits standard phone jacks.

Std. Pkg. 25

No.	Circuit	Terminals	NET Per C
243	Two	Solder	$39.00

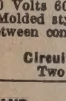
PJ055 AND PJ068 PLUGS

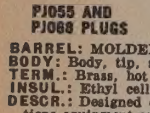
BARREL: MOLDED plastic.
BODY: Body, tip, sleeve—Machined brass.
TERM.: Brass, hot tinned.
INSUL.: Ethyl cellulose type EM-1 MIL-P-3412.
DESCR.: Designed especially for high quality communications equipment and to meet the exacting requirements of the armed services. Parts are assembled together in a mold, providing a finished plug with complete continuity of thermo plastic insulation between the tip rod and plug sleeve.

Std. Pkg. 25

No.	Type	NET Per C
217	PJ055B	$100.00
247	PJ068B	215.00

CORD CLAMP STRAIN RELIEF



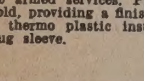


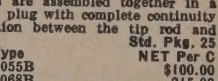
MATERIAL: Cold Rolled Steel, per QQ-S-636. Finish zinc per Spec. 7253, Table II, Type I.
DESCR.: Used on Government cord assemblies. Made in accordance with Signal Corps. Spec. SC-A-7674.

Std. Pkg. 100

No.	NET Per C
747	$1.80

TELEPHONE CORD SLEEVE



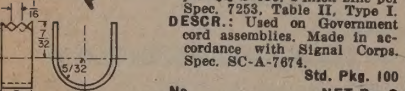


MATERIAL: Neoprene in accordance with Grade SC415AFF per MIL-R-3065.
DESCR.: Used on Government cord assemblies, for Strain Relief, Dust and Moisture Seal.

Std. Pkg. 100

No.	NET Per C
748	$9.00

PHONE PLUG ADAPTER

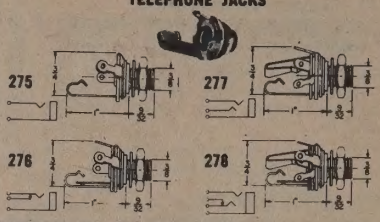


BODY: Body, tip, sleeve—Brass, nickel plated.
INSUL.: XXXP PHENOLIC.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 750 Volts 60 cycle AC continuous working voltage.
DESCR.: Assembled to insure positive contact with input wire of mating microphone connector. Molded styrene separator insures maximum insulation between conductors. Mates with No. 116 microphone connector. Fits standard phone jacks.

Std. Pkg. 25

No.	NET Per C
113	$40.00

TELEPHONE JACKS

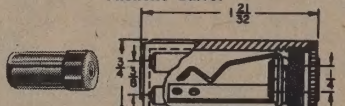


BUSHING: BRASS, nickel plated.
INSUL.: Bakelite, type PBE-P per MIL-P-3115B.
SPRING: Nickel-Silver alloy, spring temper. New tapered design provides for ease of insertion while eliminating possibility of shorts.
SLEEVE TERM.: Brass, hot tinned.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty. 1.2 K Volts 60 cycle AC continuous working voltage.
DESCR.: Notched insulating washers accurately locate all parts, and eliminate possibility of shorts and arc-over. Springs designed for firm, low-resistance electrical contact. Bushings ¼" long, threaded ⅜"-32. Mounts in ⅜" hole in panels up to 7/32" thick. Overall diameter ⅞", require 1" clearance behind panel. Supplied with ½" hex brass nut and ⅝" steel panel washer, all nickel plated.

Std. Pkg. 50

No.	Circuit	NET Per C
275	Two Conductor Open	$27.00
276	Two Conductor Closed	30.00
277	Three Conductor Open	36.00
278	Three Conductor Closed	51.00

IN-LINE EXTENSION JACK
Phenolic Barrel



BARREL: MOLDED PHENOLIC plastic, Red and Black.
BODY: Brass, nickel plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage.
SPRING: Nickel, silver, special alloy, spring temper.
INSUL.: XXP PHENOLIC.
DESCR.: For microphone and Hi-Fi extension cords. Mates with standard phone plugs.

Std. Pkg. 25

No.	Type	NET Per C
274	Solder Connection	$66.00
288	Screw Connection	75.00

Shielded Barrel

BARREL: Brass, nickel plated, with tubular insulator.
BODY: Brass, nickel plated.
RATING: 10 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage.
SPRING: Nickel, silver, special alloy, spring temper.
INSUL.: XXP Bakelite.
DESCR.: For microphone and Hi-Fi extension cords. Mates with standard phone plugs.

Std. Pkg. 25

No.	Type	NET Per C
278	Solder Connection	$ 90.00
289	Screw Connection	102.00

MINIATURE MICROPHONE CONNECTOR

BODY: BRASS, nickel plated.
SPRING: Steel, cadmium plated.
INSUL: XXXP PHENOLIC.
EYELET: Brass, hot tinned.
DESCR.: Ideal for lapel microphone, musical instruments, etc., wherever small cable is used. Acccepts cable up to 3/16" diameter.

Std. Pkg. 50

No.	Type	NET Per C
484	Single Contact Female	$39.00
485	Single Contact Male	30.00

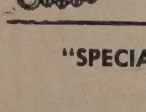
CHASSIS CONNECTOR

Mounts in 3/16" hole grounded; ¼" hole insulated with shoulder washer.

Std. Pkg. 25

No.	Type	NET Per C
486	Single Contact Male	$24.00

CAP AND CHAIN



DESCR.: Brass, nickel plated. Seals chassis connectors against dust. Eliminates noisy connections. Used with any threaded one or two conductor chassis unit.

Std. Pkg. 25

No.		NET Per C
118	⅝-27 Thread	$48.00

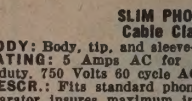
"SPECIALS are STANDARD with SMITH!"

For VARIATIONS of these standard parts to meet your SPECIAL requirements, or for entirely NEW parts made to your specifications, WE WELCOME YOUR INQUIRY!

SLIM PHONE PLUGS
Cable Clamp Style

BODY: Body, tip, and sleeve—Brass, nickel plated.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 750 Volts 60 cycle AC continuous working voltage.
DESCR.: Fits standard phone jacks. Molded styrene separator insures maximum insulation between elements.

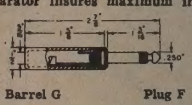
Std. Pkg. 5



Barrel G

Plug F

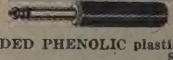
Plug H



Barrel J

PLUG "O"

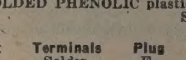
Phenolic Barrel



BARREL: MOLDED PHENOLIC plastic, Red and Black. SPECIFY COLOR

No.	Circuit	Terminals	Plug	Barrel	NET Per C
225	2	Solder	F	G	$51.00
307	2	Screw	H	G	60.00

Shielded Barrel



BARREL: BRASS, nickel plated with tubular insert.

No.	Circuit	Terminals	Plug	Barrel	NET Per C
226	2	Solder	F	J	$69.00
316	2	Screw	H	J	72.00

ECONOMY TYPE

DESCR.: An inexpensive modified version of our popular #225 and 226 plugs shown above. Features two small solder lugs.

Std. Pkg. 50

Phenolic Barrel

BARREL: MOLDED PHENOLIC plastic, Red and Black. SPECIFY COLOR

No.	Circuit	Terminals	Plug	Barrel	NET Per C
320	2	Solder	O	G	$39.00

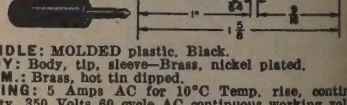
Shielded Barrel

Std. Pkg. 25

BARREL: BRASS, nickel plated with tubular insert.

No.	Circuit	Terminals	Plug	Barrel	NET Per C
330	2	Solder	O	J	$51.00

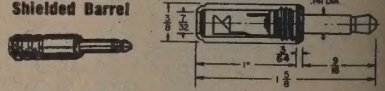
MINIATURE PHONE PLUG



HANDLE: MOLDED plastic, Black.
BODY: Body, tip, sleeve—Brass, nickel plated.
TERM.: Brass, hot tin dipped.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 350 Volts 60 cycle AC continuous working voltage.
DESCR.: Designed for use with small radios, tape recorders, etc. Solder terminals.

No.	Circuit	NET Per C
480	Two Conductor	$65.00

Shielded Barrel

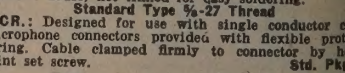


BARREL: BRASS, nickel plated with tubular insulator.
BODY: Body, tip, sleeve—Brass, nickel plated.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 350 Volts 60 cycle AC continuous working voltage.
DESCR.: Designed for use with small radios, tape recorders, etc. Solder terminals.

Std. Pkg. 25

No.	Circuit	NET Per C
481	Two Conductor	$95.00

MICROPHONE CONNECTORS



BODY: Brass, chrome plated.
SPRING: Steel cadmium plated.
INSUL.: XXXP PHENOLIC
EYELET: Brass, hot tinned for easy soldering.

Standard Type ⅝-27 Thread

DESCR.: Designed for use with single conductor cable. Microphone connectors provided with flexible protector spring. Cable clamped firmly to connector by hollow point set screw.

Std. Pkg. 50

No.	Type	NET Per C
115	Single Contact Male	$30.00
116	Single Contact Female	39.00

CHASSIS CONNECTORS

Mount in .385 hole grounded: .500 hole insulated with shoulder washer.

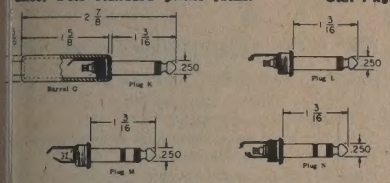
Std. Pkg. 25

117	Single Contact Male	30.00

 © United Technical P

IMPROVED "TURRET-CENTER" STYLE

BODY: Body, Tip, Ring, and sleeve —Brass, nickel plated.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 1.5 KV 60 cycle AC continuous working voltage.
DESCR.: New, improved construction has co-axial "turret-terminal" tip lug and widely separated contacts for maximum voltage ratings. Styrene separator, Mylar sleeves, and Nylon bushings used for increased performance. Fits standard phone jacks. **Std. Pkg. 50**

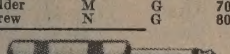


Phenolic Barrel

BARREL.: MOLDED PHENOLIC plastic, Red and Black. SPECIFY COLOR

).	Circuit	Terminals	Plug	Barrel	NET Per C
1	2	Solder	K	G	$51.00
2	2	Screw	L	G	55.00
8	3	Solder	M	G	70.00
9	3	Screw	N	G	80.00

Shielded Barrel



Std. Pkg. 25

BARREL: BRASS, nickel plated with tubular insert.

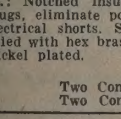
).	Circuit	Terminals	Plug	Barrel	NET Per C
3	2	Solder	K	J	$65.00
4	2	Screw	L	J	72.00
1	3	Solder	M	J	82.00
2	3	Screw	N	J	90.00

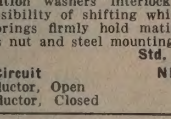
MINIATURE TELEPHONE JACKS

USHING: BRASS, nickel plated.
SUL.: XXXP Phenolic, type PBE-P per MIL-P-3115A.
PRING: Nickel silver alloy, spring temper.
ERM.: Brass, hot tinned.
ATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 500 Volts 60 cycle AC continuous working voltage.
ESCR.: Notched insulation washers interlock springs and lugs, eliminate possibility of shifting which result in electrical shorts. Springs firmly hold mating plug. Supplied with hex brass nut and steel mounting washer, all nickel plated. **Std. Pkg. 50**

).	Circuit	NET Per C
2	Two Conductor, Open	$40.00
3	Two Conductor, Closed	45.00

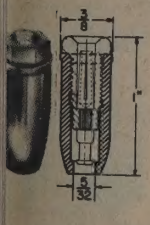
MINIATURE EXTENSION JACK Shielded





ARREL: Brass, nickel plated.
ODY: Brass, nickel plated.
PRING: Nickel silver alloy, spring temper.
SUL.: Phenolic.
ATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 500 Volts 60 cycle AC continuous working voltage.
ESCR.: Mates with Miniature Phone Plugs. **Std. Pkg. 25**
). 487 **NET Per C $81.00**

NYLON IN-LINE TIP JACK



Color Code Suffix
Add to Catalog Number as Required
- –101 WHITE
- –102 RED
- –103 BLACK
- –104 GREEN
- –105 BLUE
- –106 ORANGE
- –107 YELLOW
- –108 BROWN
- –112 PURPLE
- –113 GREY

All Nylon
HANDLE: MOLDED NYLON, per MIL-P-20693A. Specify color as coded above.
BODY: Molded Nylon, per MIL-P-20693A.
CONTACT: Phosphor Bronze, gold plated.
ATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 5 KV 60 cycle AC continuous working voltage.
ESCR.: Fits all standard phone-tip plugs, with recessed contact for safe connection. Ideally suited for use in patch and extension cords. Can also be used for panel mounting where wrap-around terminal connection must be insulated at rear. **Std. Pkg. 50**
). 1518 **NET Per C $80.00**

PHONE TIP PLUG SPLICE

HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black, Yellow, Green. SPECIFY COLOR
CAP: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green.
BODY: Brass, nickel plated.
SPRING: Phosphor bronze.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Invaluable for quick splicing connections or for test lead extension. Accepts standard phone tip plugs. **Std. Pkg. 50**

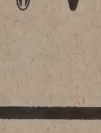
No.	NET Per C
246	$30.00

BANANA PLUG SPLICE

HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black, Yellow, Green. SPECIFY COLOR
INSERT: Brass.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Invaluable for quick splicing connections. Accepts standard banana plugs. **Std. Pkg. 50**

No.	NET Per C
245	$25.00

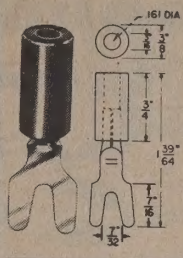
ADAPTER Tip Plug to Banana Plug



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black. SPECIFY COLOR
CONTACT: Beryllium Copper.
SPRING: Four-leaved phosphor bronze, nickel plated.
BODY: Brass, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Accepts standard phone tip plugs and adapts to standard banana plugs. **Std. Pkg. 50**

No.	NET Per C
214	$35.00

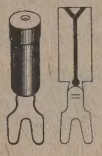
INSULATED SPADE LUG



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red and Black. SPECIFY COLOR
LUG: Steel electro tinned, .020 thick.
RATING: 15 Amp AC for 10°C Temp. rise, continuous duty.
DESCR.: Tapered slot fits studs from ¼" dia. down to #6 dia. Fits all standard binding posts. Accepts standard banana plugs in rear. Solder bridge for wire connection up to No. 18 AWG.

No.	Description	Std. Pkg.	NET
218	Insulated Spade Lug	100	$11.00 per C
129	Lug Only	1000	25.00 per M

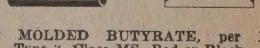
ADAPTER Tip Plug to Spade Lug



HANDLE: MOLDED BUTYRATE, per, Fed., Spec. L-P349A, Type 3, Class MS. Red and Black. SPECIFY COLOR
CAP: MOLDED THERMOSETTING plastic, Red or Black per MIL-M-14CFG.
BODY: Brass.
CONTACT: Beryllium Copper, Gold Plated.
LUG: Steel electro tinned, .020 thick.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESC.: Tapered slot fits studs from ¼" dia. down to #6 Dia. Fits all standard binding posts. Accepts standard .080 phone tip plugs in rear. **Std. Pkg. 50**

No.	Description	NET Per C
249	Adapter	$40.00

COMBINATION SPLICE Phone Tip to Banana Plug

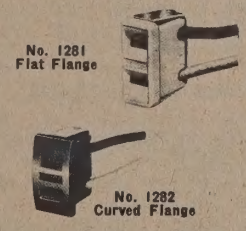


HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR
BODY: Brass.
CONTACT: Beryllium copper, gold washed.
DESCR.: Invaluable for quick splice of test leads. Accepts standard Banana plug one end, .080 phone tip other end. **Std. Pkg. 50**
No. 496 **NET Per C $30.00**

CONVENIENCE OUTLETS

For small unit electrical appliances and Electronic devices. UL Approved RADIOS — CLOCK RADIOS — CLOCKS — T.V. SETS — LAMPS — TOASTERS, ETC.

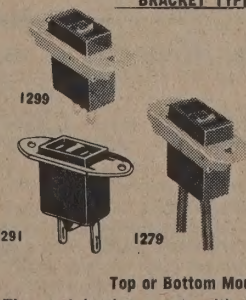
SINGLE SCREW BRACKET TYPE WIRE LEADS



Can be dropped into opening and held in place by metal bracket and single central screw, supplied. UL Approved. SPECIFY COLOR
RATING: 15 Amps, 125 Volts AC or DC.
LEADS: Plastic wire #14 gauge, 6" long. **Std. Pkg. 50**

No.	Color	NET Per C
1281-103	Black	$17.00
1281-101	White	19.00
1282-103	Black	17.00
1282-101	White	19.00

BRACKET TYPE

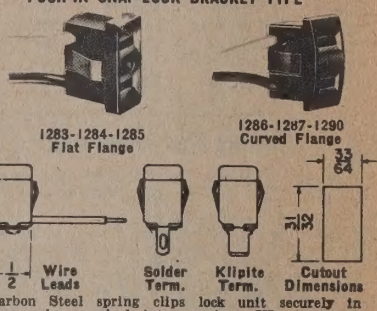


Top or Bottom Mount

Flat steel bracket mounts with two #6 screws or equivalent size eyelets. Black Only.
RATING: 15 Amps., 125 Volts AC or DC.
LEADS: No. 1279 has two leads, plastic wire #16 gauge, 8" long. UL Approved. **Std. Pkg. 50**

No.	Type	Terminals	NET Per C
1291	Bottom Mount	Solder	$10.00
1279	Bottom Mount	Wire Leads	22.80
1299	Top or Bottom Mount	Solder	9.00

PUSH-IN SNAP-LOCK BRACKET TYPE



Carbon Steel spring clips lock unit securely in place when pushed into opening. UL Approved.
RATING: 15 Amps, 125 Volts AC or DC. SPECIFY
LEADS: Plastic wire #14 gauge, 6" long. COLOR **Std. Pkg. 50**

No.	Terminals	Color	NET Per C
1283-103	Wire Leads	Black	$17.00
1283-101	Wire Leads	White	19.00
1284-103	Solder	Black	15.00
1284-101	Solder	White	17.00
1285-103	Klipite	Black	15.00
1285-101	Klipite	White	17.00
1286-103	Wire Leads	Black	15.00
1286-101	Wire Leads	White	17.00
1287-103	Solder	Black	15.00
1287-101	Solder	White	17.00
1290-103	Klipitite	Black	15.00
1290-101	Klipitite	White	17.00

THREE WIRE OUTLET (With grounding lead)

Carbon steel spring clips lock unit securely in place when pushed into opening. UL Approved. SPECIFY COLOR
RATING: 15 Amps, 125 Volts, AC or DC.
LEADS: Two #14 gauge 6" long plastic wire and one #16 gauge green ground lead 6" long. **Std. Pkg.50**

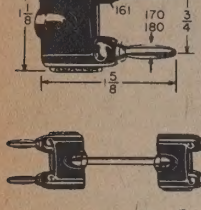
No.	Color	NET Per C
1280-103	Black	$32.00
1280-101	White	35.00

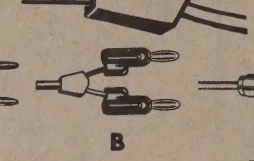
specify SMITH

HERMAN H. SMITH, INC.

ELECT
COMP

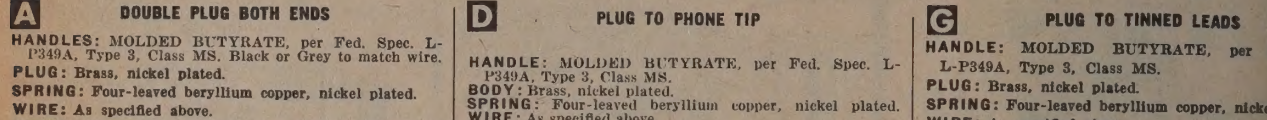
DOUBLE BANANA PATCH CORD





CABLE TYPES AVAILABLE

	WIRE "A"	WIRE "B"	WIRE "C
DESCRIPTION	2-cond. tw. 18 ga. 65/36 str.	Shielded audio cable	Coaxial Cable R
INSULATION	Vinyl	Polyethylene	Polyethylene
JACKET	Vinyl, Color Grey	Vinyl, Color Grey	Vinyl,Color Blac
NOM. CAP.	30 mmf./ft.	25 mmf./ft.	28.5 mmf./ft.



A B C D E F G H

A DOUBLE PLUG BOTH ENDS

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.
PLUG: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
WIRE: As specified above.
DESCR.: Mates with standard dual binding post having ¾" center. Polarity indicated by the word GROUND molded on side. Interconnects unlimited number of multiple circuits top and side. Each end terminates with molded double banana plug. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1530-12	1540-12	1580-12	12"	$4.35
1530-24	1540-24	1580-24	24"	4.45
1530-36	1540-36	1580-36	36"	4.55
1530-48	1540-48	1580-48	48"	4.65
1530-60	1540-60	1580-48	60"	4.75

B PLUG TO "CROSS-PATCH" PLUGS

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.
BODY: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
WIRE: As specified above.
PLUG: Our No. 1510. Red and black.
DESCR.: Mates with standard dual binding post having ¾" centers. Polarity indicated by the word GROUND molded on side. Interconnects unlimited number of multiple circuits on top and side. One end terminates with double banana plug, other end with "Cross-Patch" banana plugs, color coded Red and Black Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1523-12	1524-12	1525-12	12"	$5.35
1523-24	1524-24	1525-24	24"	5.45
1523-36	1524-36	1525-36	36"	5.55
1523-48	1524-'8	1525-48	48"	5.65
1523-60	1524-60	1525-60	60"	5.75

C DOUBLE PLUG TO UHF MALE

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.
PLUG. Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
DESCR.: Mates with standard dual binding post having ¾" center. Polarity indicated by the word GROUND molded on side. One end terminates with double banana plug, other end with UHF Male Plug.
WIRE: As specified above. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
———	1545-12	1585-12	12"	$5.35
———	1545-24	1585-24	24"	5.45
———	1545-36	1585-36	36"	5.55
———	1545-48	1585-48	48"	5.65
———	1545-60	1585-60	60"	5.75

D PLUG TO PHONE TIP

HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
BODY: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
WIRE: As specified above.
PLUG: Our No. 203. Red and black.
DESCR.: Mates with standard dual binding post having ¾" center. Polarity indicated by the word GROUND molded on side. One end terminates with double banana plug, other end with insulated tip plug, one red and one black. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1533-12	1543-12	1583-12	12"	$4.35
1533-24	1543-24	1583-24	24"	4.45
1533-36	1543-36	1583-36	36"	4.55
1533-48	1543-48	1583-48	48"	4.65
1533-60	1543-60	1583-60	60"	4.75

E BNC MALE TO DOUBLE PLUG

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.
PLUG: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
DESCR.: Mates with standard dual binding post having ¾" center. Polarity indicated by the word GROUND molded on side. One end terminates with double banana plug, other end with BNC Male Plug.
WIRE: As specified above. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
———	1544-12	1584-12	12"	$5.35
———	1544-24	1584-24	24"	5.45
———	1544-36	1584-36	36"	5.55
———	1544-48	1584-48	48"	5.65
———	1544-60	1584-60	60"	5.75

F PLUG TO "CROSS-PATCH" PIN PLUGS

HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
BODY: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
WIRE: As specified above.
PLUG: Our No. 1595. Red and black.
DESCR.: Mates with standard dual binding post having ¾" centers. Polarity indicated by the word GROUND molded on side. Interconnects unlimited number of multiple circuits on top and side. One end terminates with double banana plug, other end with "Cross-Patch" Pin plugs with standard .080" tip and jack in rear, banana jack in side, color coded Red and Black. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1592-12	1593-12	1594-12	12"	$5.35
1592-24	1593-24	1594-24	24"	5.45
1592-36	1593-36	1594-36	36"	5.55
1592-48	1593-48	1594-48	48"	5.65
1592-60	1593-60	1594-60	60"	5.75

G PLUG TO TINNED LEADS

HANDLE: MOLDED BUTYRATE, per Fed. L-P349A, Type 3, Class MS.
PLUG: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel pla
WIRE: As specified above.
DESCR.: Mates with standard dual binding post ¾" center. Polarity indicated by the word GR molded on the side. One end terminates with banana plug, other end stripped and tinned. Std.

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.
1532-12	1542-12	1582-12	12"
1532-24	1542-24	1582-24	24"
1532-36	1542-36	1582-36	36"
1532-48	1542-48	1582-48	48"
1532-60	1542-60	1582-60	60"

H DOUBLE PLUG TO ALLIGATOR CLIPS

HANDLES: MOLDED BUTYRATE, per Fed L-P349A, Type 3, Class MS. Black or Grey t wire.
PLUG: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel pla
CLIP: Steel cadmium plated (No. 300).
INSUL.: Molded vinyl plastic (No. 331).
WIRE: As specified above.
DESCR.: Mates with standard dual binding post ¾" center. Polarity indicated by the word GR molded on side. One end terminates with double plug, other end with insulated alligator clips, o one black. Std.

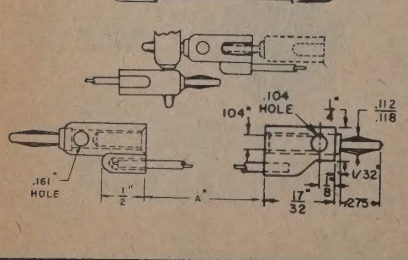
No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.
1531-12	1541-12	1581-12	12"
1531-24	1541-24	1581-24	24"
1531-36	1541-36	1581-36	36"
1531-48	1541-48	1581-48	48"
1531-60	1541-60	1581-60	60"

I DOUBLE PLUG TO DOUBLE JACK

HANDLES: MOLDED BUTYRATE, per Fed. L-P349A, Type 3, Class MS. Black or Grey to wire.
PLUG: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel pla
WIRE: As specified above.
DESCR.: Mates with standard dual binding post ¾" center. Polarity indicated by the word GR molded on side. Interconnects unlimited num multiple circuits top and side. One end terminate molded double banana plug, other end in double sion jack. Std.

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.
1881-12	1822-12	1883-12	12"
1881-24	1882-24	1883-24	24"
1881-36	1882-36	1883-36	36"
1881-48	1882-48	1883-48	48"
1881-60	1882-60	1883-60	60"

STAND "CROSS PATCH" TO MINIATURE "CROSS PATCH"



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
BODY: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel plated.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG, insulated to an O.D. of /140".
DESCR.: Mates with miniature or standard banana jacks or binding posts. Interconnects unlimited number of multiple circuits. Positive, lasting contact for all banana plugs on top and side. One end terminates in a miniature banana plug, other end in standard banana plug

No.	Length ("A")	Std. Pkg. 10 NET Per C
1728-8	8 inches	$130.00
1728-12	12 inches	130.00
1728-24	24 inches	135.00
1728-36	36 inches	140.00

COMBINATION POST

HEAD: Captive, brass plated.
CAP: Molded Styrene
BODY: Brass, nickel
SPRING: Four-leave phor bronze, nickel
RATING: 15 Amps 10°C Temp. rise, o ous duty.
DESCR.: Converts any panel-mounted banana jack spring loaded push-post. Accepts standard pho solid or stranded wire, and locks them in place on of pressure on cap. Std.

No. 2714 NET

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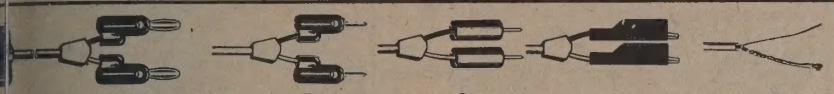
HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

PATCH CORDS

CABLE TYPES AVAILABLE

	WIRE "A"	WIRE "B"	WIRE "C"
IPTION	2-cond. tw. 18 ga. 65/36 str.	Shielded audio cable	Coaxial Cable RG58/U.
LTION	Vinyl	Polyethylene	Polyethylene
	Vinyl, Color Grey	Vinyl, Color Grey	Vinyl, Color Black
CAP.	30 mmf./ft.	25 mmf./ft.	28.5 mmf./ft.



A B C D E

OUBLE JACK TO "CROSS-PATCH" PLUGS

ES: MOLDED BUTYRATE, per Fed. Spec. 9A, Type 3, Class MS. Black or Grey to match

Brass, nickel plated.

S: Four-leaved beryllium copper, nickel plated.

As specified above.

Our No. 1510. Red and black.

.: Mates with standard dual banana plugs having enters. Polarity indicated by the word GROUND d on side. Interconnects unlimited number of mul- circuits on top and side. One end terminates with e banana jacks, other end with "Cross-patch" a plugs, color coded Red and Black. Std. Pkg. 10

No. "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
2	1896-12	1897-12	12″	$5.35
4	1896-24	1897-24	24″	5.45
6	1896-36	1897-36	36″	5.55
8	1896-48	1897-48	48″	5.65
0	1896-60	1897-60	60″	5.75

OUBLE JACK TO "CROSS-PATCH" PIN PLUGS

LES: MOLDED BUTYRATE, per Fed. Spec. 49A, Type 3, Class MS. Black or Grey to match

: Brass, nickel plated.

: As specified above.

: Our No. 1595. Red and black.

R.: Mates with standard dual banana plugs having centers. Polarity indicated by the word GROUND ed on side. Interconnects unlimited number of mul- circuits on top and side. One end terminates with le banana jacks, other end with "Cross-Patch" plugs with standard .080″ tip and jack in rear, na jack in side, color coded Red and Black.

Std. Pkg. 10

No. A"	No. Wire "B"	N Wire ' C"	Lgth.	NET Ea.
2	1898-12	1899-12	12″	$5.35
4	1898-24	1899-24	24″	5.45
6	1898-36	1899-36	36″	5.55
8	1898-48	1899-48	48″	5.65
0	1898-60	1899-60	60″	5.75

C DOUBLE JACK TO PHONE TIPS

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.

PLUG: Brass, nickel plated.

WIRE: As specified above.

PLUG: Our No. 203. Red and black.

DESCR.: Mates with standard dual banana plugs by the word GROUND molded on side. One end terminates with double banana jacks, other end with insulated tip plug, one red and one black. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1892-12	1893-12	1894-12	12″	$4.35
1892-24	1893-24	1894-24	24″	4.45
1892-36	1893-36	1894-36	36″	4.55
1892-48	1893-48	1894-48	48″	4.65
1892-60	1893-60	1894-60	60″	4.75

D DOUBLE JACK TO ALLIGATOR CLIPS

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.

JACKS: Brass, nickel plated.

CLIP: Steel cadmium plated (No. 300).

INSUL.: Molded vinyl plastic (No. 331).

WIRE: As specified above.

DESCR.: Mates with standard dual banana plugs having ¾″ center. Polarity indicated by the word GROUND molded o nside. One end terminates with double banana jacks, other end with insulated alligator clips, one red, one black. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1889-12	1890-12	1891-12	12″	$5.35
1889-24	1890-24	1891-24	24″	5.45
1889-36	1890-36	1891-36	36″	5.55
1889-48	1890-48	1891-48	48″	5.65
1889-60	1890-60	1891-60	60″	5.75

E DOUBLE JACK TO STRIPPED & TINNED LEADS

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.

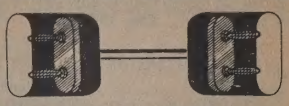
PLUG: Brass, nickel plated.

WIRE: As specifier above.

DESCR.: Mates with standard dual plugs having ¾″ center. Polarity indicated by the word GROUND molded on side. One end terminates in double extension jack, other end in stripped and tinned leads. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1886-12	1887-12	1888-12	12″	$3.35
1886-24	1887-24	1888-24	24″	3.45
1886-36	1887-36	1888-36	36″	3.55
1886-48	1887-48	1888-48	48″	3.65
1886-60	1887-60	188-60	60″	3.75

SHIELDED DOUBLE PLUG TO SHIELDED DOUBLE PLUG



SHIELD: Aluminum, black anodized.

BODY: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.

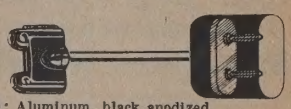
PLUG: Brass,nickel plated.

SPRING: Four-leaved beryllium copper, nickel plated.

DESCR.: Mates with standard dual binding post having ¾″ center. Both ends terminate with double shielded banana plugs. Std. Pkg. 10

No. RG-58C/U Wire	No. RG-11/U Wire	Length	NET Ea.
1876-12	1877-12	12 inches	$5.60
1876-24	1877-24	24 inches	5.70
1876-36	1877-36	36 inches	5.80
1876-48	1877-48	48 inches	5.90
1876-60	1877-60	60 inches	6.00

DOUBLE JACK TO SHIELDED DOUBLE PLUG



SHIELD: Aluminum, black anodized.

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Black or Grey to match wire.

PLUG: Brass, nickel plated.

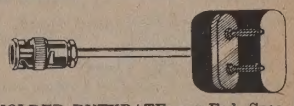
SPRING: Four-leaved beryllium copper, nickel plated.

WIRE: As specified above.

DESCR.: Mates with standard dual binding pos having ¾″ center. Polarity indicated by the word GROUND molded on side. Interconnects unlimited number of multiple circuits top and side. One end terminates with molded double shielded banana plug, other end in double extension jack. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
———	1884-12	1885-12	12″	$5.30
———	1884-24	1885-24	24″	5.40
———	1884-36	1885-36	36″	5.50
———	1884-48	1885-48	48″	5.60
———	1884-60	1885-60	60″	5.70

BNC MALE TO SHIELDED DOUBLE PLUG



BODY: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Assemblies.

SHIELD: Aluminum, black anodized.

PLUG: Brass, nickel plated.

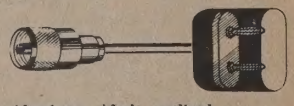
SPRING: Four-leaved beryllium copper, nickel plated.

DESCR.: Mates with standard dual binding post having ¾″ center. One end terminates with double shielded banana plug other end with BNC Male Plug.

WIRE: RG58/U Std. Pkg. 10

No.	Length	NET Ea.
1873-12	12 inches	$6.10
1873-24	24 inches	6.20
1873-36	36 inches	6.30
1873-48	48 inches	6.40
1873-60	60 inches	6.50

UHF MALE TO SHIELDED DOUBLE PLUG



SHIELD: Aluminum, black anodized.

BODY: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.

PLUG: Brass, nickel plated.

SPRING: Four-leaved beryllium copper, nickel plated.

DESCR.: Mates with standard dual binding post having ¾″ center. One end terminates with double shielded banana plug, other end in UHF Conn. Std. Pkg. 10

No. RG-58C/U Wire	No. RG-11/U Wire	Length	NET Ea.
1874-12	1875-12	12 inches	$6.10
1874-24	1875-24	24 inches	6.20
1874-36	1875-36	36 inches	6.30
1874-48	1874-48	48 inches	6.40
1874-60	1875-60	60 inches	6.50

COAXIAL CABLE CONNECTORS

Solder Type

onnectors for use with RG-8, 9, 10, 11, 12, 63, 65/U cables. Std. Pkg. 10

STRAIGHT COAXIAL CONNECTOR

Brass. Silver-plated shell.

No.	Type	NET Per C
713	PL-259	$67.50

CHASSIS TYPE COAXIAL RECEPTACLE

1715	SO-239	$67.50

COAXIAL JUNCTION

For joining separate cable lengths.

1716	PL-258	$121.50

CABLE REDUCING ADAPTER

5/16″ I.D. For RG-58/U.

CABLE: Brass, Silver-plated.

No.	Type	NET Per C
1719	UG-175/U	$27.00

RF COAXIAL CABLE CONNECTORS

weatherproof low-voltage connectors with bayonet for quick disconnect. Constant impedance, 50 ohms. silver-plated. For RG-55 and 58/U Cables.

Std. Pkg. 5

Type	Description	Each
UG-88C/U	Plug	$ .93
UG-913/U	90° Plug	4.05
UG-290AA/U	Receptacle	1.08
UG-89B/U	Jack	1.35

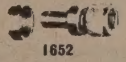
SOLDERLESS COAXIAL CABLE CONNECTORS

For RG-8/U, RG-11/U, RG-13/U and RG-59/U Cables

Designed to use the inner conductor of the coaxial cable for the male pin. Can be wrench-tightened for positive contact. Brass, silver plated. Std. Pkg. 25

Crimp Type

MALE CONNECTORS



Both types mate with female chassis fitting #1660 and Female Coupling #1680. Designed for quick and easy assembly using #1752 Crimping Tool. Withstands 350-lb pull when assembled. Packaged individually, with instruction sheet. Std. Pkg. 25

No.	For Cables	NET Ea.
1652	RG-59/U	$ .48
1656	RG-6/U	.63

FEMALE CHASSIS FITTING

Mates with #1652 connector. Mounts in 5/16″ hole. Threaded stem is ⅜″.

No.		Net Ea.
1660	Individually Packaged	$ .48

FEMALE COUPLING

Accepts two #1652 or 1656 connectors.

No.		Net Ea.
1680	Individually Packaged	$ .60

LABORATORY INTERCHANGE KIT

DESCR.: All parts interchangeable, converts any standard test lead to an all purpose unit. Packaged in an electronically sealed vinyl kit.

Consists of one Red, one Black of the following:

Phone tips No. 215 Spade lugs No. 218

Tip plug adapter No. 214

Alligator clip jack No. 305 Std. Pkg. 1

No. 640 NET Ea. $2.25

specify **SMITH**

HERMAN H. SMITH, INC.

ELEC
COMP

JUMPERS & PATCH CORDS

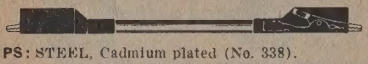
STANDARD ALLIGATOR CLIP BOTH ENDS

CLIPS: STEEL, Cadmium plated (No. 300).
BOOTS: Vinyl plastic. Boot colors match wire.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG, insulated to an O.D of .140". Available in Red, Black, Yellow, Green, Blue, and White.

SPECIFY COLOR
Std. Pkg. 10

No.	Length	Net Ea.
1596-12	12 inches	$ .47
1596-24	24 inches	.49
1596-36	36 inches	.51
1596-48	48 inches	.53
1596-60	60 inches	.55

MINIATURE ALLIGATOR CLIP BOTH ENDS

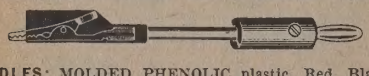


CLIPS: STEEL, Cadmium plated (No. 338).
BOOTS: Vinyl plastic. Boot colors match wire.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: General purpose, PVC insulated 1/64" wall, #18 AWG, 16/30 stranded conductor. Available in Red, Black, Yellow, Green, Blue, and White.

SPECIFY COLOR
Std. Pkg. 10

No.	Length	Net Ea.
1597-12	12 inches	$ .47
1597-18	18 inches	.48
1597-24	24 inches	.49
1597-36	36 inches	.51
1597-48	48 inches	.53
1597-60	60 inches	.55

STANDARD ALLIGATOR CLIP TO BANANA PLUG



HANDLES: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Hex brass, nickel plated.
SPRING: Four-leaved phosphor bronze, nickel plated.
CLIPS: STEEL, Cadmium plated.
BOOTS: Vinyl plastic. Boot colors match wire.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG, insulated to an O.D. of .140". Std. Pkg. 10

No.	Length	Net Ea.
1866-12	12 inches	$ .57
1866-24	24 inches	.59
1866-36	36 inches	.61
1866-48	48 inches	.63
1866-60	60 inches	.65

STANDARD ALLIGATOR CLIP TO SPADE LUG

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A. Type 3, Class MS. Red, Black. SPECIFY COLOR
LUG: Brass, .050 thick, nickel plated.
CLIPS: STEEL, Cadmium plated.
BOOTS: Vinyl plastic. Boot colors match wire.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG, insulated to an O.D. of .140". Std. Pkg. 10

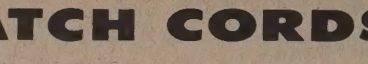
No.	Length	Net Ea.
1867-12	12 inches	$ .52
1867-24	24 inches	.54
1867-36	36 inches	.56
1867-48	48 inches	.58
1867-60	60 inches	.60

SPADE LUG BOTH ENDS

HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red, Black, SPECIFY COLOR
LUG: Brass, .050 thick, nickel plated.
RATING: 25 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG, insulated to an O.D. of .140". Std. Pkg. 10

No.	Length	Net Ea.
1864-12	12 inches	$ .52
1864-24	24 inches	.54
1864-36	36 inches	.56
1864-48	48 inches	.58
1864-60	60 inches	.60

STANDARD ALLIGATOR CLIP TO PIN PLUG



HANDLES: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUG: Brass, nickel plated.
CLIPS: STEEL, Cadmium plated.
BOOTS: Vinyl plastic. Boot colors match wire.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG insulated to an O.D. of .140". Std. Pkg. 10

No.	Length	Net Ea.
1865-12	12 inches	$ .52
1865-24	24 inches	.54
1865-36	36 inches	.56
1865-48	48 inches	.58
1865-60	60 inches	.60

PIN PLUG BOTH ENDS

HANDLES: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUGS: Brass, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG, insulated to an O.D. of .140". Std. Pkg. 10

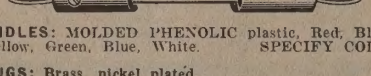
No.	Length	Net Ea.
1862-12	12 inches	$ .62
1862-24	24 inches	.64
1862-36	36 inches	.66
1862-48	48 inches	.68
1862-60	60 inches	.70

PIN PLUG TO BANANA PLUG

HANDLES: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUGS: Brass, nickel plated.
SPRING: Four-leaved phosphor bronze, nickel plated.
RATING: 12 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, insulated to an O.D. of .140". Std. Pkg. 10

No.	Length	Net Ea.
1868-12	12 inches	$ .67
1868-24	24 inches	.69
1868-36	36 inches	.71
1868-48	48 inches	.73
1868-60	60 inches	.75

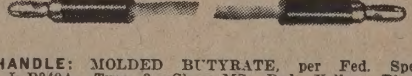
BANANA PLUG BOTH ENDS



HANDLES: MOLDED PHENOLIC plastic, Red, Black, Yellow, Green, Blue, White. SPECIFY COLOR
PLUGS: Brass, nickel plated.
SPRINGS: Four-leaved phosphor bronze, nickel plated.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, #18 AWG, insulated to an O.D. of .140". Std. Pkg. 10

No.	Length	Net Ea.
1863-12	12 inches	$ .72
1863-24	24 inches	.74
1863-36	36 inches	.76
1863-48	48 inches	.78
1863-60	60 inches	.80

MINIATURE MOLDED PATCH CORDS



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red, Yellow, Black, Green, assemblies. SPECIFY COLOR
BODY: Brass, nickel plated.
SRING: Four-leaved beryllium copper, nickel plated.
WIRE: 10 KV PVC flexible wire, 65 strands #36 copper, insulated to an O.D. of .140".
DESCR.: Interconnects banana jacks on closely spaced centers where space is at a premium. Fits standard banana jacks. Std. Pkg. 10

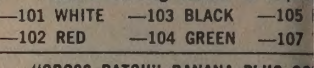
No.	WIRE	NET Per C
1860-8	8 inches	$65.00
1860-12	12 inches	65.00
1860-24	24 inches	70.00
1860-36	36 inches	75.00

COLOR CODE SUFFI

Add to Catalog Number as requir

—101 WHITE	—103 BLACK	—105
—102 RED	—104 GREEN	—107

"CROSS PATCH" BANANA PLUG CO



HANDLE: MOLDED BUTYRATE, per L-P349A, Type 3, Class MS. Red, Black, Ye Blue, White SPECI
BODY: Brass, nickel plated.
SPRING: Four-leaved beryllium copper, nickel
WIRE: 10 KV PVC flexible wire, 65 strands #18 AWG, insulated to an O.D. of .140".
DESCR.: Interconnects unlimited number circuits. Positive, lasting contact for all ba on top and side. St

WITH PLUG SPRING 9/16" LON

No.	Length ("A")
1510-8	8 inches
1510-12	12 inches
1510-25	24 inches
1510-36	36 inches

WITH PLUG SPRING 13/32" LON

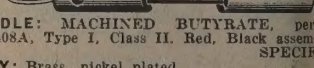
No.	Length ("A")
1515-8	8 inches
1515-12	12 inches
1515-24	24 inches
1515-36	36 inches

"CROSS PATCH" PIN TIP CORD

HANDLE: MOLDED BUTYRATE, per L-P349A, Type 3, Class MS. Red, Black, Ye Blue, White SPECI
BODY: Brass, nickel plated.
CONTACT: Beryllium copper.
WIRE: 10 KV PVC flexible wire, 65 strands # insulated to an O.D. of .140".
DESC.: Interconnects an unlimited number circuits .080" tip plug and female jack in re fits all standard phone tips and jacks. Side h standard banana plugs. S

No.	Length ("A")
1595-8	8 inches
1595-12	12 inches
1595-24	24 inches
1595-36	36 inches

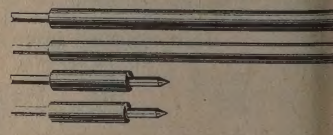
"CROSS PATCH" CORD



HANDLE: MACHINED BUTYRATE, per 10408A, Type I, Class II. Red, Black assem SPECI
BODY: Brass, nickel plated.
SPRING: Four-leaved, beryllium copper, nicke
WIRE: 10 KV PVC flexible wire, 65 strands # #18 AWG, insulated to an O.D. of .140".
DESCR.: Provides a never ending banana plug and can be used to interconnect an unlimit of multiple circuits Accepts standard banan side. S

No.	Length ("A")
680	8 inches
681	12 inches
682	24 inches
683	36 inches

MINIATURE TEST LEAD



HANDLE: MACHINED BUTYRATE, 3/16" long, per MIL-P-10408A, Type I, Class II Black.
PLUG: MACHINED BUTYRATE, 3/16" O.D. per MIL-P-10408A, Type I, Class II.
TIPS: Brass, nickel plated. St

No.	N
660	

FOR SPECIAL REQUIREMENTS — We are eq manufacture all types of Jumpers in vario nations using Alligator and Battery clips.

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pecify SMITH

HERMAN H. SMITH, INC.

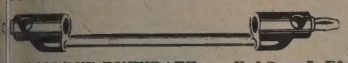
ELECTRONIC COMPONENTS

JUMPERS & PATCH CORDS

COLOR CODE SUFFIX
Add to Catalog Number as required

—101 WHITE	—106 ORANGE
—102 RED	—107 YELLOW
—103 BLACK	—108 BROWN
—104 GREEN	—112 PURPLE
—105 BLUE	—113 GREY

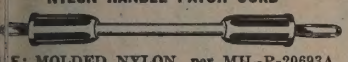
SUB-MINIATURE "CROSS PATCH" CORD



E: MOLDED BUTYRATE, per Fed Spec. L-P349A, , Class MS. Available in ten colors listed above. SPECIFY COLOR
Brass, silver plated.
: Four-leaved beryllium copper, silver plated.
General purpose, PVC insulated, 1/64" wall. #18 41/34 stranded conductor. Voltage rating up to RMS.
: Interconnects unlimited number of multiple s. Positive, lasting contact for banana plugs on d side. Special lengths on request. Std. Pkg. 10

Length ("A")	NET Per C
6 inches	$130.00
12 inches	130.00
18 inches	135.00
24 inches	140.00

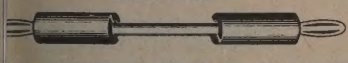
NYLON HANDLE PATCH CORD



E: MOLDED NYLON, per MIL-P-20693A. Red, Yellow or Green. SPECIFY COLOR
Brass, nickel plated.
: Four-leaved beryllium copper, nickel plated.
10 KV PVC flexible wire, 65 strands #36 copper, AWG, insulated to an O.D. of .140".
.: Uses our standard No. 478 banana plug to in- nect circuits. Fits standard banana jacks. Std. Pkg. 10

Length	NET Per C
8 inches	$81.00
12 inches	81.00
24 inches	83.00
36 inches	85.00

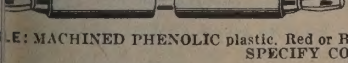
PATCH CORD



LE: MOLDED PHENOLIC plastic, Red, Black, w, Green. SPECIFY COLOR
Brass, nickel plated.
: Four-leaved beryllium copper, nickel plated.
10 KV PVC flexible wire ,65 strands #36 copper, ated to an O.D. of .140".
.: Uses our standard No. 271 banana plug to onnect circuits. Fits standard banana jacks. Std. Pkg. 10

Length ("A")	NET Per C
8 inches	$70.00
12 inches	70.00
24 inches	75.00
36 inches	80.00

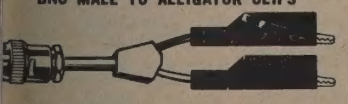
HIGH-CURRENT PATCH CORD



LE: MACHINED PHENOLIC plastic, Red or Black. SPECIFY COLOR
: Brass, nickel plated.
GS: Six-leaved, phosphor bronze, nickel plated.
: #10, PVC insulated stranded wire, 105 strands tinned copper wire, insulated to an O.D of .215".
G: 25 Amps AC for 10°C Temp. rise, continuous
R.: Tapered recessed plug so that no metal portions exposed when plugged into mating jacks. Std. Pkg. 10

Length	NET Per C
8 inches	$190.00
12 inches	190.00
24 inches	195.00
36 inches	200.00

BNC MALE TO ALLIGATOR CLIPS



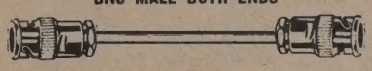
: Steel Cad. Plated (#300).
.: Molded Vinyl (#331).
: As specified above.
R.: For testing wave patterns etc. One end terminates BNC Male Plug, other end with insulated alligator . one red, one black. Std. Pkg. 10

'A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
—	1537-12	1587-12	12"	$5.35
—	1537-24	1587-24	24"	5.45
—	1537-36	1587-36	36"	5.55
—	1537-48	1587-48	48"	5.65
—	1437-60	1587-60	60"	5.75

CABLE TYPES AVAILABLE

	WIRE "A"	WIRE "B"	WIRE "C"
DESCRIPTION	2-cond. tw. 18 ga. 65/36 str.	Shielded audio cable	Coaxial Cable RG58/U.
INSULATION	Vinyl	Polyethylene	Polyethylene
JACKET	Vinyl, Color Grey	Vinyl, Color Grey	Vinyl, Color Black
NOM. CAP.	30 mmf./ft.	25 mmf./ft.	28.5 mmf./ft.

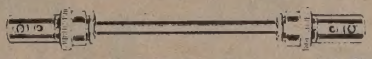
BNC MALE BOTH ENDS



WIRE: As specified above. Std. Pkg. 10

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
———	1539-12	1589-12	12"	$5.35
———	1539-24	1589-24	24"	5.45
———	1539-36	1589-36	36"	5.55
———	1539-48	1589-48	48"	5.65
———	1539-60	1589-60	60"	5.75

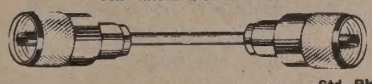
BNC FEMALE BOTH ENDS



CONN.: UG-89B/U. (BNC Series) Std. Pkg. 10
WIRE: RG-58C/U.

No.	Length	NET Ea.
1869-12	12 inches	$6.10
1869-24	24 inches	6.20
1869-36	36 inches	6.30
1869-48	48 inches	6.40
1869-60	60 inches	6.50

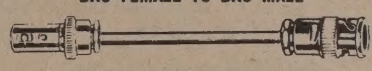
UHF MALE BOTH ENDS



Std. Pkg. 10

No. RG-58C/U Wire	No. RG-11/U Wire	Length	NET Ea.
1871-12	1870-12	12 inches	$5.35
1871-24	1870-24	24 inches	5.45
1871-36	1870-36	36 inches	5.55
1871-48	1870-48	48 inches	5.65
1871-60	1870-60	60 inches	5.75

BNC FEMALE TO BNC MALE



WIRE: RG58/U

No.	Length	NET Ea.
1878-12	12 inches	$5.60
1878-24	24 inches	5.70
1878-36	36 inches	5.80
1878-48	48 inches	5.90
1878-60	60 inches	6.00

NYLON LACING CORD

MIL-T-713-D, Type P, classes 3, 2 and 1. Supplied in 1-lb. tubes. Std. Pkg. 1

Natural Color

No.	Class	Test	Yardage	NET Ea.
734	1	70 lb.	600	$9.00
'35	2	48 lb.	800	9.30
36	3	32 lb.	1140	9.60

Black Color

No.	Class	Test	Yardage	NET Ea.
791	1	70 lb.	600	$10.80
792	2	48 lb.	800	11.10
793	3	32 lb.	1140	11.40

NYLON LACING TAPE
Braided — MGD Finish

#18 size meets MIL-T-43435, size 3, finish B. Furnished in 500 yard spools.

Natural Color

No.	Size	Width	Thick	Test	NET Each
766	18	.090	.0125	50 lbs.	$10.50
767	21	.0625	.009	25 lbs.	8.00

Black Color

No.	Size	Width	Thick	Test	NET Each
769	18	.090	.0125	50 lbs.	$11.00
770	21	.0625	.009	25 lbs.	8.50

Commercial Type

Has all application of above but at a much lower cost. Supplied in 1-lb tubes in natural color.

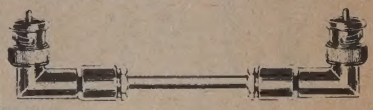
No.	Width	Yardage	NET Ea.
743	1/8"	620	$5.70

DACRON LACING CORD

Conforms to the physical requirements of MIL-T-713A. Greater tensile strength with minimal stretch than nylon. Fungus, acid and abrasion resistance. Supplied in 1 lb. tubes in natural color.

No.	Class	Test	Yardage	NET Ea.
722	1	78 lbs.	750	$10.50
723	2	57 lbs.	1000	11.00
724	3	37 lbs.	1500	11.50

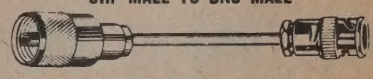
RIGHT ANGLE BNC TO RIGHT ANGLE BNC



WIRE: As specified above.

No. Wire "A"	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
———	1538-12	1588-12	12"	$10.60
———	1538-24	1588-24	24"	10.70
———	1538-36	1588-36	36"	10.80
———	1538-48	1588-48	48"	10.90
———	1538-60	1588-60	60"	11.00

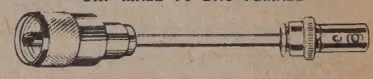
UHF MALE TO BNC MALE



WIRE: RG58/U

No.	Length	NET Ea.
1879-12	12 inches	$5.35
1879-24	24 inches	5.45
1879-36	36 inches	5.55
1879-48	48 inches	5.65
1879-60	60 inches	5.75

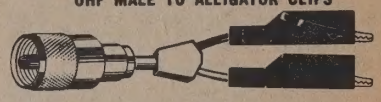
UHF MALE TO BNC FEMALE



WIRE: RG58/U

No.	Length	NET Ea.
1880-12	12 inches	$5.35
1880-24	24 inches	5.45
1880-36	36 inches	5.55
1880-48	48 inches	5.65
1880-60	60 inches	5.75

UHF MALE TO ALLIGATOR CLIPS



CLIPS: Steel Cad. Plated (#300).
INSUL.: Molded Vinyl (#331).
DESC.: For testing wave patterns, etc. One end terminates with UHF Male, other end with insulated alligator clips one red, one black.
WIRE: As specified above. Std. Pkg. 10

No. BG-11/U Wire	No. Wire "B"	No. Wire "C"	Lgth.	NET Ea.
1872-12	1536-12	1586-12	12"	$5.35
1872-24	1536-24	1586-24	24"	5.45
1872-36	1536-36	1586-36	36"	5.55
1872-48	1536-48	1586-48	48"	5.65
1872-60	1536-60	1586-60	60"	5.75

For VARIATIONS of these standard parts to meet your SPECIAL requirements, or for entirely NEW parts made to your specifications, WE WELCOME YOUR INQUIRY!

LINEN LACING CORD

Mildew proofed. Spec. MIL-T-713-A. Type N.

Natural Color

No.	Tube	Ply	Class	Ydg.	NET Ea.
725	4 oz.	4	—	210	$1.80
726	8 oz.	4	—	425	3.30
727	1 lb.	4	—	850	6.00
728	4 oz.	6	3	150	1.80
729	8 oz.	6	3	300	3.30
730	1 lb.	6	3	600	6.00
737	4 oz.	8	2	115	1.80
738	8 oz.	8	2	235	3.30
739	1 lb.	8	2	470	6.00
731	4 oz.	9	—	100	1.80
732	8 oz.	9	—	200	3.30
733	1 lb.	9	—	400	6.00
740	4 oz.	12	1	75	1.80
741	8 oz.	12	1	150	3.30
742	1 lb.	12	1	300	6.00

Black Color

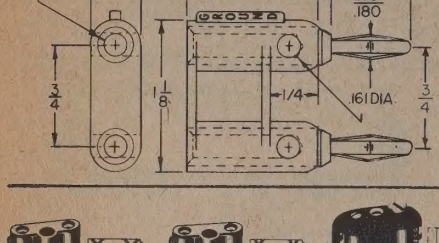
No.	Tube	Ply	Class	Ydg.	NET Ea.
794	1 lb.	4	—	850	6.60
795	1 lb.	6	3	600	6.60
796	1 lb.	8	2	470	6.60
797	1 lb.	9	—	400	6.60
798	1 lb.	12	1	300	6.60

specify SMITH

HERMAN H. SMITH, INC.

ELECTI
COMPO

DUAL INSTRUMENT TEST ADAPTERS



MATERIALS:
BODY: Molded Butyrate, per Fed Spec. L-P349A, Type 3, Class MS. Color BLACK unless otherwise specified.
CONDUCTOR: Brass, per QQ-B-626, Comp. 22, ½ hard.
SPRING: Four-leaved beryllium copper, heat treated.
HEAD: Molded Nylon, per MIL-P-20693A.
SHIELD: Drawn Aluminum.
SCREWS: Steel, cadmium plated.

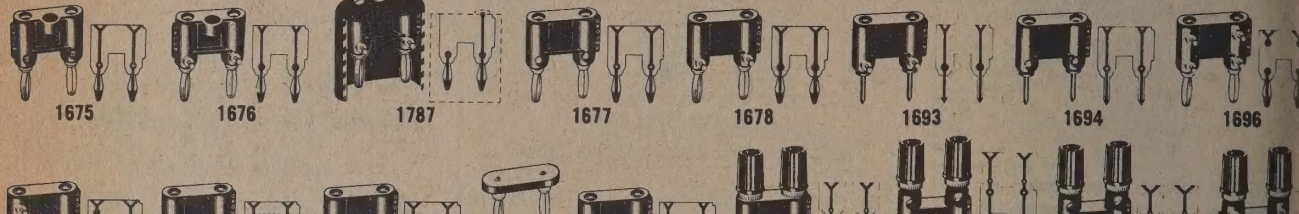
COLOR CODE SUFFIX

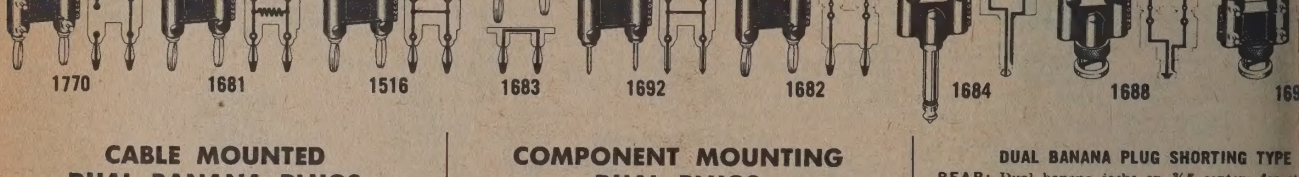
Add to Catalog Number as required

–101 WHITE	–105 BLUE	–108 BROWN
–102 RED	–106 ORANGE	–112 PURPLE
–103 BLACK	–107 YELLOW	–113 GREY
–104 GREEN		

FINISHES:
CONDUCTOR: Nickel plate, per QQ-N-290, Type VII.
SPRING: Nickel plate, as above.
TERMINAL: Gold washed.
CONNECTOR: Non-tarnish.
SHIELD: Black Anodized.

RATINGS:
CURRENT: 15 Amps AC for 10°C Temp. Rise, ous duty, except where limited by co-axial co
VOLTAGE: 5 KV, 60 cycle AC continuous worki age, except where limited by co-axial connecto
CAPACITY: 1.0 mmfd nominal between ¾" spa ductors.
RESISTANCE: 1 milliohm or less per conductor





CABLE MOUNTED DUAL BANANA PLUGS

SET-SCREW TYPE

REAR: 7/32 Dia. cable guide. Dual banana jacks on ¾" centers.
FRONT: Dual banana plugs on ¾" centers. Set-screws secure leads to conductors.
COLORS: Available in 10 std. colors as coded above. (Specify color)

No.	Std. Pkg. 10	NET Ea.
1675		$.77

TURRET-TERMINAL TYPE

REAR: 7/32 Dia. cable guide. Dual banana jacks on ¾" centers.
FRONT: Dual banana plugs on ¾" centers. Turret terminals for permanent solder connection of leads.
COLORS: Available in 10 std. colors as coded above. (Specify color)

No.	Std. Pkg. 10	NET Ea.
1676		$.81

SHIELDED TYPE

REAR: Mounting screw and locating boss. Inline cable entry with flush cable guide.
FRONT: Dual banana plugs ¾" centers. Turret terminals for permanent solder connection of leads.
SHIELD: Aluminum shield electrically connected to GND conductor fully enclosed plug and mating binding posts to reduce noise pickup.

No.	Std. Pkg. 1	NET Ea.
1787		$2.25

COMPONENT MOUNTING DUAL PLUGS

SET-SCREW TYPE

REAR: Dual banana jacks on ¾" centers for stacking.
FRONT: Dual banana jacks on ¾" centers. Set-screws secure component leads to conductors.
COLORS: Available in 10 std. colors as coded above. (Specify color)

No.	Std. Pkg. 10	NET Ea.
1677		$.72

TURRET-TERMINAL TYPE

REAR: Dual banana jacks on ¾" centers for stacking.
FRONT: Dual banana plugs on ¾" centers. Turret terminals for permanent solder connection of component leads.
COLORS: Available in 10 std. colors as coded above. (Specify color)

No.	Std. Pkg. 10	NET Ea.
1678		$.81

.080" PHONE TIP TYPE

REAR: Dual phone tip jacks on ¾" centers for stacking.
FRONT: Dual .080" phone tips on ¾" centers. Turret terminals for permanent solder connections of component leads.
COLORS: Available in Red or Black only. (Specify color)

No.	Std. Pkg. 10	NET Ea.
1693		$.81

COMPONENT MOUNTING DUAL PLUGS

SET-SCREW PHONE TIP

REAR: Dual banana jacks on ¾" centers for stacking.
FRONT: Dual .080" phone tips on ¾" centers. Set-screws secure component leads to conductors.
COLORS: Available in Red or Black only. (Specify color)

No.	Std. Pkg. 10	NET Ea.
1694		$.72

FOUR TERMINAL ISOLATION TYPE

REAR: Dual banana jacks on ¾" centers for stacking.
CENTER: Turret-terminal connections to isolated front and rear conductors in both GND and HOT circuits allow insertion of matching pad or other 4-terminal networks in input circuits of instruments.
FRONT: Dual banana plugs on ¾" centers.
COLORS: Available in 10 colors as coded above. (Specify color)

No.	Std. Pkg. 1	NET Ea.
1696		$3.25

THREE TERMINAL ISOLATION TYPE

REAR: Dual banana jacks on ¾" centers for stacking.
CENTER: Turret-terminal connections to isolated front and rear conductors in HOT circuit, and straight-thru connection of GND circuit, with terminal, allow insertion of "T" and "P" networks in input-output circuits in instruments.
FRONT: Dual banana plugs on ¾" centers.
COLORS: Available in 10 colors as coded above. (Specify color)

No.	Std. Pkg. 1	NET Ea.
1770		$2.50

MOLDED-IN PRECISION RESISTORS

REAR: Dual banana jacks on ¾" centers for stacking.
FRONT: Dual banana plugs on ¾" centers. Banana jack side holes for stacking.
INTERNAL: Resistors and capacitors are available molded into housing. All values are available on special order only.

No.	Std. Pkg. 1	NET Ea.
1681		$2.75

DUAL BANANA PLUG SHORTING TYPE

REAR: Dual banana jacks on ¾" centers for st
INTERNAL: Busbar shorted across line.
FRONT: Dual banana plugs on ¾" centers. jack holes for side stacking.
COLORS: Available in Red, Black, Yellow, and (Specify color)

No.	Std. Pkg. 25	N
1516		

METAL SHORTING BAR TYPE

REAR: 3/32" thick brass busbar. 15 amps. cont duty.
FRONT: Dual banana plugs on ¾" centers. Un flush to panel.

No.	Std. Pkg. 10	N
1683		

.080" PHONE TIP

REAR: Dual banana jacks on ¾" centers for sta
INTERNAL: Busbar shorted across line.
FRONT: Dual .080" phone tips on ¾" centers. jack holes for side stacking.
COLORS: Available in Red, Black, Yellow, and (Specify color)

No.	Std. Pkg. 10	NE
1692		

DUAL BINDING POST ADAPT

BINDING POSTS TO DUAL BANANA PLUG

REAR: Insulated dual 5-way binding posts, Re Black heads on ¾" centers. Banana jack ho side stacking.
FRONT: Dual banana plugs on ¾" centers.

No.	Std. Pkg. 1	N
1682		

BINDING POSTS TO 2-CIRCUIT PHONE PLU

REAR: Insulated dual 5-way binding posts, Re Black heads on ¾" centers. Banana jack hol side stacking.
FRONT: Standard ¼" 2-circuit phone plug.

No.	Std. Pkg. 1	NE
1684		

BINDING POSTS TO BNC MALE

REAR: Insulated dual 5-way binding posts, Re Black heads on ¾" centers. Banana jack hol side stacking.
FRONT: BNC series co-axial plug.

No.	Std. Pkg. 1	NE
1688		

BINDING POSTS TO ISOLATED BNC MALE

REAR: Insulated dual 5-way binding posts, Re Black heads on ¾" centers.
CENTER: Turret-terminal connections to isolated and rear conductors in both GND and HOT c allow insertion of matching pad or other 4-te networks in input circuits.
FRONT: BNC series co-axial plug.

No.	Std. Pkg. 1	NE
1698		

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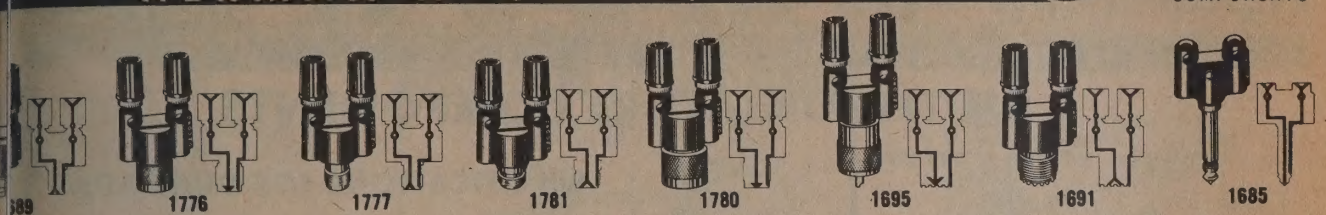
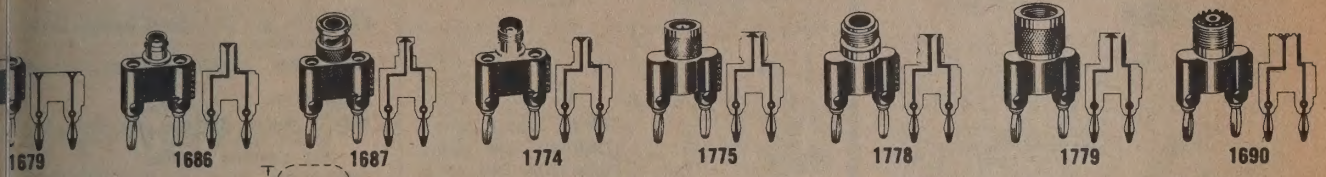
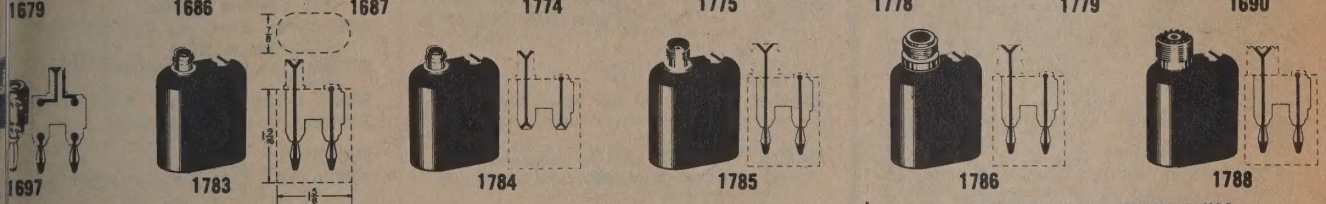
Specify **SMITH**

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS







BINDING POST ADAPTERS

BINDING POSTS TO BNC FEMALE

Insulated dual 5-way binding posts, Red and heads on ¾" centers. Banana jack holes for stacking.
: BNC series co-axial jack.

Std. Pkg. 1 — NET Ea. $4.60

BINDING POSTS TO TNC MALE

Insulated dual 5-way binding posts, Red and heads on ¾" centers. Banana jack holes for stacking.
: TNC series co-axial plug.

Std. Pkg. 1 — NET Ea. $6.00

BINDING POSTS TO TNC FEMALE

: Insulated dual 5-way binding posts, Red and k heads on ¾" centers. Banana jack holes for stacking.
T: TNC series co-axial jack.

Std. Pkg. 1 — NET Ea. $5.00

BINDING POSTS TO TYPE N MALE

: Insulated dual 5-way binding posts, Red and r heads on ¾" centers. Banana jack holes for stacking.
f: Type N co-axial plug.

Std. Pkg. 1 — NET Ea. $5.00

BINDING POSTS TO TYPE N FEMALE

: Insulated dual 5-way binding posts, Red and k heads on ¾" centers. Banana jack holes for stacking.
f: Type N co-axial jack.

Std. Pkg. 1 — NET Ea. $5.00

BINDING POSTS TO UHF MALE

: Insulated dual 5-way binding posts, Red and k heads on ¾" centers. Banana jack holes for stacking.
T: UHF series co-axial plug.

Std. Pkg. 1 — NET Ea. $4.60

BINDING POSTS TO UHF FEMALE

: Insulated dual 5-way binding posts, Red and k heads on ¾" centers. Banana jack holes for stacking.
T: UHF series co-axial jack.

Std. Pkg. 1 — NET Ea. $5.00

ADAPTERS

DUAL BANANA JACKS TO 2-CIRCUIT PHONE PLUG

REAR: Dual banana jacks on ¾" centers, rear and side for stacking.
FRONT: Standard ¼" 2-circuit phone plug.

No.	Std. Pkg.	NET Ea.
1685	1	$2.60

DUAL PHONE-TIP TO DUAL BANANA PLUGS

REAR: Dual .080" phone tip jacks on ¾" centers.
FRONT: Dual banana plugs on ¾" enters. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1679	10	$.81

COAXIAL CONNECTOR ADAPTERS

BNC FEMALE TO BANANA PLUGS

REAR: BNC series co-axial jack. Banana jack holes for side stacking.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1686	1	$2.60

BNC MALE TO BANANA PLUGS

REAR: BNC series co-axial plug.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1687	1	$3.60

TNC FEMALE TO BANANA PLUGS

REAR: TNC series co-axial jack.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1774	1	$5.00

TNC MALE TO BANANA PLUGS

REAR: TNC series co-axial plug.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1775	1	$6.00

TYPE N FEMALE TO BANANA PLUGS

REAR: Type N co-axial jack.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1778	1	$5.00

TYPE N MALE TO BANANA PLUGS

REAR: Type N co-axial plug.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1779	1	$5.00

UHF FEMALE TO BANANA PLUGS

REAR: UHF series co-axial jack.
FRONT: Dual banana plugs on ¾" centers. Banana jack holes for side stacking.

No.	Std. Pkg.	NET Ea.
1690	1	$4.60

BNC FEMALE TO ISOLATED DUAL BANANA PLUGS

REAR: BNC series co-axial jack.
CENTER: Turret-terminal connections to isolated front and rear conductors in both GND and HOT circuits allow insertion of matching pad or other 4-terminal networks in input circuits.
FRONT: Dual banana plugs on ¾" centers.

No.	Std. Pkg.	NET Ea.
1697	1	$9.00

SHIELDED CO-AXIAL CONNECTOR ADAPTERS

BNC FEMALE TO DUAL BANANA PLUGS

REAR: BNC series co-axial jack.
FRONT: Dual banana plugs on ¾" centers.
SHIELD: Aluminum shield electrically connected to GND conductor fully enclose plug and mating binding posts to reduce noise pickup.

No.	Std. Pkg.	NET Ea.
1783	1	$3.25

BNC FEMALE TO DUAL BANANA JACKS

REAR: BNC series co-axial jack.
FRONT: Dual banana plugs on ¾" centers.
SHIELD: Aluminum shield electrically connected to GND conductor fully encloses jacks and mating plug to reduce noise pickup.

No.	Std. Pkg.	NET Ea.
1784	1	$3.25

TNC FEMALE TO DUAL BANANA PLUGS

REAR: TNC series co-axial jack.
FRONT: Dual banana plug ¾" center.
SHIELD: Aluminum shield electrically connected to GND conductor fully encloses plug and binding posts to reduce noise pickup.

No.	Std. Pkg.	NET Ea.
1785	1	$4.50

TYPE N FEMALE TO DUAL BANANA PLUGS

REAR: Type N co-axial jack.
FRONT: Dual banana plugs on ¾" centers.
SHIELD: Aluminum shield electrically connected to GND conductor fully enclosed plug and binding posts to reduce noise pickup.

No.	Std. Pkg.	NET Ea.
1786	1	$4.50

UHF FEMALE TO DUAL BANANA PLUGS

REAR: UHF series co-axial jack.
FRONT: Dual banana plugs on ¾" centers.
SHIELD: Aluminum shield electrically connected to GND conductor fully enclose plug and mating binding posts to reduce noise pickup.

No.	Std. Pkg.	NET Ea.
1788	1	$4.50

AMERICAN-FOREIGN PLUG ADAPTERS

Streamlined bakelite plug adapters. Adapts from American to Foreign type.

Std. Pkg. 25

NG: 125 VAC—15 AMP — 220 VAC — 7.5 AMP

Female End	Male End	NET Per C
American	Continental	$25.00
American	British	24.00

"UNIVERSAL" FOREIGN ADAPTER PLUGS

Permits operation of American, British or Continental electric shavers, radios, record players and other small appliances, from any electrical outlet, anywhere in the world supplying the required voltage. All plugs are rated at 15 Amps/117 V. — 7.5 Amps/220 V.

St. Pkg. 25

No.	Male Plug	Female Socket	NET Per C
1991	Continental	Universal	$31.00
1992	American	Universal	39.00
1993	Bayonet	Universal	60.00
1994	Screw	Universal	60.00
1995	Kit of 4 Adapters, 1 each of above		210.00

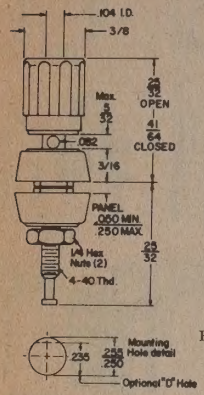
Std. Pkg. 6

specify **SMITH**

HERMAN H. SMITH, INC.

SMITH MINIATURE COMPONENTS

MINIATURE BINDING POST



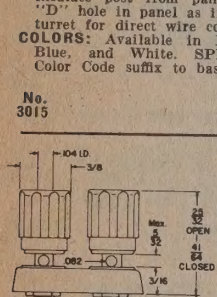
HEAD: Captive, Molded Nylon, per MIL-P-20693A, with Brass, Gold plated insert.
BODY: Brass, Gold Plated.
WASHERS: Molded Nylon, per MIL-P-20693A, with Brass Gold Plated inserts.
ACCEPTS: Standard .080" phone tip, #6 spade lug, miniature banana plug, alligator clip or wire.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 1 KV, 60 cycle AC, continuous working voltage. Capacitance 2.5 pf.

DESCR.: Compact Binding Post designed for use with miniaturized equipment. Molded washers completely insulate post from panel. Mounts in ¼ round or "D" hole in panel as indicated. Wrap-around solder turret for direct wire connection.
COLORS: Available in Red, Black, Yellow, Green, Blue, and White. SPECIFY COLOR by adding Color Code suffix to basic Catalog No.

Std. Pkg. 100

No.	NET Per C
3015	$50.00

MINIATURE DUAL BINDING POST



MINIATURE DUAL BINDING POST ASSEMBLY

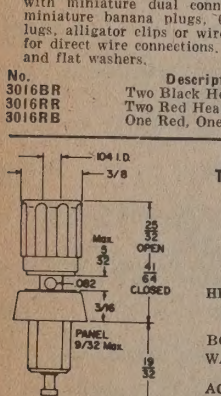
INSUL.: MOLDED Black STYRENE, octagonal-keyed to align cross-holes at alternate 90° positions.
BODIES: Brass, Gold plated.
HEADS: CAPTIVE, MOLDED NYLON, per MIL-P-20693A, with Brass plated inserts.
HARDWARE: Brass, Gold plated.
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 2 KV 60 cycle AC, continuous working voltage. Capacitance 3.5 pf between conductors, 3.0 pf to panel.

DESCR.: Compact Dual Binding Post designed for use with miniaturized equipment. Mounts in two ¼" round, single or double "D" holes on ½" centers, in panels up to ¼" thick. ½" center spacing designed for use with miniature dual connectors. Also accepts single miniature banana plugs, .080" phone tips, #6 spade lugs, alligator clips or wire. Wraparound solder turret for direct wire connections. Supplied with two hex nuts and flat washers.

Std. Pkg. 25

No.	Description	NET Per C
3016BR	Two Black Heads	$75.00
3016RR	Two Red Heads	75.00
3016RB	One Red, One Black Head	75.00

MINIATURE PRESS-FIT TEFLON* BINDING POST

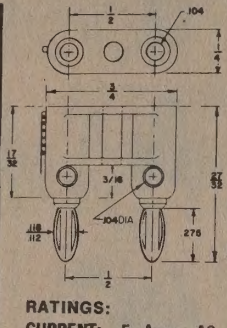


HEAD: Captive Molded Nylon, per MIL-P-20693A, with Brass, Gold plated insert.
BODY: Brass, Gold plated.
WASHER BODY: Virgin Teflon per MIL-P-19468.
ACCEPTS: Standard .080" phone tip, #6 spade lug, miniature Banana Plug, alligator clip or wire.
RATING: 5 Amps AC for 10° C. Temp. rise, continuous duty. 1 KV, 60 cycle AC, continuous working voltage. Capacitance 2.5 pf.

DESCR.: Unique binding post mounts in ¼" "D" punched hole **without any mounting hardware.** "Memory" characteristic of Teflon locks unit hole after insertion and "D" flat prevents rotation. Compact binding post head for use with miniaturized equipment. Wrap-around solder turret for direct wire connection.
COLORS: Available in Red, Black, Yellow, Green, Blue, and White, SPECIFY COLOR by adding Color Code suffix to basic catalog No.

No.	NET Per C
3017	$60.00

*Reg. Trademark E. I. DuPont Co.



SPRING: Nickel plated.
TERMINAL: Gold washed.
CONNECTOR: Non-tarnish Plate.

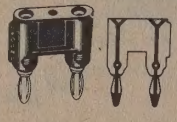
RATINGS:
CURRENT: 5 Amps AC for 10°C Temp. Rise, continuous duty, except where limited by co-axial connectors.
VOLTAGE: 2 KV, 60 cycle AC continuous working voltage, except where limited by co-axial connectors.

SPECIFICATIONS FOR DUAL ADAPTE

CAPACITY: 3.0 pf. nominal between ½" sp conductors.
RESISTANCE: 1 milliohm or less per condu

MATERIALS:
BODY: Molded Butyrate, per Fed. Spec. P349A, Type 3, Class MS. Color BLACK less otherwise specified.
CONDUCTOR: Brass, per QQ-B-626, Comp. ½ hard.
SPRING: Four-leaved beryllium copper, treated.
HEAD: Molded Nylon, per MIL-P-20693A.
SCREWS: Steel, cadmium plated.

FINISHES:
CONDUCTOR: Nickel plate, per QQ-N-290, C I, Type VII.

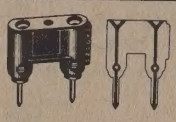


SET SCREW CONNECTION BANANA PLUGS

REAR: Dual banana jacks on ½" centers for stacking.
FRONT: Dual banana plugs on ½" centers. Set-screws secure leads to conductors.
COLORS: Available in Red or Black (Specify color.)

Std. Pkg. 10

No.	NET Ea.
1749	$ .72

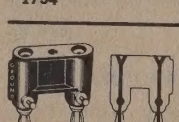


SET SCREW CONNECTION PHONE TIP

REAR: Dual banana jacks on ½" centers for stacking.
FRONT: Dual .080" phone tips on ½" centers. Set-screws secure component leads to conductors.
COLORS: Available in Red or Black (Specify color.)

Std. Pkg. 10

No.	NET Ea.
1754	$ .72



TURRET TERMINAL CONNECTION

REAR: Dual banana jacks on ½" centers for stacking.
FRONT: Dual banana plugs on ½" centers, Turret terminals for permanent solder connection of component leads.
COLORS: Available in Red or Black (Specify color.)

Std. Pkg. 10

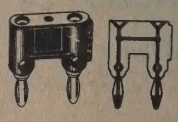
No.	NET Ea.
1750	$ .81

PHONE TIP ADAPTER

REAR: Dual .080" phone tip jacks on ½" centers for stacking.
FRONT: Dual banana plugs on ½" centers.
COLORS: Available in Red or Black (Specify color.)

Std. Pkg. 10

No.	NET Ea.
1751	$ .81

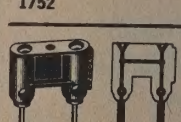


MOLDED-IN SHORTING TYPE BANANA PLUGS

REAR: Dual banana jacks on ½" centers stacking.
INTERNAL: Busbar shorted across line.
FRONT: Dual banana plugs on ½" cente Banana jack holes for side stacking.
COLORS: Available in Red or Black (Spec color.)

Std. Pkg.

No.	NET E
1752	$.



MOLDED-IN SHORTING TYPE .080 PHONE TIP

REAR: Dual banana jacks on ½" centers f stacking.
INTERNAL: Busbar shorted across line.
FRONT: Dual .080 phone tips on ½" cente Banana jack holes for side stacking.
COLORS: Available in Red or Black (Speci color.)

Std. Pkg. 1

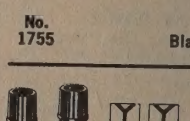
No.	NET Ea
1753	$ .7

BINDING POSTS DUAL BANANA PLU

REAR: Insulated dual 5-way binding posts, Red and Black heads on ½" centers. Banana jack holes for side stacking.
FRONT: Dual banana plugs on ½" centers.

Std. Pkg. 1

No.	NET Ea.
1755 Black only	$2.25



BINDING POSTS TO BNC MALE

REAR: Insulated dual 5-way binding posts, Red and Black heads on ½" centers. Banana jack holes for side stacking.
FRONT: BNC series co-axial plug. Std. Pkg. 1

No.	NET Ea.
1756 Black only	$4.60

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specify **SMITH**

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

MINIATURE COMPONENTS

BINDING POSTS TO BNC FEMALE

R: Insulated dual 5-way binding posts, Red and Black heads on ½" centers. Banana jack holes for side stacking.

NT: BNC series co-axial jack.

		Std. Pkg. 1 NET Ea.
7	Black only	$4.60

BNC FEMALE TO BANANA PLUGS

AR: BNC series co-axial jack. Banana jack holes for stacking.

ONT: Dual banana plugs on ½" centers. Banana jack holes for side stacking.

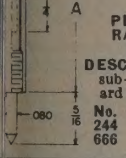
	Std. Pkg. 1	NET Ea.
58	Black only	$2.60

BNC MALE TO BANANA PLUGS

AR: BNC series co-axial plug.

ONT: Dual banana plugs on ½" centers. Banana jack holes for side stacking.

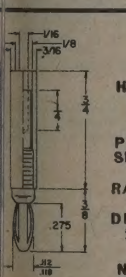
	Std. Pkg. 1	NET Ea.
59	Black only	$3.60



MINIATURE TIP PLUG AND TEST PROD

HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
RATING: 2 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Ideally suited for checking sub-miniature equipment. Fits standard phone tip jacks.

No.	Length (A)	Std. Pkg.	NET Per C
244	¾"	100	$18.00
666	3"	25	30.00

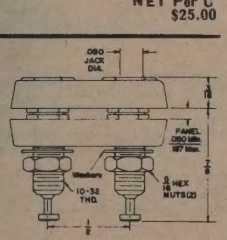


MINIATURE INSULATED BANANA PLUG Midget Type

HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red, Black. SPECIFY COLOR
PLUG: Brass, nickel plated.
SPRING: Beryllium Copper, Nickel plated.
RATING: 2 Amps AC for 10°C Temp. rise, continuous duty.
DESCR: Wire soldered directly into stud. Fits miniature banana jacks. Std. Pkg. 100

No.	NET Per C
268	$25.00

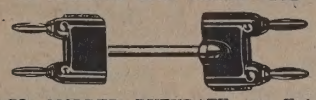
INIATURE DUAL TIP JACK



LA.: MOLDED Black STYRENE, octagonal ed to align cross holes at alternate 90° holes. : Recessed, brass, nickel plated. ACT: Phosphor bronze. NG: 5 Amps AC for 10°C Temp. rise, continuous . 2 K Volts 60 cycle AC continuous working volt- CAPACITANCE 2.0 pf. between conductors, 4.0 to panel. R.: Mounts in two ¼" round single or double holes on ½" mounting centers in panels up to thick. Accommodates miniature dual phone tip s and standard .080 phone tip plugs. Supplied two hex nuts. Std. Pkg. 10

	NET Per C
	$60.00

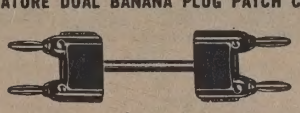
MINIATURE DUAL BANANA PLUG TO STANDARD DUAL BANANA PLUG



HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
PLUG: Brass, Nickel plated.
SPRING: Four-leaved Beryllium Copper, Nickel plate.
WIRE: RG-174 Coaxial wire.
DESCR.: Mates with standard or miniature banana jacks or binding posts having ½" center or ¾" center. Polarity indicated by the word GROUND molded on side. Interconnects unlimited number of multiple circuits top and side. One end terminates in a miniature dual banana plug, ½" center, other end in a standard dual banana plug ¾" center. Std. Pkg. 10

No.	Length	NET Ea.
1729-12	12"	$4.35
1729-24	24"	4.45
1729-36	36"	4.55
1729-48	48"	4.65
1729-60	60"	4.75

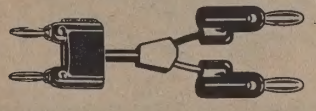
MINIATURE DUAL BANANA PLUG PATCH CORDS



HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
PLUGS: Brass, Nickel plated.
SPRING: Four-leaved Beryllium Copper, Nickel plated.
WIRE: RG-174/U Coaxial Cable.
DESCR.: Mates with miniature dual binding posts or banana jacks having ½" centers. Polarity indicated by word GROUND molded on side. Interconnects unlimited number of multiple circuits on top and side. Each end terminated with molded double banana plug. Std. Pkg. 10

No.	Length	NET Ea.
1599-12	12"	$4.35
1599-24	24"	4.45
1599-36	36"	4.55
1599-48	48"	4.65
1599-60	60"	4.75

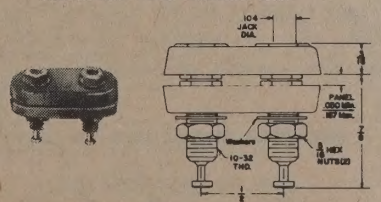
MINIATURE DUAL BANANA PLUG TO MINIATURE CROSS PATCH BANANA PLUGS



HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
BODIES: Brass, Nickel plated.
SPRING: Four-leaved Beryllium Copper, Nickel plated.
WIRE: RG-174/U Coaxial Cable.
PLUGS: Our No. 1590, Red and Black.
DESCR.: Mates with miniature dual binding posts or banana jacks having ½" centers. Polarity indicated by word GROUND molded on side. Interconnects unlimited number of multiple circuits on top and side. One end terminates with double banana plug, other end with Cross-Patch banana plugs, color coded Red and Black. Std. Pkg. 10

No.	Length	NET Ea.
1738-12	12"	$5.35
1738-24	24"	5.45
1738-36	36"	5.55
1738-48	48"	5.65
1738-60	60"	5.75

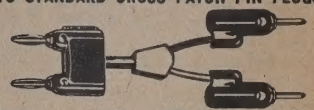
MINIATURE DUAL BANANA JACK



INSULA.: MOLDED Black STYRENE, octagonal keyed to align cross-holes at alternate 90° holes.
BODY: Brass, nickel plated
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 mmfd. between conductors, 4.0 mmfd to panel.
DESCR.: Mounts in two ¼" round single or double "D" holes on ½" mounting centers in panels up to ¼" thick. Accommodates miniature and dual banana plugs. Supplied with two hex nuts. Std. Pkg. 10

No.	NET Per C
3019	$60.00

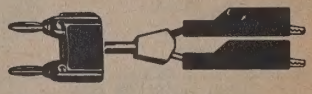
MINIATURE DUAL BANANA PLUG TO STANDARD CROSS PATCH PIN PLUGS



HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
BODIES: Brass, Nickel plated.
SPRING: Four-leaved Beryllium Copper, Nickel plated.
WIRE: RG-174/U Coaxial Cable.ble.
PLUGS: Our No. 1595, Red and Black.
DESCR.: Mates with miniature dual binding posts or banana jacks having ½" centers. Polarity indicated by word GROUND molded on side. Interconnects unlimited number of multiple circuits on top and side. One end terminates with double banana plug, other end with cross-patch pin plugs with standard .080" tip and jack in rear. banana jack in side, color coded Red and Black. Std. Pkg. 10

No.	Length	NET Ea.
1535-12	12"	$5.35
1535-24	24"	5.45
1535-36	36"	5.55
1535-48	48"	5.65
1535-60	60"	5.75

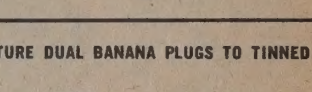
MINIATURE DUAL BANANA PLUG TO INSULATED MINI-CLIPS



HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P348A, Class MS.
BODIES: Brass, Nickel plated.
SPRING: Four-leaved Beryllium Copper, Nickel plated.
CLIP: Steel cadmium plated (No. 338).
INSULATOR: Molded vinyl plastic (No. 389).
WIRE: RG-174/U Coaxial Cable.
DESCR.: Mates with miniature dual binding posts or banana jacks having ½" centers. Polarity indicated by the word GROUND molded on side. One end terminates with double banana plug, other end with insulated miniature clips. Std. Pkg. 10

No.	Length	NET Ea.
1739-12	12"	$5.35
1739-24	24"	5.45
1739-36	36"	5.55
1739-48	48"	5.65
1739-60	60"	5.75

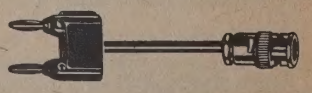
MINIATURE DUAL BANANA PLUGS TO TINNED LEADS



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
BODIES: Brass, Nickel plated.
SPRING: Four-leaved Beryllium Copper, Nickel plated.
WIRE: RG-174/U Coaxial Cable.
DESCR.: Mates with miniature dual binding posts or banana jacks having ½" centers. Polarity indicated by the word GROUND molded on side. One end terminates with double banana plug, other end stripped and tinned. Std. Pkg. 10

No.	Length	NET Ea.
1534-12	12"	$3.35
1534-24	24"	3.45
1534-36	36"	3.55
1534-48	48"	3.65
1534-60	60"	3.75

MINIATURE DUAL BANANA PLUG TO BNC MALE



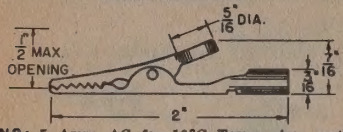
HANDLES: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS.
PLUG: Brass, Nickel plated.
SPRING: Four-leaved Beryllium Copper, Nickel plated.
WIRE: RG-174/U Coaxial Cable.
CONN.: BNC male.
DESCR.: Mates with miniature dual binding posts or banana jacks having ½" center. Polarity indicated by the word GROUND molded on side. One end terminates with the double banana plug, other end with BNC male conn. Std. Pkg. 10

No.	Length	NET Ea.
1748-12	12"	$5.35
1748-24	24"	5.45
1748-36	36"	5.55
1748-48	48"	5.65
1748-60	60"	5.75

specify SMITH

HERMAN H. SMITH, INC.

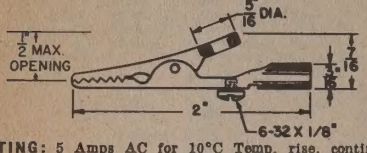
ALLIGATOR CLIPS
Solder Connection



RATING: 5 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ½" jaw opening. Jaws match accurately and grip securely, accepts standard banana plugs in rear. **Std. Pkg. 100**

No.	Type	NET Per C
300	Steel, Cad. Pl.	$4.70
380	Solid Copper	6.50
332	Brass N.P.	8.40

Screw Connection



RATING: 5 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ½" jaw opening. Supplied with screw for solderless connection when required. Jaws match accurately and grip securely. Accepts standard banana plugs in rear. **Std. Pkg. 100**

No.	Type	NET Per C
350	Steel, Cad. Pl.	$5.40
360	Solid Copper	8.20
339	Brass N.P.	9.90

JUMBO ALLIGATOR CLIP
Solder Connection

RATING: STEEL: 10 Amps AC for 10°C Temp. rise, continuous duty.
COPPER: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ¾" jaw opening. Jaws match accurately. For heavy terminal use. **Std. Pkg. 100**

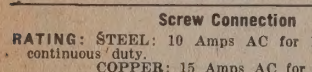
No.	Type	NET Per C
392	Steel, Cad. Pl.	$15.00
396	Solid Copper	18.00

Screw Connection

RATING: STEEL: 10 Amps AC for 10°C Temp. rise, continuous duty.
COPPER: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ¾" jaw opening. Jaws match accurately. Supplied with screw for solderless connection. For heavy terminal use. **Std. Pkg. 100**

No.	Type	NET Per C
368	Steel, Cad. Pl.	$18.00
356	Solid Copper	21.00

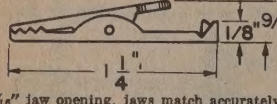
ALLIGATOR CLIP BOOTS



MATERIAL: MOLDED VINYL PLASTIC, Red, Black, Yellow, Green, Blue or White. SPECIFY COLOR
RATING: 1 K Volts 60 cycle AC continuous working voltage.
DESCR.: Fully insulated clip while allowing maximum jaw opening. No. 331 for use on standard size alligator clips such as our No. 300. No. 389 for use on miniature alligator clips, such as our No. 338. **Std. Pkg. 100**

No.	Description	NET Per C
389	Miniature	$2.90
331	Standard	3.30

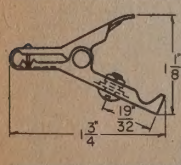
MIDGET ALLIGATOR CLIP



DESCR.: 9/32" jaw opening, jaws match accurately and grip securely. Unique SMITH spring construction. Solder connection and ears for crimping. **Std. Pkg. 100**

No.	Type	NET Per C
338	Steel, Cad. Pl.	$4.30
367	Copper	5.30

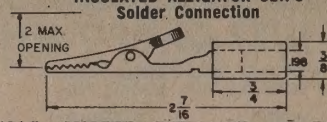
TL137 TEST CLIP
Signal Corps Approved



RATING: 10 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: Steel, nickel plated, made in accordance with government specs, ⅛" jaw opening. Needle for piercing corrosion. **Std. Pkg. 25**

No.	NET Per C
315	$65.00

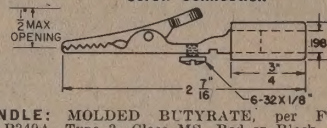
INSULATED ALLIGATOR CLIPS
Solder Connection



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ½" jaw opening. Jaws match accurately and grip securely, accepts standard banana plugs in rear. **Std. Pkg. 100**

No.	Type	NET Per C
301	Steel, Cad. Pl.	$7.50
381	Solid Copper	9.00
354	Brass N.P.	11.40

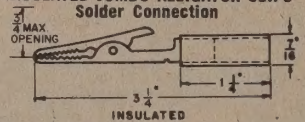
Screw Connection



HANDLE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR
RATING: 5 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ½" jaw opening. Supplied with screw for solderless connection when required. Jaws match accurately and grip securely. Accepts standard banana plugs in rear. **Std. Pkg. 100**

No.	Type	NET Per C
351	Steel, Cad. Pl.	$7.60
361	Solid Copper	10.10
362	Brass N.P.	12.40

INSULATED JUMBO ALLIGATOR CLIPS
Solder Connection

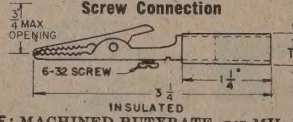


INSULATED

HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red or Black. SPECIFY COLOR
RATING: STEEL: 10 Amps AC for 10°C Temp. rise, continuous duty.
COPPER: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ¾" jaw opening. Jaws match accurately. For heavy terminal use. **Std. Pkg. 100**

No.	Type	NET Per C
393	Steel, Cad. Pl.	$21.00
397	Solid Copper	24.00

Screw Connection



INSULATED

HANDLE: MACHINED BUTYRATE, per MIL-P-10408A, Type I, Class II. Red or Black. SPECIFY COLOR
RATING: STEEL: 10 Amps AC for 10°C Temp. rise, continuous duty.
COPPER: 15 Amps AC for 10°C Temp. rise, continuous duty.
DESCR.: ¾" jaw opening. Jaws match accurately. Supplied with screw for solderless connection. For heavy terminal use. **Std. Pkg. 100**

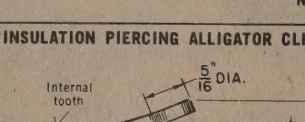
No.	Type	NET Per C
369	Steel, Cad. Pl.	$24.00
357	Solid Copper	27.00

MINIATURE INSULATION PIERCING ALLIGATOR CLIP

RATING: 1 Amp AC for 10°C Temp. rise, continuous duty.
DESCR.: 3/16" jaw opening. Jaws match accurately and grip securely. Internal tooth for piercing wire insulation. Solder connection and ears for crimping. **Std. Pkg. 100**

No.	NET Per C
326	$11.00

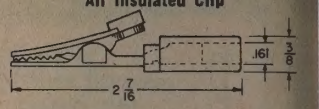
INSULATION PIERCING ALLIGATOR CLIP



RATING: 5 Amps AC for 10°C Temp. rise, continuous duty.
DESCR: 1/2" jaw opening. Jaws match accurately and grip securely. Internal tooth for piercing wire insulation. Accepts standard banana plug in rear. **Std. Pkg. 100**

No.	NET Per C
347	$11.00

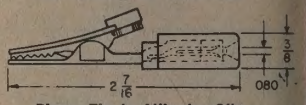
All Insulated Clip



INSULA.: MOLDED BUTYRATE, per Fed. L-P349A, Type 3, Class MS. Red or Black.
CLIP: Steel cadmium plated. SPECIFY
RATING: 10 Amps AC for 10°C Temp. rise, cont duty. 1 K Volts 60 cycle AC continuous working
DESCR.: All metal parts fully insulated with plastic. Insures against shock or grounding. Sold connection. **Std.**

No.	NET
337	

ALL INSULATED ADAPTERS

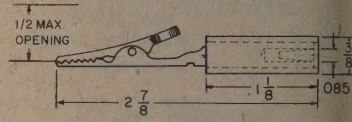


Phone Tip to Alligator Clip

INSULA.: MOLDED BUTYRATE, per Fed. L-P349A, Type 3, Class MS. Red or Black. SPECIFY C
CLIP: Steel, cadmium plated.
BODY: Brass.
CONTACT: Phosphor bronze.
RATING: 5 Amps AC for 10°C Temp. rise, cont duty.
DESCR.: All metal parts fully insulated with plastic. Insures against shock or grounding. Jack permits adapting standard phone tip plugs to all clips. **Std.**

No.	NET
336	

ALLIGATOR CLIP ADAPTERS

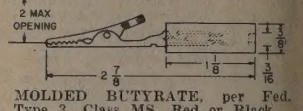


Phone Tip to Alligator Clip

HANDLE: MOLDED BUTYRATE, per Fed. Spe P349A, Type 3, Class MS. Red and Black. SPECIFY C
CLIP: Steel, cadmium plated or solid copper.
BODY: Brass.
CONTACT: Phosphor bronze.
RATING: 5 Amps for 10°C Temp. rise, continuous d
DESCR.: Jack in rear permits adapting standard phon plug to alligator clips. **Std.**

No.	Description	NET
304	Steel Clip	
334	Copper Clip	

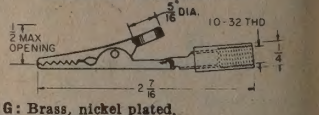
Phone Tip or Banana Plug to Alligator Clip



HANDLE: MOLDED BUTYRATE, per Fed. L-P349A, Type 3, Class MS. Red or Black. SPECIFY C
CLIP: Steel, cadmium plated or solid copper.
BODY: Brass.
CONTACT: Phosphor bronze.
RATING: 5 Amps AC for 10°C Temp. rise, continuous
DESCR.: Combination jack in rear, permits the ad standard phone tip plug or banana plugs to alligator **Std.**

No.	Description	NET
305	Steep Clip	
335	Copper Clip	

ALLIGATOR CLIP ADAPTER



BUSHING: Brass, nickel plated.
CLIP: Steel cadmium plated.
RATING: 5 Amps AC for 10°C Temp. rise, conti duty.
DESCR.: Adapts standard solderless tips to alligator This novel quick-adapter is a must for all types of work. **Std.**

No.	NET
310	

MORE THAN

TEN THOUSAND

ELECTRONIC COMPONENT PARTS

MANUFACTURED UNDER ONE ROOF

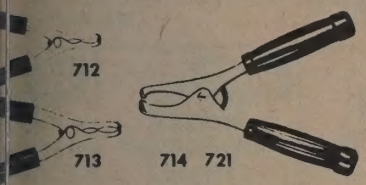
 © United Technical

pecify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

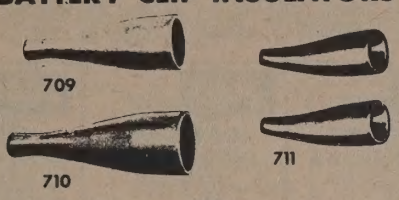
IER TYPE BATTERY CLIPS



ed Vinylite Handles, Red or Black. SPECIFY COLOR

mps.	Material	Overall Size	Std. Pkg.	NET Per C
35	Steel, Cop. Pl.	3¼"	10	$21.00
75	Steel, Cop. Pl.	4½"	10	27.60
00	Steel, Cop. Pl.	7½"	10	38.00
00	Solid Copper	7½"	5	130.00

BATTERY CLIP INSULATORS



Red or Black. SPECIFY COLOR

No.	Made to fit Smith Clip #	Material	Std. Pkg.	NET Per C
709	701, 703	H.D. Rubber	25	$16.00
710	704, 706	H.D. Rubber	10	63.00
711	366	Vinyl	100	5.90

SMITH BATTERY CLIPS

No.	Current Capacity	Jaw Spread	Length	Spring	Std. Pkg.	NET Per C
EEL, ELECTROPLATED						
365	5 Amp.	⅜"	1⅝"	7 lbs.	100	$ 8.00
366	10 Amp.	9/16"	2"	10 lbs.	100	8.75
701	25 Amp.	1"	2½"	17 lbs.	25	13.10
702	50 Amp.	1½"	3⅞"	33 lbs.	25	21.00
704	100 Amp.	1⅜"	5"	40 lbs.	10	49.00
LID COPPER						
703	50 Amp.	1"	2½"	17 lbs.	10	24.60
705	100 Amp.	1¼"	4¾"	33 lbs.	10	72.00
706	200 Amp.	1⅜"	5¾"	40 lbs.	10	119.00

A UNIVERSALLY ADJUSTABLE PRINTED CIRCUIT CARD RACK

Complete and Economical Support System for Printed Circuit Cards

STABLE UP-AND-DOWN
ard Widths 2⅜" to 4¾"

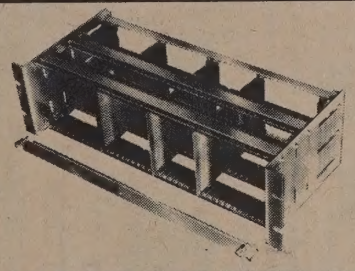
STABLE LOCKING BAR
Cards Securely against Rear Connectors

STABLE CARD SPACING
ble in .400" Increments

STABLE FRONT-TO-BACK
ard Lengths 3½" to 7¼"

STABLE
'.C. Connector Sizes

STABLE CALIBRATED SLIDE PANELS
ast, Precise Adjustments to Any Card Size



FITS STANDARD 19-INCH EQUIPMENT RACKS

- Simple Adjustments for Multipe Card Sizes
- Simple Adjustments for Card Spacing
- Front to Back Adjustment of Printed Circuit Card Connectors
- Simple Adjustments for Printed Circuit Connector Sizes
- Locking Bar to Secure P.C. Cards
- Complete with Board Guides

SPECIFICATIONS

D CAPACITY
p to 39 cards, depending on component height.

D SIZES
1/16" thick standard.
With Locking Bar Feature:
Maximum Card Width: 4¾"
Maximum Card Length: 6½"
Minimum Card Width: 2⅜"
Minimum Card Length: 4⅜"
Without Front Card Lock:
Maximum Card Length: 7¼"
Minimum Card Length: 3½"

D SPACING
400" Minimum Centers. Adjustable in .400" increments.

D GUIDES
Precision Molded Plastic. Four guides provided for ach card to insure location accuracy. Guides nest ogether in staggered holes for minimum practical ard spacing.

USTABILITY
All card guide and connector rails slide smoothly n Nylon bushings for ease in adjusting. Card ails adjust symmetrically to keep cards centered n rack. Connector rails adjust front-to-back to keep cards against locking rail. Adjust index marks permanently stamped on side plates for standard card sizes.

NECTOR SPACING
Accommodates card-edge connectors with mounting centers from 0.936" minimum to 4.437" maximum.

STRUCTION
Heavy-gauge clear Anodized aluminum. Guide and alignment members are extrusions for maximum precision of fits.

SPECIAL FEATURES

LOCKING BAR
Front locking bar holds cards securely against rear connectors. Held in place with captive screws for rapid card change. Card identification marking available on front of locking bar.

STACKING
Can be stacked for wider panels in multiples of 5¼". Accessory brackets available for free-standing stacking.

SPECIALS
Special color anodized finishes available on request. Non-standard sizes available on special order.

CARD RACK, CAT. NO. 3050

In Lots of	Suggested Resale Each
1 to 9	$27.95
10 to 24	25.95
25 to 99	23.95
100 up	21.95

BOARD GUIDES, CAT. NO. 3051

Std. Pkg.	Suggested Resale Per C
100	$5.00

RADIO CHASSIS PUNCHES

A complete line of chassis hole punches for swiftly cutting clean, accurately located holes in chassis and panels. An assortment of round, square, "D," and Keyed holes can be punched by inserting in drilled pilot hole, and turning with wrench. Finished hole is smooth, accurately sized without burrs. Round punches are provided with center-line markings for enlarging holes larger than pilot hole. Individually packed.

ROUND HOLE PUNCHES

No.	Hole Size	NET Ea.	No.	Hole Size	NET Ea.
3801	1/2"	$2.85	3814	1¼"	$3.85
3802	9/16"	2.85	3815	1⅜"	4.15
3803	5/8"	2.85	3816	1½"	4.15
3804	11/16"	2.85	3817	1⅝"	4.55
3805	¾"	2.85	3818	1¾"	5.50
3806	13/16"	2.85	3819	1⅞"	6.30
3807	⅞"	2.85	3820	1⅞"	7.80
3808	15/16"	3.20	3821	2"	8.35
3809	1"	3.20	3822	2¼"	9.00
3810	1 1/16"	3.35	3823	2½"	9.30
3811	1⅛"	3.35	3824	2¾"	15.10
3812	1 3/16"	3.35	3825	2¾"	21.00
3813	1 5/16"	3.35	3826	3"	29.00

SQUARE PUNCHES

3827	¼"	$6.90	3830	⅜"	$8.80
3828	5/16"	6.80	3831	1"	9.10
3829	⅜"	7.50			

"KEY" PUNCHES

3832	15/32"	$8.10	3834	1 11/64"	$9.10
3833	15/16"	8.50	3835	1 11/64"	10.70

METER HOLE PUNCH

3836	2 35/64"	$13.75

"D" PUNCHES

3837	1/2x1 9/32"	$4.90	3838	5/8x1 9/32"	$7.10

BALL BEARING DRIVE SCREWS

Reduces friction and effort when punching round holes 11/16" and larger. For use only with Round punches listed above.

No.	Use with Nos.	NET Ea.
3839	3804 to 3808	$1.60
3840	3809 to 3817	1.70
3841	3818 to 3819	4.10
3842	3820 to 3824 and 3836	4.30
3843	3825 to 3826	7.50

CHASSIS PUNCH SET

A set of 7 of the most often used chassis punch sizes for electronic construction. Packed in a plastic platform box to keep punches sharp and rust-free. Contains the following sizes: ½", ⅝", ¾", ⅞", 1", 1⅛", 1¼".

No.	Description	NET Ea.
3844	Set of 7 Punches	$22.00

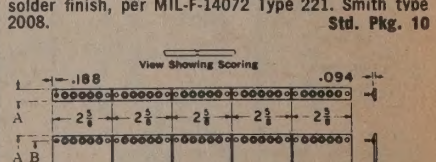
RELAY SOCKET PUNCH

3845	P&B KHP Relay Socket Punch, 1.015 & .859	$20.00

SCORED TERMINAL BOARDS

featuring
SNAP-APART SEPARATION

SMITH Scored Boards are fabricated in PBE material per MIL-P-3115C, Temp. 250° F. Max., Type XXXP. Terminals are securely staked and are made of Brass per QQ-626 comp. 22, half-hard with hot-tinned dip solder finish, per MIL-F-14072 Type 221. Smith type 2008. **Std. Pkg. 10**



Cat. No.	Dimensions A	Dimensions B	Terminals	Net Price Each
2810	½"	Single Row	25	$1.30
2811	1½"	1"	50	2.30
2812	2"	1½"	50	2.34
2813	2½"	2"	50	2.50
2814	3"	2½"	50	2.50

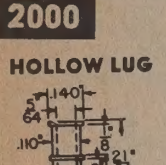
specify SMITH
HERMAN H. SMITH, INC.
SPECIFY SMITH
ELECTRI
COMPONI

SWAGE TURRET TERMINALS

Terminals shown below are "stock" items, available for speedy delivery. All brass, silver-plated, precision made. See next page for Suggested Re
Prices. For quantities over 15,000 request special prices. Inquiries are invited, for special types and sizes to particular requirements.
L indicates **Shank Length** of Lug. **T** indicates **thickness** of mounting boards. **Standard Packag**

2000

HOLLOW LUG

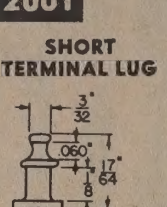


No.	L	T
2000A	.075	1/32
2000B	.105	1/16
2000C	.135	3/32
2000D	.165	1/8
2000E	.195	5/32
2000F	.230	3/16

Staking Tool Kit
No. 3860

2001

SHORT TERMINAL LUG

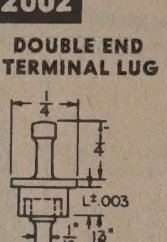


No.	L	T
2001A	.075	1/32
2001B	.105	1/16
2001C	.135	3/32
2001D	.165	1/8

Staking Tool Kit
No. 3860

2002

DOUBLE END TERMINAL LUG

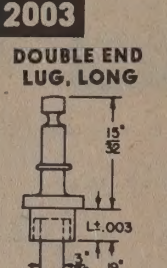


No.	L	T
2002A	.105	1/16
2002B	.135	3/32
2002C	.165	1/8
2002D	.195	5/32
2002E	.230	3/16

Staking Tool Kit
No. 3861

2003

DOUBLE END LUG, LONG

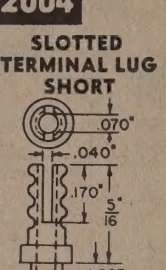


No.	L	T
2003A	.105	1/16
2003B	.135	3/32
2003C	.165	1/8
2003D	.195	5/32
2003E	.230	3/16

Staking Tool Kit
No. 3862

2004

SLOTTED TERMINAL LUG SHORT

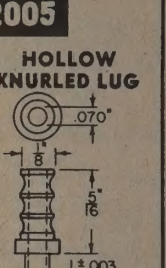


No.	L	T
2004A	.075	1/32
2004B	.105	1/16
2004C	.135	3/32
2004D	.165	1/8

Staking Tool Kit
No. 3863

2005

HOLLOW KNURLED LUG

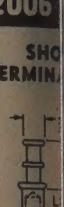


No.	L	T
2005A	.105	1/16
2005B	.135	3/32
2005C	.165	1/8

Staking Tool Kit
No. 3860

2006

SHO TERMIN

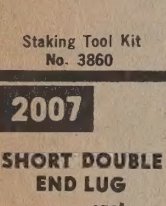


No.
2006A
2006B
2006C
2006D

Staking T
No. 3

2007

SHORT DOUBLE END LUG



No.	L	T
2007A	.075	1/32
2007B	.105	1/16
2007C	.135	3/32
2007D	.165	1/8

Staking Tool Kit
No. 3865

2008

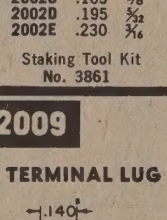
TERMINAL LUG

No.	L	T
2008A	.075	1/32
2008B	.105	1/16
2008C	.135	3/32
2008D	.165	1/8
2008E	.195	5/32
2008F	.230	3/16
2008G	.293	1/4

Staking Tool Kit
No. 3860

2009

TERMINAL LUG

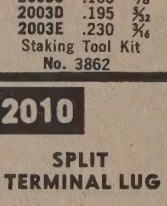


No. 2009

Staking Tool Kit
Not Required

2010

SPLIT TERMINAL LUG

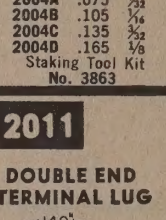


No.	L	T
2010A	.075	1/32
2010B	.105	1/16
2010C	.135	3/32
2010D	.165	1/8

Staking Tool Kit
No. 3866

2011

DOUBLE END TERMINAL LUG

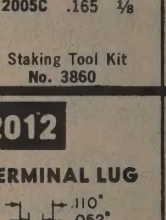


No.	L	T
2011A	.105	1/16
2011B	.135	3/32
2011C	.165	1/8
2011D	.195	5/32
2011E	.230	3/16

Staking Tool Kit
Not Available

2012

TERMINAL LUG

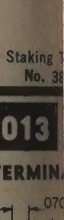


No.	L	T
2012A	.105	1/16
2012B	.135	3/32
2012C	.165	1/8

Staking Tool Kit
No. 3860

2013

TERMIN

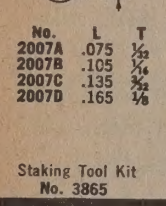


No.
2013A
2013B
2013C
2013D

Staking To
No. 38

2014

TERMINAL LUG

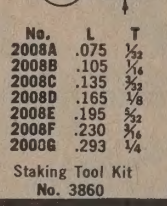


No.	L	T
2014A	.105	1/16
2014B	.135	3/32
2014C	.165	1/8
2014D	.195	5/32
2014E	.230	3/16

Staking Tool Kit
No. 3860

2015

TERMINAL LUG

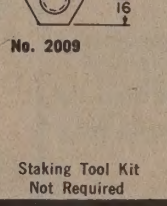


No.	L	T
2015A	.135	3/32
2015B	.165	1/8
2015C	.195	5/32
2015D	.230	3/16

Staking Tool Kit
Not Available

2016

TERMINAL LUG

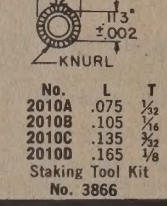


No.	L	T
2016A	.105	1/16
2016B	.135	3/32
2016C	.155	1/8

Staking Tool Kit
No. 3860

2017

HOLLOW KNURLED LUG

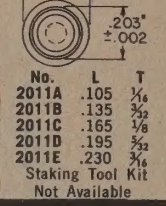


No.	L	T
2017A	.105	1/16
2017B	.135	3/32
2017C	.165	1/8
2017D	.195	5/32

Staking Tool Kit
No. 3860

2018

HOLLOW TERMINAL LUG

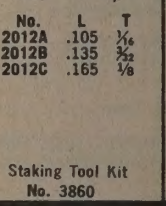


No.	L	T
2018A	.075	1/32
2018B	.105	1/16
2018C	.135	3/32
2018D	.165	1/8
2018E	.195	5/32
2018F	.230	3/16

Staking Tool Kit
No. 3863

2019

SPLIT TERMINAL LUG



No.	L	T
2019A	.075	1/32
2019B	.105	1/16
2019C	.135	3/32
2019D	.165	1/8
2019E	.195	5/32
2019F	.230	3/16

Staking Tool Kit
No. 3860

2020

TERMINA

No.
2020A
2020B
2020C
2020D

Staking To
No. 38

SMITH PAGE 23 (COMPLETE SMITH INDEX ON LAST SMITH PAGE)

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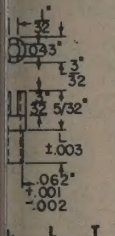
SWAGE TURRET TERMINALS

21

NIATURE ADE LUG

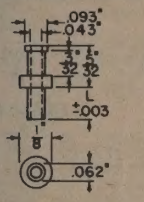


No.	L	T
1A	.037	1/64
1B	.053	1/32
1C	.084	1/16
1D	.115	3/32
1E	.147	1/8

aking Tool Kit No. 3867

2022

MINIATURE HOLLOW LUG

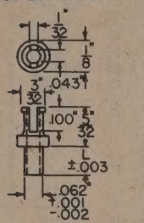


No.	L	T
2022A	.037	1/64
2022B	.053	1/32
2022C	.084	1/16
2022D	.115	3/32
2022E	.147	1/8

Staking Tool Kit No. 3864

2023

MINIATURE HOLLOW SPLIT LUG

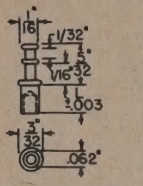


No.	L	T
2023A	.037	1/64
2023B	.053	1/32
2023C	.084	1/16
2023D	.115	3/32
2023E	.147	1/8

Staking Tool Kit No. 3864

2024

MINIATURE DOUBLE TIE LUG

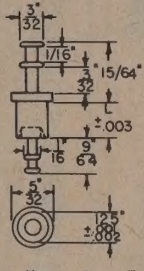


No.	L	T
2024A	.037	1/64
2024B	.053	1/32
2024C	.084	1/16
2024D	.115	3/32
2024E	.147	1/8

Staking Tool Kit No. 3868

2025

MINIATURE THROUGH LUG

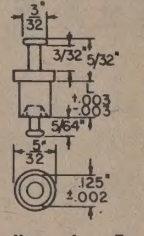


No.	L	T
2025A	.075	1/32
2025B	.105	1/16
2025C	.135	3/32
2025D	.165	1/8

Staking Tool Kit No. 3869

2026

MINIATURE THROUGH LUG

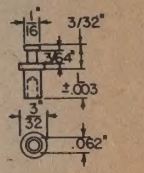


No.	L	T
2026A	.075	1/32
2026B	.105	1/16
2026C	.135	3/32
2026D	.165	1/8

Staking Tool Kit No. 3866

2027

MINIATURE LUG

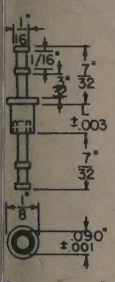


No.	L	T
2027A	.037	1/64
2027B	.054	1/32
2027C	.084	1/16
2027D	.115	3/32
2027E	.147	1/8

Staking Tool Kit No. 3868

28

EED-THRU RMINAL LUG

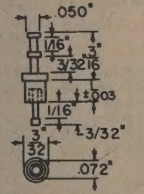


No.	L	T
28A	.054	1/32
28B	.084	1/16
28C	.115	3/32
28D	.147	1/8

Staking Tool Kit No. 3870

2029

TERMINAL LUG

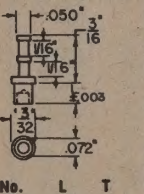


No.	L	T
2029A	.054	1/32
2029B	.084	1/16
2029C	.115	3/32
2029D	.147	1/8

Staking Tool Kit No. 3871

2030

TERMINAL LUG

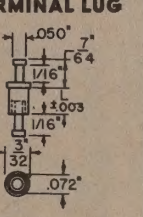


No.	L	T
2030A	.054	1/32
2030B	.084	1/16
2030C	.115	3/32
2030D	.147	1/8

Staking Tool Kit No. 3868

2031

FEED TERMINAL LUG

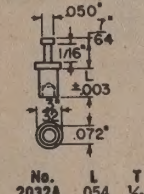


No.	L	T
2031A	.054	1/32
2031B	.084	1/16
2031C	.115	3/32
2031D	.147	1/8

Staking Tool Kit No. 3871

2032

TERMINAL LUG



No.	L	T
2032A	.054	1/32
2032B	.084	1/16
2032C	.115	3/32
2032D	.147	1/8

Staking Tool Kit No. 3868

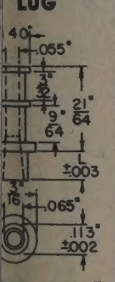
SUGGESTED RESALE

Cat. No. Series	NET Per C
2000	$2.80
2001	3.00
2002	4.20
2003	6.80
2004	5.30
2005	4.00
2006	1.80
2007	2.30
2008	2.80
2009	5.10
2010	4.30
2011	5.40
2012	4.80
2013	1.80
2014	2.30
2015	6.30
2016	3.20
2017	4.10
2018	4.10
2019	5.00

Cat. No. Series	NET Per C
2020	$2.80
2021	2.70
2022	2.50
2023	3.00
2024	2.60
2025	4.20
2026	3.80
2027	2.00
2028	2.70
2029	2.50
2030	2.10
2031	2.40
2032	2.10
2033	6.20
2034	7.20
2035	6.30
2036	6.30
2037	18.00
2038	19.00

033

CEPTACLE LUG

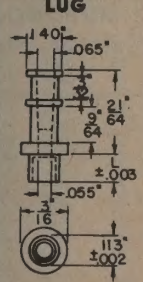


No.	L	T
33A	.075	1/32
33B	.105	1/16
33C	.135	3/32
33D	.165	1/8
33E	.195	3/32
33F	.230	3/16

king Tool Kit No. 3860

2034

RECEPTACLE LUG

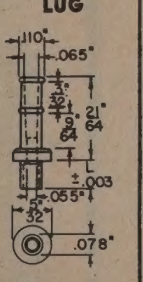


No.	L	T
2034A	.075	1/32
2034B	.105	1/16
2034C	.135	3/32
2034D	.165	1/8
2034E	.195	3/32
2034F	.230	3/16

Staking Tool Kit No. 3860

2035

RECEPTACLE LUG

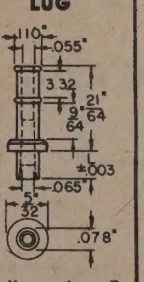


No.	L	T
2035A	.075	1/32
2035B	.105	1/16
2035C	.135	3/32
2035D	.165	1/8
2035E	.195	3/32
2035F	.230	3/16

Staking Tool Kit No. 3863

2036

RECEPTACLE LUG

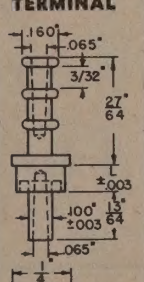


No.	L	T
2036A	.075	1/32
2036B	.105	1/16
2036C	.135	3/32
2036D	.165	1/8
2036E	.195	3/32
2036F	.230	3/16

Staking Tool Kit No. 3863

2037

TAPERED TERMINAL

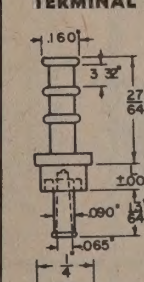


No.	L	T
2037A	.105	1/16
2037B	.135	3/32
2037C	.165	1/8

Staking Tool Kit Not Available

2038

TAPERED TERMINAL



No.	L	T
2038A	.105	1/16
2038B	.135	3/32
2038C	.165	1/8

Staking Tool Kit Not Available

ALL STAKING TOOL KITS Each.....$3.00

ACCESSORY TOOL HOLDERS

Anvil Bench Tool Holder, 1/4" anvils. Malleable iron base with bottom felt pad for bench use.
No. 3877 Net Ea. $4.20

Anvil tool holder for use with drill press, arbor, kick press, punch press or vise.
No. 3878 Net Ea. $1.50

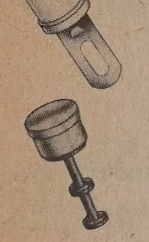
We invite your inquiries on other types of turret terminals not shown here.

specify SMITH

HERMAN H. SMITH, INC.

ELECTR
COMPON

TEFLON TERMINALS by SMITH



- Miniature
- Subminiature
- Microminiature

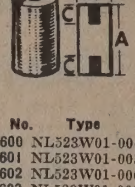
- Standoff — Feed-thru
- Probes — Test Jacks
- Connectors — Sockets
- Custom Fabrication

ALL SIZES • ALL TYPES • TEN COLORS

FULL LINE

Meets MIL Specifications

SMITH
COMPLETE 12-PAGE
TEFLON TERMINALS
CATALOG
FREE ON REQUEST!

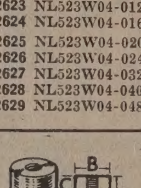


CERAMIC STANDOFFS

MADE TO JAN. SPECS.

Grade L-5 Ceramic made to JAN 1-8 and JAN 1-10 Specs. Outside of ceramic is glazed. **Std. Pkg. 50**

No.	Type	A	B	C	Thd.	NET Per C
2600	NL523W01-004	1/2"	3/8"	5/32"	6-32	$16.70
2601	NL523W01-005	5/8"	3/8"	1/4"	6-32	18.20
2602	NL523W01-006	3/4"	3/8"	1/4"	6-32	19.00
2603	NL523W01-008	1"	3/8"	3/8"	6-32	19.70
2604	NL523W01-010	1 1/4"	3/4"	3/8"	6-32	21.80
2605	NL523W01-012	1 1/2"	3/8"	3/8"	6-32	22.70
2606	NL523W01-016	2"	3/8"	3/8"	6-32	23.00
2607	NL523W02-005	5/8"	1/2"	3/16"	8-32	16.70
2608	NL523W02-006	3/4"	1/2"	1/4"	8-32	17.20
2609	NL523W02-008	1"	1/2"	3/8"	8-32	17.40
2610	NL523W02-010	1 1/4"	1/2"	3/8"	8-32	20.00
2611	NL523W02-012	1 1/2"	1/2"	3/8"	8-32	25.00
2612	NL523W02-016	2"	1/2"	3/8"	8-32	30.00
2613	NL523W02-020	2 1/2"	1/2"	3/8"	8-32	30.00
2614	NL523W02-024	3"	1/2"	3/8"	8-32	31.50
2615	NL523W03-008	1"	3/4"	3/8"	10-32	26.00
2616	NL523W03-010	1 1/4"	3/4"	3/8"	10-32	28.00
2617	NL523W03-012	1 1/2"	3/4"	3/8"	10-32	34.40
2618	NL523W03-016	2"	3/4"	3/8"	10-32	39.00
2619	NL523W03-020	2 1/2"	3/4"	3/8"	10-32	40.00
2620	NL523W03-024	3"	3/4"	3/8"	10-32	45.00
2621	NL523W03-032	4"	3/4"	3/8"	10-32	51.00
2622	NL523W04-010	1 1/4"	1"	7/16"	1/4-20	37.50
2623	NL523W04-012	1 1/2"	1"	1/2"	1/4-20	48.00
2624	NL523W04-016	2"	1"	5/8"	1/4-20	54.00
2625	NL523W04-020	2 1/2"	1"	5/8"	1/4-20	55.00
2626	NL523W04-024	3"	1"	5/8"	1/4-20	62.00
2627	NL523W04-032	4"	1"	5/8"	1/4-20	75.00
2628	NL523W04-040	5"	1"	5/8"	1/4-20	92.00
2629	NL523W04-048	6"	1"	5/8"	1/4-20	103.00



CERAMIC STANDOFFS

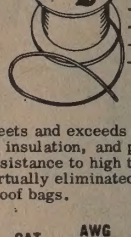
COMMERCIAL

Grade L5 Ceramic with outside glazed. **Std. Pkg. 50**

No.	A	B	C	Thd.	NET Per C
2640	1/4"	1/4"	Thru	6-32	$13.40
2641	1/2"	1/4"	5/32"	6-32	13.70
2642	3/8"	3/8"	5/32"	6-32	14.20
2643	1/2"	3/8"	5/16"	6-32	16.90
2644	1/2"	1/2"	3/16"	6-32	18.50
2645	3/4"	1/2"	1/4"	6-32	19.50
2646	1"	1/2"	3/8"	6-32	21.50
2647	1 1/2"	1/2"	5/16"	6-32	24.50
2648	2 1/2"	1/2"	1/2"	6-32	26.70
2649	2 1/2"	3/4"	3/4"	1/4-20	36.00
2650	4"	3/4"	3/4"	1/4-20	54.00

BRASS STANDOFFS
SEE SMITH PAGE 26

TEFLON* SPAGHETTI TUBIN



COLOR CODE CHART

— 101 WHITE	— 107 YELLOW
— 102 RED	— 108 BROWN
— 103 BLACK	— 112 PURPLE
— 104 GREEN	— 113 GREY
— 105 BLUE	— 115 NATURAL
— 106 ORANGE	

(If no color is specified, Natural Teflon (—115) will be supplied.)

Meets and exceeds MIL-I-22129B. Ideal for sli on insulation, and provides greater reliability a resistance to high temperatures. Shrink-back is virtually eliminated. Individually packed in dust proof bags. SPECIFY COLOR

CAT. NO.	AWG WIRE SIZE	NOM I.D.	NOM. WALL THK.	STD. PKG. FT.	NET EA.
STANDARD WALL					
7701-24	24	.022	.012	100	$11.68
7701-22	22	.027	.012	100	12.95
7701-20	20	.034	.016	100	17.75
7701-19	19	.038	.016	100	19.38
7701-18	18	.042	.016	100	20.88
7701-17	17	.047	.016	100	22.93
7701-16	16	.053	.016	100	24.63
7701-15	15	.059	.016	100	25.30
7701-14	14	.066	.016	100	27.25
7701-13	13	.076	.016	100	30.30
7701-12	12	.085	.016	100	32.75
7701-11	11	.095	.016	100	36.38
7701-10	10	.106	.016	100	40.00
7701-09	9	.118	.020	100	57.10
7701-81	1/8"	.125	.020	100	61.00
7701-08	8	.133	.020	50	31.25
7701-07	7	.148	.020	50	33.69
7701-06	6	.166	.020	50	36.44
7701-05	5	.186	.020	50	40.10
7701-04	4	.208	.020	50	43.56
7701-03	3	.234	.020	50	49.88
7701-41	1/4"	.250	.020	50	52.88
7701.02	2	.263	.020	50	54.82
7701-01	1	.294	.020	50	60.94
7701-51	5/16"	.312	.020	50	67.50
7701-00	0	.330	.020	50	68.57
THINWALL					
7702-30	30	.012	.009	100	$10.53
7702-28	28	.015	.009	100	9.20
7702-26	26	.018	.009	100	8.88
7702-24	24	.022	.010	100	9.63
7702-22	22	.027	.010	100	10.75
7702-20	20	.034	.012	100	13.63
7702-19	19	.038	.012	100	14.68
7702-18	18	.042	.012	100	15.75
7702-17	17	.047	.012	100	17.38
7702-16	16	.053	.012	100	19.00
7702-15	15	.059	.012	100	19.63
7702-14	14	.066	.012	100	21.00
7702-13	13	.076	.012	100	23.75
7702-12	12	.085	.012	100	25.50
7702-11	11	.095	.012	100	28.38
7702-10	10	.106	.012	100	30.50
7702-09	9	.118	.015	100	44.00
7702-81	1/8"	.125	.015	100	45.00
7702-08	8	.133	.015	50	24.32
7702-07	7	.148	.015	50	26.63
7702-06	6	.166	.015	50	29.75
7702-05	5	.186	.015	50	33.50
7702-04	4	.208	.015	50	36.75
7702-03	3	.234	.015	50	40.75
7702-41	1/4"	.250	.015	50	43.75
7702-02	2	.263	.015	50	45.50
7702-01	1	.294	.015	50	50.69
7702-51	5/16"	.312	.015	50	55.12
7702-00	0	.330	.015	50	56.12
LIGHTWEIGHT					
7703-28	28	.015	.006	100	$ 7.63
7703-26	26	.018	.006	100	7.75
7703-24	24	.022	.006	100	8.13
7703-22	22	.027	.006	100	9.38
7703-20	20	.034	.006	100	11.13
7703-19	19	.038	.006	100	12.38
7703-18	18	.042	.006	100	13.38
7703-17	17	.047	.006	100	14.88
7703-16	16	.053	.006	100	16.13
7703-15	15	.059	.006	100	16.75
7703-14	14	.066	.008	100	19.50
7703-13	13	.076	.008	100	22.25
7703-12	12	.085	.008	100	24.38
7703-11	11	.095	.008	100	27.38
7703-10	10	.106	.008	100	29.50
7703-09	9	.118	.008	50	16.63
7703-81	1 8"	.125	.008	50	17.88
7703-08	8	.133	.008	50	18.44
7703-07	7	.148	.008	50	20.00
7703-06	6	.166	.010	50	25.88
7703-05	5	.186	.010	50	28.38
7703-04	4	.208	.010	50	31.38
7703-03	3	.234	.010	50	34.50
7703-41	1/4"	.250	.010	50	36.69
7703-02	2	.263	.010	50	37.57
7703-01	1	.294	.010	50	41.19
7703-51	5/16"	.312	.012	50	48.69
7703-00	0	.330	.012	50	49.63

*Reg. Trademark E. I. DuPont Co.

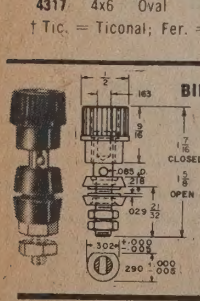
Norelco Loudspeakers

featuring The World's Most Powerful Magnets

Standard EIA mounting . Tropic-proof cadmium-plated frames . Designed for use in original equipment and as replacements in Radio, TV, Hi-Fidelity, Car Radio, etc.

Smith No.	Size	Shape	Imped. Ohms	Continuous Power Watts*	Height	Width	Depth	Free Air Resonance Freq. Resp. CPS	Free Air Resonance CPS	Cone Types	Magnet Type†	Magnet Wgt. Oz.	Std. Pkg.	NET Each
4310	8"	Octag.	8	0.6	7 3/4"	7 3/4"	2 7/8"	60-18000	72	Dual	Fer.	5.00	3	$3.84
4311	8"	Octag.	8	6.0	7 3/4"	7 3/4"	4 5/8"	55-18000	60	Dual	Tic.	13.20	1	14.40
4312	10"	Round	8	10.0	10 1/4"	10 1/4"	5 5/16"	45-18000	50	Dual	Tic.	15.10	1	15.75
4313	12"	Round	3.2	10.0	12 3/8"	12 3/8"	4 11/16"	40-18000	45	Dual	Tic.	9.30	1	10.65
4314	12"	Round	8	20.0	12 3/8"	12 3/8"	6 1/8"	35-17000	45	Dual	Tic.	15.10	1	16.05
4316	4x6	Oval	3.2	3.0	6 1/8"	4 7/16"	2 1/2"	110-11000	130	Single	Tic.	1.50	3	2.70
4317	4x6	Oval	3.2	3.0	6 1/8"	4 7/16"	2 1/8"	105-18000	124	Dual	Fer.	5.00	3	3.36

† Tic. = Ticonal; Fer. = Ferroxdure. * DOUBLE these ratings for PEAK power.



BINDING POST Insulated

HEAD: CAPTIVE: MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS. Red or Black. SPECIFY COLOR

BODY: Brass, nickel plated.

WASHERS: MOLDED BUTYRATE, per MIL-L-P349A, Type 3, Class MS. With brass inserts.

ACCEPTS: Phone tip plug, spade lug, banana plug, alligator clip or wire strand.

RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 1 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 3.0 pf.

DESCR.: Mounts in 5/16" hole in panel with milled slot for locking, supplied with two hex nuts. **Std. Pkg. 100**

No.	Description	Net Per C
260	8-32 Stud	$45.00
259	6-32 Stud	45.00
	With brass nickel plated insert in head	
290	8-32 Stud	$50.00
231	6-32 Stud	50.00

SMITH PAGE 25 (COMPLETE SMITH INDEX ON LAST SMITH PAGE) © United Techn

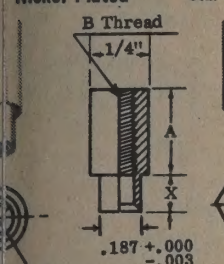
Specify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

BRASS THREADED SWAGE STANDOFFS

Nickel Plated — Std. Pkg. 100



HEX

ET Per C	A	B	X	No.	NET Per C
0.00	1/4	4/40	.105	4200	$11.00
0.00	1/4	4/40	.135	4201	11.00
0.00	1/4	4/40	.165	4202	11.00
1.00	3/8	4/40	.105	4203	12.00
1.00	3/8	4/40	.135	4204	12.00
1.00	3/8	4/40	.165	4205	12.00
2.50	1/2	4/40	.105	4206	13.50
2.50	1/2	4/40	.135	4207	13.50
2.50	1/2	4/40	.165	4208	13.50
4.00	5/8	4/40	.105	4209	15.00
4.00	5/8	4/40	.135	4210	15.00
4.00	5/8	4/40	.165	4211	15.00
6.00	3/4	4/40	.105	4212	17.00
6.00	3/4	4/40	.135	4213	17.00
6.00	3/4	4/40	.165	4214	17.00
0.00	1	4/40	.105	4215	21.00
0.00	1	4/40	.135	4216	21.00
0.00	1	4/40	.165	4217	21.00
		Staking Tool Kit			NET Ea. $3.00
0.00	1/4	6/32	.105	4218	11.00
0.00	1/4	6/32	.135	4219	11.00
0.00	1/4	6/32	.165	4220	11.00
1.00	3/8	6/32	.105	4221	12.00
1.00	3/8	6/32	.135	4222	12.00
1.00	3/8	6/32	.165	4223	12.00
2.50	1/2	6/32	.105	4224	13.50
2.50	1/2	6/32	.135	4225	13.50
2.50	1/2	6/32	.165	4226	13.50
4.00	5/8	6/32	.105	4227	15.00
4.00	5/8	6/32	.135	4228	15.00
4.00	5/8	6/32	.165	4229	15.00
6.00	3/4	6/32	.105	4230	17.00
6.00	3/4	6/32	.135	4231	17.00
6.00	3/4	6/32	.165	4232	17.00
0.00	1	6/32	.105	4233	21.00
0.00	1	6/32	.135	4234	21.00
0.00	1	6/32	.165	4235	21.00
		Staking Tool Kit			NET Ea. $3.00
0.00	1/4	8/32	.105	4236	11.00
0.00	1/4	8/32	.135	4237	11.00
0.00	1/4	8/32	.165	4238	11.00
1.00	3/8	8/32	.105	4239	12.00
1.00	3/8	8/32	.135	4240	12.00
1.00	3/8	8/32	.165	4241	12.00
2.50	1/2	8/32	.105	4242	13.50
2.50	1/2	8/32	.135	4243	13.50
2.50	1/2	8/32	.165	4244	13.50
4.00	5/8	8/32	.105	4245	15.00
4.00	5/8	8/32	.135	4246	15.00
4.00	5/8	8/32	.165	4247	15.00
6.00	3/4	8/32	.105	4248	17.00
6.00	3/4	8/32	.135	4249	17.00
6.00	3/4	8/32	.165	4250	17.00
20.00	1	8/32	.105	4251	21.00
20.00	1	8/32	.135	4252	21.00
20.00	1	8/32	.165	4253	21.00

CERAMIC STANDOFFS

SEE SMITH PAGE 25

FIBRE SPACERS

These fibre bushings are ideal for use in raising sub panels, chassis, condensers, transformers, etc.
MATERIAL:
FIBRE, per MIL-F-1148A, Grade CH.

¼" O.D.

Std. Pkg. 100

h	for #4 Screw No.	for #6 Screw No.	for #8 Screw No.	NET Per C
	8880	8881	8882	$3.00
	8883	8884	8885	3.40
	2335	2130	2140	3.90
	8886	8887	8888	4.00
	2336	2131	2141	4.95
	8889	8890	8891	5.00
	2337	2132	2142	6.00
	8892	8893	8894	6.20
	8895	8896	8897	6.50
	8898	8899	8900	6.80
	2338	2133	2143	7.20
	8901	8902	8903	7.30
	8904	8905	8906	7.50
	8907	8908	8909	8.00
	2339	2134	2144	8.25

BRASS SPACERS
Cadmium Plated

These brass bushings are ideal for use in raising sub panels, chassis, condensers, transformers, etc. Hole in bushing to accommodate a #4, #6, or #8 screw.

Std. Pkg. 100

¼" O.D.

Length "L"	for #4 Screw No.	for #6 Screw No.	for #8 Screw No.	NET Per C
.125	8700	8701	8702	$2.50
.187	8703	8704	8705	2.80
.250	2340	2100	2105	3.30
.312	8706	8707	8708	3.70
.375	2341	2101	2106	4.35
.437	8709	8710	8711	4.70
.500	2342	2102	2107	5.28
.562	8712	8713	8714	5.50
.652	8715	8716	8717	5.70
.687	8718	8719	8720	6.00
.750	2343	2103	2108	6.30
.812	8721	8722	8723	6.70
.875	8724	8725	8726	6.90
.937	8727	8728	8729	7.00
1.000	2344	2104	2109	7.20

⅜" O.D.

.125	8730	8731	8732	$4.20
.187	8733	8734	8735	4.50
.250	2345	2110	2115	5.28
.312	8736	8737	8738	5.50
.375	2346	2111	2116	6.30
.437	8739	8740	8741	7.00
.500	2347	2112	2117	8.00
.562	8742	8743	8744	8.70
.625	8745	8746	8747	9.20
.687	8748	8749	8750	10.00
.750	2348	2113	2118	10.90
.812	8751	8752	8753	11.70
.875	8754	8755	8756	12.50
.937	8757	8758	8759	13.40
1.000	2349	2114	2119	14.20

BRASS THREADED SPACERS
Cadmium Plated

¼" O.D.

Length "L"	THD 4-40 No.	THD 6-32 No.	THD 8-32 No.	NET Per C
.125	8760	8761	8762	$2.80
.187	8763	8764	8765	3.30
.250	2370	2120	2125	3.90
.312	8766	8767	8768	4.30
.375	2371	2121	2126	4.95
.437	8769	8770	8771	5.50
.500	2372	2122	2127	6.00
.562	8772	8773	8774	6.50
.625	8775	8776	8777	7.00
.687	8778	8779	8780	7.80
.750	2373	2123	2128	8.40
.812	8781	8782	8783	9.20
.875	8784	8785	8786	9.50
.937	8787	8788	8789	10.00
1.000	2374	2124	2129	10.40

BRASS HEX SPACERS
Cadmium Plated

¼" HEX

Length "L"	for #4 Screw No.	for #6 Screw No.	for #8 Screw No.	NET Per C
.125	8790	8791	8792	$3.00
.187	8793	8794	8795	3.20
.250	2380	2300	2305	3.60
.312	8796	8797	8798	4.00
.375	2381	2301	2306	4.65
.437	8799	8800	8801	5.00
.500	2382	2302	2307	5.58
.562	8802	8803	8804	5.80
.625	8805	8806	8807	6.00
.687	8808	8809	8810	6.40
.750	2383	2303	2308	6.75
.812	8811	8812	8813	7.00
.875	8814	8815	8816	7.30
.937	8817	8818	8819	7.50
1.000	2384	2304	2309	7.80

⅜" HEX

.125	8850	8851	8852	$4.40
.187	8853	8854	8855	5.00
.250	2385	2310	2315	6.18
.312	8856	8857	8858	6.30
.375	2386	2311	2316	7.20
.437	8859	8860	8861	7.90
.500	2387	2312	2317	8.25
.562	8862	8863	8864	10.00
.625	8865	8866	8867	10.90
.687	8868	8869	8870	11.70
.750	2388	2313	2318	12.50
.812	8871	8872	8873	13.40
.875	8874	8875	8876	14.20
.937	8877	8878	8879	15.00
1.000	2389	2314	2319	15.90

BRASS THREADED HEX SPACERS
Cadmium Plated

¼" HEX

Std. Pkg. 100

Length "L"	THD 4-40 No.	THD 6-32 No.	THD 8-32 No.	NET Per C
.125	8820	8821	8822	$3.30
.187	8823	8824	8825	3.80
.250	2330	2320	2325	4.20
.312	8826	8827	8828	4.70
.375	2331	2321	2326	5.25
.437	8829	8830	8831	5.80
.500	2332	2322	2327	6.30
.562	8832	8833	8834	7.50
.625	8835	8836	8837	8.45
.687	8838	8839	8840	8.90
.750	2333	2323	2328	9.20
.812	8841	8842	8843	10.00
.875	8844	8845	8846	10.40
.937	8847	8848	8849	10.90
1.000	2334	2324	2329	11.20

ALUMINUM SPACERS

Irridite 14-2 per MIL-C-5541 — Std. Pkg. 100

ROUND—CLEAR HOLE

LENGTH "L"	.250 O.D. for #4 screw No.	for #6 screw No.	for #8 screw No.	NET Per C	.312 O.D. for #10 screw No.	NET Per C
.125	8480	8500	8520	$ 9.75	8540	$ 8.50
.250	8481	8501	8521	10.50	8541	10.75
.375	8482	8502	8522	11.00	8542	11.50
.500	8483	8503	8523	11.75	8543	12.25
.625	8484	8504	8524	12.50	8544	13.00
.750	8485	8505	8525	14.25	8545	14.50
.875	8486	8506	8526	14.50	8546	14.75
1.000	8487	8507	8527	15.00	8547	15.25
1.250	8488	8508	8528	20.00	8548	21.50
1.500	8489	8509	8529	21.50	8549	22.50
1.750	8490	8510	8530	21.75	8550	23.50
2.000	8491	8511	8531	22.25	8551	25.50
2.50	8492	8512	8532	24.00	8552	28.00
3.00	8493	8513	8533	28.00	8553	28.75
3.50	8494	8514	8534	30.00	8554	46.00
4.00	8495	8515	8535	32.00	8555	48.00
5.00	8496	8516	8536	40.00	8556	54.00
6.00	8497	8517	8537	44.00	8557	62.00

ROUND—TAPPED HOLE

LENGTH "L"	.250 O.D. 4-40 THD	6-32 THD	8-32 THD	NET Per C	.312 O.D. 10-32 THD	NET Per C
.125	8320	8340	8360	$ 8.75	8380	$ 9.00
.250	8321	8341	8361	12.00	8381	12.75
.375	8322	8342	8362	12.50	8382	13.00
.500	8323	8343	8363	13.00	8383	14.00
.625	8324	8344	8364	14.75	8384	15.25
.750	8325	8345	8365	15.50	8385	17.75
.875	8326	8346	8366	17.00	8386	18.75
1.000	8327	8347	8367	18.00	8387	19.75
1.250	8328	8348	8368	19.50	8388	20.50
1.500	8329	8349	8369	20.25	8389	21.50
1.750	8330	8350	8370	21.50	8390	22.50
2.00	8331	8351	8371	21.75	8391	24.00
2.50	8332	8352	8372	24.00	8392	26.00
3.00	8333	8353	8373	25.50	8393	28.00
3.50	8334	8354	8374	29.00	8394	31.00
4.00	8335	8355	8375	32.00	8395	34.00

HEX—CLEAR HOLE

LENGTH "L"	.250 O.D. for #4 screw	for #6 screw	for #8 screw	NET Per C	.312 O.D. for #10 screw	NET Per C
.125	8560	8580	8600	$ 9.25	8620	$11.50
.250	8561	8581	8601	11.00	8621	13.50
.375	8562	8582	8602	12.00	8622	14.25
.500	8563	8583	8603	12.25	8623	15.00
.625	8564	8584	8604	13.50	8624	16.00
.750	8565	8585	8605	15.00	8625	16.50
.875	8566	8586	8606	15.50	8626	17.00
1.000	8567	8587	8607	20.00	8627	17.50
1.250	8568	8588	8608	21.00	8628	22.00
1.500	8569	8589	8609	22.00	8629	23.75
1.750	8570	8590	8610	22.50	8630	25.50
2.00	8571	8591	8611	23.00	8631	26.00

HEX—TAPPED HOLE

LENGTH "L"	.250 O.D. 4-40 THD	6-32 THD	8-32 THD	NET Per C	.312 O.D. 10-32 THD	NET Per C
.125	8400	8420	8440	$11.00	8460	$12.25
.250	8401	8421	8441	12.00	8461	15.00
.375	8402	8422	8442	13.50	8462	16.00
.500	8403	8423	8443	14.00	8463	16.75
.625	8404	8424	8444	15.25	8464	17.50
.750	8405	8425	8445	16.00	8465	20.00
.875	8406	8426	8446	18.00	8466	20.50
1.000	8407	8427	8447	18.50	8467	21.00
1.250	8408	8428	8448	20.25	8468	21.75
1.500	8409	8429	8449	22.00	8469	22.75
1.750	8410	8430	8450	21.50	8470	26.00
2.00	8411	8431	8451	22.50	8471	28.00
2.50	8412	8432	8452	25.00	8472	30.00
3.00	8413	8433	8453	26.50	8473	32.00
3.50	8414	8434	8454	30.00	8474	33.00
4.00	8415	8435	8455	31.00	8475	38.00

INSTRUMENT CASES AND COVERS

Ideal for small instruments and test equipment. The right size and the right mounting for your requirements. Molded of high quality, glass finish, thermosetting plastic. Threaded brass insert for cover mounting. BLACK ONLY. Std. Pkg. 5

No.	H	W	D	Insert	NET Ea.
2255	6-1/4"	x 3-3/4"	x 2"	6-32	$1.03
2257	6-13/16"	x 5-9/32"	x 2-5/16"	4-40	1.45
2289	8-1/2"	x 7-7/16"	x 3"	6-32	2.65
2377	4"	x 2-7/8"	x 1-9/16"	4-40	.48

PHENOLIC COVERS

2256	For No. 2255	.65
2260	For No. 2257	.95
2390	For No. 2289	2.20
2378	For No. 2377	.93

PANEL PLATE

Brushed and lacquered Aluminum

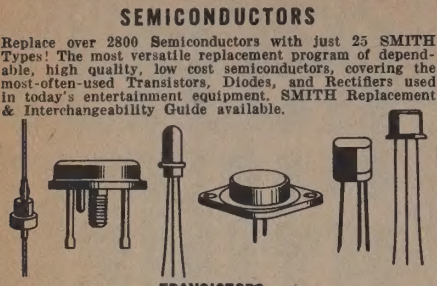
2379	For No. 2255	1.00

specify SMITH

HERMAN H. SMITH, INC.

SEMICONDUCTORS

Replace over 2800 Semiconductors with just 25 SMITH Types! The most versatile replacement program of dependable, high quality, low cost semiconductors, covering the most-often-used Transistors, Diodes, and Rectifiers used in today's entertainment equipment. SMITH Replacement & Interchangeability Guide available.



TRANSISTORS

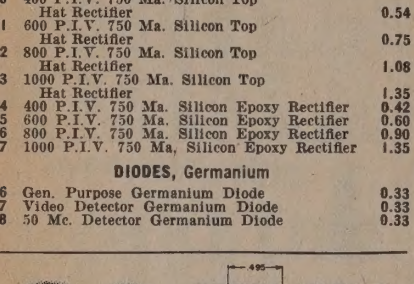
3501	Mixer, Osc., Converter PNP	$1.47
3502	I.F. Amplifier PNP	1.17
3503	A.F. Amplifier 6 V. PNP	0.99
3504	A.F. Amplifier 12 V. PNP	1.20
3505	A.F. Amplifier 9 V. PNP	0.99
3506	A.F. Automobile Power Amp. PNP	1.77
3507	Hi Power Automobile Amp. PNP	3.57
3508	Mixer, Osc., Converter NPN	1.50
3509	I.F. Amplifier NPN	1.50
3510	A.F. Amplifier 9 V. NPN	1.17
3511	A.F. Amplifier 12 V. NPN	1.17
3512	Hi Freq. R.F., I.F., Mixer, Osc., Converter PNP	1.50
3513	Hi Current (15 Amps.) for Ignition and D. C. Converters TO-3 Case	3.00
3514	Hi Current (15 Amps.) for Ignition and D. C. Converters TO-36 Case	3.57

RECTIFIERS, Silicon

3560	400 P.I.V. 750 Ma. Silicon Top Hat Rectifier	0.54
3561	600 P.I.V. 750 Ma. Silicon Top Hat Rectifier	0.75
3562	800 P.I.V. 750 Ma. Silicon Top Hat Rectifier	1.08
3563	1000 P.I.V. 750 Ma. Silicon Top Hat Rectifier	1.35
3564	400 P.I.V. 750 Ma. Silicon Epoxy Rectifier	0.42
3565	600 P.I.V. 750 Ma. Silicon Epoxy Rectifier	0.60
3566	800 P.I.V. 750 Ma. Silicon Epoxy Rectifier	0.90
3567	1000 P.I.V. 750 Ma, Silicon Epoxy Rectifier	1.35

DIODES, Germanium

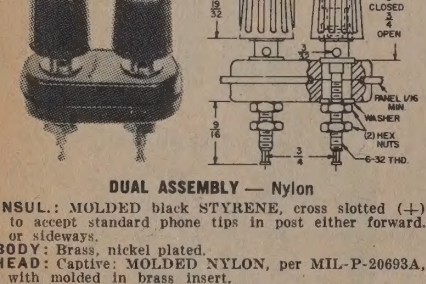
3586	Gen. Purpose Germanium Diode	0.33
3587	Video Detector Germanium Diode	0.33
3588	50 Mc. Detector Germanium Diode	0.33



DUAL ASSEMBLY — Nylon

INSUL.: MOLDED black STYRENE, cross slotted (+) to accept standard phone tips in post either forward. or sideways.
BODY: Brass, nickel plated.
HEAD: Captive: MOLDED NYLON, per MIL-P-20693A, with molded in brass insert.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 pf. between conductors, 3.0 pf. to panel.
DESCR.: Mounts in two ¼" holes on ¾" mounting centers in panels up to ¼" thick. Accommodates single or dual banana plugs Supplied with 4 hex nuts, 2 flat washers.
Std. Pkg. 25

No.	Description	NET Per C
1813BB	Two Black Heads	$70.00
1813RR	Two Red Heads	70.00
1813RB	One Red, One Black Head	70.00

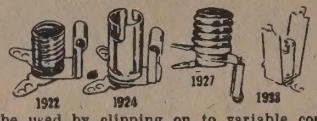


DUAL ASSEMBLY — Nylon

INSUL.: MOLDED black STYRENE, cross slotted (+) to accept standard phone tips in post either forward. or sideways.
BODY: Brass, nickel plated.
HEAD: Captive: MOLDED NYLON, per MIL-P-20693A, with molded in brass insert.
RATING: 15 Amps AC for 10°C Temp. rise, continuous duty. 2 K Volts 60 cycle AC continuous working voltage. CAPACITANCE 2.0 pf. between conductors, 3.0 pf. to panel.
DESCR.: Mounts in two ½" holes on ¾" mounting centers in panels up to ¼" thick. Accommodates single or dual banana plugs. Supplied with 4 hex nuts, 2 flat washers.
Std. Pkg. 25

No.	Description	NET Per C
1814BB	Two Black Heads	$70.00
1814RR	Two Red Heads	70.00
1814RB	One Red, One Black Head	70.00

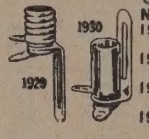
PILOT LIGHT SOCKETS
Clip-On Type



Can be used by clipping on to variable condenser or chassis. All brackets are cadmium plated.

No.	Type	Std. Pkg.100 NET Per C
1922	Miniature Screw Up Clip	$14.00
1923	Miniature Screw Down Clip	14.00
1924	Miniature Bayonet Up Clip	14.00
1925	Miniature Bayonet Down Clip	14.00
1926	Candelabra Up Clip	14.00
1927	Candelabra Down Clip	14.00
1938	Clip-in Socket	14.00

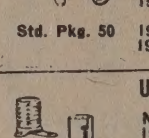
PILOT LIGHT SOCKETS
Bracket Type
Std. Pkg. 100



No.	Type	NET Per C
1928	Miniature Screw Up Bracket	$14.00
1929	Miniature Screw Down Bracket	14.00
1930	Miniature Bayonet Up Bracket	14.00
1931	Miniature Bayonet Down Bracket	14.00
1932	Candelabra Up Bracket	14.00
1933	Candelabra Down Bracket	14.00

Std. Pkg. 50

UNMOUNTED TYPE SOCKETS
Std. Pkg. 100



No.	Type	NET Per C
1934	Miniature Screw Base	$13.00
1935	Miniature Bayonet Base	13.00
1936	Candelabra Base	13.00

Std. Pkg. 50

NAVY TYPE LAMP SOCKETS
75W-125V
CANDELABRA BAYONET BASE

Vibration-proof socket for surface mounting. Made to rigid specifications of black phenolic. Has bayonet sleeve of brass and double contacts of heavy spring phosphor bronze. Std. Pkg. 10
No. 1950 NET Per C $135.00

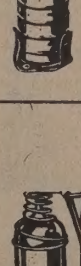
CANDELABRA SCREW BASE

Made of black phenolic to strict requirements. Instead of usual screw shell has phosphor bronze wire coiled spring for perfect contact and elimination of vibration. Designed for soldering wire leads. Std. Pkg. 10
No. 1951 NET Per C $84.00

CANDELABRA SCREW BASE

Easily wired and mounted. A very practical unit made of black phenolic to rigid specifications. Has phosphor bronze spring contact to assure positive contact and elimination of vibration. Std. Pkg. 10
No. 1952 NET Per C $84.00

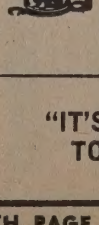
MINI-SHIELDS FOR MINI-TUBES



These Mini-Shields fit snugly on all Mini-Tubes. Available in two sizes for 1½" & 2" long tubes.

		Std. Pkg. 50	NET Per C
550	for 2" tube	1¾"	$7.80
551	for 1½" tube	1¼"	6.60

MINI-SPRING FOR MINI-TUBES



The Mini-Tube guard gives support to the Mini-Tube in two ways. It maintains a direct axial pressure downwards plus a sideways support that keeps the tube upright and perpendicular to the chassis. The spring action is constant and resilient permanently. Std. Pkg. 50

No.	Type	Height (H)	NET Per C
560	Short	1½"	$12.00
561	Medium	1⅞"	12.00
562	Long	2⅜"	12.00
563	9 Prong	1⅞"	12.00

"IT'S SOUND PLANNING TO SPECIFY SMITH!"

MINIATURE WAFER SOCKETS

Miniature bakelite sockets brass cadmium plated cont XP bakelite top plate 1 thick, bottom plate 3/64" t high grade spring brass mium plated contact; .095 mounting holes. Std. Pkg.

SEVEN PIN

No.	Description	MTG. Cen.	NET P
880	Eyelet only	⅞"	
881	Eyelet and Shield	⅞"	
882	Grd Strap and Shield	⅞"	
887	Eyelet only	1"	
888	Eyelet and Shield	1"	
889	Grd Strap and Shield	1"	

NINE PIN

890	Eyelet only	1¼"	$
891	Eyelet and Shield	1⅛"	
892	Grd Strap and Shield	1⅛"	

MOLDED MINIATURE SOCKET

Saddle Type

Molded from either high diele black general purpose bakelit low loss mica-filled bakel

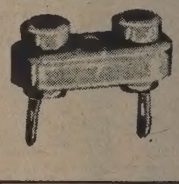
Both types supplied with center pin. .098 mtg. holes. Std. Pkg. 50

GENERAL PURPOSE BLACK BAKELITE

No.	Type	Pin	Mtg. Ctrs.	Mtg. Hole	NET P
895	Bottom Mount	7	⅞"	5/32"	
896	Top Mount	7	⅞"	5/32"	
897	Bottom Mount	9	1⅛"	¾"	
898	Top Mount	9	1⅛"	¾"	

LOW LOSS MICA-FILLED BAKELITE

883	Bottom Mount	7	⅞"	5/32"	
884	Top Mount	7	⅞"	5/32"	
885	Bottom Mount	9	1⅛"	¾"	
886	Top Mount	9	1⅛"	¾"	



CRYSTAL SOCK

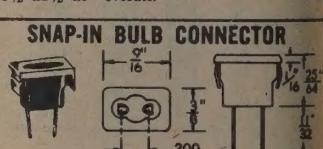
For HC-6/U Type Crys

Glazed ceramic Phosphor bronze plated contacts .486". Pin diameter mtg. hole .125
Std. Pkg. 50 NET P
No. 1945 $1

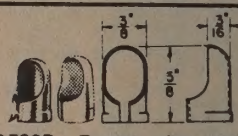
COOLING FAN

Designed for efficient cooling of tubes, rectifiers, industrial equipment, amateur transmitters, hi-fi equipment and all other devices requiring the assisted convection of air. Permits more efficient RF shielding of equipment depending on convection cooling. Shaded pole motor with Nylon fan blade. Supplied complete with all mounting hardware.
Std. Pkg. 1
POWER INPUT: 115 Volts AC 60 cycles.
AIR FLOW: 30 CFM (nominal).
SPEED: 3000 RPM (nominal).
SIZE: 3½"x2½"x3" overall.
NET P

SNAP-IN BULB CONNECTOR



Designed for use with the new Twin Pin Bas Miniature Lamps (G.E. #10-25 volts, #1 volts, or #15-7.0 volts). Easily assembled to unit for indicating purposes. Withstands ex sive temperatures. Snaps into a .500x.296 tangular hole in panels .032 to .062 thick. B — brass, cad. plated; contacts — brass, s plated.
Std. Pkg
No. 1504 NET Per C $1



PILOT LIGHT SHIELD

DESCR.: Prevents glare when used in radio ceiver meters, etc. Ribbed bottom holds sh securely in place on bulb. Std. Pkg

No.	Type	NET P
1963	Brass Cad. Plate	
1968	Plain Brass	
1969	Flared Brass Cad. Plate	

GRID CAPS

Std. Pkg. 100

No.	Tube Type	NET P
1454	¼" Mini Tubes	

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pecify SMITH
HERMAN H. SMITH, INC.
SPECIFY SMITH
ELECTRONIC COMPONENTS

EQUIPMENT HANDLES

MATERIAL AND FINISH SPECIFICATIONS

ving specifications are met by all panel handles, and hardware where applicable:

Materials:

In accordance with Federal Spec. QQ-B-626, Com- 22, ½ Hard.
UM: In accordance with Federal Spec. QQ-A-365, ition A, Type 3.
Cold-Rolled, in accordance with QQ-S-633b, Grade).

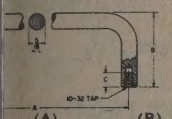
Finishes:

NICKEL PLATE: Polished Nickel Plate, in accordance with Federal Spec. QQ-N-290, Class I, Type VI.
BLACK OXIDE: In accordance with MIL-F-495A.
SATIN ETCH: Commercial finish.
BLACK ANODIZE: In accordance with MIL-A-8625A.
OPTICAL BLACK: Color in accordance with Fed. Std. 595, type 37038. Paint complies with Fed. Spec. TT-E-527.

Note:

Aluminum Handles, either round or oval, and matching ferrules, can be supplied anodized in colors per MIL-A-8625A on special order.

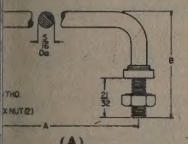
PANEL HANDLES



Brass Panel Handles, finished as shown, with internal thread. Individually packaged.
Std. Pkg. 10

(A)	(B)	(C)	NET Ea.
BRASS NICKEL PLATE			
3"	1-5/16"	7/16"	1.00
3"	1-1/2"	9/16"	1.00
4-1/4"	1-1/2"	9/16"	1.05
4-9/16"	1-1/2"	9/16"	1.10
6-7/16"	1-3/4"	9/16"	1.40
BRASS BLACK OXIDE			
3"	1-5/16"	7/16"	1.00
3"	1-1/2"	9/16"	1.00
4-1/4"	1-1/2"	9/16"	1.05
4-9/16"	1-1/2"	9/16"	1.10
6-7/16"	1-3/4"	9/16"	1.40

PANEL HANDLES



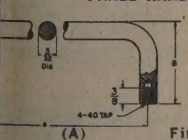
Brass Panel Handles, finished as shown with male threaded stud. Supplied complete with matching ferrules, and brass, nickel plated hex nuts. Individually packaged.
Std. Pkg. 10

(A)	(B)	NET Ea.
BRASS NICKEL PLATE		
2"	2-1/8"	1.35
3"	2-1/8"	1.40
4"	2-1/8"	1.45
4-1/4"	2-1/8"	1.50
6"	2-11/16"	1.55
BRASS BLACK OXIDE		
2"	2-1/8"	1.35
3"	2-1/8"	1.40
4"	2-1/8"	1.45
4-1/4"	2-1/8"	1.50
6"	2-11/16"	1.55

PANEL HANDLES

(A)	Finish	NET Ea.
BRASS		
2"	Nickel Plate	$ .90
2"	Black Oxide	.90
3"	Nickel Plate	.95
3"	Black Oxide	.95
4"	Nickel Plate	1.00
4"	Black Oxide	1.00
6"	Nickel Plate	1.05
6"	Black Oxide	1.05
ALUMINUM		
2"	Satin	.65
2"	Blk. Anodize	.75
3"	Satin	.75
3"	Blk. Anodize	.80
4"	Satin	.80
4"	Blk. Anodize	.85
6"	Satin	.85
6"	Blk. Anodize	.90

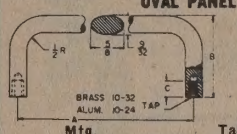
PANEL HANDLES



⅝" Diameter panel handles, Brass and Aluminum, finished as shown, with internal 4-40 thread. Individually packaged.
Std. Pkg. 10

(A)	Finish	NET Ea.
BRASS		
1¼"	Nickel Plate	$.80
1¼"	Black Oxide	.80
2"	Nickel Plate	.85
2"	Black Oxide	.85
3"	Nickel Plate	.90
3"	Black Oxide	.90
ALUMINUM		
1¼"	Satin	.75
1¼"	Blk. Anodize	.80
2"	Satin	.80
2"	Blk. Anodize	.85
3"	Satin	.85
3"	Blk. Anodize	.90

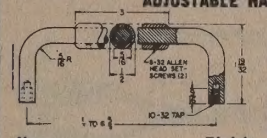
OVAL PANEL HANDLES



Flat, oval panel handles in Brass and Aluminum, finished as shown. Brass handles have internal 10-32 thread, Aluminum handles have internal 10-24 thread. Individually packaged.
Std. Pkg. 10

No.	Mtg. Ctrs. (A)	Height (B)	Tap Depth (C)	Finish	NET Ea.
			BRASS		
1644	3"	1-9/32"	9/32"	Nickel Plate	$1.80
1645	3"	1-9/32"	9/32"	Black Oxide	1.80
1647	4-9/16"	1-1/2"	1/2"	Nickel Plate	2.20
1648	4-9/16"	1-1/2"	1/2"	Black Oxide	2.20
1651	6-7/16"	1-3/4"	1/2"	Nickel Plate	2.50
1653	6-7/16"	1-3/4"	1/2"	Black Oxide	2.50
1655	9"	1-3/4"	1/2"	Nickel Plate	2.75
1657	9"	1-3/4"	1/2"	Black Oxide	2.75
			ALUMINUM		
1646	3"	1-9/32"	9/32"	Black Anodize	1.65
1649	4-9/16"	1-1/2"	9/32"	Black Anodize	1.80
1654	6-7/16"	1-3/4"	9/32"	Black Anodize	2.10
1658	9"	1-3/4"	9/32"	Black Anodize	2.20

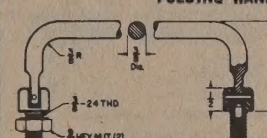
ADJUSTABLE HANDLES



Adjustable Brass Panel handles, with mounting center range from 4½" to 6⅝". Finished as shown. Internal 10-32 thread, supplied with Allen-Head locking screws. Individually packaged.
Std. Pkg. 10

No.	Finish	NET Ea.
1659	Nickel Plate	$3.85
1661	Black Oxide	3.85

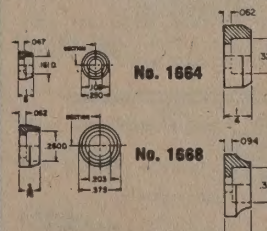
FOLDING HANDLES



Folding Brass panel handles, with spring-loaded detents which snap into upright or left-or-right folded position. Finished as shown. Supplied with brass, nickel plated hex nuts. Mounts in ⅜" panel holes. Individually packaged.
Std. Pkg. 10

No.	Finish	NET Ea.
1662	Nickel Plate	$4.40
1663	Black Oxide	4.40

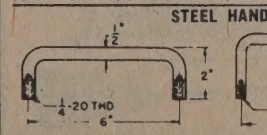
FERRULES



Brass and Aluminum ferrules, finished as shown, to match handles listed above.
Std. Pkg. 50

No.	Fig.	(A)	(B)	(C)	(D)	(E)	Per C
				BRASS, NICKEL PLATED			
1664	1	5/32"	.109	1/8"	1/4"	3/64"	$15.00
1668	1	1/4"	.203	3/16"	3/8"	1/16"	15.00
2055	1	5/16"	.219	1/4"	9/16"	1/16"	18.00
2054	2	5/16"	.196	5/16"	3/4"	3/32"	15.00
				BRASS, BLACK OXIDE			
1665	1	5/32"	.109	1/8"	1/4"	3/64"	12.00
1669	1	1/4"	.203	3/16"	3/8"	1/16"	12.00
1673	1	5/16"	.219	1/4"	9/16"	1/16"	12.00
1672	2	5/16"	.196	5/16"	3/4"	3/32"	13.00
				ALUMINUM SATIN ETCH			
1666	1	5/32"	.109	1/8"	1/4"	3/64"	13.00
1670	1	1/4"	.203	3/16"	3/8"	1/16"	13.00
				ALUMINUM, BLACK ANODIZED			
1667	1	5/32"	.109	1/8"	1/4"	3/64"	13.00
1671	1	1/4"	.203	3/16"	3/8"	1/16"	13.00

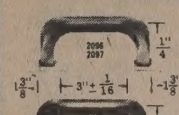
STEEL HANDLES



Optical Black finish.
Std. Pkg. 10

No.	(A)	(B)	(C)	NET Ea.
2061	6"	2"	½"	$2.00
2062	6¼"	2⅝"	⅜"	1.75

MOLDED GRIP HANDLES

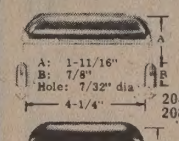


HANDLE: Molded High Impact styrene.
HDWRE.: Steel, nickel plated.
DESCR.: Designed for economy and rugged use.
Std. Pkg. 10

ATTACHES WITH RIVETS OR SCREWS

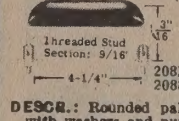
No.	Color	NET Each
2096	Black	$.66
2097	Grey	.66
ATTACHES WITH THREADED STUD		
2098	Black	$1.05
2099	Grey	1.05

MOLDED GRIP HANDLES



HANDLE: Molded high impact Styrene, Fungus Resistant.
HDWRE.: Steel, Nickel plated.
DESCR.: Rounded palm fitting design. Attaches to case with machine screws.
Std. Pkg. 10

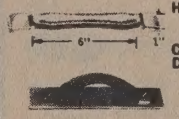
No.	Color	NET Ea.
2085	Black	$1.45
2086	Grey	1.45



HANDLE: Molded high impact Styrene, Fungus Resistant.
HDWRE.: Steel, Nickel plated.
DESCR.: Rounded palm fitting design. Attaches to case with washers and nuts supplied. Will support 100 lbs.
Std. Pkg. 10

No.	Color	Stud Lgth.	NET Ea.
2087	Black	9/16"	$1.45
2088	Grey	9/16"	1.45

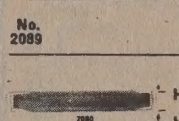
SPRING GLIDE HANDLE



HANDLE: Genuine leather, contoured BLACK, matching stitching, 6" long.
CAPS: Steel, chrome plated.
DESCR.: Strong, silent spring glide, frequency of decibel extremes will not induce handle rattle. Handle moves up for comfortable carrying down when not in use.
Std. Pkg. 10

No.	Color	NET Ea
2089	Black	$2.75

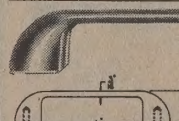
RETRACTO-LINK HANDLES



HANDLE: Genuine leather, matching stitching, BLACK.
HDWRE.: Steel, nickel plated.
DESCR.: Assemblies are shaped with all hardware installed except for decorative cover caps which are packed separately. Supplied in two styles—different lengths.
Std. Pkg. 10

ATTACHES WITH PRONGS THAT BEND INSIDE CASE

No.	Length	NET Each
2090	4½"	$2.50
2091	5½"	2.50
2092	6¾"	2.50
ATTACHES WITH RIVETS OR SCREWS		
2093	4½"	$2.50
2094	5½"	2.50
2095	6¾"	2.50



OVAL HANDLE

Die Cast Zamac Handle. Brush chrome plated.
Std. Pkg. 10

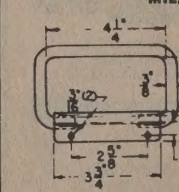
No.	NET Per C
2065	$90.00

BAKELITE HANDLE

Std. Pkg. 10

No.	Thread	O.D.	Mtg. Centers	Color	NET Per C
2281	8-32	4¼"	2¾"	Black	$18.00
2282	8-32	4¼"	2⅝"	Red	18.00

MIL. SPEC. HANDLES



MATERIAL: Aluminum, 1100F Alloy per QQ-A-225/1A.
FINISH: Alodine per MIL-C-5541A. Sprayed to MIL-E-15090B. Gloss gray color #16376 per Fed. Std. 595.

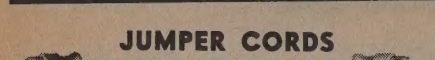
No.	Type	(A)	NET Ea.
2063	Half Bracket	1"	$1.65
2064	Full Bracket	1⅜"	1.65
WITH TRANSFLUX PLASTIC PROTECTOR			
2048	Half Bracket	1"	2.00
2049	Full Bracket	1⅜"	2.00

specify SMITH

HERMAN H. SMITH, INC.

ELECT
COMPO

JUMPER CORDS



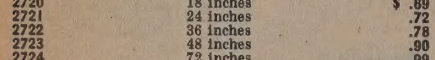
Male Phono Plug with fingergrip handle on each end.

No.	Length	Std. Pkg. 12 NET Each
631	18 inches	$ .69
632	24 inches	.72
633	36 inches	.78
634	48 inches	.90
635	72 inches	.99
636	120 inches	1.32
745	180 inches	1.65

Right Angle Phono Plug to Right Angle Phono Plug. Std. Pkg. 12

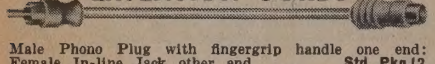
No.	Length	NET Ea.
2720	18 inches	$ .69
2721	24 inches	.72
2722	36 inches	.78
2723	48 inches	.90
2724	72 inches	.99
2725	120 inches	1.32
2726	180 inches	1.65

EXTENSION CORDS



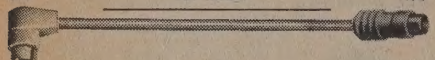
Male Phono Plug with fingergrip handle one end; Female In-line Jack other end. Std. Pkg. 12

No.	Length	NET Ea.
641	18 inches	$ .78
642	24 inches	.84
643	36 inches	.90
644	48 inches	1.05
645	72 inches	1.17
646	120 inches	1.32



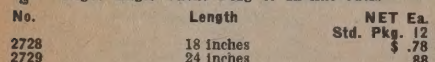
Right Angle Phono Plug to In-line Jack.

No.	Length	NET Ea. Std. Pkg. 12
2728	18 inches	$ .78
2729	24 inches	.88
2730	36 inches	.90
2731	48 inches	1.05
2732	72 inches	1.17
2733	120 inches	1.32



Male Phono Plug one end; In-line Jack other end. Std. Pkg. 12

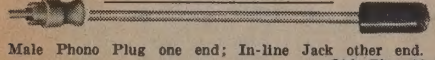
No. 639 — 72 inches — NET Ea. $1.32



Right Angle Phono Plug to In-line Jack. Std. Pkg. 12

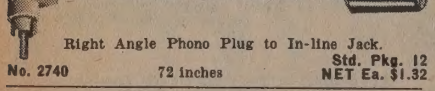
No. 2740 — 72 inches — NET Ea. $1.32

INPUT-OUTPUT CORDS



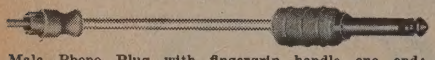
Male Phono Plug with fingergrip handle one end; Male Phono Plug other end. Std. Pkg. 12

No. 662 — 72 inches — NET Ea. $1.32



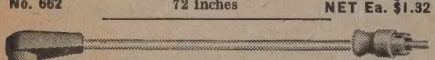
Right Angle Phone Plug to Straight Phono Plug. Std. Pkg. 12

No. 2786 — 6 feet — NET Ea. $1.32



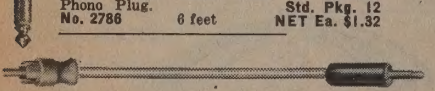
Male Phono Plug with Molded Fingergrip handle one end; Miniature Phone Plug other end. Std. Pkg. 12

No. 715 — 72 inches — NET Ea. $1.65



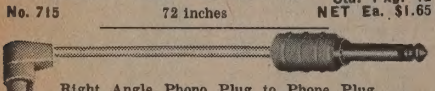
Right Angle Phono Plug to Phone Plug. Std. Pkg. 12

No. 2739 — 72 inches — NET Ea. $1.32



Right Angle Phone Plug to Right Angle Phono Plug. Std. Pkg. 12

No. 2787 — 6 feet — NET Ea. $1.32

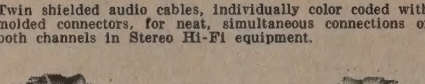


Right Angle Phono Plug to Miniature Phone Plug. Std. Pkg. 12

No. 2741 — 72 inches — NET Ea. $1.65

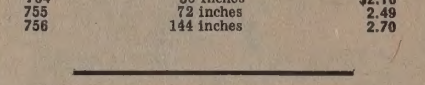
STEREO CONNECTOR CABLES

Twin shielded audio cables, individually color coded with molded connectors, for neat, simultaneous connections of both channels in Stereo Hi-Fi equipment.



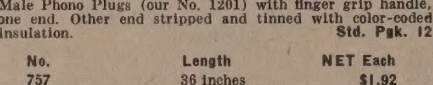
Male Phono Plugs (our No. 1201) with finger grip handle on each end. Std. Pkg. 12

No.	Length	NET Each
754	36 inches	$2.16
755	72 inches	2.49
756	144 inches	2.70



Male Phono Plugs (our No. 1201) with finger grip handle, one end. Other end stripped and tinned with color-coded insulation. Std. Pgk. 12

No.	Length	NET Each
757	36 inches	$1.92
758	72 inches	2.16
759	144 inches	2.31



Male Phono Plugs (our No. 1201) with finger grip handle, one end. Female molded in-line jacks other end. Std. Pkg. 12

No.	Length	NET Each
760	36 inches	$1.95
761	72 inches	2.25
762	144 inches	2.70

PHONO PLUG CONNECTOR CORDS

Male Phono Plug with fingergrip handle one end; Spade Lugs other end. Std. Pkg. 12

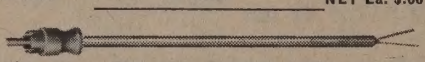
No. 668 — 72 inches — NET Ea. $.66

Male Phono Plug with fingergrip handle one end; other end stripped and tinned.

No.	Length	Std. Pkg. 12
637	36 inches	$.63
638	72 inches	.75

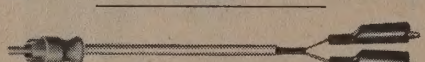
Male Phono Plug with fingergrip handle one end; Insulated Alligator Clips other end.

No.	Length	Std. Pkg. 12
673	36 inches	1.08
674	72 inches	1.17



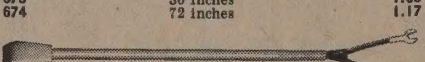
Right Angle Phono Plug to Spade Lugs. Std. Pkg. 12

No. 2734 — 72 inches — NET Ea. $.66



Right Angle Phono Plug to stripped and tinned ends. Std. Pkg. 12

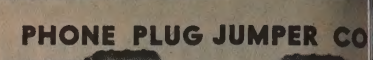
No.	Length	NET Ea.
2735	36 inches	$.63
2736	72 inches	.75



Right Angle Phono Plug to Insulated Alligator Clips. Std. Pkg. 12

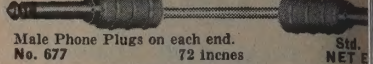
No.	Length	NET Ea.
2737	36 inches	$1.08
2738	72 inches	1.17

PHONE PLUG JUMPER CO



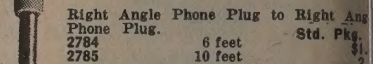
Male Phone Plugs on each end. Std.

No. 677 — 72 inches — NET E



Right Angle Phone Plug to Right Ang Phone Plug. Std. Pkg.

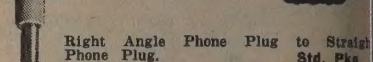
2784	6 feet	$1.
2785	10 feet	2.



Right Angle Phone Plug to Straigh Phone Plug. Std. Pkg.

No. 2783 — 72 Inches — NET Ea. $1.

PHONE PLUG EXTENSION CORDS

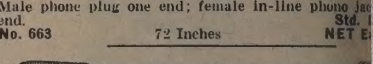


Male phone plug one end; female in-line phono jac end. Std.

No. 663 — 72 Inches — NET E

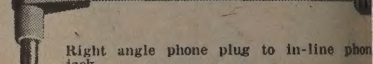
Right angle phone plug to in-line phon jack.

No. 2788 — 72 Inches — NET Ea. $1.4



Male phone plug one end; in-line phone jack oth Std.

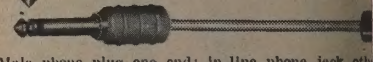
No. 669 — 72 Inches — NET E



Right angle phone plug to in-line ph jack.

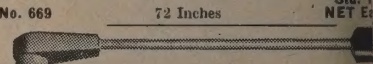
No. 2789 — 72 Inches — NET Ea. $1

PHONE PLUG CONNECTO CORDS



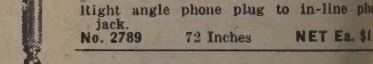
Male Phone Plug one end; Spade Lugs othe Std. P

No. 665 — 72 inches — NET E



Male Phone Plug one end; other end stripp tinned. Std.

No. 667 — 72 inches — NET E

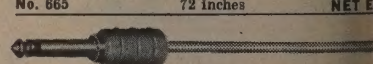


Male Phone Plug one end; insulated Alligato other end. Std.

No. 664 — 72 inches — NET E

Right Angle Phone Plug to Insula Spade Lug. Std. Pkg.

No. 2780 — 72 Inches — NET Ea. $



Right Angle Phone Plug to Stripped Tinned Ends. Std. Pkg.

No. 2781 — 72 Inches — NET Ea. $1.

Right Angle Phone Plug to Insulat Alligator Clips. Std. Pkg.

No. 2782 — 72 Inches — NET Ea. $1.

SMITH PAGE 29 (COMPLETE SMITH INDEX ON LAST SMITH PAGE) © United Technica

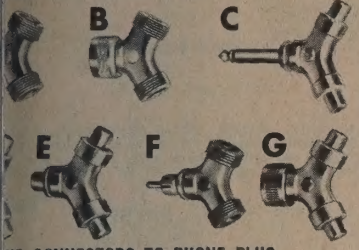
ecify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

"Y" CONNECTOR ADAPTERS

fully shielded connectors for parallel input, d mixing various styles of audio cable termi- connectors are American made, precision die- right nickel plated finish **Std. Pkg. 10**



KE CONNECTORS TO PHONE PLUG

wo Male threaded Microphone connectors Single two-circuit phone plug.

NET Each $1.35

CONNECTORS TO MIKE CONNECTOR

wo Male threaded Microphone connectors, Single Female threaded Microphone connector, ng.

NET Each $1.26

PHONO JACKS TO PHONE PLUG

o standard phono jacks, paralleled. Single two-circuit phone plug.

NET Each $1.26

PHONO JACKS TO PHONO PLUG

wo standard phono jacks, paralleled. Single standard phono plug.

NET Each $1.17

PHONO JACKS TO PHONO JACK

wo standard phono jacks, paralleled. Single standard phono jack.

NET Each $1.17

IKE CONNECTORS TO PHONO PLUG

Two Male threaded Microphone connectors, Single standard phono plug.

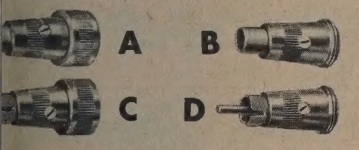
NET Each $1.32

HONO JACKS TO MIKE CONNECTOR

standard phono jacks, paralleled. Single Female threaded Microphone connector, ng.

NET Each $1.32

ICROPHONE CONNECTOR ADAPTERS



andard phono jack. **Std. Pkg. 10**
emale microphone connector, with captive ring.

NET Each $ .96

andard phono jack.
Male threaded microphone connector.

NET Each $ .90

emale Microphone connector, with captive ring.
Standard phono plug.

NET Each $ .84

ale threaded Microphone connector.
Standard phono plug.

NET Each $ .78

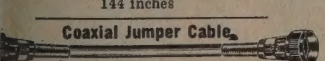
ICROPHONE CABLES

Std. Pkg. 12

Coaxial Extension Cable

Length	NET Ea.
36 inches	$1.20
72 inches	1.56
144 inches	1.80

Coaxial Jumper Cable



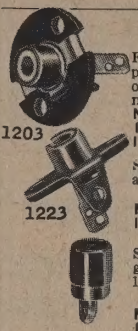
Length	NET Ea.
36 inches	$1.32
72 inches	1.65
144 inches	2.31

PHONO PLUGS

RCA Type Phone Plug. For use with record players, recording and reproducing equipment, etc. Extra large hole in cap (.175") for coaxial cable. Std. Pkg. 100

No.	Type	NET Per C
1201	Long Pin (1" overall)	$3.60
1202	Short Pin (13/16" overall)	3.60

PHONO JACKS



Female for No. 1201 plug. Single prong positive grip jack mounted on 1/16" bakelite with 11/16" mounting centers. Std. Pkg. 100

No.		NET Per C
1203		$4.20
1203-1	Insulating Washer	1.80

Small, compact . . . where space is at a premium. 11/16" Mtg. Ctrs. **Std. Pkg. 100**

No.	NET Per C
1223	$7.20

Space Saver . . . Rivets and grounds to chassis. Mounts in 19/64" hole. **Std. Pkg.100**

No.	NET Per C
1233	$7.00

PANEL MOUNT PHONO JACK

Mounts in ¼" hole, with nut and washer. Easy installation for the home Hi-Fi enthusiast. **Std. Pkg. 100**

No.	NET Per C
1247	$30.00

HANDY GRIP PHONO PLUG

Quick connect: strip wire, solder inner conductor to pin and either solder braid to lug or crimp to lug. Fits all standard phone jacks. **Std. Pkg. 100**

No.	NET Per C
1246	$9.00

SHIELDED EXTENSION JACK

Brass shell, cadmium plated, 1 7/16" long, with black bakelite insert. Provides insulation for solder-coated positive grip contact. Uses No. 1201 phono plug. Std. Pkg. 50 **NET Per C**

No. 1237 ..... $27.00

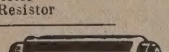
PHONE ADAPTERS

Phono Plug to Phone Plug

Adapts standard phono plug to phone plug with built in resistor to adapt either crystal or magnetic pickups. **Std. Pkg. 12**

No.	Description	NET Ea.
707	With Resistor	$.70
708	Without Resistor	.48

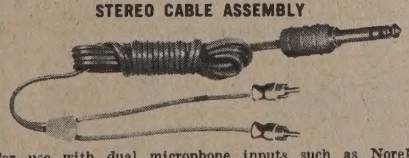
FEED THRU



Accepts Phono Plug on Each End.

No. 661 Std. Pkg. 12 **NET Ea. $.45**

STEREO CABLE ASSEMBLY



For use with dual microphone inputs such as Norelco, Webcor, Revere and Wollensak. 6-ft. dual shielded stereo cable with 3-conductor molded phone plug at one end and two color-coded phono plugs at other two ends. **Std. Pkg.12**

No. 2712 **NET Ea. $2.64**

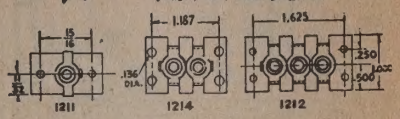
STEREO HEADPHONE CORD

Replacement cord for Jensen HS-10, Knight KN-840, Sharpe AA-8, HA-10 and most all stereo headphones. 6-ft. dual shielded stereo cable with 3-conductor molded phone plug at one end and other two ends stripped and tinned.

No. 2719 **NET Ea. $1.95**

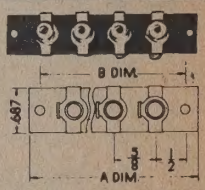
PHONO JACKS

Used on recording units, phono plays, etc. Std. pkg. 50



No.	NET Per C
1211—Single Jack	$ 7.20
1214—Double Jack	9.60
1212—Triple Jack	15.00
1214-1—Insulating Washer for No. 1214 ..	2.40

MULTIPLE PHONO JACKS

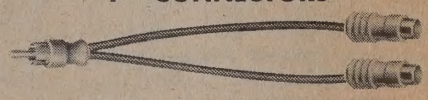


Individual phono jacks (no interconnected grounds) kmounted on narrow width bakelite strip.

Std. Pkg. 50

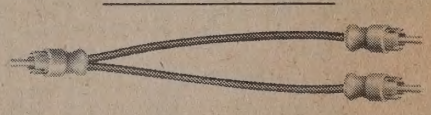
No.	No. of Jacks	Dimensions "A"	Dimensions "B"	NET Per C
1261	1	1⅜"	1.000	$ 5.50
1262	2	2"	1.625	11.00
1263	3	2⅝"	2.250	16.00
1264	4	3¼"	2.875	21.00
1265	5	3⅞"	3.500	24.00
1266	6	4½"	4.125	30.00
1267	7	5⅛"	4.750	33.00
1268	8	5¾"	5.375	37.00

"Y" CONNECTORS



Flexible "Y" connector, male phono plug to twin female phono jacks. 4" shielded wire.

No. 751 Std. Pkg. 12 **NET Ea. $1.35**



Flexible "Y" connector, male phono plug to twin male phono plugs. 4" shielded wire.

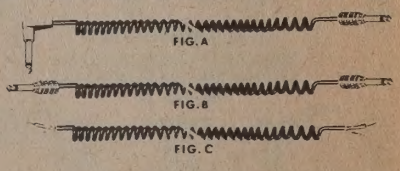
No. 752 Std. Pkg. 12 **NET Ea. $1.35**

Flexible "Y" connector, female phono jack to twin male phono plugs. 4" shielded wire.

No. 753 Std. Pkg. 12 **NET Ea. $1.35**

ELECTRIC GUITAR CABLES

For professional use with guitars, accordions, electronic organs, other stringed instruments, etc. **Std. Pkg. 12**



RUBBER COVERED COILED CORD — BLACK ONLY

No.	Fig.	Expanded Length	NET Each
2715	A	15 ft.	$4.50
2717	B	15 ft.	4.50
Rubber Covered Coiled Cord Only — without terminations.			
7505	C	15 ft.	3.50

VINYL PLASTIC COILED CORD

Available in Red (—102), Black (—103), Yellow (—107), Green (—104), Blue (—105), White (—101). Specify Color

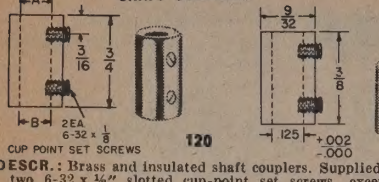
No.	Fig.	Expanded Length	NET Each
2710	A	15 ft.	$4.20
Vinyl Plastic Coiled Cord Only — without terminations.			
7504	C	15 ft.	$3.00

specify SMITH

HERMAN H. SMITH, INC.

ELECTR
COMPON

SHAFT COUPLERS

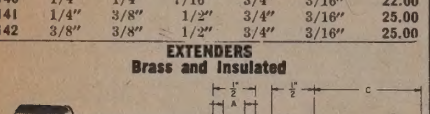


DESCR.: Brass and insulated shaft couplers. Supplied with two 6-32 x ⅛" slotted cup-point set screws, except as indicated. **Std. Pkg. 50**

Brass, Nickel Plated Couplers

No.	(A)	(B)	(C)	(D)	(E)	NET Per C
120	1/4"	1/4"	7/16"	3/4"	3/16"	$22.00
131	1/4"	3/8"	1/2"	3/4"	3/16"	25.00
133	3/8"	3/8"	1/2"	3/4"	3/16"	25.00
With Four Set Screws, Spaced 90°						
138	1/4"	1/4"	7/16"	3/4"	3/16"	33.00
Miniature Coupler, With 4-40 x 1/8" Allen Head Cup-Point Set Screws						
180	1/8"	1/8"	9/32"	3/8"	5/64"	40.00
Insulated Black Fibre, Per Mil-F-1148A, Grade Ch.						
140	1/4"	1/4"	7/16"	3/4"	3/16"	22.00
141	1/4"	3/8"	1/2"	3/4"	3/16"	25.00
142	3/8"	3/8"	1/2"	3/4"	3/16"	25.00

EXTENDERS
Brass and Insulated



Std. Pkg. 25

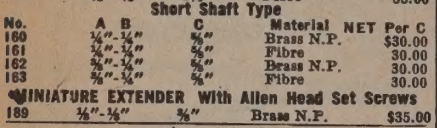
Long Shaft Type

No.	A	B	C	Material	NET Per C
150	1/4"-1/4"		1 1/4"	Brass N.P.	$35.00
130	1/4"-1/4"		1 1/4"	Fibre	35.00
132	3/8"-1/4"		1 1/4"	Brass N.P.	35.00
184	3/8"-1/4"		1 1/4"	Fibre	35.00
Short Shaft Type					
160	1/4"-1/4"		5/8"	Brass N.P.	$30.00
161	1/4"-1/4"		5/8"	Fibre	30.00
162	3/8"-1/4"		5/8"	Brass N.P.	30.00
163	3/8"-1/4"		5/8"	Fibre	30.00

MINIATURE EXTENDER With Allen Head Set Screws

189	1/8"-1/4"	3/4"	Brass N.P.	$35.00

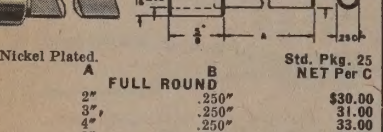
SHAFT EXTENDERS For Volume Controls



Brass, Nickel Plated. **Std. Pkg. 25**

No.	A	B	NET Per C
		FULL ROUND	
2356	2"	.250"	$30.00
2357	3",	.250"	31.00
2358	4"	.250"	33.00
2359	2"	.219"	34.00
		WITH FLAT	
2360	3"	.219"	35.00
2361	4"	.219"	45.00
2362	2"	.156"	34.00
2363	3"	.156"	35.00
2364	4"	.156"	50.00

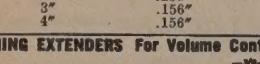
BUSHING EXTENDERS For Volume Controls



Brass, Nickel Plated. **Std. Pkg. 25**

No.	A	B	NET Per C
2350	3/4"	3/16"	$25.00
2351	5/8"	1/4"	30.00
2352	3/4"	3/8"	33.00
2353	1 1/16"	3/8"	34.00
2354	1 1/16"	1/2"	35.00
2355	3/4"	1/4"	36.00

BRASS THREADED RODS



Std. Pkg. 10

1-Ft. Length No.	NET Ea.	Threaded	2-Ft. Length No.	NET Ea.
1400-1	$.50	6-32	1400-2	$1.00
1401-1	.50	8-32	1401-2	1.00
1402-1	.50	10-32	1402-2	1.00
1403-1	.55	1/4-20	1403-2	1.10

NYLON THREADED RODS
Std. Pkg. 10

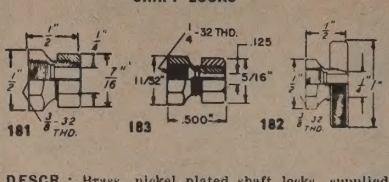
1-Ft. Length No.	NET Ea.	Threaded	2-Ft. Length No.	NET Ea.
1420-1	$1.10	6-32	1420-2	$2.20
1421-1	1.20	8-32	1421-2	2.40
1422-1	1.50	10-32	1422-2	3.00
1423-1	1.80	1/4-20	1425-2	3.60

Brass Acetate & Nylon PLAIN RODS

Std. Pkg. 10

1/4" DIA No.	Net Ea.	Type	Length	1/8" DIA No.	NET Ea.
1404	$.35	Brass N.P.	6"	1431	$.30
1405	.70	Brass N.P.	12"	1432	.60
1406	.15	Fibre	6"	1433	.15
1407	.30	Fibre	12"	1434	.30
1408	.24	Nylon	6"	1440	.30
1409	.48	Nylon	12"	1441	.60

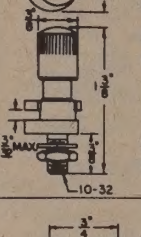
SHAFT LOCKS



DESCR.: Brass, nickel plated shaft locks, supplied with lock nut. Standard (No. 181, 182) for ¼" shafts; miniature (No. 183) for ⅛" shafts. **Std. Pkg. 50**

No.	(A)	(B)	(C)	(D)	(E)	Per C
181	.253	1/2"	1/2"	7/16"	3/8"-32	$27.00
182	.253	1/2"	1/2"	1"	3/8"-32	50.00
183	.128	1/2"	11/32"	5/16"	1/4"-32	20.00

DIAL LOCK



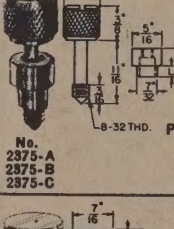
HEAD: Captive: Brass, nickel plated.

BODY: Brass nickel plated.

DESCR.: Prevents detuning of the dial when locked by means of the captive knurled nut. Supplied with hex nut & lockwasher. **Std. Pkg. 25**

No.	NET Per C
199	$66.00

CAPTIVE SCREW & BUSHING
Large Head

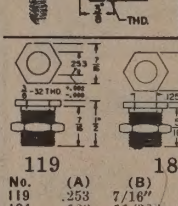


BODY: BRASS, nickel plated.

DESCR.: Supplied with panel bushing as shown. Used extensively for quick removal of panels from chassis. Non-removable from panel. **Std. Pkg. 25**

No.	Panel Bushing Length (L)	NET Per C
2365-A	5/32"	$60.00
2365-B	1/32"	60.00
2365-C	9/32"	60.00

CAPTIVE SCREW & BUSHING
Small Head

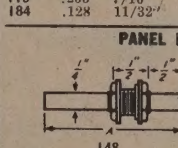


BODY: BRASS, nickel plated.

DESCR.: Supplied with panel bushing as shown. Used extensively for quick removal of panels from chassis. Non-removable from panel. **Std. Pkg. 25**

No.	Panel Bushing Length (L)	NET Per C
2375-A	5/32"	$30.00
2375-B	1/32"	30.00
2375-C	9/32"	30.00

THUMB SCREW

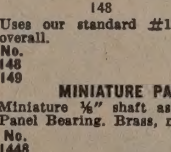


BODY: BRASS, nickel plated.

DESCR.: Used extensively for quick removal of panels from chassis. **Std. Pkg. 25**

No.	Thread	NET Per C
2366	6-32	$24.00
2367	8-32	24.00
2368	10-32	24.00

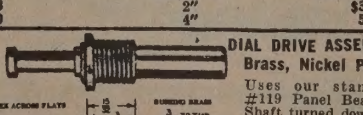
PANEL BEARINGS



DESCR.: Brass, nickel plated panel bearings, supplied with hex nut. Standard (No. 119) for ¼" shafts; miniature (No. 184) for ⅛" shafts. **Std. Pkg. 100**

No.	(A)	(B)	(C)	(D)	(E)	Per C
119	.253	7/16"	1/2"	7/16"	3/8"-32	$15.00
184	.128	11/32"	7/16"	5/16"	1/4"-32	15.00

PANEL BEARING ASSEMBLY



Uses our standard #119 Panel Bearing. Nickel plated overall. **Std. Pkg. 25**

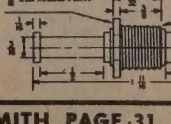
No.	A	NET Per C
148	3"	$35.00
149	6"	50.00

MINIATURE PANEL BEARING ASSEMBLY

Miniature ⅛" shaft assembly, using our standard #184 Panel Bearing. Brass, nickel plated overall. **Std. Pkg. 25**

No.	Length "A"	NET Per C
1448	2"	$35.00
1449	4"	50.00

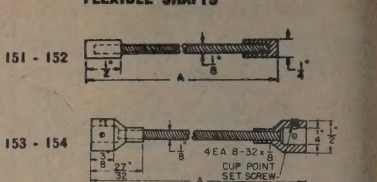
DIAL DRIVE ASSEMBLY
Brass, Nickel Plated



Uses our standard #119 Panel Bearing. Shaft turned down for dial drive. Nickel Plated overall. **Std. Pkg. 25**

No.	NET Per C
126	$33.00

FLEXIBLE SHAFTS



High quality phosphor bronze non-magnetic, non-ru flexible shafts. Remote control when necessary to condensers and potentiometers away from panel at an angles. Turns at any angle up to 90°; free from back

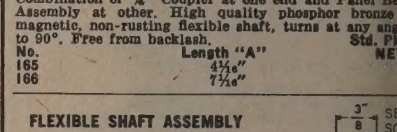
No.	Size "A"	Description	Std. Pk NET
151	3"	With 1/4" hub	
152	6"	With 1/4" hub	
153	3 1/4"	With 1/4" coupler	
154	6 1/4"	With 1/4" coupler	

BI-DIRECTIONAL FLEXIBLE SHAFT AND PANEL BEA

Combination of ¼" Coupler at one end and Panel Bea Assembly at other. High quality phosphor bronze magnetic, non-rusting flexible shaft, turns at any angl to 90°. Free from backlash. **Std. Pkg.**

No.	Length "A"	NET
165	4 1/16"	
166	7 1/16"	

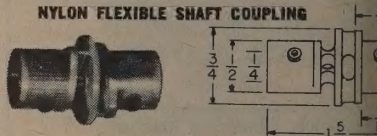
FLEXIBLE SHAFT ASSEMBLY
With Casing



Bi-directional high quality flexible shaft. Cable ca acts as a support and reduces amount of deflection in ca Metal parts steel cadmium plated.

No.	Length	NET
169	8"	
170	12"	

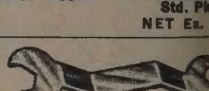
NYLON FLEXIBLE SHAFT COUPLING



DESCR.: Molded nylon with molded-in brass bushi Hi-temp nylon not influenced by moisture. Designed long reach shaft coupling. Supplied with 2 Allen h set screws. **Std. Pkg.**

No. 164 NET Ea. $

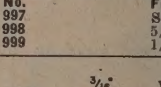
SHAFT WRENCHES



Specially designed offset, double-end wrenches for m hex sizes encountered in electronic construction. Made heavy gauge, cadmium plated steel, clearly marked w size. No. 999 is especially useful for Toggle Switch Volume Control mounting nuts. **Std. Pkg**

No.	For Nut Sizes	NET Pe
997	Set of 2	$42
998	5/16" - 3/8"	21
999	1/2" - 9/16"	21

NYLON LOCKING CLAMP



Wedge and ratchet design makes positive holding and locking. Acc modates cables from ⅛" to 1¼". knot tying, just slip clamp aro cable, insert tongue and pull ti

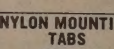
No.	Std. Pkg.	NET Pe
800	100	$

NYLON MOUNTING TABS

For use with No. 800 locking cl when premounted assembly po are desired. Furnished with mounting hole. **Std. Pkg.**

No.	NET Pe
801	$

NYLON PERFORATING STRAPPING



For bundling of wire, cable tubing. Time saver for harness Use No. 803 ratchet buckle for assembly. Supplied on 50' rolls.

No.	Std. Pkg.	NET Per
802	1	$

NYLON RATCHET BUCKLE

For No. 802 strapping. Quick easier assembly with this ingeni item. **Std. Pkg.**

No.	NET Pe
803	For ½" Strapping $1

TIGHTENING TOOL

Used with strapping for fast sembly. **Std. Pkg.**

No.	NET E
804	$16.

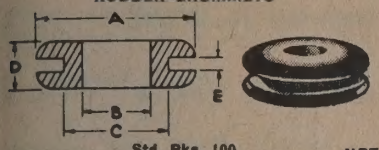
SMITH PAGE 31 (COMPLETE SMITH INDEX ON LAST SMITH PAGE) © United Technical

Specify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

RUBBER GROMMETS



Std. Pkg. 100

No.	A	B	C	D	E	NET Per C
2185	5/16"	1/8"	3/16"	3/16"	1/16"	$2.31
2172	7/16"	3/16"	5/16"	3/16"	1/16"	1.98
2170	5/8"	1/4"	3/8"	1/4"	1/16"	2.31
2174	5/8"	5/16"	7/16"	1/4"	1/16"	2.16
2175	11/16"	3/8"	1/2"	1/4"	1/16"	2.31
2177	3/4"	7/16"	9/16"	1/4"	1/16"	2.16
2186	1 1/16"	1/2"	3/4"	5/16"	1/16"	4.80
2187	1 1/16"	5/8"	7/8"	5/16"	1/16"	4.20
2188	1 1/16"	9/16"	3/4"	5/16"	1/16"	4.20
2189	1"	3/4"	7/8"	5/32"	1/32"	5.10

VINYL GROMMETS

DESCR.: Exceptional aging qualities. High dielectric properties. Oil resistant. Durometer hardness 45 to 85.

No.	A	B	C	D	E	NET Per C
2145	11/32	1/8	1/4	3/16	1/16	$1.00
2146	7/16	3/16	5/16	7/32	1/16	1.20
2147	9/16	1/4	3/8	1/4	1/16	1.50
2148	5/8	3/8	1/2	1/4	1/16	1.60
2149	13/16	1/2	5/8	9/32	1/16	2.40

RUBBER GROMMETS

nerly listed by Radio Essentials, Inc., and American lo Hardware Inc., (Their catalog numbers as below. is first digit).

Std. Pkg. 100

	A	B	C	D	E	NET Per C
0	3/8"	13/64"	1/2"	13/32"	3/64"	$7.50
2	9/32"	5/16"	13/32"	3/8"	5/32"	3.15
3	3/16"	3/16"	15/32"	3/8"	1/8"	3.00
6	5/16"	5/16"	1/2"	1/2"	3/16"	6.60
7	5/8"	5/8"	7/16"	3/16"	3/32"	4.50
9	3/8"	11/16"	7/8"	3/8"	1/4"	13.50
1	5/8"	7/8"	11/16"	13/32"	3/64"	7.00
2	49/64"	15/16"	13/32"	5/16"	1/16"	10.00
3	21/64"	5/8"	13/32"	1/4"	1/16"	2.85
4	1/8"	11/32"	1/4"	3/16"	1/16"	2.34
6	5/16"	3/4"	1/2"	3/8"	1/8"	4.35
7	5/16"	13/32"	7/16"	3/8"	1/8"	3.15
8	3/16"	7/16"	5/16"	7/32"	1/16"	2.40
9	17/64"	7/16"	13/32"	1/4"	1/16"	2.55
0	13/64"	5/8"	7/16"	1/4"	1/16"	3.00
1	5/8"	11/16"	1/2"	1/4"	1/16"	2.85
2	1/4"	1/2"	11/32"	5/32"	1/32"	2.85
3	9/32"	11/16"	1/2"	1/16"	1/4"	5.10
4	7/16"	3/4"	9/16"	1/4"	1/16"	3.45

RECESS RUBBER BUMPERS

Std. Pkg. 100

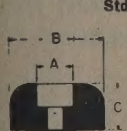


FIG 1

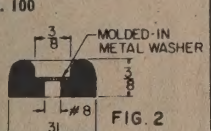


FIG. 2

No.	Fig.	A	B	C	NET Per C
2192	1	1/2"	17/32"	1/4"	$1.50
2193	1	1/4"	5/16"	5/16"	2.00
2194	1	9/32"	1/4"	3/8"	3.00
2184	1	9/32"	5/16"	3/8"	3.00
		With molded-in metal washer			
2135	2	3/8"	31/32"	5/8"	4.80

With Screw

FIG 3

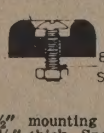


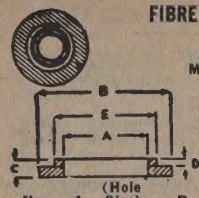
FIG. 4

Supplied complete with 1/2" mounting screw and hex nut For panels up to 1/4" thick. Specify longer screw for thicker panels

Std. Pkg. 100

No.	Fig.	A	B	C	Screw	NET Per C
2196	3	7/32"	17/32"	1/4"	6-32	$6.60
2197	3	1/4"	5/8"	5/16"	6-32	6.90
2198	3	9/32"	3/4"	5/8"	6-32	7.50
2199	3	1/4"	5/8"	9/32"	6-32	7.50
		With molded-in metal washer				
2195	4	3/8"	31/32"	3/8"	8-32	9.80

FIBRE WASHERS



SHOULDER WASHERS

MATERIAL: Fibre, per MIL-F-1148A, Grade CH.

A. Inside Diameter
B. Outside Diameter
C. Thickness Overall
D. Height of Shoulder
E. Diameter of Shoulder

No.	A	(Hole Size)	B	C	D	E	NET Per C	NET Per M
2150	.140	No. 6	.375	.093	.031	.237	$1.00	$7.00
2151	.110	No. 4	.250	.062	.031	.187	.90	6.00
2152	.136	No. 6	.250	.093	.031	.187	.95	6.50
2153	.136	No. 6	.312	.093	.031	.187	1.05	7.30
2154	.250	1/4"	.500	.068	.028	.312	1.10	7.80
2155	.172	No. 8	.375	.093	.031	.246	1.05	7.30
2156	.196	No.10	.375	.093	.031	.308	1.05	7.30
2159	.265	17/64"	.500	.097	.031	.365	1.10	8.00
2157	.375	3/8"	.750	.093	.031	.500	1.40	11.00
2158	.385	3/8"	.625	.093	.031	.500	1.35	10.20

FLAT WASHERS

MATERIAL: Fibre, per MIL-F-1148A, Grade CH.

No.	(Hole Size)	A I.D.	B O.D.	C Thickness	NET Per C	NET Per M
2160	No. 6	.136	.250	1/16	$ .95	$6.30
2161	No. 4	.110	.250	1/16	.95	6.30
2162	No. 6	.140	.375	1/16	.90	6.00
2163	No. 8	.172	.375	1/16	.90	6.00
2164	No. 10	.196	.375	1/16	.90	6.00
2165	1/4"	.250	.500	1/16	.90	6.00
2166	1/4"	.250	.500	3/32	.95	6.30
2167	5/16"	.312	.500	1/16	.95	6.00
2168	3/8"	.385	.625	1/16	1.05	7.20
2169	3/8"	.375	.750	1/16	1.25	9.20

NYLON WASHERS

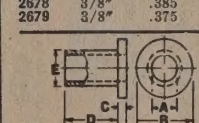
SHOULER WASHERS

MATERIAL: Natural Nylon per MIL-P-20693A.

No.	A	(Hole Size)	B	C	D	E	NET Per C	NET Per M
2660	.140	No. 6	.375	.093	.031	.237	$2.25	$18.00
2661	.110	No. 4	.250	.062	.031	.187	1.90	15.00
2662	.136	No. 6	.250	.093	.031	.187	1.90	15.00
2663	.136	No. 6	.312	.093	.031	.187	2.05	16.20
2664	.250	1/4"	.500	.068	.028	.312	2.15	17.25
2665	.172	No. 8	.375	.093	.031	.246	2.25	18.00
2666	.196	No. 10	.375	.093	.031	.308	2.25	18.00
2669	.265	17/64"	.500	.097	.031	.365	3.15	25.00
2667	.375	3/8"	.750	.093	.031	.500	5.65	45.00
2668	.385	3/8"	.625	.093	.031	.500	3.75	30.00

FLAT WASHERS

No.	(Hole Size)	A I.D.	B O.D.	C Thickness	NET Per C	NET Per M
2514	No. 4	.115	.281	.047	$1.80	$18.00
2670	No. 6	.136	.250	1/16	1.60	12.90
2671	No. 4	.110	.250	1/16	1.60	12.90
2672	No. 6	.140	.375	1/16	2.05	16.30
2515	No. 6	.140	.312	.047	1.86	18.60
2673	No. 8	.172	.375	1/16	2.25	18.00
2516	No. 8	.170	.375	.062	2.10	21.00
2674	No. 10	.196	.375	1/16	2.05	16.30
2517	No. 10	.200	.437	.062	2.22	22.20
2675	1/4"	.250	.500	1/16	2.25	18.00
2676	1/4"	.250	.500	3/32	2.65	21.00
2518	1/4"	.260	.562	.062	2.40	24.00
2677	5/16"	.312	.500	1/16	2.25	18.00
2678	3/8"	.385	.625	1/16	2.45	19.50
2679	3/8"	.375	.750	1/16	2.70	21.75



NYLON SPACER BUSHINGS

Natural Color, MIL-P-20693A. Std. Pkg. 100

No.	I.D.(A)	B	C	D	E	NET Per C	NET Per M
2534	#4 (.115)	.235	3/64	1/4	.147	$2.10	$21.00
2535	#6 (.140)	.290	3/64	1/4	.170	2.10	21.00
2536	#8 (.170)	.344	1/16	3/8	.205	2.22	22.00
2537	#10 (.200)	.399	1/16	3/8	.260	2.40	24.00
2538	1/4"(.260)	.513	1/16	3/8	.312	2.70	27.00

NYLON SCREWS

Natural Color, MIL-P-30693A. Std. Pkg. 100

Size	A No.	B No.	C No.	D No.	E No.	F No.	NET Per C
4-40 x 1/4	2500	2520	2540	2560	2580	2480	$3.00
4-40 x 3/8	2501	2521	2541	2561	2581	2481	3.06
4-40 x 1/2	2502	2522	2542	2562	2582	2482	3.12
6-32 x 1/4	2503	2523	2543	2563	2583	2483	3.06
6-32 x 3/8	2504	2524	2544	2564	2584	2484	3.06
6-32 x 1/2	2505	2526	2545	2565	2585	2485	3.12
6-32 x 5/8	2506	2526	2546	2566	2586	2486	3.12
6-32 x 3/4	2507	2527	2547	2567	2587	2487	3.18
8-32 x 1/4	2509	2529	2549	2569	2589	2489	3.06
8-32 x 3/8	2510	2530	2550	2570	2590	2490	3.12
8-32 x 1/2	2511	2531	2551	2571	2591	2491	3.12
8-32 x 5/8	2512	2532	2552	2572	2597	2492	3.18

NYLON HEX NUT

Natural Color, MIL-P-20693A. Std. Pkg. 100

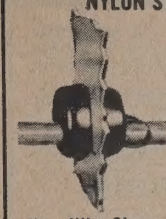
2554	4-40 x 1/4"	$6.00
2555	6-32 x 5/16"	6.30
2556	8-32 x 11/32"	6.60
2556	10-32 x 3/8"	6.90

FIBRE WASHER KIT

Each kit contains about 1,000 Flat and Shoulder Washers, packed in an 18-compartment plastic box, in the following approximate quantities of SMITH standard washers:
100 each #2151, 2161, 2155, 2160; 75 each #2150, 2162; 60 each #2155, 2163; 50 each #2156, 2164, 2154, 2165; 35 each #2159, 2167; 25 each #2158, 2168; 10 each #2157, 2169.

No.		NET Each
2173	Kit of 1,000 Washers	$6.50

NYLON STRAIN RELIEF BUSHINGS



One piece construction. Eliminates grommets, wire knots and costly labor. Completely insulates wire from chassis and prevents cord pull push and twist. No. 937 ideal for small mike cables; No. 938 for line cords; No. 939 for Co-Ax Wire.

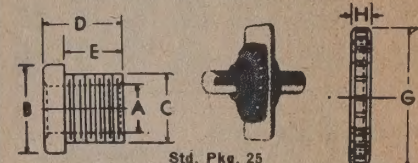
Std. Pkg. 50

A: Chassis Hole
B: Diameter of head
C: Length
D: Chassis Thickness

No.	Wire Size	A	B	C	D	NET Per C
937	1/8-3/16"	.375	.440	.415	to 1/16"	$4.00
938	SP-1 & SPT-1	.437	.468	.406	to 1/16"	4.00
939	.235-.265	.500	.560	.438	to 3/32"	4.50

No. 940 Setting Pliers — NET Each $25.00

INSULATED GROMMET BUSHINGS

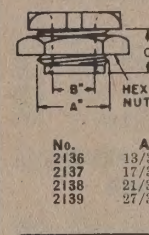


Std. Pkg. 25

Black Phenolic—Matte Finish

No.	BUSHING A	B	C	COLLAR D	E	G	H	NET Per C
931	1/8"	3/8"	1/4"-32	.3750"	1/4"	1/2"	1/8"	$27.00
932	5/16"	7/16"	5/16"-32	.4250"	5/16"	5/8"	1/8"	28.00
933	1/4"	1/2"	3/8"-27	.4375"	5/16"	11/16"	1/8"	29.00
934	5/16"	9/16"	15/32"-32	.4500"	5/16"	3/4"	1/8"	30.00
935	3/8"	3/4"	5/8"-27	.4500"	5/16"	1"	1/8"	31.00

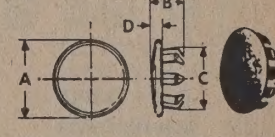
BAKELITE INSULATING BUSHINGS



BODY: MOLDED Phenolic, black. U.L. approved, recommended for temperatures up to 300 degrees Fahrenheit.
NUT. Steel, cadmium plated.

Std. Pkg. 50

No.	A	B	C	NET Per C
2136	13/32"	17/64"	1/4"	$ 9.00
2137	17/32"	5/16"	/16"	10.00
2138	21/32"	29/64"	5/16"	10.50
2139	27/32"	9/16"	11/32"	11.00



SNAP BUTTON HOLE PLUGS

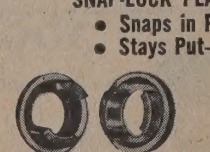
Metal plugs for covering punched or drilled holes. Firm grip spring action prongs in steel, nickel plated.

No.	Hole	A	B	C	Std. Pkg. 100 Prongs	NET Per C
650	1/4"	13/32	15/64	1/16	6	$2.70
651	5/16"	7/16	1/4	1/16	6	2.70
652	3/8"	1/2	15/64	1/16	6	2.70
653	1/2"	21/32	9/32	5/64	8	2.70
654	5/8"	13/16	19/64	5/64	8	3.60
655	3/4"	59/64	19/64	5/64	12	3.60
608	7/8"	1-1/16	19/64	1/16	12	4.00
612	1"	1-9/64	21/64	3/32	12	5.00
*656	1"	1-5/32	19/64	5/64	12	20.00

*Vent

SNAP-LOCK PLASTIC GROMMETS

- Snaps in Place—FAST!
- Stays Put—LOCKED IN!



Two identical halves snap tight, lock in place. Provides a rigid bearing surface, greater dielectric, extreme chemical and wear resistance. Identical halves form complete grommet. Color, black.

Std. Pkg. 100

No.	A	B	C	D	E	NET Per C
2178	3/16"	5/16"	7/16"	1/16"	1/4"	$3.00
2179	1/4"	3/8"	1/2"	1/16"	1/4"	3.20
2180	3/8"	1/2"	5/8"	1/16"	1/4"	3.30

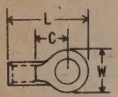
SMITH SOLDERLESS TERMINALS

COLOR CODE: RED: 22-18 AWG; BLUE: 16-14 AWG; YELLOW: 12-10 AWG

WIRE SIZE 22 - 18 AWG — UL APPROVED

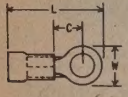
.030 ELECTROLYTIC COPPER TIN PLATED

RING TERMINAL — NON-INSULATED



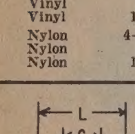
Smith Cat.No.	Material	Stud Size	Dimensions W	C	L	Net Per C
4801	Butted Seam	4-6	1/4	7/32	19/32	$2.00
4802	Butted Seam	8	21/64	1/4	11/16	2.00
4803	Butted Seam	10	21/64	1/4	11/16	2.00
4804	Brazed	4-6	1/4	7/32	19/32	3.20
4805	Brazed	8	21/64	1/4	11/16	3.20
4806	Brazed	10	21/64	1/4	11/16	3.20

RING TERMINAL — INSULATED



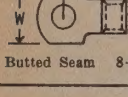
4809	Vinyl	4-6	1/4	7/32	25/32	4.00
4810	Vinyl	8	21/64	1/4	7/8	4.00
4811	Vinyl	10	21/64	1/4	7/8	4.00
4812	Nylon	4-6	1/4	7/32	25/32	6.50
4813	Nylon	8	21/64	1/4	7/8	6.50
4814	Nylon	10	21/64	1/4	7/8	6.50

FLAG TERMINAL — NON-INSULATED



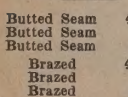
4815	Butted Seam	8-10	3/8	11/32	21/32	$3.00

SPADE TERMINAL — NON-INSULATED



4816	Butted Seam	4-6	21/64	1/4	11/16	$2.00
4817	Butted Seam	8	21/64	1/4	11/16	2.00
4818	Butted Seam	10	21/64	1/4	11/16	2.00
4819	Brazed	4-6	21/64	1/4	11/16	3.20
4820	Brazed	8	21/64	1/4	11/16	3.20
4821	Brazed	10	21/64	1/4	11/16	3.20

SPADE TERMINAL — INSULATED

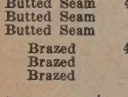


4822	Vinyl	4-6	21/64	1/4	7/8	4.00
4823	Vinyl	8	21/64	1/4	7/8	4.00
4824	Vinyl	10	21/64	1/4	7/8	4.00
4825	Nylon	4-6	21/64	1/4	7/8	6.50
4826	Nylon	8	21/64	1/4	7/8	6.50
4827	Nylon	10	21/64	1/4	7/8	6.50

BLOCK SPADES — NON-INSULATED

4829	Butted Seam	4-6	19/64	1/4	21/32	$2.00
4830	Butted Seam	8	19/64	1/4	21/32	2.00
4831	Butted Seam	10	19/64	1/4	21/32	2.00
4832	Brazed	4-6	19/64	1/4	21/32	3.20
4833	Brazed	8	19/64	1/4	21/32	3.20
4834	Brazed	10				3.20

BLOCK SPADES — INSULATED

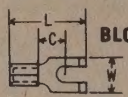


4835	Vinyl	4-6	19/64	1/4	27/32	4.00
4836	Vinyl	8	19/64	1/4	27/32	4.00
4837	Vinyl	10	19/64	1/4	27/32	4.00
4838	Nylon	4-6	19/64	1/4	27/32	6.50
4839	Nylon	8	19/64	1/4	27/32	6.50
4840	Nylon	10	19/64	1/4	27/32	6.50

WIRE SIZE 22 - 18 AWG — UL APPROVED

.030 ELECTROLYTIC COPPER TIN PLATED

BLOCK SPADES FLANGED — NON-INSULATED

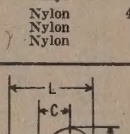


4841	Butted Seam	4-6	19/64	1/4	21/32	$2.00
4842	Butted Seam	8	19/64	1/4	21/32	2.00
4843	Butted Seam	10	19/64	1/4	21/32	2.00
4844	Brazed	4-6	19/64	1/4	21/32	3.20
4845	Brazed	8	19/64	1/4	21/32	3.20
4846	Brazed	10	19/64	1/4	21/32	3.20

BLOCK SPADES FLANGED — INSULATED

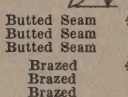
4847	Vinyl	4-6	19/64	1/4	27/32	4.00
4848	Vinyl	8	19/64	1/4	27/32	4.00
4849	Vinyl	10	19/64	1/4	27/32	4.00
4850	Nylon	4-6	19/64	1/4	27/32	6.50
4851	Nylon	8	19/64	1/4	27/32	6.50
4852	Nylon	10	19/64	1/4	27/32	6.50

HOOK TERMINAL — NON-INSULATED



4853	Butted Seam	4-6	21/64	1/4	11/16	$2.00
4854	Butted Seam	8	21/64	1/4	11/16	2.00
4855	Butted Seam	10	21/64	1/4	11/16	2.00
4856	Brazed	4-6	21/64	1/4	11/16	3.20
4857	Brazed	8	21/64	1/4	11/16	3.20
4858	Brazed	10	21/64	1/4	11/16	3.20

HOOK TERMINAL — INSULATED

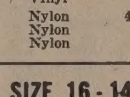


4859	Vinyl	4-6	21/64	1/4	7/8	4.00
4860	Vinyl	8	21/64	1/4	7/8	4.00
4861	Vinyl	10	21/64	1/4	7/8	4.00
4862	Nylon	4-6	21/64	1/4	7/8	6.50
4863	Nylon	8	21/64	1/4	7/8	6.50
4864	Nylon	10	21/64	1/4	7/8	6.50

WIRE SIZE 16 - 14 AWG — UL APPROVED

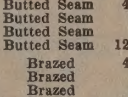
.030 ELECTROLYTIC COPPER TIN PLATED

RING TERMINAL — NON-INSULATED



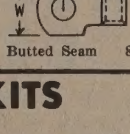
4865	Butted Seam	4-6	1/4	7/32	19/32	$2.00
4866	Butted Seam	8	21/64	1/4	11/16	2.00
4867	Butted Seam	10	21/64	1/4	11/16	2.00
4868	Butted Seam	12¼	15/32	13/32	57/64	2.50
4869	Brazed	4-6	1/4	7/32	19/32	3.20
4870	Brazed	8	21/64	1/4	11/64	3.20
4871	Brazed	10	21/64	1/4	11/64	3.20
4872	Brazed	12¼	15/32	13/32	57/64	4.00

RING TERMINAL — INSULATED



4873	Vinyl	4-6	1/4	7/32	25/32	4.00
4874	Vinyl	8	21/64	1/4	7/8	4.00
4875	Vinyl	10	21/64	1/4	7/8	4.00
4876	Vinyl	12¼	15/32	13/32	1-3/16	4.50
4877	Nylon	4-6	1/4	7/32	25/32	6.50
4878	Nylon	8	21/64	1/4	7/8	6.50
4879	Nylon	10	21/64	1/4	7/8	6.50
4880	Nylon	12¼	15/32	13/32	1-3/64	7.50

FLAG TERMINAL — NON-INSULATED

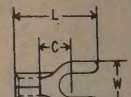


4881	Butted Seam	8-10	3/8	11/32	11/16	$3.00

WIRE SIZE 16 - 14 AWG — UL APPROVED

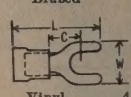
.030 ELECTROLYTIC COPPER TIN PLATED

SPADE TERMINAL — NON-INSULATED



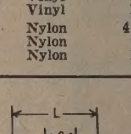
4882	Butted Seam	4-6	21/64	1/4	11/16	$2.0
4883	Butted Seam	8	21/64	1/4	11/16	2.0
4884	Butted Seam	10	21/64	1/4	11/16	2.0
4885	Brazed	4-6	21/64	1/4	11/16	3.2
4886	Brazed	8	21/64	1/4	11/16	3.2
4887	Brazed	10	21/64	1/4	11/16	3.2

SPADE TERMINAL — INSULATED



4888	Vinyl	4-6	21/64	1/4	7/8	4.00
4889	Vinyl	8	21/64	1/4	7/8	4.00
4890	Vinyl	10	21/64	1/4	7/8	4.00
4891	Nylon	4-6	21/64	1/4	7/8	6.50
4892	Nylon	8	21/64	1/4	7/8	6.50
4893	Nylon	10	21/64	1/4	7/8	6.50

BLOCK SPADES — NON-INSULATED



4894	Butted Seam	4-6	19/64	1/4	21/32	$2.00
4895	Butted Seam	8	19/64	1/4	21/32	2.00
4896	Butted Seam	10	19/64	1/4	21/32	2.00
4897	Brazed	4-6	19/64	1/4	21/32	3.20
4898	Brazed	8	19/64	1/4	21/32	3.20
4899	Brazed	10	19/64	1/4	21/32	3.20

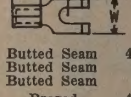
BLOCK SPADES — INSULATED

4901	Vinyl	4-6	19/64	1/4	27/32	4.00
4902	Vinyl	8	19/64	1/4	27/32	4.00
4903	Vinyl	10	19/64	1/4	27/32	4.00
4904	Nylon	4-6	19/64	1/4	27/32	6.50
4905	Nylon	8	19/64	1/4	27/32	6.50
4906	Nylon	10				6.50

BLOCK SPADES FLANGED — NON-INSULATED

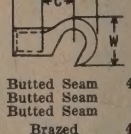
4907	Butted Seam	4-6	19/64	1/4	21/32	$2.00
4908	Butted Seam	8	19/64	1/4	21/32	2.00
4909	Butted Seam	10	19/64	1/4	21/32	2.00
4910	Brazed	4-6	19/64	1/4	21/32	3.20
4911	Brazed	8	19/64	1/4	21/32	3.20
4912	Brazed	10	19/64	1/4	21/32	3.20

BLOCK SPADES FLANGED — INSULATED



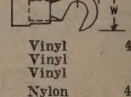
4913	Vinyl	4-6	19/64	1/4	27/32	4.00
4914	Vinyl	8	19/64	1/4	27/32	4.00
4914	Vinyl	10	19/64	1/4	27/32	4.00
4916	Nylon	4-6	19/64	1/4	27/32	6.50
4917	Nylon	8	19/64	1/4	27/32	6.50
4918	Nylon	10	19/64	1/4	27/32	6.50

HOOK TERMINAL — NON-INSULATED



4919	Butted Seam	4-6	21/64	1/4	11/16	$2.00
4920	Butted Seam	8	21/64	1/4	11/16	2.00
4921	Butted Seam	10	21/64	1/4	11/16	2.00
4922	Brazed	4-6	21/64	1/4	11/16	3.20
4923	Brazed	8	21/64	1/4	11/16	3.20
4924	Brazed	10	21/64	1/4	11/16	3.20

HOOK TERMINAL — INSULATED

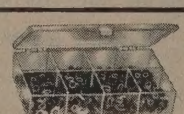


4925	Vinyl	4-6	21/64	1/4	7/8	4.00
4926	Vinyl	8	21/64	1/4	7/8	4.00
4927	Vinyl	10	21/64	1/4	7/8	4.00
4928	Nylon	4-6	21/64	1/4	7/8	6.50
4929	Nylon	8	21/64	1/4	7/8	6.50
4930	Nylon	10	21/64	1/4	7/8	6.50

STANDARD PACKAGE: 100 OF A NUMBER

TOOL & KITS

ALL KITS PACKED IN PLASTIC BOXES



TOOL NO. 4980

Made of heavy gauge heat treated tool steel with insulated handles. Adjustable tension screw, cuts and crimps wire and all types of terminals 10-22 AWG, also 7 mm. NET $3.95

TERMINAL KIT, UNINSULATED

Terminal Kit, Uninsulated, contains 200 popular assorted types, 18 styles.

Cat. No. 4981 With Tool NET $8.95
Cat. No. 4984 Less Tool NET $5.00

TERMINAL KIT, VINYL INSULATED

Terminal Kit, Vinyl Insulated Types, contains 180 popular types, 18 styles.

Cat. No. 4982 With Tool NET $12.95
Cat. No. 4985 Less Tool NET $ 9.00

TERMINAL KIT, NYLON INSULATED

Terminal Kit, Nylon Insulated Types, contains 165 assorted types, 18 styles.

Cat. No. 4983 With Tool NET $15.95
Cat. No. 5000 Less Tool NET $12.00

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SMITH SOLDERLESS TERMINALS

COLOR CODE: RED: 22-18 AWG; BLUE: 16-14 AWG; YELLOW: 12-10 AWG

IRE SIZE 12 - 10 AWG — UL APPROVED
.040 ELECTROLYTIC COPPER TIN PLATED

ith t.No.	Material	Stud Size	W	C	L	Net Per C
	RING TERMINAL — NON-INSULATED					
1	Butted Seam	8-10	3/8	9/32	47/64	$2.80
2	Butted Seam	12¼	39/64	7/16	31/32	3.20
3	Butted Seam	5/16-⅜	39/64	7/16	31/32	3.20
4	Brazed	8-10	39/64	7/16	47/64	4.80
5	Brazed	12¼	39/64	7/16	31/32	5.50
6	Brazed	5/16-⅜	39/64	7/16	31/32	5.50
	RING TERMINAL — INSULATED					
7	Vinyl	8-10	3/8	9/32	1-1/64	5.50
8	Vinyl	12¼	39/64	7/16	1-9/32	6.00
9	Vinyl	5/16-⅜	39/64	7/16	1-9/32	6.00
0	Nylon	8-10	3/8	9/32	1-1/64	7.00
1	Nylon	12¼	39/64	7/16	1-9/32	8.00
2	Nylon	5/16-⅜	39/64	7/16	1-9/32	8.00
	FLAG TERMINAL — NON-INSULATED					
3	Butted Seam	8-10	3/8	9/32	11/16	$3.20
	SPADE TERMINAL — NON-INSULATED					
4	Butted Seam	8	3/8	9/32	47/64	$2.80
5	Butted Seam	10	3/8	9/32	47/64	2.80
6	Brazed	8	3/8	9/32	47/64	4.80
7	Brazed	10	3/8	9/32	47/64	4.80
	SPADE TERMINAL — INSULATED					
8	Vinyl	8	3/8	9/32	1-1/64	5.50
9	Vinyl	10	3/8	9/32	1-1/64	5.50
0	Nylon	8	3/8	9/32	1-1/64	7.00
1	Nylon	10	3/8	9/32	1-1/64	7.00
	BLOCK SPADES — NON-INSULATED					
2	Butted Seam	8	5/16	9/32	47/64	$2.80
3	Butted Seam	10	5/16	9/32	47/64	2.80
4	Brazed	8	5/16	9/32	47/64	4.80
5	Brazed	10	5/16	9/32	47/64	4.80
	BLOCK SPADES — INSULATED					
6	Nylon	8	5/16	9/32	1-1/64	5.50
7	Vinyl	10	5/16	9/32	1-1/64	5.50
8	Nylon	8	5/16	9/32	1-1/64	7.50
9	Nylon	10	5/16	9/32	1-1/64	7.50
	HOOK TERMINAL — NON-INSULATED					
0	Butted Seam	8	3/8	9/32	47/64	$2.80
1	Butted Seam	10	3/8	9/32	47/64	2.80
2	Brazed	8	3/8	9/32	47/64	4.80
3	Brazed	10	3/8	9/32	47/64	4.80
	HOOK TERMINAL — INSULATED					
4	Vinyl	8	3/8	9/32	1-1/64	5.50
5	Vinyl	10	3/8	9/32	1-1/64	5.50
6	Nylon	8	3/8	9/32	1-1/64	7.50
7	Nylon	10	3/8	9/32	1-1/64	7.50

WIRE SIZE 26 - 24 AWG — UL APPROVED
.020 ELECTROLYTIC COPPER TIN PLATED

Smith Cat.No.	Material	Stud Size	W	C	L	Net Per C
	MINIATURE RING TERMINAL — NON-INSULATED					
4968	Butted Seam	4	13/64	7/32	37/64	$6.00
4969	Butted Seam	6	13/64	7/32	37/64	6.00
4970	Butted Seam	8	1/4	9/32	21/32	6.00
4971	Butted Seam	10	1/4	9/32	21/32	6.00
	MINIATURE RING TERMINAL — INSULATED					
4972	Nylon	4	13/64	7/32	39/64	7.00
4973	Nylon	6	13/64	7/32	39/64	7.00
4974	Nylon	8	1/4	9/32	11/16	7.00
4975	Nylon	10	1/4	9/32	11/16	7.00
	MINIATURE SPADE TERMINAL — NON-INSULATED					
4976	Butted Seam	4	13/64	7/32	37/64	$6.00
4977	Butted Seam	6	1/4	9/32	11/16	6.00
	MINIATURE SPADE TERMINAL — INSULATED					
4978	Nylon	4	13/64	7/32	39/64	7.00
4979	Nylon	6	1/4	9/32	11/16	7.00

CONNECTORS

Smith Cat.No.	Material	Wire Size	Thick	L	Cost Per C
	BUTT CONNECTOR — NON-INSULATED UL APPROVED				
4986	Butted Seam	26-24	.016	5/8	$6.50
4987	Butted Seam	22-18	.030	9/16	2.00
4988	Butted Seam	16-14	.030	9/16	2.00
4989	Butted Seam	12-10	.040	9/16	3.00
	BUTT CONNECTOR — INSULATED — UL APPROVED				
4990	Nylon	26-24	.016	7/8	9.50
4991	Vinyl	22-18	.030	15/16	5.00
4992	Vinyl	16-14	.030	15/16	5.00
4993	Vinyl	12-10	.040	15/16	6.00
	PARALLEL CONNECTORS — NON-INSULATED UL APPROVED				
4994	Butted Seam	22-18	.030	5/16	$2.00
4995	Butted Seam	12-10	.030	5/16	2.00
4996	Butted Seam	12-10	.040	5/16	2.50
	PARALLEL CONNECTORS — INSULATED UL APPROVED				
4997	Vinyl	22-18	.030	11/16	3.50
4998	Vinyl	16-14	.030	11/16	3.50
4999	Vinyl	12-10	.040	11/16	4.50

***CROSS-LOCK DISCONNECT — NON-INSULATED**

Smith Cat.No.	Material	Wire Size	W	Thick	Cost Per C
5001	Butted Seam	22-18	1/4	.030	$3.50
5002	Butted Seam	16-14	1/4	.030	3.50

***CROSS-LOCK DISCONNECT — SELF-MATING INSULATED**

5003	Vinyl	22-18	1/4	.030	6.00
5004	Vinyl	16-14	1/4	.030	6.00

* U. S. PATENT

STANDARD PACKAGE: 100 OF A NUMBER

CONNECTORS

BUTT CONNECTORS — CLOSED END

Smith Cat.No.	Material	Wire Size	I.D.	O.D.	L	Cost Per C
5005	Nylon	22-14	1/4	13/32	45/64	$3.50
5006	Nylon	18-10	3/8	15/32	3/4	4.50

QUICK SLIDES — FEMALE — UL APPROVED

Smith Cat.No.	Material	Wire Size	W	Thick	L	Cost Per C
5007	Butted Seam	18-14	.187 .205	.016 .030	31/64	$2.00
5008	Butted Seam	18-14	.250	.032	41/64	2.00

QUICK SLIDES — FEMALE — INSULATED

5009	Vinyl	18-14	.187 .205	.016 .030	25/32	4.50
5010	Vinyl	18-14	.250	.032	55/64	4.50

QUICK SLIDES — MALE NON-INSULATED UL APPROVED

5011	Butted Seam	18-14	.187	.016 .030	1/2	$2.00
5012	Butted Seam	18-14	.250	.032	23/32	2.00

QUICK SLIDES — MALE INSULATED UL APPROVED

5013	Vinyl	18-14	.187	.016 .030	25/32	4.50
5014	Vinyl	18-14	.250	.032	59/64	4.50

***QUICK SLIDES — SELF MATING NON-INSULATED — UL APPROVED**

5015	Butted Seam	18-14	.187-.205		31/64	$2.50
5016	Butted Seam	18-14	.250		41/64	2.50

QUICK SLIDES — SELF MATING INSULATED — PATENTED UL APPROVED

5017	Vinyl	18-14	.187-.205	—	25/32	4.50
5018	Vinyl	18-14	.250	—	25/32	4.50

* U. S. PATENT

QUICK SLIDE RECEPTACLE INSULATED DOUBLE MALE INLINE CONNECTION

5019	Vinyl	.157	.250W	$7.50

SNAP PLUGS — NON-INSULATED

Smith Cat.No.	Material	Snap Area	Wire Size	L	Thick	Net Per C
5020	Butted Seam	16-14	.157	3/16	.030	$2.00
5021	Butted Seam	16-14	.176	3/16	.030	2.00

SNAP PLUGS — INSULATED

5022	Vinyl	16-14	.157	3/16	.030	4.00
5023	Vinyl	16-14	.176	3/16	.030	4.00

SNAP PLUG RECEPTACLE INSULATED

5024	Vinyl	used with .157 plug	$6.00

SEE NEXT PAGE FOR SMITH SOLDERLESS TERMINAL BARREL STYLES

specify SMITH

HERMAN H. SMITH, INC.

ELECTR COMPO

SOLDERLESS TERMINALS

AMP "SOLISTRAND" Non-Insulated

The only terminal designed for use with solid, stranded or irregularly shaped wires, or combinations of wires. Corrosion resistant, high strength, electro-tinned; versatile — widely adaptable.

Std. Pkg. 100

RING TONGUE (A)

Wire Size	No.	AMP No.	Stud Size	Tong. W.	O'all L.	Stud Clear.	NET Per C
	2850	32989	4	7/32	17/32	5/32	$4.50
22	2851	34194	6	7/32	17/32	5/32	4.50
	2852	32990	8	5/32	11/16	17/64	5.50
to	2853	33214	10	5/16	11/16	5/32	5.50
	2854	33215	1/4	15/32	15/16	27/64	7.50
16	2855	33452	5/16	15/32	15/16	27/64	7.50
	2856	33453	3/8	17/32	1 1/16	17/32	7.50
	2857	32991	4	1/4	5/16	11/64	$5.50
16	2858	34197	6	1/4	5/16	11/64	5.50
	2859	32992	8	5/16	11/32	1/4	5.50
to	2860	320093	10	5/16	11/32	1/4	5.50
	2861	33218	1/4	15/32	15/16	7/16	7.50
14	2862	33454	5/16	15/32	15/16	7/16	7.50
	2863	33455	3/8	17/32	1 1/8	17/32	7.50

SPADE TONGUE (B)

22	2864	32897	6	11/32	5/8	13/64	$4.50
to	2865	32898	8	11/32	5/8	13/64	4.50
16	2866	32899	10	11/32	5/8	13/64	4.50
16	2867	32903	6	11/32	5/8	13/64	$4.50
to	2868	32904	8	11/32	5/8	13/64	4.50
14	2869	32905	10	11/32	5/8	13/64	4.50

BUTT CONNECTOR (C)

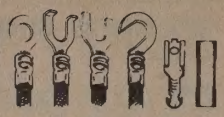
2870	31818	22-16 .140 I.D.	37/64	$5.50
2871	31819	16-14 .170 I.D.	37/64	5.50

SOLDERLESS TERMINAL ASSORTMENTS

A basic assortment of the most commonly used Ring Tongue and Spade Terminals for wire sizes 22 thru 14. Packed in a re-usable clear plastic compartmented box.

No.	Approx. Quantity of Terminals	Style	Std. Pkg.	NET
1526	200	"PLASTI-GRIP"	1	$18.00
1527	300	"PLASTI-GRIP"		26.00
1528	200	"SOLISTRAND"		13.00
1529	300	"SOLISTRAND"		19.00
1577	200	"P.I.D.G."		24.00
1578	300	"P.I.D.G."		35.00

AMP Pre-Insulated Diamond Grip



Color-coded for wire size. Std. Pkg. 100

RING TONGUE (A)

Wire Size	No.	AMP No.	Stud Size	Tongue Width	Overall Length	Stud Clear.	Per C
22	1550	320882	4	3/16	21/32	5/32	$10.50
	1551	31881	6	7/32	21/32	5/32	10.50
to	1552	31886	8	5/32	25/32	1/4	10.50
	1553	31887	10	5/32	25/32	1/4	10.50
16	1554	31894	1/4	15/32	1 1/16	27/64	11.50
14	1555	32441	4	1/4	1 1/16	11/64	10.50
	1556	32442	6	1/4	1 1/16	11/64	10.50
to	1557	31902	8	11/32	27/32	5/32	10.50
	1558	322238	10	5/16		1 1/4	10.50
16	1559	31906	1/4	15/32	1/16	7/16	11.50

FLANGED SPADE (B)

22-16	1560	32562	6	19/64	23/32	13/64	$10.50
	1561	32498	8	27/64	13/16	1/4	11.50
	1562	320861	6	19/64	23/32	13/64	10.50
14-16	1563	320862	8	19/64	23/32	13/64	10.50
	1564	320863	10	19/64	23/32	13/64	10.50

SPADE TONGUE (C)

	1565	34541	6	1/4	53/64	13/64	$11.50
22-16	1566	32053	8	3/8	57/64	13/64	10.50
	1567	32054	10	3/8	57/64	13/64	10.50
	1568	35559	6	19/64	47/64	13/64	10.50
14-16	1569	321233	8	19/64	47/64	13/64	11.50
	1570	32060	10	3/8	57/64	3/16	10.50

HOOK TONGUE (D)

22-16	1571	34313	6	5/32	47/64	13/64	$10.50
	1572	32456	8	11/32	55/64	5/32	10.50
	1573	320381	6	11/32	27/32	5/32	$10.50
14-16	1574	320306	8	11/32	27/32	5/32	12.50
	1575	35481	10	11/32	27/32	5/32	12.50
18-14	1576	Terminal Strip Connectors					$4.50

BUTT CONNECTOR (F)

22-16	1548	320559 .125 I.D.	$39.00
16-14	1549	320562 .150 I.D.	39.00

AMP "PLASTI-GRIP" (P.G.)

Insulated, strong, special plastic has high die strength. Applied with single operation of pres or hand tools. High tensile strength. High c tivity copper, electro-tinned. Color coded for size. Std. Pk

RING TONGUE (A)

Wire Size	No.	AMP No.	Stud Size	Tong. W.	O'all L.	Stud Clear.
	2750	34141	4	7/32	21/32	5/32
22	2751	34142	6	7/32	21/32	5/32
	2752	34145	8	5/32	25/32	1/4
to	2753	34146	10	5/32	25/32	1/4
	2754	34150	1/4	15/32	1 1/16	27/64
16	2755	34151	5/16	15/32	1 1/16	27/64
	2756	34152	3/8	17/32	1 13/64	17/32
	2757	34157	4	1/4	1 1/16	5/32
16	2758	34158	6	1/4	1 1/16	5/32
	2759	34160	8	11/32	27/32	17/64
to	2760	34161	10	11/32	27/32	17/64
	2761	34162	1/4	15/32	1 1/16	27/64
14	2762	34163	5/16	15/32	1 1/16	27/64
	2763	34164	3/8	17/32	1 13/64	33/64

SPADE TONGUE (B)

22	2764	34153	6	11/32	49/64	13/64
to	2765	34155	8	3/8	57/64	13/64
16	2766	34156	10	3/8	57/64	13/64
16	2767	34165	6	3/8	57/64	13/64
to	2768	34166	8	3/8	57/64	13/64
14	2769	34167	10	3/8	57/64	13/64

HOOK TONGUE (C)

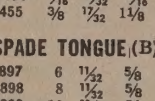
20-16	2770	34501	6	5/32	47/64	3/16
	2771	321699	8	11/32	55/64	5/32
16-14	2772	320263	8	11/32	55/64	17/64

BUTT CONNECTOR (D)

2773	34070	22-16 .140 I.D.	1	
2774	34071	16-14 .70 I.D.	1 1/64	

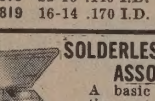
SMITH BARREL STYLES

NON-INSULATED TERMINALS



BUTTED SEAM

- Eletrolytic pure copper, tin plated.
- Open end for visual inspection of wire contact.
- Tight grip, multiple barrel serrations for full wire contact.

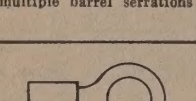


BRAZED — Same as above except silver brazed barrel.

INSULATED TERMINALS

VINYL INSULATED

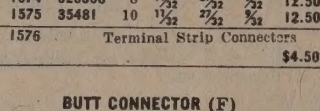
- Electrolytic pure copper, tin plated.
- Vinyl insulation, butted seam.
- Flared for easy wire insertion.
- Color coded for proper wire selection.



NYLON INSULATED

- Electrolytic pure copper, tin plated.
- Flared for easy wire insertion.
- Nylon insulation.
- Butted seam with seamless brass sleeve attached.
- Color Coded.

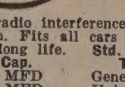
GENERATOR CONDENSER



Eliminates radio interference caused by auto electrical system. Fits all cars — Proven quality — Guaranteed long life. Std. Pkg. 25

No.	Cap.	Type	NET Per C
811	.5 MFD	General, Univ.	$35.00
812	.25 MFD	Universal	$42.00

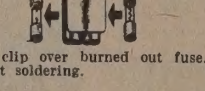
TV SNAP-ON FUSE HOLDER



Snap fuse clip over burned out fuse. Insert new fuse without soldering. Std. Pkg. 50

No.	NET Each
529	$.20

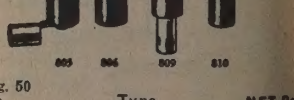
FUSE MOUNTING BASES



Black bakelite, panel mount type. Will accommodate the 3 A G Auto type cartridge fuse. Std. Pkg. 50

No.	Type	NET Per C
530	Single	$15.00
531	Double	30.00

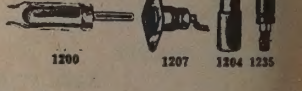
Auto Radio IGNITION SUPPRESSORS



Std. Pkg. 50

Cat. No.	Type	NET Pe
805	Snap-On Type Suppressor	$4
806	Univ. Type with Double Thrd.	4
809	Distributor Plug-in Type	5
810	Double Screw Type	2

MOTOROLA PLUGS & JACK



Std. Pkg. 100

No.	Type	NET P
1200	Motorola Type Plug	
1207	Motorola Jack	
1204	Lead-in Adapter	
1235	Motorola Jack, without flange	

MORE THAN TEN THOUSAND

ELECTRONIC COMPONENT PARTS MANUFACTURED UNDER ONE ROOF!

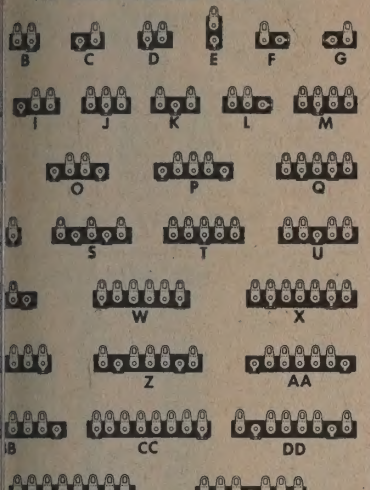
 © United Technica

Specify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

TIE DOWN TERMINAL STRIPS



Standard Type

EEL cadmium
paced ⅜"
P Phenolic ⅜"
62 thick.
.140 I.D. for No.

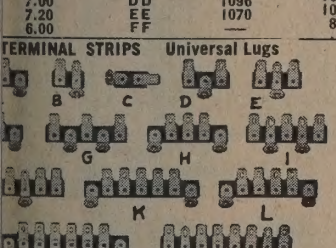
Miniature Type

LUG: STEEL cadmium plated, spaced 1/4" centers.
STRIP: XP Phenolic 5/16" wide & .062 thick.
MOUNT.: .096 I.D. for No. 3 screw or 3/32 rivet.

kg. 100 — Std. Pkg. 100

ID TYPE NET Per C	Illus-tration	MINIATURE TYPE No.	NET Per C
$2.40	A	1061	$ 2.40
2.40	B	1062	3.00
2.50	C	1003	3.30
2.50	D	1004	3.50
3.00	E	1039	4.00
2.40	F	1005	4.50
2.40	G	1009	3.50
3.00	H	1055	4.50
2.80	I	1043	4.50
3.00	J	1064	3.60
3.00	K	1063	4.50
3.50	L	1059	4.50
4.00	M	1074	5.50
4.00	N	1072	5.50
4.50	O	1067	5.00
4.50	P	1073	5.20
5.00	Q	1068	5.80
5.50	R	1071	5.80
4.50	S	1065	5.20
4.00	T	1066	6.50
3.50	U	1084	7.00
5.10	V	1069	6.20
5.50	W	1076	9.00
6.50	X	1158	9.50
6.00	Y	1156	9.50
5.50	Z	1157	9.50
6.00	AA	1060	7.00
6.70	BB	1078	7.50
6.50	CC	1075	10.50
7.00	DD	1096	10.20
7.20	EE	1070	8.40
6.00	FF	—	

TERMINAL STRIPS — Universal Lugs

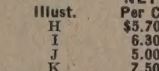


l, cadmium plated, spaced ⅜"
P Phenolic ⅜" wide x .062 thick.
.140" I.D. for No. 6 screw.
QUICK CONNECT-DISCONNECT; TIE SOLDER; WRAP and SOLDER.

Std. Pkg. 100

Illust.	NET Per C	No.	Illust.	NET Per C
A	$2.50	1092	H	$5.70
B	3.10	1093	I	6.30
C	2.50	1094	J	5.00
D	3.30	1095	K	7.50
E	3.50	1097	L	7.50
F	4.30	1098	M	8.50
G	5.70	1099	N	9.00

TYPE TERMINAL STRIPS



STEEL, cadmium plated, spaced ⅜" centers.
ETS: Brass, cadmium plated.
X Phenolic ⅜" wide x .062 thick.
.140 I.D. for No. 6 screw. Std. Pkg. 100

Lugs	NET Per C
1	$3.20
2	4.40
3	7.00
4	7.50
5	8.50

TERMINAL STRIP ASSEMBLY

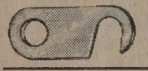
LUG: STEEL, cadmium plated.
BASE: STEEL, cadmium plated. Mounting holes for No. 6 screw.
STRIP: XP Phenolic — Std. Pkg. 100

No.	Terminals	Dimensions "A"	Dimensions "B"	NET
3002	2	1.000	⅝"	$7.00
3003	3	1.312	1 1/16"	8.00
3004	4	1.625	1¼"	8.50
3005	5	1.937	1 9/16"	9.50
3006	6	2.250	1⅞"	10.00
3007	7	2.562	2 3/16"	11.50
3008	8	2.875	2½"	13.50
3009	9	3.187	2 13/16"	14.00
3010	10	3.500	3⅛"	14.50
3011	11	3.812	3 7/16"	15.50
3012	12	4.125	3¾"	17.00

SCREW TYPE TERMINAL BOARD

LUGS: BRASS, hot tinned, spaced 7/16" centers.
SCREW: Steel, cadmium plated 6-32x⅝.
STRIP: XP Phenolic ⅜" wide x .062 thick.

No.	Terminals	Mounting Center	Std. Pkg.	NET Per C
914	1	⅞"	50	$ 6.50
872	2	1 1/16"	50	7.50
873	3	1 3/4"	50	11.00
874	4	2 3/16"	50	13.50
875	5	2⅝"	25	17.00
876	6	3 1/16"	25	19.50
877	7	3½"	25	22.50
928	8	3 15/16"	25	24.00
929	9	4 3/8"	25	28.00
930	10	4 13/16"	25	32.00



878 Shorting Link 1.80

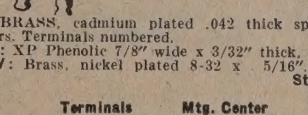
HEAVY DUTY TERMINAL BOARDS

LUG: BRASS, cadmium plated .042 thick spaced 1/2" centers. Terminals numbered.
STRIP: XP Phenolic 7/8" wide x 3/32" thick, numbered.
SCREW: Brass, nickel plated 8-32 x 5/16".

Std. Pkg. 25

No.	Terminals	Mtg. Center	NET Per C
902	2	1⅛"	$20.00
903	3	2"	22.00
904	4	2⅛"	27.00
905	5	3"	33.00
906	6	3⅛"	39.00
907	7	4"	45.00
908	8	4⅛"	50.00
909	9	5"	60.00
910	10	5⅛"	62.00
911	11	6"	65.00
912	12	6⅛"	70.00

QUICK DISCONNECT TERMINALS



Terminals of pure electrolytic copper. Resists corrosion and insures shelf life. Beveled entry for easy wire threading and improved V-ridges for wire protection. Male tongue width .248/.251, female entry .225 Min.

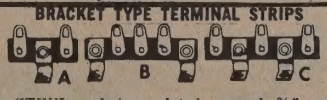
Std. Pkg. 100

Male	Female	Wire-Size	NET Per C
		Non-Insulated	
2742	2745	22-16	$2.10
2743	2746	16-14	2.10
2744	2747	12-10	2.10
		Insulated	
2794	2797	22-16	4.50
2795	2798	16-14	4.50
2796	2799	12-10	4.50

Std. Pkg. 1

No. 2748	Kit, 50 each, 12 types in plastic box	NET Ea. $19.80

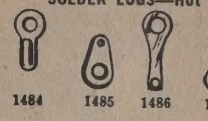
BRACKET TYPE TERMINAL STRIPS



LUGS: STEEL cadmium plated, spaced ⅜" centers.
STRIPS: XP Phenolic ⅜" wide x .062 thick.
MOUNT: .140 I.D. for No. 6 screw. Std. Pkg. 100

No.	Fig.	Lugs	NET Per C
1077	A	2	$3.20
1079	C	3	5.00
1080	B	3	5.00
1081	B	4	5.50
1082	B	5	6.20
1083	B	6	7.20

SOLDER LUGS—Hot Tinned



Std. Pkg. 1000

No.	Material	Length	Thick.	Hole	NET Per M
1484	Ph. Br.	5/8"	.020"	No. 6	$12.00
1485-4	Ph. Br.	17/32"	.012"	No. 4	10.00
1485-6	Ph. Br.	17/32"	.012"	No. 6	10.00
1485-8	Ph. Br.	17/32"	.012"	No. 8	10.00
1485-10	Ph. Br.	17/32"	.012"	No. 10	10.00
1486-4	Ph. Br.	13/16"	.012"	No. 4	10.00
1486-6	Ph. Br.	13/16"	.012"	No. 6	10.00
1486-8	Ph. Br.	13/16"	.012"	No. 8	10.00
1486-10	Ph. Br.	13/16"	.012"	No. 10	10.00
1488-4	Ph. Br.	9/16"	.012"	No. 4	10.00
1488-6	Ph. Br.	9/16"	.012"	No. 6	10.00
1488-8	Ph. Br.	9/16"	.012"	No. 8	10.00
1490	Brass	3/4"	.020"	No. 10	12.00
1491	Copper	15/16"	.020"	No. 10	20.00
1493	Brass	1-1/8"	.027"	¼"	25.00
1494-6	Brass	5/8"	.020"	No. 6	11.00
1494-8	Brass	5/8"	.020"	No. 8	11.00
1495	Brass	5/8"	.020"	No. 8	12.00
1496	Brass	3/4"	.020"	¼"	12.00
1497	Brass	7/8"	.017"	⅝"	15.00

SOLDER LUG ASSORTMENT

A complete assortment of the most widely used Solder Lug styles, with hole sizes from #4 thru #10. Packed in a re-usable clear plastic compartmented box. Std. Pkg. 1

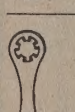
No.	Approx Quantity of Terminals	NET
1546	1400	$13.00

LOCKING TERMINAL LUGS

BRASS HOT TINNED — Std. Pkg. 1000

No.	Length	Thick	Hole	NET Per M
1410-4	7/64"	.018"	No. 4	$11.00
1410-6	7/64"	.018"	No. 6	11.00
1410-8	7/64"	.018"	No. 8	11.00
1410-10	57/64"	.018"	No. 10	12.00
1410-14	13/16"	.018"	¼"	12.00
1411-4	47/64"	.020"	No. 4	11.00
1411-6	47/64"	.020"	No. 6	11.00
1411-8	47/64"	.020"	No. 8	11.00
1412-4	5/8"	.018"	No. 4	10.00
1412-6	5/8"	.018"	No. 6	10.00
1412-8	5/8"	.018"	No. 8	10.00
1413-4	25/32"	.018"	No. 4	11.00
1413-6	25/32"	.018"	No. 6	11.00
1413-8	25/32"	.018"	No. 8	11.00
1414-4	15/16"	.018"	No. 4	11.00
1414-6	15/16"	.018"	No. 6	11.00
1414-8	15/16"	.018"	No. 8	11.00
1414-10	59/64"	.018"	No. 10	12.00
1415-4	47/64"	.018"	No. 4	11.00
1415-6	47/64"	.018"	No. 6	11.00
1415-8	47/64"	.018"	No. 8	11.00
1416-4	17/16"	.020"	No. 4	11.00
1416-6	17/16"	.020"	No. 6	11.00
1416-8	17/16"	.020"	No. 8	11.00

LOCKING TYPE TERMINAL LUGS



Brass Electro Plated

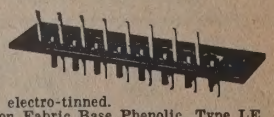
No.	Length	Thick	Hole	NET Per M
1465	47/64"	.020	#4	$12.00
1466	47/64"	.020	#6	12.00
1467	7/8"	.020	#8	12.00
1468	13/16"	.020	1/4"	12.00

LOCKING TERMINAL LUG ASSORTMENT

A complete assortment of the most widely used Locking Terminal Lug styles, with hole sizes from #4 thru #10. Packed in a re-usable clear plastic compartmented box.

No.	Approx. Quantity of Terminals	NET
1547	900	$13.00

WIRE WRAP TERMINAL STRIPS



LUG: Brass, electro-tinned.
STRIP: Cotton Fabric Base Phenolic, Type LE.
SCREW: Brass, nickel plated.
DESCR.: Accommodates lugs for wires, size AWG #18 to 22. Rated 750 volts RMS (½ breakdown voltage).
Std. Pkg. 25

No.	Term.	(A) Mtg Ctrs.	B	NET Per C
941	8	3½"	3⅞"	$40.00
942	10	4¼"	4⅝"	50.00
943	12	5"	5⅜"	60.00

specify SMITH

HERMAN H. SMITH, INC.

ROUND HEAD STEEL MACHINE SCREWS
CADMIUM PLATED

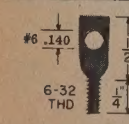
Size	No.	Net per C	No.	Net per M
2-56 x 1/4"	1173C	$.75	1173M	$5.30
2-56 x 1/2"	1174C	.80	1174M	5.60
2-56 x 3/4"	1775C	.85	1175M	6.50
3-48 x 3/4"	1176C	.90	1176M	6.85
4-36 x 1/4"	1177C	.80	1177M	5.60
4-36 x 3/8"	1178C	.85	1178M	5.85
4-36 x 1/2"	1183C	.90	1183M	6.15
4-36 x 5/8"	1184C	1.00	1184M	7.85
4-36 x 3/4"	1185C	1.10	1185M	9.00
4-40 x 1/4"	1350C	.75	1350M	5.60
4-40 x 3/8"	1351C	.80	1351M	5.85
4-40 x 1/2"	1352C	.85	1352M	6.20
4-40 x 5/8"	1353C	.90	1353M	6.65
4-40 x 3/4"	1354C	1.10	1354M	9.00
6-32 x 1/4"	1000C	.80	1000M	5.85
6-32 x 3/8"	1001C	.90	1001M	7.00
6-32 x 1/2"	1002C	1.00	1002M	7.80
6-32 x 5/8"	1355C	1.00	1355M	8.00
6-32 x 3/4"	1356C	1.15	1356M	9.40
6-32 x 1"	1357C	1.20	1357M	9.80
6-32 x 2"	1358C	1.95	1358M	17.55
8-32 x 1/4"	1006C	1.00	1006M	7.80
8-32 x 3/8"	1007C	1.05	1007M	8.10
8-32 x 1/2"	1008C	1.10	1008M	8.50
8-32 x 3/4"	1359C	1.30	1359M	10.90
10-32 x 1/2"	1360C	1.35	1360M	11.20
10-32 x 3/4"	1361C	1.55	1361M	13.15
10-32 x 1"	1362C	1.70	1362M	14.70

BRASS MACHINE SCREWS
Round Head Nickel Plated

Size	No.	NET per C	No.	NET per M
4-36 x 1/4"	1044C	$1.05	1044M	$8.50
4-36 x 3/8"	1045C	1.00	1045M	7.80
4-36 x 1/2"	1046C	1.35	1046M	11.20
4-40 x 1/4"	1047C	1.10	1047M	8.80
4-40 x 3/8"	1048C	1.26	1048M	10.50
4-40 x 1/2"	1049C	1.35	1049M	11.20
6-32 x 1/4"	1050C	1.56	1050M	13.00
6-32 x 3/8"	1051C	1.62	1051M	13.50
6-32 x 1/2"	1052C	1.50	1052M	12.50
8-32 x 1/4"	1056C	1.92	1056M	16.00
8-32 x 3/8"	1057C	2.30	1057M	19.20
8-32 x 1/2"	1058C	2.70	1058M	22.50

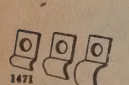
BINDING HEAD STEEL MACHINE SCREWS
CADMIUM PLATED

Size	No.	Net per C	No.	Net per M
2-56 x 1/4"	1369C	$.75	1369M	$5.30
2-56 x 1/2"	1370C	.80	1370M	5.60
2-56 x 5/8"	1371C	.85	1371M	6.50
4-40 x 1/4"	1372C	.80	1372M	5.60
4-40 x 1/2"	1373C	.85	1373M	6.20
4-40 x 3/4"	1374C	1.10	1374M	9.10
6-32 x 3/4"	1375C	.85	1375M	6.50
6-32 x 1/4"	1425C	.85	1425M	6.40
6-32 x 3/8"	1426C	.90	1426M	7.00
6-32 x 1/2"	1427C	.95	1427M	7.15
6-32 x 5/8"	1376C	1.00	1376M	7.95
6-32 x 3/4"	1377C	1.15	1377M	9.40
8-32 x 1/4"	1428C	.85	1428M	6.40
8-32 x 5/16"	1378C	1.05	1378M	8.65
8-32 x 3/8"	1429C	1.00	1429M	8.10
8-32 x 1/4"	1430C	1.05	1430M	8.40
8-32 x 3/4"	1379C	1.30	1379M	10.90
10-32 x 1/2"	1380C	1.35	1380M	11.20
10-32 x 3/4"	1381C	1.40	1381M	12.10



SPADE BOLTS
STEEL, CADMIUM PLATED

ize	No.	Net per C	No.	Net per M
x 5/16"	1500C	$2.40	1500M	$20.00



CABLE CLAMPS
Steel Cadmium Plated with No. 8 Mtg. Hole. Std. Pkg. 100

No.	Length	Width	Cable	NET Per C
1471	3/4"	3/8"	1/8"	$.85
1470	3/4"	3/8"	1/4"	.90
1472	1"	3/8"	1/2"	1.00

SELF TAPPING SCREWS
STEEL, CADMIUM PLATED

ROUND HEAD—TYPE A—Sharp Point

Size	No.	NET per C	No.	NET per M
4 x 1/2	1801C	$.80	1801M	$6.00
6 x 1/4	1802C	.85	1802M	6.67
6 x 3/8	1803C	.90	1803M	7.00
6 x 1/2	1804C	1.00	1804M	8.10
8 x 3/8	1805C	.95	1805M	7.50
8 x 1/2	1806C	1.15	1806M	9.45

ROUND HEAD—TYPE Z—Blunt Point

Size	No.	NET per C	No.	NET per M
4 x 1/2	1807C	$.90	1807M	$7.00
6 x 1/4	1808C	.90	1808M	7.00
6 x 3/8	1809C	.90	1809M	7.00
6 x 1/2	1810C	1.00	1810M	8.10
8 x 3/8	1811C	.95	1811M	7.50
8 x 1/2	1812C	1.15	1812M	9.45

SLOTTED HEX HEAD — TYPE Z
Blunt Point

Size	No.	NET per C	No.	NET per M
6 x 1/4	1830C	$1.15	1830M	$9.45
6 x 3/8	1831C	1.15	1831M	9.45
6 x 1/2	1832C	1.15	1832M	9.45
8 x 3/8	1833C	.95	1833M	7.50
8 x 1/2	1834C	1.15	1834M	9.45

PAN HEAD METAL SCREWS
STEEL, CADMIUM PLATED

Size	No.	Net per C	No.	Net per M
4 x 1/2"	1389C	$1.25	1389M	$10.20
6 x 1/4"	1390C	1.25	1390M	10.20
6 x 3/8"	1391C	1.25	1391M	10.55
6 x 1/2"	1392C	1.30	1392M	10.80
6 x 3/4"	1393C	1.40	1393M	11.70
8 x 1/4"	1394C	1.40	1394M	11.70
8 x 3/4"	1395C	1.45	1395M	12.35
8 x 1/2"	1396C	1.50	1396M	12.60
8 x 1"	1397C	1.80	1397M	16.20

ROUND HEAD STEEL WOOD SCREWS

Size	No.	Net per C	No.	Net per M
4 x 1/2"	1384C	$1.10	1384M	$9.10
4 x 3/4"	1385C	1.25	1385M	10.50
6 x 3/4"	1386C	1.35	1386M	11.35
6 x 1"	1387C	1.60	1387M	14.00
8 x 3/4"	1388C	1.55	1388M	13.50

OVAL HEAD STEEL NICKEL PLATED RACK SCREWS

Size	No.	Net per C	No.	Net per M
6-32 x 3/4"	1382C	$1.10	1382M	$8.85
8-32 x 3/4"	1383C	1.35	1383M	11.20
10-32 x 1/2"	1111C	1.15	1111M	9.50
10-32 x 3/4"	1112C	1.20	1112M	9.74

COUNTER SUNK WASHERS BRASS
NICKEL PLATED

Size	No.	Net per C	No.	Net per M
#6	1115C	$.75	1115M	$5.30
#8	1116C	.91	1116M	6.75
#10	1117C	1.00	1117M	7.80

FAHNESTOCK SPRING BATTERY CLIPS

Clips are made of brass, nickel plated and are available in the single and double clip types. Std. Pkg. 100

No.	Type	Length	NET Per C
539	Single	5/8"	$2.80
583	Single	3/4"	2.80
534	Single	1"	4.00
535	Double	1 1/2"	11.00
536	Double	2 1/16"	13.00

HEXAGON NUTS
Brass Nickel Plated
Std. Pkg. 100

Size	No.	NET per C	No.	
4-36x1/4"	1188C	$1.15	1188M	
4-40x1/4"	1168C	1.15	1168M	
6-32x1/4"	1189C	1.68	1189M	
6-32x5/16"	1190C	1.30	1190M	
8-32x5/16"	1192C	1.30	1192M	
10-32x5/16"	1193C	1.70	1193M	
1/4-32"	1187C	1.20	1187M	
Steel Nickel Plated				
1/4-32"	1186C	1.50	1186M	$13

HEX NUTS STEEL
CADMIUM PLATED
Std. Pkg. 100
*Nickel plated.

Size	No.	Net per C	No.
2-56 x 3/16"	1363C	$.70	1363M
3-48 x 3/16"	1364C	.70	1364M
4-36 x 1/4"	1365C	.70	1365M
6-32 x 1/4"	1179C	.75	1179M
6-32 x 5/16"	1180C	.75	1180M
8-32 x 1/4"	1366C	.75	1366M
8-32 x 3/8"	1181C	1.00	1181M
10-32 x 3/8"	1367C	1.00	1367M
1/4-20 x 7/16"	1368C	1.35	1368M
1/4-32 x 3/16"*	1186C*	.80	1186M*

VOL CONTROL & OGGLE SWITCH NUTS
Nickel Plated

Type	No.	NET Per C	No.
Vol. Cont. Brass*	1195C	$1.70	1195M
Vol. Cont. Steel*	1199C	1.40	1199M
Toggle Sw. Hex†	1196C	2.00	1196M
Toggle Sw. Ring‡	1197C	3.30	1197M
*3/8-32 x 1/2 x 3/32	†15/32 x 3/16 x 3/4		‡15/32 x 3/16

FLAT STEEL WASHERS
NICKEL PLATED

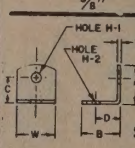
Size	No.	Net per C	No.
For #2 Screw	1138C	$.70	1138M
For #4 Screw	1149C	1.05	1149M
For #6 Screw	1150C	.90	1150M
For #8 Screw	1151C	.70	1151M
For #10 Screw	1152C	.95	1152M
For 1/4" Screw	1147C	.90	1147M
For 3/8" Screw	1148C	.95	1148M

INTERNAL TOOTH LOCKWASHERS STEEL
CADMIUM PLATED

Size	No.	Net per C	No.
#4	1127C	$.55	1127M
#6	1128C	.55	1128M
#8	1129C	.60	1129M
#10	1130C	.60	1130M
1/4"	1132C	.70	1132M
3/8"	1131C	1.05	1131M
Narrow Rim 3/8"	1145C	1.05	1145M
Narrow Rim 15/32"	1146C	1.32	1146M

EXTERNAL TOOTH LOCKWASHERS STEEL
CADMIUM PLATED

Size	No.	Net per C	No.
#4	1139C	$.55	1139M
#6	1140C	.55	1140M
#8	1141C	.60	1141M
#10	1142C	.60	1142M
1/4"	1144C	.70	1144M
3/8"	1143C	1.32	1143M



ANGLES
A — Length of leg C — Hole Loc
B — Length of leg D — Hole Loc
T — Thickness H1 — Hole Dia
W — Width H2 — Hole Dia
Std. Pkg. 100
STEEL, Cadmium Plated

No.	A	B	C	D	W	T	H1	H2
1444	7/16	7/16	17/64	1/4	3/8	.032	3/16	#4
1445	1/2	1/2	11/32	23/64	1/2	.050	#6	#4
1446	49/64	27/64	39/64	15/64	5/16	.032	#6	#8
1447	19/64	1/2	61/64	23/64	5/16	.050	#8	#8
1476	11/16	11/16	1/2	1/2	3/8	.032	#6	#6

Note: No. 1476 has Hot Tin Dipped finish

BRASS, Nickel Plated

1474	15/32	15/32	19/64	19/64	5/16	.025	#8	#8
1475	21/32	21/32	3/8	3/8	3/8	.050	#8	#8

SMITH PAGE 37 (COMPLETE SMITH INDEX ON LAST SMITH PAGE)

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specify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

ISTRUMENT KNOBS

Plain | With Pointer | With Skirt

ded black bakelite instrument knobs with molded brass insert for ¼" shafts. Style B pointer knobs e white vinyl pointer. Style C skirt type have ite indicator line. Style D same as style A except h protruding brass insert for mounting special ls and pointers. Std. Pkg. 10

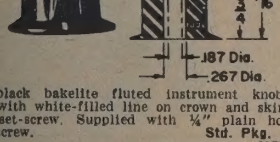
).	Style	C.D.	Pointer Size	Height	Per C
0	A	1¼"		9/16"	$35.00
1	A	1⅜"		11/16"	36.00
2	A	1⅝"		3/4"	42.00
3	A	2⅜"		7/8"	60.00
4	B	1¼"	¾" pointer	11/16"	54.00
5	B	1⅜"	1 1/16" pointer	3/4"	55.00
6	B	1⅝"	1 3/16" pointer	13/16"	59.00
7	B	2⅜"	1 5/16" pointer	13/16"	80.00
8	C	1⅛"	1½" Skirt	13/16"	66.00
9	C	1⅜"	1¾" Skirt	7/8"	68.00
0	C	1⅝"	2 1/16" Skirt	29/32"	80.00
1	C	2⅜"	3" Skirt	1 1/16"	105.00
2	D	1⅛"		29/32"	43.00
3	D	1⅜"		29/32"	45.00
4	D	1⅝"		27/32"	50.00
5	D	2⅜"		31/32"	68.00
			SKIRT ONLY		
6		1⅛"	Skirt only		9.50
7		1⅜"	Skirt only		16.00
8		2⅛"	Skirt only		18.00
9		3"	Skirt only		22.00

Matte Finish — Made to Meet MS-91531

ded Black, Matte finish bakelite instrument obs, with molded-in brass insert for ¼" shafts. knobs supplied with two (2) Allen-head set-ews. Style B pointer knobs have white vinyl nter. Style C skirt knobs have white indicator e on skirt. Std. Pkg. 10

	Style	O.D.	Pointer size	Height	NET Per C
0	A	1¼"		9/16"	$100.00
1	A	1⅝"		3/4"	120.00
2	A	2⅜"		7/8"	146.00
3	B	1½"	¾" pointer	11/16"	105.00
4	B	1⅝"	1 3/16" pointer	13/16"	121.00
5	B	2⅜"	1 5/16" pointer	15/16"	150.00
6	C	1½"	1½" skirt	13/16"	147.00
7	C	1⅝"	2 1/16" skirt	29/32"	180.00
8	C	2⅜"	3" skirt	1 1/32"	222.00

FLUTED INSTRUMENT KNOBS



ded black bakelite fluted instrument knobs, plied with white-filled line on crown and skirt. osite set-screw. Supplied with ¼" plain hole h set-screw. Std. Pkg. 10

	Skirt Dia.	Height	NET Per C
1	¾"	1/2"	$31.00
2	1⅛"	5/8"	36.00
3	1¼"	5/8"	40.00
4	1½"	7/8"	42.00
5	2"	13/16"	55.00
	With ¼" plain hole with set-screw		
6	¾"	½"	33.00

CONCENTRIC FLUTED

ded black and Red bakelite dual-concentric ed instrument knobs. Outside knob is black with te filled line on skirt. Inner knob is red with te-filled line on skirt and crown. Both knobs plied with set-screws. Std. Pkg. 10

	NET Per C
7	$66.00

POINTER KNOBS

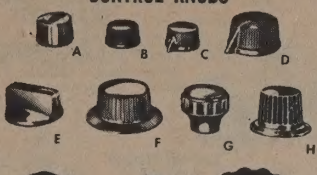
A: gth 1¼" gt. 5/8" | B: Length 2" Hgt. 5/8" | C: Length 1¼" Hgt. 5/8"

ded bakelite pointer knobs, supplied with ¼" n hole or brass inset. Complete with set screw. Std. Pkg. 25

).	Style	Type Hole	Color	NET Per C
0	A	¼" Plain	Black	$13.00
1	A	¼" Plain	Walnut	14.00
2	A	¼" Plain	Ivory	15.00
3	A	¼" Brass Insert	Black	20.00
4	A	¼" Brass Insert	Walnut	21.00
5	A	¼" Brass Insert	Red	22.00
6	B	¼" Plain	Black	25.00
7	B	¼" Plain	Walnut	26.00
8	B	¼" Brass Insert	Black	31.00
9	B	¼" Brass Insert	Walnut	32.00
0	C	¼" Plain	Black	16.00
1	C	¼" Plain	Walnut	17.00

HERMAN H. SMITH, INC.
MORE THAN TEN THOUSAND ELECTRONIC COMPONENT PARTS MANUFACTURED UNDER ONE ROOF

CONTROL KNOBS



Molded bakelite control knobs. Supplied with ¼" molded hole; complete with set screw. *Recessed for locknut. Std. Pkg. 25

No.	Style	O.D.	Height	Color	NET Per C
2240	A	¾"	19/32"	Black	$17.00
2241	A	¾"	19/32"	Walnut	18.00
2242	B	1¼"	13/32"	Black	11.00
2243	B	1¼"	13/32"	Walnut	12.50
2244*	B	1"	½"	Black	16.00
2245*	B	1"	½"	Walnut	17.50
2275†	B	1¼"	13/32"	Black	29.00
2276†	B	1¼"	13/32"	Red	31.00
2246	C	1¼"	13/32"	Black	11.00
2247	C	1¼"	13/32"	Walnut	12.50
2273†	C	1¼"	13/32"	Black	29.00
2274†	C	1¼"	13/32"	Red	31.00
2248*	D	1"	½"	Black	20.00
2249*	D	1"	½"	Walnut	21.00
2250*	E	1⅛"	9/16"	Black	17.00
2251*	E	1⅛"	9/16"	Walnut	18.00
2252*	F	1½"	11/16"	Black	22.00
2253*	F	1½"	11/16"	Walnut	23.50
2254*	F	1½"	11/16"	Ivory	25.00
2258	G	⅞"	¾"	Black	19.00
2259	G	⅞"	¾"	Walnut	20.00
2265	H	29/32"	19/32"	Black	20.00
2266	H	29/32"	19/32"	Red	21.00
2267	J	1 3/16"	⅝"	Black	16.50
2268	J	1 3/16"	⅝"	Red	18.00
2269	K	⅞"	⅝"	Black	24.00
2270	K	⅞"	⅝"	Red	26.00
2283	L	⅞"	½"	Black	30.00
2284	L	⅞"	½"	Red	31.00

† Supplied with brass insert.

LEVER KNOBS

Molded bakelite lever knobs with ¼" brass insert, complete with set screw. Std. Pkg. 25

No.	Style	Length	Height	Color	NET Per C
2232	A	1⅝"	19/32"	Black	$30.00
2233	A	1⅝"	19/32"	Walnut	31.00
2234	B	1 15/16"	19/32"	Black	50.00
2235	B	1 15/16"	19/32"	Walnut	51.00
2236	C	2½"	⅝"	Black	30.00
2237	C	2½"	⅝"	Walnut	32.00
2238	D	2 13/16"	⅝"	Black	51.00
2239	D	2 13/16"	⅝"	Walnut	52.00

KNOB DIAL PLATES

2261 | 2262 | 2290

DIAL: BRASS, chrome silver, 1⅝" O.D.
KNOB: Molded bakelite black (our 2250).
DESCR.: For matching dials on instruments, receivers, amplifiers. Dial has clear black etched numbers. Knob fits 1/4" shaft. Std. Pkg. 10

No.	Type	NET Each
2261	10 to 0 180 Degrees	$1.05
2262	10 to 0 270 Degrees	1.05
	DIAL PLATES ONLY ½" I.D.	
2263	10 to 0 180 Degrees	.80
2264	10 to 0 270 Degrees	.80

DIAL: Nickel silver, 1⅝" O.D.
KNOB: Molded bakelite.
DESCR.: Engraved numerals, varnish coated. 10 to 0, in 360 degrees. Knob fits ¼" shaft. Std. Pkg. 10

No. 2290	NET Each
	$1.05

PUSH BUTTON KNOBS

Std. Pkg. 25

No.	Style	O.D.	Height	Color	NET Per C
2277	A	½"	5/64"	Black	$8.50
2278	A	½"	5/64"	Red	10.00
2279	B	31/64"	3/16"	Black	6.00
2280	B	31/64"	3/16"	Red	7.50

CONTROL PLATES

MATERIAL: Brass Black Satin Finish. Etched silver numerals.
DIMENSION: 13/32" I.D. x O.D. as specified, x .020" thick. Std. Pkg. 5

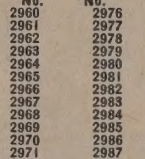
Clockwise Calib. 0-100 No.	Counter-Clockwise Calib. 100-0 No.	Degrees	Total Graduations	O.D.	NET Per C
2900	2906	180	20	2"	$105.00
2901	2907	270	20	2"	105.00
2902	2908	325	20	2"	105.00
2903	2909	180	100	3½"	150.00
2904	2910	270	100	3½"	150.00
2905	2911	325	100	3½"	150.00

DIAL PLATES

MATERIAL: Brass Chrome Silver Finish, .020" thick.
DESCR.: Mounting Holes 9/64". Std. Pkg. 5

Clockwise Calib. 0-100 No.	Counter-Clockwise Calib. 100-0 No.	Degrees	A	B	NET Per C
2912	2928	180	1⅛"	3/8"	$80.00
2913	2929	270	1⅛"	3/8"	80.00
2914	2930	325	1⅛"	3/8"	80.00
2915	2931	360	1⅛"	3/8"	80.00
2916	2932	180	1¾"	31/64"	100.00
2917	2933	270	1¾"	31/64"	100.00
2918	2934	325	1¾"	31/64"	100.00
2919	2935	360	1¾"	31/64"	100.00
2920	2936	180	2¾"	3/4"	135.00
2921	2937	270	2¾"	3/4"	135.00
2922	2938	325	2¾"	3/4"	135.00
2923	2939	360	2¾"	3/4"	135.00
2924	2940	180	4"	15/16"	170.00
2925	2941	270	4"	15/16"	170.00
2926	2942	325	4"	15/16"	170.00
2927	2943	360	4"	15/16"	170.00

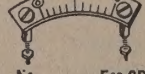
DIAL AND KNOB ASSEMBLY



DIAL: Brass Chrome Silver Finish, .020" thick.
KNOB: Molded Bakelite with ¼" Brass insert. Std. Pkg. 5

Clockwise Calib. 0-100 No.	Counter-Clockwise Calib. 100-0 No.	Degrees	O.D.	NET Each
2960	2976	180	1⅛"	$1.35
2961	2977	270	1⅛"	1.35
2962	2978	325	1⅛"	1.35
2963	2979	360	1⅛"	1.35
2964	2980	180	1⅝"	1.50
2965	2981	270	1⅝"	1.50
2966	2982	325	1⅝"	1.50
2967	2983	360	1⅝"	1.50
2968	2984	180	2⅜"	3.00
2969	2985	270	2⅜"	3.00
2970	2986	325	2⅜"	3.00
2971	2987	360	2⅜"	3.00
2972	2988	180	4"	3.45
2973	2989	270	4"	3.45
2974	2990	325	4"	3.45
2975	2991	360	4"	3.45

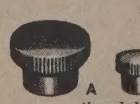
VERNIER DIAL MARKERS



MATERIAL: Brass Chrome Silver Finish. Supplied with hardware. Std. Pkg. 5

No.	For °Dials	Dial O.D.	NET Per C
2944	180	1⅛"	$85.00
2945	270	1⅛"	85.00
2946	325	1⅛"	85.00
2947	360	1⅛"	85.00
2948	180	1⅝"	85.00
2949	270	1⅝"	85.00
2950	325	1⅝"	85.00
2951	360	1⅝"	85.00
2952	180	2⅜"	85.00
2953	270	2⅜"	85.00
2954	325	2⅜"	85.00
2955	360	2⅜"	85.00
2956	180	4"	85.00
2957	270	4"	85.00
2958	325	4"	85.00
2959	360	4"	85.00

BINDING POST KNOBS



Std. Pkg. 25

threaded 8-32 brass inserts

No.	Style	O.D.	Height	Color	NET Per C
2271	A	¾"	½"	Black	$10.00
2272	A	¾"	½"	Red	12.00
2285	B	½"	7/16"	Red	10.00
2286	B	½"	7/16"	Black	10.00
2287	C	½"	½"	Red	10.00
2288	C	½"	½"	Black	10.00

specify SMITH

HERMAN H. SMITH, INC.

ELECT COMPO

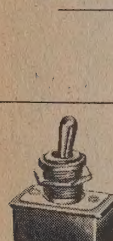
CUTLER-HAMMER SWITCHES

TOGGLE SWITCHES
STANDARD DUTY

15 Amps. 125 Volts — 10 Amps. 250 Volts AC, UL Approved 15/32" shank; slow-make and break; bakelite case. AC rated only for longer life and greater capacity. Std. Pkg. 10

BACK CONNECTED LUG TERMINALS

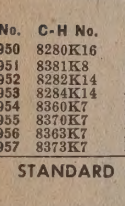
No.	C-H No.	Type	NET Each
966	7501K13	SPST	$ .92
967	7505K4	SPDT	1.06
968	7561K4	DPST	1.41
969	7565K5	DPDT	1.66
970	7611K2	TPST	2.86
971	7615K2	TPDT	3.53



BACK CONNECTED SCREW TERMINALS

No.	C-H No.	Type	NET Each
972	7500K14	SPST	$1.06
973	7504K4	SPDT	1.24
974	7560K5	DPST	1.66
975	7564K6	DPDT	2.05
976	7610K2	TPST	3.33
977	7614K2	TPDT	4.22

CENTER OFF STANDARD DUTY TOGGLE SWITCHES



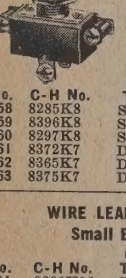
BACK CONNECTED LUG TERMINALS

No.	C-H No.	Type	NET Each
978	7503K13	SPDT	$1.06
979	7563K4	DPDT	1.66
980	7613K2	TPDT	3.53

BACK CONNECTED SCREW TERMINALS

No.	C-H No.	Type	NET Each
981	7502K13	SPDT	$1.24
982	7562K4	DPDT	2.05
983	7612K2	TPDT	4.22

TOGGLE SWITCHES
LIGHT DUTY



AC-DC, UL Approved; 15/32" shank; quick make — quick break; bakelite case. Unusually small size for electrical capacity. Std. Pkg. 10

BACK CONNECTED LUG TERMINALS

SMALL BAT HANDLE 15/32" LONG

No.	C-H No.	Type	Current Rating 125 V.	250 V	NET Each
950	8280K16	SPST		3 Amp.	$ .92
951	8381K8	SPST	6 Amps.	3 Amps.	1.06
952	8282K14	SPDT	3 Amps.	1 Amp.	1.16
953	8284K14	2 circ.	3 Amps.	1 Amp.	1.21
954	8360K7	DPST		3 Amps.	1.65
955	8370K7	DPST	6 Amps.	3 Amps.	1.77
956	8363K7	DPDT		3 Amps.	1.89
957	8373K7	DPDT	6 Amps.	3 Amps.	2.04

STANDARD BAT HANDLE 11/16" LONG

					NET Each
1160	8280K38	SPST		3 Amps.	$ .92
1161	8381K38	SPST	6 Amps.	3 Amps.	1.06
1162	8908K448	SPDT	3 Amps.	1 Amp.	1.16
1163	8908K449	2 Circ.	3 Amps.	1 Amp.	1.21
1164	8360K38	DPST		3 Amps.	1.65
1165	8908K451	DPST	6 Amps.	3 Amps.	1.77
1166	8363K38	DPDT		3 Amps.	1.89
1167	8908K453	DPDT	6 Amps.	3 Amps.	2.04

SIDE CONNECTED

SCREW TERMINALS

No.	C-H No.	Type	Current Rating 125 V.	250 V.	NET Each
958	8285K8	SPST		3 Amps.	$1.11
959	8396K8	SPST	6 Amps.	3 Amps.	1.24
960	8297K8	SPDT	3 Amps.	1 Amp.	1.45
961	8372K7	DPST	6 Amps.	3 Amps.	2.17
962	8365K7	DPDT		3 Amps.	2.50
963	8375K7	DPDT	6 Amps.	3 Amps.	2.62

WIRE LEADS — SIX INCHES LONG

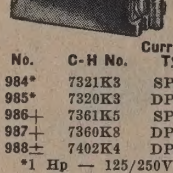
Small Bat Handle 15/32" Long

No.	C-H No.	Type	Current Rating 125 V.	250 V.	NET Each
964	8290K16	SPST		3 Amps.	$1.11
965	8391K8	SPST	6 Amps.	3 Amps.	1.24

PUSH BUTTON MOMENTARY SWITCHES
Std. Pkg. 10

AC-DC, UL Approved, 15/32" shank; rated at ¾ Amp, 125 volts — ¼ Amp, 250 volts.

No.	C-H No.	Type	Term.	NET Each
992	8411K11	SP Norm. Op	Lug	$ .64
993	8411K12	SP Norm. Op	Screw	.70
994	8411K8	SP Norm. Cl	Lug	.46
995	8411K7	SP Norm. Cl	Screw	.53



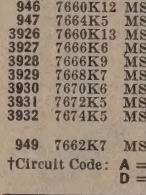
TOGGLE SWITCHES
HEAVY DUTY

AC - DC, UL Approved; 15/32" shank; quick make-quick break; bakelite case. Screw Terminals.

Std. Pkg. 10

No.	C-H No.	Current Rating Type	125 V	250-V	NET Each
984*	7321K3	SPST	12 A	6 A	$1.85
985*	7320K3	DPST	12 A	6 A	1.85
986+	7361K5	SPST	15 A	10 A	3.18
987+	7360K8	DPST	15 A	10 A	3.18
988±	7402K4	DPST		20 A	4.27

*1 Hp — 125/250V. +1½ Hp — 125/250V. ±1½ Hp — 125V, 2 Hp — 250V.



FOUR POLE SWITCHES

AC-DC GOVERNMENT APPROVED PER MIL-S-6745. 15/32" shank. Rated 10 amps, 115 volt AC—20 amps, 28 volts DC (Nominal rating per pole) SEALED LEVER Std. Pkg. 5

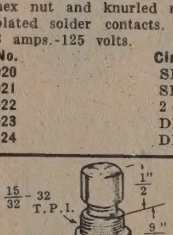
SOLDER LUGS

No.	C-H No.	"MS" No.	Type	Circuit†	NET Each
944	7661K6	—	4PST	A-D-B	$5.68
945	7665K4	—	4PDT	A-D-A	6.93
3922	7669K4	—	4PST	A-D-E	7.81
3923	7671K4	—	4PDT	A-B-C	8.58
3924	7673K4	—	4PDT	C-B-C	8.58
3925	7675K4	—	4PDT	A-D-C	8.58
		CENTER OFF			
948	7663K5	—	4PDT	A-B-A	6.93

SCREW TERMINALS (Per MIL-S-3950)

No.	C-H No.	"MS" No.	Type	Circuit†	NET Each
946	7660K12	MS25068- *	4PST	A-D-B	$6.60
947	7664K5	MS25068-23	4PDT	A-D-A	7.70
3926	7660K13	MS25068-24	4PST	A-B-D	6.16
3927	7666K6	MS25068- *	4PST	A-D-C	8.36
3928	7666K9	MS25068-28	4PST	D-B-C	8.36
3929	7668K7	MS25068-25	4PST	A-C-D	8.36
3930	7670K6	MS25068-31	4PDT	A-B-C	9.24
3931	7672K5	MS25068-27	4PDT	C-B-C	9.24
3932	7674K5	MS25068-26	4PDT	A-D-C	9.24
		CENTER OFF			
949	7662K7	MS25068-21	4PDT	A-B-A	7.70

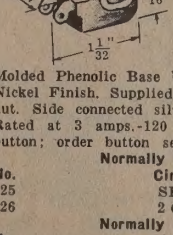
†Circuit Code: A = On B = Off C = Momentary On D = None E = Momentary Off



MIDGET TOGGLE SWITCH

Bat lever. Molded phenolic base. 15/32-32 x 15/32" long. Slotted sleeve, nickel finish. Supplied with hex nut and knurled nut. Back connected silver plated solder contacts. Rated 1 amp.-250 volts; 3 amps.-125 volts. Std. Pkg. 10

No.	Circuit	NET Each
920	SPST	$1.21
921	SPDT	1.44
922	2 Circ.	1.50
923	DPST	1.77
924	DPDT	2.04



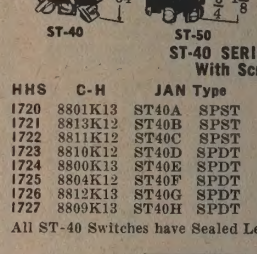
MIDGET MOMENTARY SWITCH

SLOW MAKE AND BREAK

Molded Phenolic Base 15/32-32 x 9/16" slotted sleeve, Nickel Finish. Supplied with hex nut and knurled nut. Side connected silver plated solder contacts. Rated at 3 amps.-120 volts A.C. Supplied less button; order button separately. Std. Pkg. 10

No.	Normally Closed (ON) Circuit	NET Each
925	SPST	$ .99
926	2 Circ.	1.07
	Normally Open (OFF)	
No.	Circuit	NET Each
927	SPST	$ .99

Additional C-H Push Button Switches on Smith Page 41



"ST" SWITCHES

Nominal Ra
Per. Pole:
10 Amps. 1
20 Amps. 2
Std. Pkg. 1

ST-40 SERIES — Single Pole With Screw Terminals

HHS	C-H	JAN Type		Circuit
1720	8801K13	ST40A	SPST	On-None-Off
1721	8813K12	ST40B	SPST	On-None-Mom-Off
1722	8811K12	ST40C	SPST	On-None-Mom-On
1723	8810K12	ST40D	SPDT	On-None-On
1724	8800K13	ST40E	SPDT	On-Off-On
1725	8804K12	ST40F	SPDT	On-None-Mom-On
1726	8812K13	ST40G	SPDT	Mom-On-Off-Mom-(
1727	8809K13	ST40H	SPDT	Off-On-Mom-On

All ST-40 Switches have Sealed Lever.

ST-42 SERIES — Single Pole With Solder Lugs

HHS	C-H	JAN Type		Circuit
1730	8803K6	ST42A	SPST	On-None-Off
1731	8819K5	ST42B	SPST	On-None-Mom-Off
1732	8817K5	ST42C	SPST	On-None-Mom-On
1733	8816K5	ST42D	SPDT	On-None-On
1734	8802K6	ST42E	SPDT	On-Off-On
1735	8805K5	ST42F	SPDT	On-None-Mom-On
1736	8818K5	ST42G	SPDT	Mom-On-Off-Mom-(
1737	8815K6	ST42H	SPDT	On-Off-Mom-On

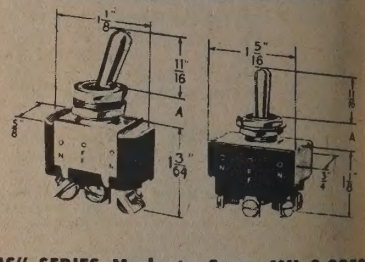
ST-50 SERIES — Double Pole With Screw Terminals

HHS	C-H	JAN Type		Circuit
1740	8822K8	ST50K	DPST*	On-None-Off
1741	8828K5	ST50L	DPST	On-None-Mom-Off
1742	8826K5	ST50M	DPST	Off-None-Mom-On
1743	8824K8	ST50N	DPDT*	On-None-On
1744	8820K10	ST50P	DPDT*	On-Off-On
1745	8830K5	ST50R	DPDT	On-None-Mom-On
1746	8834K4	ST50S	DPDT*	Mom-On-Off-Mom-(
1747	8832K4	ST50T	DPDT*	On-Off-Mom-On

* These switches are equipped with Sealed Lever.

ST-52 SERIES — Double Pole With Solder Lugs

HHS	C-H	JAN Type		Circuit
1760	8823K5	ST52K	DPST	On-None-Off
1761	8829K5	ST52L	DPST	On-None-Mom-Off
1762	8827K5	ST52M	DPST	Off-None-Mom-On
1763	8825K5	ST52N	DPDT	On-None-On
1764	8821K5	ST52P	DPDT	On-Off-On
1765	8831K5	ST52R	DPDT	On-None-Mom-On
1766	8835K3	ST52S	DPDT	Mom-On-Off-Mom-(
1767	8833K3	ST52T	DPDT	On-Off-Mom-On



"MS" SERIES Made to Spec. MIL-S-3950

Supersedes all previous specifications. Made to me MIL-S-3950B. Provided with sealed lever for protecti against sand, dust and moisture. Std. Pkg.

SINGLE POLE

No.	C-H No.	"MS" No.	Type	Circuit†	N E
3900	8800K16	MS35058-21	SPST	A-B-A	$2
3901	8801K22	MS35058-22	SPST	A-D-B	
3902	8810K15	MS35058-23	SPST	A-D-A	2
3903	8801K23	MS35058-24	SPDT	A-B-D	
3904	8813K18	MS35058-25	SPDT	A-E-D	2
3905	8804K13	MS35058-26	SPDT	A-D-C	2
3906	8812K14	MS35058-27	SPDT	C-B-C	2
3907	8811K18	MS35058-28	SPDT	D-B-C	2
3908	8813K17	MS35058-29	SPDT	A-D-E	2
3909	8811K17	MS35058-30	SPDT	B-D-C	2
3910	8809K16	MS35058-31	SPDT	A-B-C	2

DOUBLE POLE

No.	C-H No.	"MS" No.	Type	Circuit†	N E
3911	8820K16	MS35058-21	DPDT	A-B-A	3
3912	8822K20	MS35059-22	DPST	A-D-B	2
3913	8824K14	HS35059-23	DPDT	A-D-A	3
3914	8822K21	MS35059-24	DPDT	A-B-D	2
3915	8828K12	MS35059-25	DPDT	A-E-D	3
3916	8830K13	MS35059-26	DPDT	A-D-C	3
3917	8834K5	MS35059-27	DPDT	C-B-C	3
3918	8826K14	MS35059-28	DPDT	D-B-C	3
3919	8828K13	MS35059-29	DPDT	A-D-E	3
3920	8826K15	MS35059-30	DPDT	B-D-C	3
3921	8823K6	MS35059-31	DPDT	A-B-C	3

†Circuit Code: A = On B = Off C = Momentary On D = E = Momentary Off

© United Technical

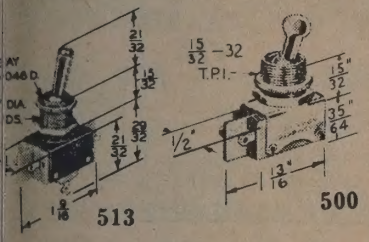
ecify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

ARROW HART & HEGEMAN SWITCHES

IALL CANOPY TYPE SWITCHES



ated type 15/32-32 slotted sleeve, nickel Supplied with hex nut and knurled nut. terminals. SPST rated at 3 amps-250 volts C; all other rated at 1 amp-250 volts, 3 125 volts AC-DC. Std. Pkg. 10

BAT LEVER POSITIVE ACTION

⅜" long shaft NET Each	CIRCUIT	No.	13/32" long shaft NET Each
$ .91	SPST	584	$ .91
1.16	SPDT	585	1.16
1.21	2-Circ.	586	1.21
1.65	DPST	587	1.65
1.89	DPDT	588	1.89

BAT LEVER MOMENTARY ACTION

15/32" long shaft

ally Closed (ON) NET Each	CIRCUIT		Normally Open (OFF) NET Each
$1.45	SPST	1024	$1.45
1.69	SPDT	—	—
2.18	DPST	1025	2.20
2.45	DPDT	—	—

BALL LEVER POSITIVE ACTION

⅜2 long shaft NET Each	CIRCUIT	3/4" long shaft NET Each
$ .91	SPST	501	$1.09
1.16	SPDT	503	1.45
1.21	2 Circ.	541	1.40
1.65	DPST	505	1.96
1.89	DPDT	507	2.18

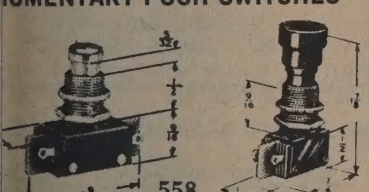
It's Sound Planning to SPECIFY SMITH FOR SWITCHES

To assist you in planning your prototypes and production, Smith maintains an inventory of all switches listed here —

IN STOCK — IN DEPTH

to meet your Immediate Requirements!

IOMENTARY PUSH SWITCHES



nated type 15/32-32 x 9/16" slotted sleeve, l finish. Supplied with hex nut and knurled All switches accept snap on button. SPST at 3 amps-250 volts AC-DC. All others rated amp-250 volts. 3 amps-125 volts AC-DC. Std. Pkg. 10

PLIED LESS BUTTON: ORDER BUTTON ARATELY.

QUICK MAKE AND BREAK

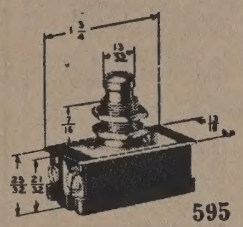
ally Closed (ON) NET Each	CIRCUIT	No.	Normally Open (OFF) NET Each
$1.77	SPST	555	$1.77
2.05	SPDT	—	—
2.09	2 Circ.	—	—
2.46	DPST	558	2.46
2.88	DPDT	—	—

SLOW MAKE AND BREAK

Rated at 1 amp.-125 volts AC

nally Closed (ON) NET Each	CIRCUIT		Normally Open (OFF) NET Each
$ .99	SPST	579	$ .99
1.28	2 Circ.	—	—

STANDARD DUTY MOMENTARY PUSH SWITCHES



Molded phenolic base. 15/32-32 x 7/16" long slotted sleeve, nickel finish. Screw terminals. Supplied with hex nuts.

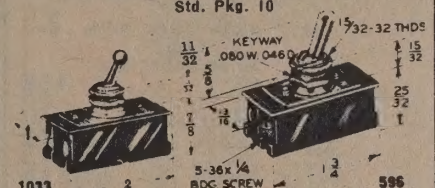
Two circ. rated at 3 amps.-250 volts, 6 amps-125 volts. AC-DC. All others rated at 6 amps-250 volts, 12 amps-125 volts AC-DC. DPST also rated at 1 HP at 250 volts AC-DC. Std. Pkg. 10

Normally Closed (ON) No.	NET Each	CIRCUIT	Normally Open (OFF) No.	NET Each
1026	$2.59	SPST	544	$2.59
1027	2.63	SPDT	—	—
1028	2.67	2 Circ.	—	—
1029	2.71	DPST	595	$2.71

STANDARD DUTY TOGGLE SWITCHES

QUICK MAKE AND BREAK

Std. Pkg. 10



BALL LEVER No.	NET Each	CIRCUIT	BAT LEVER No.	NET Each
1030	$1.75	SPST	597	$1.75
1031	1.84	SPDT	598	1.84
1032	1.75	2 Circ.	599	1.75
1033	1.84	DPST	596	1.84

MIDGET SIZE TOGGLE SWITCHES

Molded phenolic base, 15/32-32 x 15/32" long slotted sleeve, nickel finish. Side connected silver plated solder contacts. Supplied with hex nut and knurled nut. SPST rated at 3 amps 250 volts; 6 amps.-125 volts; all others rated at 1 amp-250 volts, 6 amps.-125 volts. Std. Pkg. 10

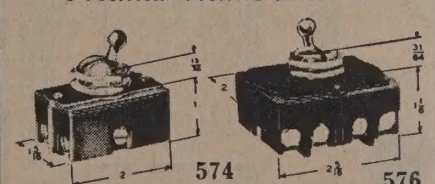
BALL LEVER No.	NET Each	CIRCUIT	BAT LEVER No.	NET Each
590	$1.05	SPST	591	$1.05
589	1.29	SPDT	592	1.29
594	1.26	2 Circ.	593	1.26

6" WIRE LEADS

BALL LEVER NET Each	CIRCUIT	BAT LEVER NET Each
$1.11	SPST	$1.11
1.54	SPDT	1.54
1.69	2 Circ.	1.69

EXTRA HEAVY DUTY POWER SWITCHES

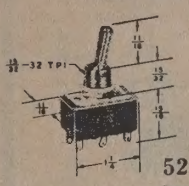
3 POSITION—POSITIVE CENTER OFF



Slotted sleeve 3/4-32, nickel finish. Screw terminals. Supplied with 2 hex nuts. Rated at 5 amps-250 volts. 10 amps-125 volts plus HP rating shown below. Std. Pkg. 5

No.	Circuit	Description	NET Each
574	DPDT 3/4 HP	250 volts AC-DC	$ 6.45
575	TPDT 1/2 HP	115/230 volts AC, 3 phase	9.90
576	4PDT 1/2 HP	115/230 volts AC, 2 phase	13.20

INTERMEDIATE SIZE TOGGLE SWITCHES

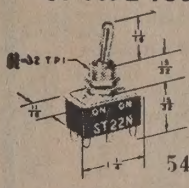


Molded phenolic base. 15/32-32 x 15/32" long slotted sleeve, nickel finish. Supplied with hex nut and knurled nut. Back connected silver plated solder contacts. SPDT rated at 1 amp-250 volts, 6 amps-125 volts AC-DC; all others rated at 3 amps-250 volts, 6 amps-125 volts AC-DC. Std. Pkg. 10

BAT LEVER

POSITIVE ACTION No.	NET Each	CIRCUIT	MOMENTARY ACTION No.		NET Each
520	$1.21	SPST	524	OFF	$1.74
521	1.33	SPDT	549	—	1.89
583	1.50	2 Circ.	—	—	—
522	1.66	DPST	537	OFF	2.49
523	2.04	DPDT	525	—	2.73

ST TYPE TOGGLE SWITCHES



MEETS AN SPEC. JAN-23

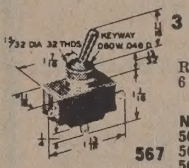
Rated at 3 amps-250 volts, 6 amps-125 volts AC-DC.

Std. Pkg. 10

No.	AWS No.	CIRCUIT	Position	NET Each
545	ST 12A	SPST	OFF-ON	$1.64
546	ST 12D	SPDT	ON-ON	1.86
1040	ST 12V	2-Circ.	ON-OFF	1.89
547	ST 22K	DPST	OFF-ON	2.32
548	ST 22N	DPDT	ON-ON	2.53

MOMENTARY NORMALLY OPEN (OFF)

1041	ST 12C	SPST	OFF-ON	$2.13
1042	ST 22M	DPST	OFF-ON	2.81

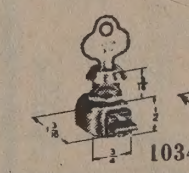


3 POSITION CENTER OFF

Rated at 3 amps-250 volts, 6 amps-125 volts AC-DC. Std. Pkg. 10

No.	CIRCUIT	NET Each
566	SPDT	$2.22
565	2 Circ.	2.48
567	DPDT	2.62

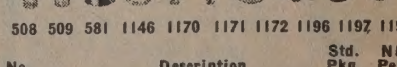
CANOPY TYPE ROTARY SWITCHES



Laminated type. 11/32-32 x 15/32" sleeve, nickel finish. Solder lugs. Supplied with hex nut and dress nut. SPST rated at 3 amps-250 volts AC-DC, all others rated at 1 amp-250 volts, 3 amps-125 volts. AC-DC. Key removable in OFF position only on SPST and DPST—key removable in both positions on all others. 1⅛" shaft. Std. Pkg. 10

KEY TYPE No.	NET Each	CIRCUIT	ROTARY TYPE No.	NET Each
1034	$2.15	SPST	570	$1.24
1035	2.21	SPDT	571	1.39
1036	2.27	2 Circ.	—	—
1037	2.72	DPST	572	1.77
1038	2.73	DPDT	573	2.34

SWITCH ACCESSORIES



508 509 581 1146 1170 1171 1172 1196 1197 1198

No.	Description	Std. Pkg.	NET Per C
508	ON-OFF name plate	100	$6.00
509	HI-LO name plate	100	6.00
581	Snap-On Button (Red or Black)	50	27.00
1146	Narrow Rim Lockwasher	100	1.32
1170	Key—Remove off position	50	24.00
1171	Key—Remove both positions	50	24.00
1172	Locking Ring	100	2.70
1196	Hex Nut—Brass N.P.	100	2.00
1197	Ring Nut—Brass N.P.	100	3.30
1198	Dress Nut—Brass N.P.	100	20.00

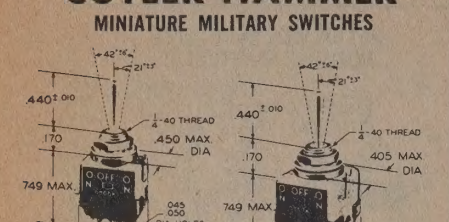
specify SMITH

HERMAN H. SMITH, INC.

ELECTR
COMPO

CUTLER-HAMMER

MINIATURE MILITARY SWITCHES



Extremely compact, highly reliable power or dry circuit switches. Usable as a pre-set switch in aircraft recognition systems; for walkie-talkies; for electronic instruments and communications systems.

RATINGS: Res. Load 4 Amps. @ 28 V.D.C. 1 Amp @ 50 V.D.C. 3 Amps. @ 115 V.A.C.

MINIMUM RATING: 25 Microamps. @ 5 Millivolts.

SINGLE POLE

WEIGHT: 5.0 Grams.
CUBIC CONTENT: .147 cubic inches "behind panel" volume.
Std. Pkg. 5

.440 LEVER APPROVED TO MIL-S-8834

No.	C-H No.	"MS" No.	Type	Circuit†	NET Each
1841	8866K1	MS24655-211	SPDT	A-B-A	$7.48
1842	8866K2	MS24655-271	SPDT	C-B-C	8.42
1843	8866K3	MS24655-311	SPDT	A-B-C	8.42
1844	8866K4	MS24655-231	SPDT	A-D-A	7.40
1845	8866K4	MS24655-241	SPST	A-B-D	8.42
1846	8866K6	MS24655-281	SPST	D-B-C	8.42
1847	8866K7	MS24655-221	SPST	A-D-B	7.40

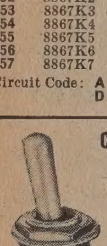
DOUBLE POLE

WEIGHT: 6.5 grams.
CUBIC CONTENT: .230 cubic inches "behind panel" volume.
Std. Pkg. 5

No.	C-H No.	"MS" No.	Type	Circuit†	NET Each
1851	8867K1	MS24656-211	DPDT	A-B-A	$ 9.35
1852	8867K2	MS24656-271	DPDT	C-B-C	10.90
1853	8867K3	MS24656-311	DPDT	A-B-C	10.90
1854	8867K4	MS24656-231	DPDT	A-D-A	9.35
1855	8867K5	MS24656-241	DPST	A-B-D	10.90
1856	8867K6	MS24656-281	DPST	D-B-C	10.90
1857	8867K7	MS24656-221	DPST	A-D-B	9.35

†Circuit Code: A = On B = Off C = Momentary On D = None E = Momentary Off

C-H MINIATURE MILITARY SWITCHES



Same as above, but with .687" lever. Total weight: 5.0 - 6.5 grams. Bushing dia. 15/32". Gold plated solder lug terminals.

SINGLE POLE

1 1/16" LEVER APPROVED TO MIL-S-8834

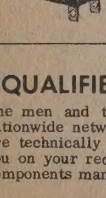
No.	C-H No.	Type	Circuit†	NET Each
3933	8868K1	SPDT	A-B-A	$7.60
3934	8868K2	SPDT	C-B-C	8.60
3935	8868K3	SPDT	A-B-C	8.60
3936	8868K4	SPDT	A-D-A	7.60
3937	8868K5	SPST	A-B-D	8.60
3938	8868K6	SPST	D-B-C	8.60
3939	8868K7	SPST	A-D-B	7.60

DOUBLE POLE

No.	C-H No.	Type	Circuit†	NET Each
3940	8869K1	DPDT	A-B-A	$ 9.46
3941	8869K2	DPDT	C-B-C	11.00
3942	8869K3	DPDT	A-B-C	11.00
3943	8869K4	DPDT	A-D-A	9.46
3944	8869K5	DPST	A-B-D	11.00
3945	8869K6	DPST	D-B-C	11.00
3946	8869K7	DPST	A-D-B	9.46

†Circuit Code: A = On B = Off C = Momentary On D = None E = Momentary Off

PUSH BUTTON SWITCHES



Push to make—Push to break

AC-DC, UL Approved; 11/16" shank; bakelite case. Pushing the button once closes the contacts. Pushing it again opens the contacts. Rated at 6 Amps. 125 Volts; 3 Amps. 250 Volts. **Std. Pkg. 10**

No.	C-H No.	Type	Term.	NET Each
989	7206K4	SPST	Lug	$1.27
990	7208K4	SPST	Screw	1.43
991	7207K4	SPST	Wire	1.43

QUALIFIED SALES ENGINEERS

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MICRO TOGGLE SWITCHES

ROCKER-ACTUATED TOGGLE SWITCHES

Combines advantages of Toggle Switch circuitry and current capacity with pushbutton control. Snag-proof keys prevent false actuation. Translucent plastic keys feature edge light indication. Lower half of key emits soft glow from light source in panel. Enables easy identification of actuator position. Transparent plastic keys mounted above flush. An insert with signs, symbols, or letters can be placed under the key.
Temperature range —65°F to +160°F. Sealed between bushing and rocker actuator, and between cover and case.
Std. Pkg. 10

Circuit Code #	Circuit	Circuit Code #	Circuit
1	ON-OFF-ON	8	OFF-NONE-ON(MOM)
2	ON-NONE-OFF	9	ON(MOM)OFF-ON (MOM
3	ON-NONE-ON	10	ON-NONE-ON(MOM)
4	ON-OFF-NONE	11	ON-OFF(MOM)-NONE
5	ON-ON-NONE	12	ON(MOM)-ON-NONE
6	ON-NONE-OFF(MOM)	13	NONE-OFF-ON(MOM)
7	ON-OFF-ON(MOM)		

RATING: CURRENT CAPACITY (AMPS)

	CONTINUOUS	RESISTIVE LOAD 30 vdc	115 vdc	250 vdc	115 vac	230 vac	LAMP LOAD 30 vdc	115 vac	INDUCTIVE LOAD 30 vdc	115 vac
A	45	20	.75	.5	15	6	5	3	15	10
B	45	15	.75	.5	15	6	4	2	10	7
C	40	20	.75	.5	15	6	7	4	15	15
D	40	18	.75	.5	11	6	5	2	10	8
E	40	20	.75	.5	15	6	5	4	12	15
F	40	18	.75	.5	11	6	4	2	10	8

HHS	MICRO	Circuit	Rating	NET Each
	1 POLE TRANSLUCENT KEY			
3401	1TP1-1	1	A	$ 7.50
3402	1TP1-2	2	A	7.50
3403	1TP1-3	3	A	7.50
3404	1TP1-21	4	A	7.50
3405	1TP1-31	5	A	7.50
3406	1TP1-4	6	B	7.50
3407	1TP1-5	7	B	7.50
3408	1TP1-6	8	B	7.50
3409	1TP1-7	9	B	7.50
3410	1TP1-8	10	B	12.63
3411	1TP1-41	11	B	13.02
3412	1TP1-51	12	B	13.05
3413	1TP1-61	13	B	7.50
	TRANSPARENT KEY			
3414	1TP4-1	1	A	$ 7.50
3415	1TP4-2	2	A	7.50
3416	1TP4-3	3	A	7.50
3417	1TP4-21	4	A	15.57
3418	1TP4-31	5	A	15.57
3419	1TP4-4	6	B	7.50
3420	1TP4-5	7	B	7.50
3421	1TP4-6	8	B	7.50
3422	1TP4-7	9	B	7.50
3423	1TP4-8	10	B	15.15
3424	1TP4-41	11	B	15.57
3425	1TP4-51	12	B	15.63
3426	1TP4-61	13	B	13.02
	2 POLE TRANSLUCENT KEY			
3427	2TP1-1	1	C	$ 8.79
3428	2TP1-2	2	C	8.79
3429	2TP1-3	3	C	8.79
3430	2TP1-21	4	C	8.79
3431	2TP1-31	5	C	8.79
3432	2TP1-4	6	D	16.17
3433	2TP1-5	7	D	8.79
3434	2TP1-6	8	D	8.79
3435	2TP1-7	9	D	14.61
3436	2TP1-8	10	D	8.79
3437	2TP1-41	11	D	15.03
3438	2TP1-51	12	D	15.21
3439	2TP1-61	13	D	15.03
	TRANSPARENT KEY			
3440	2TP4-1	1	C	$ 8.79
3441	2TP4-2	2	C	8.79
3442	2TP4-3	3	C	8.79
3444	2TP4-31	5	C	17.58
3446	2TP4-5	7	D	8.79
3447	2TP4-6	8	D	17.19
3448	2TP4-7	9	D	8.79
3449	2TP4-8	10	D	8.79
3451	2TP4-51	12	D	17.73
3452	2TP4-61	13	D	17.58
	4 POLE TRANSLUCENT KEY			
3453	4TP1-1	1	E	$10.53
3454	4TP1-2	2	E	10.53
3455	4TP1-3	3	E	10.53
3456	4TP1-21	4	E	10.53
3457	4TP1-31	5	E	10.53
3458	4TP1-4	6	F	18.00
3459	4TP1-5	7	F	10.53
3461	4TP1-7	9	F	10.53
3462	4TP1-8	10	F	15.03
3463	4TP1-41	11	F	15.21
3464	4TP1-51	12	F	15.03
	TRANSPARENT KEY			
3466	4TP4-1	1	E	$10.53
3467	4TP4-2	2	E	10.53
3468	4TP4-3	3	E	10.53
3469	4TP4-21	4	E	21.15
3470	4TP4-31	5	E	22.05
3471	4TP4-4	6	F	20.52
3472	4TP4-5	7	F	10.53
3474	4TP4-7	9	F	10.53
3475	4TP4-8	10	F	20.67
3476	4TP4-41	11	F	20.91
3477	4TP4-51	12	F	22.44
3478	4TP4-61	13	F	20.91

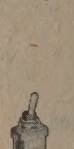
BUSHING-MOUNTED TOGGLE SWIT

Tested and approved under MIL-S-3950A. Silicone between cover and case, and between bushing and lever. Integral terminals provide stronger wiring tions. Wide temperature range of —85°F to +
Std.

Circuit Code #	Circuit	Circuit Code #	Circuit
1	ON-OFF-ON	8	OFF-NONE-ON(
2	ON-NONE-OFF	9	ON(MOM)OFF-((MOM)
3	ON-NONE-ON	10	ON-NONE-ON(M
4	ON-OFF-NONE	11	ON-OFF(MOM)-
5	ON-ON-NONE	12	ON(MOM)-ON-N
6	ON-NONE-OFF(MOM)	13	NONE-OFF-ON(
7	ON-OFF-ON(MOM)		

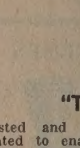
RATING: CURRENT CAPACITY (AMPS)

	CONTINUOUS	RESISTIVE LOAD 30 vdc	115 vdc	250 vdc	115 vac	230 vac	LAMP LOAD 30 vdc	115 vac	IND TI LO 30 vdc
A	45	20	.75	.5	15	6	5	3	15
B	45	15	.75	.5	15	6	4	2	10
C	40	20	.75	.5	15	6	7	4	15
D	40	18	.75	.5	11	6	5	2	10



HHS	MICRO	"MS" No.	Circuit	Rating
	1 POLE (MS 24523)			
3101	1TL1-1	MS24523-21	1	A
3102	1TL1-2	MS24523-22	2	A
3103	1TL1-3	MS24523-23	3	A
3104	1TL1-21	MS24523-24	4	A
3105	1TL1-31	MS24523-33	5	A
3106	1TL1-4	MS24523-29	6	B
3107	1TL1-5	MS24523-31	7	B
3108	1TL1-6	MS24523-30	8	B
3109	1TL1-7	MS24523-27	9	B
3110	1TL1-8	MS24523-26	10	B
3111	1TL1-41	MS24523-25	11	B
3112	1TL1-51	MS24523-51	12	B
3113	1TP1-61	MS24523-28	13	B

	2 POLE (MS 24524)			
3114	2TL1-1	MS24524-21	1	C
3115	2TL1-2	MS24524-22	2	C
3116	2TL1-3	MS24524-23	3	C
3117	2TL1-21	MS24524-24	4	C
3118	2TL1-31	MS24524-33	5	C
3119	2TL1-4	MS24524-29	6	D
3120	2TL1-5	MS24524-31	7	D
3121	2TL1-6	MS24524-30	8	D
3122	2TL1-7	MS24523-27	9	D
3123	2TL1-8	MS24524-26	10	D
3124	2TL1-41	MS24524-25	11	D
3125	2TL1-51	MS24524-32	12	D
3126	2TL1-61	MS24524-28	13	D



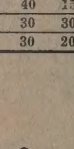
	4 POLE (MS 24525)			
3127	4TL1-1	MS24525-21	1	C
3128	4TL1-2	MS24525-22	2	C
3129	4TL1-3	MS24525-23	3	C
3130	4TL1-21	MS24525-24	4	C
3131	4TL1-31	MS24525-33	5	C
3132	4TL1-4	MS24525-29	6	D
3133	4TL1-5	MS24525-31	7	D
3134	4TL1-6	MS24525-30	8	D
3135	4TL1-7	MS24525-27	9	D
3136	4TL1-8	MS24525-26	10	D
3137	4TL1-41	MS24525-25	11	D
3139	4TL1-51	MS24525-32	12	D
3139	4TL1-61	MS24525-28	13	D

BUSHING-MOUNTED "TS" TOGGLE SWITCHES

Tested and approved under MIL-S-3950A. Terminals plated to enable conversion to solder use by removing screws. Sealed toggle lever.
Std. P

RATING: CURRENT CAPACITY (AMPS)

	CONTINUOUS	RESISTIVE LOAD 30 vdc	125 vdc	250 vdc	125 vac	250 vac	LAMP LOAD 30 vdc	125 vac	IND TIV LOA 30 vdc
A	40	20	.75	.5	15	6	5	3	15
B	40	15	.75	.5	15	6	4	2	10
C	30	30	.75	.5	25	9	7	4	15
D	30	20	.75	.5	15	6	5	2	10



HHS	MICRO	"MS" No.	Circuit	Rating
	1 POLE (MS 35058)			
3141	511TS1-1	MS35058-21	1	A
3142	511TS1-2	MS35058-22	2	A
3143	511TS1-3	MS35058-23	3	A
3144	511TS1-21	MS35058-24	4	A
3145	511TS1-4	MS35058-29	6	B
3146	511TS1-5	MS35058-31	7	B
3147	511TS1-6	MS35058-30	8	B
3148	511TS1-7	MS35058-27	9	B
3149	511TS1-8	MS35058-26	10	B
3150	511TS1-61	MS35058-28	13	B
3151	511TS1-41	MS35058-25	11	B

	2 POLE (35059)			
3152	512TS1-1	MS35059-21	1	C
3153	512TS1-2	MS35059-22	2	C
3154	512TS1-3	MS35059-23	3	C
3155	512TS1-21	MS35059-24	4	C
3156	512TS1-4	MS35059-29	6	D
3157	512TS1-5	MS35059-31	7	D
3158	512TS1-6	MS35059-30	8	D
3159	512TS1-7	MS35059-27	9	D
3160	512TS1-8	MS35059-26	10	D
3161	512TS1-61	MS35059-28	13	D
3162	512TS1-41	MS35059-25	11	D

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HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

MICRO TOGGLE SWITCHES

"S" TOGGLE SWITCHES "UL" LISTED

"L" listed "Commercial" type are identical to military type except for bat handle finish. Bright chrome plated to enhance panel appearance. Also certified by the Canadian Standards Association (CSA). **Std. Pkg. 10**

Circuit Code #	Circuit	Circuit Code #	Circuit
1	ON-OFF-ON	8	OFF-NONE-ON(MOM)
2	ON-NONE-OFF	9	ON(MOM)OFF-ON
3	ON-NONE-ON		(MOM)
4	ON-OFF-NONE	10	ON-NONE-ON(MOM)
6	ON-NONE-OFF(MOM)	13	NONE-OFF-ON(MOM)
7	ON-OFF-ON(MOM)		

RATING "A"	RATING "B"	RATING "C"
15 Amps., 125-250 VAC	10 Amps., 125-250 VAC	15 Amps., 125-250 VAC
½ HP, 250 VAC	¼ HP, 125 VAC	⅓ HP, 125 VAC
	½ HP, 250 VAC	¾ HP, 250 VAC

HHS	MICRO	Circuit	Rating	Net Ea.
	1 POLE			
	SCREW TERMINALS			
3331	11TS15-1	1	A	$2.18
3332	11TS15-2	2	A	1.82
3333	11TS15-3	3	A	2.18
3334	11TS15-6	8	B	2.02
3335	11TS15-61	13	B	2.02
3336	11TS15-7	9	B	2.37
	QUICK DISCONNECT TERMINALS			
3337	11TS95-1	1	A	$2.11
3338	11TS95-2	2	A	1.76
3339	11TS95-21	4	A	1.76
3340	11TS95-3	3	A	2.11
3341	11TS95-4	6	B	1.95
3342	11TS95-5	7	B	2.31
3343	11TS95-6	8	B	1.95
3344	11TS95-61	13	B	1.95
3345	11TS95-7	9	B	2.31
3346	11TS95-8	10	B	2.31
	SOLDER TERMINALS			
3347	11TS115-1	1	A	$2.05
3348	11TS115-2	2	A	1.72
3349	11TS115-3	3	A	2.05
3350	11TS115-4	6	B	1.92
3351	11TS115-7	9	B	2.24
	2 POLE			
	SCREW TERMINALS			
3352	12TS15-1	1	A	$2.93
3353	12TS15-2	2	A	2.44
3354	12TS15-21	4	A	2.44
3355	12TS15-3	3	A	2.93
3357	12TS15-5	7	C	3.15
3359	12TS15-61	13	C	2.93
3360	12TS15-7	9	C	3.15
3361	12TS15-8	10	C	3.15
	QUICK DISCONNECT			
3362	12TS95-1	1	A	$2.76
3363	12TS95-2	2	A	2.31
3365	12TS95-3	3	A	2.76
3366	12TS95-4	6	C	2.83
3367	12TS95-5	7	C	3.02
3370	12TS95-7	9	C	3.02
	SOLDER TERMINALS			
3372	12TS115-1	1	A	$2.63
3373	12TS115-2	2	A	2.24
3374	12TS115-21	4	A	2.24
3375	12TS115-3	3	A	2.63
3376	12TS115-4	6	C	2.73
3377	12TS115-5	7	C	2.89
3378	12TS115-6	8	C	2.73
3379	12TS115-61	13	C	2.73
3380	12TS115-7	9	C	2.89
3381	12TS115-8	10	C	2.89

3-HOLE MOUNT "TS" TOGGLE SWITCHES

"An" Type tested and approved under MIL specs. "JAN" Type conform to JAN-S-23. Sealed Lever. **Std. Pkg. 10**

Circuit Code #	Circuit	Circuit Code #	Circuit
1	ON-OFF-ON	8	OFF-NONE-ON(MOM)
2	ON-NONE-OFF	9	ON(MOM)OFF-ON
3	ON-NONE-ON		(MOM)
4	ON-OFF-NONE	10	ON-NONE-ON(MOM)
6	ON-NONE-OFF(MOM)	11	ON-OFF(MOM)-NONE
7	ON-OFF-ON(MOM)	13	NONE-OFF-ON(MOM)

RATING: CURRENT CAPACITY (AMPS)

	CONTINUOUS	RESISTIVE 30 vdc	125 vdc	250 vdc	115 vac	230 vac	LAMP LOAD 30 vdc	125 vac	INDUCTIVE LOAD 30 vdc	125 vac
A	55	40	.75	.5	20	7.5	7	7	20	15
B	55	30	.75	.5	20	7.5	5	4	18	11
C	55	40	.75	.5	25	8	10	7	20	15
D	55	30	.75	.5	20	7	7	4	18	11

1 POLE (MIL-S-6745)

HHS	MICRO	"AN" No.	"JAN" No.	Circuit	Rating	Net Ea.
3301	31TS1-1	3022-1	ST45E	1	A	$2.57
3302	31TS1-2	3022-2	ST45A	2	A	2.11
3303	31TS1-3	3022-3	ST45D	3	A	2.57
3304	31TS1-21	——	——	4	A	2.11
3305	31TS1-4	3022-9	ST45B	6	B	2.34
3306	31TS1-5*	——	ST45H	7	B	2.76
3307	31TS1-6	3022-8	ST45C	8	B	2.34
3308	31TS1-7	3022-7	ST45G	9	B	2.76
3309	31TS1-8	3022-11	ST45F	10	B	2.76
3310	31TS2-5	3022-6	——	7	B	2.96
3311	31TS1-61	——	——	13	B	2.34

*Has a jumper across the stationary contact terminals.

2 POLE (MIL-S-3950A)

HHS	MICRO	"MS" No.	Circuit	Rating	Net Ea.
3312	532TS1-1	MS25103-21	1	C	$5.33
3313	532TS1-3	MS25103-23	3	C	5.33
3314	532TS1-21	MS25103-24	4	C	4.45
3315	532TS1-5	MS25103-31	7	D	5.79
3316	532TS1-7	MS25103-27	9	D	5.79
3317	532TS1-8	MS25103-26	10	D	5.79
3319	532TS1-61	MS25103-28	13	D	5.23

RATING: CURRENT CAPACITY (AMPS)

	CONTINUOUS	RESISTIVE LOAD 30 vdc	115 vac	LAMP LOAD 30 vdc	115 vac	INDUCTIVE LOAD 30 vdc	115 vac
E	30	25	22	5	3	15	15
F	20	20	20	5	4	12	15
G	20	18	11	4	2	10	8

3 POLE (MIL-S-3950A)

HHS	MICRO	"MS" No.	Circuit	Rating	Net Ea.
3320	533TS1-1	MS25105-21	1	E	$4.97
3321	533TS1-3	MS25105-23	3	E	4.97
3322	533TS1-21	MS25105-24	4	E	4.16

4 POLE (MIL-S-6745)

HHS	MICRO	"AN" No.	Circuit	Rating	Net Ea.
3323	34TS1-1	3227-1	1	F	$6.66
3324	34TS1-2	3227-2	2	F	5.33
3325	34TS1-3	3227-3	3	F	6.66
3326	34TS1-21	3227-9	4	F	7.83
3327	34TS1-5	3227-5	7	G	8.03
3328	34TS1-6	3227-8	8	G	7.22
3329	34TS1-7	3227-7	9	G	8.03
3330	34TS1-61	3227-10	13	G	7.22

SEALED "TS" TOGGLE SWITCHES

These switches have a panel seal in addition to all other "TS" features. When mounted, the seal provides a dust, liquid and moisture seal at the panel. **Std. Pkg. 10**

Circuit Code #	Circuit	Circuit Code #	Circuit
1	ON-OFF-ON	7	ON-OFF-ON(MOM)
2	ON-NONE-OFF	8	OFF-NONE-ON(MOM)
3	ON-NONE-ON	9	ON(MOM)OFF-ON
4	ON-OFF-NONE		(MOM)
6	ON-NONE-OFF(MOM)	10	ON-NONE-ON(MOM)

RATING: CURRENT CAPACITY (AMPS)

	CONTINUOUS	RESISTIVE LOAD 30 vdc	125 vdc	250 vdc	125 vac	250 vac	LAMP LOAD 30 vdc	125 vac	INDUCTIVE LOAD 30 vdc	125 vac
A	40	20	.75	.5	15	6	5	3	15	10
B	40	15	.75	.5	15	6	4	2	10	7
C	30	30	.75	.5	25	9	7	4	15	15
D	30	20	.75	.5	15	6	5	2	10	8

1 POLE

SCREW TYPE TERMINALS

HHS	MICRO	Circuit	Rating	NET Each
3201	211TS1-1	1	A	$3.45
3202	211TS1-2	2	A	3.06
3203	211TS1-3	3	A	3.45
3206	211TS1-5	7	B	3.61
3207	211TS1-6	8	B	3.25
3209	211TS1-8	10	B	3.61

SOLDER TYPE TERMINALS

HHS	MICRO	Circuit	Rating	NET Each
3211	211TS11-1	1	A	$3.28
3212	211TS11-2	2	A	2.96
3213	211TS11-3	3	A	3.28
3215	211TS11-4	6	B	3.15
3216	211TS11-5	7	B	3.48
3217	211TS11-6	8	B	3.15
3218	211TS11-7	9	B	3.48
3219	211TS11-8	10	B	3.48

2 POLE

SCREW TYPE TERMINALS

HHS	MICRO	Circuit	Rating	NET Each
3221	212TS1-1	1	C	$4.13
3222	212TS1-2	2	C	3.64
3223	212TS1-3	3	C	4.13
3224	212TS1-21	4	C	3.64
3225	212TS1-4	6	D	4.13
3226	212TS1-5	7	D	4.39
3227	212TS1-6	8	D	4.13
3228	212TS1-7	9	D	4.39
3229	212TS1-8	10	D	4.39

SOLDER TYPE TERMINALS

HHS	MICRO	Circuit	Rating	NET Each
3231	212TS11-1	1	C	$3.84
3232	212TS11-2	2	C	3.45
3233	212TS11-3	3	C	3.84
3236	212TS11-5	7	D	4.06
3237	212TS11-6	8	D	3.93
3238	212TS11-7	9	D	4.06
3239	212TS11-8	10	D	4.06

ARROW H & H "SNAP-ACTING" Momentary Contact SWITCHES

A B C

TERMINAL CODE: S = solder lugs; L = screws, lock washers; C = screws, cup washers; Q = quick connect

Std. Pkg. 5

HIGH SENSITIVITY PIN TYPE (A)

RATINGS
LIMIT LOAD to 1 10 Amp, 125 V., A.C.
or 10 Watts, 125 V., A.C.
or 5 Watts, 25 V., D.C.

Operating Characteristics
Operating Force..... 7 to 12 oz.
Pretravel ..... .012" max.
Overtravel ..... .005" min.
Diff. Travel.. .0002 to .0008 in.

WITH TERMINALS	S.P. NORM. OPEN No.	NET Ea.	S.P. NORM. CLOSED No.	NET Ea.	½ S.P.D.T. No.	NET Ea.
S	4701	$7.05	4705	$7.05	4709	$7.33
C	4702	7.20	4706	7.20	4710	7.45
L	4703	7.20	4707	7.20	4711	7.45
Q	4704	7.05	4708	7.05	4712	7.33

ADJUSTABLE RIGID LEVER (B)

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Characteristics
Operating Force.. 2½ oz. max.
Pretravel ..... 5/64" max.
Overtravel ..... .078" min.
Diff. Travel..... .109" max.

WITH TERMINALS	S.P. NORM. OPEN No.	NET Ea.	S.P. NORM. CLOSED No.	NET Ea.	S.P.D.T. No.	NET Ea.
S	4721	$3.20	4725	$3.20	4729	$3.71
C	4722	3.34	4726	3.34	4730	3.63
L	4723	3.34	4727	3.34	4731	3.63
Q	4724	3.20	4728	3.20	4732	3.71

ROLLER LEAF ACTUATOR (C)

General Purpose 15 Amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Characteristics
Operating Force..... 5 oz. max.
Pretravel ..... 5/32" max.
Overtravel..... not over 1/16 in.
Diff. Travel..... .050" max.

WITH TERMINALS	S.P. NORM. OPEN No.	NET Ea.	S.P. NORM. CLOSED No.	NET Ea.	S.P.D.T. No.	NET Ea.
S	4501	$2.65	4533	$2.65	4565	$3.01
C	4502	2.73	4534	2.73	4566	3.20
L	4503	2.73	4535	2.73	4567	3.20
Q	4504	2.65	4536	2.65	4568	3.01

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Characteristics
Operating Force..... 5 oz. max.
Pretravel ..... 11/32" max.
Overtravel..... not over 1/16 in.
Diff. Travel..... .065" max.

WITH TERMINALS	S.P. NORM. OPEN No.	NET Ea.	S.P. NORM. CLOSED No.	NET Ea.	S.P.D.T. No.	NET Ea.
S	4601	$3.06	4633	$3.06	4665	$3.40
C	4602	3.20	4634	3.20	4666	3.20
L	4603	3.20	4635	3.20	4667	3.20
Q	4604	3.06	4636	3.06	4668	3.40

specify SMITH

HERMAN H. SMITH, INC.

ELECT
COMPO

ARROW, HART & HEGEMAN "SNAP ACTING" MOMENTARY CONTACT SWITCHES

PRECISION SNAP-ACTING SWITCH A precision snap-acting switch is a mechanically operated electric switch having predetermined and accurately controlled characteristics, and having contacts other than the blade and jaw, or mercury type, where the maximum separation between any butting contacts is 1/8 inch.

MOMENTARY CONTACT SWITCH A momentary contact switch is a switch which returns from the operated condition to its normal circuit condition when the actuating force is removed.

ACTUATOR An actuator is the mechanism of the switch or enclosure which, when moved as intended, will operate the contacts.

OPERATING FORCE Operating force is that straight line force in the designated direction applied to the actuator to cause the switch contacts to snap to the operated contact position.

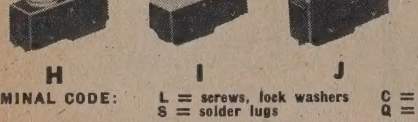
PRETRAVEL Pretravel is the distance or angle which the actuator moves from the actuator free to the actuator operating position.

OVERTRAVEL Overtravel is the movement of t ator beyond the operating position.

MOVEMENT DIFFERENTIAL Movement differ the distance or angle from the operating positio releasing position.

Std. Pkg. 5

D E F G



H I J

TERMINAL CODE: L = screws, lock washers C = screws, cup washers S = solder lugs Q = quick disconnect

FLEXIBLE LEAF ACTUATOR (D)

General Purpose 15 amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Characteristics
Operating Force..... 5 oz. max.
Pretravel..... 5/32" max.
Overtravel ..... not over 1/16 in.
Diff. Travel..... .050" max.

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET Ea.
S	4505	$1.97	4537	$1.97	4569	$2.37
C	4506	2.04	4538	2.04	4570	2.65
L	4507	2.04	4539	2.04	4571	2.64
Q	4508	1.97	4540	1.97	4572	2.37

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Characteristics
Operating Force.. 9 oz. max.
Pretravel..... 11/32" max.
Overtravel ..... not over 1/16 in.
Diff. Travel..... .065" max.

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET Ea.
S	4605	$2.15	4637	$2.15	4669	$2.73
C	4606	2.11	4638	2.11	4670	2.57
L	4607	2.11	4639	2.11	4671	2.57
Q	4608	2.15	4640	2.15	4672	2.73

STANDARD ROLLER (E)

General Purpose 15 Amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Characteristics
Operating Force.. 3½ oz. max.
Pretravel..... 9/32" max.
Overtravel..... .156" min.
Diff. Travel... .004 to .040 in.

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET Ea.
S	4521	$3.06	4553	$3.06	4585	$3.49
C	4522	3.20	4554	3.20	4586	3.63
L	4523	3.20	4555	3.20	4587	3.63
Q	4524	3.06	4556	3.06	4588	3.49

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Characteristics
Operating Force.. 2½ oz. max.
Pretravel..... 15/32" max.
Overtravel..... 1/16" min.
Diff. Travel..... .085" max.

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET Ea.
S	4621	$3.20	4653	$3.20	4685	$3.75
C	4622	3.27	4654	3.27	4686	3.71
L	4623	3.27	4655	3.27	4687	3.71
Q	4624	3.20	4656	3.20	4688	3.75

RIGID HINGE (F)

General Purpose 15 Amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Characteristics
Operating Force..... 2½ oz.
Pretravel..... ⅜" max.
Overtravel..... .219" min.
Diff. Travel..... .007 to .050 in.

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET Ea.
S	4525	$2.37	4557	$2.37	4589	$2.81
C	4526	2.44	4558	2.44	4590	2.87
L	4527	2.44	4559	2.44	4591	2.87
Q	4528	2.37	4560	2.37	4592	2.81

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Characteristics
Operating Force.. 2½ oz. max.
Pretravel..... ⅝" max.
Overtravel..... .078" min.
Diff. Travel..... .109" max.

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET Ea.
S	4625	$2.79	4657	$2.79	4689	$3.06
C	4626	2.57	4658	2.57	4690	2.94
L	4627	2.57	4659	2.57	4691	2.94
Q	4628	2.79	4660	2.79	4692	3.06

PIN TYPE (G)

General Purpose 15 Amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Character
Operating Force..... 9
Pretravel..... .0
Overtravel..... .0
Diff. Travel.. .0004 to

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4529	$1.82	4561	$1.82	4593	$2.1
C	4530	1.89	4562	1.89	4594	2.2
L	4531	1.89	4563	1.89	4595	2.2
Q	4532	1.82	4564	1.82	4596	2.1

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Character
Operating Force.... 14
Pretravel..... .03
Overtravel..... .0
Diff. Travel.. .002 to .

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4629	$1.89	4661	$1.89	4693	$2.4
C	4630	1.97	4662	1.97	4694	2.3
L	4631	1.97	4663	1.97	4695	2.3
Q	4632	1.89	4664	1.89	4696	2.4

PANEL MOUNTED TYPE (H)

General Purpose 15 Amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Character
Operating Force..... 9
Pretravel..... 1/6
Overtravel..... 7/3
Diff. Travel.... .0004 to

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4509	$4.29	4541	$4.29	4573	$4.8
C	4510	4.32	4542	4.32	4574	4.8
L	4511	4.32	4533	4.32	4575	4.8
Q	4512	4.29	4544	4.29	4576	4.8

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Character
Operating Force.... 14
Pretravel..... .05
Overtravel..... .2
Diff. Travel.. .002 to .

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4609	$4.40	4641	$4.40	4673	$4.9
C	4610	4.47	4642	4.47	4674	5.0
L	4611	4.47	4643	4.47	4675	5.0
Q	4612	4.40	4644	4.40	4676	4.9

SHORT OVERTRAVEL BUTTON (I)

General Purpose 15 Amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Character
Operating Force..... 9
Pretravel..... 1/6
Overtravel..... 1/1
Diff. Travel.. .0004 to

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4513	$2.37	4545	$2.37	4577	$2.6
C	4514	2.44	4546	2.44	4578	2.7
L	4515	2.44	4547	2.44	4579	2.7
Q	4516	2.37	4548	2.37	4580	2.6

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Character
Operating Force.... 14
Pretravel..... .05
Overtravel..... .0
Diff. Travel.. .002 to .

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4613	$2.44	4645	$2.44	4677	$3.0
C	4614	2.37	4646	2.37	4678	2.7
L	4615	2.37	4647	2.37	4679	2.7
Q	4616	2.44	4648	2.44	4680	3.0

SHORT ROLLER (J)

General Purpose 15 Amp

RATINGS
15 Amp., 480 V., A.C.
½ Amp., 125 V., D.C.
¼ Amp., 250 V., D.C.

Operating Character
Operating Force 6
Pretravel..... 9/
Overtravel..... 3/
Diff. Travel.... .003 to

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4517	$3.06	4549	$3.06	4581	$3.4
C	4518	3.20	4550	3.20	4582	3.6
L	4519	3.20	4551	3.20	4583	3.6
Q	4520	3.06	4552	3.06	4584	3.4

Heavy Duty 20 Amp

RATINGS
20 A., 480 V., A.C. ¼ A., 250 V., D.C.
10 A, 125 V., A.C. "L" Load 1 H.P., 120 V., A.C.
½ A, 125 V., D.C. 2 H.P., 240 V., A.C.

Operating Character
Operating Force 6
Pretravel..... 1/
Overtravel..... 3/
Diff. Travel..... 3/

WITH TERMINALS	S.P. NORM. OPEN No.	S.P. NORM. OPEN NET Ea.	S.P. NORM. CLOSED No.	S.P. NORM. CLOSED NET Ea.	S.P.D.T. No.	S.P.D.T. NET
S	4617	$3.20	4649	$3.20	4681	$3.7
C	4618	3.27	4650	3.27	4682	3.7
L	4619	3.27	4651	3.27	4683	3.7
Q	4620	3.20	4652	3.20	4684	3.7

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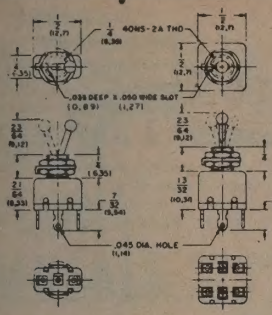
Specify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS



H.& H. SUB-MINIATURE TOGGLE SWITCHES

greatest switching flexibility and is available sitive and momentary action. Gold plated silver contacts to insure continuity on low energy d Rhodium plated silver movable contacts to mechanical wear. Molded diallyl phthalate and housing. Available in Commercial and Military ng. Resistive and *Inductive.

AC
DC
rush: 25A.
n rating: 40 milliamps at 1.5 volts
% Power Factor
Inductors
al Life: 100,000 cycles

Std. Pkg. 5

COMMERCIAL

nd mounting hardware gold anodized. Available inless steel ball lever.

A H&H No.	Circuit*	Net Each
TC-3	SPDT A-B-A	$5.00
TE-3	SPDT C-B-A	5.30
TG-3	SPDT C-B-C	5.30
TM-3	SPDT C-D-A	5.30
TS-1	SPST B-D-A	4.60
TS-2	DPST B-D-A	5.60
TS-3	SPDT A-D-A	5.00
TC-6	DPDT A-B-A	6.50
TE-6	DPDT C-B-C	8.25
TG-6	DPDT C-B-C	8.25
TM-6	DPDT C-D-A	8.25
TS-6	DPDT A-D-A	6.50

B-OFF, C-Momentary ON, D-None

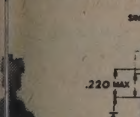
MILITARY

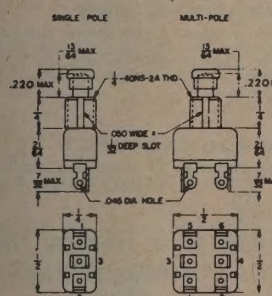
S-3950B, MS75028 and MS75029. Housing are, clear anodized. Available only with alu- lever.

H&H No.	MS No.	Circuit*	NET Each
-3-M	MS75028-21	SPDT A-B-A	$5.30
-3-M	MS75028-31	SPDT C-B-A	5.60
-3-M	MS75028-27	SPDT C-B-C	5.60
-3-M	MS75028-26	SPDT C-D-A	5.60
-1-M	MS75028-22	SPST B-D-A	5.00
-2-M	MS75029-22	DPST B-D-A	6.00
-3-M	MS75028-23	SPDT A-D-A	5.30
-6-M	MS75029-21	DPDT A-B-A	6.80
-6-M	MS75029-31	DPDT C-B-A	8.60
-6-M	MS75029-27	DPDT C-B-C	8.60
-6-M	MS75029-26	DPDT C-D-A	8.60
-6-M	MS75029-23	DPDT A-D-A	6.80

B-OFF, C-Momentary ON, D-None

H.& H. SUB-MINIATURE MOMENTARY PUSH BUTTON SWITCHES





omentary switch available, combining maximum , dependability and durability with minimum envelope. Gold plated leaf contacts, with llyl phthalate body and anodized aluminum ounts with ¼" diameter slotted sleeve, supplied ting hardware. Nylon push button caps are d are available in seven colors.
2A. 29V.DV Resistive
1A. 115V.AC
Rating: 10 Micro-amps at 50 MV.
2.5 Grams Single Pole
4.0 Grams Double Pole
al Life: Min. 1,000,000 Cycles.

Circuit	Net Each
SPDT NO/MC	4.60
DPDT NO/MC	5.60
3PST 3P/NO	5.30
3PST 3P/NC	7.60
Button Only, Available in Red, Black, Green, Yellow Blue, Brown, Natural	.17

Std. Pkg. 25

CONTINENTAL-WIRT SLIDE SWITCHES

MATERIALS: Housings—Steel, cad. plated; Insulators—Phenolic; Contacts—Silver Plated Brass; Knobs & Toppers—Black Phenolic (except #8655—Natural Nylon).

RATINGS: Based on 125 Volts
Rating A—3.0 amps AC, 0.5 amps DC
Rating B—6.0 amps AC, 0.5 amps DC
Rating C—0.5 amp AC-DC

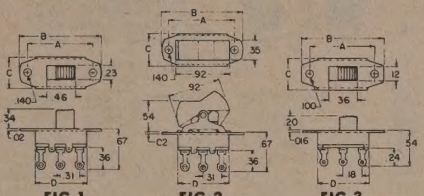


FIG.1 FIG.2 FIG.3

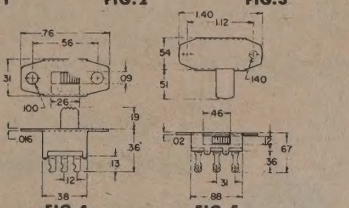


FIG.4 FIG.5

DETENT SLIDE SWITCHES

	RATING A No.	NET Per C	DIMENSIONS FIGURE 1 A	B	C	D	RATING B No.	NET Per C
SPST	515	$11.40	1.12	1.40	0.54	0.88	1105	$15.00
SPDT	516	12.00	1.12	1.40	0.54	0.88	1106	15.00
DPST	517	16.50	1.12	1.40	0.54	0.88	1107	24.00
DPDT	518	18.00	1.12	1.40	0.54	0.88	1108	27.00
DP3P'OS	1054	30.00	1.40	1.65	0.54	1.18	8637	31.00
3PDT	1109	48.00	1.12	1.40	0.71	0.88	8638	52.00
3P3P0S	8635	56.00	1.40	1.65	0.78	1.18	8639	67.00
4PDT	1104	60.00	1.12	1.40	1.00	0.88	8640	60.00
4P3P0S	8636	69.00	1.40	1.65	1.00	1.18	8641	75.00

SPRING-RETURN SLIDE SWITCHES

SPST	568	35.00	1.12	1.40	0.54	0.88	8643	23.00
SPDT	569	28.80	1.12	1.40	0.54	0.88	8644	23.00
DPDT	8642	37.00	1.12	1.40	0.71	0.88	8645	27.00

ROCKER SWITCHES

	RATING A Detent No.	NET Per C	DIMENSIONS FIGURE 2 A	B	C	D	Spr. Return No.	NET Per C
SPST	8646	41.00	1.12	1.40	0.54	0.88	8651	50.00
SPDT	8647	41.00	1.12	1.40	0.54	0.88	8651	50.00
DPST	8648	47.00	1.12	1.40	0.54	0.88	—	—
DPDT	8649	45.00	1.12	1.40	0.54	0.88	—	—
3PDT	8650	77.00	1.12	1.40	0.71	0.88	—	—

MINIATURE SLIDE SWITCHES

	RATING C No.	NET Per C	DIMENSIONS FIGURE 3 A	B	C	D	Spr. Return No.	NET Per C
SPDT	1226	27.00	0.81	1.00	0.40	0.63	1236	40.00
DPDT	1227	33.00	0.81	1.00	0.40	0.63	—	—
SP3P0S	1238	40.00	1.00	1.19	0.40	0.80	—	—
DP3P0S	1239	40.00	1.00	1.19	0.40	0.80	—	—

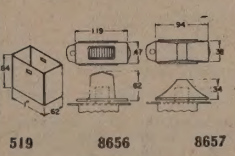
SUBMINIATURE SLIDE SWITCH

	RATING C No.	NET Per C	FIGURE 4 A	B	C	D	Spr. Return No.	NET Per C
SPDT	8655	$45.00	0.81	1.00	0.40	0.63	—	—

SIDE-ACTION SLIDE SWITCH

	RATING A No.	NET Per C	FIGURE 5 A	B	C	D	Spr. Return No.	NET Per C
SPDT	8653	$24.00	0.81	1.00	0.40	0.63	—	—
DPDT	8654	27.00	1.00	1.19	0.40	0.80	—	—

Slide Switch Accessories



519 8656 8657

No.	Description	NET Per C
519	Metal Shield	$15.00
8656	Black Slide Topper For Standard Switch	9.00
8657	Black Slide Topper For Miniature Switch	11.00

TV ANTENNA LUG

Solderless Type

A secure, swift, positive and permanent method of connecting TV wire to antenna. Simply strip wire, coil around groove and fold over. Insure positive contact.

Std. Pkg. 100

No.	Type	Length	Hole	NET Per C
1460	Double Cup	1 5/16"	No. 10	$3.00
1461	Double Cup	1 5/16"	¼"	$3.50

PLUG-IN MODULE HOUSING

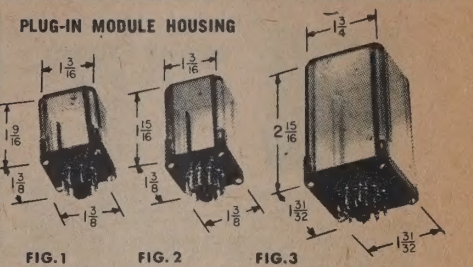


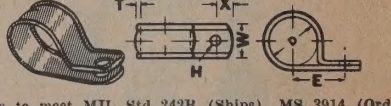
FIG.1 FIG.2 FIG.3

Molded plastic housings and pin headers fit standard tube sockets. For use in packaging relays, networks, miniature interchangeable circuits in plug-in, replaceable modules. Available in three sizes and materials for a wide range of temperature and environmental applications.

HEADERS: MOLDED PHENOLIC plastic, Black.
HOUSINGS: MOLDED POLYSTYRENE, Black, MOLDED BUTYRATE, per Fed. Spec. L-P349A, Type 3, Class MS, Clear.
MOLDED NYLON, per MIL-P-20693A, Natural.
Housings are supplied complete with header.
PINS: Brass, nickel plated.
SCREWS: Steel, Cadmium plated. **Std. Pkg. 10**

HOUSING	STYRENE Cat. No.	STYRENE NET Each	BUTYRATE Cat. No.	BUTYRATE NET Each	NYLON Cat. No.	NYLON NET Each
Miniature (Fig. 1)						
8-Pin	2437-08	$.66	2421-08	$.76	2424-08	$.69
9-Pin	2437-09	.76	2421-09	.88	2424-09	.88
11-Pin	2437-11	.76	2421-11	.88	2424-11	.88
20-Pin	2437-20	.88	2421-20	1.00	2424-20	1.00
Standard (Fig. 2)						
8-Pin	2438-08	$.64	2422-08	$.64	2432-08	$.76
9-Pin	2438-09	.70	2422-09	.76	2432-09	.88
11-Pin	2438-11	.70	2422-11	.76	2432-11	.88
20-Pin	2438-20	.88	2422-20	.88	2432-20	1.00
Large (Fig. 3)						
8-Pin	2439-08	$.81	2423-08	$1.20	—	—
11-Pin	2439-11	.88	2423-11	1.25	—	—
20-Pin	2439-20	1.15	2423-20	1.47	—	—

PLASTIC CABLE CLIPS — ETHYL CELLULOSE



Made to meet MIL Std 242B (Ships), MS 3914 (Ord.) Withstands temperatures from —60 to +175 degrees F.

T .060 — W ½" X 7/32" — H .204

Std. Pkg. 100

No.	Hole (D)	E	NET Per C
831	1/8	.360	$2.34
832	5/32	.423	2.40
833	3/16	.457	2.58
834	5/32	.498	2.85
835	3/4	.529	3.00
836	7/32	.560	3.30
837	1/2	.592	3.60
838	9/32	.623	4.20
839	5/8	.654	4.50
840	11/32	.752	4.80
841	3/4	.783	5.10
842	7/8	.845	5.40
843	1	.908	5.70
844	1 1/8	.970	6.00
845	1 1/4	1.062	6.30

NYLON CABLE CLIPS

MIL P17091A, Amend 2. Withstands temperatures from —60 to +250 degrees F. **Std. Pkg. 100**

	⅛" to ½" (D)	9/16" to 1¼" (D)
T	.040	.060
W	3/4"	1/4"
X	5/32"	13/64"
H	.167	.204

No.	Hole (D)	E	NET Per C
771	1/8	.310	$3.60
772	5/32	.373	3.90
773	3/16	.407	4.20
774	5/32	.448	4.65
775	1/4	.479	4.80
776	7/32	.510	5.10
777	1/2	.542	5.40
778	9/32	.623	6.60
779	5/8	.654	7.20
780	11/32	.752	7.50
781	3/4	.783	8.10
782	7/8	.845	8.70
783	1	.908	10.20
784	1 1/8	1.002	12.00
785	1 1/4	1.062	13.80

SPRING GRID CLIP

Small and large type grid clip used to replace clips that have lost their tension due to heat causing poor contact.

Std. Pkg. 100

No.	Type Type	Per C
1288	1X2-6BQ6	$6.00
1289	1B3-6BG6	6.00

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HERMAN H. SMITH, INC.

SINGLE RECORD 33-1/3 R.P.M.

TEN LESSONS
UP TO 15 WORDS PER MINUTE
Complete on Two Sides

This twelve inch long play record contains all ten of the Code Course Lessons listed above, five on each side. 20-Page SMITH Instruction Book is included, and the record is housed in attractive, sturdy jacket with International Morse Code table on reverse side.
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ADVANCED CODE COURSE

Single Record—33⅓ R.P.M.
TWELVE LESSONS 16 to 25 Words Per Minute

Specially prepared to increase skills in copying code at high speeds. 12 step-by-step lessons are provided plus specific directions with each.

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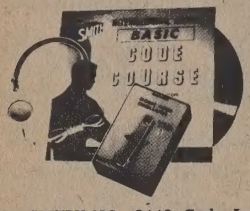
No. 2435 Advanced Code Course complete with 20 page instruction Book ——— **NET $4.80**

BEGINNERS AND ADVANCED CODE COURSES IN COMBINATION PACKAGE

Advanced Code Course #2435 PLUS Beginners' Code Course #2420 (see above) both complete with 20-page instruction books, attractively packaged in combination carton.
No. 2436 **NET $9.00**

SMITH CODE INSTRUCTION KIT



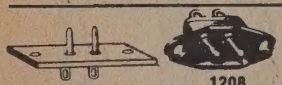
The SMITH NO. 2442 Code Instruction Kit contains a Code Oscillator (Self Keyed) in kit form, complete with all instructions, Code Record and Headphone.

The oscillator is housed in a sturdy black plastic case with a gold front panel and utilizes a single transistor blocking oscillator circuit that provides audio regeneration or oscillation. The oscillator is supplied with its own Key and is battery powered by means of any 9 Volt transistor type battery which is not furnished with the kit.

The Code Record, 12"-33-1/3 RPM, is individually sleeved and contains 10 lessons up to 15 WPM on two sides. Also included is a 20 page instruction booklet containing all lessons and information as to how to use the record for best results.

The No. 2442 Code Instruction Kit is the ideal and most complete package for any individual desiring to learn the Code.

No. 2442 **Net Each $16.95**



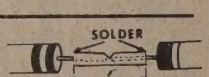
1228 1208

INTERLOCK PLUGS

RATING: 125 VAC-15 Amp.

No.	Std. Pkg. 100 Type	NET Per C
1208	Recessed	$8.00
1228	Flush	7.00

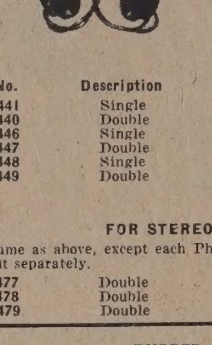
"CLEAPS" (Connectors for Joining Severed Wires)



MATERIAL: Brass, cadmium plated.
WIRE SIZE: For wires, .010" to .050" (B&S Gauge 16 to 30).
DESCR.: Used to splice cut leads of condensers, resistors, etc., in process of trouble-shooting. Insert wire in each tapered end and solder thru center opening. Std. Pkg. 1000

No. 1270 **NET Per M $10.00**

HIGH SENSITIVITY HEADPHONES



The latest in deluxe design, with many features of more expensive types. Featherweight construction assures fatigue-free use. Alnico V magnets, dual coil construction provide excellent tonal fidelity. Adjustable vinyl covered headband, molded plastic cases. Cord equipped with phone tips.

No.	Description	Ohms	NET Each
2441	Single	1000	$1.89
2440	Double	2000	3.45
2446	Single	2—4	1.89
2447	Double	4—8	3.45
2448	Single	2000	2.10
2449	Double	4000	3.75

FOR STEREO USE

Same as above, except each Phone has leads brought out separately.

2477	Double	2000	$3.75
2478	Double	4—8	3.75
2479	Double	4000	4.20

RUBBER EAR CUSHIONS

Finest quality soft rubber ear cushions, fit all standard earphones. For comfortable listening over long periods of time.
No. 2410 **Per Pair $1.50**

HEX AND SPLINE KEYS

Made of special alloy steel, tempered to avoid brittleness and impose maximum resistance to torsional strain. Ends ground for easy insertion.

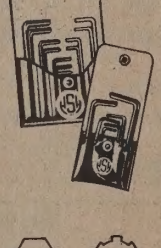
HEX KEYS **Std. Pkg. 50**

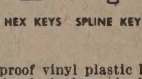
No.	Screw	O.D.	NET Per C
340	No. 2	.034	$7.80
341	No. 3, 4	.050	7.80
342	No. 5, 6	.062	7.80
343	No. 8	.078	7.80
344	No. 10	.093	9.00
345	No. ¼"	.125	9.00
346	No. 5/16"	.156	9.00

SPLINE KEYS

No.	Screw	O. D.	NET Per C
370	No. 4	.058	$7.80
371	No. 5	.068	7.80
372	No. 6	.075	7.80
373	No. 8	.093	7.80
374	No. 10	.109	9.00
375	No. ¼"	.143	9.00
376	No. 5/16"	.182	9.00

HEX AND SPLINE KEY KITS

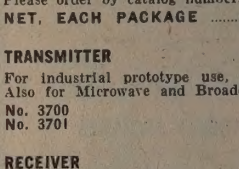




HEX KEYS SPLINE KEYS

Attractive tearproof vinyl plastic kit with individual pockets for each of six keys in kit. **Std. Pkg. 5**
Kit of 6 hex keys for screws from No. 3 to 5/16".
No. 355 **$60.00 NET Per C**
Kit of 6 spline keys for screws from No. 5 to 5/16".
No. 385 **$60.00 NET Per C**
Combination Kit of 3 hex and 3 spline keys for No. 6-8-10 screws.
No. 390 **$60.00 NET Per C**
Kit of 7 hex keys for screws from No. 2 to 5/16" and 4 spline keys Nos. 4, 6, 8, and 10.
No. 395 **$120.00 NET Per C**

"PANELABELS" Modern Panel Title Decals



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3717	⅝-inch
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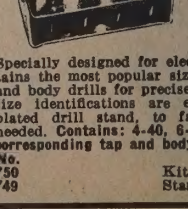

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—102 Red —104 Green —106 Orange —108 Brown —113 Grey

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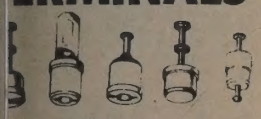

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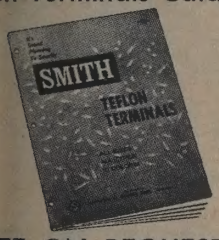

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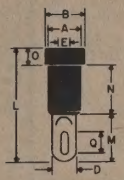
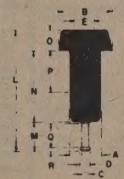
TEST JACKS

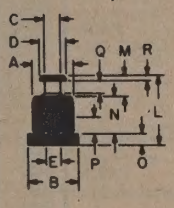


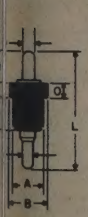
Cat. No.	DIMENSIONS A	B	C	D	E*	L	M	N	O	P**	Q	R	NET Per M
PHONE TIP JACK													
63-1000	.185	.218	—	.105	.050	.687	.354	.287	.046	.250	—	—	$120.00
63-1001	.185	.218	—	.105	.041	.687	.354	.287	.046	.250	—	—	160.00
63-1002	.185	.218	—	.110	.080	.687	.354	.287	.046	.250	—	—	160.00
63-1014	.185	.218	—	.115	.050	.687	.354	.281	.052	.250	—	—	160.00
63-1015	.185	.218	—	.103	.080	.687	.330	.146	.187	.187	—	—	160.00
63-1016	.185	.218	—	.115	.050	.625	.355	.224	.046	.200	—	—	160.00
63-1017	.185	.218	—	.104	.060	.718	.316	.356	.046	.315	—	—	160.00
63-1037	.185	.218	—	.110	.050	.687	.330	.146	.187	.250	—	—	160.00

*Probe Diameter **Probe Length

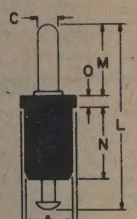


BANANA JACK													
63-1074	.218	.250	.054	.074	.104	.655	.187	.375	.093	.280	.116	.035	$300.00
63-1508	.265	.460	.062	.093	.161	1.000	.250	.597	.160	.546	.215	.032	500.00
TURRET LUG													
63-1003	.185	.218	.054	.074	.090	.437	.120	.271	.046	.195	.053	.037	$180.00
63-1004	.185	.218	.054	.074	.080	.437	.120	.271	.046	.195	.053	.037	180.00
63-1005	.185	.218	.054	.074	.080	.640	.187	.400	.050	.287	.104	.037	180.00
63-1006	.204	.250	.054	.074	.080	.437	.120	.271	.046	.195	.053	.037	200.00
63-1007	.170	.218	.046	.078	.090	.375	.060	.269	.046	.250	.040	.010	220.00
63-1010	.148	.172	.040	.060	.040	.345	.120	.179	.046	.140	.077	.023	180.00
63-1011	.218	.250	.066	.098	.105	.400	.060	.294	.046	.250	.037	.010	220.00
63-1012	.120	.142	.040	.060	.040	.449	.120	.283	.046	.245	.060	.030	190.00
63-1013	.200	.218	.054	.074	.093	.761	.187	.386	.187	.455	.116	.035	270.00
63-1020	.200	.218	.054	.074	.093	.699	.187	.386	.125	.390	.116	.035	400.00
63-1029	.140	.172	.046	.080	.040	.253	.060	.143	.050	.125	.040	.010	220.00
63-1032	.148	.172	.046	.080	.040	.203	.060	.097	.046	.078	.040	.010	210.00
63-1033	.120	.150	.046	.080	.040	.203	.060	.113	.030	.078	.040	.010	210.00
63-1054	.185	.218	.054	.074	.090	.340	.120	.174	.046	.140	.077	.023	210.00
63-1057	.185	.218	.054	.074	.080	.467	.120	.301	.046	.225	.047	.035	210.00
63-1072	.120	.142	.040	.060	.040	.410	.120	.244	.046	.205	.060	.030	180.00
63-1077	.140	.172	.040	.060	.040	.345	.120	.179	.046	.140	.077	.023	180.00
63-1078	.148	.172	.046	.080	.040	.190	.050	.094	.046	.078	.030	.010	200.00
63-1079	.185	.218	.054	.074	.050	.437	.120	.271	.046	.195	.053	.037	190.00
63-1080	.185	.218	.080	.125	.080	.455	.105	.300	.050	.315	.065	.020	250.00
63-1081	.200	.375	.054	.074	.093	.834	.187	.417	.230	.518	.116	.035	350.00





73-1000 Group



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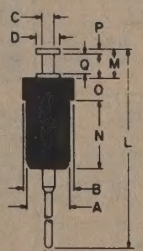
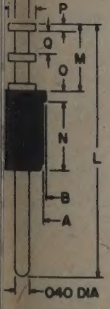


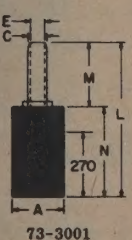
73-1007 Group

PROBES & PLUGS

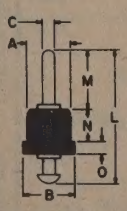
Cat. No.	A	B	C	D	E*	L	M	N	P	Q**	NET Per M
73-1000	.185	.218	.030	.050	—	1.531	.250	.287	.046	—	—	—	$150.00
73-1001	.185	.218	.030	.050	—	.906	.250	.287	.046	—	—	—	150.00
73-1002	.185	.218	.030	.050	—	2.083	.250	.287	.046	—	—	—	150.00
73-1003	.185	.218	.030	.050	—	1.937	.250	.141	.046	—	—	—	130.00
73-1018	.148	.172	.030	.050	—	1.937	.250	.165	.046	—	—	—	180.00
73-1028	.185	.218	.030	.040	—	1.870	.120	.250	.046	—	—	—	180.00
73-1006	.185	.218	.081	—	—	.739	.281	.287	.046	—	—	—	$150.00
73-1011	.185	.218	.050	—	—	.562	.250	.135	.052	—	—	—	120.00
73-1015	.185	.218	.081	—	—	.739	.281	.287	.046	—	—	—	130.00
73-1016	.185	.218	.050	—	—	.562	.250	.141	.046	—	—	—	120.00
73-1017	.185	.218	.081	—	—	.562	.250	.141	.046	—	—	—	130.00
73-1022	.171	.187	.040	—	—	.687	.272	.212	.040	—	—	—	180.00
73-1023	.185	.218	.050	—	—	.906	.250	.287	.046	—	—	—	150.00
73-1026	.185	.218	.090	—	—	.648	.190	.287	.046	—	—	—	170.00
73-1027	.185	.218	.062	—	—	.612	.250	.141	.046	—	—	—	150.00
73-1007	.185	.218	.050	.093	—	2.005	.125	.287	.093	.020	.085	—	$150.00
73-1008	.185	.218	.050	.093	—	1.000	.125	.287	.093	.020	.085	—	150.00
73-1009	.185	.218	.050	.093	—	2.000	.125	.150	.230	.020	.085	—	160.00
73-1010	.185	.218	.060	.125	—	1.052	.281	.287	.046	.031	.093	—	$150.00
73-3001	.218	—	.080	—	.062	.645	.270	.375	—	—	—	—	$120.00
73-3012	.218	—	.090	—	.062	.645	.270	.375	—	—	—	—	150.00
37-1011	.185	.218	.050	—	—	.562	.250	.135	.052	—	—	—	$150.00



73-1010



73-3001 Group



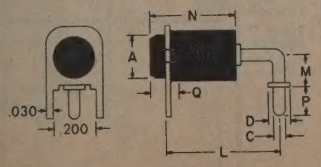
37-1011

TEFLON PRINTED CIRCUIT TEST JACK

Standard Package 100

Cat. No.	A	B	C	D	E*	L	M	N	P	Q**	NET Per M
63-3002	.187	.218	.050	.080	.080	.500	.140	.378	.125	.250	$350.00
63-3003	.187	.218	.050	.080	.080	.400	.140	.378	.125	.250	350.00
63-3004	.187	.218	.040	.080	.080	.520	.140	.398	.130	.250	350.00
63-3005	.187	.218	.035	.080	.080	.400	.140	.378	.187	.250	360.00
63-3009	.187	.218	.050	.080	.080	.500	.140	.689	.125	.500	390.00

*Probe Diameter **Probe Length



SINGLE INSTRUMENT TEST ADAPTERS

Materials:

BODIES MACHINED: Butyrate, per MIL-P-10408A, Type 1, Class 2. Color Black or Red, Specify color by adding color code suffix to basic part No. as coded above.
CONDUCTORS: Brass, per QQ-B-626, Comp. 22, half hard.
SPRINGS: Four-leaved beryllium copper, heat-treated.
HEADS: Molded Nylon, Per MIL-P-20693A.
SCREWS: Steel, cadmium plated.

Finishes:

CONDUCTORS: Nickel Plate, per QQ-N-290, Class I, Type VII.
SPRING: Nickel Plate, as above.
TERMINAL: Gold washed.

Mechanical	Standard Adapters	Miniature Adapters
PHONE TIP:	.080 Dia. x ½" long	.080 Dia. x ⅜" long
BANANA PLUG:	.180/.170 Dia. x 9/16" long	.118/.112 Dia. x 9/32" long
PHONE JACKS:	.080 Dia.	.080 Dia.
BANANA JACKS:	.161 Dia.	.104 Dia.
BODIES:	⅜" Dia.	¼" Dia.

Ratings:

CURRENT: 15 Amps (Standard); 5 Amps (Miniature) AC for 10°C Temp. Rise, Continuous Duty, except where limited by a co-axial connector.
VOLTAGE: 5 KV (Standard), 2 KV (Miniature) 60 cycle AC Continuous Working Voltage, except where limited by co-axial connector.
RESISTANCE: 1 Milliohm or less when seated in proper mating connectors.

COLOR CODE SUFFIX
Add to Catalog Number as Required
—102 RED —103 BLACK

BINDING POST TO BANANA PLUG

REAR: Insulated 5-way binding post.
FRONT: Standard or Miniature Banana plug. Banana jack hole or side stacking. **Std. Pkg. 10**

No.	Description	NET Per C
5025	Standard Adapter	$90.00
5035	Miniature Adapter	90.00

BINDING POST TO PHONE TIP

REAR: Insulated 5-way binding post.
FRONT: Standard .080 phone tip. Banana jack hole for side stacking. **Std. Pkg. 10**

No.	Description	NET Per C
5026	Standard Adapter	$85.00
5036	Miniature Adapter	85.00

BINDING POST TO ISOLATED BANANA PLUG

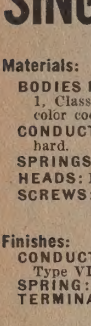
REAR: Insulated 5-way binding post.
CENTER: Turret-terminal connections to isolated front and rear conductors allow insertion of component in series input circuit.
FRONT: Standard or miniature banana plug. **Std. Pkg. 10**

No.	Description	NET Per C
5027	Standard Adapter	$100.00
5037	Miniature Adapter	100.00

BINDING POST TO ISOLATED PHONE TIP

REAR: Insulated 5-way binding post.
CENTER: Turret-terminal connections to isolated front and rear conductors allow insertion of component in series input circuit.
FRONT: Standard .080 phone tip. **Std. Pkg. 10**

No.	Description	NET Per C
5028	Standard Adapter	$90.00
5038	Miniature Adapter	90.00



BANANA JACK TO ISOLATED BANANA PLUG

REAR: Standard or Miniature Banana Jack.
CENTER: Turret-terminal connections to isolated front and rear conductors allow insertion of component in series input circuit.
FRONT: Standard or miniature banana plug. **Std. Pkg. 10**

No.	Description	NET Per C
5029	Standard Adapter	$85.00
5039	Miniature Adapter	85.00

TIP JACK TO ISOLATED PHONE TIP

REAR: Standard .080 tip jack.
CENTER: Turret-terminal connections to isolated front and rear conductors allow insertion of component in series input circuit.
FRONT: Standard .080 phone tip. **Std. Pkg. 10**

No.	Description	NET Per C
5030	Standard Adapter	$75.00
5040	Miniature Adapter	75.00

STACKING SOLDERLESS PHONE TIP

REAR: Standard or miniature banana jack for stacking.
SIDE: Wire lead hole secures test lead with internal set-screw.
FRONT: Standard .080 phone tip. **Std. Pkg. 10**

No.	Description	NET Per C
5031	Standard Adapter	$70.00
5041	Miniature Adapter	70.00

STACKING SOLDERLESS BANANA PLUG

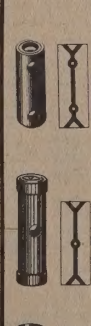
REAR: Miniature Banana jack for stacking.
SIDE: Wire lead hole secures test lead with internal set-screw.
FRONT: Miniature banana plug.

No.	Description	NET Per C
5042	Miniature Adapter	$50.00

BNC SERIES JACK TO BANANA PLUG

REAR: BNC Series co-axial jack.
SIDE: Banana jack hole for side stacking.
FRONT: Standard banana plug. **Std. Pkg. 10**

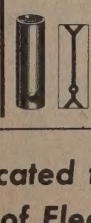
No.	Description	NET Per C
5032	Standard Adapter	$150.00



TIP JACK TO BANANA PLUG

REAR: Standard .080 phone tip jack.
FRONT: Standard or miniature banana plug. Banana jack hole for side stacking. **Std. Pkg. 10**

No.	Description	NET Per C
214	Standard Adapter	$35.00
5033	Miniature Adapter	35.00



TIP JACK TO SPADE LUG

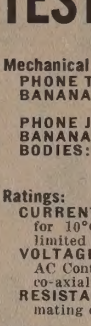
REAR: Standard .080 tip jack.
FRONT: Tapered spade lug fits studs from ¼" down to #6. **Std. Pkg. 50**

No.	Description	NET Per C
249	Standard Adapter	$40.00

BANANA PLUG SPLICE

REAR: Standard or miniature banana jack.
FRONT: Standard or miniature banana jack. Banana jack hole for side stacking. **Std. Pkg. 50**

No.	Description	NET Per C
245	Standard banana jack both ends	$25.00
5043	Miniature banana jack both ends	25.00
5034	Standard banana jack to min. banana jack	25.00



PHONE TIP PLUG SPLICE

REAR: Standard .080 phone jack.
FRONT: Standard .080 phone jack. Banana jack hole for side stacking. **Std. Pkg. 50**

No.	Description	NET Per C
246	Standard Adapter	$30.00

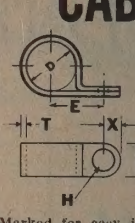
BANANA JACK TO TIP JACK

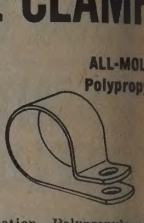
REAR: Standard or miniature banana jack.
FRONT: Standard .080 tip jack. Banana jack hole for side stacking. **Std. Pkg. 50**

No.	Description	NET Per C
496	Standard banana to tip jack	$30.00
5044	Miniature banana to tip jack	30.00

Smith - *A Company Dedicated to Excellence in the Manufacture and Distribution of Electronic Components*

CABLE CLAMP





ALL-MOLI
Polypropy

Marked for easy identification. Polypropylene clamps feature excellent support at low cost. M factured entirely from propylene, they exhibi environmental stress cracking and have excellent resistance at prolonged periods of time. Prop clamps are impervious to most acids, alkalies, or solvents and detergents. Conforms to appli Mil. Specs. **Std. Pkg.**

T = .060 X = 7/32"
W = ½" H = 13/64"

No.	Hole (D)	E
8910	1/8"	.360
8911	3/16"	.423
8912	1/4"	.457
8913	5/16"	.498
8914	3/8"	.529
8915	7/16"	.560
8916	1/2"	.592
8917	9/16"	.623
8918	5/8"	.654
8919	11/16"	.752
8920	3/4"	.783
8921	7/8"	.845
8922	1"	.908

CELLULOSE

Marked for easy identification. Cellulose C Clamps feature excellent support at low cost. M entirely from cellulose, they are ultra-violet st ized for extreme weather resistance. Tough lightweight, they provide exceptional service in outdoor and indoor applications. Conforms to ap able Mil. Specs. **Std. Pkg.**

T = .060 X = 7/32"
W = ½" H = 13/64"

No.	Hole (D)	E
8925	1/8"	.360
8926	3/16"	.423
8927	1/4"	.457
8928	5/16"	.498
8929	3/8"	.529
8930	7/16"	.560
8931	1/2"	.592
8932	9/16"	.623
8933	5/8"	.654
8934	11/16"	.752
8935	3/4"	.783
8936	7/8"	.845
8937	1"	.908

NYLON

Marked for easy identification. Black Nylon C Clamps feature excellent support. Manufactured the best material available they exhibit a t rigidity at elevated temperatures. Nylon is insol in common solvents, alkalies, dilute mineral a and most organic acids. Made to meet these Mili Specifications: Mil-Std.-24E; MS-30914(ord.) C-21565(NAS); Mil-P-17091-B; Mil-P-20693. **Std. Pkg.**

T = .060 X = 7/32"
W = ½" H = 13/64"

No.	Hole (D)	E
8940	1/8"	.360
8941	3/16"	.423
8942	1/4"	.457
8943	5/16"	.495
8944	3/8"	.529
8945	7/16"	.560
8946	1/2"	.592
8947	9/16"	.623
8948	5/8"	.654
8949	11/16"	.752
8950	3/4"	.783
8951	7/8"	.845
8952	1"	.908

T = .050 W = 3/8" X = 1/32" H = 1/4

8955	1/8"	.325
8956	3/16"	.378
8957	1/4"	.409
8958	5/16"	.441
8959	3/8"	.471
8960	7/16"	.519
8961	1/2"	.550

BEADED WIRE T
White Nylon

Std. Pkg.
No. 8962 5" Long **NET Per C $**

 © United Technic

specify **SMITH**

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

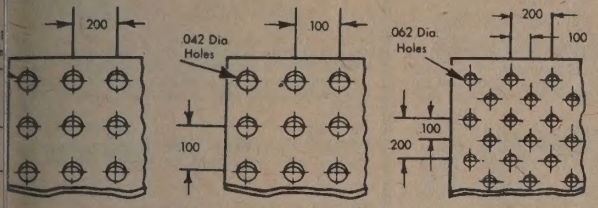
PRINTED CIRCUIT PRE-PUNCH BOARDS

SPECIFICATIONS

rds are precision-punched and pre-cut to size with various spacings to accom- and provide economical mounting of components in Electronic circuitry. They al for production and prototype uses. They can be etched as required, drilled, l or sawed. The following specifications apply:

XXXP—**Phenolic** unclad, Type PBE-P per MIL-P-3115, 250° F Max.
EXXXP—**Epoxy Paper**, Type PEE per MIL-P-22324, 250° F Max.
XXXPC—**Phenolic**, Copper Clad, Type PP per MIL-P-13949, 250° F Max.
G-10—**Epoxy Glass**, unclad, Type GEE per MIL-P-18177, 300° F Max.
G-10—**Epoxy Glass**, Copper Clad, Type GE per MIL-P-13949B, 300° Max.

Many Others Available — Specials — Inquire



"F" PATTERN "P" PATTERN "G" PATTERN

ATTERN .062 Holes .200 Centers Std. Pkg. 10 1/16" Thickness

MATERIALS AVAILABLE

No. of Holes	XXXP No.	XXXP NET Per C	G-10 No.	G-10 NET Per C	XXXP 1 Side Copper Clad No.	XXXP 1 Side Copper Clad NET Per C	G-10 1 Side Copper Clad No.	G-10 1 Side Copper Clad NET Per C
15x20	6001	28.00	6014	72.00	6027	39.00	6040	100.00
15x22	6002	35.00	6015	81.00	6028	45.00	6041	110.00
15x30	6003	45.00	6016	105.00	6029	60.00	6042	150.00
15x32	6004	48.00	6017	115.00	6030	62.00	6043	160.00
17x20	6005	33.00	6018	82.00	6031	45.00	6044	114.00
17x22	6006	36.50	6019	91.00	6032	50.00	6045	127.00
17x30	6007	50.50	6020	120.00	6033	67.00	6046	155.00
17x32	6008	55.50	6021	131.00	6034	73.00	6047	183.00
20x22	6009	45.00	6022	108.00	6035	60.00	6048	150.00
20x30	6010	56.00	6023	138.00	6036	75.00	6049	192.00
20x32	6011	60.00	6024	147.00	6037	81.00	6050	207.00
22x30	6012	61.50	6025	152.00	6038	83.00	6051	207.00
22x32	6013	66.00	6026	162.00	6039	88.00	6052	230.00

ATTERN .042 Holes .100 Centers Std. Pkg. 10 3/64" Thickness

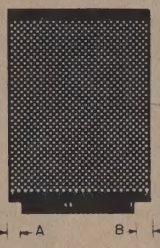
MATERIALS AVAILABLE

No. of Holes	G-10 No.	G-10 NET Per C	G-10 1 Side Copper Clad No.	G-10 1 Side Copper Clad NET Per C
25x40	6092	66.00	6109	90.00
25x45	6093	74.00	6110	100.00
25x60	6094	99.00	6111	134.00
25x65	6095	105.00	6112	142.00
30x40	6096	77.00	6113	105.00
30x45	6097	85.00	6114	115.00
30x60	6098	110.00	6115	155.00
30x65	6099	122.00	6116	165.00
35x40	6100	88.00	6117	119.00
35x45	6101	96.00	6118	132
35x60	6102	127.00	6119	177.00
35x65	6103	135.00	6120	184.00
40x45	6104	114.00	6121	155.00
40x60	6105	144.00	6122	197.00
45x60	6107	157.00	6124	220.00
40x65	6106	152.00	6123	212.00
45x65	6108	168.00	6125	235.00

ATTERN .062 Holes .100 x .200 Alternate Centers Std. Pkg. 10 1/16" Thickness

MATERIALS AVAILABLE

No. of Hole	XXXP No.	XXXP NET Per C	G-10 No.	G-10 NET Per C	G-10 1 Side Copper Clad No.	G-10 1 Side Copper Clad NET Per C
(15x20)2	6053	30.00	6066	72.00	6079	100.00
(15x22)2	6054	32.50	6067	81.00	6080	110.00
(15x30)2	6055	45.00	6068	105.00	6081	150.00
(15x32)2	6056	48.00	6069	115.00	6082	160.00
(17x20)2	6057	37.00	6070	80.00	6083	114.00
(17x22)2	6058	36.50	6071	91.00	6084	127.00
(17x30)2	6059	50.50	6072	120.00	6085	155.00
(17x32)2	6060	55.50	6073	131.00	6086	183.00
(20x22)2	6061	45.00	6074	108.00	6087	150.00
(20x30)2	6062	56.00	6075	138.00	6088	192.00
(20x32)2	6063	60.00	6076	147.00	6089	207.00
(22x30)2	6064	61.50	6077	152.00	6090	207.00
(22x32)2	6065	66.00	6078	162.00	6091	230.00



4.5" x 6.5" PLUG-IN CARDS WITH ETCHED FINGERS

.062 Holes. .100 x .200 Alternate Centers.
.156 Spacing. 1/16" Thickness.

Total Contacts	1 or 2 Sides	Fig. A	Fig. B	G-10 No.	G-10 NET Ea.	XXXP No.	XXXP NET Ea.
43	2	.408	.508	6126	3.71	6130	3.35
43	2	.458	.458	6127	3.71	6131	3.35
22	1	.408	.508	6128	3.05	6132	2.43
22	1	.458	.458	6129	3.05	6133	2.43

CONNECTOR INFORMATION:

With Plug-In Cards SMITH Nos.	Use SMITH Connector Commercial No.	Military No.
6126 and 6130	6227	6212
6127 and 6131	6227	6212
6128 and 6132	6220	6204
6129 and 6133	6220	6204

FIG. 1

FIG. 2

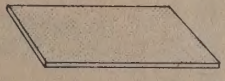
PLUG-IN CARDS WITH ELCO "VARICON" CONTACTS

.062 Holes. .100 x .200 Alternate Centers. 1/16"Thickness.

No.	Fig.	No. of Contacts	Size	Material	NET Ea.
6134	1	16	4.5x6.5	Paper Epoxy	4.00
6135	1	16	4.5x6.5	Glass Epoxy	4.40
6136	1	12	3x4.5	Paper Epoxy	2.85
6137	1	12	3x4.5	Glass Epoxy	3.15
6138	1	14	3x4.5	Paper Epoxy	3.00
6139	1	14	3x4.5	Glass Epoxy	3.50
6140	2	35	4.5x6.5	Glass Epoxy	7.50
6141	2	35	4.5x6.5	Paper Epoxy	6.20

CONNECTOR INFORMATION:

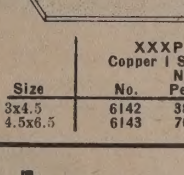
Plug-In Cards, SMITH Nos.	Use Elco Connector No.
6134 and 6135	5009-016-156-001
6136 and 6137	5009-012-156-001
6138 and 6139	5004-014-103-002
6140	7008-035-146-001
6141	7001-035-146-001



BLANK PANELS

1 and 2 Sides Copper.
1/16" Thickness. Std. Pkg. 5

Size	XXXP Copper 1 Side NET No.	XXXP Copper 1 Side NET Per C	XXXP Copper 2 Sides NET No.	XXXP Copper 2 Sides NET Per C	G-10 Copper 1 Side NET No.	G-10 Copper 1 Side NET Per C	Copper 2 Sides G-10 NET No.	Copper 2 Sides G-10 NET Per C
3x4.5	6142	38.00	6144	51.00	6146	88.00	6148	98.00
4.5x6.5	6143	70.00	6145	98.00	6147	170.00	6149	193.00

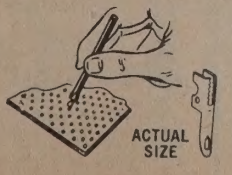


MINIATURE TUBULAR TERMINALS
For .062-.067 Diam. Hole

For printed circuits. Suitable for mounting transistors, resistors, neons, etc. Tapered section retains wire leads. Positive locking in hole, no staking required. Firmly holds wires of .010 to .050 diam.
Material: .006 thick brass, precision-formed and pre-tinned Std. Pkg. 100
No. 6160 NET Per C $1.30

INSERTION TOOL, for hand insertion.
No. 6161 Std. Pkg. 6 NET Each $1.25

PUSH-IN TERMINALS For .062 Diam. Holes



Miniature type, excellent for point-to-point or feed-thru wiring. Serrated slot grips transistor or heavier leads. Multiple connections quickly and easily made. **Material:** .008 thick Beryllium Copper. **Finish:** Fused Tin Plate.
Std. Pkg. 100
No. 6162 NET Per C $1.70

INSERTION TOOL, for hand insertion.
No. 6163 Std. Pkg. 6 NET Each $.65

specify SMITH

HERMAN H. SMITH, INC.

ELECTRI COMPON

PRINTED CIRCUIT CONNECTORS

COMMERCIAL

INSULATOR: Glass filled blue Alkyd.
CONTACTS: Beryl Copper .00001 gold flash; pierced terminal.
ACCEPTS: 1/16" Printed Circuit Cards.
MTG. HOLE: .125 Clearance.
DESCR.: Bifurcated bellows action assures positive electrical contact.

.156 SPACING

.125 Mtg. Hole Clearance
Pierced Terminal — Std. Pkg. 5

Smith No.	No. of Contacts	Single or Double	Mtg. Centers	NET Ea.
6216	6	S	1.531	1.65
6217	10	S	2.156	1.75
6218	15	S	2.937	1.60
6219	18	S	3.406	2.40
6220	22	S	4.031	2.50
6221	28	S	5.046	4.25
6222	36	S	6.219	3.30
6223	12	D	1.531	1.70
6224	20	D	2.156	1.75
6225	30	D	2.937	1.65
6226	36	D	3.406	2.45
6227	44	D	4.031	2.50
6228	56	D	5.046	4.25
6229	72	D	6.219	3.40
6230	86	D	7.302	3.90

MIL-C-21097

MILITARY

INSULATOR: Diallyl Phthalate, Green, Type GDI-30 per MIL-P-19833.
CONTACTS: Beryl. Copper .000031 gold per MIL-G-45204, Type II over .0005-silver per QQ-5-365, pierced terminal.
ACCEPTS: 1/16" Printed Circuit Cards.
MTG. HOLE: .125 Clearance.
DESCR.: Bifurcated bellows action assures positive electrical contact.

.156 SPACING

.125 Mtg. Hole Clearance.
Pierced Terminal — Std. Pkg. 5

No. Smith	No. of Contacts	Single or Double	Mtg. Centers	NET Ea.
6200	6	S	1.531	2.75
6201	10	S	2.156	2.95
6202	15	S	2.937	3.25
6203	18	S	3.406	3.70
6204	22	S	4.031	3.90
6205	28	S	5.046	4.25
6206	36	S	6.219	4.65
6207	43	S	7.302	7.15
6208	12	D	1.531	2.90
6209	20	D	2.156	3.00
6210	30	D	2.937	3.25
6211	36	D	3.406	3.70
6212	44	D	4.031	3.90
6213	56	D	5.046	4.25
6214	72	D	6.219	4.65
6215	86	D	7.302	7.15

.100 SPACING

.125 Mtg. Hole Clearance.
Pierced Terminal — Std. Pkg. 1

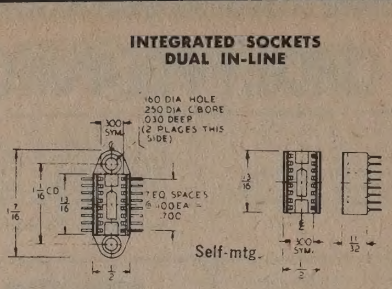
Smith No.	No. of Contacts	Single or Double	Mtg. Centers	NET Ea.
6231	40	D	2.625	6.75
6232	60	D	—	7.50
6233	70	D	4.125	8.40
6234	80	D	4.625	9.25
6235	100	D	—	9.90
6236	120	D	6.625	10.10

.050 SPACING

.125 Mtg. Hole Clearance.
Dip Solder Terminal — Std. Pkg. 1

Smith No.	No. of Contacts	Single or Double	Mtg. Centers	NET Ea.
6237	40	D	1.500	10.25
6238	60	D	2.000	12.00
6239	80	D	2.500	12.50
6240	100	D	3.000	14.10
6241	110	D	3.250	14.50
6242	128	D	3.500	15.50

INTEGRATED SOCKETS DUAL IN-LINE

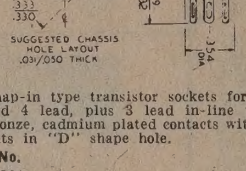


P.C.

For 14 and 16 pin in-line Hybrid packages having .100" x .300" grid spacing. Accepts round or flat pins. Body of general purpose phenolic. Brass electro plated contacts for P.C. version and brass cadmium plated contacts for self-mounting type.

No.	Pins	Body	NET Per C
6250	14	Self-mtg.	$50.00
6251	16	Self-mtg.	50.00
6252	14	P.C.	45.00
6253	16	P.C.	45.00

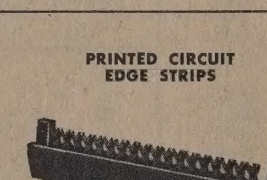
TRANSISTOR SOCKETS



Snap-in type transistor sockets for TO-5 and TO-18 3 and 4 lead, plus 3 lead in-line transistors. Phosphor bronze, cadmium plated contacts with a polysulfone body. Fits in "D" shape hole. Std. Pkg. 100

No.	NET Per C
6264	$15.00

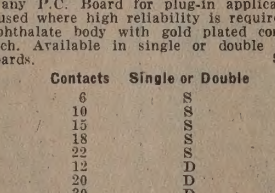
POWER TRANSISTOR SOCKET



For use with transistors having a TO-3 case. Body of general purpose phenolic with contacts of phosphor bronze, gold over silver plated. Mounting plate with 6-32 tapped holes. Std. Pkg. 100

No.	NET Per C
6266	$25.00

PRINTED CIRCUIT EDGE STRIPS



Convert any P.C. Board for plug-in applications. Can also be used where high reliability is required. Molded diallyl phthalate body with gold plated contacts .125 Micro-inch. Available in single or double sided. For 1/16" boards. Std. Pkg. 1

No.	Contacts	Single or Double	NET Each
6254	6	S	$ 4.00
6255	10	S	5.25
6256	15	S	6.90
6257	18	S	7.60
6258	22	S	8.90
6259	12	D	5.80
6260	20	D	8.25
6261	30	D	11.25
6262	36	D	13.25
6263	44	D	13.50

P. C. PROTOTYPE ETCHING EQUIPME FOR SCREEN CUTTING

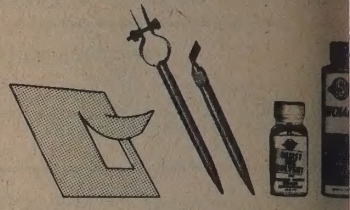


Photo layout film for hand-cutting mechanical neg A red film is laminated to a transparent backing When knife-cut, the red film laminate is peele to permit light to penetrate only through the c area; the remainder is light-safe. Supplied in 8" sheets. Std.

No. 6268 — NET Each

SWIVEL CUTTING KNIFE for cutting circle curves. Also locks tight for cutting straight lines. Std.

No. 6269 — NET Each

EXTRA BLADES for above. Std. P

No. 6270 — NET Eac

PARALLEL LINE-CUTTING KNIFE, for c parallel lines up to ½" in width. Std.

No. 6271 — NET Each

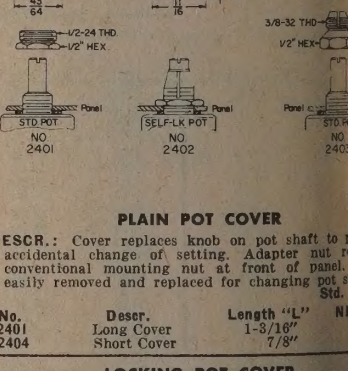
FOR ETCHING

A low cost kit to enable the engineer to quickly copper-clad boards in minutes. The kit conta unique felt-tip Resist Ink pen to apply the Resis as easily as writing. Also included is a 2-oz. bot Resist-Ink solvent and a 6-oz. bottle of ferric-ch etchant solution. Std.

No. 6272 — NET Each

LOCKING AND PLAIN POT COVERS

MATERIALS: Covers are alum black anodized. Adapter Nuts are Nickel Plated.
MECHANICAL: Fits ⅜-32 th bushings. Long covers, (L Dim 1-3/16") for shafts up to 1" long. covers (L Dimension ⅞") for shaft pots.



PLAIN POT COVER

DESCR.: Cover replaces knob on pot shaft to accidental change of setting. Adapter nut r conventional mounting nut at front of panel. easily removed and replaced for changing pot Std.

No.	Descr.	Length "L"
2401	Long Cover	1-3/16"
2404	Short Cover	7/8"

LOCKING POT COVER

DESCR.: Locking cover for pots with built-in feature, such as Ohmite type CLU, CTS type L Cover replaces locking nut supplied with po both locks setting and prevents attempts to locked shaft. Cover looks like knob, and provide finished appearance on panel. Std.

Length "L"	NET Ea.	No.
2402	Long Cover	1-3/16"
2405	Short Cover	7/8"

POT-LOCKING ADAPTER COVER

DESCR.: Converts standard, non-locking pots to type, and provides finished appearance on panel, preventing attempts to turn locked shaft. Loc adapter replaces conventional mounting nut at of panel. Cover easily removed for change setting. Std.

.ength "L"	NET Ea.	No.
2403	Long Cover	1-3/16"
2406	Short Cover	7/8"

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pecify SMITH

HERMAN H. SMITH, INC.

ELECTRONIC COMPONENTS

ALL TRANSISTOR

orelco Electronic Educational kits

Model EE20 "Master Kit" With New Concept in Assembly

FOR AGES 9 AND OVER

lete, foolproof individual template provided for each circuit

SOLDERING — NO TOOLS REQUIRED

OLUTELY SAFE • PEGBOARD ASSEMBLY

23 DIFFERENT USEFUL OPERATING PROJECTS

HESE WORKING UNITS CAN BE MADE

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ublic Address and elephone Amplifier

Transistor Radio eceiver
-Transistor Sensi- ve Radio Receiver

EE 8 1-Transistor Radio Receiver

ELECTRONIC SIGNALING
EE20 Burglar Alarm
EE20 Acoustic Relay
EE20 Pilfering Alarm
EE20 Pilfering Alarm with power-economizing circuit
EE 8 Tell-tale Light
EE 8 Flashing Beacon

ELECTRONIC MEASURING AND CONTROL
EE 8 Rain or Moisture Indicator
EE20 Time Switch
EE20 Automatic Night Light
EE20 Universal Measuring Equipment
EE20 Light Meter

a project loses its appeal, it can be stripped e same parts used to rebuild other projects, nd over!

Std. Pkg. 6

l EE20 SUGGESTED RETAIL
l No. 2419 (less battery) $27.95

NORELCO

ALL TRANSISTOR

Radio Kit

Model RE-2

9 and over. Easy to assemble, using two-color charts and step-by-step assembly. No soldering. et up, taken apart and re-assembled. Powered ard 9-volt battery. Build any of these units: istor radio with earphones and cabinet. istor radio with speaker and cabinet. Player Amplifier. • Code Practice Oscillator. Address System. • Radio Direction Finder. with 24-page instruction manual. Model RE-2

No. 2416 (ttery) SUGGESTED RETAIL $24.95

STARTER KIT EE-1050

BUILD ACTUAL ELECTRONIC EQUIPMENT

ELECTROCOUSTICS TELECOMMUNICATIONS SIGNALING - RADIO ELECTRONIC CONTROL

FOR AGES 9 AND OVER

STARTER KIT EE-1050
Makes the Following Projects:

Burglar Alarm with Flashing Light
Flashing Traffic Beacon with Adjustable Rate
Flashing Light with Adjustable Rate
Phonograph Amplifier with Earphones
Automatic Night Light
Wetness Indicator
Burglar Alarm with Tel-Tale Light
Sound Operated Relay
Morse Code Oscilator with Earphones
Light Dependent Frequency Generator
Lightmeter
Time Switch

BUILD UP TO 24* EXCITING INSTRUCTIVE PROJECTS
USES THE NEWEST SILICON PLANAR TRANSISTORS
Individual Templates Provided for Each Project

No. 1 ADD-ON KIT EE-1051
Used Only to Extend Range of Projects:
Pushpull Phonograph Amplifier with Speaker
Phonograph Amplifier with Frequency Correction
Burglar Alarm, Tell-Tale Light with Sound
Morse Code Oscillator with Speaker
Electron Siren
Telephone Signaler

No. 2 ADD-ON KIT EE-1052
Used Only to Extend Range of Projects:
Sound and Light Operated Relay
Variable Frequency Audio Generator
Telephone Pickup Amplifier with Speaker
Telephone Pickup Amplifier with Earphones
2-Transistor Multiwave Radio with Earphones
3-Transistor Multiwave Radio with Speaker
***Combination of All Kits Makes Total of 24 Projects.**

100% EDUCATIONAL — Learn How and Why Each Project Works Basic Electronics Course Included.
SIMPLIFIED INSTRUCTION MANUAL — Teaches Basic Electronics, Circuitry, Components and Transistor Theory.
ENCOURAGES CREATIVITY — Invent your own Projects.
ABSOLUTELY SAFE — Battery Operated.
NO SOLDERING—NO TOOLS—Pegboard Assembly, Spring Clips, Overlay Templates.

MODEL EE-1050 — STARTER KIT
Makes 12 Projects.
SMITH NO. 2412 .....**Suggested Resale $17.95**

MODEL EE-1051 — No. 1 ADD-ON KIT
Used Only to Make 6 Additional Projects in conjunction with EE-1050 Kit. (Cannot be used separately).
SMITH NO. 2413 .....**Suggested Resale $9.95**

MODEL EE-1052 — No. 2 ADD-ON KIT
Used Only to Make 6 Additional Projects in conjunction with EE-1050 Kit. (Cannot be used separately).
SMITH NO. 2414 .....**Suggested Resale $9.95**

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NORELCO

Mechanical Kit

Model ME-1200

FOR AGES 9 AND OVER

Promotes knowledge and understanding of fundamental sources of energy. Makes over 40 projects. Over 600 parts.

SMITH No. 2415 (less battery) SUGGESTED RETAIL $39.95

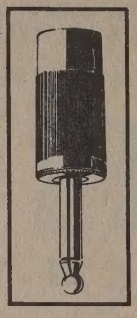
TRIMM INC.

A SELECTED LISTING FROM OVER
TRIMM-MANUFACTURED COMPONE

PLUGS AND JACKS: General Purpose Audio, Miniature, Adapters

"511" and "513" STANDARD PHONE PLUGS

General purpose. To fit standard 0.250" I.D. jacks. "511" two-conductor plugs have screw terminals and ribbed bakelite or knurled metal shell. The "513" three-conductor plugs use an identical shell, but the terminals are solder lug type only. All metal parts are bright plated brass. Stay cord anchorage is provided.

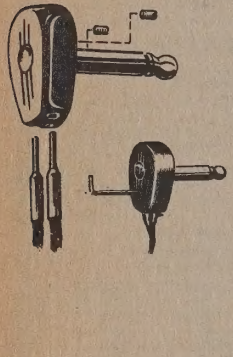


Two-Circuit Type

511	Black plastic shell	$.80
511-1	Red plastic shell	0.80
511-2	Metal one piece shell	1.35
511-3	Metal two piece shell (With cable clamp)	1.85
511-4	Metal stubby shell	1.00
511-5	Metal stubby. Has long tip to sleeve insulator which leaves "ring" spring open when inserted in 3-ckt. jack.	1.25

Three-Circuit Type

513	Black plastic shell	$1.10
513-1	Red plastic shell	1.10
513-2	Metal, one piece shell	1.70
513-3	Metal, two piece shell (With cable clamp)	2.20
513-4	Metal stubby shell	1.45
515	Adapter. Couples Amphenol mike plug to standard jacks.	0.55



"512" FLAT PLUG

Compact, non protruding. Adapts phone pin tips, or any two conductors, to a two-circuit plug. One piece molded phenolic plastic. Fits standard jacks 0.250" I.D.

512	Black	$1.10	512-2	With headset hanger	$1.60
512	Red	1.10			

"514" MIN-A-PLUG

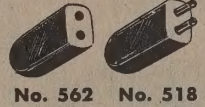
Small size for use with shielded microphone cable. Two conductor types, plastic or metal shell. Shield connection clamp.

TWO CONDUCTOR TYPES (0.250" dia.) SOLDER TERMINALS

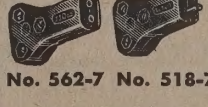
		List			List
514	Black plastic	$0.80	514-2	Shielded	$ 1.15
514-1	Red plastic	0.80	514-4	Shielded, stubby	0.90

"518" PLUG — "562" JACK

Two circuit miniature disconnect plug and jack. Unshielded. Parallel pin plug locks into jack springs. No. 518 and 562 acetate shells are cemented together. No. 518-7 and 562-7 bakelite shells are held together with screws. No. 518-8 plug set is polarized (one male and one female terminal per plug).



No. 562 No. 518

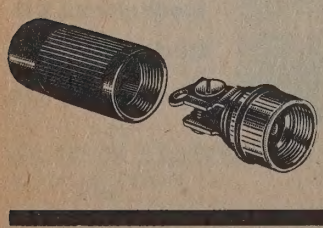


No. 562-7 No. 518-7

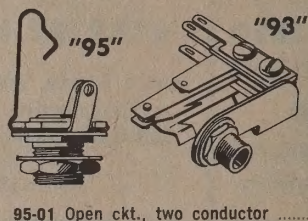
518 Plug $0.80 518-7 Plug $1.10 518-8 $1.20
562 Jack 1.00 562-7 Jack 1.35

"525" CONNECTOR

Adapts headset cords, or any two wires, to single contact microphone plugs — such as Amphenol 75MC series. Same shell as No. 511.



525	Black Plastic	$1.60
525-1	Red Plastic	1.60
525-2	Shielded one piece shell	2.00
525-3	Shielded, two piece shell (With cable clamp)	2.50
525-4	Shielded stubby shell	1.80



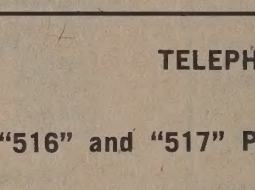
"93" and "95" JACK

Threaded bushing 3/8" in di mounts jack to panel or chassis for limited space and depth. The is only 15/16" deep behind pane "93" is offset to one side. Nickel springs, tinned terminals. Jack c described below.

95-01	Open ckt., two conductor	$.45	93-01
95-02	Closed ckt., two conductor	0.50	93-02
95-25	Open ckt., three conductor (0.250" dia. plugs)	0.60	93-06
			93-07
95-50	Open ckt., three conductor (0.206" dia. plugs)	0.70	93-25
			93-26
			93-27

TELEPHONE TYPE PLUGS

"516" and "517" PLUGS

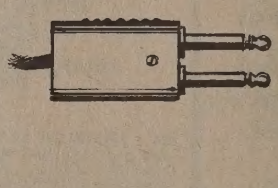


The three circuit 516 has been the a standard for telephone switchboards, ment systems, and in other commu areas. Supplied on TRIMM 851 serie cords. Red, black or gray shell which attached without removing cord. Inter able with WE 310. The three-circuit 5 are identical with 516 types, but special tip contour that reduces "cli service.

Net Prices

516	Red	$1.50	517	Red	$1.70	516-10	Red, marked PJ-051
516-1	Black	1.50	517	Black	1.70	516-11	Black, marked PJ-051B

"506" TWIN 3-CKT. PLUG



A broadcast standard now widely instrumentation and missile contro plied on 840 patch cords. Electrica mon plug shafts spaced 5/8" C to aligning. Bakelite shell notched on o to indicate polorization. Intercha with WE 241 and MIL PJ-241.

506 Black $2.60 N
506-1 Red $2.60 N

"536" - "537" MINIATURE PLUGS

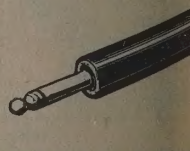
Used with "94" series jacks and "866"-"867" patch cords. Both two-circuit 536 and three-circuit 537 have molded in place insulation and screw terminals. Contact your distributor for miniature line prices.

536 Black
536-1 Red

537 Black
537-1 Red

"500" and "501" (PJ-055) TWO-CIRCUIT PLUGS

The 500 telephone plug — long the two-circuit switchboard standard has been replaced, for the most part, by the slightly shorter 501. The 501 has been widely used on high quality military communication equipment. Commonly referred to as PJ-055. Black or Red plastic shell or nickel plated brass for shielded types.



Net Prices

501	Black	$.72	501-10	Black, marked PJ-05
501-1	Red	.72	501-11	Red, marked PJ-055F
501-2	Metal shell	1.00	501-12	Metal, marked PJ-055
500	Red	.90	500-10	Red, marked PJ-047F
500-1	Black	.90	500-11	Black, marked PJ-04

Trade Discount Applies To List Prices Only
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TRIMM INC.

A SELECTED LISTING FROM OVER 2500 TRIMM-MANUFACTURED COMPONENTS.

PATCH CORDS, JACK PANELS AND TELEPHONE PLUGS: Audio, Broadcast, Miniature

TRIMM patch cords feature telephone type plugs on cords built to withstand hard use. Two or more conductors of bronze tinsel are covered with numerous layers of insulation and waterproofing. The cords are color coded, shielded (if desired) then covered with a final braid of nylon to assure long service. The nylon is standard black unless a color is specified. Available at a slight extra charge are: Blue (BL), Brown (BR), Green (GR), Red (RD), Slate Gray (GY) and White (WH).

"840" PATCH CORDS

Broadcast type "506" twin plugs at both ends. Conductors are wired to tip and the shield (when used) is connected to the grounded shaft. Commonly supplied with shield attached at one end only. Available without shield (W in code number), or with shield attached at both ends (X in code number). PP indicates the cord has a plug at both ends.

Standard Shielding		"X" Shielding	
840-05-PP	840- 4-PP	840-05X-PP	840- 4X-PP
840- 1-PP	840- 5-PP	840- 1X-PP	840- 5X-PP
840- 2-PP	840- 6-PP	840- 2X-PP	840- 6X-PP
840- 3-PP	840-10-PP	840- 3X-PP	840-10X-PP

Without Shield

840-2W-PP 840-3W-PP

"841" and "851" SPACESAVERS

841 patch cords use two No. 517 triple circuit plugs of special broadcast design. The unique plug tip contour reduces "clicks" in service. Conductors are wired to tip and ring. Shield (if used) is wired to plug shaft. 851 patch cords use two No. 516 triple circuit plugs with standard ball tip construction. Both types commonly have shield connected at one end only.

841 1-PP	841- 6-PP	851- 4-PP
841-2-PP	841-10-PP	851- 5-PP
841-3-PP	851- 1-PP	851- 6-PP
841-4 PP	851- 2-PP	851-10-PP
841-5-PP	851- 3-PP	

"X" Shielding

841-1X-PP 851-1X-PP
841-2X-PP 851-2X-PP

Without Shield

851-2W-PP
851-3W-PP

"866" - "867" MINIATURE PATCH CORDS

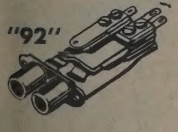
Two conductor (866) and three conductor (867) patch cords using new miniature "536" and "537" plugs. Have same high quality construction details and optional features as standard patch cords. Same coding. Contact your distributor for miniature line prices.

866-1-PP	867-1-PP	866- 5-PP	867- 5-PP
866-2-PP	867-2-PP	866-10-PP	867-10-PP

"90" and "91" JACKS

Commonly known as the telephone jack. The "90" series nickel plated bushing fits a $^{29}/_{64}$" dia. mounting hole and the jack is held to the panel with a mounting screw. The "91" series has a $^{3}/_{8}$" threaded bushing for mounting and has the standard mounting screw hole in addition. Screws or nuts and washers furnished. Cadmium plated frame, nickel silver springs and tinned terminals.

90SN-01	90CSN-14B	91-01	91-09B
90SN-02B	90SN-25	91-02B	91-25
90SN-06B	90SN-26B	91-05B	91-26B
90SN-07B	90SN-27B	91-06B	91-50
90SN-08B	90SN-50	91-07B	91-51B
90SN-09B	90SN-51B		



"92" JACKS

Twin jacks on a single frame used in toll and carrier frequency systems. 92-1009B provides **unbalanced** normal through circuitry while 92-1030B provides **balanced** normal through circuitry between jacks. A single plug inserted into either side of the jack opens circuit up to jack for testing up to that point. Brass bushing as in 92-1009B, or nickel plated as in 92N-1009B. G indicates gold contacts.

92S-1009B	92SN-1009B
92S-1009BG	92SN-1009BG
92S-1030B	92SN-1030B
92S-1030BG	92SN-1030BG
92S-25	92SN-25

"94" MINIATURE JACKS

Uses one half the space of conventional jacks. Fits new 96-700 miniature jack mounting strips. Same high reliability. Cadmium plated steel frame. Molded spring insulation prevents moisture absorption. Welded gold crossbar contacts on nickel silver springs.

94S-01	94S-08B	94S-26B
94S-02B	94S-25	94S-27B
		94S-32B

"96" JACK PANELS

$^{5}/_{16}$" thick bakelite panel with end brackets, side reinforcing strips and designation strips. Complete with jacks mounted and choice of jack circuits. All jacks insulated from each other. Ordinarily supplied with jack ground lug offset (to reduce wiring time). Straight ground lugs are available to duplicate W.E. jacks. Types 96-71 through 96-77 are three circuit types for No. 516 or 517 plugs. Types 96-01 through 96-07 usually used with No. 506 twin plugs although other standard two-circuit plugs will fit.

Code No.	Rows	No. of Jacks	Jack Type	Jack Mounting Strip Type	Width
96-01	1	24	90LN-02B	96-21	1¾"
96-02	2	48	90LN-02B	96-22	2⅛"
96-03	2	48	90LN-02B	96-23	3½"
96-04	2	48	90LN-02B	96-24	3½"
96-06	1	26	90LN-02B	96-26	1¾"
96-07	2	52	90LN-02B	96-27	1¾"
96-71	1	24	90LN-26B	96-21	1¾"
96-72	2	48	90LN-26B	96-22	2⅛"
96-74	2	48	90LN-26B	96-24	3½"
96-76	1	26	90LN-26B	96-26	1¾"
96-77	2	52	90LN-26B	96-27	1¾"

"96-700" MINIATURE JACK MOUNTING STRIPS

Bakelite panels $^{3}/_{8}$" thick, 1¾" wide. Fits standard 19" panel mountings. One or two rows of mounting holes for the installation of one or two rows of miniature jacks, 48 or 52 jacks per row. Standard designation strip is JP-35. Contact your distributor for miniature line prices.

	Rows	Total Jacks	No. Desig. Strips		Rows	Total Jacks	No. Desig. Strips
96-721-1	1	48	1	96-726	1	52	1
96-721-2	2	96	2	96-727	2	104	2

"96" JACK MOUNTING STRIPS — WITHOUT JACKS

Used as a mounting base where non-standard arrangement of jacks, lamps sockets, turn or push keys, and coaxial jacks are combined on one panel. Suppliesd with end brackets, designation strips and side reinforcing strips mounted. Available in numerous other types than those listed.

Code No.	Jack Holes Rows	Jack Holes per Row	Jack Hole Spacing c. to c.	Width	Designation Strip Qty.	Designation Strip Type
96-20	1	12	1⅜	1¾	1	JP-30
96-20-1	1	12	⅝ - 2¼ - ⅝	1¾	1	JP-35
96-21	1	24	⅝ - ¾ - ⅝	1¾	1	JP-30
96-22	2	24	⅝ - ¾ - ⅝	2⅛	1	JP-30
96-23	2	24	⅝ - ¾ - ⅝	3½	1	JP-30
96-24	2	24	⅝ - ¾ - ⅝	3½	2	JP-30
96-25	2	12	1⅜	3½	2	JP-30
96-26	1	26	⅝	1¾	1	JP-34
96-27	2	26	⅝	1¾	2	JP-34
96-28	2	Upper 24 Lower 12	⅝ - ¾ - ⅝	3½	2	JP-35
96-31	1	24	⅝ - ¾ - ⅝	1¾	1	JP-38
96-32	2	24	⅝ - ¾ - ⅝	2⅛	2	JP-33
96-37	2	24	⅝ - ¾ - ⅝	1¾	2	JP-34
*96-38	1	32	⅝	1¾	2	JP-31-3
*96-39	2	32	⅝	1¾	2	JP-31-3
96-40	4	24	⅝ - ¾ - ⅝	3½	3	Special

ALUMINUM JACK MTG. STRIPS— LESS JACKS

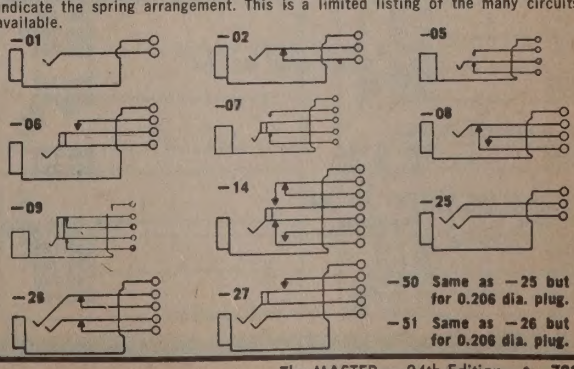
The "99" series features a front aluminum panel $^{3}/_{16}$" thick separated from a rear sub-panel ⅛" thick to which the jacks are mounted. Overall thickness of $^{13}/_{32}$". Sub-panel forms common ground for jacks. Fits 19" rack. The "99-200" series backs the aluminum front panel with a $^{1}/_{16}$" bakelite strip to isolate jacks from each other. Total thickness of $^{5}/_{16}$".

Code No.	Rows	Jacks/ Row	Jack Hole Spacing c. to c.	Designation Strip Width	Qty.	Type	Notes
99-20	1	12	1⅜"	1¾	1	JP-37	
99-20-1	1	12	⅝ - 2¼ - ⅝	1¾	1	JP-37	
99-21	1	24	⅝ - ¾ - ⅝	1¾	1	JP-37	
99-22	2	24	⅝ - ¾ - ⅝	2⅛	1	JP-30	
99-22-1	2	24	⅝ - ¾ - ⅝	2⅛	2	JP-33	1
99-22-2	2	23	⅝ - ¾ - ⅝	2⅛	2	JP-33	2
99-24	2	24	⅝ - ¾ - ⅝	3½	2	JP-37	1
99-26	1	26	⅝"	1¾	1	JP-34	
99-27	2	26	⅝"	1¾	2	JP-34	1

NOTES 1. Designation strip above top, and below bottom row.
2. Designation strip above each row.

JACK CIRCUIT DIAGRAMS

Standardized coding: The jack series number PLUS a DASH NUMBER to indicate the spring arrangement. This is a limited listing of the many circuits available.



-50 Same as -25 but for 0.206 dia. plug.

-51 Same as -26 but for 0.206 dia. plug.

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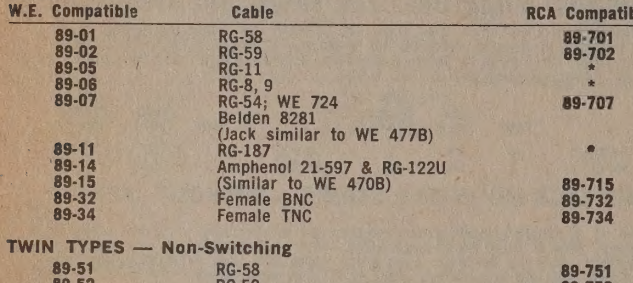
COAXIAL JACKS, PLUGS AND PANELS: Video Patch Cords, Hybrid Audio/Visual



COAXIAL JACKS: "89" SERIES

Developed for a wide range of RF applications including video frequencies, carrier and UHF frequencies. Triple layer plating of silver, palladium and hard gold on female contact assures extremely low contact resistance and long wear.

SINGLE JACKS

W.E. Compatible	Cable	RCA Compatible
89-01	RG-58	89-701
89-02	RG-59	89-702
89-05	RG-11	*
89-06	RG-8, 9	*
89-07	RG-54; WE 724 Belden 8281 (Jack similar to WE 477B)	89-707
89-11	RG-187	*
89-14	Amphenol 21-597 & RG-122U	
89-15	(Similar to WE 470B)	89-715
89-32	Female BNC	89-732
89-34	Female TNC	89-734

TWIN TYPES — Non-Switching

89-51	RG-58	89-751
89-52	RG-59	89-752
89-57	WE 724 or Belden 8281	*
89-64	Amphenol 21-597 or RG-122	*
89-82S	Single BNC at rear	89-782S
89-207	General T43M	*
89-218	WE 754E, RG-22, General T43	*

TWIN TYPES — Switching

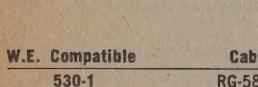
89-102	RG-59	89-802
89-132	BNC at rear	89-832

TERMINATING JACKS

These jacks are used in circuitry in which there is a need to maintain a known load in the circuit. When plug is fully inserted load is automatically disconnected and circuit transferred to plug. Similar to regular single jacks — fitting same cable, etc. (For example: 89-01-40-50 fits RG-58 cable).

W.E. Compatible	Impedance	RCA Compatible
89-01-40-50	50 ohm	89-701-40-50
89-02-40-75	75 ohm	89-702-40-75
89-07-40-75	75 ohm	89-707-40-75
89-32-40-50	50 ohm	89-732-40-50
89-32-40-75	75 ohm	89-732-40-75
89-82S-40-75	75 ohm	89-782S-40-75

COAXIAL PLUGS: "530" SERIES



For use with "89" series jacks. Assembled on cords to form "849" series patch cords. Silver and hard gold plated contact pin assures minimum resistance and long wear.

W.E. Compatible	Cable	RCA Compatible
530-1	RG-58	530-701
530-2	RG-59	530-702
530-6	(Similar to WE 358A) RG-54, Belden 8281, WE 724	530-706
530-15	RG-58	530-715
530-16	RG-59	530-716

COAXIAL ADAPTER PLUGS

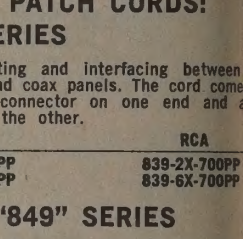
530-32	BNC at rear	530-732
530-34	TNC at rear	530-734

TERMINATING and DUMMY PLUGS

W.E. Compatible	Impedance	RCA Compatible
530-41	50 ohm	530-741
530-42	75 ohm	530-742
530-46	50 ohm	530-746
530-47	75 ohm	530-747
530-19	dummy plug (no center contact)	

COAXIAL BRIDGING PLUGS "531" SERIES

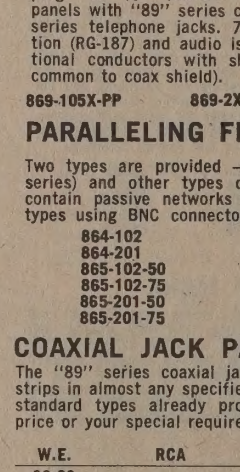
A twin coaxial plug (sometimes called a looping plug). Internally wired to connect two adjacent coaxial jacks spaced ⅝" C to C. Two plugs essentially similar to "530" series mounted in a plastic handle-like shell.



W.E. Compatible	Impedance	RCA Comp
531-1	50 ohm	531-70
531-2*	75 ohm	531-70
531-11**	50 ohm	531-71
531-12**	75 ohm	531-71

*Equivalent to WE 477B.

**With pin tip test jacks (white jack wired to ground and green—50 or purple—75 ohm jack to center conductor).



COAXIAL PATCH CORDS: "839" SERIES

Used for testing and interfacing between instruments and coax panels. The cord come a male BNC connector on one end and a connector on the other.

W.E.	RCA
839-2X-PP	839-2X-700PP
839-6X-PP	839-6X-700PP

COAXIAL PATCH CORDS: "849" SERIES

The following cords use two 530-2 (for WE) or two 530-702 (for RCA) and RG59B/U cable—75 ohm.

W.E.	RCA	W.E.	RCA
849-05X-PP	849-05X-700PP	849-3X58-PP	849-3X58-
849-1X-PP	849-1X-700PP	849-3X-PP	849-3X-70
849-105X-PP	849-105X-700PP	849-4X-PP	849-4X-70
849-2X-PP	849-2X-700PP	849-6X-PP	849-6X-70

The following cords, as above, but with RG-58C/U cable—50 ohm.

W.E.	RCA	W.E.	RCA
849-1X58-PP	849-1X58-700PP	849-3X58-PP	849-2X58-
849-2X58-PP	849-2X58-700PP	849-4X58-PP	849-4X58-

HYBRID PATCH CORDS: "869" SERIES

Audio and Video patch cord. Twin plug contains a coax and a three-circuit telephone plug. On ⅝" centers. Will fit combination panels with "89" series coaxial jacks and "90" series telephone jacks. 75 ohm cable on section (RG-187) and audio is carried by two additional conductors with shield overall (but not common to coax shield).

869-105X-PP 869-2X-PP 869-3X-PP

PARALLELING FITTINGS

Two types are provided — those that parallel several cables or jacks series) and other types called power dividers (869 series) which inte contain passive networks to provide constant impedance. The most co types using BNC connectors are listed below.

864-102		1 input — 2 jacks
864-201		2 inputs — 1 jack
865-102-50	50 ohm	1 input — 2 jacks
865-102-75	75 ohm	1 input — 2 jacks
865-201-50	50 ohm	2 inputs — 1 jack
865-201-75	75 ohm	2 inputs — 1 jack

COAXIAL JACK PANEL ASSEMBLIES

The "89" series coaxial jacks can be mounted on the "96" or "99" se strips in almost any specified configuration. Listed below are some of the m standard types already produced. Consult factory for information regard price or your special requirements.

W.E.	RCA	Qty/Row	Rows	Jack Type	Jack M Strip
99-80		12	1	89-32	99-20
	99-780	12	1	89-732	99-20
98-84		24	2	89-02	96-24
	96-784	24	2	89-702	96-24
*96-94-2		24	2	89-02	96-52
	*96-794-2	24	2	89-702	96-52
96-85		12	2	89-02	96-25
	96-785	12	2	89-702	96-25
*96-95-2		12	2	89-02	96-52
	*96-795-2	12	2	89-702	96-52
*96-98-2		Top 24 Bottom 12	2	89-02	96-52
	*96-798-2	Top 24 Bottom 12	2	89-702	96-52

*Denotes sub-chassis with 24 UHF connectors.

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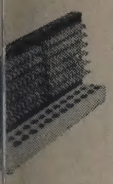
MINAL BLOCKS, TURN AND PUSH KEYS, LAMP SOCKETS: Related Panel Equipment



TERMINAL BLOCKS

Originally developed for telephone and telegraph exchange use, now are quite generally found in broadcast and microwave relay stations, large instrument systems —wherever very large numbers of circuits need convenient places of termination.

Terminals are of three basic types: standard solder types, wire wrap type, and hybrid wire wrap on one side, solder on the other. All are of 0.040" brass, tinti late plated. Standard solder type available in four different lengths with "butterfly" notched design assuring retention of wire. All blocks having numbering along the top row. Costs as shown are for standard solder lugs.

"421 SERIES"

of black phenolic plastic material, including base. Provides 20 terminals in two banks of ten, with up to ten rows. Base 6 1/16" long x 3" wide. Has unting strip inset in groove in base, with standard mounting dimensions mmodating #10-32 screws. Interchange with W.E. "L" series, as by ( ) following TRIMM no.

Code No.	No. Rows	No. Term
421C-1	1	20
421C-2	2	40
421C-3 (L34)	3	60
421C-4 (L4A)	4	80
421C-5 (L5A)	5	100
421C-6 (L6A)	6	120
421C-7	7	140
421C-8 (L8A)	8	160
421C-9	9	180
421C-10	10	200

"427" SERIES

of black phenolic plastic material, including base. Provides 26 terminals in two banks of 13. Base 8" x 2 5/8" wide. Fits Cook Elec. frames.

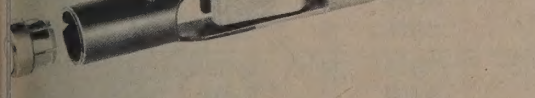
Code No.	No. Rows	No. Term.
427B-1	1	26
427B-2	2	52
427B-3	3	78
427B-4	4	104
427B-5	5	130
427B-6	6	156
427B-7	7	182
427B-8	8	208
427B-9	9	234
427B-10	10	260
427B-11	11	286
427B-12	12	312

OTHER SERIES

ed below are terminal arrangements and base dimensions for other l bases 5/8" thick phenolic. Available in 1 to 14 rows. Write for l information.

s	Term. per Row	Base Dimensions	Notes
2	20	6 1/16" x 2 5/8"	Eq. to W.E. "M" type.
2	26	8" x 3 1/16"	

SOCKET: "247"



ard type lamp socket; intended for use with standard No. 2 switchboard d to be assembled on to standard 5/8" thick jack mounting strips with jack bushing holes. Has lug for #6-32 mounting screw 3/8" off center be mounted 5/8" c. to c. horizontally.

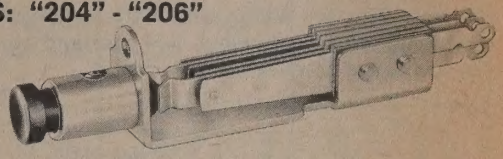
e piece steel construction. Springs nickel silver insulated from frame other with XXXP phenolic laminated spacers. Lamp mounts close to mp cap, giving maximum illumination.

Lamp Socket 47B

"240" GLASS LAMP CAP

ode No.	Color	W.E. Type
240-AY	Lamp Cap White Opalescent	2-AY
240-H	Lamp Cap Red Opalescent	2-H
240-L	Lamp Cap Green Opalescent	2-L
240-U	Lamp Cap Amber	2-U
240-W	Lamp Cap Blue	2-W

PUSH KEYS: "204" - "206"



Long frame push button type key very similar to turn keys. The usual applications for push button type keys are as an impulse switch for relays, or motor starters; buzzer signals, test circuits requiring momentary contact, etc. Mounting, dimensional and contact data, similar to turn keys. Available in non-locking and locking forms. Knob of black plastic material with depressed dimple for finger.

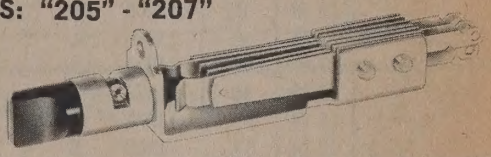
LOCKING TYPE, "204"

204-1A 204-2A

NON-LOCKING TYPE, "206"

Part. No.	Part No.
206-1A	206-2A
206-1B	206-2B
206-1C	206-2C
206-1D	206-3C
	206-4A

TURN KEYS: "205" - "207"



Long frame rotating cam type keys or switches. Intended to be assembled on to standard 5/8" thick jack mounting strips having 2 3/4" dia. jack bushing holes. Hole for #6-32 screw 3/8" off center provided. Entirely interchangeable with telephone type jacks, and essentially similar to W.E. "552" series. See table below for cross reference.

Knob of molded black nylon, has two flat areas on each side to provide convenience in turning. White filled line on front of knob readily identifies in which of two positions key has been turned.
Requires 2 23/32" depth behind panel.

LOCKING TYPE, "205"

Part No.	Part No.	Part No.	Part No.
205-1A	205-2A	205-3A	205-2A2B
205-1B	205-2B	205-3C	205-1A2C
205-1C	205-2C	205-4A	205-1000
205-1D	205-2D	205-4C	205-1001

NON-LOCKING TYPE, "207"

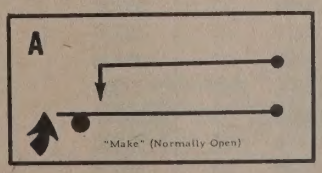
Part-No.	Part No.	Part No.
207-1A	207-1B	207-2C

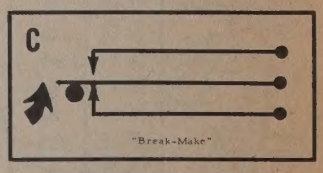
CROSS REFERENCE W.E. to TRIMM

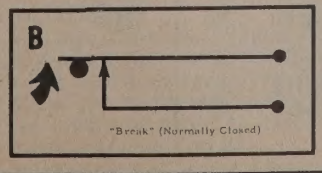
TRIMM Code	W.E. Type	TRIMM Code	W.E. Type
205-2C	552A	205-1000	552E
205-3A	552B	205-1D	552G
205-1001	552C	205-2C1A	552H
205-2B 2C	552D		

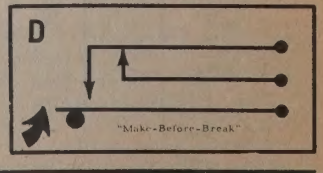
SWITCH DIAGRAMS

Basic switching for Turn Keys and Push Keys is described by these diagrams. Other combinations are available. Coding: The series number of the switch followed by a dash number. 205-4C is then a locking type Turn Key with a stacking of four 'C' switches.





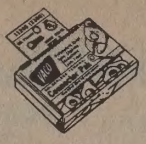




SOLDERLESS TERMINALS

Packaged Four Convenient Ways

Vaco offers convenient packaging for every type and size of terminal user. All Vaco Paks are shown with stock number, actual size illustration of terminal, and wire and stud size for easy shelf identification.



$ PAK
(5 Paks to Master Carton). Use prefix "D" when ordering.

"C" PAK
(100 per Pak—5 Paks to Master Carton). Use prefix "C" when ordering.

"MB" PAK
(Contains 1000 of a number.) Use prefix "MB" when ordering.

69¢ PA
For sma quantity u

	Wire Size	Stud Size	Series 10000 Vaco Single-Grip Terminals and Connectors are one-piece, non-insulated basic type and meet most requirements. Stock No.	Qty. per $ Pack	Series 30000 Similar to 10000 Series except with brazed barrel, providing a seamless connector. Especially recommended for solid strand wire. Stock No.	Qty. per $ Pack	Series 40000 Vaco Double-Grip Terminals and Connectors are excellent wherever vibration is a problem. Tin-plated bronze sleeve provides area for double crimp that prevents strain from reaching the barrel crimp. Stock No.	Qty. per $ Pack	Series 50000 Vaco Single-Grip Insulated Terminals, with heavy plastic sleeve, provides insulation from tongue to wire insulation. The sleeve also prevents wire from flexing at the crimp for greater strength. Stock No.	Qty. per $ Pack	Series 60000 Similar to 50000 Series except with flared or bell-mouth insulation. Stock No.	Qty. per $ Pack	Series 90 Vaco Doubl Insulated nals and C tors have sleeve tha tends beyon tin-plated b sleeve to p complete i tion from to wire. Engi to meet the exacting re ments. Stock No.
RING TONGUE	22-18	4	11204	32	31204	★			51204	16	61204	14	91204
	22-18	5-6	11205*	32	31205				51205	16	61205	14	91205
	22-18	5-6	11206	32	31206				51206	16	61206	14	91206
	22-18	8	11208*	32	31208				51208	16	61208	14	91208
Non-Insulated	22-18	10	11210*	32	31210				51210	16	61210	14	91210
	22-18	12-¼	11214	25	31214				51214	14	61214	12	91214
	22-18	⅜	11238	25	31238				51238	14	61238	12	91238
	16-14	4	11304	32	31304				51304	16	61304	14	91304
	16-14	5-6	11305*	32	31305				51305	16	61305	14	91305
	16-14	5-6	11306	32	31306				51306	16	61306	14	91306
	16-14	8	11308*	32	31308				51308	16	61308	14	91308
Insulated	16-14	10	11310*	32	31310				51310	16	61310	14	91310
	16-14	12-¼	11314	25	31314				51314	14	61314	12	91314
	16-14	⅜	11338	25	31338				51338	14	61338	12	91338
	12-10	4-6	11406	25	31406				51406	14	61406	12	91406
	12-10	8	11408	25	31408				51408	14	61408	12	91408
	12-10	10	11410	25	31410				51410	14	61410	12	91410
	12-10	12-¼	11414	19	31414				51414	13	61414	10	91414
	12-10	⅜	11438	19	31438				51438	13	61438	10	91438
SPADE TONGUE	22-18	4	13204	36	33204				53204	16	63204	14	93204
	22-18	5-6	13206	36	33206				53206	16	63206	14	93206
	22-18	8	13208	32	33208				53208	16	63208	14	93208
Non-Insulated	22-18	10	13210	32	33210				53210	16	63210	14	93210
	16-14	4-6	13306	32	33306				53306	16	63306	14	93306
	16-14	8	13308	32	33308				53308	16	63308	14	93308
	16-14	10	13310	32	33310				53310	16	63310	14	93310
	12-10	4-6	13406	25	33406				53406	14	63406	12	93406
	12-10	8	13408	25	33408				53408	14	63408	12	93408
Insulated	12-10	10	13410	25	33410				53410	14	63410	12	93410
	22-18	4-6	14206	36					54206	16	64206	14	94206
HOOK TONGUE	22-18	4-6	15206	32	35206				55206	16	65206	14	95206
Non-Insulated	22-18	8	15208	32	35208				55208	16	65208	14	95208
	22-18	10	15210	32	35210				55210	16	65210	14	95210
	16-14	4-6	15306	32	35306				55306	16	65306	14	95306
	16-14	8	15308	32	35308				55308	16	65308	14	95308
	16-14	10	15310	32	35310				55310	16	65310	14	95310
Insulated	12-10	4-6	15406	25	35406				55406	14	65406	12	95406
	12-10	8	15408	25	35408				55408	14	65408	12	95408
	12-10	10	15410	25	35410				55410	14	65410	12	95410
FLAG TONGUE Non-Insulated	22-18	8-10	16210	32									
	16-14	8-10	16310	32									
	12-10	8-10	16410	25									

*Available in High Temperature Material (substitute 2 for 1st digit instead of 1) Example: 21205

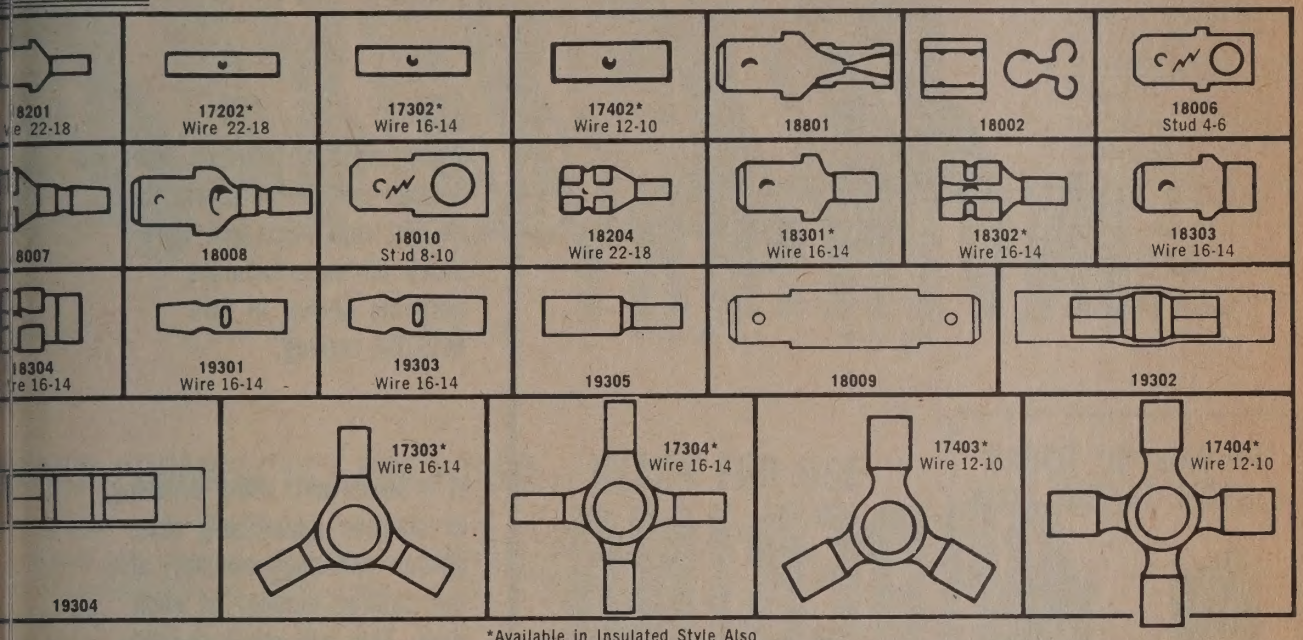
★Note: not available in

© United Technical Publi

QUICK CONNECTORS

- Use Quick Connect Terminals For Fast Connect and Disconnect Feature
- Insulated and Non-Insulated Styles Available

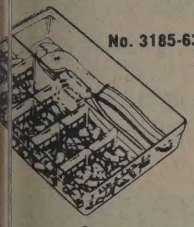
Illustrations Actual Size



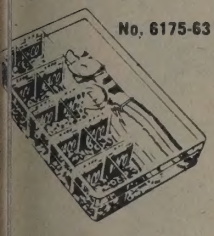
*Available in Insulated Style Also

RMINAL KITS

No. 2195-63 Service Kit. Kit contains 10 different types of popular electrical, radio and TV single-grip terminals and No. 1963 crimping tool. Terminals included are: 11205, 11206, 11210, 11305, 11306, 11310, 14206, 13306, 13310, 15208. **Price.....$10.25**



No. 3185-63 Service Kit. Especially designed for the appliance, automotive and electrical equipment service man. Contains varied assortment of popular quick connect terminals and adapters plus No. 1963 crimping tool. Terminals included are: 18301, 18302, 18303, 18304, 18001, 18002, 18008, 18007, 19301, 19302. **Price.....$10.25**



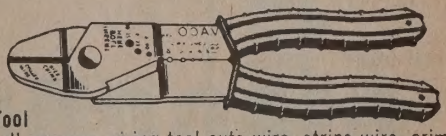
No. 6175-63 Service Kit. Kit contains 10 different types of popular insulated single-grip terminals for electrical, radio and TV plus No. 1963 crimping tool. Terminals included are: 51205, 51206, 51210, 51305, 53206, 53306, 53310, 51306, 51310, 54206.
Price $10.25

No. 5000-63 Non-Insulated "Cash Register" Assortment. Heavy steel box contains 20 compartmented sections each with supply of 50 single-grip, non-insulated terminals (1000 in all). Complete with identification card in cover for easy selection of any terminal. Size: 13¼"x9¼"x2".
Price each $34.00

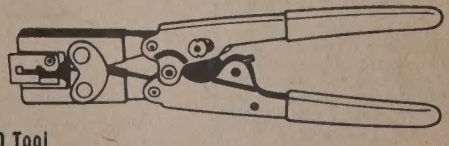
No. 4900-63 Insulated "Cash Register" Assortment. Same as No. 5000-63 except assortment contains 500 insulated, single-grip terminals in 20 different types and sizes. Plastic insulation is color-coded for size.
Size: 13¼"x9¼"x2".
Price each $34.00

ATTACHING TOOLS

No. 1900 Tool
Features specially designed crimping dies for use on non-insulated type terminals . . . forms cold weld between wire and terminal barrel. Cuts wire, strips wire and crimps terminals 22 to 10 gauge AWG. Plastic comfort grip handles.
Price . . . $4.50



No. 1963 Tool
Patented, all purpose wiring tool cuts wire, strips wire, crimps insulated and non-insulated terminals and slices 6 sizes of bolts (4-40, 5-40, 6-32, 8-32, 10-32, and 10-24). Special features include end positioned wire cutter for reaching into hard-to-get-at places, and new bolt slicing principle that permits less hand pressure for slicing bolts with **no** burrs to file. Plastic comfort grip handles.
Price . . . $5.25



No. T1710 Tool
One tool . . . one die . . . crimps all styles of insulated and non-insulated terminals in wire range from 22-10 gauge AWG. Built-in ratchet with safety release assures uniform crimps every time, and compound lever action from narrow span handles puts "ease in the squeeze." Terminals are quickly positioned for double crimps by special terminal locator. Plastic comfort grip handles.
Price . . . $40.00

INVENTORY

While most distributors maintain a large and varied stock, they do not represent that they stock all manufacturers' products shown in this MASTER catalog.

ORDERING

It is important, when ordering, to mention specifically the edition and page number, also the catalog number of each item. This will avoid possible confusion and delay.

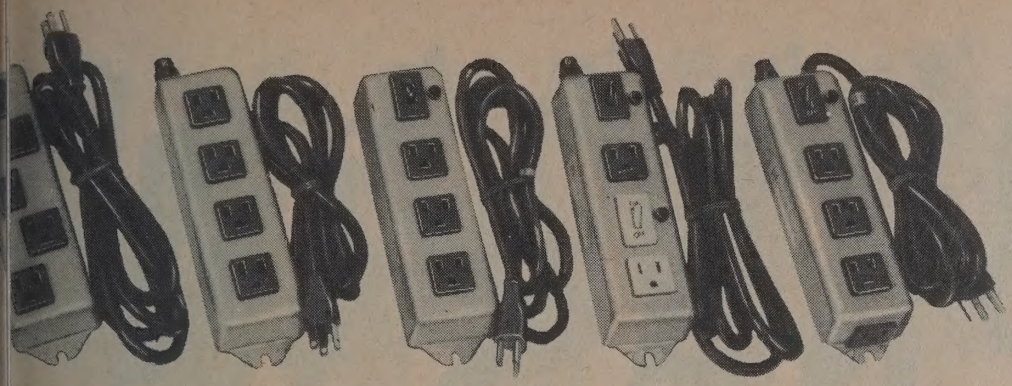
PRICES

INQUIRE ABOUT LATEST PRICES AND DELIVERY.
Prices in this MASTER should not be considered as final.

DISCOUNTS

Trade discounts apply in most cases where LIST PRICES are shown.

ABER — COMPACT ELECTRICAL OUTLET BOXES — WABER



odel 602 Model 603 Model 605 Model 606 Model 608

FEATURES

- TOUGH HSJ FINEST QUALITY UL APPROVED CORD-SET
- RATED AT 15 AMPERES 130 VOLTS CONTINUOUS DUTY
- SEAMLESS DRAWN STEEL CASE IN HANDSOME GRAY FINISH
- ALL SNAP-IN COMPONENTS, FUSES, CIRCUIT BREAKERS UL APPROVED
- 8¼ INCH MOUNTING CENTERS. SIZE 8⅝x2¼x1½
- SHIPPING WEIGHT:
  2 LBS. FOR 6 FOOT CORD-SET MODELS
  3 LBS. FOR 15 FOOT CORD-SET MODELS

ABER "COMPACTS" PRE-WIRED – READY FOR USE

ct in size, these sturdy Waber units quality "U" ground type outlets in ty of configurations for schools, labs, stry. They are particularly useful for plications. Custom variations can be o meet your specific needs.

L 602 SERIES, 5 "U" Ground Outlets Only

	Net
02 (6′ cord-set)	$4.80
02-15 (15′ cord-set)	5.80

DEL 603 SERIES, 4 "U" Ground Outlets, use or Push-To-Reset Circuit Breaker

03 (fuse, 6′ cord-set)	$5.25
03-15 (fuse, 15′ cord-set)	6.25
03CB (circuit breaker, 6′ cord-set)	6.25
03CB-15 it breaker, 15′ cord-set)	7.25

DEL 605 SERIES, 3 "U" Ground Outlets, Pilot Light, On-Off Switch, Fuse or Push-To-Reset Circuit Breaker

05 (fuse, 6′ cord-set)	$5.95
Model 605-15 (fuse, 15′ cord-set)	6.95
Model 605CB (circuit breaker, 6′ cord-set)	6.95
Model 605CB-15 (circuit breaker, 15′ cord-set)	7.95

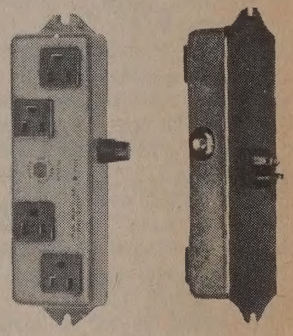
MODEL 606 SERIES, 2 Color-Coded Sets (Switch, Pilot Light, Outlet) Fuse or Push-To-Reset Circuit Breaker

Model 606 (fuse, 6′ cord-set)	$5.95
Model 606-15 (fuse, 15′ cord-set)	6.95
Model 606CB (circuit breaker, 6′ cord-set)	6.95
Model 606CB-15 (circuit breaker, 15′ cord-set)	7.95

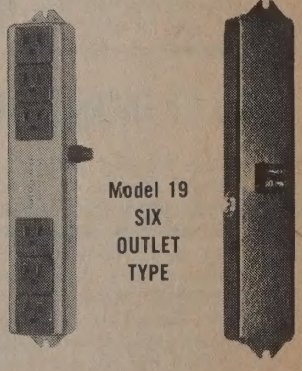
MODEL 608 SERIES, Pilot Light, On-Off Switch, Fuse or Push-To-Reset Circuit Breaker, and 4 "U" Ground Outlets. Outlet On One End and Cord-Set Out Other End For Series-String Wiring.

Model 608 (fuse, 6′ cord-set)	$6.50
Model 608-15 (fuse, 15′ cord-set)	7.50
Model 608CB (circuit breaker, 6′ cord-set)	7.50
Model 608CB-15 (circuit breaker, 15′ cord-set)	8.50

WABER "U" GROUND WALL OUTLET MODELS



Model 611
FOUR OUTLET TYPE



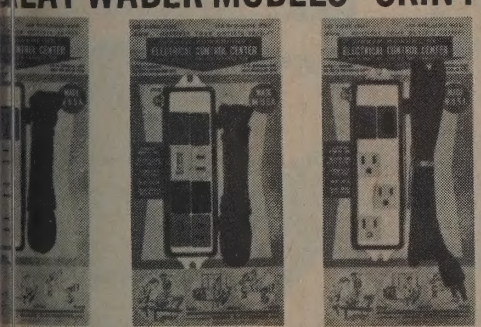
Model 19
SIX OUTLET TYPE

Get four or six "U" ground outlets from one wall outlet. Waber Model 611 is the four outlet unit and Waber Model 19 provides the six "U" ground outlets. Plug in male outlet to wall receptacle and secure mounting ears.

Either of these models is also available with panel mounted fuse or push-to-reset circuit breaker. Overall size of the Model 611 is 8⅝x2¼x1½ and the Model 19 is 13⅛x2⅜x1⅝. Shipping weight is 2 pounds.

	Net
Model 611 (fuse)	$4.75
Model 611CB (circuit breaker)	5.75
Model 611B (no fuse or crct. bkr.)	4.25
Model 19 (fuse)	6.75
Model 19CB (circuit breaker)	7.75
Model 19B (no fuse or crct. bkr.)	6.25

EAT WABER MODELS - SKIN PACKED - CHROME PLATED



11 Model 12 Model 601U

11

fore anything so useful, so handy for the home, work- office. This sturdy chrome case features six individual, ty outlets with an on-off master switch and bright pilot u get a handy control center for power tools, appliances, ment with **positive circuit breaker protection against or overload.**

MODEL 12

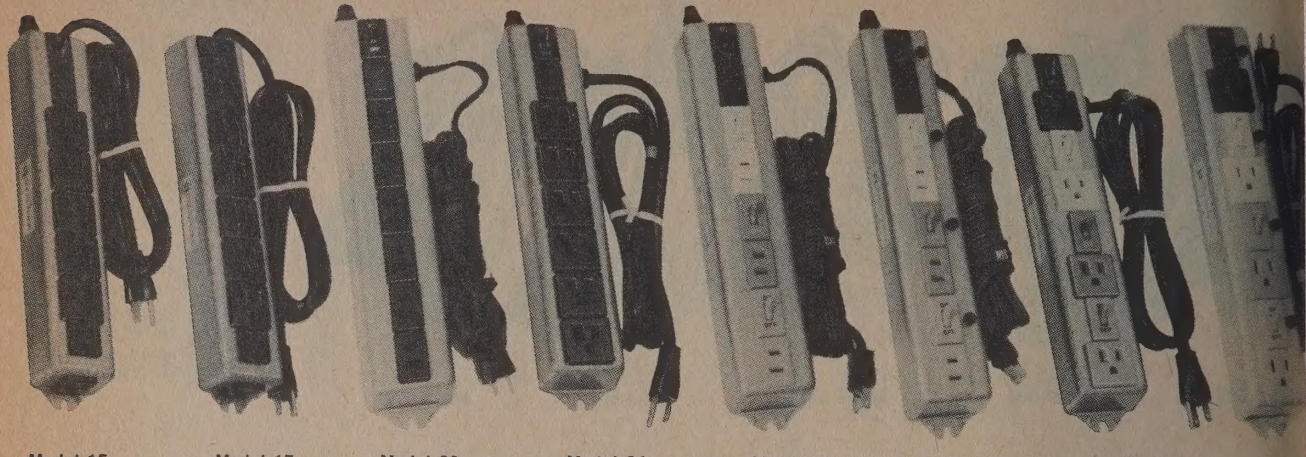
Control a piece of equipment or appliance by a flip of a switch! Each of the four individual, heavy duty outlets is controlled by its own on-off switch with contrasting colors for swift, positive identification. You get a handsome control center for power tools, appliances, or equipment with **positive circuit breaker protection against burnout or overload.**

MODEL 601U

Now you can have this chrome beauty with "U" ground type outlets. It features a sturdy steel case, 3 individual grounded outlets, with an on-off master switch and bright pilot light. This handy control center can be used in any number of applications with **positive "push-to-reset" circuit protection against burnout or overload.**

AMERICA'S GREATEST LINE OF PRE-WIRED POWER OUTLET BOXES

WABER ELECTRICAL OUTLET BOXES WABE



Model 15 Model 17 Model 20 Model 24 Model 30 Model 30P Model 32 Model

POPULAR WABER PRE-WIRED OUTLET BOXES – READY TO PLUG IN AND U

Here are eight series of Waber Models of proven utility. Models 15 and 17 are in-line units designed for series stringing with an outlet on one end and the cord-set coming out the other. Model 15 is the control unit, with "on-off" switch, pilot light, fuse or circuit breaker, and seven "U" ground outlets. Model 17 is the slave unit, with 9 "U" ground outlets only.

Waber Models 20 and 24 have 6 outlets controlled by an "on-off" switch, pilot light, and panel-mounted fuse or circuit breaker. Model 20 is of the 2-wire type and Model 24 is the 3-wire "U" ground type.

Waber Models 30 and 32 feature 4 color-coded switch-outlet sets, protected by either a fuse or circuit breaker. Model 30 is the 2-wire type and Model 32 is the 3-wire "U" ground type. These same units are available with a pilot light for each switch outlet group in the Models 30P and 32P series.

	NET
Model 15 (fuse, 6' cord-set)	$ 8.75
Model 15-15 (fuse, 15' cord-set)	9.75
Model 15CB (circuit breaker, 6' cord-set)	9.75
Model 15CB-15 (circuit breaker, 15' cord-set)	10.75
Model 17 (6' cord-set)	6.75
Model 17-15 (15' cord-set)	7.75
Model 20 (fuse, 10' cord-set)	5.95
Model 20CB (circuit breaker, 10' cord-set)	6.95
Model 24 (fuse, 6' cord-set)	8.50
Model 24-15 (fuse, 15' cord-set)	9.50
Model 24CB (circuit breaker, 6' cord-set)	9.50
Model 24CB-15 (circuit breaker, 15' cord-set)	10.50
Model 30 (fuse, 10' cord-set)	5.95
Model 30CB (circuit breaker, 10' cord-set)	6.95
Model 30P (fuse, 10' cord-set)	7.50
Model 30PCB (circuit breaker, 10' cord-set)	8.50
Model 32 (fuse, 6' cord-set)	8.50
Model 32-15 (fuse, 15' cord-set)	9.50
Model 32CB (circuit breaker, 6' cord-set)	
Model 32CB-15 (circuit breaker, 15' cord-set)	
Model 32P (fuse, 6' cord-set)	
Model 32P-15 (fuse, 15' cord-set)	
Model 32PCB (circuit breaker, 6' cord-set)	
Model 32PCB-15 (circuit breaker, 15' cord-set)	

FEATURES

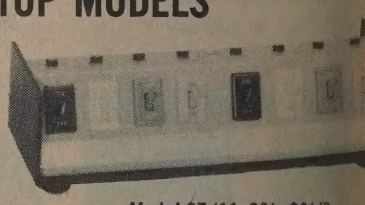
- TOUGH UL APPROVED 15 AMP HSJ (3-W OR HPN (2-WIRE) CORD-SET
- RATED 15A. 130V. CONTINUOUS DUTY
- SEAMLESS DRAWN STEEL CASE IN HANDS GRAY FINISH
- ALL SNAP-IN COMPONENTS, FUSES, CIR BREAKERS UL APPROVED
- 12¾" MOUNTING CENTERS SIZE: 13⅛x2⅜x1⅝
- MODELS 15, 17 AND 24 HAVE ELECTR WIRED GROUND AS WELL AS GROUNDIN CASE BY CONTACT WITH CLIPS
- SHIPPING WEIGHT 3 LBS.

NEW! WABER CONSOLE DESK TOP – LAB TOP MODELS

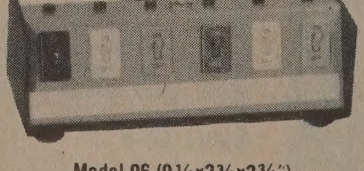
Nothing is more elegant for the desk or lab and nothing will give you such complete control over instruments and equipment as will these well designed units. Available in 3 different sizes, these models have 4, 6 or 8 "U" ground outlets, each controlled by its own switch and pilot light. The outlets are in the rear of the units. All 3 models are available with circuit breaker or fuse, 6-foot or 15-foot, HSJ cord-set. Rated at 15 amperes, 130 volts.

	NET
Model 95 (fuse, 6' cord-set)	$12.95
Model 95-15 (fuse, 15' cord-set)	13.95
Model 95CB (circuit breaker, 6' cord set)	13.95
Model 95CB-15 (circuit breaker, 15' cord-set)	14.95
Model 96 (fuse, 6' cord-set)	15.50
Model 96-15 (fuse, 15' cord-set)	16.50
Model 96CB (circuit breaker, 6' cord-set)	16.50
Model 96CB-15 (circuit breaker, 15' cord-set)	17.50
Model 97 (fuse, 6' cord-set)	19.50
Model 97-15 (fuse, 15' cord-set)	20.50
Model 97CB (circuit breaker, 6' cord-set)	20.50
Model 97CB-15 (circuit breaker, 15' cord-set)	21.50

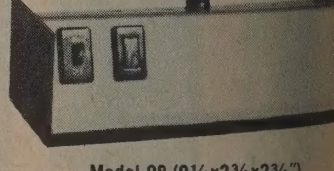
Model 95 (7½x2¾x2¾")



Model 97 (11x2¾x2¾")



Model 96 (9¼x2¾x2¾")



Model 98 (9¼x2¾x2¾")

Model 98 Series offers a master switch and pilot light controlling six "U" ground outlets on the rear panel. Your choice of fuse or circuit breaker protection, 6 or 15 foot HSJ cord-set.

Model 98 (fuse, 6' cord-set)	$
Model 98-15 (fuse, 15' cord-set)	
Model 98CB (circuit breaker, 6' cord-set)	
Model 98CB-15 (circuit breaker, 15' cord-set)	

WANT SOMETHING SPECIAL . . . WE'LL MANUFACTURE TO YOUR SPECS

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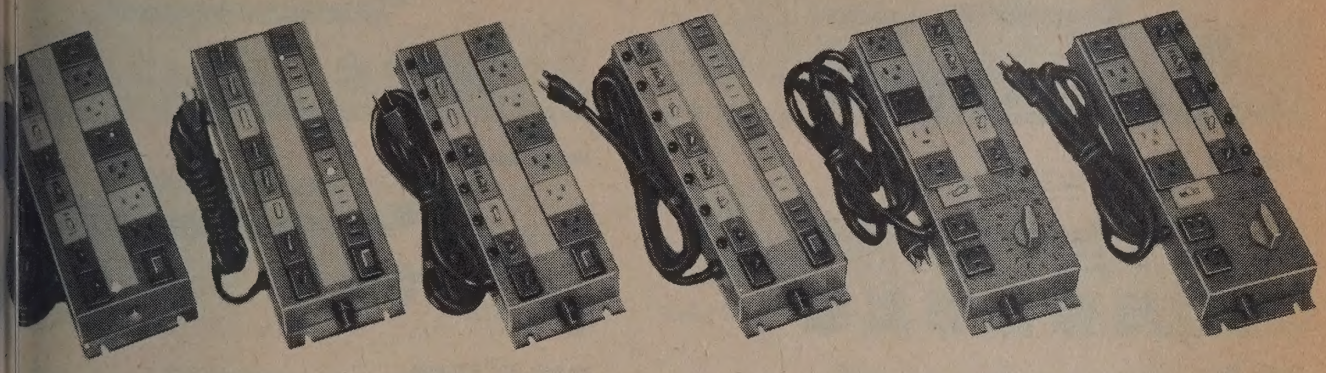
WABER DELUXE ELECTRICAL OUTLET BOXES



Model 25 | Model 25P | Model 35 | Model 35P | Model 26 | Model 26P

WABER DELUXE OUTLET BOXES IN SIX COLORFUL MODELS

Deluxe Models 25 and 35 provide 7 yed switch-outlet groups, a panel d fuse or circuit breaker, pilot light, and r "on-off" switch. These models feature r "write-on" strip for immediate identi- The 25 series is the "U" ground type ur choice of a 6 or 15-foot Waber HSJ . Model 35 is the 2-wire type with 10- prene cord-set. The Models 26 and 27 er Models and provide settings for up to s. Two types are available. The timer in 6 Series turns power to the unit "on" nd of the preset time and Model 27 is d to turn power off at the end of the ime.

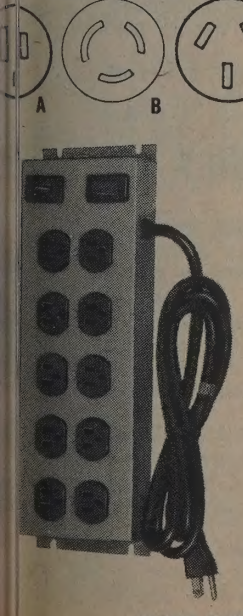
r Deluxe Models 25P, 26P, 27P and 35P ave the same configuration as the 25, and 35, with the addition of a bright ht for each switch-outlet set. All Waber oxes are pre-wired, ready for use.

	NET
5 (fuse, 6′ cord-set)	$15.50
5-15 (fuse, 15′ cord-set)	16.50
5CB (circuit breaker, 6′ cord-set)	16.50
Model 25CB-15 (circuit breaker, 15′ cord-set)	17.50
Model 35 (fuse, 10′ cord-set)	13.50
Model 35CB (circuit breaker, 10′ cord-set)	14.50
Model 25P (fuse, 6′ cord-set)	19.50
Model 25P-15 (fuse, 15′ cord-set)	20.50
Model 25PCB (circuit breaker, 6′ cord-set)	20.50
Model 25PCB-15 (circuit breaker, 15′ cord-set)	21.50
Model 35P (fuse, 10′ cord-set)	17.50
Model 35PCB (circuit breaker, 10′ cord-set)	18.50
Model 26 (fuse, 6′ cord-set)	24.00
Model 26-15 (fuse, 15′ cord-set)	25.00
Model 26CB (circuit breaker, 6′ cord-set)	25.00
Model 26CB-15 (circuit breaker, 15′ cord-set)	26.00
Model 26P (fuse, 6′ cord-set)	28.00
Model 26P-15 (fuse, 15′ cord-set)	29.00
Model 26PCB (circuit breaker, 6′ cord-set)	29.00
Model 26PCB-15 (circuit breaker, 15′ cord-set)	30.00
Model 27 (fuse, 6′ cord-set)	24.00
Model 27-15 (fuse, 15′ cord-set)	25.00
Model 27CB (circuit breaker, 6′ cord-set)	25.00
Model 27CB-15 (circuit breaker, 15′ cord-set)	26.00
Model 27P (fuse, 6′ cord-set)	28.00
Model 27P-15 (fuse, 15′ cord-set)	29.00
Model 27PCB (circuit breaker, 6′ cord-set)	29.00
Model 27PCB-15 (circuit breaker, 15′ cord-set)	30.00

FEATURES

- TOUGH HSJ FINEST QUALITY UL APPROVED CORD-SET
- RATED 15 AMPS 130 VOLTS CONTINUOUS DUTY
- SEAMLESS STEEL CASE IN HANDSOME GRAY FINISH
- ALL SNAP IN COMPONENTS, FUSES, CIRCUIT BREAKERS UL APPROVED
- MOUNTING CENTERS 13″x2⅞″ SIZE: 13⅜x4⅛x1½″
- SHIPPING WEIGHT: 3 LBS FOR 6 FT. CORD-SET MODELS. 4 LBS. FOR 15 FT. CORD-SET MODELS

ABER 800 SERIES PROVIDES POPULAR DUPLEXES WITH MATCHING PLUGS



A B C D

Model	On-Off Switch	Pilot Light	Fuse	Circuit Breaker	6 Ft. Cord 15A	15 Ft. Cord 15A	6 Ft. Cord 20A	15 Ft. Cord 20A	"U" Ground	Locking	Crow's Foot	20A-125V	Shpg. Wt. Lbs.	Net
800	●	●	●		●				A				3	13.50
800-15	●	●	●			●			A				4	14.50
800CB	●	●		●	●				A				3	14.50
800CB-15	●	●		●		●			A				4	15.50
801	●	●	●		●					B			3	24.50
801-15	●	●	●			●				B			4	25.50
801CB	●	●		●	●					B			3	25.50
801CB-15	●	●		●		●				B			4	26.50
802	●	●	●		●						C		3	34.95
802-15	●	●	●			●					C		4	35.95
802CB	●	●		●	●						C		3	35.95
802CB-15	●	●		●		●					C		4	36.95
803	●	●	●				●					D	5	24.50
803-15	●	●	●					●				D	6	25.50
803CB	●	●		●			●					D	5	25.50
803CB-15	●	●		●				●				D	6	26.50
804-15			●			●			A					12.00
805-15			●			●				B				21.50
806-15			●			●					C			30.00
807-15			●					●				D		21.50

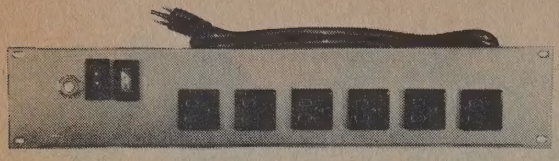
Four different duplex types are available in this series including the new 20 Ampere 125 Volt type. Models 804-805-806-807 feature five duplex outlets. Special duplexes available on request.

FEATURES

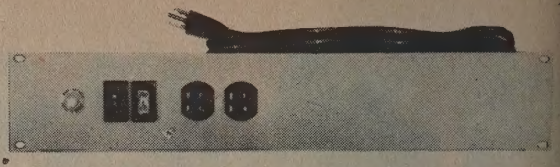
- TOUGH HSJ FINEST QUALITY UL APPROVED CORD-SET
- RATED 15 AMPS 130 VOLTS CONTINUOUS DUTY. MODELS 803 AND 807 RATED 20 AMPS 125 VOLTS
- SEAMLESS STEEL CASE IN HANDSOME GRAY FINISH
- ALL SNAP IN COMPONENTS, FUSES, CIRCUIT BREAKERS UL APPROVED
- MOUNTING CENTERS 13″x2⅞″ SIZE: 13⅜x4⅛x1½″
- SHIPPING WEIGHT: 3 LBS. FOR 6 FT. CORD-SET MODELS. 4 LBS. FOR 15 FT. CORD-SET MODELS

NEED OUTLETS IN A HURRY? ALL WABER MODELS ARE PRE-WIRED. JUST PLUG IN!

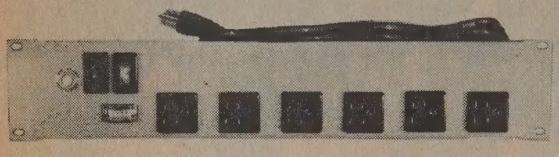
WABER RACK MOUNT ELECTRICAL OUTLET PANELS WABE



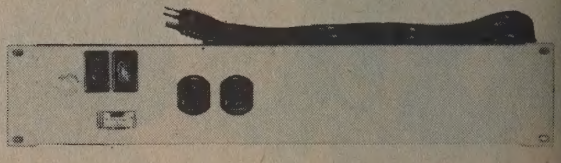
Model 900



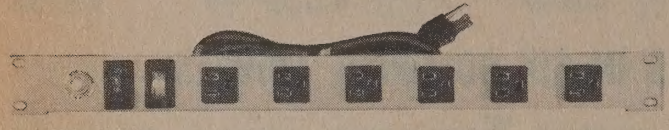
Models 904-905-906



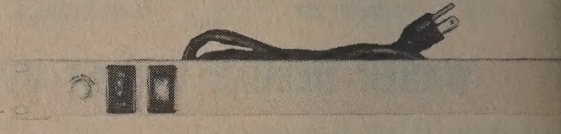
Model 901



Models 907-908-909



Model 903



Models 911-912-913

POWER UP YOUR RACKS WITH THESE PRE-WIRED WABER OUTLET PANELS

Waber pre-wired, ready-to-use, master power controls provide a quick and easy power source for standard relay racks. You have your choice from this great variety of configurations with outlets on the outside, inside, or combinations of both. Choose the Waber pre-wired panel you need from the many standard units shown here. All rack panels are 3½" x 19" in size except series 903, 911, 912, 913 which are 1¾" x 19".

WABER MODEL 900 SERIES RACK PANEL OUTLET BOXES

These units feature an "on-off" switch, pilot light, fuse or push-to-reset circuit breaker, 6 "U" ground outlets, and your choice of a 6 or 15-foot neoprene cord-set. All component parts UL approved.

	NET
Model 900 (fuse, 6' cord-set)	$10.95
Model 900-15 (fuse, 15' cord-set)	11.95
Model 900CB (circuit breaker, 6' cord-set)	11.95
Model 900CB-15 (circuit breaker, 15' cord-set)	12.95

WABER 901 RACK MOUNT FEATURES AC VOLTMETER

This unit has all of the features of the 900 series, plus a handsome, edgewise reading AC Voltmeter for monitoring voltages of from 0 to 150 volts AC.,

Model 901 (fuse, 6' cord-set)	$14.50
Model 901-15 (fuse, 15' cord-set)	15.50
Model 901CB (circuit breaker, 6' cord-set)	15.50
Model 901CB-15 (circuit breaker, 15' cord-set)	16.50

WABER MODEL 904 SERIES IN "U" GROUNB, CROW'S FOOT, OR LOCKING TYPE

This popular series features an "on-off" switch pilot light, fuse or push-to-reset circuit breaker, 6 or 15-foot HSJ cord-set, and 6 outlets (2 in front and 4 in back). Size: 3½x19". All component parts UL approved.

"U" GROUND TYPE	NET
Model 904 (fuse, 6' cord-set)	$12.95
Model 904-15 (fuse, 15' cord-set)	13.95
Model 904CB (circuit breaker, 6' cord-set)	13.95
Model 904CB-15 (circuit breaker, 15' cord-set)	14.95
LOCKING TYPE	
Model 905 (fuse, 6' cord-set)	23.95
Model 905-15 (fuse, 15' cord-set)	24.95
Model 905CB (circuit breaker, 6' cord-set)	24.95
Model 905CB-15 (circuit breaker, 15' cord-set)	25.95
CROW'S FOOT TYPE	
Model 906 (fuse, 6' cord-set)	24.95
Model 906-15 (fuse, 15' cord-set)	25.95
Model 906CB (circuit breaker, 6' cord-set)	25.95
Model 906CB-15 (circuit breaker, 15' cord-set)	26.95

WABER MODELS 907-908-909 EQUIPPED WITH AC VOLTMETER

These Waber Models have all of the features of the 904-905-906 series with the addition of an edgewise reading 0-150 volt AC voltmeter.

"U" GROUND TYPE	NET
Model 907 (fuse, 6' cord-set)	$16.50
Model 907-15 (fuse, 15' cord-set)	17.50
Model 907CB (circuit breaker, 6' cord-set)	17.50
Model 907CB (circuit breaker, 15' cord-set)	
LOCKING TYPE	
Model 908 (fuse, 6' cord-set)	
Model 908-15 (fuse, 15' cord-set)	
Model 908CB (circuit breaker, 6' cord-set)	
Model 908CB-15 (circuit breaker, 15' cord-set)	
CROW'S FOOT TYPE	
Model 909 (fuse, 6' cord-set)	
Model 909-15 (fuse, 15' cord-set)	
Model 909CB (circuit breaker, 6' cord-set)	
Model 909CB-15 (circuit breaker, 15' cord-set)	

FEATURES

- TOUGH HSJ FINEST QUALITY UL APPRO CORD-SET
- RATED AT 15 AMPERES 130 VOLTS CON UOUS DUTY
- STEEL PANEL IN A HANDSOME GRAY FI
- ALL SNAP IN COMPONENTS, FUSES, CIR BREAKERS UL APPROVED
- SIZE: 3½x19" FOR ALL UNITS EXCEPT 911, 912, 913 SERIES (1¾x19")
- SHIPPING WEIGHT: 3 LBS. FOR 6 CORD-SET MODELS. 4 LBS. FOR 15 CORD-SET MODELS

WABER SPACE SAVING MODELS ONLY 1¾" WIDE

Waber Model 903 series features 6 "U" ground outlets (in the front) "on-off" switch, pilot light, fuse or circuit breaker, 6 or 15-foot neoprene cord-set. Models 911, 912, 913 have the same features except that the outlets are in the back and are available in "U" ground, locking, or crow's foot types. Component parts UL approved. Size: 1¾x19".

	NET
Model 903 (fuse, 6' cord-set)	$10.95
Model 903 (fuse, 15' cord-set)	11.95
Model 903CB (circuit breaker 6' cord-set)	11.95
Model 903CB-15 (circuit breaker, 15' cord-set)	12.95
"U" GROUND TYPE	
Model 911 (fuse, 6' cord-set)	12.95
Model 911-15 (fuse, 15' cord-set)	13.95
Model 911CB (circuit breaker, 6' cord-set)	
Model 911CB-15 (circuit breaker, 15' cord-set)	
LOCKING TYPE	
Model 912 (fuse, 6' cord-set)	
Model 912-15 (fuse, 15' cord-set)	
Model 912CB (circuit breaker, 6' cord-set)	
Model 912CB-15 (circuit breaker, 15' cord-set)	
CROW'S FOOT TYPE	
Model 913 (fuse, 6' cord-set)	
Model 913-15 (fuse, 15' cord-set)	
Model 913CB (circuit breaker, 6' cord-set)	
Model 913CB-15 (circuit breaker, 15' cord-set)	

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Net

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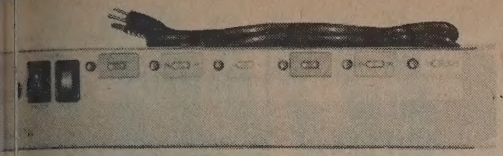
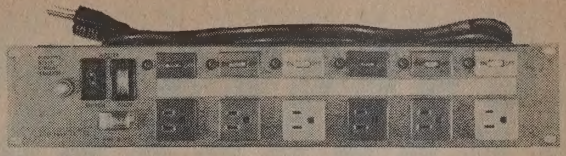
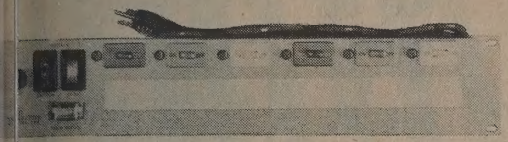
WABER DELUXE RACK MOUNT OUTLET PANELS WABER



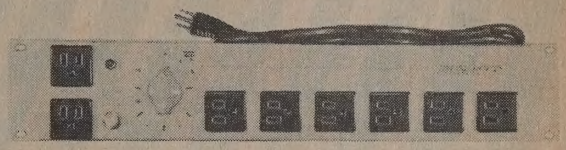
914-915-916



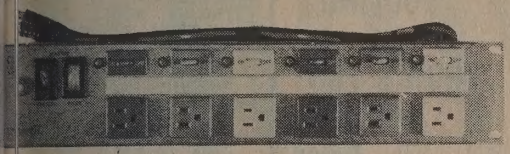
Model 921



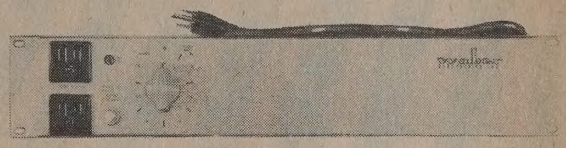
917-918-919



Model 922



920



Models 924-925

MODEL 914 SERIES DELUXE RACK PANEL

r-coded switches provide individual con- r outlets on the inside, with individual pilot lights and write-on strip. Master and pilot light control the entire unit. of 6 or 15-foot neoprene cord-set, and r push-to-reset circuit breaker. Sturdy panel finished in silver gray textured rtone. Rated at 15 amperes, 130 volts ous duty.

"U" GROUND TYPE	NET
914 (fuse, 6' cord-set)	$22.00
914-15 (fuse, 15' cord-set)	23.00
914CB	
breaker, 6' cord-set)	23.00
914CB-15	
uit breaker, 15' cord-set)	24.00
LOCKING TYPE	
915 (fuse, 6' cord-set)	32.00
915-15 (fuse, 15' cord-set)	33.00
915CB	
uit breaker, 6' cord-set)	33.00
915CB-15	
uit breaker, 15' cord-set)	34.00
CROW'S FOOT TYPE	
916 (fuse, 6' cord-set)	33.00
916-15 (fuse, 15' cord-set)	34.00
916CB	
uit breaker, 6' cord-set)	34.00
916CB-15	
uit breaker, 15' cord-set)	35.00

MODELS 917, 918 & 919 WITH METER

models have all of the features of the ith the addition of a 0 to 150 volts AC ter.

"U" GROUND TYPE	NET
917 (fuse, 6' cord-set)	$25.45
917-15 (fuse, 15' cord-set)	26.45
917CB	
uit breaker, 6' cord-set)	26.45
917CB-15	
uit breaker, 15' cord-set)	27.45
LOCKING TYPE	NET
918 (fuse, 6' cord-set)	$40.00
918-15 (fuse, 15' cord-set)	41.00
918CB	
uit breaker, 6' cord-set)	41.00
918CB-15	
uit breaker, 15' cord-set)	42.00
CROW'S FOOT TYPE	
919 (fuse, 6' cord-set)	41.00
919-15 (fuse, 15' cord-set)	42.00
Model 919CB (circuit breaker, 6' cord-set)	42.00
Model 919CB-15 (circuit breaker, 15' cord-set)	43.00

WABER MODEL 920 HAS DELUXE FEATURES

6 color-coded switch and "U" ground outlet sets with individual pilot lights are featured in this deluxe model. The entire unit is controlled by a master switch and pilot light. You have a choice of fuse or push-to-reset circuit breaker, and 6 or 15-foot neoprene cord-set. Unit is rated at 15 amperes, 130 volts continuous duty.

	NET
Model 920 (fuse, 6' cord-set)	$18.50
Model 920-15 (fuse, 15' cord-set)	19.50
Model 920CB (circuit breaker, 6' cord-set)	19.50
Model 920CB-15 (circuit breaker, 15' cord-set)	20.50

WABER MODEL 921 HAS AC VOLTMETER

This unit has all of the features of the Model 920, with the addition of a 0 to 150 volt AC Voltmeter.

	NET
Model 921 (fuse, 6' cord-set)	$21.95
Model 921-15 (fuse, 15' cord-set)	22.95
Model 921CB (circuit breaker, 6' cord-set)	22.95
Model 921CB-15 (circuit breaker, 15' cord-set)	23.95

WABER MODELS 922 AND 923 ARE TIMER CONTROLLED

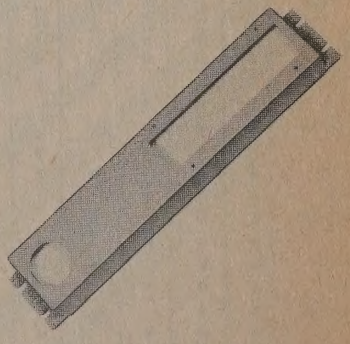
Put a timer model (up to 12 hours) to work for you in many different ways. These models have 6 "U" ground outlets and a master pilot light, plus 2 extra "always-on" outlets. You have your choice of fuse or push-to-reset circuit breaker protection, 6 or 15-foot neoprene cord-set. Model 922 is designed to turn power off after the timed interval, while Model 923 turns power on. Rated at 15 amperes, 130 volts continuous duty.

	NET
Model 922 (fuse, 6' cord-set)	$20.55
Model 922-15 (fuse, 15' cord-set)	21.55
Model 922CB (circuit breaker, 6' cord-set)	21.55
Model 922CB-15 (circuit breaker, 15' cord-set)	22.55
Model 923 (fuse, 6' cord-set)	20.55
Model 923-15 (fuse, 15' cord-set)	21.55
Model 923CB (circuit breaker, 6' cord-set)	21.55
Model 923CB-15 (circuit breaker, 15' cord-set)	22.55

WABER MODELS 924 AND 925 FEATURE 12-HOUR TIMER

These Models feature 6 heavy-duty "U" ground outlets, 2 "always-on" in the front and 4 timed outlets in the back. A bright neon pilot light shows when power is on. You have a choice of fuse or push-to-reset circuit breaker protection, and 6 or 15-foot neoprene cord-set. Model 924 utilizes the up-to-12-hour timer to turn power off after the timed interval, and Model 925 is designed to turn power on. Rating is 15 amperes, 130 volts continuous duty. Size is 3½x19".

	NET
Model 924 (fuse, 6' cord-set)	$22.55
Model 924-15 (fuse, 15' cord-set)	23.55
Model 924CB (circuit breaker, 6' cord-set)	23.55
Model 924CB-15 (circuit breaker, 15' cord-set)	24.55
Model 925 (fuse, 6' cord-set)	22.55
Model 925-15 (fuse, 15' cord-set)	23.55
Model 925CB (circuit breaker, 6' cord-set)	23.55
Model 925CB-15 (circuit breaker, 15' cord-set)	24.55



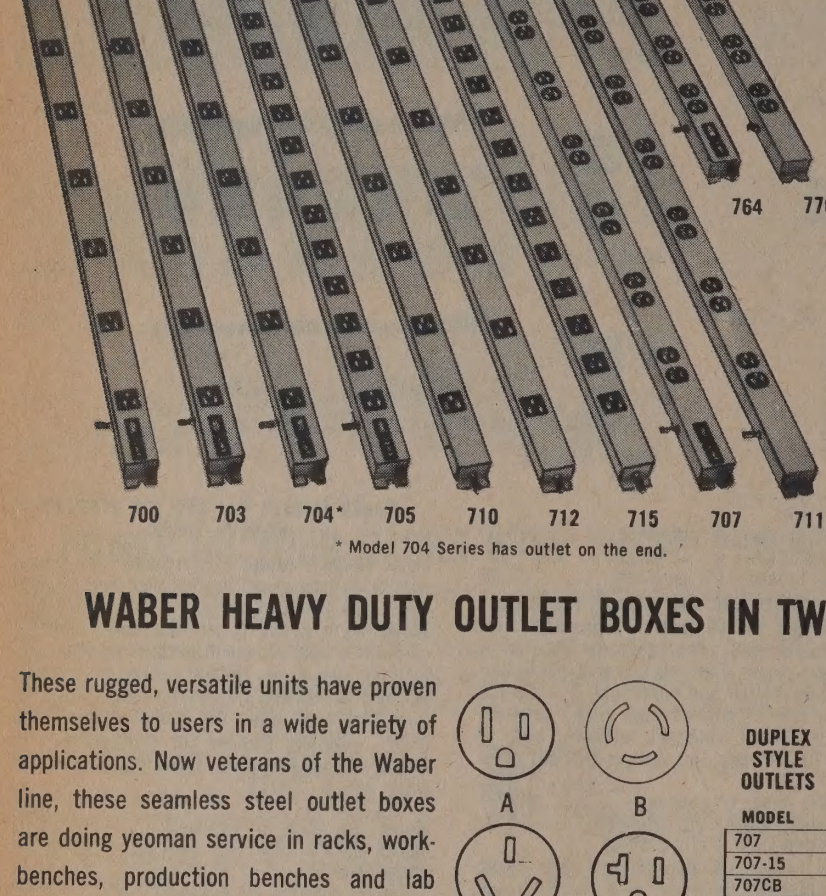
DUST AND SAFETY COVER

Cover exposed rear of panels with a dust and safety cover. Model DC-5 is for use with Models 900, 901, 920 and 921. DC-1 is used with Models 904, 907, 922, 923, 924 and 925. Other 3½" models have dust covers attached. Model DC-11 is used with Model 903.

DUST AND SAFETY COVER....4.00 Net

WABER RACK PANELS PROVIDE OUTLETS INSIDE AND/OR OUTSIDE THE CABINET

WABER LONG JOHN ELECTRICAL OUTLET BOXES WAB



* Model 704 Series has outlet on the end.

THESE DUPLEX MODELS MAY BE OBTAINED IN "U" GROUND

LOCKING

CROW'S FOOT and other types

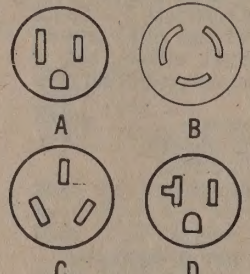
See chart below

FEATURES

- TOUGH HSJ FINEST QUALI APPROVED CORD-SET ON 15 MODELS. 20 AMP MODELS PROVED CORD
- SEAMLESS STEEL CASE IN SOME GRAY FINISH
- ALL SNAP-IN COMPONE FUSES, CIRCUIT BREAKER APPROVED
- SHIPPING WEIGHTS: 2 FT. ELS, 6 FT. CORDS 4 LBS., CORDS 5 LBS.; 4 FT. MOD FT. CORDS 6 LBS., 15 FT. 7 LBS.
- MODELS 764, 765, 766, 76 TWO FT. MODELS WITH MOUNTING CENTERS. SIZ 24x2x1½". ALL OTHER M ARE 49 x 2 x 1½" WITH MOUNTING CENTERS
- ALL MODELS ARE RATED 15 A 130V. EXCEPT MODELS 727 AND 766. THESE ARE RAT AMPS, 125 VOLTS
- ALL OUTLETS HAVE MATC PLUGS ON CORD-SET

WABER HEAVY DUTY OUTLET BOXES IN TWO AND FOUR FOOT LENGTHS

These rugged, versatile units have proven themselves to users in a wide variety of applications. Now veterans of the Waber line, these seamless steel outlet boxes are doing yeoman service in racks, workbenches, production benches and lab tables across the country. No wiring to do . . . just plug in.



INDIVIDUAL OUTLET TYPE MODEL	ON-OFF SWITCH	PILOT LIGHT	6' CORD-SET	15' CORD-SET	FUSE	CIRCUIT BREAKER	TYPE OF OUTLET	NO. OF OUTLETS	0-150 V. METER	NET
700	●	●	●		●		A	8		14.95
700-15	●	●		●	●		A	8		15.95
700CB	●	●	●			●	A	8		15.95
700CB-15	●	●		●		●	A	8		16.95
703	●	●	●		●		A	8	●	17.50
703-15	●	●		●	●		A	8	●	18.50
703CB	●	●	●			●	A	8	●	18.50
703CB-15	●	●		●		●	A	8	●	19.50
704	●	●	●		●		A	9		15.95
704-15	●	●		●	●		A	9		16.95
704CB	●	●	●			●	A	9		16.95
704CB-15	●	●		●		●	A	9		17.95
705	●	●	●		●		A	15		18.95
705-15	●	●		●	●		A	15		19.95
705CB	●	●	●			●	A	15		19.95
705CB-15	●	●		●		●	A	15		20.95
710			●				A	8		12.95
710-15				●			A	8		13.95
712			●				A	9		13.95
712-15				●			A	9		14.95
715			●				A	15		16.95
715-15				●			A	15		17.95

DUPLEX STYLE OUTLETS MODEL	ON-OFF SWITCH	PILOT LIGHT	6' CORD 15A	15' CORD 15A	6' CORD 20A	15' CORD 20A	FUSE	CIRCUIT BREAKER	TYPE OF OUTLET	NO. OF OUTLETS	
707	●	●	●				●		A	14	
707-15	●	●		●			●		A	14	
707CB	●	●	●					●	A	14	
707CB-15	●	●		●				●	A	14	
711			●						A	14	
711-15				●					A	14	
720	●	●	●				●		B	14	
720-15	●	●		●			●		B	14	
720CB	●	●	●					●	B	14	
720CB-15	●	●		●				●	B	14	
725			●						B	14	
725-15				●					B	14	
727	●	●			●		●		D	14	
727-15	●	●				●	●		D	14	
727CB	●	●			●			●	D	14	
727CB-15	●	●				●		●	D	14	
728					●				D	14	
728-15						●			D	14	
730	●	●	●				●		C	14	
730-15	●	●		●			●		C	14	
730CB	●	●	●					●	C	14	
730CB-15	●	●		●				●	C	14	
735			●						C	14	
735-15				●					C	14	
764	●	●	●				●		A	8	
764-15	●	●		●			●		A	8	
764CB	●	●	●					●	A	8	
764CB-15	●	●		●				●	A	8	
765	●	●	●				●		B	8	
765-15	●	●		●			●		B	8	
765CB	●	●	●					●	B	8	
765CB-15	●	●		●				●	B	8	
766	●	●			●		●		C	8	
766-15	●	●				●	●		C	8	
766CB	●	●			●			●	C	8	
766CB-15	●	●				●		●	C	8	
770			●						A	8	
770-15				●					A	8	

ABOVE UNITS ELECTRICALLY GROUNDED IN ADDITION TO CLIP-CASE CONTACT

Net

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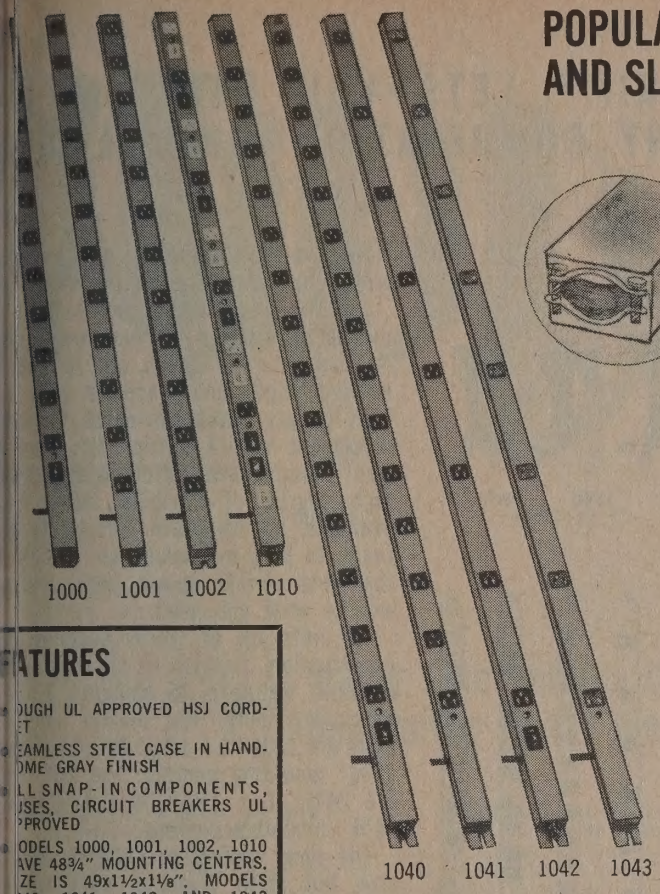
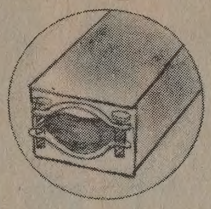
WABER PRE-WIRED & WIRE-IN ELECTRICAL OUTLET BOXES WABER



POPULAR WABER "STRING-BEAN" PRE-WIRED AND SLIM DESIGN HEAVY-DUTY OUTLET BOXES



MODEL	NO. OF SWITCHES	NO. OF PILOTS	6' CORD	15' CORD	FUSE	CIRCUIT BREAKER	"U" GR. OUTLETS	4 FT. LENGTH	6 FT. LENGTH	SHIPPING WEIGHT	NET
1000	1	1	1		1		12	•		5	15.95
1000-15	1	1		1	1		12	•		6	16.95
1000CB	1	1	1			1	12	•		5	16.95
1000CB-15	1	1		1		1	12	•		6	17.95
1001			1		1		12	•		5	14.95
1001-15				1	1		12	•		6	15.95
1001CB			1			1	12	•		5	15.95
1001CB-15				1		1	12	•		6	16.95
1002			1				12	•		5	13.95
1002-15				1			12	•		6	14.95
1010	9	9	1		1		8	•		5	19.95
1010-15	9	9		1	1		8	•		6	20.95
1010CB	9	9	1			1	8	•		5	20.95
1010CB-15	9	9		1		1	8	•		6	21.95
1040	1	1	1		1		15		•	6	19.95
1040-15	1	1		1	1		15		•	7	20.95
1040CB	1	1	1			1	15		•	6	20.95
1040CB-15	1	1		1		1	15		•	7	21.95
1041		1	1				15		•	6	16.95
1041-15		1		1			15		•	7	17.95
1042	1	1	1		1		8		•	6	16.95
1042-15	1	1		1	1		8		•	7	17.95
1042CB	1	1	1			1	8		•	6	17.95
1042CB-15	1	1		1		1	8		•	7	18.95
1043		1	1				8		•	6	14.95
1043-15		1		1			8		•	7	15.95

ATURES

- OUGH UL APPROVED HSJ CORD-ET
- EAMLESS STEEL CASE IN HAND-OME GRAY FINISH
- LL SNAP-IN COMPONENTS, USES, CIRCUIT BREAKERS UL PROVED
- ODELS 1000, 1001, 1002, 1010 AVE 48¾" MOUNTING CENTERS. ZE IS 49x1½x1⅛". MODELS 040, 1041, 1042, AND 1043 AVE 71¾" MOUNTING CENTERS. ZE IS 72x1½x1⅛"
- ATED 15 AMPERES, 130 VOLTS ONTINUOUS DUTY

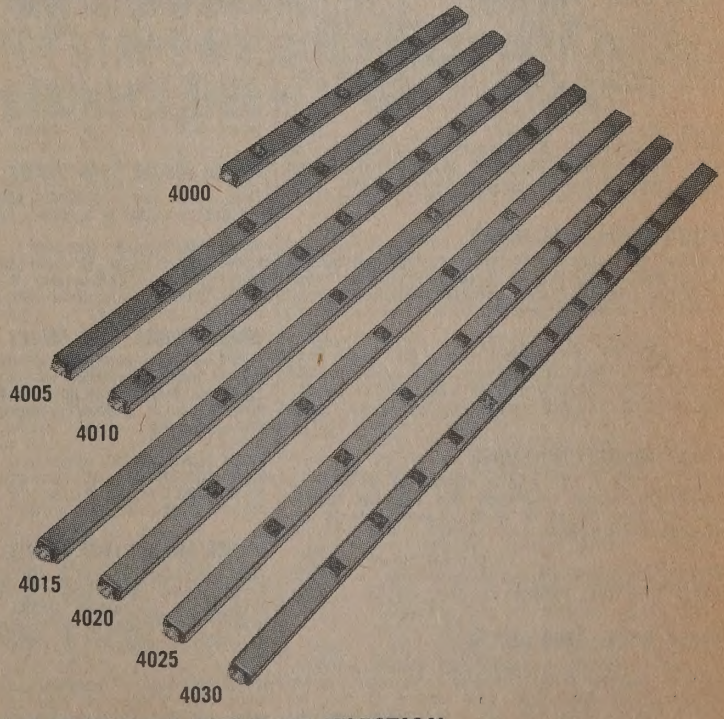
NEW! WABER OUTLET STRIPS WITH CONNECTOR . . . READY TO WIRE IN

e the application calls for an outlet strip to be wired into a e installation the Waber Model 4000 Series are ideal for this rpose. Make your choice from the wide range shown here. Many " round outlets or few outlets . . . long strip or short strip . . . e hoice is yours.

Mounting is easy. Bottom cover is screwed to bench, back wall, wherever outlet strip is wanted. After connections are made, top ve is mounted to bottom plate with self tappers. Size is 1⅝" de 1⅜" deep. Lengths are as shown. Case is of sturdy steel th andsome gray finish. Outlets are "U" ground type and UL pved.

CEL N.	LENGTH FT.	NO. OF OUTLETS	CENTERS	SHIPPING WT.	NET
40	3	6	6"	4	$ 7.75
45	5	5	10"	7	8.50
40	5	10	6"	7	11.00
45	6	4	14"	7	8.50
40	6	6	10"	7	9.75
45	6	8	8"	7	11.00
40	6	12	5"	7	13.50
45	6	8*	8"	7	18.50

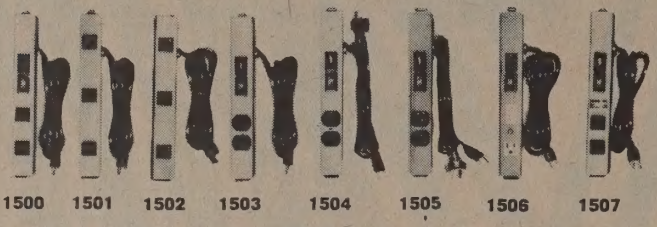
a controlled by its own switch and pilot light



CHOOSE THE OUTLET BOX YOU NEED FROM OUR WIDE SELECTION

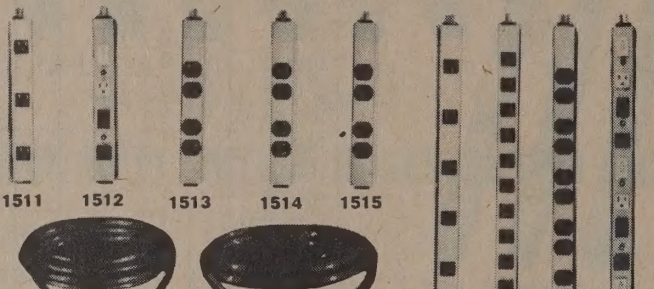
NEW! WABER "PICK-A-STRIP" LETS YOU MIX 'EM MATCH 'EM FOR ANY COMBINATION—ANY LENG

TAKE ANY ONE OF THESE MASTERS



1500 1501 1502 1503 1504 1505 1506 1507

AND ADD ANY COMBINATION OF THESE SLAVES



1511 1512 1513 1514 1515

3073 3074

1520 1521 1522 1523

Now you can combine any vari slaves to any master to give you ... as you want them ... controlled master best suited for your require You can intermix slaves, add to ma desired length, and space out with high quality extension cords, perr placement of Pick-A-Strip units whe want them. These outlet boxes pro high degree of flexibility never available, and they are completely ready to plug in. Make your choice the wide variety shown here, and exactly what you need.

All units are of sturdy seamless construction, finished in silver gray mertone. Rating is 15 amperes, 130 continuous duty. The master and units are 12¾" L x 1 11/16" W x 1½" H 12⅜" mounting centers. The 24" m are 24¾" L x 1 11/16" W x 1½" H 24⅜" mounting centers.

The timer models are slightly larg size, but mate perfectly with all "Pick-A-Strip" units. Their size is 12 x 1½" H with 12⅜" mounting ce

WABER MASTER UNITS

WABER MODEL 1500 SERIES

This popular model has 2 "U" ground outlets in addition to the female through connector, on-off switch, pilot light, and your choice of fuse or circuit-breaker protection and 6 or 15 foot neoprene cord-set. Component parts are UL approved.

	Net
Model 1500 (fuse, 6′ cord-set)	$6.95
Model 1500-15 (fuse, 15′ cord-set)	7.95
Model 1500CB (circuit breaker, 6′ cord-set)	7.95
Model 1500CB-15 (circuit breaker, 15′ cord-set)	8.95

WABER MODEL 1501 SERIES

Provided with this model are 3 "U" ground outlets in addition to the female through connector. These units have fuse or circuit breaker protection, and 6- or 15-foot neoprene cord-set.

	Net
Model 1501 (fuse, 6′ cord-set)	$6.50
Model 1501-15 (fuse, 15′ cord-set)	7.50
Model 1501CB (circuit breaker, 6′ cord-set)	7.50
Model 1501CB-15 (circuit breaker, 15′ cord-set)	8.50

WABER MODEL 1502 SERIES

This unit has 3 "U" ground outlets in addition to the female through connector. This unit has outlets only and your choice of 6- or 15-foot cord-set. UL approved components.

	Net
Model 1502 (6′ cord-set)	$5.25
Model 1502-15 (15′ cord-set)	6.25

WABER MODEL 1503 SERIES

This series features a duplex "U" ground outlet in addition to the female through connector, on-off switch, bright pilot light, your choice of fuse or circuit breaker protection, and 6 or 15-foot neoprene cord-set. Components are UL approved.

	Net
Model 1503 (fuse, 6′ cord-set)	$6.95
Model 1503-15 (fuse, 15′ cord-set)	7.95
Model 1503CB (circuit breaker, 6′ cord-set)	7.95
Model 1503CB-15 (circuit breaker, 15′ cord-set)	8.95

WABER MODEL 1504 SERIES

This is the same as 1503 series above except that the duplex outlet is of the locking type.

	Net
Model 1504 (fuse, 6′ cord-set)	$15.50
Model 1504-15 (fuse, 15′ cord-set)	16.50
Model 1504CB (circuit breaker, 6′ cord-set)	16.50
Model 1504CB-15 (circuit breaker, 15′ cord-set)	17.50

WABER MODEL 1505 SERIES

This is the same as Model 1503 series except that the duplex outlet is a crow's foot type.

	Net
Model 1505 (fuse, 6′ cord-set)	$15.50
Model 1505-15 (fuse, 15′ cord-set)	16.50
Model 1505CB (circuit breaker, 6′ cord-set)	16.50
Model 1505CB-15 (circuit breaker, 15′ cord-set)	17.50

WABER MODEL 1506 SERIES

This unit has a master on-off switch, pilot light, "U" ground outlet controlled by its own switch and pilot light and female through connector. Your choice of fuse or circuit breaker protection, 6 or 15-foot neoprene cord-set.

	Net
Model 1506 (fuse, 6′ cord-set)	$7.50
Model 1506-15 (fuse, 15′ cord-set)	8.50
Model 1506CB (circuit breaker, 6′ cord-set)	8.50
Model 1506CB-15 (circuit breaker, 15′ cord-set)	9.50

WABER MODEL 1507 SERIES

This versatile unit has 2 "U" ground outlets, on-off switch, pilot light, and a 0 to 150 volt edgewise reading AC voltmeter. Choice of fuse or circuit breaker protection, 6 or 15-foot neoprene cord-set. In addition, unit has a female through connector.

	Net
Model 1507 (fuse, 6′ cord-set)	$8.95
Model 1507-15 (fuse, 15′ cord-set)	9.95
Model 1507CB (circuit breaker, 6′ cord-set)	9.95
Model 1507CB-15 (circuit breaker, 15′ cord-set)	10.95

WABER SLAVE MODEL

All of the slave models listed below are de with a male connector on one end and a st "U" ground female connector on the other en enables these units to be plugged one into the These connectors are in addition to the comp listed below.

Model 1511	(3 "U" ground receptacles)
Model 1512	(2 "U" ground outlets each controlled by its own color coded switch and pilot light)
Model 1513	(Four "U" ground outlets)
Model 1514	(4 locking outlets, duplex type)
Model 1515	(4 crow's foot outlets, duplex type)

WABER 24 INCH SLAVE MODELS

Model 1520	(6 "U" ground outlets)
Model 1521	(11 "U" ground outlets)
Model 1522	(10 "U" ground outlets, duplex type)
Model 1523	(5 "U" ground outlets, each controlled by its own on-off switch and pilot light, color coded)

WABER TIMER SLAVE MODEL

Model 1516	12-hour timer and 2 "U" ground outlets. Timer turns off at end of cycle)
Model 1517	(12-hour timer and 2 "U" ground outlets. Timer turns on at end of cycle)

WABER EXTENSION CORDS

These quality extension cords are ideal as s between slave units or can be used instead master unit. Insulation on both conductors and jacket is finest heat and oil resistant duPont prene. All plugs and receptacles are molded on. UL approved cord-sets are rated at 15 am 130 volts.

Model 3073	(7′ extension cord)
Model 3074	(16′ extension cord)

Net

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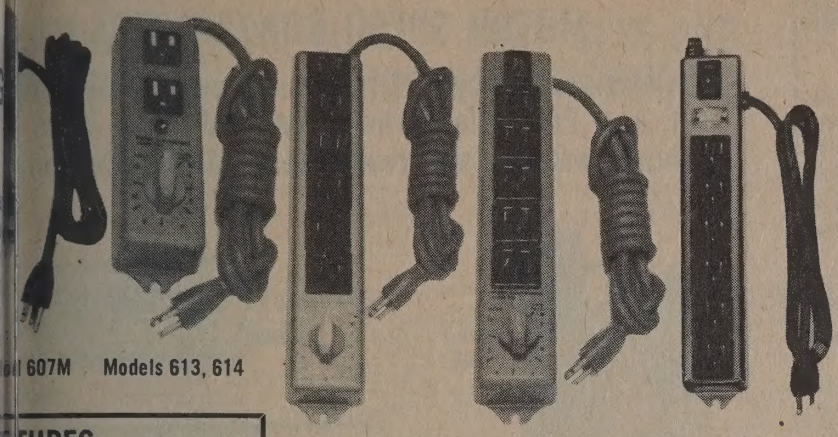
ABER METER-TIMER ELECTRICAL OUTLET BOXES WABER



607M Models 613, 614

TURES

IGH UL APPROVED 15 AMP
D-SET
ED 15A, 130V CONTINUOUS
DY
MLESS DRAWN STEEL CASE
HANDSOME GRAY FINISH
SNAP-IN COMPONENTS,
ES, CIRCUIT BREAKERS UL
ROVED
S: 8⅝x2¼x1½" WITH 8¼"
NTING CENTERS AND 13⅛x
x1⅝" WITH 12¾" MOUNTING
TERS
PPING WEIGHT: 3 LBS.

Models 13, 14 Models 42, 43 Model 24M

Waber Line Voltage Continuous Monitoring Meter Models

ABER MODEL 607M OUTLET BOX WITH ILLUMINATED AC VOLTMETER

ly useful outlet box features an "on-off" with three "U" ground outlets, with an d edge-wise reading 0 to 150 volts AC for continuous line voltage checks. Your f a 6- or 15-foot HSJ cord-set, fuse or set circuit breaker protection. Size: 8⅝ " with 8¼" mounting centers.

	NET
7M (fuse, 6' cord-set)	$ 8.95
7M-15 (fuse, 15' cord-set)	9.95
7MCB (circuit breaker, 6' cord-set)	9.95
7MCB-15 (circuit breaker, 15' cord-set)	10.95

WABER MODEL 24M OUTLET BOX FEATURES ILLUMINATED AC VOLTMETER

Our popular Model 24 series, now available with an illuminated voltmeter, provides continuous check of AC line voltage. The illuminated wide angle, edgewise reading meter monitors from 0 to 150 AC Volts. Included also are an "on-off" switch, 6 "U" ground outlets, and your choice of a 6- or 15-foot HSJ cord-set, fuse or circuit breaker.

	NET
Model 24M (fuse, 6' cord-set)	$11.95
Model (24M-15 (fuse, 15' cord-set)	12.95
Model 24MCB (circuit breaker, 6' cord-set)	12.95
Model 24MCB-15 (circuit breaker, 15' cord-set)	13.95

NEW! Waber Outlet Boxes Equipped With Timers

WABER MODEL 613 AND 614 COMPACT SERIES TIMER MODELS

2 timed outlets, fuse or push-to-reset circuit breaker, and your choice of 6 or 15-foot neoprene cord-set are featured in this compact unit with up to 12-hour timer control. Model 613 turns power off at the end of the preset interval. Model 614 turns power on. Size: 8⅝x 2¼x1½" with 8¼" mounting centers.

	NET
Model 613 (fuse, 6' cord-set)	$13.00
Model 613-15 (fuse, 15 (fuse, 15' cord-set)	14.00
Model 613CB (circuit breaker, 6' cord-set)	14.00
Model 613CB-15 (circuit breaker, 15' cord-set)	15.00
Model 614 (fuse, 6' cord-set)	13.00
Model 614-15 (fuse, 15' cord-set)	14.00
Model 614CB (circuit breaker, 6' cord-set)	14.00
Model 614CB-15 (circuit breaker, 15' cord-set)	15.00

WABER MODEL 42 AND 43 SERIES WITH UP TO 12-HOUR TIMER

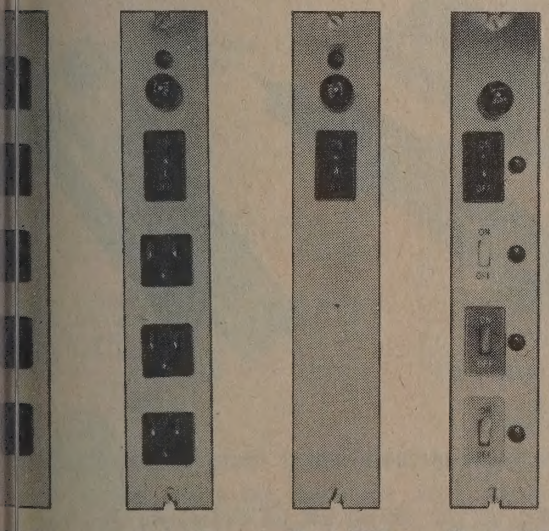
5 "U" ground outlets, neon pilot light, your choice of 6- or 15-foot HSJ line cord, fuse or push-to-reset circuit breaker, and a reliable timer with settings of up to 12 hours. Model 42 is designed to turn power off at the conclusion of the timed interval, and Model 43 is designed to turn power on. Size: 13⅛x2⅜x1⅝" with 12¾" mounting centers.

	NET
Model 42 (fuse, 6' cord-set)	$17.00
Model 42-15 (fuse, 15' cord-set)	18.00
Model 42CB (circuit breaker, 6' cord-set)	18.00
Model 42CB-15 (circuit breaker, 15' cord-set)	19.00
Model 43 (fuse, 6' cord-set)	17.00
Model 43-15 (fuse, 15' cord-set)	18.00
Model 43CB (circuit breaker, 6' cord-set)	18.00
Model 43CB-15 (circuit breaker, 15' cord-set)	19.00

WABER MODEL 13 AND 14 SERIES TIMER MODELS

These popular units provide up to 12 hours of timing, and have an HSJ cord-set. The 6 outlets are timer-controlled. Model 13 turns power off at the end of the timed interval, and Model 14 turns power on. Size: 13⅛x2⅜x1⅝" with 12¾" mounting centers.

	NET
Model 13 (6' cord-set)	$15.00
Model 13-15 (15' cord-set)	16.00
Model 14 (6' cord-set)	16.00
Model 14-15 (15' cord-set)	17.00



del 1560 Model 1561 Model 1562 Model 1563

NEW! CHROME FINISHED "ICEBERG"® OUTLET STRIPS MADE TO RECESS INTO DESKS, CABINETS AND HI-FI INSTALLATIONS

The new Waber "Iceberg"® line is a handsome addition to our growing family of outlet boxes. These units are made to be recessed into desks, counters, cabinets, and hi-fi installations of all types. Just like the iceberg, which has most of its bulk submerged and out of sight, only the handsome chrome plated face plate shows in the new Waber "Iceberg"® Outlet Box line.

Four units are available in this new line. Two of the units have outlets available on the surface plate, and the other two have the outlets on the back with control from the face plate. Size of the unit is 1½" wide x 10" long x 1½" deep. Mounting hole size is 9½x1$^{17}/_{32}$". These units are available with fuse or circuit breaker protection and 6- or 15-foot neoprene cord-sets. Rating is 15 amps, 130 volts continuous duty.

Model 1560 consists of five "U" ground outlets only, surface mounted with your choice of a 6- or 15-foot HSJ cord-set. Model 1561 has three surface mounted "U" ground outlets controlled by a switch and pilot light. You have a choice between a fuse post or circuit breaker, 6- or 15-foot HSJ cord-set. Model 1562 has the switch, protective device, and pilot light surface mounted with access to the three "U" ground outlets from the back. You have a choice between a fuse post or circuit breaker, 6- or 15-foot HSJ cord-set. Model 1563 is the deluxe unit with four color coded switches, pilot lights and protective device surface mounted, and with access to the four "U" ground outlets from the back. Each outlet is individually controlled by its own switch.

	NET
Model 1560 (6' cord-set)	$5.75
Model 1560-15 (15' cord-set)	6.75
Model 1561 (fuse, 6' cord-set)	6.95
Model 1561-15 (fuse, 15' cord-set)	7.95
Model 1561CB (6' cord-set, circuit breaker)	7.95
Model 1561CB-15 (circuit breaker, 15' cord-set)	8.95
Model 1562 (6' cord-set, fuse)	6.95
Model 1562-15 (15' cord-set, fuse)	7.95
Model 1562CB (6' cord-set, circuit breaker)	$7.95
Model 1562CB-15 (15' cord-set, circuit breaker)	8.95
Model 1563 (6' cord-set, fuse)	8.50
Model 1563-15 (15' cord-set, fuse)	9.50
Model 1563CB (6' cord-set, circuit breaker)	9.50
Model 1563CB-15 (15' cord-set, circuit breaker)	10.50

EXCELLENT FOR USE WITH HIGH FIDELITY INSTALLATIONS

NEED A SPECIAL? WE CAN SUPPLY YOU WITH CUSTOM UNITS

New Vari-Fine® Only 9.95 Net

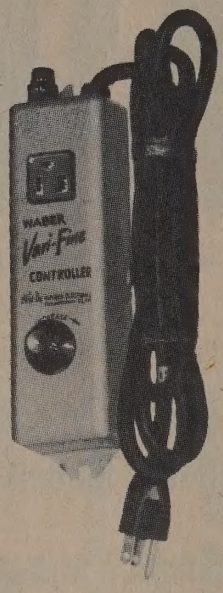
Model 205

Now you can dial the speed you want; the light intensity you want with this newest addition to the Vari-Fine® Motor Controller family. 6' 3 wire AC cord, "U" ground outlet. Works on universal AC/DC motors. 5 Amps 130 volts.

Model 205 ..... $9.95 Net

NEW! WABER VARI-FINE® SOLID STATE AC-MOTOR SPEED CONTROLLERS

Now Available In High Current Ratings And New Twins Test And Production Where Identical Twin Units In Modern Package Can Provide Space Saving Convenien



Model 200

Model 2

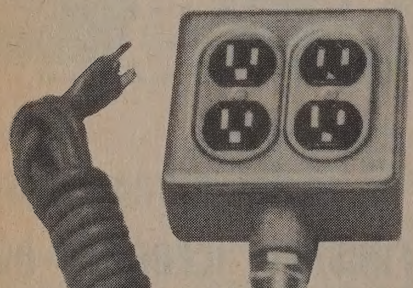
Model 2

Model 2

Waber Vari-Fine Controllers are solid state devices for speed and light con featuring stepless change from zero to maximum. They provide infinite contro motor speed and light intensity, and can be used to vary the speed of AC motors of the universal type. They handle load currents up to the maximum ra at 117 volts 60 cps. These self contained units may be plugged into any wall o and are fused for circuit protection. They are compact and portable. Waber Vari Controllers have many applications in the home, laboratory, school, or factory w the regulation of motor or light is desirable.

	NET
Model 200 (Rated at 7 amperes, 117 volts)	$14.95
Model 201 (Rated at 12 amperes, 117 volts)	19.95
Model 202 (Twin, rated 7 amperes each half)	26.95
Model 203 (Twin, rated 12 amperes each half)	34.95

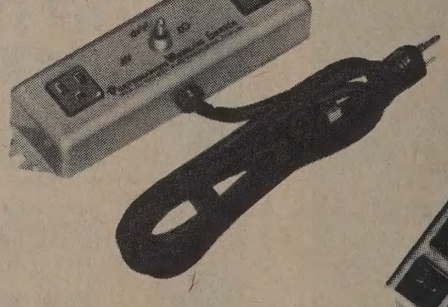
SEAMLESS CASTINGS MAKE THESE IDEAL FOR CHEM LABS



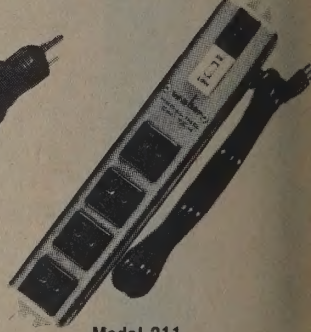
Model 300

Two duplex outlets, in popular styles, are well protected by the seamless heavy casting. Available with 6- or 15-foot UL approved cord-set. Cords are with matching plugs.

MODEL	15A. 6' CORD-SET	15A. 15' CORD-SET	20A. 6' CORD	20A. 15' CORD	"U" GROUND	LOCKING	CROW'S FOOT	20A. 125V.	NET
300	•				•				9.95
300-15		•			•				10.95
301	•					•			18.95
301-15		•				•			19.95
302	•						•		22.95
302-15		•					•		23.95
303			•					•	18.95
303-15				•				•	19.95



Model 210



Model 211

TWO WABER MODELING SWITCHES NEWEST PHOTO STUDIO ACCESSORIES

Photofloods last longer . . . lots, lots longer! And it licks the heat problem too. Flick the switch to "low" and you have the shadows you need to properl position and focus your subject. When you're ready to shoot, flick the switc to "high" and the lights come on at maximum brilliance.

	NET
Model 210 (for two bulbs of the same type. Up to 1650 watts, total.)	$ 5.9
Model 211 (for up to four bulbs of any type. Max. 1650 watts, total.)	10.8

POWER UP WITH WABER POWER OUTLET BOXES

© United Technical Publica

BER EXTRA FINE QUALITY CORD SETS AND TENSION CORDS IN CONVENIENT LENGTHS

a cord-set or extension cord? Choose from these well made UL ed units. Made of the finest materials, these cords have molded and female parts. Ideal for industrial "Work-horse" applications.

WABER TIPOVER SWITCH — This unit installs easily in automobiles, trucks, buses, and tractors. The mercury operated switches automatically shut off the motor when the vehicle is tipped past a forty-five degree angle. In addition to minimizing the danger of fire or explosion, this unit is especially valuable in stalling moving blades, wheel and parts found on many farm vehicles. This unit will operate with either 6 or 12 volt ignition systems. Installation is permanent. Nothing to burn out or replace.

3067 ..... $5.97 Net

ALOG NO.	DESCRIPTION	LENGTH FT.	CONDUCTORS	SIZE AWG	TYPE	NET PRICE
071	"U" Ground Cord-Set	6	3	16	HSJ	$2.25
072	"U" Ground Cord-Set	15	3	16	HSJ	4.20
073	"U" Ground Extension Cord	7	3	16	Neoprene	2.61
074	"U" Ground Extension Cord	16	3	16	Neoprene	4.43
075	2 Wire Cord-Set	10	2	16	HPN	1.56
076	"U" Ground Cord-Set	15	3	12	S	6.20
077	"U" Ground Cord-Set	20	3	18	SJT	3.60
078	20A - 250 V Cord-Set	15	3	12	S	6.20
079	"U" Ground Cord-Set	6	3	12	S	3.25
084	"U" Ground Cord-Set	10	3	18	SJO	1.50

WABER REPLACEMENT PARTS AND ELECTRICAL ACCESSORIES

3011

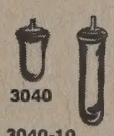
3015

3017

3020

3025

3019



3040-10

3045

3050

3055

3077

3078 3079

CONVENIENCE OUTLET — Polarized with uick connect terminals. UL rated 15 A, Takes polarized and non-polarized caps. g hole $1\frac{1}{32}$ x $2\frac{1}{32}$".

ack) ..... $.32 Net
White ..... .36 Net
Gray) ..... .36 Net
Red) ..... .36 Net

"U" GROUND CONVENIENCE OUTLET — k connect terminals. Rated 15 A, 125 V. g size: $1\frac{1}{32}$ x $1\frac{7}{32}$".

ack) ..... $.42 Net
White) ..... .48 Net
Gray) ..... .48 Net
Red) ..... .48 Net

"U" GROUND CONVENIENCE OUTLET — e leads or male quick connect terminals ound lead. Rated 15 A, 125 V. Mounting x $3\frac{1}{32}$".

ack with wire leads) ..... $.34 Net
(White with wire leads) ..... .38 Net
ack with quick connect terminals).. .34 Net
(White with quick connect terminals) ..... .38 Net

SNAP-IN ON-OFF SWITCH — With male quick connect terminals. UL rated 20 A, 125 V. Mounting hole $1\frac{7}{32}$ x $2\frac{1}{32}$".

3020 (Black) ..... $.56 Net
3030-W (White) ..... .74 Net
3020-R (Red) ..... .62 Net
3020-G (Gray) ..... .62 Net

SNAP-IN PILOT-LIGHT — Brilliant red nylon lens. Male, quick connect terminals. UL. Strong spring steel mounting clip. Mounting hole $1\frac{7}{32}$ x $2\frac{1}{32}$". 125 VAC.

3025 (Black) ..... $.68 Net
3025-W (White) ..... .75 Net
3025-R (Red) ..... .74 Net
3025-G (Gray) ..... .74 Net

MALE LOAD PLUGS — UL. With male quick connect terminals. Rated 15 A, 125 V. Mounting hole $3\frac{1}{32}$ x $3\frac{1}{32}$". Black body.

3019 ..... .74 Net

MERCURY TILT SWITCHES — Contacts in rugged all steel body. Unequalled durability for all fields including switching of heavy loads and highly inductive circuits. Low contact resistance. All steel body acts as one side of the circuit. Provides practically limitless life where a tilt action is required. Part No. 3040 is rated at 1 A, 115 VAC, and Part No. 3040-10 is rated at 10 A, 115 VAC.

3040 (package of 3) ..... $1.25 Net
3040-10 (pnackage of 2) ..... 2.10 Net

EDGEWISE READING AC VOLTMETER KIT — Modern space-saving edgewise reading meter, spring clamp, diode and series resistor. Scale reads from 0 to 150 volts AC. Mounting hole $3\frac{7}{64}$ x $1\frac{17}{64}$".

3045 ..... $3.75 Net

PUSH TO RESET CIRCUIT BREAKER — Protect from overloads with this thermal type circuit breaker. Mounts easily in $\frac{7}{16}$" hole. Plunger pops out on overloads. Push in to reset.

3050 (15 Amperes, 125 Volts) ..... $1.35 Net
3051 (20 Amperes, 125 Volts) ..... 1.35 Net

2 WIRE TO 3 WIRE ADAPTER — Polarized with "U" ground slot and green grounding lead equipped with convenient spade lug. UL rated 15 A, 125 V. Molded body. Automatically converts any standard 2 wire parallel outlet to a 3 wire "U" ground outlet.

3055 ..... $.30 Net

BRIGHT NEON PILOT LIGHTS — These handsome pilot lights, in a compact space saving size, mount easily in a $\frac{5}{16}$" diameter hole. Included is a spring clip to lock pilot firmly in place.

3077 (Package of three) ..... $1.35 Net

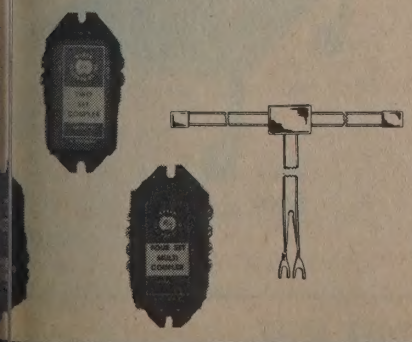
FUSE POST — UL approved. Mounting hole $\frac{5}{8}$" dia.

3078 ..... $.36 Net

FUSE — UL approved. Heavy duty. 15 Amp rating.

3079 ..... $.14 Net

WABER RADIO AND TELEVISION ACCESSORIES



BALUN TYPE COUPLERS — Two, three and four-set FM-TV multi-couplers operate with high efficiency and low loss. Transformer coupling provides the isolation needed to prevent interaction between sets. Low loss design assures full strength signals to the receiver. Dependable, sure contact screw terminals. Convenient mounting ears. For 300 Ohm Standard Twinlead.

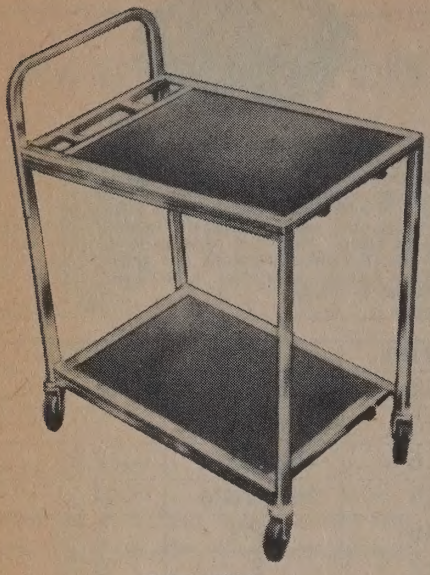
3062 (Two Set Coupler) ..... $1.17 Net
3063 (Three Set Coupler) ..... 1.95 Net
3064 (Four Set Coupler) ..... 2.97 Net

INDOOR FM-TV ANTENNA — This easy to install antenna is very effective for moderate signal areas. Folded dipole type especially suited for FM. Place behind cabinet, under rug, or any other suitable place where antenna can be concealed. Made of high quality twin lead with spade lugs attached to six foot lead-in. Attaches easily to tuner.

3030 ..... $1.20 Net

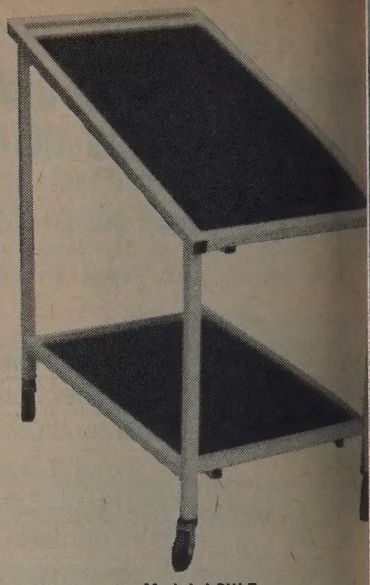
OEM CUSTOM REQUIREMENTS
Need a special? Send us your specs — Tell us what you need — We can do a good job for you.

WABER LAB-ON-WHEELS© SCOPE DOLLIES WABE



Model LOW-6

Model LOW-8



Model LOW-7

CHOOSE FROM THESE STURDY WABER LAB-ON-WHEELS© SCOPE CARTS

NEW! STURDY WABER "SCOPE" DOLLY EASILY TAKES ALL SIZES

This versatile scope dolly is designed to handle the big scopes and oversized test equipment with ease. The spacious non-skid deck, inclined at 22°, accommodates all instruments. The welded square tubing combines rigidity with functional design to permit the user free access to controls and an uncluttered view. Included is an outlet box with three convenient outlets, an on-off switch, pilot light, and panel mounted fuse. This unit is rated at 15 amperes, 130V. Capacity 500 pounds. Size: 19¼W x 29½L x 36½"H. Shipping Weight 60 lbs. NET

Model LOW-6 ..... $89.00

ADJUSTS EASILY TO THREE CONVENIENT POSITIONS

Here is an unusually good buy in a scope dolly. It is unusually versatile, just roll it out and put it to work. Also included is an outlet box with three convenient outlets, an on-off switch, pilot light, and panel mounted fuse. The outlet box is rated at 15 amperes, 130 volts continuous duty.

The top shelf will take a large variety of instruments and can be adjusted for convenient viewing angle. The sturdy bottom shelf gives you additional capacity. Size is 34Hx19Wx31"L and the rubber tired casters are 3 inches in diameter. Capacity 500 pounds. Shipping weight 60 lbs. NET

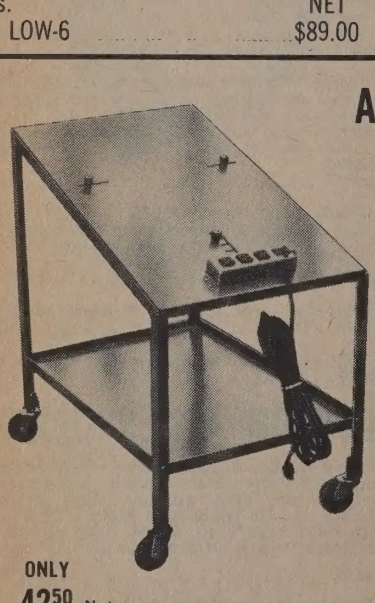
Model LOW-8 ..... $79.50

RUGGEDLY BUILT WABER SCOPE CART

This versatile Scope Cart has the am size to handle a wide range of scope siz It moves out easily on its heavy 3-in rubber wheels and handles beautifully positioning. Frame is of 1-inch squa steel tubing finished in beautiful gr Size is 34Hx19Wx31"L.

This unit is supplied complete with quality steel outlet box consisting of 3 " ground outlets, pilot light, on-off swit and panel mounted fuse. Rated at 15 a peres, 130 volts continuous duty. Capac 500 pounds. Shipping weight 60 lbs. NE

Model LOW-7 $59



ONLY 42.50 Net COMPLETE

LOW-25

A GREAT BUY IN A SCOPE CART... AND INSTRUMENT CART

HEAVY DUTY OUTLET BOX INCLUDED AT THIS LOW, LOW PRICE

Model LOW-25 SCOPE CART—You can't buy better value in a scope cart . . . solid steel construction . . . 3 inch swiveling casters . . . adjustable stops to accommodate various size instruments. Size: 30x32x19".

Model LOW-30 FLAT TOP CART—provides all welded, all steel construction with a lip on each rugged shelf to contain loads. Size: 30x32x19".

Each of these units is equipped with a Waber Outlet Box featuring a fuse post, switch, pilot light, 3 "U" ground outlets and a fifteen foot HSJ cord-set. Rating is 15 Amperes, 130 Volts. Shipping weight is 45 lbs. Rolls easily on 3 inch casters and either unit will carry 500 lbs. Durable paint finish.

ONLY 42.50 Net

LOW-30

WABER LAB-ON-WHEELS© CAN BE SUPPLIED TO YOUR SPECS.

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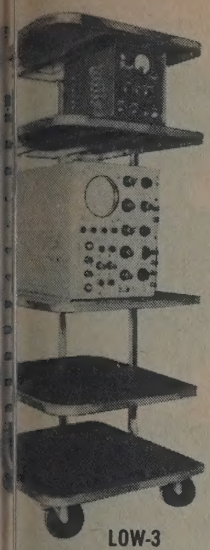
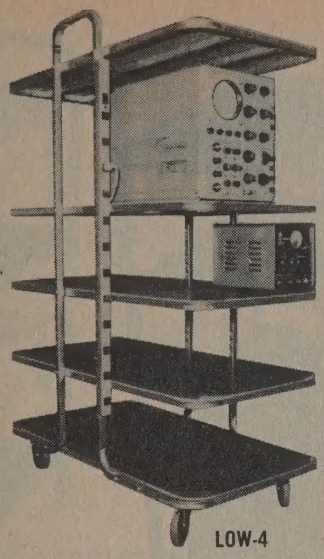
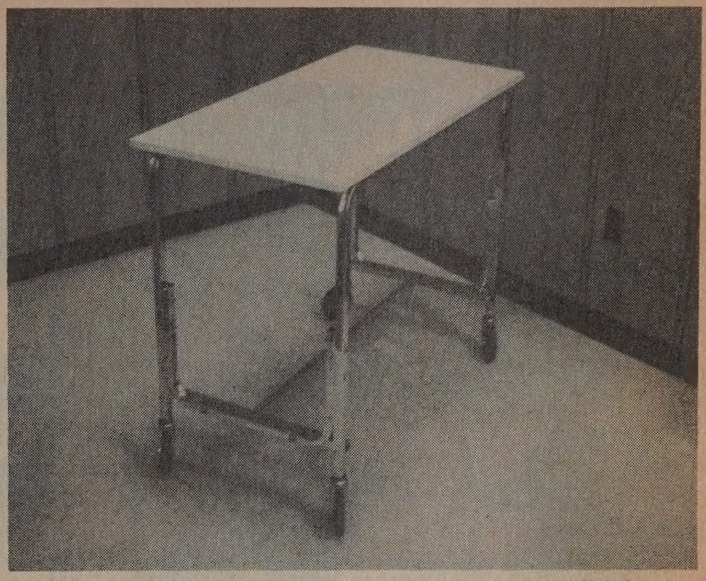
WABER LAB-ON-WHEELS© INSTRUMENT TRANSPORTS WABER



LOW-3



LOW-4



LOW-20
LOW-21

WHEEL IT IN, WHEEL IT OUT . . . AT YOUR CONVENIENCE

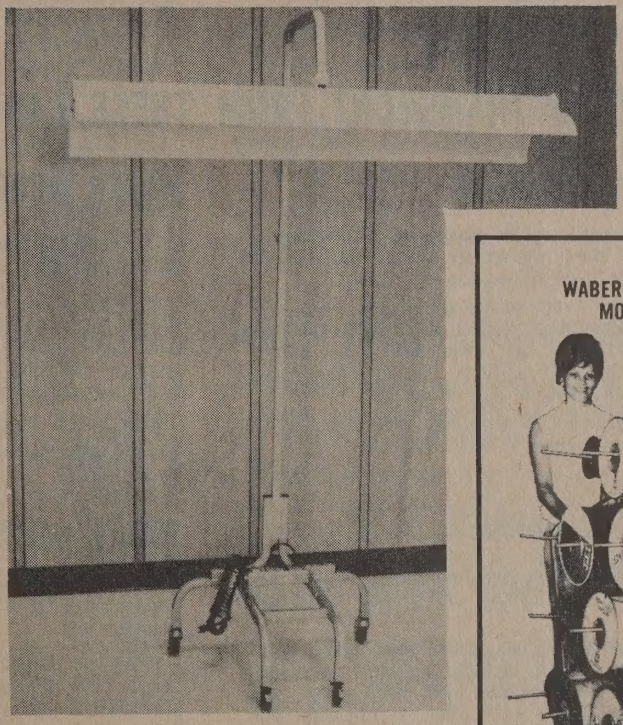
ABER "Lab On Wheels" will greatly ex- our present work area, rolls effortlessly, ill provide ample space for your in- nts, supplies, assemblies, breadboards, pes, etc. Provisions are available for ng a WABER Outlet Box (1,000 series) ply power to the unit.
ves are adjustable to make every inch Each shelf is covered with tempered ard. Size: 28Lx26Wx66"H. This unit could a real workhorse for the school, lab, or ial plant. Shipping weight 100 lbs.
Model LOW-3 (less outlet box)..$149.00

YS FOR ITSELF IN TIME SAVED . . . IN CONVENIENCE

uble cantilevered carrier is built to hold r load capacities with sway-free rigidity, th and durability. The tremendous area le will accommodate your projects with and provisions for a WABER 1000 series Box will "power-up" the carrier. When rojects are held-up you can wheel it out way and your lab tables are cleared for When you're ready to go again, wheel in.
of the WABER Double Cantilevered is 48Lx26Wx71"H. Tempered hardboard vided with each of the five shelves, and elves are adjustable. Shpg. wt. 120 lbs.
Model LOW-4 (less outlet box)..$188.00

EW! WABER LOW-20 MOBILE BENCH DOUBLES AS TABLE OR CARRIER

e versatile unit either as a table or as ier to transport equipment. It will prove asset in many ways.
framing is of attractive and durable 1- square steel tubing finished in bright e plate. The table top is constructed of oard with a formica surface. Size of the 24x48".
addition, this unit includes an electrical box with 3 "U" ground outlets, on-off , pilot light, fuse protection, and a 15- all neoprene cord-set. Rating is 15 am- 130 volts, continuous duty. Shipping ts 60 and 75 lbs.
ters are 5-in. heavy duty rubber, all swivel- ize: 25Wx48Lx37"H. Capacity: 600 pounds.
LOW-20 ..... $120.00
LOW-21 (Size 30Wx60Lx37"H) 140.00



LOW-60
LOW-61

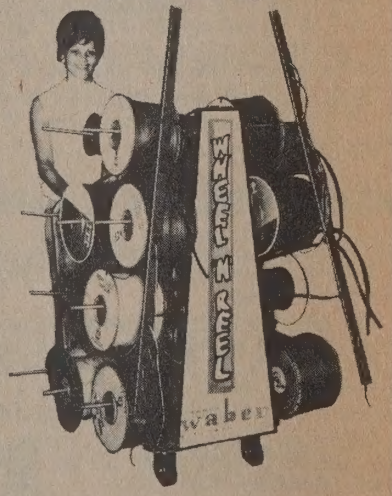
NEW! WABER LIGHTS-ON-WHEELS

Now you can have light where you want it — when you want it. Maneuver a Waber Lights-On-Wheels exactly where you want it, plug the cord into an AC source and your area is bathed in light. Made to fit under tables, counters, etc., this unit is great for those temporary setups where more hands are needed. Height is adjustable. Unit is complete with a Waber outlet with two outlets, and a ten foot neoprene cord-set. The outlets are very handy for plugging in soldering irons and other production accessories.

This handsome unit is available in two sizes; two 20-watt and two 40-watt. Fluorescent bulbs are not included with unit. Shpg. weight 60 lbs.

	NET
Model LOW-60 (Two—20 Watt)	$79.50
Model LOW-61 (Two—40 Watt)	89.50

NEW!
WABER "WHEEL 'N' REEL"® MOBILE WIRE RACK



Here's the answer to your wire handling problems. This new Waber "Wheel 'N' Reel"® Mobile Wire Rack holds up to 20 generous size reels of wire, each one in position to be dispensed easily and effortlessly. Move it into position for cable assemble; store it out of the way when not in use. Unlike fixed position wire racks, you can take a large assortment of wire to the area where needed. The "Wheel 'N' Reel" will pay for itself in time saved. Constructed of sturdy 1-inch square tubing, handsomely finished in silver grey hammertone. Equipped with brakes for stability. Shpg. weight 108 lbs.
Model LOW-10 ..... $140.00 Net

190 pound load capacity

WABER LAB-ON-WHEELS© INSTRUMENT TRANSPORTS WABER

LOW-11 LOW-12 LOW-13 LOW-14

CHOOSE YOUR TRANSPORT FROM THESE LAB-ON-WHEELS© UNITS

WABER MODEL LOW-11 CARRIER

This sturdy, versatile instrument cart provides ample area for instruments on a free moving carrier. The 4 sturdy shelves are fabricated of durable half-inch plywood laminated with black ribbed non-slip facing.

Construction of the carrier is of 1-inch square steel tubing beautifully finished in gleaming chrome plate. Also included is an outlet box providing 3 "U" ground outlets, neon pilot light, on-off switch, fuse protection, and an HSJ cord-set. Rating is 15 amperes, 130 volts continuous duty. Two middle shelves are adjustable to desired position.

Casters are 5-inch heavy duty rubber, all swiveling. Shelf size: 21x21". 40" H. Cap.: 600 pounds. Shipping weight 92 lbs.
Model LOW-11 ..... $110.00 Net

WABER MODEL LOW-12 CARRIER

Here is a highly useful instrument carrier built for years of service. The 4 sturdy shelves are made of half-inch plywood with a thick ribbed non-slip laminated top.

This carrier is well constructed of 1-inch square steel tubing handsomely finished in bright chrome plate. Included with this unit is an outlet box with 3 "U" ground outlets, neon pilot light, on-off switch, fuse protection, and an HSJ cord-set. Rating is 15 amperes, 130 volts continuous duty. Two middle shelves are adjustable to desired positions.

Casters are 5-inch rubber, all swiveling. Shelf size: 21x29". 60" H. Cap.: 600 lbs. Shipping weight 102 lbs.
Model LOW-12 ..... $125.00 Net

FREE OUTLET BOX INCLUDED WITH MANY LOW MODELS

This handsome outlet box is offered as standard equipment with many of the Waber LOW Models. Ruggedly constructed of drawn steel, the outlet box consists of three "U" ground outlets, an off-on switch, pilot light, fuse post, and a heavy duty HSJ cord-set. Rating of the unit is 15 Amperes, 130 volts. This is an outstanding addition to these carriers and adds greatly to their utility and convenience.

WABER MODEL LOW-13 CARRIER

As useful as it is handsome. Same specifications as LOW-12 above exc guard rail on top shelf is the longer dimension.

Construction is of 1-inch square steel tubing finished in bright chr plate. Included is an outlet box with 3 "U" ground outlets, neon p light, on-off switch, fuse protection, and an HSJ cord-set. Rating is amperes, 130 volts continuous duty. Two middle shelves are adjust to desired positions.

Casters are 5 inches, all swiveling. Shelf size: 21x29". Capac 600 lbs. Shipping weight 102 lbs.
Model LOW-13 ..... $125.00

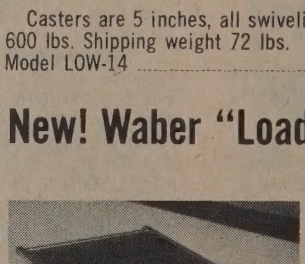
WABER MODEL LOW-14 CARRIER

This popular 3-shelf model provides easy mobility for your instrume Shelves are made of half-inch plywood faced with a thick ribbed non- laminated top.

Framework is made of 1-inch square steel tubing finished in br chrome plate. Included is an outlet box with 3 "U" ground outlets, n pilot light, on-off switch, fuse protection, and all neoprene cord- Rating is 15 amperes, 130 volts continuous duty.

Casters are 5 inches, all swiveling. Shelf size: 21x29". 58" H. Capac 600 lbs. Shipping weight 72 lbs.
Model LOW-14 ..... $120.00

New! Waber "Load Lugger" Utility Ca

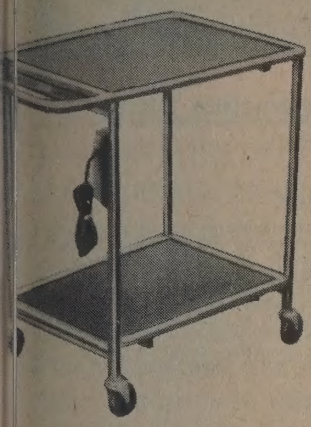


Here's a handy cart that has co less applications for the lab or s Beautifully constructed of one square steel tubing, this hands carrier rolls easily on its three rubber, swiveling casters. The is constructed of half inch plyw faced with a ribbed matting. S 19x21". This unit has a load capa of 500 lbs. Shipping weight 25
Model LOW-28 ..... $27.00

Net

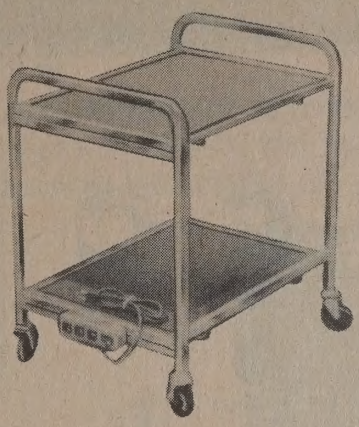
© United Technical Publicati

ABER LAB-ON-WHEELS© INSTRUMENT TRANSPORTS WABER

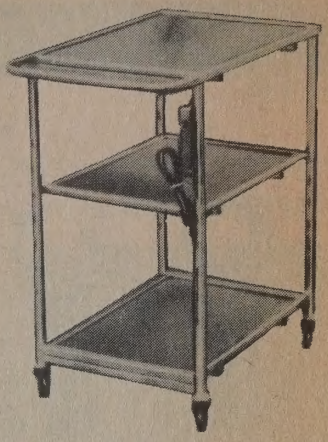


LOW-15

LOW-16



LOW-17



LOW-18

ER MODEL LOW-15 CARRIER

cture this handy cart in your lab giving your instruments uipment mobility. The 2 decks are made of half-inch ply- laminated with a heavy ribbed facing.

h cart is constructed of 1-inch square steel tubing finished ht chrome plate. Included is an outlet box with 3 "U" outlets, neon pilot light, on-off switch, fuse protection, HSJ cord-set. Rating is 15 amperes, 130 volts continuous

ters are 5 inches, all swiveling. Shelf size: 22Lx36Wx36"H. ty: 600 pounds. Shipping weight 40 lbs.
LOW-15 $110.00 Net

ER MODEL LOW-16 CARRIER

Visual users will appreciate this versatile carrier. Both are constructed of durable half-inch plywood with a thick surface.

nework is of decorator 1-inch square steel tubing finished ht chrome plate. Included is an outlet box with 3 "U" l outlets, neon pilot light, on-off switch, fuse protection, all neoprene cord-set. Rating is 15 amperes, 130 volts uous duty.

ch casters are of the swiveling type. Shelf size: 18Lx24Wx Capacity: 500 pounds. Shipping weight 37 lbs.
LOW-16 $80.00 Net

WABER MODEL LOW-17 CARRIER

Schools, Labs, and Audio-Visual users will find this a work-horse of carriers. Each of the 2 shelves is made of sturdy half-inch plywood laminated with a heavy duty ribbed non-slip top.

Popular 1-inch square steel construction provides support for this carrier and finish is in bright chrome plate. Also included is an outlet box providing 3 "U" ground outlets, neon pilot light, on-off switch, fuse protection, and an all neoprene cord-set. Rating is 15 amperes, 130 volts continuous duty.

All of the 4-inch casters are of the swiveling type. Shelf size: 21Lx29Wx32"H. Capacity: 500 pounds. Shipping weight 40 lbs.
Model LOW-17 ..... $90.00 Net

WABER MODEL LOW-18 CARRIER

Featuring 3 decks, each of half-inch plywood faced with a ribbed non-slip top, these easy rolling carriers provide many advantages for the school, shop or lab.

Here again the construction is of eye appealing 1-inch square steel tubing finished with a bright chrome plate. In addition the carrier is supplied with an attractive electrical outlet box featuring 3 "U" ground outlets, neon pilot light, on-off switch, fuse protection, and an all neoprene cord-set. Rating is 15 amperes, 130 volts continuous duty.

The 5-inch casters are of the swiveling type. Shelf size: 21Lx 29Wx42"H. Capacity: 600 pounds. Shipping weight 50 lbs.
Model LOW-18 ..... $125.00 Net

THIS WABER DOLLY HAS THE UTILITY YOU NEED

Transport stocks, instruments, assemblies with ease with this low cost WABER Basic Dolly. You can make your own adaptations to serve many purposes in your projects, where mobility would be desirable. Size: 32Lx18½Wx37½"H. Here is one of the most versatile and rugged units available to serve the needs of the lab, school or industry. Shipping weight 30 lbs.

WABER NET
Model LOW-5 $48.00

LOW-19

NEW WABER MOBILE TAPE RACK SIMPLIFIES HANDLING PROBLEMS

This compact mobile tape carrier will help you solve your tape handling problems. You'll get better control, less handling, and more efficiency with this versatile carrier.

This unit is made of one inch square steel tubing, with one-half inch rods as cross members. This carrier is finished in durable attractive chrome plate. Sizes is: 24x32x 20". Unit is equipped with three inch, rubber, swiveling casters. Rated at 500 lbs. carrying capacity. Shipping weight 45 lbs. NET
Model LOW-19 ..... $69.00

waldom SOLDERLESS TERMINALS AND CONNECTORS

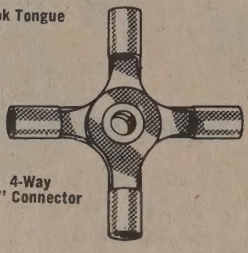
INSULATED AND NON-INSULATED TYPES FOR EVERY WIRING APPLICATION

Ring Tongue

Spade Tongue

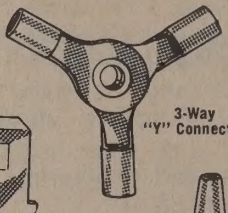
Hook Tongue

Flag Type

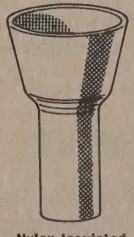

4-Way "X" Connector

Rectangular Tongue

Flanged Spade


3-Way "Y" Connector

Butt Connector


Nylon Insulated Closed End Connector

Male Push-On Quick Disconnect

Parallel Connector

Snap Plug

Female Flag Quick Disconnect

INSULATED TERMINALS COLOR CODED FOR QUICK IDENTIFICATION OF WIRE RANGES			
Wire Range	Color	Wire Range	Color
26-24*	Yellow	4	Yellow
22-18	Red	2	Red
16-14	Blue	1/0	Blue
12-10	Yellow	2/0	Yellow
8	Red	3/0	Red
6	Blue	4/0	Blue

Available in 6 Construction Styles

INSULATED

INSULKRIMP®

INSULKRIMP® terminals and connectors incorporate all the advanced features of KRIMPTITE construction, plus the advantages of the permanently attached rigid vinyl plastic insulating sleeve. Up to No. 10 wire range basic barrel is Krimptite; size No. 8 and up uses Versakrimp (brazed seam) barrel. Replacing slower methods of individually insulating connection with tubing or tape, INSULKRIMP Terminals and Connectors are rapidly applied in a single application. The tough insulating sleeve is permanently attached and will not slip off, fracture, or unravel. In addition, INSULKRIMP construction affords increased vibration resistance due to its insulation supporting plastic sleeve. Operating Temperature Range: continuous duty from —40° to 220°F; intermittent duty to 300°F.

NYLAKRIMP®

Wire Ranges 8 thru 4/0 Has the same features as the Versakrimp except that it has a Nylon insulated sleeve. Nylon Sleeve ideal for high temperature applications.

AVIKRIMP®

AVIKRIMP® terminals are truly the ultimate in construction and performance. To all the VIBRAKRIMP features has been added the permanently attached and overlapping NYLON insulating sleeve — no extra insulation necessary. It provides extra barrel strength and insulation grip to resist high vibration plus heat-resistant pre-insulation. Color coded for rapid identification, these terminals are complete in themselves, needing only the proper wire and crimping tool WALDOM offers many sizes and types with the maximum in reliability for yo most critical applications. Operation Temperature Range: continuous dut fr n —40° to 250°F; intermittent duty to 350°F.

NON-INSULATED

KRIMPTITE®

KRIMPTITE® terminals and connectors are the most modern labor saving answer to your wiring problems. Functionally designed to make positive connections with a minimum of experience and time needed for application. Uniformly reliable connections can be made in a fraction of the time formerly required by less reliable and more costly methods. Available in a wide range of types and sizes to meet your every wiring need. Minimum ¼ inch barrel lengths are available in all terminals listed.

VERSAKRIMP®

VERSAKRIMP® terminals and connectors have all the advantageous features of the KRIMPTITE construction plus the universality and higher tensile strength afforded by BRAZED BARREL construction. The seam is bonded with a special silver brazing alloy, and cannot possibly pull open under any conditions of stress or wire pull. Capable of being crimped by a wide variety of crimp styles, a new freedom of selection is available for your needs. Crimping location is not critical, as the specially brazed seams are guaranteed not to split and may be crimped from any direction. Recommended for both stranded and solid wires.

VIBRAKRIMP®

VIBRAKRIMP® terminals are particularly suitable where high vibration is a factor and firm insulation support is required. The seamless annealed electro-tin plated brass sleeve adds over-all strength to the terminal construction while the "skirt" portion which extends beyond the barrel is crimped in the same operation as the barrel and the wire is permanently held, preventing creep. Insulation is anchored and any wire flexing takes place beyond the terminal.

BASIC TERMINAL CONSTRUCTION DETAILS

Made of pure electrolytic copper for highest conductivity (MIL QQC576). Annealed to flow freely under crimping pressure for best connection. Electroplated with pure tin for greatest corrosion-resistance, in accordance with the highest standards of the electrical industry and MIL-T-10727 (Ord.).

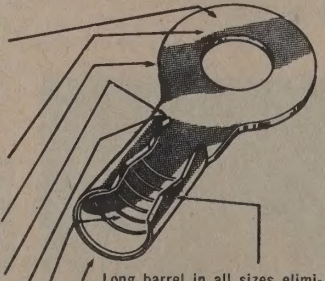
Modern construction from a single piece of metal gives greater strength, lower cost, uniform current flow for maximum conductivity.

All terminals and connectors have wire range clearly stamped on back.

The open-end design allows quick visual inspection of wire location before and after crimping.

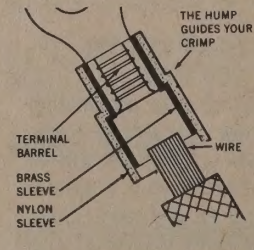
Strength gussets reinforce terminal where flat tongue has been formed into round barrel.

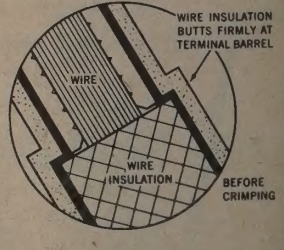
Multiple deep V-notches securely grip wire, provide best contact and maximum holding power over wide contact area.



Long barrel in all sizes eliminates loss of time finding a critical crimping location, eliminates squeeze-outs and shearing. Allows wider crimp for extra-strong, vibration-proof, moisture-tight connection with wide contact area.

Chamfered edge for faster, easier insertion of wire. Actually gathers frayed strands by funnel action.





"STEP" CONSTRUCTION GIVES EXTRA PROTECTION

Cutaway views of an AVIKRIMP barrel show how the "step" design for the brass sleeve acts to socket the wire insulation solidly in both the AVIKRIMP and VIBRAKRIMP styles for the ultimate in anti-vibration protection. In addition, the external "hump" marks the exact location of the barrel end — a quick guide to the target.

WALDOM . . the "positive action" line . . . available through your electronic parts distributor

© United Technical Publica

SOLDERLESS TERMINALS AND CONNECTORS

waldom

26-24 WIRE RANGE

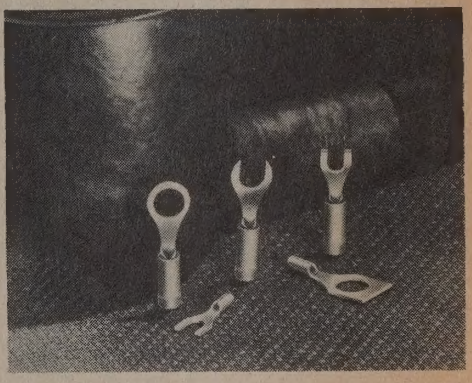
NEW NEW

TERMINALS FOR SMALL WIRE RANGE APPLICATIONS

you can meet your wire needs in the 26-24 wire range with WALDOM High Quality, Dependable Terminals. terminal tongue styles are available in both uninsulated KRIMPTITE® and nylon insulated AVIKRIMP®

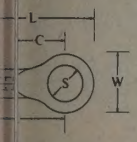
e terminals feature: Serrated barrels for extra gripping strength — Funnel action chamfered for easy wire insertion — Controlled atmos- annealing insures easy crimping — Highest uctivity because they are made from pure rolytic copper with an electro-tin plating. The insulated AVIKRIMP will operate continuously m −40° to 250°F.—intermittently up to 350°.

for use in electronic industry, aircraft, in- ment manufacturing, or any industry use with se circuitry requirements.



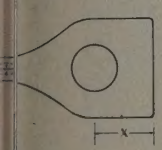
.018 STOCK — INSULATION COLOR YELLOW

RING TONGUE TERMINALS — BARREL LENGTH: AVIKRIMP* 23/64", KRIMPTITE* 1/8"



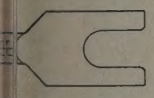
TONGUE

Basic Dimensions			Insulated AVIKRIMP* .075 Max. Insulation Diameter				Uninsulated Krimptite*			Price Code See Below
Stud Size S	Width W	Clearance C	Part No.	Length L	Barrel Extension E	Tongue Length X	Part No.	Length L	Barrel Extension	
0	9/64	1/8	N-5925	33/64	7/16	—	S-1925	23/64	17/64	A
	9/64	1/8	N-5926	33/64	7/16	—	S-1926	23/64	17/64	A
2	13/64	7/32	N-5927	21/32	17/32	—	S-1927	31/64	23/64	A
	9/64	7/32	N-5928	39/64	17/32	—	S-1928	29/64	23/64	A
4	13/64	7/32	N-5929	21/32	17/32	—	S-1929	31/64	23/64	A
6	13/64	7/32	N-5930	21/32	17/32	—	S-1930	31/64	23/64	A
	1/4	19/64	N-5931	3/4	39/64	—	S-1931	37/64	7/16	A
8	1/4	19/64	N-5932	3/4	39/64	—	S-1932	37/64	7/16	A
10	1/4	19/64	N-5933	3/4	39/64	—	S-1933	37/64	7/16	A



NGULAR TONGUE

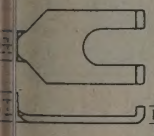
RECTANGULAR TONGUE — BARREL LENGTH: AVIKRIMP* 23/64", KRIMPTITE* 1/8"



E TONGUE

2	3/16	7/32	N-5934	21/32	17/32	7/64	S-1934	31/64	23/64	A
6	5/16	19/64	N-5935	13/16	39/64	3/16	S-1935	41/64	7/16	A
8	5/16	19/64	N-5936	13/16	39/64	3/16	S-1936	41/64	7/16	A
10	5/16	19/64	N-5937	13/16	39/64	3/16	S-1937	41/64	7/16	A

SPADE TONGUE — BARREL LENGTH: AVIKRIMP* 23/64", KRIMPTITE* 1/8"

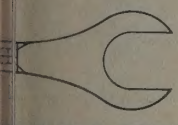


ED SPADE TONGUE

0	9/64	1/8	N-5938	23/64	7/16	1/16	S-1938	23/64	17/64	A
2	3/16	7/32	N-5939	21/32	17/32	7/64	S-1939	31/64	23/64	A
4	13/64	7/32	N-5940	41/64	17/32	3/32	S-1940	31/64	23/64	A

FLANGED SPADE TONGUE — BARREL LENGTH: AVIKRIMP* 23/64", KRIMPTITE* 1/8"

2	3/16	7/32	N-5941	21/32	17/32	7/64	S-1941	31/64	23/64	A



TED RING TONGUE

SLOTTED RING TONGUE — BARREL LENGTH: AVIKRIMP* 23/64", KRIMPTITE* 1/8"

6	1/4	19/64	N-5942	3/4	39/64	—	S-1942	37/64	7/16	A

NET PRICES 26-24 WIRE RANGE TERMINALS

WRITE FOR QUOTATION ON LARGER QUANTITIES

Price Code Letter	KRIMPTITE* Pkg. of 100	KRIMPTITE* BULK 1000-4999 Per M	KRIMPTITE* BULK 5000 or more Per M	AVIKRIMP* Pkg. of 100	AVIKRIMP* BULK 1000-4999 Per M	AVIKRIMP* BULK 5000 or more Per M
A	2.38	17.20	13.30	7.95	64.55	48.40

REMARK

SOLDERLESS TERMINALS AND CONNECTORS

waldom

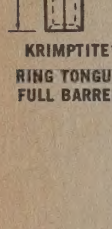
22-18 WIRE RANGE

MILITARY 22-18; COMMERCIAL 22-16; BUREAU OF SHIPS 1-2
CIRCULAR MIL AREA 509—2,600 UL & CSA RECOGNIZED

.032" STOCK • INSULATION COLOR RED

PRICING FOLLOWS WIRE RANGE LISTI

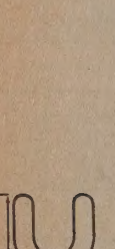
RING TONGUE TERMINALS—FULL (1/4") BARREL LENGTH



KRIMPTITE*
RING TONGUE
FULL BARREL

BASIC DIMENSIONS			KRIMPTITE*		INSULKRIMP*			VERSAKRIMP*		VIBRAKRIMP*		AVIKRIMP*	
Stud Size S	Width W	Clearance C	Part Number	Length L	.125 Max. Ins. Dia. Pt. No.	.145 Max. Ins. Dia. Pt. No.	Length L	Part Number	Length L	.145 Max. Ins. Dia. Pt. No.	Length L	.145 Max. Ins. Dia. Pt. No.	Length L
1-2	7/32	5/32	S-1099	33/64	T-2099	T-2099X	45/64	B-3099	33/64	D-4099	43/64	N-5099	45/64
3-4	7/32	5/32	S-1047	33/64	T-2047	T-2047X	45/64	B-3047	33/64	D-4047	43/64	N-5047	45/64
	9/32	1/4	S-1096	41/64	T-2096	T-2096X	53/64	B-3096	41/64	D-4096	51/64	N-5096	53/64
5-6	7/32	5/32	S-1001	33/64	T-2001	T-2001X	45/64	B-3001	33/64	D-4001	43/64	N-5001	45/64
	9/32	1/4	S-1002	41/64	T-2002	T-2002X	53/64	B-3002	41/64	D-4002	51/64	N-5002	53/64
	5/16	5/16	S-1103	23/32	T-2103	T-2103X	29/32	B-3103	23/32	D-4103	7/8	N-5103	29/32
8	9/32	1/4	S-1097	41/64	T-2097	T-2097X	53/64	B-3097	41/64	D-4097	51/64	N-5097	53/64
	5/16	5/16	S-1021	23/32	T-2021	T-2021X	29/32	B-3021	23/32	D-4021	7/8	N-5021	29/32
10	9/32	1/4	S-1098	41/64	T-2098	T-2098X	53/64	B-3098	41/64	D-4098	51/64	N-5098	53/64
	5/16	5/16	S-1003	23/32	T-2003	T-2003X	29/32	B-3003	23/32	D-4003	7/8	N-5003	29/32
	15/32	.400	S-1111	57/64	T-2111	T-2111X	1- 5/64	B-3111	57/64	D-4111	1- 3/64	N-5111	1- 5/64
	9/16	9/16	S-1800	1- 7/64	T-2800	T-2800X	1-19/64	B-3800	1- 7/64	D-4800	1-17/64	N-5800	1-19/64
1/4	15/32	.400	S-1004	57/64	T-2004	T-2004X	1- 5/64	B-3004	57/64	D-4004	1- 3/64	N-5004	1- 5/64
	9/16	9/16	S-1801	1- 7/64	T-2801	T-2801X	1-19/64	B-3801	1- 7/64	D-4801	1-17/64	N-5801	1-19/64
5/16	15/32	.400	S-1005	57/64	T-2005	T-2005X	1- 5/64	B-3005	57/64	D-4005	1- 3/64	N-5005	1- 5/64
	9/16	9/16	S-1802	1- 7/64	T-2802	T-2802X	1-19/64	B-3802	1- 7/64	D-4802	1-17/64	N-5802	1-19/64
3/8	9/16	9/16	S-1143	1- 7/64	T-2143	T-2143X	1-19/64	B-3143	1- 7/64	D-4143	1-17/64	N-5143	1-19/64

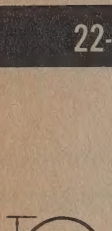
RING TONGUE TERMINALS—SHORT (5/32") BARREL LENGTH



VERSAKRIMP*
RING TONGUE
SHORT BARREL

1-2	7/32	5/32	SS-1099	27/64	ST-2099	ST-2099X	5/8	SB-3099	27/64	SD-4099	37/64	SN-5099	5/8
3-4	7/32	5/32	SS-1047	27/64	ST-2047	ST-2047X	5/8	SB-3047	27/64	SD-4047	37/64	SN-5047	5/8
	9/32	1/4	SS-1096	35/64	ST-2096	ST-2096X	3/4	SB-3096	35/64	SD-4096	45/64	SN-5096	3/4
5-6	7/32	5/32	SS-1001	27/64	ST-2001	ST-2001X	5/8	SB-3001	27/64	SD-4001	37/64	SN-5001	5/8
	9/32	1/4	SS-1002	35/64	ST-2002	ST-2002X	3/4	SB-3002	35/64	SD-4002	45/64	SN-5002	3/4
	5/16	5/16	SS-1103	5/8	ST-2103	ST-2103X	53/64	SB-3103	5/8	SD-4103	25/32	SN-5103	53/64
8	9/32	1/4	SS-1097	35/64	ST-2097	ST-2097X	3/4	SB-3097	35/64	SD-4097	45/64	SN-5097	3/4
	5/16	5/16	SS-1021	5/8	ST-2021	ST-2021X	53/64	SB-3021	5/8	SD-4021	25/32	SN-5021	53/64
10	9/32	1/4	SS-1098	35/64	ST-2098	ST-2098X	3/4	SB-3098	35/64	SD-4098	45/64	SN-5098	3/4
	5/16	5/16	SS-1003	5/8	ST-2003	ST-2003X	53/64	SB-3003	5/8	SD-4003	25/32	SN-5003	53/64
	15/32	.400	SS-1111	51/64	ST-2111	ST-2111X	1	SB-3111	51/64	SD-4111	61/64	SN-5111	1
1/4	15/32	.400	SS-1004	51/64	ST-2004	ST-2004X	1	SB-3004	51/64	SD-4004	61/64	SN-5004	1
	9/16	9/16	SS-1801	1- 1/64	ST-2801	ST-2801X	1- 7/32	SB-3801	1- 1/64	SD-4801	1-11/64	SN-5801	1- 7/32
5/16	15/32	.400	SS-1005	51/64	ST-2005	ST-2005X	1	SB-3005	51/64	SD-4005	61/64	SN-5005	1
	9/16	9/16	SS-1802	1- 1/64	ST-2802	ST-2802X	1- 7/32	SB-3802	1- 1/64	SD-4802	1-11/64	SN-5802	1- 7/32
3/8	9/16	9/16	SS-1143	1- 1/64	ST-2143	ST-2143X	1- 7/32	SB-3143	1- 1/64	SD-4143	1-11/64	SN-5143	1- 7/32

SPADE TONGUE TERMINALS—FULL (1/4") BARREL LENGTH



Full Barrel X=7/16"
Short Barrel X=23/64"

INSULKRIMP*
SPADE TONGUE

3-4	1/4	7/32	S-1116	5/8	T-2116	T-2116X	13/16	B-3116	5/8	D-4116	25/32	N-5116	13/16
	19/64	7/32	S-1803	5/8	T-2803	T-2803X	13/16	B-3803	5/8	D-4803	25/32	N-5803	13/16
	21/64	1/4	S-1804	23/32	T-2804	T-2804X	29/32	B-3804	23/32	D-4804	7/8	N-5804	29/32
5-6	1/4	7/32	S-1118	5/8	T-2118	T-2118X	13/16	B-3118	5/8	D-4118	25/32	N-5118	13/16
	19/64	7/32	S-1014	5/8	T-2014	T-2014X	13/16	B-3014	5/8	D-4014	25/32	N-5014	13/16
	5/16	5/16	S-1029	3/4	T-2029	T-2029X	15/16	B-3029	3/4	D-4029	29/32	N-5029	15/16
	21/64	1/4	S-1501	23/32	T-2501	T-2501X	29/32	B-3501	23/32	D-4501	7/8	N-5501	29/32
	3/8	1/4	S-1503	23/32	T-2503	T-2503X	29/32	B-3503	23/32	D-4503	7/8	N-5503	29/32
	27/64	1/4	S-1805	23/32	T-2805	T-2805X	29/32	B-3805	23/32	D-4805	7/8	N-5805	29/32
8	19/64	7/32	S-1030	5/8	T-2030	T-2030X	13/16	B-3030	5/8	D-4030	25/32	N-5030	13/16
	5/16	5/16	S-1031	3/4	T-2031	T-2031X	15/16	B-3031	3/4	D-4031	29/32	N-5031	15/16
	21/64	1/4	S-1806	23/32	T-2806	T-2806X	29/32	B-3806	23/32	D-4806	7/8	N-5806	29/32
	3/8	1/4	S-1504	23/32	T-2504	T-2504X	29/32	B-3504	23/32	D-4504	7/8	N-5504	29/32
	27/64	1/4	S-1507	23/32	T-2507	T-2507X	29/32	B-3507	23/32	D-4507	7/8	N-5507	29/32
10	5/16	5/16	S-1032	3/4	T-2032	T-2032X	15/16	B-3032	3/4	D-4032	29/32	N-5032	15/16
	3/8	1/4	S-1505	23/32	T-2505	T-2505X	29/32	B-3505	23/32	D-4505	7/8	N-5505	29/32
	27/64	1/4	S-1807	23/32	T-2807	T-2807X	29/32	B-3807	23/32	D-4807	7/8	N-5807	29/32

*TRADEMARK

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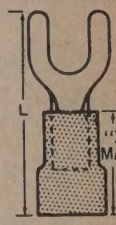
SOLDERLESS TERMINALS AND CONNECTORS

22-18 WIRE RANGE (Continued)

E TYPE TERMINALS—SHORT (5/32") BARREL LENGTH

PRICING FOLLOWS THIS WIRE RANGE LISTING

IMENSIONS		KRIMPTITE*		INSULKRIMP*		VERSAKRIMP*			VIBRAKRIMP*		AVIKRIMP*		Price Code See Page 5
Width W	Clearance C	Part Number	Length L	.125 Max. Ins. Dia. Pt. No.	.145 Max. Ins. Dia. Pt. No.	Length L	Part Number	Length L	.145 Max. Ins. Dia. Pt. No.	Length L	.145 Max. Ins. Dia. Pt. No.	Length L	
1/4	7/32	SS-1116	17/32	ST-2116	ST-2116X	47/64	SB-3116	17/32	SD-4116	11/16	SN-5116	47/64	A
9/64	7/32	SS-1803	17/32	ST-2803	ST-2803X	47/64	SB-3803	17/32	SD-4803	11/16	SN-5803	47/64	A
1/64	1/4	SS-1804	5/8	ST-2804	ST-2804X	53/64	SB-3804	5/8	SD-4804	25/32	SN-5804	53/64	A
1/4	7/32	SS-1118	17/32	ST-2118	ST-2118X	47/64	SB-3118	17/32	SD-4118	11/16	SN-5118	47/64	A
9/64	7/32	SS-1014	17/32	ST-2014	ST-2014X	47/64	SB-3014	17/32	SD-4014	11/16	SN-5014	47/64	A
5/16	5/16	SS-1029	21/32	ST-2029	ST-2029X	55/64	SB-3029	21/32	SD-4029	13/16	SN-5029	55/64	A
1/64	1/4	SS-1501	5/8	ST-2501	ST-2501X	53/64	SB-3501	5/8	SD-4501	25/32	SN-5501	53/64	A
3/8	1/4	SS-1503	5/8	ST-2503	ST-2503X	53/64	SB-3503	5/8	SD-4503	25/32	SN-5503	53/64	A
7/64	1/4	SS-1805	5/8	ST-2805	ST-2805X	53/64	SB-3805	5/8	SD-4805	25/32	SN-5805	53/64	A
9/64	7/32	SS-1030	17/32	ST-2030	ST-2030X	47/64	SB-3030	17/32	SD-4030	11/16	SN-5030	47/64	A
5/16	5/16	SS-1031	21/32	ST-2031	ST-2031X	55/64	SB-3031	21/32	SD-4031	13/16	SN-5031	55/64	A
1/64	1/4	SS-1806	5/8	ST-2806	ST-2806X	53/64	SB-3806	5/8	SD-4806	25/32	SN-5806	53/64	A
3/8	1/4	SS-1504	5/8	ST-2504	ST-2504X	53/64	SB-3504	5/8	SD-4504	25/32	SN-5504	53/64	A
7/64	1/4	SS-1507	5/8	ST-2507	ST-2507X	53/64	SB-3507	5/8	SD-4507	25/32	SN-5507	53/64	A
5/16	5/16	SS-1032	21/32	ST-2032	ST-2032X	55/64	SB-3032	21/32	SD-4032	13/16	SN-5032	55/64	A
3/8	1/4	SS-1505	5/8	ST-2505	ST-2505X	53/64	SB-3505	5/8	SD-4505	25/32	SN-5505	53/64	A
7/64	1/4	SS-1807	5/8	ST-2807	ST-2807X	53/64	SB-3807	5/8	SD-4807	25/32	SN-5807	53/64	A



Full Barrel X=7/16"
Short Barrel X=23/64"

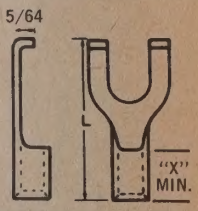
INSULKRIMP*

GED SPADE TERMINALS—FULL (1/4") BARREL LENGTH

9/64	7/32	S-1125	5/8	T-2125	T-2125X	13/16	B-3125	5/8	D-4125	25/32	N-5125	13/16	A
1/64	1/4	S-1808	23/32	T-2808	T-2808X	29/32	B-3808	23/32	D-4808	7/8	N-5808	29/32	A
9/64	7/32	S-1080	5/8	T-2080	T-2080X	13/16	B-3080	5/8	D-4080	25/32	N-5080	13/16	A
1/64	1/4	S-1510	23/32	T-2510	T-2510X	29/32	B-3510	23/32	D-4510	7/8	N-5510	29/32	A
3/8	1/4	S-1809	23/32	T-2809	T-2809X	29/32	B-3809	23/32	D-4809	7/8	N-5809	29/32	A
7/64	1/4	S-1810	23/32	T-2810	T-2810X	29/32	B-3810	23/32	D-4810	7/8	N-5810	29/32	A
9/64	7/32	S-1081	5/8	T-2081	T-2081X	13/16	B-3081	5/8	D-4081	25/32	N-5081	13/16	A
1/64	1/4	S-1811	23/32	T-2811	T-2811X	29/32	B-3811	23/32	D-4811	7/8	N-5811	29/32	A
3/8	1/4	S-1812	23/32	T-2812	T-2812X	29/32	B-3812	23/32	D-4812	7/8	N-5812	29/32	A
7/64	1/4	S-1516	23/32	T-2516	T-2516X	29/32	B-3516	23/32	D-4516	7/8	N-5516	29/32	A
3/8	1/4	S-1582	23/32	T-2582	T-2582X	29/32	B-3582	23/32	D-4582	7/8	N-5582	29/32	A
7/64	1/4	S-1813	23/32	T-2813	T-2813X	29/32	B-3813	23/32	D-4813	7/8	N-5813	29/32	A

GED SPADE TERMINALS—SHORT (5/32") BARREL LENGTH

19/64	7/32	SS-1125	17/32	ST-2125	ST-2125X	47/64	SB-3125	17/32	SD-4125	11/16	SN-5125	47/64	A
21/64	1/4	SS-1808	5/8	ST-2808	ST-2808X	53/64	SB-3808	5/8	SD-4808	25/32	SN-5808	53/64	A
19/64	7/32	SS-1080	17/32	ST-2080	ST-2080X	47/64	SB-3080	17/32	SD-4080	11/16	SN-5080	47/64	A
21/64	1/4	SS-1510	5/8	ST-2510	ST-2510X	53/64	SB-3510	5/8	SD-4510	25/32	SN-5510	53/64	A
3/8	1/4	SS-1809	5/8	ST-2809	ST-2809X	53/64	SB-3809	5/8	SD-4809	25/32	SN-5809	53/64	A
27/64	1/4	SS-1810	5/8	ST-2810	ST-2810X	53/64	SB-3810	5/8	SD-4810	25/32	SN-5810	53/64	A
19/64	7/32	SS-1081	17/32	ST-2081	ST-2081X	47/64	SB-3081	17/32	SD-4081	11/16	SN-5081	47/64	A
21/64	1/4	SS-1811	5/8	ST-2811	ST-2811X	53/64	SB-3811	5/8	SD-4811	25/32	SN-5811	53/64	A
3/8	1/4	SS-1812	5/8	ST-2812	ST-2812X	53/64	SB-3812	5/8	SD-4812	25/32	SN-5812	53/64	A
27/64	1/4	SS-1516	5/8	ST-2516	ST-2516X	53/64	SB-3516	5/8	SD-4516	25/32	SN-5516	53/64	A
3/8	1/4	SS-1582	5/8	ST-2582	ST-2582X	53/64	SB-3582	5/8	SD-4582	25/32	SN-5582	53/64	A
27/64	1/4	SS-1813	5/8	ST-2813	ST-2813X	53/64	SB-3813	5/8	SD-4813	25/32	SN-5813	53/64	A



Full Barrel X=1/4"
Short Barrel X=5/32"

VERSAKRIMP*

K TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

5/16	5/16	S-1018	23/32	T-2018	T-2018X	29/32	B-3018	23/32	D-4018	7/8	N-5018	29/32	A
5/16	5/16	S-1036	23/32	T-2036	T-2036X	29/32	B-3036	23/32	D-4036	7/8	N-5036	29/32	A
5/16	5/16	S-1037	23/32	T-2037	T-2037X	29/32	B-3037	23/32	D-4037	7/8	N-5037	29/32	A

K TONGUE TERMINALS—SHORT (5/32") BARREL LENGTH

5/16	5/16	SS-1018	5/8	ST-2018	ST-2018X	53/64	SB-3018	5/8	SD-4018	25/32	SN-5018	53/64	A
5/16	5/16	SS-1036	5/8	ST-2036	ST-2036X	53/64	SB-3036	5/8	SD-4036	25/32	SN-5036	53/64	A
5/16	5/16	SS-1037	5/8	ST-2037	ST-2037X	53/64	SB-3037	5/8	SD-4037	25/32	SN-5037	53/64	A

Full Barrel X=13/32"
Short Barrel X=5/16"

VIBRAKRIMP*

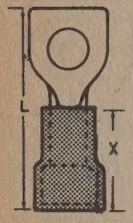
SOLDERLESS TERMINALS AND CONNECTORS

waldom

22-18 WIRE RANGE (Continued)

RECTANGULAR TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

PRICING FOLLOWS WIRE RANGE LISTIN



Full Barrel X=7/16"
Short Barrel X=23/64"

AVIKRIMP*
Rectangular Tongue

BASIC DIMENSIONS			KRIMPTITE*		INSULKRIMP*			VERSAKRIMP*		VIBRAKRIMP*		AVIKRIMP*	
Stud Size S	Width W	Clearance C	Part Number	Length L	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L	Part Number	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	.175 Max. Ins. Dia. Pt. No.	Length L
3-4	1/4	7/32	S-1814	5/8	T-2814	T-2814X	13/16	B-3814	5/8	D-4814	25/32	N-5814	13/16
	19/64	7/32	S-1128	5/8	T-2128	T-2128X	13/16	B-3128	5/8	D-4128	25/32	N-5128	13/16
	21/64	1/4	S-1815	23/32	T-2815	T-2815X	29/32	B-3815	23/32	D-4815	7/8	N-5815	29/32
5-6	1/4	7/32	S-1816	5/8	T-2816	T-2816X	13/16	B-3816	5/8	D-4816	25/32	N-5816	13/16
	19/64	7/32	S-1071	5/8	T-2071	T-2071X	13/16	B-3071	5/8	D-4071	25/32	N-5071	13/16
	5/16	5/16	S-1130	3/4	T-2130	T-2130X	15/16	B-3130	3/4	D-4130	29/32	N-5130	15/16
	21/64	1/4	S-1519	23/32	T-2519	T-2519X	29/32	B-3519	23/32	D-4519	7/8	N-5519	29/32
	3/8	1/4	S-1817	23/32	T-2817	T-2817X	29/32	B-3817	23/32	D-4817	7/8	N-5817	29/32
	27/64	1/4	S-1818	23/32	T-2818	T-2818X	29/32	B-3818	23/32	D-4818	7/8	N-5818	29/32
8	19/64	7/32	S-1072	5/8	T-2072	T-2072X	13/16	B-3072	5/8	D-4072	25/32	N-5072	13/16
	5/16	5/16	S-1132	3/4	T-2132	T-2132X	15/16	B-3132	3/4	D-4132	29/32	N-5132	15/16
	21/64	1/4	S-1819	23/32	T-2819	T-2819X	29/32	B-3819	23/32	D-4819	7/8	N-5819	29/32
	3/8	1/4	S-1820	23/32	T-2820	T-2820X	29/32	B-3820	23/32	D-4820	7/8	N-5820	29/32
	27/64	1/4	S-1526	23/32	T-2526	T-2526X	29/32	B-3526	23/32	D-4526	7/8	N-5526	29/32
10	5/16	5/16	S-1133	3/4	T-2133	T-2133X	15/16	B-3133	3/4	D-4133	29/32	N-5133	15/16
	21/64	1/4	S-1821	23/32	T-2821	T-2821X	29/32	B-3821	23/32	D-4821	7/8	N-5821	29/32
	3/8	1/4	S-1524	23/32	T-2524	T-2524X	29/32	B-3524	23/32	D-4524	7/8	N-5524	29/32
	27/64	1/4	S-1822	23/32	T-2822	T-2822X	29/32	B-3822	23/32	D-4822	7/8	N-5822	29/32

RECTANGULAR TONGUE TERMINALS—SHORT (5/32") BARREL LENGTH

3-4	19/64	7/32	SS-1128	9/16	ST-2128	ST-2128X	49/64	SB-3128	9/16	SD-4128	23/32	SN-5128	49/64
	21/64	1/4	SS-1815	5/8	ST-2815	ST-2815X	53/64	SB-3815	5/8	SD-4815	25/32	SN-5815	53/64
5-6	19/64	7/32	SS-1071	9/16	ST-2071	ST-2071X	49/64	SB-3071	9/16	SD-4071	23/32	SN-5071	49/64
	21/64	1/4	SS-1519	5/8	ST-2519	ST-2519X	53/64	SB-3519	5/8	SD-4519	25/32	SN-5519	53/64
	3/8	1/4	SS-1817	5/8	ST-2817	ST-2817X	53/64	SB-3817	5/8	SD-4817	25/32	SN-5817	53/64
	27/64	1/4	SS-1818	5/8	ST-2818	ST-2818X	53/64	SB-3818	5/8	SD-4818	25/32	SN-5818	53/64
8	19/64	7/32	SS-1072	9/16	ST-2072	ST-2072X	49/64	SB-3072	9/16	SD-4072	23/32	SN-5072	49/64
	27/64	1/4	SS-1526	5/8	ST-2526	ST-2526X	53/64	SB-3526	5/8	SD-4526	25/32	SN-5526	53/64
	21/64	1/4	SS-1819	5/8	ST-2819	ST-2819X	53/64	SB-3819	5/8	SD-4819	25/32	SN-5819	53/64
	3/8	1/4	SS-1820	5/8	ST-2820	ST-2820X	53/64	SB-3820	5/8	SD-4820	25/32	SN-5820	53/64
10	21/64	1/4	SS-1821	5/8	ST-2821	ST-2821X	53/64	SB-3821	5/8	SD-4821	25/32	SN-5821	53/64
	3/8	1/4	SS-1524	5/8	ST-2524	ST-2524X	53/64	SB-3524	5/8	SD-4524	25/32	SN-5524	53/64
	27/64	1/4	SS-1822	5/8	ST-2822	ST-2822X	53/64	SB-3822	5/8	SD-4822	25/32	SN-5822	53/64

NET PRICES — 22-18 WIRE RANGE TERMINALS

WRITE FOR QUOTATIO ON LARGER QUANTITI

	KRIMPTITE*			INSULKRIMP* No Suffix			INSULKRIMP* Suffix X			VERSAKRIMP*			VIBRAKRIMP*			AVIKRIMP*		
		BULK			BULK			BULK			BULK			BULK			BULK	
Price Code Letter	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	50 or m per
A	2.27	16.35	12.75	4.47	33.05	25.85	5.02	37.10	29.00	3.50	28.00	21.00	5.30	42.40	31.80	7.57	61.45	46.
B	3.11	22.35	17.50	5.79	42.80	33.45	6.13	45.35	35.40	4.87	39.15	29.35	6.76	54.10	40.55	9.47	75.75	56.
C	4.08	29.45	23.00	5.79	42.80	33.45	6.13	45.35	35.40	4.87	39.15	29.35	6.76	54.10	40.55	9.47	75.75	56.

16-14 WIRE RANGE

BUREAU OF SHIPS 21½-4 UL & CSA RECOGNIZED
CIRCULAR MIL AREA 2,050-5,180 (HEAVY DUTY 2,050-9,000)

.032" STOCK (HEAVY DUTY .050") • INSULATION COLOR CODED BLUE (HEAVY DUTY YELLOW) •

RING TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

PRICING FOLLOWS TH WIRE RANGE LISTING

Full Barrel X=1/4"
Short Barrel X=5/32"

KRIMPTITE*
Ring Tongue

BASIC DIMENSIONS			KRIMPTITE*		INSULKRIMP*			VERSAKRIMP*		VIBRAKRIMP*		AVIKRIMP*		Pri Co Se Pa
Stud Size S	Width W	Clearance C	Part Number	Length L	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L	Part Number	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	
1-2	1/4	7/32	S-1102	19/32	T-2102	T-2102X	25/32	B-3102	19/32	D-4102	3/4	N-5102	25/32	
3-4	1/4	7/32	S-1048	19/32	T-2048	T-2048X	25/32	B-3048	19/32	D-4048	3/4	N-5048	25/32	
	5/16	9/32	S-1823	45/64	T-2823	T-2823X	57/64	B-3823	45/64	D-4823	55/64	N-5823	57/64	
	11/32	5/16	S-1095	47/64	T-2095	T-2095X	59/64	B-3095	47/64	D-4095	57/64	N-5095	59/64	
5-6	1/4	7/32	S-1006	19/32	T-2006	T-2006X	25/32	B-3006	19/32	D-4006	3/4	N-5006	25/32	
	5/16	9/32	S-1007	45/64	T-2007	T-2007X	57/64	B-3007	45/64	D-4007	55/64	N-5007	57/64	
	11/32	5/16	S-1092	47/64	T-2092	T-2092X	59/64	B-3092	47/64	D-4092	57/64	N-5092	59/64	
8	1/4	7/32	S-1824	19/32	T-2824	T-2824X	25/32	B-3824	19/32	D-4824	3/4	N-5824	25/32	
	5/16	9/32	S-1024	45/64	T-2024	T-2024X	57/64	B-3024	45/64	D-4024	55/64	N-5024	57/64	
	11/32	5/16	S-1093	47/64	T-2093	T-2093X	59/64	B-3093	47/64	D-4093	57/64	N-5093	59/64	
10	5/16	9/32	S-1008	45/64	T-2008	T-2008X	57/64	B-3008	45/64	D-4008	55/64	N-5008	57/64	
	11/32	5/16	S-1094	47/64	T-2094	T-2094X	59/64	B-3094	47/64	D-4094	57/64	N-5094	59/64	
	15/32	.400	S-1106	57/64	T-2106	T-2106X	1- 5/64	B-3106	57/64	D-4106	1- 3/64	N-5106	1- 5/64	
	9/16	9/16	S-1825	1- 7/64	T-2825	T-2825X	1-19/64	B-3825	1- 7/64	D-4825	1-17/64	N-5825	1-19/64	
1/4	15/32	.400	S-1009	57/64	T-2009	T-2009X	1- 5/64	B-3009	57/64	D-4009	1- 3/64	N-5009	1- 5/64	
	9/16	9/16	S-1826	1- 7/64	T-2826	T-2826X	1-19/64	B-3826	1- 7/64	D-4826	1-17/64	N-5826	1-19/64	
5/16	15/32	.400	S-1041	57/64	T-2041	T-2041X	1- 5/64	B-3041	57/64	D-4041	1- 3/64	N-5041	1- 5/64	
	9/16	9/16	S-1827	1- 7/64	T-2827	T-2827X	1-19/64	B-3827	1- 7/64	D-4827	1-17/64	N-5827	1-19/64	
3/8	9/16	9/16	S-1147	1- 7/64	T-2147	T-2147X	1-19/64	B-3147	1- 7/64	D-4147	1-17/64	N-5147	1-19/64	

*TRADEMARK

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waldom

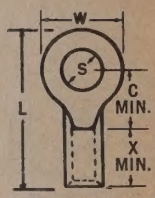
SOLDERLESS TERMINALS AND CONNECTORS

16-14 WIRE RANGE (Continued)

TONGUE TERMINALS—SHORT (5/32") BARREL LENGTH

PRICING FOLLOWS THIS WIRE RANGE LISTING

DIMENSIONS		KRIMPTITE*		INSULKRIMP*			VERSAKRIMP*		VIBRAKRIMP*		AVIKRIMP*		Price Code See Page 8
Width W	Clearance C	Part Number	Length L	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L	Part Number	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	
1/4	7/32	SS-1102	1/2	ST-2102	ST-2102X	45/64	SB-3102	1/2	SD-4102	21/32	SN-5102	45/64	D
1/4	7/32	SS-1048	1/2	ST-2048	ST-2048X	45/64	SB-3048	1/2	SD-4048	21/32	SN-5048	45/64	D
5/16	9/32	SS-1823	39/64	ST-2823	ST-2823X	13/16	SB-3823	39/64	SD-4823	49/64	SN-5823	13/16	D
1/4	7/32	SS-1006	1/2	ST-2006	ST-2006X	45/64	SB-3006	1/2	SD-4006	21/32	SN-5006	45/64	D
5/16	9/32	SS-1007	39/64	ST-2007	ST-2007X	13/16	SB-3007	39/64	SD-4007	49/64	SN-5007	13/16	D
11/32	5/16	SS-1092	41/64	ST-2092	ST-2092X	27/32	SB-3092	41/64	SD-4092	51/64	SN-5092	27/32	D
1/4	7/32	SS-1824	1/2	ST-2824	ST-2824X	45/64	SB-3824	1/2	SD-4824	21/32	SN-5824	45/64	D
5/16	9/32	SS-1024	39/64	ST-2024	ST-2024X	13/16	SB-3024	39/64	SD-4024	49/64	SN-5024	13/16	D
11/32	5/16	SS-1093	41/64	ST-2093	ST-2093X	27/32	SB-3093	41/64	SD-4093	51/64	SN-5093	27/32	D
5/16	9/32	SS-1008	39/64	ST-2008	ST-2008X	13/16	SB-3008	39/64	SD-4008	49/64	SN-5008	13/16	D
11/32	5/16	SS-1094	41/64	ST-2094	ST-2094X	27/32	SB-3094	41/64	SD-4094	51/64	SN-5094	27/32	D
15/32	.400	SS-1106	51/64	ST-2106	ST-2106X	1	SB-3106	51/64	SD-4106	61/64	SN-5106	1	B
15/32	.400	SS-1009	51/64	ST-2009	ST-2009X	1	SB-3009	51/64	SD-4009	61/64	SN-5009	1	B
9/16	9/16	SS-1826	1- 1/64	ST-2826	ST-2826X	1- 7/32	SB-3826	1- 1/64	SD-4826	1-11/64	SN-5826	1- 7/32	C
15/32	.400	SS-1041	51/64	ST-2041	ST-2041X	1	SB-3041	51/64	SD-4041	61/64	SN-5041	1	B
9/16	9/16	SS-1827	1- 1/64	ST-2827	ST-2827X	1- 7/32	SB-3827	1- 1/64	SD-4827	1-11/64	SN-5827	1- 7/32	C
9/16	9/16	SS-1147	1- 1/64	ST-2147	ST-2147X	1- 7/32	SB-3147	1- 1/64	SD-4147	1-11/64	SN-5147	1- 7/32	C

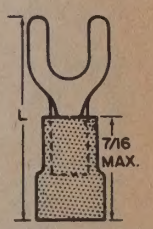


Full Barrel X=1/4"
Short Barrel X=5/32"

KRIMPTITE*
Ring Tongue

DE TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

1/4	7/32	S-1121	5/8	T-2121	T-2121X	13/16	B-3121	5/8	D-4121	25/32	N-5121	13/16	D
19/64	7/32	S-1828	5/8	T-2828	T-2828X	13/16	B-3828	5/8	D-4828	25/32	N-5828	13/16	D
21/64	1/4	S-1829	23/32	T-2829	T-2829X	29/32	B-3829	23/32	D-4829	7/8	N-5829	29/32	D
1/4	7/32	S-1123	5/8	T-2123	T-2123X	13/16	B-3123	5/8	D-4123	25/32	N-5123	13/16	D
19/64	7/32	S-1015	5/8	T-2015	T-2015X	13/16	B-3015	5/8	D-4015	25/32	N-5015	13/16	D
21/64	1/4	S-1529	23/32	T-2529	T-2529X	29/32	B-3529	23/32	D-4529	7/8	N-5529	29/32	D
23/64	9/32	S-1051	3/4	T-2051	T-2051X	15/16	B-3051	3/4	D-4051	29/32	N-5051	15/16	D
3/8	1/4	S-1531	23/32	T-2531	T-2531X	29/32	B-3531	23/32	D-4531	7/8	N-5531	29/32	D
27/64	1/4	S-1830	23/32	T-2830	T-2830X	29/32	B-3830	23/32	D-4830	7/8	N-5830	29/32	D
19/64	7/32	S-1033	5/8	T-2033	T-2033X	13/16	B-3033	5/8	D-4033	25/32	N-5033	13/16	D
21/64	1/4	S-1831	23/32	T-2831	T-2831X	29/32	B-3831	23/32	D-4831	7/8	N-5831	29/32	D
23/64	9/32	S-1052	3/4	T-2052	T-2052X	15/16	B-3052	3/4	D-4052	29/32	N-5052	15/16	D
3/8	1/4	S-1532	23/32	T-2532	T-2532X	29/32	B-3532	23/32	D-4532	7/8	N-5532	29/32	D
27/64	1/4	S-1535	23/32	T-2535	T-2535X	29/32	B-3535	23/32	D-4535	7/8	N-5535	29/32	D
23/64	9/32	S-1016	3/4	T-2016	T-2016X	15/16	B-3016	3/4	D-4016	29/32	N-5016	15/16	D
3/8	1/4	S-1533	23/32	T-2533	T-2533X	29/32	B-3533	23/32	D-4533	7/8	N-5533	29/32	D
27/64	1/4	S-1832	23/32	T-2832	T-2832X	29/32	B-3832	23/32	D-4832	7/8	N-5832	29/32	D

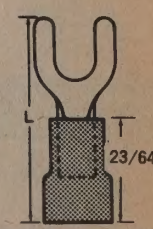


Full Barrel X=7/16"

INSULKRIMP*
Spade Tongue
Full Barrel

DE TONGUE TERMINALS—SHORT (5/32") BARREL LENGTH

1/4	7/32	SS-1121	17/32	ST-2121	ST-2121X	47/64	SB-3121	17/32	SD-4121	11/16	SN-5121	47/64	D
19/64	7/32	SS-1828	17/32	ST-2828	ST-2828X	47/64	SB-3828	17/32	SD-4828	11/16	SN-5828	47/64	D
21/64	1/4	SS-1829	5/8	ST-2829	ST-2829X	53/64	SB-3829	5/8	SD-4829	25/32	SN-5829	53/64	D
1/4	7/32	SS-1123	17/32	ST-2123	ST-2123X	47/64	SB-3123	17/32	SD-4123	11/16	SN-5123	47/64	D
19/64	7/32	SS-1015	17/32	ST-2015	ST-2015X	47/64	SB-3015	17/32	SD-4015	11/16	SN-5015	47/64	D
21/64	1/4	SS-1529	5/8	ST-2529	ST-2529X	53/64	SB-3529	5/8	SD-4529	25/32	SN-5529	53/64	D
23/64	9/32	SS-1051	21/32	ST-2051	ST-2051X	55/64	SB-3051	21/32	SD-4051	13/16	SN-5051	55/64	D
3/8	1/4	SS-1531	5/8	ST-2531	ST-2531X	53/64	SB-3531	5/8	SD-4531	25/32	SN-5531	53/64	D
27/64	1/4	SS-1830	5/8	ST-2830	ST-2830X	53/64	SB-3830	5/8	SD-4830	25/32	SN-5830	53/64	D
19/64	7/32	SS-1033	17/32	ST-2033	ST-2033X	47/64	SB-3033	17/32	SD-4033	11/16	SN-5033	47/64	D
21/64	1/4	SS-1831	5/8	ST-2831	ST-2831X	53/64	SB-3831	5/8	SD-4831	25/32	SN-5831	53/64	D
23/64	9/32	SS-1052	21/32	ST-2052	ST-2052X	55/64	SB-3052	21/32	SD-4052	13/16	SN-5052	55/64	D
3/8	1/4	SS-1532	5/8	ST-2532	ST-2532X	53/64	SB-3532	5/8	SD-4532	25/32	SN-5532	53/64	D
27/64	1/4	SS-1535	5/8	ST-2535	ST-2535X	53/64	SB-3535	5/8	SD-4535	25/32	SN-5535	53/64	D
23/64	9/32	SS-1016	21/32	ST-2016	ST-2016X	55/64	SB-3016	21/32	SD-4016	13/16	SN-5016	55/64	D
3/8	1/4	SS-1533	5/8	ST-2533	ST-2533X	53/64	SB-3533	5/8	SD-4533	25/32	SN-5533	53/64	D
27/64	1/4	SS-1832	5/8	ST-2832	ST-2832X	53/64	SB-3832	5/8	SD-4832	25/32	SN-5832	53/64	D



Short Barrel X=23/64"

INSULKRIMP*
Spade Tongue
Short Barrel

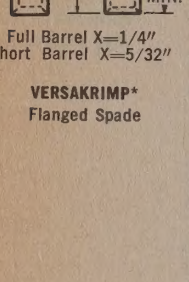
REMARK

16-14 WIRE RANGE (Continued)

FLANGED SPADE TERMINALS—FULL (1/4") BARREL LENGTH

PRICING FOLLOWS WIRE RANGE LISTI

BASIC DIMENSIONS			KRIMPTITE*		INSULKRIMP*			VERSAKRIMP*		VIBRAKRIMP*		AVIKRIMP*	
Stud Size S	Width W	Clearance C	Part Number	Length L	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L	Part Number	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	.175 Max. Ins. Dia. Pt. No.	Length L
3-4	19/64	7/32	S-1126	5/8	T-2126	T-2126X	13/16	B-3126	5/8	D-4126	25/32	N-5126	13/16
	21/64	1/4	S-1833	23/32	T-2833	T-2833X	29/32	B-3833	23/32	D-4833	7/8	N-5833	29/32
5-6	19/64	7/32	S-1083	5/8	T-2083	T-2083X	13/16	B-3083	5/8	D-4083	25/32	N-5083	13/16
	21/64	1/4	S-1538	23/32	T-2538	T-2538X	29/32	B-3538	23/32	D-4538	7/8	N-5538	29/32
	3/8	1/4	S-1834	23/32	T-2834	T-2834X	29/32	B-3834	23/32	D-4834	7/8	N-5834	29/32
	27/64	1/4	S-1835	23/32	T-2835	T-2835X	29/32	B-3835	23/32	D-4835	7/8	N-5835	29/32
8	19/64	7/32	S-1084	5/8	T-2084	T-2084X	13/16	B-3084	5/8	D-4084	25/32	N-5084	13/16
	21/64	1/4	S-1836	23/32	T-2836	T-2836X	29/32	B-3836	23/32	D-4836	7/8	N-5836	29/32
	3/8	1/4	S-1837	23/32	T-2837	T-2837X	29/32	B-3837	23/32	D-4837	7/8	N-5837	29/32
	27/64	1/4	S-1543	23/32	T-2543	T-2543X	29/32	B-3543	23/32	D-4543	7/8	N-5543	29/32
10	3/8	1/4	S-1585	23/32	T-2585	T-2585X	29/32	B-3585	23/32	D-4585	7/8	N-5585	29/32
	27/64	1/4	S-1838	23/32	T-2838	T-2838X	29/32	B-3838	23/32	D-4838	7/8	N-5838	29/32



Full Barrel X=1/4"
Short Barrel X=5/32"

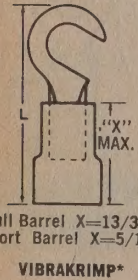
VERSAKRIMP*
Flanged Spade

FLANGED SPADE TERMINALS—SHORT (5/32") BARREL LENGTH

3-4	19/64	7/32	SS-1126	17/32	ST-2126	ST-2126X	47/64	SB-3126	17/32	SD-4126	11/16	SN-5126	47/64
	21/64	1/4	SS-1833	5/8	ST-2833	ST-2833X	53/64	SB-3833	5/8	SD-4833	25/32	SN-5833	53/64
5-6	19/64	7/32	SS-1083	17/32	ST-2083	ST-2083X	47/64	SB-3083	17/32	SD-4083	11/16	SN-5083	47/64
	21/64	1/4	SS-1538	5/8	ST-2538	ST-2538X	53/64	SB-3538	5/8	SD-4538	25/32	SN-5538	53/64
	3/8	1/4	SS-1834	5/8	ST-2834	ST-2834X	53/64	SB-3834	5/8	SD-4834	25/32	SN-5834	53/64
	27/64	1/4	SS-1835	5/8	ST-2835	ST-2835X	53/64	SB-3835	5/8	SD-4835	25/32	SN-5835	53/64
8	19/64	7/32	SS-1084	17/32	ST-2084	ST-2084X	47/64	SB-3084	17/32	SD-4084	11/16	SN-5084	47/64
	21/64	1/4	SS-1836	5/8	ST-2836	ST-2836X	53/64	SB-3836	5/8	SD-4836	25/32	SN-5836	53/64
	3/8	1/4	SS-1837	5/8	ST-2837	ST-2837X	53/64	SB-3837	5/8	SD-4837	25/32	SN-5837	53/64
	27/64	1/4	SS-1543	5/8	ST-2543	ST-2543X	53/64	SB-3543	5/8	SD-4543	25/32	SN-5543	53/64
10	3/8	1/4	SS-1585	5/8	ST-2585	ST-2585X	53/64	SB-3585	5/8	SD-4585	25/32	SN-5585	53/64
10	27/64	1/4	SS-1838	5/8	ST-2838	ST-2838X	53/64	SB-3838	5/8	SD-4838	25/32	SN-5838	53/64

HOOK TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

5-6	23/64	9/32	S-1038	23/32	T-2038	T-2038X	29/32	B-3038	23/32	D-4038	7/8	N-5038	29/32
8	23/64	9/32	S-1039	23/32	T-2039	T-2039X	29/32	B-3039	23/32	D-4039	7/8	N-5039	29/32
10	23/64	9/32	S-1040	23/32	T-2040	T-2040X	29/32	B-3040	23/32	D-4040	7/8	N-5040	29/32



Full Barrel X=13/32"
Short Barrel X=5/16"

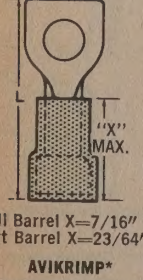
VIBRAKRIMP*
Hook Tongue

HOOK TONGUE TERMINALS—SHORT (5/32") BARREL LENGTH

5-6	23/64	9/32	SS-1038	5/8	ST-2038	ST-2038X	53/64	SB-3038	5/8	SD-4038	25/32	SN-5038	53/64
8	23/64	9/32	SS-1039	5/8	ST-2039	ST-2039X	53/64	SB-3039	5/8	SD-4039	25/32	SN-5039	53/64
10	23/64	9/32	SS-1040	5/8	ST-2040	ST-2040X	53/64	SB-3040	5/8	SD-4040	25/32	SN-5040	53/64

RECTANGULAR TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

3-4	1/4	7/32	S-1134	5/8	T-2134	T-2134X	13/16	B-3134	5/8	D-4134	25/32	N-5134	13/16
	19/64	7/32	S-1839	5/8	T-2839	T-2839X	13/16	B-3839	5/8	D-4839	25/32	N-5839	13/16
	21/64	1/4	S-1840	23/32	T-2840	T-2840X	29/32	B-3840	23/32	D-4840	7/8	N-5840	29/32
5-6	1/4	7/32	S-1136	5/8	T-2136	T-2136X	13/16	B-3136	5/8	D-4136	25/32	N-5136	13/16
	19/64	7/32	S-1074	5/8	T-2074	T-2074X	13/16	B-3074	5/8	D-4074	25/32	N-5074	13/16
	21/64	1/4	S-1546	23/32	T-2546	T-2546X	29/32	B-3546	23/32	D-4546	7/8	N-5546	29/32
	23/64	9/32	S-1137	3/4	T-2137	T-2137X	15/16	B-3137	3/4	D-4137	29/32	N-5137	15/16
	3/8	1/4	S-1841	23/32	T-2841	T-2841X	29/32	B-3841	23/32	D-4841	7/8	N-5841	29/32
	27/64	1/4	S-1842	23/32	T-2842	T-2842X	29/32	B-3842	23/32	D-4842	7/8	N-5842	29/32
8	19/64	7/32	S-1075	5/8	T-2075	T-2075X	13/16	B-3075	5/8	D-4075	25/32	N-5075	13/16
	21/64	1/4	S-1843	23/32	T-2843	T-2843X	29/32	B-3843	23/32	D-4843	7/8	N-5843	29/32
	23/64	9/32	S-1139	3/4	T-2139	T-2139X	15/16	B-3139	3/4	D-4139	29/32	N-5139	15/16
	3/8	1/4	S-1550	23/32	T-2550	T-2550X	29/32	B-3550	23/32	D-4550	7/8	N-5550	29/32
	27/64	1/4	S-1553	23/32	T-2553	T-2553X	29/32	B-3553	23/32	D-4553	7/8	N-5553	29/32
10	21/64	1/4	S-1844	23/32	T-2844	T-2844X	29/32	B-3844	23/32	D-4844	7/8	N-5844	29/32
	23/64	9/32	S-1140	3/4	T-2140	T-2140X	15/16	B-3140	3/4	D-4140	29/32	N-5140	15/16
	3/8	1/4	S-1551	23/32	T-2551	T-2551X	29/32	B-3551	23/32	D-4551	7/8	N-5551	29/32
	27/64	1/4	S-1845	23/32	T-2845	T-2845X	29/32	B-3845	23/32	D-4845	7/8	N-5845	29/32



Full Barrel X=7/16"
Short Barrel X=23/64"

AVIKRIMP*
Rectangular Tongue

*TRADEMARK

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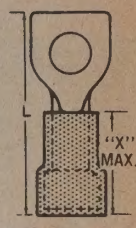
SOLDERLESS TERMINALS AND CONNECTORS

16-14 WIRE RANGE (Continued)

ANGULAR TONGUE TERMINALS—SHORT (5/32") BARREL LENGTH

PRICING FOLLOWS THIS WIRE RANGE LISTING

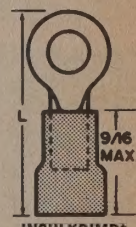
DIMENSIONS		KRIMPTITE*		INSULKRIMP*			VERSAKRIMP*		VIBRAKRIMP*		AVIKRIMP*		Price Code (See Pricing Below)
Width W	Clearance C	Part Number	Length L	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L	Part Number	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	
19/64	7/32	SS-1839	49/64	ST-2839	ST-2839X	31/32	SB-3839	49/64	SD-4839	59/64	SN-5839	31/32	D
21/64	1/4	SS-1840	5/8	ST-2840	ST-2840X	53/64	SB-3840	5/8	SD-4840	25/32	SN-5840	53/64	D
19/64	7/32	SS-1074	49/64	ST-2074	ST-2074X	31/32	SB-3074	49/64	SD-4074	59/64	SN-5074	31/32	D
21/64	1/4	SS-1546	5/8	ST-2546	ST-2546X	53/64	SB-3546	5/8	SD-4546	25/32	SN-5546	53/64	D
3/8	1/4	SS-1841	5/8	ST-2841	ST-2841X	53/64	SB-3841	5/8	SD-4841	25/32	SN-5841	53/64	D
27/64	1/4	SS-1842	5/8	ST-2842	ST-2842X	53/64	SB-3842	5/8	SD-4842	25/32	SN-5842	53/64	D
19/64	7/32	SS-1075	49/64	ST-2075	ST-2075X	31/32	SB-3075	49/64	SD-4075	59/64	SN-5075	31/32	D
21/64	1/4	SS-1843	5/8	ST-2843	ST-2843X	53/64	SB-3843	5/8	SD-4843	25/32	SN-5843	53/64	D
3/8	1/4	SS-1550	5/8	ST-2550	ST-2550X	53/64	SB-3550	5/8	SD-4550	25/32	SN-5550	53/64	D
27/64	1/4	SS-1553	5/8	ST-2553	ST-2553X	53/64	SB-3553	5/8	SD-4553	25/32	SN-5553	53/64	D
21/64	1/4	SS-1844	5/8	ST-2844	ST-2844X	53/64	SB-3844	5/8	SD-4844	25/32	SN-5844	53/64	D
3/8	1/4	SS-1551	5/8	ST-2551	ST-2551X	53/64	SB-3551	5/8	SD-4551	25/32	SN-5551	53/64	D
27/64	1/4	SS-1845	5/8	ST-2845	ST-2845X	53/64	SB-3845	5/8	SD-4845	25/32	SN-5845	53/64	D



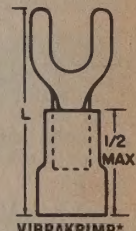
Full Barrel X=7/16"
Short Barrel X=23/64"
AVIKRIMP*
Rectangular Tongue

Y DUTY RING TONGUE TERMINALS—FULL (1/4") BARREL LENGTH—.050" STOCK
12-10 TOOLING

DIMENSIONS		KRIMPTITE*		INSULKRIMP*			VIBRAKRIMP*			AVIKRIMP*			Price Code (See Pricing Below)
Width W	Clearance C	Part Number	Length L	.215 Max. Ins. Dia. Pt. No.	.255 Max. Ins. Dia. Pt. No.	Length L	.235 Max. Ins. Dia. Pt. No.	.255 Max. Ins. Dia. Pt. No.	Length L	.235 Max. Ins. Dia. Pt. No.	.255 Max. Ins. Dia. Pt. No.	Length L	
9/32	5/16	S-1401H	45/64	T-2401H	T-2401HX	1- 1/64	D-4401H	D-4401HX	61/64	N-5401H	N-5401HX	1	L
3/8	5/16	S-1402H	3/4	T-2402H	T-2402HX	1- 1/16	D-4402H	D-4402HX	1	N-5402H	N-5402HX	1- 3/64	L
9/32	5/16	S-1403H	45/64	T-2403H	T-2403HX	1- 1/64	D-4403H	D-4403HX	61/64	N-5403H	N-5403HX	1	L
3/8	5/16	S-1404H	3/4	T-2404H	T-2404HX	1- 1/16	D-4404H	D-4404HX	1	N-5404H	N-5404HX	1- 3/64	L
9/32	5/16	S-1432H	45/64	T-2432H	T-2432HX	1- 1/64	D-4432H	D-4432HX	61/64	N-5432H	N-5432HX	1	L
3/8	5/16	S-1406H	3/4	T-2406H	T-2406HX	1- 1/16	D-4406H	D-4406HX	1	N-5406H	N-5406HX	1- 3/64	L
3/8	5/16	S-1407H	3/4	T-2407H	T-2407HX	1- 1/16	D-4407H	D-4407HX	1	N-5407H	N-5407HX	1- 3/64	L
7/32	13/32	S-1408H	59/64	T-2408H	T-2408HX	1-15/64	D-4408H	D-4408HX	1-11/64	N-5408H	N-5408HX	1- 7/32	M
9/32	31/64	S-1409H	1- 1/32	T-2409H	T-2409HX	1-11/32	D-4409H	D-4409HX	1- 9/32	N-5409H	N-5409HX	1-21/64	N
7/32	13/32	S-1410H	59/64	T-2410H	T-2410HX	1-15/64	D-4410H	D-4410HX	1-11/64	N-5410H	N-5410HX	1- 7/32	M
9/32	31/64	S-1411H	1- 1/32	T-2411H	T-2411HX	1-11/32	D-4411H	D-4411HX	1- 9/32	N-5411H	N-5411HX	1-21/64	N
3/4	5/8	S-1433H	1-17/64	T-2433H	T-2433HX	1-37/64	D-4433H	D-4433HX	1-33/64	N-5433H	N-5433HX	1- 9/16	O
7/32	13/32	S-1413H	59/64	T-2413H	T-2413HX	1-15/64	D-4413H	D-4413HX	1-11/64	N-5413H	N-5413HX	1- 7/32	M
9/32	31/64	S-1414H	1- 1/32	T-2414H	T-2414HX	1-11/32	D-4414H	D-4414HX	1- 9/32	N-5414H	N-5414HX	1-21/64	N
3/4	5/8	S-1434H	1-17/64	T-2434H	T-2434HX	1-37/64	D-4434H	D-4434HX	1-33/64	N-5434H	N-5434HX	1- 9/16	O
8/32	31/64	S-1416H	1- 1/32	T-2416H	T-2416HX	1-11/32	D-4416H	D-4416HX	1- 9/32	N-5416H	N-5416HX	1-21/64	N
3/4	5/8	S-1417H	1-17/64	T-2417H	T-2417HX	1-37/64	D-4417H	D-4417HX	1-33/64	N-5417H	N-5417HX	1- 9/16	O
3/4	5/8	S-1435H	1-17/64	T-2435H	T-2435HX	1-37/64	D-4435H	D-4435HX	1-33/64	N-5435H	N-5435HX	1- 9/16	O
3/4	5/8	S-1419H	1-17/64	T-2419H	T-2419HX	1-37/64	D-4419H	D-4419HX	1-33/64	N-5419H	N-5419HX	1- 9/16	O



INSULKRIMP*
Heavy Duty
Ring Tongue



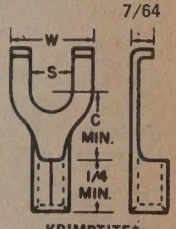
VIBRAKRIMP*
Heavy Duty
Spade Tongue

Y DUTY SPADE TONGUE TERMINALS—FULL (1/4") BARREL LENGTH —.050" STOCK

3/8	5/16	S-1420H	25/32	T-2420H	T-2420HX	1- 3/32	D-4420H	D-4420HX	1- 1/32	N-5420H	N-5420HX	1- 5/64	L
3/8	5/16	S-1421H	25/32	T-2421H	T-2421HX	1- 3/32	D-4421H	D-4421HX	1- 1/32	N-5421H	N-5421HX	1- 5/64	L
3/8	5/16	S-1422H	25/32	T-2422H	T-2422HX	1- 3/32	D-4422H	D-4422HX	1- 1/32	N-5422H	N-5422HX	1- 5/64	L
7/32	13/32	S-1427H	59/64	T-2427H	T-2427HX	1-15/64	D-4427H	D-4427HX	1-11/64	N-5427H	N-5427HX	1- 7/32	M
7/32	13/32	S-1428H	59/64	T-2428H	T-2428HX	1-15/64	D-4428H	D-4428HX	1-11/64	N-5428H	N-5428HX	1- 7/32	M

Y DUTY FLANGED SPADE TERMINALS—FULL (1/4") BARREL LENGTH—.050" STOCK

3/8	5/16	S-1423H	3/4	T-2423H	T-2423HX	1- 1/16	D-4423H	D-4423HX	1	N-5423H	N-5423HX	1- 3/64	L
3/8	5/16	S-1424H	3/4	T-2424H	T-2424HX	1- 1/16	D-4424H	D-4424HX	1	N-5424H	N-5424HX	1- 3/64	L
3/8	5/16	S-1425H	3/4	T-2425H	T-2425HX	1- 1/16	D-4425H	D-4425HX	1	N-5425H	N-5425HX	1- 3/64	L



KRIMPTITE*
Heavy Duty
Flanged Spade

NET PRICES — 16-14 WIRE RANGE TERMINALS

WRITE FOR QUOTATIONS ON LARGER QUANTITIES

KRIMPTITE*			INSULKRIMP* No Suffix			INSULKRIMP* Suffix (X)			VERSAKRIMP*			VIBRAKRIMP*			AVIKRIMP*		
	BULK			BULK			BULK			BULK			BULK			BULK	
Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M
3.11	22.35	17.50	5.79	42.80	33.45	6.13	45.35	35.40	4.87	39.15	29.35	6.76	54.10	40.55	9.47	75.75	56.85
4.08	29.45	23.00	5.79	42.80	33.45	6.13	45.35	35.40	4.87	39.15	29.35	6.76	54.10	40.55	9.47	75.75	56.85
2.37	17.05	13.35	4.47	33.05	25.85	5.02	37.10	29.00	3.50	28.00	21.00	5.30	42.40	31.80	7.57	61.45	46.10
3.53	28.20	21.15	6.64	53.15	39.85	6.64	53.15	39.85				8.89	71.10	53.35	12.00	95.95	72.00
4.55	36.40	27.30	7.33	58.60	43.95	7.33	58.60	43.95				9.36	74.90	56.20	13.08	104.70	78.50
5.01	40.10	30.10	7.95	63.65	47.65	7.95	63.65	47.65				10.29	82.20	61.70	13.86	110.85	83.15
7.97	63.75	47.85	11.44	91.45	68.65	11.44	91.45	68.65				12.85	100.60	75.45	14.89	119.20	89.35

A MARK

SOLDERLESS TERMINALS AND CONNECTORS

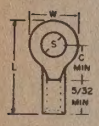
waldom

12-10 WIRE RANGE

BUREAU OF SHIPS 6-9
CIRCULAR MIL AREA 5,180-13,100 UL & CSA RECOGNIZED

.040" STOCK • INSULATION COLOR CODED YELLOW

PRICING FOLLOWS WIRE RANGE LISTIN



KRIMPTITE*
Ring Tongue

RING TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

BASIC DIMENSIONS			KRIMPTITE*		INSULKRIMP*			VERSAKRIMP*		VIBRAKRIMP*			AVIKRIMP*		
Stud Size S	Width W	Clearance C	Part Number	Length L	.215 Max. Ins. Dia. Pt. No.	.255 Max Ins. Dia. Pt. No.	Length L	Part Number	Length L	.235 Max. Ins. Dia. Pt. No.	.255 Max. Ins. Dia. Pt. No.	Length L	.235 Max. Ins. Dia. Pt. No.	.255 Max. Ins. Dia. Pt. No.	Length L
3-4	9/32	5/16	S-1148	45/64	T-2148	T-2148X	1- 1/64	B-3148	45/64	D-4148	D-4148X	61/64	N-5148	N-5148X	1-22/33
	3/8	5/16	S-1846	3/4	T-2846	T-2846X	1- 1/16	B-3846	3/4	D-4846	D-4846X	1	N-5846	N-5846X	1- 3/64
5-6	9/32	5/16	S-1149	45/64	T-2149	T-2149X	1- 1/64	B-3149	45/64	D-4149	D-4149X	61/64	N-5149	N-5149X	1
	3/8	5/16	S-1049	3/4	T-2049	T-2049X	1- 1/16	B-3049	3/4	D-4049	D-4049X	1	N-5049	N-5049X	1- 3/64
8	9/32	5/16	S-1150	45/64	T-2150	T-2150X	1- 1/64	B-3150	45/64	D-4150	D-4150X	61/64	N-5150	N-5150X	1
	3/8	5/16	S-1050	3/4	T-2050	T-2050X	1- 1/16	B-3050	3/4	D-4050	D-4050X	1	N-5050	N-5050X	1- 3/63
10	3/8	5/16	S-1011	3/4	T-2011	T-2011X	1- 1/16	B-3011	3/4	D-4011	D-4011X	1	N-5011	N-5011X	1- 3/64
	17/32	13/32	S-1115	59/64	T-2115	T-2115X	1-15/64	B-3115	59/64	D-4115	D-4115X	1- 7/64	N-5115	N-5115X	1- 7/32
	19/32	31/64	S-1107	1- 1/32	T-2107	T-2107X	1-11/32	B-3107	1- 1/32	D-4107	D-4107X	1- 9/32	N-5107	N-5107X	1-21/64
1/4	17/32	13/32	S-1100	59/64	T-2100	T-2100X	1-15/64	B-3100	59/64	D-4100	D-4100X	1- 7/64	N-5100	N-5100X	1- 7/32
	19/32	31/64	S-1012	1- 1/32	T-2012	T-2012X	1-11/32	B-3012	1- 1/32	D-4012	D-4012X	1- 9/32	N-5012	N-5012X	1-21/64
	3/4	5/8	S-1847	1-17/64	T-2847	T-2847X	1-37/64	B-3847	1-17/64	D-4847	D-4847X	1-33/64	N-5847	N-5847X	1- 9/16
5/16	17/32	13/32	S-1101	59/64	T-2101	T-2101X	1-15/64	B-3101	59/64	D-4101	D-4101X	1- 7/64	N-5101	N-5101X	1- 7/32
	19/32	31/64	S-1042	1- 1/32	T-2042	T-2042X	1-11/32	B-3042	1- 1/32	D-4042	D-4042X	1- 9/32	N-5042	N-5042X	1-21/64
	3/4	5/8	S-1848	1-17/64	T-2848	T-2848X	1-37/64	B-3848	1-17/64	D-4848	D-4848X	1-33/64	N-5848	N-5848X	1- 9/16
3/8	19/32	31/64	S-1013	1- 1/32	T-2013	T-2013X	1-11/32	B-3013	1- 1/32	D-4013	D-4013X	1- 9/32	N-5013	N-5013X	1-21/64
	3/4	5/8	S-1153	1-17/64	T-2153	T-2153X	1-37/64	B-3153	1-17/64	D-4153	D-4153X	1-33/64	N-5153	N-5153X	1- 9/16
7/16	3/4	5/8	S-1154	1-17/64	T-2154	T-2154X	1-37/64	B-3154	1-17/64	D-4154	D-4154X	1-33/64	N-5154	N-5154X	1- 9/16
1/2	3/4	5/8	S-1155	1-17/64	T-2155	T-2155X	1-37/64	B-3155	1-17/64	D-4155	D-4155X	1-33/64	N-5155	N-5155X	1- 9/16

INSULKRIMP*
Spade Tongue

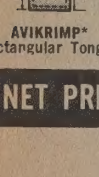
SPADE TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

5-6	3/8	5/16	S-1053	25/32	T-2053	T-2053X	1- 3/32	B-3053	25/32	D-4053	D-4053X	1- 1/32	N-5053	N-5053X	1- 5/64
8	3/8	5/16	S-1054	25/32	T-2054	T-2054X	1- 3/32	B-3054	25/32	D-4054	D-4054X	1- 1/32	N-5054	N-5054X	1- 5/64
10	3/8	5/16	S-1017	25/32	T-2017	T-2017X	1- 3/32	B-3017	25/32	D-4017	D-4017X	1- 1/32	N-5017	N-5017X	1- 5/64
1/4	17/32	13/32	S-1184	59/64	T-2184	T-2184X	1-15/64	B-3184	59/64	D-4184	D-4184X	1-11/64	N-5184	N-5184X	1- 7/32
	17/32	13/32	S-1849	59/64	T-2849	T-2849X	1-15/64	B-3849	59/64	D-4849	D-4849X	1-11/64	N-5849	N-5849X	1- 7/32
5/16	17/32	13/32	S-1850	59/64	T-2850	T-2850X	1-15/64	B-3850	59/64	D-4850	D-4850X	1-11/64	N-5850	N-5850X	1- 7/32

VERSAKRIMP*
Flanged Spade

FLANGED SPADE TERMINALS—FULL (1/4") BARREL LENGTH

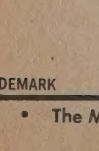
5-6	3/8	5/16	S-1086	3/4	T-2086	T-2086X	1- 1/16	B-3086	3/4	D-4086	D-4086X	1	N-5086	N-5086X	1- 3/64
8	3/8	5/16	S-1087	3/4	T-2087	T-2087X	1- 1/16	B-3087	3/4	D-4087	D-4087X	1	N-5087	N-5087X	1- 3/64
10	3/8	5/16	S-1088	3/4	T-2088	T-2088X	1- 1/16	B-3088	3/4	D-4088	D-4088X	1	N-5088	N-5088X	1- 3/64



VIBRAKRIMP*
Hook Tongue

HOOK TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

5-6	3/8	5/16	S-1057	3/4	T-2057	T-2057X	1- 1/16	B-3057	3/4	D-4057	D-4057X	1	N-5057	N-5057X	1- 3/64
8	3/8	5/16	S-1058	3/4	T-2058	T-2058X	1- 1/16	B-3058	3/4	D-4058	D-4058X	1	N-5058	N-5058X	1- 3/64
10	3/8	5/16	S-1045	3/4	T-2045	T-2045X	1- 1/16	B-3045	3/4	D-4045	D-4045X	1	N-5045	N-5045X	1- 3/64



AVIKRIMP*
Rectangular Tongue

RECTANGULAR TONGUE TERMINALS—FULL (1/4") BARREL LENGTH

5-6	3/8	5/16	S-1077	25/32	T-2077	T-2077X	1- 3/32	B-3077	25/32	D-4077	D-4077X	1- 1/32	N-5077	N-5077X	1- 5/64
8	3/8	5/16	S-1078	25/32	T-2078	T-2078X	1- 3/32	B-3078	25/32	D-4078	D-4078X	1- 1/32	N-5078	N-5078X	1- 5/64
10	3/8	5/16	S-1079	25/32	T-2079	T-2079X	1- 3/32	B-3079	25/32	D-4079	D-4079X	1- 1/32	N-5079	N-5079X	1- 5/64

NET PRICES—12-10 WIRE RANGE TERMINALS

WRITE FOR QUOTATIONS ON LARGER QUANTITIES

Price Code Letter	KRIMPTITE* Pkg. of 100	KRIMPTITE* BULK 1000-4999, per M	KRIMPTITE* BULK 5000 or more, per M	INSULKRIMP* No Suffix Pkg. of 100	INSULKRIMP* No Suffix BULK 1000-4999, per M	INSULKRIMP* No Suffix BULK 5000 or more, per M	INSULKRIMP* Suffix (X) Pkg. of 100	INSULKRIMP* Suffix (X) BULK 1000-4999, per M	INSULKRIMP* Suffix (X) BULK 5000 or more, per M	VERSAKRIMP* Pkg. of 100	VERSAKRIMP* BULK 1000-4999, per M	VERSAKRIMP* BULK 5000 or more, per M	VIBRAKRIMP* Pkg. of 100	VIBRAKRIMP* BULK 1000-4999, per M	VIBRAKRIMP* BULK 5000 or more, per M	AVIKRIMP* Pkg. of 100	AVIKRIMP* BULK 1000-4999, per M	AVIKRIMP* BULK 5000 or more, per M
E	3.30	23.70	18.55	5.79	42.80	33.45	6.13	45.35	35.40	4.87	39.15	29.35	6.76	54.10	40.55	9.47	75.75	56.8
F	4.35	31.30	24.40	6.13	45.35	35.40	6.81	50.40	39.45	5.63	45.05	33.80	7.50	59.95	45.00	9.68	77.40	58.0
G	4.78	34.45	26.90	6.81	50.40	39.35	7.51	55.60	43.45	5.91	47.25	35.45	7.98	63.85	47.90	10.62	83.95	62.9
H	7.38	53.20	41.55	9.09	67.20	52.50	9.78	72.40	56.55	8.51	68.10	51.10	10.34	82.75	62.10	12.47	99.75	74.8

*TRADEMARK

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SOLDERLESS TERMINALS AND CONNECTORS

WAY & 4-WAY CONNECTORS

WRITE FOR QUOTATIONS ON LARGER QUANTITIES

"X" Connectors are made up of ring terminals joined to form a 3-way or 4-way splice. The wire ranges apply to each terminal. Material is l copper with a plated steel rivet. Other combinations of standard terminals can be supplied on special order.

3-WAY "Y" CONNECTORS

Wire Range	Stock	KRIMPTITE* Part Number	KRIMPTITE* Ref. Length R	INSULKRIMP* Part Number	INSULKRIMP* Max. Ins. Dia.	INSULKRIMP* Part Number	INSULKRIMP* Max. Ins. Dia.	INSULKRIMP* Ref. Length R	VERSAKRIMP* Part Number	VERSAKRIMP* Ref. Length R	VIBRAKRIMP* Part Number	VIBRAKRIMP* Max. Ins. Dia.	VIBRAKRIMP* Ref. Length R	AVIKRIMP* Part Number	AVIKRIMP* Max. Ins. Dia.	AVIKRIMP* Ref. Length R	Price Code (See pricing below)
22-16	.032	S-1065	33/64	T-2065	.125	T-2065X	.145	45/64	B-3065	33/64	D-4065	.145	43/64	N-5065	.145	45/64	BF
16-14	.032	S-1066	35/64	T-2066	.155	T-2066X	.175	47/64	B-3066	35/64	D-4066	.175	45/64	N-5066	.175	47/64	BF
12-10	.040	S-1067	37/64	T-2067	.215	T-2067X	.255	57/64	B-3067	37/64	D-4067	.235	53/64	N-5067	.235	7/8	BG

4-WAY "X" CONNECTORS

Wire Range	Stock	KRIMPTITE* Part Number	KRIMPTITE* Ref. Length R	INSULKRIMP* Part Number	INSULKRIMP* Max. Ins. Dia.	INSULKRIMP* Part Number	INSULKRIMP* Max. Ins. Dia.	INSULKRIMP* Ref. Length R	VERSAKRIMP* Part Number	VERSAKRIMP* Ref. Length R	VIBRAKRIMP* Part Number	VIBRAKRIMP* Max. Ins. Dia.	VIBRAKRIMP* Ref. Length R	AVIKRIMP* Part Number	AVIKRIMP* Max. Ins. Dia.	AVIKRIMP* Ref. Length R	Price Code (See pricing below)
22-16	.032	S-1068	33/64	T-2068	.125	T-2068X	.145	45/64	B-3068	33/64	D-4068	.145	43/64	N-5068	.145	45/64	BH
16-14	.032	S-1069	35/64	T-2069	.155	T-2069X	.175	47/64	B-3069	35/64	D-4069	.175	45/64	N-5069	.175	47/64	BH
12-10	.040	S-1070	37/64	T-2070	.215	T-2070X	.255	57/64	B-3070	37/64	D-4070	.235	53/64	N-5070	.235	7/8	BI

PRICES — 3-WAY AND 4-WAY CONNECTORS

WRITE FOR QUOTATIONS ON LARGER QUANTITIES

KRIMPTITE* Pkg. of 25	KRIMPTITE* Bulk 500-1499, per M	KRIMPTITE* Bulk 1500 or more, per M	INSULKRIMP* Straight Insulation Pkg. of 25	INSULKRIMP* Straight Insulation Bulk 500-1499, per M	INSULKRIMP* Straight Insulation Bulk 1500 or more, per M	INSULKRIMP* Flared Insulation Pkg. of 25	INSULKRIMP* Flared Insulation Bulk 500-1499, per M	INSULKRIMP* Flared Insulation Bulk 1500 or more, per M	VERSAKRIMP* Pkg. of 25	VERSAKRIMP* Bulk 500-1499, per M	VERSAKRIMP* Bulk 1500 or more, per M	VIBRAKRIMP* Pkg. of 25	VIBRAKRIMP* Bulk 500-1499, per M	VIBRAKRIMP* Bulk 1500 or more, per M	AVIKRIMP* Pkg. of 25	AVIKRIMP* Bulk 500-1499, per M	AVIKRIMP* Bulk 1500 or more, per M
38	60.25	45.20	4.21	134.85	101.20	4.69	149.80	112.40	3.43	109.90	82.45	5.05	161.50	121.10	6.92	221.30	165.95
50	83.05	62.30	5.38	172.25	129.05	5.91	188.85	141.70	4.09	131.00	98.30	6.32	202.15	151.55	8.44	270.25	202.65
47	74.85	59.25	5.50	175.90	131.90	6.13	195.80	146.85	4.48	143.35	107.45	6.60	211.25	158.45	9.09	290.70	218.05
56	113.85	85.40	7.04	225.40	169.05	7.66	245.20	183.90	6.57	210.10	157.55	8.30	265.20	198.90	11.12	355.95	267.00

LD-OVER SOLDERLESS TERMINALS

to give a trim appearance to otherwise unsightly wire connections. l neatly over the stranding and confine it directly under binding screw d automatically insure greatest possible contact. The cushion-like construction when closed permits binding nut or screw to sink into the soft copper and so serve the purpose of a lock nut and is therefore vibration proof. Each is adaptable to a wide range of wire sizes. For standard, extra flexible or solid wire.

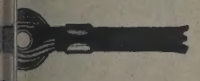


FIG. 1

FIG. 2

FIG. 3

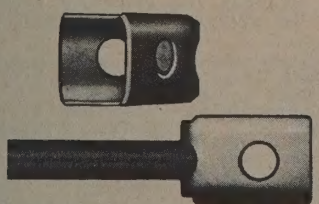


FIG. 4

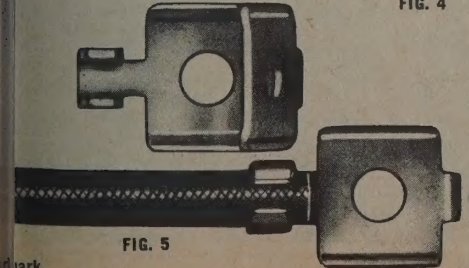


FIG. 5

CIRCULAR FOLDING TERMINALS WITH INSULATION GRIP (FIG. 1)

Wire Range	Stud Size	Width	Length	Part No.	Price Per 100	1000-4999 Per M	5000-over Per M
18-14	6-8	5/16	9/16	KH-100	$2.72	$23.10	$19.65
18-14	6-10	3/8	11/16	KH-101	2.90	24.70	21.00
16-10	6-8	7/16	13/16	KH-102	3.07	26.10	22.20
16-10	6-10	9/16	15/16	KH-103	3.42	29.10	24.75
16-10	12-¼	9/16	15/16	KH-104	3.42	29.10	24.75
10-6	¼-5/16	21/32	1-1/8	KH-105	5.96	50.70	43.10
10-6	5/16-⅜	13/16	1-1/4	KH-106	13.12	111.50	94.80
10-6	5/16-⅜	1	1-5/16	KH-107	24.50	208.30	177.05

CIRCULAR FOLDING TERMINALS WITHOUT INSULATION GRIP (FIG. 2)

18-10	6-10	9/16	9/16	KH-120	1.57	13.40	11.40
12-8	12-¼	21/32	11/16	KH-121	1.67	14.20	12.10
18-10	6-8	7/16	7/16	KH-122	1.75	14.90	12.20
18-10	6-10	1/2	1/2	KH-123	1.84	15.60	13.25
18-14	6-10	3/8	3/8	KH-124	2.10	17.90	15.22
18-14	6-8	5/16	5/16	KH-125	3.32	28.20	24.00

SINGLE CUP WASHER TERMINALS (FIG. 3)

18-14	4-6	1/4	1/4	KH-130	1.22	10.40	8.85
16-10	6-10	9/16	9/16	KH-131	1.32	11.20	9.50
16-10	6-8	7/16	7/16	KH-132	1.39	11.80	10.00
18-14	6-10	3/8	3/8	KH-133	1.57	13.40	11.40
18-14	6-8	5/16	5/16	KH-134	1.70	14.50	12.35
18-14	4-6	1/4	1/4	KH-135	1.84	15.60	13.25

RECTANGULAR FOLDING TERMINALS WITHOUT INSULATION GRIP (FIG. 4)

6-10	10-12	15/32	3/4	KH-140	4.02	34.20	29.05
8-4	12-¼	11/16	7/8	KH-141	6.12	52.00	44.20

RECTANGULAR FOLDING TERMINALS WITH INSULATION GRIP (FIG. 5)

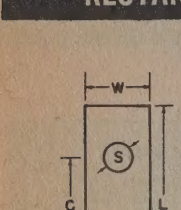
18-10	6-10	1/2	1	KH-150	8.75	74.40	63.25
12-6	12-¼	11/16	1-1/8	KH-151	3.50	29.80	25.35

SOLDERLESS TERMINALS AND CONNECTORS

waldom

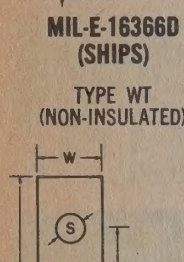
RECTANGULAR TONGUE TERMINALS FOR TERMINAL BLOCKS

MIL-E-16366D (SHIPS) covers non-insulated brazed barrel rectangular tongue terminals. Insulated versions of these termina covered by MS-17143 (SHIPS). Since the Navy and AWG Wire Sizes, Tongue Width, Clearance, and Stud Size are identical for Specifications, these common basic dimensions are in the center section of the chart below. The left and right sections o chart list the individual Specification, the Waldom Part Number, Length, and the Maximum Wire Insulation Diameter (for MS-17



MIL-E-16366D (SHIPS)

TYPE WT (NON-INSULATED)



MIL-T-7928 (ASG) MS-17143 (SHIPS)

TYPE II (INSULATED)

AWG Wire Size	Navy Wire Size	BASIC DIMENSIONS Stud Size S	Width W	Clearance C	VERSAKRIMP* TYPE WT (Non-Insulated) Part Number	Length L	AVIKRIMP* TYPE II (Insulated) Part Number	Maximum Insulation Diameter	Length L	MS-17143 Dash No.	Pri C (S Pric Bel
22-18	1-2	8	25/64	5/8	B-3555	1-13/64	SN-5555	.145	1-21/64	—1	BS
22-18	1-2	6	5/16	15/32	B-3556	61/64	SN-5556	.145	1- 5/64	—4	BS
22-18	1-2	8	5/16	15/32	B-3557	61/64	SN-5557	.145	1- 5/64	—7	BS
22-18	1-2	5	9/32	9/32	B-3558	45/64	SN-5558	.145	53/64	—10	BT
22-18	1-2	6	15/64	13/32	B-3559	55/64	SN-5559	.145	63/64	—13	BT
22-18	1-2	4	15/64	13/32	B-3560	55/64	SN-5560	.145	63/64	—16	BT
22-18	1-2	4	15/64	1/4	B-3561	41/64	SN-5561	.145	49/64	—19	BT
16-14	2 1/2-4	8	25/64	5/8	B-3562	1-13/64	SN-5562	.175	1-21/64	—2	BS
16-14	2 1/2-4	6	19/64	15/32	B-3563	61/64	SN-5563	.175	1- 5/64	—5	BS
16-14	2 1/2-4	8	19/64	15/32	B-3564	61/64	SN-5564	.175	1- 5/64	—8	BS
16-14	2 1/2-4	5	9/32	9/32	B-3565	45/64	SN-5565	.175	53/64	—11	BT
16-14	2 1/2-4	6	15/64	13/32	B-3566	55/64	SN-5566	.175	63/64	—14	BT
16-14	2 1/2-4	4	15/64	13/32	B-3567	55/64	SN-5567	.175	63/64	—17	BT
16-14	2 1/2-4	4	15/64	1/4	B-3568	41/64	SN-5568	.175	49/64	—20	BT
12-10	6-9	8	25/64	5/8	B-3569	1-17/64	SN-5569	.235	1-17/32	—3	BU
12-10	6-9	6	19/64	15/32	B-3570	1- 1/64	SN-5570	.235	1- 9/32	—6	BV
12-10	6-9	8	19/64	15/32	B-3571	1- 1/64	SN-5571	.235	1- 9/32	—9	BV
12-10	6-9	5	9/32	9/32	B-3572	49/64	SN-5572	.235	1- 3/64	—12	BV
12-10	6-9	6	15/64	13/32	B-3573	59/64	SN-5573	.235	1-13/64	—15	BV
12-10	6-9	4	15/64	13/32	B-3574	59/64	SN-5574	.235	1- 3/16	—18	BV
12-10	6-9	4	15/64	61/64	B-3575	57/64	SN-5575	.235	63/64	—21	BV

NET PRICES — FOR ABOVE RECTANGULAR TONGUE TERMINALS

WRITE FOR QUOTATION ON LARGER QUANTITIE

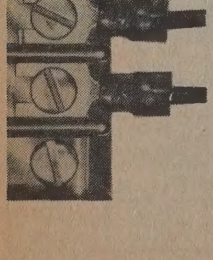
Code Letter	VERSAKRIMP* Pkg. of 100	VERSAKRIMP* BULK 1000-4999, per M	VERSAKRIMP* BULK 5000 or more, per M	AVIKRIMP* Pkg. of 100	AVIKRIMP* BULK 1000-4999, per M	AVIKRIMP* BULK 5000 or more, per M
BS	4.04	35.40	30.50	7.75	68.75	58.50
BT	2.81	24.95	21.22	6.04	53.60	45.60
BU	7.04	62.40	53.10	9.32	87.10	74.10

Code Letter	VERSAKRIMP* Pkg. of 100	VERSAKRIMP* BULK 1000-4999, per M	VERSAKRIMP* BULK 5000 or more, per M	AVIKRIMP* Pkg. of 100	AVIKRIMP* BULK 1000-4999, per M	AVIKRIMP* BULK 50 or m pe
BV	5.63	49.95	42.50	8.26	73.25	62
BW	4.04	35.85	30.50	7.45	66.10	56

*TRADEMARK

TERMINALS FOR USE WITH COMMERCIAL TYPE TERMINAL BLOCKS

To eliminate circuit failure in terminal blocks, WALDOM has produced exactly the right shape and width terminals to fit commonly used commercial terminal blocks. They c turn sideways, loosen, arc, or fail.



TERMINAL BLOCKS JONES Series	KULKA Series	GENPRO Series	MARATHON Series	For Wire Range	RECTANGULAR TONGUE For greatest reliability	SPADE TONGUE Least effort in installing & removing	FLANGED SPADE Greater reliabili than Spade Tong
140, 164 540	600, 600A 599	440, 464 740	100, 6A100	22-18	S-1071, T-2071, B-3071, D-4071, N-5071	S-1014, T-2014, B-3014, D-4014, N-5014	S-1080, T-2080, B-3 D-4080, N-5080
				16-14	S-1074, T-2074, B-3074, D-4074, N-5074	S-1015, T-2015, B-3015, D-4015, N-5015	S-1083, T-2083, B- D-4083, N-5083
141, 151	601, 699	441, 741	200	22-18	S-1519, T-2519, B-3519, D-4519, N-5519	S-1501, T-2501, B-3501, D-4501, N-5501	S-1510, T-2510, B-3 D-4510, N-5510
				16-14	S-1546, T-2546, B-3546, D-4546, N-5546	S-1529, T-2529, B-3529, D-4529, N-5529	S-1538, T-2538, B-3 D-4538, N-5538
142, 542	602	442,742	300	22-18	S-1526, T-2526, B-3526, D-4526, N-5526	S-1507, T-2507, B-3507, D-4507, N-5507	S-1516, T-2516, B-3 D-4516, N-5516
				16-14	S-1553, T-2553, B-3553, D-4553, N-5553	S-1535, T-2535, B-3535, D-4535, N-5535	S-1543, T-2543, B-3 D-4543, N-5543

Refer to Alpha-Numerical Index to Locate Terminal Description and Pricing Information.

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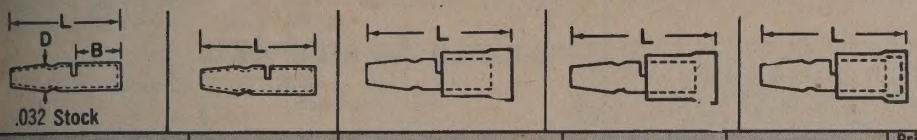
SOLDERLESS TERMINALS AND CONNECTORS

QUICK DISCONNECT DEVICES

AP PLUGS



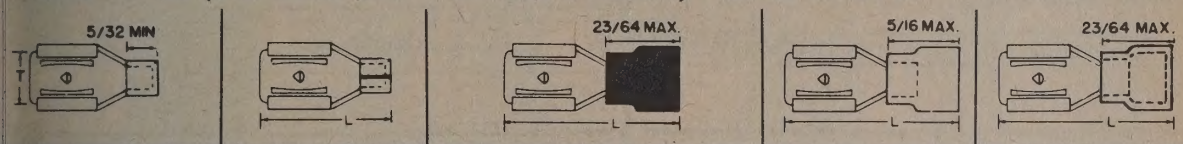
BASIC DIMENSIONS				KRIMPTITE*		INSULKRIMP*			VIBRAKRIMP*		AVIKRIMP*			Price Code (See Pricing Below)
	Length L	Barrel Length B	Diameter D	Part Number	Length L	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L	.175 Max. Ins. Dia. Pt. No.	Length L	.175 Max. Ins. Dia. Pt. No.	Length L		
4	35/64	3/16	.176	S-1056	35/64	T-2056	T-2056X	51/64	D-4056	49/64	N-5056	51/64		AW
4	19/32	3/16	.157	S-1055	19/32	T-2055	T-2055X	21/32	D-4055	13/16	N-5055	27/32		AV

PR-1426
INSULATED SNAP PLUG RECEPTACLE. An insulated connector for use with S-1005, T-2055, T-2055X, D-4055 & N-5055. One snap plug is inserted in either end of the receptacle. Tubular Shell is high impact transparent Styrene.

Part No.	BULK		
	Pkg. of 100	1000-4999, per M	5000 or more, per M
PR-1426	8.98	64.70	50.35

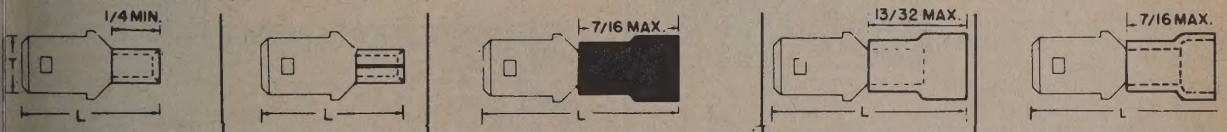
ICK-DISCONNECT PUSH-ON TYPE TERMINALS

4 WIRE RANGE (USE 22-18 SHORT BARREL TOOLING) FEMALE IN LINE



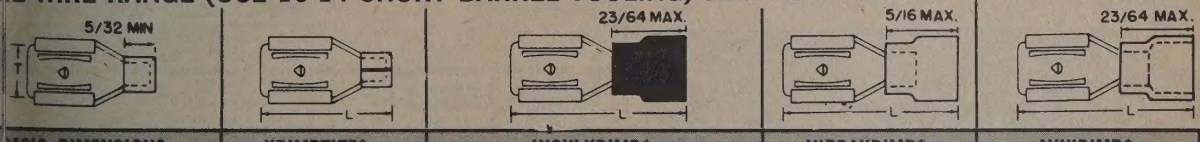
BASIC DIMENSIONS		KRIMPTITE*		INSULKRIMP*			VIBRAKRIMP*		AVIKRIMP*		Price Code Letter (See Pricing Below)
Fits Male Tab T	Stock	Part Number	Length L Max.	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	
0 .125 x .020	.016	SS-1186	29/64	ST-2186	ST-2186X	21/32	SD-4186	39/64	SN-5186	27/32	AX
.187 x .020	.020	SS-1187	17/32	ST-2187	ST-2187X	47/64	SD-4187	11/16	SN-5187	47/64	AX
.250 x .032	.020	SS-1090	41/64	ST-2090	ST-2090X	27/32	SD-4090	51/64	SN-5090	27/32	AX

4 WIRE RANGE (USE 16-14 REGULAR TOOLING) MALE



BASIC DIMENSIONS		KRIMPTITE*		INSULKRIMP*			VIBRAKRIMP*		AVIKRIMP*		Price Code Letter (See Pricing Below)
ab Width T	Stock	Part Number	Length L Max.	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	
.187	.020	S-1190	1/2	T-2190	T-2190X	25/32					AX
.250	.032	S-1089	21/32	T-2089	T-2089X	27/32	D-4089	13/16	N-5089	27/32	AX

2 WIRE RANGE (USE 16-14 SHORT BARREL TOOLING) FEMALE IN LINE



BASIC DIMENSIONS		KRIMPTITE*		INSULKRIMP*			VIBRAKRIMP*		AVIKRIMP*		Price Code Letter (See Pricing Below)
its Male Tab T	Stock	Part Number	Length L Max.	.155 Max. Ins. Dia. Pt. No.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	.175 Max. Ins. Dia. Pt. No.	Length L Max.	175 Max. Ins. Dia. Pt. No.	Length L Max.	
0 x .032	.020	SS-1188	41/64	ST-2188	ST-2188X	27/32	SD-4188	51/64	SN-5188	27/32	AX

NET PRICES — SNAP PLUGS AND QUICK DISCONNECT PUSH ON TYPE TERMINALS

	KRIMPTITE*			INSULKRIMP* No Suffix			INSULKRIMP* Suffix (X)			VIBRAKRIMP*			AVIKRIMP*		
		BULK			BULK			BULK			BULK			BULK	
Pr Co er	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M	Pkg. of 100	1000-4999, per M	5000 or more, per M
A	2.14	15.40	12.00	4.47	33.05	25.85	5.02	37.10	29.00	5.30	42.40	31.80	7.57	61.45	46.10
A	2.23	16.05	12.55	4.47	33.05	25.85	5.02	37.10	29.00	5.30	42.40	31.80	7.57	61.45	46.10
A	2.60	18.75	14.65	4.80	35.50	27.75	5.41	40.05	31.30	5.30	42.40	31.80	7.57	61.45	46.10

EMARK

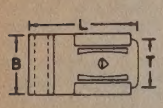
SOLDERLESS TERMINALS AND CONNECTORS

waldom

QUICK DISCONNECT DEVICES (Continued)

FEMALE FLAGS

18-14 WIRE RANGE—KRIMPTITE*



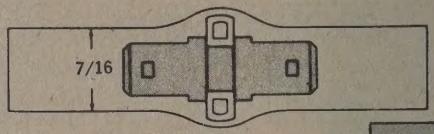
Part No.	Basic Dimensions Tab T	Barrel Length B	Length L	Pkg. of 100	Bulk 1000-4999, per M	Bulk 5000 or more, per M
S-1189	.187x.020	15/64	29/64	2.77	19.95	15.70
S-1091-A	.250x.032	15/64	29/64	2.64	18.95	14.80

16-12 WIRE RANGE—KRIMPTITE*

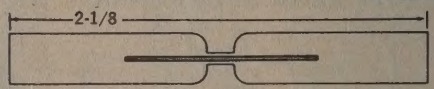
S-1091-B	.250x.020	5/16	19/32	3.07	22.05	17.20

INSULATED TAB RECEPTACLE

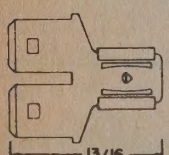
For connecting two .250 Female Disconnects.



Part No.	NET PRICES Pkg. of 100	1000-4999, per M	5 or
TR-1427	9.19	66.20	5



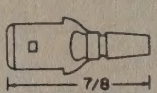
DOUBLE MALE TAB ADAPTER



For converting one .250 x .032 Male Tab to two Male Tabs. .032 Stock.

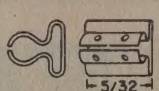
Part No.	NET PRICES Pkg. of 100	BULK 1000-4999, per M	BULK 5000 or more, per M
A-1428	4.70	33.85	26.35

SNAP PLUG TO TAB ADAPTERS



DOUBLE MALE
A-1429

For adapting .157 Plug Receptacle to .250 Female Disconnect. .032 Stock.



DOUBLE FEMALE
A-1430

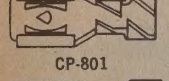
For adapting .157 Plug to .250 x .032 Tab.

Part No.	NET PRICES Pkg. of 100	1000-4999, per M	o
A-1429	5.87	42.25	
A-1430	6.42	46.20	

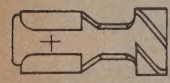
ECONOMICAL INSULATION-GRIP QUICK DISCONNECTS

MATERIAL: BRASS, ELECTRO-TIN PLATED

CP-801



CP-802

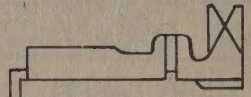


CP-803

Part No.	Wire Range	Description	NET PRICES Pkg. of 100	BULK 1000-4999, per M	BULK 5000 or more, per M
CP-801	20-16	1/4" Female	2.87	21.80	16.40
CP-802	16-12	1/4" Female	4.57	34.75	26.05
CP-803	20-16	1/4" Male	3.73	28.45	21.35

PIGGY BACK TERMINAL

MATERIAL: BRASS (UNPLATED)

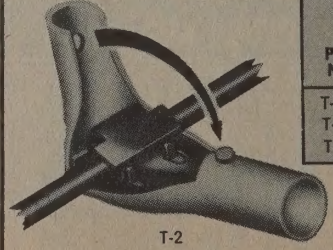


Part No.	Wire Range	NET PRICES Pkg. of 100	Pkg. of 1 1-4	m
PB-1431	20-12	6.49	49.45	3

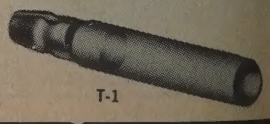
T—TAB TERMINAL

For attaching trailer lights to Towing Vehicle's Lighting System v
cutting wires. The T-2 receptical consists of a brass insulation piercing te
with a slipover, fold-over insulating sleeve. (Use ordinary plyers to
piercing portion of terminal to wire.)
The T-1 snap plug, with nylon insulating sleeve, allows easy, quick disconn
of trailer wire. Wire range 16-14. Use CT-4050 crimping tool.

PART NO. (Male) T-1
PART NO. (Female) T-2
PART NO. (Complete Set) T-3



T-2



T-1

Part No.	Pkg. of 25	NET PRICES Pkg. of 100	1000-4999 per M	o
T-3	4.31	14.26	126.45	1
T-2	3.36	11.13	98.70	
T-1	1.47	4.99	44.05	

1/4" MALE TABS

MATERIAL: .031 BRASS, CADMIUM PLATED

S-1432T

S-1431T

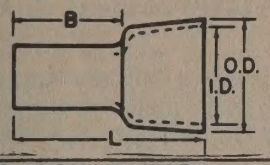
Part No.	Height	Mtg. Hole	NET PRICES Pkg. of 100	BULK 1000-4999, per M	BULK 5000 or more per M
S-1431T	29/64"	.144	1.28	10.25	7.70
S-1432T	7/16"	.156	2.38	19.05	14.30

© United Technical Public

PERMANENT CONNECTORS

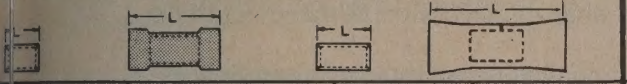
ON INSULATED CLOSED END CONNECTORS

tors are annealed, tin-plated, seamless brass for 22-14 wire range, and annealed tin-plated copper for 16-10 wire range. Insulation is natural- or translucent DuPont Nylon. Underwriters' Laboratories approved. UL temperature rating of 105°C maximum. 600 Volts maximum in building and 1,000 Volts inside a sign or fixture.



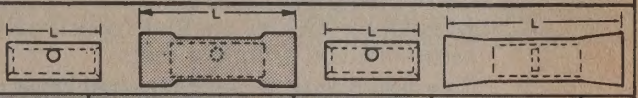
Wire Range	Part Number	Outside Diameter O.D.	Overall Length L	Barrel Length B	Inside Diameter I.D.	Circular Mil Area	Pkg. of 100	BULK 1000-4999, per M	BULK 5000 or more, per M
22-14	CE-2214	5/16	39/64	11/32	1/4	600- 5,180	3.89	27.95	21.85
16-10	CE-1610	7/16	23/32	3/8	3/8	2,400-13,000	5.68	40.90	31.95

PARALLEL CONNECTORS



Wire Range	KRIMPTITE* Part Number	KRIMPTITE* Length L	INSULKRIMP* Straight Ins. Dia. Pt. No.	INSULKRIMP* Flared Ins. Dia. Pt. No.	INSULKRIMP* Length L	VERSAKRIMP* Part Number	VERSAKRIMP* Length L	NYLAKRIMP* Part Number	NYLAKRIMP* Length L
22	S-1105	5/16	T-2105	T-2105X	11/16	†B-3105S	5/16	N-5105S	5/8
16	S-1063	5/16	T-2063	T-2063X	11/16	†B-3063S	5/16	N-5063S	5/8
12	S-1064	5/16	T-2064	T-2064X	25/32	†B-3064S	5/16	N-5064S	5/8
			T-2260	T-2260X	1	B-3260	3/8	N-5260S	1
			T-2261	T-2261X	1- 3/16	B-3261	7/16	N-5261S	1-13/16
			T-2262	T-2262X	1-13/32	B-3262	17/32	N-5262S	1-13/32
			T-2303	T-2303X	1- 5/8	B-3303	41/64	N-5303S	1- 5/8
1			The INSULKRIMP and NYLAKRIMP Parts in Wire Ranges 8 thru 2 have Brazed Barrels.			†B-3321	47/64	†N-5321S	1-61/64
2						†B-3336	47/64	†N-5336S	1-61/64
3						†B-3338S	3/4	†N-5338S	2-19/64
4						†B3340S	3/4	†N-5340S	2-19/64

BUTT CONNECTORS



Wire Range	KRIMPTITE* Part Number	KRIMPTITE* Length L	INSULKRIMP* Straight Ins. Dia. Pt. No.	INSULKRIMP* Flared Ins. Dia. Pt. No.	INSULKRIMP* Length L	VERSAKRIMP* Part Number	VERSAKRIMP* Length L	NYLAKRIMP* Part Number	NYLAKRIMP* Length L	Price Code Letter (see Below)
	S-1019	9/16	T-2019	T-2019X	15/16	†B-3019S	21/32	N-5019S	1- 3/64	AH
	S-1020	9/16	T-2020	T-2020X	15/16	†B-3020S	21/32	N-5020S	1- 3/64	AH
	S-1046	9/16	T-2046	T-2046X	1- 1/16	†B-3046S	13/16	N-5046S	1- 3/64	AI
			T-2263	T-2263X	1- 7/16	B-3263	53/64	N-5263S	1- 7/16	AJ
			T-2264	T-2264X	1- 3/4	B-3264	1- 1/64	N-5264S	1- 3/4	AK
			T-2265	T-2265X	2	B-3265	1- 1/8	N-5265S	2	AL
			T-2304	T-2304X	2- 1/4	B-3304	1- 1/4	N-5304S	2- 1/4	AM
			The INSULKRIMP and NYLAKRIMP Parts in Wire Ranges 8 thru 2 have Brazed Barrels.			†B-3320	1-27/64	†N-5320S	2-41/64	AN
						†B-3337	1- 7/16	†N-5337S	2-41/64	AO
						†B-3339S	1-31/64	†N-5339S	3	AP
						†B-3341S	1-31/64	†N-5341S	3	AQ

Wire Range needed for Parallel Connectors, compute the total Circular Mil Area of Wires involved and consult Conversion and Wire Combination Charts at back of Solderless Terminal Listing. †Formed from solid copper tubing.

NET PRICES — PERMANENT CONNECTORS

WRITE FOR QUOTATIONS ON LARGER QUANTITIES

Wire Ranges 22-10

Type	Price Code Letter	KRIMPTITE* Pkg. of 100	KRIMPTITE* BULK 1000-4999, per M	KRIMPTITE* BULK 5000 or more, per M	INSULKRIMP* No Suffix Pkg. of 100	INSULKRIMP* No Suffix BULK 1000-4999, per M	INSULKRIMP* No Suffix BULK 5000 or more, per M	INSULKRIMP* Suffix (X) Pkg. of 100	INSULKRIMP* Suffix (X) BULK 1000-4999, per M	INSULKRIMP* Suffix (X) BULK 5000 or more, per M	VERSAKRIMP* Pkg. of 100	VERSAKRIMP* BULK 1000-4999, per M	VERSAKRIMP* BULK 5000 or more, per M	NYLAKRIMP* Pkg. of 100	NYLAKRIMP* BULK 1000-4999, per M	NYLAKRIMP* BULK 5000 or more, per M
Parallel Connectors	AH	2.16	15.55	12.15	3.98	29.45	23.00	3.98	29.45	23.00	3.00	24.10	18.10	4.24	35.55	32.05
	AI	2.87	20.65	16.10	5.31	39.30	30.70	5.31	39.30	30.70	3.73	29.75	22.35	5.70	50.55	43.00
Butt Connectors	AH	2.50	17.95	14.00	5.28	39.05	30.55	5.28	39.05	30.55	3.96	31.70	23.75	6.74	54.75	41.05
	AI	4.43	31.90	24.95	7.21	53.35	41.65	7.21	53.35	41.65	5.62	44.90	33.90	8.76	71.10	53.35

Wire Ranges 8 thru 2

Type	Price Code No.	INSULKRIMP* Straight Insulation Prefix (T) No Suffix Pkg. of (A)25 (B)20	100-999, per C	1000-4999, per M	5000 or more, per M	INSULKRIMP* Flared Insulation Prefix (T) Suffix (X) Pkg. of (A)25 (B)20	100-999, per C	1000-4999, per M	5000 or more, per M	VERSAKRIMP* Prefix (B) Pkg. of (A)25 (B)20	100-999, per C	1000-4999, per M	5000 or more, per M	NYLAKRIMP* Prefix (N) Pkg. of (A)25 (B)20	100-999, per C	1000-4999, per M	5000 or more, per M
Parallel Connectors	AJ	(A)2.67	8.55	74.90	64.20	(A)2.92	9.30	81.60	69.95	(A)1.56	5.00	43.65	37.40	(A) 3.78	12.55	111.25	94.65
	AK	(A)3.94	12.60	110.25	94.50	(A)4.20	13.45	117.65	100.85	(A)2.65	8.45	74.10	63.55	(A) 5.57	18.38	162.95	139.35
	AL	(B)4.06	16.25	142.00	121.75	(B)4.29	17.15	150.00	128.60	(B)2.77	11.10	97.15	83.25	(B) 5.74	23.78	210.90	179.45
	AM	(B)4.98	19.90	174.25	149.35	(B)5.25	21.00	183.55	157.35	(B)3.39	13.55	118.40	101.50	(B) 7.05	29.19	311.35	220.30
Butt Connectors	AJ	(A)4.37	14.00	122.30	104.80	(A)4.60	14.75	128.90	110.50	(A)3.09	9.90	86.60	74.25	(A) 6.18	20.48	181.55	154.50
	AK	(A)6.04	19.35	169.20	145.05	(A)6.30	20.15	176.50	151.30	(A)4.72	15.10	132.20	113.30	(A) 8.55	28.35	251.20	213.85
	AL	(B)6.28	25.10	219.70	188.30	(B)4.51	26.45	227.80	195.30	(B)4.92	19.65	172.05	147.45	(B) 8.88	36.78	326.20	277.60
	AM	(B)7.91	31.65	276.80	237.25	(B)8.17	32.70	286.10	245.25	(B)6.18	24.70	216.35	185.40	(B)11.19	46.35	411.00	349.80

Wire Ranges 1/0 thru 4/0

Type	Price Code No.	VERSAKRIMP* Prefix (B) Pkg. of 20	100-999, per C	1000-4999, per M	5000 or more, per M	NYLAKRIMP* Prefix (N) Pkg. of 20	100-999, per C	1000-4999, per M	5000 or more, per M
Parallel Connectors	AN	3.51	14.00	122.65	105.15	6.86	28.40	251.80	214.30
	AO	3.86	15.45	135.20	115.90	6.65	27.51	244.20	207.80
	AP	5.30	21.20	185.50	159.00	8.64	35.80	317.40	270.10
	AQ	6.69	26.70	233.85	200.45	11.36	47.09	417.50	355.30
Butt Connectors	AN	8.10	32.40	285.40	244.65	16.62	68.84	610.40	519.55
	AO	9.65	38.55	338.50	290.15	16.32	67.55	599.00	509.80
	AP	12.09	48.35	424.40	363.80	18.51	76.63	679.55	578.35
	AQ	14.43	57.70	506.55	434.25	23.87	98.81	876.15	745.70

waldom

SOLDERLESS TERMINALS AND CONNECTORS

MILITARY SPECIFICATION TERMINALS (MIL-T-7928F)

These terminals are produced to military specification. **MIL-T-7928F (ASG)** of the U. S. Army, Air Force, A Ordnance, Coast Guard, Marine Corps and Navy.

Class 1 and Class 2 are designations for the two classes of Military Approvals. Class 1 Terminals and Splices are those which meet all performance requirements of their Military Standard specification when crimped with Military Specification crimping tools.

Class 2 Terminals and Splices are those which meet all performance characteristics of their Military Standard specification when crimped with the manufacturer's recommended crimping tools.

Type I and Type II designate insulated and non-insulated Terminals and Splices. Type I is un-insulated. Type II is insulated.

RING TONGUE TERMINALS

CLASS I TYPE I

MS PART NO.	WALDOM PART NO. 1/4" Barrel	5/32" Barrel
MS-20659-105	D-4001	SD-4001
-106	B-3101	
-128	B-3013	

CLASS I TYPE II

MS PART NO.	WALDOM PART NO. 1/4" Barrel	5/32" Barrel
MS25036-101	N-5001	SN-5001
-102	N-5002	SN-5002
-103	N-5003	SN-5003
-104		SN-5005
-105	N-5143	SN-5143
-106		SN-5006
-107		SN-5007
-108		SN-5094
-109		SN-5041
-110		SN-5147
-111	N-5049	
-112	N-5011	
-113	N-5101	
-114	N-5013	
-148	N-5047	SN-5047
-149	N-5021	SN-5021
-150		SN-5004
-152		SN-5048
-153		SN-5024
-154		SN-5009
-156	N-5050	
-157	N-5100	

CLASS I TYPE II

MS PART NO.	WALDOM PART NO. 1/4" Barrel	5/32" Barrel
MS-17143-1	N/A	SN-5555
-2	N/A	SN-5562
-3	N/A	SN-5569
-4	N/A	SN-5556
-5	N/A	SN-5563
-6	N/A	SN-5570
-7	N/A	SN-5557
-8	N/A	SN-5564
-9	N/A	SN-5577
-10	N/A	SN-5558
-11	N/A	SN-5565
-12	N/A	SN-5572
-13	N/A	SN-5559
-14	N/A	SN-5566
-15	N/A	SN-5573
-16	N/A	SN-5560
-17	N/A	SN-5567
-18	N/A	SN-5574
-19	N/A	SN-5561
-20	N/A	SN-5568
-21	N/A	SN-5573

N/A (Not Available)

SPLICE TERMINALS

CLASS I TYPE II

MS PART NO.	WIRE RANGE	PART NO.
MS-25181-1	22-18	A81-1
-2	16-14	B81-2
-3	12-10	C81-3
-4	26-24	M81-4

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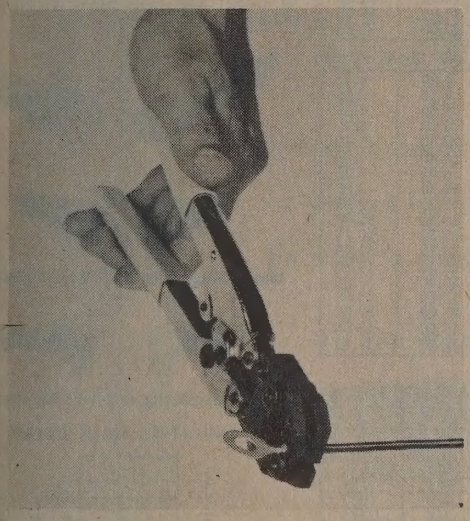
waldom

SOLDERLESS TERMINALS AND CONNECTORS

HAND RATCHET AND MAINTENANCE TOOLS

RATCHET TOOL

A precision production tool. Lighter in weight and easier to use than any similar tool. Unique pin-action gives greater mechanical advantage. The tool crimps even the heavier wires and terminals (up through #10 AWG) with a light squeeze. Tamper-proof ratchet mechanism is safe for fingers. The ratchet mechanism will not release until the crimping cycle is complete, but no extra effort is required for release and handles then open automatically. Precision-calibrated and crimp-tested at the factory to give perfect electrical connections every time.



FOR KRIMPTITE* & VERSAKRIMP*
Terminals • Parallel Connectors • Butt Connectors

Crimp Section	Wire Size	Ratchet Tool Part No.		Maintenance Tool Part No.
		Full Barrel Terminals	Short Barrel Terminals	
	22-18	RHT-1000	RHT-1050	CT-4050
	16-14			
	12-10			
Price ea. Net		24.75	24.75	4.35

FOR INSULKRIMP* & AVIKRIMP*
Terminals • Parallel Connectors • Butt Connectors

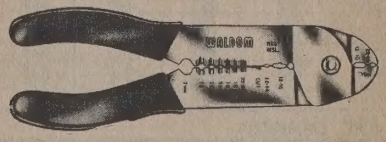
Crimp Section	Wire Size	Ratchet Tool Part No.		Maintenance Tool Part No.
		Regular Terminals	Short Barrel Terminals	
	22-18	RHT-2000	RHT-2050	CT-4050
	16-14	RHT-2100	RHT-2150	
	16-14	RHT-2100	RHT-2150	
	12-10	RHT-2200		
Price ea. Net		32.73	32.73	4.35

FOR NYLON CLOSED-END CONNECTORS

Crimp Section	Wire Size	Ratchet Tool Part No.	Maintenance Tool Part No.
	22-14	RHT-8000	CT-4050
	16-10	RHT-9000	
Price ea. Net		26.95	4.35

MAINTENANCE TOOL

An ideal inexpensive multi-purpose maintenance tool. Handles wire sizes #22 through #10 AWG. Cuts and strips wires, crimps insulated and non-insulated termials and connectors. Proper leverage is provided to assure uniformly reliable results. Edges stay sharp. Quality hardened steel. Instulated handles.



Crimps both insulated and non-insulated parts, and both Full and Short Barrel Terminals.

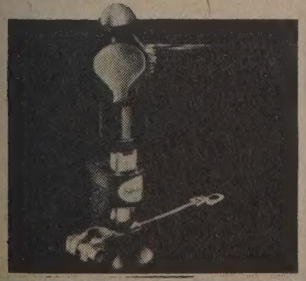
Part No. CT-4050 .....Price $4.35 ea. Net

ECTAKRIMP®

w Tool for Crimping Both Small and Large Range Terminal in Maintenance and uction Work

STANDING FEATURES

- pletely portable—easy to use
- minates need for soldering large wires to terminals
- laces costly, permanently mounted crimping equipment
- line" action assures uniform crimping
- ossible to over- or under-crimp
- cost—yet lasts indefinitely
- s #16 thru 4/0 wire range terminals



Here's the long-awaited answer to the problem of crimping large wire range terminals in maintenance and production work — without costly, permanently mounted equipment. The new Waldom "Selectakrimp" is a completely portable, easy-to-use tool. To operate, all you need is any conventional 2-lb. hammer to produce the closing pressure by striking the ram. An easy-to-read crimping scale prevents under-crimping. Over-crimping is prevented by unique design of the nest and indenter. Terminal being crimped is held securely in the nest by a strong, completely enclosed spring. Uniform, positive connection crimping is assuerd by the "in-line" ram action.

A single Selectakrimp tool can serve various departments, because its light weight (1¾ pounds) makes it easy to bring the tool to the work. Where production requirements call for simultaneous use in several locations, the low cost of Selectakrimp makes it economically feasible to have more than one in plant or shop.

Built to last indefinitely, the ram is made of specially heat-treated tool steel, and the base, of cast malleable iron. Base design prevents rocking of tool under closing pressures.

Part No. SKT-840 .....each $14.80

* Trademark

NYLON CONNECTORS

ORDER DATA

Waldom/Molex Miniature Nylon Connector/Housings

ORDER TERMINALS SEPARATELY FROM CHART BELOW

Part Number	Configuration	No. of Circuits	W/ Mounting Ears Plug	W/ Holding Tabs Receptacle	W/ Mounting Ears Receptacle	Amps. per Circuit	Volts per Circuit	Std. Pkg.	Per Pkg.	100-499 Per C	500-Over Per C
1625-1P	Plug	1				5	250	10	$ .70	$ 4.80	$ 4.00
1625-1R	Receptacle	1		X		5	250	10	.60	4.15	3.50
1625-3P	Plug	3	X			5	250	10	1.20	9.00	7.40
1625-3R	Receptacle	3		X	X	5	250	10	1.40	10.15	8.35
1625-4P	Plug	4				5	250	10	2.45	17.75	14.65
1625-4R	Receptacle	4		X		5	250	10	2.55	17.90	14.70
1625-5P	Plug	5				5	250	5	.95	13.30	10.95
1625-5R	Receptacle	5		X	X	5	250	5	1.15	16.80	13.85
1625-6P	Plug	6				5	250	5	.90	12.50	10.30
1625-6R	Receptacle	6		X	X	5	250	5	1.05	14.10	11.60
1649-8P	Plug	8				5	250	5	1.15	15.35	12.65
1649-8R	Receptacle	8		X	X	5	250	5	1.30	18.55	14.80
1625-9P	Plug	9	X			5	250	5	.95	13.30	10.95
1625-9R	Receptacle	9		X	X	5	250	5	1.05	15.05	12.40
1625-12P	Plug	12	X			5	250	5	1.15	15.70	12.90
1625-12R	Receptacle	12		X	X	5	250	5	1.15	15.90	13.15
1625-15P	Plug	15	X			5	250	5	1.50	21.90	18.05
1625-15R	Receptacle	15		X	X	5	250	5	1.65	24.70	20.40
1772-36P	Plug	36	X			4	250	5	5.75	84.00	68.15
1772-36R	Receptacle	36			X	4	250	5	5.95	87.50	71.35

Waldom/Molex Standard Nylor Connector Housings

ORDER TERMINALS SEPARATELY FROM CHART BELOW

1619P	Plug	1				12	250	10	.72	5.20	4.05
1619R	Receptacle	1		X		12	250	10	.61	4.55	3.55
1545P	Plug	2	X			12	250	10	1.16	8.50	6.55
1545R	Receptacle	2		X	X	12	250	10	1.20	8.80	6.70
1396R	Plug	3	X			12	250	10	1.14	8.30	6.40
1396R	Receptacle	3		X	X	12	250	10	1.26	9.40	7.25
1490P	Plug	4	X			9	250	10	1.30	9.45	7.35
1490R	Receptacle	4		X	X	9	250	10	1.47	10.70	8.25
1653P	Plug	5				9	250	5	.80	12.70	9.85
1653R	Receptacle	5		X		9	250	5	1.12	16.30	12.60
1261P	Plug	6	X			9	250	5	.88	12.80	10.15
1261R	Receptacle	6		X	X	9	250	5	.98	14.55	11.45
1292P	Plug	9	X			9	250	5	1.00	15.10	11.90
1292R	Receptacle	9		X	X	9	250	5	1.14	16.40	12.90
1360P	Plug	12	X			7.5	250	5	1.17	17.00	13.35
1360R	Receptacle	12			X	7.5	250	5	1.23	17.60	13.85
1375P	Plug	15	X			7.5	250	5	1.40	19.90	15.65
1375R	Receptacle	15			X	7.5	250	5	1.58	22.40	17.60

CONNECTOR DIMENSIONS Miniature .062" Connctors

	1625-1		1625-3		1625-4		1625-5		1625-6		1649-8		1625-9		1625-12		1625-15		1772-36	
	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P
A	N/A	N/A	.265	.318	N/A	N/A	.265	N/A	.552	N/A	.330	N/A	.552	.615	.563	.614	.563	.614	.707	.825
B	N/A	N/A	.650	.745	N/A	N/A	.940	N/A	.505	N/A	1.715	N/A	.650	.752	.795	.903	.934	1.042	1.677	1.795
C	.203 Dia.		.203		.203		.203		.484		.310		.531		.531		.531		.859	
D	.781		.781		.781		.781		.781		.781		.781		.781		.781		.781	
E	N/A		.203		.203		.203		.484		.220		.484		.484		.484		.687	
F	N/A		.484		.625		.781		.343		1.500		.484		.625		.765		1.515	
G	N/A		.390		.390		.390		.390		.390		.390		.390		.390		.390	
H	N/A		.187		N/A		.187		.375		.312		.375		.375		.375		.562	
I	.203 Dia.		.203		.203		.203		.484		.225		.531		.531		.531		1.015	
J	.750		.750		.750		.750		.750		.750		.750		.750		.750		.750	
K	.296 Dia.		.281		.296		.296		.578		.312		.578		.578		.593		.812	
L	N/A		.484		.625		.781		.343		1.500		.484		.625		.781		1.640	
M	N/A		.578		.734		.875		.453		1.593		.578		.718		.859		1.640	
N	N/A		.375		.375		N/A		.375		N/A		.375		.375		.375		.375	
O	N/A		.187		N/A		N/A		N/A		N/A		.375		.375		.375		.625	

Standard .093" Connectors

	1619		1545		1396		1490		1653		1261		1292		1360		1375	
	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P
A	N/A	N/A	.705	.800	.840	.933	1.038	1.131	N/A	N/A	.718	.750	.828	.937	1.050	1.155	1.240	1.343
B	N/A	N/A	.312	.375	.312	.375	.312	.375	N/A	N/A	.600	.695	.725	.725	.655	.760	.655	.760
C	.234 Dia.		.250		.234		.236		.234		.632		.625		.640		.632	
D	1.000		1.000		1.031		1.000		1.000		1.031		1.031		1.031		1.031	
E	N/A		.250		.234		.236		.234		.632		.625		.640		.632	
F	N/A		.531		.671		.875		1.062		.437		.671		.870		1.067	
G	N/A		.437		.437		.437		.437		.437		.437		.437		.437	
H	N/A		.250		.234		.236		N/A		.562		.562		.562		.562	
I	.241 Dia.		.250		.234		.250		.250		.734		.634		.634		.632	
J	.968		.968		.968		.968		.968		.968		.968		.968		.968	
K	.358 Dia.		.352		.338		.338		.343		.640		.734		.734		.734	
L	N/A		.531		.671		.859		1.062		.531		.765		.975		1.169	
M	N/A		.640		.773		.968		1.171		.531		.765		.975		1.169	
N	N/A		.421		.421		.421		.421		.421		N/A		.421		.421	
O	N/A		.250		.234		.250		N/A		.562		.562		.562		.562	

Dimensions subject to nominal variation N/A — Not Applicable.

Waldom/Molex Pin Terminals

Part Number	Configuration	Mating Diameter	Wire Size 16	18	20	22	24	26	28	30	Std. Pkg.	100-999 Per C	1,000-4,999 Per M	5,000-Over Per M
1189	Female	.093"	X	X	X						100	$3.05	$20.75	$15.25
1190	Male	.093"	X	X	X						100	3.05	20.75	15.25
1380	Male	.093"		X	X	X		X	X		100	3.05	20.75	
1381	Female	.093"		X	X	X		X	X		100	3.05	20.75	
1433	Female	.093"				X	X	X	X	X	100	3.05	20.75	15.25
1434	Male	.093"				X	X	X	X	X	100	3.05	20.75	15.25
1560	Male	.062"		X	X	X					100	3.70	25.10	18.50
1561	Female	.062"		X	X	X					100	3.70	25.10	18.50
1854	Male	.062"					X	X	X	X	100	3.70	25.10	18.50
1855	Female	.062"					X	X	X	X	100	3.70	25.10	18.50

NOTE: .093" Pin Terminals are used with Standard Connectors.
.062" Pin Terminals are used with Miniature Connectors.

Waldom/Molex Tooling

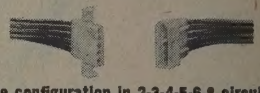
Use with Pine Types	Prototype Hand Tool	Each	Manual Production Tool	Each
1189-1190	HT-1919	$4.35	HT-1031-C	$30.00
1380-1381	HT-1919	$4.35	HT-1031-C	$30.00
1433-1434	HT-1921	$4.35	HT-1708	$55.00
1560-1561	HT-1921	$4.35	HT-1719-C	$45.00
1854-1855	HT-1921	$4.35	HT-1885	$50.00

These products are manufactured by Molex Products Company, and are available from Electronic/Electrical Distributors through Waldom Electronic

molex®

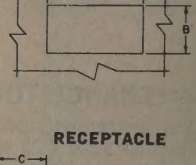
Waldom/Molex connectors are being designed into some of man's most exciting circuitry. For they offer incomparable reliability, versatility and economy. Save time and labor. Provide a better mode of connection. They are being used in countless applications in the business machine, home entertainment, appliance, communications, measurement and instrumentation industries. Solving some of the most demanding circuitry problems. Making connections in some of the toughest environments imaginable. We offer Nylon Miniature Connectors in 1 to 36 circuits and standard connectors from 1 to 15 circuits. They are available with integrally molded mounting ears for ease of panel mounting. And are U.L. recognized. To simplify the attachment of individual contacts. Waldom/Molex provides a complete range of manual production and prototype hand tools. Both male and female terminals may be readily extracted and easily replaced using Waldom/Molex extractor tools. These tools permit simple servicing and circuitry variation.

Above configuration in 9-12-15-36 circuits

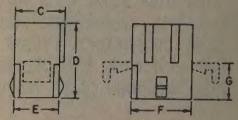


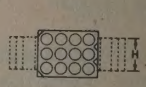
Above configuration in 2-3-4-5-6-8 circuits

MOUNTING HOLE DETAIL

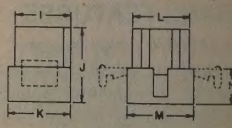


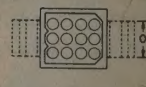
RECEPTACLE





PLUG





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The
RADIO-ELECTRONIC
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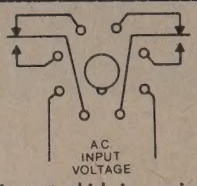
DIVERSIFIED ELECTRONICS INC.

VOLTAGE, CURRENT, PHASE MON
SOLID STATE TIME DELAY RELAY
CURRENT TRANSFORMERS

VB SERIES — VOLTAGE BAND MONITOR



The VB Series offers protection to equipment which is required to operate between two voltage limits. The solid state monitor determines preselected under or over voltage conditions, and de-energizes an internal 10A DPDT control relay if these limits are exceeded. The monitor is equipped with time delay to accommodate start-up transients.

SPECIFICATIONS

RESPONSE TIME
Pick-up: 30 m. sec
Drop-out: 0.5 sec.

TEMPERATURE
Operating: 0°C — +55°C
Storage: —45°C — +85°C

RATED OUTPUT
DPDT Relay — Resistive
10A @28VDC or 120VAC
5A @240VAC

POWER REQUIRED
3 Watts (Approx.)

ENCLOSURE
Plastic Dust Cover

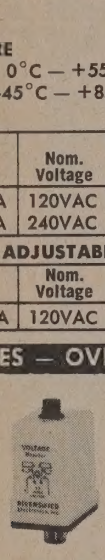
A.C. FIXED:

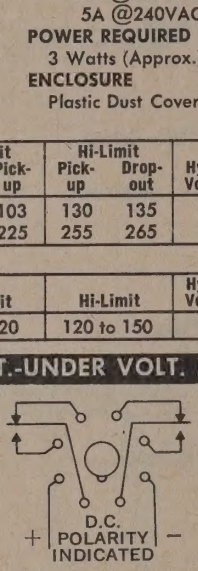
Catalog No.	Nom. Voltage	Lo-Limit Drop-out	Lo-Limit Pick-up	Hi-Limit Pick-up	Hi-Limit Drop-out	Hyster. Voltage	Price 1-9
VBA-120-AFA	120VAC	98	103	130	135	5	$47.55
VBA-240-AFA	240VAC	215	225	255	265	10	52.55

A.C. KNOB ADJUSTABLE:

Catalog No.	Nom. Voltage	Lo-Limit	Hi-Limit	Hyster. Voltage	Price 1-9
VBA-120-AKA	120VAC	90 to 120	120 to 150	5	$50.55

UO SERIES — OVER VOLT.-UNDER VOLT. MONITOR





The UO Series consists of a solid state voltage detector that senses a voltage greater than a preset "pick-up voltage" and causes an internal DPDT relay to operate. When the voltage drops to a preset "drop-out" voltage the output relay will de-energize. A hysteresis is set into each standard monitor to allow a differential between pickup and dropout. For specifications, see VB Series.

KNOB ADJUSTABLE:

Catalog No.	Drop-out Voltage	Pull-in Voltage	Hysteresis Voltage	Price 1-9
UOA-120-AKA	97-130VAC	102-135VAC	5	$39.75
UOA-240-AKA	205-250VAC	215-260VAC	10	44.75
UOA- 24-DKA	19- 27VDC	21- 29VDC	2	29.50

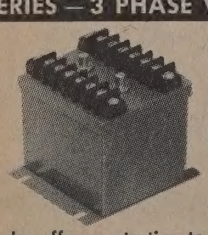
FIXED UNDER VOLTAGE:

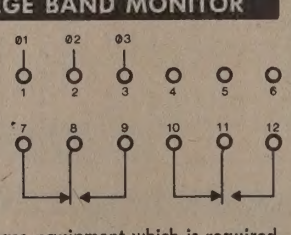
UOA-100-AFA	97VAC	103VAC	6	38.25
UOA-220-AFA	215VAC	225VAC	10	43.25
UOA- 20-DFA	19VDC	21VDC	2	28.00

FIXED OVER VOLTAGE:

UOA-133-AFA	130VAC	136VAC	6	38.25
UOA-260-AFA	255VAC	265VAC	10	43.25
UOA- 28-DFA	27VDC	29VDC	2	28.00

PB SERIES — 3 PHASE VOLTAGE BAND MONITOR





The PB Series offers protection to three phase equipment which is required to operate between two voltage limits. The three phases are monitored for a preselected under or over limit. An internal control relay is de-energized when the voltage goes outside of these limits. This device provides both under and over voltage monitoring of each phase of a 3-wire, 3 power line in one package. The monitors are equipped with a di time delay to accommodate start-up transients. With normal op voltages on all phases, an internal relay will be energized. If the on any phase goes above or below the drop-out limit, the signal time delay will be removed. If this out-of-limit condition exists phase, for a period longer than the release time of the time del output relay will de-energize.

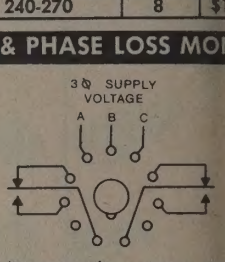
A.C. FIXED:

Catalog No.	Low-Limit Drop-out	Low-Limit Pick-up	Hi-Limit Pick-up	Hi-Limit Drop-out	Hyster. Voltage	P
PBA-120-AFF-D	98	103	130	135	5	$1
PBA-240-AFF-D	220	228	252	260	8	1

A.C. KNOB ADJUSTABLE:

Catalog No.	Low-Limit	Hi-Limit	Hyster. Voltage	P
PBA-240-AKF-D	220-240	240-270	8	$1

SL Series—PHASE SEQUENCE & PHASE LOSS MON



The SL Series is designed for use in applications where motor rota connection to the power line is critical, or where loss of one o phases may cause damage to electrical equipment. If the phase se is correct and full-line voltage is present on all three phases, the i relay will be energized. If one or more phase is lost or if the sequence is reversed, the control relay will de-energize.

SPECIFICATIONS

TEMPERATURE
Operating: 0°C — +55°C
Storage: —45°C — +85°C

RATED OUTPUT
DPDT Relay
10A @24VDC or 120VAC
5A @240VAC Resistive

OPERATING VOLTAGE
83% of Nominal Voltage @25°C

POWER REQUIRED
3 Watts (Approx.)

OPERATE TIME
60m. sec

RELEASE TIME
0.5 sec.

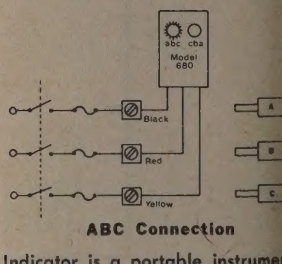
ENCLOSURE
Plastic Dust Cover

STANDARD MONITORS:

Catalog No.	3ø Supply Voltage	Phase Sequence	Price
SLA-208-AFA-A	208	ABC	$32
SLA-240-AFA-A	240	ABC	32
SLA-240-AFA-B	240	CBA	32

MODEL 680 — PHASE SEQUENCE INDICATOR

PRICE: 1-9—$27.50



ABC Connection

The Model 680 Phase Sequence Indicator is a portable instrumen used in determining the phase sequence of a 3-phase 60 hz. line.

For an ABC (clockwise rotation) load connection, the three te are connected to the power line at random. If the CBA indicator lig interpose any two test leads. When the ABC indicator light is on, tions from line to load should be made as drawing at right.

ABC CONNECTION

Indicator Light	Test Lead	Load Termi
ABC	Black	A
ABC	Red	B
ABC	Yellow	C

CBA CONNECTION

CBA	Yellow	C
CBA	Red	B
CBA	Black	A

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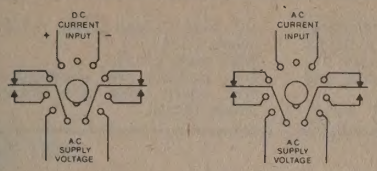
VERSIFIED ELECTRONICS INC.

QUALITY PRODUCTS FOR INDUSTRY

CM SERIES — CURRENT MONITOR



(\ Series consists of a Solid State, magnetic, current detector which e a current level. When the monitored current exceeds the trip point n for a period greater than the response time, an internal 10 amp. T lay will operate. A current decrease of at least 5% of trip point is i d for relay to de-energize. The monitors are equipped with appro- t ime delays to accommodate start-up transients and short-time line a ns.

CICATIONS

P NSE TIME
pate: 1 sec.
e se: 30m. sec.

ENT DIFFERENTIAL
% of Trip Point

OINT (FIXED)
= % of setting

TEMPERATURE
Operating: 0°C — +55°C
Storage: -45°C — +85°C

RATED OUTPUT
DPDT Relay — Resistive
10A @28VDC or 120VAC
5A @240VAC

SUPPLY POWER (Auxiliary)
2-Volt Amperes Nominal

NOB ADJUSTABLE:

atalog No.	Supply Voltage	Trip Point (Amps.)	Price 1-9
-120-AKA- 1	120VAC	0.2- 1.0	$52.85
-120-AKA- 5	120VAC	1.0- 5.0	52.85
-120-AKA-10	120VAC	5.0-10.0	52.85

XED:

-120-AFA-1	120VAC	1.0	51.35

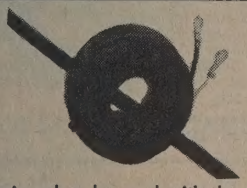
NOB ADJUSTABLE:

-120-DKA-1	120VAC	0.2-1.0	57.00

XED:

120-DFA-1.0	120VAC	1.0	55.00

CT SERIES — CURRENT TRANSFORMERS



C Series are designed to be used with the SM Series monitors, when ents above 5 amps. are to be detected. This torroidal transformer o extend the range of the basic current monitor. The transformer r a conductor and is provided with a secondary lead length of s.

g No.	Current Ratio	Accuracy	Capacity	Maximum Diameter of Primary	Price 1-9
5/5	25/5	6.0%	2 V.A.	1"	$20.25
0/5	50/5	6.0%	2 V.A.	1"	17.00
0/5	100/5	3.0%	2 V.A.	1"	17.00

SERIES — SOLID STATE TIME DELAY RELAYS

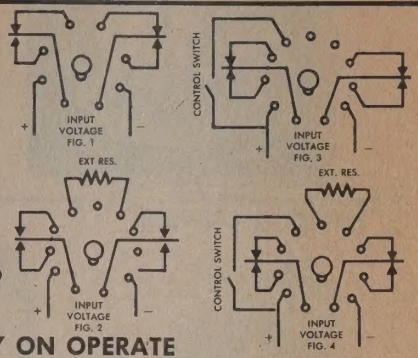
ON OPERATE
pplication of the input voltage, the time delay period begins. At of the time-delay period, an internal 10 amp. DPDT relay ener- imer is reset by removal of input voltage.

AL ON OPERATE
pplication of the input voltage an internal 10 amp. DPDT relay s and the time delay begins. At the end of the delay period, the e-energizes. Timer is reset by removal of input voltage.

ON RELEASE
osure of a control switch, an internal 10 amp. DPDT relay energizes. e-delay period begins when the switch is opened. At the end of y period, the relay de-energizes.

SHOT
osure of a control switch (either momentarily or maintained), an 10 amp. DPDT relay energizes and the time delay begins. At the the delay period, the relay de-energizes.

D.C.: POLARITY INDICATED



TDA SERIES — DELAY ON OPERATE

(If voltage is removed before time out, relay contacts may momentarily pick up and drop out)

EXT. RES. ADJUSTABLE—Fig. 2
PRICE: 1-9—$18.50

Catalog No.	Input Voltage	Delay Time (Sec)	Ext. Res. Max. Time
TDA- 24-DRA-010	24VDC	1 to 10	200K
TDA- 24-ARA-010	24VAC	1 to 10	200K
TDA-120-ARA-010	120VAC	1 to 10	200K
TDA-120-ARA-200	120VAC	2 to 200	2 Meg

KNOB ADJUSTABLE—Fig. 1
PRICE: 1-9—$19.00

Catalog No.	Input Voltage	Delay Time (Sec)
TDA- 24-DKA-010	24VDC	1 to 10
TDA- 24-AKA-010	24VAC	1 to 10
TDA-120-AKA-010	120VAC	1 to 10
TDA-120-AKA-200	120VAC	2 to 200

FIXED—Fig. 1
PRICE: 1-9—$17.50

TDA- 24-DFA-010	24VDC	10
TDA- 24-AFA-010	24VAC	10
TDA-120-AFA-010	120VAC	10

TDB SERIES — INTERVAL ON OPERATE

(If voltage is removed before time out, timer will reset)

EXT. RES. ADJUSTABLE—Fig. 2
PRICE: 1-9—$30.75

Catalog No.	Input Voltage	Delay Time (Sec)	Ext. Res. Max. Time
TDB- 24-DRA-010	24VDC	.1 to 10	1 Meg
TDB- 24-ARA-010	24VAC	.1 to 10	1 Meg
TDB-120-ARA-010	120VAC	.1 to 10	1 Meg
TDB-120-ARA-200	120VAC	2 to 200	2 Meg

KNOB ADJUSTABLE—Fig. 1
PRICE: 1-9—$31.25

Catalog No.	Input Voltage	Delay Time (Sec)
TDB- 24-DKA-010	24VDC	.1 to 10
TDB- 24-AKA-010	24VAC	.1 to 10
TDB-120-AKA-010	120VAC	.1 to 10
TDB-120-AKA-200	120VAC	2 to 200

FIXED—Fig. 1
PRICE: 1-9—$29.75

TDB- 24-DFA-010	24VDC	10
TDB- 24-AFA-010	24VAC	10
TDB-120-AFA-010	120VAC	10

TDC SERIES—DELAY ON OPERATE

(If voltage is removed before time out, timer will reset and relay contacts will not pick up.)

EXT. RES. ADJUSTABLE—Fig. 2
PRICE: 1-9—$27.00

Catalog No.	Input Voltage	Delay Time (Sec)	Ext. Res. Max. Time
TDC- 24-DRA-010	24VDC	.1 to 10	1 Meg
TDC- 24-ARA-010	24VAC	.1 to 10	1 Meg
TDC-120-ARA-010	120VAC	.1 to 10	1 Meg
TDC-120-ARA-200	120VAC	2 to 200	2 Meg

KNOB ADJUSTABLE—Fig. 1
PRICE: 1-9—$27.50

Catalog No.	Input Voltage	Delay Time (Sec)
TDC- 24-DKA-010	24VDC	.1 to 10
TDC- 24-AKA-010	24VAC	.1 to 10
TDC-120-AKA-010	120VAC	.1 to 10
TDC-120-AKA-200	120VAC	2 to 200

FIXED—Fig. 1
PRICE: 1-9—$26.00

TDC- 24-DFA-010	24VDC	10
TDC- 24-AFA-010	24VAC	10
TDC-120-AFA-010	120VAC	10

TDD SERIES—DELAY ON RELEASE

(If control switch is re-closed before time out, timer will reset)

EXT. RES. ADJUSTABLE—Fig. 4
PRICE: 1-9—$32.25

Catalog No.	Input Voltage	Delay Time (Sec)	Ext. Res. Max. Time
TDD- 24-DRA-010	24VDC	.1 to 10	1 Meg
TDD- 24-ARA-010	24VAC	.1 to 10	1 Meg
TDD-120-ARA-010	120VAC	.1 to 10	1 Meg
TDD-120-ARA-200	120VAC	2 to 200	2 Meg

KNOB ADJUSTABLE—Fig. 3
PRICE: 1-9—$32.75

Catalog No.	Input Voltage	Delay Time (Sec)
TDD- 24-DKA-010	24VDC	.1 to 10
TDD- 24-AKA-010	24VAC	.1 to 10
TDD-120-AKA-010	120VAC	.1 to 10
TDD-120-AKA-200	120VAC	2 to 200

FIXED—Fig. 3
PRICE: 1-9—$31.25

TDD- 24-DFA-010	24VDC	10
TDD- 24-AFA-010	24VAC	10
TDD-120-AFA-010	120VAC	10

TDE SERIES — SINGLE SHOT

(Timer resets automatically at end of delay period)

EXT. RES. ADJUSTABLE—Fig. 4
PRICE: 1-9—$30.75

Catalog No.	Input Voltage	Delay Time (Sec)	Ext. Res. Max. Time
TDE- 24-DRA-010	24VDC	.1 to 10	1 Meg
TDE- 24-ARA-010	24VAC	.1 to 10	1 Meg
TDE-120-ARA-010	120VAC	.1 to 10	1 Meg
TDE-120-ARA-200	120VAC	2 to 200	2 Meg

KNOB ADJUSTABLE—Fig. 3
PRICE: 1-9—$31.25

Catalog No.	Input Voltage	Delay Time (Sec)
TDE- 24-DKA-010	24VDC	.1 to 10
TDE- 24-AKA-010	24VAC	.1 to 10
TDE-120-AKA-010	120VAC	.1 to 10
TDE-120-AKA-200	120VAC	2 to 200

FIXED—Fig. 3
PRICE: 1-9—$29.75

TDE- 24-DFA-010	24VDC	10
TDE- 24-AFA-010	24VAC	10
TDE-120-AFA-010	120VAC	10

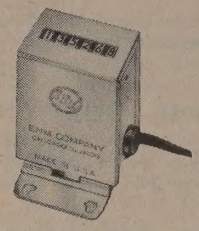
ELECTRICAL AND MECHANICAL COUNTERS AND NUMBERING DEVICE

INDICATING MODULE

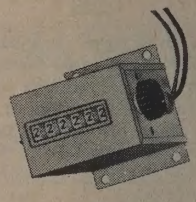
Model U44 — Panel mount, indicating, up to 40 pulses per second, resettable by external switch using half wave rectified A.C. source with fixed plug and removable socket.
Dimensions: Front panel 1.680" high x ¼" wide; Overall length 4.216"; Body height 1.125".
Price each: $12.00
Also available with electrical readout, print wheels, high speed operation 80 pulses/second.

ELECTRICAL COUNTERS

BASE MOUNT

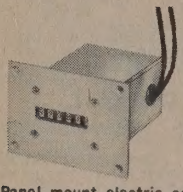


Model E2B—Economy electric counter, 6 digit, 110 V. 60 hz. 600 CPM, 12" leads, non-resettable, base mount, "L" shaped mounting holes. U.L. Recognized.
Dimensions: 2.340" long x 1.718" wide x 1.187" high
Price each: $5.25

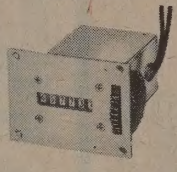


Model E3A—Basemount electrical impulse counter, standard speed (500 counts per min.), knob resettable 6 digits, 115 V. 60 hz. U.L. Recognized.
Dimensions: 2.63" long x 2.75" wide x 1.87" high
Price each: $16.00

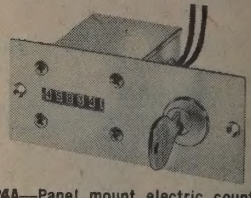
PANEL MOUNT



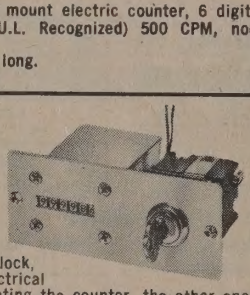
Model P2A—Panel mount electric counter, 6 digits, 115 V. 60 hz., (U.L. Recognized) 500 CPM, non-resettable.
Dimensions: 2.63" long.
Price each: $14.00



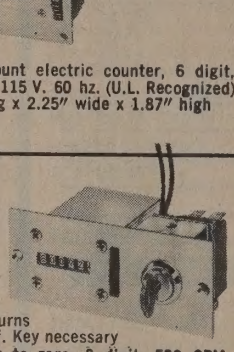
Model P3A—Panel mount electric counter, 6 digit, knob reset, 500 CPM, 115 V. 60 hz. (U.L. Recognized)
Dimensions: 2.63" long x 2.25" wide x 1.87" high
Price each: $20.00



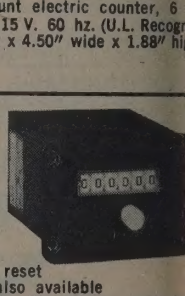
Model P4A—Panel mount electric counter, 6 key reset, 500 CPM, 115 V. 60 hz. (U.L. Recogn
Dimensions: 2.63" long x 4.50" wide x 1.88" hi
Price each: $29.00



Model P6A—Panel mount electric counter non-reset with key lock, controlling two electrical circuits, one operating the counter, the other operating the equipment, 6 digit, 500 CPM, 115 V. 60 hz., key switch; D.P.S.T. standard 25 AMP, 120-250 V. A.C.
Dimensions: 2.63" long x 4.5" wide x 1.87" high
Price each: $24.00

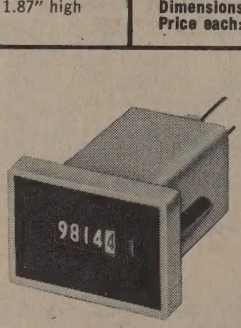


Model P7A—Panel mount electric resettable counter with an exclusive key switch which turns the equipment on or off. Key necessary for manually resetting to zero, 6 digit, 500 CPM, 115 V. 60 hz., switch D.P.S.T. standard 25 AMP, 120-250 V. A.C. (U.L. Recognized)
Dimensions: 2.63" long x 4.5" wide x 1.88" high
Price each: $36.00

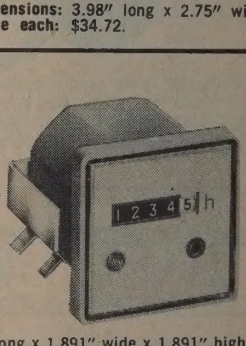


Model 443—Panel mount electric impulse counter, high speed, add only, push button reset 6 digits, 24 V. D.C., also available with electric reset or add/subtract push bu reset.
Dimensions: 3.98" long x 2.75" wide x 1.81"
Price each: $34.72.

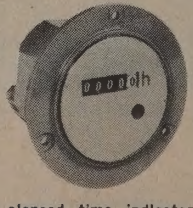
ELAPSED TIME INDICATORS



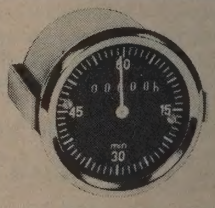
Stock T4B — Miniature elapsed time indicator, 5 digit, non-reset, 115 V. 60 hz., scale 9999.9 hours, with tenths in red, panel mount.
Dimensions: 1.72" long x 1.59" wide x 1.03" high
Price each: $15.50



Stock T5B—Economy elapsed time indicator, 5 digit, non-reset, 110 V. 60 hz., scale 9999.9 hours, with tenths in red, mounting in 1.968 dia. hole or 1.781 square panel cutout.
Dimensions: 2.078" long x 1.891" wide x 1.891" high
Price each: $15.00



Model T5BB—Economy elapsed time indicator, 5 digit non-reset, 110 V. 60 hz., scale 9999.9 hours with tenths in red, mounting in 1.968 dia. hole.
Dimensions: 2.88" dia., 2.14" long.
Price each: $15.00.



Model T8B—Panel mounted elapsed time indicator, records hours and minutes only in 6 V., 12 V. and 24 V. D.C. only, mounts in 2⅜" dia. hole.
Dimensions: 2.6" dia., 2.36" long.
Price each: $26.00.

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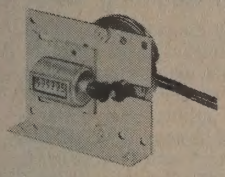
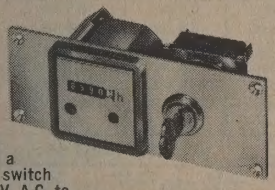
ELECTRICAL AND MECHANICAL COUNTERS AND NUMBERING DEVICES

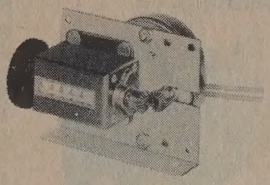
ELAPSED TIME INDICATORS



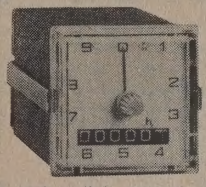
lodel T10A — Low cost elapsed time indicator, or 6 digit, hours or minutes scale with tenths red, non-resettable, 115 V. 60 hz., other voltages vailable, universal bracket mount.
imensions: 2.25″ long x 3.0″ wide x 2.31″ high.
rice each: $15.10.



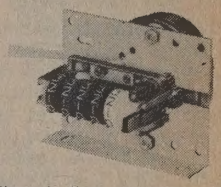
lodel P8C — conomy lapsed time ndicator with ecurity lock and ey. Key actuates a tandard D.P.S.T. switch 5 AMP, 120-250 V. A.C. to tart equipment; thus true operating hours are re- orded. 5 digit, non-reset, 110 V. 60 hz., scale 9999.9 ours with tenths in red, panel mount.
imensions: 1.828″ long x 5.505″ wide x 1.891″ high
rice each: $29.50



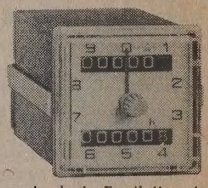
Model T20A — Elapsed time indicator, 5 or 6 digit, hours or minutes scale with tenths in red, knob resettable, 115 V. 60 hz., other voltages available, universal bracket mount.
Dimensions: 2.45″ long x 3.0″ wide x 2.31″ high.
Price each: $17.50.



Model T2B — Low cost 7 digit elapsed time indicator, records hours, tenths and hundredths, tenths in red, hundredths with sweep hand, knob resettable, 127/220 dual voltage, 60 hz. panel mount.
Dimensions: 4″ long x 1.87″ wide x 1.87″ high.
Price each: $22.00.

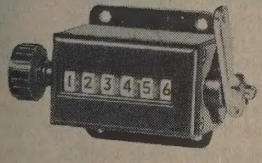


Model T30A — Elapsed time indicator, 4 or 5 digits, hours, minutes or seconds scale with tenths in red, push button resettable, 115 V. 60 hz., other voltages available, universal bracket mount.
Dimensions: 2.81″ long x 3.0″ wide x 2.31″ high.
Price each: $17.90.

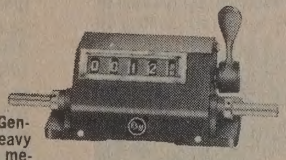


Model T3B — Low cost dual 7 digit odometer elapsed time indicator, records hours, tenths and hundredths, tenths in red, hundredths with sweep hand, one odometer knob resettable, other total time, 127/220 dual voltage, 60 hz., panel mount.
Dimensions: 4″ long x 1.87″ wide x 1.87″ high.
Price each: $27.50.

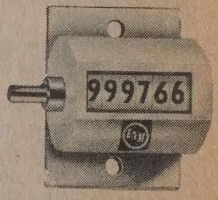
MECHANICAL COUNTERS



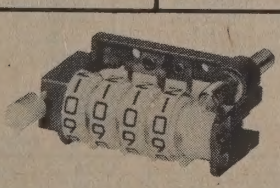
lodel 426 — Small medium duty 6 digit mechanical troke counter with resettable knob and operating ever, 1000 CPM, base mount.
imensions: 1.63″ long x 1.00″ wide x 1.045″ high
rice each: $7.22



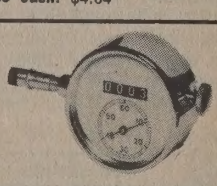
Model 428 — General purpose heavy duty, 6 digit, mechanical double shaft counter, revolution drive, adds or subtracts one count for each complete revolution of input shaft, 10,000 CPM, base mount with resettable lever.
Dimensions: 3.094″ long x 2.250″ wide x 1.781″ high
Price each: $32.14



Model 421—Small medium duty 5 digit mechanical revolution counter, 3000 CPM, non-resettable, base mount.
Dimensions: 0.876″ long x 0.938″ wide x 0.432″ high
Price each: $4.64

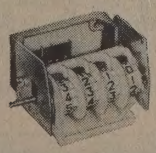


Model 433 — Tape recorder counter with push button reset, worm drive, 1 count per input revolution, 4 digit, high speed, adds and subtracts.
Dimensions: 1.66″ long x 1.89″ wide x .87″ high
Price each: $7.50

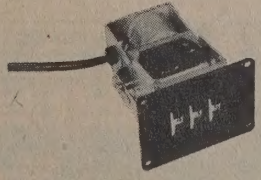


Model M99 — Exceptionally economical tachometer combines hand speed counter and stop watch to measure rpms, rated to 6000 rpm max., knob resettable.
Dimensions: 2.36″ dia.
Price each: $52.92

PREDETERMING COUNTERS



Model M36 — Predetermining mechanical counter, 3 digit, 200 strokes per min. Predetermined contact is a single pole double throw switch, capacity 5 A., 250 V. A.C. Terminals on switch, panel mount, preset by 3 setting knobs.
Dimensions: 2.155″ long x 3.062″ wide x 2.312″ high
Price each: $20.50



Model PE 35 — A three digit 115 W. electrical predetermining counter 200 pulses per min. Predetermining contact is a single pole double throw switch, capacity 5A, 250 V. A.C. panel mount. Preset by two setting knobs. U.L. Recognized.
Dimensions: 3.580″ long x 3.062″ wide x 2.312″ high
Price each: $22.50, 2 figures; $23.95, 3 figures

ENM Company, Inc.

GENERAL TIME

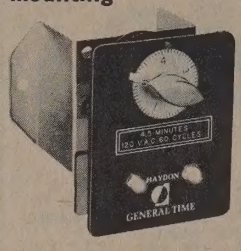
Progress in the World of Time

INDUSTRIAL CONTROLS DIVISION

Full line of...

- **Electromagnetic and electronic timing devices**
- **Elapsed Time Indicators**

Series DA Time Delay Timers, Rear Mounting



Type DA11. Manually adjustable by knob. Apply wherever delay, interval or repeat cycle timing functions are required (repeat cycle requires two units). Internal clutch engages and disengages when motor is energized and de-energized. Resets to start position when power is removed. SPDT switch rated 20 amps. 125 or 250 VAC resistive; solder lug terminals. Min. setting 0 sec. Repeat accuracy ±¾ of 1% of total time range. 5 watt motor. 120 VAC, 60 Hz. U/L listed. Size: 3⅜" W x 2¹³⁄₁₆" D x 3⅛" H. Weight: 1½ lbs.

Type DA21. Same as DA11 but with locknut adjustment to eliminate tampering.

When ordering, specify model number, voltage and frequency.

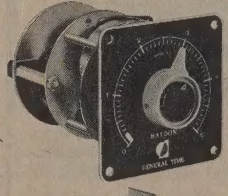
MFR'S MODEL NO.		MAX. TIME SETTING	MAX. RESET TIME
DA11-036		5.7 sec.	0.25 sec.
DA11-031	DA21-001	14 sec.	1.0 sec.
DA11-032	DA21-002	57 sec.	1.5 sec.
DA11-035	DA21-005	114 sec.	9.0 sec.
DA11-033	DA21-003	4.5 min.	15 sec.
DA11-034	DA21-004	9.5 min.	120 sec.

NET EACH, LOTS OF

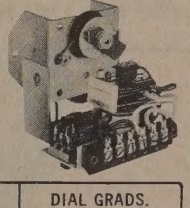
1-4	5-9	10-24	25-49	50-99	100-249	250 & over
$16.79	$15.95	$15.11	$14.27	$13.43	$12.59	$11.75

Series BN Adjustable Reset Timers

Panel or rear mounting; interval or delay timing. Built-in relay, adjustable time range. Apply to machine tools, production and processing equipment or other operations requiring a compact, dependable unit for direct control of electrical loads.



BN41 (Interval) and BN42 (Delay) Panel Mount Dial and setting knob with readout of elapsed time by pointer in center of knob. SPDT relay rated 10 amps at 125 or 250 VAC. Timing motor rated 5 watts max. 120 VAC, 60 Hz. Repeat accuracy ±¾ of 1% of total time range. Screw terminal block. Size: 3⁵⁄₁₆" square x 4⅜" deep; behind panel. Requires 3¹⁄₁₆" dia. mounting hole.



BN25 (Interval) and BN22 (Delay) Rear Mount Same specifications as BN41 and BN42 except have chassis or back panel mount. Locknut setting adjustment, where only occasional time period changes are required. Size: 3.375" W x 4.202" H x 3.750" D.

PANEL MOUNTING

MFR'S MODEL NO.		TIME SETTING		MAX. RESET TIME	DIAL GRADS.	
INTERVAL	DELAY	MAX.	MIN.		MAJOR	MINOR
BN41-001	BN42-001	6 sec.	0.3 sec.	0.5 sec.	1 sec.	0.1 sec.
BN41-003	BN42-003	15 sec.	0.8 sec.	1.0 sec.	1 sec.	0.2 sec.
BN41-004	BN42-004	30 sec.	1.5 sec.	1.5 sec.	5 sec.	0.5 sec.
BN41-005	BN42-005	60 sec.	3.0 sec.	1.5 sec.	10 sec.	1.0 sec.
BN41-006	BN42-006	120 sec.	6.0 sec.	10 sec.	20 sec.	2.0 sec.
BN41-007	BN42-007	5 min.	0.2 min.	15 sec.	1 min.	0.1 min.
BN41-008	BN42-008	10 min.	0.4 min.	120 sec.	1 min.	0.2 min.

REAR MOUNTING

MFR'S MODEL NO.		TIME SETTING		MAX. RESET TIME	DIAL GRADS.	
INTERVAL	DELAY	MAX.	MIN.		MAJOR	MINOR
BN25-006	BN22-006	5.4 sec.	0.3 sec.	0.5 sec.	1 sec.	0.1 sec.
BN25-001	BN22-001	13.5 sec.	0.7 sec.	0.5 sec.	1 sec.	0.5 sec.
BN25-002	BN22-002	54 sec.	3.0 sec.	1.5 sec.	5 sec.	1.0 sec.
BN25-005	BN22-005	108 sec.	6.0 sec.	2.5 sec.	10 sec.	1.0 sec.
BN25-003	BN22-003	4.5 min.	15 sec.	5.0 sec.	1 min.	5.0 sec.
BN25-004	BN22-004	9.5 min.	30 sec.	120 sec.	1 min.	5.0 sec.

NET EACH, LOTS OF

MOUNTING	1-4	5-9	10-24	25-49	50-99	100-249	250 & over
Panel	$28.69	$27.25	$25.82	$24.38	$22.95	$21.52	$20.08
Rear	23.80	22.61	21.42	20.23	19.04	17.85	16.66

Series DP11 Panel Mounting Reset Timer

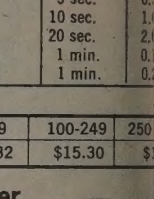
Adjustable time range by simple pointer knob. Apply wherever delay, interval or repeat cycle timing are needed (repeat cycle requires two timers). Readout of elapsed time by pointer in center of knob. Unit resets to start position when power is removed. SPDT switch rated 10 amps, 125 or 250 VAC resistive. Timing motor rated 5 watts max. 120 VAC, 60 Hz. Repeat accuracy ±1% of total time range. Screw terminals. Size square x 3⁹⁄₃₂" deep, behind panel. Requires 3¹⁄₁₆" dia. mounting h When ordering, specify model number, voltage and frequency.

MFR'S MODEL NO.	TIME SETTING		MAX. RESET TIME	DIAL GRADS	
	MAX.	MIN.		MAJOR	M
DP11-007	6 sec.	0.3 sec.	0.5 sec.	1 sec.	1.
DP11-001	15 sec.	0.8 sec.	1.0 sec.	1 sec.	0.
DP11-006	30 sec.	1.5 sec.	1.5 sec.	5 sec.	0.
DP11-002	60 sec.	3.0 sec.	1.5 sec.	10 sec.	1.
DP11-005	120 sec.	6.0 sec.	10 sec.	20 sec.	2.
DP11-003	5 min.	0.2 min.	15 sec.	1 min.	0.
DP11-004	10 min.	0.4 min.	120 sec.	1 min.	0.

NET EACH, LOTS OF

1-4	5-9	10-24	25-49	50-99	100-249	250
$20.40	$19.38	$18.36	$17.34	$16.32	$15.30	$

Series BJ Push-Button Interval Timer



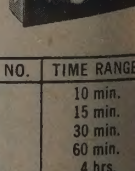
Dependable, rugged panel-mount timer. Timing interval is initiated by manually setting knob to selected position and manually depressing the push button. For control of mixers, ovens, tumbling and plating equipment, copy machines, photographic equipment, etc. Readout of elapsed time by pointer in center of setting knob. Instant reset to start position automatically. SPDT switch rated 15 amps, 125 or 250 VAC resistive. Timing motor rated 5 watts max. 120 VAC, 60 Hz. accuracy ±½ of 1% of full scale. Combination spade and solder lugs. Size square x 2²³⁄₃₂" deep, behind panel. Requires 3¹⁄₁₆" dia. mountin Weight: 1½ lbs. When ordering, specify model number, voltage and fre

MFR'S MODEL NO.	TIME SETTING		DIAL GRADS.	
	MAX.	MIN.	MAJOR	MINOR
BJ12-004	30 sec.	1.5 sec.	5 sec.	0.5 sec.
BJ12-005	60 sec.	3.0 sec.	10 sec.	1.0 sec.
BJ12-006	120 sec.	6.0 sec.	20 sec.	2.0 sec.
BJ12-007	5 min.	0.2 min.	1 min.	0.1 min.
BJ12-008	10 min.	0.4 min.	1 min.	0.2 min.
BJ12-009	15 min.	0.8 min.	1 min.	0.2 min.
BJ12-010	30 min.	1.5 min.	5 min.	0.5 min.
BJ12-011	60 min.	3.0 min.	10 min.	1.0 min.

NET EACH, LOTS OF

1-4	5-9	10-24	25-49	50-99	100-249	250
$19.13	$18.17	$17.21	$16.26	$15.30	$14.34	$1

Series RG21 Repeat Cycle Timers



Cam-actuated, single switch timers for rear mounting. Run continuously, repeating a set cycle of make-break switching operations as long as motor is energized. Also operates a single time cycle. Cam adjustable from 7° min. to 169° max. (±3%). SPDT switch rated 20 amps resistive. Timing motor 3.7 watts max., 120 VAC, 60 Hz. Solder lug terminals. 6" leads. U/L listed. Size: 2⁵⁄₁₆" W x 3⅛" H x 2½" D. Weight: 1 lb.

MFR'S MODEL NO.	TIME RANGE	MFR'S MODEL NO.	TIME RANGE
RG21-090	7½ sec.	RG21-095	10 min.
RG21-091	15 sec.	RG21-096	15 min.
RG21-092	30 sec.	RG21-097	30 min.
RG21-093	1 min.	RG21-098	60 min.
RG21-094	5 min.	RG21-099	4 hrs.

NET EACH, LOTS OF

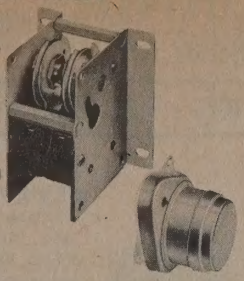
1-4	5-9	10-24	25-49	50-99	100-249	250
$12.96	$12.31	$11.67	$11.02	$10.37	$ 9.72	$

Net

© United Technical Publica

s RE62 Repeat Cycle Multi-Cam Timers

pecifications as RG21, except 2 to 6 switches e actuated during cycle. Run continuously, ng set cycles of multiple switching opera- long as motor is energized. Complete unit s one motor and one or more switch stacks. r wrench included to adjust cams. Two- nit size: 2⅝" H x 3⅜" W x 3⅜" D; add " depth for each additional switch. When g, specify switch stock model number, drive ype-number, voltage and frequency.



SWITCH STACKS

NO.	SWITCH	1-4	5-9	10-24	25-49	50-99	100-249	250 & over
91	2	$12.03	$11.42	$10.83	$10.22	$ 9.62	$ 9.02	$ 8.42
92	3	16.06	15.26	14.66	13.66	12.85	12.04	11.25
93	4	20.10	19.09	18.10	17.09	16.08	15.07	14.08
94	5	24.56	23.33	22.11	20.88	19.65	18.42	17.20
95	6	28.60	27.17	25.75	24.31	22.88	21.45	20.03

DRIVE MOTORS — Order one with switch stacks for complete unit.

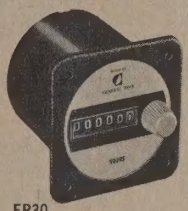
TYPE	TIME RANGE	TYPE	TIME RANGE
MP10-390	7½ sec.	MP10-395	10 min.
MP10-391	15 sec.	MP10-396	15 min.
MP10-392	30 sec.	MP10-397	30 min.
MP10-393	1 min.	MP10-398	1 hr.
MP10-394	5 min.	MP10-399	4 hrs.

NET EACH, LOTS OF

	5-9	10-24	25-49	50-99	100-249	250 & over
	$5.94	$5.62	$5.31	$5.00	$4.69	$4.37

ed Time Indicators

Wide variety of meters available for any application where accurate time readings are required. All are synchronous motor driven. Round, square bezel, panel mount and rear mount available. Can be resettable or non-resettable, and readout is digital with a range of



ER30

res plus tenths; in hours and tenths or minutes and tenths. All erate at 120 VAC, 60 Hz; operating temperatures −12°C to +55°C.

E	BEZEL	DEPTH	DIAMETER OF UNIT	MAX. MOTOR RATING	LEADS OR TERMINALS
NR	2⅛" Rd.	1 51/64	2 17/64	2.5 w	6" leads
NR	1¾" Sq.	2 37/64	1 17/32	2.5 w	11¼" leads
NR	1¾" Sq.	2 37/64	1 17/32	2.5 w	solder
NR	3" Sq.	3 5/16	2 22/32	3.7 w	8-32 studs
R	3" Sq.	3 5/16	2 22/32	3.7 w	8-32 studs
R	3½" Rd.	3 5/16	2 22/32	3.7 w	8-32 studs
NR	3½" Rd.	3 5/16	2 22/32	3.7 w	8-32 studs

Reset
Non-reset

NET EACH, LOTS OF

REGISTERS	1-4	5-9	10-24	25-49	50-99	100-249	250 & over
min. & 10ths	$ 9.56	$ 9.08	$ 8.61	$ 8.13	$ 7.65	$ 7.17	$ 6.69
hrs. & 10ths	9.56	9.08	8.61	8.13	7.65	7.17	6.69
hrs. & 10ths	22.31	21.20	20.08	18.97	17.85	16.73	15.62
hrs. & 10ths	24.23	23.01	21.80	20.59	19.38	18.17	16.96
min. & 10ths	17.00	16.15	15.30	14.45	13.60	12.75	11.90
hrs. & 10ths	17.00	16.15	15.30	14.45	13.60	12.75	11.90
min. & 10ths	17.00	16.15	15.30	14.45	13.60	12.75	11.90
hrs. & 10ths	17.00	16.15	15.30	14.45	13.60	12.75	11.90
min. & 10ths	24.65	23.42	22.19	20.95	19.72	18.49	17.26
hrs. & 10ths	24.65	23.42	22.19	20.95	19.72	18.49	17.26
min. & 10ths	24.65	23.42	22.19	20.95	19.72	18.49	17.26
hrs. & 10ths	24.65	23.42	22.19	20.95	19.72	18.49	17.26

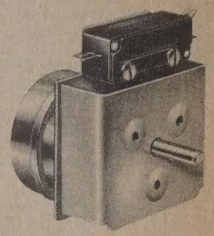
ffective May 1, 1969.

Series AB Hand Set Interval Timer

Type AB51. Rotation energizes the load and timing motor. On release motor drives timer to zero; motor and load is then de-energized. Setting can be changed during cycle without damage. Mount behind panel, using three equally spaced .180 dia. tapped holes on .562 R. Setting shaft: ¼" dia. flatted to .156 for ½". Flat is located 180° from "0" time. SPDT switch rated 25 amps. 125 or 250 VAC resistive ¼" spade terminals 3.5 watt motor 120 VAC 60 Hz. Size 2½" W x 3⅜" D x 3" H. Weight: 1 lb. When ordering specify model number, voltage and frequency.

BEHIND PANEL MOUNTING

MFR'S MODEL NO.	TIME RANGE
AB51-001	1 Min.
AB51-002	6 Min.
AB51-003	15 Min
AB51-004	30 Min.
AB51-005	60 Min.
AB51-006	2 Hrs.
AB51-007	6 Hrs.
AB51-008	8 Hrs.
AB51-010	12 Hrs.
AB51-016	24 Hrs.



NET EACH, LOTS OF

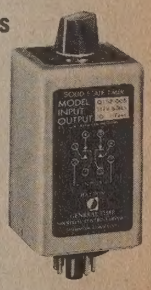
1-4	5-9	10-24	25-49	50-99	100-249	250 & over
$7.65	$7.27	$6.89	$6.50	$6.12	$5.74	$5.36

Series QT21 Solid State Rear-Mounting Timers

Solid state construction includes moisture-resistant coated PC board. Knob-adjustable time periods. Rear mounting. For applications where delay, interval or repeat cycle time functions are required (repeat cycle requires two units). SPDT relay 10 amps, 125 VAC resistive. Power input 117 volts, 60 Hz. Repeat accuracy ±2% of set value under constant conditions of temperature and voltage. Power standing on this timer has no damaging effect. Maximum reset time 130 milliseconds. Dial accuracy 10% of full scale. ¼" male spade terminals. Size: 3⅜" x 2 57/64" x 3⅝". Two ⅜" x 5/16" slotted mounting holes on 2⅞" centers. Average weight: 1 lb. When ordering, specify model number.

Series QT52 Solid State Octal Plug Timers

Basically same specifications as QT21, except has octal plug mounting and DPDT relay. Size: 4⅜" x 3 9/16" x 2⅛".



MFR'S MODEL NO.		RANGE
QT21-003	QT52-003	3 sec.
QT21-004	QT52-004	5 sec.
QT21-005	QT52-005	10 sec.
QT21-006	QT52-006	15 sec.
QT21-007	QT52-007	30 sec.
QT21-008	QT52-008	60 sec.

NET EACH, LOTS OF

	1-4	5-9	10-24	25-49	50-99	100-249	250 & over
QT21	$18.91	$17.97	$17.02	$16.08	$15.13	$14.18	$13.24
QT52	20.61	19.58	18.55	17.52	16.49	15.46	14.43

Hermetically Sealed Military Type Indicator

A very small, lightweight running time meter for wide application in military equipment. Meets Mil specification requirements per Mil-M-7793C and Mil-E-5272C. Life tested over 78,000 hours. Driven by synchronous hysteresis motor. Readout four digits plus tenths. Temperature range −55°C to +85°C. Round case 1¾" square bezel, 2 37/64" deep, barrel diameter 1½", four mounting holes on 1 5/16" centers. 115 volts, 400 Hz. Shock 50g, 11 milliseconds. Vibration to 1000 Hz at 10g. Altitude, sea level to 80,000 feet. Dielectric strength 500 volts, rms 60 Hz for one minute. Mil-Std-Ms-28053-5 solder terminals. Shipping weight: ¾ lb.

NET EACH, LOTS OF

TYPE	REGISTERS	1-4	5-9	10-24	25-49	50-99	100-249	250 & over
7010-004	hrs. & 10ths	$37.40	$35.53	$33.66	$31.79	$29.92	$28.05	$26.18

240 VAC units available; prices on request.

DUSTRIAL CONTROLS DIVISION

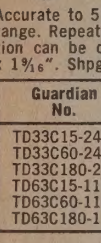
GENERAL TIME

Progress in the World of Time

GUARDIAN CALIFORNIA

Guardian Electric Manufacturing Company of California, Inc.

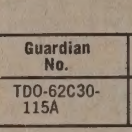
SOLID STATE • HYBRID • TIMING DEVICES • CONTROL DEVICES • TIME DELAY RELAYS • PROTECTIVE SENSORS



TIME DELAY HYBRID (RELAY OUTPUT)

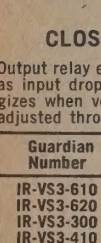
SERIES TD — This is the most accurate and compact solid-state time-delay available commercially from stock. 3DPT contacts handle up to 10 amp resistive load. Six standard model relays for 24V., DC and 115V., AC 50/60 cycles provide delays from 1 to 180 seconds. All units utilize silicon semi-conductors and precision tantalum capacitors for reliability. 15-turn screw-type potentiometer furnishes high resolution and accuracy. Accurate to 5% of a nominal setting over its complete temperature and voltage range. Repeatability is 2% after a line interruption of 50 milliseconds. Termination can be quick disconnects, socket or solder connections. Size: 3" x 1⅝" x 1 9/16". Shpg. wt., 5 oz.

Guardian No.	Coil Voltage	Adjustment Range	Net Each, Lots of 1-49	50-99	100 Up
TD33C15-24D	24VDC ±10%	1 to 15 sec.	$24.20	$21.88	$19.69
TD33C60-24D	24VDC ±10%	10 to 60 sec.	25.19	22.67	20.40
TD33C180-24D	24VDC ±10%	50 to 180 sec.	32.09	29.88	26.90
TD63C15-115A	115VAC ±10%	1 to 15 sec.	29.70	26.73	24.06
TD63C60-115A	115VAC ±10%	10 to 60 sec.	30.06	27.54	24.79
TD63C180-115A	115VAC ±10%	50 to 180 sec.	36.85	33.16	29.84



SERIES TDO — Incorporates many features of expensive units, but is the most economical 5 amp 115V., AC solid-state adjustable time-delay relay offered. Delay is adjustable from 0.5 to 30 seconds on at and is controlled by a 10-turn potentiometer for high lution, easy reset and accuracy. Unit terminates in plug. Accurate within 10% of a nominal setting ove entire temperature and voltage range. Repeatability is 2% after a line interruption of 100 milliseconds. Size x 2⅝" x 2 1/16". Shpg. wt., 8 oz.

Guardian No.	Coil Voltage	Adjustment Range	Net Each, Lots of 1-49	50-99	100
TDO-62C30-115A	115V ±%	50/60 cycle 0.5 to 30 sec.	$16.32	$15.69	$14.



SENSORS, PROTECTIVE

Fast-acting voltage, frequency and phase rotation sensors provide accurate repeat cycle characteristic of solid state input sensors, plus dependable 3PDT relay output. For use in visual or audible indicating devices or transfer switches. Sensors are non-latching; electrical latch and unlatch can be obtained by interwiring Guardian 24 VDC or 115 VAC enclosed relays. Versatile mounting; accepts printed-circuit socket, chassis mount, clip or chassis-mounted socket. 3DPT contacts rated 10 amps resistive at 115 VAC. Temperature range, 0°C to 50°C. Life expectancy, 100,000 operations min. Protected for transient voltages: 600 volts on 3-phase models, 2500 volts on all other types. With plastic dust cover.

3-PHASE, 4-WIRE VOLTAGE SENSING DEVICE

Detects from 3-phase source of 95 VAC when sufficient voltage available and loss of any line or drop-in average to 50 VAC. For use as warning or lockout device to protect 3-phase motors and systems. Designed for pull-in and drop-out; will repeat close values, allowing for unevenly loaded lines which can cause drastic rise and fall in other lines.

Guardian No. IR-AV2-611 — For 115 VAC, 60 Hz. ..... Net **$34.20**
Guardian No. IR-AV2-621 — For 115 VAC, 400 Hz. ..... Net **34.20**

CLOSE DIFFERENTIAL VOLTAGE SENSING DEVICE

Output relay energizes as input voltage rises to adjusted sense-point, de-energizes as input drops to adjusted differential release point. Non-latching output; energizes when voltage is returned to normal. Both sense-point and differential are adjusted through top of cover.

Guardian Number	Nominal Input	Adjustable Voltage Ranges Sense-Point	Differential	Net Each
IR-VS3-610	115 VAC, 60 Hz	105 - 130 VAC	2.5 - 15 VAC	$54.80
IR-VS3-620	115 VAC, 400 Hz	105 - 130 VAC	2.5 - 15 VAC	54.80
IR-VS3-300	24 VDC	23 - 32 VDC	1 - 5 VDC	53.40
IR-VS3-410	24 VAC, 60 Hz	23 - 32 VAC	1 - 5 VAC	54.15
IR-VS3-420	24 VAC, 400 Hz	23 - 32 VAC	1 - 5 VAC	54.15

OVER-VOLTAGE SENSING DEVICE

Output relay energizes as input voltage rises to adjusted sense-point. De-energizes as input voltage drops approx. 2.5% below sense-point. Permits sensor to function as under or over-voltage detector. Adjustment through cover.

Guardian Number	Nominal Input	Adjustable Voltage Range	Net Eac
IR-VS1-610	115 VAC, 60 Hz	90 - 130 VAC	$42.90
IR-VS1-620	115 VAC, 400 Hz	90 - 130 VAC	42.90
IR-VS1-300	24 VDC	18 - 32 VDC	41.70
IR-VS1-410	24 VAC, 60 Hz	18 - 32 VAC	42.15
IR-VS1-420	24 VAC, 400 Hz	18 - 32 VAC	42.15

UNDER-VOLTAGE SENSING DEVICE

Output relay energizes at low voltage pull-in point, independent of control cuit; remains energized until voltages rise to adjusted sense-point.

Guardian Number	Nominal Input	Adjustable Voltage Range	Net Eac
IR-VS2-610	115 VAC, 60 Hz	90 - 130 VAC	$42.90
IR-VS2-620	115 VAC, 400 Hz	90 - 130 VAC	42.90
IR-VS2-300	24 VDC	18 - 32 VDC	41.70
IR-VS2-410	24 VAC, 60 Hz	18 - 32 VAC	42.15
IR-VS2-420	24 VAC, 400 Hz	18 - 32 VAC	42.15

4-WIRE PHASE ROTATION SENSOR DEVICE

With ABC phase rotation, output relay is energized by 75 VAC balanced p inputs. Non-latching. Designed to monitor power input to 3-phase motor systems.

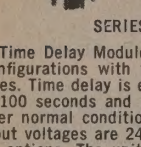
Guardian No. IR-PR1-610 — For 115 VAC, 60 Hz ..... Net $3
Guardian No. IR-PR1-620 — For 115 VAC, 400 Hz ..... Net 3

ADJUSTABLE FREQUENCY SENSOR DEVICE

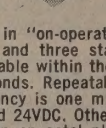
Use as under or over-frequency detector; ideal as AC generator speed dete destructive frequency trip-out or AC power loss detector. Output relay of t IR-FS1 energizes as frequency rises to the adjusted sense-point and de-ener when frequency drops to approx. 1.5% of sense-point; output relay of t IR-FS2 energizes at its low-voltage pull-in point, independent of control ci and remains energized until frequency rises to the adjusted sense-p Adjustable through cover.

Guardian Number	Nominal Input	Adjustable Voltage Range	Net Eac
IR-FS1-610	115 VAC, 60 Hz	45 - 66 Hz	$55.20
IR-FS1-620	115 VAC, 400 Hz	360 - 440 Hz	55.20
IR-FS2-610	115 VAC, 60 Hz	45 - 66 Hz	55.20
IR-FS2-620	115 VAC, 400 Hz	360 - 440 Hz	55.20

TIMING MODULES, SOLID STATE



SERIES TMP



SERIES TMT

Series TMP Time Delay Modules are available in "on-operate" and "on-release" configurations with two time delay and three standard input voltage ranges. Time delay is externally adjustable within the two ranges from ½ to 100 seconds and 100 to 300 seconds. Repeatability is ±1 percent under normal conditions. Life expectancy is one million cycles. Standard input voltages are 24VAC, 115VAC and 24VDC. Other ranges are available as options. The unit is terminated in an octal plug for quick mounting and remote control of relay and other switching devices.

Series TMT Time Delay Modules are designed to permit a relay to be mounted directly onto the module or to permit stacking of TD modules for extended time delay periods. The unit can also be mounted direct to a printed circuit board for remote control of a relay or other switching devices. Modules provide "on-operate" or "on-release" operation at input voltages of 24VAC, 115VAC and 24VDC. Other input voltages are available as an option. Time delay is externally adjustable within ranges of ½ to 100 seconds and 100 to 300 seconds. Repeatability is ±1 percent under normal conditions. Life expectancy is one million cycles.

*IMPORTANT: USE RELAYS SPECIFIED IN BULLETIN TMP/TMT-39

Guardian Number	Time Delay Seconds	Voltage	T/D Operate Release	Type Octal or Taper Tab	Net Each 1-49	50-99	10
IR-TMT-O-100-24D	.5-100	24VDC	Operate	Taper Tab	11.59	11.10	10.
IR-TMT-O-300-24D	100-300	24VDC	Operate	Taper Tab	14.76	14.14	13.
IR-TMT-O-100-24A	.5-100	24VAC	Operate	Taper Tab	12.37	11.86	11.
IR-TMT-O-300-24A	100-300	24VAC	Operate	Taper Tab	15.55	14.90	13.
IR-TMT-O-100-115A	.5-100	115VAC	Operate	Taper Tab	11.59	11.10	10.
IR-TMT-O-300-115A	100-300	115VAC	Operate	Taper Tab	14.76	14.14	13.
IR-TMT-R-100-24D	.5-100	24VDC	Release	Taper Tab	15.60	14.94	14.
IR-TMT-R-300-24D	100-300	24VDC	Release	Taper Tab	18.72	17.94	16.
IR-TMT-R-100-24R	.5-100	24VAC	Release	Taper Tab	16.07	15.39	14.
IR-TMT-R-300-24A	100-300	24VAC	Release	Taper Tab	19.19	18.38	17.
IR-TMT-R-100-115A	.5-100	115VAC	Release	Taper Tab	15.60	14.94	14.
IR-TMT-R-300-115A	100-300	115VAC	Release	Taper Tab	18.72	17.94	16.
IR-TMP-O-100-24D	.5-100	24VDC	Operate	Plug Type	12.91	12.37	11.
IR-TMP-O-300-24D	100-300	24VDC	Operate	Plug Type	15.25	14.61	13.
IR-TMP-O-100-24A	.5-100	24VAC	Operate	Plug Type	13.41	12.85	12.
IR-TMP-O-300-24A	100-300	24VAC	Operate	Plug Type	15.75	15.09	14.
IR-TMP-O-100-115A	.5-100	115VAC	Operate	Plug Type	12.91	12.37	11.
IR-TMP-O-300-115A	100-300	115VAC	Operate	Plug Type	15.25	14.61	13.
IR-TMP-R-100-24D	.5-100	24VDC	Release	Plug Type	17.48	16.75	15.
IR-TMP-R-300-24D	100-300	24VDC	Release	Plug Type	19.86	19.02	17.
IR-TMP-R-100-24A	.5-100	24VAC	Release	Plug Type	17.95	17.20	16.
IR-TMP-R-300-24A	100-300	24VAC	Release	Plug Type	20.16	19.31	18.
IR-TMP-R-100-115A	.5-100	115VAC	Release	Plug Type	17.48	16.75	15.
IR-TMP-R-300-115A	100-300	115VAC	Release	Plug Type	19.86	19.02	17.

Net

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HMITE OHMITROL® solid state power and motor speed controls

SPACE, SAVE POWER, SAVE $$
LEST 1 & 2 KW CONTROL
LIFE
DC OUTPUT TYPES
GRAL TRIMMER ADJUSTS CONTROL RANGE
DIFFERENT APPLICATIONS
RPORATES ON-OFF SWITCH

Now, for the first time, a Solid State Power Control is available which is adaptable to a wide variety of applications by a simple turn of a screwdriver!

An internal trimmer allows the starting point of the control voltage of the Ohmitrol to be set anywhere within the stated trimmer voltage range. (This adjustment can be preset at the factory at small additional cost).

From the starting point to full line voltage, infinitely smooth control is obtained by means of the control knob. An "on-off" line switch actuated at the counterclockwise end of the control knob rotator is provided on all models.

Ohmite solid state power controls are the smallest 1 or 2 KW controls available and offer the advantages not only of convenient size, but also of power savings, long life and low initial cost.

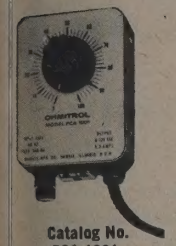
Two styles are available: the component style for panel mounting in equipment, and the lightweight, self-contained portable style. Portable units are completely self contained with grounded line cord and standard grounded AC receptacle.

Ohmitrol Controls are available with AC output and with two kinds of DC output delivered simultaneously. One kind consists of rectified DC, at approximately full line voltage; the other is the variable or controlled DC. This double output is useful, for example, for controlling shunt wound motors. Two-way terminals at the rear of the controls accept quick-connectors (push-on connectors), or can be soldered.

T TO CONTROL

	MOTOR SPEED
PCA AC OUTPUT	MODEL PCD DC OUTPUT
pole motors	Shunt wound motors
nt split capacitor	Series wound motors
rs	Permanent magnet motors
l motors	Magnetic clutches and
—both resistive and	brakes

RTABLE STYLE



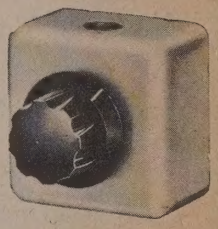
Catalog No.
PCA-1001,
PCD-1001,
PCA-1021,
PCD-1021

SPECIFICATIONS AND ORDERING INFORMATION

	120 Volt Types	240 Volt Types
LOAD RATING PCA Models	1 KW, 8.3 Amps. AC	2 KW, 8.3 Amps
PCD Models	3.5 Amp DC-Motorload 6.0 Amp DC-Resistive	3.5 Amp DC-Motorload 6.0 Amp DC-Resistive
INPUT	120v AC, 60 Hz†	240v AC, 60 Hz†
OUTPUT	0-120v AC(PCD) DC(PCD)	0-240v AC (PCA) DC(PCD)
TRIMMER VOLTAGE RANGE	0-70 Volts	0-200 Volts

Mounting (Component Style) ⅜"-32 Bushing, Non-Turn Projection on ½" centers with shaft.
Knob (not included) Recommend Catalog No. 5150.
Terminals (Component Style) Two-way Accept ¼" Faston connectors or soldering.
† 50 Hz also available. Contact factory.

COMPONENT STYLE*

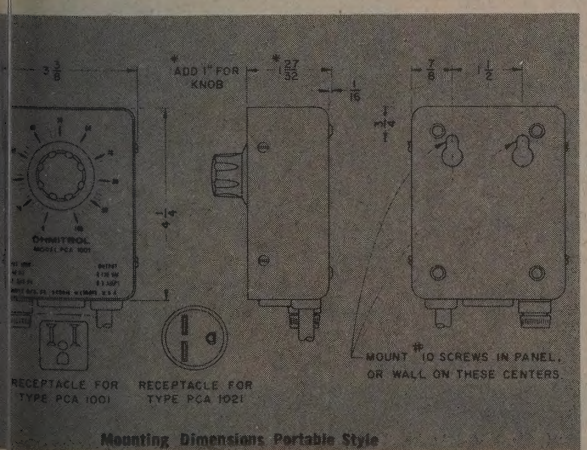


Catalog No.
PCD-1000,
PCA-1000,
PCA-1020,
PCD-1020

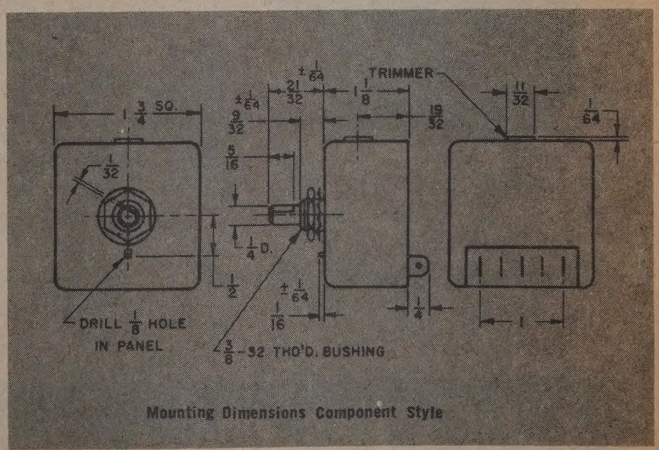
* Knob not included

Catalog No.	Input	Output
PCA-1001	120 VAC	0-120 VAC
PCD-1001	60 Hz	Pulsating 0-120 VDC and Full 120 VDC
PCA-1021	240 VAC	0-240 VAC
PCD-1021	60 Hz	Pulsating 0-240 VDC and Full 240 VDC

Catalog No.	Input	Output
PCA-1000	120 VAC	0-120 VAC
PCD-1000	60 Hz	Pulsating 0-120 VDC and Full 120 VDC
PCA-1020	240 VAC	0-240 VAC
PCD-1020	60 Hz	Pulsating 0-240 VDC and Full 240 VDC



Mounting Dimensions Portable Style



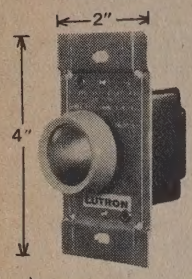
Mounting Dimensions Component Style

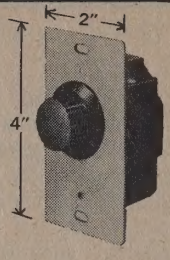
ncandescent Light Dimmers, see Ohmite in Section 5600, page 1473.

OHMITE PAGE 35

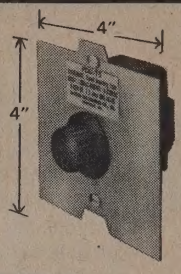
LUTRON POWERDIAL®
SCR* POWER CONTROLS

*Silicon Controlled Re

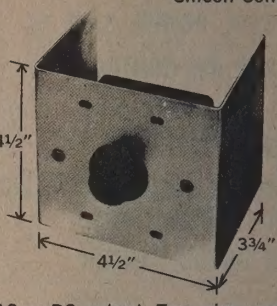




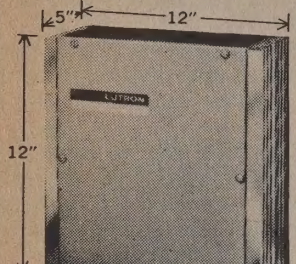
PDU-50
2PDU-50



PDU-75
2PDU-75
PDU-100
2PDU-100



PDU-150
2PDU-150



PDU SERIES

PDU Series is suitable for panel mounting. — May be wired for AC or DC output. Two wire connection.

MODEL	MAX. AC WATTS	RMS. AMPS. AC	RMS. AMPS. DC	AC INPUT VOLTS	AC OUTPUT VOLTS	RMS-DC OUTPUT VOLTS	WEIGHT LBS.	TR N
PDU-50	600	0-5	0-5	120	0-120	0-85	.25	$ 1
PDU-75	900	0-7.5	0-7.5	120	0-120	0-85	.34	1
PDU-100	1200	0-10	0-7.5	120	0-120	0-85	.53	3
PDU-150	1800	0-15	0-10	120	C-120	0-85	1.0	6
PDU-300	3600	0-30	0-20	120	0-120	0-85	12.0	12
2PDU-50	1200	0-5	0-5	240	0-240	0-170	.25	3
2PDU-75	1800	0-7.5	0-7.5	240	0-240	0-170	.34	3
2PDU-100	2400	0-15	0-7.5	240	0-240	0-170	.53	3
2PDU-150	3600	0-15	0-10	240	0-240	0-170	1.0	7
2PDU-300	7200	0-30	0-20	240	0-240	0-170	12.0	16

NOTE: Above units are 60 cycle service. Please send 400 cycle or other special unit inquiries to our Engineerin

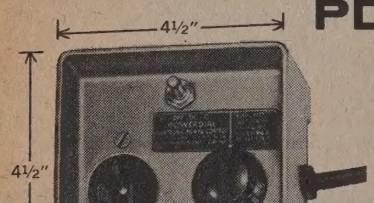
POWERDIAL FEATURES

- Output is continuously adjustable AC or DC
- Rugged, reliable, solid state circuitry
- 1/10 the weight, ½ the size of conventional variable auto-transformer controls
- No brushes to burn out or wear
- Lower installed cost

POWERDIAL WILL CONTROL:

- Universal and Series DC Motors
- Shaded Pole Motors*
- Permanent Split Capacitor Motors*
- Lamps
- Voltage
- Current
- Resistive Heaters & Infra-Red Lamps
- Soldering Irons
- Electric Solenoids & Brakes, D.C. Clutches
- Electroplaters
- Electric Punches & Actuators
- Vibratory Feeders
- Centrifuges

*Used only on fan and light loads, or where torque is proportional to spe

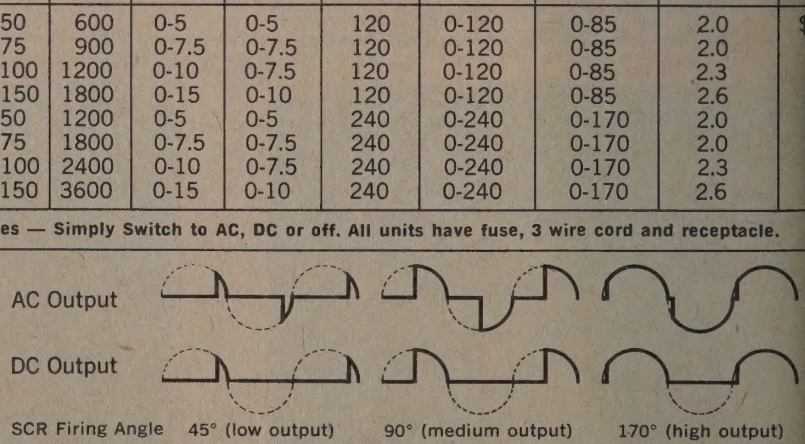


PD SERIES BENCH MODELS

MODEL	MAX. AC WATTS	RMS. AMPS. AC OUT	RMS. AMPS. DC OUT	AC INPUT VOLTS	AC OUTPUT VOLTS	RMS-DC OUTPUT VOLTS	WEIGHT LBS.	TR N
PD-50	600	0-5	0-5	120	0-120	0-85	2.0	$24
PD-75	900	0-7.5	0-7.5	120	0-120	0-85	2.0	2
PD-100	1200	0-10	0-7.5	120	0-120	0-85	2.3	3
PD-150	1800	0-15	0-10	120	0-120	0-85	2.6	6
2PD-50	1200	0-5	0-5	240	0-240	0-170	2.0	3
2PD-75	1800	0-7.5	0-7.5	240	0-240	0-170	2.0	3
2PD-100	2400	0-10	0-7.5	240	0-240	0-170	2.3	3
2PD-150	3600	0-15	0-10	240	0-240	0-170	2.6	8

PD Series — Simply Switch to AC, DC or off. All units have fuse, 3 wire cord and receptacle.

Typical Waveforms



LUTRON ELECTRONICS CO., INC.

Net
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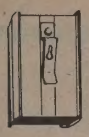
LUTRON SPEEDIAL® MOTOR SPEED CONTROLS

MK-II/III



Clip-on Back For Use on Belt or Wall

SPEEDIAL MOTOR SPEED CONTROLS electronically vary the speed of any Universal (AC-DC) motor driven tool from zero to full speed without loss of power. Electronic feedback increases power as load increases. Solid state construction throughout.

Speed control saves drill bits, makes cleaner cuts, holes and sanded surfaces possible with inexpensive tools.

FOR HANDYMAN AND HOBBYIST

MODELS	MAXIMUM MOTOR NAMEPLATE RATING	50-60 CPS INPUT VOLTS	APPROXIMATE MAX. H.P.	APPROX. MAX. DRILL SIZE	TRADE NET
MK-II	5 Amps	120	.4 H.P.	¼", ⅜"	$11.96
MK-III	10 Amps	120	.8 H.P.	½"	19.46

INDUSTRIAL — PROFESSIONAL — SCIENTIFIC MODELS

(Housed in 4½" x 2⅝" DEEP CAST ALUMINUM CASES)

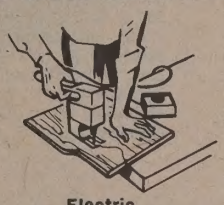
MODELS	MAXIMUM MOTOR NAMEPLATE RATING	50-60 CPS INPUT VOLTS	APPROXIMATE MAX. H.P.	APPROX. MAX. DRILL SIZE	TRADE NET
MK-5	5 Amps	120	.4 H.P.	¼", ⅜"	$19.46
MK-10	10 Amps	120	.8 H.P.	½"	29.96
MK-15	15 Amps	120	1.2 H.P.	⅝"	42.90
MK-250-5	5 Amps	208-250	.8 H.P.	½"	24.00
MK-250-10	10 Amps	208-250	1.6 H.P.	⅝"	36.00
MK-250-15	15 Amps	208-250	2.5 H.P.		51.75

TION: To be used on Universal (AC-DC) and on DC motors ONLY. Do not use on AC motors. hand tools have Universal motors. May also d on electric clutches and brakes requiring age.

L APPLICATIONS: Mixing Liquids (Paints, als, etc.) Feeders, Flame Cutting Machines, Machines, Controls, Electric Clutches and Screwdrivers, Paper Cutters, Paper Pulp Mix- nveyor Belts. Also Mixers, Stirrers, Blenders.

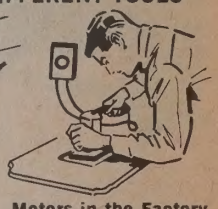
ONE INEXPENSIVE SPEED CONTROL FOR DOZENS OF DIFFERENT TOOLS

Electric Drills



Electric Saws

Electric Sanders



Motors in the Factory and Laboratory

NEW SPEEDIAL SOLID STATE MODULES

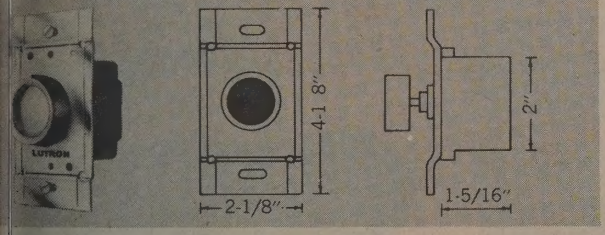
provide complete electronic motor speed control in module form for easy mounting to wall, panel, rack, or plate.

Specifications — Speedial Modules for 5 and 10 amp service

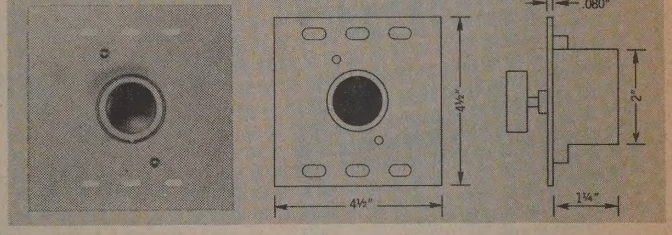
20 vac, 60 Hz.
Model DJ-5 — 5 max; Model DJ-10 — 10 max.
Rotary with full power ON setting.
Universal ac-dc or series dc motors.

Installation: Single gang box, or any panel, rack or plate mounting.
Operating Temperature: +50°C max. ambient.
Weight: Model DJ-5 — 3¼ oz; Model DJ-10 — 4¼ oz.
Trade Net Price: Model DJ-5 — $8.65; Model DJ-10 — $24.00.

SIONS — MODEL DJ-5 (Faceplate not supplied.)

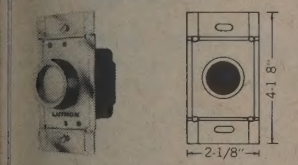


DIMENSIONS — MODEL DJ-10 (Faceplate not supplied.)

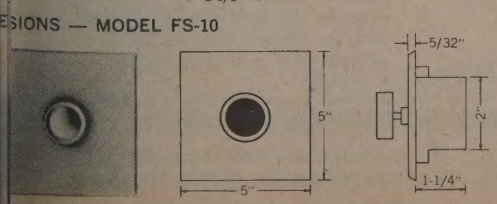


LUTRON FANDIAL™ FAN SPEED CONTROLS

SIONS — MODEL FS-5



SIONS — MODEL FS-10



FANDIAL continuously varies fan and blower speeds from maximum to any lower speed. Permits exact comfort level adjustment, fan noise reduction and elimination of smoke and odors without excess cooling. OUTSTANDING FEATURES: Turns on at top speed and adjusts to lower speeds. Built-in trimmer can be set to prevent stalling, or at any higher minimum speed. Control knob has positive ON-OFF action. Easy installation and mounting. Internal radio interference suppression filter. TYPICAL APPLICATIONS: Controls a wide variety of fans in home and industry, including kitchen and bathroom exhaust, range hood, window, attic and pedestal fans, furnace blowers, environmental chambers, clean rooms, cooling electronic equipment, industrial exhaust and ventilating equipment.

SPECIFICATIONS — FANDIAL Modules for 5 and 10 amp service.

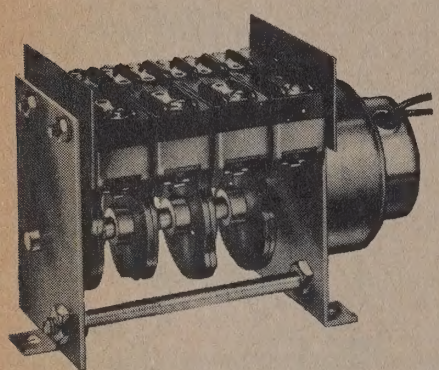
Volts: 120 vac, 60 cps.
Amps: Model FS-5 — 5 max; Model FS-10 — 10 max; (see motor nameplate rating).
Switch: Rotary with positive ON/OFF action. **Service:** Shaded pole or permanent split capacitor motors only.
Installation: Single gang electrical wall box. **Faceplate:** Use any standard faceplate (supplied with FS-10). **Power Component:** Solid state Triac.
Leads: 6 inches — 1 black, 1 yellow, 1 red. **Minimum Speed:** Low end adjustment provided by knurled collar trim control.
Weight: FS-5 — 4.0 oz.; FS-10 — 7.0 oz. **Trade Net Price:** FS-5 — $7.97; FS-10 — $16.67.

BRISTOL MOTORS / DIVISION OF VOCALINE

SYNCHRONOUS MOTORS AND TIMERS

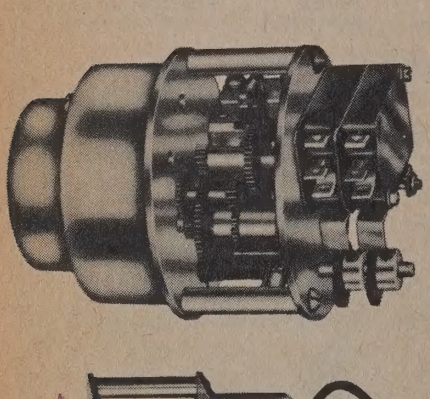
Versatility is the characteristic which design engineers need — and find — in Bristol Synchronous Motors and Timing D Bristol's unusually broad experience and range of design and manufacturing skills are particularly valuable where requirements must be met.

The devices shown are among the most widely used. All can be mounted in any position, and take a minimum of Materials are selected on the basis of their suitability to provide long service, and perform well under a variety of con Bristol engineering service is available for applications that require custom design and manufacture.

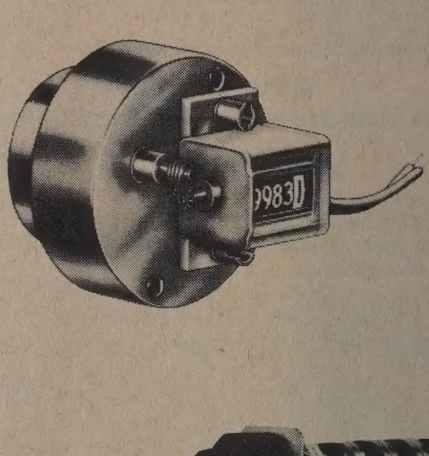


SERIES 31 REPEAT CYCLE TIMER. Low-cost multi-contact timer with high repeat accuracy. For vending machines, home appliances, industrial program controls. Speed Ranges: 1 Revolution Per Second to 1 Revolution Per Month. Motors standard, or high torque reversible. Switch Rating: 20 amp. at 115-230 V AC (also in ½ hp. at 125 V AC). Switches: enclosed snap action SPDT type. Cams: dual cams with set screws for field adjustment. Cut cams available on special order. Bulletin B-22. **Available with 1 to 12 Switches.**

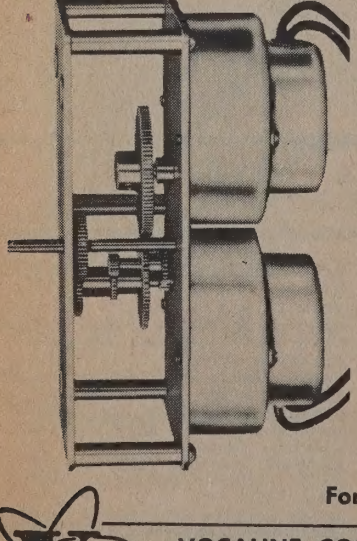
SERIES 6100 TIME DELAY RE versal Time Delay Relay prov holding solenoid starting wit able timed contact operation. provides three types of load which give seven types of lo operation in a single unit. Th may be wired up to one of f types of operation: momenta automatic reset; momentary st ual reset; sustained switching dem or cascaded operation. S diameter by 5¼ long. Timer c 1⅝ thick x 3⅝ inches square. mounting allows standard 3-st stud panel mounting. For furt mation request Bulletin No. B-



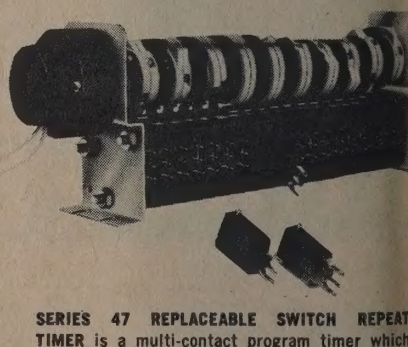
SERIES 21 TIME DELAY RELAY. General timer for instantaneous reset-type action, such as timers for photography, electronic safety, alarms, signals, etc. (Life expectancy over 1 million cycles.) Compact. Quick reset time (well under 1/5 second). Repeat accuracy better than 1% full scale. Time setting: 15 seconds to 3 months full scale. Rating: 10 amp (non-inductive load), Voltage: 115 V AC, 60 cycles standard. Optional adjustment feature available. Bulletin B-21. **Available with 1 to 7 Switches.**



SERIES 41 ELAPS INDICATOR. Adapt panel or unit this low-cost series simple installation choice of four mo non-reset or reset Maximum readings units from 9,999.9 to 99,999 hours. 1 60 Cycle standard. and other voltag able. For further tion on the thre above request Bull **Both Non-Reset Ta set Table Models**



MODEL 42 DUAL SPEED UNIT. Consists of two motors assembled to a common output shaft through a differential. Output speed is the sum of the two motor input speeds. Therefore, two different speed unidirectional motors provide a choice of 3 output speeds (either motor speed or the sum of the two motor speeds). Available with reversible motors for further variations in output speed. Standard units also available incorporating 3 and 4 motors providing up to 40 output speeds by electrical switching. Dimensions depend on the design of the unit in question. For further information request Bulletin B-24.



SERIES 47 REPLACEABLE SWITCH REPEAT TIMER is a multi-contact program timer which easy switch replacement without the nece disassembling. In addition one turn of the adjusting screw provides a 2% variation of sequence. Switches are rated at 6 amps-1 Available in a wide range of switches and sp binations. Request Bulletin B-20 **Available with 2 to 20 Switches.**

For Complete Bristol Line Write for Catalog

VOCALINE COMPANY OF AMERICA, INC., BRISTOL MOTOR/TIMER DIVISION

Timers and Motors to meet special applications are available from distributors. See Vocaline Bristol Motors Catalog for complete line of motors and timers.

IMMEDIATE DELIVERY FROM FRANCHISED VOCALINE\BRISTOL MOTORS DISTRIBUTORS

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BRISTOL MOTORS / DIVISION OF VOCALINE

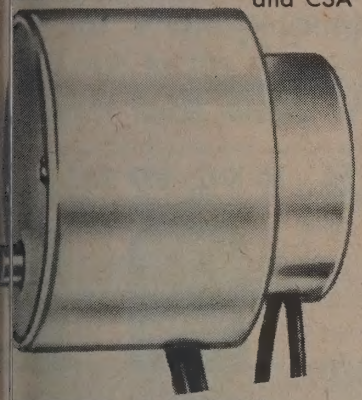
CATALOGED IN MASTER

MOTOR FEATURES:

STANDARDS AVAILABLE "OFF THE SHELF" AT ANCHISED DISTRIBUTORS

SYNCHRONOUS MOTORS AND TIMERS

Speeds from 1800 RPM to as low as 1 Revolution Per Month for 60-cycle operation • High starting torque with running torque considerably higher • Exceptionally compact size—the motor is 2 inches in diameter • May be operated in any position • Impregnated bronze-graphite rotor bearings • Most gears hobbed for efficient operation and long life • Moisture and dust-proof type construction throughout • All standard motors are approved by UL and CSA except Models 647 and 830.

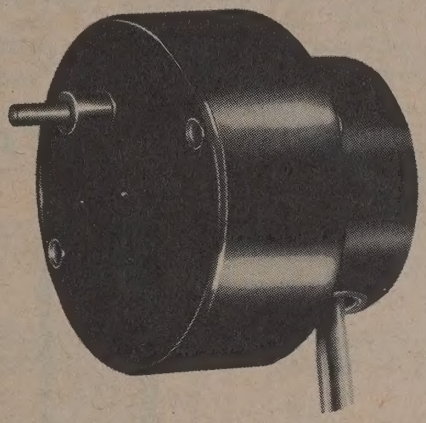


REVERSIBLE SYNCHRONOUS MOTOR. A versatile, low-cost motor for remote control and high torque applications. This motor operates by means of a condenser phase shift network, and offers positive reversibility in the following ratings:*

Model	Watts	Rated Starting Torque at 1 RPM
530	5	45 In. oz.
830	8	100 In. oz.

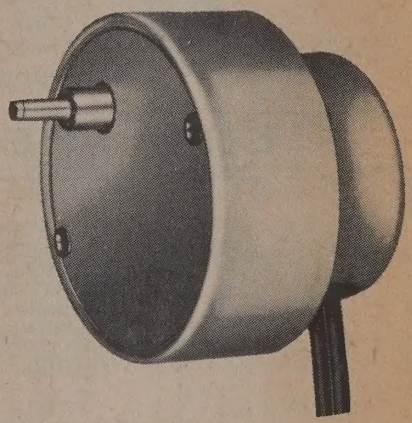
These are 2 inches in diameter, and 2 inches long.

*Torque ratings are developed motor torque. All standard gear trains are rated for 20 in. oz. maximum continuous running, 5 in. lbs., static torque rating.



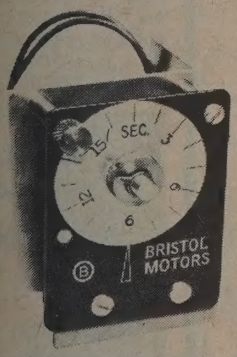
MODEL 350 INTERNAL SHIFT MOTOR. The rotor is disengaged from the gear train when de-energized permitting restting. A built-in solenoid assures positive engaged and disengagement of the clutch in all positions. Output torque rated at 16 in. oz. Available in speeds of ½ to 5 RPM. Dimensions 2" dia. x 1 25/64" long. (Similar shift type action available on Type 830 reversible motor.)

For further information on the models above request Bulletin B-10.

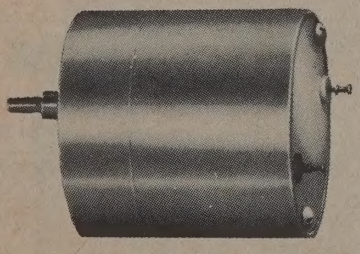


BASIC TIMING MOTOR. The standard Bristol motor for light and medium duty in uni-directional use, 2 in. diameter x 1 23/64 long, with through hole mounting. Avaliable in a wide variety of output shafts and the following torque rating:!*

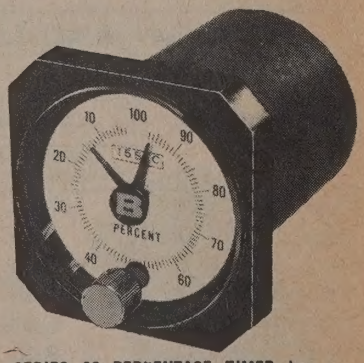
Model	Watts	Rated Starting Torque at 1 RPM
247	2.5	16 in. oz.
425	4	16 in. oz.
447	4	40 in. oz.
647	6	50 in. oz.



STOL SERIES 55 DELAY TIMER, the cost timer with the adjustable dial. use when short time-delays are ed for. This Delay Timer has a ress pointer which indicates the ress of a cycle, automatically re- when power to the duty-matched chronous motor is interrupted and anually adjusted by a selective dial ch can be reset at will. The stand- motor is for 115v/60 cycle, other ages are available at small extra . Switch is SPDT rated 20 Amps stive load at 115-230 VAC. Delay ers are available in 15, 30, 60 and second time delays. Bulletin B-32.



MODEL 317 AND 318 TRANSISTORIZED DC MOTOR. This DC motor consists of a synchronous hysteresis motor with a transistorized inverter circuit. Ideal for long, reliable use in high humidity or saline atmosphere, with **no objectionable radio noise.** Speed ranges from 1 Rev per Month to 1500 RPM. Speed accuracy ±10%; 16 in. oz. starting toque at .1 RPM. Suitable for ambient temperatures ranging from −10 degrees C to +65 degrees C. Model 317 dimensions 3 5/16" wide x 3" high x 1 3/8" deep. Model 318: 2" in diameter x 2 3/8" long. For further information request Bulletin B-26.



SERIES 63 PERCENTAGE TIMER has a progress indicator which always shows the present position of the timer. This is an easily adjustable repeat cycle timer which makes or breaks an electrical circuit for an adjustable percentage of the full time cycle. Available in 7.5 second to 31 day time ranges, they are ideal for control of blowers, ovens, dryers, heaters, pumps, etc. Have repeat accuracy within ¼%. Panel mount. Automatic re-cycle. For complete information, request Bulletin B-30.

SEND FOR COMPLETE MOTOR AND TIMER CATALOG

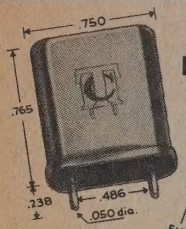
VOCALINE COMPANY OF AMERICA, INC., BRISTOL MOTOR/TIMER DIVISION

Timers and Motors to meet special applications are available from distributors. See Vocaline Bristol Motors Catalog for complete line of motors and timers.

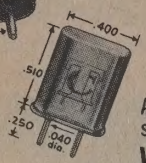
IMMEDIATE DELIVERY FROM FRANCHISED VOCALINE BRISTOL MOTORS DISTRIBUTORS

PRICE LIST • Subject to Change without Notice • **MINIMUM ORDER $10.**

CRYSTEK CRYSTALS... FOR EVERY PURPOS



HC6/U



HC25/U

2.95 EACH

"THE ON CHANNEL CRYSTALS"

CLASS "D" CITIZEN BAND CRYSTALS

23 Frequencies — 3rd Overtone — .005% Tol.

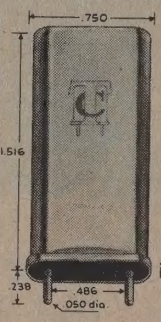
All "Citizen Band" crystals supplied in Hermetically sealed holders for all 23 channels, C.A.P. and Monitor.

When ordering, specify make and Model of UNI CHANNEL NUMBERS desired.

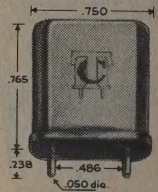
We supply crystals for every popular make of Citizen Band Transceiv

LOW FREQUENCY CRYSTALS 80 KHZ - 999 KHZ

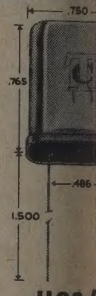
FREQUENCY	TYPE	
	STANDARD	SPECIAL
	CALIBRATION TOLERANCE ±.005%	CALIBRATION TOLERANCE ±.002%
80- 99 KHZ	$10.00	$12.00
100-199 KHZ	8.00	10.00
200-799 KHZ	7.00	9.00
800-999 KHZ	12.00	13.00



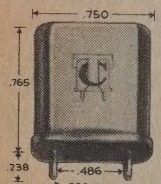
HC13/U
70 KHZ — 200 KHZ (70-99 KHZ is 2.5" in height)



HC6/U
200 KHZ to 1000 KHZ



HC6/
Also Avai with Wire



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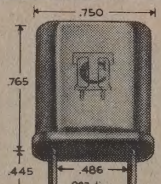
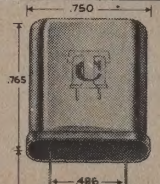
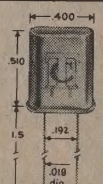


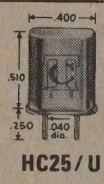
HC17/U



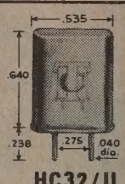
HC6/U with wire leads



HC18/U



HC25/U



HC32/U

FUNDAMENTAL TYPE — 1000 KHZ - 22000 KHZ

FREQUENCY	TYPE		
	STANDARD	SPECIAL	OVEN 75°C/85°C
	CALIBRATION TOLERANCE ±.002%	CALIBRATION TOLERANCE ±.001%	CALIBRATION TOLERANCE ±.002%
1000- 1499 KHZ	$8.50	$10.50	$12.50
1500- 1999 KHZ	7.50	10.00	12.00
2000- 2999 KHZ	6.00	9.00	11.00
3000-10999 KHZ	4.50	7.00	9.00
11000-19999 KHZ	6.00	8.00	10.00
20000-22000 KHZ	8.00	10.00	12.00

OVERTONE TYPE — 10 MHZ - 125 MHZ

FREQUENCY	MODE	STANDARD	SPECIAL	OVEN 75°C/85°C
		CALIBRATION TOLERANCE ±.002%	CALIBRATION TOLERANCE ±.001%	CALIBRATION TOLERANCE ±.002%
10- 60 MHZ	(3rd)	$6.00	$ 8.00	$10.00
61- 75 MHZ	(5th)	7.50	11.00	13.00
76-125 MHZ	(5th)	9.00	13.00	15.00

AMATEUR CRYST
Hermetically Seal
HC6/U Holder

Supplied In Following Freq.	±.0 Tole
3501 to 3999KC	$2.9
4667 to 4780KC	2.9
7000 to 7425KC	2.9
8001 to 8221KC	2.9
8334 to 8900KC	2.9

MARINE CRYSTALS
2000 — 5000 KHZ
FOR ALL UNITS

Type HC6/U Marin
2000 KHZ thru 5000 K
$5.50

Type HC17/U Marin
2000 KHZ thru 5000 K
$5.50

THE ON CHANNEL CRYSTALS

CRYSTEK *formerly Texas Crystals Div. of Whitehall Electronics*

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CRYSTALS

"Makers of fine crystals since 1934"

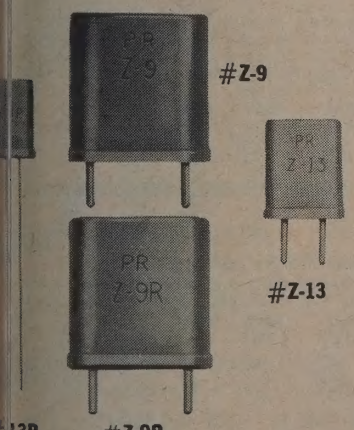
PETERSEN RADIO HI FREQUENCY MILITARY TYPE CRYSTALS FOR

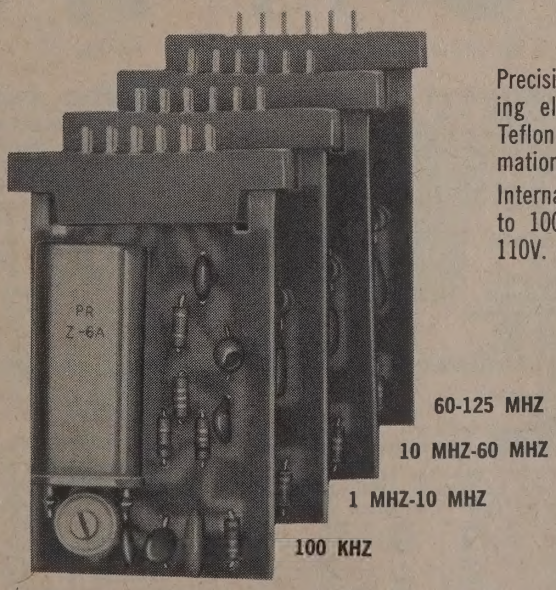
- **VHF AIRCRAFT REQUIREMENTS**
- **VHF MARINE BAND REQUIREMENTS**
- **SPECIAL VHF APPLICATIONS**

MILITARY QUARTZ CRYSTAL UNITS

Military ystal Unit	PR Type	Military Holder	Frequency Range Nominal KHZ	Operating Temp. Range °C	Frequency Tolerance %	Co PF	Resonance
R-54A/U	Z-9R	HC-6/U	50,000 to 125,000	—55° to +105° C	±0.005	7.0	Series
R-56A/U	Z-13P	HC-18/U	50,000 to 125,000	—55° to +105° C	±0.005	7.0	Series
R-59A/U	Z-13P	HC-18/U	50,000 to 125,000	85° C+1°	±0.002	7.0	Series
R-75/U	Z-9R	HC-6/U	50,000 to 125,000	75° C+1°	±0.001	7.0	Series
R-80/U	Z-13P	HC-18/U	50,000 to 125,000	—40° to +90° C	±0.002	7.0	Series
R-82/U	Z-13	HC-25/U	50,000 to 125,000	—55° to +105° C	±0.005	7.0	Series
R-83/U	Z-13	HC-25/U	50,000 to 125,000	—40° to +90° C	±0.002	7.0	Series
R-107/U	Z-13P	HC-18/U	70,000 to 125,000	—55° to +105° C	±0.005	6.0	Series
R-116/U	Z-13P	HC-18/U	50,000 to 125,000	—55° to +105° C	±0.005	4.5	Series

R-18A/U Maximum drive level 10 w. from 800 KHZ to 1.00 MHZ. ive level 5 Mw. from 1.00 MHZ to 5 MHZ. Correlated to 32 pf. unless herwise specified.





OSCILLATORS 1 MHZ-125 MHZ Output impedance 50 ohms. Minimum output 10 Mw. ☐ Frequency Dividers available below 1 MHZ.

OVEN PRO-26

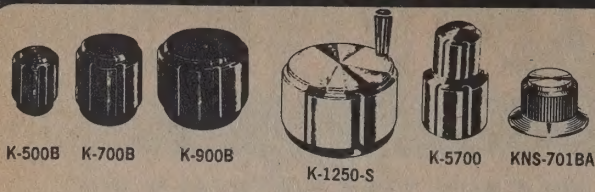
Precision built for long life. Heating element anchored in epoxy. Teflon coated interior inhibits formation of moisture.

Internal cavity temperature: 65°C. to 100°C. Input voltage: 6.3 to 110V. AC or DC.

Write for Petersen's complete military crystal type catalog.

PETERSEN RADIO CO., INC.

ALUMINUM KNOBS



K-500B K-700B K-900B K-1250-S K-5700 KNS-701BA

ALUMINUM INSTRUMENT KNOBS

STANDARD ANODIZED KNOBS FOR ¼" SHAFTS

Modern, decorative knobs of machined aluminum. Offers one-piece construction and superior styling at moderate price.

Model	Finish — See Box Below	O.D.	One-99	100-249	250-499	500-999
K-500	A, B, G	.500"	.45	.41	.39	.36
K-700	A, B, G	.750"	.50	.45	.43	.40
K-900	A, B, G	.937"	.55	.50	.47	.44
K-1250	A, B, G	1.250"	.65	.59	.56	.52
K-1250-S	A, B	1.250"	1.55	1.40	1.32	1.24
K-5700	A, B	.500 & .750"	1.10	.99	.94	.88

SKIRTED ANODIZED KNOBS FOR ¼" SHAFTS

Decorative knobs with skirts of natural or black aluminum or acrylic plastic. KS types have aluminum skirt; KSP types, acrylic plastic skirt.

Model	Finish — See Box Below	O.D.	Skirt Dia.	One-99	100-249	250-499	500-999
KS-500	A, B	.500"	.750"	.60	.54	.51	.48
KS-700	A, B	.750"	1.125"	.65	.59	.56	.52
KS-900	A, B	.937"	1.406"	.85	.77	.73	.68
KSP-700	A, B	.750"	1.125"	.60	.54	.51	.48
KSP-900	A, B	.937"	1.406"	.65	.59	.56	.52

ALUMINUM INSTRUMENT KNOBS

SKIRTED KNURL KNOBS FOR ¼" SHAFTS

Aluminum skirt is added to straight knurl body. Engraved ARROWHEAD indicator on skirt. Anodized two-tone.

Model	Finish — See Box Below	Knob O.D.	Skirt O.D.	One-99	100-249	250-499	500-999
KNS-501	BA only	.500"	.750"	1.00	.90	.85	.80
KNS-701	BA only	.750"	1.125"	1.15	1.04	.98	.92

KN-700B KN-1250BA KPN-700BA KD-900 KN-701BA

KNURLED ALUMINUM KNOBS

STRAIGHT KNURL KNOBS FOR ¼" SHAFTS

Precision serrations; hairline indicators. Available in solid anodized color types and two-tone models.

Model	Finish — See Box Below	O.D.	One-99	100-249	250-499	500-999
KN-500	A, B	.500"	.55	.50	.47	.44
KN-700	A, B	.750"	.60	.54	.51	.48
KN-900	A, B	.937"	.70	.63	.60	.56
KN-1250	A, B	1.250"	.85	.77	.73	.68
KN-500	AB, BA**	.500"	.75	.68	.64	.60
KN-700	AB, BA**	.750"	.80	.72	.68	.64
KN-900	AB, BA**	.937"	.90	.81	.77	.72
KN-1250	AB, BA**	1.250"	1.10	.99	.94	.88

One-piece aluminum pointer knob mates with KN Series.

KPN-700	A, B	.750"	1.40	1.26	1.20	1.12
KPN-700	AB or BA**	.750"	1.60	1.44	1.36	1.28

DIAMOND KNURL KNOBS FOR ¼" SHAFTS

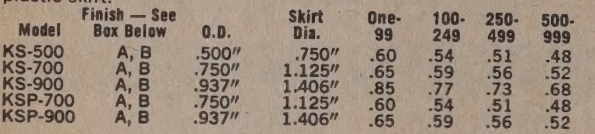
Conical top, non-slipping diamond knurl in solid anodized colors. Hairline indicator.

Model	Finish — See Box Below	O.D.	One-99	100-249	250-499	500-999
KD-500	A, B, G	.500"	.55	.50	.47	.44
KD-700	A, B, G	.750"	.60	.54	.51	.48
KD-900	A, B, G	.937"	.70	.63	.60	.56
KD-1250	A, B, G	1.250"	.85	.77	.73	.68

ARROWHEAD POINTER KNOBS FOR ¼" SHAFTS

Arrowhead pointer on top of straight knurl body. Black anodized body with natural top only.

Model	Finish — See Box Below	O.D.	One-99	100-249	250-499	500-999
KN-501	BA only	.500"	.80	.72	.68	.64
KN-701	BA only	.750"	.85	.77	.73	.68



K-500A-⅛ KS-500B-⅛ KC-500A KC-500B-10 KCVS-500A KHF-700A

KR-1 Shaft Reducer

ALUMINUM INSTRUMENT KNOBS

MINIATURE ANODIZED KNOBS FOR ⅛" SHAFTS

K-⅛ types are machined aluminum with anodized finish and hairline indicator. Usable with switches and controls having ⅛" shafts. KC types are skirted knobs for MRA Series Alco-switches and are machined aluminum anodized with hairline and two set screws. Knob outside dia. .500", plus skirt O.D.

Model	Finish—See Box Below	Description	One-99	100-249	250-499	500-999
K-500( )-⅛	A, B, G	Standard	.45	.41	.39	.36
KN-500( )-⅛	A, B	Straight Knurl	.55	.50	.47	.44
KN-500( )-⅛	AB, BA	Straight Knurl	.75	.68	.64	.60
KN-501( )-⅛	BA	Knurl-Arrowhead	.80	.72	.68	.64
KNS-501( )-⅛	BA	Knurl-Skirted	1.00	.90	.85	.80
KD-500( )-⅛	A, B, G	Diamond Knurl	.55	.50	.47	.44
KS-500( )-⅛	A, B	Skirted	.60	.54	.51	.48
KC-500( )	A, B	Skirted	.55	.50	.47	.44
KC-500( )-10	A, B	0-9 Numerals	.65	.59	.56	.52
KCVS-500( )	A, B	Adj. Stop	.10	.99	.94	.88
KR-1		Shaft Reducer ¼-⅛	.06	.045	.04	.036

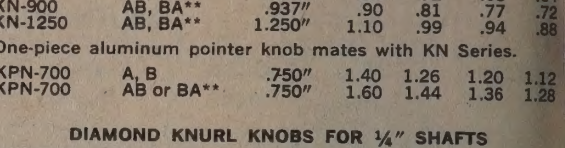
DELUXE KNOBS WITH A CUSTOM LOOK

ALCOKNOBS with unique, notched pointers are designed for hi-fi/stereo, tape recorders, test equipment, lab and medical instruments. The emphasis is on style to enhance the overall appearance. For ¼" shafts.

Model	Finish*	O.D.	One-99	100-249	250-499	500-999
KHF-500	A, G	.500"	.45	.41	.39	.36
KHF-700	A, G	.750"	.50	.45	.43	.40
KHF-900	A, G	.937"	.55	.50	.47	.44
KHF-1250	A, G	1.250"	.65	.59	.56	.52

SPECIFY FINISH CODE FOR TYPES LISTED ABOVE

A — Natural Aluminum; Black Indicator
B — Black; White Indicator
G — Gold; Red Indicator
AB — Natural Body With Black Top; Black Indicator
BA — Black Body With Natural Top; White Indicator



PK-70B PKS-90B-10 PKA-70B PKP-70B

PLASTIC KNOBS WITH ALUMINUM TOPS

KNURLED KNOBS FOR ⅛" AND ¼" SHAFTS

Black plastic knobs with spun aluminum cap plate for a 2-tone effect. Molded-in brass bushing and standard 6/32 set screw. White indicating dot.

Dial skirt is natural anodized aluminum with or without numerals. Serrated knob body is of contrasting black with aluminum spun plate on top. Color: black. Indications: black arrow 0 through 10 with 30° spacing. Brass insert and 6/32 set screw. Model PKS-90B-10 has 0-10 numerals.

Model	Knob O.D.	Skirt O.D.	Shaft Dia.	One-99	100-249	250-499	500-999
PK-50B-⅛	.500"	.750"	⅛"	.20	.18	.17	.16
PK-50B	.500"	.750"	¼"	.20	.18	.17	.16
PK-70B	.750"	1.000"	¼"	.25	.23	.21	.20
PK-90B	.937"	1.250"	¼"	.30	.27	.26	.24
PKS-90B	.937"	1.437"	¼"	.45	.41	.39	.36
PKS-90B-10	.937"	1.437"	¼"	.50	.45	.43	.40

STANDARD KNOBS FOR ⅛" AND ¼" SHAFTS

Slip-proof knobs with extended skirt and aluminum spun plate. Color: black. Brass insert and 6/32 set screw. White hair line.

Model	Knob O.D.	Skirt O.D.	Shaft Dia.	One-99	100-249	250-499	500-999
PKA-50B-⅛	.500"	.812"	⅛"	.30	.27	.26	.24
PKA-50B	.500"	.812"	¼"	.30	.27	.26	.24
PKA-70B	.750"	1.000"	¼"	.35	.32	.30	.28

FLUTED KNOBS FOR ⅛" AND ¼" SHAFTS

Knob body has deep flutes, dial skirt, aluminum spun plate. Color: black. White indicator. Brass insert and 6/32 screw.

Model	Knob O.D.	Skirt O.D.	Shaft Dia.	One-99	100-249	250-499	500-999
PKB-70B	.750"	1.125"	¼"	.35	.32	.30	.28
PKB-90B	.937"	1.500"	¼"	.40	.36	.34	.32

ALCO ELECTRONIC PRODUCTS, INC.

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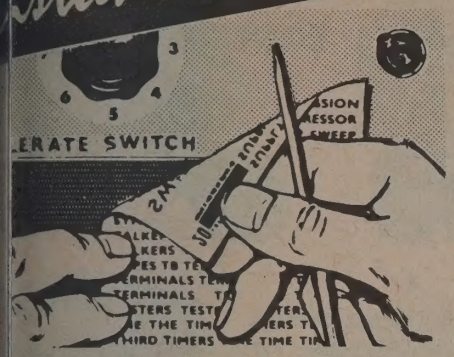
THE REVOLUTIONARY METHOD FOR MARKING ELECTRONIC EQUIPMENT

JUST RUB and it's PRINTED!

Sharp • Clean • Fast • Not a Decal • No Water • No Tapes



INSTANT LETTERING® marking kits bring you all the necessary elements for completely marking electronic equipment, prototypes, drawings, etc. in this fast new easy-to-use form. There's even a new drafting symbol kit for better more readable schematics.

Words, letters, numerals, switch patterns, arcs, drafting symbols, etc. are printed on a special transparent carrier film. Rubbing over one of these elements with a ballpoint pen releases it from the carrier film and adheres it to your working surface.

INSTANT LETTERING® words and symbols transfer to almost any surface including glass, plastic, even painted and bare metals. Now you can quickly mark all panels, even especially calibrated two-color nomenclatures, pilot light jewels, sub-assemblies, circuit boards, etc. Reproduction quality **INSTANT LETTERING®** transfers are clean and sharp, leave no background haze or film, make prototypes look like finished production equipment and give all equipment and drawings a professional look.

lettering DRY TRANSFER MARKING KITS

TITLES for ELECTRONIC EQUIPMENT

NEW, REVISED; Now 20% more titles in a new easy-to-read typeface. Researched to give up to 95% of all electronic marking. For labeling, marking, titling all electronic control panels, drawings, prototypes, etc.

No. 9581—Complete Set (black) **$4.95**
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REFILL SETS—12 sheets per set
No. 9601—Alphabets (black) **$2.50**
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No. 9621—Numerals (black) **$2.50**
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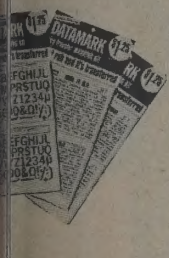
TERMINAL & CHASSIS MARKING KIT

All the necessary letters, letter combinations and numerals for marking chassis, printed circuit and terminal boards, rotating components, etc.

No. 966—Black **$4.95**
No. 967—White **$4.95**



DATAMARK KITS

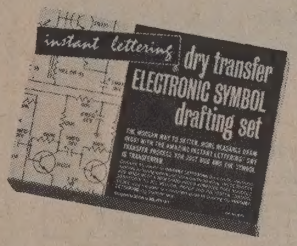
Low cost dry transfer marking kits designed to provide useful preset words, symbols and alphabets for specific uses.

K58B—Audio, TV & Hi-Fi (black) **$1.25**
K58W—Audio, TV & Hi-Fi (white) **$1.25**
K59B—Amateur Radio & CB (black) **$1.25**
K59W—Amateur Radio & CB (white) **$1.25**
K60B—Experimenter, Home & Intercom (black) **$1.25**
K60W—Experimenter, Home & Intercom (white) **$1.25**
K61B—Test & Industrial Equipment (black) **$1.25**
K61W—Test & Industrial Equipment (white) **$1.25**
K62—Marks & Switch Patterns **$1.25**
K63—Alphabets & Numerals (⅛") **$1.25**
K64—Alphabets & Numerals (¼") **$1.25**
K65—Alphabets & Numerals (½") **$1.25**

METER & DIAL MARKING KIT

Arcs, dial patterns, lines, wedges, graduation lines, switch symbols alphabets and numerals in black, white and red for marking standard and special rotary tap switches, potentiometers and prototype and specially calibrated meter dials. Colors provide contrast on scales and switches, simplifying usage of complex instruments.

No. 968—Complete Set **$4.95**
REFILL SHEETS—set of four identical sheets
No. 968R—(specify sheet number) **$2.00**



ELECTRONIC SYMBOL DRAFTING SET

The quick way to more readable schematics. Contains 40 sheets of electronic symbols plus letters and numerals. Symbols designed to conform with MIL-STD-15-1A. Sheets have heat resistant adhesive for perfect reproduction in any blue- or white-printer. Also included is a complete guide to drawing with dry transfer symbols.

No. 970—Complete Set **$15.95**
REFILL SHEETS—set of four identical sheets
No. 970R—(specify sheet number) **$2.00**

LOGIC DIAGRAM SYMBOL SET

NEW! The most modern and effective aid to drawing logic diagrams. Symbols transfer to your drawing in seconds. All you need do is add the connecting leads. Heat resistant adhesive allows perfect reproduction even in diazo and other high speed printers. Symbols conform fully to MIL-STD-806B and ASA-Y32.14.

No. 971—Complete Set **$3.50**
REFILL SHEETS—set of four identical sheets
No. 971R—(specify sheet number) **$2.00**

lettering STANDARD SHEETS

Full 10" x 15" sheets of alphabets and numerals available in over 50 different typefaces in sizes ranging from 8 pt. to 3 in. display letters and in 6 colors. Also available are arrows, math symbols, chart symbols, line and dot rules, etc. Free sample and complete type chart available upon request.

lettering HEAT RESISTANT SHEETS

Heat resistant letters allow your drawings to be reproduced with perfect results every time. Letters will not flake, peel or fray in any blue- or white-printer. Razor sharp letters are printed with a highly opaque ink so you get perfect results every time. Write for complete details.

lettering SPECIAL SHEETS

Sheets made to your own specifications can include logos, drawings, symbols, preset words — anything that you use repeatedly. Hundreds of lettering and marking problems that were impossible or too expensive become practical with "Instant Lettering". Tell us your problem and let us suggest a "dry transfer" solution.

instant lettering DATAKOAT

Clear Protective Coating

Specially designed to protect "Instant Lettering" transfers from abrasion and weathering. Datakoat is water-clear and dries quickly.

Protective Coating Kit contains a 1 oz. bottle of Datakoat with applicator brush in cap and a 1 oz. bottle of thinner.

No. 04176 ..... **$1.00**

Spray Coatings are the handy aerosol can form of Datakoat (16 oz. cans).

No. 04177 (Glossy) **$2.95**
No. 04178 (Matte) **$2.95**

THE DATAK CORPORATION

ELECTRONIC HARDWARE CORPORATION

MS91528 (STANDARD) AND DECORATOR SERIES CONTROL KNOBS

N or G | D or E | F, G or H | P | K | S | Decorator S

These control knobs are designed for use with electronic, communication and allied equipment. All knobs listed are in full compliance with MIL-K-3926A and MS-91528C.

NEW FEATURES:

- ½" diameter knobs (0 Series) accommodate ¼" standard round shaft.
- Decorator Series, aluminum caps, knobs now available in half-inch diameter size.
- Small spinner, crank type, knob now available in .900" dia. size.

KNOB SPECIFICATIONS

Each digit of model number indicates size, style, shaft hole diamete color as indicated below. Additionally, a final suffix **C** (e.g., 3D2BC) cates a concentric base knob. Decorator Series: Indicated by prefi (e.g., **DC**1D1B) for aluminum cap with black dot; or, **PC** plain aluminu

1st Digit: Size		2nd Digit: Style		3rd Digit: Shaft		4th Digit: Co	
No.	Knob Dia.	Letter	Description	No.	Hole Dia.	Letter	Finis
0	.500"	A	Bar knob with white line	1	.127" round	B	Matte B
1	.700"	C	Round with white dot	2	.252" round	G	Matte G
2	.900"	D	Skirted round	3	.127" D flat	J*	Mirror
3	1.250"	E	Skirted round, white dot	4	.252" D flat	R*	Matte R
4	1.750"	F	Round dial skirt, wh. arrow	5	.190" round	S	Mirror B
		G	Dial, no arrow	6	.267" round	T*	Mirror R
		H	Dial with slot				
		K	Skirted pointer				
		N	Round				
		O	Dial skirt, backlight arrow				
		P	Pointer			* Color availab on request.	
		S	Spinner				

DESIGN AND CONSTRUCTION:

A. One-piece construction, including dial knobs.
B. Either mirror or matte finish. All knobs to MIL-K-3926A must have matte finish.

CONSTRUCTION MATERIALS:

A. Self-extinguishing thermoplastic, MIL STD. Method 111.
B. Metal inserts are aluminum, plated to withs salt spray per MIL STD. 202, Method 101, condition B.
C. Each knob has two socket head set screws to FF- S-103, Type 111, Style 4.

STANDARD BLACK KNOBS PER MS91528

Control Knobs Number or MS91528-	Net Each 1-99**	Control Knobs Number or MS91528-	Net Each 1-99**
0N1S	$0.50	2N1B	$0.77
0N1B	.53	2N2S	.67
0D1B	.63	2N2B	.72
0F1B	.69	2D1B	.86
0G1B	.66	2D2B	.80
0P1B	.54	2F1B	.94
0K1B	.62	2F2B	.88
1N1S	.68	2G2B	.86
1N1B	.73	2P1B	.81
1N2S	.63	2P2B	.77
1N2B	.69	2K1B	.89
1D1B	.82	2K2B	.85
1D2S	.72	3N2S	.71
1D2B	.75	3N2B	.75
1F1B	.89	3D2B	.85
1F2S	.80	3F2S	.87
1F2B	.86	3F2B	.92
1O1B	2.56	3G2B	.90
1O2B	2.51	3S2B	1.89
1G2B	.81	4N2S	.84
1P1B	.74	4N2B	.88
1P2S	.63	4D2S	.92
1P2B	.68	4D2B	.97
1K1B	.81	4F2B	1.09
1K2S	.72	4G2B	1.07
1K2B	.76	4S2B	2.05
1A2B	.76		

ALUMINUM CAP DECORATOR SERIES CONTROL KNOBS

Control Knobs Catalog Number	Net Each 1-99**	Control Knobs Catalog Number	Net Each 1-99**
PC1N1S	$0.78	PC1K2B	$0.90
PC1N1B	.80	PC2N1S	.98
DC1N1S	.95	PC2N1B	1.03
DC1N1B	.97	DC2N1S	1.06
PC1N2S	.78	DC2N1B	1.08
PC1N2B	.80	PC2N2S	.90
DC1N2S	.90	PC2N2B	.91
DC1N2B	.91	DC2N2B	1.03
PC1N5S	.90	PC2D2S	.98
PC1N5B	.91	PC2D2B	1.03
PC1D1S	.95	DC2D2S	1.10
PC1D1B	.97	DC2D2B	1.11
DC1D1S	1.06	PC2F2S	1.08
DC1D1B	1.08	PC2F2B	1.10
PC1D2S	.90	PC2P2S	.95
PC1D2B	.91	PC2P2B	.97
PC1F2S	.97	PC2K2S	1.05
PC1F2B	.98	PC2K2B	1.06
PC1P1S	.84	PC3N2S	.98
PC1P1B	.85	PC3N2B	1.03
PC1P2S	.78	PC3D2S	1.10
PC1P2B	.81	PC3D2B	1.11
PC1K1S	.95	PC3F2S	1.18
PC1K1B	.97	PC3F2B	1.19
PC1K2S	.87		

SPECIAL BLACK KNOBS PER MS91528

Control Knobs Number or MS91528-	Net Each 1-99**	Control Knobs Number or MS91528-	Net Each 1-99**
0C1B	$0.69	2C1B	$0.91
0E1B	.66	2C2B	.85
1N5B	.83	2D2BC*	.80
1N2BC*	.68	2D6BC	.88
1C1B	.88	2E1B	.99
1C2B	.81	2E2B	.93
1D2BC*	.77	2F2BC*	.88
1E1B	.95	2F6BC*	.97
1E2B	.89	3N2BC*	.76
1F2BC	.84	3C2B	.89
2N5B	.86	3D2BC*	.86
2N2BC*	.72		

CONTROL KNOBS PER MS91528

Control Knobs Number or MS91528-	Net Each 1-99**	Control Knobs Number or MS91528-	Net Each 1-99**
0N1G	$0.63	2N1B	$0.77
0F1G	.78	2H2B	.94
0P1G	.63	2H1B	1.00
0G1G	.75	2P2G	.86
0K1G	.71	2K2G	.93
1N1G	.82	3N2G	.86
1N2G	.77	3D2G	.95
1O2G	.86	3F2G	1.01
1F2G	.93	3G2G	.98
1G2G	.90	3S2G	1.99
2N1G	.88	4N2G	.98
2N2G	.80	4D2G	1.07
2D2G	.89	4F2G	1.17
2F2G	.97	4G2G	1.15
2G2G	.94		

* Concentric base. ** See distributor for greater quantity discounts.

Net

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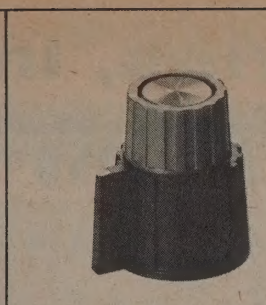
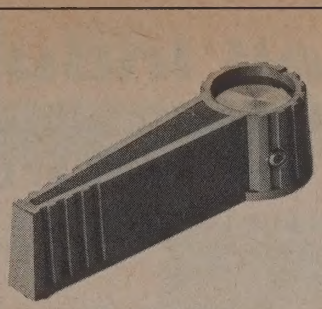
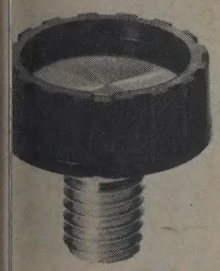
100 Series Round Dial

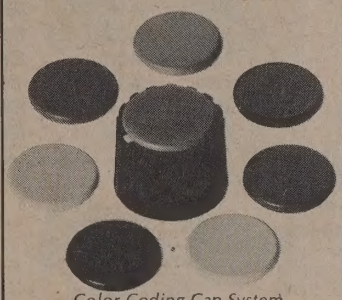

Low-Profile Concentrics

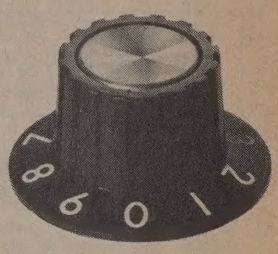

100 Series Large Lever

Miniature Binding Post


Series Small Thumbscrew

100 Series Small Pointer

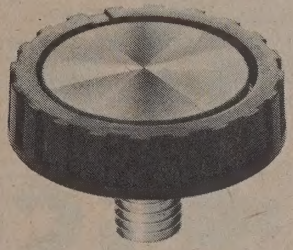

Color Coding Cap System

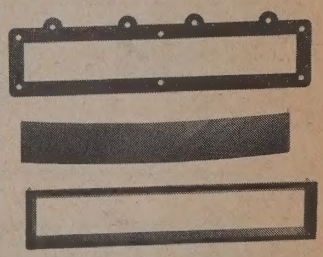


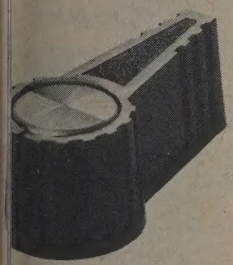
500 Series Numbered Dial

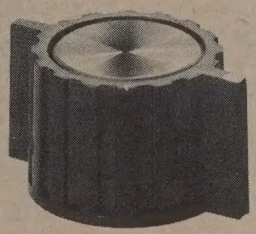
Model 920 Digibezel

Standard Binding Post

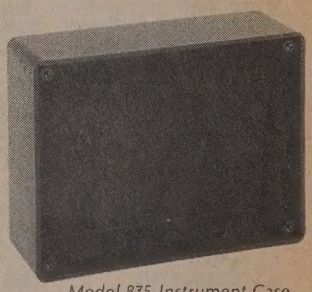

500 Series Large Thumbscrew


Model 940 Digibezel


500 Series Small Lever


500 Series 2-Bar

500 Series Miniature 2-Bar Dial


Model 875 Instrument Case

For the widest selection of high-quality front-panel components, ask your distributor for Nobex

NOBEX control knobs are available in 72 different sizes, including low-profile concentrics and miniatures, with snap-in color caps in 9 standard colors, and bodies in 3 standard and 25 special-order colors.

NOBEX binding posts are made in standard and miniature sizes in 6 colors to match NOBEX control knobs.

NOBEX unbreakable instrument cases are injection molded in 9 colors.

For digital displays, specify the low-cost DIGIBEZEL™—the numeric display tube bezel with built-in Polaroid* filter. DIGIBEZEL is designed to enhance your instrument's lines while providing maximum contrast and readability in high ambient light levels. DIGIBEZEL installs in seconds with hidden mounting hardware.

NOBEX

MECHANICAL COMPONENTS

Next time you talk to your distributor about front-panel components, talk about NOBEX. If he doesn't carry NOBEX, phone or write directly to NOBEX DIVISION GRIFFITH PLASTIC PRODUCTS COMPANY.

Write today for a free, full-color catalog containing complete NOBEX specifications, dimensions and ordering information.

*A trademark of Polaroid Corporation

NOBEX DIVISION
GRIFFITH PLASTIC PRODUCTS COMPANY

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AM-2	AM-2W	NM-2	NM-2W	1/4"
AM-3	AM-3W	NM-3	NM-3W	3/8"
AM-4	AM-4W	NM-4	NM-4W	1/2"
AM-5	AM-5W	NM-5	NM-5W	21/32"
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Contains dial patterns, arcs, wedges, lines, dots, switch symbols, graduation lines, lines for rotary taps, switches, potentiometers and calibrated meter dials.

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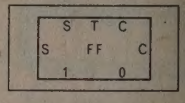

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Thousands of printed circuit pads: circles (with center hole), teardrops, teardrops (with vanishing point), double end teardrops, double end teardrops (with vanishing points), elbows, elbow (terminal), T-connectors, fillets, ovals.

PC-1 (black)

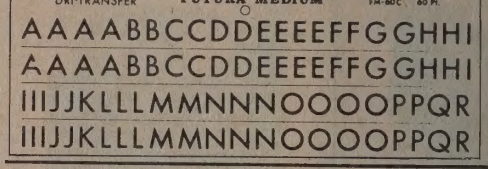
PRINTED CIRCUIT PADS MARKIT®

MARKETCH® ETCHING SOLUTION

Adhere any desired MarKit® symbol to copper surface of printed circuit board. Burnish thoroughly. Then deposit entire board into etching solution until all exposed copper is completely etched from board. Symbol will remain as it is, unaffected by etching solution. Wash board under running water. Wipe board dry. Then use thinner or fine sandpaper until bright copper is exposed.

PCE-1 — PRICE $3.00

One pint liquid in unbreakable plastic container. Weight approx. 28 oz.



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Cat. No. NOB42-CL/42 Pt. Capitals and Lower Case
Cat. No. NOB48-L/48 Pt. Lower Case Letters Only
Cat. No. NOB48-C/48 Pt. Capital Letters Only

FUTURA BOLD ABCDEFGHIJKlmnopqrs

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Cat. No. FOB24-CL/24 Pt. Capitals and Lower Case
Cat. No. FOB30-CL/30 Pt. Capitals and Lower Case
Cat. No. FOB36-CL/36 Pt. Capitals and Lower Case
Cat. No. FOB48-C/48 Pt. Capital Letters Only
Cat. No. FOB60-L/60 Pt. Lower Case Letters Only
Cat. No. FOB60-C/60 Pt. Capital Letters Only

FUTURA DEMI-BOLD ABCDEFghijkl

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Cat. No. FDB36-CL/36 Pt. Capitals and Lower Case
Cat. No. FDB48-L/48 Pt. Lower Case Letters Only
Cat. No. FDB48-C/48 Pt. Capital Letters Only
Cat. No. FDB60-L/60 Pt. Lower Case Letters Only
Cat. No. FDB60-C/60 Pt. Capital Letters Only
Cat. No. FDB72-L/72 Pt. Lower Case Letters Only
Cat. No. FDB72-C/72 Pt. Capital Letters Only

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Cat. No. FM60-L/60 Pt. Lower Case Letters Only
Cat. No. FM60-C/60 Pt. Capital Letters Only
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Cat. No. FGC72-C/72 Pt. Capital Letters Only

FRANKLIN GOTHIC ABCDEFghijk

Cat. No. FG18-CL/18 Pt. Capitals and Lower Case
Cat. No. FG36-CL/36 Pt. Capitals and Lower Case
Cat. No. FG48-L/48 Pt. Lower Case Letters Only
Cat. No. FG48-C/48 Pt. Capital Letters Only
Cat. No. FG60-L/60 Pt. Lower Case Letters Only
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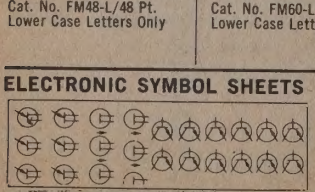

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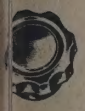
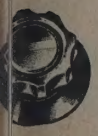
waldom KNOBS

INSTRUMENT KNOBS

MODERN KNOBS
Black Styrene, 1/4″ Brass Insert, Slotted Set Screw

Part No.	Diam.	Height	Skirt or Pointer Size	Net Ea.	100-Up, Ea.
6126	5/8″	7/16″		.32	.25
6126 Red	5/8″	7/16″		.37	.30
6129	7/8″	19/32″		.50	.40
BAR KNOB					
BK-1B	11/16″	1/2″		.37	.30
INSTRUMENT KNOBS—Full-Fluted Type Black Bakelite, 1/4″ Brass Insert, Slotted Set Screw					
WA-4100	1-1/8″	5/8″		.49	.40
WA-4101	1-3/8″	11/16″		.51	.40
WA-4102	1-5/8″	3/4″		.59	.45
WA-4103	2-3/8″	7/8″		.86	.65
The above knobs supplied drilled and tapped for mounting skirts, pointers, or dials. Add Suffix (D) — Net + $.08 Ea.					
W/SKIRT					
WA-4104	1-1/8″	51/64″	1-1/2″	.95	.72
WA-4107	1-3/8″	55/64″	1-3/4″	.97	.74
WA-4108	1-5/8″	7/8″	2-1/16″	1.13	.86
WA-4109	2-3/8″	1″	3″	1.50	1.14
W/WHITE OPAQUE PLASTIC POINTER					
WA-4100Q	1-1/8″	11/16″	3/4″	.76	.58
WA-4101J	1-3/8″	3/4″	7/8″	.78	.60
WA-4102Q	1-5/8″	13/16″	1-1/4″	.84	.64
WA-4103W	2-3/8″	15/16″	1-9/16″	1.13	.86
W/TRANSPARENT, LINED PLASTECELE POINTER					
6566-P	1-1/8″	5/8″	25/32″	.88	.71
6571-P	1-3/8″	11/16″	1-1/32″	.99	.78
6570-P	1-5/8″	3/4″	1-9/32″	1.01	.82
6559-P	2-3/8″	7/8″	1-11/16″	1.34	1.09

LATEST SERIES INSTRUMENT KNOBS
Black Bakelite, slotted set screw, white marker line on skirt.

INSTRUMENT KNOBS WITH DECORATIVE SILVER INLAY. All Instrument Knobs are available with a spun aluminum inlay for decorative purposes. Write for quotation.

Part No.	Diam.	Height	Figure	Net Ea.	100-Up, Ea.
WA-101	3/4″	1/2″	A	.34	.26
WA-101B*	3/4″	1/2″	A	.71	.54
WA-101C†	3/4″	1/2″	A	.36	.28
WA-102	1-1/8″	5/8″	A	.41	.31
WA-102B*	1-1/8″	5/8″	A	.57	.44
WA-103	1-1/4″	3/4″	A	.44	.34
WA-103B*	1-1/4″	3/4″	A	.57	.43
WA-104	1-1/2″	7/8″	A	.46	.35
WA-104B*	1-1/2″	7/8″	A	.59	.45
WA-105	2″	15/16″	A	.63	.50
WA-105B*	2″	15/16″	A	.78	.60
WA-106S	1-1/4″	3/4″	B	.69	.53
WA-106AG	1-1/4″	3/4″	B	.69	.53
WA-109	1-1/4″	5/8″	C	.48	.37
WA-109B*	1-1/4″	5/8″	C	.60	.46

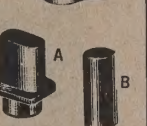
* 1/4″ Brass Insert; † 1/8″ Molded Hole; All others have 1/4″ Molded Hole. S w/Silver Inlay. G w/Gold Inlay.

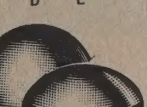
DUO CONCENTRIC KNOB
Small Knob WA-101-C—Large Knob for 1/4″ Shaft.

WA-107	1-1/4″	1-3/16″	D	.65	.50

BAR KNOBS
Black Bakelite, 1/4″ Molded Hole, Slotted Set Screw, White Indicator Knob.

WA-1510	3/4″	9/16″		.33	.30
WA-1500	1-1/8″	9/16″		.25	.20
WA-1520	1-1/2″	3/4″		.60	.46





STANDARD KNOBS—Pointer Knobs
Molded Black Bakelite, Slotted Set Screw
11/16″ Diam., 13/32″ High

Part No.	Description	Net Ea.	100-Up, Ea.
WA-1400	1/4″ Molded Hole	.16	.12
WA-1400W	1/4″ Brass Insert	.41	.32
WA-1400R	1/8″ Molded Hole	.22	.17
1″ Diam., 1/2″ High			
WA-1470	1/4″ Molded Hole	.29	.22
WA-1470C	1/4″ Brass Insert	.46	.36
ROUND KNOBS 11/16″ Diam., 13/32″ High			
WA-1450	1/4″ Molded Hole	.16	.12
WA-1450W	1/4″ Brass Insert	.37	.30
WA-1450G	1/8″ Molded Hole	.22	.17
1″ Diam., 1/2″ High			
WA-1475	1/4″ Molded Hole	.23	.17
WA-1475C	1/4″ Brass Insert	.39	.30
SKIRTED KNOBS Molded Black Bakelite, Slotted Set Screw 1-1/2″ Diam. x 3/4″ High			
WA-1600	1/4″ Molded Hole	.32	.24
WA-1600A	1/4″ Brass Insert	.47	.36
7/8″ Diam. x 9/16″ High			
WA-1610	1/4″ Molded Hole	.29	.22
WA-1610A	1/4″ Brass Insert	.40	.31

LEVER KNOBS
Black Bakelite. For use on Intercoms, appliances, electronic equipment. 1/4″ Brass Insert, Slotted Set Screw

Part No.	Diam.	Height	Net Ea.	100-Up, Ea.
WA-2110A	1-5/8″	19/32″	.43	.33
WA-2100A	2-1/2″	5/8″	.43	.33

POINTER KNOBS
Black Bakelite, White Filled Pointer, for 1/4″ Shaft, Set Screw

Part No.	Diam.	Height	Figure	Net Ea.	100-Up, Ea.
WA-2300	1-1/4″	5/8″	A	.18	.14
WA-2300A*	1-1/4″	5/8″	A	.29	.22
WA-2350	2″	5/8″	A	.35	.30
WA-2350A*	2″	5/8″	A	.44	.35
*Brass Insert					
WA-2150	1-1/4″	9/16″	B	.22	.17

PUSH BUTTON KNOBS
Self-locating Friction fit for use on Flat Wire Shaft, .050 x .187. Black Bakelite

WA-201	1/2″	51/64″	A	.14	.10
WA-202	31/64″	9/16″	B	.09	.07
WA-203	7/16″	1″	C	.14	.10

UTILITY KNOBS
Black Bakelite w/8-32 Threaded Female Insert

WA-204	31/64″	1/2″	D	.12	.10
WA-205	3/4″	1/2″	E	.15	.10

BALL KNOBS
Black Bakelite. WA-301 has 1/4-20 Threaded hole. WA-302 and WA-303 have 3/8-24 Threaded Female Insert.

WA-301	1- 1/4″	1″	F	.28	.20
WA-302	1-15/16″	1-27/32″	F	.89	.68
WA-303	2″	1- 9/16″	G	.52	.40

POINTER KNOB

WA-1550	1-1/8″	9/16″		.24	.18

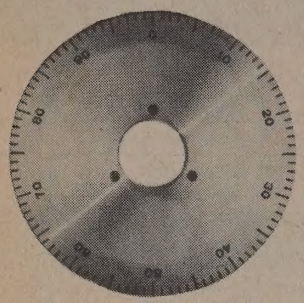
…os above are available in other colors than black, with more than one set screw, …socket type set screws, and with special hot-stamped markings. Write for quotation.

waldom DIALS & ASSEMBLIES

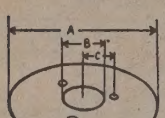
DIALS, INDICATORS & DIAL ASSEMBLIES

Material: Heavy aluminum with hand spun finish. Calibration lines etched and filled with black e

DIALS



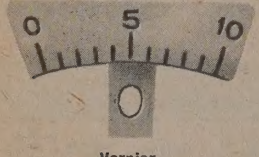
DO-8



CALIBRATION			DIMENSIONS				
Clockwise 0-100 Part No.	Counter-clockwise 100-0 Part No.	DEGREES	A	B	C	NET EA.	M
DO-15	DO-15R	180°	1-1/8″	3/8″	7/32″	.50	
DO-16	DO-16R	270°	1-1/8″	3/8″	7/32″	.50	
DO-17	DO-17R	325°	1-1/8″	3/8″	7/32″	.50	
DO-18	DO-18R	360°	1-1/8″	3/8″	7/32″	.50	
DO-1	DO-1R	180°	1-3/4″	31/64″	9/32″	.66	
DO-2	DO-2R	270°	1-3/4″	31/64″	9/32″	.66	
DO-19	DO-19R	325°	1-3/4″	31/64″	9/32″	.66	
DO-20	DO-20R	360°	1-3/4″	31/64″	9/32″	.66	
DO-3	DO-3R	180°	2-3/4″	3/4″	13/32″	.83	
DO-4	DO-4R	270°	2-3/4″	3/4″	13/32″	.83	
DO-21	DO-21R	325°	2-3/4″	3/4″	13/32″	.83	
DO-5	DO-5R	360°	2-3/4″	3/4″	13/32″	.83	
DO-6	DO-6R	180°	4″	15/16″	5/8″	1.32	1
DO-7	DO-7R	270°	4″	15/16″	5/8″	1.32	1
DO-22	DO-22R	325°	4″	15/16″	5/8″	1.32	1
DO-8	DO-8R	360°	4″	15/16″	5/8″	1.32	1
0-360 DO-8A	360-0 DO-8AR	360°	4″	15/16″	5/8″	1.32	1

DIAL INDICATORS

1-1/8″ and 1-3/4″ Dials use the single line indicator SL-1. The numbers on the verniers (VI-3 etc.) are the same as the numbers of the dials they are to be used with (DO-3 etc.), Verniers are heavy, etched aluminum with a single mounting bracket complete with mounting hardware.



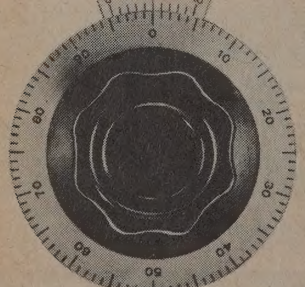
Vernier

SL-1

PART NO.	USED WITH DIAL NO.	NET EA.	100 OR MORE EA.	PART NO.	USED WITH DIAL NO.	NET EA.	M
SL-1	All 1-1/8″ & 1-3/4″ dials	.11	.10	VI-6	DO-6	.33	
				VI-6R	DO-6R	.33	
VI-3	DO-3	.33	.25	VI-7	DO-7	.33	
VI-3R	DO-3R	.33	.25	VI-7R	DO-7R	.33	
VI-4	DO-4	.33	.25	VI-22	DO-22	.33	
VI-4R	DO-4R	.33	.25	VI-22R	DO-22R	.33	
VI-21	DO-21	.33	.25	VI-8	DO-8	.33	
VI-21R	DO-21R	.33	.25	VI-8R	DO-8R	.33	
VI-5	DO-5	.33	.25	VI-8A	DO-8A	.33	
VI-5R	DO-5R	.33	.25	VI-8AR	DO-8AR	.33	

DIRECT DRIVE DIAL AND KNOB ASSEMBLIES

Direct Drive Dial assemblies in 1-1/8″ and 1-3/4″ sizes have knobs only—all others have knob and skirt. All knobs have brass inserts for 1/4″ shafts. Complete with appropriate indicator or vernier.



302

CALIBRATION						
Clockwise 0-100 Part No.	Counter-clockwise 100-0 Part No.	DEGREES	O.D.	KNOB USED (See Pg. 34)	NET EA.	M
27084	27084-R	180°	1-1/8″	WA-1450-W	1.56	1
27085	27085-R	270°	1-1/8″	WA-1450-W	1.56	1
27086	27086-R	325°	1-1/8″	WA-1450-W	1.56	1
27087	27087-R	360°	1-1/8″	WA-1450-W	1.56	1
27068	27068-R	180°	1-3/4″	WA-4100	1.68	1
27069	27069-R	270°	1-3/4″	WA-4100	1.68	1
27080	27080-R	325°	1-3/4″	WA-4100	1.68	1
27081	27081-R	360°	1-3/4″	WA-4100	1.68	1
294	294-R	180°	2-3/4″	WA-4108	2.76	2
295	295-R	270°	2-3/4″	WA-4108	2.76	2
27082	27082-R	325°	2-3/4″	WA-4108	2.76	2
303	303-R	360°	2-3/4″	WA-4108	2.76	2
292	292-R	180°	4″	WA-4109	3.60	2
293	293-R	270°	4″	WA-4109	3.60	2
27083	27083-R	325°	4″	WA-4109	3.60	2
302	302-R	360°	4″	WA-4109	3.60	2
0-360 302-A	360-0 302-AR	360°	4″	WA-4109	3.60	2

WRITE FOR QUOTATIONS ON LARGER QUANTITIES

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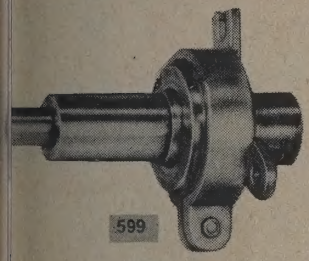
waldom

INSTRUMENT CASES & COVERS

Molded Plastic 1/8" Thick w/Highly Polished Finish. Will withstand rugged usage. Cases suffixed BI have 6-32 brass inserts. Others have molded hole.

Part No.	DESCRIPTION	Net Ea.	100-up Ea.
BC-136	3-25/32"L x 2-21/32"W x 1-15/32" Deep	.51	.35
BP-135	Flat Panel for above	.34	.25
BC-138	6"L x 3-1/2"W x 1-7/8"D	1.01	.70
BC-138BI	W/Brass Inserts in 6 corners	1.13	.80
BP-137	Flat Panel for above	.62	.45
BP-137A	Molded Cover for above	.70	.48
BC-140	6-1/2"L x 4-31/32"W x 2-5/32" Deep	1.34	.95
BC-140BI	W/Brass Inserts in 4 corners	1.49	1.05
BP-139	Flat Panel for above	.83	.60
BP-139A	Molded Cover for above	1.03	.71
BC-142	5-7/8"L x 3-1/16"W x 2-1/4" Deep	.95	.65
BC-141BI	8-3/8"L x 7-3/8"H x 3" Deep	3.08	2.15
BP-141	Flat Panel for above	1.68	1.35

PLANETARY DRIVES



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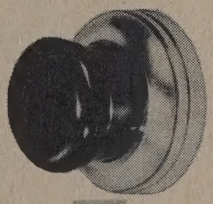


6665

Two ball-type planetary drive units are useful whenever a compact device is needed for reduced-speed operation of light mechanisms. These units depend on the action of steel balls that rotate between the knob shaft and a concentric sleeve that is attached to the driven instrument. The units are adjustable so that the pressure on the balls can be varied to match the operating load, this assures maximum smoothness while maintaining adequate torque. Maximum torque is 14 inch ounces; minimum torque is 10 inch ounces. The ratio is approximately 5 to 1, and two units may be used in tandem to produce a 25 to 1 ratio. These are precision devices for both military and commercial applications.

'EED PLANETARY DRIVE

s slow speed operation at approximately 5 to 1; high speed at 1 to 1. The ual Concentric Knob below fits this unit. Complete with mounting acces-

. 599 Net Ea. 11.62 25 to 99, Ea. 10.90 100 or more, Ea. 9.15

SPEED PLANETARY DRIVE

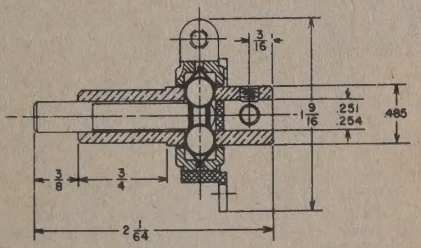
as above unit, except that the sleeve for the high-speed knob has been d. In its place is a threaded sleeve with shoulder, so an indicating dial or may be installed. Clamping nut, clamping washers and planetary anchor e included.

. 27067 Net Ea. 11.01 25 to 99, Ea. 10.40 100 or more, Ea. 8.45

SORY DUAL CONCENTRIC KNOB

9 Planetary Drive. Larger knob is aluminum. 1-3/16" diameter drilled 7/16" high-speed sleeve on planetary. Smaller knob is molded black styrene /4" brass insert to fit low-speed planetary shaft. Both with set screws.

o. 6665 Net. Ea. 1.26 100 or more, Ea. .90



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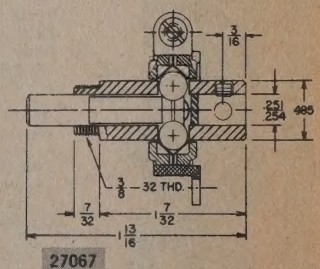
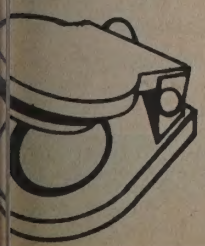


27067

JACK COVERS

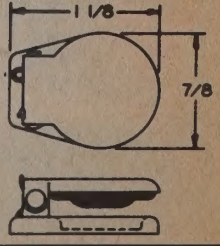


J-106

Have high-torque springs for positive self-closing action. Used for protecting jacks against entrance of dust and moisture.

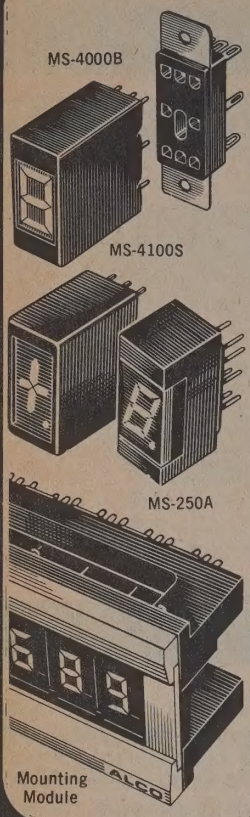
Steel with smooth black finish. Use with standard 3/8"-32 threaded bushing type phone jack.

Part No. J-106 Net Ea., .66



READOUT INDICATORS

NEW 5V. MINIATURE ENCASED READOUTS



MS-4000B — 7-segment incandescent readout has a bright display (for 0 to 9, and some alpha) that is clearly read under all ambient lighting conditions. The flat, single-plane display allows true wide-angle viewing without distortion. Large character size (.325" x .600") relative to case size (.552" x 1.18"). Makes use of high temperature materials housed in a one-piece, black matte metal case. Terminal pins are nickel-plated brass. Lamps are closely fitted into a compartmented block with short leads virtually eliminating vibration problems. Vibration test: 2000 c/s. Lamps are separately lit to form any numeral as desired by use of an external decoder/driver. High reliability, long life #683 T-1 subminiature lamps have a life expectancy of 100,000 hours.

MS-4100 — as above, but with decimal and figure at a slight angle. Size same as above.

MS-4100S — symbol indicator with +, —, 1, and decimal. Segments at a slight angle.

MS-250A — smaller version of above. 0-to-9 character size. Snap-mount socket. Plastic housing.

MS-250S — symbol indicator (+, —, 1, and decimal) mates with MS-250A.

MS-4000DDM — decode display logic module for MS-4000 features plug-in display, integrated circuit compatible 4-line BCD input, automatic blanking of most significant leading edge zeros. P.C. board connector. Size overall: .65"w. x 1.18"h. x 4.0"d. with readout.

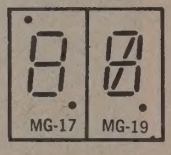
MS-4FB — mounting kit and frame: brushed aluminum or black bezel pr., mounting bars and red filter. Holds up to five MS-4000, MS-4100 readouts.

	4000 Series	250 Series
Lamps:	3-5V @ 40-60 ma. per segment	2.5V @ 20 ma. per segment
Current Drain:	120 ma (min.)	40 ma (min.)
Consumption:	420 ma (max.)	160 ma (max.)
Power:	0.6 watt (min.) 2.1 watt (max.)	0.1 watt (min.) 0.4 watt (max.)
Weight:	15 grams	5.6 grams
Size:	.522x1.18x1.18"	

Model	Description	Filter	One-99	100-999	1000-Over
†MS-4000BR	Numeric Readout*	Red	6.93	5.16	4.14
†MS-4000BC	Numeric Readout*	Clear	6.93	5.16	4.14
MS-4100BR	Numeric Readout*	Red	7.95	5.96	4.77
MS-4100BC	Numeric Readout*	Clear	7.95	5.96	4.77
MS-4100SR	Symbol Readout*	Red	7.95	5.96	4.77
MS-4100SC	Symbol Readout*	Clear	7.95	5.96	4.77
MS-250AR	Numeric Readout*	Red	8.25	6.19	4.97
MS-250AC	Numeric Readout*	Clear	8.25	6.19	4.97
MS-250SR	Symbol Readout*	Red	8.25	6.19	4.97
MS-250SC	Symbol Readout*	Clear	8.25	6.19	4.97
MS-4000DDM	Decoder Display Module & &Readout		31.50	24.00	21.00
MS-4FBA	Module Section Kit, Natural		4.95	3.75	2.97
MS-4FBB	Module Section Kit, Black		4.95	3.75	2.97
MS-4BA	Bezel Only, Natural, pr.		1.25	.94	.75
MS-4BB	Bezel Only, Black, pr.		1.25	.94	.75
SKT-4B	Socket for MS-4000		.48	.36	.29

* Supplied with socket. † Available without socket, 6.45 each 1-99; 4.80 each 100-999; 3.85 each 1000-over.

ELFIN® NEON INDICATORS



The Elfin is a cold cathode neon type of presentation, capable of displaying on a single plane. It's small diameter of .413" allows more figures for panel space. Character height: 0.433". Displays 0 to 9 numerals, +, or —, decimal point, and some alpha. 9-Segmented MG-19 has diagonal bars to give better shaped numerals or a + and —sign. MG-17 has 7 segments and 2 decimal points to use as colon. Suitable for DC or pulsed operation.

Model	Description	One-99	100-999	1000-Over
MG-19	9 Segment Neon Indicator	4.95	3.75	2.99
MG-17	7 Segment Neon Indicator	4.95	3.75	2.99
MGDL-D200	MG-19 Elfin Mounted on PC with Driver & Decoder	29.95	22.50	19.97

READOUT INDICATORS

RK Series — precision machined from 1-piece aluminum which also serves as a heat sink for the bulbs. Front and rear tapped holes for mounting on a panel or on RKA-2-8 brackets. The RK-FLV violet filter is available to reduce reflected lighting effects resulting in a better contrast.

Unique in-line design provides clear displays without focusing problems thereby allowing equally clear viewing from any angle. Compact size assures a neat fit in a limited space. Long life bulbs — 20,000 to 50,000 hrs. Engraved acrylic plates are of a non-yellowing quality are mounted in a tightly-packed stack and edge-lit.

RKP Series—plug-in readout indicators are designed for ease of use.

RKF Series—has a larger 1-piece aluminum body with 1" high numerals, along with 2 long-life bulbs per numeral for increased brightness.

SPECIFICATIONS

Numerals: 0 to 9 and a period
Numeral Size: .55" high (RK, RKP)
1.0" high (RKF)
Standard Voltages: 6, 14, 24 volts
Bulbs Used (T-1-¾): #2181 (6.3V), 2182 (14V), A-24 (24V)
Current Drain: 6.3V @ 200 ma., 14V @ 80 ma., 24V @ 50 ma. (RK, RKP)
6.3V @ 400 ma., 14V @ 160 ma., 24V @ 100 ma. (RKF)
Body Size: 2.56 x .78 x .83" (RK, RKP)
3.30 x 1.18 x 1.18" (RKF)
Bracket: Holds 2 to 8 readouts. (RK, RKP)

MS Series Mosaic — 0-9 and some alphabet is displayed through diode-matrix (not supplied). Decimal points used as colon. High illumination. Figures .25/32" high. 20,000 hr. bulb life. Body size: .827" w. x 1.73" h. x 1.69" d. Available 6 or 14V

MSM Series Mosaic (Miniature) — as above, except smaller. Lamps are 5v 60 ma. Body size: .433" w. x 1.15" h. x 1.18" d. Figures .472" high, 100,000 hr. bulb life.

Model	Volt	Description	One-99	100-999	1000 Over
RK-6	6.3	Edgelighted, Numeric	8.25	6.19	4.97
RK-14	14.0	Edgelighted, Numeric	8.25	6.19	4.97
RK-24	24.0	Edgelighted, Numeric	8.75	6.56	5.21
RK-6S	6.3	Edgelighted, Symbol	8.25	6.19	4.97
RK-14S	14.0	Edgelighted, Symbol	8.25	6.19	4.97
RK-24S	24.0	Edgelighted, Symbol	8.75	6.56	5.21
RKP-6	6.3	Edgelighted, Numeric	8.25	6.19	4.97
RKP-14	14.0	Edgelighted, Numeric	8.25	6.19	4.97
RKP-24	24.0	Edgelighted, Numeric	8.75	6.56	5.21
RKP-6S	6.3	Edgelighted, Symbol	8.25	6.19	4.97
RKP-14S	14.0	Edgelighted, Symbol	8.25	6.19	4.97
RKP-24S	24.0	Edgelighted, Symbol	8.75	6.56	5.21
RKF-6	6.3	Edgelighted, Numeric	15.75	11.80	9.48
RKF-14	14.0	Edgelighted, Numeric	15.75	11.80	9.48
RKF-24	24.0	Edgelighted, Numeric	16.60	12.45	9.97
RKF-6S	6.3	Edgelighted, Symbol	15.75	11.80	9.48
RKF-14S	14.0	Edgelighted, Symbol	15.75	11.80	9.48
RKF-24S	24.0	Edgelighted, Symbol	16.60	12.45	9.97
RKA-2-8	—	Bracket (RK, RKP)	1.65	1.24	.97
RK-FLV	—	Violet Filter (RK, RKP)	.40	.28	.20
RKF-FLV	—	Violet Filter (RKF)	.50	.35	.26
RK-SKT	—	Pr. Sockets (RKP, RKF)	1.65	1.24	.97
RK-SKT-C	—	Pr. Sockets w/cover (RKP, RKF)	2.45	1.85	1.48
MS-6A	6.3	Mosaic, Numeric	8.25	6.19	4.97
MS-6S	6.3	Mosaic, Plus — Minus	8.25	6.19	4.97
MS-14A	14.0	Mosaic, Numeric	8.25	6.19	4.97
MS-14S	14.0	Mosaic, Plus — Minus	8.25	6.19	4.97
MSM-5A	5.0	Mini Mosaic, Numeric	8.25	6.19	4.97
MSM-5S	5.0	Mini Mosaic, Plus — Minus	8.25	6.19	4.97
MS-MTX	—	49 Diode Matrix	12.45	9.35	7.47
MS-SK-R	—	Right Angle Socket (MS)	1.55	1.16	1.03
MS-SKT	—	Socket (MS)	1.15	.92	.82
MSM-SK	—	Socket (MSM)	.85	.68	.57
MS-FLV	—	Filter, violet	.40	.28	.20
MS-FLR	—	Filter, red	.40	.28	.20
MS-FLG	—	Filter, green	.40	.28	.20

Symbol indicators (+ − V Ω %) can be used with numeric readouts.

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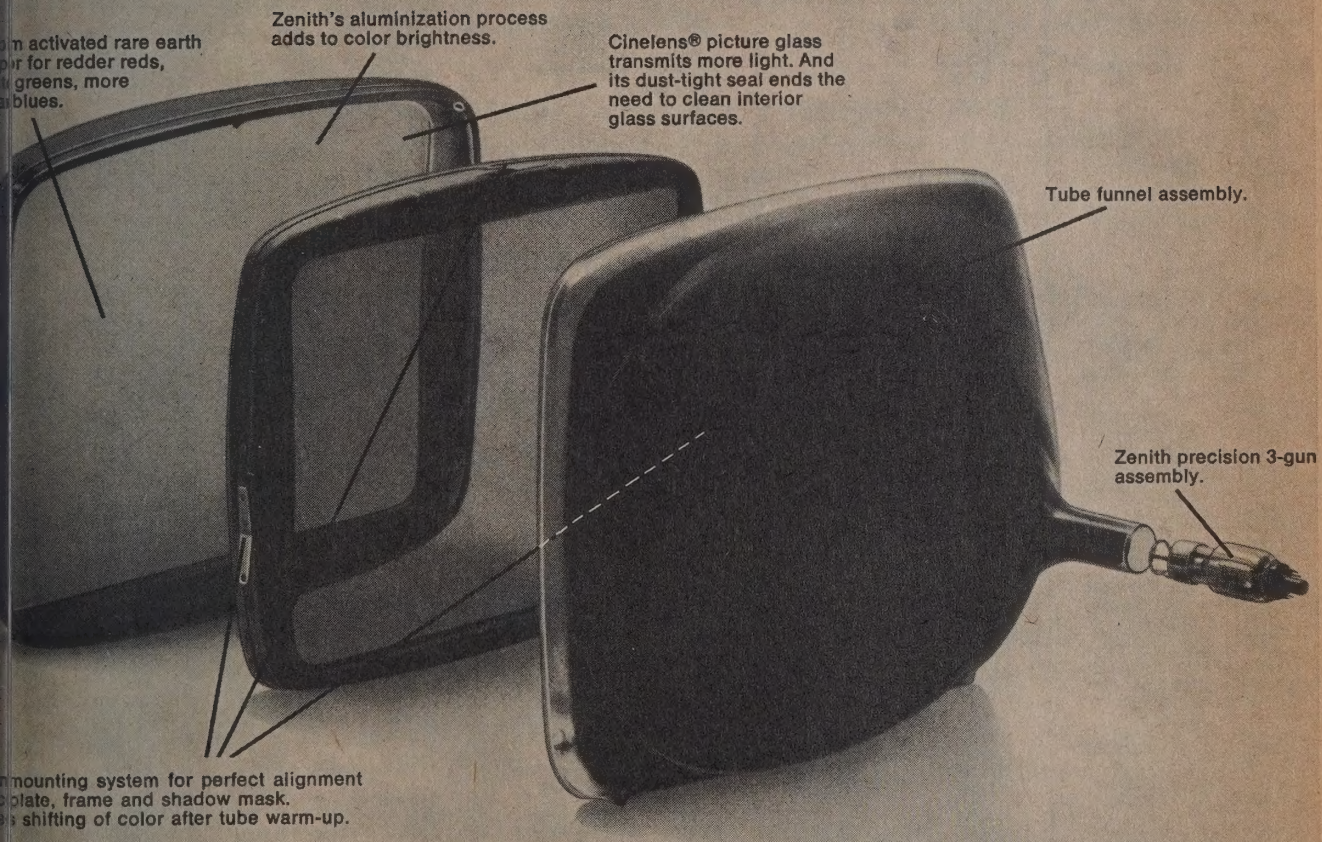
Zenith engineered and produced Color Picture Tubes!



Every Zenith replacement picture tube is made with the same care and engineering skill that go into the color TV picture tubes which Zenith produces as original equipment.

Zenith's uncompromising quality standards—which include tube testing at elevated line voltages for long periods—assure your customers of tubes with greater dependability and longer life.

Be sure. Order genuine Zenith picture tubes— for color or B&W TV—from your Zenith Distributor.

EXCITING SURPRISES FOR YOU—and Your Family! Fun for all! Get the details at your Zenith *Distributor's Parts Department.*

Zenith B&W replacement picture tubes are made only from new parts and materials except for the glass envelope which, prior to reuse, is inspected and tested to the same high standard as a new envelope. Zenith color picture tubes may contain used material which, prior to reuse, is carefully inspected, to meet Zenith's high quality standards.

Why not sell the best ZENITH®

The quality goes in before the name goes on

RCA

PICTURE TUBES
COLOR and BLACK and WHITE

RCA SILVERAMA® BLACK AND WHITE PICTURE TUBES

NOTICE: RCA Silverama Picture Tubes contain all new parts and materials except for the envelopes wh prior to re-use, are carefully inspected to meet the standards of original new envelopes.

TUBE TYPE	
5AXP4	
8DP4	
8XP4	
8YP4	
9AEP4	
9WP4	
10BP4A	Use 10FP4A
10BP4C	Use 10FP4A
10BP4D	Use 10FP4A
10CP4	Use 10FP4A
10EP4	Use 10FP4A
10FP4A	
11AP4	Use 11HP4A
11BP4	Use 11HP4A
11CP4	
11GP4	
11HP4	Use 11HP4A
11HP4A	
12BNP4	Use 12BNP4A
12BNP4A	
12CFP4	Use 12CNP4
12CGP4	Use 12BNP4A
12CNP4	
12DEP4	
12DFP4	
14NP4	Use 14WP4
14NP4A	Use 14WP4
14RP4	Use 14WP4
14RP4A	Use 14WP4
14SP4	Use 14WP4
14WP4	
14ZP4	Use 14WP4
16ASP4	Use 16CMP4A
16ATP4	Use 16CHP4A
16AXP4	Use 16CMP4A (Note 1)
16AYP4	Use 16BGP4 (Note 1)
16BFP4	Use 16CMP4A
16BGP4	
16BKP4	Use 16CHP4A
16BMP4	Use 16BGP4
16BQP4	Use 16CMP4A
16BTP4	Use 16CHP4A
16BVP4	Use 16CMP4A
16BWP4	Use 16BGP4
16CAP4	Use 16BGP4
16CEP4	Use 16CMP4A
16CHP4	Use 16CHP4A
16CHP4A	
16CJP4	Use 16CMP4A
16CMP4	Use 16CMP4A
16CMP4A	
16CTP4	Use 16BGP4
16CUP4	Use 16CMP4A
16CVP4	Use 16CHP4A
16KP4	Use 16RP4B
16KP4A	Use 16RP4B
16QP4	Use 16RP4B
16RP4A	Use 16RP4B
16RP4B	
16TP4	
16UP4	Use 16RP4B
16XP4	Use 16RP4B
17AP4	Use 17BP4D
17ATP4	Use 17BJP4
17ATP4A	Use 17BJP4
17AVP4	Use 17BJP4
17AVP4A	Use 17BJP4
17BP4B	Use 17BP4D
17BP4D	
17BJP4	
17BRP4	Use 17DSP4
17BUP4	Use 17BJP4
17BZP4	Use 17DSP4
17CAP4	Use 17DSP4

TUBE TYPE	
17CBP4	Use 17BJP4
17CKP4	Use 17DSP4
17CLP4	Use 17BJP4
17CWP4	Use 17DSP4
17CYP4	
17DAP4	
17DHP4	Use 17EFP4
17DKP4	Use 17DSP4
17DLP4	Use 17DSP4
17DQP4	
17DRP4	
17DSP4	
17DTP4	Use 17DSP4
17DXP4	
17DZP4	Use 17DXP4
17EAP4	Use 17HP4C (Note 3)
17EBP4	Use 17EFP4
17EFP4	
17EMP4	
17EWP4	
17FP4	Use 17HP4C
17FP4A	Use 17HP4C
17HP4B	Use 17HP4C
17HP4C	
17JP4	Use 17BP4D
17KP4	Use 17HP4C (Note 3)
17KP4A	Use 17HP4C (Note 3)
17LP4A	Use 17LP4B
17LP4B	
17QP4A	Use 17QP4B
17QP4B	
17RP4	Use 17HP4C
17RP4C	Use 17HP4C
17SP4	Use 17LP4B (Note 3)
17UP4	Use 17QP4B
17VP4	Use 17LP4B
17VP4B	Use 17LP4B
17YP4	Use 17QP4B
19ABP4	
19ACP4	Use 19CHP4
19ADP4	Use 19AVP4
19AFP4	
19AGP4	Use 19AVP4
19AHP4	Use 19AYP4
19AJP4	
19AKP4	Use 19AVP4
19ANP4	Use 19AYP4
19ARP4	Use 19AFP4
19AUP4	Use 19AFP4
19AVP4	
19AWP4	Use 19AYP4
19AXP4	Use 19AYP4
19AYP4	
19AZP4	Use 19AVP4
19BDP4	
19BHP4	Use 19AVP4
19BLP4	Use 19AVP4
19BMP4	Use 19AFP4
19BRP4	Use 19DRP4
19BSP4	Use 19AVP4
19BTP4	Use 19AVP4
19BVP4	Use 19AVP4
19BWP4	Use 19AYP4
19BXP4	Use 19AYP4
19CAP4	Use 19AVP4
19CDP4	Use 19CXP4
19CFP4	Use 19CHP4
19CHP4	
19CJP4	Use 19AVP4
19CKP4	Use 19CHP4
19CLP4	Use 19BDP4
19CMP4	
19CMP4A	Use 19CMP4
19CQP4	Use 19CXP4

TUBE TYPE	
19CRP4	Use 19BDP4
19CSP4	Use 19CHP4
19CUP4	Use 19CMP4
19CXP4	
19CYP4	Use 19AVP4
19CZP4	Use 19DQP4
19DAP4	Use 19DQP4
19DCP4	Use 19DRP4
19DEP4	Use 19AVP4
19DFP4	Use 19CHP4
19DHP4	Use 19DSP4
19DKP4	Use 19DRP4
19DLP4	Use 19CHP4
19DNP4	Use 19DRP4
19DQP4	
19DRP4	
19DSP4	
19DTP4	Use 19DQP4
19DUP4	Use 19ENP4A
19DWP4	Use 19DQP4
19EAP4	Use 19FEP4B (Note 1)
19EBP4	
19EDP4	Use 19DRP4
19EFP4	Use 19DSP4
19EGP4	
19EHP4	Use 19DRP4
19EHP4A	Use 19DRP4
19EJP4	Use 19FEP4B
19ELP4	Use 19AVP4
19EMP4	Use 19EBP4
19ENP4	Use 19FEP4B (Note 1)
19ENP4A	Use 19FEB4B Note 1
19ERP4	Use 19DRP4
19ESP4	Use 19DSP4
19EUP4	Use 19DRP4
19EVP4	Use 19DQP4
19EWP4	Use 19DQP4
19EZP4	
19FBP4	Use 19EGP4
19FCP4	Use 19DQP4
19FCP4A	Use 19DQP4
19FDP4	Use 19DQP4
19FEP4	Use 19FEP4B
19FEP4A	Use 19FEP4B
19FEP4B	
19FJP4	Use 19DQP4
19FJP4A	Use 19DQP4
19FLP4	
19FSP4	Use 19FEP4B (Note 1)
19FTP4	Use 19FLP4
19FWP4	Use 19AYP4
19GAP4	
19GBP4	Use 19DQP4
19GEP4	Use 19GEP4A
19GEP4A	
19GFP4	Use 19GEP4A
19GHP4	Use 19DUP4
19GJP4	Use 19DQP4
19GJP4A	Use 19DQP4
19GNP4	Use 19DRP4
19GRP4	Use 19DQP4
19GTP4	Use 19FEP4B (Note 1)
19XP4	Use 19AVP4
19YP4	Use 19AVP4
19ZP4	Use 19AVP4
20CP4	Use 20DP4D
20CP4A	Use 20DP4D
20CP4B	Use 20DP4D
20CP4C	Use 20DP4D
20CP4D	Use 20DP4D
20DP4C	Use 20DP4D
20DP4D	
20SP4	
20TP4	

TUBE TYPE	
20XP4	Use 20TP4
20YP4	Use 20SP4
21AP4	Use 21ZP4C (Note 2)
21ACP4	Use 21AMP4B
21ACP4A	Use 21AMP4B
21AFP4	Use 21YP4B
21ALP4	Use 21CBP4A
21ALP4A	Use 21CBP4A
21ALP4B	Use 21CBP4A
21AMP4A	Use 21AMP4B
21AMP4B	
21ANP4	Use 21CBP4A
21ANP4A	Use 21CBP4A
21AQP4	Use 21AMP4B
21AQP4A	Use 21AMP4B
21ASP4	Use 21XP4B
21ATP4	Use 21CBP4A
21ATP4A	Use 21CBP4A
21ATP4B	Use 21CBP4A
21AUP4	Use 21AVP4C
21AUP4A	Use 21AVP4C
21AUP4B	Use 21AVP4C
21AVP4B	Use 21AVP4C
21AVP4C	
21AWP4	Use 21AWP4A
21AWP4A	
21AYP4	Use 21XP4B
21BAP4	Use 21CBP4A
21BCP4	Use 21YP4B
21BDP4	Use 21AVP4C
21BNP4	Use 21CBP4A
21BSP4	Use 21AMP4B
21BTP4	Use 21CBP4A
21CBP4A	
21CEP4	Use 21EMP4/ 21EQP4
21CEP4A	Use 21EMP4/ 21EQP4
21CMP4	Use 21CBP4A
21CQP4	
21CUP4	Use 21AMP4B
21CVP4	Use 21CBP4A
21CWP4	Use 21CBP4A
21CXP4	Use 21DSP4
21CZP4	Use 21DEP4A
21DAP4	Use 21DEP4A
21DEP4A	
21DFP4	Use 21EMP4/ 21EQP4
21DHP4	
21DLP4	
21DMP4	Use 21EMP4/ 21EQP4
21DNP4	Use 21CPB4A
21DQP4	Use 21DLP4
21DSP4	
21EAP4	Use 21FDP4
21EDP4	Use 21EMP4/ 21EQP4
21EMP4	Use EMP4/ 21EQP4
21EMP4/21EQP4	
21EP4B	Use 21EP4C
21EP4C	
21EQP4	Use 21EMP4/ 21EQP4
21ESP4	Use 21EMP4/ 21EQP4
21ETP4	Use 21EMP4/ 21EQP4
21EVP4	Use 21FDP4 (Note 1)
21FP4C	Use 21FP4D
21FP4D	
21FAP4	Use 21EMP4/ 21EQP4

TUBE TYPE	
21FDP4	
21FLP4	Use 21
21FVP4	
21FWP4	Use 2
21FZP4	Use 2
21GAP4A	
21MP4	Use 2 (No
21WP4A	Use 21
21WP4B	
21XP4A	Use 21
21XP4B	
21YP4A	Use 21
21YP4B	
21ZP4B	Use 21
21ZP4C	
23ACP4	Use 2
23AFP4	Use 2
23AHP4	
23ALP4	Use 23
23ANP4	Use 23
23ARP4	
23ASP4	
23ATP4	Use 23
23AUP4	Use 23
23AVP4	Use 2
23AWP4	Use 23
23BDP4	Use 2
23BGP4	
23BHP4	Use 23
23BJP4	
23BKP4	
23BLP4	Use 23
23BMP4	Use 2
23BNP4	Use 2
23BQP4	
23BTP4	Use 2
23BVP4	Use 2
23BWP4	Use 2
23BZP4	Use 23
23CP4	
23CP4A	Use 2
23CBP4	
23CGP4	
23CQP4	
23CZP4	Use 23
23DAP4	
23DBP4	
23DLP4	Use 23
23DLP4A	Use 23
23DNP4	Use 23
23DQP4	Use 23
23DSP4	Use 23
23DSP4A	Use 23
23DYP4	Use 23
23DZP4	Use 23
23EP4	
23ECP4	Use 23 (Not
23EDP4	Use 23 (Not
23EHP4	Use 23
23EKP4	
23ENP4	
23EQP4	
23ERP4	Use 23
23ESP4	Use 23H
23ETP4	
23EWP4	Use 23
23EWP4A	Use 23
23EYP4	
23EZP4	Use 23
23FP4A	
23FBP4	
23FCP4	Use 23G
23FDP4	Use 23G
23FEP4	Use 23
23FHP4	Use 23G

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RCA

PICTURE TUBES
COLOR and BLACK and WHITE

	TUBE TYPE		TUBE TYPE		TUBE TYPE		TUBE TYPE	
Use 23ETP4	23GSP4		23HWP4	Use 23HWP4A	23WP4	Use 23FP4A	24CP4B	
Use 23EKP4	23GTP4	Use 23ETP4	23HWP4A		23XP4	Use 23YP4	24DP4	Use 24AEP4
Use 23HFP4A	23GWP4	Use 23GJP4A	23HXP4	Use 23HFP4A	23YP4		24DP4A	Use 24AEP4
	23GXP4	Use 23GSP4	23JP4		24ADP4	Use 24CP4B	24QP4	Use 24CP4B
	23HP4	Use 23CP4	23JEP4		24AEP4		24TP4	Use 24CP4B
Use 23HFP4A	23HFP4	Use 23HFP4A	23KP4	Use 23FP4A	24AHP4		24VP4	Use 24CP4B
Use 23HFP4A	23HFP4A		23KP4A	Use 23FP4A	24ALP4	Use 24AHP4	24VP4A	Use 24CP4B
Use 23CP4	23HGP4		23MP4	Use 23FP4A	24ANP4	Use 24AEP4	24XP4	Use 24CP4B
Use 23HFP4A	23HLP4	Use 23GSP4	23MP4A	Use 23FP4A	24AUP4		24YP4	Use 24AEP4
Use 23ENP4	23HQP4	Use 23HGP4	23NP4		24AVP4	Use 24BEP4	24ZP4	Use 24AEP4
Use 23GJP4A	23HRP4	Use 23HWP4A	23TP4	Use 23YP4	24BEP4		230RB4	Use 9WP4
	23HUP4A		23UP4	Use 23BQP4	24CP4A	Use 24CP4B	310AVB4	Use 12CNP4

NOTES

Where replacement type is indicated consult RCA Interchangeability Guide for Replacement information.

: For replacement purposes of these types electrical and/or mechanical modifications may be required.

NOTE 2: 21AP4 — "RCA receivers with 21AP4 may be converted to 21ZP4C with conversion kit (RCA Part No. 12B202)."

: Pin No. 6 (Focusing Electrode) of the RCA replacement must be connected to Pin No. 11 at the socket. The original tube did not require an external voltage for focus.

RCA HI-LITE "RARE EARTH" COLOR TELEVISION PICTURE TUBES

TICE: RCA Hi-Lite "Rare Earth" Color Television Picture Tubes contain all new parts and materials.

L22	H-19GVP22	H-19HNP22	H-21GVP22	H-22KP22	H-25AJP22	H-25XP22
N22	H-19GWP22	H-21GUP22	H-22JP22	H-22UP22	H-25BCP22	H-25YP22

RCA COLORAMA PICTURE TUBES

TICE: RCA Colorama Picture Tubes contain used materials which, prior to re-use, are carefully inspected to e our high quality standards. Sulfide types are marked with *; all others are "Rare Earth" types.

V22	C-19GVP22/19EXP22	C-21AXP22A*	C-21FJP22*	C-22JP22	C-23EGP22A	C-25XP22/25AP22A
L22	C-19GWP22/19EYP22	C-21CYP22A*	C-21GUP22/21FBP22A	C-22KP22	C-25AJP22	C-25YP22/25BP22A
N22	C-19HNP22	C-21FBP22*	C-21GVP22/21FJP22A	C-22UP22	C-25BCP22	

COLOR PICTURE TUBE INTERCHANGEABILITY GUIDE

TYPE TO BE REPLACED	REPLACE BY RCA TYPE	NOTES
V22 S22	C-11WP22	Direct
L22	H-15LP22 C-15LP22	Direct Direct
N22 T22	H-15NP22 C-15NP22	Direct Direct
P22	H-19GVP22 C-19GVP22/19EXP22	Note 1 Note 1
P22 P22 P22 P22	H-19GWP22 C-19GWP22/19EYP22	Note 1 Note 1
P22	H-19GVP22 C-19GVP22/19EXP22	Direct Direct
P22	H-19GWP22 C-19GWP22/19EYP22	Direct Direct
P22 P22	H-19GVP22 C-19GVP22/19EXP22	Note 1 Note 1
P22 P22 P22	H-19GWP22 C-19GWP22/19EYP22	Direct Direct
P22	C-19HNP22	Direct
P22 P22A P22A/AXP22	C-21AXP22A C-21CYP22A C-21FBP22 H-21GUP22 C-21GUP22/21FBP22A	Direct Note 1 Note 1 Note 1 Note 1

TYPE TO BE REPLACED	REPLACE BY RCA TYPE	NOTES
21CYP22 21CYP22A	C-21CYP22A C-21FBP22 H-21GUP22 C-21GUP22/22FBP22A	Direct Note 1 Note 1 Note 1
21FBP22 21FBP22A	C-21FBP22 H-21GUP22 C-21GUP22/21FBP22A	Direct Note 1 Note 1
21FJP22 21FJP22A 21FKP22	C-21FJP22 H-21GVP22 C-21GVP22/21FJP22A	Direct Note 1 Note 1
21GFP22 21GRP22	H-22JP22 C-22JP22	Note 2 Note 2
21GUP22	H-21GUP22 C-21FBP22 C-21GUP22/21FBP22A	Direct Direct Direct
21GVP22	H-21GVP22 C-21FJP22 C-21GVP22/21FJP22A	Direct Direct Direct
21GWP22	H-22JP22 C-22JP22	Note 2 Note 2
22ADP22	H-22UP22 C-22UP22	Direct Direct
22JP22	H-22JP22 C-22JP22	Direct Direct
22KP22	H-22KP22 C-22KP22	Direct Direct
22LP22 22QP22	H-22JP22 C-22JP22	Direct Direct
22RP22	H-22KP22 C-22KP22	Direct Direct

TYPE TO BE REPLACED	REPLACE BY RCA TYPE	NOTES
22SP22	H-22JP22 C-22JP22	Direct Direct
22UP22 22XP22	H-22UP22 C-22UP22	Direct Direct
22YP22	H-22JP22 C-22JP22	Direct Direct
23EGP22 23EGP22A	C-23EGP22A	Direct
25ABP22	H-25XP22 C-25XP22/25AP22A	Direct Direct
25ADP22	H25AJP22 C25AJP22	Direct Direct
25AEP22	H-25YP22 C-25YP22/25BP22A	Direct Direct
25AFP22	H-25XP22 C-25XP22/25AP22A	Direct Direct
25AGP22 25AJP22	H25AJP22 C-25AJP22	Direct Direct
25ANP22 25AP22 25AP22A	H-25XP22 C-25XP22/25AP22A	Note 1 Note 1
25ASP22	H-25AJP22 C-25AJP22	Direct Direct
25BP22 25BP22A	H-25YP22 C-25YP22/25BP22A	Note 1 Note 1
25CP22 25CP22A	H-25XP22 C-25XP22/25AP22A	Note 1 Note 1

TYPE TO BE REPLACED	REPLACE BY RCA TYPE	NOTES
25FP22 25FP22A	H-25YP22 C-25YP22/25BP22A	Note 1 Note 1
25GP22 25GP22A	H-25XP22 C-25XP22/25AP22A	Note 1 Note 1
25RP22	H-25YP22 C-25YP22/25BP22A	Note 1 Note 1
25SP22	H-25XP22 C-25XP22/25AP22A	Note 1 Note 1
25VP22	H-25YP22 C-25YP22/25BP22A	Note 1 Note 1
25WP22	H-25XP22 C-25XP22/25AP22A	Note 1 Note 1
25XP22	H-25XP22 C-25XP22/25AP22A	Direct Direct
25YP22	H-25YP22 C-25YP22/25BP22A	Direct Direct
25ZP22	H-25XP22 C-25XP22/25AP22A	Note 1 Note 1
490EB22A 490FB22 490GB22 490HB22 490JB22 490LB22 490MB22	H-19GVP22 C-19GVP22/19EXP22	Note 1 Note 1

— Replacement information is packed with the tube.
— Mounting hardware may have to be modified to accept substitution. In some small cabinet receivers substitution may not be feasible.

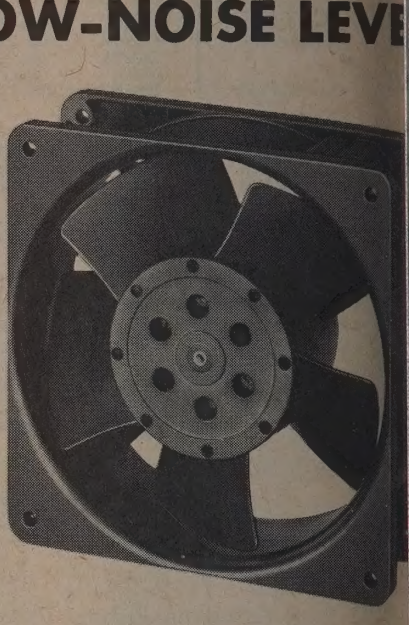
PAMOTOR

MINIATURE AXIAL FANS

MODELS 4500A & 4550A (Shaded-pole Type)

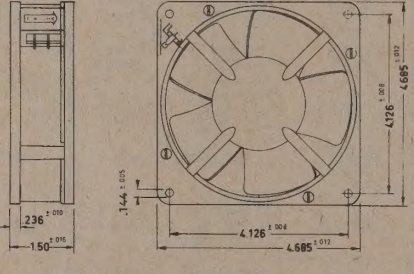
4 11/16" x 4 11/16" x 1 1/2" • ALL-METAL • LOW-NOISE LEVEL

*Provides 115 cfm with less than 37.5 dB SIL**



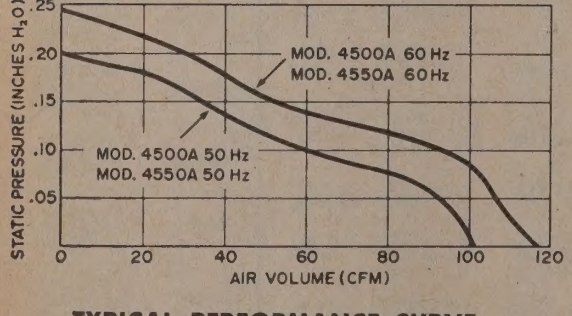
- All-metal precision hubs, impellers, and die-cast housings eliminate warping often found in plastic fans.
- Designed for applications in wide variety of electronic apparatus, such as computers, laboratory and office machines, industrial and military communications equipment, industrial control equipment, sound systems, power supplies, telephone equipment, etc.
- Designed to operate continuously at room temperature (25° C) for over 100,000 hours—even at uppermost limit of 55° C, 20,000 operational hours, continuous duty may be expected.
- Delivers more air at a lower noise level, yet priced under similar conventional plastic fans.
- Powerful shaded-pole motor operates with low internal heat rise—efficient inside-out design.
- Hand-fitted proven broached dual-sleeve bearing system assures longer, more reliable operation.
- Weighs just 1¼ lbs. and is interchangeable with similar, less reliable 4½" fans.
- Operates over range of 105 to 125 VAC at dual frequency of 50/60 Hz.
- Has Underwriters' Laboratories Inc. Yellow Card Component Recognition Number E41168.
- Accessories available for use with this model include mounting brackets, filter, metal screen assembly, finger guard, plug and cord assembly.

*Speech Interference Level

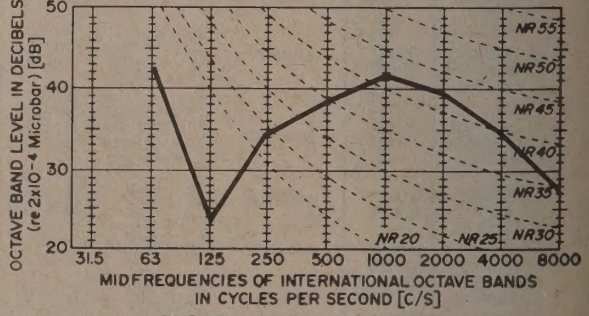


Characteristic	MODEL 4500A	MODEL 4550
Voltage	117 volts	230 volts
Frequency*	60 Hz	60 Hz
Air Flow	115 cfm	115 cfm
Speed	2900 rpm	2850 rpm
Input Power	20 watts	17 watts
Weight	1 lb. 4 oz.	1 lb. 4 oz.

*These models also operate at 50 Hz. Additional data available upon request.



TYPICAL PERFORMANCE CURVE



NOISE LEVEL CURVE

PAMOTOR FANS ARE STOCKED FOR IMMEDIATE DELIVERY FROM LEADING ELECTRONICS DISTRIBUTORS THROUGHOUT THE UNITED STATES AND CANADA. CONTACT YOUR LOCAL DISTRIBUTOR FOR COMPLETE ENGINEERING DATA AND PRICES.

PAMOTOR INC.

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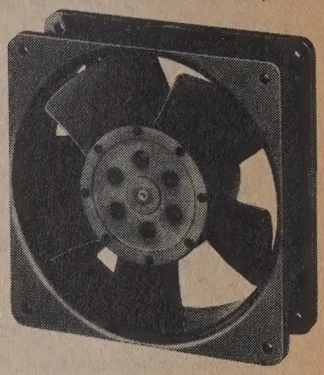
PAMOTOR MINIATURE AXIAL FANS

ODELS 4506 and 4556 (Shaded-pole Type)
$^{1}/_{16}$" x $4^{11}/_{16}$" x $1^{1}/_{2}$" • ALL-METAL • 115 CFM

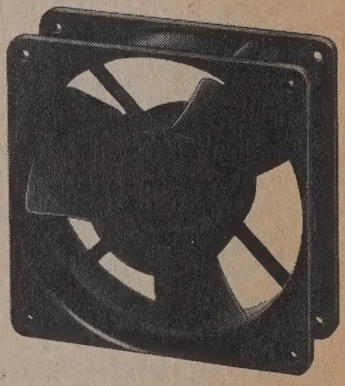


l bearing fans for 85° C
rbient temperature operation

- Designed for over 20,000 hours of eration at 85° C.
- w noise level of less than 37.5 dB . (Speech Interference Level).
- esigned to meet UL requirements.
- Offer same performance characteristics as Models 4500 and 4550.
- Standard accessories available include mounting brackets, filter, metal screen assembly, finger guard, plug and cord assembly.

ODEL 4800 (Shaded-pole Type)
$^{1}/_{16}$" x $4^{11}/_{16}$" x $1^{1}/_{2}$" • ALL-METAL • 70 CFM

cifically designed for noiseless eformance . . . noise level less n 20 dB SIL.

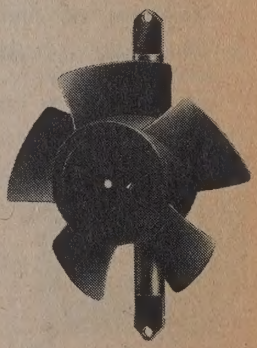


- signed for applications in Hi-Fi/stereo quipment, TV, office copying machines, etc. here noiseless performance is a prime re- irement.
- and-fitted proven broached dual-sleeve earing system with large oil reservoir en- res longer, more reliable operation.
- recognition number E41168.

Characteristic	MODEL 4800
Voltage	115 volts
Frequency*	60 Hz
Air Flow	70 cfm
Speed	1650 rpm
Input Power	10 watts
Weight	1 lb. 4 oz.

*This model also operates at 50 Hz.
Additional data available upon request.

ODELS 4700 and 4750 (Shaded-pole Type)
$^{1}/_{8}$" (DIA.) x $1^{1}/_{2}$" • ALL-METAL • 65 CFM

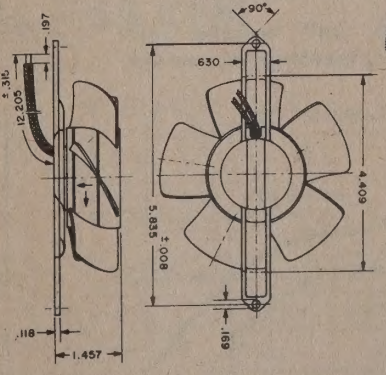


-cost fans for where venturi sing is not needed

Bracket" models save ace and weight when quipment arrangement rves as venturi housing. tach to heat sinks and duce space requirements. esigned to meet UL re- irements.

Characteristic	MODEL 4700	MODEL 4750
Voltage	115 volts	220 volts
Frequency*	60 Hz	60 Hz
Air Flow	65 cfm	55 cfm
Speed	2800 rpm	2500 rpm
Input Power	21 watts	19 watts
Weight	1 lb.	1 lb.

*These models also operate at 50 Hz.
Additional data available upon request.



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PAMOTOR INC.

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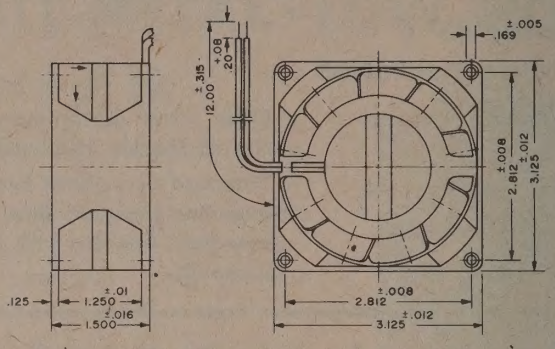
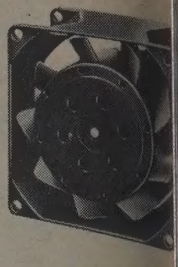
MINIATURE AXIAL FANS

MODELS 8500 and 8550 (Shaded-pole Type)
3 1/8" x 3 1/8" x 1 1/2" • ALL-METAL • 43 CFM

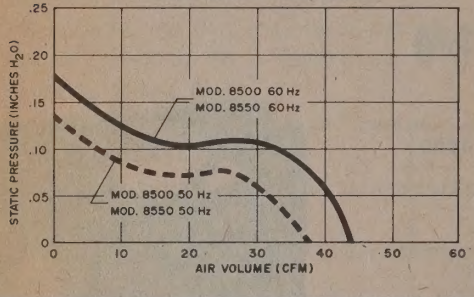
Ultra-compact . . . 1/8" thinner than other 3 1/8" fans

- Unmatched low noise level of 28.8 dB SIL.
- Ideal for tight dimensional applications.
- Standard mounting dimensions for EIA 3½" rack panels.
- All-metal construction ensures longer life in various low-profile electronic equipment.
- UL recognition number E41168.
- Model 8506 ball bearing fan for 85°C ambient temperature operation also available.





TYPICAL PERFORMANCE CURVE



Characteristic	MODEL 8500	MODEL 8550
Voltage	115 volts	220 volts
Frequency*	60 Hz	60 Hz
Air Flow	43 cfm	37 cfm
Speed	3200 rpm	2600 rpm
Input	13 watts	13 watts
Weight	1 lb. 2½ oz.	1 lb. 2½ oz.

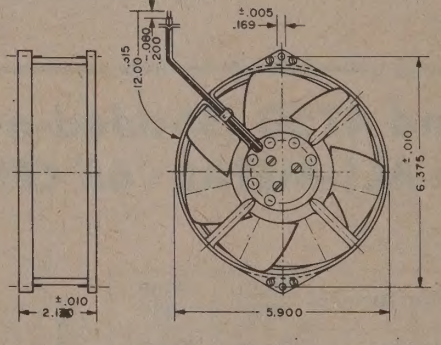
*These models also operate at 50 Hz. Additional data available upon request.

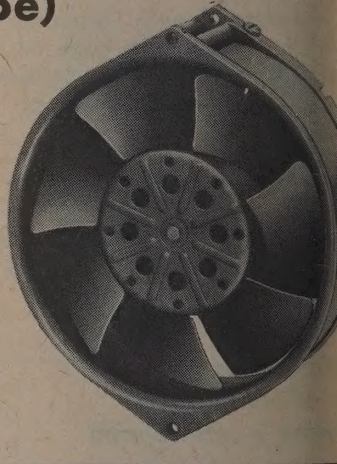
MODELS 7500 and 7550 (Shaded-pole Type)
6" (DIA.) x 2" • ALL-METAL • 250 CFM

use one to replace two or more fans where max. air movement is needed with low 40.5 dB noise level

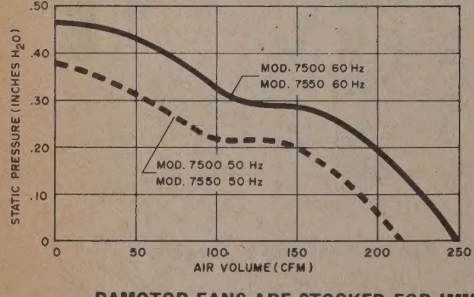
- High air delivery ideal for cooling large enclosures with high resistance to air flow.
- New design of pressure type blades will sustain delivery as high as 200 cfm at .2 inches of water back pressure.
- UL recognition number E41168.

MODELS 7506/7556, ball bearing fans for 85° C ambient temperature operation, also available





TYPICAL PERFORMANCE CURVE



Characteristic	MODEL 7500	MODEL 7550
Voltage	115 volts	220 volts
Frequency*	60 Hz	50 Hz
Air Flow	250 cfm	220 cfm
Speed	3250 rpm	2700 rpm
Input	40 watts	36 watts
Weight	2 lbs. 11½ oz.	2 lbs. 11½ oz.

*These models also operate at 50 Hz. Additional data available upon request.

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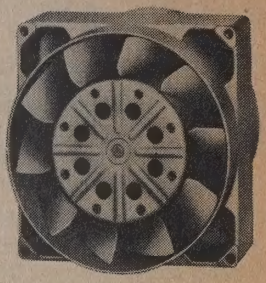
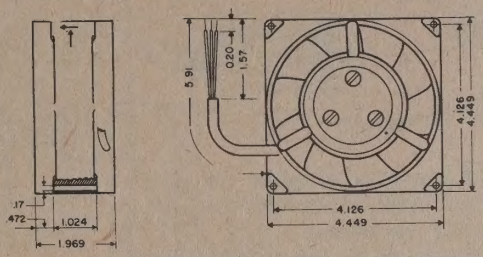
PAMOTOR MINIATURE AXIAL FANS

ODELS 1000A, 1110, and 1300 (Induction Type)
/16" x 4 7/16" x 1 31/32" • ALL-METAL • 125 CFM

ultimate in reliability and eformance in a 4½" fan



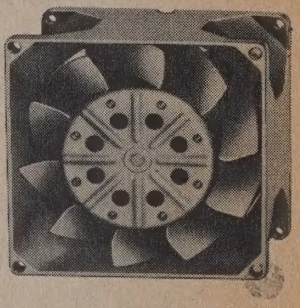


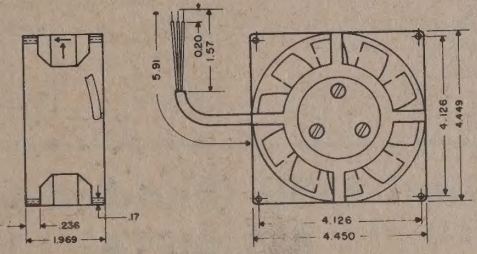
pedance protected for longer, more icient operation.
iiversal 4⅛" mounting makes these odels interchangeable with similar, less iable 4 1/16" fans.
werful inside-out motor is impedance otected.
:andard accessories include mounting lackets, filter, metal screen assembly, ger guard.
. recognition number E41168.

Characteristic	MODEL 1000A		MODEL 1110	MODEL 1300	
Voltage	115 volts	115 volts	115 volts	220 volts	220 volts
Frequency	60 Hz	50 Hz	400 Hz	60 Hz	50 Hz
Air Flow	125 cfm	100 cfm	110 cfm	125 cfm	110 cfm

ODELS 2000, 2050, and 2110 (Induction Type)
/16" x 4 7/16" x 1 31/32" • ALL-METAL • 130 CFM

ihest free air delivery 1 4 7/16" package



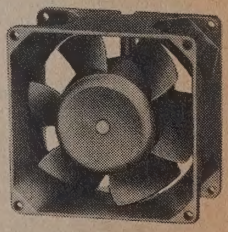


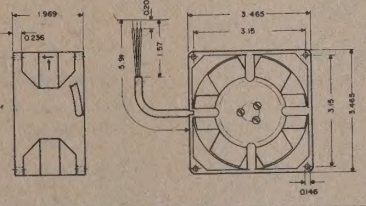
and-fitted sleeve bearings ensure re- able performance.
xtremely low internal heat rise extends fe beyond that of conventional fans.
tator windings for motor are uniform, llowing for minimum magnetic field den- ty within the air gap.
niversal 4⅛" mounting.
L recognition number E41168.
ccessories include filter, metal screen ssembly, finger guard, and mounting rackets.

Characteristic	MODEL 2000		MODEL 2050		MODEL 2110
Voltage	115 volts	115 volts	220 volts	220 volts	115 volts
Frequency	60 Hz	50 Hz	60 Hz	50 Hz	400 Hz
Air Flow	130 cfm	116 cfm	130 cfm	116 cfm	110 cfm

ODELS 3000 and 3050 (Induction Type)
5/32" x 3 15/32" x 1 31/32" • ALL-METAL • 65 CFM

matched design and perfor- nce in a compact 3½" fan





ontinuous reliable operation in a com- act package . . . dynamically balanced otor.
xtremely low-noise level.
recision hubs, impellers, and die-cast ousings.
fficient inside-out motor design.
JL recognition number E41168.

Characteristic	MODEL 3000		MODEL 3050	
Voltage	115 volts	115 volts	220 volts	220 volts
Frequency	60 Hz	50 Hz	60 Hz	50 Hz
Air Flow	65 cfm	58 cfm	65 cfm	58 cfm

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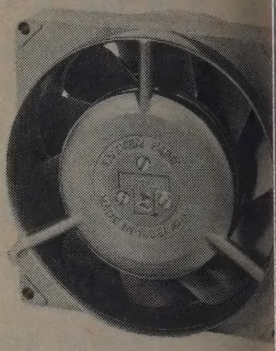
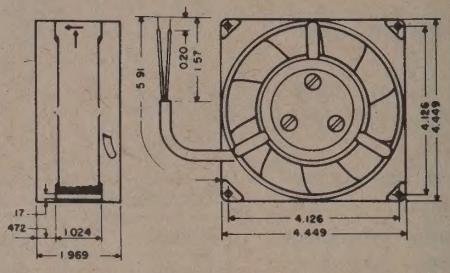
MINIATURE AXIAL FANS

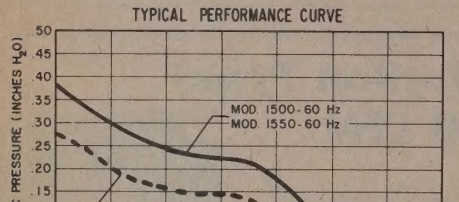
MODELS 1500 and 1550 (Shaded-pole Type)
$4\frac{7}{16}''$ x $4\frac{7}{16}''$ x $1\frac{31}{32}''$ • ALL-METAL • 105 CFM

Universal 4⅛" mounting for interchangeability



- All-metal component parts are natural heat sinks, ensuring cooler operation.
- Special moisture resistant finish prevents corrosion or deterioration under humid atmospheric conditions or in extreme temperature variations.
- Long operating life without maintenance.
- UL recognition number E41168.
- Standard accessories include mounting brackets, filter, metal screen assembly, finger guard.

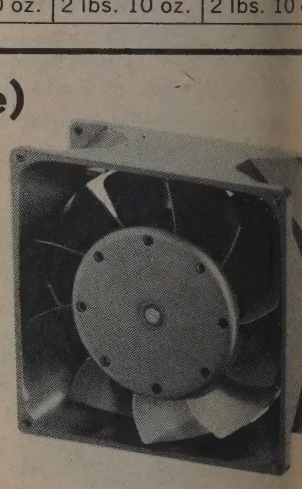




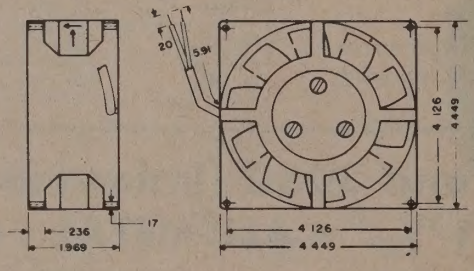
Characteristic	MODEL 1500		MODEL 1550	
Voltage	115 volts	115 volts	220 volts	220 volt
Frequency	60 Hz	50 Hz	60 Hz	50 Hz
Air Flow	105 cfm	90 cfm	105 cfm	90 cfm
Speed	3400 rpm	2850 rpm	3400 rpm	2850 rpm
Input Power	25 watts	27 watts	25 watts	27 wat
Weight	2 lbs. 10 oz.	2 lbs. 10 oz.	2 lbs. 10 oz.	2 lbs. 10

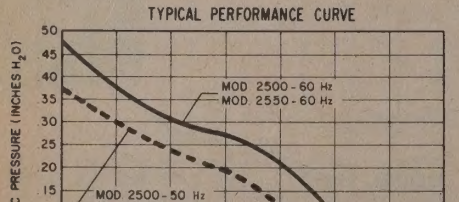
MODELS 2500 and 2550 (Shaded-pole Type)
$4\frac{7}{16}''$ x $4\frac{7}{16}''$ x $1\frac{31}{32}''$ • ALL-METAL • 115 CFM

Low-cost design with efficient inside-out type motor



- Long operating life without maintenance.
- Universal 4⅛" mounting for interchangeability.
- 50-60 Hz operation at 115 or 220 VAC.
- Standard accessories include mounting brackets, filter, metal screen assembly, finger guard.
- UL recognition number E41168.





Characteristic	MODEL 2500		MODEL 2550	
Voltage	115 volts	115 volts	220 volts	220 volt
Frequency	60 Hz	50 Hz	60 Hz	50 Hz
Air Flow	115 cfm	95 cfm	115 cfm	95 cfm
Speed	3400 rpm	2850 rpm	3400 rpm	2850 rpm
Input Power	25 watts	27 watts	25 watts	27 wat
Weight	2 lbs. 1 oz.	2 lbs. 1 oz.	2 lbs. 1 oz.	2 lbs. 1 o

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AEROVOX Hi-Q

FILTERS

TYPE IN MINIATURE L & Pi TUBULAR R.F.I. FILTERS

ox type IN miniature L and Pi filters offer up to a 60% reduction in size over e industry standards with comparable ratings and performance.

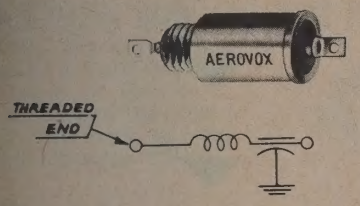
new miniature filters utilize conventional film paper dielectric which result pacitance change with temperature of ±5% from −55°C to +85°C and +15% to . The stability of the capacitance dielectric allows these filters to meet the insertion loss specified over the complete temperature excursion - under ad conditions.

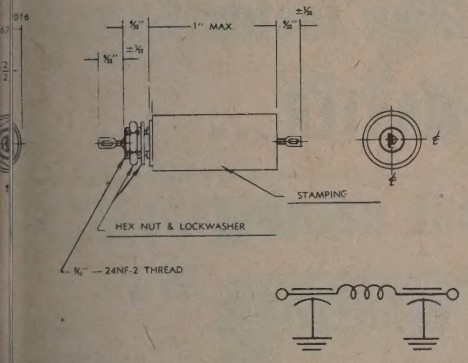
line is dual rated 185 VDC/115 VAC 0-400 Hz at 85°C and 150VDC/115 VAC at 125°C and will meet or exceed the applicable requirements of MIL-F-15733.

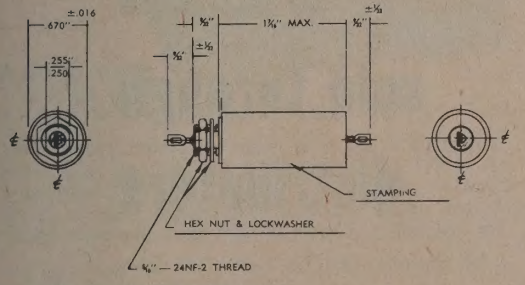
erning packaging, the new line offers one standard L and one standard Pi e for all current ratings.

ries are invited for filter designs to meet specific application requirements.

lete technical information is contained in Bulletin NPJ-141.







MINIATURE TUBULAR L

C — 115 VAC 0-400 Hz • 185 VDC At 125°C — 115 VAC 0-60 Hz • 150 VDC

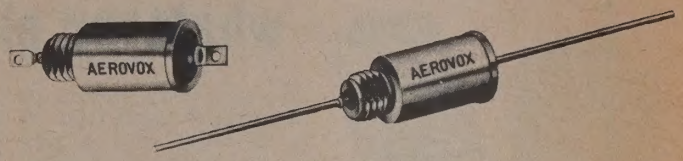
Current (Amps) @+125°C	Max. Rdc. (ohms)	Voltage Drop	Minimum Full Load Insertion Loss (db) per Mil-Std-220A						
			150 KHz	300 KHz	500 KHz	1 MHz	10 MHz	100 MHz	1 GHz
.1	3.0	.3	50	60	70	70	70	70	70
.25	2.0	.5	45	55	65	70	70	70	70
.5	1.2	.6	40	50	60	70	70	70	70
1.0	.42	.42	30	40	50	64	70	70	70
2.0	.12	.24	22	32	40	50	70	70	70
3.0	.06	.18	20	28	34	44	70	70	70
5.0	.03	.15	18	26	30	38	70	70	70
10.0	.01	.1	16	24	28	36	60	70	70

MINIATURE TUBULAR Pi

°C — 115 VAC 0-400 Hz • 185 VDC At 125°C — 115 VAC 0-60 Hz • 150 VDC

Current (Amps) @+125°C	Max. Rdc. (ohms)	Voltage Drop	Minimum Full Load Insertion Loss (db) per Mil-Std-220A						
			150 KHz	300 KHz	500 KHz	1 MHz	10 MHz	100 MHz	1 GHz
.1	3.0	.3	72	80	80	80	80	80	80
.25	2.0	.5	66	80	80	80	80	80	80
.5	1.2	.6	54	80	80	80	80	80	80
1.0	.42	.42	52	70	80	80	80	80	80
2.0	.12	.24	38	58	70	80	80	80	80
3.0	.06	.18	32	50	64	78	80	80	80
5.0	.03	.15	20	35	62	78	80	80	80
10.0	.01	.1	6	28	46	65	80	80	80

TYPE FC MINIATURE CERAMIC LOW-PASS R.F.I. FILTERS



Type FC miniature low-pass RFI filters meet or exceed applicable requirements of MIL-F-15733. They are available in working voltages of 28, 35 and 50 VDC at 125°C, 105°C and 85°C respectively, or equivalent AC peak. In addition, this series will withstand dielectric tests of 100 VDC at 25°C and has insulation resistance of 100 megohms minimum at 25°C.

These filters are supplied in hermetically-sealed silver plated cases and meet moisture resistance requirements of MIL-STD-202. Temperature cycling and immersion, vibration and attenuation also conform to MIL-STD-202.

All units are marked with Aerovox part number and working voltage.

Complete technical information is contained in Bulletin NPJ-140.

STANDARD RATINGS

Aerovox FC Series	Stock Items	Minimum Insertion Loss in Decibels (db) MIL-STD-220						Maximum DC Current or Low Frequency AC	Maximum DC Resistance @ 25°C. (ohms)
	Dash Numbers	30 KHz	150 KHz	300 KHz	1 MHz	10 MHz	1000 MHz		
FC001- *	-01 -02 -04 -11 -21	44	70	70	70	70	70	60 ma	70.0
FC002- *	-01 -02 -04 -11 -21	24	52	64	70	70	70	150 ma	12.0
FC003- *	-01 -02 -04 -11 -21	18	42	56	70	70	70	250 ma	4.0
FC004- *	-01 -02 -04 -11 -21	16	35	44	62	70	70	300 ma	2.3
FC005- *	-01 -02 -04 -11 -21	15	31	37	55	70	70	450 ma	1.2
FC006- *	-01 -02 -04 -11 -21	15	28	33	44	64	70	10 amps	.01

*Add Dash Numbers in accordance with Part Number Ordering Data listed on back of this sheet.

PART NUMBER ORDERING DATA

EXAMPLE: FC 001 -1 1

FC — FILTER CERAMIC
001 — 60 MA UNIT
-1 — THREADED CAPACITOR END
1 — SPADE TERMINALS

0 — Threaded Inductor End
1 — Threaded Capacitor End
2 — Hex Case - Threaded Inductor End—(Fig. 5)
3 — Hex Case - Threaded Capacitor End—(Fig. 5)
— 1 Spade Terminals—(Fig. 2)
— 2 Wire Terminals—(Fig. 3)
— 3 Wire Terminal Threaded End - Spade Other—(Fig. 4)
— 4 Spade Terminal Threaded End - Wire Other—(Fig. 4)

Figure 1
STANDARD SCHEMATIC

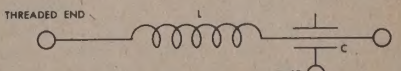


Figure 2

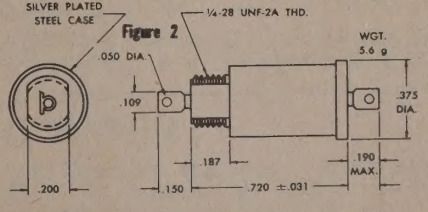


Figure 4

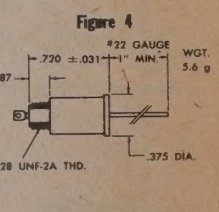


Figure 3

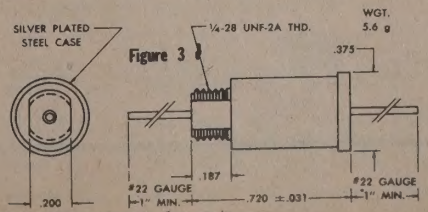
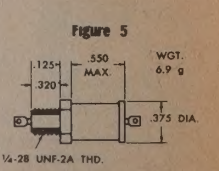


Figure 5



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you require...

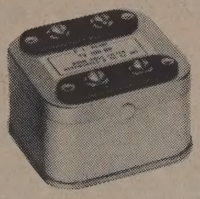
...you'll find them faster
in the MASTER...
...the world's largest catalog
of electronic
products
sold through
distributors

R. L. DRAKE COMPANY

RADIO COMMUNICATIONS EQUIPMENT

LTERS TVI MAY BE ELIMINATED WITH THESE UNITS

3)-HP
PASS FILTER



is more than 40 db attenuation at 52
al lower. Protects the TV set from
te transmitters 6 thru 160 meters.
5

C-LP CITIZENS BAND LOW PASS FILTER

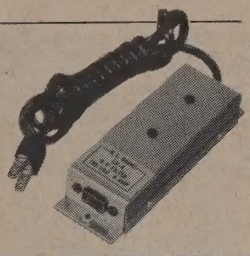
ir section filter designed with
C cut-off and extremely high
ntion in all TV channels for
e band and other transmitters
M and lower. Rated 100 watts
tSO-239 connectors built-in.

$6.95

-LINE FILTER

as transmitter or TV set from RF on
eline. Attenuates 500 KHz to over 200
z. 25 VAC, 6 amps max.

$7.30



88 TO 108 MHz FM FILTERS

FM broadcast xmtrs cause much TVI, often blamed on radio amateurs. A Drake TV-300-FMS installed in TV antenna lead will clear up entire FM band; no adjustment. TV-300-FMI adjustable for superior attenuation of one frequency.

TV-300-FMS
Band Stop
$4.50

TV-300-FMI
Tunable Filter
$4.50

DRAKE AMATEUR LOW PASS FILTERS

. . . have four pi sections for sharp cut-off between 6 meters and channel 2, and to attenuate xmtr harmonics falling in any TV channel and the FM band. 52-ohm.

T-1000-LP

$16.95

rated 1000 watts input, 200 watts on 6 meters. SO-239 connectors built-in.

TV-100-LP

$5.95

rated 100 watts input, 20 watts on 6. Solder it in or use your own SO-239's.

RECEIVERS

FI *NEW!*
D-STATE
GRAMMABLE
CIVER

net

l engineering and the recent
opment of the dual gate
Take possible the first no-compromise, solid-state receiver.

li receivers with bipolar transistors which have poor crossmodula-
n intermodulation, AGC, and overload performance; the SPR-4 has
p handling capabilities superior to the best tube receiver. In addi-
n the SPR-4 has all of the advantage of a solid-state design such as
w ower consumption, mechanical and thermal stability, reliability, etc.

e pr-4 can be programmed for short wave listening, amateur radio,
o tory, broadcasting, marine radio, etc.

AIRES:

- D gate FET RF amplifier.
- Fs in signal path for low cross
n ulation and overload.
- F linear PTO with 1 kHz readout.
- Fquency coverage: 150-500 kHz
p any 23 ranges between .500
a 30 MHz. Each range is 500 kHz
ve with large overtravel.
- Nmally supplied with xtals for:
..0, 1.0-1.5, 6.0-6.5, 7.0-7.5,
S-10.0, 11.5-12.0, 15.0-15.5, 17.5-
10, and 21.5-22.0 MHz.
- Coverage may easily be changed by adding or changing xtals and range selector dial.
- 4 pole xtal filter in first IF (5645 kHz).
- 4 pole LC filter in second IF (50 kHz).
- 3 bandwidths: 0.4 kHz, 2.4 kHz, and 4.8 kHz for CW, SSB, and AM.
- AVC: Fast attack and slow release for SSB, fast release for AM, fast or slow release for CW.
- Built-in speaker.
- Power: 115 VAC, 220 VAC, or 12 VDC.

SSORIES

	NET
tch Filter	$20.00
se Blanker	65.00
kHz Calibrator	25.00
4 Loop Antenna for .15-1.5 MHz.	19.95
• Transceiver Adaptor (T-4XB)	$15.00
• MSx4 Speaker	19.95
• DC Power Cord	2.50
• Extra Crystals per 500 kHz range	5.00

SW-4A INTERNATIONAL SHORT WAVE BROADCAST RECEIVER
DIRECT FREQUENCY DIALING $299.00

• Ultra-precision tuning dial accuracy • Also accurately tunes standard AM Broadcast • Crystal lattice filter for adjacent station rejection and good audio frequency response • Dual conversion • Solid state AF output gives low distortion good frequency response • S-meter for signal strength indication • Preselector gives superior sensitivity by peaking antenna and RF stages • Crystal H. F. Oscillator for exceptional stability on all ranges • Amplified AVC — gives constant AF output for all signal strengths.

FREQUENCY COVERAGE — .15-.5, .5-1.0, 1.0-1.5, 6.0-6.5, 7.0-7.5, 9.5-10.0, 11.5-12.0, 15.0-15.5, 17.5-18.0, 21.5-22.0, and 25.5-26.0 megacycles with crystals supplied. These frequencies cover European LF, American MF and International SW Broadcast Bands. **SIZE** — 5½" high, 10¾" wide. Cabinet depth 11⅝", overall 12¼". **WEIGHT** — 16 lbs.

ACCESSORIES — Models MS-4 Speaker **$19.95** and **AL-4** Shielded Directional Loop Antenna for .5-1.5 MC **$19.95. Model AN-5** SW Antenna Kit **$8.00.**

RF WATTMETER

Reads forward and reflected power directly in watts (VSWR from nomogram). Two scales in each direction. **Size:** 5½" H x 3¾" W x 4" D.

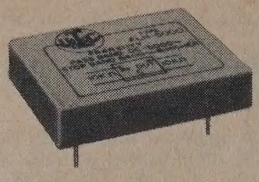
Model	Full Scale	Calibration Accuracy	Price
W-4	200 watts	±(5% of reading +2 watts)	
(2-30 MHz)	2000 watts	±(5% of reading +20 watts)	$49.50
WV-4	100 watts	±(5% of reading +1 watt)	
(20-200 MHz)	1000 watts	±(5% of reading +10 watts)	$73.50

ELECTRIC WAVE FILTERS

Manufactured and Guaranteed to MIL-F-18327C

See UTC High-Q Coils in inductor section 1800 and Transformers in transformer section 5600.

NEW UTC "FLATS"* ELECTRIC WAVE FILTERS



Designed, Manufactured and Successfully Tested to Complete MIL-F-18327C Specifications

These filters meet today's need for flat component configurations, have excellent attenuation characteristics and are ruggedized to Grade 6, MIL-F-18372C. Straight pin terminals and flat construction make these units ideally suited for printed circuit applications. These filters are hermetically sealed in flat metal cases shielded to reduce hum pickup. FP-A case: 2 x 2 x ½" h., 2.5 oz. FP-B case: 2 x 1½ x ⅜" h., 2 oz. **Suggested stock price: $42.00 each net.**

FHH-200: Flat package high pass filter, source and load 10K ohms. Units are within 1 db up to 300 Hz 3 db ±1 db at 200 Hz, and have an attenuation of at least 40 db at frequencies below 140 Hz. FP-A case. Mil Type: FR6RX33YY1.

FLH-600: Flat package low pass filter, source and load 10K ohms. Units are within 1 db from DC to 450 Hz, 3 db ±1 db at 600 Hz, and have an attenuation of at least 40 db at frequencies above 800 Hz. FP-A case. Mil Type: FR6RX11YY1.

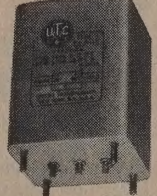
FLH-5000: Flat package low pass filter, source and load 10K ohms. Units are within 1 db from DC to 4.2 kHz, 3 db ±1 db at 5 kHz, and have an attenuation of at least 43 db at frequencies above 6400 Hz. FP-B case. Mil Type: FR6RX11YY1.

FLL-3500: Flat package low pass filter, source and load 600 ohms. Units are within 1 db from DC to 3 kHz, 3 db ±1 db at 3500 Hz, and have an attenuation of at least 40 db at frequencies above 4500 Hz. FP-A case. Mil Type: FR6RX33YY1.

FLL-18000: Flat package low pass filter, source and load 600 ohms. Units are within 1 db from DC to 15 kHz, 3 db ±1 db at 18 kHz, and have an attenuation of at least 43 db at frequencies above 23 kHz. FP-A case. Mil Type: FR6RX11YY1.

FLL-50000: Flat package low pass filter, source and load 600 ohms. Units are within 1 db from DC to 42 kHz, 3 db ±1 db at 50 kHz, and have an attenuation of at least 43 db above 64 kHz. FP-B case. Mil Type: FR6RX11YY1.

NEW, LLP-10 & LLP-15, STANDARD LOW FREQUENCY LOW PASS FILTER



Designed, Manufactured and Successfully Tested to Complete MIL-F-18327C

The LLP-10 low frequency low pass filter has a loss of less than 3 db at 10 Hz and attenuation of more than 40 db at 20 Hz. The LLP-15 low frequency low pass filter has a loss of less than 3 db at 15 Hz and attenuation of more than 40 db at 30 Hz. Both filters have a source and load impedance of 100K ohms. Both are MIL Type FR6RX11FA1. Dim: 2¼ x 2⅜ x 3⅛" h., 1½ lbs. **Suggested Net Price: $60.00 net.**

NEW 400-CYCLE 115 V. LINE FILTERS

Intended for use on 115 v., 400 cps line to eliminate harmonic distortion.

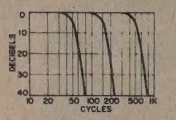
UTC No. PLF-25 — Gives 150 v. output into 500 ohm load with ±1 db, 375-425 Hz. Will attenuate 800 Hz by 30 db; 1200 Hz and higher by at least 50 db. MIL type, **FR4RX11NB1.** Meets MIL-F-18327C. Size 4⅝" w x 5¼" d. x 5½" h. Weight, 10 lbs. Suggester Net Each.....**$66.00**

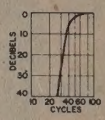
UTC No. PLP-13 — Eliminates harmonic distortion, rejects 60 and 120 Hz, and gives zero phase shift at 400 Hz. Operating into 1000 ohm load, provides 115 v. output at 400 Hz, within ±1 db, 375-425 Hz. Attenuates 800 Hz by 15 db; 1200 Hz by 45 db; above 1200 Hz by at least 35 db; 120 Hz by 20 db; and, 60 Hz by 30 db. MIL type **FR4RX22-LB1;** meets MIL-F-18327C specifications. Size, 3¹¹⁄₁₆" w x 4⅝" d. x 4½" h. Weight, 6½ lbs. Suggested Net Each.....**$66.00**

FOR FULL LINE OF STANDARD FILTERS, SEE UTC PAGE F-2.

ELECTRIC WAVE FILTERS

NEW STANDARD FILTERS



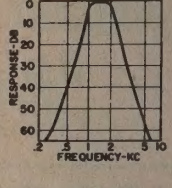


Base .....1⅜ x 1¹¹⁄₁₆"
LMI-150 .....1⅝" h., wt. 6 oz.
LMI-50, LML-500, HML-40 .....2½" h., wt. 9 oz.

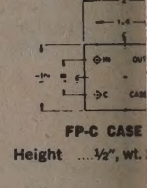
All UTC filters are designed, manufactured and successfully tested to 18327C environmental requirements. The **LMI-50** & **LMI-150** are Low Pass stage Filters with source and load impedance of 10,000 ohms. Cutoff f cies: LMI-50 at 50 Hz; LMI-150 at 150 Hz. The **LML-500** is a Low Pas with a source and load impedance of 500/600 ohms, cutoff frequency Hz. **HML-40** is a High Pass Filter with a source and load impedance of 5 ohms, cutoff frequency is 40 Hz. Suggested net prices are: **LMI-50 — LMI-150 — $31.50; LML-500 — $39.00; HML-40 — $42.00. MIL** design LMI-50 & LMI-150, FR6RX11YY1; LML-500, FR6RX11YY1; HML-40, FR6R

BROAD BAND FILTER

The **FBH-1** — Flat package Broad Band Pass Filter has a source and load of 10K ohms. Units are within 3 db from 1 kHz to 2 kHz, and have an attenuation of at least 36 db at frequencies below 500 cps and above 4 kHz. FP-C Case. MIL type FR6RX22YY1. **Suggested net price: $54.00.**

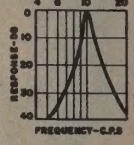


FBH-10 — Same as FBH-1, except less than 3 db from 10 kHz to 20 kHz, attenuation of at least 36 db below 5 kHz and above 40 kHz. Suggested net price: **$54.00.**



FP-C CASE
Height ....½", wt.

LOW FREQUENCY FILTER (BAND PASS & BAND REJECT)



The **LBP-10** Low Frequency Band Pass Filter has a 10 Hz center frequency. The filter has 4 terminals so that it can be used as a band pass filter with a 10K ohm load or with a high impedance load, and in addition as a band reject f As a Band Pass Filter, the unit is within 3 db at 9.6 and 10.4 Hz. Attenuati 5 & 20 Hz is at least 30 db with the 10K ohms output load and 35 db the 3.3 Megohm load. As a Band Reject Filter, the unit attenuates 10 Hz minimum of 30 db and varies less than 3 db from DC to 7 Hz, and from 1 to 36 kHz. This filter is MIL type FR6RX22FB1. **Suggested net price: $6**

For size and weight, see FB, UTC Page T-12 Section 5600.

HIGH Q PRECISION INDUCTANCE DECADE

Invaluable instruments for design and experimental work with tuned circuits, wave filters, and equalizers. The low hum pickup toroid coils employ a new permalloy dust core which, combined with special winding methods, provides very high Q, excellent voltage and temperature stability, and high self resonance frequency. The inductance values are laboratory adjusted to better than 1% precision, with calibration noted on base. Not to Mil specs.

DI CASE
Length 4
Width 4
Height 2
Weight 2

Type No.	Induct. Henries	Optimum Range	Max. Q	Max. ACma	Ins. Test Volts RMS	Sugg. Net Ea.
DI-1	10 x .01	2-60 KC	200	500	500	$51.00
DI-2	10 x .1	.25-20 KC	200	150	500	58.50
DI-3	10 x 1	.25-10 KC	200	50	500	61.50
DI-4	10 x 10	.2-1.5 KC	100	15	500	78.00

UNITED® TRANSFORMER CO. **TRW**

UTC PAGE F-1

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Net

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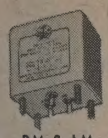
ELECTRIC WAVE FILTERS

Designed, Manufactured and Successfully Tested to Complete MIL-F-18327C Specifications.

SPECIAL FREQUENCY FILTERS
INTERMEDIATE FREQUENCIES OTHER THAN THOSE SHOWN. SUGGESTED NET $90.00 EACH. CHECK YOUR LOCAL DISTRIBUTOR FOR QUANTITY DISCOUNTS.



BM & LM Series

HM Series

INTERSTAGE AND LINE FILTERS

Available in stock frequencies listed below (numerical part of type —number is cutoff frequency in Hz). Compact shielded cases hermetically sealed to MIL-F-18327C specs. BMI, LMI, BML cases: 1¾" x 1¹¹⁄₁₆" x 1⅝" h.; wt., 6 oz. HMI, HML, LML cases: 1¾" x 1¹¹⁄₁₆" x 2½" h.; wt., 9 oz. The BMI filters are band pass interstage units designed to operate between a vacuum tube plate (or 10,000 ohms) and a grid. They provide a gain of 2 at center frequency.
BTI units are same as BMI, but 10,000 ohms output.
BML band pass filters, similarly, work into a grid, but have an input impedance of 500/600 ohms. They provide a gain of 9.
HMI filters are high pass interstage units.
LMI filters are low pass interstage units.
HML filters are high pass with input and output impedance of 500/600 ohms.
LML filters are low pass filters with input and output impedance of 500/600 ohms.
LLP low frequency low pass filter, loss of less than 40 db at 20 Hz. Source & load 100K ohms.

UTC Type	Sugg. Net Ea.	UTC Type	Sugg. Net Ea.	UTC Type	Sugg. Net Ea.
BMI-30	$36.00	BML-1000	$30.00	LMI-200	$31.50
BMI-50	30.00	BTI-60	36.00	LMI-400	31.50
BMI-60	30.00	BTI-100	36.00	LMI-500	31.50
BMI-90	30.00	BTI-120	36.00	LMI-800	$31.50
BMI-100	30.00	HMI-50	31.50	LMI-1000	31.50
BMI-120	30.00	HMI-100	31.50	LMI-1500	31.50
BMI-150	30.00	HMI-200	31.50	LMI-2000	31.50
BMI-200	30.00	HMI-300	31.50	LMI-2500	31.50
BMI-240	30.00	HMI-400	31.50	LMI-3000	31.50
BMI-300	30.00	HMI-500	31.50	LMI-4000	31.50
BMI-400	30.00	HMI-800	31.50	LMI-5000	31.50
BMI-500	30.00	HMI-1000	31.50	LMI-10000	31.50
BMI-750	30.00	HMI-2000	31.50	LML-500	39.00
BMI-800	30.00	HMI-3000	31.50	LML-1000	31.50
BMI-1000	30.00	HML-40	42.00	LML-1500	31.50
BMI-1500	30.00	HML-200	39.00	LML-2000	31.50
BMI-2000	30.00	HML-300	39.00	LML-2500	31.50
BMI-3000	30.00	HML-500	39.00	LML-3000	31.50
BMI-4000	30.00	HML-1000	39.00	LML-4000	31.50
BMI-5000	30.00	LMI-50	39.00	LML-8000	31.50
BMI-10000	30.00	LMI-100	31.50	LML-10000	31.50
BML-400	30.00	LMI-150	31.50	LML-12000	31.50

IMMEDIATE DELIVERY ON ALL ITEMS

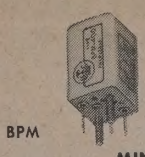
TGT CASE
½ x 1½ x 2½
Mtg 1⅛ x 1⅛"
Screws 6-32
Weight .....8 oz.

TGR CASE
½ x 1½ x 4¼
Mtg 1⅛ x 1⅛"
Screws 6-32
Weight ....15 oz.

TELEGRAPH TONE CHANNEL FILTERS

UTC band pass filters for mutiplex transmitting and receiving provide maximum stability in miniature sizes. Stock filters cover all standard transmit and receive bands. All units employ 7 terminal header matching subminiature 7 pin socket.
TGR (receiving) & TGT (transmitting) filters are 600 ohms in and out. They are down less than 3 db at ± 42.5 Hz from center frequency. TGR units are down more than 30 db at ± 170 Hz. Attenuation is greater than 15 db at adjacent channel crossover.
TGT units are down more than 16 db at ± 170 Hz. Attenuation is greater than 7.5 db at adjacent channel crossover.
All units are MIL type FR6RX-22YY1.

UTC Type	Sugg. Net Ea.	Center Frequency (Hz)	UTC Type	Sugg. Net Ea.
TGT-425	$42.00	425	TGR-425	$72.00
TGT-595	42.00	595	TGR-595	72.00
TGT-765	42.00	765	TGR-765	72.00
TGT-935	42.00	935	TGR-935	72.00
TGT-1105	36.00	1105	TGR-1105	63.00
TGT-1275	36.00	1275	TGR-1275	63.00
TGT-1445	36.00	1445	TGR-1445	63.00
TGT-1615	36.00	1615	TGR-1615	63.00
TGT-1785	33.00	1785	TGR-1785	60.00
TGT-1955	33.00	1955	TGR-1955	60.00
TGT-2125	33.00	2125	TGR-2125	60.00
TGT-2295	33.00	2295	TGR-2295	60.00
TGT-2465	30.00	2465	TGR-2465	57.00
TGT-2635	30.00	2635	TGR-2635	57.00
TGT-2805	30.00	2805	TGR-2805	57.00
TGT-2975	30.00	2975	TGR-2975	57.00
TGT-3145	30.00	3145	TGR-3145	57.00
TGT-3315	30.00	3315	TGR-3315	57.00



BPM

HPM & LPM

MINIFILTERS*

These units provide almost the same characteristics as the standard interstage units listed to the left, although extremely miniaturized. Hermetically sealed to MIL-F-18327C specs. B type case: ¾" x ¾" x 1⅛" h.; wt., 1 oz. H and L cases: 1" x 1" x 1⅜" h.; wt., 2¼ oz. Cutoff frequencies in Hz indicated by type number.
BPM units (BAND PASS) have 2:1 gain. Attenuation is approximately 2 db ±3% from center frequency, and 35 db per octave as shown. Input 10,000 ohms, output to grid, tapped for 10,000 ohms to provide for transistor circuits. For tube circuits continuity is on grid side, for transistor use continuity is on input side.
BPH units (BAND PASS) attenuation less than 3 db ±5% from center frequency, and 40 db per octave. Source and load 500 ohms.
HPM units (HIGH PASS) are down less than 6 db at cutoff frequency, and more than 30 db at .67 cutoff frequency, 40 db at .6 cutoff frequency. Input and output 10,000 ohms.
LPM units (LOW PASS) are down less than 6 db at cutoff frequency, and more than 30 db at 1.5 cutoff frequency, 40 db at 1.65 cutoff frequency. Input and output 10,000 ohms.

UTC Type	Sugg. Ea.	UTC Type	Sugg. Ea.	UTC Type	Sugg. Ea.
BPH-50000	$27.00	BPM-2500	$27.00	HPM-1500	$30.00
BPH-100000	27.00	BPM-3000	27.00	HPM-4000	30.00
BPM-400	27.00	BPM-3200	27.00	LPM-200	30.00
BPM-440	27.00			LPM-300	30.00
BPM-500	27.00	BPM-4000	27.00	LPM-500	30.00
BPM-600	27.00	BPM-4800	27.00	LPM-1000	30.00
BPM-750	27.00	BPM-5000	27.00	LPM-1500	30.00
BPM-800	27.00	BPM-6000	27.00	LPM-2000	30.00
BPM-1000	27.00	BPM-6400	27.00	LPM-3000	30.00
BPM-1200	27.00	BPM-8000	27.00	LPM-5000	30.00
BPM-1500	27.00	BPM-10000	27.00	LPM-6000	30.00
BPM-1600	27.00	BPM-20000	27.00	LPM-8000	30.00
BPM-1800	27.00	HPM-500	30.00	LPM-10000	30.00
BPM-2000	27.00	HPM-1000	30.00	LPM-15000	30.00

TMN-.4 thru TMN-1.7
1¹¹⁄₁₆ x 1³⁄₃₂ x 2"
Weight 3.5 oz.
TMN-2.3 thru TMW-70
²³⁄₃₂ x ²³⁄₃₂ x 1⅜"
Weight 1.2 oz.

TELEMETERING BAND PASS FILTERS

MNF-.4 thru MNF-5.4
1¾" Sq. x ½" high
Weight 1 oz.
MNF-7.35 thru MWF-70
²³⁄₃₂" Sq. x ½" high
Weight ⅓ oz.

Both TMN and TMW types are designed for 100 K input and output impedance and have an insertion loss of less than 6 db. Four pin hermetic header matches small Winchester socket.
TMN filters are down less than 3 db at ± 7.5% of center frequency. They are down more than 18 db at ± 25% of center frequency. Attenuation is greater than 40 db beyond 1.75 Fc and .58 Fc.
TMW filters are down less than 3 db at ± 15% of center frequency. They are down more than 20 db at ± 50% of center frequency. Attenuation is greater than 40 db beyond 2.5 Fc and .4 Fc.
MNF and MWF (Minifilter) provide same performance as filters described above but are extremely miniaturized. Slanted toward use with transistors. Pin terminals ideally suited for printed circuits.

UTC Type	Sugg. Net Ea.	Center Frequ'cy kHz	Band Width±	UTC Type	Sugg. Net Ea.
TMN- .4	$39.00	.4	7½%	MNF- .4	$39.00
TMN- .56	39.00	.56	7½%	MNF- .56	39.00
TMN- .73	39.00	.73	7½%	MNF- .73	39.00
TMN- .96	39.00	.96	7½%	MNF- .96	39.00
TMN-1.3	39.00	1.3	7½%	MNF-1.3	39.00
TMN-1.7	39.00	1.7	7½%	MNF-1.7	39.00
TMN-2.3	39.00	2.3	7½%	MNF-2.3	39.00
TMN-3.0	39.00	3.0	7½%	MNF-3.0	39.00
TMN-3.9	39.00	3.9	7½%	MNF-3.9	39.00
TMN-5.4	39.00	5.4	7½%	MNF-5.4	39.00
TMN-7.35	39.00	7.35	7½%	MNF-7.35	39.00
TMN-10.5	42.00	10.5	7½%	MNF-10.5	42.00
TMN-14.5	42.00	14.5	7½%	MNF-14.5	42.00
TMN-22	42.00	22	7½%	MNF-22	42.00
TMN-30	42.00	30	7½%	MNF-30	42.00
TMN-40	42.00	40	7½%	MNF-40	42.00
TMN-52.5	42.00	52.5	7½%	MNF-52.5	42.00
TMN-70	42.00	70	7½%	MNF-70	42.00
TMW-22	42.00	22	15%	MWF-22	42.00
TMW-30	42.00	30	15%	MWF-30	42.00
TMW-40	42.00	40	15%	MWF-40	42.00
TMW-52.5	42.00	52.5	15%	MWF-52.5	42.00
TMW-70	42.00	70	15%	MWF-70	42.00

UNITED® TRANSFORMER CO. **TRW®**

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DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

FASTENINGS, NYLON-FIBRE WASHERS, SPACERS, SCREWS, NUTS, SPAGHETTI PACKS ALL-WAVE KITS, FIBERGLASS GUY WIRE, HOT AIR GUN

DABURN NYLON FASTENINGS ZYTEL 101 PER MIL-P-17019B AND MIL-P-20693A

Has outstanding insulation specs. hi-resistance to heat, shock, vibration, chemical. Is light in weight, superior torque strength. Corrosion resistant, non magnetic. Continuous service temperature to 300° F. All parts made to American thread standards to Class 2A or 2B fit. B18.2 (hex nuts), B18.6 (machine screws), B1.1 (thread specs.).

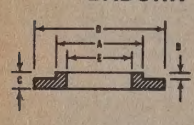
DABURN No.	Size	Type	DABURN No.	Size	Type
14-40	2-56 x 1/4"	Rd. Hd.	14-48B	6-32 x 1/2"	Fill. Hd.
14-40A	2-56 x 1/4"	Fill. Hd.	14-48C	6-32 x 1/2"	Flat. Hd.
14-40B	2-56 x 1/4"	Bind. Hd.	14-49	6-32 x 3/4"	Rd.Hd.
14-41	2-56 x 3/8"	Rd. Hd.	14-49A	6-32 x 3/4"	Fill. Hd.
14-41A	2-56 x 3/8"	Fill. Hd.	14-49B	6-32 x 3/4"	Bind. Hd.
14-41B	2-56 x 3/8"	Bind. Hd.	14-50	6-32 x 1"	Rd. Hd.
14-42	2-56 x 1/2"	Rd. Hd.	14-50C	6-32 x 1	Flat. Hd.
14-42A	2-56 x 1/2"	Fill. Hd.	14-51	8-32 x 1/4"	Rd. Hd.
14-42B	2-56 x 1/2"	Bind. Hd.	14-51A	8-32 x 1/4"	Fill. Hd.
14-43	4-40 x 1/4"	Rd. Hd.	14-51B	8-32 x 1/4"	Bind. Hd.
14-43A	4-40 x 1/4"	Fill. Hd.	14-52	8-32 x 1/2"	Rd. Hd.
14-43B	4-40 x 1/4"	Bind. Hd.	14-52A	8-32 x 1/2"	Fill. Hd.
14-44	4-40 x 3/8"	Rd. Hd.	14-52B	8-32 x 1/2"	Bd. Hd.
14-44A	4-40 x 3/8"	Fill Hd.	14-52C	8-32 x 1/2"	Flat Hd.
14-44B	4-40 x 3/8"	Bind. Hd.	14-54	8-32 x 5/8"	Rd. Hd.
14-45	4-40 x 1/2"	Rd. Hd.	14-54A	8-32 x 5/8"	Fill. Hd.
14-45A	4-40 x 1/2"	Fill. Hd.	14-55	8-32 x 3/4"	Rd. Hd.
14-45B	4-40 x 1/2"	Bind. Hd.	14-55A	8-32 x 3/4"	Fill. Hd.
14-46	6-32 x 1/4"	Rd. Hd.	14-55B	8-32 x 3/4"	Bd. Hd.
14-46A	6-32 x 1/4"	Fill. Hd.	14-56A	8-32 x 1"	Fill. Hd.
14-46B	6-32 x 1/4"	Bind. Hd.	14-56C	8-32 x 1"	Flat. Hd.
14-47	6-32 x 3/8"	Rd. Hd.	14-57	10-32 x 3/8"	Rd. Hd.
14-47A	6-32 x 3/8"	Bind. Hd.	14-58	10-32 x 1/2"	Rd. Hd.
14-47B	6-32 x 3/8"	Fill. Hd.	14-58C	10-32 x 1/2"	Flat. Hd.
14-47C	6-32 x 3/8"	Flat. Hd.	14-59	10-32 x 5/8"	Rd. Hd.
14-48	6-32 x 1/2"	Rd. Hd.	14-60	10-32 x 1"	Rd. Hd.
14-48A	6-32 x 1/2"	Bind. Hd.	14-60C	10-32 x 1"	Flat Hd.

STOCK COLOR: Natural — Std. Pkg.: 100, 1000

Additional sizes available to order.

DABURN NYLON SHOULDER WASHERS

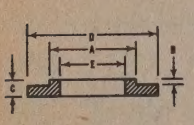
Natural Nylon Per MIL-P-20693A
Standard Package 1000



Catalog No.	E	Hole Size	D	C	B	A
14-540	.140	6	.375	.093	.031	.237
14-541	.110	4	.250	.062	.031	.187
14-542	.136	6	.250	.093	.031	.187
14-543	.136	6	.312	.093	.031	.187
14-544	.250	1/4"	.500	.068	.028	.312
14-545	.172	8	.375	.093	.031	.246
14-546	.196	10	.375	.093	.031	.308
14-547	.265	17/64"	.500	.097	.031	.365
14-548	.375	3/8"	.750	.093	.031	.500
14-549	.385	3/8"	.625	.093	.031	.500

FIBRE SHOULDER WASHERS

Fibre Material Per NEMA Standard and ASTM Spec. D-710

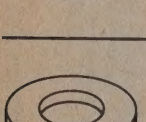


Catalog No.	E	Hole Size	D	C	B	A
14-530	.140	6	.375	.093	.031	.237
14-531	.110	4	.250	.062	.031	.187
14-532	.136	6	.250	.093	.031	.187
14-533	.136	6	.312	.093	.031	.187
14-534	.250	1/4"	.500	.068	.028	.312
14-535	.172	8	.375	.093	.031	.308
14-536	.196	10	.375	.093	.031	.308
14-537	.265	17/64"	.500	.097	.031	.365
14-538	.375	3/8"	.750	.093	.031	.500
14-539	.385	3/8"	.625	.093	.031	.500

Standard Package 1000

FLAT FIBRE WASHERS

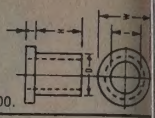
NEMA STANDARD ASTM SPEC D-710



Cat. No.	Hole Size	I.D.	O.D.	Thickness
14-510	6	.136	.250	1/16
14-511	4	.110	.250	1/16
14-512	6	.140	.375	1/16
14-513	8	.172	.375	1/16
14-514	10	.196	.345	1/16
14-515	1/4"	.250	.500	1/16
14-516	1/4"	.250	.500	3/32
14-517	5/16"	.312	.500	1/16
14-518	3/8"	.385	.625	1/16
14-519	3/8"	.375	.750	1/16

Standard Package 1000

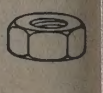
DABURN NYLON SPACER/BUSHINGS



Wide flanges isolates screw from mounting surface. Has hi-tensile and torque strength.
COLOR: Natural. MIL-P-20693A. Std. Pkg.: 100, 1000.

Daburn No.	Screw Size I.D.	W	T	H	D
14-79	# 4 (.115")	.235"	3/64"	1/4"	.146"
14-79A	# 6 (.140")	.290"	3/64"	1/4"	.170"
14-79B	# 8 (.173")	.344"	1/16"	3/8"	.205"
14-79C	#10 (.200")	.399"	1/16"	3/8"	.260"
14-79D	1/4" (.260")	.513"	1/16"	3/8"	.312"

DABURN NYLON HEX NUTS



Daburn No.	Size	Daburn No.	Size
14-85	2-56	14-88	8-32
14-86	4-40	14-89	10-32
14-87	6-32	14-90	1/4-20

COLOR: Natural. MIL-P-20693A. Std. Pkg.: 100, 1000

DABURN NYLON FLAT WASHERS

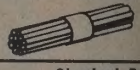
Daburn No.	For Screw Size	I.D.	O.D.	Thickness
14-92	2	3/32"	1/4"	.016"
14-93	4	1/8"	1/4"	.016"
14-94	6	3/32"	5/16"	.031"
14-95	8	.170"	3/8"	.031"
14-96	10	.195"	3/8"	.031"
14-97	1/4	9/32"	5/8"	.063"

COLOR: Natural — Std. Pkg.: 100, 1000

NOTE: See Sections 2100, 3100 for additional Daburn Hardware Products. Section 6000, for our Insulated Tubing - Wire - Cable — including Heat Shrinkable Tubing.

DABURN ASSORTED SPAGHETTI PACKS

25-9" lengths per pack consists of varnished sleeving of assorted sizes and colors.



DABURN Cat. No.		Standard Package
9-07	Pack	25
9-08	25 Packs in Display Carton	1

HOT AIR GUN AND ACCESSORIES

FOR DAFLEX SHRINKABLE TUBING

Daburn No.
HG1 — For SH265, SH275 & SH290 Series
HG2 — For SH400 & SH621 Series

A flameless heat source; light in weight; portable and/or permanent mounting.

ADAPTOR HGA-02

Concentrates heat and allows use of baffle.

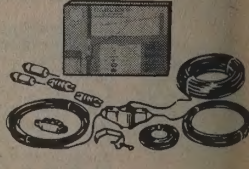
BAFFLE PLATE HGB-01

For tubing up to 1¼" O.D. Made to concentrate hot air.

DABURN ALL-WAVE ASSEMBLED ANTENNA KIT

Designed for reception of overseas radio signals & programs. Utilizes the Hertz principle — balanced line consists of:

2—30′ coils 7/24 copper wire
1—40′ coil transmission cable
1—Center insulator
2—Porcelain insulators
2—Lead-in strips
1—Ground clamp
2—Nail-on knobs



DABURN Cat. No.		Standard Package
9-09	All Wave Kit	12
10-09	Nail-on Knob, Glazed	100

DABURN FIBERGLASS GUY WIRE

Gives complete isolation for any antenna system. Non-radiating, non-absorbing, no rot, no shrink, no sag. This non metallic guy wire has an overall (PVC) polyvinylchloride jacket.

DABURN No.	Put-Up	Tensile Strength	Color	Nom. O.D.
10-01	100′, 500′, 1000′	500 lbs.	Green	.125"
10-02	100′, 500′, 1000′	1000 lbs.	Gray	.218"
10-03	100′, 500′, 1000′	2500 lbs.	White	.313"

Doubling the cable will double the strength.

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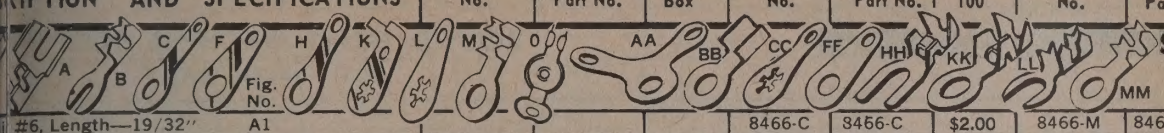
ELECTRONIC HARDWARE



SOLDERING LUGS

RIPTION AND SPECIFICATIONS	Fig. No.	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
							TINNED			
#6, Length—19/32"	A1				8466-C	8466-C	$2.00	8466-M	8466-M	$15.95
#6, Length—23/32"	A				8467-C	8467-C	3.59	8467-M	8467-M	28.69
#8, Length—23/32"	A				8468-C	8468-C	3.38	8468-M	8468-M	27.01
#6, Length—21/32"	B	H104-F	H104-F	25	1021-BC	7136-C	1.35	1021-BM	7136-M	10.77
#8, Length—5/8"	B	H106-F	H106-F	25	7445-C	7138-CW	1.53	7445-M	7138-MW	12.18
#10, Length—11/16"	B				8473-C	8473-C	1.49	8473-M	8473-M	11.90
#6, Length—9/16"	C				5703-C	5703-C	1.14	5703-M	5703-M	9.09
#8, Length—9/16"	C				5704-C	5704-C	2.14	5704-M	5704-M	17.07
#10, Length—13/16"	C				5705-C	5705-C	2.14	5705-M	5705-M	17.07
#6, Length—11/16"	C	H108-F	H108-F	30	1021-CC	1021-CC	1.18	1021-CM	1021-CM	9.38
#6, Length—9/16"	F	H112-F	H112-F	30	1021-FC	1021-FC	1.18	1021-FM	1021-FM	9.38
#8, Length—9/16"	F	H113-F	H113-F	30	7451-C	7168-C	1.12	7451-M	7168-M	8.96
#6, Length—7/8"	F	H114-F	H114-F	25	7454-C	7454-C	.84	7454-M	7454-M	6.72
#8, Length—7/8"	H	H117-F	H117-F	25	7455-C	7455-C	1.10	7455-M	7455-M	8.82
#10, Length—7/8"	H	H118-F	H118-F	25	7456-C	7456-C	1.10	7456-M	7456-M	8.82
#4, Length—25/32"	K				7458-C	7458-C	2.34	7458-M	7458-M	18.74
#8, Length—25/32"	K				7460-C	7460-C	2.38	7460-M	7460-M	19.04
#10, Length—13/16"	K				7461-C	7461-C	2.38	7461-M	7461-M	19.04
#6, Length—5/8"	L	H122-F	H122-F	20	7462-C	7462-C	1.37	7462-M	7462-M	10.92
#8, Length—5/8"	L				7463-C	7463-C	1.37	7463-M	7463-M	10.92
#4, Length—9/16"	F				5706-C	5706-C	2.13	5706-M	5706-M	17.07
#8, Length—13/16"	F				5707-C	5707-C	2.13	5707-M	5707-M	17.07
#6, Length—13/16"	F				5708-C	5708-C	2.13	5708-M	5708-M	17.07
#6, Length—11/16"	M	H124-F	H124-F	25	7441-C	7146-C	1.50	7441-M	7146-M	12.03
#8, Length—11/16"	M	H134-F	H134-F	25	7442-C	7148-CW	1.42	7442-M	7148-MW	11.34
#10, Length—11/16"	M	H102-F	H102-F	25	1021-AC	7149-C	1.42	1021-AM	7149-M	11.34
s TV Line Lugs	O	H225-F	7190-F	10	8633-C	7199-C	2.10	8633-M	7199-M	16.79
#6	AA				7116-C	7116-C	1.55	7116-M	7116-M	12.45
#8	AA				7118-CW	7118-CW	1.65	7118-MW	7118-MW	13.16
#6, Length—7/16"	BB				7126-C	7126-C	1.23	7126-M	7126-M	9.80
#8, Length—5/8"	BB				7128-C	7128-C	1.61	7128-M	7128-M	12.87
#6	CC				7156-C	7156-C	1.37	7156-M	7156-M	10.92
#8, Length—13/16"	CC				7158-CW	7158-CW	1.37	7158-MW	7158-MW	10.92
#6, Length—1/2"	FF				7166-C	7166-C	1.26	7166-M	7166-M	10.08
#10, Length—11/16"	FF				7169-C	7169-C	1.07	7169-M	7169-M	8.54
#10	HH	7170-F	7170-F	25	7179-C	7179-C	1.34	7179-M	7179-M	10.77
#10	KK	7180-F	7180-F	15	7189-C	7189-C	2.15	7189-M	7189-M	17.21
#6-#10 Hole Size	B, C, F, M	H100-F	H100-F	30						
Types		7100-F	7100-F	36						
#6-#8 Hole Size	AA	7110-F	7110-F	20						
#6-#8 Hole Size	BB	7120-F	7120-F	20						
#6-#8 Hole Size	LL	7130-F	7130-F	25						
#6-#8 Hole Size	MM	7140-F	7140-F	16						
#6-#8 Hole Size	CC	7150-F	7150-F	15						
#6-#8 Hole Size	FF	7160-F	7160-F	35						
rted Terminals					1020	1020	1.37			

ROUND HEAD MACHINE SCREWS

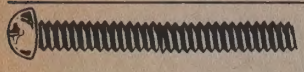
STEEL — NICKEL PLATED

/4"	H1022-F	H1022-F	40	7130-C	7130-C	$ .60	7130-M	7130-M	$ 4.76
/2"	H1024-F	8024-F	40	7131-C	8024-C	.63	7131-M	8024-M	5.04
/4"	H1026-F	H1026-F	40	7132-C	7132-C	.76	7132-M	7132-M	6.02
/4"	H1028-F	H1028-F	40	7124-C	7124-C	.76	7124-M	7124-M	6.02
/4" Phono Cartridge Mounting Screw	H1032-F	8032-F	40	6005-C	8032-C	.63	6005-M	8032-M	5.04
/8"	H1033-F	H1033-F	35	7138-C	7138-C	.68	7138-M	7138-M	5.46
/2"	H1034-F	8034-F	35	6006-C	8034-C	.70	6006-M	8034-M	5.60
/8"				5651-C	5651-C	.74	5651-M	5651-M	5.88
/4"	H1036-F	8036-F	35	6007-C	8036-C	.89	6007-M	8036-M	7.14
/4" Phono Cartridge Mounting Screw	H1042-F	8042-F	40	6005-AC	8042-C	.63	6005-AM	8042-M	5.04
/2"	H1044-F	8044-F	35	6005-BC	8044-C	.70	6005-BM	8044-M	5.60
/8"				5652-C	5652-C	.74	5652-M	5652-M	5.88
/4"	H1046-F	H1046-F	35	6005-CC	6005-CC	.83	6005-CM	6005-CM	6.57
/4"	H1062-F	8062-F	40	6008-C	8062-C	.68	6008-M	8062-M	5.46
/2"	H1064-F	8064-F	30	6009-C	8064-C	.79	6009-M	8064-M	6.30
/8"				5653-C	5653-C	.87	5653-M	5653-M	6.99
/4"	H1066-F	8066-F	30	6010-C	8066-C	.92	6010-M	8066-M	7.41
"	H1068-F	H1068-F	30	6011-C	8068-C	1.07	6011-M	8068-M	8.54
- 1/4"	H1070-F	H1070-F	30	7141-C	7141-C	1.30	7141-M	7141-M	10.35

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

GC ELECTRONICS

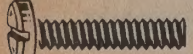
ELECTRONIC HARDWARE



ROUND HEAD MACHINE SCREWS

STEEL — NICKEL PLATED

DESCRIPTION AND SPECIFICATIONS	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.
6-32 x 2″	H1076-F	8078-F	20	7148-C	8078-C	$1.93	7148-M	8078-M
8-32 x 1/4″	H1082-F	8082-F	30	6013-C	8082-C	.91	6013-M	8082-M
8-32 x 3/8″	H1083-F	8083-F	25	6014-C	8083-C	1.00	6014-M	8083-M
8-32 x 1/2″	H1084-F	8084-F	25	6015-C	8084-C	1.07	6015-M	8084-M
8-32 x 5/8″				5654-C	5654-C	1.12	5654-M	5654-M
8-32 x 3/4″	H1086-F	8086-F	20	6016-C	8086-C	1.19	6016-M	8086-M
8-32 x 1″	H1088-F	H1088-F	20	6017-C	8088-C	1.37	6017-M	8088-M
8-32 x 1-1/4″	H1090-F	H1090-F	20	7142-C	7142-C	1.58	7142-M	7142-M
10-32 x 1/2″	H1104-F	8104-F	20	6020-C	8104-C	1.21	6020-M	8104-M
10-32 x 5/8″				5655-C	5655-C	1.33	5655-M	5655-M
10-32 x 3/4″	H1106-F	8106-F	20	6021-C	8106-C	1.46	6021-M	8106-M
10-32 x 1″	H1108-F	8108-F	17	6022-C	8108-C	1.60	6022-M	8108-M
10-32 x 1-1/2″	H1112-F	H1112-F	15	7143-C	7143-C	2.12	7143-M	7143-M
2-56 x 3/16″				8021-CW	8021-CW	.55	8021-MW	8021-MW
2-56 x 5/16″				8022-C	8022-C	.56	8022-AM	8022-AM
2-56 x 3/8″	8023-F	8023-F	40	8023-C	8023-C	.60	8023-M	8023-M
4-40 x 3/8″				8043-C	8043-C	.63	8043-M	8043-M
4-40 x 1″							8048-M	8048-M
6-32 x 3/8″	8063-F	8063-F	35	8063-C	8063-C	.68	8063-M	8063-M
Assorted	8000-F	8000-F	40					
Assorted	H1000-F	H1000-F	35					
Assorted	H1001-F	H1001-F	40					
Assorted	H1002-F	H1002-F	35					
Assorted	H1010-F	H1010-F	40					
Assorted	H1012-F	H1012-F	40					
Assorted	H1016-F	H1016-F	40					
Assorted	H1018-F	H1018-F	25					
Small Machine Screws and Nut Assortment	8002-F	8002-F	36					
Cartridge Mounting Screw Assortment	H1560-F	H1560-F	60					
Cartridge Mounting Screw Assortment	H1562-F	H1562-F	40					
Cartridge Mounting Screw	H1564-F	H1564-F	40					
Pickup Cartridge Mounting Screw	8560-F	8560-F	30					
Phonograph Needle and Stylus Set Screw (Assorted)	H1550-F	8550-F	12					
1-72 x 1″	H1555-F	8555-F	5					
2-56 x 9/16″	H1551-F	H1551-F	12					
2-64 x 3/4″	H1553-F	8553-F	12					
2-56 x 5/8″	8552-F	8552-F	15					



BINDING HEAD MACHINE SCREWS

STEEL — NICKEL PLATED

2-56 x 1/4″	H1122-F	8151-F	40	7160-C	8151-C	$ .65	7160-M	8151-M
2-56 x 1/2″	H1124-F	8152-F	40	7161-C	8152-C	.71	7161-M	8152-M
2-56 x 3/4″	H1126-F	8154-F	40	7162-C	8154-C	.79	7162-M	8154-M
4-36 x 1/4″	H1132-F	8155-F	40	7163-C	8155-C	.79	7163-M	8155-M
4-36 x 1/2″	H1134-F	8156-F	35	7164-C	8156-C	.79	7164-M	8156-M
4-36 x 3/4″	H1136-F	8157-F	35	7165-C	8157-C	.79	7165-M	8157-M
4-40 x 1/4″	H1142-F	8158-F	40	7170-C	8158-C	.67	7170-M	8158-M
4-40 x 1/2″	H1144-F	8159-F	35	7171-C	8159-C	.70	7171-M	8159-M
4-40 x 3/4″				7172-C	8160-C	.83	7172-M	8160-M
5-36 x 1/4″	H1170-F	8161-F	35	7154-C	8161-C	.68	7154-M	8161-M
6-32 x 3/16″				7151-C	8162-C	.71	7151-M	8162-M
6-32 x 1/4″	H1172-F	8163-F	35	7152-C	8163-C	.68	7152-M	8163-M
6-32 x 3/8″				7153-C	8164-C	.74	7153-M	8164-M
6-32 x 1/2″				7118-C	8166-C	.79	7118-M	8166-M
6-32 x 3/4″	H1166-F	8167-F	30	7173-C	8167-C	.92	7173-M	8167-M
7-32 x 3/8″	H1174-F	8165-F	30	7155-C	8165-C	2.00	7155-M	8165-M
8-32 x 1/4″	H1182-F	8168-F	30	7174-C	8168-C	.91	7174-M	8168-M
8-32 x 5/16″				7158-C	8171-C	1.00	7158-M	8171-M
8-32 x 3/8″				7119-C	8169-C	1.00	7119-M	8169-M
8-32 x 1/2″				7120-C	8170-C	1.07	7120-M	8170-M
8-32 x 3/4″	H1186-F	8172-F	25	7175-C	8172-C	1.19	7175-M	8172-M
10-32 x 1/2″	H1188-F	8173-F	20	7176-C	8173-C	1.21	7176-M	8173-M
10-32 x 3/4″	H1190-F	8174-F	20	7177-C	8174-C	1.46	7177-M	8174-M
Assorted	H1168-F	H1168-F	35					

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

Net

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ELECTRONIC HARDWARE

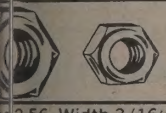
SHEET METAL SCREWS

HEX HEAD — SLOTTED SELF-TAPPING — NICKEL PLATED

CRIPTION AND SPECIFICATIONS	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
3"	H1383-F	8383-F	20	6095-C	8383-C	$1.34	6095-M	8383-M	$20.77
2"	H1384-F	8384-F	20	6096-C	8384-C	1.39	6096-M	8384-M	11.06
	H1388-F	8388-F	15	6097-C	8388-C	1.77	6097-M	8388-M	14.13
x 1/8"	H1403-F	8403-F	15	6098-C	8403-C	1.50	6098-M	8403-M	12.03
x 1/2"	H1404-F	8404-F	15	6099-C	8404-C	1.65	6099-M	8404-M	13.16
x 1/4"	H1406-F	8406-F	12	6100-C	8406-C	1.79	6100-M	8406-M	14.27
3"				5696-C	5696-C	1.40	5696-M	5696-M	11.19
3"				6089-C	6089-C	.99	6089-M	6089-M	7.83
2"	H1350-F	H1350-F	35	6090-C	6090-C	1.07	6090-M	6090-M	8.54
4"	H1362-F	8362-F	30	6091-C	8362-C	1.12	6091-M	8362-M	8.96
3"	H1363-F	8363-F	25	6092-C	8363-C	1.14	6092-M	8363-M	9.09
2"	H1364-F	8364-F	25	6093-C	8364-C	1.21	6093-M	8364-M	9.66
4"	H1366-F	8366-F	20	6094-C	8366-C	1.30	6094-M	8366-M	10.35
4"	H1382-F	8382-F	20	8102-C	8382-C	1.30	8102-M	8382-M	10.35
	8368-F	8368-F	20	8368-C	8368-C	1.75	8368-M	8368-M	14.00
4"	8386-F	8386-F	15	8386-C	8386-C	1.68	8386-M	8386-M	13.43
d	H1300-F	8300-F	25						

FLAT HEAD RACK AND CABINET SCREWS

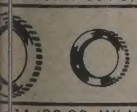
x 2"				6540-C	6540-C	$ .79	6540-M	6540-M	$ 6.30
x 1/8"	8265-F	8265-F	30	5691-C	8265-C	1.12	5691-M	8265-M	8.96
x 1/4"				6541-C	6541-C	.92	6541-M	6541-M	7.41
x 1/8"	8269-F	8269-F	25	5692-C	8269-C	1.21	5692-M	8269-M	9.66
x 1/4"				6542-C	6542-C	1.19	6542-M	6542-M	9.69
2 1/2"				8848-C	8848-C	1.21	8848-M	8848-M	9.66
2 5/8"				5693-C	5693-C	1.31	5693-M	5693-M	10.50
2 3/4"	8273-F	8273-F	20	6543-C	8273-C	1.42	6543-M	8273-M	11.34
4 5/8"				8278-C	8278-C	1.82	8278-M	8278-M	14.50
d	H1005-F	8005-F	30						



HEXAGON NUTS

STEEL — NICKEL PLATED

2-56, Width 3/16", Thickness 1/16"	H1802-F	8802-F	30	7225-C	8802-C	$ .87	7225-M	8802-M	$ 6.99
3-48, Width 3/16", Thickness 1/16"	H1803-F	H1803-F	30	7226-C	7226-C	.87	7226-M	7226-M	6.99
4-36, Width 1/4", Thickness 3/32"	H1805-F	H1805-F	30	6041-C	8824-CW	.87	6041-M	8824-MW	6.99
4-40, Width 1/4", Thickness 3/32"	H1804-F	H1804-F	30	6041-AC	6041-AC	.87	6041-AM	6041-AM	6.99
6-32, Width 1/4", Thickness 3/32"	H1806-F	8806-F	30	6042-C	8806-C	.87	6042-M	8806-M	6.99
6-32, Width 5/16", Thickness 7/64"	H1807-F	H1807-F	30	7230-C	8826-C	.95	7230-M	8826-M	7.56
8-32, Width 1/4", Thickness 3/32"	H1808-F	H1808-F	30	6043-C	6043-C	.87	6043-M	6043-M	6.99
8-32, Width 5/16", Thickness 7/64"	8808-F	8808-F	30	7232-C	8808-C	.95	7232-M	8808-M	7.56
8-32, Width 11/32", Thickness 1/8"	H1809-F	H1809-F	30	7233-C	8828-C	.92	7233-M	8828-M	7.41
10-32, Width 3/8", Thickness 5/64"	H1810-F	H1810-F	30	6044-C	6044-C	1.23	6044-M	6044-M	9.80
10-32, Width 3/8", Thickness 1/8"				6049-C	8830-C	1.12	6049-M	8830-M	8.96
1/4-20, Width 7/16", Thickness 3/16"	H1820-F	H1820-F	25	7235-C	7235-C	1.55	7235-M	7235-M	12.45
11/32-32, Width 7/16", Thickness 1/16"				7236-C	7236-C	2.49	7236-M	7236-M	19.88
3/8-32, Width 9/16", Thickness 3/32"	H1923-F	H1923-F	15	6050-AC	6050-AC	1.87	6050-AM	6050-AM	14.97
7/16-27, Width 9/16", Thickness 1/8"				7238-C	7238-C	4.20	7238-M	7238-M	33.59
15/32-32, Width 9/16", Thickness 5/64"	H1924-F	8924-F	10	6050-BC	6050-BC	2.29	6050-BM	6050-BM	18.33
1/4-32, Width 3/8", Thickness 3/32"				7715-C	7715-C	1.02	7715-M	7715-M	13.58
5-40, Width 5/16", Thickness 7/64"				6045-BC	6045-BC	.92	6045-BM	6045-BM	7.41
10-32, Width 5/16", Thickness 7/64"	8810-F	8810-F	25	8810-C	8810-C	1.23	8810-M	8810-M	9.80
d	H1800-F	8800-F	30						
4-40, Width 3/16", Thickness 1/16"	8804-F	8804-F	30	8804-C	8804-C	.84	8804-M	8804-M	6.72



MOUNTING NUTS

STEEL — NICKEL PLATED

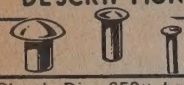
11/32-32, Width 7/16", Thickness 1/16", Switch Size — Hex				7236-C	7236-C	$2.49	7236-M	7236-M	$19.88
3/8-32, Width 9/16", Thickness 3/32", Control Size—Hex	H1923-F	H1923-F	15	6050-AC	6050-AC	1.87	6050-AM	6050-AM	14.97
7/16-27, Width 9/16", Thickness 1/8", ght Size—Hex				7238-C	7238-C	4.20	7238-M	7238-M	33.59
15/32-32, Width 9/16", Thickness 5/64", Switch Size—Hex	H1924-F	8924-F	10	6050-BC	8924-C	2.24	6050-BM	8924-M	18.33
15/32-32, Width 19/32", Thickness 1/16", Ring Nut, Knurled—Toggle Switch Size	H1926-F	H1926-F	8	6050-CC	6050-CC	4.41	6050-CM	6050-CM	35.27
3/8-32, Width 1/2", Thickness 3/32", Control Switch—Hex	8923-F	8923-F	12	8923-C	8923-C	2.80	8923-M	8923-M	22.39
15/32-32, Width 19/32", Thickness 3/32", Ring Nut Knurled—Toggle Switch Size	8926-F	8926-F	8	8926-C	8926-C	5.99	8926-M	8926-M	47.86
3/8-32, Width 1/2", Thickness 3/32", Control—Hex									
d	8920-F	8920-F	12						
d	H1920-F	H1920-F	12						

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

GC ELECTRONICS

ELECTRONIC HARDWARE

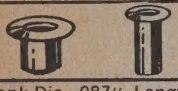
RIVETS



NICKEL PLATED

DESCRIPTION AND SPECIFICATIONS	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	
Shank: Dia. .059", Length 5/32"				7276-C	7276-C	$1.12	7276-M	7276-M	$
Shank: Dia. .059", Length 3/16"				7277-C	7277-C	1.12	7277-M	7277-M	
Shank: Dia. .060", Length 1/4"				7278-C	7278-C	.74	7278-M	7278-M	
Shank: Dia. .088", Length 3/16"				7280-C	7280-C	1.21	7280-M	7280-M	
Shank: Dia. .098", Length 3/16"				7283-C	7283-C	1.26	7283-M	7283-M	
Shank: Dia. .121", Length 1/8"				7286-C	7286-C	.98	7286-M	7286-M	
Shank: Dia. .121", Length 3/16"				7288-C	7288-C	.77	7288-M	7288-M	
Shank: Dia. .121", Length 1/4"				7290-C	7290-C	.89	7290-M	7290-M	
Shank: Dia. .121", Length 1/2"				7293-C	7293-C	.82	7293-M	7293-M	
Shank: Dia. .146", Length 5/16"				7296-C	7296-C	1.04	7296-M	7296-M	
Assorted rivets and eyelets	H526-F	H526-F	55						
Assorted rivets	H525-F	7525-F	50						
Assorted TV interlock recept rivets	H527-F	7527-F	50						
Envelope of 12 TV inter-recept rivets	8205-E								

EYELETS



BRASS

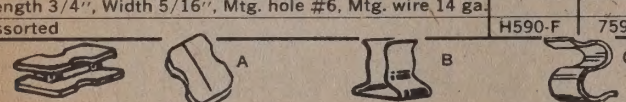
Shank Dia. .087", Length 1/8", Head Dia. .145"				7251-C	7251-C	$ .37	7251-M	7251-M	$
Shank Dia. .087", Length 5/32", Head Dia. .145"				7252-C	7252-C	.49	7252-M	7252-M	
Shank Dia. .087", Length 7/32", Head Dia. .145"				7253-C	7253-C	.61	7253-M	7253-M	
Shank Dia. .087", Length 11/32", Head Dia. .180"				7254-C	7254-C	1.42	7254-M	7254-M	
Shank Dia. .123", Length 5/32", Head Dia. .197"	H515-F	H515-F	50	7257-C	7257-C	.68	7257-M	7257-M	
Shank Dia. .123", Length 7/32", Head Dia. .195"				7259-C	7259-C	.55	7259-M	7259-M	
Shank Dia. .123", Length 1/4", Head Dia. .195"				7260-C	7260-C	.71	7260-M	7260-M	
Shank Dia. .123", Length 9/32", Head Dia. .195"				7261-C	7261-C	.71	7261-M	7261-M	
Shank Dia. .125", Length 5/16", Head Dia. .289"				7264-C	7264-C	1.23	7264-M	7264-M	
Shank Dia. .127", Length 15/32", Head Dia. .222"				7265-C	7265-C	1.50	7265-M	7265-M	
Shank Dia. .182", Length .145", Head Dia. .315"				7269-C	7269-C	.42	7269-M	7269-M	
Assorted eyelets	H510-F	H510-F	50						
Assorted eyelets and clamps	H744-F	H744-F	50						
Assorted eyelets and rivets	H526-F	H526-F	55						

FAHNESTOCK CLIPS

A B C D E

A Length 1/2", Width 7/32", Mtg. hole #4, Mtg. wire 16 ga.	H592-F	7592-F	15	6301-C	7592-C	$1.91	6301-M	7592-M	$
B Length 3/4", Width 5/16", Mtg. hole #6, Mtg. wire 14 ga.	H594-F	7594-F	14	6302-C	7594-C	2.18	6302-M	7594-M	
C Length 1", Width 3/8", Mtg. hole #8, Mtg. wire 10 ga.				6303-C	6303-C	3.78	6303-M	6303-M	
D Lgth. 1-1/2", Width 5/16", Mtg. hole #6, Mtg. wire 10 ga.				6304-C	6304-C	14.00	6304-M	6304-M	
E Length 3/4", Width 5/16", Mtg. hole #6, Mtg. wire 14 ga.				6306-C	6306-C	6.30	6306-M	6306-M	
Assorted	H590-F	7590-F	12						

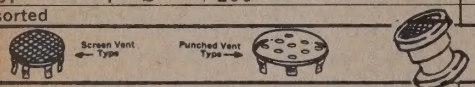
FUSE CLIPS



Prices per quantity shown on these items

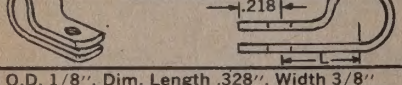
For 1/4" Glass Fuses, Mtg. Hole #6	B	H600-F	H600-F	12	6311-C	7601-C	$2.67	6311-M	7601-M	$
TV Fuse Clip Box of 100	A				8618-C		18.90			
TV Fuse Clip Box of 500	A				8618-5C		70.35			
TV Fuse Clip Each	A				8618		.29			
S-Type Fuse Clip Bag of 20	C				8619		.49			
S-Type Fuse Clip Box of 200	C				8619-2C		2.63			
Assorted		7600-F	7600-F	10	(see index for pricing)					

SNAP-IN VENTILATING PLUGS



1" dia. Snap-in type punched holes, nickel plated	H334-F	H334-F	4	1709-C	1709-C	$10.30	1709-M	1709-M	$
1" dia. Snap-in type screen vent, steel nickel plated				1708-C	7331-C	27.15	1708-M	7331-M	2
19/32" dia. eyelet type screen vent, brass not plated				7332-CW	7332-CW	6.00	7332-MW	7332-MW	
3/4" dia. eyelet type screen vent, brass not plated				7333-CW	7333-CW	8.51	7333-MW	7333-MW	
Assorted	7330-F	7330-F	3						

NYLON CABLE CLAMPS



Made of natural color (Translucent White)

For Cable O.D. 1/8", Dim. Length .328", Width 3/8"		34-370-C		$3.60	34-370-M	$
For Cable O.D. 3/16", Dim. Length .390", Width 3/8"		34-374-C		3.90	34-374-M	
For Cable O.D. 1/4", Dim. Length .421", Width 3/8"	Material Thickness is .050" on all clamps 1/2" and smaller in diameter.	34-378-C		4.20	34-378-M	
For Cable O.D. 5/16", Dim. Length .453", Width 3/8"		34-382-C		4.65	34-382-M	
For Cable O.D. 3/8", Dim. Length .483", Width 3/8"		34-386-C		4.80	34-386-M	
For Cable O.D. 7/16", Dim. Length .531", Width 3/8"		34-390-C		5.10	34-390-M	
For Cable O.D. 1/2", Dim. Length .625", Width 3/8"		34-394-C		5.40	34-394-M	
For Cable O.D. 9/16", Dim. Length .625", Width 1/2"		34-398-C		6.60	34-398-M	
For Cable O.D. 5/8", Dim. Length .610", Width 1/2"	Material thickness is .060 on all clamps 9/16" and larger in diameter.	34-402-C		7.20	34-402-M	
For Cable O.D. 11/16", Dim. Length .666", Width 1/2"		34-406-C		7.50	34-406-M	
For Cable O.D. 3/4", Dim. Length .765", Width 1/2"		34-410-C		8.10	34-410-M	
For Cable O.D. 7/8", Dim. Length .812", Width 1/2"		34-414-C		8.70	34-414-M	
For Cable O.D. 1", Dim. Length .906", Width 1/2"		34-418-C		10.20	34-418-M	

WRITE FOR CATALOG # FR-69 FOR COMPLETE LISTINGS

Net

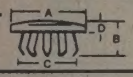
© United Technical Public

ELECTRONIC HARDWARE

CABLE HOLDER CLAMPS

NICKEL PLATED

DESCRIPTION AND SPECIFICATIONS	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
1/8" to 3/16". Mounting Hole Size #6	H502-F	7502-F	25	6251-C	7502-C	$1.25	6251-M	7502-M	$10.00
1/4" to 5/16". Mounting Hole Size #6				7503-C	7503-C	1.60	7503-M	7503-M	12.79
5/16" to 1/2". Mounting Hole Size #6	H506-F	H506-F	15	6253-C	6253-C	1.54	6253-M	6253-M	12.26
Wire Clips, Black, Parkerized	H509-F	H509-F	20	8345-C	8345-C		8345-M	8345-M	
3/16" to 1/4". Mounting Hole Size #8	H503-F	7503-F	20	6252-C	7503-CW	1.43	6252-M	7503-MW	11.46
1/4" to 5/16". Mounting Hole Size #8	7505-F	7505-F	16	7505-C	7505-C	2.52	7505-M	7505-M	20.13
	H500-F	H500-F	20						
	7500-F	7500-F	20						



SNAP BUTTON HOLE PLUGS

ize 1/4" ", B—1/4", C—17/64", D—5/64"	H306-F	7306-F	8	1711-AC	7306-CW	$2.84	1711-AM	7306-MW	$22.67
ize 5/16" , B—1/4", C—21/64", D—1/16"				1711-BC	1711-BC	3.05	1711-BM	1711-BM	24.35
ize 3/8" ", B—3/8", C—25/64", D—5/64"	H308-F	7308-F	8	1711-C	7308-CW	3.22	1711-M	7308-MW	25.75
ize 1/2" ", B—17/64", C—17/32", D—5/64"	H310-F	7310-F	6	1712-C	7310-C	3.91	1712-M	7310-MW	31.21
ize 5/8" ", B—9/32", C—41/64", D—5/64"	H312-F	7312-F	6	1713-C	7312-CW	4.20	1713-M	7312-MW	33.59
ize 3/4" ", B—19/64", C—49/64", D—3/32"	H314-F	7314-F	5	1714-C	7314-C	4.23	1714-M	7314-M	33.86
ize 7/8". Fits switch box knockout holes				1714-AC	7315-C	5.88	1714-AM	7315-M	47.02
ize 1-1/8" ",B—11/32", C—1-9/64", D—3/32"				1715-BC	7318-C	7.52	1715-BM	7318-M	60.18
ize 1-1/4" ", B—15/16", C—1-17/16", D—3/32"				1715-C	7320-C	8.20	1715-M	7320-M	65.64
ize 1-3/8" ", B—13/32", C—1-13/32", D—3/32"				5700-C	5700-C	9.04	5700-M	5700-M	72.36
ize 1-7/16" 4", B—27/64", C—1-15/32", D—7/64"				5701-C	5701-C	9.24	5701-M	5701-M	73.89
ize 1-1/2" 4", B—13/32", C—1-17/32", D—3/32"				5702-C	5702-C	11.92	5702-M	5702-M	95.03
ize 1" ", B—19/64", C—1-1/32", D—5/64"	H316-F	7316-F	5	1715-AC	7316-C	5.63	1715-AM	7316-M	45.07
ize 1/8" , B—15/64", C—9/64", D—1/32"				7302-C	7302-C	4.07	7302-M	7302-M	32.57
ize 3/16" ", B—7/32", C—7/32", D—3/64"				7304-C	7304-C	3.86	7304-MW	7304-MW	30.98
	H300-F	7300-F	8						
50 per box				1710	1710	2.11	(per box of 50)		

CUP FINISHING WASHERS

NICKEL PLATED

" O.D.)	H806-F	7806-F	45	6161-C	7806-C	$ .60	6161-M	7806-M	$4.76
O.D.)	H808-F	7808-F	45	6162-C	7808-C	.63	6162-M	7808-M	5.04
5" O.D.)	H810-F	7810-F	35	6163-C	7810-C	.71	6163-M	7810-M	5.73
" O.D.)				7812-C	7812-C	2.98	7812-M	7812-M	7.98
screws and washers	H1005-F	8005-F	30						
washers	H805-F	H805-F	40						

EXTERNAL LOCK WASHERS

ze #4				7354-C	7354-C	$ .56	7354-M	7354-M	$4.47
ze #6				7356-C	7356-C	.56	7356-M	7356-M	4.47
ze #8				7358-C	7358-C	.61	7358-M	7358-M	4.89
ze #10				7360-C	7360-C	.61	7360-M	7360-M	4.89
ze 1/4", O. D. 1/2"				7361-C	7361-C	.81	7361-M	7361-M	6.44
ze #3/8, O. D. 11/16"				7363-C	7363-C	1.21	7363-M	7363-M	9.66
	H950	H950	60						

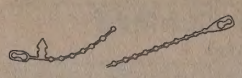
INTERNAL LOCK WASHERS

ze #2	H922-F	H922-F	35	7322-C	7322-C	$ .91	7322-M	7322-M	$7.28
ze #3				7323-C	7323-C	.79	7323-M	7323-M	6.30
ze #4	H924-F	7924-F	50	7324-C	7924-CW	.58	7324-M	7924-M	4.62
ze #6, O. D. 9/32"	H926-F	7926-F	50	7326-C	7926-CW	.56	7326-M	7926-M	4.47
ze #8, O. D. 21/64"	H928-F	7928-F	50	7328-C	7928-CW	.61	7328-M	7928-M	4.89
ze #10	H930-F	7930-F	45	7330-C	7930-CW	.61	7330-M	7930-M	4.89
ze 1/4", O. D. 15/32"				7332-C	7932-CW	.81	7332-M	7932-M	6.44
ze #5/16, O. D .19/32"				7333-C	7333-C	1.03	7333-M	7333-M	8.25
ze 3/8", O. D. 11/16"				7334-C	7935-C	1.21	7334-M	7935-M	9.66
ze 3/8", O. D. 9/16"	H938-F	7934-AF	25	7335-C	7934-C	1.60	7335-M	7934-M	12.74
ze 15/32", O. D. 19/32"				7338-C	7338-C	2.00	7338-M	7338-M	15.95
ze 5/16", O. D. .430"	7933-AF	7933-AF	20	7933-C	7933-C	1.03	7933-M	7933-M	8.30
types	H918-F	H918-F	45						
	H920-F	7920-F	50						

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

GC ELECTRONICS

ELECTRONIC HARDWARE



SNAP-IN PLASTIC CABLE TIES

Low-cost, efficient ties for binding wire and cables into a single harness. Unique design permits quick adjustment to any size bundle, insures tight fit. Rugged locking arrangement prevents loosening, yet allows easy release. Snap-in button terminals insert into ¼" chassis hole for positive hold-down. 4¼" length. Shpg. wt.: box of 100, 4 oz.; 1000, 4 lbs.

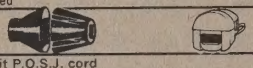
Mfr's Type	Color	Box of 100	Box of 1000	Example	
34-454	Red	1.75	1.75	34-454C	34-454M
34-456	Yellow	1.75	1.75	34-456C	34-456M
34-458	Blue	1.75	1.75	34-458C	34-458M

ADHESIVE-MOUNTED LOCKING CABLE CLAMPS

For fast, neat appearing cable installation in tight locations. Exclusive lock/release design provides positive locking, is easily released. Adhesive backing gives permanent holding on most surfaces without special surface treatment. Made of high-impact, stable PVC. Temperature range, −20° to +180°F (best adhesion from +70° to +120°F). *Cable diameter. Av. shipg. wt.: box of 100, 1 lb.; box of 1000, 10 lbs.

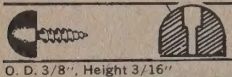
Mfr's Type	Dimensions A	B	C	D*	Pull-Off, Box of Lbs.	100	Box of 1000	Example	
34-404	1/2"	3/4"	3/8"	3/16"	8	7.70	61.57	34-404C	34-404M
34-400	1/2"	1"	13/32"	1/4"	9	8.46	67.71	34-400C	34-400M
34-396	1/2"	1"	13/32"	3/8"	9	10.00	79.97	34-396C	34-396M
34-393	1"	3/4"	3/8"	3/16"	10	11.18	89.43	34-392C	34-392M
34-387	1"	1"	13/32"	1/4"	12	12.20	97.64	34-388C	34-388M
34-383	1"	1"	21/64"	3/8"	12	14.21	113.69	34-384C	34-383M
34-380	1"	1¼"	1¼"	1/2"	14	16.38	131.01	34-380C	34-380M
34-376	1¼"	1¼"	25/32"	5/8"	16	21.19	169.53	34-376C	34-376M
34-372	1½"	1½"	59/64"	3/4"	20	34.49	243.90	34-372C	34-372M

DESCRIPTION	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
FLAT METAL WASHERS									
Screw Size #4, Hole size 1/8", O.D. 9/32", Thickness 1/32"	H874-F	7874-F	80	6154-C	7874-C	.58	6154-M	7874-M	4.62
Screw Size #6, Hole size 5/32", O.D. 3/8", Thickness 1/32"	H876-F	7876-F	80	6155-C	7876-C	.58	6155-M	7876-M	4.62
Screw Size #8, Hole size 3/16", O.D. 7/16", Thickness 1/32"	H878-F	H878-F	80	6156-C	6156-C	.63	6156-M	6156-M	5.04
Screw Size #10, Hole Size 13/64", O.D. 3/8", Thickness 1/32"	H880-F	H880-F	70	7306-C	7306-C	.60	7306-M	7306-M	4.76
Screw Size #10, Hole size, 13/64", O.D. 7/16", Thickness 1/32"	7880-F	7880-F	70	7307-C	7880-C	.60	7307-M	7880-M	4.76
Screw Size #10, Hole size 13/64", O.D. 1/2", Thickness .049"				6157-C	6157-C	.63	6157-M	6157-M	5.04
Screw Size #12, Hole size .228", O.D. 7/16", Thickness .021"				7308-C	7308-C	.60	7308-M	7308-M	4.76
Screw Size #1/4, Hole size 17/64", O.D. 5/8", Thickness 1/16"	H882-F	H882-F	50	6158-C	6158-C	.87	6158-M	6158-M	6.99
Screw Size #1/4, Hole size 11/32", O.D. 1/2", Thickness 1/16"	7882-F	7882-F	50	7311-C	7882-C	.79	7311-M	7882-M	6.30
Screw #5/16, Hole size 11/32", O.D. 11/16", Thickness 1/16"				7312-C	7312-C	.74	7312-M	7312-M	5.88
Screw Size #8, Hole size 19/64", O.D. 3/8", Thickness 1/32"	7878-F	7878-F	80	7878-C	7878-C	.63	7878-M	7878-M	5.04
Assorted	H870-F	7870-F	80						

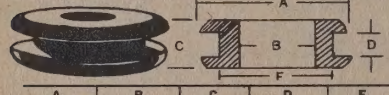


CORD STRAIN RELIEFS									
Will fit P.O.S.J. cord	H048-F	7048-F	5	6675-C	7048-C	6.70	6675-M	7048-M	53.60
Size / Use on wire type / Hole Size						Net Per Bag			
0.120" x 0.220" — SP1, SPT-1, POSJ, POT — 7/16"	1521	1521	4			.33			
.15" x .28" thru .16" x .30" — SP & SPT-2 #18/2, SP & SPT-2 #16/2 HPN-18, HPN-16 — 1/2"	1522	1522	3			.30			
.330" thru .410" — SJ, SJT & SJO #18/3 #16/2, #16/3, #18/4, #14/2 — 5/8"	1523	1523	2			.30			

RUBBER TACK BUMPERS									
3/8" O. D.	H071-F	H071-F	10	1075-C	7071-C	2.36	1075-M	7071-M	18.89

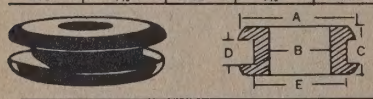


RUBBER FEET SCREW TYPE									
O. D. 3/8", Height 3/16"	H052-F	7052-F	8	1075-BC	7052-C	1.68	1075-BM	7052-M	13.43
O. D. 1/2", Height 1/4"	H054-F	7054-F	8	1075-CC	7054-C	2.22	1075-CM	7054-M	17.78
O. D. 5/8", Height 5/16"	H056-F	7056-F	8	1075-FC	7056-C	3.13	1075-FM	7056-M	25.05
O. D. 3/4", Height 3/16"				7058-C	7058-C	3.59	7058-M	7058-M	28.69
Assorted	H050-F	7050-F	8						



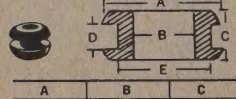
RUBBER GROMMETS

A	B	C	D	E	Catalog No.	Dealer	Distributor	Catalog No.	Dealer	Distributor
11/32"	7/64"	3/16"	1/16"	13/64"	1038-C	$1.35	$ .81	1038-M	$10.80	$6.48
11/32"	1/8"	3/16"	1/16"	13/64"	1039-C	1.50	.90	1039-M	12.00	7.20
11/32"	1/8"	3/16"	1/16"	1/4"	1041-2C	1.42	.85	1041-2M	11.34	6.80
7/32"	3/16"	7/32"	1/16"	3/16"	1041-C	1.62	.97	1041-M	12.87	7.73
1/2"	3/16"	7/32"	1/16"	3/16"	1040-C	2.25	1.35	1040-M	18.00	10.80
1/2"	1/4"	1/4"	1/16"	3/16"	5710-C	4.83	2.90	5710-M	38.62	23.17
1/2"	1/4"	1/4"	5/32"	3/16"	1044-C	2.24	1.34	1044-M	17.86	10.72
1/2"	1/4"	3/16"	1/8"	3/8"	7566-C	3.12	1.87	7566-M	24.91	14.95
5/16"	1/4"	1/4"	1/16"	3/8"	1042-C	2.12	1.27	1042-M	16.94	10.16
5/16"	5/32"	1/4"	1/16"	3/16"	1045-C	2.85	1.71	1045-M	22.80	13.68
5/8"	1/4"	3/8"	1/8"	3/8"	5720-C	4.50	2.70	5720-M	36.00	21.60
5/8"	3/16"	1/4"	1/16"	7/16"	1046-C	4.35	2.61	1046-M	34.80	20.88
5/8"	3/8"	1/4"	1/16"	1/2"	1043-C	2.42	1.45	1043-M	19.31	11.59
5/8"	3/8"	11/32"	1/16"	17/32"	1047-C	2.85	1.71	1047-M	22.80	13.68
3/4"	1/4"	11/32"	1/16"	9/16"	5721-C	3.90	2.34	5721-M	31.20	18.72
3/4"	3/4"	11/32"	3/32"	13/32"	5715-C	5.00	3.00	5715-M	40.00	24.00
3/4"	3/8"	1/2"	1/8"	17/32"	1048-C	4.95	2.97	1048-M	39.60	23.76
3/4"	7/16"	1/4"	1/16"	9/16"	5712-C	3.93	3.93	5712-M	52.34	31.42
13/16"	1/2"	3/8"	1/16"	5/8"	1043-1C	3.65	2.19	1043-1M	29.25	17.56
7/8"	9/16"	15/32"	1/16"	3/4"	5711-C	4.48	2.69	5711-M	35.83	21.50
1 1/32"	3/8"	5/16"	1/16"	13/16"	7569-C	7.31	4.39	7569-M	58.50	35.10
1 1/32"	7/16"	5/16"	1/16"	25/32"	5718-C	8.33	5.00	5718-M	66.64	39.98
1 1/32"	1/2"	5/16"	1/16"	13/16"	5719-C	7.05	4.23	5719-M	56.40	33.84
1 1/16"	1/2"	13/32"	1/8"	13/16"	5722-C	7.05	4.23	5722-M	56.40	33.84
1 1/8"	5/8"	3/8"	1/16"	7/8"	5716-C	7.28	4.37	5716-M	58.22	35.05
1 1/8"	13/16"	1/4"	3/16"	13/16"	5723-C	10.50	6.30	5723-M	84.00	50.40
1 3/16"	1 1/16"	3/8"	1/16"	1"	5717-C	14.66	8.80	5717-M	117.27	70.36
2 1/8"	1 1/16"	1 1/2"	3/16"	1 3/4"	5724-C	21.90	13.14	5724-M	175.20	105.12



VINYL GROMMETS

A	B	C	D	E	Catalog No.	Dealer	Distributor	Catalog No.	Dealer	Distributor
11/32"	1/8"	3/16"	1/16"	1/4"	7030-C	$1.16	$ .70	7030-M	$ 9.38	$5.63
7/32"	3/16"	7/32"	1/16"	3/16"	7032-C	1.28	.77	7032-M	11.55	6.93
9/32"	1/4"	1/4"	1/16"	3/8"	7034-C	1.70	1.02	7034-M	12.56	7.54
5/8"	3/8"	1/4"	1/16"	1/2"	7036-C	1.86	1.12	7036-M	13.53	8.12
13/16"	1/2"	5/32"	1/16"	5/8"	7038-C	2.91	1.75	7038-M	21.41	12.85



PURE GUM GROMMETS

A	B	C	D	E	Catalog No.	Dealer	Distributor	Catalog No.	Dealer	Distributor
3/16"	3/16"	7/32"	1/16"	3/16"	7582-C	$2.07	$1.24	7582-M	$16.52	$ 9.91
5/16"	1/4"	1/4"	1/16"	3/8"	7584-C	2.92	1.75	7584-M	23.73	14.24

Net

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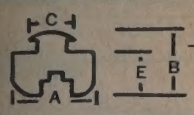
ELECTRONIC HARDWARE

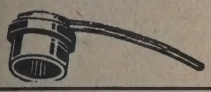


RUBBER BUTTON BUMPERS

DESCRIPTION	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
, B—7/16", C—3/16", D—5/32"				7596-C	7596-C	$1.81	7596-M	7596-M	$14.42
, B—7/16", C—1/4", D—1/4"	H058-F	H058-F	8	7597-C	7597-C	2.70	7597-M	7597-M	21.56
, B—9/16", C—3/8", D—5/16"				7598-C	7598-C	4.34	7598-M	7598-M	34.70
	7083-F	7083-F	12						

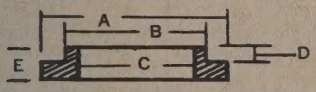
RADIO KNOB FELTS

D. x 1/4" I. D., Brown	H760-F	7760-F	40	1065-C	7760-C	$ .49	7760-M	7760-M	3.92



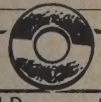
GRID CAP AND CLIPS

h Voltage Spring Grid Clips				8838-1RC	7617-C	$4.83	8838-1RM	7617-M	$38.63
h Voltage Spring Grid Clips				8838-2RC	7616-C	5.04	8838-2RM	7616-M	40.30
ulated High Voltage Grid Cap	H612-F	H612-F	1	8834-C	8834-C	31.91	8834-M	8834-M	255.26
ulated High Voltage Grid Cap	H614-F	H614-F	1	8835-C	8835-C	31.91	8835-M	8835-M	255.26



EXTRUDED FIBRE WASHERS

ze #4 ", B—13/64", C—1/8", D—1/32", E—1/16"				6524-C	6524-C	$1.12	6524-M	6524-M	$8.96
ze #6 ", B—3/16", C—9/64", D—1/32", E—1/16"				6525-C	6525-C	1.12	6525-M	6525-M	8.96
ze #8 B—1/4", C—11/64", D—1/32", E—1/16"				6526-C	6526-C	1.12	6526-M	6526-M	8.96
ze #10 ", B—1/4", C—13/64", D—1/32", E—1/16"				6527-C	6527-C	1.21	6527-M	6527-M	9.66
ze #1/4 , B—3/8", C—1/4", D—1/32", E—1/16"				6528-C	6528-C	1.21	6528-M	6528-M	9.66
ze #3/8 , B—7/16", C—3/8", D—1/32", E—1/16"	H864-F	H864-F	20	6529-C	6529-C	1.26	6529-M	6529-M	10.08
ze #6 ", B—3/16", C—9/64", D—1/32", E—3/32"				7856-C	7856-C	1.12	7856-M	7856-M	8.96
ze #10 , B—5/16", C—13/64", D—1/32", E—3/32"				7860-C	7860-C	1.21	7860-M	7860-M	9.66
ze #1/4 , B—11/32", C—1/4", D—1/32", E—3/32"				7862-C	7862-C	1.21	7862-M	7862-M	9.66
ze 3/8 , B—1/2", C—3/8", D—1/32", E—3/32"				7864-C	7864-C	1.26	7864-M	7864-M	10.08
ze #8 , B—1/2", C—3/8", D—1/32", E—3/32"				7858-C	7858-C	1.12	7858-M	7858-M	8.96
d	H855-F	H855-F	30						
d	7824-F	7824-F	30						
d									
d	7825-F	7825-F	30						
d									
d	7826-F	7826-F	30						
d									
d	7827-F	7827-F	24						
d									
d	7828-F	7828-F	20						
d									
d	H854-F	7820-F	35						



FLAT FIBRE WASHERS

ize	I.D.	O.D.	Thickness									
	.120"	1/4"	1/32"	H824-F	H824-F	30	6512-C	6512-C	$ .63	6512-M	6512-M	$5.04
	9/64"	1/4"	1/32"	H825-F	H825-F	30	6513-C	6513-C	.63	6513-M	6513-M	5.04
	11/64"	3/8"	1/32"	H826-F	H826-F	30	6514-C	7838-C	.63	6514-M	7838-M	5.04
	.196"	3/8"	1/32"	H827-F	H827-F	24	6515-C	7840-C	.63	6515-M	7840-M	5.04
"	1/4"	1/2"	3/64"	H828-F	H828-F	20	6516-C	7842-C	.68	6516-M	7842-M	5.46
"	25/64"	39/64"	3/64"				6517-C	7844-C	.99	6517-M	7844-M	7.83
5"	.440"	3/4"	1/32"				6519-C	6519-C	1.07	6519-M	6519-M	8.54
32"	15/32"	3/4"	1/32"				6518-C	6518-C	.99	6518-M	6518-M	7.83
d							7836-C	7836-C	.55	7836-M	7836-M	4.34
				H820-F	H820-F	35						

SPACERS
INSULATED

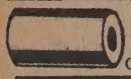
1/4"	1/4"	8	6775-C	6775-C	$6.00	6775-M	6775-M	$54.00
1/4"	3/8"	8	6776-C	6776-C	6.00	6776-M	6776-M	54.00
1/4"	1/2"	8	6777-C	6777-C	6.00	6777-M	6777-M	54.00
1/4"	3/4"	8	6778-C	6778-C	8.40	6778-M	6778-M	67.10
3/8"	1/4"	12	6779-C	6779-C	6.00	6779-M	6779-M	54.00
3/8"	1/2"	12	6780-C	6780-C	6.00	6780-M	6780-M	54.00
3/8"	3/4"	12	6781-C	6781-C	6.00	6781-M	6781-M	54.00

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

GC ELECTRONICS

ELECTRONIC HARDWARE

SPACERS
ALUMINUM — ROUND TAPPED HOLE

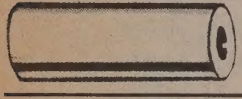


DESCRIPTION AND SPECIFICATIONS			GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.
O.D.	Length	For Screw size								
.250"	1.000"	6-32				13-700-C	13-700-C	18.00	13-700-M	13-700-M
.250"	1.500"	6-32				13-704-C	13-704-C	20.25	13-704-M	13-704-M
.250"	2.000"	6-32				13-708-C	13-708-C	21.75	13-708-M	13-708-M
.250"	2.500"	6-32				13-712-C	13-712-C	24.00	13-712-M	13-712-M

SPACERS
CADMIUM PLATED BRASS — ROUND NON-THREADED

1/4"	1/4"	4				13-500-C	13-500-C	3.30	13-500-M	13-500-M
1/4"	3/8"	4				13-502-C	13-502-C	4.35	13-502-M	13-502-M
1/4"	1/2"	4				13-504-C	13-504-C	5.28	13-504-M	13-504-M
1/4"	3/4"	4				13-506-C	13-506-C	6.30	13-506-M	13-506-M
1/4"	1"	4				13-508-C	13-508-C	7.20	13-508-M	13-508-M
1/4"	1/4"	6				13-516-C	13-516-C	3.30	13-516-M	13-516-M
1/4"	3/8"	6				13-518-C	13-518-C	4.35	13-518-M	13-518-M
1/4"	1/2"	6				13-520-C	13-520-C	5.28	13-520-M	13-520-M
1/4"	3/4"	6				13-522-C	13-522-C	6.30	13-522-M	13-522-M
1/4"	1"	6				13-524-C	13-524-C	7.20	13-524-M	13-524-M
1/4"	1/4"	8				13-532-C	13-532-C	3.30	13-532-M	13-532-M
1/4"	3/8"	8				13-534-C	13-534-C	4.35	13-534-M	13-534-M
1/4"	1/2"	8				13-536-C	13-536-C	5.28	13-536-M	13-536-M
1/4"	3/4"	8				13-538-C	13-538-C	6.30	13-538-M	13-538-M
1/4"	1"	8				13-540-C	13-540-C	7.20	13-540-M	13-540-M
3/8"	1/4"	10				6769-C	6769-C	7.00	6769-M	6769-M
3/8"	1/2"	10				6770-C	6770-C	8.00	6770-M	6770-M
3/8"	3/4"	10				6771-C	6771-C	10.00	6771-M	6771-M

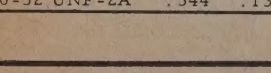
SPACERS
CADMIUM PLATED BRASS — ROUND THREADED



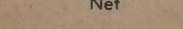
1/4"	1/4"	4-40				13-600-C	13-600-C	3.90	13-600-M	13-600-M
1/4"	3/8"	4-40				13-602-C	13-602-C	4.95	13-602-M	13-602-M
1/4"	1/2"	4-40				13-604-C	13-604-C	6.00	13-604-M	13-604-M
1/4"	3/4"	4-40				13-606-C	13-606-C	8.40	13-606-M	13-606-M
1/4"	1"	4-40				13-608-C	13-608-C	10.40	13-608-M	13-608-M
1/4"	1/4"	6-32				13-616-C	13-616-C	3.90	13-616-M	13-616-M
1/4"	3/8"	6-32				13-618-C	13-618-C	4.95	13-618-M	13-618-M
1/4"	1/2"	6-32				13-620-C	13-620-C	6.00	13-620-M	13-620-M
1/4"	3/4"	6-32				13-622-C	13-622-C	8.40	13-622-M	13-622-M
1/4"	1"	6-32				13-624-C	13-624-C	10.40	13-624-M	13-624-M
1/4"	1/4"	8-32				13-632-C	13-632-C	3.90	13-632-M	13-632-M
1/4"	3/8"	8-32				13-634-C	13-634-C	4.95	13-634-M	13-634-M
1/4"	1/2"	8-32				13-636-C	13-636-C	6.00	13-636-M	13-636-M
1/4"	3/4"	8-32				13-638-C	13-638-C	8.40	13-638-M	13-638-M
1/4"	1"	8-32				13-640-C	13-640-C	10.40	13-640-M	13-640-M

SPACERS
ASSORTED METAL AND INSULATING

Assorted Metal Spacers	7620-F		12	
Assorted Insulating Spacers	7630-F		12	



NYLON ROUND HEAD MACHINE SCREWS



	A	H	J	T	L					
2-56 UNC-2A	.156	.064	.027	.043	1/4"	9900-C		3.69	9900-M	
2-56 UNC-2A	.156	.064	.027	.043	1/2"	9901-C		3.69	9901-M	
4-40 UNC-2A	.203	.081	.035	.050	1/4"	9902-C		3.69	9902-M	
4-40 UNC-2A	.203	.081	.035	.050	1/2"	9903-C		3.69	9903-M	
4-40 UNC-2A	.203	.081	.035	.050	3/4"	9904-C		3.79	9904-M	
6-32 UNC-2A	.250	.097	.044	.060	1/4"	9905-C		3.69	9905-M	
6-32 UNC-2A	.250	.097	.044	.060	3/8"	9906-C		3.79	9906-M	
6-32 UNC-2A	.250	.097	.044	.060	1/2"	9907-C		3.79	9907-M	
6-32 UNC-2A	.250	.097	.044	.060	5/8"	9908-C		3.79	9908-M	
6-32 UNC-2A	.250	.097	.044	.060	3/4"	9909-C		3.79	9909-M	
8-32 UNC-2A	.297	.113	.050	.068	3/8"	9910-C		3.86	9910-M	
8-32 UNC-2A	.297	.113	.050	.068	1/2"	9911-C		3.86	9911-M	
8-32 UNC-2A	.297	.113	.050	.068	3/4"	9912-C		3.86	9912-M	
10-32 UNF-2A	.344	.130	.055	.070	1/2"	9913-C		3.86	9913-M	
10-32 UNF-2A	.344	.130	.055	.070	1"	9914-C		4.02	9914-M	

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

Net

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NYLON BINDING HEAD MACHINE SCREWS

DESCRIPTION	A	H	F	J	T	L	GC Part No.	Old Walsco Part No.	QTY. IN Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
NC-2A	.176	.028	.013	.027	.027	1/4"				9915-C		3.69	9915-M		33.30
NC-2A	.176	.028	.013	.027	.027	1/2"				9916-C		3.69	9916-M		33.30
NC-2A	.229	.039	.021	.035	.038	1/4"				9917-C		3.69	9917-M		33.30
NC-2A	.229	.039	.021	.035	.038	1/2"				9918-C		3.69	9918-M		33.30
NC-2A	.229	.039	.021	.035	.038	3/4"				9919-C		3.79	9919-M		34.50
NC-2A	.280	.047	.028	.044	.049	1/4"				9920-C		3.69	9920-M		33.30
NC-2A	.280	.047	.028	.044	.049	3/8"				9921-C		3.79	9921-M		34.50
NC-2A	.280	.047	.028	.044	.049	1/2"				9922-C		3.79	9922-M		34.50
NC-2A	.280	.047	.028	.044	.049	5/8"				9923-C		3.79	9923-M		34.50
NC-2A	.280	.047	.028	.044	.049	3/4"				9924-C		3.79	9924-M		34.50
NC-2A	.337	.058	.034	.050	.060	3/8"				9925-C		3.86	9925-M		35.30
NC-2A	.337	.058	.034	.050	.060	1/2"				9926-C		3.86	9926-M		35.30
NC-2A	.337	.058	.034	.050	.060	3/4"				9927-C		3.86	9927-M		35.30
UNF-2A	.383	.068	.040	.055	.070	1/2"				9928-C		3.86	9928-M		35.30
UNF-2A	.383	.068	.040	.055	.070	1"				9929-C		4.02	9929-M		37.30

NYLON FLAT HEAD MACHINE SCREWS

	A	H	J	T	D	L	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
NC-2A	.217	.062	.035	.025	81°	1/2"	9945-C		3.69	9945-M		33.30
NC-2A	.267	.078	.044	.030	81°	3/8"	9946-C		3.79	9946-M		34.50
NC-2A	.267	.078	.044	.030	81°	1/2"	9947-C		3.79	9947-M		34.50
NC-2A	.267	.078	.044	.030	81°	5/8"	9948-C		3.79	9948-M		34.50
NC-2A	.318	.094	.050	.037	81°	1/2"	9949-C		3.86	9949-M		35.30
NC-2A	.318	.094	.050	.037	81°	3/4"	9950-C		3.86	9950-M		35.30
NF-2A	.369	.108	.055	.045	81°	1/2"	9951-C		4.01	9951-M		37.30
NF-2A	.369	.108	.055	.045	81°	1"	9952-C		4.31	9952-M		40.00

NYLON FILLISTER HEAD MACHINE SCREWS

	A	H	F	J	T	L	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
NC-2A	.132	.058	.016	.027	.031	1/4"	9930-C		3.69	9930-M		33.30
NC-2A	.132	.058	.016	.027	.031	1/2"	9931-C		3.69	9931-M		33.30
NC-2A	.176	.074	.024	.035	.040	1/4"	9932-C		3.69	9932-M		33.30
NC-2A	.176	.074	.024	.035	.040	1/2"	9933-C		3.69	9933-M		33.30
NC-2A	.176	.074	.024	.035	.040	3/4"	9934-C		3.79	9934-M		34.50
NC-2A	.218	.091	.030	.044	.055	1/4"	9935-C		3.69	9935-M		33.30
NC-2A	.218	.091	.030	.044	.055	3/8"	9936-C		3.79	9936-M		34.50
NC-2A	.218	.091	.030	.044	.055	1/2"	9937-C		3.79	9937-M		34.50
NC-2A	.218	.091	.030	.044	.055	5/8"	9938-C		3.79	9938-M		34.50
NC-2A	.218	.091	.030	.044	.055	3/4"	9939-C		3.79	9939-M		34.50
NC-2A	.260	.108	.035	.050	.060	3/8"	9940-C		3.86	9940-M		35.30
NC-2A	.260	.108	.035	.050	.060	1/2"	9941-C		3.86	9941-M		35.30
NC-2A	.260	.108	.035	.050	.060	3/4"	9942-C		3.86	9942-M		35.30
UNF-2A	.302	.124	.042	.055	.070	1/2"	9943-C		3.86	9943-M		35.30
UNF-2A	.302	.124	.042	.055	.070	1"	9944-C		4.02	9944-M		37.30

NYLON HEX NUTS

A	B				GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
3/16"	1/16"				9953-C		$6.13	9953-M		$57.12
1/4"	3/32"				9954-C		6.26	9954-M		58.07
5/16"	7/64"				9955-C		6.37	9955-M		59.33
14/32"	1/8"				9956-C		6.49	9956-M		60.36
3/8"	1/8"				9957-C		6.57	9957-M		61.32

NYLON WASHERS

A	B	C				GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000
.120	8/32"	.050				9958-C		$ .70	9958-M		$ 6.51
.150	5/16"	.050				9959-C		.78	9959-M		6.13
.170	3/8"	.050				9960-C		1.04	9960-M		9.45
.195	7/16"	.060				9961-C		1.20	9961-M		11.03

CRIPTION AND SPECIFICATIONS	GC Part No.	QTY. IN Box	Net Per Box	GC Part No.	Old Walsco Part No.	Net Per 100	GC Part No.	Old Walsco Part No.	Net Per 1000

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

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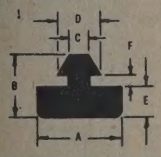
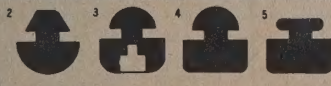
WRITE FOR CATALOG

All items except MS-35489 Grommets are molded of natural and synthetic rubber compounds or reclaimed rubber in combination or blends thereof. All series are listed in ascending order of diameter and height.

GROMMETS

Part No.	A O.D.	B I.D.	C Height	D Groove Width	E Groove Diam.	Per 100 100/999	Per 100 1000/4999
GOB-2101	1/4	1/8	1/8	1/32	3/16	$1.95	$1.56
GOB-2104	11/32	7/64	3/16	1/16	13/64	1.35	1.08
GOB-2105	11/32	1/8	3/16	1/16	3/16	1.50	1.20
GOB-210	11/32	1/8	3/16	1/16	1/4	2.70	2.16
GOB-2158	13/32	3/16	13/64	1/16	3/16	1.80	1.44
GOB-2157	7/16	1/8	7/32	1/16	5/16	1.95	1.56
GOB-2156	7/16	3/16	7/32	1/32	3/16	1.95	1.56
GOB-215	7/16	3/16	7/32	1/16	5/16	1.80	1.44
GOB-415	7/16	3/16	1/4	3/32	3/16	1.95	1.56
GOB-2160	7/16	7/32	3/16	1/16	5/16	1.80	1.44
GOB-2161	7/16	13/64	3/32	1/32	21/64	1.80	1.44
GOB-2153	15/32	9/64	1/4	1/16	3/16	2.10	1.68
GOB-2151	15/32	9/64	9/32	3/32	3/16	1.80	1.44
GOB-2154	15/32	7/32	1/8	1/32	5/16	1.80	1.44
GOB-2174	1/2	3/32	3/16	1/16	3/8	2.70	2.16
GOB-2171	1/2	3/16	3/16	3/32	3/8	2.10	1.68
GOB-2173	1/2	3/16	7/32	1/16	5/16	2.25	1.80
GOB-217	1/2	3/16	7/32	1/16	3/8	2.25	1.80
GOB-2172	1/2	1/4	7/32	1/32	3/16	2.25	1.80
GOB-2191	17/32	7/32	25/64	3/64	11/32	2.85	2.28
GOB-219	17/32	7/32	13/32	3/32	11/32	2.85	2.28
GOB-2201	9/16	3/16	3/8	1/8	7/16	2.85	2.28
GOB-220	9/16	1/4	1/4	1/16	3/8	2.40	1.92
GOB-221	9/16	9/32	1/4	1/16	3/8	2.40	1.92
GOB-2211	9/16	9/32	1/4	1/16	13/32	2.85	2.28
GOB-321	9/16	7/32	3/16	1/8	3/8	2.85	2.28
GOB-523	19/32	1/4	11/64	3/64	13/32	2.85	2.28
GOB-324	19/32	3/16	3/8	1/8	7/16	2.85	2.28
GOB-3241	19/32	3/16	11/32	3/32	7/16	2.85	2.28
GOB-2253	5/8	7/32	1/4	3/64	7/16	4.35	3.48
GOB-2254	5/8	7/32	11/64	3/64	7/16	3.15	2.52
GOB-2260	5/8	1/4	9/32	1/16	3/8	3.75	3.00
GOB-2251	5/8	1/4	11/32	1/16	3/8	4.50	3.60
GOB-3251	5/8	1/4	3/8	1/8	3/8	4.50	3.60
GOB-2257	5/8	1/4	17/32	9/32	1/2	4.50	3.60
GOB-2255	5/8	17/64	3/16	1/16	7/16	3.90	3.12
GOB-2352	5/8	5/16	7/32	1/32	7/16	2.85	2.28
GOB-2252	5/8	5/16	1/4	1/16	7/16	3.60	2.88
GOB-225	5/8	3/8	1/4	1/16	3/8	2.85	2.28
GOB-2258	5/8	3/8	11/32	1/16	17/32	2.85	2.28
GOB-226	23/32	21/64	5/16	1/16	7/16	3.75	3.00
GOB-2261	3/4	1/4	11/64	1/16	9/16	3.90	3.12
GOB-3262	3/4	5/16	7/16	1/16	17/32	8.25	6.60
GOB-3261	3/4	5/16	7/16	3/16	17/32	5.10	4.08
GOB-1101-1	3/4	3/8	1/2	1/8	17/32	4.95	3.96
GOB-1101	3/4	7/16	1/4	1/16	9/16	4.05	3.24
GOB-230	13/16	1/2	9/32	1/16	5/8	4.80	3.84
GOB-2274	7/8	5/16	5/16	1/16	5/8	6.00	4.80
GOB-2272	7/8	5/16	11/32	3/32	11/16	6.00	4.80
GOB-2271	7/8	3/8	5/16	1/16	5/8	6.30	5.05
GOB-1102-5	1 1/16	5/16	1/2	3/32	3/4	8.70	6.96
GOB-1102	1 1/16	1/2	5/16	1/16	13/16	7.05	5.64
GOB-1102-2	1 1/16	1/2	11/32	1/8	13/16	7.05	5.64
GOB-2301	1 1/16	11/16	1/4	1/16	13/16	10.20	8.16
GOB-1103	1 1/8	5/8	5/16	1/16	7/8	10.50	8.40
GOB-1105	1 1/8	13/16	1/4	3/64	15/16	10.50	8.40
GOB-1104	2 1/8	1 1/2	5/16	1/16	1 3/4	21.90	17.52





BUTTON BUMPERS

Part No.	A Max. Diam.	B Hgt.	C Insert Head	D Insert Head Base	E Base Hgt.	F Channel Width	PRICES Per 100 100/999 Black	PRICES Per 100 100/999 White	PRICES Per 100 1000/4999 Black	PRICES Per 100 1000/4999 White
FIG. 1										
BUT-3169	3/8	1/4	1/4	5/16	1/16	.070	$1.20	$1.35	$ .96	$1.08
BUT-3062	3/8	1/4	1/4	5/16	7/32	3/64	1.05	1.35	.84	1.08
BUT-3061	3/8	5/32	3/16	1/4	1/8	3/64	1.05	1.35	.84	1.08
BUT-4061	3/8	3/16	3/16	1/4	1/8	1/16	1.05	1.35	.84	1.08
BUT-4062	3/8	3/16	1/4	5/16	1/8	1/16	1.20	1.50	.96	1.20
BUT-4161	3/8	11/32	3/16	1/4	1/8	3/32	1.05	1.35	.84	1.08
BUT-4163	3/8	3/8	13/64	11/32	3/16	1/32	1.65	1.95	1.32	1.56
BUT-3168	3/8	15/32	13/64	13/64	7/32	1/16	1.50	1.65	1.20	1.32
BUT-3063	7/16	1/2	1/4	5/16	7/16	3/64	1.20	1.50	.96	1.20
BUT-3072	1/2	21/64	5/32	3/8	1/8	3/64	1.50	1.95	1.20	1.56
BUT-4071	1/2	3/8	3/16	1/4	1/8	1/16	1.65	1.95	1.32	1.56
BUT-4078	1/2	13/32	1/4	3/8	1/8	1/16	1.80	1.95	1.44	1.56
BUT-4167	1/2	27/64	5/32	13/32	1/4	3/64	1.65	1.95	1.32	1.56
BUT-4171	1/2	7/16	3/16	1/4	3/16	1/16	1.65	1.95	1.32	1.56
BUT-4176	1/2	7/16	1/4	5/16	3/16	3/64	1.50	1.80	1.20	1.44
BUT-4165	1/2	7/16	1/4	5/16	13/64	1/16	1.80	2.10	1.44	1.68
BUT-4075	1/2	9/16	13/64	1/4	5/16	1/16	1.95	2.40	1.56	1.96
BUT-4081	9/16	1/4	5/32	3/8	1/16	1/16	1.80	2.25	1.44	1.80
BUT-4082	5/8	15/32	3/16	1/4	1/4	.025	2.70	3.60	2.16	2.80
BUT-1160	3/4	1/2	.480	5/16	1/8	.050	2.70	3.75	2.16	3.00
BUT-1161	3/4	9/16	.480	27/64	3/16	.050	2.70	3.75	2.16	3.00
BUT-611	7/8	1/2	5/16	13/32	1/4	5/64	3.75	4.65	3.00	3.72
FIG. 2										
BUT-4076	1/2	7/16	1/4	5/16	3/16	1/16	1.50	1.80	1.20	1.44
BUT-3167	5/16	9/16	3/16	1/4	7/32	1/32	1.65	—	1.32	—
BUT-3064	7/16	13/64	13/64	13/64	3/32	3/64	1.35	1.50	1.08	1.20
BUT-3065	7/16	11/32	1/4	5/16	1/8	1/16	1.35	1.50	1.08	1.20
BUT-6112	13/16	11/32	1/4	5/16	5/32	1/16	3.15	—	2.52	—
FIG. 3										
BUT-306	3/8	3/8	3/16	17/64	3/16	.040	1.50	1.65	1.20	1.32
BUT-307	1/2	7/16	1/4	11/32	1/4	.040	1.80	2.55	1.44	2.04
BUT-407	1/2	7/16	1/4	11/32	1/4	1/16	1.65	2.55	1.32	2.04
BUT-317	1/2	1/2	1/4	11/32	1/4	3/8	1.80	2.55	1.44	2.04
BUT-408	5/8	7/16	3/8	13/32	5/16	1/16	3.75	4.05	3.00	3.24

BUTTON BUMPERS (Continued)

Part No.	A Max. Diam.	B Hgt.	C Insert Head	D Insert Head Base	E Base Hgt.	F Channel Width	PRICES Per 100 100/999 Black	PRICES Per 100 100/999 White	PRICES Per 100 1000/4999 Black	PRICES Per 100 1000/4999 White
FIG. 4										
BUT-4068	7/16	17/64	3/16	1/4	3/32	3/64	1.20	1.50	1.96	1.20
BUT-3263	7/16	7/16	1/4	5/16	3/16	1/8	1.50	1.80	1.20	1.44
BUT-4166	7/16	21/32	1/4	11/32	1/2	1/32	3.15	3.75	2.52	3.00
FIG. 5										
BUT-4083	5/8	3/32	13/32	17/32	1/8	3/32	2.55	3.30	2.04	2.64

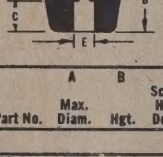
MS-35489 GROMMETS

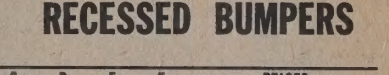
ARMY-NAVY APPROVED AN 931 (Military Standard)

SPECIFICATION: MIL-G-3036

GROMMET, ELASTIC, HOT-OIL AND COOLANT RESISTANT MATERIAL

MS #	AN 931 #	I.D.	O.D. Groove	O.D.	Width Groove	Thickness	Per 100 100/0100	Per 100 above 1000
MS-35489-1	AN 931-3-5	3/16	5/16	7/16	1/16	3/16	$6.30	$5.04
MS-35489-6	AN 931-4-7	1/4	7/16	5/8	1/16	3/16	7.20	5.76
MS-35489-9	AN 931-5-9	5/16	9/16	13/16	1/16	3/16	11.25	9.00
MS-35489-11	AN 931-6-10	3/8	5/8	7/8	1/16	3/16	11.25	9.00
MS-35489-13	AN 931-7-11	7/16	11/16	15/16	1/16	3/16	15.30	12.24
MS-35489-14	AN 931-8-13	1/2	13/16	1 1/16	1/16	3/16	16.65	13.32
MS-35489-17	AN 931-10-14	5/8	7/8	1 1/8	1/16	3/16	16.65	13.32
MS-35489-19	AN 931-11-16	11/16	1	1 3/16	1/16	3/16	21.15	16.92
MS-35489-20	AN 931-12-17	3/4	1 1/16	1 3/8	1/16	3/16	23.85	19.08
MS-35489-22	AN 931-14-20	7/8	1 1/4	1 5/8	1/16	3/16	33.75	27.00
MS-35489-23	AN 931-16-22	1	1 3/8	1 3/4	1/16	3/16	41.40	33.12
MS-35489-35	AN 931-A4-7	1/4	7/16	5/8	1/8	3/16	8.10	6.48
MS-35489-40	AN 931-A6-10	3/8	5/8	7/8	1/8	3/16	12.60	10.08
MS-35489-42	AN 931-A7-11	7/16	11/16	15/16	1/8	3/16	16.65	13.32
MS-35489-43	AN 931-A8-13	1/2	13/16	1 1/16	1/8	3/16	18.45	14.76
MS-35489-49	AN 931-A12-17	3/4	1 1/16	1 3/8	1/8	3/8	26.10	20.88



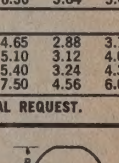


RECESSED BUMPERS

Part No.	A Max. Diam.	B Hgt.	C Screw Head Depth	D Screw Shaft Depth	E Screw Base Opening	F Screw Shaft Width	PRICES Per 100 100/999 Black	PRICES Per 100 100/999 White	PRICES Per 100 1000/4999 Black	PRICES Per 100 1000/4999 White
FIG. 1										
REC-2062	3/8	1/4	3/16	1/16	1/4	5/32	$1.80	$2.40	$1.44	$1.92
REC-2082	5/8	1/2	1/4	1/4	5/16	5/32	2.10	2.70	1.68	2.16
REC-2082S	5/8	1/2	1/4	1/4	5/16	3/32	3.60	4.50	2.90	3.60
REC-2084S	3/4	3/8	7/16	3/16	7/16	7/32	6.75	9.30	5.40	7.44
REC-2096S	15/16	5/8	7/16	3/16	7/16	7/32	9.60	12.00	7.68	9.60
FIG. 2										
REC-206	3/8	3/16	3/16	3/32	3/16	3/64	.90	1.20	.72	.96
REC-2061	7/16	5/32	3/32	1/16	1/4	3/32	1.35	1.65	1.08	1.32
REC-2061S	7/16	5/32	3/32	1/16	1/4	3/32	3.45	4.05	2.76	3.24
REC-207	1/2	1/4	1/8	1/8	1/4	1/8	1.50	1.80	1.20	1.44
REC-207S	1/2	1/4	1/8	1/8	1/4	1/8	2.55	3.00	2.04	2.40
REC-2081	5/8	5/16	3/16	1/8	1/4	3/16	1.95	2.70	1.56	2.16
REC-2081S	5/8	5/16	3/16	1/8	1/4	3/16	3.45	4.20	2.76	3.36
REC-2088	5/8	5/16	3/16	1/8	1/4	1/8	1.95	2.70	1.56	2.16
REC-2085	3/4	3/8	3/16	3/16	5/16	5/32	3.00	—	2.40	—
REC-2085S	3/4	3/8	3/16	3/16	5/16	5/32	4.80	6.15	3.84	4.92
REC-209	13/16	1/2	1/4	1/4	5/16	5/32	3.75	5.10	3.00	4.08
REC-209S	13/16	1/2	1/4	1/4	5/16	5/32	6.15	7.35	4.92	5.88
REC-2097	1	1	5/8	3/8	5/16	5/32	7.65	10.50	6.12	8.40
REC-2097S	1	1	5/8	3/8	5/16	5/32	9.90	12.60	7.92	10.08
REC-2099S	1	1 1/2	5/8	7/8	5/16	5/32	14.75	17.10	11.76	13.68
FIG. 3										
REC-2195	13/16	1/4	1/8	1/8	1/2	1/4	4.80	6.30	3.84	5.04
FIG. 4										
REC-2087	3/4	3/32	5/32	1/8	1/4	1/8	3.60	4.65	2.88	3.72
REC-2196	13/16	11/32	3/16	5/32	3/8	3/16	3.90	5.10	3.12	4.08
REC-2095S	13/16	3/8	3/16	3/16	3/8	5/32	4.05	5.40	3.24	4.32
REC-2197S	1	1/2	1/4	1/4	3/8	3/16	5.70	7.50	4.56	6.00

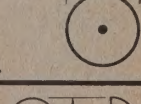
RECESSED BUMPERS AVAILABLE IN WHITE ON SPECIAL REQUEST.

TACK BUMPERS



PART NO.	A O.D.	B HEIGHT	C TACK LENGTH	NOMINAL DURO-METER
TAC-37	3/8	7/32	3/8	75
TAC-50	1/2	1/4	5/8	75
TAC-62	5/8	5/16	7/16	75
TAC-75	3/4	3/8	3/8	75
TAC-87	7/8	1/2	11/32	75

MACHINE BUMPERS



PART NO.	A O.D.	B HEIGHT	C SCREW LENGTH	SCREW SIZE	NOMINAL DURO-METER
MAC-51	1/2	1/4	1/4	8-32	75
MAC-62	5/8	3/16	1/4	8-32	75
MAC-75	3/4	3/8	1/4	8-32	75
MAC-87	7/8	1/2	1/2	10-32	75
MAC-100	1	1/2	1/2	10-32	75
MAC-112	1 1/8	1/2	1/2	10-32	75

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All packages are .59 Net. Quantity varies with item. (See listings.)

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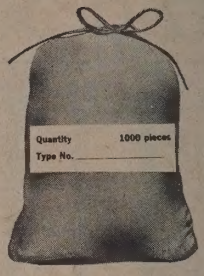
All packages contain 100 pieces each, unless shown otherwise. Price varies with item. (See listings.)



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Offers greatest economy. Each bag contains 1000 pieces. Price varies with item. (See listings.)

HOW TO ORDER: Simply use correct PART NO. for quantity desired.

ROUND HEAD STEEL MACHINE SCREWS Nickel Plated	SHOW OFF .59 per Pkg.		BLUE LINE Pkg. of 100		BULK PACK Bag of 1000		
	Part No.	Quan.	Part No.	Per Pkg.	Part No.	1-4 Per Bag	5-9 Per Bag
2-56 x 1/8"	KF-579	60	F-579-C	.74	F-579-M	5.40	4.15
2-56 x 1/4"	KF-461	60	F-461-C	.55	F-461-M	4.10	3.10
2-56 x 1/2"	KF-462	60	F-462-C	.58	F-462-M	4.45	3.40
2-56 x 3/4"	KF-463	60	F-463-C	.67	F-463-M	5.15	3.95
3-48 x 3/4"	KF-464	60	F-464-C	.67	F-464-M	5.15	3.95
4-36 x 1/4"	KF-465	60	F-465-C	.58	F-465-M	4.45	3.40
4-36 x 3/8"	KF-466	50	F-466-C	.60	F-466-M	4.65	3.55
4-36 x 1/2"	KF-467	50	F-467-C	.62	F-467-M	4.85	3.70
4-36 x 5/8"	KF-580	50	F-580-C	.66	F-580-M	5.20	4.10
4-36 x 3/4"	KF-468	50	F-468-C	.74	F-468-M	5.80	4.40
4-40 x 1/4"	KF-469	50	F-469-C	.58	F-469-M	4.45	3.40
4-40 x 3/8"	KF-581	50	F-581-C	.60	F-581-M	4.65	3.55
4-40 x 1/2"	KF-470	50	F-470-C	.62	F-470-M	4.85	3.70
4-40 x 5/8"	KF-582	50	F-582-C	.66	F-582-M	5.25	4.00
4-40 x 3/4"	KF-471	50	F-471-C	.74	F-471-M	5.30	4.40
6-32 x 1/4"	KF-472	50	F-472-C	.61	F-472-M	4.95	3.75
6-32 x 3/8"	KF-583	45	F-583-C	.66	F-583-M	5.20	3.95
6-32 x 1/2"	KF-473	45	F-473-C	.71	F-473-M	5.65	4.35
6-32 x 5/8"	KF-584	45	F-584-C	.79	F-584-M	6.25	4.80
6-32 x 3/4"	KF-474	45	F-474-C	.83	F-474-M	6.75	5.20
6-32 x 1"	KF-475	45	F-475-C	.96	F-475-M	7.65	5.90
6-32 x 1-1/4"	KF-476	45	F-476-C	1.16	F-476-M	9.30	7.10
6-32 x 2"	KF-477	30	F-477-C	1.73	F-477-M	13.90	10.60
8-32 x 1/4"	KF-478	45	F-478-C	.81	F-478-M	6.45	4.95
8-32 x 3/8"	KF-479	35	F-479-C	.90	F-479-M	7.10	5.40
8-32 x 1/2"	KF-480	35	F-480-C	.95	F-480-M	7.55	5.80
8-32 x 5/8"	KF-585	35	F-585-C	1.01	F-585-M	8.05	6.15
8-32 x 3/4"	KF-481	35	F-481-C	1.07	F-481-M	8.50	6.50
8-32 x 1"	KF-482	30	F-482-C	1.24	F-482-M	9.80	7.50
8-32 x 1-1/4"	KF-483	30	F-483-C	1.42	F-483-M	11.50	8.75
10-32 x 1/2"	KF-484	30	F-484-C	1.10	F-484-M	8.70	6.65
10-32 x 5/8"	KF-586	30	F-586-C	1.19	F-586-M	9.45	7.25
10-32 x 3/4"	KF-485	30	F-485-C	1.29	F-485-M	10.40	7.95
10-32 x 1"	KF-486	25	F-486-C	1.45	F-486-M	11.45	8.75
10-32 x 1-1/2"	KF-487	20	F-487-C	1.91	F-487-M	15.15	11.55
12-24 x 3/4"			F-587-C	1.72	F-587-M	14.10	10.75
12-24 x 1"			F-588-C	2.00	F-588-M	16.85	12.85
12-24 x 1-1/2"			F-589-C	2.66	F-589-M	21.90	16.65
12-24 x 2"			F-590-C	3.13	F-590-M	25.65	19.60
1/4-20 x 1/2"			F-488-C	2.09	F-488-M	17.10	13.05
1/4-20 x 3/4"			F-489-C	2.38	F-489-M	19.55	14.85
1/4-20 x 1"			F-490-C	2.72	F-490-M	22.25	16.95
1/4-20 x 1-1/4"			F-491-C	3.09	F-491-M	25.30	19.25
1/4-20 x 1-3/4"			F-492-C	3.74	F-492-M	30.70	23.40

ROUND HEAD BRASS MACHINE SCREWS Nickel Plated	SHOW OFF .59 per Pkg.		BLUE LINE Pkg. of 100		BULK PACK Bag of 1000	
	Part No.	Quan.	Part No.	Per Pkg.	Part No.	1-4 Per Bag
2-56 x 1/4"			F-461B-C	.81	F-461B-M	6.35
2-56 x 1/2"			F-462B-C	.92	F-462B-M	7.45
2-56 x 3/4"			F-463B-C	1.07	F-463B-M	8.80
3-48 x 3/4"			F-464B-C	1.22	F-464B-M	9.90
4-36 x 1/4"			F-465B-C	.92	F-465B-M	7.45
4-36 x 3/8"			F-466B-C	1.18	F-466B-M	9.35
4-36 x 1/2"			F-467B-C	1.29	F-467B-M	9.65
4-36 x 5/8"			F-580B-C	1.39	F-580B-M	10.40
4-36 x 3/4"			F-468B-C	1.47	F-468B-M	11.35
4-40 x 1/4"			F-469B-C	.92	F-469B-M	7.45
4-40 x 1/2"			F-470B-C	1.18	F-470B-M	9.35
4-40 x 5/8"			F-582B-C	1.39	F-582B-M	10.40
4-40 x 3/4"			F-471B-C	1.47	F-471B-M	11.35
6-32 x 1/4"			F-472B-C	1.25	F-472B-M	10.00
6-32 x 3/8"			F-583B-C	1.33	F-583B-M	10.65
6-32 x 1/2"			F-473B-C	1.50	F-473B-M	11.95
6-32 x 5/8"			F-584B-C	1.74	F-584B-M	13.25
6-32 x 3/4"			F-474B-C	1.83	F-474B-M	14.75
6-32 x 1"			F-475B-C	2.17	F-475B-M	17.35
6-32 x 1-1/4"			F-476B-C	2.52	F-476B-M	20.60
6-32 x 2"			F-477B-C	4.25	F-477B-M	33.95
8-32 x 1/4"			F-478B-C	1.95	F-478B-M	15.15
8-32 x 3/8"			F-479B-C	2.00	F-479B-M	15.50
8-32 x 1/2"			F-480B-C	2.22	F-480B-M	17.75
8-32 x 5/8"			F-585B-C	2.58	F-585B-M	20.05
8-32 x 3/4"			F-481B-C	2.72	F-481B-M	21.70
8-32 x 1"			F-482B-C	3.23	F-482B-M	25.85
8-32 x 1-1/4"			F-483B-C	3.79	F-483B-M	30.35
10-32 x 1/2"			F-484B-C	2.80	F-484B-M	22.50
10-32 x 5/8"			F-586B-C	3.12	F-586B-M	25.05
10-32 x 3/4"			F-485B-C	3.41	F-485B-M	27.20
10-32 x 1"			F-486B-C	4.06	F-486B-M	32.45
OVAL HEAD STEEL MACHINE SCREWS Nickel Plated						
6-32 x 1/2"	KF-506	45	F-506-C	.71	F-506-M	5.65
6-32 x 3/4"	KF-507	45	F-507-C	.83	F-507-M	6.75
8-32 x 3/4"	KF-508	35	F-508-C	1.07	F-508-M	8.50
10-32 x 1/2"	KF-509	30	F-509-C	1.10	F-509-M	8.70
10-32 x 3/4"	KF-510	30	F-510-C	1.29	F-510-M	10.40

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HARDWARE AND FASTENING DEVICES

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PACKAGED HARDWARE (Continued)

ER HEAD MACHINE REWS l Plated	SHOW OFF .59 per Pkg.		BLUE LINE Pkg. of 100		BULK PACK Bag of 1000		
	Part No.	Quan.	Part No.	Per Pkg.	Part No.	1-4 Per Bag	5-9 Per Bag
1/8"	KF-591	60	F-591-C	.74	F-591-M	5.40	4.15
1/4"	KF-592	60	F-592-C	.55	F-592-M	4.10	3.10
1/2"	KF-593	60	F-593-C	.58	F-593-M	4.45	3.40
5/8"	KF-594	60	F-594-C	.67	F-594-M	5.10	3.90
1/4"	KF-020	50	F-020-C	.58	F-020-M	4.45	3.40
1/2"	KF-021	50	F-021-C	.62	F-021-M	4.85	3.70
3/4"	KF-022	50	F-022-C	.74	F-022-M	5.80	4.40
3/16"	KF-502	60	F-502-C	.64	F-502-M	4.95	3.80
1/4"	KF-503	50	F-503-C	.61	F-503-M	4.95	3.75
3/8"	KF-504	50	F-504-C	.66	F-504-M	5.20	3.95
1/2"	KF-014	45	F-014-C	.71	F-014-M	5.65	4.35
5/8"	KF-621	45	F-621-C	.79	F-621-M	6.25	4.80
3/4"	KF-015	45	F-015-C	.83	F-015-M	6.75	5.20
1/4"	KF-023	45	F-023-C	.81	F-023-M	6.40	4.90
5/16"	KF-505	45	F-505-C	.90	F-505-M	7.10	5.40
3/8"	KF-024	35	F-024-C	.90	F-024-M	7.10	5.40
1/2"	KF-025	35	F-025-C	.95	F-025-M	7.55	5.80
3/4"	KF-026	35	F-026-C	1.07	F-026-M	8.50	6.50
1/2"	KF-577	30	F-577-C	1.10	F-577-M	8.70	6.65
3/4"	KF-578	30	F-578-C	1.29	F-578-M	10.40	7.95

BINDER HEAD BRASS MACHINE SCREWS
Nickel Plated

1/4"			F-020B-C	.92	F-020B-M	7.45	5.65
1/2"			F-021B-C	1.18	F-021B-M	9.35	7.15
3/4"			F-022B-C	1.47	F-022B-M	11.35	8.65
1/4"			F-503B-C	1.25	F-503B-M	10.00	7.60
3/8"			F-504B-C	1.33	F-504B-M	10.65	8.15
1/2"			F-014B-C	1.50	F-014B-M	11.95	9.15
3/4"			F-015B-C	1.83	F-015B-M	14.65	11.20
1/4"			F-023B-C	1.85	F-023B-M	15.15	11.55
3/8"			F-024B-C	1.94	F-024B-M	15.50	11.85
1/2"			F-025B-C	2.22	F-025B-M	17.75	13.55
3/4"			F-026B-C	2.72	F-026B-M	21.70	16.55

FILLISTER HEAD STEEL MACHINE SCREWS
Nickel Plated

1/4"	KF-606	50	F-606-C	.55	F-606-M	4.10	3.10
1/2"	KF-607	50	F-607-C	.58	F-607-M	4.45	3.40
1/4"	KF-608	50	F-608-C	.58	F-608-M	4.45	3.40
1/2"	KF-609	45	F-609-C	.62	F-609-M	4.85	3.70
3/4"	KF-610	45	F-610-C	.74	F-610-M	5.80	4.40
1/4"	KF-611	45	F-611-C	.61	F-611-M	4.95	3.75
1/2"	KF-612	40	F-612-C	.71	F-612-M	5.65	4.35
3/4"	KF-613	40	F-613-C	.83	F-613-M	6.75	5.20
3/8"	KF-614	35	F-614-C	.90	F-614-M	7.10	5.40
1/2"	KF-615	35	F-615-C	.95	F-615-M	7.55	5.80
3/4"	KF-616	35	F-616-C	1.07	F-616-M	8.50	6.50
1/2"	KF-617	30	F-617-C	1.10	F-617-M	8.70	6.65

FLAT HEAD STEEL MACHINE SCREWS
Nickel Plated

1/4"	KF-622	60	F-622-C	.58	F-622-M	4.45	3.40
3/8"	KF-623	50	F-623-C	.60	F-623-M	4.65	3.55
1/2"	KF-624	50	F-624-C	.62	F-624-M	4.85	3.70
1/4"	KF-625	50	F-625-C	.61	F-625-M	4.95	3.75
3/8"	KF-626	50	F-626-C	.66	F-626-M	5.20	3.95
1/2"	KF-627	45	F-627-C	.71	F-627-M	5.65	4.35
3/4"	KF-628	45	F-628-C	.83	F-628-M	6.75	5.20
3/8"	KF-629	35	F-629-C	.90	F-629-M	7.10	5.40
1/2"	KF-630	35	F-630-C	.95	F-630-M	7.55	5.80
3/4"	KF-631	35	F-631-C	1.07	F-631-M	8.50	6.50
1/2"	KF-632	30	F-632-C	1.10	F-632-M	8.70	6.65

PHILLIPS HEAD ROUND STEEL MACHINE SCREWS Nickel Plated	SHOW OFF .59 per Pkg.		BLUE LINE Pkg. of 100		BULK PACK Bag of 1000		
	Part No.	Quan.	Part No.	Per Pkg.	Part No.	1-4 Per Bag	5-9 Per Bag
6-32 x 1/4"	KF-494	30	F-494-C	1.37	F-494-M	10.80	8.25
6-32 x 5/16"	KF-018	30	F-018-C	1.37	F-018-M	10.95	8.40
6-32 x 1/2"	KF-495	25	F-495-C	1.24	F-495-M	9.90	7.60
6-32 x 3/4"	KF-496	25	F-496-C	1.41	F-496-M	11.20	8.55
6-32 x 1"	KF-497	25	F-497-C	1.59	F-497-M	12.60	9.60
8-32 x 1/4"	KF-019	25	F-019-C	1.50	F-019-M	12.35	9.40
8-32 x 1/2"	KF-499	25	F-499-C	1.41	F-499-M	11.30	8.60
8-32 x 3/4"	KF-500	20	F-500-C	1.53	F-500-M	12.25	9.35
8-32 x 1"	KF-501	20	F-501-C	1.71	F-501-M	14.00	10.70

ORNAMENTAL HEAD STEEL MACHINE SCREWS
Statuary Bronze Plated

6-32 x 3/4"	KF-511	35	F-511-C	1.48	F-511-M	12.15	9.25
6-32 x 1"	KF-512	30	F-512-C	1.62	F-512-M	13.30	10.15
6-32 x 1-1/4"	KF-513	20	F-513-C	2.22	F-513-M	18.15	13.85

HEX STEEL NUTS
Nickel Plated

Thrd. Width Thk.							
2-56x3/16x1/16"	KF-554	60	F-554-C	.79	F-554-M	6.25	4.80
3-48x3/16x1/16"	KF-555	60	F-555-C	.79	F-555-M	6.25	4.80
4-36x1/4x3/32"	KF-556	60	F-556-C	.78	F-556-M	6.15	4.75
4-40x1/4x3/32"	KF-557	60	F-557-C	.78	F-557-M	6.15	4.75
6-32x1/4x3/32"	KF-559	60	F-559-C	.78	F-559-M	6.15	4.75
6-32x5/16x7/64"	KF-560	50	F-560-C	.84	F-560-M	6.70	5.15
8-32x1/4x3/32"	KF-561	50	F-561-C	.78	F-561-M	6.15	4.75
8-32x5/16x7/64"	KF-562	50	F-562-C	.84	F-562-M	6.70	5.15
10-32x3/8x1/8"	KF-563	45	F-563-C	.99	F-563-M	7.90	6.00
12-24x7/16x5/32"	KF-619	35	F-619-C	1.30	F-619-M	10.70	8.20
1/4-20x7/16x3/16"	KF-564	35	F-564-C	1.41	F-564-M	11.30	8.60

HEX BRASS NUTS
Nickel Plated

Thrd. Width Thk.							
2-56x3/16x1/16"			F-554B-C	1.13	F-554B-M	9.10	6.95
3-48x3/16x1/18"			F-555B-C	1.03	F-555B-M	8.30	6.35
4-36x1/4x2/32"	KF-556B	50	F-556B-C	1.37	F-556B-M	10.90	8.35
4-40x1/4x3/32"	KF-557B	35	F-557B-C	1.35	F-557B-M	10.80	8.25
6-32x1/4x3/32"	KF-559B	35	F-559B-C	1.34	F-559B-M	10.75	8.25
6-32x5/16x7/64"			F-560B-C	1.62	F-560B-M	13.00	9.90
8-32x1/4x3/32"			F-561B-C	1.34	F-561B-M	10.75	8.25
8-32x5/16x7/64"	KF-562B	20	F-562B-C	1.62	F-562B-M	13.00	9.90
10-32x3/8x1/8"	KF-563B	15	F-563B-C	1.76	F-563B-M	14.25	10.85

VOLUME CONTROL AND TOGGLE SWITCH MOUNTING NUTS
Nickel Plated

(For Volume Control) 3/8-32x1/2x3/32"	KF-565	20	F-565-C	1.70	F-565-M	13.90	10.60
(For Toggle Switch) 15/32-32x9/16x5/64"	KF-566	15	F-566-C	2.08	F-566-M	17.05	13.00
.475-32x19/32x1/16"	KF-567	*10	F-567-C	3.93	F-567-M	31.45	24.00

*Knurled Ring Nut—Brass Nickel

WING NUTS
Nickel Plated

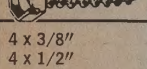
6-32	KF-571	15	F-571-C	3.03	F-571-M	25.25	19.25
8-32	KF-572	15	F-572-C	3.03	F-572-M	25.25	19.25
10-32	KF-573	15	F-573-C	3.03	F-573-M	25.25	19.25

waldom

HARDWARE AND FASTENING DEVICES

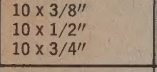
PACKAGED HARDWARE (Continued)

SLOTTED HEX HEAD SHEET METAL SCREWS (Type A) Nick. Pl.



	SHOW OFF .59 per Pkg.		BLUE LINE Pkg. of 100		BULK PACK Bag of 1000		
	Part No.	Quan.	Part No.	Per Pkg.	Part No.	1-4 Per Bag	5-9 Per Bag
4 x 3/8″	KF-016	50	F-016-C	.89	F-016-M	7.25	5.50
4 x 1/2″	KF-523	50	F-523-C	.95	F-523-M	7.75	5.95
6 x 1/4″	KF-524	45	F-524-C	1.01	F-524-M	8.40	6.40
6 x 3/8″	KF-525	35	F-525-C	1.03	F-525-M	8.45	6.45
6 x 1/2″	KF-526	35	F-526-C	1.08	F-526-M	9.00	6.85
6 x 5/8″	KF-595	35	F-595-C	1.10	F-595-M	9.05	6.90
6 x 3/4″	KF-527	30	F-527-C	1.16	F-527-M	9.20	7.00
8 x 1/4″	KF-528	30	F-528-C	1.16	F-528-M	9.20	7.00
8 x 3/8″	KF-529	30	F-529-C	1.22	F-529-M	9.65	7.35
8 x 1/2″	KF-530	30	F-530-C	1.25	F-530-M	9.90	7.60
8 x 5/8″	KF-017	25	F-017-C	1.27	F-017-M	10.15	7.70
8 x 1″	KF-531	20	F-531-C	1.63	F-531-M	12.85	9.80
10 x 3/8″	KF-532	20	F-532-C	1.35	F-532-M	10.80	8.25
10 x 1/2″	KF-533	20	F-533-C	1.47	F-533-M	11.65	8.85
10 x 3/4″	KF-534	15	F-534-C	1.62	F-534-M	12.85	9.80

HEX WASHER HEAD SHEET METAL SCREWS (Type A) Steel-Indented Slotted Head Nickel Plated

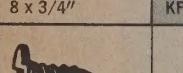


6 x 1/4″	KF-056	35	F-056-C	1.05	F-056-M	8.05	6.50
6 x 3/8″	KF-057	35	F-057-C	1.08	F-057-M	9.00	6.85
6 x 1/2″	KF-050	35	F-050-C	1.14	F-050-M	9.15	6.95
6 x 5/8″	KF-058	30	F-058-C	1.18	F-058-M	9.65	7.35
6 x 3/4″	KF-054	25	F-054-C	1.24	F-054-M	10.15	7.70
8 x 1/4″	KF-051	25	F-051-C	1.24	F-051-M	10.15	7.70
8 x 3/8″	KF-052	25	F-052-C	1.29	F-052-M	10.60	8.10
8 x 1/2″	KF-053	25	F-053-C	1.34	F-053-M	9.80	7.50
8 x 5/8″	KF-055	25	F-055-C	1.37	F-055-M	11.20	8.55
8 x 3/4″	KF-059	25	F-059-C	1.52	F-059-M	12.50	9.55

PAN HEAD SHEET METAL SCREWS (TYPE A) Nickel Plated

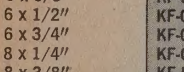
4 x 1/2″	KF-596	45	F-596-C	.89	F-596-M	7.25	5.50
6 x 1/4″	KF-033	45	F-033-C	.95	F-033-M	7.75	5.95
6 x 3/8″	KF-597	35	F-597-C	.97	F-597-M	8.00	6.10
6 x 1/2″	KF-034	35	F-034-C	1.03	F-034-M	8.45	6.45
6 x 3/4″	KF-035	30	F-035-C	1.12	F-035-M	9.10	6.95
8 x 1/4″	KF-036	30	F-036-C	1.12	F-036-M	9.10	6.95
8 x 3/8″	KF-598	30	F-598-C	1.18	F-598-M	9.55	7.25
8 x 1/2″	KF-037	30	F-037-C	1.22	F-037-M	9.65	7.35
8 x 1″	KF-038	25	F-038-C	1.54	F-038-M	12.70	9.65

ROUND HEAD STEEL WOOD SCREWS Nickel Plated



4 x 1/2″	KF-514	35	F-514-C	.90	F-514-M	7.25	5.50
4 x 3/4″	KF-515	35	F-515-C	1.04	F-515-M	8.35	6.35
6 x 3/4″	KF-516	30	F-516-C	1.12	F-516-M	9.00	6.85
6 x 1″	KF-517	30	F-517-C	1.39	F-517-M	11.10	8.45
8 x 3/4″	KF-518	25	F-518-C	1.33	F-518-M	10.60	8.10
8 x 1″	KF-047	25	F-047-C	1.53	F-047-M	12.80	9.75
8 x 1-1/4″	KF-519	15	F-519-C	1.83	F-519-M	14.70	11.20
10 x 1-1/2″	KF-520	15	F-520-C	2.45	F-520-M	19.65	14.95
12 x 1-1/2″	KF-521	10	F-521-C	3.12	F-521-M	25.05	19.10
14 x 1-3/4″	KF-522	10	F-522-C	4.39	F-522-M	35.30	26.90

FLAT HEAD STEEL WOOD SCREWS Nickel Plated



8 x 1/2″	KF-027	35	F-027-C	.90	F-027-M	7.25	5.50
8 x 1″	KF-048	25	F-048-C	1.56	F-048-M	12.80	9.75
8 x 1-1/4″	KF-032	15	F-032-C	1.83	F-032-M	14.70	11.20
10 x 1-1/2″	KF-044	15	F-044-C	2.45	F-044-M	19.65	14.95

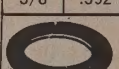
STEEL SPADE BOLT Nickel Plated

6-32 x 5/16″	KF-620	15	F-620-C	1.29	F-620-M	10.55	8.10

FLAT STEEL WASHERS Nickel Plated

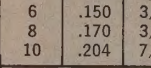
Screw Size	I. D. In.	O. D. In.	Thk. In.	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PAC Bag of 10 Part No.	1- Pe Ba
2	.092	7/32	.018	KMW-400	150	MW-400-C	.49	MW-400-M	4.1
4	.125	9/32	.025	KMW-401	150	MW-401-C	.38	MW-401-M	3.2
6	.150	3/8	.032	KMW-402	150	MW-402-C	.38	MW-402-M	3.2
8	.170	3/8	.032	KMW-403	150	MW-403-C	.38	MW-403-M	3.2
10	.204	7/16	.032	KMW-404	140	MW-404-C	.43	MW-404-M	3.6
1/4	.281	5/8	.050	KMW-408	90	MW-408-C	.78	MW-408-M	6.1
3/8	.392	11/16	.050	KMW-410	60	MW-410-C	.81	MW-410-M	6.5

FLAT BRASS WASHERS Nickel Plated



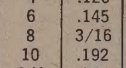
2	.092	7/32	.018			MW-400B-C	.53	MW-400B-M	4.2
4	.125	9/32	.025			MW-401B-C	.55	MW-401B-M	4.4
6	.150	3/8	.032			MW-402B-C	.71	MW-402B-M	5.6
8	.170	3/8	.032			MW-403B-C	.71	MW-403B-M	5.6
10	.204	7/16	.032			MW-404B-C	.78	MW-404B-M	6.1

FLAT FIBER WASHERS



4	.120	1/4	1/32	KFW-374	50	FW-374-C	.48	FW-374-M	3.9
6	.145	1/4	1/32	KFW-375	45	FW-375-C	.48	FW-375-M	3.9
8	3/16	3/8	1/32	KFW-376	45	FW-376-C	.52	FW-376-M	4.2
10	.192	3/8	1/32	KFW-377	45	FW-377-C	.52	FW-377-M	4.2
1/4	.255	1/2	1/32	KFW-378	35	FW-378-C	.57	FW-378-M	4.4
3/8	3/8	5/8	1/32	KFW-379	30	FW-379-C	.85	FW-379-M	6.7
7/16	.440	3/4	1/32	KFW-380	25	FW-380-C	.91	FW-380-M	7.4

EXTRUDED FIBER WASHERS



4	1/8	9/32	5/64	KFW-384	35	FW-384-C	.96	FW-384-M	7.6
6	9/64	5/16	5/64	KFW-385	35	FW-385-C	.96	FW-385-M	7.6
8	11/64	3/8	3/32	KFW-386	30	FW-386-C	.96	FW-386-M	7.6
10	13/64	7/16	3/32	KFW-387	30	FW-387-C	1.05	FW-387-M	8.3
1/4	.256	1/2	3/32	KFW-388	30	FW-388-C	1.05	FW-388-M	8.3
3/8	.375	5/8	3/32	KFW-389	30	FW-389-C	1.08	FW-389-M	8.5

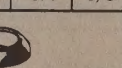
STEEL CUP WASHERS Nickel Plated

6				KCW-6	60	CW-6-C	.56	CW-6-M	4.5
8				KCW-6	60	CW-8-C	.59	CW-8-M	4.9
10				KCW-10	50	CW-10-C	.67	CW-10-M	5.3

STEEL SPLIT LOCK WASHERS Zinc Plated

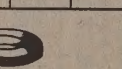
#4 Screw				KMW-411	120	MW-411-C	.66	MW-411-M	5.2
#6 Screw				KMW-412	120	MW-412-C	.55	MW-412-M	4.4
#8 Screw				KMW-413	120	MW-413-C	.54	MW-413-M	4.3
#10 Screw				KMW-414	100	MW-414-C	.61	MW-414-M	4.9
#1/4 Screw				KMW-415	75	MW-415-C	.92	MW-415-M	7.3

METAL CABLE CLAMPS Cadmium Plated



Mtl. In.	Ht. In.	W. In.	Wire Hold Area						
.020B	7/16	1/4	3/32	KC-201	30	C-201-C	.89	C-201-M	7.3
.032S	5/8	3/8	10/64	KC-202	30	C-202-C	1.12	C-202-M	9.2
.032S	11/16	3/8	1/4	KC-203	25	C-203-C	1.29	C-203-M	10.5
.032S	15/16	3/8	10/32	KC-204	15	C-204-C	1.43	C-204-M	11.7

SPRING CLIPS Brass, Nickel Plated



Thick-ness	Ht. In.	W. In.	Mtg. Hole In.						
.016	45/64	7/32	.130	KC-101	20	C-101-C	1.66	C-101-M	13.1
.020	25/32	5/16	.144	KC-102	20	C-102-C	2.20	C-102-M	17.4
.022	1	3/8	.144	KC-103	10	C-103-C	3.23	C-103-M	26.9

WRITE FOR QUOTATIONS ON LARGER QUANTITIES.

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PACKAGED HARDWARE (Continued)

ACORN NUTS (Nickel Plated Brass)

Size	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag	5-9 Per Bag
6-32	KF-574	15	F-574-C	3.16	F-574-M	25.95	19.80
8-32	KF-575	15	F-575-C	3.36	F-575-M	27.55	21.05
0-32	KF-576	10	F-576-C	4.06	F-576-M	33.35	25.40

SNAP BUTTON HOLE PLUGS Nickel Plated

ole ize	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag	5-9 Per Bag
/4"	KHP-1	12	HP-1-C	2.42	HP-1-M	19.85	15.15
/8"	KHP-2	12	HP-2-C	2.75	HP-2-M	22.55	17.20
/2"	KHP-3	8	HP-3-C	2.64	HP-3-M	21.65	16.50
/4"	KHP-4	5	HP-4-C (50)*	1.90	HP-4-M	29.75	22.70
1"	KHP-5	5	HP-5-C (25)*	1.30	HP-5-M	39.70	30.25

*Where quantities are shown in brackets ( ) in front of "Pkg. of 100" prices, this quantity, rather than 100 pieces, applies.

RUBBER HEADED TACK BUMPERS

ia. d.	Ht. Hd.	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PARK Bag of 1000 Part No.	1-4 Per Bag	5-9 Per Bag
'8"	1/4"	KB-350	10	B-350-C	2.12	B-350-M	17.45	13.30
'8"	5/16"	KB-352	7	B-352-C	3.65	B-352-M	29.95	22.85

ANGLE BRACKETS

.032 Thk. Material: Steel (S), Brass (B). Plating: Cadmium (C), Nickel (N), Hot-tin dipped (HT).

tl.	Pg.	Hole Size	W	A	B	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag	5-9 Per Bag
	C	#6	9/32	13/64	9/32	A-100-C	1.68	A-100-M	13.30	11.10
	N	#6	3/8	15/64	19/64	A-101-C	2.31	A-101-M	18.25	15.25
	N	#8	5/16	9/32	9/32	A-102-C	2.08	A-102-M	16.40	13.70
	HT	#6	3/8	15/32	15/32	A-103-C	1.48	A-103-M	11.70	9.75
	HT	#8	3/8	7/8	3/8	A-104-C	1.78	A-104-M	13.95	11.65

SPACERS — (Brass & Fibre) — 1/4" O.D.

or use in raising sub panels, chassis, condensers, transformers, tc. Hole in bushing to accommodate #6 or #8 screw.

ngth	Unthreaded For #6 Screw Part No.	For #8 Screw Part No.	Price Pkg. of 100	Threaded For #6 Screw Part No.	For #8 Screw Part No.	Price Pkg. of 100
ROUND TYPE (Brass — Cadmium Plated)						
/4"	RS-614	RS-814	3.63	RST-146	RST-148	4.29
/8"	RS-638	RS-838	4.79	RST-386	RST-388	5.45
/2"	RS-612	RS-812	5.81	RST-126	RST-128	6.60
/4"	RS-634	RS-834	6.83	RST-346	RST-348	7.92
1"	RS-610	RS-810	7.92	RST-106	RST-108	9.08
HEX TYPE (Brass — Cadmium Plated)						
/4"	HS-614	HS-814	3.96	HST-146	HST-148	4.62
/8"	HS-638	HS-838	5.12	HST-386	HST-388	5.78
/2"	HS-612	HS-812	6.14	HST-126	HST-128	6.93
/4"	HS-634	HS-834	7.43	HST-346	HST-348	8.42
1"	HS-610	HS-810	8.58	HST-106	HST-108	9.41
ROUND TYPE (Fibre)*						
/4"	FS-614	FS-814	4.29	Not available threaded.		
/8"	FS-638	FS-838	5.45			
/2"	FS-612	FS-812	6.60			
/4"	FS-634	FS-834	7.92			
1"	FS-610	FS-810	9.08			

TERMINAL AND SPADE LUGS

Supplied with hot-tin dipping in brass (B), or copper (C) as specified in Material (Mtl.) column

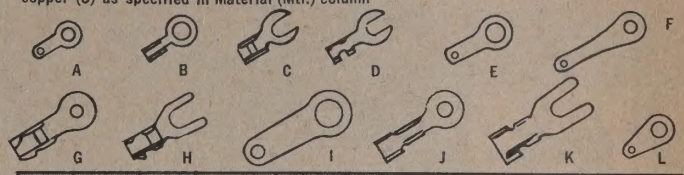
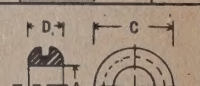


Fig.	Mtl., Thick-ness	Hole Size	Length In.	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag	5-9 Per Bag
A	.015C	#2	21/64			T-251-C	.89	T-251-M	7.00	5.85
A	.020B	#6	1/2	KT-151	60	T-151-C	.92	T-151-M	7.55	5.80
A	.020B	#8	13/16	KT-152	60	T-152-C	.99	T-152-M	8.15	6.20
A	.020B	#10	13/16	KT-153	60	T-153-C	.99	T-153-M	8.15	6.20
B	.020C	#4	9/16			T-226-C	1.13	T-226-M	9.35	7.10
B	.032C	#6	1/2	KT-156	45	T-156-C	1.13	T-156-M	9.35	7.10
B	.020B	#8	21/32			T-227-C	1.53	T-227-M	12.10	10.10
B	.020B	#10	21/32			T-228-C	1.53	T-228-M	12.10	10.10
C	.020B	#8	41/64	KT-157	45	T-157-C	.97	T-157-M	7.90	6.05
D	.020B	#6	21/32	KT-158	45	T-158-C	1.07	T-158-M	8.75	6.65
D	.020B	#8	21/32	KT-159	45	T-159-C	1.07	T-159-M	8.75	6.65
D	.020B	#10	47/64			T-225-C	1.36	T-225-M	11.05	8.40
E	.015B	#8	47/64	KT-162	45	T-162-C	1.05	T-162-M	8.55	6.50
F	.025B	#6	1	KT-163	45	T-163-C	1.19	T-163-M	9.75	7.45
F	.025B	#8	1	KT-164	45	T-164-C	1.19	T-164-M	9.75	7.45
G	.020C	#6	15/16	KT-166	25	T-166-C	1.96	T-166-M	16.05	12.25
G	.020C	#8	15/16	KT-167	25	T-167-C	1.96	T-167-M	16.05	12.25
G	.020C	#10	15/16	KT-168	25	T-168-C	1.96	T-168-M	16.05	12.25
H	.020B	3/16"	25/32	KT-170	25	T-170-C	1.13	T-170-M	9.35	7.10
I	.020B	#10	1-5/32	KT-173	20	T-173-C	1.89	T-173-M	15.20	11.60
J	.032B	#8	15/16	KT-187	15	T-187-C	3.40	T-187-M	27.90	21.30
J	.032B	#10	15/16	KT-188	10	T-188-C	3.75	T-188-M	30.75	23.50
K	.032B	#8	1	KT-193	10	T-193-C	5.15	T-193-M	42.20	32.20
L	.020B	#6	9/16	KT-154	45	T-154-C	1.07	T-154-M	8.75	6.65
L	.015C	#8	17/32			T-224-C	1.18	T-224-M	9.65	7.35

VINYL GROMMETS

- Exceptional Aging Qualities*
- High Dielectric Properties
- Oil Resistant
- Durometer Hardness 45 1045
- Cost Less Than Rubber
- Will Not Stain Most Surfaces



A	B	C	D	E						
1/8	1/16	11/32	3/16	1/4	KG-401	25	G-401-C	.99	G-401-M	8.15	6.20
3/16	1/16	7/16	7/32	5/16	KG-402	20	G-402-C	1.09	G-402-M	9.10	6.90
1/4	1/16	9/16	1/4	3/8	KG-403	18	G-403-C	1.45	G-403-M	10.45	8.00
5/16	1/16	5/8	1/4	7/16	KG-404	15	G-404-C	1.58	G-404-M	11.20	8.55
3/8	1/16	5/8	1/4	1/2	KG-405	15	G-405-C	1.58	G-405-M	11.20	8.55
1/2	1/16	13/16	9/32	5/8	KG-406	10	G-406-C*	1.28	G-406-M	19.50	14.85
5/8	1/16	1-1/8	9/32	7/8			G-407-C*	1.29	G-407-M	33.45	25.85
							*(50) **(25)				

These grommets were tested by Underwriters Laboratories in a circulating air oven at 212°F. for seven days with no visible change.

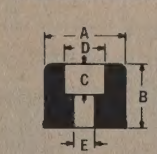
RUBBER GROMMETS

A	B	C	D	E							
1/8	1/16	11/32	3/16	1/4	KG-300	16	G-300-C	1.45	G-300-M	11.90	9.10
5/16	1/16	9/16	3/16	15/32			G-301-C	1.94	G-301-M	15.85	12.10
3/8	1/16	11/32	9/32	1/2	KG-302	10	G-302-C	2.49	G-302-M	20.40	15.55
3/16	1/16	7/16	7/32	5/16	KG-305	14	G-305-C	2.06	G-305-M	16.95	12.90
7/16	3/64	3/4	1/4	19/32			G-307-C*	1.46	G-307-M	22.55	17.20
11/32	1/16	5/8	5/16	15/32	KG-309	8	G-309-C	2.10	G-309-M	17.25	13.15
5/8	1/16	1-1/8	5/16	7/8			G-311-C**	1.80	G-311-M	49.95	38.10
							*(50) **(25)				

RUBBER BUMPERS

Recess Screw Type

For mounting on all types of Electronic Equipment. Prevents vibration and protects surfaces under equipment from being marred.



A	B	C	D	E	BLUE LINE		BULK PACK		
1/2	1/4	5/32	1/4	1/8	B-321-C	2.37	B-321-M	19.45	14.80
3/4	1/4	1/8	1/4	1/8	B-322-C*	1.65	B-322-M	56.25	42.90
5/8	3/8	7/32	1/4	1/8	B-323-C*	1.31	B-323-M	44.80	34.20
3/4	5/8	7/32	1/4	1/8	B-324-C*	1.84	B-324-M	16.55	47.65
					*(25)				

Button Type

A	B	C	D	E	BLUE LINE		BULK PACK		
3/8	3/8	17/64	3/16	.040	B-361-C	1.65	B-361-M	13.30	10.15
1/2	7/16	11/32	1/4	.040	B-362-C	2.43	B-362-M	19.50	14.85
5/8	9/16	15/32	5/16	.040	B-363-C	3.91	B-363-M	31.30	23.90

waldom

HARDWARE AND FASTENING DEVICES

PACKAGED HARDWARE (SHAKEPROOF® PRODUCTS)

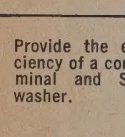
LIVE-ACTION INTERNAL LOCKWASHERS

Spring-steel cadmium-plated

Bite on both sides, to lock tight, stay tight, where others fail.

Screw Size	Shakeproof® Part No.	O.D.	Material Thickness	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag
2	1202	.185-.175	.013	KMW-428	70	MW-428-C	.84	MW-428-M	5.20
4	1204	.265-.255	.015	KMW-416	90	MW-416-C	.50	MW-416-M	3.30
6	1206	.288-.278	.018	KMW-417	90	MW-417-C	.50	MW-417-M	3.30
8	1208	.336-.325	.020	KMW-418	80	MW-418-C	.56	MW-418-M	3.45
10	1210	.381-.370	.022	KMW-419	80	MW-419-C	.56	MW-419-M	3.45
1/4	1214	.478-.466	.025	KMW-420	50	MW-420-C	.72	MW-420-M	4.65
3/8	1220	.692-.678	.035	KMW-421	35	MW-421-C	1.08	MW-421-M	8.20

LIVE-ACTION EXTERNAL LOCKWASHERS



Spring-steel, cadmium-plated.

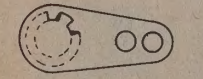
Bite on both sides, to lock tight, stay tight, where others fail.

Screw Size	Shakeproof® Part No.	O.D.	Material Thickness	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag
4	1104	.255-.245	.015	KMW-422	90	MW-422-C	.50	MW-422-M	3.30
6	1106	.317-.306	.020	KMW-423	90	MW-423-C	.50	MW-423-M	3.30
8	1108	.381-.370	.020	KMW-424	80	MW-424-C	.56	MW-424-M	3.45
10	1110	.406-.395	.022	KMW-425	80	MW-425-C	.56	MW-425-M	3.45
1/4	1114	.506-.494	.025	KMW-426	50	MW-426-C	.72	MW-426-M	4.65
3/8	1120	.695-.680	.035	KMW-427	35	MW-427-C	1.08	MW-427-M	8.20

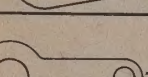
LOCKING TERMINALS Bronze hot tin-dipped, .018 thickness

Provide the economy and efficiency of a combination wire terminal and Shakeproof® lockwasher.

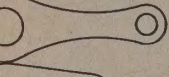
Style 4



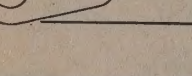
Style 7



Style 9



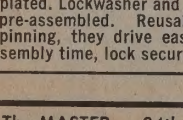
Style 11



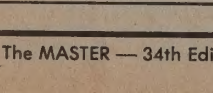
Screw Size	Shakeproof® Part No.	Length	Form 1. — 2. ⌐	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag
4	2101-04-00	7/8	1	KT-196	30	T-196-C	1.41	T-196-M	9.75
6	2101-06-00	7/8	1	KT-197	30	T-197-C	1.41	T-197-M	9.75
8	2101-08-00	7/8	1	KT-198	30	T-198-C	1.41	T-198-M	9.75
10	2101-10-00	57/64	1	KT-223	30	T-223-C	1.43	T-223-M	9.85
4	2103-04-00	13/16	2			T-247-C	1.41	T-247-M	9.75
6	2103-06-00	13/16	2			T-248-C	1.41	T-248-M	9.75
8	2103-08-00	13/16	2			T-249-C	1.41	T-249-M	9.75
10	2103-10-00	53/64	2			T-250-C	1.57	T-250-M	10.35
4	2106-04-00	5/8	1			T-229-C	1.32	T-229-M	9.55
6	2106-06-00	5/8	1	KT-194	30	T-194-C	1.32	T-194-M	9.55
8	2106-08-00	5/8	1	KT-195	30	T-195-C	1.32	T-195-M	9.55
4	2102-04-00	23/32	1			T-230-C	1.32	T-230-M	9.55
6	2102-06-00	23/32	1			T-231-C	1.32	T-231-M	9.55
8	2102-08-00	23/32	1			T-232-C	1.32	T-232-M	9.55
4	2104-04-00	5/8	2			T-233-C	1.32	T-233-M	9.55
6	2104-06-00	5/8	2			T-234-C	1.32	T-234-M	9.55
8	2104-08-00	5/8	2			T-235-C	1.32	T-235-M	9.55
10	2104-10-00	41/64	2			T-236-C	1.43	T-236-M	9.85
6	2108-06-00	25/32	1			T-237-C	1.55	T-237-M	10.30
10	2108-10-00	51/64	1			T-238-C	1.62	T-238-M	10.50

PLAIN TERMINALS Brass hot tin-dipped, .018 thickness

Style 1



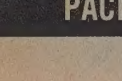
Style 4



Style 7

Style	Screw Size	Shakeproof® Part No.	Length	Form 1. — 2. ⌐	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag
1	4	2522-04-00	21/32	1			T-239-C	.84	T-239-M	6.15
	6	2522-06-00	21/32	1			T-240-C	.84	T-240-M	6.15
4	6	2501-06-00	7/8	1			T-241-C	.89	T-241-M	6.55
	8	2501-08-00	7/8	1			T-242-C	.89	T-242-M	6.55
	10	2501-10-00	57/64	1			T-243-C	.89	T-243-M	6.55
7	6	2506-06-00	5/8	1			T-244-C	.89	T-244-M	6.55
	8	2506-08-00	5/8	1			T-245-C	.89	T-245-M	6.55
	10	2506-10-00	5/8	1			T-246-C	.89	T-246-M	6.55

EXTERNAL LOCKWASHER KEPS®—STANDARD SIZES



American Standard Machine Screw Nut Series, Nut, SAE20 steel; Washer, spring steel, cadmium-plated. Lockwasher and nut are pre-assembled. Reusable, free-spinning, they drive easily, cut assembly time, lock securely.

Diameter and Thread	Shakeproof® Part No.	Across Flats	Nut Thickness	SHOW OFF .59 per Pkg. Part No.	Quan.	BLUE LINE Pkg. of 100 Part No.	Per Pkg.	BULK PACK Bag of 1000 Part No.	1-4 Per Bag
4-40	511-041800-00	1/4	3/32			511-041800-00-C	2.87	511-041800-00-M	21.15
6-32	511-061800-00	5/16	7/64			511-061800-00-C	2.27	511-061800-00-M	16.75
8-32	511-081800-00	11/32	1/8			511-081800-00-C	2.33	511-081800-00-M	17.15
10-32	511-101800-50	3/8	1/8			511-101800-50-C	2.45	511-101800-50-M	18.00
1/4-20	511-251800-00	7/16	3/16			511-251800-00-C	3.09	511-251800-00-M	22.70

*TRADE

WRITE FOR QUOTATIONS ON LARGER QUANTITIES.

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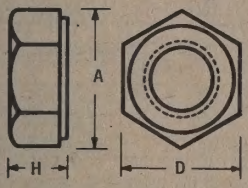
waldom HARDWARE AND FASTENING DEVICES

MOLDED NYLON HARDWARE

N SCREWS

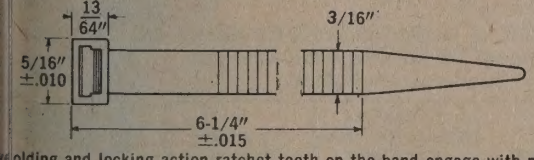
Description	Part No. Round Head	Binder Head	Fillister Head	Flat Head	Net Prices Pkg. of 100	Bulk 1000 or More, Per M
2-56 x 1/4″	FN-800	FN-815	FN-830		3.30	25.85
2-56 x 1/2″	FN-801	FN-816	FN-831		3.30	25.85
4-40 x 1/4″	FN-802	FN-817	FN-832		3.30	26.15
4-40 x 1/2″	FN-803	FN-818	FN-833	FN-845	3.30	26.25
4-40 x 3/4″	FN-804	FN-819	FN-834		3.39	26.65
6-32 x 1/4″	FN-805	FN-820	FN-835		3.30	26.30
6-32 x 3/8″	FN-806	FN-821	FN-836	FN-846	3.39	26.55
6-32 x 1/2″	FN-807	FN-822	FN-837	FN-847	3.39	26.80
6-32 x 5/8″	FN-808	FN-823	FN-838	FN-848	3.39	27.05
6-32 x 3/4″	FN-809	FN-824	FN-839		3.47	27.30
8-32 x 3/8″	FN-810	FN-825	FN-840		3.47	27.30
8-32 x 1/2″	FN-811	FN-826	FN-841	FN-849	3.47	27.70
8-32 x 3/4″	FN-812	FN-827	FN-842	FN-850	3.47	28.05
10-32 x 1/2″	FN-813	FN-828	FN-843	FN-851	3.61	28.75
10-32 x 1″	FN-814	FN-829	FN-844	FN-852	3.87	30.75

I HEX NUTS



Part No.	Thread	D Max.	D Min.	A Max.	A Min.	H Max.	H Min.	Net Prices Pkg. of 100	Bulk 1000 or More, Per M
FN-853	2-56	3/16	.180	.214	.208	.090	.086	5.28	42.65
FN-854	4-40	1/4	.240	.279	.272	.124	.120	5.36	43.05
FN-855	6-32	5/16	.300	.350	.343	.146	.138	5.49	44.20
FN-856	8-32	11/32	.331	.386	.379	.170	.162	5.57	44.80
FN-857	10-32	3/8	.360	.420	.412	.196	.188	5.62	45.45

E LOCKING NYLON WIRE CLAMP



olding and locking action ratchet teeth on the band engage with match- inside the clamp loop. A small, floating wedge, which cannot fall out, teeth together. Slip clamp around cable, insert tongue, pull tight, push and cut off extra material. It's a permanently locked, neat cable clamp. lates from 1/8″ to 1-3/4″ diameter wire bundles. Natural color.

t No.	Pkg. of 100	1000 or more Per M
N-25	9.90	76.55

N FINISHING WASHERS

olded Nylon Finishing Washers are made to be used with No. 6, o. 10 and 1/4″ countersunk metal or nylon screws. They prevent nd scratching of instrument and control panels, cover misaligned n be used as glides, protective feet, bumpers, insulators, spacers. glossy finish. Natural nylon; special quotations for color coding.

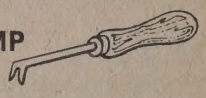
	I.D.	O.D.	Thick-ness	NET PRICES Pkg. of 100	Bulk 1000 or More, Per M
9	#6(.143)	.437	.100	4.02	32.10
0	#8(.171)	.515	.115	4.24	33.85
1	#10(.191)	.580	.152	4.53	36.20

SEPARATE NYLON MOUNTING TABS

For clamp at left. May be pre-mounted at support points, with band clamps inserted later, or slipped on band clamp when bundling wires and mounted later. Never in the way when not needed.

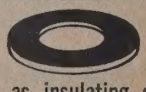
Part No. BCN-12 Pkg. of 100—$3.30 1000 or more, per M—$24.75

FORKED TOOL FOR WEDGING BAND CLAMP



Part No. FT-27 Net Ea. $2.20

NYLON FLAT WASHERS



Stamped from extruded nylon strip. Use as insulating or cushioning washers, spacers, thrust washers. Natural color from stock, color coding at slight additional cost.

Part No.	I.D.	O.D	Thick-ness	NET PRICES Pkg. of 100	Bulk 1000 or More, Per M
NW-875	#4(.120)	9/32	.050	.58	4.80
NW-876	#6(.150)	5/16	.050	.64	5.25
NW-877	#8(.170)	3/8	.060	.87	7.15
NW-878	#10(.195)	7/16	.060	.99	8.10

AAD-39
EFFECTIVE MAY, 1969

AMPROBE INSTRUMENT®
DIVISION OF SOS CONSOLIDATED INC

ROTARY SCALE MODELS

Offer you these outstanding features. • Only the voltage or current range you select is visible in the unbreakable magnifying window—avoids confusion—provides greater reading speed and accuracy. • On models RS-3, RS-3A, RS-1000 and RS-1007 ohmmeter scale is also visible. • Pointer-lock "freezes" pointer at reading. • Accurate within ±3% full scale reading. • One hand operation.

MODEL	VOLTS, AC	AMPS, AC	PRICE
RS-1A	0-150/600	0-6/15/40/100	$49.85
RS-2A	0-150/300	0-6/15/40/100	49.85
RS-3A	0-150/300/600	0-6/15/40/100/300	63.50
RS-300A	0-150/300/600	0-6/15/40/100/300	58.50

A Case

RS-3A OHMMETER RANGE: 25 Ohms Mid-Scale
Price includes Extendo-Lead Pack VLK-311 and special "A" Case with space for Amprobe Energizer A-45L

G Case

RS-1	0-150/600	0-6/15/40/100	$44.85
RS-2	0-150/300	0-6/15/40/100	44.85
RS-3	0-150/300/600	0-6/15/40/100/300	58.50
*RS-3 400 Hz	0-150/300/600	0-6/15/40/100/300	78.50
RS-300	0-150/300/600	0-6/15/40/100/300	53.50
RS-1000	0-150/300/600	0-15/40/100/300/1000	77.50
RS-1007	0-150/300/750	0-/15/40/100/300/1000	77.50

Models RS-3, RS-3 400 Hz, RS-1000 and RS-1007 OHMMETER RANGE: 25 Ohms Mid-Scale
Price includes "G" carrying case (RS-1000 and RS-1007 include "E" case) and Test Leads VL-11.
*Model RS-3 400 Hz—Calibrated for 400 Hz (cycles) for Use in Aircraft and Maritime Industries.

AMPROBE® TEST-MASTER KITS

TM-43A U Case

Truly the sign of the professional, these good-looking rugged, sturdy cases contain all the equipment you need to do all your electrical testing jobs with precision and accuracy.

CONTAINS:	RS-3	Extendo Leads	PSA-1	Energizer	Deca Tran	A Case	U Case	Price
TM-33A	one	one	—	one	one	—	one	$ 98.50
TM-43A	one	one	one	one	one	—	one	107.85
TM-60	—	one	—	one	—	one	—	15.85
TM-63	one	one	—	one	—	one	—	69.85

EXTENDO-LEADS

Ends awkward, 3 handed voltage readings. Eliminates need for someone or something to hold the instrument while test probes are applied to the circuit. VLK-311 for RS except (RS-1000, RS-1007), VLK-355 for Juniors. **Price: $3.95**

PHASE SEQUENCE ADAPTOR

The Model PSA-1 Phase Sequence Adaptor is used to determine the phase sequence of polyphase circuits. When used in conjunction with any AMPROBE model it permits you to determine phase sequence of motors and other electrical equipment using three phase lines up to 550 volts. **Price** w/ case: **$12.85**

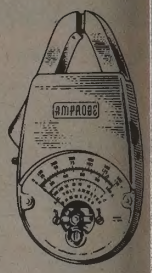
AMPROBE® DECA-TRAN, A50-1

Extends current range 10 times, up to 1200 Amps intermittent, 600 Amps continuous. **Price: $30.50**

AMPROBE® ENERGIZER

The **Model A-45L ENERGIZER** permits current readings on permanently wired low-current electrical equipment by simplifying series connection. It increases the sensitivity of your ammeter 5x or 10x for more precise readings directly at outlets by "splitting" double conductor line cords while the appliance is connected to the line. Capacity 10 amps. **Price** w/weatherproof pouch: **$7.25**

AMPROBE® JUNIOR MODELS



Advanced, precision snap around testers that anyone can afford. These compact Juniors measure voltage, current and resistance (YO and YTO Models) instantly and accurately on easy to read scales. "B" Case available for all Junior models. Has space for Extendo-Leads VLK-355 and Energizer A45L.

YTO MODEL

2 current ranges, 2 voltage ranges, 25 ohms mid-scale.
Price w/test leads **$34.50**

MODEL	AMPS, AC	VOLTS, AC
YTO525/100	0-25/100	0-150/600

YT MODELS

2 current ranges, 2 voltage ranges.
Price with test leads **$28.50**

YT10/25	0-10/25	0-150/300
YT25/100	0-25/100	0-150/300
YT525/100	0-25/100	0-150/600

B CASE (Closed)

YTB MODELS

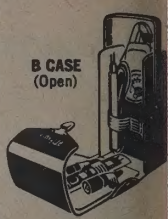
Versatile YT Jr. and Extendo-Lead Pack VLK-335 in handy "B" case, with space for Energizer A-45L. **Price $34.50**

YTB10/25	0-10/25	0-150/300
YTB25/100	0-25/100	0-150/300

YO MODELS

1 current range, 2 voltage ranges, 25 Ohms Mid-Scale. **Price** w/test leads **$29.50**

YO "525"	0-25	0-150/600
YO "550"	0-50	0-150/600
YO "500"	0-100	0-150/600



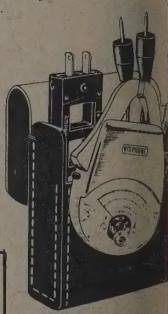
B CASE (Open)

Y MODELS

1 current range, 2 voltage ranges.
Price w/test leads **$24.50**

Y25	0-25	0-125/250
Y500	0-100	0-150/600
Y550	0-50	0-150/600

AMPROBE® JUNIOR TEST-MASTER KITS



The AMPROBE Jr. Test-Master Kit consists of a specially designed case that contains one of the **YO AMPROBE Jr.** voltage testers, an **AMPROBE Energizer,** battery attachment and test leads.

The YO models are precision instruments that measure voltage, amperage and resistance, instantly and accurately on a calibrated scale. **Price: $39.85**

MODEL	3 AMMETER RANGES (full scale) BASIC INST.	2 VOLTAGE RANGES
TM-YO "525"	0-25	0-150/600
TM-YO "550"	0-50	0-150/600
TM-YO "500"	0-100	0-150/600

OHMMETER RANGE: 25 Ohms Mid-Scale

AMPROBE® JUNIOR LINE PROBE

Unique, versatile... traces up to 10 circuits at one time, measures voltage and current without interrupting service, checks for continuity. Furnished with 10 station markers, 2 station marker holders, voltage leads, grounding leads, fused battery attachment and case. **Price $41.50**

MODEL	VOLTS, AC	AMPS, AC
ALP550	0-150/600	0-50

AMPROBE® VOLTPROBE® VOLTAGE TESTER

Visual readout by series of lit windows corresponding to each Voltage level; ends guesswork. Retractable coil and probe. Lightweight, fits in shirt pocket. **Price: $9.50**

Model VT-100 indicates nominal Voltage Levels
Voltage levels: 115-220-277-440-550 AC
115-220-400-600-750 DC

All prices slightly higher outside the U.S.

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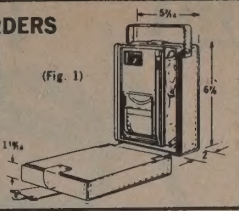
AMPROBE INSTRUMENT® / SERVICE & INDUSTRIAL RECORDERS

DIVISION OF SOS CONSOLIDATED INC.

PORTABLE-CASED RECORDERS

Supplied with permanently attached motor line cord and one roll each of necessary strip charts. Meter line cord, extensions, adaptors, transducers, etc. supplied when indicated.

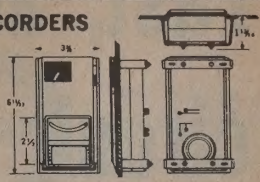
(Fig. 1)



FLUSH-MOUNTING RECORDERS

Supplied with one roll each of necessary strip charts and mounting hardware. Transducers, probes, etc. supplied when indicated. Motor leads not furnished.

(Fig. 2)



Recommended Panel Opening Size: 3⁹⁄₃₂"×6¹³⁄₃₂"

*Indicates the availability of this model in flush-mount version. Ranges and Specifications same as Portable cased models. See fig. 2 for configuration First prefix letter "L" of model number indicates Portable Cased. Prefix letter "F" indicates Flush-Mounting.

Model No.	Description	Range	Price
C VOLTMETERS			
LAV2X*	Dual Range, Expanded Scale AC Voltmeter.	95-130 Volts AC 190-260 Volts AC	$103.85
LAV3X*	Three Range, Expanded Scale AC Voltmeter.	95-130 Volts AC 190-260 Volts AC 380-520 Volts AC	124.85
LAV4X*	Dual Range, Expanded Scale 220 volt, 50 cycles only	165-245 Volts AC 330-490 Volts AC	108.85
LAV8600*	Three Range, AC Voltmeter. 1380Ω/V	0-150/300/600 Volts AC	108.85
C AMMETERS			
LAA81*	With A-70FL Transducer	0-10/50/250/500 Amps AC	114.85
LAA82*	With A-60FL Transducer	0-5/25/100/250 Amps AC	109.85
LAA1500*	With A-50FL Transducer	0-800/1500 Amps AC	138.85
LAA830*	For use with external current transformer 2VA (Not supplied).	0-5 Amps AC Scale: 0-150/300/600	107.85
LAA840*		0-5 Amps AC Scale: 0-200/400/800	107.85
LAA850*		0-5 Amps AC Scale: 0-100/250/500	107.85
C VOLT/AMMETERS			
LAVA81*	With A-70FL Transducer	Volts: 95-130; 190-260 Amps: 0-10/50/250/500	158.85
LAVA82*	With A-60FL Transducer	Volts: 95-130; 190-260 Amps: 0-5/25/100/250	153.85
LAVA83*	With A-70FL Transducer	Volts: 95-130; 190-260; 380-520 Amps: 0-10/50/250/500	174.85
LAVA84*	With A-60FL Transducer	Volts: 95-130; 190-260; 380-520 Amps: 0-5/25/100/250	169.85
LAVA85*	With A-75FL Transducer 220 volt, 50 cycles only	Volts: 165-245/330-490 Amps: 0-10/50/250/500	159.85
LAVA86*	With A-65FL Transducer 220 volt, 50 cycles only	Volts: 165-245/330-490 Amps: 0-5/25/100/250	154.85
LAVA-87	With A70FL Transducer	Volts: 0-150/300/600 Amps: 0-10/50/250/500	163.85
EMPERATURE RECORDERS			
LT8100*	Dual Range with FL-RBT-1 Probe	−50° to +100°F +50° to +250°F	113.85
LT8101*	Dual Range with FL-RBT-1 Probe	−45 to + 40°C +10 to +120°C	113.85
LT8650	Incremental Recorder	50°F Span Probes Not Included	143.85
RBT-5	Probe for LT8650	−50° to 0°F	20.50
RBT-6	Probe for LT8650	0° to +50°F	20.50
RBT-7	Probe for LT8650	+50° to +100°F	20.50
RBT-8	Probe for LT8650	+100° to +150°F	20.50
RBT-9	Probe for LT8650	+150° to +200°F	20.50
RBT-10	Probe for LT8650	+200° to +250°F	20.50

Model No.	Description	Range	Price
C MICROAMMETERS			
LDC850*	(Tautband Movement). Resistance: 900Ω	0-50ua DC	$101.85
LDC8100*	DC Microammeter. Resistance: 550Ω	0-100ua DC	95.85
LDC8500*	DC Microammeter. Resistance: 45Ω	0-500ua DC	89.85
C MILLIAMMETERS			
LDM81*	Resistance: 25Ω	0-1 ma DC	89.85
C AMMETERS For use with 50 mv shunts. Furnished with calibrated (0.065Ω) five foot leads.			
LDM830*	DC Millivoltmeter. Resistance: 940Ω	0-50 mv DC Scale 0-30 Amps DC	95.85
LDM840*		0-50 mv DC Scale: 0-40 Amps DC	95.85
LDM850*		0-50 mv DC Scale: 0-50 Amps DC	95.85
YROMETERS Not supplied with Thermocouples.			
LP8400*	Three Range Pyrometer. (External Resistance: 3.50Ω) Uses Iron-Constantan Type J Thermocouples.	0° to 400°F 0° to 800°F 0° to 1200°F	149.85
LP8601*	(External Resistance: Adjustable up to 10.5 Ohms approx.) Uses Iron-Constantan Type J Thermocouples	0-600°F	149.85
LP81001*	(External Resistance; Adjustable up to 25 Ohms approx.) Uses Iron-Constantan Type J Thermocouples.	0° to 1000°F 0° to 530°C	149.85
LP82001*	(External Resistance: Adjustable up to 40 Ohms approx.) Uses Chromel Alumel Type K Thermocouples.	0° to 2000°F 0° to 1080°C	149.85

EVENTS RECORDERS Designed to monitor and document from one to 10 separate operations.		
LEV10*	Events Recorder, 10 channel operation.	120.85
LDL10	DIRECT-O-LOG® Recorder. Features 10 self-clearing channel selector buttons with lights.	178.85
DC VOLTMETERS		
LDV8600*	Three Range DC Voltmeter 0-150/300/600 Volts DC 20,000Ω/v	108.85

AMPROBE® RECORDER STRIP CHARTS

Individually packaged 30' chart rolls packed six (6) to a box. Sold in multiples of six (6) only. Price $1.80 per roll except where indicated *$1.50.

Type	Cat. No.	Description	For Use with Model No.
Voltage	835X3A*	Marked: 95-130/190-260/380-520 Volts AC	LAV2X, FAV2X, LAV3X, FAV3X, LAVA81, FAVA81, FAVA82, LAVA82, FAVA83, LAVA83, FAVA84, LAVA84
	830AV600*	Marked: 0-150/300/600 Volts AC	LAV8600, FAV8600, LAVA87
	840X2	Marked: 165-245/330-490 Volts AC	LAV4X, FAV4X, LAVA85, FAVA85, LAVA86, FAVA86
Current	850A*	Marked: 0-5/25/100/250 Amps AC	LAA81, FAA81, LAA82, FAA82, LAVA81, FAVA81, FAVA82, LAVA82, LAVA83, FAVA83, LAVA84, FAVA84, LAVA85, FAVA85, LAVA86, FAVA86, LAVA87
	800AA*	0-800 Amps AC	LAA1500, FAA1500
	1500AA*	0-1500 Amps AC	LAA1500, FAA1500
	830AA	30 Division for AC Amperes. Marked: 0-150/300/600/1200	LAA830, FAA830
	840AA	40 Division for AC Amperes. Marked: 0-200/400/800	LAA840, FAA840
	850AA	50 Division for AC Amperes. Marked: 0-100/250/500	LAA850, FAA850
DC Variable	850D	50 Division for DC variables, (Millivolts, Milliamperes, Microamps), Marked: 0-1/5/25; 25-0-25	LDM850, FDM850, LDC850, FDC850, LDC8100, FDC8100, LDC8500, FDC8500, LDB81, FDB81
	840D	40 Division for DC variables. (Millivolts, Milliamperes, Microamps), Marked: 0-20/40/80; 20-0-20	LDM840, FDM840
	830D	30 Division for DC variables. (Millivolts, Milliamperes, Microamps). Marked: 0-15/30/60; 15-0-15	LDM830, FDM830 LDV8600, FDV8600
Pyrometer	601F	Marked: 0°F to 600°F	LP-8601, FP-8601
	840F	Marked: 0°F to 400°F; 0°F to 800°F; 0°F to 1200°F	LP8400, FP8400
	850P1&2	Marked: 0°F to 1000°F 0°F to 2000°F	LP81000, FP81000, LP82000, FP82000 LP81001, FP81001 LP82001, FP82001
	856C1	Marked: 0 to 530°C	LP81000, FP81000 LP81001, FP81001
	857C2	Marked: 0 to 1080°C	LP82000, FP82000 LP82001, FP82001
Temperature	823T1*	Marked: −50°F to +100°F	LT8100, FT8100
	833T2*	Marked: +50°F to +250°F	LT8100, FT8100
	828T3	Marked: −45 to + 40°C	LT8101, FT8101
	822T4	Marked: +10 to +120°C	LT8101, FT8101
	850T6*	Marked: −50° to 0°F 0° to +50°F +50° to +100°F +100° to +150°F +150° to +200°F +200° to +250°F	LT8650
Events	EV10	Marked from 0 to 10	LEV10, FEV10, LDL10

SPECIFICATIONS

Strip Chart Size: 2½" wide x 30' long.

Standard Chart Speeds: 1 inch or 12 inches per hour. (Other speeds available.) Unless otherwise specified 12 inches per hour chart speed will be shipped.

Impression Rate: Once every 5 seconds at 12 inches per hour. Once every 1 minute at 1 inch per hour.

Power Requirements: 115v AC, 60 cycles, 2.5 Watts. Other frequencies and voltages including 12 volts DC available at extra charge.

Accuracy:
DC Microammeter, Milliammeter and Millivoltmeter: ±2% FS.
AC ⊙ and DC Voltmeters: ± 3% on other than expanded scales.
AC Ammeters: All models EXCEPT LAA/FAA-1500: ±3% on current recorders using transducer furnished,⊙ ±5% if using transducer other than furnished.⊙
LAA/FAA-1500: ±4% using transducer furnished which has the same serial number as the recorder.⊙ Other transducers cannot be used.
Expanded Range AC Voltmeters: ±1.25% FS ⊙.
Pyrometers: ±3%FS
Model LT8100:
−50 to + 20°F: ±4°F.
+20 to +100°F: ±3°F.
+50 to +250°F: ±5°F.
Model LT8650: ±1.5°F
Model LT8101:
−45 To − 10°C: ± 2°C
−10 To + 40°C: ±1.5°C
+10 To +120°C: ±2.5°C
⊙ On sinusoidal wave form

Fast, accurate point to point circuit testing

PARAGON PRO-GLO Circuit Testers are simple, inexpensive, easy-to-use instruments for checking non-energized circuits. This little pen-size unit accurately checks for polarity, shorts and opens and continuity in circuits with resistance up to 10 ohms.

The PARAGON PRO-GLO tester consists simply of a plastic case containing two AA penlight batteries and a #222 lamp, a pointed probe and a three-ft. lead wire with alligator. The lead wire holds a new probe protector.

Servicemen and home repairmen appreciate the ease of use of this simple tester. Signal light at point of contact eliminates necessity for shifting eyes to read meter. Speed and accuracy of testing is increased. Low cost of device makes it practical for mass distribution in large service centers. Long operating life is assured — probe and battery contact spring are tin-plated beryllium copper, case is high-impact plastic and wire is heavy-duty, flexible test lead.

Paragon Electric Company, Inc.

Subsidiary of American Machine & Foundry Co.

DEALER NET PRICE $1.66

• FOR SERVICE SHOPS • HOME TESTING • GARAGES • HOBBYISTS • FARM USES

Probe-Protector Included

New! Vinyl extrusion Probe - Protector glides easily on the cord—can't be mislaid. Slips over Probe when circuit tester is not being used. This prevents accidental contact with metal that could create a circuit thus minimizing unnecessary battery burn-out.

AMF
PARAGON

Net
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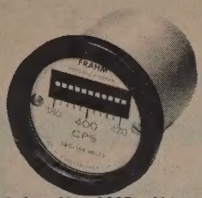
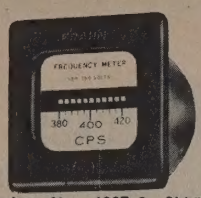
BIDDLE INSTRUMENTS

FRAHM® RESONANT REED FREQUENCY METERS

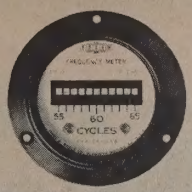
EW . . . 1½", 5, c 9 reeds, 50, 60 d 00 cycle Frahm rture Frequency r with metal case, tically sealed.



Catalog No. 2997—2½", 11 reeds, 400 cycle Frahm Miniature Frequency Meter with metal case.



Catalog No. 4997-2—3½", 11 reeds, 400 cycle, Frahm Frequency Meter with square plastic case.



Catalog No. 4967—3½", 11 reeds, 60 cycle, Frahm Frequency Meter with plastic case.

3½" meters available in round plastic, or metal (sealed), or round plastic with square bezel. Portable instruments available in all ranges shown with 3½" cases.

15 TO 1500 CPS (SPECIAL UP TO 1700 CPS) 2 TO 122 REEDS. MOLDED PLASTIC OR METAL CASES. SEALED IF REQUIRED. 1 ½" TO 8 ½" • PANEL MOUNTING OR PORTABLE

e first resonant reed instrument in the U.S.A. s ntroduced 50 years ago by James G. Biddle . Ve have maintained this leadership ever since, ace at your service the greatest knowledge of rials, processes, and controls—the finest facil- to produce quality instruments for unfailing acy and long life.

sic specifications are shown in the table at .

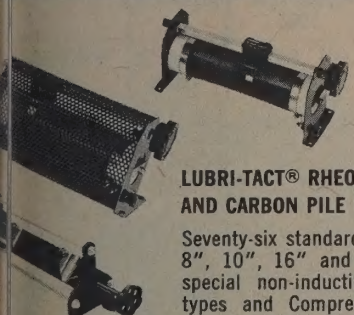
ecially designed instruments will be made to requirements.

rite or phone if you have applications which ire special modifications of range, methods of ating, scale graduations or other design acteristics.

Catalog Number	Range, Cycles	Number of Reeds	Interval Between Reeds, Cycles	Type of Case	Sealed	Accuracy %
2854	48-52	9	0.5	1½" Metal	Yes	0.3
2864	58-62	9	0.5	1½" Metal	Yes	0.3
2896	380-420	9	5.0	1½" Metal	Yes	0.3
2955	45-55	11	1.0	2½" Metal	Yes	0.3
2966	57.5-62.5	11	0.5	2½" Metal	Yes	0.3
2997	380-420	11	4.0	2½" Metal	Yes	0.3
4860	59-61	21	0.1	3½" Metal	Yes	0.1
4890	390-410	21	0.1	3½" Metal	Yes	0.1
4956	47.5-52.5	11	0.5	3½" Plastic	No	0.3
4959	48-52 58-62	10	1.0	3½" Plastic	No	0.3
4964	58-62	9	0.5	3½" Plastic	No	0.3
4967	55-65	11	1.0	3½" Plastic	No	0.3
4997	380-420	11	4.0	3½" Plastic	No	0.3
5066	55-65	21	0.5	3½" Plastic	No	0.3
5097	380-420	21	2.0	3½" Plastic	No	0.3

For standard specs and prices write or phone for BULLETIN 32 REM.

Voltages 100 to 150 v—D.C. resistance 100 ohms per volt. Instruments meet MIL Specifications. Cases meet ASA standard diameter dimensions.



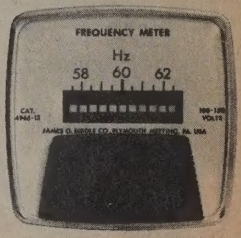
LUBRI-TACT® RHEOSTATS AND CARBON PILE RHEOSTATS

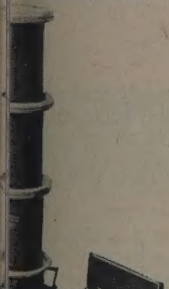
Seventy-six standardized ratings available in 8", 10", 16" and 20" sizes. A variety of special non-inductive, double and graded types and Compression Carbon Rheostats also available. Write for Bulletin 41 REM.

The New Look!

3½" FREQUENCY METER

Available with all 5, 7, 9, 10 and 11 reed instruments listed in our Bulletin 32. A handsome addition to any modern panel at no additional cost.





DIELECTRIC TEST SETS

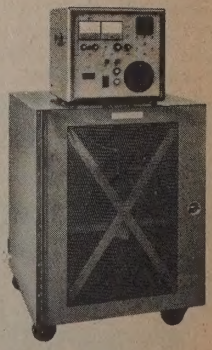
From 5 to 150 kv, both a-c and d-c. Excellent safety features and output voltage regulation.

For information on all ranges—Request file 22 REM.

CORONA TEST EQUIPMENT

. . . for measuring corona starting and extinction voltage, apparent corona charge, relative corona current.

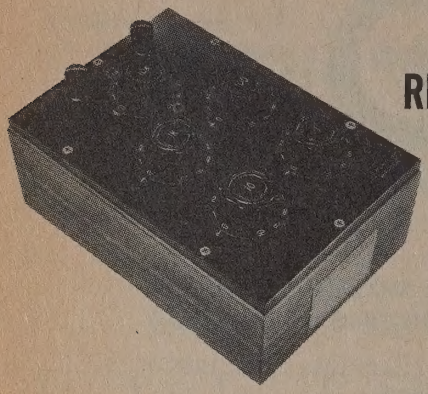
. . . for use in non-destructive or breakdown dielectric tests on electrical insulating materials, individual insulation structures and insulation of electrical equipment. Write for Bulletin 66 REM.



JAMES G. BIDDLE CO.

Beckman®

TEST AND



RESISTANCE DECADES Model DR Series

High Precision and Stability — Low Zero Resistance — Long Life Switches

DR units provide convenient selection of precise resistance values. Typical applications are found in the areas of circuit design in simulation of various factors and as standard in bridge-type measurements.

Standard units are available with 3, 5, or 7-dials. Each decade inserts a precise ohmic resistance in series with the terminals. The basic ohmic value of any decade may be multi factors of 0, 1, 2, 3, thru 10 by setting at the appropriate step. Switches are 12 360-degree type. Actual resistance is the zero-resistance and indicated resistance DR units provide zero-resistance of le 0.003 ohm per decade.

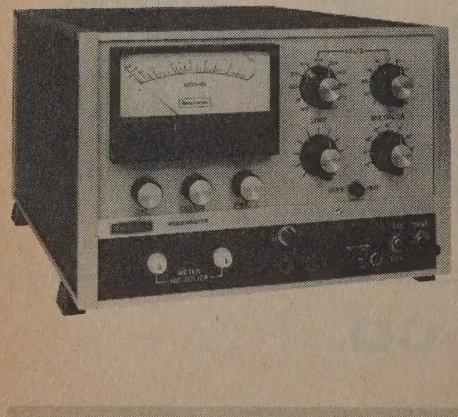
Model No.	Maximum Resistance	Decade Steps	Accuracy	Overall Dimensions	Weight Lbs. Net	Ship	
DR-4D	1,110	10 x (1+10+100)	±0.25 & ±0.1%	8 x 5½ x 4½	4	6	$
DR-50D	11,111	10 x (0.1+1+10+100+1K)	±0.25 & ±0.01%	9 x 6 x 4½	5	7	
DR-51D	111,110	10 x (1+10+100+1K+10K)	±0.25 & ±0.1%	9 x 6 x 4½	5	7	
DR-52D	1,111,100	10 x (10+100+1K+10K+100K)	±0.1%	9 x 6 x 4½	5	7	
DR-70D	1,111,111	10 x 0.1+1+10+100+1K+10K+100K)	±0.25 & ±0.1%	17¼ x 5 x 4½	6	8	
DR-71D	11,111,110	10 x (1+10+100+1K+10K+100K+1M)	±0.25 & ±0.1%	17¼ x 5 x 4½	6	8	

WHEATSTONE BRIDGES Model RN

Universally used for the measurement of all types of resistance devices and circuits where high accuracy is required. Models available for performing Murray-Varley Loop tests. Decade accuracy essentially ±0.1%, ratios are ±0.05%. May also be used as a 4-dial precision decade resistance.

Model	Total Resistance of Decade	Ratio Dial Settings	Circuits	Dimensions	
RN-1	9 x (1+10+100 +1000)	.001, .01, .1, 1, 10, 100, 1000	—	9"8"x6½"	$
RN-2	9 x (1+10+100 +1000)	.001, .01, .1, 1, 10, 100, 1000, M10, M100, M1000	Murray & Varley	9"8"x6½"	
RN-3	10 x (1+10+100) +9(1000)	1/1000, 1/100, 1/10, 1/9, 1/4, 1/1, 10/1, 100/1, 1000/1, M10, M100, M1000	Murray & Varley	9½"x8"x6½"	

Model L MEGOHMMETERS



Type L. Megohmmeters are used for both laboratory and high speed production testing of motor and transformer winding insulation, cable insulation, high value resistors, capacitor insulation, and for the measurement of surface and volume leakage of insulating materials. These instruments meet the requirements for testing insulation resistance in accordance with ASTM D-257, and Federal Specification LP-406B, Method 4041.

Model	Test Voltage	Resistance Range Low	Resistance Range High	Power Consumption	Weight Lbs. Net	Ship	Size	
L-4B	200 or 500 fixed	1 meg. 2.5 meg.	100,000 meg. 250,000 meg.	50 watts	14	17	15"x8"10"	$
L-6C	100 to 600*	1 meg.	100,000 meg.	80 watts	15	18	15"x8"x10"	
L-7	100 to 600*	1 meg.	5 x 10^{13} ohms	75 watts	20	24	8"x10½"x11½"	
L-8	10 to 1000**	10^5 ohms	10^{16} ohms	35 watts	18	22	7½"x11"x13"	

* Continuously variable, built-in voltmeter for accurate setting.

** Continuously variable, selectable by switch.

Net

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MEASURING INSTRUMENTS

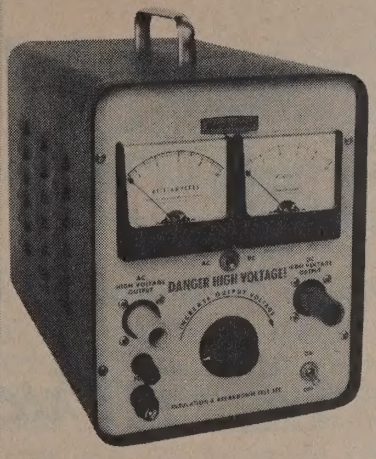
KILOVOTMETER
Measures 100,000 volts AC or DC

Large rugged 6 inch precision mirror scale meter, ideal for use in lab or field testing. Completely transistorized with stabilized anti-drift circuitry resulting in sensitivity in the order of a few micro-amperes. Battery operated unit using long life, self-contained mercury batteries. Panel mounted trimmers provide for recalibration when required.

spike bypass circuitry and a novel automatic voltage coeffi-
pensator for the multipliers. Special high voltage probes sup-
n instrument. The low voltage probe is used on the 5 and 10
with the larger high voltage probe used in the higher ranges.
racy of the basic instrument is ±1% of full scale on DC,
full scale on 60 Hz. The probe accuracy is ±2% on the 5
V range and ±4% on the 50 and 100 KV range.

ES: 0 to 5,000/10,000/50,000/100,000 volts DC or 60 Hz AC.
l 50-AC/DC kilovoltmeter is supplied complete with high and
ge probes. Two Mallory TR-135R mercury cells are also supplied
wer source.

20.00 complete, including probes and batteries.

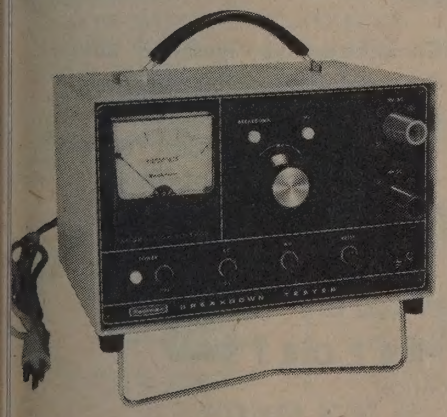


INSULATION TEST SETS
AC or DC up to 40 kV

Used in testing insulation where both applied voltage and leakage currents may be read simultaneously. Test sets provide voltage outputs of AC only, DC only, or a combination of AC/DC. Metering accuracy is ±3%. Automatic current limiter action prevents damage to instrument or sample. The sets are designed for portability and are recommended for bench or field measurements.

Model	Voltage	Output	Current Meter	Price
3000-AC	0 to 3kV	AC	10 ma	**$200.00**
3000-AC/DC	0 to 3kV	AC/DC	10 ma	**230.00**
1000-AC	0 to 10kV	AC	10 ma	**275.00**
1000-AC/DC	0 to 10kV	AC/DC	10 ma	**330.00**
2500-DC	0 to 25kV	DC	100 μa	**400.00**
4000-DC	0 to 40kV	DC	50 μa	**600.00**

L P-2B VOLTAGE BREAKDOWN TESTER

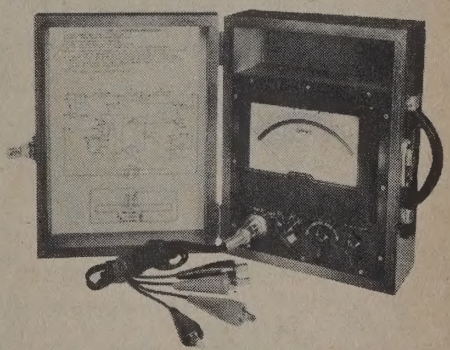


el P-2B Voltage Breakdown Tester furnishes adjustable AC or
ge for safely and accurately determining breakdown capability
lashtesting capacitors or other insulating materials. The unit
lf-contained, metered HV power supply which can be adjusted
esired level by the main control knob on th front panel. The
merely inserts the probe into either the AC or DC connector.
al trip-points are settable with recessed front-panel controls;
e current reaches a pre-set point, high voltage is automatically
ized. To re-energize, a reset switch must be depressed.
e trip point has been exceeded, a panel light becomes lit.
nt can be set to as low as 0.5 mA.

Voltage Range*		Current			
AC(RMS)	DC	AC	DC	Input Power Required	Price
0-3000	0-4000	7mA	5mA	120/240 V, 50-60 Hz	**$315.00**

g Accuracy ±5%

Model LRO-1 LOW RESISTANCE OHMMETER



The Model LRO-1 Low Resistance Ohmmeter is useful for the measurement of resistance of sensitive relay contacts, fuses, bus-bars and connections, rail joints, pipe or conduit, switch contacts, transformer windings, motor windings, bonding, grounding and similar applications. The current through the unknown resistance never exceeds 110 ma.

PRICE $175.00

FEATURES: Extreme accuracy for the most critical measurements • Entirely self-contained, including 1½ volt flashlight battery • Ranges: .1 ohm, 1 ohm and 10 ohms • 100 meter scale divisions • Accuracy of plus/minus 1½% on LRO-1 based on full scale values. • Full Scale Readings • Maximum current through piece under test = 0.11 amp.

Other electrical test equipment manufactured by Beckman Instruments, Inc., Cedar Grove Operations can be found in current editions of the MASTER. For complete technical details and specifications on test equipment listed here and others request a copy of Catalog RM-68.

Beckman INSTRUMENTS, INC.
CEDAR GROVE OPERATIONS

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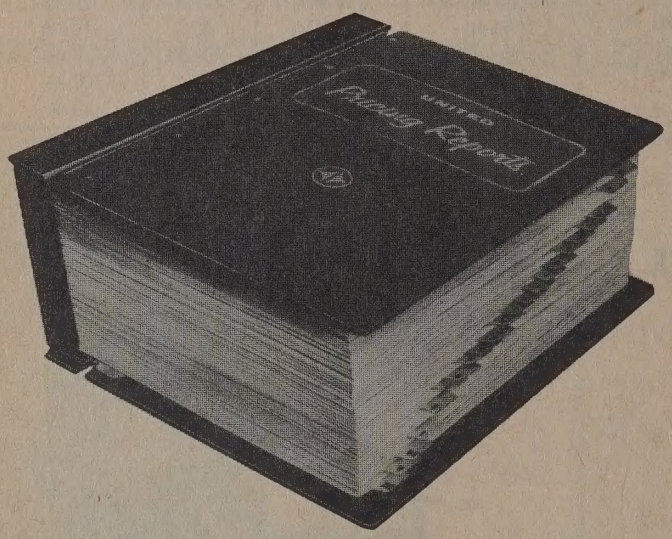

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Delivery is often dependent on availability of raw materials. Check with your distributor for delivery information at the time you place your order.

Tracks 'em Down Dead or Alive

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DESCO* Circuitracer*

GIVES YOU A 3-IN-1 ELECTRICAL TEST LABORATORY

MODEL CT1-1
Weighs only 2½ ozs. LIST $5.95

Satisfaction Unconditionally Guaranteed

DON'T SEND A MAN TO DO A BOY'S JOB!

Are the technicians in your laboratories and shops using expensive meters and instruments for sample continuity and voltage checks? Speed up production through the use of the tool specifically designed for this application. A meter should be used only when the value of voltage, resistance or current must be known. Under any other conditions a Circuitracer will provide the required information faster and easier than expensive, bulky meters.

CIRCUIT TESTING WITH A CIRCUITRACER IS FASTER because the signal light is in the tip at the point of contact. This makes it possible to determine the existence of a circuit or voltage without removing the eyes from the test point to read a meter.

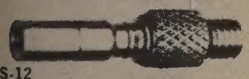
SAVE METER REPAIR MONEY BY USING DESCO CIRCUITRACERS. An overvoltage across a meter usually results in extensive damage which takes the meter out of service until repaired or replaced. The worst that can happen to your Circuitracer is a burned out lamp that can be replaced by the operator in less than a minute. Total cost, ten or fifteen cents for the lamp!

*T.M. Reg.

The CIRCUITRACER is the only electrical tester (other than expensive meters) that can test dead circuits, low voltage live circuits AND high voltage live circuits. It is made of the finest materials available and is designed for long life.

DESCO TEST PROBE ADAPTERS

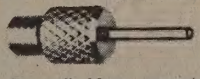
ORDER DESCO CIRCUITRACER* MODEL CT2-2 OR CT2-1 FOR USE WITH THESE FITTINGS



WS-12
Socket to fit 12 ga. connector pin

WP-12
Pin to fit 12 ga. connector socket

WS-16
Socket to fit 16 ga. connector pin



WP-16
Pin to fit 16 ga. connector socket

WS-20
Socket to fit 20 ga. connector pin

WP-20
Pin to fit 20 ga. connector socket

FITTINGS $1.00 EA.

INSURE CONNECTOR RELIABILITY

Manual probing of harness connectors while circuit testing can damage connectors and impair reliability. Desco Test Probe Adapters were developed to provide a test fitting identical to the pins and sockets in "AN" connectors being tested. They make the same electrical and mechanical contact as the mating connector, and insure against scratching, bending and warping.

The adapters are made in three sizes to fit connectors using #12, #16 and #20 wire gauges. The sockets are gold plated copper with a brass sheath which retains a berylium copper spring. The pins are stainless steel to insure long life. All are made to rigid MIL-SPECS. The adapters will fit Desco Jumper Wires and the Desco Circuitracer* Tester interchangeably.

THE ULTRA LOW CURRENT Trantracer*

MODEL TR200 LIST $12.75

A SAFE, FAST, INEXPENSIVE "GO" – "NO GO" TESTER OF ULTRA LOW CURRENT SENSITIVE CIRCUITS

The Trantracer* checks continuity by sending less than 50 micro amperes through the circuits to prevent damage to solid state junctions and micro watt sensitive elements. Continuity is established as Go — No Go through circuit resistances of up to 400,000 ohms.

Maximum voltage applied to very high resistance circuits is 2 volts, low resistance circuits normally see millivolts and micro amperes.

*T.M. Reg.

DESCO MFG. CO.

PRECISIO

the Recognized Leader

PRICE LIST

PRICES — Prices listed are net and include all hardware and individual
Resistance approximate. If important request factory engineering confir

ELECTRO-MECHANICAL INSTRUMENT CO., INC.

DC AMMETERS

Range	Approximate Resist. Ohms	MODEL NF2C Catalog Number	MODEL RF2C Catalog Number	Dealer's Net Price	Catalog Number	MODEL RF2-¼C Dealer's Net Price	For Skin Packing Add Suffix "S" to Catalog No. Dealer's Net Price	MODEL Catalog Number
0-1	.15	2101	2201	$2.40	2301	$2.85	$3.00	
0-3	.032	2101-A	2201-A	2.40	2301-A	2.85	3.00	
0-5	.016	2102	2202	2.40	2302	2.85	3.00	
0-10	.00115	2103	2203	2.40	2303	2.85	3.00	2403
0-15	.00115	2103-A	2203-A	2.40	2303-A	2.85	3.00	2403-A
0-20	.00115	2104	2204	2.40	2304	2.85	3.00	
0-25	.00115	2104-A	2204-A	2.40	2304-A	2.85	3.00	
0-30	.00115	2105	2205	2.40	2305	2.85	3.00	2405
0-60	.000116	2106-A	2206-A	3.10	2306A	3.30	3.45	
1-0-1	.08	2109	2209	2.40	2309	2.85	3.00	
3-0-3	.00115	2110	2210	2.40	2310	2.85	3.00	
6-0-6	.00115	2111	2211	2.40	2311	2.85	3.00	
10-0-10	.00115	2112	2212	2.40	2312	2.85	3.00	
15-0-15	.00115	2113	2213	2.40	2313	2.85	3.00	
20-0-20	.00115	2114	2214	2.40	2314	2.85	3.00	2414
30-0-30	.00115	2115	2215	2.40	2315	2.85	3.00	2415
75-0-75	.000116	2116-A	2216-A	3.50	2316-A	3.90	4.05	

DC MILLIAMMETERS

0-1	850	2120	2220	$4.05	2320	$4.20	$4.35	2420
0-3	425	2121	2221	3.25	2321	3.40	3.55	
0-5	925	2125	2225	3.00	2325	3.15	3.30	2425
0-10	300	2126	2226	2.85	2326	3.00	3.15	2426
0-20	95	2127	2227	2.50	2327	2.75	2.90	2427
0-25	65	2127-A	2227-A	2.50	2327-A	2.75	2.90	
0-30	37	2128	2228	2.50	2328	2.75	2.90	2428
0-50	14.5	2129	2229	2.50	2329	2.75	2.90	2429
0-100	7.0	2130	2230	2.50	2330	2.75	2.90	2430
0-150	1.8	2130-A	2230-A	2.50	2330-A	2.75	2.90	2430-A
0-200	1.5	2130-B	2230-B	2.50	2330-B	2.75	2.90	2430-B
0-300	.61	2131	2231	2.50	2331	2.75	2.90	2431
0-500	.21	2132	2232	2.50	2332	2.75	2.90	2432

DC VOLTMETERS (High Resistance)

0-10	1050	2140	2240	$3.25	2340	$3.55	$3.70	
0-30	2800	2141	2241	3.25	2341	3.55	3.70	
0-50	4000	2142	2242	3.50	2342	3.90	4.05	
0-150	28000	2143	2243	3.60	2343	4.00	4.15	
0-300	55000	2144	2244	3.70	2344	4.15	4.30	

DC VOLTMETERS (Low Resistance)

0-1	33	2134	2234	$2.50	2334	$2.75	$2.90	
0-3	100	2135	2235	2.50	2335	2.75	2.90	2435
3-0-3	30	2136	2236	2.50	2336	2.75	2.90	
0-5	140	2136-A	2236-A	2.50	2336-A	2.75	2.90	
0-8	225	2136-B	2236-B	2.50	2336-B	2.75	2.90	
0-10	280	2137	2237	2.50	2337	2.75	2.90	2437
0-15	450	2137-A	2237-A	2.50	2337-A	2.75	2.90	2437-A
0-20	600	2137-B	2237-B	2.50	2337-B	2.75	2.90	2437-B
0-30	1000	2137-C	2237-C	2.50	2337-C	2.75	2.90	2437-C
0-50	1400	2138	2238	2.50	2338	2.75	2.90	2438

AC AMMETER

0-1	.365	6101	6201	$3.70	6301	$3.90	$4.05	
0-3	.078	6102	6202	3.70	6302	3.90	4.05	
0-5	.023	6103	6203	3.70	6303	3.90	4.05	6403
0-10	.013	6104	6204	3.70	6304	3.90	4.05	

AC MILLIAMMETER

0-25	750	6125	6225	$3.70	6325	$3.90	$4.05	
0-50	175	6126	6226	3.70	6326	3.90	4.05	
0-100	58	6127	6227	3.70	6327	3.90	4.05	
0-250	12	6128	6228	3.70	6328	3.90	4.05	
0-500	1.75	6129	6229	3.70	6329	3.90	4.05	6429

AC VOLTMETER

0-5	50	6135	6235	$3.70	6335	$3.90	$4.05	
0-10	175	6136	6236	3.70	6336	3.90	4.05	
0-15	300	6137	6237	3.70	6337	3.90	4.05	6437
0-25	920	6137-A	6237-A	3.70	6337-A	3.90	4.05	
0-50	1800	6138	6238	3.70	6338	3.90	4.05	
0-150	9530	6139	6239	4.25	6339	4.60	4.75	6439
0-300	32000	6140	6240	4.80	6340	5.10	5.25	6440

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Precision Products

EMICO

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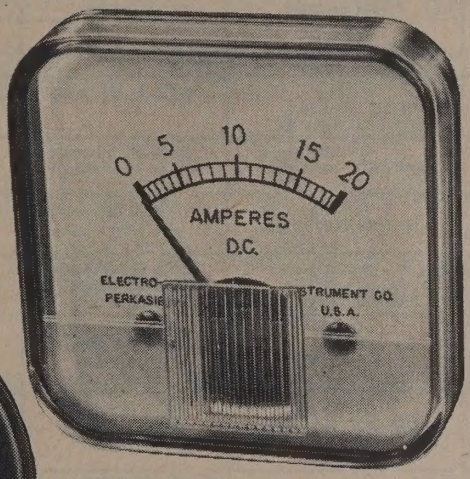
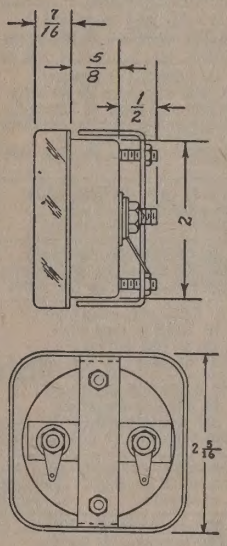
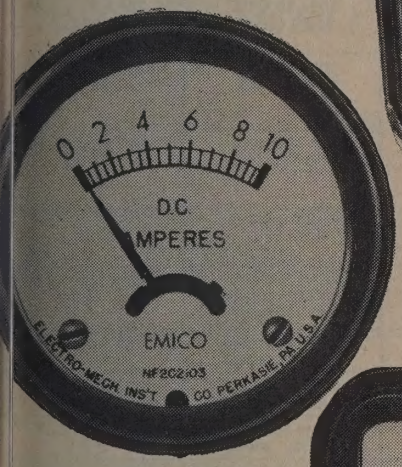
MODEL 13
Edge Reading Type

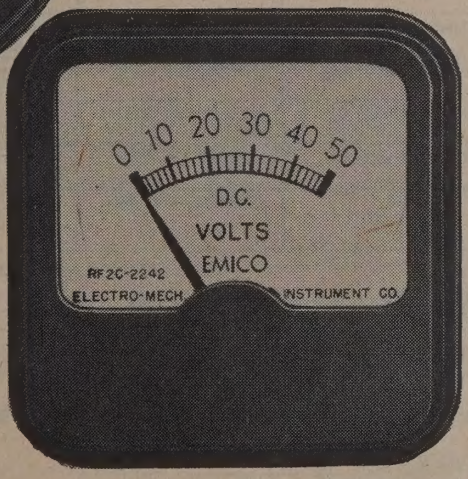


MODEL RF2¼C

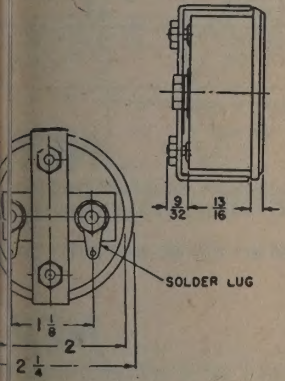


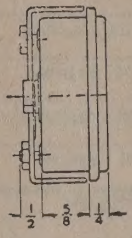


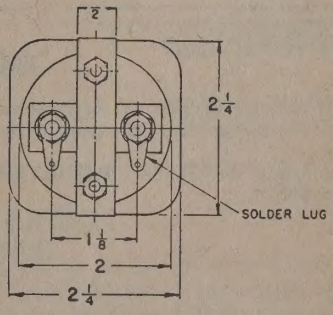
MODEL NF2C



MODEL RF2C







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Accurate, precision mechanism plug-in type with damped meter movement. Convenient 90° swivel prongs for ease of reading from any position.

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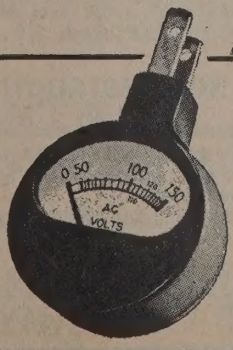
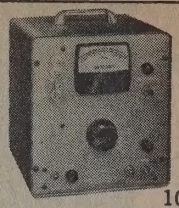


FREED TRANSFORMER CO., INC.

1620-A-B-C-D


1020-C

667

2030-A-B-C

266

MEGOHMMETERS

Freed can supply a complete range of insulation resistance measuring equipment with fixed and variable d.c. test voltages from 5 to 5000 volts. Insulation and leakage measurements can be made on transformers, motors, cables, electronic assemblies and components, dielectric materials, electrical appliances and tools, capacitors and resistors.

Type	Resistance Range	Test Voltage	Accuracy	Power Requirements	Size and Weight
1620	0.1 to 4,000,000 megohms 1 to 2,000,000 megohms @ 500 volts	Variable 50 to 1000 volts d.c.	±5% at full scale	105-125 volts 50-60 cycles	15" x 9" x 7½" 24 lbs. *
1620-A	0.01 to 4,000,000 megohms 0.1 to 200,000 megohms @ 50 volts 1 to 2,000,000 megohms @ 500 volts	Variable 5-100 volts d.c. 100-1000 volts d.c.	±5% at full scale	105-125 volts 50-60 cycles	15" x 9" x 7½" 24 lbs. *
1620-B	1 to 2,000,000 megohms 10 to 2,000,000 megohms @ 2500 volts	Variable 250-2500 volts d.c.	±5% at full scale	105-125 volts 50-60 cycles	15" x 9" x 7½" 24 lbs. *
1620-C	All features same as Type 1620 with additional circuitry for capacitor measurements	Variable 50 to 1000 volts d.c.	±5% at full scale	105-125 volts 50-60 cycles	15" x 9" x 7½" 24 lbs. *
1620-D	0.01 to 40,000,000 megohms 0.1 to 2,000,000 megohms @ 50 volts 1 to 20,000,000 megohms @ 500 volts	Variable 5-100 volts d.c. 100-1000 volts d.c.	±5% at full scale except highest range ±10%	105-125 volts 50-60 cycles	15" x 9" x 7½" 25 lbs. *
1020-C	0.1 to 2,000,000 megohms 0.1 to 200,000 megohms @ 50 or 100 volts d.c. 1 to 2,000,000 megohms @ 500 volts d.c.	Fixed 50, 100, 500 volts Regulated	±3% all ranges except highest range ±5%	105-125 volts 50-60 cycles	9½" x 10½" x 8" 18 lbs. *
1020-D	0.1 to 2,000,000 megohms 0.1 to 200,000 megohms @ 100 or 200 volts d.c. 1 to 2,000,000 megohms @ 500 volts d.c.	Fixed 100, 200, 500 volts Regulated	±3% all ranges except highest range ±5%	105-125 volts 50-60 cycles	9½" x 10½" x 8" 18 lbs. *
* 266	0.6 megohm to 500 teraohm @ 500 v. 0.6 megohm to 100 teraohm @ 100 v.	Fixed 100-500 v.d.c. Regulated	± 5% at full scale	105-125 Volts 50-60 Hz	11½" x 9" x 9" 18 lbs.
* 668	0 to 20,000 megohms @ 1000 v 0 to 50,000 megohms @ 2500 v 0 to 100,000 megohms @ 5000 v	Fixed 1000-2500 5000 v.d.c.	±2.5% of scale length	battery operated transistor supply built in charger	16" x 12½" x 6½" 23 lbs.
2030-A	10 to 2,000,000 megohms	Fixed 500 volts d.c.	±5% full scale	battery operated transistor supply	6" x 8" x 4" 8 lbs.
2030-B	1 to 20,000,000 megohms	Fixed 500 volts d.c.	±5% full scale	battery operated transistor supply	6" x 8" x 4" 8 lbs.
2030-C	1 to 2,000,000 megohms	Fixed 50 volts d.c.	±5% full scale	battery operated transistor supply	6" x 8" x 4" 8 lbs.
2030-D	1 to 2,000,000 megohms	Fixed 100 volts d.c.	±5% full scale	battery operated transistor supply	6" x 8" x 4" 8 lbs.
2030-E	1 to 2,000,000 megohms	Fixed 200 volts d.c.	±5% full scale	battery operated transistor supply	6" x 8" x 4" 8 lbs.
* 667	0 to 10,000 megohm	Fixed 100-250-500 1000 v.d.c.	± 2.5% of scale length	battery operated transistor supply	8½" x 4½" x 5" 4½ lbs.

Rack type available — 1620 series 19" x 10½" x 9½"
1020 series 19" x 7" x 9½"

* Norma Instruments, Freed exclusive U.S. agent.

MEGOHMMETER - NO. 1650

NEW

The Type 1650 Megohmmeter is a versatile ultra high resistance measuring instrument providing variable test voltages from 10 to 1000 v.d.c. Ground and guard termina are provided for measurement of grounded and ungrounded two or three terminal components. Provision for pre-charging and discharging capacitors is incorporated the instrument.

Specifications: Test Voltage: 10-1000 v.d.c. – Resistance Range: 50 KΩ to 200 TΩ – Operating Voltage: 105-125 volts, 50-60 Hz – Size and Weight: 11" x 10" x 8 approx. 12 lbs. – Price: $465.00.

MEGOHMMETER - NO. 2030-G

NEW

The new Type 2030-G Megohmmeter is a portable re-chargeable battery operated high insulation resistance measuring instrument. Battery operation provides stab isolated resistance measurement capability not affected by leakage path through the power lines. Five commonly used test voltages are available from 50 to 500 volts.

Specifications: Test Voltages: 50, 100, 200, 250, 500 v.d.c., ±5% – Resistance Range: 50 KΩ to 100 teraohms in eight ranges: 50 v., 50KΩ to 10 TΩ, 100 v., 100 KΩ 20 TΩ, 200 v., 200 KΩ to 40 TΩ, 250 v., 250 KΩ to 50 TΩ, 500 v., 500 KΩ to 100 TΩ – Resistance Accuracy: ±5% at full scale to 1 teraohm, ±10% above – Operati Voltage: Re-chargeable batteries – Size and Weight: 11" x 10" x 8", approx. 10 lbs. – Price: $345.00.

NON-DESTRUCTIVE MEGOHMMETER

NEW

The Type 1625 Non-Destructive Megohmmeter provides three modes of insulation resistance testing: a manual voltage control meghommeter; an automatic line ramp voltage; and an adjustable leakage current for non-destructive dielectric testing of components. The non-destructive feature will operate in the automatic ram mode or by manual voltage control. Test voltage is removed from the unknown in milli-seconds when leakage current exceeds the preset value. A voltmeter indicates th test voltage at disconnect and will hold the reading until reset.

Specifications: Test Voltage: Manual or Ramp controlled, 50-1000 v.d.c. – Resistance Range: 0.1 to 4,000,000 megohms, 1 to 2,000,000 megohms at 500v. – Resistanc Accuracy: ±5% at full scale – Leakage Current: 15 microamps to 3 milliamps – Operating Voltage: 105-125 volts, 50-60 Hz – Size and Weight: 15" x 9" x 7½", 26 lbs. Price: $460.00.

Prices quoted are subject to change without notice

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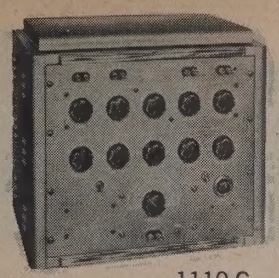
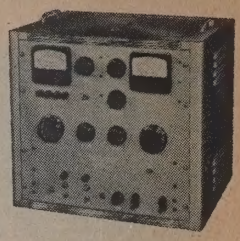
1010-A

1210-A



1110-C



1870

INCREMENTAL INDUCTANCE BRIDGES

ect in-line readings of inductance and conductance of iron core component audio frequencies with or without superimposed direct current. The bridge s the Owens circuit with provisions for measuring the series or parallel ictance and conductance of the unknown inductor; five precision resistance and capacitance decades are provided to indicate these values. "Q" or storage factor can be measured as the product of the inductive reactance and the conductance.

Ty	Inductance Range	Conductance Range	Frequency Range	D.C. Current	Accuracy	Dimensions and Weight	Price
1C	1111.1 h to 1 mh 5 decades 1.1 h to 1 μh 2 decades	0.015 μmho—100 mho "Q" = 600 max @ 100 cycles	20 cycles to 10KC	up to 2 amperes	±0.5% to 5 KC ±2% to 10 KC	21¾" x 17½" x 15¼" 50 lbs.	545.00
1	111.1 h to 100 μh 5 decades 0.11 h to 0.1 μh 2 decades	0.15 μmho—1000 mho "Q" = 600 max @ 100 cycles	20 cycles to 10 KC	up to 15 amperes	±1% to 5 KC ±3% to 10 KC	21¾" x 28" x 15¼" 80 lbs.	825.00
1	111.1 h to 100 μh 5 decades 0.11 h to 0.1 μh 2 decades	0.15 μmho—1000 mho "Q" = 600 max @ 100 cycles	20 cycles to 10 KC	up to 30 amperes	±1% to 5 KC ±3% to 10 KC	21¾" x 33¼" x 15¼" 100 lbs.	1250.00

IMPEDANCE & ADMITTANCE BRIDGE

An audio frequency bridge for measuring the complex impedances of inductors, transformers, filter networks and capacitors.

Type	Frequency Range	Impedance and Admittance	Accuracy	Maximum Applied Voltage	Dimensions and Weight	Price
1120	20 to 20,000 cycles	XL, XC and R up to 1000 ohms, BL, BC and G up to 1000 microhms	R: ±1% G: ±2% X: ±1% up to 5 KC B: ±1% up to 5 KC	125 Volts	10½" x 12" x 12" 25 lbs.	455.00

UNIVERSAL BRIDGE

he Freed Type 1150-A Universal Bridge offers the laboratory a combination of ight bridges in one instrument. This bridge will measure the reactive and esistive component of impedances, capacitance, resistance and phase angle. In the Hay and/or Owen bridge configuration the incremental permeability of an inductance can be measured.

Type	Inductance Range	Capacitance Range	Resistance Range	"D" Hay Bridge	Price
1150-A	5 μh 1110 h	5 pf-10 mf	0.05 Ω-1 MΩ	0.001-10 Q = 0.1-1000	825.00
	"Q" Maxwell 0.01-50	"Q" Series Owen 0.01-600 @ 100 cycles	"Q" Parallel Owen 80 @ 100 cycles	"Q" Parallel Resistor-Condensor Bridge 0.01-11.1	
	Accuracy Inductance ±0.5% up to 1 KC. ±2% to 10 KC. Capacitance ±1% @ 1 KC. "D"-"Q" ±5% @ 1 KC. Resistance (ac.) ±1% @ 1 KC.			Dimensions and Weight 21¾" x 24½" x 17" 65 lbs.	

INDUCTANCE COMPARISON BRIDGE

A complete production unit for comparing transformer and inductor impedances under dynamic conditions against a standard resistor. The instrument has a self-contained metered 500 Ma. d.c. supply, metered 135 volt a.c. source and a direct reading percentage deviation indicator, provision for connecting external test frequencies up to 10 Kc. is provided.

Type	Inductance Range	Deviation Range	Test Frequency	D.C. Current Range	Dimensions and Weight	Price
1870	25 mh - 100 h	±20%, accuracy 1% ±30%, accuracy 5%	60-10,000 cycles	0.5 ma., 0-25 ma., 0-100 ma., 0-500 ma.	22" x 19½" x 15" 150 lbs.	550.00

COMPARISON & LIMIT BRIDGE

A rapid and convenient method for laboratory or production testing of resistors, capacitors and inductors. Components may be sorted for tolerances up to ±20% or selected in matched pairs.

ype	Inductance Range	Capacitance Range	Resistance Range	Test Frequency	Accuracy	Dimensions and Weight	Price
0-A	10 μh-100 h	10 Pf-100 mf.	1 Ω-20 MΩ	50 or 60 cycles 1 KC-10 KC	±0.1% on 5% range	10½" x 12" x 12" 17 lbs.	350.00

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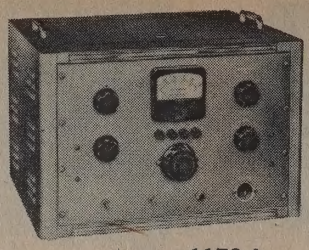
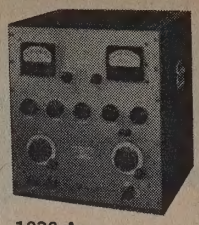
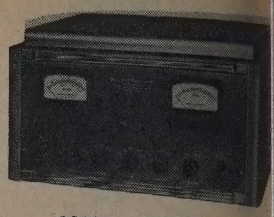
1140-B



1170-A



1030-A



1210-A

NULL DETECTORS

Sensitive null detectors for bridge measurements, with self contained selective filters to limit the amplifier characteristics at various bridge measuring frequencies.

Type	Sensitivity	Frequency Range	Filter	Power Requirements	Dimensions and Weight	Price
1140-B	10μ volts @ 1 KC for 15% meter deflection filter in	20 to 20,000 cycles	Fixed 60, 400, 1000 cycles Adjustable ±5% of center Other frequencies available	105-125 volts 50-60 cycles	Cabinet 12" x 8½" x 10"—18 lbs. Rack—19" x 6" x 10"	250.00
2076	1μ volts @ 1 KC for 15% meter deflection filter in	20 to 20,000 cycles	Fixed 60, 400, 1000 cycles Adjustable ±5% of center Other frequencies available	Transistorized Battery operated	Cabinet—8" x 6" x 8" Rack—19" x 5¼" x 8"	295.00

NULL DETECTOR — VACUUM TUBE VOLTMETER

Designed primarily for a.c. bridge measurements, a dual purpose instrument for indicating bridge balance and the a.c. excitation across the unknown.

Type	Null Sensitivity	Frequency Range	Filter	Power Requirements	Dimensions and Weight	Price
1210-B	10 M volts @ 1 KC for 15% meter deflection	20-20,000 cycles	Fixed 60, 400, 1000 cycles provision for other frequencies	105-125 volts 50-60 cycles	*21" x 12" x 13" 37 lbs.	350.00
	Voltage Range	Input Impedance	Frequency Range	Accuracy	Rack	
	0.1 to 150 volts ac. 0.15-1.5-15-150 volts full scale	500 KΩ in parallel with 25 PF.	20 to 20,000 cycles ±1db	2% of full scale	19" x 8¾" x 9½"	

D.C. SUPPLY

A constant voltage transformer regulated current source designed for use with the Freed Incremental Inductance Bridges. Solid state bridge rectification, L-C filters and low internal impedance provides good current regulation with a minimum of circuit complexity.

Type	Current Ranges	Voltage Ranges	Regulation	Power Requirement	Dimensions and Weight	Price
1170-A	4 ranges, 0-5, 25, 100 and 1000 milliamperes	Maximum no load voltage 1000 Ma, 270V, 100 Ma, 270V, 25 Ma, 85 V, 5 Ma, 48 V	± 1% for line variation 105-125 V	105-125 volts 60 cycles	19" x 10½" x 13½" 66 lbs.	350.00

LOW FREQUENCY "Q" INDICATORS

Direct indication of "Q" at low frequencies, inductance, distributed capacity, impedance and dielectric loss can also be measured. Instrument may be used to study the magnetic properties of iron core material for stability as a function of applied voltage and losses as a function of the frequency.

Two units are available, the 1030-A indicates "Q" as a product of meter readings multiplied by dial settings.

Type	Test Frequency	Q Range	Accuracy	Test Voltage	Power Requirements	Dimensions and Weight	Price
1030-A	20 cycles to 200 K.C.	1-1000	±5% 20 cycles to 50 KC— to 200 KC at reduced accuracy	Voltage to series circuit, 0.01 to 10 volts voltage across coil variable to 100 volts	105-125 volts 50-60 cycles	21" x 23" x 15" 120 lbs.	1250.00

NEW

NON-DESTRUCTIVE AC/DC INSULATION TESTERS

The Freed Series 3000 Non-destructive Insulation Testers feature adjustable leakage current which may be preset for non-destructive dielectric testing of materials and components. Voltage is removed from the test sample when preset current is exceeded. A memory voltmeter will indicate voltage when preset current is removed from test sample and hold reading until reset. Manually variable test voltage.

Specifications: Test Voltage: Model 3000 – 0-3000 v. A.C. RMS/D.C., Model 3001 – 0-5000 v. A.C. RMS/D.C. – Preset Leakage Current: 15 microamps to 5 milliamps – Operating Voltage: 105-125 volts, 50-60 Hz – Size and Weight: 21" x 15" x 10"; 58 lbs. – Price: Type 3000 – $350.00, Type 3001 – $375.00.

Prices quoted are subject to change without notice

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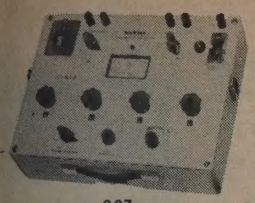

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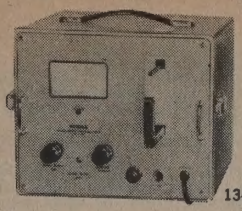

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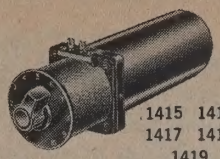


1415 1416
1417 1418
1419

RAC—1.5/3

DISTORTION METER

The type 1970 Distortion Meter is a wide range low input impedance instrument, designed with passive circuitry resulting in high stability, low residual distortion and hum levels.

Type	Frequency Range	Input Impedance	Input Voltage	Sensitivity	Dimensions and Weight	Price
1970	20 cycles to 1 megacycle	75-150 300-600	1 to 200 volts	Distortion level of 0.02% for 1 volt input	19″ x 10½″ x 12″ 30 lbs.	525.00

A.C. LINE REGULATOR

A distortion free 60/400 Hz electromechanical a.c. line regulator. Features a tubeless fast response phase reversible magnetic amplifier preceded by a transistor comparison amplifier with zener reference.

Type	Nominal Input Voltage-Frequency	Output Voltage	KVA Rating and Regulation Range	Regulation Accuracy	Response Speed Volts/sec.	Dimensions and Weight	Price
R.A.C. 1.5/3	115 Volts 60 or 400 Hz	Adjustable 110-120 volts	3 KVA for ± 10% regulation 1.5 KVA for ± 20% regulation	± 0.25% for ± 10% regulation range ± 0.5% for ± 20%	10@ ± 10% 20@ ± 20%	19″ x 7″ x 13″ 45 lbs.	450.00

DECADE CAPACITORS

The Freed series of Decade Capacitors cover a wide range of values and can be supplied as individual decades from 0.0001 PF. per step to 1 mf. per step or in various combinations of assembled decade boxes. All capacitors are non-inductively wound and heat treated for stability.

Type	Total Capacity	Dielectric	Dissipation Factor	Accuracy	Dimensions and Weight		Price
1415	10 μf in steps of 1 μf	Mylar	<0.005	±1%	3″ x 3″ x 7″	2 lbs.	40.00
1416	1 μf in steps of 0.1 μf	Polystyrene	<0.0002	±1%	3″ x 3″ x 7″	2 lbs.	55.00
1417	0.1 μf in steps of 0.01 μf	Polystyrene	<0.0002	±1%	3″ x 3″ x 7″	2 lbs.	40.00
1418	0.01 μf in steps of 0.001 μf	Polystyrene	<0.0002	±1%	3″ x 3″ x 7″	2 lbs.	40.00
1419	0.001 μf in steps of 0.0001 μf	Polystyrene	<0.0002	±1%	3″ x 3″ x 7″	2 lbs.	45.00
1250	1.110 μf in steps of 0.001 μf	Polystyrene	<0.0002	±1%	13¾″ x 6″ x 4½″	8 lbs.	180.00
1351	11.111 μf in steps of 0.0001 μf plus 100 pf variable air capacitor	Mylar Polystyrene Air	<0.005	±1%	19″ x 10¾″ x 8″	25 lbs.	305.00
1352	1.111 μf in steps of 0.0001 μf	Polystyrene	<0.0002	±1%	19″ x 5¼″ x 10″	13 lbs.	220.00
1353	11.111 μf in steps of 0.0001 μf	Mylar Polystyrene	<0.005	±1%	19″ x 5¼″ x 10″	14 lbs.	275.00

Maximum operating voltage, 500 VDC or peak. Capacitors can be supplied to better than ±1%, write for complete information.
In addtion to listed equipment, Freed manufactures a complete series of decade inductors, AC and DC regulated power supplies, comparison and limit bridges. Write for complete catalog.

DECADE INDUCTORS

Each unit is an assembly of four toroids wound on a stabilized Molybdenum permaloy dust core. The coils have a nominal inductance of 1-2-3-4 and are connected in series and switched to vary the inductance from 0-10.

Type	Frequency Range, Cycles	Maximum*	Inductance per Step	Total Inductance	Accuracy	Dimensions and Weight		Price
1220	500-20,000	230 @ 4 KC	0.001 h	0.01 h	±2%	3″ x 3″ x 9″	4½ lbs.	$100.00
1230	500-20,000	280 @ 3 KC	0.01 h	0.1 h	±1%	3″ x 3″ x 9″	4½ lbs.	95.00
1240	500-20,000	260 @ 3 KC	0.1 h	1. h	±0.5%	3″ x 3″ x 9″	4½ lbs.	100.00
1270	500-20,000	190 @ 2 KC	1. h	10 h	±0.25%	3″ x 3″ x 9″	4½ lbs.	110.00
1341	100-2,000	100 @ 1 KC	10 h	100 h	±0.25%	3″ x 3″ x 9″	4½ lbs.	120.00
1280	500-20,000	280 @ 3 KC	0.001 h	1.11 h	See note	13¾″ x 6⅛″ x 5½″	16 lbs.	325.00
1290	500-20,000	280 @ 3 KC	0.001 h	11.11 h	See note	15″ x 7″ x 5½″	20 lbs.	425.00
1310	500-20,000	280 @ 3 KC	0.01 h	11.1 h	See note	13¾″ x 6⅛″ x 5½″	16 lbs.	325.00
1164†	30-2,000	60 @ 300	0.1 h	111 h	±1%	15″ x 7″ x 5½″	28 lbs.	285.00

†Type 1164 inductors are wound on special nickel alloy laminated cores.

Inductance per step:	1 mh	10 mh	100 mh	1 h	10h
Nominal Accuracy:	±2%	±1%	±0.5%	±0.25%	±0.25%

*Maximum Q depending on inductance value and a.c. voltage across coil.

PHASE SEQUENCE INDICATOR

The model 206 phase sequence indicator is a rugged instant reading instrument for determining the proper connections of motors, meters and relays operating in a 3 phase system. The unit is supplied with permanently connected coded leads and operates over a voltage range of 80 to 400/500 volts, 16 to 400 Hz. Weight: 8 oz.; Dimensions: 2½″ dia. x 1″ thick. Comes complete with leather carrying case. Price: $29.50.

ELAPSED TIME METER

Model 1900 is a rugged synchronous drive elapsed time indicator which indicates hours to 9999.9. Operates on 117 volts, 60 Hz; power consumption 1 watt. Mounts in a 1″ x 2″ opening Price: $14.50.

SHORTED TURNS INDICATOR

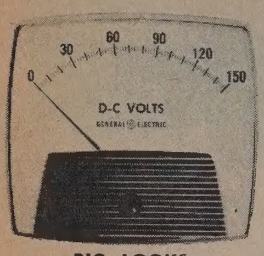
The *type 134 shorted turns indicator is a high sensitivity instrument which will detect the presence of one or more shorted turns in a coil using up to #44 wire. Eddy current losses are minimized by the use of a very low frequency built in test oscillator. The instrument will test most types of audio, power, IF chokes, relays and other coreless coils. Power requirement: 1 Volt, 60 Hz; Wt.: 13.5 lbs.; Dimension: 11″ x 9″ x 10″; Price: $395.00.

TRANSFORMER RATIO METER

The *type 227 will measure transformer ratio of 1 to 1011 in three decade ranges with an accuracy of 0.1%. The instrument can also be operated as a ratio comparison tester with deviation range of ±1%. Power requirements: 115 volts, 60 Hz; Size 17″ x 13″ x 6″; Wt.: 25 lbs.; Price: $925.00.

*Norma Instruments, Freed Exclusive U.S. Agent.

PANEL METERS

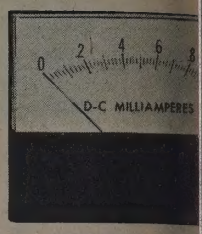


BIG LOOK¶

Handsome, easy-to-read meters in two styles for all panel and control applications. All DC meters have self-shielded movement with pivot and jewel or taut-band suspension. Taut-band designs give great resistance to shock and increased sensitivity. Zener-diode, expanded-scale voltmeters available for improved narrow-range accuracy on 3½" and 4½" sizes. Snap-on, snap-off covers on meters. All types meet ASA Specification C-39.1.

Accuracy: ±2% FS, all DC and AC iron vane; ±3% FS, AC rectifier type (with 60-cycle sine wave at 25° C); ±0.5% of midspan, expanded-scale types. **Overload:** 20% momentary and sustained, voltmeters; 10 times rated current for 10 consecutive intervals of ½-sec. with 1-min. interval between successive applications, momentary; 20% for 8 hours, sustained, ammeters. **Scale:** Pivot and jewel, 90° rotation; taut-band, 100°.

Insulation: 2600 V rms hi-pot for all but 1½" models (1600 V rms). **Response Time:** Meet or exceed ASA requirements: 3 sec. max. for microammeters; 2 sec. max. all other DC ratings; 2.5 sec. max. AC ratings. **Damping:** 40% max. overshoot; 2.5 min. damping factor. **Burden:** 5 amps, 0.5 VA, 0.5 power factor for AC ammeter; unity power factor, AC voltmeter.



HORIZON LINE

BIG LOOK PANEL METERS

Accurate, qick reading with wide, border-to-border scales; free from shadows. Most popular meter design with low-profile, easy-to-read sense. Aluminum frame holds reflections to a minimum. Big, bold numerals over cleanly marked divisions for fast reading. Tapered pointers assure high accuracy. Taut-band suspension provided on all models except 1½" size. Standard 2½" and 3½" models come with sealed cases to protect against hair, dust, chemicals or other foreign particles. Shelf-shielded DC mechanisms; snap-on, snap-off covers.

Meter Size and Type	Scale Length: Pivot Jewel	Scale Length: Taut-band	Max. Meter Dimensions, Inches: Face Size H. x W.	Cutout O.D.	Back* Depth	Front* Depth
1½" DW-90	1.400"	.....	1.750 x 1.750	1.530	1.230	0.375
2½" DW-91§	2.100"	2.300"	2.702 x 2.702	2.195	2.002	0.478
3½" DO-91†	2.900"	3.200"	3.512 x 3.512	2.786	2.002	0.478
4½" DO-92‡	3.930"	4.360"	4.408 x 4.846	2.786	1.965	0.573

§Or AW-91. †Or AO-91. ‡Or AO-92. *Back-of-panel and front-of-panel, respectively.

HORIZON LINE PANEL METERS

Distinctive, low profile design for sophisticated styling. Best read with swept-back windows to deflect light from line of sight. Both 3½ 4½" meters may be mounted semi-flush or back-of-panel, recessed face silhouetted by half-bezel frame to conserve space and in readability. DC types have core-magnet d'Arsonval movement with and jewel, or taut-band suspensions; self-shielded for use on any Zener-diode, expanded-scale voltmeters available. Snap-on, snap-off supplied on 4½" size.

G.E. No. 1012K11702 Bezel — For flush mtg. 2½" size. List.....
G.E. No. 1012K11700 Bezel — For flush mtg. 3½" size. List.....
G.E. No. 1012K11701 Bezel — For flush mtg. 4½" size. List.....

Meter Size and Type	Scale Length: Pivot Jewel	Scale Length: Taut-band	Max. Meter Dimensions, Inche: Face Size H. x W.	Cutout O.D.	Back* Depth
2½" NO. 157	2.013"	2.284"	2.256 x 2.892	2.031	2.048
3½" NO. 167	2.725"	3.060"	3.006 x 3.756	2.781	1.963
4½" NO. 178	3.502"	3.800"	3.756 x 4.632	2.781	1.963

*Back-of-panel and front-of-panel, respectively.

DC VOLTMETERS

ZERO-LEFT, SELF CONTAINED

Scale Volts	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price: 1½" DW-90 Prefix: 50-188 011§	2½" DW-91 Prefix: 50-152 011§	3½" DO-91 Prefix: 50-162 011§	4½" DO-92 Prefix: 50-171 011§	HORIZON LINE List Price: 2½" No. 157 Prefix: 50-157 011§	3½" No. 167 Prefix: 50-167 011§	4½" No. Prefix 50-178 0
0-1	50		**LALA**	**$24.00**	**$24.00**	**$26.00**	**$28.00**	**$24.00**	**$26.00**	**$28.**
0-1.5	75†		**LCLC**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-3	60		**LJLJ**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-5	50		**LSLS**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-8	40		**MJMJ**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-10	50		**MTMT**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-15	75†	1000	**NDND**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-30	60	ohms	**NLNL**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-50	50	per	**NTNT**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-80	40	volt	**PDPD**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.**
0-100	50		**PKPK**	**24.00**	**24.00**	**26.00**	**30.00**	**24.00**	**26.00**	**30.**
0-150	75†		**PZPZ**	**24.00**	**24.00**	**26.00**	**30.00**	**24.00**	**26.00**	**30.**
0-200	40		**RLRL**	**24.00**	**24.00**	**26.00**	**30.00**	**24.00**	**26.00**	**30.**
0-250	50		**RSRS**	**24.00**	**24.00**	**26.00**	**30.00**	**24.00**	**26.00**	**30.**
0-300	60		**RXRX**	**26.00**	**26.00**	**27.00**	**31.00**	**26.00**	**27.00**	**31.**
0-500	50		**SFSF**	.....	.....	**28.00**	**32.00**	.....	**28.00**	**32.**
0-600	60		**SJSJ**	.....	.....	**28.00**	**32.00**	.....	**28.00**	**32.**
0-500*	50	125	**FASF**	**17.00**	**17.00**	.....	.....	**17.00**	.....	.....
0-600*	60	125	**FASJ**	**17.00**	**17.00**	.....	.....	**17.00**	.....	.....
0-750*	75†	125	**FASM**	**17.00**	**17.00**	**18.00**	**20.00**	**17.00**	**18.00**	**20.0**

ZERO-CENTER, SELF CONTAINED

Scale Volts	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price: 1½" DW-90 Prefix: 50-188 012§	2½" DW-91 Prefix: 50-152 012§	3½" DO-91 Prefix: 50-162 012§	4½" DO-92 Prefix: 50-171 012§	HORIZON LINE List Price: 2½" No. 157 Prefix: 50-157 012§	3½" No. 167 Prefix: 50-167 012§	4½" No. Prefix: 50-178 01
5-0-5	50		**LSLS**	**$24.00**	**$24.00**	**$26.00**	**$28.00**	**$24.00**	**$26.00**	**$28.0**
10-0-10	40		**MTMT**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.0**
30-0-30	60	1000	**NLNL**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.0**
50-0-50	50	ohms	**NTNT**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.0**
80-0-80	40	per	**PDPD**	**24.00**	**24.00**	**26.00**	**28.00**	**24.00**	**26.00**	**28.0**
150-0-150	60	volt	**PZPZ**	**24.00**	**24.00**	**26.00**	**30.00**	**24.00**	**26.00**	**30.0**
300-0-300	60		**RXRX**	**26.00**	**26.00**	**27.00**	**31.00**	**26.00**	**27.00**	**31.0**
500-0-500	50		**SFSF**	.....	.....	**28.00**	**32.00**	.....	**28.00**	**32.0**
600-0-600	60		**SJSJ**	.....	.....	**28.00**	**32.00**	.....	**28.00**	**32.0**
500-0-500*	50	64	**FASF**	**23.00**	**23.00**	.....	.....	**23.00**	.....	.....
600-0-600*	60	64	**FASJ**	**23.00**	**23.00**	.....	.....	**23.00**	.....	.....
750-0-750*	60	64	**FASM**	**23.00**	**23.00**	**24.00**	**27.00**	**23.00**	**24.00**	**27.0**

EXPANDED-SCALE, SELF CONTAINED

Zener-diode type. Accuracy ±0.5% of mid-span.

Scale Volts	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price: 1½" DW-90 Not Available	2½" DW-91 Not Available	3½" DO-91 Prefix: 50-162 091§	4½" DO-92 Prefix: 50-171 091§	HORIZON LINE List Price: 2½" No. 157 Not Available	3½" No. 167 Prefix: 50-167 091§	4½" No. Prefix: 50-178 09
24-30	60	100	**NNNN**	.....	.....	**$70.00**	**$74.00**	.....	**$70.00**	**$74.0**
110-130	40	ohms/	**PNPN**	.....	.....	**70.00**	**74.00**	.....	**70.00**	**74.0**
220-260	40	volt	**RTRT**	.....	.....	**70.00**	**74.00**	.....	**70.00**	**74.0**

*Not self contained, for use with external resistor, not supplied; rated 0-1 mADC (or 1-0-1 mADC, center scale types); when ordering, change last prefix indicat 111 or 112 (i.e., 50-152 111 FASF; 50-162 112 FASM; etc.).
†75 divisions on all 3½" and 4½" meters; 30 divisions on 2½" and 1½".
§**When ordering show complete number, prefix plus suffix;** example: **50-157 012 LSLS** for 5-0-5 self contained 2½" HORIZON LINE DC voltmeter.
¶Trade-mark of General Electric Co.

Trade Discount Applies To List Prices Only © United Technical Publica

ANEL METERS

DC MICROAMMETERS

ZERO-LEFT, PIVOT AND JEWEL TYPE

Sca A	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 111§	2½" DW-91 Prefix: 50-152 111§	3½" DO-91 Prefix: 50-162 111§	4½" DO-92 Prefix: 50-171 111§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 111§	3½" No. 167 Prefix: 50-167 111§	4½" No. 178 Prefix: 50-178 111§
0-	40	3400	CFCF	$41.00	$41.00	$42.00	.....	$41.00	$42.00	.....
0-	50	1600	CYCY	32.00	32.00	34.00	$38.00	32.00	34.00	$38.00
0-0	50	1525	DRDR	27.00	27.00	28.00	32.00	27.00	28.00	32.00
0-0	40	690	EAEA	24.00	24.00	26.00	30.00	24.00	26.00	30.00
0-0	50	220	EMEM	23.00	23.00	24.00	27.00	23.00	24.00	27.00

ZERO-LEFT, TAUT-BAND TYPE

-ad suspension is also available in other DC ratings; prices on request.

Sca A	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Not Available	2½" DW-91 Prefix: 50-156 111§	3½" DO-91 Prefix: 50-166 111§	4½" DO-92 Prefix: 50-173 111§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-192 111§	3½" No. 167 Prefix: 50-193 111§	4½" No. 178 Prefix: 50-194 111§
0-	40	3400	CFCF	.....	$45.00	$46.00	$50.00	$45.00	$46.00	$50.00
0-	50	2600	CYCY	.....	36.00	38.00	42.00	36.00	38.00	42.00
0-0	50	1170	DRDR	.....	31.00	32.00	36.00	31.00	32.00	36.00

ZERO-CENTER, PIVOT AND JEWEL TYPE

Sca A	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 112§	2½" DW-91 Prefix: 50-152 112§	3½" DO-91 Prefix: 50-162 112§	4½" DO-92 Prefix: 50-171 112§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 112§	3½" No. 167 Prefix: 50-167 112§	4½" No. 178 Prefix: 50-178 112§
0-20	40	3330	CFCF	$36.00	$36.00	$38.00	.....	$36.00	$38.00	.....
0-50	50	1525	CYCY	27.00	27.00	28.00	$32.00	27.00	28.00	$32.00
0-100	40	690	DRDR	24.00	24.00	26.00	30.00	24.00	26.00	30.00
0-200	40	221	EAEA	23.00	23.00	24.00	28.00	23.00	24.00	28.00
0-500	50	64	EMEM	23.00	23.00	24.00	27.00	23.00	24.00	27.00

DC MILLIAMMETERS

ZERO-LEFT, PIVOT AND JEWEL TYPE

Sle	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 111§	2½" DW-91 Prefix: 50-152 111§	3½" DO-91 Prefix: 50-162 111§	4½" DO-92 Prefix: 50-171 111§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 111§	3½" No. 167 Prefix: 50-167 111§	4½" No. 178 Prefix: 50-178 111§
0-	50	64	FAFA	$23.00	$23.00	$24.00	$27.00	$23.00	$24.00	$27.00
0-5	75†	64	FDFD	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	60	2.5	FNFN	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	50	2.5	FXFX	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	50	1.8	GZGZ	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	40	1.5	HFHF	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	50	2.0	HJHJ	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	60	1.67	HMHM	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	50	1.00	HYHY	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	40	0.62	JJJJ	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-10	50	0.50	JRJR	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-50	75†	0.33	JXJX	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-10	40	0.25	KAKA	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-50	50	0.20	KDKD	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-10	60	0.167	KGKG	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-10	50	0.100	KMKM	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-10	40	0.062	KWKW	23.00	23.00	24.00	27.00	23.00	24.00	27.00

ZERO-CENTER, PIVOT AND JEWEL TYPE

Sle A	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 112§	2½" DW-91 Prefix: 50-152 112§	3½" DO-91 Prefix: 50-162 112§	4½" DO-92 Prefix: 50-171 112§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 112§	3½" No. 167 Prefix: 50-167 112§	4½" No. 178 Prefix: 50-178 112§
1-1	40	64	FAFA	$23.00	$23.00	$24.00	$27.00	$23.00	$24.00	$27.00
3-3	60	2.6	FNFN	23.00	23.00	24.00	27.00	23.00	24.00	27.00
5-5	50	1.8	FXFX	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-10	40	1.5	GZGZ	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-20	40	1.25	HFHF	23.00	23.00	24.00	27.00	23.00	24.00	27.00
5-25	50	1.0	HJHJ	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-30	60	0.83	HMHM	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-50	50	0.50	HYHY	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-100	40	0.25	JRJR	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-150	60	0.167	JXJX	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-200	40	0.125	KAKA	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-250	50	0.100	KDKD	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-300	60	0.083	KGKG	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-500	50	0.050	KMKM	23.00	23.00	24.00	27.00	23.00	24.00	27.00

DC AMMETERS

ZERO-LEFT, SELF-CONTAINED

ale ps	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 111§	2½" DW-91 Prefix: 50-152 111§	3½" DO-91 Prefix: 50-162 111§	4½" DO-92 Prefix: 50-171 111§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 111§	3½" No. 167 Prefix: 50-167 111§	4½" No. 178 Prefix: 50-178 111§
0-	50	.0500	LALA	$23.00	$23.00	$24.00	$27.00	$23.00	$24.00	$27.00
0-.5	75†	.0333	LCLC	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	40	.0250	LELE	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	60	.0167	LJLJ	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-	50	.0100	LSLS	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-0	50	.0050	MTMT	23.00	23.00	24.00	27.00	23.00	24.00	27.00
0-5	75†	.0033	NDND	.....	23.00	24.00	27.00	23.00	24.00	27.00
0-0	40	.0025	NGNG	.....	23.00	24.00	27.00	23.00	24.00	27.00
0-0	60	.00167	NLNL	.....	23.00	24.00	27.00	23.00	24.00	27.00
0-0	50	.00100	NTNT	.....	.....	24.00	27.00	.....	24.00	27.00

visions on 3½" and 4½" sizes; 30 divisions on 1½" and 2½" sizes.
ordering show complete number, prefix plus suffix; example: 50-188 111 LALA
IG LOOK 1½" DW-90 zero-left, self-contained DC ammeter with 0-1 scale.
-mark of General Electric Co.

GENERAL ELECTRIC

PANEL METERS

DC AMMETERS (CONT'D)

ZERO-LEFT, SHUNT-RATED

For use with 2-way shunt-lead resistance .065 ohm. Does not include shunt or shunt leads.

Scale Amps	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 121§	2½" DW-91 Prefix: 50-152 121§	3½" DO-91 Prefix: 50-162 121§	4½" DO-92 Prefix: 50-171 121§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 121§	3½" No. 167 Prefix: 50-167 121§	4½" No Prefi 50-178
0-20	40		ECNG	$23.00	$23.00	$24.00	.....	$23.00	$24.00	$2
0-30	60		ECNL	23.00	23.00	24.00	.....	23.00	24.00	2
0-50	50		ECNT	23.00	23.00	24.00	$27.00	23.00	24.00	2
0-75	75†		ECPB	23.00	23.00	24.00	27.00	23.00	24.00	2
0-100	50		ECPK	23.00	23.00	24.00	27.00	23.00	24.00	2
0-150	75†	50 mV	ECPZ	23.00	23.00	24.00	27.00	23.00	24.00	2
0-200	40	shunt-	ECRL	23.00	23.00	24.00	27.00	23.00	24.00	2
0-250	50	rated	ECRS	23.00	23.00	24.00	27.00	23.00	24.00	2
0-300	60	12.5	ECRX	23.00	23.00	24.00	27.00	23.00	24.00	2
0-400	40	ohms	ECSC	23.00	23.00	24.00	27.00	23.00	24.00	2
0-500	50		ECSF	23.00	23.00	24.00	27.00	23.00	24.00	2
0-600	60		ECSJ	23.00	23.00	24.00	27.00	23.00	24.00	2
0-800	40		ECSN	23.00	23.00	24.00	27.00	23.00	24.00	2
0-1000	50		ECVA	23.00	23.00	24.00	27.00	23.00	24.00	2
0-1500	75†		ECVC	23.00	23.00	24.00	27.00	23.00	24.00	2
0-2000	40		ECVE	23.00	23.00	24.00	27.00	23.00	24.00	2
0-20	40		GBNG	23.00	23.00	24.00	.....	23.00	24.00	2
0-40	40		GBNP	23.00	23.00	24.00	.....	23.00	24.00	2
0-50	50		GBNT	23.00	23.00	24.00	27.00	23.00	24.00	2
0-75	75†		GBPB	23.00	23.00	24.00	27.00	23.00	24.00	2
0-100	50		GBPK	23.00	23.00	24.00	27.00	23.00	24.00	2
0-150	75†	100 mV	GBPZ	23.00	23.00	24.00	27.00	23.00	24.00	2
0-200	40	shunt-	GBRL	23.00	23.00	24.00	27.00	23.00	24.00	2
0-250	50	rated	GBRS	23.00	23.00	24.00	27.00	23.00	24.00	2
0-300	60	25	GBRX	23.00	23.00	24.00	27.00	23.00	24.00	2
0-400	40	ohms	GBSC	23.00	23.00	24.00	27.00	23.00	24.00	2
0-500	50		GBSF	23.00	23.00	24.00	27.00	23.00	24.00	2
0-600	60		GBSJ	23.00	23.00	24.00	27.00	23.00	24.00	2
0-800	40		GBSN	23.00	23.00	24.00	27.00	23.00	24.00	2
0-1000	50		GBVA	23.00	23.00	24.00	27.00	23.00	24.00	2
0-2000	40		GBVE	23.00	23.00	24.00	27.00	23.00	24.00	2

ZERO-CENTER, SELF CONTAINED

Scale Amps	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 112§	2½" DW-91 Prefix: 50-152 112§	3½" DO-91 Prefix: 50-162 112§	4½" DO-92 Prefix: 50-171 112§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 112§	3½" No. 167 Prefix: 50-167 112§	4½" No. Prefix 50-178 1
1-0-1	40	.0500	LALA	$23.00	$23.00	$24.00	$27.00	$23.00	$24.00	$2
2-0-2	40	.0250	LELE	23.00	23.00	24.00	27.00	23.00	24.00	2
5-0-5	50	.010	LSLS	23.00	23.00	24.00	27.00	23.00	24.00	2
10-0-10	40	.0050	MTMT	23.00	23.00	24.00	27.00	23.00	24.00	2
15-0-15	60	.0033	NDND	.....	23.00	24.00	27.00	23.00	24.00	2
20-0-20	40	.0025	NGNG	.....	23.00	24.00	27.00	23.00	24.00	2
30-0-30	60	.00167	NLNL	.....	23.00	24.00	27.00	23.00	24.00	2
50-0-50	50	.00100	NTNT	.....	.....	24.00	27.00	23.00	24.00	2

ZERO-CENTER, 50 mV SHUNT-RATED

For use with 2-way shunt-lead resistance of .065 ohm. Does not include shunt or shunt leads.

Scale Amps	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 122§	2½" DW-91 Prefix: 50-152 122§	3½" DO-91 Prefix: 50-162 122§	4½" DO-92 Prefix: 50-171 122§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 122§	3½" No. 167 Prefix: 50-167 122§	4½" No. Prefix 50-178 1
20-0-20	40		ECNG	$23.00	.....	.....	.....	.....	.....	.....
50-0-50	50	25	ECNT	23.00	$23.00	$24.00	$27.00	$23.00	$24.00	$27.
75-0-75	60	ohms	ECPB	23.00	23.00	24.00	27.00	23.00	24.00	27.
100-0-100	40		ECPK	23.00	23.00	24.00	27.00	23.00	24.00	27.
150-0-150	60		ECPZ	23.00	23.00	24.00	27.00	23.00	24.00	27.

AC VOLTMETERS

SELF CONTAINED, IRON VANE

Scale Volts	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Not Available	2½" AW-91 Prefix: 50-152 031§	3½" AO-91 Prefix: 50-162 031§	4½" AO-92 Prefix: 50-171 031§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 031§	3½" No. 167 Prefix: 50-167 031§	4½" No. Prefix 50-178 03
0-3	60	11.1	LJLJ	.....	$22.00	$23.00	$27.00	$22.00	$23.00	$27
0-5	50‡	29	LSLS	.....	22.00	23.00	27.00	22.00	23.00	27
0-10	50	110	MTMT	.....	22.00	23.00	27.00	22.00	23.00	27
0-15	75†	251	NDND	.....	22.00	23.00	27.00	22.00	23.00	27
0-30	60	779	NLNL	.....	22.00	23.00	27.00	22.00	23.00	27
0-50	50	2,500	NTNT	.....	23.00	24.00	28.00	23.00	24.00	28
0-150	75†	15,000	PZPZ	.....	24.00	26.00	30.00	24.00	26.00	30
0-300	60	70,260	RXRX	.....	27.00	28.00	32.00	27.00	28.00	32
0-500	50	117,260	SFSF	.....	.....	35.00	39.00	.....	35.00	39
0-600	60	140,000	SJSJ	.....	.....	35.00	39.00	.....	35.00	39

SELF CONTAINED, 400 CYCLES

Scale Volts	Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Not Available	2½" AW-91 Prefix: 50-152 061§	3½" AO-91 Prefix: 50-162 061§	4½" AO-92 Prefix: 50-171 061§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 061§	3½" No. 167 Prefix: 50-167 061§	4½" No. Prefix: 50-178 06
0-150	75†	15,000	PZPZ	.....	$24.00	$26.00	$30.00	$24.00	$26.00	$30
0-300	60	70,260	RXRX	.....	27.00	28.00	32.00	27.00	28.00	32

†75 divisions, 3½" and 4½" sizes; 30 divisions, 1½" and 2½" sizes.
‡50 divisions, 3½" and 4½" sizes; 25 divisions, 2½" size.
§**When ordering show complete number, prefix plus suffix;** example: **50-171 031 LJLJ** for 4½" BIG LOOK 0-3 voltmeter.
¶Trade-mark of General Electric Co.

Trade Discount Applies To List Prices Only © United Technical Publicati

PANEL METERS

AC VOLTMETERS (CONT'D)

TRANSFORMER-RATED, 0-150 VOLTS

Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Not Available	2½" AW-91 Prefix: 50-152 031§	3½" AO-91 Prefix: 50-162 031§	4½" AO-92 Prefix: 50-171 031§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 031§	3½" No. 167 Prefix: 50-167 031§	4½" No. 178 Prefix: 50-178 031§
60	15,000	PZSJ	.....	$24.00	$26.00	$30.00	$24.00	$26.00	$30.00
75†	15,000	PZSM	.....	24.00	26.00	30.00	24.00	26.00	30.00
60	15,000	PZVJ	.....	24.00	26.00	30.00	24.00	26.00	30.00

SELF CONTAINED, RECTIFIER TYPE

y ±3% (60-cycle sine wave, 25°C).

Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 051§	2½" AW-91 Prefix: 50-152 051§	3½" AO-91 Prefix: 50-162 051§	4½" AO-92 Prefix: 50-171 051§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 051§	3½" No. 167 Prefix: 50-167 051§	4½" No. 178 Prefix: 50-178 051§
50		MTMT	$31.00	$31.00	$32.00	$36.00	$31.00	$32.00	$36.00
75†		NDND	31.00	31.00	32.00	36.00	31.00	32.00	36.00
40		NGNG	31.00	31.00	32.00	36.00	31.00	32.00	36.00
50		NJNJ	31.00	31.00	32.00	36.00	31.00	32.00	36.00
60	1000	NLNL	31.00	31.00	32.00	36.00	31.00	32.00	36.00
50	ohms	NTNT	31.00	31.00	32.00	36.00	31.00	32.00	36.00
40	per	PDPD	31.00	31.00	32.00	36.00	31.00	32.00	36.00
50	volt	PKPK	32.00	32.00	34.00	38.00	32.00	34.00	38.00
75†		PZPZ	32.00	32.00	34.00	38.00	32.00	34.00	38.00
40		RLRL	.....	.....	34.00	38.00	.....	34.00	38.00
50		RSRS	.....	.....	34.00	38.00	.....	34.00	38.00
60		RXRX	.....	.....	35.00	39.00	.....	35.00	39.00

y ±0.5% of mid-span.

EXPANDED SCALE

Scale Div.	Term. Resis., Ohms	§ Add Suffix	Not Available	Not Available	Prefix: 50-162 071§	Prefix: 50-171 071§	Not Available	Prefix: 50-167 071§	Prefix: 50-178 071§
30	100	PNPN	.....	.....	$70.00	$74.00	.....	$70.00	$74.00
25	ohms/V	PTPT	.....	.....	70.00	74.00	.....	70.00	74.00

AC AMMETERS (SELF CONTAINED, 25-400 CYCLES)

Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Not Available	2½" AW-91 Prefix: 50-152 141§	3½" AO-91 Prefix: 50-162 141§	4½" AO-92 Prefix: 50-171 141§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 141§	3½" No. 167 Prefix: 50-167 141§	4½" No. 178 Prefix: 50-178 141§
50	0.16	LALA	.....	$23.00	$24.00	$28.00	$23.00	$24.00	$28.00
60	0.015	LJLJ	.....	23.00	24.00	28.00	23.00	24.00	28.00
50‡	0.007	LSLS	.....	23.00	24.00	28.00	23.00	24.00	28.00
40	0.003	MJMJ	.....	23.00	24.00	28.00	23.00	24.00	28.00
50	0.0024	MTMT	.....	23.00	24.00	28.00	23.00	24.00	28.00
75†	0.0016	NDND	.....	23.00	24.00	28.00	23.00	24.00	28.00
40	0.001	NGNG	.....	24.00	26.00	30.00■	24.00■	26.00■	30.00■
60	0.0006	NLNL	.....	24.00	28.00	30.00■	24.00■	26.00■	30.00■
50	0.0004	NTNT	.....	.....	28.00	32.00■	.....	28.00■	32.00■
.....	0.0004	PDPD	.....	.....	32.00	36.00■	.....	32.00■	36.00■

TRANSFORMER-RATED, 0-5 AMPERES, 25-400 CYCLES

50		LSM1	.....	$23.00	$24.00	$28.00	$23.00	$24.00	$28.00
75†		LSND	.....	23.00	24.00	28.00	23.00	24.00	28.00
40		LSNG	.....	23.00	24.00	28.00	23.00	24.00	28.00
60		LSNL	.....	23.00	24.00	28.00	23.00	24.00	28.00
40		LSNP	.....	23.00	24.00	28.00	23.00	24.00	28.00
50		LSNT	.....	23.00	24.00	28.00	23.00	24.00	28.00
75†		LSPB	.....	23.00	24.00	28.00	23.00	24.00	28.00
40		LSPD	.....	23.00	24.00	28.00	23.00	24.00	28.00
50		LSPK	.....	23.00	24.00	28.00	23.00	24.00	28.00
75†		LSPZ	.....	23.00	24.00	28.00	23.00	24.00	28.00
40	0.007	LSRL	.....	23.00	24.00	28.00	23.00	24.00	28.00
60		LSRX	.....	23.00	24.00	28.00	23.00	24.00	28.00
40		LSSC	.....	23.00	24.00	28.00	23.00	24.00	28.00
50		LSSF	.....	23.00	24.00	28.00	23.00	24.00	28.00
60		LSSJ	.....	23.00	24.00	28.00	23.00	24.00	28.00
40		LSSN	.....	23.00	24.00	28.00	23.00	24.00	28.00
50		LSVA	.....	23.00	24.00	28.00	23.00	24.00	28.00
60		LSVB	.....	23.00	24.00	28.00	23.00	24.00	28.00
75†		LSVC	.....	23.00	24.00	28.00	23.00	24.00	28.00
40		LSVE	.....	23.00	24.00	28.00	23.00	24.00	28.00
60		LSVJ	.....	23.00	24.00	28.00	23.00	24.00	28.00

AC MILLIAMMETERS (SELF CONTAINED, 25-400 CYCLES)

mA	50	2158	GZGZ	.....	$23.00	$24.00	$28.00	$23.00	$24.00	$28.00
mA	50	341	HJHJ	.....	23.00	24.00	28.00	23.00	24.00	28.00
mA	50	84	HYHY	.....	23.00	24.00	28.00	23.00	24.00	28.00
0 mA	50	21	JRJR	.....	23.00	24.00	28.00	23.00	24.00	28.00
0 mA	40	4.1	KAKA	.....	23.00	24.00	28.00	23.00	24.00	28.00
0 mA	50	0.7	KMKM	.....	23.00	24.00	28.00	23.00	24.00	28.00

AC MILLIAMMETERS AND MICROAMMETERS (RECTIFIER TYPE)

acy ±3% (60-cycle sine wave, 25°C).

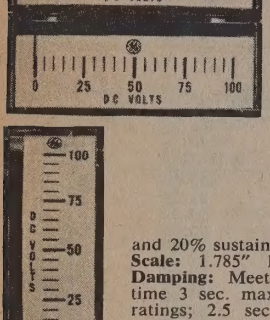
Scale Div.	Term. Resis., Ohms	§ Add Suffix	BIG LOOK List Price 1½" DW-90 Prefix: 50-188 151§	2½" AW-91 Prefix: 50-152 151§	3½" AO-91 Prefix: 50-162 151§	4½" AO-92 Prefix: 50-171 151§	HORIZON LINE List Price 2½" No. 157 Prefix: 50-157 151§	3½" No. 167 Prefix: 50-167 151§	4½" No. 178 Prefix: 50-178 151§
50	570	FAFA	$30.00	$30.00	$31.00	$35.00	$30.00	$31.00	$35.00
75†	375	FDFD	30.00	30.00	31.00	35.00	30.00	31.00	35.00
40	325	FGFG	30.00	30.00	31.00	35.00	30.00	31.00	35.00
60	197	FNFN	30.00	30.00	31.00	35.00	30.00	31.00	35.00
50	139	FXFX	30.00	30.00	31.00	35.00	30.00	31.00	35.00
50	90	GZGZ	30.00	30.00	31.00	35.00	30.00	31.00	35.00
40	62	HFHF	30.00	30.00	31.00	35.00	30.00	31.00	35.00
50	985	EMEM	30.00	30.00	31.00	35.00	30.00	31.00	35.00
40	655	EWEW	30.00	30.00	31.00	35.00	30.00	31.00	35.00

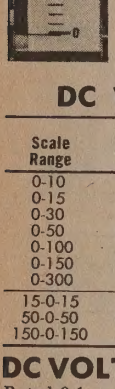
ivisions, except 30 on 1½" and 2½" sizes.
ivisions, except 25 on 2½" size.
n ordering show complete number, prefix plus suffix; example: **50-171 151 EMEM**
uA 4" BIG LOOK AC ammeter.
e-mark of General Electric Co.

• Do not have sealed terminal studs.
■ With external magnetic shield assembled to meter base.

GENERAL ELECTRIC

PANEL METERS





NEW 185 SERIES EDGEWISE METERS

Slim, miniature design can be mounted individually or in space-saving clusters. Choice of horizontal or vertical placement. Flush sides assure tight, case-to-case stacking without mechanism bulge. Magnetically shielded to prevent interaction between meters; no need for special calibration. Optional bezel and mounting brackets available for one, two or three-unit stacking. Meet applicable portions of ASA C-39.1. **Accuracy:** ±2% of full scale, DC meters; ±3% with 60-cycle sine wave at 25°C, AC rectifier-type meters. **Overload:** 20% momentary and sustained, voltmeter; 1000% momentary and 20% sustained, ammeter. **Insulation:** 1800 V rms hi-pot. **Scale:** 1.785" long, 53° rotation. **Response Time and Damping:** Meet or exceed ASA requirements. Response time 3 sec. max., μA meters; 2 sec. max., all other DC ratings; 2.5 sec. max., AC ratings. Damping 40% max. overshoot; damping factor, 2.5 minimum. **Size:** 0.92" w. x 2.258" lg. x 3.44" D., overall. Bezel 1.255" w. x 3.005" lg., single; 2.155" w., double; 3.055" w., triple-unit mounting.

DC VOLTMETERS (SELF CONTAINED)

Scale Range	Term. Resis., Ohms	Horizontal Zero-Left* Number	Vertical Zero-Bottom* Number	List Price
0-10		50-185 011 MTMT	50-185 013 MTMT	$26.00
0-15		50-185 011 NDND	50-185 013 NDND	26.00
0-30	1000	50-185 011 NLNL	50-185 013 NLNL	26.00
0-50	ohms/	50-185 011 NTNT	50-185 013 NTNT	26.00
0-100	volt	50-185 011 PKPK	50-185 013 PKPK	26.00
0-150		50-185 011 PZPZ	50-185 013 PZPZ	26.00
0-300		50-185 011 RXRX	50-185 013 RXRX	27.00
15-0-15	2000	50-185 012 NDND	50-185 014 NDND	26.00
50-0-50	ohms/	50-185 012 NTNT	50-185 014 NTNT	26.00
150-0-150	volt	50-185 012 PZPZ	50-185 014 PZPZ	27.00

DC VOLTMETERS (FOR EXTERNAL RESISTORS)

Rated 0-1 mA for use with external resistor, not supplied.

0-500	40	50-185 111 FASF	50-185 113 FASF	$24.00
0-600	40	50-185 111 FASJ	50-185 113 FASJ	24.00
0-750	40	50-185 111 FASM	50-185 113 FASM	24.00

DC MICROAMMETERS (SELF CONTAINED)

0-20	2030	50-185 111 CFCF	50-185 113 CFCF	$42.00
0-50	1625	50-185 111 CYCY	50-185 113 CYCY	34.00
0-100	1350	50-185 111 DRDR	50-185 113 DRDR	28.00
0-500	200	50-185 111 EMEM	50-185 113 EMEM	24.00
50-0-50	1350	50-185 112 CYCY	50-185 114 CYCY	28.00
500-0-500	40	50-185 112 EMEM	50-185 114 EMEM	24.00

DC MILLIAMMETERS (SELF CONTAINED)

0-1	40	50-185 111 FAFA	50-185 113 FAFA	$24.00
0-5	2.0	50-185 111 FXFX	50-185 113 FXFX	24.00
0-10	1.0	50-185 111 GZGZ	50-185 113 GZGZ	24.00
0-20	0.5	50-185 111 HFHF	50-185 113 HFHF	24.00
0-50	1.0	50-185 111 HYHY	50-185 113 HYHY	24.00
0-100	0.5	50-185 111 JRJR	50-185 113 JRJR	24.00
0-300	0.167	50-185 111 KGKG	50-185 113 KGKG	24.00
0-500	0.099	50-185 111 KMKM	50-185 113 KMKM	24.00
5-0-5	1.0	50-185 112 FXFX	50-185 114 FXFX	24.00
10-0-10	0.5	50-185 112 GZGZ	50-185 114 GZGZ	24.00
50-0-50	0.5	50-185 112 HYHY	50-185 114 HYHY	24.00
500-0-500	0.049	50-185 112 KMKM	50-185 113 KMKM	24.00

DC AMMETERS (SELF CONTAINED)

0-1	0.049	50-185 111 LALA	50-185 113 LALA	$24.00
0-5	0.0099	50-185 111 LSLS	50-185 113 LSLS	24.00
0-10	0.0049	50-185 111 MTMT	50-185 113 MTMT	24.00
5-0-5	0.0049	50-185 112 LSLS	50-185 114 LSLS	24.00

DC AMMETERS (50 mV SHUNT-RATED)

Shunt not supplied. Calibrated for use with 2-way shunt-lead resistance of 0.065 ohm.

0-20	12.5	50-185 121 ECNG	50-185 123 ECNG	$24.00
0-50	12.5	50-185 121 ECNT	50-185 123 ECNT	24.00
0-300	12.5	50-185 121 ECRX	50-185 123 ECRX	24.00
0-500	12.5	50-185 121 ECSF	50-185 123 ECSF	24.00

AC RECTIFIER TYPE INSTRUMENTS

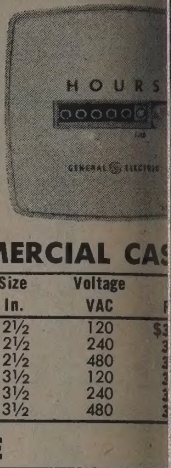
Self-contained with linear scale. Accuracy, ±3%.

0-10 V		50-185 051 MTMT	50-185 053 MTMT	$32.00
0-15 V		50-185 051 NDND	50-185 053 NDND	32.00
0-30 V	1000	50-185 051 NLNL	50-185 053 NLNL	32.00
0-50 V	ohms/	50-185 051 NTNT	50-185 053 NTNT	32.00
0-100 V	volt	50-185 051 PKPK	50-185 053 PKPK	34.00
0-150 V		50-185 051 PZPZ	50-185 053 PZPZ	34.00
0-50 μA	985	50-185 151 EMEM	50-185 153 EMEM	31.00
0-1 mA	570	50-185 151 FAFA	50-185 153 FAFA	31.00
0-5 mA	139	50-185 151 FXFX	50-185 153 FXFX	31.00
0-10 mA	90	50-185 151 GZGZ	50-185 153 GZGZ	31.00
0-20 mA	62	50-185 151 HFHF	50-185 153 HFHF	31.00

*Zero-center as listed. ¶ Trade-mark of General Electric Co.

TYPE 236 BIG LOOK¶ ELAPSED TIME METER

Offers distinctive appearance and excellent readability; designed to match ammeters and voltmeters with "Big Look" styling. Models are available for every time-measuring application. Both 2½" and 3½" sizes for panel mounting, plus 2½" size for use with conduit type case or portable stand. All panel mounted timers meet requirements of ASA specification C39.1 for four-stud mounting. Available in reset and non-reset types, measuring either minutes or hours. Types listed are 60 cps operation, for 50 cps, add **$1.00** to list price. For 208-volt type specify model desired and add **$1.50** to list price of 240-volt model.



NONRESET TYPE — COMMERCIAL CA

G.E. Model Number Minutes	G.E. Model Number Hours	Size In.	Voltage VAC	
50-236401AAAA1	50-236402AAAA1	2½	120	$3
50-236401ABAA1	50-236402ABAA1	2½	240	3
50-236401ACAA1	50-236402ACAA1	2½	480	3
50-236301AAAA1	50-236302AAAA1	3½	120	3
50-236301ABAA1	50-236302ABAA1	3½	240	3
50-236301ACAA1	50-236302ACAA1	3½	480	3

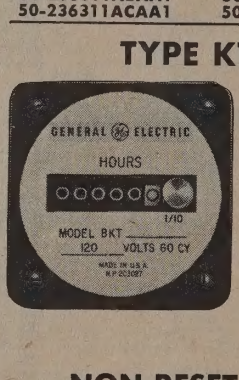
SEALED CASE

50-236421AAAA1	50-236422AAAA1	2½	120	$3
50-236421ABAA1	50-236422ABAA1	2½	240	3
50-236421ACAA1	50-236422ACAA1	2½	480	3
50-236321AAAA1	50-236322AAAA1	3½	120	3
50-236321ABAA1	50-236322ABAA1	3½	240	3
50-236321ACAA1	50-236322ACAA1	3½	480	3

RESET KNOB TYPE — COMMERCIAL CA

50-236411AAAA1	50-236412AAAA1	2½	120	$4
50-236411ABAA1	50-236412ABAA1	2½	240	4
50-236411ACAA1	50-236412ACAA1	2½	480	4
50-236311AAAA1	50-236312AAAA1	3½	120	4
50-236311ABAA1	50-236312ABAA1	3½	240	4
50-236311ACAA1	50-236132ACAA1	3½	480	4

TYPE KT-11 TIME METERS



Ideal indicator for proper servicing and ventive maintenance in industry or for cating component life. Available in 2½" 3½" sizes, round or square cases, for mounting on panel board or in equip case. Diecast zinc bezel with aluminized face. Wide temperature operating range 6-digit register. Extra large counter num white on black background for exce readability. Last digit in contrasting col indicate tenths. Bezel and plastic case vide dust-resistant enclosure for mecha Available with or without reset knob. ASA panel mounting specifications. Fo cps operation. For 50 cps operation, **$3.00** to list price.

NON-RESET TYPE — ROUND CASE

G.E. Model Number Minutes	G.E. Model Number Hours	Size In.	Voltage VAC	Li Pri
50-235011AAAA1	50-235012AAAA1	2½	120	$35
50-235011ABAA1	50-235012ABAA1	2½	240	36
50-235011ACAA1	50-235012ACAA1	2½	480	38
50-235091AAAA1	50-235092AAAA1	3½	120	35
50-235091ABAA1	50-235092ABAA1	3½	240	36
50-235091ACAA1	50-235092ACAA1	3½	480	38

SQUARE CASE

50-235051AAAA1	50-235052AAAA1	2½	120	$35
50-235051ABAA1	50-235052ABAA1	2½	240	36
50-235051ACAA1	50-235052ACAA1	2½	480	38
50-235131AAAA1	50-235132AAAA1	3½	120	35
50-235131ABAA1	50-235132ABAA1	3½	240	36
50-235131ACAA1	50-235132ACAA1	3½	480	38

RESET KNOB TYPE — ROUND CASE

50-235021AAAA1	50-235022AAAA1	2½	120	$46
50-235021ABAA1	50-125022ABAA1	2½	240	47
50-235021ACAA1	50-235022ACAA1	2½	480	49
50-235101AAAA1	50-235102AAAA1	3½	120	46
50-235101ABAA1	50-235102ABAA1	3½	240	47
50-235101ACAA1	50-235102ACAA1	3½	480	49

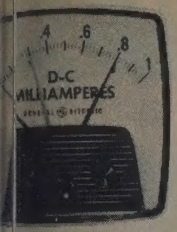
SQUARE CASE

50-235061AAAA1	50-235062AAAA1	2½	120	$46
50-235061ABAA1	50-235062ABAA1	2½	240	47
50-235061ACAA1	50-235062ACAA1	2½	480	49
50-235141AAAA1	50-235142AAAA1	3½	120	46
50-235141ABAA1	50-235142ABAA1	3½	240	47
50-235141ACAA1	50-235142ACAA1	3½	480	49

Trade Discount Applies To List Prices Only © United Technical Publicati

METER RELAYS

TYPE 195 AND 196 METER RELAYS

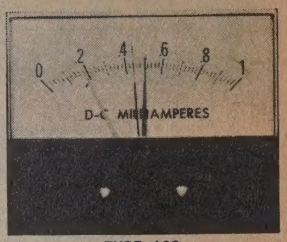


TYPE 195

New General Electric Meter Relays feature a **solid-state, light-sensitive switch** for optimum control simplicity and reliability. This switch controls the load relay directly; no amplifiers, no pointer contacts . . . no mechanical interference with meter movement. Pointer travel is unrestricted across the entire scale . . . you get **continuous indication** above and below the setpoints! Control action is dependable and repeatable over entire range!

Unique **piggy-back control modules** on 3½-inch and 4½-inch models, eliminate mounting and wiring of separate components . . . speed up and simplify installation. Control mounts directly on rear of indicator; no soldering, no complicated connections . . . just plug-in and they're mated! Control module may be removed without interrupting measurement circuit.

Other features include **ON-OFF** (automatic reset) **or Alarm** (manual reset) **Control . . . 120-volt A-C Operation!** No special power supply needed . . . **Long Lamp Life!** Conservatively estimated at 5 years . . . **Fail-safe Operation.**



TYPE 196

ting nd cale	Meter Size 2½-inch*	3½-inch	4½-inch
	List Price (With Single Set-point)†		
OLTMETERS, ZERO-CENTER			
u with external resistors. (Resistors luded.)			
00 Volts	$151	.....	.....
00 Volts	151	.....	.....
50 Volts	151	$146	$149
CROAMMETERS, ZERO-LEFT			
0 ua	$166	.....	.....
0 ua	161	$155	.....
0 ua	155	150	$154
0 ua	153	147	151
0 ua	151	146	149
CROAMMETERS, ZERO-CENTER			
50 ua	$155	$150	$154
100 ua	153	147	151
200 ua	151	146	149
500 ua	151	146	149
LLIAMMETERS, ZERO-LEFT			
Ma	$151	$146	$149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
Ma	151	146	149
OLTMETERS, ZERO-LEFT			
Volts	$153	$147	$150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	150
Volts	153	147	151
Volts	153	147	151
Volts	153	147	151
Volts	153	147	151
Volts	154	149	153
Volts	.....	150	154
Volts	.....	150	154
OLTMETERS, ZERO-LEFT			
e with external resistors. (Resistors luded.)			
Volts	$151	.....	.....
Volts	151	.....	.....
Volts	151	$146	$149
OLTMETERS, ZERO-CENTER			
5 Volts	$153	$147	$150
10 Volts	153	147	150
30 Volts	153	147	150
50 Volts	153	147	150
80 Volts	153	147	150
150 Volts	153	147	151
300 Volts	154	149	153
500 Volts	.....	150	154
600 Volts	.....	150	154

Rating and Scale	Meter Size 2½-inch*	3½-inch	4½-inch
	List Price (With Single Set-point)†		
D-C MILLIAMMETERS, ZERO-CENTER			
1-0-1 Ma	$151	$146	$149
3-0-3 Ma	.....	.....	149
5-0-5 Ma	151	146	149
10-0-10 Ma	151	146	149
20-0-20 Ma	151	146	149
25-0-25 Ma	151	146	149
30-0-30 Ma	151	146	149
50-0-50 Ma	151	146	149
100-0-100 Ma	151	146	149
150-0-150 Ma	151	146	149
200-0-200 Ma	151	146	149
250-0-250 Ma	151	146	149
300-0-300 Ma	151	146	149
500-0-500 Ma	151	146	149
D-C AMMETERS, ZERO-LEFT			
1 Amp	$151	$146	$149
1.5 Amp	151	146	149
2 Amp	151	146	149
3 Amp	151	146	149
5 Amp	151	146	149
10 Amp	151	146	149
15 Amp	151	146	149
20 Amp	151	146	149
30 Amp	151	146	149
50 Amp	.....	146	149
D-C AMMETERS, 50-MV SHUNT-RATED, ZERO-LEFT (Shunt and leads **not** included)			
20 Amp	$151	$146	.....
30 Amp	151	146	.....
50 Amp	151	146	$149
75 Amp	151	146	149
100 Amp	151	146	149
150 Amp	151	146	149
200 Amp	151	146	149
250 Amp	151	146	149
300 Amp	151	146	149
400 Amp	151	146	149
500 Amp	151	146	149
600 Amp	151	146	149
800 Amp	151	146	149
1 KA	151	146	149
1.5 KA	151	146	149
2.0 Ka	151	146	149
D-C AMMETERS, 100-MV SHUNT-RATED, ZERO-LEFT (Shunt and leads **not** included)			
20 Amp	$151	$146	$149
40 Amp	151	146	149
50 Amp	151	146	149
75 Amp	151	146	149
100 Amp	151	146	149
150 Amp	151	146	149
200 Amp	151	146	149
250 Amp	151	146	149
300 Amp	151	146	149
400 Amp	151	146	149
500 Amp	151	146	149
600 Amp	151	146	149
800 Amp	151	146	149
1 Ka	151	146	149
2 Ka	151	146	149
D-C AMMETERS, ZERO-CENTER			
1-0-1 Amp	$151	$146	$149
2-0-2 Amp	151	146	149
5-0-5 Amp	151	146	149
10-0-10 Amp	151	146	149
15-0-15 Amp	151	146	149
20-0-20 Amp	151	146	149
30-0-30 Amp	151	146	149
50-0-50 Amp	.....	146	149

Rating and Scale	Meter Size 2½-inch*	3½-inch	4½-inch
	List Price (With Single Set-point)†		
D-C AMMETERS, 50-MV SHUNT-RATED, ZERO-CENTER (Shunt & leads **not** included)			
50-0-50 Amp	$151	$146	$149
75-0-75 Amp	151	146	149
100-0-100 Amp	151	146	149
150-0-150 Amp	151	146	149
A-C VOLTMETERS, RECTIFIER-TYPE			
10 Volts	$159	$154	$158
15 Volts	159	154	158
20 Volts	159	154	158
25 Volts	159	154	158
30 Volts	159	154	158
50 Volts	159	154	158
80 Volts	159	154	158
100 Volts	161	155	159
150 Volts	161	155	159
200 Volts	.....	155	159
250 Volts	.....	157	161
300 Volts	.....	157	161
A-C MICROAMMETERS, RECTIFIER-TYPE			
500 ua	$158	$153	$157
800 ua	158	153	157
A-C MILLIAMMETERS, RECTIFIER-TYPE			
1 Ma	$158	$153	$157
1.5 Ma	158	153	157
2 Ma	158	153	157
3 Ma	158	153	157
5 Ma	158	153	157
10 Ma	158	153	157
20 Ma	158	153	157
A-C AMMETERS, RECTIFIER-TYPE (Rectifier-type milliammeter with external 5A/20 ma transformer **included**)			
Combined Rating 5 Amp	$174	$169	$173
TRANSFORMER-RATED AMMETERS (Same as above except scales marked as follows:)			
10 Amp	$174	$169	$173
15 Amp	174	169	173
20 Amp	174	169	173
30 Amp	174	169	173
40 Amp	174	169	173
50 Amp	174	169	173
75 Amp	174	169	173
80 Amp	174	169	173
100 Amp	174	169	173
150 Amp	174	169	173
200 Amp	174	169	173
300 Amp	174	169	173
400 Amp	174	169	173
500 Amp	174	169	173
600 Amp	174	169	173
800 Amp	174	169	173
1 Ka	174	169	173
1.2 Ka	174	169	173
1.5 Ka	174	169	173
2.0 Ka	174	169	173
3.0 Ka	174	169	173

nd one-half-inch meter relays are available in Type 195 styling only, and include g bracket and six-foot plug-in lead — accessory kit 1012K10G701.

s listed are for meter relays with single set-point. For double set-point, add $25.

GENERAL ELECTRIC

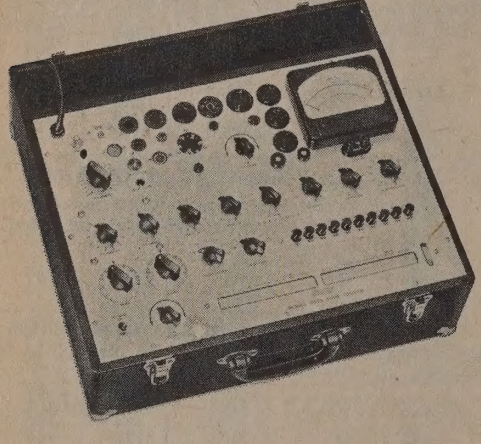
HICKOK TEST EQUIPMENT

MODEL 539C

New Industrial and Laboratory Portable Tube Tester

Tests VR tubes, low power thyratrons, "4 digit" types. VR test evaluates voltage regulator tubes under actual operating conditions. Tests Nuvistors, Novars, Compactrons, 10-pin types. Provision for separate monitoring of plate current. Panel terminals provide access to grid, plate, cathode and heater circuits, permitting direct measurement of voltages and current for "non-standard" or "tailored" tests. Covers 600 to 60,000 umhos in six ranges. Dual leakage readings: directly on meter or by neon short indicators (Sensitivity to 50 megohms). Complete with socket savers. In black leatherette portable case. 16¾" x 18⅜" x 7½". 105-125v, 50-400 cycles, 40 watts. Shipping weight, 35 lbs.

Model 539C Industrial and Laboratory Tube Tester—Net Each $595.00



NEW MODEL 752A

New Industrial Communications Portable Tube Tester

Designed for use in maintaining communications equipment and industrial electronic apparatus. New voltage regulator test circuit tests VR tubes to handbook specifications, including firing point, regulating voltage and current range. Tests Nuvistors, Compactrons, Novars, 10-pin types. Push button test for dual-section tubes speeds selection of tubes for balanced or matched characteristics. Covers 1500 to 30,000 umhos in five ranges. Interelement leakage read directly on the meter (Sensitivity to 10 megohms). Illuminated meter and roll chart. Complete with socket savers and pin-straighteners. In black leatherette portable case, 18⅜" x 16¾" x 7½". 105-125v, 50-60 cycles, 40-70 watts. Shipping weight, 27 lbs.

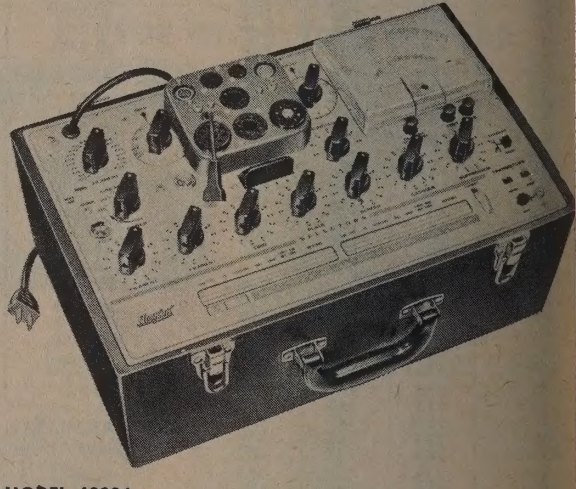
Model 752A Industrial and Communication Portable Tube Tester—Net Each $415.00

MODEL 123R

Cardmatic® Automatic Tube Tester

Ideal for Industrial and laboratory application. A genuine complete tube tester, card-programs complete "fringe" tests saturation and cut-off tests, in addition to basic Gm measurement. Gm ranges: 500-26,000 umhos; Current ranges: 100 u to 510MA. Complete with pin straighteners, socket savers and 500 selected cards. In black leatherette portable case, 19½" x 16½" x 9¼". 105-125v, 50-60 cycles, 55 watts. Shipping weight, 57 lbs.

Model 123R—Cardmatic® Automatic Tube Tester—Net Each $725.00



MODEL 6000A

Service Technician's Deluxe Portable Tube and Transistor Tester

Has replaceable socket plate for obsolescence protection. Sensitive, instantaneous inter-element leakage and shorts test (Sensitivity — in excess of 3 megohms) filament continuity test. Covers 3,000 to 15,000 umhos in 3 ranges. Tests Compactrons, Nuvistors, Novars and 10-pin types. 14-position selector switches, no paralleled elements. Also tests transistors and diodes. In red leatherette portable case, 16¾" x 11¾" x 7½". 105-125v, 50-70 cycles, 40 watts. Shipping weight, 21 lbs.

Model 6000A Deluxe Portable Tube and Transistor Tester—Net Each $279.50

Model 799 Multi-Socket Tube Tester—Net Each $199.95

THE HICKOK ELECTRICAL INSTRUMENT CO.

Net

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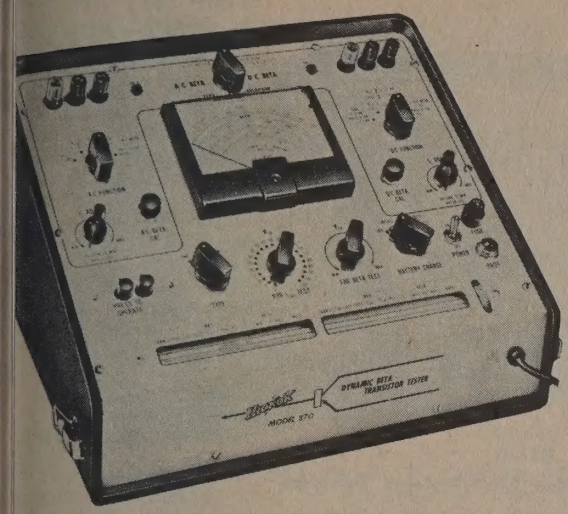
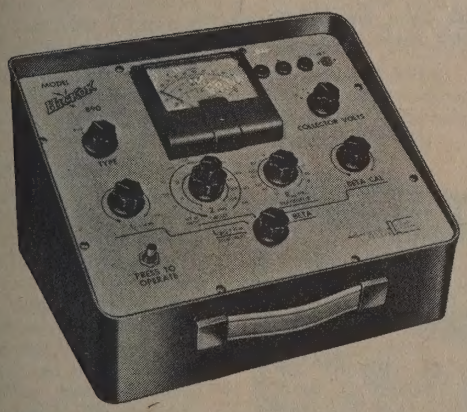
HICKOK TEST EQUIPMENT



MODEL 870
Dynamic Beta Transistor Tester

Measures AC and DC Beta. Collector test current variable up to 2 amperes, permitting Beta measurement on power transistors rated 5 amperes or more. Variable collector voltage and current permits tests according to manufacturers' specifications—Tests switching transistors, measures large signal DC Beta on power transistors—small signal AC Beta on low and medium power transistors. Icbo Ranges: 100 ua, 1 ma, 10ma; Beta Ranges: 0-100, 0-300. Complete with replaceable roll chart and test leads in black leatherette portable case 14$\frac{9}{16}$" x 11¼" x 7⅞". 115v-60 cycles, 40 watts. Shipping weight, 22 lbs.

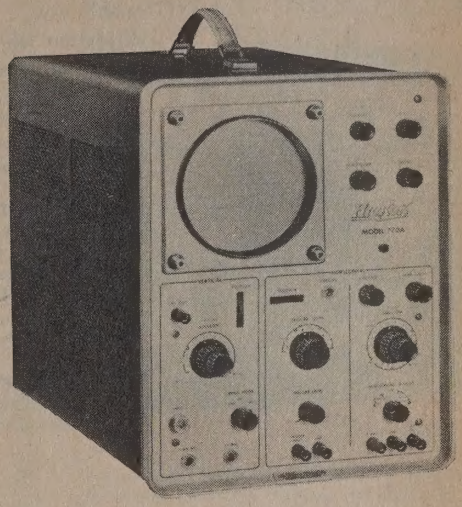
Model 870 DYNAMIC BETA Transistor Tester—Net Each $395.00



MODEL 890A
Dynamic Beta In-Circuit Transistor Test

Utilizes unique new test circuit to measure AC Beta in OR OUT of circuit with 5% accuracy. Measures these in-circuit parameters: AC Beta, Ic, Rin (transistor input impedance), Z Ohms (base-emitter circuit impedance). Measures AC Beta, Ic, Rin and Icbo out of circuit. Portable, completely self-contained, fully-transistorized — battery operated. 10¾" x 9" x 6½". Shipping weight 8 lbs.

Model 890A Dynamic Beta In-Circuit Transistor Tester—Net Each $215.00



MODEL 770A
5", Wide-band Industrial and General Purpose Oscilloscope.

Calibrated 4MC DC vertical amplifier has Gaussian roll-off for optimum pulse response. Eight-step attenuator with ranges from 0.01V to 50V/div accurate to within 5%. Built-in square calibrator accurate to ±3%. Time base with 5X magnifier, provides 18 calibrated writing speeds from 0.2 usec/div to 1.5 sec/div at ±3% accuracy. Choice of free-running, driven, or automatic sweep modes is also provided. Has flat-face, post-accelerated CRT, illuminated graticule. 13¾" x 11" x 17½". Shipping weight, 57 lbs.

Model 770A 5". Wide-band Industrial and General Purpose Oscilloscope—Net Each $675.00

MODEL 677
Wide-Band Service Technician's 5" AC Oscilloscope

5 cps to 4.5MC within 3db. New 1-2-3 circuit approach simplifies peak-to-peak measurements. Pre-set horizontal and vertical sweep positions. Sharp, bright trace with astigmatic correction, facilitates detailed observations of TV sync wave forms, including 3.58MC color burst. Furnished complete with detailed application and instruction book and test leads. 14"x9½"x18½". Shipping weight, 36 lbs.

Model 677 Wide-Band Service Technicians 5" Oscilloscope—Net Each $249.50

MODEL CA-5
Universal Adapter

For testing Compactrons, Novars, 5- and 7-pin Nuvistors, 10-pin types suitable for Cardmatic models and most other models except Models 532, 533, 534, 536, 538, 539A, 546, 600 and 605. Shipping weight, 6 lbs.

Model CA-5 Universal Adapter—Net Each $59.50

Model 725 Stereo Standard FM Multiplex Generator—Net Each $495.00

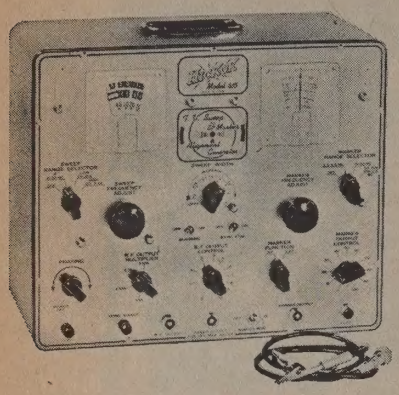
Model 470A Electronic Volt-Ohmmeter—Net Each $89.50

Model 209C True Vacuum Tube Volt-Ohm-Milliampere and Capacitance Meter—Net Each $199.50

Model CR-35 CRT Analyzer/Rejuvenator—Net Each $99.95

THE HICKOK ELECTRICAL INSTRUMENT CO.

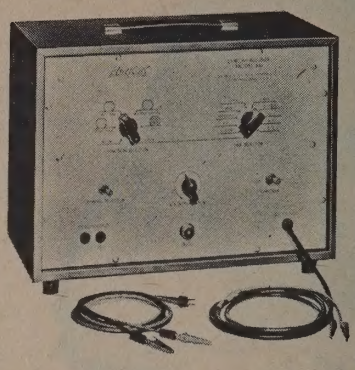
HICKOK TEST EQUIPMENT



MODEL 615
Sweep and Marker Alignment Generator

For complete TV, IF and RF alignment, including color TV alignment. Also provides harmonic output on UHF. All electronic Sweep with no moving parts. Amplitude modulation less than 0.1db/MC. 110-120v, 60 cycles, 40 watts. Furnished in steel carrying case, 16¼" x 8" x 13½" complete with leads. Shipping weight 39 lbs.

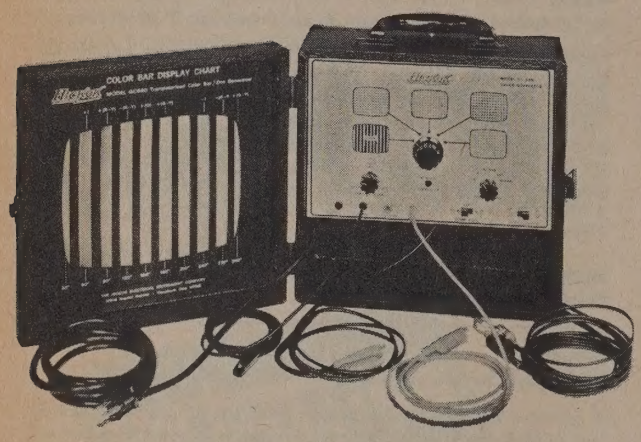
Model 615 Sweep and Marker Alignment Generator—Net Each $429.50



MODEL 661
Chrom-Aligner NTSC Color Bar-White Dot Generator

Generates individual 100% saturated color bars to NTSC standards. Provides the following demodulator alignment signals: R-Y, B-Y, G-Y, G-Y at 90°, RF output on channels 3 or 4. Crystal-controlled chroma and sync. Separate video output. 110v, 60 cycles, 20 watts. Complete with leads and 3.58MC crystal. Shipping weight, 20 lbs.

Model 661 Chrom-Aligner Generator—Net Each $379.50



MODEL GC660
Color Bar Dot/Crosshatch Generator

A completely new design that sets a new standard of stability through liberal use of high-speed silicon switching devices and unijunction transistors. Uses 300-dot, shortstep timer system to assure complete screen coverage, especially important on rectangular tubes. "No flicker" crosshatch pattern because of 60-cycle time base. Dot size based on 0.1 usec pulse is only one line thick and one line wide for maximum convergence accuracy. Standard 10-bar pattern with controllable chroma level for color sync and killer threshold checks. Gun killer permits fast purity checks and actually allows use of picture tube as a 'scope for chroma demodulator alignment. Tuneable RF output at 300 ohms, ±video output, special sync output for Zenith receivers, 10¾" x 10⅜" x 5". Shipping weight, 6¼ lbs.

Model GC660 Color Bar Dot/Crosshatch Generator—Net Each $179.50

MODEL 288AX
Crystal Controlled AM-FM Sweep and Marker Generator

A complete alignment instrument with built-in decibel meter and crystal frequency standard (100KC and 1000KC). Covers 35KC to 110MC in 8 bands frequency modulated and 35KC to 160MC in 8 bands amplitude modulated. Includes new ultrasonic range from 35KC to 125KC. Supplied with 100KC/1000KC crystal, cable assembly and meter leads. Case size 16"x 7"x13". Shipping weight, 33 lbs.

Model 288AX Crystal Controlled AM-FM Sweep and Marker Generator — Net Each $385.00

MODEL 860
"Injecto-Tracer" Signal Tracer

An all solid-state instrument for complete trouble shooting of all types of AM and FM radios, including auto radios, and TV sound circuits. Unlike other signal tracers that only inject the test signal, the 860 also picks up, amplifies and detects signals through a tuneable amplifier and allows a complete job of signal tracing. Covers range from 200KC to 1700KC, plus 10.7 MC IF. Regulated, high-current power supply is variable to permit checking distortion, oscillator drop-out, etc. 11" x 8½" x 5½". Shipping weight, 9½ lbs.

Model 860 "Injecto-Tracer" Signal Tracer—Net Each $149.50

THE HICKOK ELECTRICAL INSTRUMENT CO.

Net

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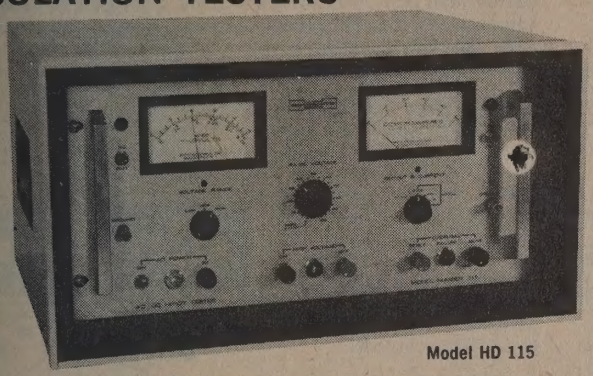
HIPOTRONICS INC.

NON-DESTRUCTIVE HIPOT & INSULATION TESTERS

00 Series
NON-DESTRUCTIVE HIPOT AND INSULATION TESTERS



Model HD 115

he Hipotronics line of non-destructive AC/DC hipot test sets utilize a thyra-on-operated overload circuit for unprecedented reliability and speed of peration. Reaction time is remarkably low, sensitivity is variable over a ange of 1 to 110% of rated output current. With circuit sensitivity set at naximum, corona discharge or leakage currents of sufficient magnitude will rip the HV before insulation failure occurs.

ach unit is packaged on a rack mounted panel installed in a new, attractive esk-top cabinet. The unit may be removed from the cabinet and mounted a standard equipment 19" rack in minutes. Controls have been human ngineered to provide ease of operation, safety, readability, and an attrac-ve, professional appearance.

wo versions are available: a standard unit with minimal control features, and deluxe unit with all the most desired controls for laboratory precision test-g programs.

EATURES IN STANDARD MODEL:

AC input on and off switches • Input fuse and pilot light • Output control ontinuously adjustable from zero to maximum • Single range, output con-ected KV meter, 2% full scale accuracy, 3½" arc • Single range current neter in grounded HV return. 2% full scale accuracy, 3½" arc, 0-5 ma C/DC • Meters are recessed for protection • KV meter recalibration facility Continuously adjustable, overload circuit from 50 ua to 5 ma • Failure ndicator and reset button • Front panel, re-entrant output jacks with shielded IV output lead and ground lead • AC/DC meter switch with reminder lights ver output jacks • External interlock provision • Surge limiting resistor in DC utput • Deluxe, 21"W x 19"D x 10"H cabinet (slightly larger for 25 KV unit)

DDITIONAL FEATURES IN DELUXE (HD) MODELS:

Zero start interlock with HV on and off buttons—compels operator to start est at zero volts • Triple range KV meter • Triple range DC current meter, -50/500/5000 ua DC • High Voltage On pilot light

PTIONAL EXTRAS (ALL UNITS):

HV test probe $10
Gravity operated output shorting solenoid with discharge resistor $35
Audible failure signal $15

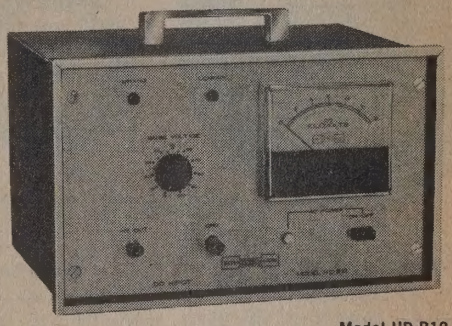
PECIFICATIONS:

nput	115 VAC, 60 Hz, 5 amps max.
ize & Weight	21"W x 19"D x 10"H; appx. 60 lbs.
utput Current	5 ma. AC or DC at full rated voltage
leters	2% full scale accuracy, 3½" arc

Model	Output Voltage	KV Meter Ranges	Net Price
H 103	0-2.5 KV AC/0-3 KV DC	0-3 KV AC/DC	$270
HD 103	0-2.5 KV AC/0-3 KV DC	0-.6/1.2/3 KV AC/DC	340
H 106	0-5 KV AC/0-6 KV DC	0-6 KV AC/DC	290
HD 106	0-5 KV AC/0-6 KV DC	0-1.2/3/6 KV AC/DC	360
H 115	0-12 KV AC/0-15 KV DC	0-15 KV AC/DC	370
HD 115	0-12 KV AC/0-15 KV DC	0-3.75/7.5/15 KV AC/DC	440
H 125	0-10 KV AC/0-25 KV DC	0-25 KV AC/DC	465
HD 125	0-10 KV AC/0-25 KV DC	0-5/10/25 KV AC/DC	535

Consult factory for quotation on special requirements.
Prices and specifications subject to change without notice.

AC and DC PRODUCTION HIPOT TESTERS
A and B Series



Model HD B12

Designed for use by unskilled or semi-skilled personnel in mass testing of electrical components, transformers and appliances. Simple to operate, reliable for go no/go testing. Indicators provide information on component leakage and internal arcing. Continuously variable output voltage and output connected KV meter provide optimum test accuracy at lowest cost.

FEATURES:

• Detachable test leads enter front panel • Continuously adjustable output from zero to maximum • Output connected KV meter for maximum accuracy • "Arcing" detector employs corona pickup network for best sensitivity • "Leakage" detector sensitivity continuously adjustable from 500 ua to 5 ma • Three-wire grounding cord and plug • Shielded output lead thru re-entrant jack • AC input switch, fuse, and pilot light • Each model has a corresponding deluxe model with an audible failure alarm circuit incorporated in its design.

OPTIONAL:

HV probe $10

SPECIFICATIONS:

Size & Weight	7"H x 12"W x 8"D; appx. 20 lbs.
Input	115 VAC, 60 Hz, 3 amps max.
Short Circuit Current	
AC Units	18 ma.
DC Units	5 ma.
KV Meter	3% full scale accuracy, 3" arc

AC Models	Output	Net Price
H A3	3 KV AC	$145
HD A3	3 KV AC	170
H A5	5 KV AC	160
HD A5	5 KV AC	185
H A10	10 KV AC	190
HD A10	10 KV DC	215
DC Models	**Output**	**Net Price**
H B4	4 KV DC	150
HD B4	4 KV DC	175
H B6	6 KV DC	170
HD B6	6 KV DC	195
H B12	12 KV DC	210
HD B12	12 KV DC	235

HIPOTRONICS INC

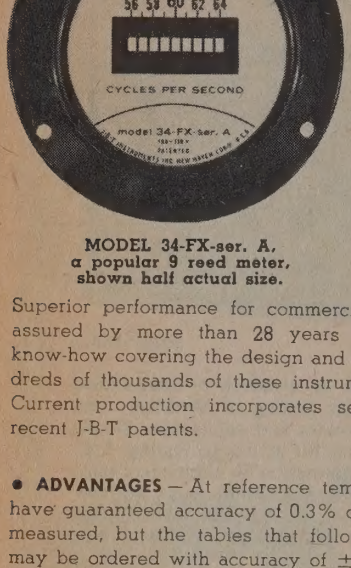
High-Potential Electronics
HIPOTRONICS, INC.

SEND FOR CATALOG

VIBRATING REED FREQUENCY METERS

J-B-T INSTRUMENTS, INC.

31st Ye



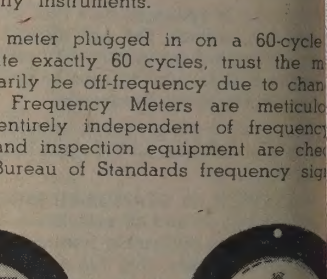
MODEL 34-FX-ser. A, a popular 9 reed meter, shown half actual size.

• **USES, Commercial and Military** — J-B-T Vibrating Reed Frequency Meters are used extensively in radio, telephone, television, and radar service, on engine-generator sets and standby equipment, in laboratories, in many types of aviation and electronic equipment, on panel and control boards, in inspection setups, and in high-cycle power sources — wherever constant or known frequency is important to accurate and efficient operation of equipment. Superior performance for commercial and military applications is assured by more than 28 years of continuous experience and know-how covering the design and complete manufacturing of hundreds of thousands of these instruments in our Connecticut plant. Current production incorporates several innovations covered by recent J-B-T patents.

• **ADVANTAGES** — At reference temperature of 77°F most models have guaranteed accuracy of 0.3% or better of the frequency being measured, but the tables that follow indicate that certain models may be ordered with accuracy of ±0.1%. Accuracy on interrupted DC may be somewhat less. High fatigue strength provides a safety factor for continuous operation. Temperature compensations are not required as frequency change per °F is only .0075%, negative. For example, a 50°F temperature rise causes a 60 cps reed to read only 0.2 cps lower than at reference temperature.

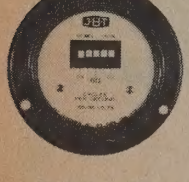
• **OPERATING PRINCIPLE** — The patented, simplified design in the J-B-T meter operates on AC or interrupted DC. Each is adjusted to respond by resonance to the frequency shown dial. As the current excites the driving coil, the reed "in tune" the frequency in the coil will respond by vibrating rapidly be of permanent magnet polarization and induced magnetism fro coil. The instrument is adapted to specified operating voltag a series resistor. To determine frequency, simply read the

• **RESPONSE PATTERNS** — Breadth of actuation differs with the ments of frequency between reeds. For example, at 60 cycles, cycle steps give the broad response shown below at left, wh full cycle steps bring the sharp response at right. In genera lower the frequency the greater the amplitude, the higher the frequency the less the amplitude. Thus a 25 cycle reed normally will have substantially greater amplitude than a 400 cycle or a 1000 cycle reed.

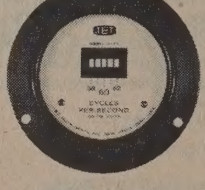


• **STABILITY** — All meters are permanently calibrated at the fa and do not require subsequent adjustment. J-B-T reeds have tively high Q characteristics, an especially desirable factor in tronic circuits. Wave form or external fields do not ordin have an adverse effect. Built with no pivoted parts and with washers at every critical point, these rugged meters can rougher treatment than many instruments.

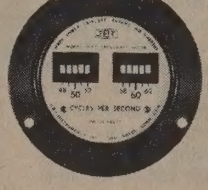
• **TRUST THE METER** — If a meter plugged in on a 60-cycle power line does not indicate exactly 60 cycles, trust the m Power supply may momentarily be off-frequency due to chan load conditions. All J-B-T Frequency Meters are meticulo calibrated at the factory, entirely independent of frequency power supply. Production and inspection equipment are che regularly against National Bureau of Standards frequency sig



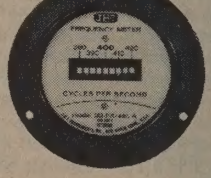
MODEL 21-FX, 5 reeds, matches other 2½" panel instruments.



MODEL 31-FX, 5 reeds, standard. For appearance when operating, see "RESPONSE PATTERNS," above.



MODEL 30-FX, 5 reeds in each of two frequency ranges.



MODEL 33-FX-ser. A, 9 reeds for measuring frequency of high-cycle power sources.

MODEL 36-FX- 21 reeds for close reading over 380-420 cycle band Shown operating at

3½" and 2½" ROUND MOLDED CASE REED METERS

Model	Range, cps (Hz)	No. of Reeds	CPS Between Reeds	Standard Voltage	Ohms Per Volt‡	Power Consumed Watts‡	Accuracy # ± %	Case	Drawing No.	Table of Dimens.	Pric Net Eac
*30-FX	48-52 & 58-62	10	1	100-130	140	0.9	0.3	3½"	SK-154	Line 5	$30.
30-FX-18	46-54 & 56-64	18	1	100-130	180	0.7	0.3	3½"	SK-154	Line 5	52.
*31-FX	58-62**	5	1	100-130	120	1.0	0.3	3½"	SK-50	Line 5	26.
*31-FX-7	57-63	7	1	100-130	140	0.9	0.3	3½"	SK-154	Line 5	28.
*33-FX	380-420	9	5	100-130	130	0.7	0.3	3½"	SK-156	Line 5	37.
33-FX-11	360-440***	11	***	100-130	130	0.7	0.3	3½"	SK-156	Line 5	39.
*34-FX	56-64	9	1	100-130	140	0.9	0.3	3½"	SK-154	Line 5	30.
*34-FX-Z	58-62	9	½	100-130	140	0.9	0.2	3½"	SK-154	Line 5	32.
34-FX-11	55-65	11	1	100-130	140	0.9	0.3	3½"	SK-154	Line 5	32.
34-FX-Z-11	57.5-62.5	11	½	100-130	140	0.9	0.2	3½"	SK-154	Line 5	35.
34-FX-21	45-65	21	1	100-130	180	0.7	0.3	3½"	SK-154	Line 5	44.
36-FX-21	380-420	21	2	28	40	0.4	0.3†	3½"	SK-156	Line 5	48.
*36-FX-21-115	380-420	21	2	100-130	130	0.7	0.3†	3½"	SK-156	Line 5	49.
21-FX	58-62**	5	1	100-130	525	0.25	0.3	2½"	MD-20	Line 2	25.
21-FX	116-124	5	2	100-130	525	0.7	0.3	2½"	MD-20	Line 2	27.
23-FX	380-420	5	10	100-130	120	0.75	0.3	2½"	MD-20	Line 2	30.
23-FX-54	390-410	5	5	100-130	120	0.75	0.3	2½"	MD-20	Line 2	30.

†Accuracy of 0.1% at reference temperature available at necessarily higher cost. Quotation on request.
*Most popular models — normally stocked.
**Also available 48-52 or 59-63, but furnished 58-62 unless otherwise specified.
***360-370-380-390-395-400-405-410-420-430-440
‡Approximate values; reflect minor changes based on recent design.
#At reference temperature, see paragraph "ADVANTAG

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

Net

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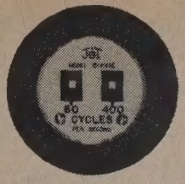
VIBRATING REED FREQUENCY METERS

J-B-T INSTRUMENTS, INC.

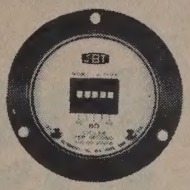
SEALED FREQUENCY METERS

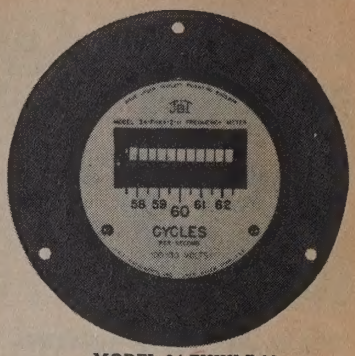
TYPE Sealed meters, glass-to-metal construction, with solder ...ls and detachable flange, supersede the former FHX sealed ... While JAN-I-6, MIL-M-6B, and MIL-M-10304B (Type MR36) do ...er specifically to frequency indicators, the FHXX series uses ...nt mounting dimensions of these specifications, and meets or ...s the sealing requirements, and for 3½" meters, electrical ...ments, including 3000 volt breakdown. (1½" and 2½" meters ...00 volt breakdown.‡‡) Electrical characteristics and accuracy ... same as for corresponding F models without the HXX ...ation. Sampling procedure includes a test in water where ...solute pressure of the air above the water is reduced to 2.5 ... of mercury (approx. 57,000 ft. altitude) and is maintained ... minute. Available in 3½", 2½" and 1½" cases. For dimen... see Table, Lines 1, 3 and 8. Standard voltage is 100-130.

MODEL 15-FHAC, 1½"; widely used as frequency standard for cathode follower circuit.



MODEL 21-FHXX, 2½"; 5 reeds, cased to match other 2½" panel meters.





MODEL 34-FHXX-Z-11, shown half size. Accuracy, ±0.2%

3½", 2½" AND 1½" SEALED ROUND METAL CASE REED METERS

...el	Range, cps (Hz)	No. of Reeds	CPS Between Reeds	Standard Voltage	Ohms Per Volt‡	Power Consumed, Watts‡	Accuracy # ± %	Case	Drawing No.	Table of Dimens.	Price Net, Each
0-IXX	48-52 & 58-62	10	1	100-130	140	0.9	0.3	3½"	SK-153	Line 8	$37.80
0-IXX-14	47-53 & 57-63	14	1	100-130	140	0.9	0.3	3½"	SK-153	Line 8	42.50
1-IXX	58-62	5	1	100-130	120	1.0	0.3	3½"	SK-51	Line 8	33.50
1-IXX-7	57-63	7	1	100-130	140	0.9	0.3	3½"	SK-153	Line 8	36.00
3-IXX	380-420	9	5	100-130	130	0.7	0.3	3½"	SK-155	Line 8	45.00
3-IXX-11-LL	360-440	11**	**	100-130	130	0.7	0.3	3½"	SK-165	Line 8	50.00
4-IXX	56-64	9	1	100-130	140	0.9	0.3	3½"	SK-153	Line 8	37.50
4-IXX-11	55-65	11	1	100-130	140	0.9	0.3	3½"	SK-153	Line 8	39.90
4-FXX-Z-11	57.5-62.5	11	½	100-130	140	0.9	0.2	3½"	SK-153	Line 8	41.80
6-IXX-21	380-420	21	2	28	40	0.4	0.3†	3½"	SK-155	Line 8	55.75
6-IXX-21-115	380-420	21	2	100-130	130	0.7	0.3†	3½"	SK-155	Line 8	57.10
1-IXX	58-62	5	1	100-130	525	0.25	0.3	2½"	SK-67	Line 3	38.50
3-IXX	380-420	5	10	100-130	120	0.75	0.3	2½"	SK-67	Line 3	43.90
5-HAC ‡‡	60 & 400	2	—	8-10	270	0.04	0.5	1½"	SK-39	Line 1	22.50
5-H-54	390-410	5	5	100-130	115	1.25	0.3	1½"	SK-55	Line 1	28.50
5-H-56	58-62	5	1	100-130	540	0.25	0.3	1½"	SK-55	Line 1	23.60
5-H-400	380-420	5	10	100-130	115	1.25	0.3	1½"	SK-55	Line 1	27.90

...el 15-FHAC meets 800 volt breakdown.

3¼" ROUND METAL CASE REED METERS (NOT SEALED)

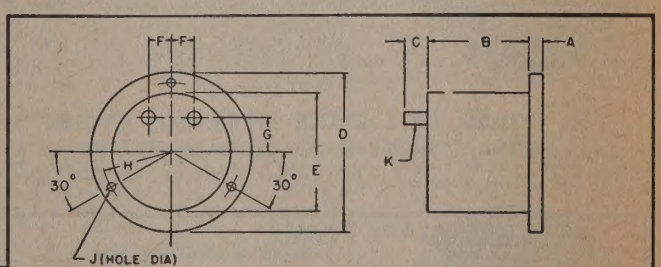
...el	Range, cps (Hz)	No. of Reeds	CPS Between Reeds	Standard Voltage	Ohms Per Volt at 120 VAC	Power Consumed, Watts	Accuracy # ± %	Case	Dwg. No.	Table of Dimens.	Price Net, Each
...'	48-52 & 58-62	10	1	100-130	140	0.9	0.3	3¼"	MD-40	Line 4	33.60
...'	58-62	5	1	100-130	115	1.0	0.3	3¼"	MD-40	Line 4	29.25
...'	380-420	9	5	100-130	130	1.0	0.3	3¼"	MD-40	Line 4	40.75
...'	56-64	9	1	100-130	140	0.9	0.3	3¼"	MD-40	Line 4	33.25
...-Z	58-62	9	½	100-130	140	0.9	0.2	3¼"	MD-40	Line 4	35.20

...popular models — normally stocked.
...70-380-390-395-400-405-410-420-430-440
...acy of ±0.1% at reference temperature available at necessarily higher cost. Quotation on request.

‡Approximate values; reflect minor changes based on most recent design.
#At reference temperature, see paragraph "ADVANTAGES."

REVISED DIAL APPEARANCE

...ents during the life of this catalog may include meters with ...omewhat different from those pictured here. Dials are being ...ly modified to use the revised trademark as adopted during ... Silver Anniversary Year. Many 3½" frequency meters also ...rrying the designation Series A after the model number (as ... 34-FX-ser. A on preceding page). Such instruments have ...nal ruggedness and sensitivity, and unusually uniform am... over the entire span of the meter. However Series A are ...rise interchangeable as to mounting dimensions and circuit ...teristics with other meters bearing the same model number.



FREQUENCY METERS AND FREQUENCY — TIME METERS, TABLE OF DIMENSIONS, INCHES

	MODEL	MIL-M-6B* MOUNTING	A	B	C	D	E	F	G	H	J	K	TERMINAL DESCRIPTION
Line 1	15-FH Series	—	3/32†	1 3/16	3/8	2 3/32 ‡	1 1/2	3/8	3/8	0.875	0.125		Solder, 1/16" dia. hole
Line 2	21-FX and 23-FX Series	MR24, MR25	1 3/64	1 3/8	2 3/32	2 11/16	2 3/32	7/16	5/16	1.220	0.116		10-32 NF-2A studs
Line 3	21-FHXX, 23-FHXX Series	MR26**	1/32†	1 27/32	1 1/16	2 11/16 ‡	2 1/8	1/2	1/2	1.220	0.125		Solder, 3/32 dia. hole
Line 4	30-F to 34-F Series	—	1/64	2 3/32	2 3/32	3 1/4	2 5/16	7/16	1/8	1.453	0.150		10-32 NF-2A studs
Line 5	30-FX to 36-FX Series	MR34, MR35	1 3/64	2	2 3/32	3 1/2	2 11/16	7/16	1/8	1.580	0.150		10-32 NF-2A studs
Line 6	31-FE Series	—	1/64	3 1/8	2 3/32	3 1/4	2 5/16	7/16	1/8	1.453	0.150		10-32 NF-2A studs
Line 7	31-FEX-1 Series	MR34, MR35	3/32	3 1/8	2 3/32	3 1/2	2 5/16	7/16	1/8	1.580	1.150		10-32 NF-2A studs
Line 8	30-FHXX to 36-FHXX Series	MR36**	3/32†	2 1/4	5/8	3 1/2 ‡	2 11/16	1/2	3/4	1.580	0.150		Solder, 3/32 dia. hole

*Also JAN-I-6 and ASA C39.1-1951 Mounting
**Also MIL-M-10304B Mounting

†Not including neoprene cushioning gasket supplied with meter, but with detachable flange.
‡Including detachable flange.

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

VIBRATING REED FREQUENCY METERS

J-B-T INSTRUMENTS, INC.

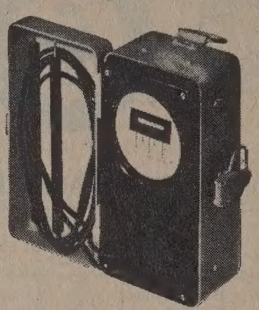
3" SQUARE-CASED FREQUENCY METERS

FS SERIES. Matching other 3" x 3" meters on a panel with square black molded cases, these meters are otherwise the same as the FX Series. For instance, 33-FS is the same as 33-FX except for the case. See Table of Dimensions, Line 10.

33-FS, 380-420 cps, 9 reeds, 3" square molded case **$38.75**

34-FS, 56-64 cps, 9 reeds, 3" square molded case **$31.30**

PORTABLE FREQ. TESTERS



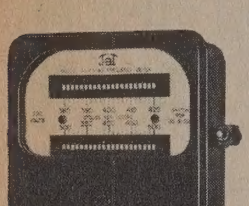
FP SERIES, METAL OR MOLDED CASE. Accuracy of ±0.3% meets the exacting test requirements of aviation, signal, and communication equipment. **M-Types** use anodized gray aluminum case, 6⅜" long x 4" wide x 3-9/32" deep. Leads permanently attached. See Print SK-63-10. With pertinent name plate, **33-FP-9M** is known as **TS-328 A/U. L-Types,** sturdy molded case within top grain leather carrying case 6-3/32" x 4¼" x 2¾"; 4' leads with 5" test picks and banana plugs.

33-FP-9M, (illustrated) 380-420 cy., 9 reeds, 100-130 volts, 130 ohms per volt, 1.0 watts power consumption; coml. quality and packing.... **$54.60**

34-FP-9M, 56-64 cy., 9 reeds, 100-130 volts, 140 ohms per volt, 0.9 watt power consumption, coml. quality and packing **$46.75**

33-FP-9L, 380-420 cy., 9 reeds, 100-130 volts **$52.50**

34-FP-9L, 56-64 cy., 9 reeds, 100-130 volts **$44.90**



42- AND 50-REED 400 CYCLE INDICATORS

MODEL 41-FX-42 and **41-FX-50.** Both are widely used in commercial and military testing especially in aviation-electronic trouble-shooting. Model 41-FX-42 (supersedes Model 41-FX) has two banks of 21 reeds: one for 300-500 cps in 10 cycle steps, and for vernier effect, one for 380-420 cps in 2 cycle steps. Model 41-FX-50 has two banks of 25 reeds giving a continuous coverage from 355-600 cps in 5 cycle steps. Black molded case, flush front is 4-3/64" x 4-3/64" x 2-17/32" deep behind panel over studs. Power consumption is 2 watts at 30 volts, 4 watts at 115 volts, and 8 watts at 200 volts. For 41-FX-42, see Print MD-38-11; for 41-FX-50, Print SK-79.

41-FX-42, 100-130 volts only **$137.59**

41-FX-42, 3 voltages: 200-240; 115; and 30; 4 studs (without switch) **$154.40**

41-FX-50, 3 voltages: 200-240; 115; and 30; 4 studs (without switch) **$198.50**

RUGGEDIZED AND ILLUMINATED METERS

Model with "RUG" — Sealed vibrating reed frequency meters and sealed elapsed time meters are available, when so ordered, to the intent of MIL-M-10304B, covering ruggedization of other kinds of meters, and usually are specified only for extra-severe shock and vibration.

LL Construction — Requirements for lighted meter dials have led to illuminating the 3½" FHXX Series of sealed meters. Light from a source behind the panel is admitted through a sealed window built into the meter case. Inquiries are invited.

400 CYCLES, IN 1 CYCLE STEPS; 800 CYCLES

Among the variations which J-B-T produces on special order, are 21-reed, 390-410 cycles in 3½" case; and 11-reed; 780-820 cycles with 4-cycle increments. Quotations on request.

New

FB SERIES FREQUENCY METERS to Match "Big Look" Panel M

SERIES FB METERS. Newest Match ers, combine the GE "Big Look" design with the time-tested accur J-B-T vibrating reed frequency m at realistic prices. Typical 3½" m for 100-130 volts follow and othe cataloged in Bulletin B-419. Line Table of Dimensions below gives m ing details. Groupings of 5 to 21 and voltages of 28 to 230 are ava on order. For further details: 60 models, Drawing SK-182 (A); 400 Drawing SK-183 (A).

30-FB, 10 reeds, dual range, 48-52 and 58-62 cps .....

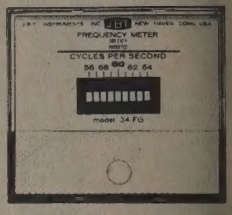
33-FB, 9 reeds, 380-420 cps .....

34-FB, 9 reeds, 56-64 cps .....

New

FG SERIES for Modern Design; Picture Window Frame Optional

FG FREQUENCY METERS. The sparkling clear-plastic front and bright textured metal insert below the dial add zest to any panel. FG meters not only match the 3½" wide x 3" high front of the New EG elapsed time meters on the next page, but are interchangeable as to mounting with Triplett and other brands of panel meters. Standard voltage is 100-130 volts; accuracy and electrical characteristics equal corresponding FX frequency meters in the table on preceding page. For example, Model 30-FG differs from Model 30-FX only in the case. FG mounting details appear in line 9 of the Table of Dimensions below and in Prints SK-160 and SK-164. For picture window mounting diagram, use the half-bezel adapter sketched on the next page. Listed below are typical 3½" FG models and others are cataloged in Bulletin G-109. Groupings of 5 to 21 reeds and voltages of 28 to 230 are available on order. Inquiries are invited on a 2½" FG series.



MODEL 34-FG for standard flush-type mounting (match makers) →

Same model with 13A-234 molded half-bezel

30-FG, 48-52 and 58-62 cps, 10 reeds **$34.10**

33-FG, 380-420 cps, 9 reeds ... **41.20**

34-FG, (illus.) 56-64 cps, 9 reeds **33.90**

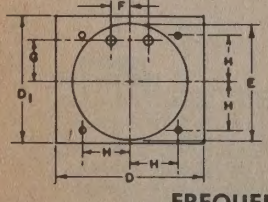
13A-234 Half-bezel adapter, separate black **molded** frame and h ware for picture window appearance on any 3½" FG or meter ..... $

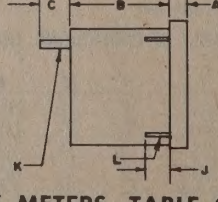
13A-239 Half-bezel adapter, separate black **metal** frame particul recommended for all 3½" FG frequency meters and elapsed time meters; with hardware ..... $

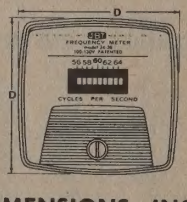
NOTE ON METER VOLTAGE

J-B-T Vibrating Reed Frequency Meters of all sizes normally a made with two studs and are designed to be connected across o phase of a multi-phase line. The single phase voltage where t meter will be used thus becomes the voltage to be specified for t meter. Special meters with extra studs are made for the purpo of using at two or more voltages, not additional phases.

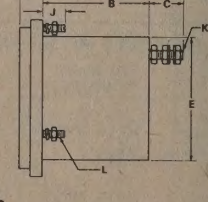
FS & FG MODELS

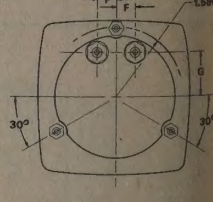






FB MODELS





FREQUENCY METERS, TABLE OF DIMENSIONS, INCHES

Model	A	B	C	D	D_1	E	F	G	H	J	K	L
Line 9 **30-FG to 36-FG**	13/32	2 11/32	23/32	3½	3*	2¾	7/16	1	1⅛	5/16	10-32NF-2A	4-40NC-2A
Line 10 **30-FS to 36-FS**	¼	2 3/64	23/32	3	3	2¾	7/16	⅞	1⅛	5/16	10-32NF-2A	4-40NC-2A
Line 11 **30-FB to 36-FB**	13/32	2 11/32	23/32	3½	—	2¾	7/16	1	—	½	10-32NF-2A	6-32NC-2A

*Centerline of FG meter barrel is 1.558" below top of case and 1.442" above bottom of case.

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ELAPSED TIME & FREQUENCY TIME METERS

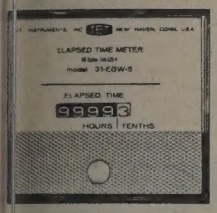
J-B-T

J-B-T INSTRUMENTS, INC.

...t Year ...S AND ADVANTAGES OF ELAPSED ...C RUNNING) TIME METERS

...ord operating time of AC electrical and elec... equipment, these self-starting synchronous ...nents normally register in 1/10th hour steps to ...9 or 99,999.9 hours, then automatically reset. ...are widely used for tube life, TV equipment, ... presses, conveyors, oil burners, ground sup... quipment, maintenance schedules, etc. J-B-T ...ers recommend the AC type of elapsed time ...for superior accuracy, especially where voltage ...bient temperature vary widely.

...w EG SERIES for High Visibility; Modern Picture Window Optional



MODEL 31-EGW-5 for standard flush type mounting.

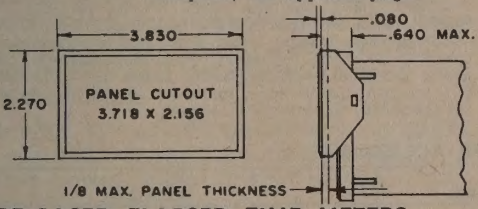
Same model with ...-239 metal half-bezel.

EG ELAPSED TIME METERS. These are designed to give a bright, jewel-like look to panels when used alone, in multiples, or in conjunction with other instruments such as the matching new FG series of frequency meters. A gleaming textured metal shroud below the dial and a clear-plastic case front 3½" wide x 3" high give high visibility to the numeral read out. Dimensions are same as line 9 for FG meters on opposite page. For optional picture window frame effect, on panel area 3.83" wide x 2.27" high, add preferred 13A-239 metal, or 13A-234 molded half-bezel adapter. (See panel cut-out and mounting detail drawing on preceding page.) The quiet, sturdy motors and extensively field-tested mechanisms of other J-B-T elapsed time meters are used in the EG series. Two models are catalogued. Other voltages, frequencies and numerals will be quoted.

31-EGW-5, (illus. at top) 5 wide digits, 0-9,999.9 hours, 60 cps, 110-125 volts ... **$21.50**

31-EGW 6 wide digits, 0-99,-999.9 hours, 60 cps, 110-125 volts **22.00**

13A-239 and 13A-234 half-bezel adapters, see opposite page.



...e dimensions ...ure window ...ng of FG ...meters.

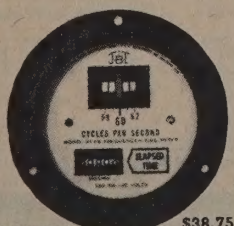
...3" SQUARE-CASED ELAPSED TIME METERS

...L 31-ES. The square black molded case ...s the appearance of other 3"x3" panel ...including **FS** series of frequency meters ...ed on the preceding page. Unlike line ...the table shown there, depth behind ... (b) is 2³²⁄₃₂", and terminals are located ...rizontal center line, each spaced ½" ...enter (G). Variations can be made for ...hours (suffix U), 230 volts, matte finish ...ycles. Now supplied with tenths in red ...ite, and units in white on black. ...60 cy., 110-125 volts, 0-9,999.9 ...hours **$19.75**

CLEAR PLASTIC ELAPSED TIME METERS

...YPE. See Print SK-102 (C) for 2½" rectangular Model 21-EPL and (C) for 3½" rectangular Model 31-EPL. Both types are made to ... The EG Series above is recommended for new designs.

ELAPSED TIME — FREQUENCY METERS



... SERIES. Conserves panel space and ...lizes information by combining elapsed ...eter with frequency reeds. A separate ...g coil for the reeds achieves close con... reed amplitude and frequency. Reads ...9 hours and 58-62 cy. with 5 reeds, ...-130 volts; self starting. Tenths, red on ... other numerals, white on black. Black ... case with front mounting per Table of ...sions, line 6. Power consumption, 4.7 ... For variations with 7, 9, or 11 reeds, ...gularly stocked, such as Model 34-FE, ...int SK-45 (D).

...3¼" metal case 4-19/32" deep **$38.75**

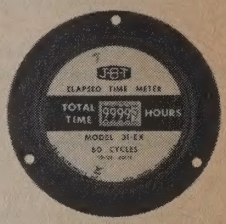
...-1, (per print SK-44 Rev. F—not regularly stocked) like Model ...E, except with 3½" metal flange permanently attached for ...M-6B front mounting per line 7, Table of Dimensions **40.50**

BASIC 3½" ELAPSED TIME METERS

New 5-DIGIT WIDE NUMERAL ELAPSED TIME METERS

MODEL 31-EXW-5. Newest in the J-B-T line of elapsed time meters is Model 31-EXW-5 with 5 wide, easy to read numerals. This model is particularly recommended for **new** equipment because, with superior visibility, rugged construction and attractive price, it is expected to supplant the 31-EX. The meter registers to 9,999.9 hours and automatically resets. Tenths are shown in red on white, units in white on black. Model 31-EXW-5 is interchangeable electrically and mechanically with both 31-EX (below) and 31-EXW shown below. Mounting, which is the same as type MR-34 or MR-35 to MIL-M-6B, also JAN-I-6, and terminal location are per print SK-125 Rev. C.

31-EXW-5, 5 digits, 0-9,999.9 hours, 60 cy., 110-125 volts..... **$17.80**



Model 31-EX. This instrument has been the most widely used of any J-B-T elapsed time meters and continues to be available where parts lists or production runs call for style of numeral and dial appearance, as illustrated. The black molded case, which mounts according to Print SK-80 Rev. E, is interchangeable with the new wide-numeral meters, 5-digit 31-EXW-5 and 6-digit 31-EXW.

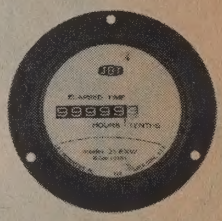
31-EX, 5 digits, 0-9,999.9 hours, 60 cy., 110-125 volts **$18.80**

31-EX-200, same except 200-240 volts. (Not regularly stocked) **19.80**

ELAPSED TIME METERS — Tenths of Minutes

MODEL 31-EXM, 60 cycles, 110-125 volts, reading 0-9,999.9 **minutes;** for short-run applications or readings at closer intervals than 31-EX. Tenths of minutes in red on white, minutes in white on black numerals otherwise identical with 31-EX **$23.00**

6-DIGIT WIDE-NUMERAL ELAPSED TIME METERS



MODEL 31-EXW. One of the most easily-read and most versatile of J-B-T elapsed time meters is Model 31-EXW, illustrated. Easy-to-read, wide numerals register to 99,999.9 hours then automatically reset. Distinctive contemporary dial shows tenths in red on white and units in white on black. This model is interchangeable, electrically and mechanically with Models 31-EXW-5 and 31-EX. The black molded case is also interchangeable with all 3½" FX types of frequency meter. Print SK-125 Rev. E gives mounting information.

31-EXW, 6-digits, 0-99,999.9 hours, 60 cy., 110-125 volts **$18.75**

3½" SEALED ELAPSED TIME METERS — 60 Cycles

MODEL 31-EHXX. Where rugged requirements make a completely sealed elapsed time meter desirable, this glass-to-metal construction with flat glass front and 3½" diameter separable flange, often is specified. Heavy-duty solder terminals are supplied. Every instrument is checked in a vacuum chamber. Overall dimensions and appearances match the FHXX series sealed frequency meters. Maximum voltage between terminals and case, 1,000 volts, R.M.S. The meter registers in 1/10 hour steps to 9,999.9 hours, then automatically resets. Tenths indicator is red on white, all others in white on black. Mount according to SK-85, Rev. C.

31-EHXX, 60 cy., 110-125 volts.... **$21.75**

3½" SEALED ELAPSED TIME METERS — 400 Cycles

MODEL 33-EHXX. This stable, self-starting 400-cycle elapsed time meter is extensively used for preventive maintenance and for reliability testing and checking in a wide variety of equipment. The instrument is entirely enclosed in a 3½" flanged case, glass-to-metal sealed construction with separable flange; heavy-duty solder terminals; flat glass front. 1/10 hours are shown in red on white, all other numerals white on black. The external appearance matches FHXX frequency meter series. For dimensional details see SK-61, Rev. B.

33-EHXX, 400 cy., 0-9,999.9 hours, 1/10 hour steps, 110-125 volts **$78.00**

2½" SEALED ELAPSED TIME METERS

MODEL 21-EHXX. A full size counter reading 9,999.9 hours in 1/10 hour steps and a rugged self-starting synchronous motor are built into this 2½" sealed meter. Its front mounting dimensions are the same as Type MR26 electrical indicating instruments in MIL-M-6B. Glass-to-metal seal makes the instrument completely tamper-proof. Ask for Print SK-68, Rev. G. (2½" 400-cycle meter, **Model 23-EHXX** also is made on special order per Print SK-178.)

21-EHXX, 60 cy., 110-125 volts **$32.50**

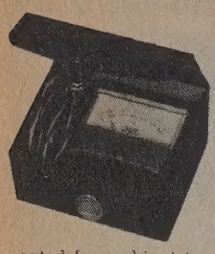
Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

J-B-T TEMPERATURE TESTERS AND ACCESSORIES

J-B-T INSTRUMENTS, INC.

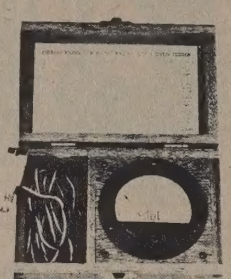
31st Year

FOR APPLIANCE SERVICING, QUALITY INSPECTION, AND LABORATORY SET-UPS

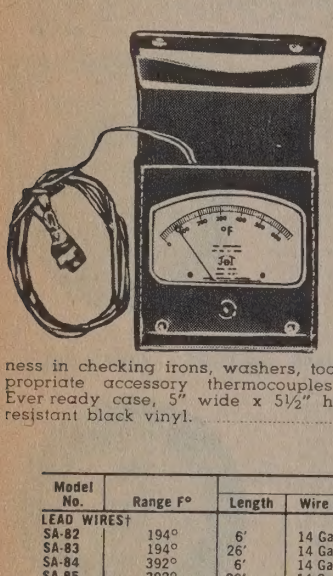


OVEN OR HEAT CHAMBER TESTERS

MODEL 23-JP-1. This new edition of a long-time favorite portable indicating pyrometer saves time and furnishes reliable information in temperature testing. For instance, when servicing and setting thermostats, the 23-JP-1 continuously reads appliance temperatures as they change. The 0-650°F. dial, with 2.48" scale arc has 10° divisions, readable to 3°. The pocket-sized, scuff-resistant, black vinyl carrying case measures 4½"x2⅞"x4¼". Characteristic of more expensive pyrometers, this model is automatically compensated for ambient temperature. Thus, the Tester eliminates calculations, avoids likelihood of serious error, as temperature changes inside the instrument itself, and gives reliable direct readings. Supplied with attached SA-116, 5½' calibrated thermocouple, clip, and convection shield **$33.00**



MODEL 32-JP-3. This time-tested model has an instrument-type carrying case of natural finished mahogany 6⅛" x 3⅞" x 4½" over hardware. The glass-covered indicator shows 0-650°F. range in 10° divisions readable to 2½° on a 2⅜" scale arc. Exceptionally fast, continuous response. Automatic compensation for ambient temperature is a valuable feature whether the tester is used for service work, sales demonstrations, or inspection. Attached SA-116, 5½' thermocouple, clip for affixing to grill and convection shield included **$36.00**

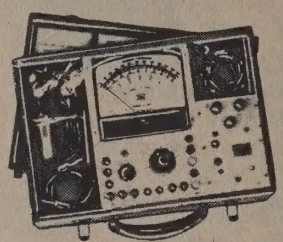


MODEL 32-JP-7. This model is recommended as the most versatile and easiest to read of this J-B-T series. The 0-650°F. scale is more than 4" long. Automatic compensation for ambient temperature is included, so that temperatures are read directly and without calculations. The 32-JP-7 also provides color-coded external binding posts. These permit quick attachment or interchanging of various J-B-T thermocouples placed in one or more of the heat zones to be checked. An SA-116 5½' thermocouple with attachment clip and convection shield is supplied and is left attached when the tester is carried. For maximum usefulness in checking irons, washers, toasters, clothes dryers, etc., use appropriate accessory thermocouples. Tester price includes stitched Ever-ready case, 5" wide x 5½" high x 2¾" deep, of sturdy, scuff resistant black vinyl. **$40.00**

IRON TESTER

MODEL 32-JIT. Self-contained bench-type tester; checks all makes of irons; measures thermostat temperatures; shows open or short circuits. Automatically compensated for room temperature. Also indicates operating temperature of the sole plate (working surface) on non-electric or cordless irons. Black metal base; overall size 10" x 12" x 5½", scale 0-650°F, 15 amp fuse, 6' cord, 110 volt, 50-60 cycles. $42.50

MULTI-PURPOSE TESTE

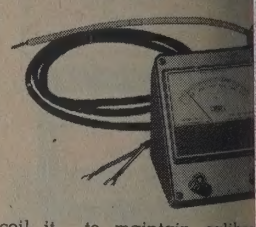


MODEL 61-JRT. A 9-in-1 tester to accurate temperature adjustment electrical analysis of ranges, re ators, test apparatus, etc. Rapidly four cold zones —100°F, +80°F, 14' distant; two heat zones 0-600° to 5½' distant; one voltage range AC; and, with transformer, two c ranges, 0-30 and 0-60 amps, AC. S polished walnut case, 15½" x 10 x 4¾". Two color etched metal p Separate switches protect bulb an meter circuits. Requires one sta flashlight cell replaceable. Temperature accuracy ±2% of full rectified AC readings ±5%. Accessories as listed may be adde testing appliances. Includes two SA-162 resistance bulbs, two S thermocouples, electrical leads, and AS-TR-2 built-in transformer. $

MODEL 61-JRT (LESS TRANSFORMER). Same unit, same scales exc reading in amperes; AS-TR-2 transformer omitted. ..... $

AS-TR-2 Transformers for use with Model 61-JRT to provide readin two current ranges: 0-30 and 0-60 amp. AC ..... $

HEAT INDICATORS



MODEL 32-JG PYROMETER IN SN-10 STAND. Mounted in sloping front black unbreakable molded stand, 4¼"h. x 4¼"d. x 3⅞"w., with 5-way binding posts. Automatically compensated for ambient temperature. Medium resistance system, damped for quick reading on 3.16" scale, assures ruggedness and pointer stability. For ±2% accuracy, use only the type and resistance of thermocouple provided; if extra length — coil it — to maintain calibra For convenience, an extra thermocouple and lead are sugge

MODEL 32-JG IN SN-10 STAND (Supersedes SN-3 and SN-7 Sta
0°-650°F-350°C, includes SA-91, SA-84, and CB-1 ..... $
0°-1200°F-650°C, includes SA-87, SA-82, and CB-1 ..... $
0°-2000°F-1100°C, includes SA-87, SA-82, and CB-1 ..... $

MODEL 32-JG IN SN-11 STAND (not illustrated). With 3 binding pos accommodate flexible extra lead and thermocouple for hard-to-re locations. 0°-650°F including SA-91 thermocouple, SA-84 lead, CB-1 nector block, and SA-86 flexible leads and thermocouple ..... $

§For certain applications, metal stand, SN-7 with Model 32-J pyrom is preferred; quotation on request.

TEMPERATURE TESTER ACCESSORIES

Model No.	Range F°	CONDUCTORS Length	Wire Gage Size	Positive	Negative	Use With	Construction	Price
LEAD WIRES†								
SA-82	194°	6'	14 Ga. Stranded	Red-Copper	Yellow-Const.	32-J in SN-7; 60-JP; 60-JPS	Compensating Lead for use with chromel-alumel thermocouples;	$3.30
SA-83	194°	26'	14 Ga. Stranded	Red-Copper	Yellow-Const.	70-J	flexible duplex with moisture and flameproof outer braid.	10.50
SA-84	392°	6'	14 Ga. Stranded	White-Iron*	Red-Const.	32-J in SN-7; 32-J in SN-8	Extension lead for use with iron-constantan thermocouples; flexible	3.30
SA-85	392°	26'	14 Ga. Stranded	White-Iron*	Red-Const.	70-J	duplex with moisture and flame-proof outer braid.	6.00
THERMOCOUPLES†								
AS-TH-1	0-1200	30"	20 Ga. Solid	Iron-Black*	Const.-Yellow	31-JPP; 31-JPP-C	Welded inside seamless steel tube ¼" O.D. for immersion in molten metal.	On App
IT-1	0-650	—	—	—	—	32-JP-7; 61-JRT	Accessory Iron Tester, same as 32-JIT except there is no meter.	20.00
SA-86	0-650	7'	20 Solid	Iron-Black*	Const.-Yellow	32-J in SN-8; 60-JP; 60-JPS	General purpose combination thermocouple and lead.	2.50
SA-87	0-1200, 0-2000	12"	14 Solid	Chromel	Alumel	32-J in SN-7	For high temperatures, insulated and protected with 2-hole ceramic	3.75
SA-88	0-1200, 0-2000	24"	14 Solid	Chromel	Alumel	60-JP; 60-JPS	beads; fits 3/16" hole.	4.75
SA-91	0-650, 0-1200	12"	14 Solid	Iron-Black*	Const.-Yellow	32-J in SN-7; 32-J in SN-8	For intermediate temperatures, insulated and protected with 2-hole	3.50
SA-92	0-650, 0-1200	24"	14 Solid	Iron-Black*	Const.-Yellow	70-J	ceramic beads; fits 3/16" hole.	4.25
SA-113	0-650	35'	20 Ga. Solid	Iron-Black*	Const.-Yellow	Former Model 32-J	Disc-type junction for attachment flush to surface.	6.75
SA-114	0-650	35'	20 Ga. Solid	Iron-Black*	Const.-Yellow	Former Model 32-J	Needle-type junction for soft material or crevices.	6.50
SA-115	0-650	35'	20 Ga. Solid	Iron-Black*	Const.-Yellow	Former Model 32-J	Ball-type, all-purpose junction. (asbestos-insulated twisted pair)	6.25
SA-116	0-650	5½'	22 Ga. Solid	Iron-Black*	Const.-Yellow		Connection shield & clip for attachment. (asbestos-insulated twisted pair)	5.00
SA-175	0-650	5½'	22 Ga. Solid	Iron-Black*	Const.-Yellow	23-JP-1;	Ball-type tip, for roasters, waffle irons, etc. (asbestos-insulated twisted pair)	2.75
SA-176	0-650	5½'	22 Ga. Solid	Iron-Black*	Const.-Yellow	32-JP-3; 32-JP-7	Disc-type tip, for toasters, etc. (asbestos-insulated twisted pair)	3.50
SA-188	0-650	5½'	22 Ga. Solid	Iron-Black*	Const.-Yellow	60-JRT; 61-JRT	Copper tube enclosed tip, for automatic washers, etc. (asbestos-insulated twisted pair)	5.00
SA-199	0-650	5½'	22 Ga. Solid	Iron-Black*	Const.-Yellow		Shield and clip, duplex nonfraying glass braid, for frequent use above 400°F. (asbestos-insulated twisted pair)	6.00
SA-300	0-650	5'	22 Ga. Solid	Iron-Black*	Const.-Yellow		Spring type in transite tip with handle, for rapid reading of surfaces. (asbestos-insulated twisted pair)	9.00
SA-304	0-650	25'	20 Ga. Solid	Iron-Black*	Const.-Yellow	32-JD in SN-7	Disc-type junction for attachment flush to surface. (asbestos-insulated twisted pair)	6.00
SA-305	0-650	25'	20 Ga. Solid	Iron-Black*	Const.-Yellow	32-JD in SN-7	Needle-type junction for soft material or crevices. (asbestos-insulated twisted pair)	
SA-306	0-650	25'	20 Ga. Solid	Iron-Black*	Const.-Yellow	32-JD in SN-7	Ball-type, all-purpose junction. (asbestos-insulated twisted pair)	5.75
RESISTANCE BULBS								
SA-142	—100 to +160	14'				60-JRT only	Thin, flat, copper clad bulb 3x1⅜x¼"; with polyethy-	7.00
SA-162	—100 to +160	14'	Polyethylene Ribbon Lead	No Polarity		61-JRT	lene ribbon lead. Doors of appliances may be closed	7.00
SA-190**	—100 to +160	8'				Custom	without damaging it.	6.85
SA-308	—100 to +160	8'				Custom		6.00
SA-309	—100 to +160	8'				Custom	Thin, fast-responding, plastic-sheathed bulb.	5.00
CONNECTOR BLOCKS								
CB-1	0-2000	1½"lg. x 1⅜" Dia.	—	As marked	As marked	All ceramic bead type thermocouples	Lava block, includes heavy brass connectors for low contact resistance.	2.25

NOTE: *Iron constantan is RP1080 calibration. **Has plug terminals; all other accessories have spade terminals.
†For best results thermocouples and leads should be as stated on instrument dials. #Price includes two in standard package.

J-B-T INSTRUMENTS, INC. Electrical Instruments, Testers, Switches and Other Components

For other J-B-T Products, see Sec. 5100

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

Net

© United Technical Publicat

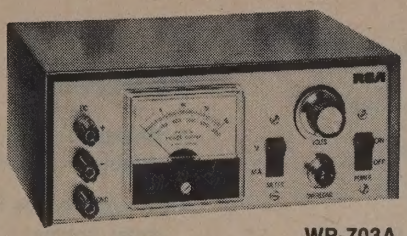
Solid-State Regulated DC Power Supplies

Type WP-700A, WP-702A, WP-703A, WP-704A

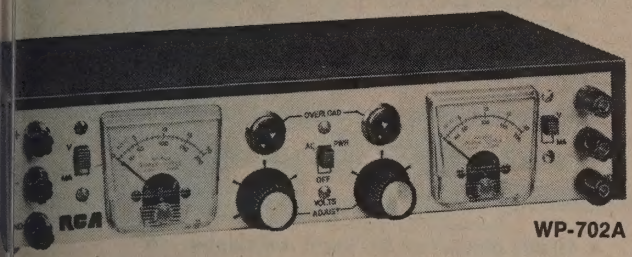
RCA

Test Equipment and Accessories

WP-700A



WP-703A
WP-704A



WP-702A

Features

- **All solid-state circuitry**
- **Continuously adjustable voltage output down to 0 volts**
- **Electronic short-circuit protection — short across the output terminals won't harm the supplies**
- **Front-panel overload-indicator lamp signals when maximum current condition is approached**
- **Negative feedback regulator circuit maintains constant output voltage with low ripple**
- **Compact and lightweight**

cription

P-700A, 702A, 703A, and 704A are solid-state, constant e dc power supplies. These versatile bench-type supplies ieally suited for use in circuit design, servicing, rial, and educational applications. Typical applications ue developmental transistor or integrated circuit ts, production line testing of dc operated equipment, rial maintenance, life testing of devices that require upply, and classroom use.

WP-700A and WP-702A circuits are identical, except that P-702A is a dual unit, with separate controls, output als, and meters for each section. The two sections of the 2A are electrically isolated from each other.

put voltage of the WP-700A and WP-702A is continuously able from 0 to 20 volts, at current levels up to 200 nperes.

put voltage of the WP-703A is continuously adjustable to 20 volts at current levels up to 500 milliamperes.

The output voltage of the WP-704A is adjustable from 0 to 40 volts at current levels up to 250 mA.

Overload current is limited to prevent damage to the power supplies. No damage will occur even if connected to an external short circuit. A special overload indicator panel lamp will begin to glow when the current approaches the maximum rated level.

A meter is provided to indicate either output voltage or current level. The meter function is selected by a convenient panel switch

All silicon transistors and diodes are used in the four supplies. Circuit design features include a negative feedback circuit to maintain constant output voltage with low ripple regardless of varying line.

Three convenient output terminals (+DC, —DC, and GND) are provided. The units are equipped with a three-wire ac power cord to permit connecting the external circuit to the power line ground, using the "GND" terminal.

cifications

	WP-700A WP-702A	WP-703A	WP-704A
t	0 to 20V 0 to 200 mA	0 to 20V 0 to 500 mA	0 to 40V 0 to 250 mA
ation	30 mV	7 mV	15 mV
(change in output with power-line variation of 110 to 135 V ac)			
ation	less than 50 mV	less than 10 mV	less than 20 mV
(change at rated load)			
	less than 500 uV rms	less than 200 uV rms	less than 200 uV rms
ions	0 to 20V 0 to 200 mA	0 to 20V 0 to 500 mA	0 to 40V 0 to 250 mA
ction selected with panel switch)			

Controls ..... Continuously variable voltage
Power on/off
Meter selector V/mA

Output Terminals ..... DC+, DC—, GND, (Pos. or neg. output)

Short Circuit Protection ..... Protected from damage due to external short circuit

Overload Indicator ..... Panel lamp glows when current approaches max. level

Power Cord ..... Three-wire type

Dimensions
WP-700A ..... 4 in. x 6½ in. x 3 in., weight 2 lbs., 11 oz.
WP-702A ..... 6 in. x 12 in. x 3 in., weight 4 lbs., 13 oz.
WP-703A and
WP-704A ..... 5¼ in. x 8¼ in. x 3¼ in., weight 5 lbs., 13 oz.

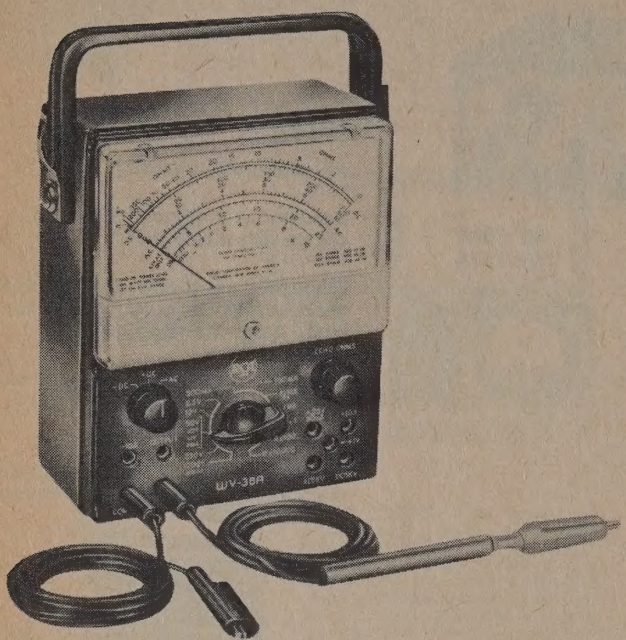
For Prices See Page 863

Volt-Ohm-Milliammeter

Type WV-38A

RCA

Test Equipment and Accessories



Features

- **Measures ohms, DC volts, AC volts, direct current, audio signals in dB units**
- **39 total ranges of measurement; easy to read 2-color meter scales**
- **Special 0.25- and 1.0-volt DC ranges**
- **Meter movement protected against burnout**
- **Full-scale accuracy ±3% on DC volts and current; ±5% on AC volts**
- **Fuse protection for ohms divider network**
- **2-color markings on front-panel for simplified operation**
- **Large 5-inch meter with 50 ua sensitivity**
- **Polarity Reversal Switch**
- **20,000 ohms/volt DC input resistance**

Description

The RCA WV-38A Volt-Ohm-Milliammeter is a rugged, accurate, and extremely versatile instrument designed for service calls, industrial applications, and all-around shop and lab use. The extra-low 0.25 and 1.0 volt DC ranges are specially useful for servicing all types of low-voltage circuits. The wide range current scales are of value in adjusting color TV receivers, TV cameras, and power-supply drains. The ohms scale can be used for trouble-shooting all types of circuits and electronic parts. The special dB scales are ideal for high fidelity and broadcast-audio tests.

A convenient function switch is provided with AC, +DC, and —DC positions. The +DC and —DC positions of this switch reverse the polarity of the test leads — a feature that is als helpful in checking the front-to-back resistance ration of electrolytic capacitors and many types of semiconductor devic

Two special silicon diodes are used to protect the meter movement against burnout due to accidental overload. A fus protects the precision multiplier in the ohms network.

The WV-38A is completely portable, requiring no external power source. Five internal batteries (not provided) are used the ohms function (4 penlight cells and 1 "D" flashlight cell).

Specifications

DC Voltmeter (at full scale):
- Ranges ..... 0 to .25, 1.0, 2.5, 10, 50, 250, 1000, 5000 V
- Input Resistance ..... 20,000 Ω/V
- Accuracy ..... ±3%

AC Voltmeter (at full scale):
- Ranges ..... 0 to 2.5, 10, 50, 250, 1000, 5000 V
- Input Resistance ..... 5000 Ω/V
- Accuracy ..... ±5%

Frequency response (reference 1000 Hz) flat within 0.5 dB from 10 Hz to 50 kHz on the 2.5, 10, and 50 V ranges.

DC Current (at full scale):
- Ranges ..... 0 to 50 uA, 1 mA, 10 mA, 100 mA, 500 mA, 10 A
- Insertion Loss ..... 0.25 V
- Accuracy ..... ±3%

Ohms:
- Ranges ..... RX 1, RX 100, RX 10,000 ±3 of pointer position for exact value

AF Output (at full scale):
- Ranges ..... 0 to 2.5, 10, 50, 25

An internally connected 0.1 μF DC blocking capacitor permits output measurements in presence of DC voltages.

Decibel Levels (Zero dB is 1 mW in 600 Ω) ..... —20 to +50

Dimensions

Height 5⅞", Width 5¼", Depth 3⅛", Weight 3½ lbs.

Equipment Supplied

Red test lead and probe, Slip-on Alligator Clip and Red Insul ing Boot, Black Test Lead with Alligator Clip and Black Insul ing Boot, Instruction Book. (Batteries not supplied.)

Accessories Available

WG-297 High Voltage Probe, less resistor, WG-210 900 Resistor for H.V. Probe (10 x multiplier for 5000 V. rang WG-211 495 mΩ Resistor for H.V. Probe (100 x multipl for 250 V. range), WG-352A RF Diode, WG-270A Vinyl Carryi Case (includes convenient storage compartment for test lead

For Prices See Page 863

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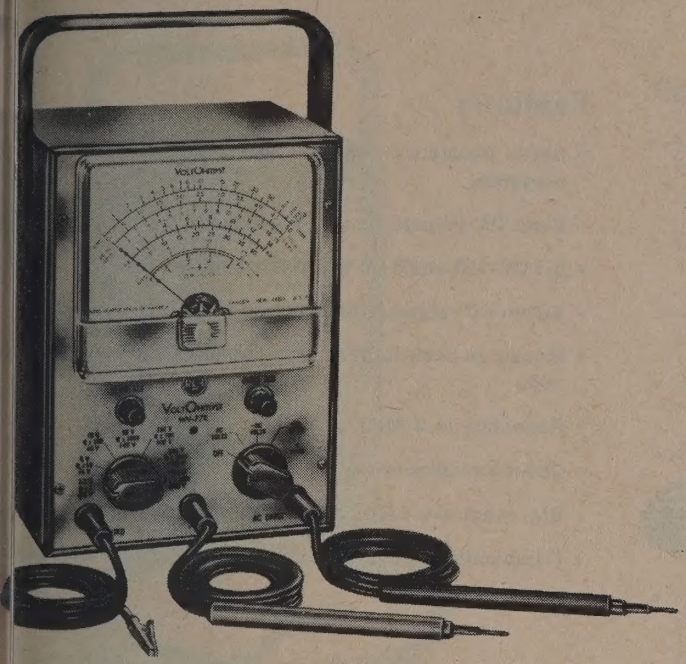
Voltohmyst®
Type WV-77E

RCA
Test Equipment and Accessories



Features

- **Seven overlapping measurement ranges for:**
  - **Ohms — 0.2 ohm to 1000 megohms**
  - **DC volts — 0.02-volt to 1500-volts**
  - **RMS AC volts — 0.1-volt to 1500-volts**
  - **Peak-to-peak AC volts — 0.2-volt to 4200-volts measured on separate red scales**
- **Zero-center DC volts**
- **Burn-out proof meter circuit**
- **Precision-ohms-measurement network fused against accidental burnout**
- **Separate low-voltage AC scale for accuracy**
- **Color-coded scales, switch settings**
- **Pilot light**

ɛcription

CA VoltOhmyst® WV-77E is designed to measure AC rms -ave voltages from 0.1 volt to 1500 volts, DC voltages 02 volt to 1500 volts, peak-to-peak voltages from 0.2 volt) volts, and resistance values from 0.2 ohm to 1000 oms. The AC voltmeter portion of the WV-77E features ɛtron tube as a full-wave signal rectifier. The meter ig in AC-voltage measurements is a function of the full ɔ-peak value of the measured waveform. The WV-77E igh input impedance on all DC- and AC-voltage . This high input impedance allows the use of the WV-77E uits where instruments with a lower input impedance result in loading of the circuit under test, and a resultant reading the operating voltage.

The VoltOhmyst utilizes a push-pull balanced DC-bridge circuit with the meter in the plate circuit. This circuit affords excellent linearity of response, good stability, and very high input impedance.

Additional features of the WV-77E include provision for zero-center indication, useful in discriminator and bias measurements; separate scales for low AC-voltage measurements to assure accurate readings; a circuit design which allows measurement of AC in the presence of DC; a separate DC probe with a 1-megohm resistor which minimizes capacitance-loading effects; and electronic protection against meter burn-out. In addition, the resistors in the resistance divider network are protected by a separate fuse.

ɛifications

nance figures are for line voltage of 120 volts, 60 Hz

tmeter:
ge ..... 0 to 1.5, 5, 15, 50, 150, 500, 1500 V
t Resistance with DC Probe (1 mΩ inside probe)
l Ranges ..... 11 mΩ
ccuracy ..... ±3% of full scale

tmeter:
ges
MS Values of Sine Waves ... 0 to 1.5 volts on separate scale
0 to 5, 15, 50, 150, 500, 1500 V
k-to-Peak Values of
ne Waves ..... 0 to 4 volts on separate scale
0 to 14, 40, 140, 400, 1400, 4000 V
uracy ..... ±5% of full scale
quency Response ..... ±5% 40 Hz to 5 MHz
On 1.5, 5, 15 rms, or 4, 14, 40, p-p ranges

um Input Voltages:
n Instrument is set up to measure DC:
C ..... 1500 V
C plus AC (peak) ..... 1800 V

When Instrument is set up to measure AC:
Maximum AC (rms) ..... 1500 V
Maximum AC (peak-to-peak) ..... 4000 V
NOTE: When AC is being measured, no more than 400 volts DC shall be present in circuit being tested.

Power Supply
Voltage Rating ..... 105 to 125 V
Frequency Rating ..... 50 to 60 Hz

Battery:
1.5-volt "C" cell ..... RCA-VSO35A or equiv.

Dimensions
Height 7¾", Width 5⅝", Depth 4¾", Weight 5 lbs.

Equipment Supplied
1 DC Probe and Cable, 1 AC-Ohms Probe and Cable, 1 Ground Cable, 1 Instruction Book.

Accessories Available
WG-297 High Voltage Probe, WG-206 Multiplier Resistor for use with WG-297, WG-351A Demodulator Probe, WG-270A Vinyl Carrying Case (includes convenient storage compartment for test leads).

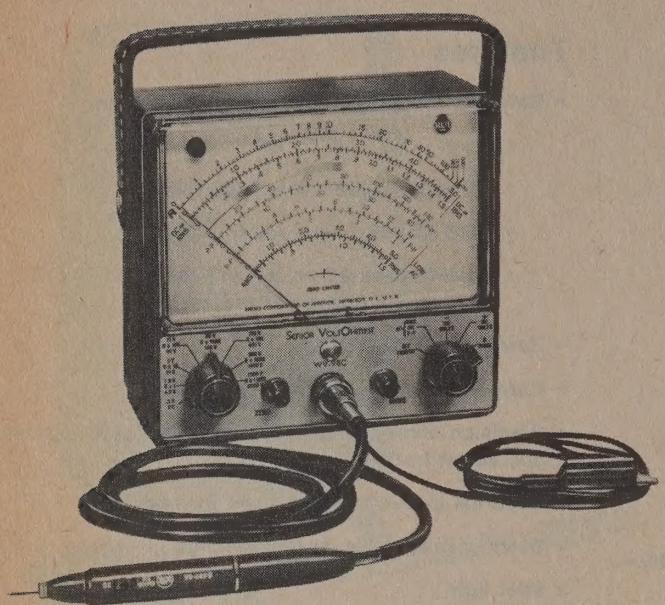
For Prices See Page 863

Senior Voltohmyst®

Type WV-98C

RCA

Test Equipment and Accessories



Features

- **Seven resistance ranges — measures 0.2 ohm to 1000 megohms**
- **Eight DC-voltage ranges — measures 0.01 volt to 1500**
- **0.5 DC-volt scale for transistor circuits**
- **Seven AC ranges — measures 0.05 to 1500 rms volts**
- **Measures peak-to-peak sine, complex waveforms to 4 volts**
- **Response to 3 MHz**
- **200-microampere meter**
- **Big, readable, 6½" color-coded meter with mirrored s**
- **Combination, shielded DC/AC/OHMS probe with swit**

Description

The RCA WV-98C incorporates all the time-tested VoltOhmyst features in a deluxe precision instrument with countless uses in audio, radio, TV, and industrial servicing applications. Accurate, dependable, and extremely versatile, it will measure resistance, DC volts, and both rms and peak-to-peak values of sine waves and complex waves.

An input resistance of 11 megohms on all DC-voltage ranges reduces loading of the test circuit.

The WV-98C has convenient mid-scale values of 10, 100, 1000, 10,000 and 100,000 ohms, and 1 and 10 megohms.

All measurements are made with a single-unit probe, t WG-299E DC/AC-OHMS Probe and Cable. The probe is qu adapted to either DC measurements or AC and resistance measurements by means of a built-in switch.

Included, also, are a zero-center scale, two separate sc for low-voltage AC measurements; a pilot light; and circuit design which permits measurements of the ac component DC voltage or the DC component of an AC signal.

Specifications

At line voltage of 120 V, 60 Hz

DC Voltmeter:

Range	0 to .5, 1.5, 15, 50, 150, 500, 1500 V
Input Resistance All Ranges	11 mΩ
Over-all Accuracy	±3% of full scale

AC Voltmeter:

Ranges:

RMS Values of Sine-Waves	0 to 1.5, 5, 15, 50, 150, 500, 1500 V
Peak-to-peak Values of Sine-Waves and Complex Waves	0 to 4, 14, 42, 140, 420, 1400, 4200 V
Overall Accuracy	±3% of full scale

(Accuracy of rms ranges based on use of sine-wave signals having less than 0.5% total harmonic content)

Frequency Response (1.5, 5, 0, and 15 V AC Ranges	±1 dB 30 Hz to 3 MHz

Ohmmeter:

Ranges, Seven	0 to 100

Power Supply:

110-130 V, 50-60 Hz

Power Consumption (Approx.) 6 W; Battery 1 RCA V 1½ V "D" cell.

Dimensions

Height 6½", Width 7", Depth 3¾", Weight 6 lbs.

Equipment Supplied

DC/AC-OHMS Probe and Cable (Type WG-299E), 1.5 Battery (Type VSO36), Slip-on Alligator Clip, Insulator, Ins tion Book.

Accessories Available

WG-301A Crystal-Diode slip-on probe for measuring RF fro kHz to 250 MHz; WG-411A High-Voltage slip-on probe measuring up to 50,000 DC volts; WG-206 Multiplier Resi

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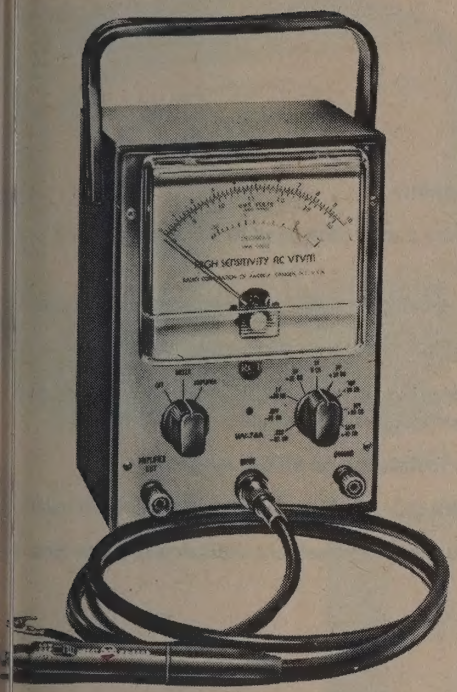
High Sensitivity AC VTVM

Type WV-76A

RCA Test Equipment and Accessories



Features

- **Nine overlapping AC voltage ranges—permits measurements from 0.0002 volt (lowest scale division) to 100 volts (full scale)**
- **Separate decibel scale for measurements of levels from −40 to +40 dB**
- **Direct/Low Capacitance input probe permits measurements up to 500 volts or +56 dB**
- **Frequency response is flat from 10 Hz to 500 kHz with "Low Cap" probe, 10 Hz to 1.5 MHz with "Direct" probe**
- **May be used as a preamplifier — 38 dB maximum gain or 10-millivolt range**
- **High input impedance — permits measurements in circuits sensitive to loading**
- **Probe and cable shielded throughout its length — eliminates pick-up from stray fields**
- **Heavy filtering in power-supply section keeps hum at extremely low level**

ription

A WV-76A High Sensitivity AC Vacuum-Tube Voltmeter ned for audio applications in industry, laboratories, hools. It is also useful in broadcast, design and ment, production, and servicing applications. Typical clude frequency response tests of preamplifiers, amplifiers, and tone-control circuits; feedback-circuit signal tracing, audio-level and power-level ements, gain measurements, amplifier-balancing tions, and general audio-voltage measurements. different scales are provided for voltage measurements, eparate scale is provided for decibel measurements. ements are made in nine over-lapping ranges. Accuracy of the voltage and decibel measurements is 5% of full-scale reading.

The coaxial-type shielded low-capacitance/direct probe, the RCA WG-300B, supplied with the WV-76A has a sliding switch in the probe housing which provides for switches from direct to low-capacitance input. In the Low-Capacitance position, the probe presents an over-all input resistance of 10 megohms and an input capacitance of approximately 13 pF to the test circuit. This feature permits measurements in circuits which are sensitive to loading.

The WV-76A is also useful as a wide-range audio preamplifier, having approximately 36 dB maximum gain.

ifications

ibration of the WV-76A is based on pure sine-wave input voltage.

ance figures are based on a line voltage of 120 volts)

ncy Range:
WG-300B in
irect" Position ..... ±1 dB 10 Hz to 1.5 MHz
ow-Cap" Position ..... ± dB 10 Hz to 500 kHz

tage Measurements (with WG-300B in "Direct" Position):
ges ..... 0 to 0.01, 0.03, 0.1, 0.3, 1 V
0 to 3, 10, 30, 100 V†
racy ..... ±5% (full scale)

asurements* (With WG-300B in "Direct" Position):
ges (nine) ..... −40, −30, −20, −10, 0, 10, 20, 30, 40 dB
racy ..... ±5%

haracteristics:
put Connector ..... 1 meg shunted by 58 pF
With WG-300B in
"Direct" Position ..... 1 mΩ shunted by 95 pF
"Low-Cap" Position ..... 10 mΩ shunted by 13 pF

Preamplifier:
Output Voltage ..... 0.8 output V for 0.01 input V
Output Impedance ..... Less than 400 Ω
Gain ..... 38 dB on 10 mV range

Power Supply:
Frequency ..... 50 to 400 Hz
Voltage ..... 105-125 V
Consumption ..... 35 W

Dimensions

Width 5⅜", Height 7⅜", Depth 4¾", Weight 5 lbs.

Equipment Supplied

WG-300B Direct/Low-Capacitance Probe, "Slip-On" Alligator Clip, Clip Insulator, Instruction Book.

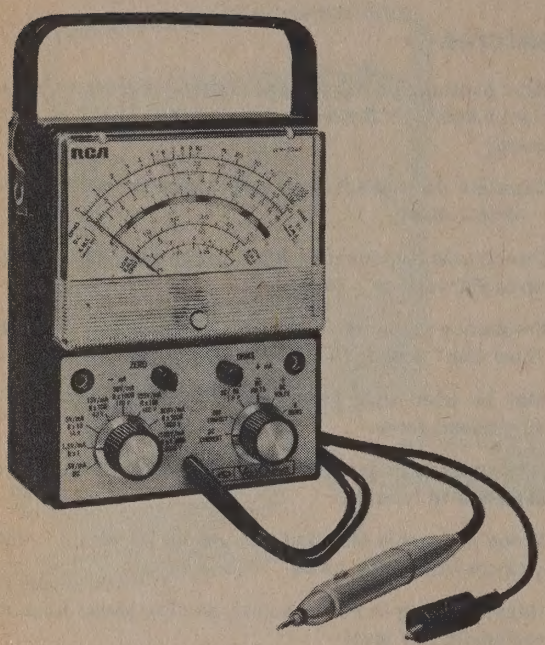
†When the WG-300B is set to the "Low-Cap" position, up to 500 V or +56 dB may be measured.
*Zero dB — 1 mW into 600 Ω.

For Prices See Page 863

Solid-State, Battery-Operated Voltohmyst®

Type WV-500B

RCA Test Equipment and Accessories



Features

- **Excellent stability**
- **Measures from 2 microamperes to 1.5 Amperes in 8 ranges**
- **Measures from 0.2 ohm to 1000 megohms in 7 ranges**
- **Measures from 0.02 volt to 1500 volts in 8 ranges**
- **Measures from 0.1 to 1500 rms AC volts in 7 ranges plus peak-to-peak voltages of complex waveforms**
- **11 megohm resistance on all DC ranges**
- **Supplied with DC/AC Ohms probe with shielded input cab**
- **Mirror scale meter—movement electrically protected aga burnout**

Description

The WV-500B VoltOhmyst is a solid-state, battery-operated electronic voltmeter. The instrument measured DC voltages from 0.01 to 1500 volts, DC current from 2 microamperes to 1500 milliamperes, AC (rms) voltages from 0.1 to 1500 volts, AC peak-to-peak voltages from 0.5 volts to 4200 volts, and resistance values from 0.2 ohms to 1000 megohms.

Seven overlapping ranges are provided for AC rms and resistance measurements, and eight ranges are provided for DC voltage and current measurement. Accuracy for the DC and AC rms functions is ±3% (of full scale reading).

The WV-500B has an input resistance of 11 megohms on all DC ranges to prevent overloading the circuit under test.

Special solid-state circuitry is used in the WV-500B to assure stable, drift-free operation with minimum effect due to temperature variation. Advantages of solid-state construction include the elimination of warm-up time and a reduction in zero-shift that can occur in tube-operated voltmeters.

Since the WV-500B is battery-operated, the measuring cir is completely isolated from the ac power line. The instrument can be used to make measurements on equipment with h ground potentials, an important feature in many industrial and laboratory applications.

Additional features include zero-centering of the meter pointer, and a circuit design that permits measurement of the component of an ac signal. The meter movement of the WV-500B is electrically protected against burnout.

Specifications

DC Voltmeter:
- Ranges ..... 0 to .5, 1.5, 5, 15, 50, 150, 500, 1500 V
- Input Resistance
  - All Ranges ..... 11 mΩ
- Accuracy ..... ±3% of full scale

AC Voltmeter:
- Ranges:
  - rms Values of Sine-Waves ..... 0 to 1.5, 5, 15, 50, 150 500, 1500 V
  - Peak-to-Peak Values of Sine Waves and Complex Waves ..... 0 to 14, 42, 140, 420, 1400, 4200 V
- Accuracy ..... ±3% of full scale
  (Accuracy of rms ranges based on use of sine wave signals having less than ½ of 1.0% total harmonic content.)
- Frequency Response (1.5 and 5.0 V AC Ranges) ..... ±1 dB 30 Hz to 3 MHz

DC Current:
- Ranges ..... 0 to .5, 1.5, 5, 15, 50, 150, 500 and 1500 mA
- Accuracy ..... ±3%

Ohmmeter:
- Ranges, Seven ..... 0 to 1000

Batteries:
- Ohms ..... 1 1.5 volt "C" cell RCA VSO or equiva
- Metering Circuit ..... 3 9 volt batte (RCA VS323 or equival

Dimensions

Height 6⅞", Width 5¼", Depth 3⅛", Weight 3½ lbs.

Equipment Supplied

DC/AC Ohms Probe and Cable WG-410B, Slip-On Alligo Clip, 2 current leads 1 RCA VSO35A Battery, 3 RCA VS Batteries, Instruction Book.

Accessories Available

WG-301A Crystal-Diode slip-on probe for measuring RF f 50 kHz to 250 MHz; WG-411A High-Voltage slip-on probe measuring up to 50,000 DC volts; WG-206 Multiplier Resist

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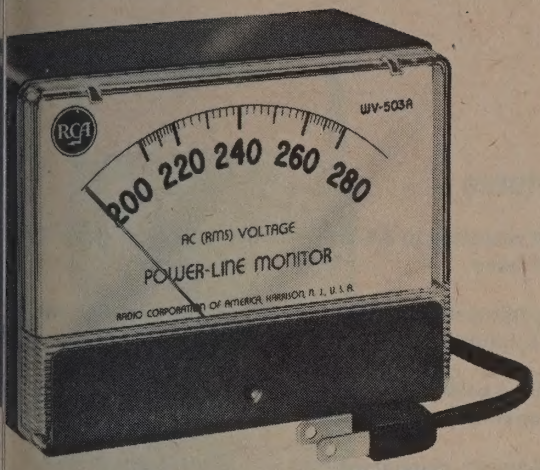
Power Line Monitor

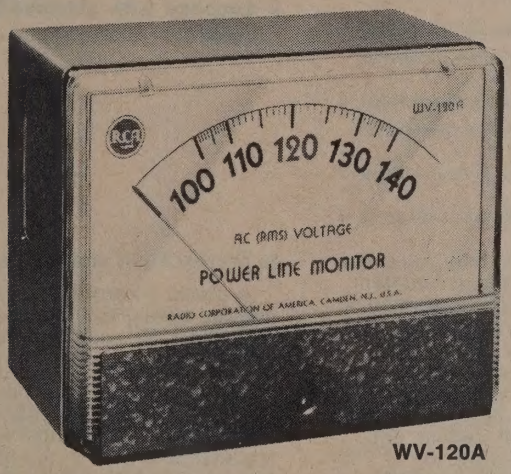
Type WV-120A and WV-503A

RCA

Test Equipment and Accessories



WV-503A



WV-120A

Features

- **Expanded 2-color scale — from 100 to 140 volts (WV-120A) and 200 to 280 volts (WV-503A)**
- **High accuracy — ±2% center scale; ±3% at both ends**
- **True rms reading — moving vane type meter gives accurate rms readings, even when line voltage is not pure sine wave**
- **Fast meter action — reveals "bounces" and fluctuations in line voltage**
- **Wide frequency range — From 25 Hz to 400 Hz**
- **Large numerals, large pointer, large scale — provides easy readability from distance of 10 feet or more**
- **Convenient wall mounting — holes are provided in rear of case for easy wall mounting**

ription

A WV-120A and WV-503A Power-Line Monitors are ed for use by industries, laboratories, and radio-TV and ce repair shops where it is important to know the line voltage at all times. These instruments provide a ous, accurate indication of the AC line voltage at a without the inconvenience of handling probes and s or the necessity of selecting one of several scales rmine the proper meter reading.

in conjunction with a variable isolation transformer, an ower Line Monitor is a valuable aid in selecting line s for such applications as TV servicing, test instrument tion, and the operation of electronic equipment that s a known line-voltage supply.

RCA WV-120A and WV-503A Power-Line Monitors e a continuous, accurate indication of the AC line voltage nce.

instruments can be used on AC power-line sources equencies of 25 Hz to 400 Hz. They feature accuracy of ±2% at 120 and 240 volts, ±3% at scale ends. The meter has a special expanded scale with large, easy-to-read voltage designations. Also, the tip of the meter pointer is made wide enough to be seen clearly at a considerable distance from the instruments. As a convenient means of reference, the nominal AC line-voltage standard of 120 or 240 volts is printed in red.

The meter movement is a moving-vane type. This type of meter indicates rms values even when the waveform of the power-supply voltage is distorted. (Peak reading and peak-to-peak reading AC voltage measuring circuits, such as used in conventional VTVM's are calibrated on the basis of pure sine-wave voltages, and such meters do NOT indicate the true rms value of distorted waveforms.) The meter movement is only slightly damped and therefore has fast response. This feature is highly desirable because it permits the meter to indicate the presence of line-voltage "bounce" or fluctuations.

ifications

ncy Range ..... 25 Hz to 400 Hz

oltage Range ..... 100 to 400 V (WV-120A)
200 to 280 V (WV-503A)

Meter Accuracy ..... ±2% at center scale, ±3% at both ends

Dimensions

Height 3 15/16", Width 5", Depth 3⅛", Weight 1½ lbs.

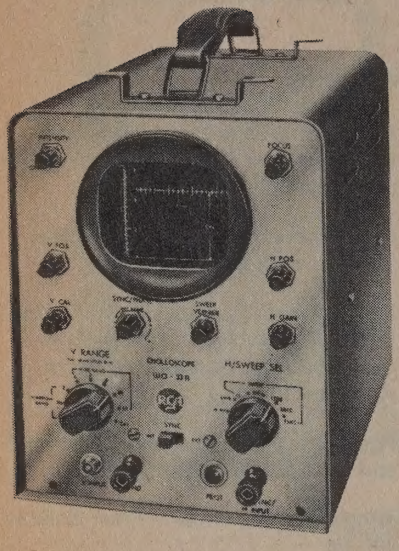
For Prices See Page 863

Super-Portable 3-Inch Oscilloscope

Type WO-33A

RCA

Test Equipment and Accessories



Features

- **Flat response to 5.5 MHz handles 3.58 MHz color TV sig with ease**
- **Exceptional sensitivity — .003 rms volt-per-inch for worl with extremely low-level input signals**
- **Built-in calibration circuit and graph screen for direct rea of peak-to-peak voltages — as easily as with a VTVM**
- **Frequency compensated 3-to-1 vertical attenuators**
- **Supplied with shielded direct/low capacitance probe cable**

Description

The RCA Super-Portable 3-Inch Oscilloscope will help you solve virtually any electronics servicing problem you may encounter inside or outside the shop. The low cost and high performance of the RCA WO-33A have made it popular as a monitor and trouble-shooting 'scope in black-and-white and color TV broadcasting studios, and in professional service shops.

High gain and exceptional bandwidth make this instrument ideal for general servicing and alignment work in black-and-white and color TV trouble-shooting, signal tracing, and measurement; for audio high-fidelity and stereo work; for all types of sweep alignment; and in all types of computer and industrial applications.

A novel feature of the WO-33A is the Vertical Input Attenuator which automatically switches the amplifier from Wide Band to Narrow Band when in the three highest gain positions.

A phase control is provided for varying the phase of the internal sweep voltage when the "LINE" position of the H/SWEEP SEL control is used, enabling the WO-33A to b phased with an external line-frequency sweep oscillator.

The WO-33A is equipped with a specially designed, sing unit Direct/Low-Capacitance probe and cable (WG-349A). When the Low-Capacitance input is used a special high-impedance circuit in the probe is connected in series with test point and the 'scope, reducing circuit-loading effects and permitting the WO-33A to be used in circuits which w not function properly if loaded down by a conventional oscilloscope.

Specifications

Note: Performance figures are for a line voltage of 117 V, 60 Hz.

Frequency Response:
- Vertical Amplifier:
  - Wide-Band Positions (5.5 Hz to 5.5 MHz) ..flat within —3 dB
  - High-Sensitivity positions:
    - 20 Hz to 150 kMz .....flat within —3 dB
    - 3 Hz to 1.5 MHz .....flat within —6 dB
- Horizontal Amplifier (3.5 Hz to 350 kHz) .....flat within —6 dB

Deflection Sensitivity: Vertical Amplifier	(Wide-Band) position		(High-Sensitivity) position	
	rms	p-p	rms	p-p
At V INPUT connector	0.10	0.3	.003	0.01 V/in
With WG-349A (Direct)	0.10	0.3	.003	0.01 V/in
With WG-349A (Low-Cap)	1.0	3.0	.03	0.1 V/in

Horizontal Amplifier (at H INPUT terminal) ..... 0.9 rms V/in

Rise Time (Vertical Amplifier)
- Wide Band MHz Positions .....0.1 μs

Input Resistance and Capacitance:
- Vertical Amplifier:
  - At V INPUT Connector .....1 mΩ shunted by approx. 50 pF
  - With WG-349A
    - (Direct) .....1 mΩ shunted by approx. 9
    - (Low-Cap) .....10 mΩ shunted by approx. 1
  - Horizontal Amplifier (at H INPUT terminal) 1
  - EXT SYNC Input Terminal .....250 KΩ to 5

Sweep Oscillator:
- Frequency Range (continuously adjustable) 15 Hz to 75
- Sync ..... External, Positive and Negative Inte

Maximum AC Input Voltage (at Lo-Cap Probe):
- (In presence of 400 V dc) .....600 p

Phase-Control Range ..... 0 to 160 deg

Power Requirements:
- Voltage .....105-125 V, 50-6
- Average Power Consumption .....

Dimensions

Height 8¾", Width 6½", Depth 10¼", Weight 14 lbs.

Equipment Supplied

WG-349A Direct/Low Capacitance Probe and Cable

Accessories Available

WG-350A Demodulator Probe for RF application from 500 to 250 MHz; WG-271A Adaptor for using WG-300B Direct/L Capacitance Probe; WG-300B Direct/Low Capacitance Pr and Cable.

For Prices See Page 863

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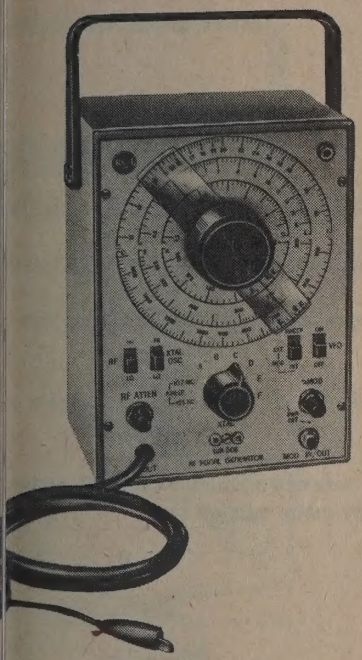
RF Signal Generator with Sweep Features

Type WR-50B

RCA Test Equipment and Accessories



Features

- **Continuous coverage 85 kHz to 40 MHz in 6 overlapping ranges**
- **Built-in crystal calibrating oscillator circuit with front panel crystal socket**
- **Internal 400 Hz audio oscillator**
- **Sweep output at 10.7 MHz and 455 kHz with return trace blanking for sweep alignment of radio receivers**
- **Permanently attached shielded RF output cable with built-in DC blocking capacitors**
- **Modulation level control**
- **Two-step RF attenuator switch plus a continuously variable attenuator control**
- **Additional switch for further attenuation of the crystal oscillator output**
- **Audio output level control**
- **Easy-to-read dial scale**

;ription

;A WR-50B RF Signal Generator is a highly versatile, portable test instrument designed for use in the shop or ield for general television and radio servicing and pplications.

unit is particularly well suited for such applications as ent and signal tracing of AM, FM, High-Fidelity and s' Band receivers, alignment of low-frequency IF ers in television receivers, and signal tracing and trouble- g in nearly all sections of television receivers.

455 kHz and 10.7 MHz sweep positions make the WR-50B larly useful for sweep alignment of both AM and FM rs, especially since the introduction of several new transistor radios in which sweep alignment of both is recommended.

variable oscillator covers the fundamental frequencies from 85 kHz to 40 MHz in six ranges. For higher frequencies, harmonics of the high range can be used. A vernier tuning control permits precise setting of the output frequency. The RF output can be modulated with the internal 400 Hz oscillator, or with an external audia signal. The modulation level is adjustable.

A two-position attenuator switch, together with a variable attenuator control provide complete adjustment of the RF ouput level.

The crystal oscillator circuit in the WR-50B enables the instrument to be used as a crystal calibrator. A convenient crystal socket is provided on the panel. This crystal oscillator can be used as a frequency calibration reference for the variable oscillator, or can be used directly as a crystal-controlled signal source.

;ifications

ance figure with line voltage at 120 volts, 60 Hz)

Output:
kHz and 10.1 MHz, center-frequencies
ep width approximately 10% of center frequency

e Oscillator:
Ranges (fundamental frequencies) ..... 85 kHz to 40 MHz
put (all ranges)[1] ..... 0.05 V rms (minimum)
libration Accuracy ..... ±2%
l Modulating Frequency ..... Approx. 400 Hz
t Modulation ..... Adjustable up to 30%
Output ..... At least 8 V rms across 15 kΩ load
al Modulation ..... Modulating frequency, 15 kHz max.

Crystal Oscillator[2]
Maximum Output ..... 0.02 V rms
Internal Mod. Percentage ..... Approx. 20%
Frequency Range ..... 100 kHz to 15 MHz (Fundamental)

Attenuator
VFO and Sweep Output ..... 2-step 10-to-1 attenuator swich with potentiometer for fine adjustment
Crystal Oscillator Output .. Additional 7-to-1 attenuator switch

Power Supply
Voltage Rating ..... 105-130 V 50/60 Hz
Power Consumption ..... 15 W

Dimensions
Height 7¾", Width 5⅜", Depth 4¾", Weight 5 lbs.

[1]Open-circuit value
[2]Varies with crystal cut and activity.

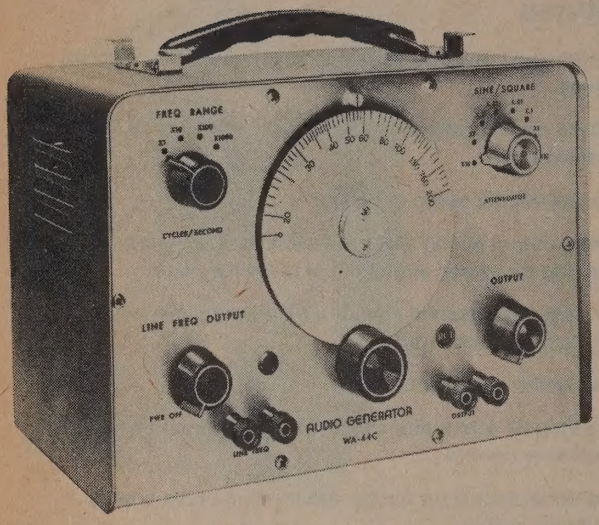
For Prices See Page 863

Sine/Square-Wave Audio Signal Generator

Type WA-44C

RCA

Test Equipment and Accessories



Features

- **Sine-wave or square-wave output from 20 Hz to 200,00**
- **High output voltages — 8 volts rms or more with rated l**
- **Separate 60 Hz output for intermodulation distortion measurements**
- **10-to-1 step attenuator and continuously adjustable ou control**
- **Durable, attractive brushed aluminum dial with etched lettering, and sturdy metal cabinet**

Description

Precision engineered and factory calibrated, the RCA WA-44C Sine/Square-Wave Audio Signal Generator is a compact, high-quality instrument designed for use in audio, high-fidelity and general electronic applications as well as in electronics training, demonstrations, and laboratory work. Covering a range from 20 Hz to 200,000 Hz, the WA-44C is also useful in testing ultra sonic equipment.

Application for this versatile instrument include measuring frequency response of amplifiers determining resonant frequencies of loudspeakers, tuning loud-speaker enclosures, finding input and output impedances, determining values of unknown inductors and capacitors, and measuring intermodulation distortion.

Operation of the WA-44C is straightforward. The des frequency is selected by means of the continuous, single frequency dial, together with the appropriate multiplier indicated on the "FREQ RANGE" switch. The type of wav the amplitude are selected by means of the "SINE-SQUAR attenuator switch. The output voltages can be adjusted fu with the continuously adjustable "OUTPUT" control. A separate output at line frequency is also provided, and output voltage is adjustable up to 6 volts.

Specifications

Note: Performance figures are for a line voltage of 117 V, 60 Hz.

Frequency Range ..... 20 Hz to 200 kHz

Amplitude Variation of Output Voltage:
(30 Hz to 100 kHz) ..... ±1.5 dB

Frequency Stability:
(105 to 125 volts AC line) ..... ±2%

Dial Calibration Accuracy:
(20 Hz to 20 kHz) ..... ±5%

Sine Wave:
Output Voltage:
(*100 KΩ and 75 pF load) ..... 8 rms V or more

Maximum Total Harmonic Distortion:
(30 Hz to 15 kHz) .....
Maximum Hum:
(Percent of rated output voltage) ..... Less than

Square Wave:
Output Voltage:
(*100 KΩ and 75 pF load) ..... 10 p-p V or

Power Supply:
Voltage ..... 105-125 V, 50-
Power Consumption ..... Approx.

Dimensions

Height 7", Width 10 11/16", Depth 6⅛", Weight 10½ lbs.

*A lower impedance may decrease the output voltage and slightly in distortion.

For Prices See Page 863

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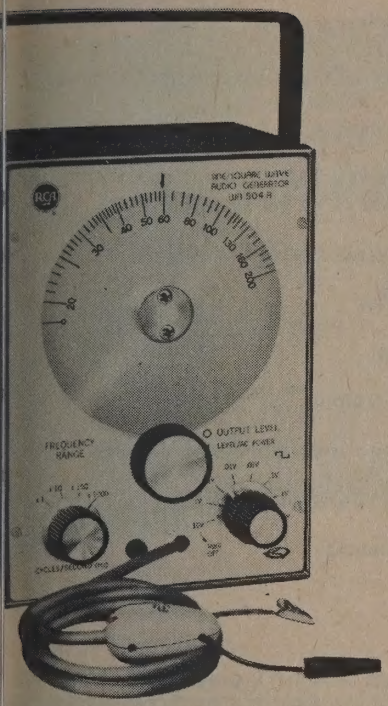
ransistorized Sine/Square Vave Audio Signal Generator

Type WA-504A

RCA

Test Equipment and Accessories



Features

- **All solid-state — including MOSFET oscillator stage**
- **Switch selection of sine-wave or square-wave output**
- **Wide frequency range — 20 Hz to 200,000 Hz**
- **High output voltages — 10 volts rms or more with rated load**
- **Low distortion — 0.25% or less over the audio frequency range**
- **Essentially flat output voltage — ±1.5 dB from 30 Hz to 100,000 Hz**
- **Attached, shielded output cable**
- **10-to-1 step attenuator and continuously adjustable output control**

ription

on engineered and factory calibrated, the RCA WA-504A torized Sine/Square-Wave Audio Signal Generator mpact, high-quality instrument designed for use in audio, delity and general electronic applications as well as tronic training, demonstrations, and laboratory work. ng a range from 20 Hz to 200,000 Hz, the WA-504A useful in testing ultrasonic equipment.

ications for this versatile instrument include the rement of frequency response characteristics of ers, determining resonant frequencies of loudspeakers, loudspeaker enclosures, finding input and output nces, determining values of unknown inductors and tors, and determining the frequency or speed of vibrating ting objects. The WA-504A facilitates the testing and servicing of any equipment employing audio or ultrasonic signals.

The RCA WA-504A Sine/Square Wave Audio Generator provides a tunable sine or square wave audio-frequency signal ideally suited for service, industrial, and educational applications. The frequency range extends from 20 Hz to 200,000 Hz.

New solid-state circuit design using six transistors, including an MOS transistor, and two diodes produces a stable signal with an amplitude variation not exceeding ±1.5 dB from 30 Hz. Total harmonic distortion of the sine wave is less than 0.25% from 30 Hz to 15,000 Hz.

The generator has an attached shielded output cable.

ifications

ance figures for line voltage of 120 V, 60 Hz

al

ncy Range ..... 20 Hz to 200 kHz (four ranges)
ude Variation of Output Voltage
Hz to 100 kHz) ..... ±1.5 dB
ncy Stability (105 to 130 volts AC line) ..... ±0.5%
alibration Accuracy (20 Hz to 20 kHz) ..... ±5%, or 2 Hz, whichever is greater

/ave

Voltage (100kΩ,75 pF load) ..... 10 V rms or more
um Total Harmonic Distortion
Hz to 15 kHz) 0.25%

Square Wave

Rise and Fall Time (Maximum output) ..... less than 1.0 μs
Maximum Tilt ..... less than 5.0%
Output Voltage ..... 10 V p-p or more

Power Supply

Voltage 105-130 V, 50-60 Hz, Average Power Consumption Approx. 8 watts.

Dimensions

Height 7¾", Width 5⅜", Depth 4¾", Weight 3 lbs.

For Prices See Page 863

Stereo FM Signal Simulator

Type WR-52A

RCA

Test Equipment and Accessories

Features

- **RF output — connects to receiver antenna terminals**
- **100 NHz carrier, tuneable**
- **Choice of FM signals — Left Stereo, Right Stereo, Mo FM, internal test and 60 Hz FM sweep**
- **FM stereo deviation adjustable from 0 to 75 kHz**
- **RF Output attenuator**
- **RF Deviation Meter**
- **Composite Stereo Output**
- **Choice of Left Stereo and Right Stereo signals**
- **Crystal-Controlled 19 kHz Subcarrier**
- **7 Sine Wave Frequencies**

Description

The WR-52A Stereo FM Signal Simulator is designed to generate the signals necessary for service, alignment and maintenance of Mono and Stereo FM receivers and multiplex adaptors. In addition to its value as a service instrument, the three low-distortion sine-wave frequencies, the crystal controlled 19 kHz and 38 kHz frequencies, the adjustable 100 MHz carrier make the WR-52A an extremely useful test instrument for FM broadcasters and manufacturers of stereo FM equipment.

A meter is included on the instrument to indicate the RF deviation of the FM signal from 0-75 kHz (75 kHz deviation represents a modulation level of 100%).

Separate color-coded scales are provided for stereo and mono. A calibration mark is also provided on the meter for convenient and accurate adjustments of the 19 kHz subcarrier level.

The RCA WR-52A Stereo FM Signal Simulator provides the following signals:

- Composite stereo output signal for either left or right channel.
- FM stereo output for either left or right channel. The 100 MHz FM carrier is adjustable to permit selection of a quiet point in the FM band. The RF deviation is adjustable from 0 to 75 kHz.
- Monaural FM output. A switch is provided to disable the 19 kHz oscillator for low-distortion mono FM output.
- 100 MHz sweep output to check receiver RF/IF alignme Sweep rate is 60 Hz. Sweep width is adjustable from more than 750 kHz.
- Audio output signals of 400 Hz, 1000 Hz, and 5 kHz.
- Crystal-controlled 19 kHz and 38 kHz signals for multi circuit adjustment.
- 67 kHz and 72 kHz output signals for SCA trap circuit adjustments.
- Special Internal Test output to check phase adjustmen WR-52A stereo signal.

The left and right composite stereo signals, left and rig stereo signals, and mono FM signals can be modulated wit the internal 400 Hz, 1000 Hz, or 5 kHz frequencies. Binding posts are provided so that other AF modulating signals car be applied from an external source. A control is provide attenuating the level of the RF output.

The WR-52A comes complete with two connecting ca A direct unterminated cable is for use with the composite stereo signal and audio signal outputs, and a terminated for RF output to a 75 ohm or 300 ohm receiver antenna inpu

Specifications

RF Signal Output:
- Carrier ..... 100 MHz
  Center Frequency adjustable ±800 kHz
- Subcarrier ..... 19 kHz*
- FM Modulation ..... Left stereo signal, Right stereo signal, Internal Test (L + R subcarrier modulation), Monaural FM
- Deviation ..... Adjustable 0 to 75 kHz

Sweep Signal
- Center Frequency ..... 100 MHz
- Rate ..... 60 Hz
- Sweep Width ..... Adjustable 0 to more than 750 kHz

RF Output Voltage ..... Adjustable up to 0.1 V, rms (approx.)

Composite Signal:
- Output ..... Left stereo signal, Right stereo signal, Internal Test (L + R subcarrier modulation), 400 Hz, 1 kHz, 5 kHz, 19 kHz*

Audio Output ..... 38 kHz*, 67 kHz, 7
- Percent distortion of 400 Hz, 1 kHz, and 5 kHz Frequencies ..... Less tha

Composite Signal/Audio Output Level ..... Adjustable fro at least 9 V p-p, open c
Output source impedance approx. 5

Power Supply:
- Voltage ..... 115 to 125 V,
- Power Consumption .....

Dimensions

Width 13½", Height 10", Depth 8", Weight 12¾ lbs.

Equipment Supplied

Direct Output Cable, RF Output Cable (terminated), Instru Book.

*19 kHz and 38 kHz signals are crystal-controlled. Accuracy within ±

For Prices See Page 863

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Crystal-Calibrated Marker Generator

Type WR-99A

RCA Test Equipment and Accessories

Features

- **Continuous tuning, 19 to 260 MHz in 8 ranges**
- **Matched-impedance pad-type attenuator**
- **Highly stable, fundamental output — no beat frequencies or harmonics used**
- **Provision for external marker crystals or LC circuits**
- **Separate crystal check points at 1 MHz or 10 MHz intervals provide accurate calibrating beats throughout entire frequency range**
- **Internal modulation frequencies — 1 MHz or 10 MHz, 4.5 MHz, a combination of 4.5 MHz and 600 Hz, and 600 Hz**
- **Most-used television IF and RF frequencies specially marked on dial scale**
- **Dual sound-and-picture-carrier markers**

cription

CA WR-99A Crystal-Calibrated Marker Generator ines in one compact instrument the functions of a le-marker generator, crystal calibrator and a heterodyne ncy meter. Featuring extreme accuracy and stability wide frequency range, the WR-99A is ideal for servicing ligning color and black-and-white TV receivers, unications and other equipment operating in the ncy range of 19 to 260 MHz.

en used as a heterodyne frequency meter, the frequency unknown signal can be quickly measured by feeding the instrument and reading the frequency directly from al.

WR-99A includes crystal-controlled 10 MHz and 1 MHz ators for calibrated accuracy. The VFO frequency as well frequency of an external signal may then be checked st internal calibrating beats at 1 or 10 MHz intervals ghout the tuning range.

A switch-type attenuator in the WR-99A provides attenuation in continuous steps over a range of 60 dB on all frequencies. Double shielding of the oscillator reduces leakage to well below the full attenuated signal; permitting control of marker amplitude right down to the noise level of TV receivers. A special coaxial cable is provided with the unit for coupling into the test circuit.

The VFO signal also may be modulated internally with both 4.5 MHz and 600 Hz, a useful feature for adjustment and alignment of sound-IF amplifiers and detectors. The 4.5 MHz signal produces dual sound and picture markers; the 600 Hz modulation will produce a horizontal-bar pattern when the output signal is set to the frequency of the picture carrier or picture intermediate frequency. The 4.5 MHz output signal may be modulated with 600 Hz for visual alignment of the detector.

cifications

tput Frequencies (fundamentals)	19-260 MHz (8 ranges)
l-Controlled	1 MHz 4.5 MHz 10 MHz
t Voltages:	
) Ranges	At least 0.1 V rms
t Cable Impedance	90 Ω
lz Crystal Calibrator:	
uracy	±0.01%
nber of 10-MHz Check Points	242
Calibrator:	
uracy	±0.01%
Number of 1-MHz Check Points	24
4.5 MHz Crystal Oscillator:	
Accuracy	±0.02%
Internal Modulation	1, 10, 4.5 MHz and 600 Hz

Power Supply

Voltage 105-125 V, Frequency 50-60 Hz, Power Consumption 45 W.

Dimensions

Height 10", Width 13½", Depth 7", Weight 17 lbs.

Equipment Supplied

1 Output cable, 1 red and 1 black phone tip, instruction book.

For Prices See Page 863

Chro-Bar Solid-State Color-Bar Generator

Type WR-502A

RCA Test Equipment and Accessories

Features

- **All solid-state circuitry**
- **Sound carrier, pattern, RF output, and color subcarri crystal controlled**
- **Rock-solid stability**
- **Battery operated — completely portable**
- **Provision for spare battery with selection switch**
- **Battery test meter**
- **Gun killer switches**

Description

The RCA WR-502A CHRO-BAR is a solid-state, battery operated color-bar generator, designed to provide the test signals required for adjusting convergence, color-phasing, matrixing, purity, and linearity of color television receivers. Patterns generated by the CHRO-BAR include color bars, dots, crosshatch, vertical lines, horizontal lines, and blank raster.

The instrument includes slide switches for shorting out the control grids of the color picture tube. This feature enables the red, blue, or green color guns to be "killed," as required in convergence and purity adjustments. Leads are provided for connection to the control-grid leads of the color picture tube socket.

The color-bar pattern provides ten bars simultaneously, including R-Y, B-Y, I and Q signals, spaced at 30 degree phase intervals. This pattern is for use in checking color phase and matrixing circuits, and adjusting the automatic frequency phase control. (AFPC). Narrow brightness pulses are added at the edges of each color bar to aid in checking the "fit" or registration of the brightness and color signals.

A crystal-controlled 4.5 MHz sound carrier is added to the color-bar pattern in the "PATTERN & SOUND CARRIER" function. This sound carrier produces beats in the color- signal to permit making an accurate fine tuning adjustment

The dot pattern provided by the WR-502A is used prima convergence adjustment. The crosshatch, vertical line, anc horizontal line patterns are for use in adjusting linearity both black and white and color receivers, and as an alterna pattern for adjusting convergence. The crosshatch pat consisting of a fixed number of vertical and horizontal lines can also be used to check receiver overscan adjustmer

The blank raster function is useful for both purity and c temperature adjustments.

Crystal-controlled RF output is provided on channel 3 (WR-502A), or channel 4 (WR-502AVI). The output cable connects directly to the antenna input terminals on the rec

The WR-502A is powered by a 4.2 Volt mercury battery. convenience, the instrument has provision for an alternate battery that can be switched in easily when the first batt becomes weak. A meter is provided on the panel to indicate the condition of the batteries.

Specifications

Output*

Frequencies	Picture carrier 61.25 MHz (Channel 3) Sound carrier 65.75 MHz (Channel 3), unmodulated
Voltage	Picture carrier 10,000 MV (approx.)
Horizontal Sync	15804 Hz
Color Subcarrier	3,563,741 kHz, ±20 Hz, keyed at 189 kHz
Sound Oscillator	4.5 MHz
Output Impedance	Approximately 300 Ω
Test Patterns	Color bars (variable chroma level)/ crosshatch (H+V)/horizontal l vertical lines/blank r
Battery	Unit powered by a 4.2V mercury battery RCA V or equiv. Includes provision for alternate ba with selector s
Meter	Indicates condition of batt
Dimensions	Width 7½", height 6½", depth 4", weight

*Note: All output signals crystal-controlled.

For Prices See Page 863

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Color/Black-and-White Picture-Tube Tester

Type WT-509A

RCA

Test Equipment and Accessories

Features

- **Tests over 1,000 color and B&W picture tubes for emission quality, interelectrode leakage, and shorted elements**
- **Includes "activate" function to improve performance of some low-emission tubes**
- **Supplied with five test sockets including unique "universal" test adaptor which can be used with any type of tube or socket arrangement**
- **Includes sensitive adjustment to establish proper cut-off point for each tube**
- **All solid-state — triac device controls internal voltage for accurate testing regardless of variations of line voltage**
- **Input jack for high voltage probe — measures picture tube anode voltage up to 50,000 volts**
- **Includes 1500 volt input to measure picture tube grid and cathode voltages**
- **Comes complete with sturdy, luggage type carrying case with convenient storage compartment**

cription

T-509A is a precision instrument that tests both color and and-white picture tubes for emission quality, inter- de leakage, and shorted elements. Complete solid-state ry is used, including a triac device for controlling l voltages. Test data is provided for testing more than icture tube types.

socket adaptors are supplied, including a versatile rsal" adaptor that can be connected to the base of any tube.

A sensitive cut-off adjustment establishes the proper cut-off point for testing each tube. The internal B+ and bias voltages of the Tester are regulated to assure an accurate and reliable test of picture tube performance.

A special "activate" function is provided to improve the performance of some low-emission tubes. Additional features of the WT-509A include a 50,000 DC volt range for use with an RCA WG-297 High-Voltage Probe to measure picture tube anode voltage. A 1500 volt input is also provided for measuring picture tube electrode voltages.

ket Adaptors

cket adaptors are provided with the WT-509A, permitting ubes commonly found in both black and white and color eivers to be tested. The socket to use for a particular tube d in the Test Data Booklet. The sockets are identified by per, Sockets 1, 2, 3, 4, and 7 are provided with the Tester. s 5 and 6 are available as accessories, and can be d from your local RCA Test Equipment Distributor, using ck numbers listed at right (use socket specified in test art E1 255, supplied with instrument).

Socket	Stock No.
1	WG-421 V1
2	WG-421 V2
3	WG-421 V2
4	WG-421 V4
5	WG-421 V5
6	WG-421 V6
7	WG-421 V7 (Universal Socket Adaptor)

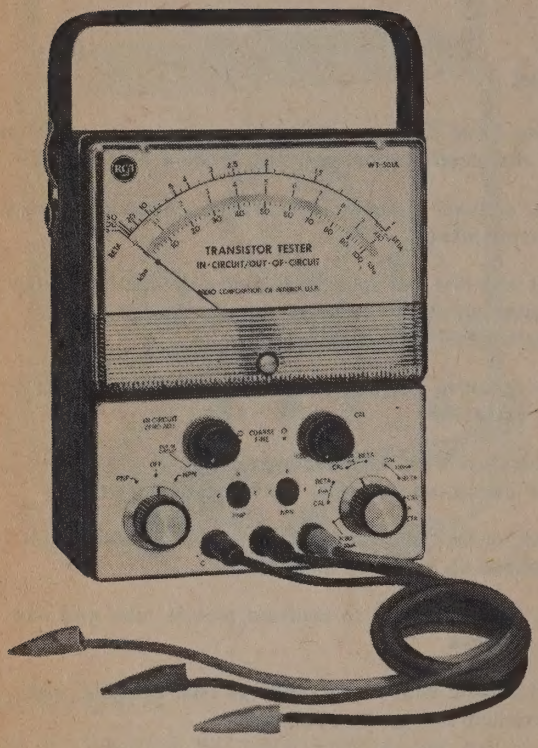
For Prices See Page 863

In-Circuit/Out-of-Circuit Transistor Tester

Type WT-501A

RCA

Test Equipment and Accessories



Features

- **Battery Operated — completely portable**
- **Tests both high-power and low-power transistors**
- **Measures NPN and PNP Transistors (Icbo), (Iceo), an Seta**
- **Adjustable collector current permits most transistors tested at their rated current level**
- **Front panel NPN and PNP sockets for convenient ma in complementary symmetry applications**
- **Reliable in-circuit testing of transistor current gain**
- **Includes zero control to cancel the effect of leakage in-circuit current gain reading**
- **Tests relative front-to-back ratio of diodes at appropr current levels**
- **Mirrored scale**

Description

Completely portable and requiring no external power source, RCA's WT-501A tests transistors both in-circuit and out-of-circuit, tests both low and high-power transitors, and has both NPN and PNP sockets to allow convenient transistor matching for complementary symmetry applications. Three color-coded test leads are provided for in-circuit testing. Special low-impedance circuitry assures reliable in-circuit testing.

The instrument is designed to test transistor for dc beta from 1 to 1000, collector-to-base leakage (Icbo) as low as two-microamperes, and collector-to-emitter leakage (Iceo) from 20 microamperes to one-ampere. Collector current is adjustable from 20 microamperes to one-ampere in four ranges, permitting most transistors to be tested at their rated current level.

Power transistors can be tested with Ic up to one-amp A DC forward current transfer ratio curve can be plotted. The instrument can also test the relative in-circuit DC curr gain of a transistor.

A 100 microampere meter movement is used in the measuring circuits for the various test functions, and preci resistors are used to insure accurate test results. Normal maintenance includes only replacing the batteries as neccessary.

The WT-501A is also a convenient instrument for makir check of the relative front-to-back ratio of diodes. An important feature is the ability to check the diode at an appropriate current level.

Specifications

DC Beta (hFE)
Range ..... 1 to 1000
Accuracy ..... ±5%
Collector Current (Ic) ..... 100 uA to 1 Amp. in four ranges
Collector-to-Base Leakage (Icbo) ..... 0 to 100 uA
Collector-to-Emitter (Iceo) ..... 0 to 1
Battery Voltage .....two 1½ V "D" cells, RCA VSO36 or

Dimensions
Height 6⅞", Width 5¼", Depth 3⅛", Weight 2¾ lbs.

For Prices See Page 863

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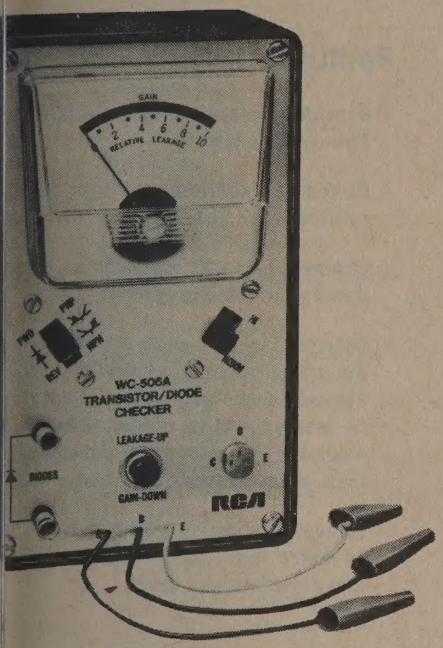
Transistor/Diode Checker & Resistance-Capacitance Circuit Box

Type WC-506A WG-412A, anr WG-412A(K)

RCA **Test Equipment and Accessories**



WG-506A

Features

- **Fast relative gain and leakage measurements of NPN and PNP transistors**
- **Forward and reverse diode-current checks**
- **Panel socket and test leads for out-of-circuit measurements**
- **Battery operated**
- **Small, compact, inexpensive**
- **Panel switch for high-and-low leakage transistors**
- **Quick-connect diode test terminals**

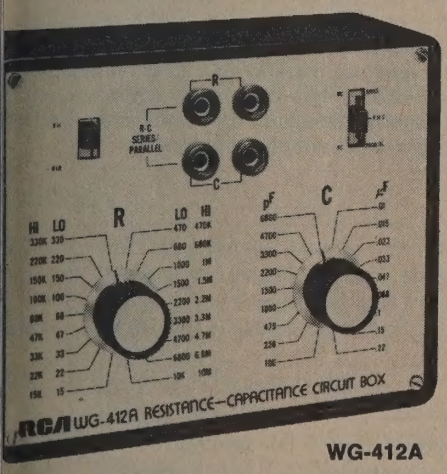
Description

The RCA WC-506A is a compact, battery-operated instrument especially designed to provide a quick, simple check of relative gain and leakage levels of out-of-circuit transistors. All measurements are indicated on an easy-to-read meter with an single red/green scale.

Both NPN and PNP transistors can be checked on the WC-506A. A panel switch is provided to adapt the circuit to accommodate checking high-leakage transistors, such as most germanium power types. The checker includes a transistor socket, and color-coded test leads.

The relative front-to-back current ratios of diodes can also be checked on the WC-506A. Special spring terminals for connecting diodes are located on the panel.

The WC-506A weighs 14 ounces and measures 3¾ inches x 6¼ inches x 2 inches. Power is supplied by two 1.5 volt penlite batteries (not included). The unit is contained in a sturdy bakelite case.



WG-412A

Features

- **Available in wired (WG-412A) or kit form (WG-412A(K))**
- **36 resistors in standard values from 15 ohms to 10 megohms (1 watt power rating, tolerance ±10%)**
- **18 capacitors from 100 pF to 0.22 uF (600V rating, tolerance ±10%)**
- **Simplified switching for separate R or C, or series or parallel RC**
- **Standard ¾" terminal-jacks — accommodates dual banana-plug**
- **Complete with plug-in test leads and alligator-clip connectors**

cription

CA WG-412A provides a convenient selection of standard rs and capacitor values available either separately or es or parallel RC combinations. The unit includes 36 rs ranging in value from 15 ohms to 10 megohms capacitors from 100 picofarads to .22 microfarads. e uses of the R-C Circuit Box include component ution in servicing and circuit design applications and hing R-C circuits for checking impedance, reactance, and frequency characteristics. The unit is also useful for classroom applications to demonstrate Ohm's Law, capacitive reactance, and other circuit effects caused by introducing various resistance and capacitance combinations.

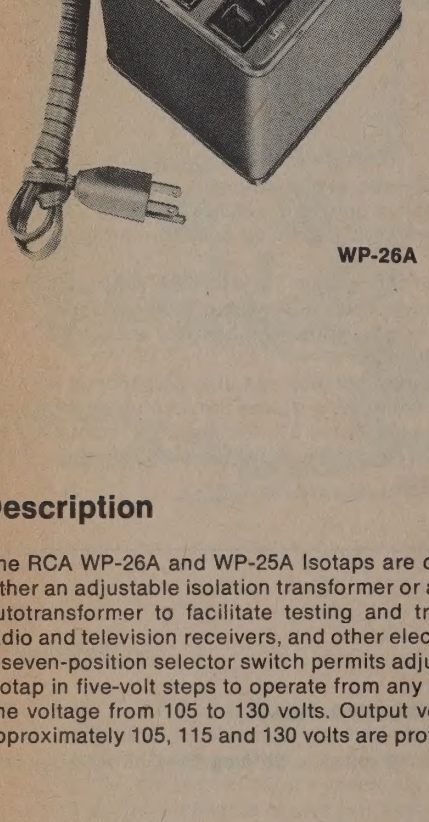
The RC Circuit Box is provided with plug-in test leads with convenient alligator clip connectors (WG-413A). The unit measures 6⅞ inches by 5⅜ inches by 2⅜ inches and weighs approximately one pound, 12 ounces.

For Prices See Page 863

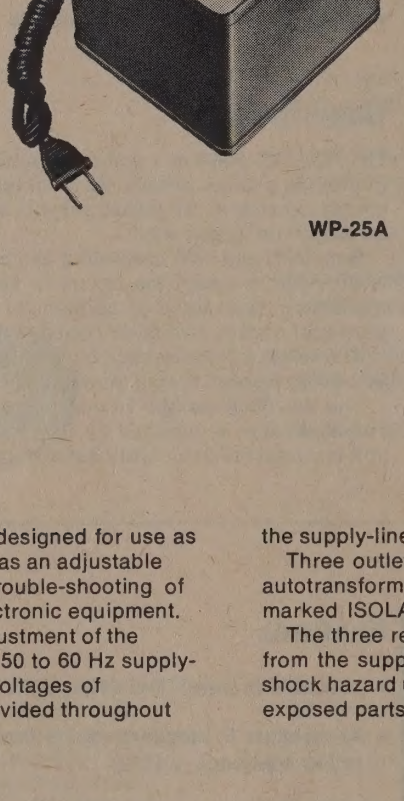
TV Isotap Isolation and Autotransformers

Type WP-26A and WP-25A

RCA Test Equipment and Accessories



WP-26A



WP-25A

Features

- **Provides instant high-low-medium line-voltage testing**
- **Speeds up servicing . . . cuts down returns**
- **Minimizes shock hazards . . . preve damage to test equipment**
- **Delivers 500 volt-amperes from autotransformer winding; 400-volt amperes from isolated secondary wi (A less expensive model, WP-25A, i available. It delivers 275 volt-ampere max. from isolated secondary wind**
- **Heavy duty rotary switch adjusts p to match line voltage over range of 130 volts in 5-volt steps**

Description

The RCA WP-26A and WP-25A Isotaps are designed for use as either an adjustable isolation transformer or as an adjustable autotransformer to facilitate testing and trouble-shooting of radio and television receivers, and other electronic equipment. A seven-position selector switch permits adjustment of the Isotap in five-volt steps to operate from any 50 to 60 Hz supply-line voltage from 105 to 130 volts. Output voltages of approximately 105, 115 and 130 volts are provided throughout the supply-line voltage range.

Three outlets, marked DIRECT, are connected to the autotransformer or primary winding, and three outlets, marked ISOLATED, are connected to the secondary win

The three receptacles marked ISOLATED provide isola from the supply-line for any connected equipment, mini shock hazard usually associated with the chassis, and oth exposed parts of transformerless equipment.

Specifications

(All voltages with ±5%)*

Supply Line:

Voltage range	105-130 V
Frequency	50-60 Hz

Output Voltages

DIRECT receptacles (with 500 max. VA load and selector set to value of supply-line voltage):

LOW	105 V
MED	115 V
HIGH	130 V

ISOLATED receptacle (with resistive load of 400 max. VA and selector set to value of supply-line voltage):

LOW	105 V
MED	
HIGH	

Load Rating:

Continuous operation:	WP-26A	WP-25
DIRECT receptacles	500 VA max.	500 V
ISOLATED receptacles	400 VA max.	275 V
Intermittent operation:		
DIRECT receptacles	750 VA max.	750 V
ISOLATED receptacles	450 VA max.	450 V

Dimensions

Height 5¾", Width 5", Depth 4⅜".

Weight	15 lbs.	12 lbs

For Prices See Page 863

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Test Equipment
Price Schedule

RCA Test Equipment and Accessories

Instruments

A Type	Description	Optional User Price
-25A	TV Isotap	27.50
-26A	TV Isotap	40.00
-33A	3-inch Oscilloscope	180.00
-38A	Volt-Ohm-Milliammeter	52.00
-44C	Audio Sinewave/Squarewave Generator	98.50
-56B	RF Signal Generator	65.00
-52A	FM-Stereo-Signal Simulator	248.00
-76A	High-Sensitivity AC VTVM	90.00
-77E	VoltOhmyst	52.00
-98C	Senior VoltOhmyst	88.50
-98CX	Senior VoltOhmyst (220 volt)	93.00
-99A	Crystal Calibrated Marker Generator	256.50
-120A	Power Line Monitor	18.50
-500B	Solid State Volt Ohmyst	79.00
-501A	Transistor Tester	66.75
-502A	"Chro-Bar"— Channel 3	148.50
-502A-V1	"Chro-Bar"— Channel 4	148.50
-503A	240 Volt Power Line Monitor	18.50
-504A	Solid State Audio Sine/Square Wave Generator	95.00
-506A	Transistor Checker	18.00
-509A	B&W/Color Picture Tube Tester with Socket Adapters WG-421-V1 Diheptar WG-421-V2 Neediheptar WG-421-V3 Duodecal WG-421-V4 Eightar WG-421-V7 Universal Adapter	118.00
-509A-V1	Same as WT-509A except for 240 Volt Operation	118.00

Accessories

A Type	Description	Optional User Price
-206	1090-Megohm Resistor for H.V. Probe	3.75
-210	900-Megohm Resistor for H.V. Probe	3.75
-211	495-Megohm Resistor for H.V. Probe	3.75
-236A	Kit of Plug-in Socket Parts for WT110A	18.75
-270A	Carrying Case for WV-38A	5.25
-271A	Adapter for using WG-300B Cable and Probe on WO-33A, WO-33A-K	2.50
-277A	Test Leads WV77E, WV77E-K	4.50
-289	High Voltage Probe (less resistor) with microphone type connector	13.50
-295C	Video Multimarker	33.50
-297	High Voltage Probe (less resistor) with banana plugs	13.50
-299E	DC/AC-Ohms Probe and Cable for WV-98A, WV-98B, WV-98C	9.75
-300B	Direct-low-Capacitance Probe for WO-91A, WO-91B and WO-91C	12.00

Accessories

RCA Type	Description	Optional User Price
WG-301A	Crystal-Diode Probe for WV-98A, WV-98B, WV-98C	8.25
WG-302A	RF/IF-VF Signal-Tracing Probe for WO-91A, WO-91B and WO-91C	9.00
WG-304B	RF Modulator	18.00
WG-307B-K	TV Bias Supply Kit	13.50
WG-325A	Unpunched Cards for WT-110A	3.75
WG-326A	Accessory Card Punch for WT-110A	5.95
WG-349A	Direct-Low, Cap, Probe for WO-33A and WO-33AK	6.75
WG-350A	Demodulator Probe for WO-33A and WO-33AK	5.25
WG-351A	RF Probe for WV-77E, WV-77E-K	5.25
WG-352A	Single-Ended RF Diode Probe	2.95
WG-354A	Capacitance-Type Voltage Divider Probe for WG-300B	11.00
WG-356A	Balanced RF Diode Probe	4.50
WG-357A	IF Diode Probe	4.50
WG-361A	Current Measuring Adapter	5.25
WG-374A	Balanced RF Output Cable for WR-64A and WR-64B	4.50
WG-410A	DC-AC Ohms Probe and Cable same as WG-299E without Connector	9.00
WG-411A	Slip on High Voltage Probe	13.50
WG-412A	RC Box	30.00
WG-412A-K	Circuit Box Kit	22.00
WG-413A	Test Leads with Dual Banana Plugs	3.75
WG-414A	3 Clip Probes	13.50
WG-415A	Video Detector	13.50
WG-416A	IF Test Block	15.25
WG-417A	Sound Detector Test Block	14.50
WG-418A	Mixer Grid Matching Pad	13.50
WG-419A	Tuner IF Input Head	11.50
WG-420A	Sound Detector	21.75
WG-421-V1	Diheptar Socket Adapter	6.00
WG-421-V2	Neodiheptar Socket Adapter	6.00
WG-421-V3	Duodecal Socket Adapter	6.00
WG-421-V4	Eightar Socket Adapter	6.00
WG-421-V5	Eightar Adapter for WT-509A; V1	6.00
WG-421-V6	7-Pin Min. Adapter for WT-509A; V1	6.00
WG-421-V7	Universal Socket Adapter	6.00
WG-422A	RF Output Cable for WR-502A	8.25
WG-425A	AC Adapter	9.00

Power Supplies

RCA Type	Description	1-4	5 & UP.
WP-700A	DC Power Supply	48.00	40.00
WP-702A	Dual DC Power Supply	87.00	73.00
WP-703A	DC Power Supply	58.50	49.00
WP-704A	DC Power Supply	58.50	49.00

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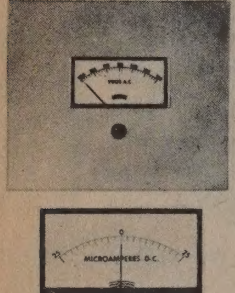
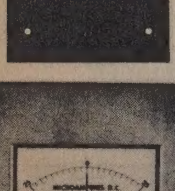
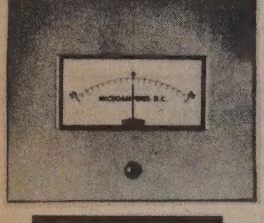
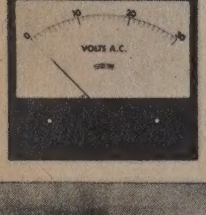
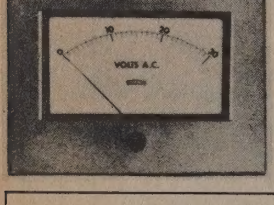
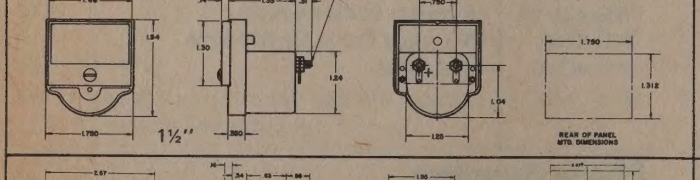
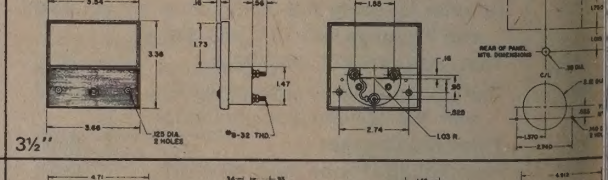
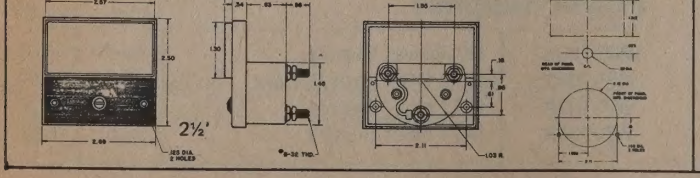






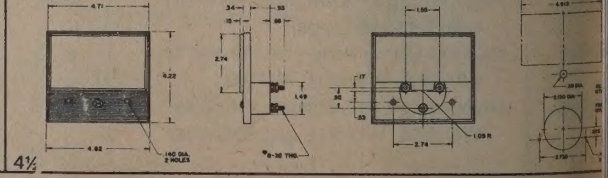
RANGE & SCALE	1½" MODEL 318 $NET EACH - LOTS OF				2½" MODEL 328 $NET EACH - LOTS OF				3½" MODEL 338 $NET EACH - LOTS OF				4½" MODEL $NET EACH - L		
	1-9	10-24	25-49	50-99	1-9	10-24	25-49	50-99	1-9	10-24	25-49	50-99	1-9	10-24	25-
D C MICROAMMETERS (Pivot & Jewel—Core Mag. ± 2% F.S.)															
0-50	17.35	14.75	13.00	12.15	17.95	15.25	13.45	12.55	18.40	15.65	13.80	12.85	19.95	16.95	14.9
0-100	15.25	12.95	11.45	10.70	15.85	13.45	11.90	11.10	16.75	14.25	12.55	11.75	18.85	16.05	14.1
0-200	13.60	11.55	10.20	9.50	14.35	12.20	10.75	10.05	15.10	12.85	11.30	10.55	16.75	12.85	11.3
0-500	13.30	11.30	9.95	9.30	14.05	11.95	10.55	9.85	14.80	12.60	11.10	10.35	16.15	13.75	12.1
25-0-25	17.35	14.75	13.00	12.15	17.95	15.25	13.45	12.55	18.40	15.65	13.80	12.85	19.95	16.95	14.9
50-0-50	15.25	12.95	11.45	10.70	15.85	13.45	11.90	11.10	16.75	14.25	12.55	11.75	18.85	16.05	14.1
100-0-100	13.60	11.55	10.20	9.50	14.35	12.20	10.75	10.05	15.10	12.85	11.30	10.55	16.75	12.85	11.3
D C MILLIAMMETERS (Pivot & Jewel—Core Mag. ± 2% F.S.)															
0-1	12.85	10.90	9.65	9.00	13.45	11.45	10.10	9.45	13.95	11.85	10.45	9.75	14.95	12.75	11.2
0-5	12.85	10.90	9.65	9.00	13.45	11.45	10.10	9.45	13.95	11.85	10.45	9.75	14.95	12.75	11.2
0-10	12.85	10.90	9.65	9.00	13.45	11.45	10.10	9.45	13.95	11.85	10.45	9.75	14.95	12.75	11.2
0-15	12.85	10.90	9.65	9.00	13.45	11.45	10.10	9.45	13.95	11.85	10.45	9.75	14.95	12.75	11.2
0-25	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.40	12.25	10.80	10.05	15.80	13.40	11.8
0-50	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.40	12.25	10.80	10.05	15.80	13.40	11.8
0-100	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.40	12.25	10.80	10.05	15.80	13.40	11.8
0-200	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.40	12.25	10.80	10.05	15.80	13.40	11.8
0-500	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.40	12.25	10.80	10.05	15.80	13.40	11.8
D C AMMETERS (Pivot & Jewel—Core Mag. ± 2% F.S.)															
0-1	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.50	12.35	10.85	10.15	15.85	13.45	11.9
0-1.5	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.50	12.35	10.85	10.15	15.85	13.45	11.9
0-3	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.50	12.35	10.85	10.15	15.85	13.45	11.9
0-5	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.50	12.35	10.85	10.15	15.85	13.45	11.9
0-10	13.30	11.30	9.95	9.30	13.75	11.70	10.35	9.65	14.50	12.35	10.85	10.15	15.85	13.45	11.9
D C MILLIVOLTMETERS (Pivot & Jewel—Core Mag. ± 2% F.S.)															
0-50	13.30	11.30	9.95	9.30	13.60	11.55	10.20	9.55	14.35	12.20	10.80	10.05	15.85	13.45	11.9
D C VOLTMETERS (Pivot & Jewel—Core Mag. ± 2% F.S.)															
0-1	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-1.5	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-3	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-5	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-10	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-15	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-25	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-30	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-50	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-100	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-150	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-300	13.30	11.30	9.95	9.30	14.50	12.35	10.85	10.15	15.10	12.85	11.35	10.60	16.75	14.25	12.5
0-500	17.20	14.60	12.90	12.05	15.10	12.85	11.30	10.55	15.85	13.45	11.90	11.10	17.35	14.75	13.0
A C VOLTMETERS (Pivot & Jewel—Core Mag. ± 2% F.S.)															
0-150	19.15	16.25	14.35	13.40	19.60	16.65	14.70	13.75	19.90	16.90	14.90	13.95	22.90	19.45	17.1
0-200	19.15	16.25	14.35	13.40	19.60	16.65	14.70	13.75	19.90	16.90	14.90	13.95	22.90	19.45	17.1
0-500	19.15	16.25	14.35	13.40	19.60	16.65	14.70	13.75	19.90	16.90	14.90	13.95	22.90	19.45	17.1
V U 'A' SCALE															
	23.80	20.23	17.85	16.66	24.10	20.48	18.08	16.87	24.85	21.12	18.64	17.40	27.10	23.04	20.3
V U 'B' SCALE															
	23.80	20.23	17.85	16.66	24.10	20.48	18.08	16.87	24.85	21.12	18.64	17.40	27.10	23.04	20.3
D B – 10 TO + 6 DB															
	23.80	20.23	17.85	16.66	24.10	20.48	18.08	16.87	24.85	21.12	18.64	17.40	27.10	23.04	20.3

NOTE: Add $0.85 for 2½", 3½" & 4½" for rear mounting brackets/clips panel thicknesses .040",.060",.090"
MODEL NUMBER CODE: 318/328/338/348 . . . . 90° DC Core Magnet. Plastic case and window.









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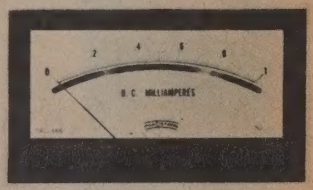
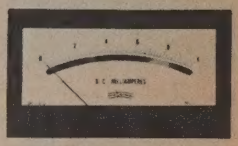
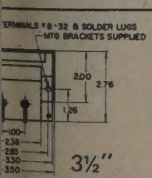
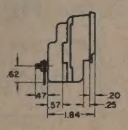
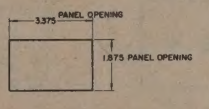
E					3½" MODELS 131-134 $ NET EACH - LOTS OF				4½" MODELS 141-144 $ NET EACH - LOTS OF							
E					1-9	10-24	25-49	50-99	1-9	10-24	25-49	50-99				
CROAMMETERS (Taut Band & Pivot & Jewel ± 2% F.S.)																
0	..	..	..	..	34.25	29.10	25.65	22.60	35.25	29.95	26.40	23.25	..	..	..	..
0	..	..	..	..	21.70	18.40	16.25	14.30	23.50	19.95	17.60	15.50	..	..	..	..
00	..	..	..	..	20.70	17.55	15.50	13.65	22.50	19.10	16.85	14.85	..	..	..	..
00	..	..	..	..	19.75	16.80	14.80	13.00	21.50	18.25	16.10	14.20	..	..	..	..
00	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
10	..	..	..	..	34.25	29.10	25.65	22.60	35.25	29.95	26.40	23.25	..	..	..	..
25	..	..	..	..	21.70	18.40	16.25	14.30	23.50	19.95	17.60	15.50	..	..	..	..
50	..	..	..	..	20.70	17.55	15.50	13.65	22.50	19.10	16.85	14.85	..	..	..	..
00	..	..	..	..	19.75	16.80	14.80	13.00	21.50	18.25	16.10	14.20	..	..	..	..
LLIAMMETERS (Pivot & Jewel ± 2% F.S.)																
	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
0	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
5	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
5	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
0	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
00	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
00	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
00	..	..	..	..	19.25	16.35	14.40	12.70	20.75	17.60	15.55	13.70	..	..	..	..
METERS (Pivot & Jewel-Self Contained ± 2% F.S.)																
	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
.5	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
0	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
5	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
0	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
0	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
LLIVOLTMETERS (Pivot & Jewel ± 2% F.S.)																
0	..	..	..	..	20.25	17.20	15.15	13.35	21.75	18.45	16.30	14.35	..	..	..	..
)LTMETERS (Pivot & Jewel ± 2% F.S.)																
	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
.5	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
0	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
5	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
5	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
0	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
0	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
00	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
50	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
00	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
00	..	..	..	..	20.75	17.60	15.55	13.70	22.50	19.10	16.85	14.85	..	..	..	..
LTMETERS (Pivot & Jewel – Rectifier – ± 3% F.S.)																
50	..	..	..	..	25.75	22.60	20.55	18.70	27.50	24.10	21.85	19.85	..	..	..	..
00	..	..	..	..	25.75	22.60	20.55	18.70	27.50	24.10	21.85	19.85	..	..	..	..
00	..	..	..	..	25.75	22.60	20.55	18.70	27.50	24.10	21.85	19.85	..	..	..	..









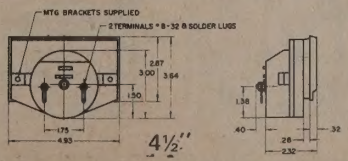


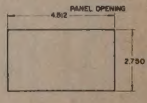
PLEASE SPECIFY WHEN ORDERING: MODEL SIZE, NUMBER AND RANGE.

MODEL NUMBER CODE

131/141 . . . . . 90° DC PIVOT JEWEL
134/144 . . . . . 90° DC TAUT BAND

- PHENOLIC CASE
- GLASS WINDOW
- "TB" SIGNIFIES TAUT BAND





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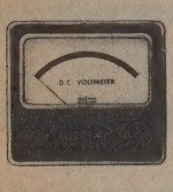
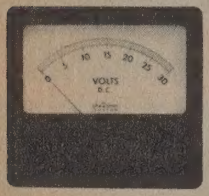
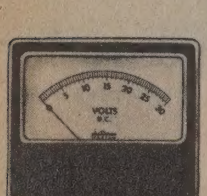
NOTE: ADD $3.00 FOR CHROME BEZEL 3½" & 4½" SIZES.

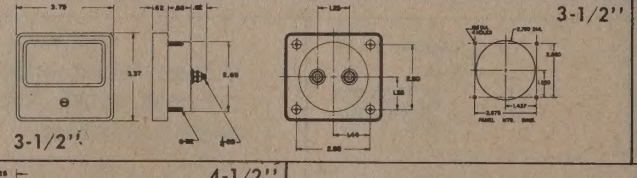




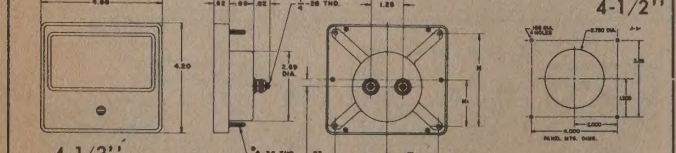


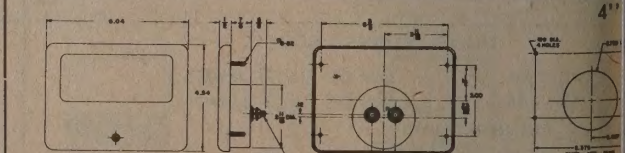
RANGE & SCALE		3½"MODELS 431-434-437 $NET EACH-LOTS OF				4½"MODELS 441-444-447 $NET EACH-LOTS OF				4"x6"MODELS $NET EACH-L		
		1-9	10-24	25-49	50-99	1-9	10-24	25-49	50-99	1-9	10-24	25-
D C MICROAMMETERS (Taut Band & Pivot Jewel ± 2% F.S.)												
TB 0-20		33.95	28.80	25.45	23.75	36.70	31.20	27.50	25.70	–	–	–
0-50		24.40	20.75	18.30	17.10	25.95	22.00	19.45	18.15	31.80	27.00	23.
0-100		22.75	19.35	17.05	15.95	24.85	21.15	18.65	17.40	27.90	23.70	20.
0-200		21.10	17.90	15.80	14.75	22.75	19.30	17.05	15.90	26.80	22.80	20.
0-500		20.80	17.70	15.60	14.55	22.15	18.80	16.40	15.80	25.60	21.80	19.
TB10-0-10		33.95	28.80	25.45	23.75	36.70	31.20	27.50	25.70	–	–	–
25-0-25		24.40	20.75	18.30	17.10	25.95	22.00	19.45	18.15	31.80	27.00	23.
50-0-50		22.75	19.35	17.05	15.95	24.85	21.15	18.65	17.40	27.90	23.70	20.
100-0-100		21.10	17.90	15.80	14.75	22.75	19.30	17.05	15.90	26.80	22.80	20.
D C MILLIAMMETERS (Pivot & Jewel ±2% F.S.)												
0-1		20.05	17.05	15.05	14.05	21.10	17.95	15.85	14.80	25.60	21.80	19.
0-5		20.05	17.05	15.05	14.05	21.10	17.95	15.85	14.80	25.60	21.80	19.
0-10		20.05	17.05	15.05	14.05	21.10	17.95	15.85	14.80	25.60	21.80	19.
0-15		20.05	17.05	15.05	14.05	21.10	17.95	15.85	14.80	25.60	21.80	19.
0-25		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	25.60	21.80	19.
0-50		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	25.60	21.80	19.
0-100		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	25.60	21.80	19.
0-200		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	25.60	21.80	19.
0-500		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	25.60	21.80	19.
D C AMMETERS (Pivot & Jewel-Self Contained ± 2% F.S.)												
0-1		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.50	22.50	19.
0-1.5		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.50	22.50	19.
0-3		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.50	22.50	19.
0-5		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.50	22.50	19.
0-10		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.50	22.50	19.
0-25		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.50	22.50	19.
0-30		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.50	22.50	19.
0-50		20.50	17.45	15.40	14.35	21.85	18.60	16.40	15.30	26.80	22.80	20.
D C MILLIVOLTMETERS (Pivot & Jewel ± 2% F.S.)												
0-50		20.35	17.30	15.25	14.25	21.85	18.60	16.40	15.30	26.50	22.50	19.
D C VOLTMETERS (Pivot & Jewel ± 2% F.S.)												
0-1		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-1.5		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-3		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-5		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-10		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-15		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-25		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-30		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-50		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-100		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-150		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-300		21.10	17.95	15.85	14.80	22.75	19.35	17.05	15.95	26.50	22.50	19.
0-500		21.85	18.60	16.40	15.30	23.35	19.85	17.50	16.35	26.50	22.50	19.
A C VOLTMETERS (Pivot & Jewel Rectifier ± 3% F.S.)												
0-150		26.15	22.30	19.65	18.35	28.90	24.60	21.70	20.25	31.80	27.00	23.
0-300		26.15	22.30	19.65	18.35	28.90	24.60	21.70	20.25	31.80	27.00	23.
0-500		26.15	22.30	19.65	18.35	28.90	24.60	21.70	20.25	31.80	27.00	23.

- DIE CAST ALUMINUM BEZEL WITH GLASS WINDOW
- INTERNAL ILLUMINATION AVAILABLE
- "TB" SIGNIFIES TAUT BAND



MODEL NUMBER COD
431/441/461 ..... 90° DC Pivo
434/444 ..... 90° DC Tau
437/447/467 ..... AC Iron Va





Net

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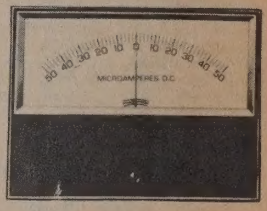
...icating instruments of integrity"

Custom II

PHAOSTRON

E	2½" MODELS 521-524-527 $ NET EACH - LOTS OF				3½" MODELS 531-534-537 $ NET EACH - LOTS OF				4½" MODELS 541-544-547 $ NET EACH - LOTS OF				4" x 6" MODELS 561-567 $ NET EACH - LOTS OF			
E	1-9	10-24	25-49	50-99	1-9	10-24	25-49	50-99	1-9	10-24	25-49	50-99	1-9	10-24	25-49	50-99
CROAMMETERS (Taut Band & Pivot & Jewel ± 2% F.S.)																
)	31.10	26.20	23.15	21.75	31.90	27.20	24.00	22.40	34.70	29.50	26.00	24.30	–	–	–	–
)	21.95	18.65	16.45	15.35	22.40	19.05	16.80	15.70	23.95	20.15	17.90	16.75	29.70	25.25	22.30	20.80
)0	19.85	16.90	14.90	13.90	20.75	17.60	15.50	14.50	22.85	19.40	17.15	16.00	25.90	22.00	19.45	18.15
)0	18.35	15.60	13.75	12.85	19.10	16.25	14.35	13.40	20.75	17.60	15.55	14.50	24.80	21.10	18.60	17.35
)0	17.95	15.30	13.45	12.60	18.80	15.95	14.10	13.15	20.15	17.10	15.10	14.10	23.60	20.05	17.70	16.50
10	31.10	26.20	23.15	21.75	31.90	27.20	24.00	22.40	34.70	29.50	26.00	24.30	–	–	–	–
25	21.95	18.65	16.45	15.35	22.40	19.05	16.80	15.70	23.95	20.15	17.90	16.75	29.70	25.25	22.30	20.80
50	19.85	16.90	14.90	13.90	20.75	17.60	15.50	14.50	22.85	19.40	17.15	16.00	25.90	22.00	19.45	18.15
)0	18.35	15.60	13.75	12.85	19.10	16.25	14.35	13.40	20.75	17.60	15.55	14.50	24.80	21.10	18.60	17.35
.LIAMMETERS (Pivot & Jewel ± 2% F.S.)																
	17.45	14.85	13.10	12.20	17.95	15.25	13.45	12.85	19.10	16.25	14.35	13.35	23.60	20.05	17.70	16.50
	17.45	14.85	13.10	12.20	17.95	15.25	13.45	12.85	19.10	16.25	14.35	13.35	23.60	20.05	17.70	16.50
	17.45	14.85	13.10	12.20	17.95	15.25	13.45	12.85	19.10	16.25	14.35	13.35	23.60	20.05	17.70	16.50
	17.45	14.85	13.10	12.20	17.95	15.25	13.45	12.85	19.10	16.25	14.35	13.35	23.60	20.05	17.70	16.50
	17.75	15.10	13.30	12.40	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.05	20.45	18.05	16.85
	17.75	15.10	13.30	12.40	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.05	20.45	18.05	16.85
)	17.75	15.10	13.30	12.40	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.05	20.45	18.05	16.85
)	17.75	15.10	13.30	12.40	18.50	15.75	13.90	12.95	19.83	16.85	14.90	13.90	24.05	20.45	18.05	16.85
)	17.75	15.10	13.30	12.40	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.05	20.45	18.05	16.85
KETERS (Pivot & Jewel – Self Contained ± 2% F.S.)																
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
	17.75	15.10	13.30	12.45	18.50	15.75	13.90	12.95	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
LI VOLTMETERS (Pivot & Jewel ± 2% F.S.)																
	17.60	14.95	13.20	12.35	18.35	15.55	13.75	12.85	19.85	16.85	14.90	13.90	24.50	20.80	18.40	17.15
.TMETERS (Pivot & Jewel ± 2% F.S.)																
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
	18.50	15.75	13.90	12.95	18.95	16.10	14.20	13.25	20.75	17.60	15.50	14.50	24.50	20.80	18.40	17.15
.TMETERS (Pivot & Jewel – Rectifier – ± 3% F.S.)																
	23.60	20.05	17.70	16.50	24.15	20.30	18.20	17.00	26.90	22.90	20.20	18.85	29.80	25.40	22.40	20.90
	23.60	20.05	17.70	16.50	24.15	20.30	18.20	17.00	26.90	22.90	20.20	18.85	29.80	25.40	22.40	20.90
	23.60	20.05	17.70	16.50	24.15	20.30	18.20	17.00	26.90	22.90	20.20	18.85	29.80	25.40	22.40	20.90



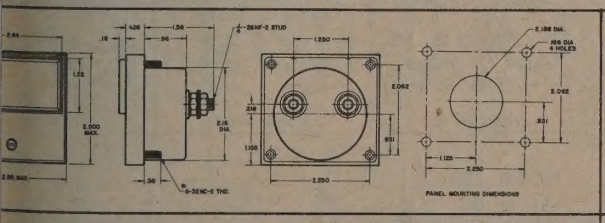
MODEL NUMBER CODE

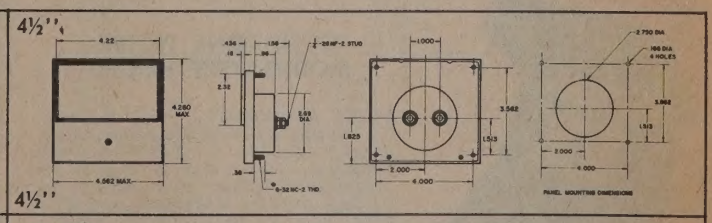
531/541/561 ... 90° DC Pivot Jewel

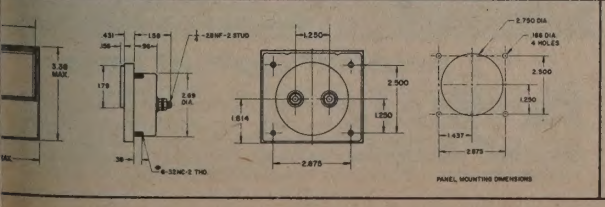
534/544 ..... 90° DC Taut Band

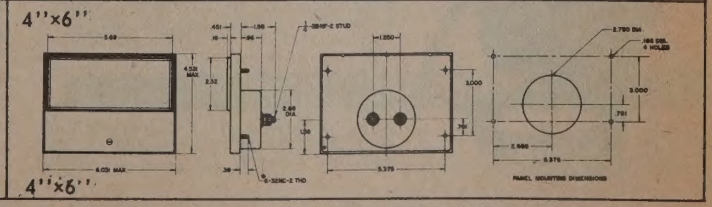
537/547/567 ... AC Iron Vane

- Die Cast Aluminum Bezel with Plastic Window
- Internal Illumination Available
- "TB" Signifies Taut Band

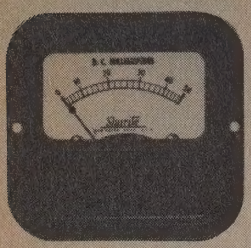




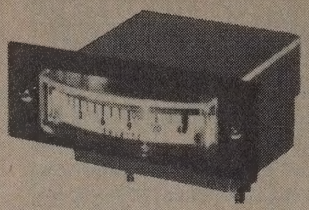




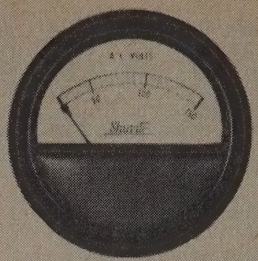
Shurite® PANEL METERS



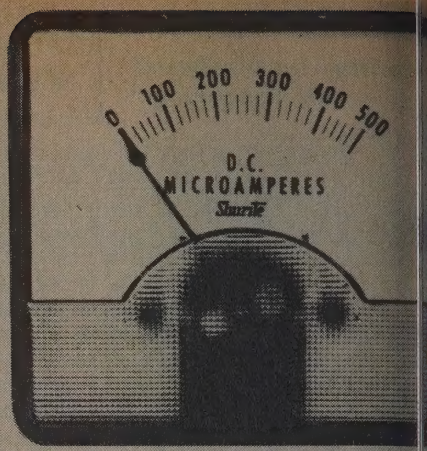
MODEL 950 SERIES
(metal case)
ZERO ADJUSTER
OPTIONAL ON DC



MODEL 350 SERIES
(crystal clear front)
EDGEWISE METER



MODEL 550 SERIES
(metal case)
RIMLESS ROUND TYPE



MODEL 850 (actual size) ZERO ADJUSTER OPT

Manufactured in SHURITE'S new Connecticut plant, these meters are attractive, rugged, dependable indicators with accuracy well within ±5%, and the ability to duplicate readings. DC meters are polarized-vane solenoid type (moving-magnet or bridge-type construction where indicated); AC meters are double-vane repulsion type with jeweled bearing. The jewel construction costs more to build, but it pays off in continuing accuracy during a longer useful life. Models 550 and 950 fit 2-5/32" hole; Model 850 fits 2-5/32" to 2-1/32" hole.

FEATURES

GUARANTEE: One year to user if returned to factory prepaid with 50c handling charge . . . **ALL METAL DIALS** — age and moisture resistant . . . **HIGH RATIO TORQUE-TO-WEIGHT** — gives fast pointer response . . . **VISCOSITY DAMPING** — effectively damps pointer overtravel . . . **CLEAR-PLASTIC 850 CASE** — crystal-clear, high-temperature, high-impact polystyrene case brings light to longest scale arc in its field; case back same material except black . . . **WIDE SELECTION** — Shurite offers the broadest line of standard meters in the economy-priced field. Distributor stocks are backed by an extensive factory inventory.

NEW AUTO BATTERY CONDITION TESTER

STOCK NO. 4153 — Four-color dial shows condition of 12 volt battery for starting and running, also charging rate of generator as too low or too high. May be left connected permanently, if desired, as it draws less current than an auto clock. Attractively blister-packed, with cigarette lighter plug, 24" cord, and mounting material **$4.50**

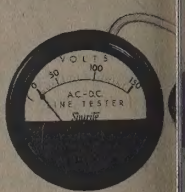
LIGHTING LEVEL INDICATOR

STOCK NO. 7902-FC — Simply place this pocket-size meter (molded case 3¼"x 2⅛"x1⅛") on bench, desk, or other work surface and read illumination value in foot candles on a 300-fc scale. Shielded to minimize the effect of external magnetic influences. Developed for utilities in Edison Electric Institute for training in providing suitable lighting. Individually boxed **$9.75**

COLD-ZONE TESTER MODERATELY PRICED

STOCK NO. 8380-RT — Place the thin, flat resistance bulb inside a refrigerator, deep freezer, air conditioner or other cooling equipment, close the door on the polyethylene ribbon lead, allow the bulb temperature to stabilize, and get a direct reading from —40 to +120°F. Saves time, builds customer confidence. Red pointer; 2⅛" scale arc, readable to ±2°; accuracy well within commercially accepted standards of ±5° (±3%). For further details, ask for Bulletin CT-1. Tester comes in gray vinyl case 5" x 5" x 4½", complete with 8 ft. Model SA-309 thin, fast responding bulb and 7½ volt standard battery **$20.50**

AC-DC LINE VOLTAGE TESTER



Stock No. 5406-LT — Plug-in to read line voltage, then demonstrate voltage drop or inadequate wiring by plugging in TV set, iron, toaster, washer, air-conditioner, shop equipment, etc. Features of this handy tester: a) attached plug receptacle permits continuous reading while loads are changed; b) reads to 150 volts AC or DC; c) cord allows convenient angle for reading; d) jewel bearing construction provides continuing accuracy **$4.85**

VU, S, and FIELD STRENGTH METERS

VU METERS — Reed volume levels in audio transmission cir scale —20 to +3 VU, red and black. AC rectifier type; poin mally at —20 VU; 1400 ohms ±5% int. res. See Bulletin VU application circuitry. High-temperature clear-plastic cases.
STOCK NO. 8801Z—850 Series, zero adjuster included; as illustrat
STOCK NO. 3801—Edgewise case, zero adjuster not available

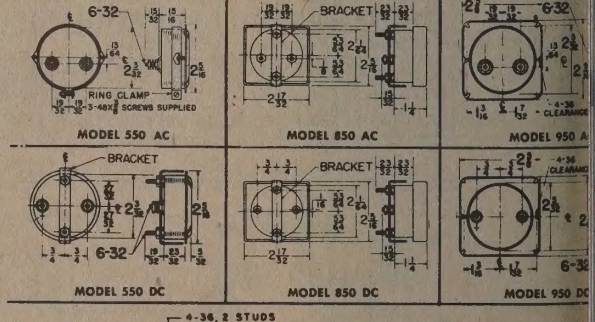
S METERS — To measure relative signal strength; black and re basic movement 0-5 Ma, DC with 1000 ohms int. res. ±5%; for tion notes and circuits, see Bulletin VUS-67. High-temperatu plastic cases.
STOCK NO. 3333 — 350 Series, 0-40 db, shown above, poin mally at 40 .....
STOCK NO. 8333* — 850 Series; 0-60 db, pointer normally at 60
*For zero adjuster, add 35c to price and Z to stock number.

FIELD STRENGTH METER — When this meter — a variatio D.C. Milliammeter — is built into an elementary circuit (supplie quest), antenna systems may be easily checked, tuned, pha matched to transmission lines.
STOCK NO. 8903Z — 850 Series case; top scale marked .1, .5, 1, 5, 7, 10; bottom scale marked 2, 4, 6, 8, 10; zero adjuster i meter only .....

3-HOLE MOUNTING ADAPTER

MODEL 5-A — 2¾" black flange attaches from front, converts M (round) meter to 3-hole flange type .....

MOUNTING DIMENSIONS



IMPORTANT — HOW TO ORDER

Give (1) Model Number, (2) Range, (3) Stock Number.
ZERO ADJUSTER (Z) 35c extra; see footnotes as to availability.
PANEL CALIBRATION (S) Normally for non-magnetic panels. panel mounting, give thickness and size; add S to stock numb
SEE YOUR DISTRIBUTOR Authorized Shurite distributors can models and can obtain your other needs promptly.

Prices Effective Nov. 1, 1969; F.O.B. Factory; Individually Boxed; (Subject to Change.)

 © United Technical Publ

DC MICROAMMETERS

E	RESIST. Approx. Ohms	Model 550* Stock No.	Model 950* Stock No.	Model 950* Net Each	Model 850* Stock No.	Model 850* Net Each
**	1000	5902	9902	$4.40	8902	$4.50

zero adjuster, add 35c to price and Z to stock number.
sitive type, note internal resistance. DC bridge-type construction.

DC MILLIAMMETERS

E	RESIST. Approx. Ohms	Model 550* Stock No.	Model 950* Stock No.	Model 950* Net Each	Model 850* Stock No.	Model 850* Net Each
	1000	5336	9336	$4.25	8336	$4.35
	500	—	—	—	8335	4.35
	4460	5301	9301	3.55	8301	3.65
	3740	5302	9302	3.25	8302	3.35
	1380	5303	9303	3.10	8303	3.20
	600	5304	9304	2.90	8304	3.00
	230	5305	9305	2.90	8305	3.00
	58	5306	9306	2.90	8306	3.00
	14.7	5307	9307	2.90	8307	3.00
	7.0	5308	9308	2.90	8308	3.00
	4.7	5309	9309	2.90	8309	3.00
	1.7	5310	9310	2.90	8310	3.00
	.84	5311	9311	2.90	8311	3.00
	.7	5312	9312	2.90	8312	3.00

zero adjuster add 35c to price and Z to stock number.
e-type construction; internal magnet design minimizes effects of nal magnetic forces. Price does not include zero adjuster.

AC MILLIAMMETERS

E	RESIST. Approx. Ohms	Model 550 Stock No.	Model 950 Stock No.	Model 950 Net Each	Model 850* Stock No.	Model 850* Net Each
	4800	5607	9607	$4.30	8607	$4.40
	750	5601	9601	4.20	8601	4.30
	150	5602	9602	4.20	8602	4.30
	37	5603	9603	4.20	8603	4.30
	5.4	5604	9604	4.20	8604	4.30
	1.34	5605	9605	4.20	8605	4.30

ERO ADJUSTER ON AC METERS, EXCEPT ON MODEL 850.
zero adjuster add 35c to price and Z to stock number.

DC AMMETERS

E / s	RESIST. Approx. Ohms	Model 550* Stock No.	Model 950* Stock No.	Model 950* Net Each	Model 850* Stock No.	Model 850* Net Each
	.105	5201	9201	$2.90	8201	$3.00
	.02 Max.	5202	9202	2.90	8202	3.00
	.02 Max.	5203	9203	2.90	8203	3.00
	.02 Max.	5204	9204	2.90	8204	3.00
	.02 Max.	5205	9205	2.90	8205	3.00
	.02 Max.	5206	9206	2.90	8206	3.00
	.02 Max.	5207	9207	3.25	8207	3.35
	.02 Max.	5208	9208	3.25	8208	3.35
	.02 Max.	5210	9210	3.00	—	—
	.022	5211	9211	3.00	—	—
	.02 Max.	5212	9212	3.00	—	—
10	.02 Max.	5213	9213	3.25	8213	3.35
20	.02 Max.	5214	9214	3.25	8214	3.35
30	.02 Max.	5215	9215	3.25	8215	3.35
50	.02 Max.	5216	9216	3.45	8216	3.55

zero adjuster add 35c to price and Z to stock number.

AC AMMETERS

E / s	RESIST. Approx. Ohms	Model 550 Stock No.	Model 950 Stock No.	Model 950 Net Each	Model 850* Stock No.	Model 850* Net Each
	.42 Max.	5501	9501	$4.10	8501	$4.20
	.072 Max.	5502	9502	4.10	8502	4.20
	.041 Max.	5503	9503	4.10	8503	4.20
	.02 Max.	5504	9504	4.10	8504	4.20
	.02 Max.	5508	9508	4.10	8508	4.20
	.02 Max.	5505	9505	4.40	8505	4.50
	.02 Max.	5506	9506	4.75	8506	4.85
	.02 Max.	—	—	—	8507	5.00

ERO ADJUSTER ON AC METERS, EXCEPT ON MODEL 850.
zero adjuster, add 35c to price and Z to stock number.

RESISTANCE METERS

GE / s	Volts	Model 550* Stock No.	Model 950* Stock No.	Model 950* Net Each	Model 850* Stock No.	Model 850* Net Each
0	4.5**	5701	9701	$3.25	8701	$3.35

zero adjuster, add 35c to price and Z to stock number.
uires 3 flashlight cells for resistance readings but does not re- e resistor for voltage readings.

SHURITE METERS

DC VOLTMETERS

RANGE Volts	RESIST. Approx. Ohms	Model 550* Stock No.	Model 950* Stock No.	Model 950* Net Each	Model 850* Stock No.	Model 850* Net Each
0-1	10	5101	9101	$2.90	—	—
0-3	93	5102	9102	2.90	8102	$3.00
3-0-3	250	5103	9103	2.90	—	—
0-5	300	5104	9104	2.90	8104	3.00
0-6	390	5105	9105	2.90	—	—
0-8	600	5106	9106	2.90	8106	3.00
0-10	880	5107	9107	2.90	8107	3.00
0-15	2370	5108	9108	2.90	8108	3.00
0-20	3500	5121	9121	2.90	8121	3.00
0-25	1420	5109	9109	3.10	8109	3.20
0-25H**	5000	5110	9110	3.55	8110	3.65
0-50	2920	5122	9122	3.00	8122	3.10
0-50H**	10000	5111	9111	3.80	8111	3.90
0-75	4280	5112	9112	3.10	—	—
0-100	5740	5113	9113	3.10	—	—
0-100H**	20000	5114	9114	3.70	—	—
0-150	8500	5115	9115	3.25	8115	3.35
0-150H**	30000	5116	9116	3.75	8116	3.85
0-300H**†	60000	5117	9117	3.90	8117	4.00
0-500H**†	100000	5118	9118	4.15	8118	4.25

*For zero adjuster add 35c to price and Z to stock number.
**H denotes high resistance.
†Supplied with external resistors.

AC VOLTMETERS

RANGE Volts	RESIST. Approx. Ohms/ Volt	Model 550 Stock No.	Model 950 Stock No.	Model 950 Net Each	Model 850* Stock No.	Model 850* Net Each
0-4	11	5401	9401	$4.20	—	—
0-6	15.8	5402	9402	4.20	—	—
0-10	27	5403	9403	4.20	8403	4.30
0-15	35	5404	9404	4.20	8404	4.30
0-20	44	5413	9413	4.20	8413	4.30
0-25	53	5412	9412	4.20	8412	4.30
0-50	96	5405	9405	4.40	8405	4.50
0-150	100	5406	9406	4.55	8406	4.65
0-300**	100	5407	9407	4.95	8407	5.05
0-500**	100	5414	9414	5.55	8414	5.65

NO ZERO ADJUSTER ON AC METERS; EXCEPT ON MODEL 850.
*For zero adjuster add 35c to price and Z to stock number.
**Supplied with external resistors.

EDGEWISE METERS — MODEL 350 SERIES

High-temperature crystal polystyrene front adds beauty to panel designs and 1.2" scale length offers easy reading. Uses less than half the panel space of other Shurite meters. Horizontal mounting; weight under 2 ozs.; accuracy well within ±5%; black escutcheon plate supplied. Case back normally black; available in light-transmitting frosted polystyrene on special order.

RANGE	Approx. Typical RESIST. (ohms)	Stock No.	Net Each
DC MILLIAMMETERS			
0-1*	500	3300	$3.95
0-5*	100	3302	3.60
0-10*	50	3303	3.60
0-25*	20	3305	3.60
0-50*	10	3306	3.60
0-100*	5	3307	3.60
0-200*	2.5	3309	3.60
0-300*	1.7	3310	3.60
0-500*	1	3312	3.60
DC AMMETERS			
0-3*	.02 Max.	3202	3.60
0-10*	.02 Max.	3205	3.60
0-15*	.02 Max.	3206	3.60
10-0-10*	.02 Max.	3213	3.70
DC VOLTMETERS			
0-5*	1000	3104	3.70
0-10*	2000	3107	3.70
0-15*	3000	3108	3.70
AC VOLTMETERS			
0-15*	1200	3404	4.40
0-150*	48000	3406	4.60
VU Meter —20 +3 VU*	1400	3801	5.25
S Meter 0-40 db*	1000	3333	3.90

*Bridge-type construction; internal magnet design minimizes effects of external magnetic forces.

POCKET TYPE METERS

Please ask for General Catalog 49 which describes 13 types of battery testers (pocket meters). Their stock numbers begin with the digit 4. Typical is **Stock No. 4151**, 0-7 DC volts, approx. res. 670 ohms **$3.25**

Prices Effective Nov. 1, 1969; F.O.B. Factory; Individually Boxed; (Subject to Change.)

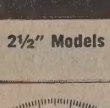
Simpson WIDE-VUE PANEL INSTRUMENTS

CALIBRATION — All DC Wide-Vue meters listed below have the Simpson self-shielded m (calibration not affected by stray magnetic fields or magnetic mounting). All AC Wide-Vue mete the Simpson Iron-vane type movement. AC Milliammeters and Ammeters are calibrated for use through 800 Hz. All AC Voltmeters are calibrated for use on 25 through 125 Hz. Calibration at fre up to 800 Hz can be made. Contact your local Distributor for prices.

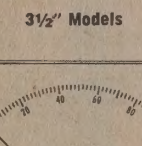
SPECIFICATIONS

Size	Type and Model Number: DC	AC: Rectifier	AC: Iron Vane	RF	Watt	Accuracy	Scale Length	Pe
1½"	1212, 1212T	1214	—	—	—	DC; RF; AC Iron Vane; Wattmeters* ±2%	1.50" (38.1 mm)	Lanc
2½"	1227, 1227T	1247	1257	—	—		2.30" (58.4 mm)	
3½"	1327, 1327T	1347	1357	1337	—		3.14" (79.7 mm)	Sp B
4½"	1329, 1329T	1349	1359	1339	1379	AC Rectifier Meters ±3%	3.93" (100.0 mm)	
8"	728T	—	—	—	—		6.9" (174.2 mm)	

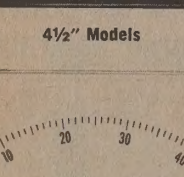
*Compensated Wattmeters ±3%.



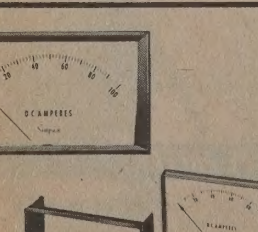
1½" Models



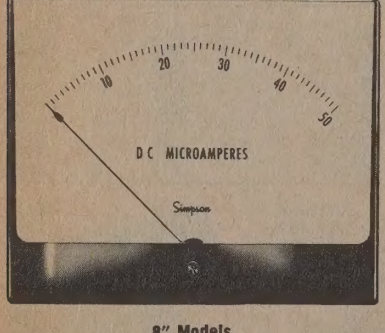
2½" Models



3½" Models



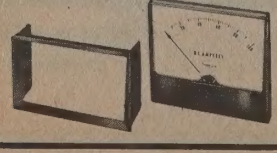
4½" Models



8" Models

Range	Approx. Resistance (ohms)	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Styl Cat. No.	4½" Case Styl P
DC VOLTMETERS Self-Shielding Meter Movement									
Range	Approx. Ω	Model 1212		Model 1227		Model 1327		Model 13	
0-5	1000 ohms per volt	9540	$18.75	9550	$20.10	9720	$20.85	9870*	
0-8		—	—	—	—	9730	20.85	9880	
0-10		9541	18.75	9560	20.10	9740	20.85	9890	
0-15		9542	18.75	9570	20.10	9750	20.85	9900	
0-25		9543	18.75	9580	20.10	9760	20.85	9910	
0-30		9544	18.75	9590	20.10	9770	20.85	9920	
0-50		9545	18.75	9600	20.10	9780	20.85	9930	
0-100		9546	18.75	9610	20.10	9790	20.85	9940	
0-150		9547	18.75	9620	20.10	9800	20.85	9950	
0-200		—	—	9622	20.10	9810	20.85	9960	
0 250		—	—	9623	20.10	9820	20.85	9970	
0-300		—	—	9630	20.10	9830	20.85	9980	
0-300	2000 ohms per volt	9548	18.75	—	—	—	—	—	
0-500		9549*	23.40	9640	20.85	9840	21.75	9990	
0-750		—	—	9650*	25.35	9850	21.75	10000	
0-1000		—	—	9660*	26.10	9860*	27.00	10010*	
DC AMMETERS Self-Shielding Meter Movement									
Range	Approx. Ω	Model 1212		Model 1227		Model 1327		Model 13	
0.1	.050	2431	$18.75	2122	$19.20	2640	$20.10	2820	
0-1.5	.033	—	—	2450	19.20	2650	20.10	2830	
0-2	.025	2432	18.75	2460	19.20	2660	20.10	2840	
0-3	.0166	2433	18.75	2470	19.20	2670	20.10	2850	
0-5	.010	2434	18.75	2480	19.20	2680	20.10	2860	
0-10	.005	2435	18.75	2490	19.20	2690	20.10	2870	
0-15	.0033	2436†	18.75	2500	19.20	2700	20.10	2880	
0-25	.0020	2437†	18.75	2510	19.20	2710	20.10	2890	
0-30	.0017	—	—	2520	19.20	2720	20.10	2900	
0-50	.001	2438†	18.75	2530†	19.20	2730	20.10	2910	
0-100	10.0	—	—	2540†	19.20	2740†	20.10	2920†	
0-150	10.0	—	—	2550†	19.20	2750†	20.10	2930†	
0-200	10.0	—	—	2552†	19.20	2760†	20.10	2940†	
0-300	10.0	—	—	2554†	19.20	2770†	20.10	2950†	
0-500	10.0	—	—	—	—	2780†	20.10	2960†	
15-0-15	.0033	—	—	—	—	2790	21.15	—	
30-0-30	.0017	—	—	—	—	2800	21.15	—	
50-0-50	.001	—	—	—	—	2810	21.15	—	

*External Multipliers, Model 183, are furnished on 1½" DC meters 500 volts or higher; on 2½" DC meters or higher; and on 3½" and 4½" DC meters 1000 volts or higher. All others are self-contained.
†1½" DC Ammeters are self-contained through 10 amps. 15 amps and higher are supplied as 50 MV meters used with external shunts. 2½", 3½" and 4½" DC ammeters are self-contained through 50 amps. Higher ammeters are 50 MV meters to be used with external shunts. Shunt listings are on page 19.



NEW WIDE-VUE MOUNTING BEZEL AND ILLUMINATION KITS

For that modern, streamlined appearance — Mounting Bezels, made for wide-vue panel meters a changeable with flush and recess type meters of many popular styles. Designed for behind panel on material thickness of ⅛" to 3/16". Groove and flange style construction. Each bezel of die cast metal has an attractive black enamel satin finish and is supplied with mounting hardware and template.

Bezel Mount Kit consists of bezel brackets and screws and installation instructions.

WIDE VUE BEZEL KITS

Meter Size	For Models	Part No.
3½"	1327, 1337, 1347, 1357	1253
4½"	1329, 1339, 1349 1359, 1379	1123
	Illumination Kit	1165

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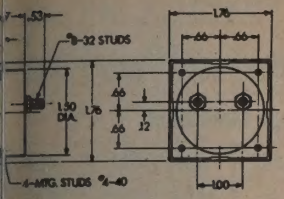
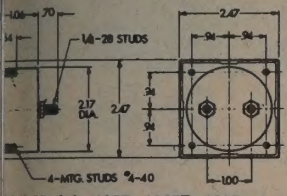
Simpson

WIDE-VUE PANEL INSTRUMENTS

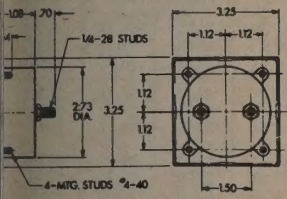
1½", 2½", 3½", 4½", 8" WIDE-VUE PANEL INSTRUMENTS



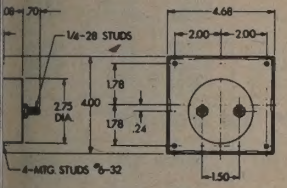
1½" Models 1212, 1212T, 1214



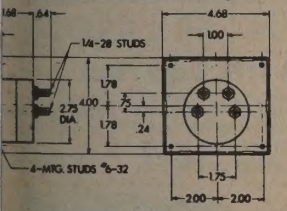
1½" Models 1227, 1227T, 1237, 1247, 1257
*1257 Barrel Dimension 1.15



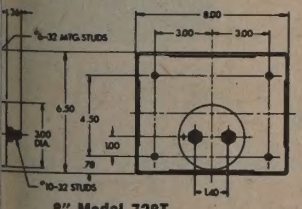
2½" Models 1327, 1327T, 1337, 1347, 1357



3½" Models 1329, 1329T, 1339, 1349, 1359
*1359 Barrel Dimension 1.20



4½" Model 1379



8" Model 728T

DC MILLIAMMETERS Self-Shielding Meter Movement

Range	Approx. Resistance (ohms)	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
0-1	43	6163	$18.00	6175	$18.90	6310	$19.50	6470	$20.85
0-3	2.0	—	—	6180	18.90	6320	19.50	6480	20.85
0-5	2.0 (20†)	6164	18.00	6190	18.90	6330	19.50	6490	20.85
0-10	10.0 (2.2†)	6165	18.00	6200	18.90	6340	19.50	6495	20.85
0-15	6.6 (2.2†)	6166	18.00	6210	18.90	6350	19.50	6502	20.85
0-20	5.0	—	—	6215	18.90	6360	19.50	6524	20.85
0-25	4.0 (6.0†)	6167	18.75	6220	19.20	6370	20.10	6530	21.75
0-50	2.0 (3.0†)	6168	18.75	6230	19.20	6380	20.10	6540	21.75
0-100	1.0 (1.5†)	6169	18.75	6240	19.20	6390	20.10	6550	21.75
0-150	.66 (1.0†)	6170	18.75	6250	19.20	6400	20.10	6560	21.75
0-200	.50 (.75†)	6171	18.75	6260	19.20	6410	20.10	6570	21.75
0-250	.40 (.60†)	6172	18.75	6270	19.20	6420	20.10	6580	21.75
0-300	.33 (.50†)	6173	18.75	6280	19.20	6430	20.10	6590	21.75
0-500	.20 (.30†)	6174	18.75	6290	19.20	6440	20.10	6600	21.75
0-750	.13	—	—	—	—	6450	20.10	6610	21.75
0-1000	.05	—	—	6292	19.20	6460	20.10	6620	21.75

Range	Approx. Ω	Model 1212		Model 1227		Model 1327		Model 1329	
0-50‡‡	1800	4294	$25.35	4310	$24.30	4380	$24.75	4480	$26.85
0-100	1800	4295	21.00	4320	21.75	4390	22.80	4490	25.35
0-200	1100	4296	19.05	4330	19.80	4400	20.85	4500	22.80
0-500§	90	4297	18.75	4340	19.50	4410	20.55	4510	22.20
25-0-25‡‡	1800	4298	23.70	—	—	4420	25.05	4520	27.00
50-0-50	1800	4302	21.15	4350	22.20	4430	22.80	4530	25.50
100-0-100	1100	4300	19.20	4351	20.10	4440	21.00	4540	23.10
500-0-500	43	4301	18.15	4352	19.05	4450	19.80	4550	21.00

DC MILLIVOLTMETERS Self-Shielding Meter Movement

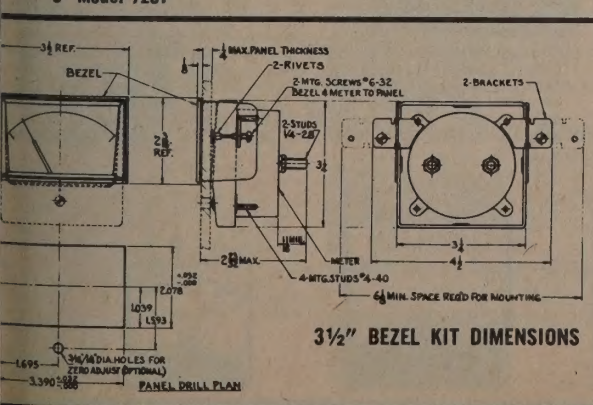
Range	Approx. Ω	Model 1212		Model 1227		Model 1327		Model 1329	
0-50	10	7005	$18.75	7010	$19.20	7020	$20.10	7030	$21.75
50-0-50	20	—	—	—	—	7021	20.10	7031	21.75

†Resistances of Model 1212 shown in ( ).
‡‡Resistance of 0-50, 25-0-25 Mic Meters in Model 1212 is 5500 ohms.
§Resistance of 0-500 Mic Meter in Model 1212 is 190 ohms.

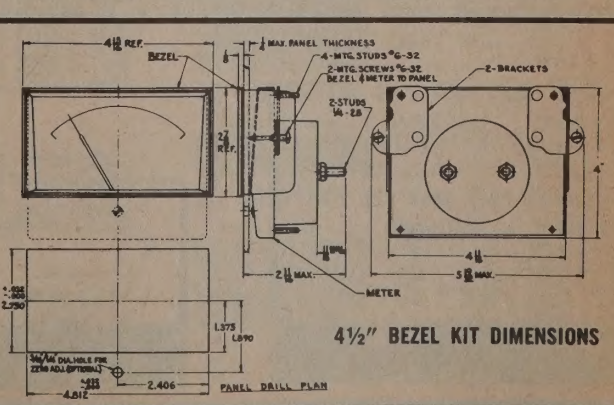
TAUT BAND DC MICROAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price	8" Case Style Cat. No.	8" Case Style Price
0-5	5750	—	—	—	—	4358††	$46.20	4458††	$49.05	—	—
0-10	4900	—	—	4303	$39.00	4350	40.65	4459	43.95	—	—
0-15	1960	4601**	$35.40	4304	35.40	4361	36.30	4461	39.60	—	—
0-25	1960	4602	33.00	4306	33.60	4371	35.25	4471	38.25	11200	$44.10§
0-50	960	4603	25.80	4311	26.40	4381	27.00	4481	28.95	11201	38.85§§
0-100	500	4604	23.10	4321	24.00	4391	24.75	4491	27.30	11203	37.50
0-200	234	4605	21.30	4331	22.50	4401	23.40	4501	25.80	—	—
DC MILLIAMMETER 0-1 mA:										11210	35.40

††High flux annular taut band meter movement.
**5000 ohms
§5780 ohms
§§1600 ohms



3½" BEZEL KIT DIMENSIONS



4½" BEZEL KIT DIMENSIONS

Simpson WIDE-VUE PANEL INSTRUMENTS

1½", 2½", 3½", 4½" WIDE-VUE PANEL INSTRUMENTS

RF AMMETERS Self-Shielding Meter Movement

Range	Approx. Resistance (ohms)	1½" Case Styles Cat. No.	1½" Case Styles Price	2½" Case Styles Cat. No.	2½" Case Styles Price	3½" Case Styles Cat. No.	3½" Case Styles Price	4½" Case Styles Cat. No.	4½" Case Styles Price
						Model 1337		Model 1339	
0-1	.343	—	—	—	—	2970	$23.10	3050	$26.40
0-1.5	.200	—	—	—	—	2980	23.10	3060	26.40
0-2	.120	—	—	—	—	2990	23.10	3070	26.40
0-2.5	.10	—	—	—	—	3000	23.10	3080	26.40
0-3	.08	—	—	—	—	3010	23.10	3090	26.40
0-5	.045	—	—	—	—	3020	23.10	3100	26.40
0-8	.031	—	—	—	—	3030	23.10	3110	26.40
0-10	.023	—	—	—	—	3040	23.10	3120	26.40

RF MILLIAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω					Model 1337		Model 1339	
0-500	.63	—	—	—	—	5362	$27.25	5364	$30.75

AC VOLTMETERS RECTIFIER TYPE Self-Shielding Meter Movement

Range	Approx. Ω	Model 1214		Model 1247		Model 1347		Model 1349	
0-5	2000 ohms per volt	10011	$25.80	10015	$24.00	10020	$27.30	10090	$30.30
0-10		10012	25.80	10016	24.00	10030	27.30	10100	30.30
0-15		—	—	—	—	10040	27.30	10110	30.30
0-50		—	—	—	—	10050	27.30	10120	30.30
0-150		10013	25.80	10017	24.00	10060	27.30	10130	30.30
0-300		10014	25.80	10018	24.00	10070	27.30	10140	30.30

DECIBEL METERS
Zero Power Level: 6 mW into 500 Ω line
Self-Shielding Meter Movement

Range	Approx. Ω			Model 1247		Model 1347		Model 1349	
−10 to +6 dB	5000	—	—	3483	$26.85	3485	$28.50	3487	$29.40

VU (Volume Level) METERS†
Reference Level: 1 mW into 600 Ω line
Self-Shielding Meter Movement

Scale	Model 1214		Model 1247		Model 1347		Model 1349	
A—Scale	10472	$28.80	10474	$31.80	10480	$32.55	10490	$35.40
B—Scale	—	—	—	—	10550	32.55	10560	35.40

DC GALVANOMETERS Self-Shielding Meter Movement

Range	Sensitivity Micro Amperes	Resistance (ohms)	Model 1212		Model 1227		Model 1327		Model 1329	
50-0-50	500-0-500	43	3692	$18.15	3700	$18.90	3730	$19.80	3732	$21.00
50-0-50	75-0-75	1800	3694	19.20	3710	20.55	3720	22.20	3734	24.30

†Simpson VU meters meet all the Electrical and Ballistic specifications established by Bell Laboratories and American Standards Association as required by broadcasting, communication and sound engineers. They are available with either type A or B scales. Type A scale stresses the level in VU for monitoring wire lines. Type B scale stresses percent use of transmitter output and is the standard for broadcast service. Impedance is 3900 Ω @ "0" VU deflection.

Range	Approx. Impedance (ohms) @ 60 Hz.	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½ Case S Cat. No.

AC VOLTMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 1257		Model 1357		Model
0-5	33	—	—	10160	$19.05	10260
0-10	133	9670	$18.15	10170	19.05	10270
0-15	300	9675	18.15	10180	19.05	10280
0-25	833	9680	18.15	10190	19.05	10290
0-50	3,333	9690	18.15	10200	19.05	10300
0-100	16,666	9695	18.75	10210	19.80	10310
0-150	25,000	9700	19.05	10220	20.55	10320
0-250	41,166	9705	19.05	10230	20.55	10330
0-300	50,000	9710	19.05	10240	20.55	10340
0-500††	83,333	9715	24.30	10250	25.95	10350

AC AMMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 1257		Model 1357		Model
0-1	.213	2560	$17.25	3130	$18.15	3260
0-1.5	.105	2570	17.25	3140	18.15	3270
0-2	.065	—	—	3150	18.15	3280
0-3	.028	2575	17.25	3160	18.15	3290
0-5	.008	2580	17.25	3170	18.15	3300
0-10	.004	2590	17.25	3180	18.15	3310
0-15	.0025	2599	17.25	3190	18.15	3320
0-25	.002	2609	18.00	3200	18.90	3330
0-30	.0015	2615	18.00	3205	18.90	3335
0-50	.001	2619	18.00	32.10	18.90	3340
0-75	.008	—	—	3215	20.55	3345
0-100	.008	2622‡	17.25	3220‡	18.15	3350‡
0-150	.008	2624‡	17.25	3230‡	18.15	3360‡
0-200	.008	2626‡	17.25	3240‡	18.15	3370‡
0-300	.008	2627‡	17.25	3250‡	18.15	3380‡

AC MILLIAMMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 1257		Model 1357		Model
0-10	1,650	6294	$17.25	6625	$18.15	6665
0-50	80	6295	17.25	6630	18.15	6670
0-100	17.2	6296	17.25	6640	18.15	6680
0-250	3.15	6297	17.25	6650	18.15	6690
0-500	.9	6300	17.25	6660	18.15	6699

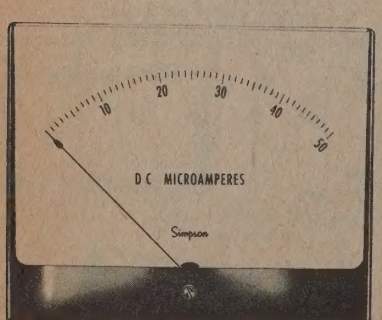
WATTMETERS DYNAMOMETER TYPE Single Phase

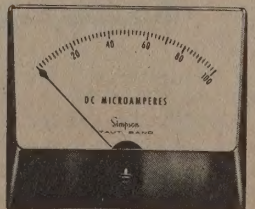
Range Watts	Range Volts	Max. Amps	Wattmeters calibrated for either magneti non-magnetic panels and for a frequency of 25-125 Hz. Accuracy ±2% F.S.				Model
0-75	150	1.0	—	—	—	—	10960
0-150	150	2.0	—	—	—	—	10970
0-300	150	4.0	—	—	—	—	10975
0-750	150	10.0	—	—	—	—	10990
0-600	300	4.0	—	—	—	—	10980
0-1500	300	10.0	—	—	—	—	11000
0-3000	300	20.0	—	—	—	—	11010

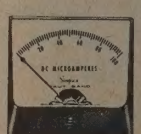
COMPENSATED WATTMETERS

Range Watts	Range Volts	Max. Amps	Accuracy ±3% F.S.				Model
0-10	300	.175	—	—	—	—	10930
0-20	300	.400	—	—	—	—	10940
0-30	300	.650	—	—	—	—	10950

††External Multipliers, Model 183, (Featured on page 19) are furnished meters having a range of 500 volts or higher. All others are self-co
‡2½" AC ammeters are self-contained through 50 amps. 3½" and 4 ammeters self-contained through 75 amps and have an impedance of a mately .0005Ω. Higher range AC ammeters are 5 amp meters to be us external current transformer. See page 18 for current transformer







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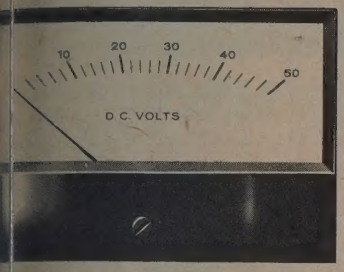
Simpson DESIGNER and BOLD-VUE INSTRUMENTS

SIGNER SERIES

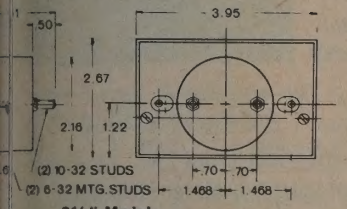


Made for today's compact equipment designs—without sacrificing readability. The 4½" 524 models take up less than 3" of panel height, yet the scale is over 3½" long. Clean and crisp look, too. Excellent reliability, they feature self-shielding spring-backed jewel movements and ±2% accuracy. Attractive case is molded black phenolic, with glass window.

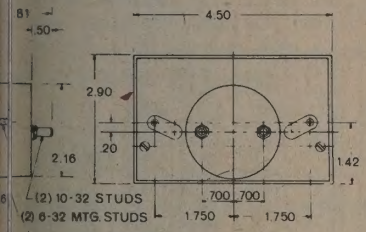
SPECIFICATIONS

Size	Type and Model No. DC	AC Rectifier	AC Iron Vane	Accuracy (% of full scale)	Scale Length	Pointer
3½"	523	543	—	±2%	3.12" (79.4 mm)	Knife-edge, Red
	—	—	553		2.82" (71.6 mm)	
4½"	524	544	—		3.51" (89.1 mm)	
	—	—	554		3.16" (80.2 mm)	

LN, UNCLUTTERED LOOK
IMUM READABILITY IN
MUM HEIGHT



3½" Models



4½" Models

DC VOLTMETERS Self-Shielding

Range	Approx. Ω	3½" Case Style Model 523 Cat. No.	3½" Case Style Model 523 Price	4½" Case Style Model 524 Cat. No.	4½" Case Style Model 524 Price
0-5	1000 ohms per volt	15038	$20.85	15108	$22.80
0-10		15039	20.85	15109	22.80
0-15		15040	20.85	15110	22.80
0-30		15042	20.85	15112	22.80
0-50		15044	20.85	15114	22.80
0-100		15045	20.85	15111	22.80
0-150		15046	20.85	15116	22.80

DC AMMETERS Self-Shielding

Range	Approx. Ω	Model 523		Model 524	
0-1	.050	15031	$21.10	15101	$21.75
0-3	.0166	15032	21.10	15102	21.75
0-5	.010	15033	21.10	15103	21.75
0-10	.005	15030	21.10	15100	21.75
0-15	.0033	15034	21.10	15104	21.75
0-25	.0020	15035	21.10	15105	21.75
0-50	.001	15036	21.10	15106	21.75

DC MILLIAMMETERS Self-Shielding

Range	Approx. Ω	Model 523		Model 524	
0-1	43.0	15000	$19.50	15070	$20.85
0-5	2.0	15001	19.50	15076	20.85
0-10	10.0	15002	19.50	15077	20.85
0-50	2.0	15003	18.10	15078	21.75
0-100	1.0	15010	18.10	15080	21.75
0-200	0.5	15004	18.10	15079	21.75
0-300	0.33	15012	18.10	15081	21.75
0-500	0.2	15013	18.10	15082	21.75

VU METERS Self-Shielding

Scale	Model 543		Model 544	
"A" Scale	15064	$32.55	15134	$35.40

*Taut Band

DC MICROAMMETERS Self-Shielding

Range	Approx. Ω	Model 523		Model 524	
*0-15	1960	15014	$36.30	15092	$39.60
0-25	2100	15015	30.75	15085	33.90
0-50	1800	15017	24.75	15087	26.85
0-100	1800	15019	22.80	15089	25.35
0-200	1100	15021	20.85	15091	22.80
0-500	90	15022	20.55	15093	22.20
25-0-25	1800	15023	25.05	15094	27.00
50-0-50	1800	15025	22.80	15095	25.50
100-0-100	1100	15027	21.00	15097	23.10
500-0-500	43	15024	19.80	15096	21.00

DC MILLIVOLTMETERS Self-Shielding

Range	Approx. Ω	Model 523		Model 524	
0-50	10	15048	$19.80	15118	$21.75

AC VOLTMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 553		Model 554	
0-150	25,000	15060	$20.55	15130	$21.75
0-250	41,166	15061	20.55	15131	21.75
0-300	50,000	15062	20.55	15132	21.75

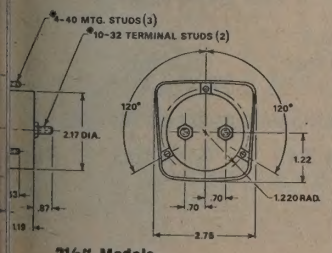
AC AMMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 553		Model 554	
0-1	.213	15049	$18.15	15121	$21.15
0-5	.008	15050	18.15	15120	21.15
010	.004	15052	18.15	15122	21.15
0-15	.0025	15051	18.15	15123	21.15
0-25	.002	15053	18.15	15125	21.75
0-50	.001	15054	18.15	15124	21.75
0-100	.008	15056†	18.15	15127†	21.15
0-150	.008	15057†	18.15	15128†	21.15

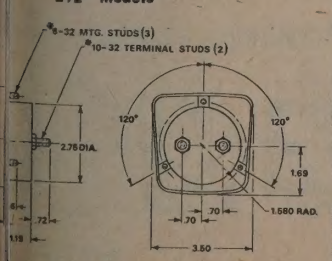
D-VUE

Now you can have a bold looking 3-hole-mount meter built with Simpson quality. DC meters have self-shielding annular movements. AC meters have magnetically damped iron vane movements. Bold numbers and wide tapered lance pointer make reading easy. Phenolic base with clear acrylic cover.

Size	Type and Model No. DC	AC Iron Vane	Accuracy (% of full scale)	Scale Length	Pointer
2½"	1222	1252	±2%	2.207" (56.1 mm)	Wide Tapered Lance, Red
3½"	1223	1253		3.047" (77.4 mm)	



2½" Models



3½" Models

DC VOLTMETERS Self-Shielding Meter Movement

Range	Approx. Ω	2½" Case Style Model 1222 Cat. No.	2½" Case Style Model 1222 Price	3½" Case Style Model 1223 Cat. No.	3½" Case Style Model 1223 Price
0-5	1000 ohms per volt	—	—	15575	$20.85
0-10		15466	$20.10	15577	20.85
0-15		15467	20.10	15578	20.85
0-25		15470	20.10	—	—
0-30		15475	20.10	15581	20.85
0-50		15480	20.10	15583	20.85
0-100		—	—	15565	20.85
0-150		—	—	15587	20.85

DC AMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1222		Model 1223	
0-1	0-050	—	—	15510	$20.10
0-5	0.010	15405	$19.20	15520	20.10
0-10	0.005	15410	19.20	15522	20.10

DC MILLIAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1222		Model 1223	
0-1	43.0	15420	$18.90	15540	$19.50
0-50	2.0	—	—	15550	19.50
0-100	1.0	—	—	15552	20.10
0-500	0.2	—	—	15558	20.10

DC MICROAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1222		Model 1223	
0-50	1800	15450	$24.30	15560	$24.75
0-100	1800	15452	21.75	15562	22.80
0-200	1100	—	—	15563	20.85
25-0-25	1800	—	—	15570	25.05
50-0-50	1800	15461	22.20	15571	22.80
100-0-100	1100	—	—	15572	21.00

AC VOLTMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 1252		Model 1253	
0-150	25,000	15620	$19.05	15660	$20.55
0-300	50,000	—	—	15675	20.55

AC AMMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 1252		Model 1253	
0-5	.008	15598	$17.25	15637	$18.15
0-10	.004	15600	17.25	15640	18.15
0-15	.0025	15605	17.25	15642	18.15
0-25	.002	15610	18.00	15645	18.90
0-50	.001	—	—	15648	18.90

†These meters are 5 amp meters with scales as indicated and require external current transformers. See listings on accessory page.

Simpson CENTURY PANEL INSTRUMENTS

Introducing Simpson's new panel instrument design concept. Now you can have a modern design with rugged phenolic and glass construction.

CALIBRATIONS

All DC meters listed below have the Simpson self-shielded movement (calibration not affected by stray magnetic fields or magnetic mounting). All AC meters have the Simpson Iron-vane type movement. AC Milliammeters and Ammeters are calibrated for use on 25 through 800 Hz. All AC Voltmeters are calibrated for use on 25 through 125 Hz. Calibration at frequencies up to 800 Hz can be made. Contact your local Distributor for prices.

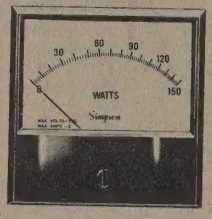
SPECIFICATIONS

Size	Type and Model Number DC	AC Rectifier	AC Iron Vane	RF	Watt	Accuracy (% of full scale) DC; RF; AC Iron Vane; Wattmeters*	Scale Length
1½"	2121	2141	—	—	—	±2% AC Rectifier Meters ±3%	1.50" (38.1 mm)
2½"	2122	2142	2152	—	—		2.30" (58.4 mm)
3½"	2123	2143	2153	2133	2173		3.14" (79.7 mm)
4½"	2124	2144	2154	2134	2174		3.93" (100.0 mm)

*Compensated Wattmeters ±3%.

1½" Models

2½" Models



3½" Models

4½" Models

DC VOLTMETERS Self-Shielding Meter Movement

Range	Approx. Resist. (ohms)	1½" Case Style Cat. No.	Price	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price
		Model 2121		Model 2122		Model 2123		Model 2124	
0-5		17840	$18.75	17445	$20.10	17525	$20.85	17618	$22.80
0-8		—	—	—	—	—	—	17619	22.80
0-10		17842	18.75	17446	20.10	17527	20.85	17620	22.80
0-15		17843	18.75	17447	20.10	17528	20.85	17621	22.80
0-25	1000	17844	18.75	17448	20.10	17529	20.85	17622	22.80
0-30	ohms	17845	18.75	17449	20.10	17530	20.85	17623	22.80
0-50	per	17846	18.75	17450	20.10	17531	20.85	17624	22.80
0-100	volt	17848	18.75	17451	20.10	17532	20.85	17625	22.80
0-150		17849	18.75	17452	20.10	17533	20.85	17626	22.80
0-200		—	—	—	—	17534	20.85	17627	22.80
0-250		—	—	—	—	17535	20.85	—	—
0-300		—	—	17455	20.10	17536	20.85	17629	22.80
0-300	2000	17850	18.75	—	—	—	—	—	—
0-500	ohms	17851	23.40	17456	20.85	17537	21.75	17630	23.55
0-750	per	—	—	17457	25.35	17538	21.75	17631	23.55
0-1000	volt	—	—	17458	26.10	17539*	27.00	17632*	28.80

DC AMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 2121		Model 2122		Model 2123		Model 2124	
0-1	.050	17800	$18.75	17400	$19.20	17475	$20.10	17565	$21.75
0-1.5	.033	—	—	17401	19.20	17476	20.10	—	—
0-2	.025	17801	18.75	17402	19.20	17477	20.10	17567	21.75
0-3	.0166	17802	18.75	17403	19.20	17478	20.10	17568	21.75
0-5	.010	17803	18.75	17404	19.20	17479	20.10	17569	21.75
0-10	.005	17805	18.75	17405	19.20	17480	20.10	17570	21.75
0-15	.0033	17806†	18.75	17406	19.20	17481	20.10	17571	21.75
0-25	.0020	17807†	18.75	17407	19.20	17482	20.10	17572	21.75
0-30	.0017	—	—	17408	19.20	17483	20.10	17573	21.75
0-50	.001	17808†	18.75	17409†	19.20	17484	20.10	17574	21.75
0-100	10.0	—	—	17410†	19.20	17485†	20.10	17575†	21.75
0-150	10.0	—	—	—	—	17486†	20.10	17576†	21.75
0-200	10.0	—	—	17412†	19.20	17487†	20.10	17577†	21.75
0-300	10.0	—	—	—	—	17488†	20.10	17578†	21.75
0-500	10.0	—	—	—	—	17489†	20.10	17579†	21.75
15-0-15	.0033	—	—	—	—	17490	21.15	—	—
30-0-30	.0017	—	—	—	—	17491	21.15	—	—

*External Multipliers, Model 183, are furnished on 1½" DC meters 500 volts or higher; on 2½" DC meters 750 volts or higher; and on 3½" and 4½" DC meters 1000 volts or higher. All others are self-contained.
†1½" DC Ammeters are self-contained through 10 amps. 15 amps and higher are supplied as 50 MV meters to be used with external shunts. 2½", 3½" and 4½" DC ammeters are self-contained through 50 amps. Higher range DC ammeters are 50 MV meters to be used with external shunts. Shunt listings are on page 19.

DC MILLIAMMETERS Self-Shielding Meter Movement

Range	Approx. Resist. (ohms)	1½" Case Style Cat. No.	Price	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4 Case Cat. No.
		Model 2121		Model 2122		Model 2123		Mode
0-1	43	17825	$18.00	17430	$18.90	17510	$19.50	17600
0-3	2.0	—	—	17431	18.90	17511	19.50	17601
0-5	2.0 (20‡)	17826	18.00	17432	18.90	17512	19.50	17602
0-10	10.0 (2.2‡)	17827	18.00	17433	18.90	17513	19.50	17603
0-15	6.6 (2.2‡)	17828	18.00	17434	18.90	—	—	17604
0-20	5.0	—	—	—	—	17515	19.50	—
0-25	4.0 (6.0‡)	17829	18.75	17436	19.20	17516	20.10	17606
0-50	2.0 (3.0‡)	17830	18.75	17437	19.20	17517	20.10	17607
0-100	1.0 (1.5‡)	17832	18.75	17438	19.20	17518	20.10	17608
0-150	.66 (1.0‡)	17833	18.75	17439	19.20	17519	20.10	17609
0-200	.50 (.75‡)	17834	18.75	17440	19.20	17520	20.10	17610
0-250	.40 (.60‡)	17835	18.75	17441	19.20	17521	20.10	17611
0-300	.33 (.50‡)	17836	18.75	17442	19.20	17522	20.10	17612
0-500	.20 (.30‡)	17837	18.75	17443	19.20	17523	20.10	17613
0-750	.13	—	—	—	—	17524	20.10	17614
0-1000	.05	—	—	17444	19.20	—	—	17615

DC MICROAMMETERS Self-Shielding Meter Movement

Range	Ω	Model 2121		Model 2122		Model 2123		Mode
0-50‡‡	1800	17815	$23.55	17418	$24.30	17499	$24.75	17589
0-100	1800	17816	21.00	17420	21.75	17501	22.80	17591
0-200	1100	17818	19.05	17422	19.80	17503	20.85	17593
0-500§	90	17819	18.75	17424	19.50	17505	20.85	17595
25-0-25‡‡	1800	17820	23.70	—	—	17506	25.05	17596
50-0-50	1800	17821	21.15	17425	22.20	17507	22.80	17597
100-0-100	1100	17822	19.20	17426	20.10	17508	21.00	17598
500-0-500	43	17823	18.15	17427	19.05	17509	19.80	17599

‡Resistances of Model 2121 shown in ( ).
‡‡Resistance of 0-50, 25-0-25 Mic Meters in Model 2121 is 5500 ohms.
§Resistance of 0-500 Mic Meter in Model 2121 is 190 ohms.

Range	Approx. Resistance (ohms)	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4½ Case S Cat. No.

DC MILLIVOLTMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 2122		Model 2123		Model 2	
0-50	10	17472	$19.20	17540	$20.10	17636	$
50-0-50	20	—	—	17541	20.10	17635	

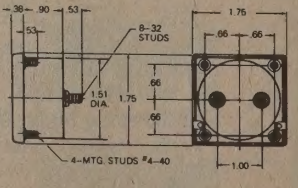
Range	Resist. Approx. (ohms)	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price

TAUT BAND DC MICROAMMETERS Self Shielding

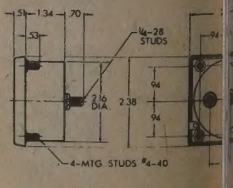
Range	Ω	Model 2122T		Model 2123T		Model 2124T	
0-5	5750	—	—	17495††	$46.20	17585††	$49.05
0-10	4900	17415	$39.00	17496	40.65	17586	43.95
0-15	1960	17416	35.40	17497	36.30	17587	39.60
0-25	1960	17417	33.60	17498	35.35	17588	38.25
0-50	960	17419	26.40	17500	27.00	17590	28.95
0-100	500	17421	24.00	17502	24.75	17592	27.30
0-200	234	17423	22.50	—	—	17594	25.80

†† High flux annular taut band movement.

CENTURY SERIES DIMENSIONS 1½", 2½" Models



Model 2121



Model 2122

Net

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Simpson CENTURY PANEL INSTRUMENTS

	Approx. Resist. (ohms)	1½" Case Style Cat. No.	Price	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price
MMETERS Self-Shielding Meter Movement						Model 2133		Model 2134	
	.343	—	—	—	—	—	—	17650	$26.40
	.120	—	—	—	—	17552	23.10	17652	26.40
	.08	—	—	—	—	17554	23.10	—	—
	.045	—	—	—	—	17555	23.10	—	—
	.023	—	—	—	—	17557	23.10	17657	26.40

	Approx. Ω	Model 2141		Model 2142		Model 2143		Model 2144	
OLTMETERS Rectifier Type Self-Shielding Meter Movement									
		17855	$25.80	17460	$24.00	17542	$27.30	17640	$30.30
	2000	17856	25.80	—	—	17543	27.30	17641	30.30
	ohms	—	—	—	—	17544	27.30	17642	30.30
	per	—	—	—	—	17545	27.30	17643	30.30
	volt	17860	25.80	17462	24.00	17546	27.30	17644	30.30
		17861	25.80	—	—	—	—	17645	30.30

BEL METERS
Power Level: 6 mW into 500 Ω line
Shielding Meter Movement

	Approx. Ω			Model 2142		Model 2143		Model 2144	
dB	5000	—	—	17465	$26.85	17549	$28.50	17648	$29.40

olume Level) METERS†
ence Level: 1 mW into 600 Ω line
hielding Meter Movement

Scale	Model 2141		Model 2142		Model 2143		Model 2144	
-Scale	17865	$28.80	17473	$31.80	17560	$32.55	17646	$35.40
-Scale	—	—	—	—	17561	32.55	17647	35.40

ALVANOMETERS Self-Shielding Meter Movement

Sensitivity Micro-Amperes	Resistance (ohms)	Model 2122		Model 2123	
500-0-500	43	17470	$18.90	17558	$19.80
75-0-75	1800	—	—	17559	22.20

	Approx. Impedance (ohms) @ 60 Hz.	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price
OLTMETERS Iron Vane Type Movement							
	33	—	—	17725	$19.05	—	—
	133	17685	$18.15	17726	19.05	17771	$21.30
	300	17686	18.15	17727	19.05	17772	21.30
	833	17687	18.15	17728	19.05	17773	21.30
	3,333	17688	18.15	17729	19.05	17774	21.30
	16,666	—	—	17730	19.80	17775	21.30
	25,000	17690	19.05	17731	20.55	17776	21.75
	41,166	17691	19.05	17732	20.55	17777	21.75
	50,000	17692	19.05	17733	20.55	17778	21.75
†	83,333	—	—	17734	25.95	17779	27.75

on VU meters meet all the Electrical and Ballistic specifications established by Bell Laboratories and American Standards Association as required by broadcasting, communication and sound engineers. They are available with type A or B scales. Type A scale stresses the level in VU for monitoring lines. Type B scale stresses percent use of transmitter output and is standard for broadcast service. Impedance is 3900 @ "0" VU deflection.

Range	Approx. Impedance (ohms) @ 60 Hz.	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price

AC AMMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 2152		Model 2153		Model 2154	
0-1	.213	17665	$17.25	17695	$18.15	17740	$19.35
0-1.5	.105	17666	17.25	—	—	—	—
0-2	.065	—	—	17697	18.15	17742	19.35
0-3	.028	17667	17.25	17698	18.15	17743	19.35
0-5	.008	17668	17.25	17699	18.15	17744	19.35
0-10	.004	17669	17.25	17700	18.15	17745	19.35
0-15	.0025	17670	17.25	17701	18.15	17746	19.35
0-25	.002	17671	18.00	17702	18.90	17747	20.10
0-30	.0015	17672	18.00	17703	18.90	17748	20.10
0-50	.001	17673	18.00	17704	18.90	17749	20.10
0-75	.008	—	—	17705	18.15	17750	21.75
0-100	.008	17674‡	17.25	17706‡	18.15	17751‡	19.35
0-150	.008	—	—	17707‡	18.15	17752‡	19.35
0-200	.008	—	—	17708‡	18.15	17753‡	19.35
0-300	.008	—		17709‡	18.15	17754‡	19.35

AC MILLIAMMETERS Iron Vane Type Movement

Range	Approx. Ω	Model 2152		Model 2153		Model 2154	
0-10	1,650	17680	$17.25	—	—	17760	$19.35
0-50	80.	17681	17.25	17716	$18.15	17761	19.35
0-100	17.2	17682	17.25	17717	18.15	17762	19.35
0-250	3.15	17683	17.25	17718	18.15	17763	19.35
0-500	.9	17684	17.25	17719	18.15	17764	19.35

Range	Maximum Volts	Maximum Amps	Wattmeters are calibrated for either magnetic or non-magnetic panels and for a frequency range of 25-125 Hz. Accuracy ±2% F.S.		Model 2173		Model 2174	
WATTMETERS Dynamometer Type Single Phase								
0-75	150	1.0	—	—	17881	$40.65	17896	$50.55
0-150	150	2.0	—	—	17882	18.60	17897	50.55
0-300	150	4.0	—	—	17883	40.65	17898	50.55
0-750	150	10.0	—	—	17885	40.65	17900	50.55
0-600	300	4.0	—	—	17884	44.10	17899	54.00
0-1500	300	10.0	—	—	17886	44.10	17901	54.00
0-3000	300	10.0	—	—	17887	44.10	17902	54.00

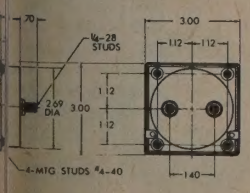
COMPENSATED WATTMETERS

Range	Maximum Volts	Maximum Amps	Accuracy ±3% F.S.		Model 2173		Model 2174	
0-10	300	0.175	—	—	17875	$64.95	17890	$67.50
0-20	300	0.400	—	—	17876	64.95	17891	67.50
0-20	500	0.175	—	—	17877	64.95	17893	67.50
0-30	300	0.650	—	—	17878	64.95	17892	67.50
0-30	500	0.300	—	—	17879	64.95	17894	67.50
0-50	500	0.500*	—	—	17880	64.95	17895	67.50

††External Multipliers, Model 183, (Featured on page 19) are furnished on AC meters having a range of 500 volts or higher. All others are self-contained.

‡2½" AC ammeters are self-contained through 50 amps. 3½" and 4½" AC ammeters self-contained through 75 amps. Higher range AC ammeters are 5 amp meters to be used with external current transformer. See page 18 for current transformer listings.

NTURY SERIES DIMENSIONS — 3½", 4½" Models



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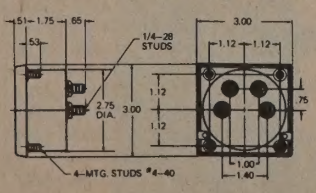
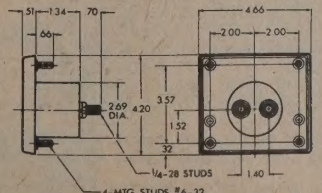
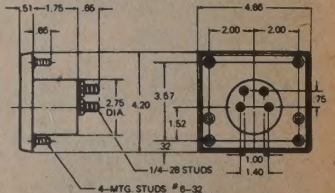


Model 2173



Models: 2124, 2134, 2144, 2154



Model 2174

Simpson ROUND and RECTANGULAR INSTRUMENT

2½", 3½", 4½" ROUND and RECTANGULAR STOCK INSTRUMENTS

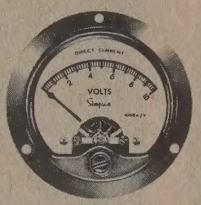
CALIBRATION

All DC meters listed below have the Simpson self-shielding movement. (Calibration not affected by stray magnetic fields or magnetic mounting.) All AC meters have the Simpson Iron Vane type movement. AC Ammeters and Milliammeters are calibrated for use on 25 through 800 Hz. AC Voltmeters are calibrated for use on 25-125 Hz. Calibration at frequencies up through 800 Hz can be made. Contact your local Distributor for prices.

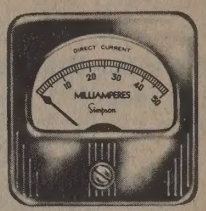
Wattmeters listed below have the Simpson dynamometer movement calibrated for either magnetic or non-magnetic panels and for a frequency range of 25-125 Hz. Standard wattmeters ±2%, compensated wattmeters ±3%.

SPECIFICATIONS

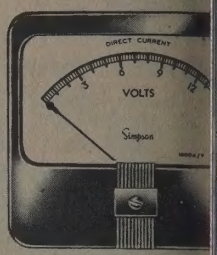
Size	Type and Model Number DC	AC Iron Vane	RF	Watt	Accuracy (% of full scale)	Scale Length
2½"	125; 125T; 127; 127T	—	135; 137	—	±2% (Compensated Wattmeters ±3%)	1.8" (45.7 mm)
	—	155; 157	—	175; 177		1.6" (41.1 mm)
3½"	25; 25T; 27; 27T	—	35; 37	—		2.5" (63.7 mm)
	—	55; 57	—	75; 77		2.3" (57.4 mm)
4½"	29; 29T	—	39	—		3.8" (97 mm)
	—	59	—	79		3.5" (89.0 mm)



2½" Models 125, 125T, 135, 145, 155, 175
3½" Models 25, 25T, 35, 45, 55, 75



2½" Models 127, 127T, 137, 147, 157, 177
3½" Models 27, 27T, 37, 47, 57, 77



4½" Models 29, 29T, 39, 4

DC VOLTMETERS Self-Shielding Meter Movement

Range	Approx. Resistance (Ohms)	2½" Case Styles Cat. Nos. 125	127	Price	3½" Case Styles Cat. Nos. 25	27	Price	4½" Case Styles Cat. No. 29	Price
0-1.5	1000 ohms per volt	8850	9020	$20.10	—	7290	$20.85	7620	$22.80
0-3		8860	9030	20.10	7070	7300	20.85	7630	22.80
0-5		8870	9040	20.10	7080	7310	20.85	7640	22.80
0-8		8880	9050	20.10	—	7320	20.85	7650	22.80
0-10		8890	9060	20.10	7100	7330	20.85	7660	22.80
0-15		8900	9080	20.10	7110	7350	20.85	7670	22.80
0-25		8910	9090	20.10	7120	7360	20.85	7680	22.80
0-30		8920	9100	20.10	7130	7370	20.85	7690	22.80
0-50		8930	9110	20.10	7140	7380	20.85	7700	22.80
0-100		8940	9130	20.10	7150	7400	20.85	7710	22.80
0-150		8950	9140	20.10	7160	7410	20.85	7720	22.80
0-200		8960	9160	20.10	7170	7430	20.85	7730	22.80
0-250		8970	9170	20.10	7180	7440	20.85	7740	22.80
0-300		—	9180	20.10	7190	7450	20.85	7750	22.80
0-500	2000 ohms per volt	—	9200	20.85	7200	7470	21.75	7760	23.55
0-750		—	—	—	7210	7490	21.75	7770	23.55
0-1000		—	—	—	7220†	7495†	27.00	7780†	28.80
0-1500		—	—	—	7230†	7520†	27.00	7790†	29.10
0-2000		—	9225†	25.95	7240†	7530†	27.90	7800†	29.60
0-2500		—	—	—	—	7550†	28.35	7810†	30.15
0-3000		—	—	—	7260†	7560†	28.65	7820†	30.45
0-4000		—	—	—	—	—	—	7830†	30.75
0-5000		—	—	—	7280†	7600†	29.40	7840†	31.20

DC AMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Models 125	127		Models 25	27		Model 29	
0-1	.050	1460	1680	$19.20	0005	0230	$20.10	0450	$21.75
0-1.5	.033	1470	1690	19.20	0020	0240	20.10	0460	21.75
0-2	.025	—	1709	19.20	0030	0250	20.10	0470	21.75
0-3	.0166	1490	1710	19.20	0040	0260	20.10	0480	21.75
0-5	.010	1500	1720	19.20	0050	0270	20.10	0490	21.75
0-10	.005	1510	1730	19.20	0060	0280	20.10	0500	21.75
0-15	.0033	1520	1740	19.20	0070	0290	20.10	0512	21.75
0-25	.0020	1530	1750	19.20	0080	0300	20.10	0520	21.75
0-30	.0017	1540	1760	19.20	0090	0310	20.10	0530	21.75
0-50	.001	1550	1770	19.20	0099	0320	20.10	0540	21.75
0-75	10.0	1560‡	1780‡	19.20	0110‡	0330‡	20.10	0550‡	21.75
0-100	10.0	1570‡	1790‡	19.20	0120‡	0340‡	20.10	0560‡	21.75
0-150	10.0	1580‡	1800‡	19.20	0130‡	0350‡	20.10	0570‡	21.75
0-200	10.0	1590‡	1810‡	19.20	0140‡	0360‡	20.10	0580‡	21.75
0-250	10.0	—	—	—	0151‡	—	20.10	0590‡	21.75
0-300	10.0	1610‡	—	19.20	0160‡	0380‡	20.10	0600‡	21.75
0-500	10.0	1620‡	—	19.20	0170‡	0390‡	20.10	0610‡	21.75
0-750	10.0	—	—	—	0177‡	0400‡	20.10	0620‡	21.75
0-1000	10.0	—	—	—	0188‡	0410‡	20.10	0630‡	21.75
15-0-15	.0033	—	—	—	0200	—	21.15	0640	22.35
30-0-30	.0017	1660	1880	19.50	0210	0430	21.15	0650	22.35
50-0-50	.001	1670	1890	19.50	0220	0440	21.15	0660	22.35

†External Multipliers, Model 183, are furnished on 2½" DC meters 750 volts or higher; and on 3½" and 4½" DC meters 1000 volts and higher. All others are self-contained.
‡DC ammeters are self-contained for ranges up to and including 50 amperes. Higher range DC ammeters (50 MV) listed above are calibrated for 5 ft. leads and require external shunts. See page 19 for complete listings.

DC MILLIVOLTMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Models 125	127		Models 25	27		Model 29
0-50	10	6970	6990	$19.20	6910	6930	$20.10	6950
0-100	20	—	—	—	—	6940	20.10	6960

DC MILLIAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Models 125	127		Models 25	27		Model 29
0-1	43	5580	5760	$18.90	4610	4790	$19.50	5070
0-1.5	43	5590	5780	18.90	4620	4810	19.50	5080
0-3	2.0	—	5790	18.90	4630	4820	19.50	5090
0-5	2.0	5610	5800	18.90	4640	4830	19.50	5100
0-10	10.0	5620	5810	18.90	4650	4840	19.50	5110
0-15	6.6	5630	5830	18.90	4660	4860	19.50	5120
0.20	5.0	—	—	—	4670	4880	19.50	5130
0.25	4.0	5650	5860	19.20	4680	4890	20.10	5140
0.50	2.0	5660	5880	19.20	4690	4910	20.10	5150
0-75	1.3	5670	—	19.20	—	4930	20.10	5160
0-100	1.0	5680	5910	19.20	4710	4940	20.10	5170
0-150	.66	5690	5930	19.20	4720	4960	20.10	5180
0-200	.5	5700	5940	19.20	4730	4980	20.10	5190
0-250	.4	5710	5960	19.20	4740	5000	20.10	5200
0-300	.33	5720	5970	19.20	4750	5010	20.10	5210
0-500	.2	5730	5990	19.20	4760	5030	20.10	5220
0-750	.13	—	—	—	—	5050	20.10	5230
0-1000	.05	—	6020	19.20	4780	5060	20.10	5240

DC MICROAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Models 125	127		Models 25	27		Model 29
0-50	1800	4210	4260	$24.30	3760	3860	$24.75	3960
0-100	1800	4220	4270	21.75	3770	3870	22.80	3970
0-200	1100	4230	4280	19.80	3780	3880	20.85	3980
0-500	90	4240	4281	19.50	3790	3890	20.55	3990
25-0-25	1800	4192	4243	25.35	3800	3900	25.05	4000
50-0-50	1800	4194	4245	22.20	3810	3910	22.80	4010
100-0-100	1100	4196	4247	20.10	3820	3920	21.00	4020
500-0-500	43	—	4249	19.05	3830	3930	19.80	4030

Net
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Simpson ROUND and RECTANGULAR INSTRUMENTS

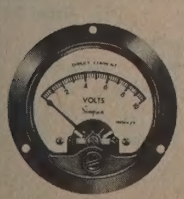
2½", 3½", 4½" ROUND and RECTANGULAR PANEL INSTRUMENTS

	Approx. Impedance (Ohms) @ 60 Hz	2½" Case Styles Cat. Nes.	Price	3½" Case Styles Cat. Nos.	Price	4½" Case Styles Cat. No.	Price
T BAND	**DC MICROAMMETERS Self-Shielding**						
		Models 125T | 127T		Models 25T | 27T		Model 29T	
	5750	— —	—	3738 03838	$46.20	3938	$49.20
	4900	4197 04246	$39.00	3739 03839	40.65	3939	43.95
	1960	4199 04248	35.40	3741 03841	36.30	3941	39.60
	1960	4201 04251	33.60	3751 03851	35.25	3951	38.25
	960	4211 04261	26.40	3761 03861	27.00	3961	28.95
	500	4221 04271	24.75	3771 03871	24.75	3971	27.30
	MMETERS Self-Shielding Meter Movement rmal Thermocouple Type						
		Models 135 | 137		Models 35 | 37		Model 39	
	.343	1901 1980	$21.00	0670 0750	$23.10	0870	$26.40
	.200	1910 2000	21.00	— 0770	23.10	0880	26.40
	.120	— 2010	21.00	— 0780	23.10	0890	26.40
	.10	1930 —	21.00	— 0800	23.10	0900	26.40
	.08	1940 2040	21.00	0710 0810	23.10	0910	26.40
	.045	1950 2060	21.00	0720 0830	23.10	0920	26.40
	.031	— 2080	21.00	— 0850	23.10	0930	26.40
	.023	— 2090	21.00	0736 0860	23.10	0940	26.40
	ILLIAMMETERS Self-Shielding Meter Movement rmal Thermocouple Type						
				Models 35 | 37		Model 39	
	5.5	— —	—	5250 5290	$41.70	5330	$43.65
	4.5	— —	—	5260 5300	27.15	5340	30.75
	3.5	— —	—	5270 5310	27.15	5350	30.75
	.63	— —	—	5280 5320	27.15	5360	30.75
	METERS Dynamometer Type Single Phase						
	Maximum Volts | Amps	Models 175 | 177		Models 75 | 77 Accuracy ±2%		Model 79	
	150 1.0	— 10860	$38.70	10580 10650	$40.65	10720	$50.55
	150 2.0	10800 10870	38.70	10590 10660	40.65	10730	50.55
	150 4.0	— 10880	38.70	10600 10670	40.65	10740	50.55
	150 10.0	10830 10900	38.70	10620 10690	40.65	10760	50.55
	300 4.0	10820 10890	42.30	10610 10680	44.10	10750	54.00
	300 10.0	10840 10910	42.30	— 10700	44.10	10770	54.00
	300 20.0	— 10920	42.30	10640 10710	44.10	10780	54.00
	PENSATED WATTMETERS Single Phase						
	Maximum Volts | Amps			Models 75 77 Accuracy ±3%		Model 79	
	300 .175	— —	—	— 10642	$64.95	10712	$67.50
	300 .400	— —	—	— 10644	64.95	10714	67.50
	500 .175	— —	—	— 10646	64.95	10716	67.50
	300 .650	— —	—	— 10645	64.95	10715	67.50
	500 .300	— —	—	— 10648	64.95	10718	67.50
	500 .500	— —	—	— 10649	64.95	10719	67.50

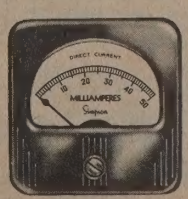
Scale	Sensitivity Micro-Amps	Res. Ohms	2½" Case Styles Cat. Nos.	Price	3½" Case Styles Cat. Nos.	Price	4½" Case Styles Cat. No.	Price
DC GALVANOMETERS								
			Models 125 | 127		Models 25 | 27		Model 29	
50-0-50	500-0-500	43	3670 3690	$18.90	3630 3650	$19.80	3654	$21.00
50-0-50	75-0-75	1800	3660 3680	20.55	3620 3640	22.20	3652	24.30
AC VOLTMETERS Iron Vane Type Meter Movement								
			Models 155 | 157		Models 55 | 57		Model 59	
0-1.5	3		— —	—	— —	—	8710	$21.30
0-3	12		— —	—	— 8540	$19.05	8720	21.30
0-5	33		— 9390	$18.15	8410 8550	19.05	8730	21.30
0-10	133		9260 9400	18.15	8420 8566	19.05	8740	21.30
0-15	300		9270 9420	18.15	8430 8580	19.05	8750	21.30
0-25	833		9280 9440	18.15	8440 8599	19.05	8760	21.30
0-50	3,3333		9290 9450	18.15	8450 8610	19.05	8770	21.30
0-100	16,666		— 9460	18.75	8460 8620	19.80	8780	21.30
0-150	25,000		9310 9470	19.05	8470 8630	20.55	8790	21.75
0-250	41,166		9320 9490	19.05	8480 8650	20.55	8800	21.75
0-300	50,000		9330 9500	19.05	8490 8660	20.55	8810	21.75
0-500	83,333		9340‡ 9520	24.30	8500‡ 8680‡	25.95	8820‡	27.75
0-750	125,000		— —	—	8510‡ 8690‡	25.95	8830‡	30.15
0-1000	166,666		— —	—	8520‡ 8700‡	30.15	8840‡	31.20
AC AMMETERS Iron Vane Type Meter Movement								
			Models 155 | 157		Models 55 | 57		Model 59	
0-1	.213		2100 2270	$17.25	0950 1120	$18.15	1290	$19.35
0-1.5	.105		— —	—	0960 1130	18.15	1302	19.35
0-2	.065		2120 2290	17.25	0970 1140	18.15	1310	19.35
0-3	.028		2130 2300	17.25	0980 1145	18.15	1320	19.35
0-5	.008		2140 2310	17.25	0990 1160	18.15	1330	19.35
0-10	.004		2150 2320	17.25	1001 1170	18.15	1340	19.35
0-15	.0025		2160 2330	17.25	1010 1180	18.15	1350	19.35
0-25	.002		2170 2340	18.00	1020 1190	18.90	1360	20.10
0-30	.0015		2180 2350	18.00	1030 1200	18.90	1370	20.10
0-50	.001		2190 2360	18.00	1040 1210	18.90	1380	20.10
0-75	.0005		— —	—	3432 3434	20.55	3436	21.75
0-75	.008		2200† 2370†	17.25	1050† 1220†	18.15	1390†	19.35
0-100	.008		2210† 2380†	17.25	1060† 1230†	18.15	1400†	19.35
0-150	.008		2220† 2390†	17.25	1070† 1240†	18.15	1410†	19.35
0-200	.008		— —	—	1080† 1250†	18.15	1420†	19.35
0-250	.008		2240† 2410†	17.25	1090† 1260†	18.15	1430†	19.35
0-300	.008		— 2420†	17.25	1100† 1270†	18.15	1440†	19.35
0-500	.008		2260† 2422†	17.25	1110† 1280†	18.15	1450†	19.35
AC MILLIAMMETERS Iron Vane Type Meter Movement								
			Models 155 | 157		Models 55 | 57		Model 59	
0-10	1,650		6030 6100	$17.25	— 5440	$18.15	5510	$19.35
0-15	887		— —	—	5380 5499	18.15	—	19.35
0-25	270		— —	—	— 5460	18.15	5530	19.35
0-50	80		6060 6130	17.25	5400 5470	18.15	5540	19.35
0-100	17.2		6070 6140	17.25	5410 5480	18.15	5550	19.35
0-250	3.15		6080 6150	17.25	5420 5490	18.15	5560	19.35
0-500	.9		6090 6152	17.25	5430 5500	18.15	5570	19.35

‡External Multipliers, Model 183, (Featured on page 19) are furnished on AC meters having a range of 500 volts or higher. All others are self-contained.

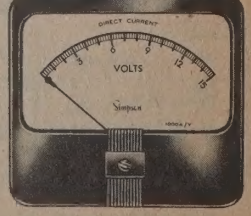
†These meters are 5 amp meters with scales as indicated and require external current transformers. See listings on page 18.



2½" Models 125, 125T, 135, 145, 155, 175
3½" Models 25, 25T, 35, 45, 55, 75



2½" Models 127, 127T, 137, 147, 157, 177
3½" Models 27, 27T, 37, 47, 57, 77



4½" Models 29, 29T, 39, 49, 59, 79

Simpson ROUND and RECTANGULAR INSTRUMENT

2½", 3½", 4½" ROUND and RECTANGULAR PANEL INSTRUMENTS

CALIBRATION

All meters have the Simpson self-shielding movement and may be used on either magnetic or non-magnetic panels.

SPECIFICATIONS

Size	Model No.	Type	Accuracy (% of full scale)	Scale Length	Pointer
2½"	145; 147	AC Rectifier and DB, VU Meters	AC Rectifier and DB meters ±3% VU meters per ASA specifications in footnote	1.8" (45.7 mm)	Spade, Black
3½"	45; 47			2.5" (63.7 mm)	
4½"	49; 142			3.8" (97 mm)	

Range	Approx. Resistance (Ohms)	2½" Case Styles Cat. No.	Price	3½" Case Styles Cat. No.	Price	4½" Case Style Cat. No.	Price

DECIBEL METERS
Zero Power Level: 6 mW into 500 Ω line
Self-Shielding Meter Movement

Range	Approx. Ω	Models 145	147		Models 45	47		Model 49	
−10 to +6 dB	5000 ohms	3470	3480	$27.15	—	3450	$27.30	3460	$29.55

AC VOLTMETERS Rectifier Type Self-Shielding Meter Movement

Range	Approx. Ω				Models 45	47		Model 49	
0-1	2000 ohms per volt	—	—	—	—	8120	$27.30	8300	$30.30
0-3		—	—	—	—	8130	27.30	8310	30.30
0-5		—	—	—	7960	8140	27.30	8320	30.30
0-10		—	—	—	7970	8150	27.30	8330	30.30
0-15		—	—	—	7980	8160	27.30	8340	30.30
0-50		—	—	—	—	8170	27.30	8350	30.30
0-100		—	—	—	—	8180	27.30	8360	30.30
0-150		—	—	—	8010	8190	27.30	8370	30.30
0-300		—	—	—	8020	8200	27.30	8371	30.30

Range	Approx. Resistance (Ohms)	2½" Case Styles Cat. No.	Price	3½" Case Styles Cat. No.	Price	4½" Case Cat. No.

AC MILLIAMMETERS Rectifier Type Self-Shielding Meter Move

Range	Approx. Ω				Models 45	47		Model 49
0-1	600	—	—	—	6820	6850	$26.40	6880
0-2	400	—	—	—	—	6860	26.40	6890
0-5	200	—	—	—	6840	6870	26.40	6900

AC MICROAMMETERS
Rectifier Type Self-Shielding Meter Movement

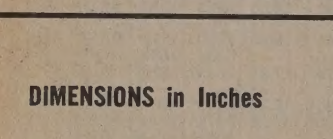
Range	Approx. Ω				Models 45	47		Model 49
0-100	3400	—	—	—	4080	4120	$30.30	4160
0-200	2400	—	—	—	—	—	—	4170
0-300	1800	—	—	—	—	4140	26.40	4180
0-500	1200	—	—	—	—	4150	26.10	4190

VU (Volume Level) METERS†
Reference Level: 1 mW into 600 Ω line
Self-Shielding Meter Movement

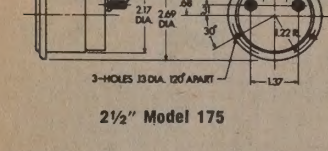
Scale				Models 45	47		Model 142
"A" SCALE; Not Illuminated	—	—	—	10440	10450	$32.55	10460
"B" SCALE; Not Illuminated	—	—	—	—	10520	32.55	10530
"A" SCALE; Illuminated	—	—	—	—	—	—	10470
"B" SCALE; Illuminated	—	—	—	—	—	—	10570

†Simpson VU meters meet all the Electrical and Ballistic specifications lished by Bell Laboratories and American Standards Association as requir broadcasting, communication and sound engineers. They are available either type A or B scales. Type A scale stresses the level in VU for moni wire lines. Type B scale stresses per cent use of transmitter output and standard for broadcast service. Impedance is 3900 Ω at "0" VU defle

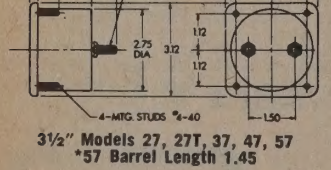
DIMENSIONS in Inches



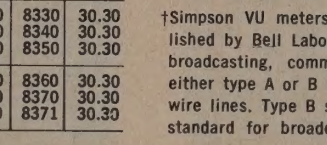
2½" Model 175



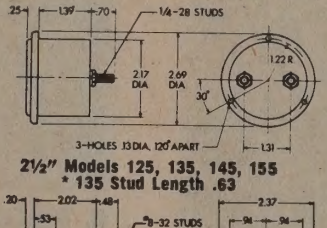
3½" Models 27, 27T, 37, 47, 57
*57 Barrel Length 1.45



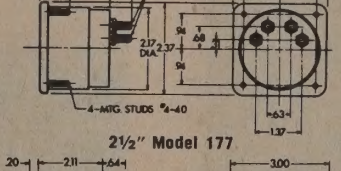
4½" Models 29, 29T, 39, 49, 59
*59 Barrel Length 1.09



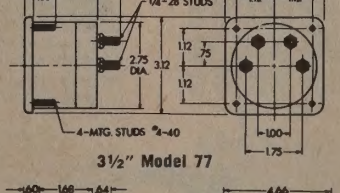
2½" Models 125, 135, 145, 155
* 135 Stud Length .63



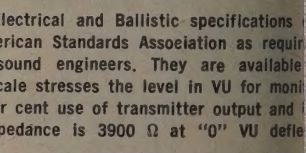
2½" Model 177



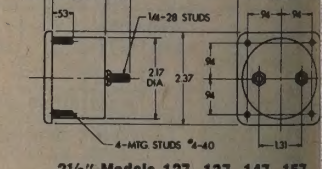
3½" Model 77



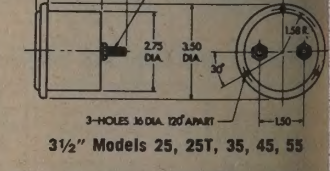
4½" Model 79



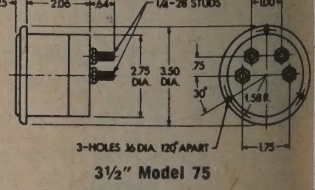
2½" Models 127, 137, 147, 157



3½" Models 25, 25T, 35, 45, 55



3½" Model 75



4½" Model 142

Net
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Simpson "RUGGED SEAL" PANEL INSTRUMENTS

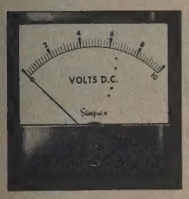
"RUGGED SEAL" 3½", 4½", 4" x 6", SQUARE and RECTANGULAR INSTRUMENTS

MPSON "RUGGED SEAL" PANEL INSTRUMENTS

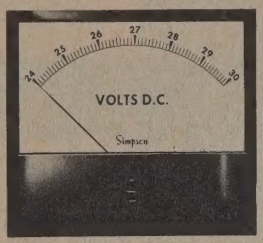
li of metal cased panel instruments is ideal for use in field test
ornt of wherever rigorous environmental conditions are encoun-
1. hey are completely sealed, commercially ruggedized, glass
o metal cased and shielded, not affected by steel panel mounting.

SPECIFICATIONS

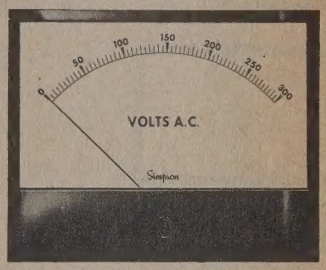
Size	Type and Model Number DC	AC Rectifier	Accuracy (% of full scale)	Scale Length	Pointer
3½"	3323	3343	DC Meters: ±2%	2.9" (74 mm)	Knife-edge Black
4½"	3324	3344	AC Rectifier Meters: ±3%	3.9" (101 mm)	
4" x 6"	3326	3346		4.7" (120 mm)	



3½" Models 3323, 343



4½" Models 3324, 3344



4" x 6" Models 3326, 3346

LTMETERS
ed Case Not Affected By Magnetic Mounting

Approx. Resistance (Ohms)	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price	4" x 6" Case Style Cat. No.	Price
1000 ohms per volt	16000	$22.95	16095	$25.05	16190	$27.30
	16005	22.95	16100	25.05	16195	27.30
	16010	22.95	16105	25.05	16200	27.30
	16015	22.95	16110	25.05	16205	27.30
	16020	22.95	16115	25.05	16210	27.30
	16025	22.95	16120	25.05	16215	27.30
	16030	22.95	16125	25.05	16220	27.30

LLIVOLTMETERS
ed Case Not Affected By Magnetic Mounting

Approx. Ω	Model 3323		Model 3324		Model 3326	
10	16062	$23.10	16157	$25.50	16252	$27.90

IMETERS
ed Case Not Affected By Magnetic Mounting

Internal Shunt	Model 3323		Model 3324		Model 3326	
Internal Shunt 75 MV Max.	16035	$23.40	16130	$25.35	16225	$28.05
	16040	23.40	16135	25.35	16230	28.05

LLIAMMETERS
ed Case Not Affected By Magnetic Mounting

Approx. Ω	Model 3323		Model 3324		Model 3326	
80Ω .5Ω	16045	$22.05	16140	$24.00	16235	$26.85
	16050	23.70	16145	25.35	16240	28.05

Range	Approx. Resistance (Ohms)	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price	4" x 6" Case Style Cat. No.	Price

DC MICROAMMETERS
Shielded Case Not Affected By Magnetic Mounting

Range	Approx. Ω	Model 3323		Model 3324		Model 3326	
0-50	3000	16055	$29.70	16150	$31.80	16245	$34.65
0-100	1300	16060	27.00	16155	28.95	16250	32.10

AC VOLTMETERS (RECTIFIER TYPE)
Shielded Case Not Affected By Magnetic Mounting

Range	Approx. Ω	Model 3343		Model 3344		Model 3346	
0-150	1000 ohms per volt	16065	$27.60	16160	$29.25	16255	$32.10
0-300		16070	27.60	16165	29.25	16260	32.10

AC AMMETERS (RECTIFIER TYPE)
Shielded Case Not Affected By Magnetic Mounting

Range	Internal Transformer Burden	Model 3343		Model 3344		Model 3346	
0-1	Internal Transformer Burden 0.5 VA maximum	16075	$34.50	16170	$36.00	16265	$39.00
0-5		16080	34.50	16175	36.00	16270	39.00

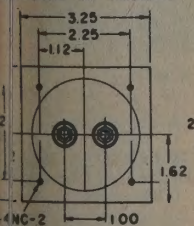
AC MILLIAMMETERS (RECTIFIER TYPE)
Shielded Case Not Affected By Magnetic Mounting

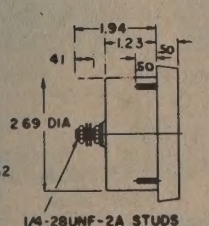
Range	Approx. Ω	Model 3343		Model 3344		Model 3346	
0-1	600	16085	$27.30	16180	$28.95	16275	$34.50

AC MICROAMMETERS (RECTIFIER TYPE)
Shielded Case Not Affected By Magnetic Mounting

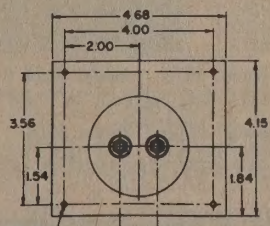
Range	Approx. Ω	Model 3343		Model 3344		Model 3346	
0-100	4000	16090	$28.95	16185	$30.15	16280	$32.85

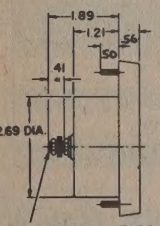
ESIONS in Inches



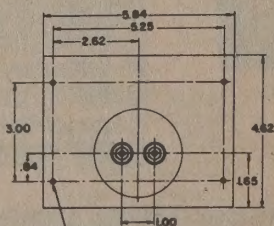


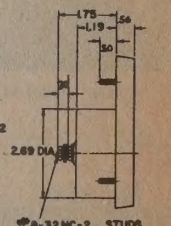
3½" Models 3323, 343



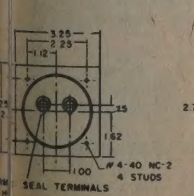


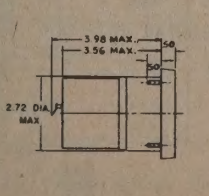
4½" Models 3324, 3344



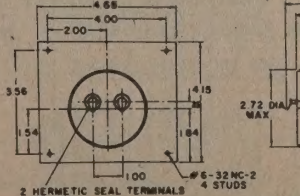


4" x 6" Models 3326, 3346

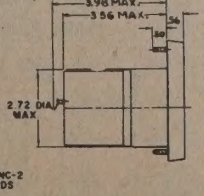


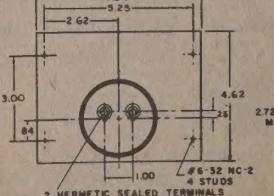


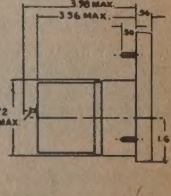
3½" Model 3383



4½" Model 3384







4" x 6" Model 3386

Simpson SEGMENTAL INSTRUMENTS

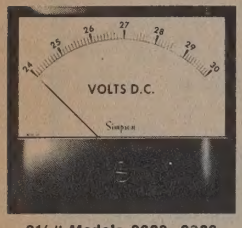
SIMPSON AVERAGE SENSING, TRUE RMS AND DC SEGMENTAL INSTRUMENTS

2½" Models 3222, 3282
3½" Models 3223, 3283
4½" Models 3224, 3284

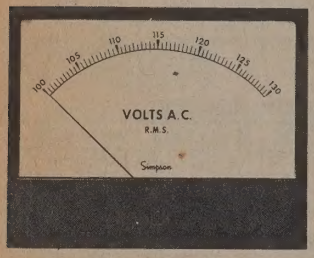
Segmental Voltmeters and frequency meters make it possible to measure very small changes in input conditions. The significant portion of the overall voltage or frequency range is expanded to occupy the full scale length. Thus, only that segment of the range that is important appears.

A.C. segmental voltmeters are available in either average sensing or true R.M.S. sensing units. When working with sine wave currents or when other measurements will be made with average se equipment, the average sensing meters are prefe

When working with distorted waveforms, as be encountered in constant voltage transfor S.C.R. circuits, D.C. to A.C. solid state inverte similar equipment, the true R.M.S. sensing would probably be preferred. In addition to standard expansions and accuracies shown, sp segmental voltmeters can be built on special



3½" Models 3323, 3383
4½" Models 3324, 3384

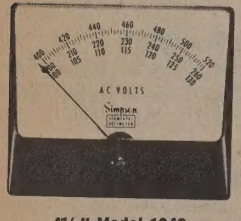


4" x 6" Models 3326, 3386

SPECIFICATIONS

	Wide-Vue, Century, and Phenolic Case Styles		Rugged-Seal and Ruggedized Metal Case Styl				
	Average Sensing AC Segments Voltmeters		RMS Sensing AC Segmental Voltmeters			DC Segmental Voltmeters	Frequ Mete
	Single Range	Multi-Range					
Range	100-130 AC Volts	100-130 / 200-260 / 400-520 AC Volts	100-130 AC Volts	105-125 AC Volts	110-120 AC Volts	—	—
Accuracy (% of Center Scale Value)	±.5%	100-130 ±.5% / 200-260 ±.75% / 400-520 ±.75%	±1.0%	±.5%	±.3%	±.5%	±.25
Frequency Range	20-2000 Hz	50-1000 Hz	55-550 Hz			—	—
Center Scale Value	115 Volts	115/230/460 Volts	115 Volts	115 Volts	115 Volts	27 Volts	60 400
Sensitivity or Power Consumption	.6 to 1.3 VA (Sensitivity decreases as input voltage increases)		50 Ω/V	65 Ω/V	80 Ω/V	100 Ω/V	3 VA M
Max. Input Voltage (10 Seconds)	150 Volts RMS	150/300/600 Volts RMS	150 Volts RMS			40 Volts	140 Volts R
Square Wave Waveform Influence Triangular Wave	11%		2.5%	2.0%	1.0%	—	.1%
	5%		1.2%	.6%	.3%	—	.1%
Voltage Influence 105-125 Volts	—	—	—	—	—	—	.25%
Movement Type	Self Shielding						
Pointer	Spade, Black		Lance, Black				

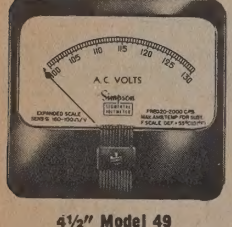
ROUND RUGGEDIZED SEGMENTAL PANEL INSTRUMENTS



4½" Model 1349

Round Panel Meters Range	Center Scale Value	Accuracy*	2½" Case Style Cat. No.	Price	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price
AC Voltmeters True RMS			**Model 3282**		**Model 3283**		**Model 3284**	
100-130	115V	1.0%	16285	$ 93.15	16305	$ 85.80	16335	$ 95.40
105-125	115V	0.5%	16290	93.15	16310	85.80	16340	95.40
110-120	115V	0.3%	16295	93.15	16315	85.80	16345	95.40
DC Voltmeters			**Model 3222**		**Model 3223**		**Model 3224**	
24-30	27V	0.5%	16300	$ 79.95	16320	$ 72.90	16350	$ 81.90
Frequency Meters					**Model 3283**		**Model 3284**	
380-420 Hz	400 Hz	0.25%	—	—	16330	$202.95	16360	$212.40

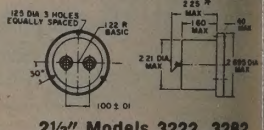
SQUARE RUGGED-SEAL SEGMENTAL PANEL INSTRUMENTS



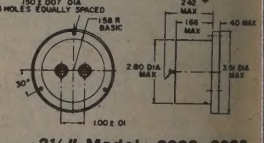
4½" Model 49

Square Panel Meters Range	Center Scale Value	Accuracy*	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price	4" x 6" Case Style Cat. No.	Price
AC Voltmeters True RMS			**Model 3383**		**Model 3384**		**Model 3386**	
100-130	115V	1.0%	16365	$ 78.60	16395	$ 86.70	16425	$ 92.70
105-125	115V	0.5%	16370	78.60	16400	86.70	16430	92.70
110-120	115V	0.3%	16375	78.60	16405	86.70	16435	92.70
DC Voltmeters			**Model 3323**		**Model 3324**		**Model 3326**	
24-30	27V	0.5%	16380	$ 65.70	16410	$ 73.65	16440	$ 79.20
Frequency Meters			**Model 3383**		**Model 3384**		**Model 3380**	
380-420 Hz	400 Hz	0.25%	16390	$198.00	16420	$203.70	16450	$209.55

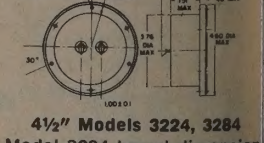
DIMENSIONS IN INCHES



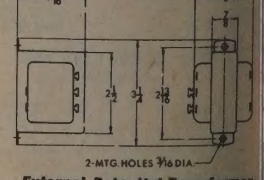
2½" Models 3222, 3282
* Model 3282 barrel dimensio 3.88", 2.94"



3½" Models 3223, 3283
* Model 3283 barrel dimensio 4.00", 3.16"



4½" Models 3224, 3284
* Model 3284 barrel dimension 3.98", 3.56"



External Potential Transformer

WIDE-VUE, CENTURY and STANDARD SEGMENTAL PANEL INSTRUMENTS — Single, Multi-Range

Range	Center Scale Value	Accuracy*	3½" Century Case Style Cat. No.	Price	3½" Wide-Vue Case Style Cat. No.	Price	4½" Century Case Style Cat. No.	Price	4½" Wide-Vue Case Style Cat. No.	Price	4½" Standard Case Style Cat. No.	Price
AC Voltmeters Aver. Sensing			**Model 2143**		**Model 1347**		**Model 2144**		**Model 1349**		**Model 49**	
100-300	115V	.5%	17548	$60.00	10152	$60.00	17638	$60.30	10155	$60.30	10151	$60.00
100-130 / 200-260 / 400-520	115V / 230V / 460V	.5% / .75% / .75%	—	—	—	—	17639	$74.55	10157‡	$74.55	—	—

* Accuracy is in percent of center scale value.

† Frequency meters are checked @ the center scale frequency @ 25°C and 115 volts sine wave after 30 minute warmup. Accuracy after 1.0 minute warmup is 1.0%. At end scale indications, maximum error will be 0.5%.

‡ Supplied with external potential transformer.

DIMENSIONS OF OTHER MODELS LIST

Model 49 — see page 12
Models 1347, 1349 — see page 5
Model 2144 — see page 9
Models 3323, 3324, 3326, 3383, 3384, 3386 — see page 13

Net

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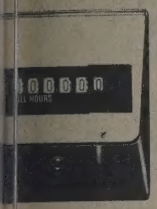
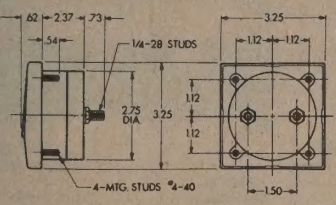
Simpson ELAPSED TIME METERS

2½" and 3½" AC and DC MODELS

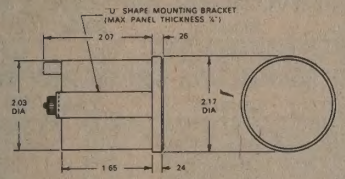
used by research labs, manufacturing plants, and broad-
itions . . . to keep life and performance records based on
g time. New Model 1357ET has popular Wide-Vue styling.
05 has modern appearance, with clear lucite cover. DC
06 gives accurate (±2%) time readouts where synchro-
power is not available. Model 106 withstands ambient
tures from −40°C to +65°C (−40°F to +149°F).
Models 105 and 106 manufactured in West Germany



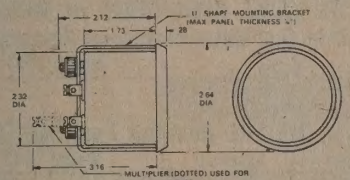
" Model 1357ET



" AC Model 105



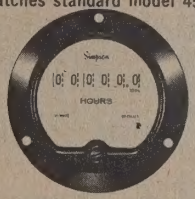
" DC Model 106



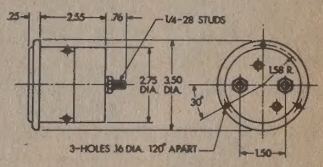
SPECIFICATIONS

Operating Voltage	Maximum Indication (Hours)	Power Consumption	Accuracy	Model Size	Model Number	Catalog Number	Price
6 V DC (+30% to —20%)	99,999	40 mA (max.)	±2%	2½"	106	13530	$20.00
12 V DC (+30% to —20%)	—	—	—	—	Adapter*	13535	1.00
24 V DC (+30% to —20%)	—	—	—	—	Adapter*	13538	1.00
120 V AC (±15%), 60 Hz	9,999.99	2 watts	synchronous	2½"	105	13520	15.00
120 V AC (±10%), 60 Hz	99,999.9	5 watts	synchronous	3½"†	55ET	03580	25.35
120 V AC (±10%), 60 Hz	99,999.9	5 watts	synchronous	3½"††	1357ET	03595	25.35
120 V AC (±10%), 60 Hz	99,999.9	5 watts	synchronous	3½"‡	57ET	03590	25.35
240 V AC (±15%), 60 Hz	9,999.99	2 watts	synchronous	2½"	105	13525	15.00
240 V AC (±10%), 60 Hz	99,999.9	5 watts	synchronous	3½"†	55ET	03600	25.65
240 V AC (±10%), 60 Hz	99,999.9	5 watts	synchronous	3½"‡	57ET	03610	25.65
240 V AC (±10%), 60 Hz	99,999.9	5 watts	synchronous	3½"††	1357ET	03615	25.65

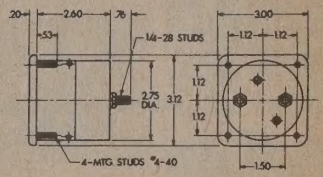
*Adapter for model 106. Simply screws onto one terminal.
‡Matches standard model 47 rectangular panel meters.
†Matches standard model 45 round panel meters. ††Matches Wide-Vue panel meters.



3½" Model 55ET



3½" Model 57ET



ECTANGULAR INSTRUMENTS MODELS 1150 and 1150-1

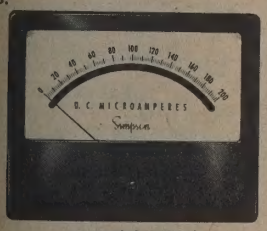
2% and 1%-MIRROR SCALE

CLIBRATION AND DIALS

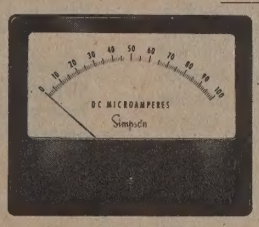
Bh models have the Simpson self-shielding movement
wch may be used on either magnetic or non-magnetic
pels.

SPECIFICATIONS

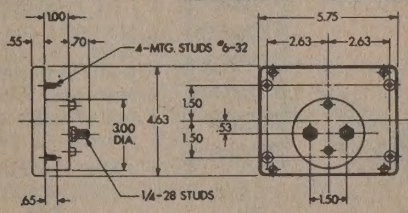
Size	Model Number	Accuracy	Scale Length	Pointer
6"	1150	±2% of full scale	4.6" (114.8 mm)	Knife-edge, Red
	1150-1	±1% of full scale	4.6" (114.8 mm) Mirrored scale	Knife-edge, Red



6" Model 1150-1



6" Model 1150



6" Models 1150, 1150-1

Range	Approx. Resistance (Ohms)	Cat. No.	Price

CROAMMETERS 1% Mirrored Scale

ge	Approx. Ω	Model 1150-1	
	5200	4290	$43.35
0	2100	4291	41.70
0	1100	4292	37.35
0	90	4293	36.30

ILLIAMMETERS 1% Mirrored Scale

ge	Approx. Ω	Model 1150-1	
	43	6158	$35.40
0	1.0	6161	35.40
0	.2	6162	35.40

ILLIVOLTMETERS 2%

ge	Approx. Ω	Model 1150	
	10	7003	$29.10

DC MICROAMMETERS 2%

Range	Approx. Ω	Model 1150	
0-15	5500	4282	$44.10
0-25	5500	4283	39.45
0-50	5200	4284	36.00
0-100	2100	4285	34.50
0-200	1100	4286	30.15
0-500	90	4287	29.40

DC MILLIAMMETERS 2%

Range	Approx. Ω	Model 1150	
0-1	43	6153	$27.90
0-10	10	6154	27.90
0-50	2.0	6155	27.90
0-100	1.0	6156	27.90
0-500	.2	6157	27.90

DC AMMETERS 2%

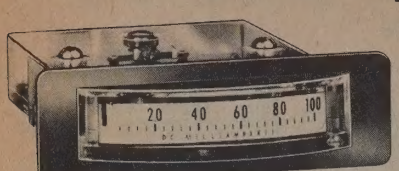
Range	Approx. Ω	Model 1150	
0-1	.050	2424	$29.10
0-5	.010	2425	29.10
0-10	.005	2426	29.10
0-15	.0033	2427	29.10
0-25	.0020	2428	29.10
0-30	.0016	2429	29.10
0-50	.001	2430	29.10

DC VOLTMETERS 2%

Range	Approx. Ω	Model 1150	
0-10		9533	$27.90
0-25	1000	9534	27.90
0-50	ohms	9535	27.90
0-100	per	9536	27.90
0-150	volt	9537	27.90
0-300		9538	27.90
0-500	2000 Ω/V	9539	28.80

Simpson EDGEWISE PANEL INSTRUMENTS

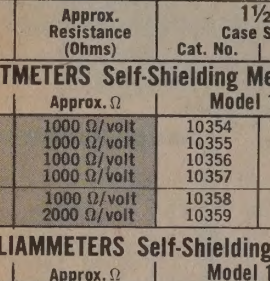
EDGEWISE INSTRUMENTS BARREL TYPE CONSTRUCTION 1½", 2½

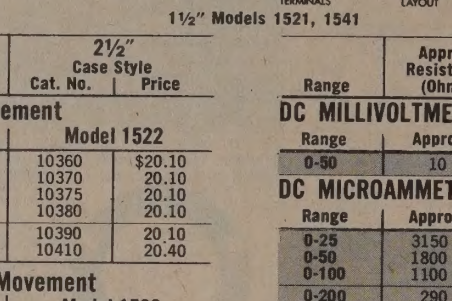


When panel designs call for making every square inch count, or when weight-saving is important, Simpson edgewise meters solve these many design problems. These meters are supplied with complete hardware which includes the bezel and two nuts. Mounting is fast and easy.

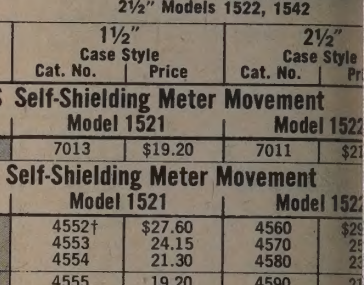
Models	1½" 1521, 1541	2½" 1522,
Accuracy	DC ±2% of full scale; AC rectifier type ±3%	
Movement Type	Self-Shielding Meter Movement	
Scale Length	1⅜"	1⅞"
Pointer	Lance, Red	
Case Construction	Dustproof, molded acrylic	
Terminals	Solder (ammeters — stud type)	

MOUNTING DIAGRAMS 1½" and 2½" SIZES





1½" Models 1521, 1541



2½" Models 1522, 1542

DC VOLTMETERS Self-Shielding Meter Movement

Range	Approx. Resistance (Ohms)	1½" Case Style Cat. No.	Price	2½" Case Style Cat. No.	Price
		Model 1521		Model 1522	
0-10	1000 Ω/volt	10354	$18.15	10360	$20.10
0-15	1000 Ω/volt	10355	18.15	10370	20.10
0-25	1000 Ω/volt	10356	18.15	10375	20.10
0-50	1000 Ω/volt	10357	18.15	10380	20.10
0-150	1000 Ω/volt	10358	18.15	10390	20.10
0-500	2000 Ω/volt	10359	18.45	10410	20.40

DC MILLIAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1521		Model 1522	
0-1	20	6811	$18.00	6710	$19.80
0-5	2.5	6812	18.00	6720	19.80
0-10	13.5	6813	18.00	6730	19.80
0-25	5.4	6815	18.75	6740	20.70
0-50	2.7	6816	18.75	6750	20.70
0-100	1.35	6817	18.75	6760	20.70
0-500	.27	6819	18.75	6810	20.70

DC AMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1521		Model 1522	
0-5	.010	—	—	3390	$21.15
0-25	.002	—	—	3420	21.15

DC MILLIVOLTMETERS Self-Shielding Meter Movement

Range	Approx. Ω	1½" Case Style Cat. No.	Price	2½" Case Style Cat. No.	Pr
		Model 1521		Model 152	
0-50	10	7013	$19.20	7011	$2

DC MICROAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1521		Model 152	
0-25	3150	4552†	$27.60	4560	$2
0-50	1800	4553	24.15	4570	2
0-100	1100	4554	21.30	4580	2
0-200	290	4555	19.20	4590	2
0-500	90	4556	18.75	4600	2

VOLUME LEVEL INDICATORS VU METERS Self-Shielding Meter Movement Reference Level 1 MW 600

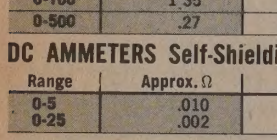
Scale	Model 1541		Model 154	
"A" Scale	—	—	10500	$3
"B" Scale	—	—	10570	3

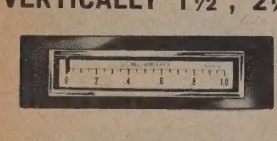
AC VOLTMETERS Rectifier Type Self-Shielding Meter Move

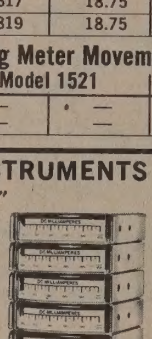
Range	Approx. Ω	Model 1541		Model 154	
0-150	1000 Ω/volt	10415	$23.85	10420	$2
0-300	1000 Ω/volt	—	—	10430	2

†Resistance of Model 1521 0-25 Mics is 5500 Ω.

EDGEWISE PANEL INSTRUMENTS STACK HORIZONTALLY or VERTICALLY 1½", 2½"







Simpson's new miniature edgewise panel meter has a unique Self-Shielding Core Magnet Movement* that eliminates the protruding barrel which is prevalent in other edgewise meter designs. It lends itself to a design that is sharp, modern, extremely compact and with a meter scale that extends nearly to the full width and height of the meter. An optimum scale display area allows for the use of large, easy-to-read numerals on a horizontal plane.

*Patent Pending

Models	1½" 1921, 1941	2½" 1622,
Accuracy	±2% of full scale; AC Rectifier types	
Movement Type	Self-Shielding Core Magnet Movem	
Scale Length	1.370 inches	1.85 inche
Pointer	Lance, Red	
Case Construction	Steel Housing with rustproof finis plastic window; insulated termina dustproof construction	
Terminals	Solder Type	6-32 studs
Dielectric	1500 Volts RMS	
Panel Cut Out	.525" x 1.718"	.562" x 2.31
Hardware	Removable brackets with clamping screws	Bezel, brack lockwashers an

DC VOLTMETERS Self-Shielding Meter Movement

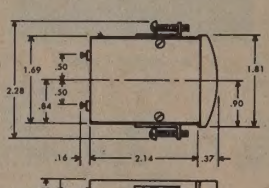
Range	Approx. Resistance (Ohms)	1½" Case Style Cat. No.	Price	2½" Case Style Cat. No.	Price
		Model 1921		Model 1622	
0-10	5000 Ω/volt	18000	$21.30	18006	$22.65
0-15	5000 Ω/volt	18001	21.30	18007	22.65
0-25	5000 Ω/volt	18002	21.30	18008	22.65
0-50	5000 Ω/volt	18003	21.30	18009	22.65
0-150	5000 Ω/volt	18004	21.30	18010	22.65
0-500	5000 Ω/volt	—	—	18011	22.80

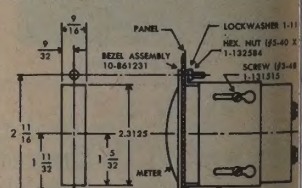
DC MILLIAMMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1921		Model 1622	
0-1	18	18012	$21.00	18019	$22.50
0-5	2	18013	21.00	18020	22.50
0-10	5	18014	21.00	18021	22.50
0-25	2	18015	22.05	18022	23.40
0-50	1	18016	22.05	18023	23.40
0-100	.5	18017	22.05	18024	23.40
0-500	.1	18018	22.05	18025	23.40

DC MILLIVOLTMETERS Self-Shielding Meter Movement

Range	Approx. Ω	Model 1921		Model 1622	
0-50	20	18028	$22.35	18029	$23.70





DC MICROAMMETERS Self-Shielding Meter Movement

Range	Approx. Resistance (Ohms)	1½" Case Style Cat. No.	Price	2½" Case Style Cat. No.	Pri
	Approx. Ω	Model 1921		Model 1622	
0-25	7760	18030	$27.45	18035	$28
0-50	2020	18031	27.15	18036	28
0-100	1060	18032	24.30	18037	25
0-200	310	18033	22.35	18038	23
0-500	63	18034	21.75	18039	22

AC VOLTMETERS Rectifier Type Self-Shielding Meter Move

Range	Approx. Ω	Model 1941		Model 1642	
0-150	5000 Ω/volt	18042	$26.70	18043	$27

Net

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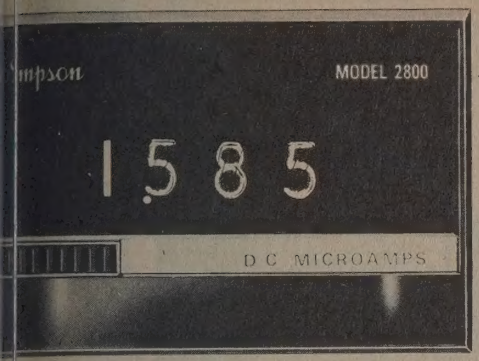
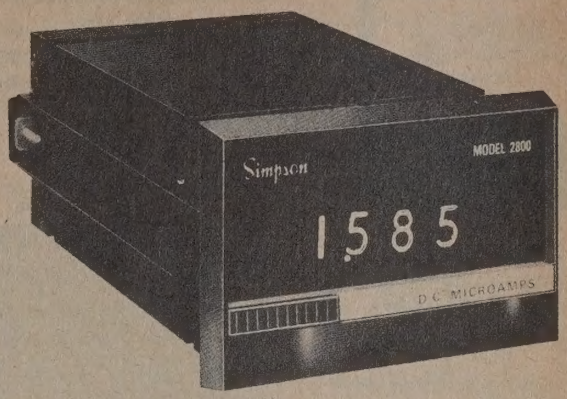
Simpson NEW! DIGITAL PANEL INSTRUMENT





MODEL 2800

CURATE: ±0.1%, ±1 DIGIT

Y TO READ NON-BLINKING DISPLAY

RAGE CIRCUITRY HOLDS NUMBER IL INPUT CHANGES

DERN COMPACT DESIGN — FRONT EL ZERO ADJUSTMENT

c so much to your new equip- t design: easier readouts, r accuracy, and the most -date appearance. Simpson's el 2800 digital panel meters reliable miniature instru- s, which easily mount on pment panels. The non- ing readouts, with storage itry to hold the number, res fast and clear readings. ll state circuitry (except for readout tubes) is used ughout for reliability. Bezel an attractive black matte h with tinted window.

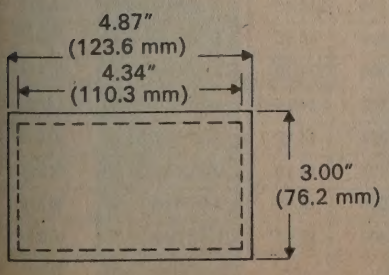
RANGES

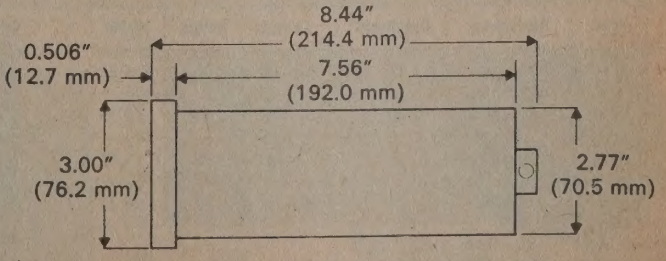
DC Voltage Range	Maximum Indication (with Overrange)	Input Impedance	Catalog Number	Price
00.0 — 99.9 mV	199.9 mV	10 kΩ	22950	$295.00
.000 — .999 volts	1.999 volts	100 kΩ	22951	295.00
0.00 — 9.99 volts	19.99 volts	1 MegΩ	22952	295.00
00.0 — 99.9 volts	199.9 volts	1 MegΩ	22953	295.00
000. — 999. volts	1010. volts*	1 MegΩ	22954	295.00
DC Current Range	**Maximum Indication (with Overrange)**	**Voltage Drop**	**Catalog Number**	**Price**
0.00 — 9.99 μA	19.99 μA	50 mV	22955	$295.00
00.0 — 99.9 μA	199.9 μA	50 mV	22956	295.00
.000 — .999 mA	1.999 mA	50 mV	22957	295.00
0.00 — 9.99 mA	19.99 mA	50 mV	22958	295.00
00.0 — 99.9 mA	199.9 mA	50 mV	22959	295.00

* Overrange limited to 10% on this unit.

SPECIFICATIONS

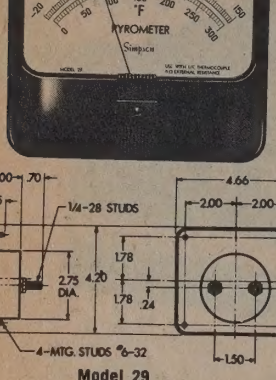
Accuracy: ±0.1% (F.S.), ±1 digit.
Resolution: 1 part in 1000.
Sample Rate: 5 readings per second, continuous.
Display: Non-blinking, with storage.
Number of Full-Time Readout Digits: 3
Readout Digits: Cold-gas glow tubes, 200,000 hour rated life.
Circuitry: Integrated circuits and solid-state components (except readout tubes).
Overrange: 100%. Number "1" automatically lights to the left of other digits to indicate overrange. When measured value exceeds overrange capacity, the "1" flashes — preventing erroneous readouts.
Underrange: Reverse polarity is automatically indicated by a light to the right of other digits. Linear 15% underrange permits reading negative values. Readout is a complement of actual reading.
Common Mode Rejection: Greater than 90 dB at 60 Hz with 1K-ohm unbalance.
Series Mode Rejection: Greater than 35 dB at 60 Hz.
Ambient Temperature Range: To maintain rated accuracy: +15°C to +35°C.
Power Required: 117 volts, 60 Hz., 9 VA (nominal).

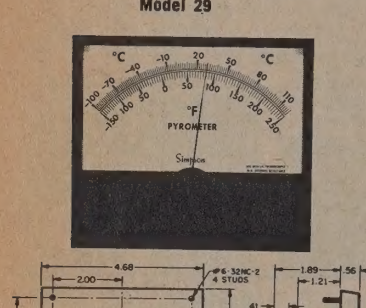




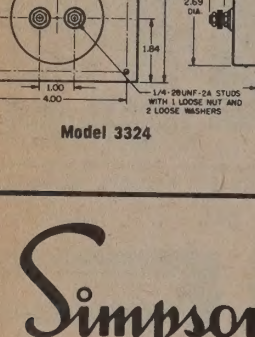
PANEL CUTOUT REQUIREMENT:
4.37" (111.0 mm) x 2.80" (71.1 mm)

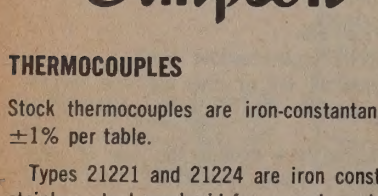
Simpson 4½" PYROMETERS





Model 29





Model 3324

Available in two versions: Standard phenolic Model 29 and Model 3324 Rugged Seal for extreme condi Both models are compensated for ambient temperature changes and include copper circuit compens ±2% accuracy.

Each pyrometer is furnished with an external adjustable series resistor to permit use of lower tance thermocouples in the field.

MODEL 29

Temperature Range °F	Temperature Range °C	Type Thermocouple†	External Resistance Ohms (max.)	Current Sensitivity MA Approx.	Cat. No.	Pr
—150 to +250	—100 to +120	I/C	10Ω	.40	21200	$36
0 to +300	—20 to +150	I/C	5Ω	.40	21202	36
0 to +500	—20 to +260	I/C	10Ω	.35	21204	36
0 to +750	—20 to +400	I/C	10Ω	.30	21206	36
0 to +1000	—20 to +540	C/A	10Ω	.28	21208	36
0 to +1500	—20 to +820	C/A	10Ω	.42	21209	33
0 to +2000	—20 to +1200	Pt/Rh	10Ω	.43	21210	33
0 to +2500	—20 to +1380	Pt/Rh	10Ω	.40	21211	33

MODEL 3324

—150 to +250	—100 to +120	I/C	10Ω	.40	21201	$49
0 to +300	—20 to +150	I/C	5Ω	.40	21203	49
0 to +500	—20 to +260	I/C	10Ω	.35	21205	49
0 to +750	—20 to +400	I/C	10Ω	.30	21207	49
0 to +1000	—20 to +540	C/A	10Ω	.28	21212	49
0 to +1500	—20 to +820	C/A	10Ω	.42	21213	46
0 to +2000	—20 to +1200	Pt/Rh‡	10Ω	.43	21214	46
0 to +2500	—20 to +1380	Pt/Rh‡	10Ω	.40	21215	46

†Thermocouple not supplied with Pyrometer. I/C types are available from stock as accessory items (see b C/A types available soon.

‡Platinum/13% Rhodium.

Simpson PANEL INSTRUMENT ACCESSORIES

THERMOCOUPLES

Stock thermocouples are iron-constantan, calibrated to 5 or 10 ohms ±1% per table.

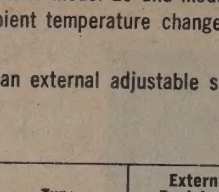
Types 21221 and 21224 are iron constantan thermocouple wire in a stainless steel overbraid for rugged service application where flexing or abrasion would cause deterioration of standard thermocouples.

Types 21222 and 21223 are iron-constantan thermocouples with a glass cloth overbraid. These thermocouples are suited for most general purpose use or for permanent mounting in protected sheaths or conduit.

Cat. No.	Type	Resistance	Overbraid*	Length	Gauge	Price
21221	I/C	5 ohms	SS	162 in.	20	$15.60
21222	I/C	10 ohms	GC	137 in.	24	5.55
21223	I/C	10 ohms	GC	34 in.	30	4.65
21224	I/C	10 ohms	SS	325 in.	20	28.35

*SS—Stainless Steel GC—Glass Cloth
C/A Thermocouples available soon.

CURRENT TRANSFORMERS — FOR USE WITH 0-10 VAC METERS AND CONTROLLERS



Model 186

Designed for use with 0-10 vol meters. Available **from stock,** they vert meter relays to AC current co units. Transformer may be locate motely from indicating meter. Ra from 0-50 milliamperes up to 0-50 peres are available for immediate livery. Frequency Range: 30 Hz. kHz. Accuracy: ±2%. (May be used any 0-10 volt, 1000 Ω/volt, or 200 volt, AC rectifier type meter.) No use in circuits where sustained loads are possible.

Range	V.A.	Cat. Number	Price
0- 50 mA	0.40	01294	$15.15
0-100 mA	0.50	01295	14.10
0-200 mA	0.37	01296	14.10
0-300 mA	0.48	01303	14.10
0-500 mA	0.53	01304	14.10
0-750 mA	0.37	01307	14.10
0- 1 Amp	0.42	01308	13.05
0- 2 Amp	0.54	01309	13.05

Range	V.A.	Cat. Number	Pr
0- 3 Amp	0.66	01311	$1
0- 5 Amp	0.75	01312	1
0-10 Amp	1.45	01314	1
0-15 Amp	1.05	01315	1
0-20 Amp	1.04	01316	1
0-25 Amp	1.50	01317	1
0-30 Amp	1.10	01318	1
0-40 Amp	1.09	01319	1
0-50 Amp	1.90	01321	1

Net

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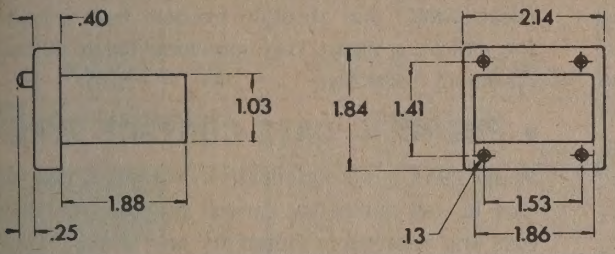
Simpson ELECTRO-MECHANICAL COUNTERS

NEW! SIMPSON COUNTERS

Simpson Electro-Mechanical Counters provide accurate counting in vending machines, duplicating equipment, packaging machinery, and in many production line applications. They feature instant number switching, so that only complete numbers are visible.



SPECIFICATIONS

RATED SPEED: 1 count per 100 milliseconds (10 counts per second, 600 counts per minute).

MINIMUM PULSE DURATION: 50 milliseconds "on", 50 milliseconds "off"

VOLTAGE INPUT: ±15% of the rated voltage.

POWER CONSUMPTION: 4.2 watts (nominal).

MAXIMUM INDICATION: 9,999.

NUMERALS: White on black, 0.2" high, 0.15" wide.

NUMERAL SWITCHING: Ratchet principle, adding one count each time the operating coil is opened. At any given time only whole numbers are visible, for clear readouts.

NUMERAL RESET: Front-panel push-button instantly resets numerals to 0000.

CONSTRUCTION: Bezel of rugged thermosetting materials; black matte finish. Heavy steel frame with a formed aluminum cover.

Voltage	Model	Catalog Number	1-9 Price*
117 VAC, 60 Hz	103	12643	$15.95
6 VDC	104	12641	15.95
12 VDC	104	12642	15.95

QUANTITY PRICES: 10-24, $13.56 ea; 25-49, $12.76 ea.; 50-99, $11.96 ea; 100-249, $11.17 ea.

Simpson PANEL INSTRUMENT ACCESSORIES

ENAL PORTABLE AND SWITCHBOARD ITS — FOR USE WITH DC AMMETERS

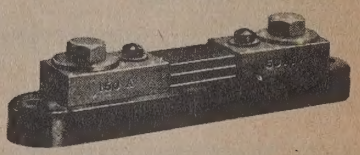
se shunts are adjusted for a 50 millivolt r use with switchboard and panel am- e where external shunts are required. tae shunts have phenolic base and sup- d up to 200 amperes. (Prices shown in- le' leads.) Accuracy ±1%.

TILE SHUNTS

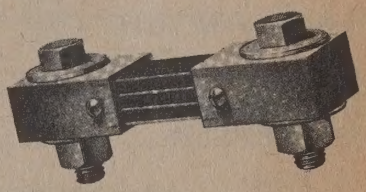
mps	Part Number	Price
1	6700	$11.10
5	6703	11.10
10	6704	11.10
15	6705	11.10
25	6707	11.10
30	6708	11.10
50	6709	11.10
75	6711	11.10
100	6713	11.10
150	6714	11.10
200	6715	11.10

SWITCHBOARD SHUNTS

Amps	Part Number	Price
100	6500	$11.10
150	6503	12.00
200	6504	12.00
250	6505	12.00
300	6506	12.00
400	6507	14.55
500	6508	17.25
600	6509	20.40
750	6510	26.10
800	6511	27.60
1000	6512	33.60
1200	6513	40.05
1500	6514	49.95
2000	6515	55.50
2500	6516	70.20
3000	6517	83.25
3500	6518	116.40
4000	6519	139.50
4500	6520	153.00
5000	6521	171.90
6000	6522	189.60
7000	6523	227.70



Phenolic base is supplied up to 200 amperes



Switchboard type — 100 through 7000 amps

IL 183 MULTIPLIER SERIES

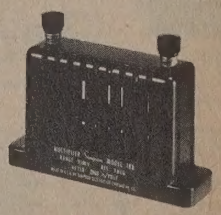
pn External Multipliers are available for iate delivery from your local distributor th ranges listed below. Other intermediate g are available on special order: DC Volts 50; AC Volts to 1000. Send your specifica- ns or a quotation.

LTS — 166 Ohms/Volt

	Multiplier Impedance (Ω) at 60 Hz.	Volt. Drop	Meter Volt. Drop	Part No.	Price
	58,333	350	150	8562	$8.70
	75,000	450	150	8563	9.90
	100,000	600	150	8564	10.95
	141,666	850	150	8565	13.05

DC VOLTS — 2000 Ohms/Volt

Range	Multiplier Resistance Megohms	Meter Sensitivity DC μA	Part No.	Price
0-500	1	500	8552	$7.20
0-750	1.5	500	8553	7.65
0-1000	2	500	8554	7.65
0-1250	2.5	500	8555	7.65
0-1500	3	500	8556	8.10
0-2000	4	500	8557	8.10
0-2500	5	500	8558	8.25
0-3000	6	500	8559	8.25
0-4000	8	500	8560	8.85
0-5000	10	500	8561	9.75

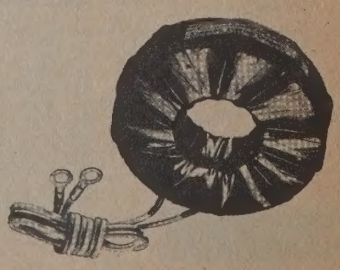


External Multiplier — Model 183
For Usage See Voltmeter Footnotes

RENT TRANSFORMERS — RISE WITH AC AMMETERS

e current transformers are of the inserted rn primary type for use with switchboard anel ammeters where external transform- e required.

Ampere Ranges Primary	Secondary	Part Number	Price
50	5	1293	$27.00
75	5	1306	19.80
100	5	1297	16.35
150	5	1298	14.55
200	5	1299	14.55
250	5	1313	14.55
300	5	1300	16.35
400	5	1305	18.15
500	5	1301	19.80
600	5	2303	19.80
750	5	2459	23.40
1000	5	2304	25.20



Current Transformer

Simpson INSTRUMENT RELAYS and CONTROLLERS

• "RUGGED SEAL" CONTACTLESS TYPE

Maximum reliability design and control, alarm, or limit applications. Photoconductor sensing eliminates all interference wth the indicating meter. High gain transistor switch circuit provides accurate switching and a "dead band" of no more than 0.5% of full scale. Fail safe circuitry opens output relays in the event of power failure. Output relays are DPDT, with 10-ampere contacts. New pyrometer types are available for use with I/C or C/A thermocouples. Taut band types are available from stock with 10 μA full scale sensitivity. Rugged Seal construction withstands rigorous environmental conditions.

• PHENOLIC CASE CONTACTLESS TYP

Now available with **contactless** control point sensing same as used in Simpson's "Rugged Seal" controllers tactless operation offers better control accuracy, s "dead band," and absolute freedom from interferenc the indicating meter. High gain amplifier is all solid-st maximum reliability.

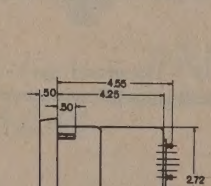
• PHENOLIC CASE CONTACT TYPE

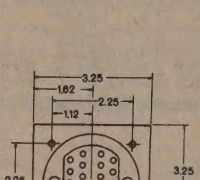
Model 29XA is also available in a contact type design type is well suited for general purpose applications cost and reasonable reliability are primary considera

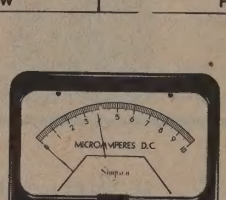
SPECIFICATIONS

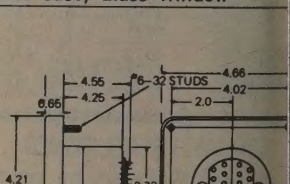
SPECIFICATIONS	CONTACTLESS CONTROLLERS "Rugged Seal" Models 3323XA, 3323TXA, 3324XA, 3324TXA, 3344XA, 3326XA, 3326TXA		CONTACTLESS CONTROLLERS Phenolic Models 29XA, 29TXA, 49XA		INSTRUME RELAYS Phenolic Mo 29XA
CALIBRATION ACCURACY:	±2% of Full Scale				
CONTROL POINT(S):	Single	Double	Single	Double	Double
CONTROL POINT ADJUSTMENT:	0-100% of arc.	Low limit: 0-95% of arc. High limit: 95-100% of arc. Adjustable to within 4° of each other.	0-100% of arc.	Low limit: 0-95% of arc. High 5-100% of arc. Adjustable to w 4° of each other.	
CONTROL POINT SWITCHING:	Within 1% of indication.				Contact "mak within 2% o dication.
CONTROL POINT DIFFERENTIAL:	Difference between "on" and "off" is within 0.5% of Full Sale.				Make: within F.S. Break: within F.S.
CONTACTS/OUTPUT RELAY:	DPDT relay contacts for each control point. Each set of contacts rated at 10 Amperes, 115 VAC.				Gold Alloy. Ra at 10 Amper VDC.
MOVEMENT:	Self-Shielding Annular				
POWER REQUIRED:	115 VAC, 50 - 500 Hz				
CASE CONSTRUCTION:	Sealed Metal Case, Glass Window		Phenolic Case, Glass Window		

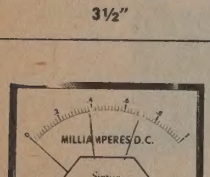
3½"



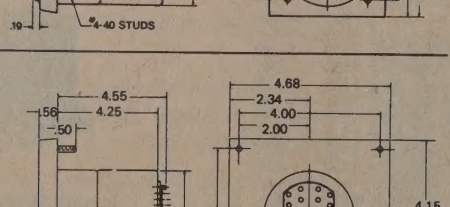


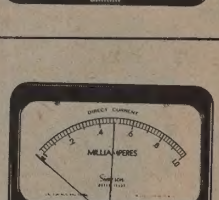


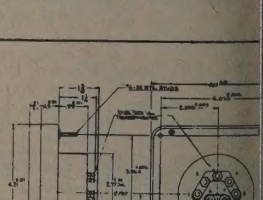


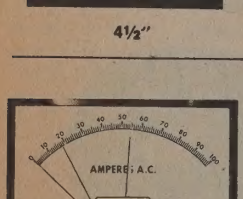


4½"

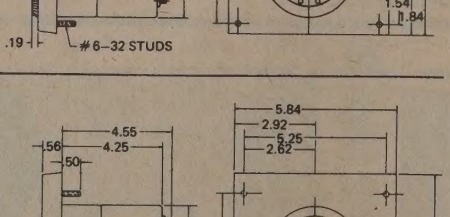


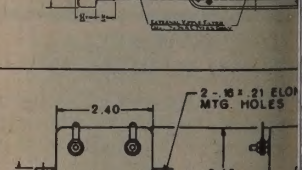






4" x 6"





EXTERNAL POWER SUPPLY — Use all two-control models (supplied unit), except contact-type model

Net

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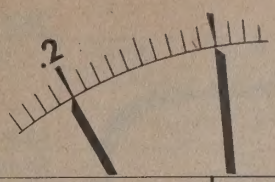
Simpson INSTRUMENT RELAYS and CONTROLLERS

NTROL • ALARM • LIMIT



GGED SEAL" CONTROLLERS

ange	Approx. Resistance (ohms)	Thermo-couple Type	3½" Single Control Point (High Limit) Cat. No.	3½" Single Control Point (High Limit) Price	3½" Double Control Point* Cat. No.	3½" Double Control Point* Price	4½" Single Control Point (High Limit) Cat. No.	4½" Single Control Point (High Limit) Price	4½" Double Control Point* Cat. No.	4½" Double Control Point* Price	4" x 6" Single Control Point (High Limit) Cat. No.	4" x 6" Single Control Point (High Limit) Price	4" x 6" Double Control Point* Cat. No.	4" x 6" Double Control Point* Price
BAND DC MICROAMPERES			Model 3323TXA (Taut Band)				Model 3324TXA (Taut Band)				Model 3326TXA (Taut Band)			
0-10	5500	—	16606	$134.70	16607	$164.85	16614	$138.00	16615	$168.15	16622	$141.30	16623	$171.45
0-25	3000	—	16604	124.80	16605	154.95	16612	128.10	16613	158.25	16620	131.40	16621	161.55
0-50	2000	—	16602	116.55	16603	146.70	16610	119.85	16611	150.00	16618	123.15	16619	153.30
0-100	570	—	16600	113.10	16601	143.25	16608	116.40	16609	146.55	16616	119.70	16617	149.85
ICROAMPERES							Model 3324XA							
0-200	570	—	—	—	—	—	16453	$116.40	16472	$146.55	—	—	—	—
0-500	220	—	—	—	—	—	16454	116.40	16473	146.55	—	—	—	—
ILLIAMPERES			Model 3323XA				Model 3324XA				Model 3326XA			
0-1	80	—	16500	$111.90	16520	$142.20	16455	$115.20	16474	$145.50	16540	$118.50	16560	$148.80
ILLIVOLTS			Model 3323XA				Model 3324XA				Model 3326XA			
0-50	10	—	16505	$112.20	16525	$142.50	16460	$115.50	16480	$145.80	16545	$118.80	16565	$149.10
MPERES							Model 3344XA							
0-5	.5 VA MAX.	—	—	—	—	—	16465	$127.05	16485	$157.35	—	—	—	—
OLTS							Model 3344XA							
0-10	1000Ω/V.	—	—	—	—	—	16570	$124.35	16575	$154.50	—	—	—	—
ERATURE							Model 3324XA							
to + 225°F	5	I/C**	—	—	—	—	16801	$120.00	16807	$156.00	—	—	—	—
to + 300°F	5	I/C**	—	—	—	—	16802	120.00	16808	156.00	—	—	—	—
to + 500°F	10	I/C**	—	—	—	—	16803	117.00	16809	153.00	—	—	—	—
to + 750°F	10	I/C**	—	—	—	—	16804	117.00	16810	153.00	—	—	—	—
to +1000°F	10	I/C**	—	—	—	—	16805	117.00	16811	153.00	—	—	—	—
to +1500°F	10	C/A**	—	—	—	—	16806	117.00	16812	153.00	—	—	—	—

ile control models use external power supply. See dimensions.
T mocouple not supplied. See panel instrument accessory page for I/C type thermocouples. C/A thermocouples will be available soon.

HENOLIC CASE CONTROLLERS
N) INSTRUMENT RELAYS

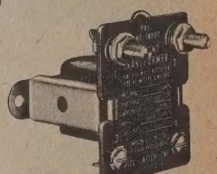
ge	Approx. Resistance (Ohms)	4½" CONTACTLESS CONTROLLERS Single Control Point (High Limit) Cat. No.	Single Control Point (High Limit) Price	Double Control Point* Cat. No.	Double Control Point* Price	4½" CONTACT SWITCHING RELAYS Double Control Point Cat. No.	Double Control Point Price
BAND DC OAMPERES		Model 29TXA		Model 29TXA			
0	5500	16700	$120.60	16701	$150.75	—	—
5	3000	16702	110.70	16703	140.85	—	—
0	2000	16704	105.75	16705	135.90	—	—
00	570	16706	102.30	16707	132.60	—	—
IICROAMPERES		Model 29XA		Model 29XA		Model 29XA	
0	5200	—	—	—	—	07032	$ 58.95
00	1800	—	—	—	—	07034	56.40
00	570 (1000‡)	16708	$ 99.00	16709	$129.15	07036	52.80
00	220 (280‡)	16710	99.00	16711	129.15	07038	52.05
IILLIAMPERES		Model 29XA		Model 29XA		Model 29XA	
	80 (140‡)	16712	$ 97.80	16713	$128.10	07040	$ 50.85
IILLIVOLTS		Model 29XA		Model 29XA		Model 29XA	
0	10	16714	$ 98.10	16715	$128.40	07050	$ 51.00
MPERES		Model 49XA		Model 49XA			
	0.5 VA MAX.	16716	$109.65	16717	$139.95	—	—
OLTS		Model 49XA		Model 49XA			
0	1000Ω/V	16718	$106.95	16719	$137.10	—	—

stance in brackets are for contact type only.
ile control contactless models use external power supply module (supplied with unit). See dimensions age 20.

CONTROLLER ACCESSORIES

CURRENT TRANSFORMERS

Designed for use with 0-10 volt AC meters. Available from stock, they convert meter relays to AC current control units.

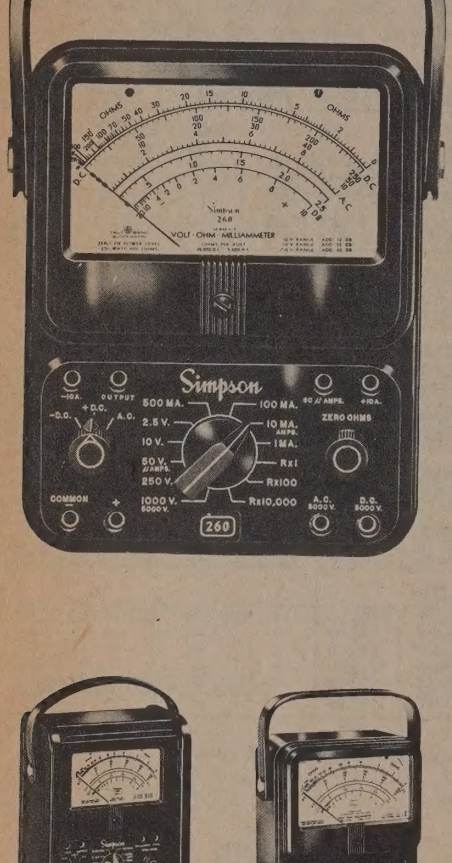


Model 186

Range	V.A.	Part Number	Price
0-50 mA	0.40	01294	$13.65
0-100 mA	0.50	01295	12.75
0-200 mA	0.37	01296	12.75
0-300 mA	0.48	01303	12.75
0-500 mA	0.53	01304	12.75
0-750 mA	0.37	01307	12.75
0- 1 Amp	0.42	01308	11.85
0- 2 Amp	0.54	01309	11.85
0- 3-Amp	0.66	01311	11.85
0- 5 Amp	0.75	01312	11.85
0-10 Amp	1.45	01314	11.85
0-15 Amp	1.05	01315	11.85
0-20 Amp	1.04	01316	11.85
0-25 Amp	1.50	01317	11.85
0-30 Amp	1.10	01318	11.85
0-40 Amp.	1.09	01319	11.85
0-50 Amp	1.90	01321	11.85

See pages 18 and 19 for thermocouples and other accessories.

Simpson VOLT OHM MILLIAMMETERS



260® The World's Best Selling VOM Family of Instruments
NEW! TAUT BAND MOVEMENT

260® Series 5 is famous for rugged dependability and advanced features. The Sim 50-microampere movement is self-shielding and shock-proof . . . for outstanding racy and repeatability. Varistor protects the movement from even 200,000% overl A replaceable 1-Ampere fuse guards the input circuits. Wide selection of access are available, including high-voltage probes, carrying cases, and exclusive A Tester plug-in adapters.

The 260® family includes Volt-Ohm-Milliammeters with special features, su mirror scales (260-5M, 261-2, 270-3), 1.25% DC accuracy. (270-3), and temper ranges (255). The chart on the next page has specifications for the entire 260® fa

Complete with operator's manual, test leads (No. 07500), and batteries.

260-5 ..... $
260-5RT (Roll-top protective case) .....
260-5M (Mirror scale and knife-edge pointer) .....
260-5MRT (Mirror scale and roll-top case) .....
Ever-Redy Vinyl Carrying Case, for above. No. 00805 .....

260-5P The Famous GOOF PROOF VOM — TAUT BAND MOVEMENT

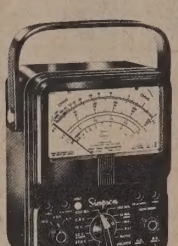
Virtually 100% protected! Makes burned components, bent pointers, and blown rectifi thing of the past. Ideal for use when exploring unfamiliar equipment, especially if no sche is available. Also popular in schools, or wherever a VOM must be used by inexperienced pe nel. No other VOM has all these features:

1. Reset button pops out to indicate overload.
2. Circuits cannot be reset while overload is present.
3. Does not require massive overloads to activate.
4. All ranges protected except those not feasible in a portable instrument (1000 and VDC, 10 Amperes DC.)

Uses same accessories as the 260-5, including Add-A-Tester adapters.

260-5P ..... $
260-5PRT (with roll-top protective case) 1

260-5RT

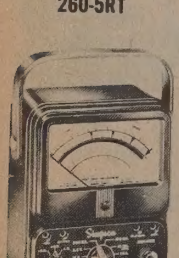

260-5P

261-2 and 270-3 HIGH ACCURACY VOLT-OHM MILLIAMMETERS—TAUT BAND MOVEM

Designed for VOM applications requiring higher accuracies. They have all the features o 260-5M, including mirror scale, varistor protected self-shielding movement, and Adjust- handle. Special calibration circuits and components, combined with strict manufacturing con produce outstanding accuracy. 270-3 has built-in temperature compensation. Both use all accessories, including plug-in Add-A-Tester adapters.

261-2 ..... $
261-2RT (Roll-top protective case) .....
270-3 .....
270-3RT (Roll-top protective case) .....

Complete with operator's manual, test leads (No. 07500), and batteries.
Ever-Redy Vinyl Carrying Case, for above. No. 00805 .....


261-2

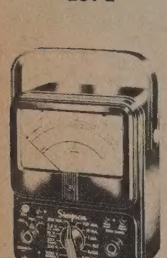
270--3

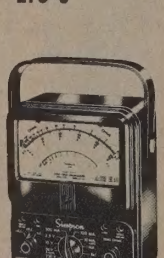
255 VOM with TEMPERATURE RANGE — TAUT BAND MOVEMENT

Designed by Simpson for a major utility company to meet the specific needs of serviceme the gas appliance, electrical heating and appliance fields — for servicing and installation. important features of 260® VOM, plus temperature range of +100°F. to +1050°F. Low volt drop on DC current ranges for servicing new solid-state controls. AC clamp-on ad model 150 is available to check AC currents up to 250 Amperes, without disconnecting or opening the circuit.

Complete with operator's manual, test leads with prods (No. 00115), 5 foot thermocouple (No. 00163), and batteries.

255 ..... $
150 Amp-Clamp Cat. No. 00532 .....
10,000 volt AC High-Voltage Probe, Cat. No. 00161 .....
Specially designed Carrying Case for 255. No. 00549 .....
Probe Case, snaps onto above Carrying Case. No. 00574 .....


255


250

250 VOM with 50 MILLIVOLT DROP — TAUT BAND MOVEMENT

Makes testing new solid-state circuits easier. All the features of the famous 260® includi 1-ampere fused input, slf-shielding varistor protected movement and Adjust-A-Vue handle w folds to use as a stand. Plus modified range coverage and 50 millivolt drop on DC cur ranges . . . specifically for solid-state circuits. Taut band movement is shock-proof.

250 ..... $7
Ever-Redy Vinyl Carrying Case, for above. No. 00805 1

Net
© United Technical Publica

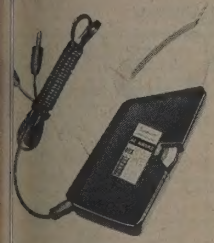
Simpson VOLT OHM MILLIAMMETERS

CIFICATIONS — 20,000Ω/V DC; 5,000Ω/V AC

RANGES	250	255	260-5	260-5M	260-5P	261-2	270-3
lts	0-0.050; 0-0.250; 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000	0-0.050; 0-0.250; 0-1; 0-2.5; 0-10; 0-50; 0-250; 0-1000	0-0.25; 0-2.5; 0-10; 0-50; 0-250; 0-1000; 0-5000				
lts	0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000	0-2.5; 0-10; 0-50; 0-250; 0-1000	0-2.5; 0-10; 0-50; 0-250; 0-1000; 0-5000				
icroamperes	0-50 (Both 50 and 250 MV Drop)		0-50 (250 MV Drop)				
illiamperes	0-1; 0-10; 0-100; 0-500 (50 MV Drop)		0-1; 0-10; 0-100; 0-500				
nperes	0-10 (50 MV Drop)	None	0-10 (250 MV Drop)				
nperes	Up to 250 AC Amps with Optional Amp-Clamp Adapter						
ale (1 MW-600Ω)	−20 to +10; −8 to +22; +6 to +36; +20 to +50	None	−20 to +10; −8 to +22; +6 to +36; +20 to +50				
t Ranges	None	None	0.1 mfd capacitor in series with all AC voltage ranges through 250 volts.				
tance Ranges	R x 1 0-2000Ω (12Ω center)	R x 100 (0-200KΩ (1200Ω center)	R x 10K 0-20 megΩ (120KΩ center)				
erature Range	None	+100°F. to +1050°F.	None				
CIES:							
MV; 0-250 MV; to 0-1000 V DC	±2% F.S.	±2% F.S.	±2% F.S.			±1.5% F.S.	±1.25% F.S.
0 V DC	—	—	±3% F.S.			±2.5% F.S.	±2.25% F.S.
Microamperes	±1% F.S.	±1% F.S.	±1.5% F.S.			±1.0% F.S.	± .75% F.S.
A to 0-10 A DC	±2% F.S.	±2% F.S.	±2% F.S.			±1.5% F.S.	±1.25% F.S.
x	±2.5° of Arc	±2.5° of Arc	±2.5° of Arc			±2.0° of Arc	±1.5° of Arc
00, R x 10,000	±2.0° of Arc	±2.0° of Arc	±2.0° of Arc			±1.5° of Arc	±1.0° of Arc
to 0-1000 V AC	±3″ F.S.	±3% F.S.	±3% F.S.			±3% F.S.	±2.0% F.S.
0	—	—	±4% F.S.			±4% F.S.	±3% F.S.
ment Type	TAUT BAND Self Shielding Annular						
erature Compensated	No	No	No	No	No	No	Yes
Movement Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
able Tester Circuit Protection	Not	Not	Not	Not	Yes	Not	Not
r Scale	No	No	No	Yes	No	Yes	Yes
Length	4.2 inches						
nsions	5¼″ x 7″ x 3⅛″						
Veight	3½ lbs.						
	$70.00	$90.00	$65.00	$67.00	$97.00	$73.00	$78.00

sories	Description	Cat. No.	Price	Description	Cat. No.	Price
50, 255, 260-5/5M/261/270	10,000v DC High voltage probe	0507	$17.00	Leather Carrying Case	1818	$12.00
Accessories on Page 31	25,000v DC High voltage probe	0508	17.00	Ever-Redy Carrying Case	0805	14.00
	50,000v DC High voltage probe	0509	17.00	Roll top safety case only	0249	12.00
	10,000v AC High voltage probe	0161	17.00	Utility Carrying Case, Vinyl	0549	20.00
	Banana plugs and alligator clip	7500	2.75	Probe Case	0574	6.00
	Banana plugs and test prods	7538	3.25	Thermocouple lead (5 ft.) (Model 255 only)	0163	6.00

p. fuse limits maximum current.



150

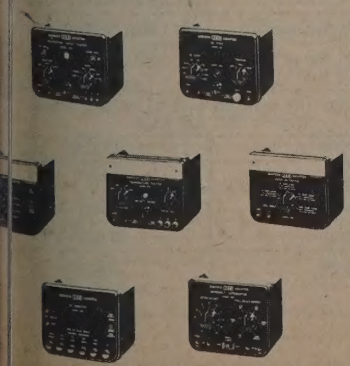
AMP-CLAMP PLUG-IN ADAPTER FOR AC AMPERE MEASUREMENTS

Clamp-on AC ammeter adapter allows measurement to be made without breaking circuit being tested. Simply plugs into 260®, 261, 270, 250 or 255 VOM. Ranges: 0-5, 10, 25, 50, 100, 250 AC Amperes. Read-out is on VOMs 0-2.5 VAC scale. May be used with any VOM having 0-2.5, or 0-3 VAC range. When used with 0-3 VAC adapter ranges are from 0-6 to 0-300 AC Amperes. Rugged construction, and easy to use.

Model 150 Cat. No. 00532 ..... $30.00

Carrying Case No. 00548 ..... 8.00

0 ADD-A-TESTER APTERS

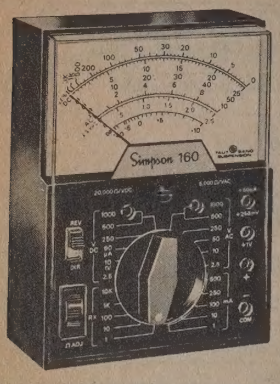


MODEL	RANGE	ACCURACY
TRANSISTOR TESTER MODEL 650 — $44.00	BETA: 0-5, 50, 250. Ico: 0-100 μa.	BETA: ±5%* Ico: ±3%*
DC VTVM MODEL 651 — $52.00	VOLTS: 0-0.5, 1.0, 2.5, 10,25, 50, 100, 250, 500 INPUT IMPEDANCE: Greater than 10megΩ on all ranges.	±3% F.S.*
TEMPERATURE TESTER MODEL 652 — $49.00	−50°F to 100°F, 100°F to 250°F. Sensing Element: Thermistor.	−50°F to −30°F: ±4°F (nominal) −30°F to +90°F: ±2°F (nominal) +90°F to +100°F: ±4°F (nominal) +100°F to +220°F: ±2°F (nominal) +220°F to +250°F: ±4°F (nominal)
AC AMMETER MODEL 653 — $30.00	0-0.25, 1.0, 2.5, 12.5, 25 Amps. Frequency range: 50-3000 cycles.	±3% F.S.
AUDIO WATTMETER MODEL 654 — $34.00	LOAD RANGES: 4, 8, 16, 600 ohms. WATTAGE: 25 watts (8, 600Ω), 50 watts (4, 16Ω) continuous. Intermittent duty: 50 and 100 w.	±10% (±7% with 261 and 270)
MICROVOLT ATTEN. MODEL 655 — $30.00	2.5 to 250,000 microvolts in decade steps. Frequency: DC to 20kc.	±1 DB
BATTERY TESTER MODEL 656 — $30.00	Up to 90 volts.	±3% F.S.*
MILLIOHMMETER MODEL 657 — $54.00	0-0.1 (150 ma. max. output), 0.25 (103 Ma.), 0.5 (90 Ma.), 1.0 (80 Ma.).	±2% F.S. (±1½% with 261 and 270).
DC AMMETER MODEL 661 — $33.00	DC AMPERES: 0-10, 2.5, 5, 10, 25.	±2% F.S. (±1½% with 261 and 270).

* 1% better accuracy when used with 261 or 270.

Simpson MULTI-TESTERS

NEW! IMPROVED 160 HANDI-VOM



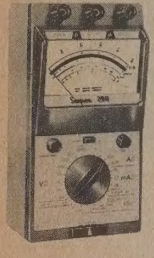
Now even better... with ±2% DC and ±3% AC accuracy. Just 3⅝" wide, and a mere 12 ounces in weight, yet the 160 Handi-VOM has the accuracy and sensitivity of a full size VOM. The self-shielding Taut Band movement features outstanding repeatability and freedom from stray magnetic fields. And the movement is varistor protected from even 200,000% overloads. Built for today's VOM needs, including solid-state circuit testing, the 160 has 0-0.25 VDC and 0-50 DCμA ranges. Five resistance ranges are provided for easy and accurate ohms measurements. Optional accessories include probe-tip leads, and a new vacuum-formed carrying case. Complete with test leads and operator's manual.

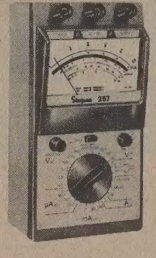
160 Handi-VOM $55.00

SPECIFICATIONS	160
Ranges — DC Volts	0-0.25, 1.0, 2.5, 10, 50, 250, 50
AC Volts	0-2.5, 10, 50, 250, 500, 1
DC Microamperes	0-50
DC Milliamperes	0-1, 10, 100, 500
DC Amperes	NONE
AC Milliamperes	NONE
AC Amperes	NONE
DB Scale (1 mW into 600 Ω)	−20 to +10, −8 to +22 +6 to +36, +20 to +5
DC Resistance	R x 1 (30 Ω center), R x 10 R x 100, R x 1k, R x 10k
Accuracy — DC	±2%
AC	±3%
Sensitivity — DC	20,000 Ω/volt
AC	5,000 Ω/volt
Movement Type	Taut Band
Illuminated Scale	NO
Light-Up Continuity Indicator	NO
Scale Length	3.0"
Dimensions (HxWxD)	4⅞" x 3⅝" x 1¾"
Net Weight	12 ounces
Price	$55.00

NEW MULTI-TESTERS MEASURE:

● VOLTAGE ● CURRENT
● CAPACITANCE ● RESISTANCE

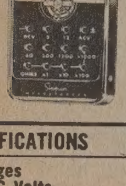




Both of these new Simpson VOMs have built-in capacitance and high Megohm ranges! The high voltage necessary for these measurements is supplied from an external source (which can simply be line voltage where AC is required). Overload circuit breaker protects all ranges except 100 volts and higher. Supplied complete with test leads and operator's manual.

Model 256 .....$105.00
Model 257 .....$ 95.00

Manufactured in Austria



Model 355 MIDGETESTER®

So small (2¾" x 4½" x 1") it easily slips into your shirt pocket. No wonder the 355 Midgetester® is popular with those who must make basic voltage and resistance measurements "in the field."

Complete with test leads and operator's manual.

355 Midgetester® $50.00

NEW Model 208 and 209 AC-DC VOMS

Bright new ideas in ha VOM packages:

- AC current ranges
- Illuminated scales
- Combined current-v measurement
- Light-up continuity ci

Both of these new Simpson VOMs have **AC current** built-in. Separate inputs for voltage and current allow combined measurements using two sets of leads. All you do to read current or voltage is flip the range switch.

Complete with test leads and operator's manual.

Model 208 .....
Model 209 .....

Manufactured in West Germany

SPECIFICATIONS	208	209	355	256	257
Ranges DC Volts	0-0.6, 3, 12, 60, 300, 600	0-0.06, 12, 60, 300, 600	0.3, 12, 60, 200, 1200	0-0.1, 0.5, 2.5, 10, 25, 100, 250, 500, 1000, 5000	0-0.1, 0.5, 2.5, 10, 25, 250, 1000, 5000
AC Volts	0-12, 60, 300, 600	0-12, 60, 300, 600	0.3, 12, 60, 200, 1200	0-0.5, 2.5, 10, 25, 100, 250, 500, 1000, 5000	0-10, 50, 250, 1000
DC Microamperes	NONE	NONE	NONE	0-100	0-10, 50, 250
DC Milliamperes	0-0.6, 30, 120, 600	0-120, 600	NONE	0-0.5, 2.5, 10, 50	0-1, 5, 25, 100
DC Amperes	0-3	0-3, 12	NONE	0-0.25, 1, 5	0-1
AC Milliamperes	0-06, 6, 30, 120, 600	0-6, 30, 120, 600	NONE	0-0.5, 2.5, 10, 50	NONE
AC Amperes	0-3	0-3, 12	NONE	0-0.25, 10, 50	NONE
DB Scale (1 mW into 600 Ω)	NONE	NONE	NONE	−34 to −4; −20 to +10; −8 to +22; 0 to +30; +12 to +42; +20 to +50; +26 to +56	−8 to +22; +6 to + +20 to +50
DC Resistance	R x 1 (128 Ω center), R x 100	R x 1 (43.9 Ω center), R x 100	R x 1 (120 Ω center), R x 10, R x 100, R x 1k	R x 1 (30 Ω center), R x 1k, R x 10k, R x 1 Meg*	R x 1 (30 Ω center), R x 1k, R x 100k, R x 10 M
AC Resistance	NONE	NONE	NONE	R x 1 Meg (1 MegΩ center)**	R x 1 Meg (1 MegΩ cente
Capacitance	NONE	NONE	NONE	100 pF to 20,000 pF** 2,000 pF to 5 μF**	2,000 pF to 5 μF**
Output Ranges	NONE	NONE	NONE	0.1 μF capacitor in series with AC voltage ranges from 10 thru 250 V.A.C.	
Accuracy — DC	±1.5%	±1.5%	±3%	±1.0%	±1.5%
AC	±2.5%	±2.5%	±5%	±1.5%	±2.5%
Sensitivity — AC	10,000 Ω/v	1,666 Ω/v	10,000 Ω/v	25,000 Ω/V	100,000 Ω/V
DC	10,000 Ω/v	1,666 Ω/v	10,000 Ω/v	2,000 Ω/V	20,000 Ω/V
Price	$72.50	$68.00	$50.00	$105.00	$95.00

Supplied complete with batteries, test leads and operator's manual.

* With external DV voltage supply which may be any voltage between 100 and 130 volts (100 and 140 volts with Model 257).

** With external AC voltage supply which may be any 60 Hz voltage between 100 and 240 volts.

Net

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Simpson VOLT-OHM-MILLIAMMETERS

EW! Model 202 ACCU-LOG VOM

irst VOM to give you consistent "percent-of-reading" racy... anywhere on the readout scale!

C-LOG has a special quasi-logarithmic scale. It gives you "percent-of-dg" accuracy anywhere on the readout scale, yet still allows easy zero ad-tent with a linear portion at the low end. There's no need to keep readings th high end of the scale, or worry about "percent-of-full scale" accuracy itions. Other features you'll like: two low power ohmmeter ranges, over-brotected taut band movement, and a large 7" antiparallax mirror scale.

E RANGES
03 - 0.33; 0.1 - 1.1; 1 - 11; 10 - 110; 30 - 330; 100 - 1100 volts
- 11; 10 - 110; 30 - 330; 100 - 1100 volts

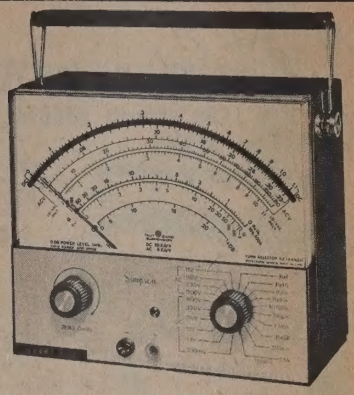
NT RANGES
01 - 0.11; 0.1 - 1.1; 1 - 11; 10 - 110; 100 - 1100 milliamperes

OWER RESISTANCE RANGES
ohm center, 2.7 mW maximum load); Rx10 (40 ohm center, 0.27 mW maximum load)

ANCE RANGES
(7k-ohm center); Rx10k (70k-ohm center); Rx100k (700k-ohm center)

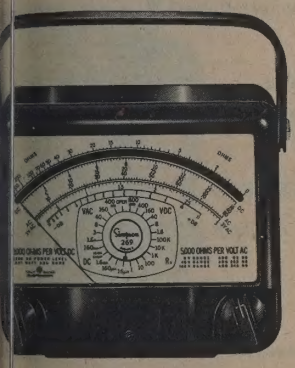
IVITY
0k Ω/V AC: 5k Ω/V

ACY
±2% of reading AC: ±3% of reading Resistance: ±3° of arc



ACCU-LOG Model 202 complete with test leads, batteries, and operator's manual $100.00
Carrying Case, Vinyl with Lead Storage Space, Cat. No. 00577.... $ 17.00
Carrying Case, Vinyl with Sponge Lining, Cat. No. 01565 ..... $ 17.00

NCH VOMs



NEW 269-3
SIER TO READ 7" SCALES

NEW! MODEL 269 SERIES 3
100,000 Ω/V
VOLT-OHM-MICROAMMETER

Now improved! . . . with a self-shielding Taut Band meter movement that gives better repeatability, plus faster pointer action. This new meter movement is combined with a new mirror scale; and knife-edge pointer, eliminating parallax errors. Large, readable scale is over 6 inches long. Accuracy is ±2% DC and ±3% AC, with new range coverage, too. One switch selects all 27 ranges. Battery replacement is quick and easy with the snap-on compartment. And the new 269-3 is protected from overloads with a replaceable 1.5 Ampere fuse at the input, and a varistor at the meter movement.

Complete with No. 00115 test leads, 4000 volt DC probe extension, and operator's manual.

Model 269-3 ..... $98.00

MODEL 262-3 • DC/AC VOLT-OHM-MILLIAMMETER

Model 262-3 Volt-Ohm-Milliammeter is very compact with 33 ranges on a large, easy to read 7" scale that makes accurate repetitive readings easy to attain. Meter movement furnished with diode overload protection. One control selects range and function. Self-shielded meter movement incorporates spring backed jewels which eliminates damage to the meter pivots that could result from shock and vibration — dependability and longer life are ensured. Complete with test leads No. 00115 and operator's manual.

Model 262-3 ..... $83.00

MODEL 263 • NEW DUAL SENSITIVITY VOM
DC/AC VOLT-OHM-MILLIAMMETER

Dual sensitivity Volt-Ohm-Milliammeter with accuracies of ±1½% DC and ±3% AC F.S. Overlapping ranges offers greater accuracy expressed as a percentage of reading. Diode overload protection (Prevents movement burn-out even on 200,000% overload). External compartment makes battery replacement easier. Uses 1½ volt alkaline battery to insure greater stability on low ohms scale. Complete with test leads No. 00115 and operator's manual.

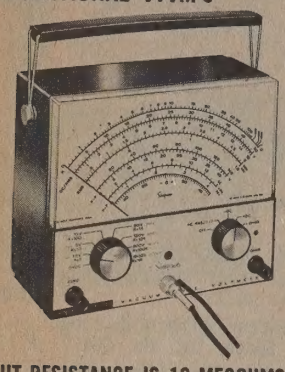
Model 263 ..... $97.00

	MODEL 262-3	MODEL 263	MODEL 269-2
RANGES:	20,000 Ω/V DC 5,000 Ω/V AC	20,000 Ω/V DC • 10,000 Ω/V DC 10,000 Ω/V AC • 5,000 Ω/V AC	100,000 Ω/V DC 5,000 Ω/V AC
Volts	0-1.6/0-8/0-40/0-160/0-400/ 0-1600/0-4000	0-0.15/0-0.75/0-3/0-7.5/0-30/0-75/0-300/ 0-750/0-3000 @ 20KΩ/V 0-0.3/0-1.5/0-6/0-15/0-60/0-150/0-600/ 0-1500/0-6000 @ 10KΩ/V	0-1.6/0-8/0-40/0-160/0-400/ 0-800/0-1600/0-4000
Volts	0-3/0-8/0-40/0-160/0-400/0-800	0-2.5/0-7.5/0-30/0-150/0-750 @ 10kΩ/V 0-5/0-15/0-60/0-300/0-1500 @ 5KΩ/V	0-3/0-8/0-40/0-160/0-400/0-800
Microamperes	0-80/0-160	0-75 @ 150 MV; 0-150 @ 300 MV	0-16/0-160
Milliamperes	0-1.6/0-16/0-160	0-0.75/0-7.5/0-75/0-750 @ 150 MV; 0-1.5/0-15/0-150 @ 300 MV	0-1.6/0-16/0-160
Amperes	0-1.6/0-8	0-7.5 @ 150 MV; 0-1.5/0-15 @ 300 MV	0-1.6/0-8
Scale (L1MW-600)	−12 to +45.5 db in four ranges	−20 to +75.5 db in 10 ranges	−12 to +45.5 db in four ranges
tput Ranges	0.1 mfd capacitor in series with all AC Voltage ranges through 160 Volts	0.1 mfd capacitor in series with all AC Voltage ranges through 300 Volts	0.1 mfd capacitor in series with all AC Voltage ranges through 160 Volts
sistance Ranges	R×1 0-500Ω; R×10 0-5000Ω; R×100 0-50KΩ R×1K 0-500KΩ; R×10K 0-5 megΩ (4.5Ω Center); R×100K 0-50 megΩ	R×1 0-500Ω; R×10 0-5000Ω; R×100 0-50KΩ R×1K 0-500KΩ; R×10K 0-5 megΩ (4.5Ω Center); R×100K 0-50 megΩ	R×1 0-200Ω; R×10 0-20KΩ; R×100 0-200KΩ R×1K 0-2 megΩ; R×10K 0-20 megΩ (12Ω center); R×100K 0-200 megΩ
CCURACIES: C Volts	±3%	0-0.15 to 1500 ±1½%; 0-3000 to 6000 ±2½%	0-1.6 to 1600 ±2%; 0-4000 ±3%
C Volts	±4%	±3%	0.3 to 800 ±3%
C Current	±3%	±1½%	All Ranges ±2%
×1	±3° of Arc	±3° of Arc	±3° of Arc
×10, R×100K	±2½° of Arc	±2½° of Arc	±2½° of Arc
cale Length	6.2 inches		
imensions	6" x 7¼" x 3"		
et Weight	4 lbs.		

Simpson ELECTRONIC VOLT-OHMMETERS

MODEL 312
ELECTRONIC VOLT-OHMMETER

OFFERS 40% LESS CIRCUIT LOADING THAN MOST CONVENTIONAL VTVM's



Large easy-to-read 7" Meter Scale

INPUT RESISTANCE IS 16 MEGOHMS—NOT THE USUAL 11

This Simpson VTVM, Model 312, offers a tracking error of less than 1% a
vides accuracies of ±3% on all AC and DC ranges. The instrument has a s
designed circuit that protects the meter against burnout. Its ½ volt DC
meets today's solid state testing requirements.

Rugged, phenolic case and large easy-to-read seven inch scale.

Model 312 with AC ohms/DC probe No. 00150 and operator's manual .....
Dual Voltage Model 312, 220/110 volts, 50/60 Hz .....
R. F. Probe, Cat. No. 00152 .....
High Voltage Probe (30,000 V. Max.), Cat. No. 00155 .....
Carrying Case, Vinyl with Lead Storage Space, Cat. No. 00577 .....
Sponge Lined Leather Case, Cat. No. 01565 .....

LINE VOLTAGE
105/125V, 50/60 Hz
Size: 7¾" x 6¾" x 3¾". Weight: 4¾ lbs.

VOLTAGE RANGES
DC: 0-0.5, 1.5, 5, 15, 50, 150, 500, 1500
(16 Megohms input impedance)
AC: (R.M.S.): 0-1.5, 5, 15, 50, 150, 500, 1500
(1 Megohm minimum input impedance)
AC: (Peak to Peak): 0-4, 14, 40, 140, 400, 1400, 4000

RESISTANCE RANGES
RX1 (10 Ω center), RX10, RX100, RX1k, RX10k, RX100k, RX1M

FREQUENCY RESPONSE
±3% from 15 Hz to 3 Megahertz on all AC voltage ranges through 150
With R.F. Probe: 10kHz to 250 MHz ±1 dB. R.F. probe usable up to 40 volts

ACCURACIES
DC: ±3% of full scale
AC: ±3% of full scale
Resistance: ±3° of arc

MODEL 311-3 AC/DC Electronic Volt-Ohmmeter

Model 311 is the most advanced vacuum tube volt-ohmmeter in its field which features: High DC input impedance (22.0 Megohm). This reduces circuit loading and permits measurements in high impedance circuits. Direct readout of RMS and peak to peak values. Excellent accuracy for low DC voltage measurements in transistorized circuitry.

LINE VOLTAGE
105/125 v, 50/60 Hz

Size: 7½" x 5⅝" x 4½". **Net Weight:** 5 lbs.

Model 311-3 with DC/AC ohms probe No. 07594, ground lead No. 00733 and operator's manual **$91.00**
High Frequency Probe, Cat. No. 00174 ..... **16.00**
High Voltage Probe (30,000 V. Max.), Cat. No. 00732 ..... **17.00**

RANGES

DC: 0-1.5v; 5v; 15v; 50v; 150v; 500v; 1500v. (22 Meg Ω input impedance)
AC: 0-1.5v; 5v; 15v; 50v; 150v; 500v; 1500v. (RMS) (Min. 2.2 Meg Ω input impedance)
PP: 0-4v; 14v; 40v; 140v; 400v; 1400v; 4000v. (Min. 2.2 Meg Ω input impedance)
AF: 0-1.5v; 5v; 15v; 50v; 150v; 500v; 1500v. (30 Hz to 110kHz ±5%)
RF: 1.5v; 5v; 15v; 50v; 150v. with probe (50 Hz to 100MHz, 0-150 VRMS)

RESISTANCE RANGES
1k Ω (10 Ω center); 10k Ω (100 Ω center); 100k Ω (1k Ω center), 1 Meg Ω (10k Ω center); 10 Meg Ω (100k Ω center); 100 Meg Ω (1 Meg Ω center); 1000 Meg Ω (10 Meg Ω center).

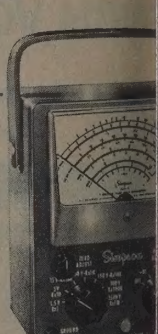
FREQUENCY RESPONSE
±5% to 100 kHz (with RF probe, usable to 250 MHz)

ACCURACY

DC VOLTS:
±3% of full scale.

AC VOLTS:
±5% of full scale.

DC RESISTANCE:
±3° of linear arc.



MODEL 303-2 AC/DC Electronic Volt-Ohmmeter

Model 303 is a worthy companion to the World Famous 260 volt-ohm-milliammeter. Model 303, a ruggedly built instrument with high accuracy, features low current consumption, wide voltage and resistance ranges, and a large, easy-to-read 4½ inch scale.

LINE VOLTAGE
105/125 v, 50/60 Hz

Size: 7" x 5¼" x 3⅛". **Net Weight:** 4 lbs.

Model 303-2 with DCV probe No. 00067, ACV-ohm probe No. 00068, ground lead No. 00069 and operator's manual **$92.00**
Model 303-2RT (in roll top safety case) **97.00**
Part No. 00073, R.F. Probe **11.75**
High Voltage Probe, 30,000 VDC at No. 00074.... **17.00**
Dual Voltage Model 303-2, 220/110 v, 50/60 Hz **98.00**
Dual Voltage Model 303-2RT, 220/110 v, 50/60 Hz **104.00**

AC-DC: 1.2v; 12v; 60v; 300v; 1200v.
AF: 1.2v; 12v; 60v.
RF: 20 volts maximum. (With RF Probe)
DB: −20 to +63 dB in five ranges.

RESISTANCE RANGES
1k Ω (10 Ω center); 100k Ω (1000 Ω center); 1 Meg Ω (10k Ω center); 10 Meg Ω (100k Ω center); 1000 Meg Ω (10 Meg Ω center).

INPUT IMPEDANCE
10 Megohms (all ranges) on DCV; 275K ohms shunted by 210 pF on ACV.

FREQUENCY RESPONSE
AF: Flat to 100 kHz on the three low AC ranges
RF: 20 kHz to 100 MHz (with RF probe)

DC VOLTS:
±3% of full scale.

AC VOLTS:
±5% of full scale.

DC RESISTANCE:
±3° of linear arc.

MODEL 715 AC Electronic Volt-Ohmmeter

High input impedance, multi-voltage ranges and wide frequency response offers a greater versatility for general purpose applications. Ideal for hi-fi and general low level audio work such as hum and ripple measurements, IF gain and vibration analyzing. Model 715 features a specially designed meter scale that provides dB markings on both the voltage range positions and the meter scale.

INPUT POWER REQUIREMENTS:
110 to 125 VRMS, 50/60 Hz at 10 watts

Size: 7½" W, 5½" H, 3" D. **Net Weight:** 3 lbs. 12 oz.
Complete with operator's manual and shielded input cable **$84.00**
Dual Voltage Model 715, 220/110 v, 50/60 Hz **91.00**

Volts: 0-.01; .03; .1; .3; 1; 3; 10; 30; 100; 300 rms
Decibels: Total Range −52 to +52 dB
Zero dB: 1 milliwatt in 600 ohms
Scale Markings: −12 to +2 dB

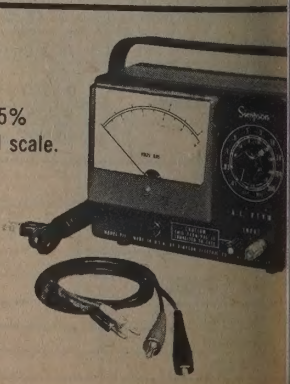
TESTER SENSITIVITY
10 millivolts full scale on lowest range

INPUT IMPEDANCE
Minimum 1 Meg Ω at 1 kHz shunted by 25 pF

INTERNAL MULTIPLIERS
±1% precision resistors

FREQUENCY RESPONSE
10 Hz to 400 kHz ±1 dB

±5%
of full scale.



Net

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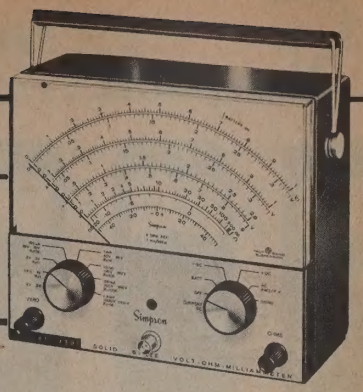
Simpson FET-INPUT VOM

...! MODEL 313 SOLID-STATE VOM



FET Input!

...FEATURES...with VOM CONVENIENCE

...accuracy and high impedance in a portable instrument. Operates ...w 300 hours on inexpensive, easily obtained batteries. Switch ...s attery condition to be checked instantly. A "power on" indicator ...o ovided. Built for rugged use, the self-shielding movement is shock ...d overload protected. All voltage range inputs are fully protected, ...n AC line voltage can be applied on ohms ranges without damage ...e ield Effect Transistor input. Readouts are quick and easy on the ... scale. Accuracy of the new 313 is assured with bulit-in frequency ...perature compensation.

...13 complete with test leads, isolating probe, and opera- ...nual **$125.00**

... Case, Vinyl with Lead Storage Space, Cat. No. 00577 ..... **17.00**

...Lined Vinyl Case, Cat. No. 01565 ..... **17.00**

VOLTAGE RANGES
DC: 0-0.3, 1, 2, 10, 30, 100, 300, 1000 volts (11 Megohms input resistance)
AC: 0-0.3, 1, 2, 10, 30, 100, 300, 1000 volts (10 Megohms input resistance)

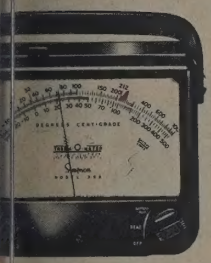
CURRENT RANGES
DC: 0-0.1, 1, 10, 100, 1000 milliamperes

RESISTANCE RANGES
RX1 (10 ohm center), RX10, RX100, RX1K, RX10K, RX100K, RX1M

FREQUENCY RESPONSE
±0.5 dB from 20 Hz to 100 kHz on 0-0.3, 1, 3 volt ranges
±0.5 dB from 20 Hz to 20 kHz on 0-10, 30, 100 volt ranges.

ACCURACY
DC: ±3% of full scale AC: ±3% of full scale Resistance: ±3° of arc

...ELS 385-3L, 388-3L, 389-3L TEMPERATURE TESTERS



388-3L

389-3L

385-3L

RANGE & ACCURACY	PROBES, LEADS & CARRYING CASES		
	Description	Cat. No.	
—50°F. to +70°F. ±1°F. @ Center Scale ±2°F. @ Either End	Surface Temperature Probe	00790	$ 9.00
	Free Air Temperature Probe	00789	12.00
	Additional Thermistor Lead	00010	9.00
	30 Ft. Thermistor Lead	00216	10.00
	50 Ft. Thermistor Lead	00415	11.00
	100 Ft. Thermistor Lead	00416	14.00
	150 Ft. Thermistor Lead	00417	18.00
	Ever-Redy Leather Carrying Case	08073	12.00

MODEL 385-3L TEMPERATURE METER
Model 385-3L is ideal for those fast, accurate temperature checks from —50°F. to +70°F. Lightweight, portable, fits easily in your hand. Three lead model. Takes temperature readings in three different locations with a simple flick of the selector knob. Standard Model has Fahrenheit scale. Supplied with one No. 00010 15 ft. thermistor lead and operator's manual.
Size: 3"x5⅞"x2½". **Wt.** 1½ lbs. **$45.00**

—50°F. to +1000°F. —40°C. to +500°C. ±1½ Scale Divisions	General Purpose Type	00190	$ 7.50
	Surface Temperature Probe Type (1000°F. Max.)	00187	12.00
	Rugged Service Lead (8 ft.)	00496	10.00
	Ever-Redy Vinyl Carrying Case	05262	14.00

MODEL 388-3L THERM-O-METER
Simpson's popular wide range Therm-O-Meter tester measures the temperature of practically anything within —50°F. to +1000°F. Standard model has combination °C. and °F. scale. Sensing Element: Thermocouple (Iron-Constantan). Supplied with internal battery and one 8' general purpose probe No. 00190 and operator's manual. Order additional probes as required.
Size: 7¹⁵⁄₁₆"x6"x2¹⁵⁄₁₆". **Weight:** 4 lbs.
Model 388-3L for three probes **$84.00**

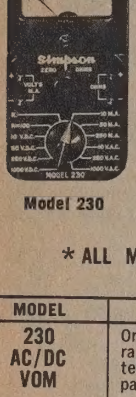
—50°F. to +100°F. —40°C. to +35°C. +100°F. to +250°F. +40°C. to +120°C. Within ±2°F.	Surface Temperature Probe	00790	$ 9.00
	Free Air Temperature Probe	00789	12.00
	Additional Thermistor Lead	00010	9.00
	30 Ft. Thermistor Lead	00216	10.00
	50 Ft. Thermistor Lead	00415	11.00
	100 Ft. Thermistor Lead	00416	14.00
	150 Ft. Thermistor Lead	00417	18.00
	Ever-Redy Vinyl Carrying Case	05262	14.00

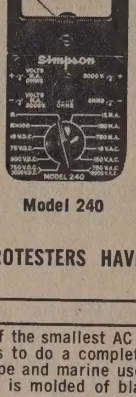
MODEL 389-3L
DUAL RANGE THERM-O-METER
Model 389-3L temperature tester, using three leads, makes temperature readings in three different locations at the same time; i.e., in a refrigerator, one lead could be connected to the evaporator plate, another to the wall of the food compartment and the third in the center of the food compartment. Readings are made quickly in 15 to 30 seconds depending on the medium being checked. Supplied with °C. and °F. scale. **Model** 389-3L....**$79.00**

0-10, 0-30, 0-100, 0-300, 0-1000 Millivolts ±3% of Full Scale	Test Prods and Spade Terminals	08379	$ 3.25
	Alligator Clips and Spade Terminals	08376	2.75
	Ever-Redy Vinyl Carrying Case	08073	12.00

APPLIANCE TESTER
MODEL 387 MILLIVOLTMETER
Make gas unit servicing faster, more accurate. Use Simpson's Millivoltmeter. Simply place the probe across the thermocouple terminals and test for the correct value. Checks Safety Thermocouples on Gas-Fired Units.
• Furnaces • Boilers • Hot Water Heaters
• Heaters • Dryers • Refrigerators
Size: 3"x5⅞"x2½". **Wt.:** 1½ lbs. **$39.00**

Simpson MICRO-TESTERS*


Model 230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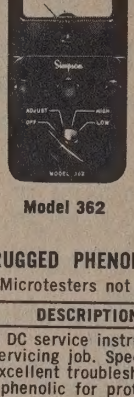
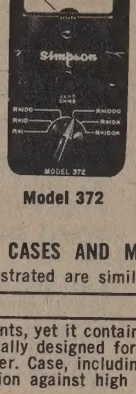
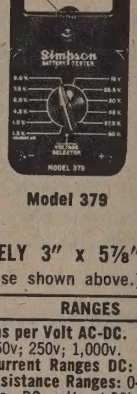
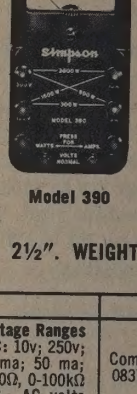
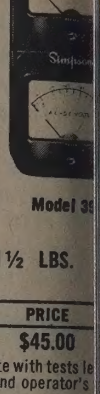

Model 362


Model 372

Model 378


Model 379


Model 390


Model 3

*** ALL MICROTESTERS HAVE RUGGED PHENOLIC CASES AND MEASURE APPROXIMATELY 3" x 5⅞" x 2½". WEIGHT: 1½ LBS.**

(Microtesters not illustrated are similar in appearance to those shown above.)

MODEL	DESCRIPTION	RANGES	PRICE
230 AC/DC VOM	One of the smallest AC and DC service instruments, yet it contains sufficient ranges to do a complete servicing job. Specifically designed for telephone, teletype and marine use. Excellent troubleshooter. Case, including the front panel, is molded of black phenolic for protection against high voltages.	**1,000 Ohms per Volt AC-DC. Voltage Ranges DC:** 10v; 50v; 250v; 1,000v. **AC:** 10v; 250v; 1,000v. **Current Ranges DC:** 10 ma; 50 ma; 250ma. **Resistance Ranges:** 0-1000Ω, 0-100kΩ **Accuracies:** DC volts ±3% F.S.; AC volts ±4% F.S.; DC resistance ±3° of linear arc from absolute value of resistance measured.	**$45.00** Complete with tests le 08375 and operator's
371 AC Voltmeter	Designed primarily for testing line voltages applied to motors, heating equipment and many other industrial applications.	**Ranges:** 0-150, 0-300, 0-600 volts. **Accuracy:** ±3% of full scale.	**$39.00**
376 AC Voltmeter	Rectifier type, 1000 ohms per volt. Useful in circuits where limited current is present. An excellent output meter when used with proper condenser.	**Ranges:** 0-5, 10, 25, 50, 100, 250, 500, 1000 AC volts. **Accuracy:** ±5% of full scale.	**$39.00**
377 DC Voltmeter	Resistance, 1000 ohms per volt. Useful in radio servicing and industrial applications.	**Ranges:** 0-1, 2.5, 5, 10, 25, 50, 100, 250, 500, 1000 DC volts. **Accuracy:** ±3% of full scale.	**$39.00**
240 AC/DC VOM	The "Hammeter." Specially designed for general application around labs, class room, ham shack, etc. Has voltage ranges of 3000 volts AC or DC to check high voltage on transmitters and receivers.	**1,000 Ohms per Volt AC-DC. Voltage Ranges DC:** 15v; 75v; 300v; 750v; 3,000v. **AC:** 15v; 150v; 750v; 3,000v. **Current Ranges DC:** 15ma; 150ma; 750ma. **Resistance Ranges:** 0-3,000Ω (30Ω center); 0-300KΩ (3KΩ center). **Accuracies:** DC volts ±3% F.S.; AC volts ±4% F.S.; DC resistance ±3° of linear arc from absolute value of resistance measured.	**$45.00** Complete with tests lea 08375 and operator's n
362 Low-Ohmmeter	The two ranges are essentially linear and permit highly accurate readings between 0.1 and 25 ohms. For checking motor armatures; switch and relay contact resistances; shorts between windings and grounds in radio chassis wiring; electrical equipment, etc.	**Ranges:** 0-5, 0-25 ohms. **Accuracy:** ±3% of linear arc length.	**$39.00** Complete with calibr test leads No. 083
372 Ohmmeter	Provides wide range of resistance measurements in a small package. .2 ohm to 500 megohms. Ideal for use in schools, on test benches or at inspection facilities.	**Ranges:** 0-500, 0-5000, 0-50,000, 0-500,000 ohms; 0-5, 0-50 megohms. **Center Scale:** 5, 50, 500, 5,000, 50,000, 500,000 ohms. **Accuracy:** ±3° of linear arc length.	**$39.00** Complete with tests lea 08375 and operator's m
375 DC Ammeter	Provides complete range from a fraction of an amp to 25 amps without external shunts. Ideal unit for use with unmetered power supplies.	**Ranges:** 0-1, 2.5, 5, 10, 25 amperes. **Accuracy:** ±3% of full scale.	**$39.00**
370 AC Ammeter	Ideal for checking small motors, line loads, etc., where AC current measurements are required. 60 Hertz. Self-contained current transformer.	**Ranges:** 0-1, 0-2.5, 0-5, 0-10, 0-25 amperes. **Accuracy:** ±5% of full scale.	**$39.00**
373 DC Milliammeter	General purpose tester. Valuable in a number of applications. Provides DC current measurements from .02 to 1000 ma.	**Ranges:** 0-1, 5, 10, 25, 50, 100, 250, 1,000 ma. **Accuracy:** ±3% of full scale.	**$39.00**
378 AC Milliammeter	Five separate ranges. Typical applications are transformer vacuum tube tests. Contains current transformer and indicating instrument in one case.	**Ranges:** 0-5, 25, 100, 250, 1,000 ma. **Accuracy:** ±5% of full scale.	**$39.00**
379 Battery Tester	Provides accurate indications of condition of all standard flashlight, hearing aid (mercury cells), radio batteries.	**Ranges:** 0-1.5, 4.5, 6.0, 7.5, 9.0, 15.0, 22.5, 30.0, 45.0, 67.5, 90.0v.	**$39.00** Complete with tests lead 08375 and operator's ma
374 DC Microammeter	Can be used with external resistors or multipliers as high sensitivity voltmeter at 20,000 ohms per volt. Can be shorted out of circuit by use of selector knob.	**Ranges:** 0-50, 100, 250, 500, 1,000 microamperes. **Accuracy:** ±3% of full scale.	**$39.00**
390 AC Volt-Amp-Wattmeter	The most popular tester for AC/DC volts, AC amps and AC watts with one meter. Rugged . . . useful for practically any appliance.	**Volts:** 0-150, 300. **Amps:** 0-3, 15. **Watts:** 0-300, 600, 1,500, 3,000. **Accuracy:** ±5% of full scale.	**$70.00** complete with test cord ass No. 08418 and operator's m
391 AC-DC Volt-Wattmeters	Simultaneous reading of volts and watts. Has separate meters, built-in cord and plug for connection to line outlet . . . separate switches for range selection.	**3,000 Watts Maximum AC or DC Range Volts:** 0-130, 0-260. **Watts:** 0-1,500, 0-3000. **Accuracy:** ±5% of full scale.	**$64.00** Supplied with cord, plu and operator's manua **Leatherette Carrying C Part No. 03413 — $12**
392 AC-DC Volt-Wattmeters	Simultaneous readings of volts and watts. Has separate meters, built-in cord and plug for connection to line outlet . . . separate switches for range selection.	**5,000 Watts Maximum AC or DC Range Volts:** 0-130, -260. **Watts:** 0-1,000, 0-5000. **Accuracy:** ±5% of full scale.	**$69.00** Supplied with cord, plu and operator's manua **Leatherette Carrying C Part No. 03413 — $12**

Ever-Redy Carrying Case, Part No. 04299 **$10.50** — for all Micro-Testers except Models 391 & 392.

Models 391 & 392 Carrying Case, Part No. 03413 $1

All prices are dealers net, subject to change without no

Net

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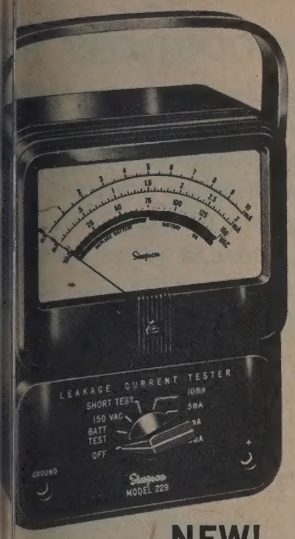
Simpson AC CURRENT LEAKAGE TESTER



NEW!

E 229 CURRENT LEAKAGE TESTER
pte with test leads, batteries, and
ar's manual $90.00
yg Case, Leather, No. 00805 ....$14.00

- **MEASURES AC CURRENT AS LOW AS 5 MICROAMPERES**
- **TESTS FOR CURRENT ABOVE THE "THRESHOLD OF PERCEPTION"**
- **DETECTS SHORTS AND NEAR SHORTS**
- **MEETS U.S. STANDARDS COMMITTEE PROPOSED SPECIFICATIONS (C101.1) FOR AC CURRENT LEAKAGE TESTS**

IS THE EQUIPMENT YOU MANUFACTURE OR SERVICE SAFE?

Even small leakage current can cause trouble. Current above the "threshold of perception" can cause a violent reaction out of fear — resulting in physical injury.

Simpson's new model 229 is designed to test 120 volt AC appliances and electrical equipment in accordance with the proposed U.S. standard. It approximates the normal perception curve to within ±1.0 dB, and measures currents as small as. 5 microamperes.

The 229 is ruggedly built for use on production lines and "in field" servicing. Operation is simple, and all ranges are protected from damage if accidentally subjected to line voltage. It's the ideal instrument for checking the safety of your equipment.

SPECIFICATIONS

RANGES: AC Current: 0-0.3; 1; 3; 10 mA / AC Voltage: 0-150 Volts / Battery Test: Replace — Good.

RESOLUTION: 5 μA on 0-0.3 mA range.

ACCURACY: ±2% at 60 Hz.

ACCURACY vs. FREQUENCY: Approximates Dalziel's "Percentile 50 Threshold of Perception Curve" within ±1.0 dB.*

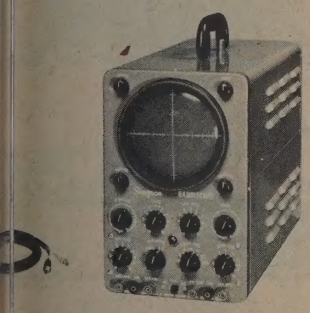
INPUT IMPEDANCE: 1.5 k-ohms, shunted by a shaping network, on all current ranges.

INPUT RESISTANCE: 500 k-ohms on voltage range.

OVERLOAD PROTECTION: Fully protected up to 150 VAC on all ranges.

* See AIEE Proceedings, Volume 69, Section 0184. The mean value of perception on individuals in test was 1.067 mA at 60 Hz. (Available at major technical libraries.)

OSCILLOSCOPES AND CAPACITOR TESTER



Model 466 HANDISCOPE® with 5" Screen

• Compact — Light Weight • Rugged Construction

Ideal for general purpose applications in radio and TV servicing and for industrial use. The Handiscope® contains horizontal push-pull amplification for the X axis, vertical push-pull amplification for the Y axis, and an intensity modulation input for the Z axis. Horizontal deflection may be obtained from either the internal sweep circuits or from the external signal voltage. Rugged construction . . . yet the Handiscope® weighs just 19 lbs.

466 HANDISCOPE® Complete with operator's manual and No. 00100 test leads (for 110 VAC operation) $190.00
Dual voltage 466 Handiscope® for use on 220/110 volts, 50/60 Hertz 214.00

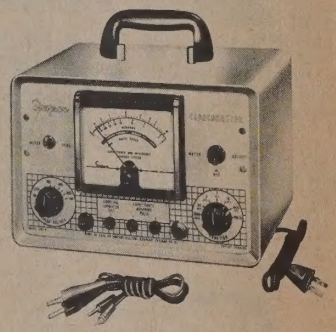
Model 458 — 7" COLORSCOPE

FEATURES:

- 7" Cathode Ray Tube.
- Wide band operation, the frequency response is flat within ±1.0 dB to 4.5 MHz. Faithfully displays COLOR BURST frequency with a sensitivity greater than 40 Mv rms per inch of vertical deflection.
- Narrow band operation, the frequency response is flat within ±2 dB from 10 Hz to 300 kHz with a sensitivity greater than 15 Mv rms per inch.
- Good square wave response provides accurate representation of sync pulses and composite wave-form pattern for trouble-shooting video, sync, and sweep circuits.
- Horizontal sweep, to 250 kHz, for expansion of high frequency wave-form detail and color burst.
- Vernier and Compensated Decimal Step Attenuator for better signal controls.
- Provision for Intensity Modulation of CRT.
- 1 volt peak to peak calibrating voltage.

458 COLORSCOPE Complete with operator's manual $420.00
Accessory probes: See Model 739 in accessory section on back cover.
Dual Voltage 458 Colorscope for use on 220/110 volts, 50/60 Hertz 430.00

LLOSCOPE IFICATIONS	466 HANDISCOPE®	458 COLORSCOPE
ze	5"	7"
ncy Response	15 Hz — 100 kHz: Flat to within ±1 dB At 250 kHz: 6 db down Usable to 1 MHz	In Wide-Band operation: Up to 4.5 MHz: Flat to within ±1 dB In Narrow-Band operation: 10 Hz — 300 kHz: Flat to within ±2 dB
l Deflection itivity	30 mV RMS/inch	In Wide-Band operation: 40 mV RMS/inch In Narrow-Band operation: 15 mV RMS/inch (minimum)
ting Voltage	1 volt peak-to-peak	1 volt peak-to-peak
ltage Required	110 volts, 50-60 Hz (220 volt model available)	105-125 volts, 50-60 Hz (220 volt model available)
	7⅞" x 12¼" x 16⅛"	11" x 16½" x 14½"
ight	19 lbs.	29 lbs.
g Weight	27 lbs.	38 lbs.
	$190.00	$420.00



Model 383A CAPACOHMETER

IN-CIRCUIT Capacitor Leakage Tester

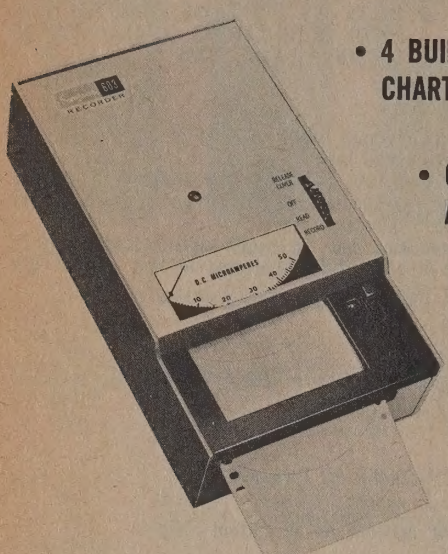
"ONE PACKAGE FLEXIBILITY"

- Measures the leakage resistance of defective paper, mica, or ceramic capacitors.
- Indicates directly the capacitance of good paper, mica, or ceramic capacitors over a range of 10.0 pf to 10.0 mf.

A pulse technique detects many marginal capacitors. All measurements are made under load conditions. No adjusting of a bridge circuit and balancing controls. Borderline capacitors which cause costly "call backs" are detected immediately with the pulse test.

Line Voltage: 105/125v, 60 Hz.
Shipping Weight 12 lbs.
Complete with test leads and operator's manual $150.00
Test Lead Assembly — Cat. No. 07509.. 3.25

Simpson STRIP CHART RECORDERS



- 4 BUILT-IN CHART SPEEDS
- OPTIONAL AUTOMATIC TAKE-UP REEL

NEW MODEL 603 RECORDERS

Available in a wide selection of ranges, these new Simpson chart recorde inkless pressure sensitive paper. No pens to re-fill. No ink mess. The sp formulated paper will not fog or blur with age, assuring clear and accurate The rugged Taut Band movement is shockproof. In addition to recording, the provides continuous readings of the measured value. **Four** built-in chart spee switch selected. Available in AC voltage, AC current, DC voltage, and DC measuring ranges. Each has a built-in event indicator, too. The 603 is comp easy panel mounting and portable use. Mounting hardware included.

SPECIFICATIONS

Accuracy of Recording DC range models	±2.5% of Full Scale
AC range models	±4.0% of Full Scale
Event channel response time	10 milliseconds (nominal)
Event Indicator Voltage	115 volts/60 Hz.
Built-in Chart Speeds (Switch Selected)	1½/6/12/18 inches-per-hour (38/152/305/457 mm-per-hour)
Impression Rate	2 seconds
Chart Paper	Pressure Sensitive, 3" wide, 63 feet long.
Take-up Reel	Optional
Motor Drive	Synchronous, 115 volts/60 Hz.
Size	7½" x 4 3/16" x 2 25/32"
Weight	2½ lbs.

RANGES

Catalog Number	Range	Channel Event Voltage	Price
20201	0-50 DC μA	110 VAC	$107.00
20202	0-100 DC μA	110 VAC	102.00
20203	0-250 DC μA	110 VAC	98.00
20205	0-1 DC mA	110 VAC	90.00
20207	0-5 DC mA	110 VAC	97.00
20211	0-50 DC mA	110 VAC	97.00
20215	0-500 DC mA	110 VAC	97.00
20218	0-5 DC Amps	110 VAC	98.00
20219	0-50 DC mV	110 VAC	93.00

Catalog Number	Range	Channel Event Voltage	P
20225	0-15 DC Volts	110 VAC	$
20227	0-50 DC Volts	110 VAC	
20230	0-150 DC Volts	110 VAC	
20250	0-5 AC Amps	110 VAC	1
20270	0-5 AC Volts	110 VAC	1
20280	0-150 AC Volts	110 VAC	1
20285	0-300 AC Volts	110 VAC	1
20286	100-130 AC Volts	110 VAC	1

Complete with mounting bracket, test leads, even channel leads, operator's manual and chart paper

ACCESSORIES

	Catalog Number	Price
Automatic take-up reel	20195	$15.00
Carrying case, vinyl	20196	20.00

CHART PAPER

Calibration	Catalog Number	Price pe of 6 r
50 division	20097	$13.
60 divisions	20099	13.
75 divisions	20098	13.

Simpson TEST EQUIPMENT ACCESSORIES

CARRYING CASES

Ever-Redy Carrying Case
For 250, 260, 261, 270, 303
Cat. No. 0805 . . . $14.00

Roll Top Safety Case
For 260, 261, 303, 270
Cat. No. 6192 . . . $13.00

Ever-Redy Carrying Case
For 262, 263, 267, 268, 269, 388-3L, 389-3L
Cat. No. 5262 . . . $14.00

Vacuum Formed Carrying Case
Cat. No. 2929 . . . $11.00

Sponge Lined Carrying Case
Cat. No. 1566 . . . $17.00
Cat. No. 1613 . . . $14.00

Saves you time and protects your instruments. Instruments are always ready for instant testing.

For Testers	Cat. No.	Price
150 Amp-Clamp Carrying Case	0548	$ 8.00
160 Handi VOM Carrying Case	2225	11.00
160 Vacuum Formed Carrying Case	2929	11.00
208, 209 —— Leather	0578	11.00
255 Utility Vinyl	0549	20.00
0549 Snap-on High Voltage Probe Case..	0574	6.00
250, 260, 261, 270 — Leather	1818	11.00
250, 260, 261, 270, 303 — Ever-Redy Leather	0805	14.00
Combination 260 and Adapter, Leather Carrying Case	1871	15.00
262, 263, 267, 268, 269, 388-3L, 389-3L Ever-Redy Vinyl	5262	14.00
312, 313 Vinyl	0577	17.00
385-3L — Every-Redy Leather	8073	12.00
391, 392 — Leatherette-Covered	3413	12.00
355 — Ever-Redy Leather	6355	6.00
All Microtesters — Ever-Redy Leather..	4299	11.00

For Testers	Cat. No.
All Microtesters — Leatherette-Covered	3011
Roll Top Safety Case For 260-2, 9, 10, 880's	6192
Roll Top Safety Case For 260-3, -4, -5, -5P, 261, 270	0249
Roll Top Safety Case For 303	5376

SPONGE LINED CASES

	Cat. No.
312, 313 Vinyl Case	1565
262, 263, 269 Vinyl Case	1613

UTILITY CASE FOR 250, 255, 260, 261 AN

Ever-Redy Carrying case (C 0549) has extra space for sories and/or tools. Probe (No. 0574) can be snapped this case to accommodate the high voltage probes.

Net

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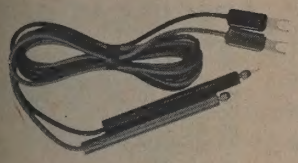
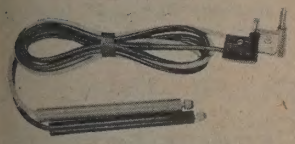
Simpson TEST EQUIPMENT ACCESSORIES

EST LEADS

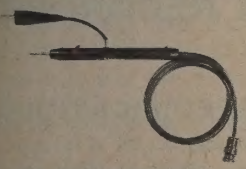




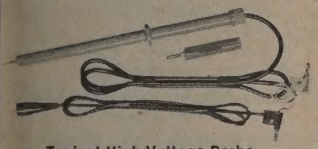
For Testers	Cat. No.	Price
160 Probe tip leads	02055	$ 3.00
160 Alligator clip leads	01927	2.50
202; 208; 209 Alligator clip leads	07500	2.75
202; 208; 209 Probe tip leads	07538	3.25
202; 208; 209 Combination probe tip leads with removable clips	00115	3.25
230; 240 Alligator clip leads	08375	2.75
230; 240 Probe tip leads	08381	3.25
250; 255 Alligator clip leads	07500	2.75
250; 255 Probe tip leads	07538	3.25
250; 255 Combination probe tip leads with removable clips	00115	3.25
256; 257 Combination probe tip leads with removable clips	07541	3.50
260 (series 1, 2 only) Alligator clip leads	08375	2.75
260 (series 1, 2 only) Probe tip leads	08381	3.25
260 (series 3, 4, 5 only); 261, 262 (series 3 only) Alligator clip leads	07500	2.75
260 (series 3, 4, 5 only); 261, 262 (series 3 only) Probe tip leads	07538	3.25
260 (series 3, 4, 5 only); 261, 262 (series 3 only) Combination probe tip leads with removable clips	00115	3.25
260-5, 260-5RT, 260-5M, 260-5MRT, 260-5P, and 260-5PRT all use 260 series 5 leads listed above.		
262 (series 1, 2 only) Combination probe tip leads with removable clips	08463	3.25

For Testers	Cat. No.	Price
263; 267; 268; 269 (series 2, 3 only) Alligator clip leads	07500	$2.75
263; 267; 268; 269 (series 2, 3 only) Probe tip leads	07538	3.25
263; 267; 268; 269 (series 2, 3 only) Combination probe tip leads with removable clips	00115	3.25
269 (series 1 only) Combination probe tip leads with removable clips	08463	3.25
270 Alligator clip leads	07500	2.75
270 Probe tip leads	07538	3.25
270 Combination probe tip leads with removable clips	00115	3.25
303 (series 1 only) Ground lead	00069	2.25
303 (series 2 only); 311 Ground lead	00733	2.25
355 Probe tip leads	08600	3.00
362; 371, 373; 374; 375; 376; 377; 378 Alligator clip leads	08376	2.75
362; 371; 373; 374; 375; 376; 377; 378 Probe tip leads	08379	3.25
383A Test lead assembly	07509	3.25
387 Alligator clip leads	08376	2.75
387 Probe tip leads	08379	3.25
390 Test cord assembly	08418	7.50
466 Input cable	00100	4.00
650 Test lead	07545	1.75
651 Ground lead	00733	2.25
715 Input cable	00100	4.00

IGH VOLTAGE AND RF PROBES



Typical DC/AC/Ohms Probe
Cat. No. 00150, 00175, 07594

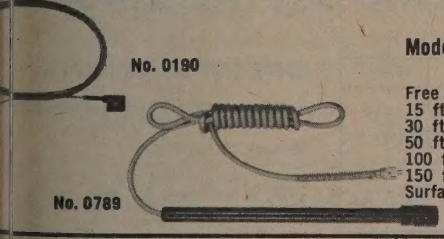


Typical High Voltage Probe
Cat. No. 0507, 0508, 0509, 0510, 0511

For	Voltage/Type	Cat. No.	Price
260 Series 2	25,000v	00007	$17.00
	50,000v	00179	17.00
250, 255, 260 Series 3, 4 4M, 5, 5M, 5P	10,000v DC	00507	17.00
261	25,000v DC	00508	17.00
267	50,000v DC	00509	17.00
270	10,000v AC	00161	17.00
262 Series 1	16,000v	00172	17.00
	40,000v	00180	17.00
262 Series 2	16,000v	00172	17.00
	40,000v	00180	17.00
262 Series 3	16,0000v	00146	17.00
	40,000v	00145	17.00
263	30KV @ 10KΩ/v 15KV @ 10KΩ/v	00158	17.00
269 Series 1	16,000v	00173	17.00
	40,000v	00181	17.00
296 Series 2, 3	16,000v	00119	17.00
	40,000v	00157	17.00

For	Voltage/Type	Cat. No.	Price
303 Series 1	DC Probe	00067	$5.50
	AC Probe	00068	5.50
	High Frequency (RF)	00073	11.75
	30,000v	00074	17.00
303 Series 2	DC/AC/Ohms Probe	00150	11.75
	High Frequency (RF)	00073	11.75
	30,000v	00186	17.00
311 Series 1	DC/AC/Ohms Probe	07594	12.00
	High Frequency (RF)	00731	17.00
	30,000v	00732	17.00
311 Series 2	DC/AC/Ohms Probe	07594	12.00
	High Frequency (RF)	00174	16.00
	30,000v	00732	17.00
311 Series 3	DC/AC/Ohms Probe	00175	12.50
	High Frequency (RF)	00176	16.00
	30,000v	00178	17.00
312	DC/AC/Ohms Probe	00150	11.75
	High Frequency (RF)	00152	11.75
	30,000v	00155	17.00
313	DC/AC/Ohms Probe	00189	12.25
	High Frequency (RF)	00191	11.75
	50,000v	00192	19.00

EMPERATURE TESTER LEADS AND PROBES



Models 385-3L, 389-3L, 260 — Adapter 652

	Cat. No.	Price
Free Air Temperature Probe	0789	$12.00
15 ft. Thermistor lead	0010	9.00
30 ft. Thermistor lead	0216	10.00
50 ft. Thermistor lead	0415	11.00
100 ft. Thermistor lead	0416	14.00
150 ft. Thermistor lead	0417	18.00
Surface temperature probe	0790	9.00

Models 388, 388-3L, 255

	Cat. No.	Price
388, -3L, Rugged Service Lead (8 ft.)	0496	$10.00
388, -3L General purpose thermocouple	0190	7.50
388, -3L Surface temperature thermocouple (1000° F. Max.)	0187	12.00
255 only, Thermocouple lead (5 ft.)	0163	6.00

SCILLOSCOPE PROBE KIT

For use with Model 458 Oscilloscope. Includes *low capcity probe, voltage doubler, detector, 100:1 voltage divider and dual direct — resistive. (Isolation.)

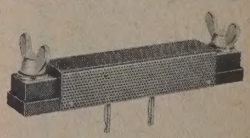
pe with 4 poles, plastic roll, and
ator's manual $50.00
odel 458 only.

	Cat. No.	Price
Doubler	0740	$18.00
pacitance	0741	18.00
oltage Divider	0742	19.00
esistive Dual Purpose	0743	15.00

METER SAFE/GUARD

Same protection as built-in new 260-5. Installs in minutes. Complete instructions for 260 series —1, 2, 3, 4. Cat. No. 12621. Complete only $1.95 ea.

ACCESSORY SHUNTS

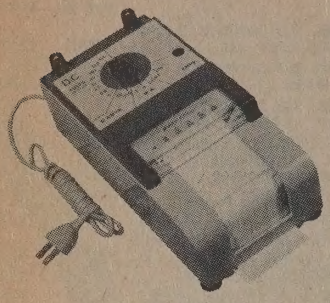


Used with models 256 and 257 for DC current measurements up to 100 amps full scale. Convenient plug-in design.

Range (F.S.)	Cat. No.	Price
25 DC Amperes	06527	$15.00
50 DC Amperes	06528	15.00
100 DC Amperes	06531	15.00

Simpson
INSTRUMENTATION PRODUCTS

CHART RECORDERS



■ 604 MULTICORDER

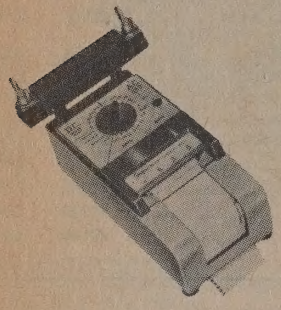
Has 22 switch selected recording ranges. Dependable inkless recording system produces a clean, clear chart every time. High torque taut band movement cannot develop friction from shock or vibration. Dual trace records both the measured value and the range selected.

604 complete with chart paper, test leads, and operator's manual **$200.00**

SPECIFICATIONS

Ranges:
DC mV: 100, 500
DC Volts: 2.5, 10, 25, 100, 250, 50
AC Volts: 10, 25, 100, 250, 500
DC μA: 50, 250
DC mA: 1, 5, 25, 100, 250
DC Amperes: 1
AC μA: 200

Accuracy: ±2.5% of full scale.
Sensitivity: 20 kΩ/v DC, 5 kΩ/v AC.
Chart Speeds: 1, 3, 12 inches/hr.
Power Required: 115 VAC, 60 Hz.



■ 605 MULTICORDER

Same outstanding features as the Model 604 listed above, but with a different selection of ranges. Records AC current up to 6 Amperes. AC voltage ranges cover standard AC line voltages. Like the 604, it offers dependable recording at less than $10 per range.

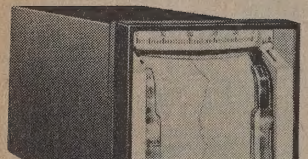
605 complete with chart paper, test leads, and operator's manual **$215.00**

SPECIFICATIONS

Ranges:
DC mV: 12, 30, 60
DC Volts: 3, 15, 60, 300, 600
AC Volts: 6, 30, 150, 300, 600
DC μA: 600
DC mA: 1.5, 3, 6, 30, 150
DC Amperes: 1.2, 6
AC mA: 3, 15, 60, 300
AC Amperes: 1.2, 6.

Accuracy: ±2.5% of full scale.
Sensitivity: 666Ω/v AC and DC.
Chart Speeds: 1, 3, 12 inches/hr.
Power Required: 115 VAC, 60 Hz.

■ 2750 PRECISION LONG-TERM RECORDERS



Panel mount in panel space of just 3¾" square. Dependable inkless recording — operates for over a month at 20 mm/hr chart speed. Available from stock in these ranges:

Range	Terminal Resistance	Catalog No.	Price
0-10 DC Microamperes	1,500Ω	22000	$167.00
0-50 DC Microamperes	1,100Ω	22002	153.00
0-100 DC Microamperes	970Ω	22003	147.50
0-500 DC Microamperes	280Ω	22004	142.00
0-1 DC Milliampere	20Ω	22005	140.00
0-1/0-1 DC Milliampere (Dual Channel)	20Ω	22024	165.00
0-0.4 . . . 25 DC Millivolts (Adjustable)	>50 MegΩ	22030	250.00
0-50 DC Millivolts	1,000Ω/v	22008	142.00
0-5 AC Amperes	†0.014Ω	22113	153.00
0-150 AC Volts	†1,000Ω/v	22110	148.00
93.5-126.5 AC Volts (Segmental Scale)	†1,000Ω/v	22115	175.00
0-300 AC Volts	†1,000Ω/v	22116	148.00

SPECIFICATIONS

Accuracy: ±1.5% of full scale.

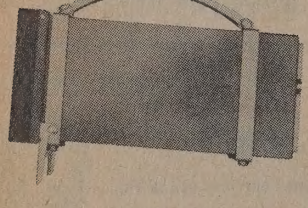
Chart Speeds: 20, 120 mm/hr. (Interc able gearboxes available from yo tributor for other speeds up t mm/hr.

Panel Mounting Bracket: Included wi corder. Requires just one 3.6 x 3. cutout.

Portable Operation: Carrying handle able from your distributor.

Paper Take-up: Automatic with bu motor driven take-up reel.

Power Required: 115 VAC, 60 Hz.



■ 2761 and 2762 TEMPERATURE RECORDERS

New multi-range temperature recorders:

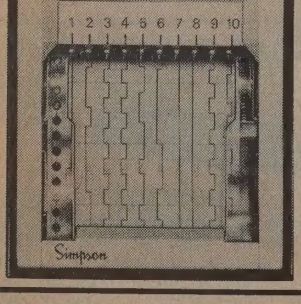
Model 2761 — Range	Cat. No.	Price
−50° to +50°F, +50° to +150°F, +150° to +250°F (3 ranges, switch selectable)	23151	$190.00
Model 2762 — Range		
−40° to +60°F, +50° to +150°F (2 ranges, switch selectable). Dual channel (same range recorded on both channels, 2 inputs).	23152	210.00

SPECIFICATIONS

Accuracy: ±2°F. (±3°F with Model outside of 0-120°F range).

Sensors: Thermistor.

Other specifications are the same as 2750 listed above.



■ 2755 EVENT RECORDERS

Each has **ten** event channels. Uses no more space than the compact Model 2750.

Voltage	Power Per Solenoid	Catalog No.	Price
10 Channels, 6 Volts DC	1.2 watts	22203	$175.00
10 Channels, 12 Volts DC	1.2 watts	22202	175.00
10 Channels, 24 Volts DC	1.2 watts	22201	175.00
10 Channels, 115 Volts AC, 60 Hz	2.2 VA	22200	175.00

SPECIFICATIONS

Accuracy: Solenoid response time i milliseconds (nominal).

Other specifications are the same as 2750 listed above.

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Simpson
UMENTATION PRODUCTS

DIGITAL INSTRUMENTS

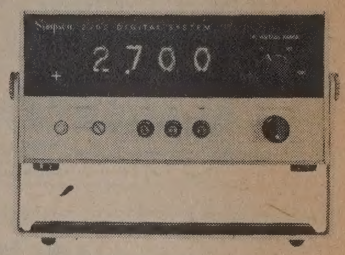
2700 DIGITAL SYSTEM

ated circuit design for compactness and ility. Plug-in function modules are avail- or DC voltage, DC current, and resistance rements. Has 4 full-time digits plus auto- overrange and polarity indications.

complete with DC voltage range module, ads, and operator's manual **$615.00**

SPECIFICATIONS

Ranges (with DC voltage module): 1, 10, 100, 1,000 DC volts.
Accuracy: ±0.05%. ±1 digit.
Input Impedance: 10.2 MegΩ.
Overrange: Linear to 10%.
Polarity Selection: Automatic, with indication.
Response Time: 5 seconds, maximum.
Sampling Rate: Variable, from 20 milliseconds to "hold."
Power Required: 115 or 220 VAC (±10%), 50-60 Hz., at 11.5 watts.



OPTIONAL PLUG-IN FUNCTION MODULES

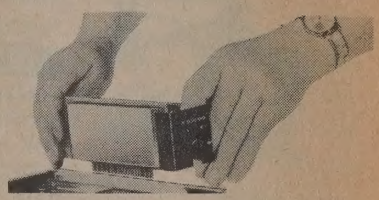
n designed plug-in modules take just sec- o change. New function and ranges are on dial plate carried by module.

ance Module: 1 kΩ, 10 kΩ, 100 kΩ, 10 MegΩ.
o. 22901 .....**$100.00**

rent Module: 1 mA, 10 mA, 100 mA, 1 Amp.
o. 22903 .....**$100.00**

SPECIFICATIONS

Accuracy: ±0.05% of reading (except 10 MegΩ range of resistance module: ±1.0% of reading).
Accuracy of 2700 system after interchanging modules: ±0.1% of reading (without recalibration). ±0.05% of reading (with recalibration).



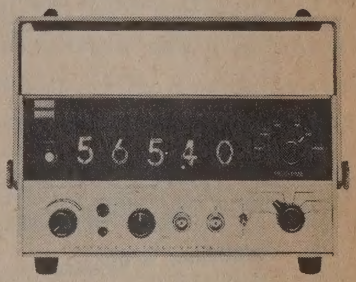
2725 ELECTRONIC COUNTER

te five-digit counter measures frequency Hz to 20 MHz. Also measures frequency time periods, time intervals, and totalizes. panel switch has "self test" position which the instrument's logic circuitry — assures te readouts you can depend on.

complete with probe and operator's manual. **$525.00**

SPECIFICATIONS

Ranges:
Average Frequency: 5 Hz to 20 MHz.
Frequency Ratio: 1 to 1.99999 x 10^5.
Time Interval: 300 μ seconds to 1.99999 x 10^5 seconds.
Time Periods: 300 μ seconds to 0.2 second.
Totalization: 1 to 1.99999 x 10^5 counts.
Accuracy: ±0.01%, ±1 digit.
Input Impedance: Channel "A": 1 MegΩ. Channel "B": 10 kΩ.
Time Bases: 6 bases, crystal controlled.
Overrange: Automatic indication.
Power Required: 115 or 220 VAC (±10%), 50-60 Hz, at 17 watts.



2724 ELECTRONIC COUNTER

features as the model 2725 shown above, but with 4-digit resolution.
complete with probe and operator's manual **$450.00**

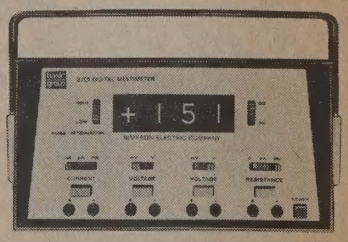
2701 DIGITAL MULTIMETER

ete digital VOM has AC-DC voltage, AC-DC t, and resistance ranges. Fast and accu- imply set magnatude switch and press a . Reading appears as a 3-digit number ete with polarity sign and decimal point. al point automatically switches over three e ranges. No errors from scale interpolation n when used by unskilled personnel.

complete with test leads and operator's l **$835.00**

SPECIFICATIONS

Ranges:
AC/DC mV: 10, 100, 1,000.
AC/DC Volts: 10, 100, 600
AC/DC nA: 1,000
AC/DC uA: 10, 100, 1,000
AC/DC mA: 10, 100, 1,000
Ohms: 100, 1,000
k-Ohms: 10, 100, 1,000
Megohms: 10, 100, 1,000
Accuracy:
DC: ±1.0% of reading.
AC: ±1.5% of reading.
Resistance up to 1,000 kΩ: ±0.5% of reading. (Accuracy on all ranges limited to ±0.2% of full scale).
Power Required: 105-130 VAC, 60 Hz, at 60 watts.



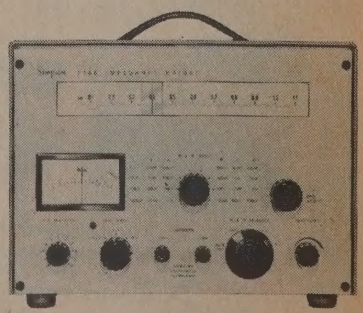
W! R-L-C BRIDGE
MODEL 2785

ulti-purpose bridge measures capacitance, ance, resistance, and "Q". Powered by two fe 9-volt batteries, a built-in generator op- at the standard test frequency of 1 kHz. used for all resistance measurements. Long ule dial and sensitive galvanometer make ble and fast to use.

complete with batteries, test leads and or's manual **$350.00**

SPECIFICATIONS

Ranges:
0.05Ω to 11 MegΩ in 8 ranges.
0.5 μ-Henrys to 110 Henrys in 8 ranges.
5 p-Farads to 1100 μ-Farads in 8 ranges.
Qx1, tan-d x 0.01, tan-d x 1.
Accuracy:
R, L, C: ±1.0% (except 1Ω, 10 MegΩ, 10 μH, 100H, and 1,000 μF ranges: ±2.5%).
Q: ±5%.
Power Required: Two 9-volt batteries (NEDA type 1603).
Rated Life: 150 hours.



Insulation Testers

WRITE FOR DATA SHEETS ON THE INSTRUMENTS SHOWN . . . ALL ARE STANDARD PRODUCTION MODELS, AVAILABLE FOR IMMEDIATE DELIVERY FROM STOCK . . . LET US QUOTE ON YOUR REQUIREMENTS FOR MODIFIED UNITS OR SPECIAL TEST EQUIPMENT.

SLAUGHTER Company
TEST WITH CONFIDENCE

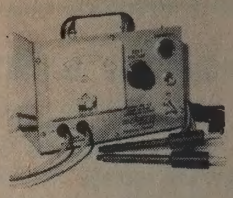
High-voltage Insulation Tester
with buzzer signal on breakdowns
. . . grounds
. . . . shorts

MODEL **101**

Watch what you are doing . . . not the tester

SIX TEST VOLTAGES . . 500 to 2500 V.A.C. PRICED SO YOU CAN AFFORD TO SPOT A FEW ALONG YOUR ASSEMBLY LINES.

Adjustable High-voltage Tester
with buzzer signal on breakdowns
. . . grounds
. . . . shorts

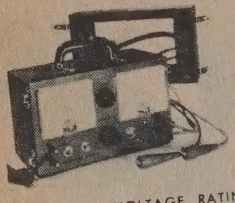


MODEL **106**

Voltmeter shows actual Test Voltage

CONTINUOUSLY VARIABLE TEST VOLTAGE RATINGS TO 10,000 VOLTS AC & DC . . RECOMMENDED FOR BREAKDOWN TESTING AT FINAL ASSEMBLY AND INSPECTION

High-voltage Leakage Tester
checks insulation for . . . leakage
. . . grounds
. . . . . arcing



MODEL **122**

16 lb. Portable for lab and field work

VARIABLE VOLTAGE RATINGS TO 5 KV AC & DC. DUAL RANGE LEAKAGE METER 0/100/1000 μa. . . . CAPACITY COMPENSATION. . . MEASURES INSULATION RESISTANCE, CAPACITY, POWER FACTOR.

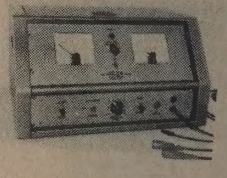
High-voltage Leakage Tester
audibly signals excess leakage
. . . grounds
. . . . . arcing

MODEL **103**

Measures Leakage . . . not capacity current

TEST VOLTAGE CONTINUOUSLY VARIABLE ADJUSTABLE LEAKAGE LIMIT. . CAPACITY COMPENSATION ON AC TESTS. . . RATINGS TO 10,000 VOLTS AC & DC. . . . LIMITED ENERGY. . NON-DESTRUCTIVE. . . FOR LAB AND PRODUCTION LINE SERVICE. . . . . .

Automatic H-V Insulation Tester
for precision checking . . . breakdowns
. . . leakage
. . . grounds

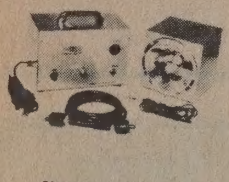


MODEL **103-MP**

Automatic Test Cycle

FULLY AUTOMATIC TEST CYCLE. . . CONTROLLED RATE-OF-RISE. . . ADJUSTABLE TEST VOLTAGE, DWELL TIME, & LEAKAGE LIMIT. . . CAPACITY COMPENSATION ON AC TEST. . . FOR PRECISION TEST OF CRITICAL PARTS & ASSEMBLIES. . .

Inspection Stroboscope
. . . with extra high intensity daylight lamp

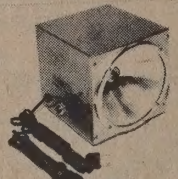


MODEL **167**

0/600 Flashes per Minute

SUPER INTENSITY TRIGGERED FLASH UNIT . . . PUSH-TO-SEE SWITCH. . . . FOR INSPECTION ON-THE-GO UNDER HIGH AMBIENT LIGHT CONDITIONS.

Inspection Stroboscope
. . . . . with high intensity daylight lamp

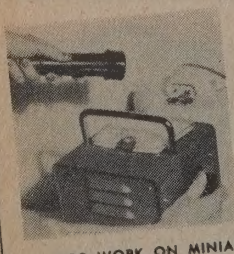


MODEL **161**

0/2,000 Flashes per Minute

LIGHT WEIGHT INEXPENSIVE TRIGGERED FLASH UNIT. . . . . PUSH-TO-SEE SWITCH. . . . INTENSE WHITE LIGHT FOR INSPECTION ON-THE-GO

MIDGET STROBOSCOPE FLASH HEAD



MODEL **166**

0/10,000 Flashes per Minute

FOR WORK ON MINIATURIZED EQUIPMENT . . . . FOR PRINTING TRADES. . . . FOR BIO-MEDICAL WORK. . ADAPTS TO ANY SLAUGHTER STROBOSCOPE. . .

Universal Stroboscope
. . . with high intensity daylight lamp

MODEL **163**

50/16,000 Flashes per Minute

UNIVERSAL UNIT FOR MOTION STUDY & INSPECTION ON-THE-GO. . . INSTANT STARTING . . . HIGH INTENSITY WHITE LIGHT . . . . TRIGGER EXTERNALLY OR OPERATE FROM INTERNAL OSCILLATOR

Stroboscopes

WRITE FOR DATA SHEETS ON THE INSTRUMENTS SHOWN . . . ALL ARE STANDARD PRODUCTION MODELS, AVAILABLE FOR IMMEDIATE DELIVERY FROM STOCK . . . LET US QUOTE ON YOUR REQUIREMENTS FOR MODIFIED UNITS OR SPECIAL TEST EQUIPMENT.

SLAUGHTER Company
TEST WITH CONFIDENCE

Metered Precision Stroboscope
. . . . . with high intensity daylight lamp

MODEL **165**

50/16,000 Flashes per Minute

PRECISION STROBOSCOPE TACHOMETER INSTANT STARTING. . . HIGH INTENSITY WHITE LIGHT. . . OPERATES FROM EXTERNAL CONTACTS OR INTERNAL OSCILLATOR. . EASILY SYNCHRONIZED. . OUTPUT JACKS TO COUPLE SCOPE, ETC. . . .

© United Technical Publica

SPRAGUE TEST EQUIPMENT

TO-6 TEL-OHMIKE® CAPACITOR ANALYZER

O-6 TEL-OHMIKE capacitor analyzer is a must hecking all capacitors. It is a moderately d instrument with laboratory quality and ac- cy—the highest accuracy of any instrument of pe available to the service trade!

- **LEAKAGE CURRENT** of electrolytics measured directly on meter. Four ranges; .06, .6, 6, and 60mA. Three ranges of DC voltage (continuously variable within each range) permit testing capacitors at exact rated voltage up to 600 volts.
- **POWER FACTOR** of electrolytics, up to 50% measured by Wien Bridge.
- **METER PROTECTOR** of solid-state design allows severe accidental over-loads without burn-outs.
- **MAGIC-EYE TUBE** simplifies bridge balancing for capacitance and power factor measurements. High gain amplifier provides greatly improved sensitivity.
- **PUSH-BUTTONS** color-keyed for instant range selection.
- **MODERN CASE:** Silver-grey hammertone finish, panel is charcoal grey with highly contrasting white designations. Measures 8⅞" high, 14⅝" wide, 6⅛" deep. Weight only 13 pounds.

MODEL TO-6 ..... 115 VAC/50-60 cy
MODEL TO-6S ..... 115-230V/50 cy

Call Your Sprague Distributor for Current Prices

APACITANCE BRIDGE measures up to 2000 μF. Five over- lapping ranges include exclusive 1 pF to 100 pF range. Special ielded transformer for bridge voltage. Extremely low AC ltage; 1.35 volts for electrolytic capacitors, 2.85 for all hers, permits safe testing of all low voltage capacitors.

ISULATION RESISTANCE of papers, ceramics and micas ectly read on large meter. No guessing with neon lamps. ial range—to 10KMΩ@ 30V for low voltage units . . . to KMΩ@ 150V for higher voltage components. Fast charge ature speeds testing of high capacitance units.

TEL-OHMIKES FOR RACK MOUNTING

Electrically identical to TO-6 and TO-6S. These models have a standard 19"w. x 10½"h. panel so that it can be mounted in standard relay racks.

MODEL TO-6RM.....115 VAC/50-60 cy
MODEL TO-6SRM.....115-230 V/50 cy

Call Your Sprague Distributor for Current Prices

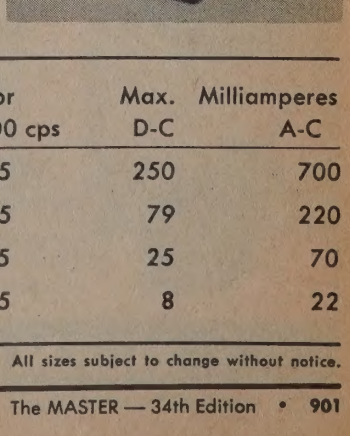
TYPE 850W PRECISION DECADE INDUCTORS

ispensable For Design and Experi- ntal Work on Audio Filters, Equal- rs, and Tuned Circuits. Frequency nge is 150 to 20,000 Cycles per cond

cellent Stability With Respect to rrent and Ambient Temperature anges

Four Decade Inductors May Be nnected in Series to Provide ,110 Steps of Inductance

- Housed in Blue Aluminum Case with Sloping Front to Facilitate Bench-Top Readings. Measures 3" Wide, 2½" High, 5½" Long. Fitted with Five-way Binding Posts.
- For Complete Technical Data, Refer to Latest Issue of Engineering Bulletin 90,500.
- Call Your Sprague Industrial Distributor for Current Quantity Prices

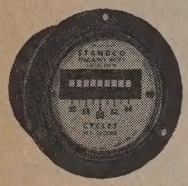


	Inductance Steps	Optimum Freq. Range in cps	Average Q Factor at 1000 cps	at 4500 cps	Max. D-C	Milliamperes A-C
C/A1	10 x 0.001H	400 to 20,000	40	75	250	700
C/A2	10 x 0.01H	400 to 20,000	60	125	79	220
C/A3	10 x 0.1H	400 to 20,000	60	125	25	70
C/A4	10 x 1.0H	400 to 5,000	60	125	8	22

t 1968, Sprague Products Company
IND-REM-65-6804
All sizes subject to change without notice.

STICHT INSTRUMENTS

"STANDCO" VIBRATING REED FREQUENCY METERS



PANEL MOUNTING

3½" Bakelite Case

- Rugged
- Dependable
- Accuracy ±0.5%
- Reeds aged

HERMETICALLY SEALED

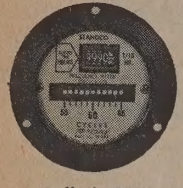
2½" and 3½"

All MIL-Specs. Also Ruggedized Types.

Cat. No.	No. Reeds	Interv. CPS	Range CPS
351	5	1	48-52
352	7	1	47-53
349	9	0.5	48-52
353	11	0.5	47.5-52.5
348	11	1	45-55
356	9	0.5	58-62
357	11	0.5	57.5-62.5
358	21	0.5	55-65
359	5	1	58-62
360	7	1	57-63
361	9	1	56-64
362	11	1	55-65
363	21	1	50-70

Bulletin 806

Cat. No.	No. Reeds	Interv. CPS	Range CPS
DUAL RANGE			
369	5	1	48-52
	5	1	58-62
400 CYCLES			
374	5	10	380-420
380	5	5	390-410
364	9	5	380-420
366	11	4	380-420
365	11	5	375-425
379	11	8	360-440
376	11	2	390-410
375	17	2.5	380-420
378	17	5	360-440
367	21	2	380-420
368	21	4	360-440



Bulletin 811

"STANDCO" COMBINATION FREQUENCY AND RUNNING TIME METERS

In 3½" flush mounting, round bakelite cases

Cat. No.	Freq. Range	No. of Reeds.	Time Range
TF-362	55-65 CPS	11 Reeds	9999.9 hrs.
TF-356	58-62 CPS	9 Reeds	9999.9 hrs.
TF-360	57-63 CPS	7 Reeds	9999.9 hrs.
TF-359	58-62 CPS	5 Reeds	9999.9 hrs.

"STANDCO" RUNNING TIME METERS

Bulletin 810

ALTERNATING CURRENT

3½" Round Flush		2⅝" Round Flush with U-Clamp
Type T-1	9999.9 hrs.	Type T-45
Type T-3	99,999 hrs.	9999.99 Hours
Type T-4	99,999 min.	
115V, 220V, 440V, 60 or 50 cycles		115 V 60 cycles 230 V 60 cycles

Bulletin 810

AC HERMETICALLY SEALED TYPE

3½" Round Flush		2½" Round Flush	
Type T-1	9999.9 hrs.	Type T-25	9999.9 hrs.
Type T-3	99,999 hrs.	Type T-30	99,999 hrs.
Type T-4	99,999 min.	Type T-35	99,999 min.

115V, 220V, 440V, 60 or 50 cycles

DIRECT CURRENT TYPE T-60

2⅝" Round Flush with U-Clamp

Reading Minutes and Hours to 99999 Hou

Bulletin 9160

Standard 12 volts DC
Specials 6, 24, 36 volts DC

AC MINIATURE TYPE T-40

1⅞" x 1⅞" Square Flush with U-Clamp

Register to 9999.99 Hours

Bulletin 9140

115 V 60 cycles
230 V 60 cycles
24 V 60 cycles

VIBRATION TYPE T-75

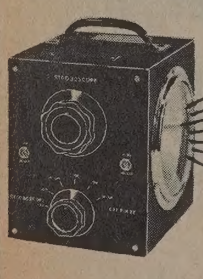
2⅝" Round Flush

Operates without electric power source. Application wherever vibrations occur during operation.

Bulletin 9175

99999 Hours

"STANDCO" TACHOMETERS



HIGH INTENSITY STROBOSCOPE

MODEL 510-AL

STOPS MOTION
MEASURES RPM
without contact

With brilliant daylight flasher unit for maximum readability.
With 4 ranges - 60-15,000 RPM
"Industry's Seeing Eye"

Bulletin 781

PORTABLE HAND TACHOMETERS

CENTRIFUGAL AND CHRONOMETRIC TYPES

With one, two, three, five or six ranges in one instrument. All speeds 0-100,000 RPM.

Bulletins 735, 750, 751, 756, 765, 790

"MEGOHMER" INSULATION TESTERS

DC GENERATOR (HAND CRANK) TYPES

"DWARF" Megohmer, 500 volts DC

Cat. No. 701, 0.1-100 megohms
Cat. No. 702, 0.1-100 megohms
0-10,000 ohms

Bulletin 420

HIGH RESISTANCE MEGOHMMETER

MODEL 29-U

20,000,000 MEGOHMS

Direct Reading: Unusual stability, fast in operat high accuracy.

11 Ranges: From 300,000 ohms to 20 mi megohms.

Power Supply: 115 volts DC, 60 cycles.

Test Potentials: 100 volts DC and 500 volts Also: 0.5 volts to 1000 volt external supply.

Bulletin 1029U

HERMAN H. STICHT COMPANY, INC.

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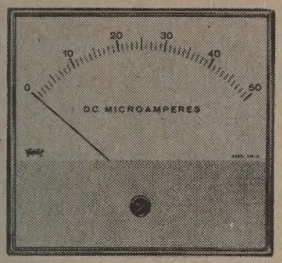
TRIPLETT INSTRUMENTS

MINIATURE 1½" PANEL METERS



1: Edgewise meter for horizontal mounting. Scale length, el hole required, 1.605" x .516". Self-shielded, dustproof er terminals. **Model 120-G:** Panel meter with large dial inum insert panel. Scale length, 1.48". Flange, 1.75" sq. " dia. x 1.3" deep. Solder terminals. **Model 150:** VU ne size as Model 120.

DC VOLTMETERS (1000 OHMS/VOLT)

Scale Div.	120 Number	120-G Number	Net Each, Lots of 1-24	25-49	50 Up
20	.....	1041102	$18.00	$14.40	$13.50
30	.....	1041106	18.00	14.40	13.50
25	.....	1041108	18.00	14.40	13.50
20	1040310	1041110	18.00	14.40	13.50
30†	.....	1041111	18.00	14.40	13.50
25	.....	1041113	18.00	14.40	13.50
30†	1040314	1041114	18.00	14.40	13.50
25	1040315	1041115	18.00	14.40	13.50
20	.....	1041118	18.00	14.40	13.50
30†	1040319	1041119	18.00	14.40	13.50
40	.....	1041120	18.00	14.40	13.50
25	.....	1041121	18.00	14.40	13.50
30	.....	1041122	18.00	14.40	13.50
25	.....	1041125	18.50	14.80	13.87
30	.....	1041127	18.50	14.80	13.87
20	.....	1041129	23.50	18.80	17.62
40	.....	1041130	23.50	18.80	17.62
30	.....	1041131	23.50	18.80	17.62
25	.....	1041133	23.50	18.80	17.62

s/volt. †Model 120 has 15 scale divisions.

DC AMMETERS

illivolts.

20	1020302	1021102	$17.00	$13.60	$12.75

C MICROAMMETERS (PIVOT AND JEWEL)

Model 120 ms	Number	Model 120-G Ohms	Number	Net Each, Lots of 1-24	25-49	50 Up
00	1060315	4000	1061115	$21.50	$17.20	$16.12
25	1060318	1170	1061118	20.00	16.00	15.00
60	1060320	400	1061120	18.50	14.80	13.87
56	1060325	210	1061125	17.50	14.00	13.12

DC MILLIAMMETERS

Resis., Ohms	120 Number	120-G Number	Net Each, Lots of 1-24	25-49	50 Up
55	1010302	1011102	$16.50	$13.20	$12.37
30	.....	1011103	16.50	13.20	12.37
14	.....	1011106	16.50	13.20	12.37
8.5	.....	1011108	16.50	13.20	12.37
3.1	1010310	1011110	16.50	13.20	12.37
3.3	.....	1011111	16.50	13.20	12.37
2.0	1010313	1011113	16.50	13.20	12.37
1.0	1010315	1011115	16.50	13.20	12.37
0.67	.....	1011116	16.50	13.20	12.37
0.50	1010318	1011118	16.50	13.20	12.37
0.33	1010319	1011119	16.50	13.20	12.37
0.25	1010320	1011120	16.50	13.20	12.37
0.2	.....	1011121	16.50	13.20	12.37
0.17	1010322	1011122	16.50	13.20	12.37
0.12	.....	1011123	16.50	13.20	12.37
0.10	1010325	1011125	16.50	13.20	12.27
0.07	.....	1011127	16.50	13.20	12.37
0.05	.....	1011129	16.50	13.20	12.37

DC MILLIVOLTMETERS

6.7	1030315	1031115	$17.00	$13.60	$12.75
13.5	.....	1031118	17.00	13.60	12.75
20.2	.....	1031119	17.00	13.60	12.75

VU METERS

Model	Scale Type	Resis., Ohms	Net Each, Lots of 1-24	25-49	50 Up
150	A	3900	$29.00	$23.20	$21.75
150	B	3900	29.00	23.20	21.75

JT TRANSFORMERS FOR AC AMMETERS

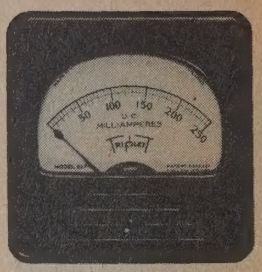
ting range of all AC ammeters. (See AC Ammeters Page 3.)

Ampere Range	Size, Inches I.D.	O.D.	Thick.	Net Each, Lots of 1-24	25-49	50 Up
0-75	1⅝	3¼	1	$14.70	$11.76	$11.03
0-100	1⅝	3¼	1	14.70	11.76	11.03
0-200	1⅝	3¼	1	14.70	11.76	11.03
0-250	1⅝	3¼	1	14.70	11.76	11.03
0-300	1⅝	3¼	1	14.70	11.76	11.03
0-400	1½	3⅜	1¼	14.70	11.76	11.03
0-500	1½	3⅜	1¼	19.30	15.44	14.48
0-750	2¼	5	1⅜	27.00	21.60	20.25
0-1000	2¼	5	1⅜	27.00	21.60	20.25

GENERAL PANEL METER INFORMATION

Triplett meters offer ±2% accuracy, rugged construction, high overload capacity and long-term reliability. **DC meters** are D'Arsonval type with pivot & jewel construction except for certain microammeters with high-sensitivity suspension movement; linear scales; extra light moving coil; self-shielded Bar-Ring magnet; one-piece diecast frame. **AC meters** are moving iron vane type, air damped, with light moving parts. All have jewel bearings; specially treated pivots; white enameled metal dials; ceramic pointer stops; molded zero adjusters, case and base.

Accuracy: ±2% except AC rect. type, ±3%. **Repeatability:** Suspension type, ±0.5%; pivot, ±2%. **Overload Capacity:** 1 second: current, 1000% except AC rect. and RF, 150%; voltage, 0-100V, 1000% except AC rect., 150%. **Continuous Overload:** 120% except DC current, 150%. **Damping Factor:** 2.5 minimum. **G-Series Meters (Fig A):** Flexible and interchangeable design with optional mounting bezel for mounting behind panel. Large dial area for multiple scales. Natural aluminum insert.

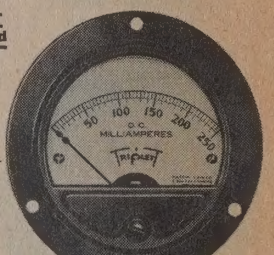


DC 227-T, 327-T
AC 237-S, 337-S

DC PANEL METERS—2.5", 3.5" AND 4.5" SIZES

Four basic styles, in three nominal sizes. Table below indicates dimensions of DC and RF meters. **To Order:** Specify both Model and Triplett Part Number, from appropriate tables below. Example: Model 220-G, Number 1049602, is a DC ammeter, 0-1 range, in a G-Series case.

Model	Meter Type	Nom. Size	Fig.	Scale Lgth.	Flange Size, In., W. x H.	Body Size, In. Dia. x Depth	Term. Extend
220-G	DC	2½"	A	2.48"	2.77 x 2.39	2.2 x 1.39	.730"
221-T	DC	2½"	B	1.76"	2.687 dia.	2.203 x .937	.750"
227-T	DC	2½"	C	1.76"	2.375 sq.	2.156 x 1.0	.750"
320-G	DC	3½"	A	3.16"	3.5 x 2.99	2.75 x 1.39	.730"
321-T	DC	3½"	B	2.49"	3.5 dia.	2.75 x .92	.750"
327-T	DC	3½"	C	2.49"	3.0 sq.	2.75 x .987	.750"
420-G	DC	4½"	A	4.03"	4.55 x 4.068	2.75 x 1.39	.968"
420	DC	4½"	D	4.04"	4.625 x 4.187	2.75 x .843	.750"
240-G	RF	2½"	A	2.48"	2.77 x 2.39	2.2 x 1.39	.730"
241-T	RF	2½"	B	1.76"	2.687 dia.	2.203 x .937	.750"
247-T	RF	2½"	C	1.76"	2.375 sq.	2.156 x 1.0	.750"
340-G	RF	3½"	A	3.16"	3.5 x 2.99	2.75 x 1.39	.730"
341-T	RF	3½"	B	2.49"	3.5 dia.	2.75 x .92	.750"
347-T	RF	3½"	C	2.49"	3.0 sq.	2.75 x .987	.750"
440-G	RF	4½"	A	4.03"	4.55 x 4.068	2.75 x 1.39	.968"
440	RF	4½"	D	4.04"	4.625 x 4.187	2.75 x .843	.750"



DC 221-T, 321-T
AC 231-S, 331-S

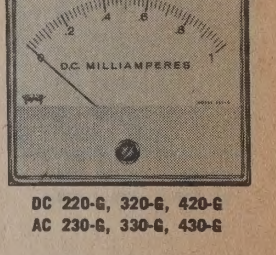
Half Bezels for G-Series Meters: For behind-panel mtg. in panels to ⅛".

Number	For Meter	Material	Size, W. x H.	Panel Hole	1-24	25-49	50 Up
13A-233	2½" G-Series	Plastic	3.09 x 1.69"	3.000 x 1.593"	$1.70	$1.36	$1.28
13A-238	2½" G-Series	Metal	3.09 x 1.69"	3.000 x 1.593"	2.10	1.68	1.58
13A-234	3½" G-Series	Plastic	3.83 x 2.27"	3.718 x 2.156"	1.70	1.36	1.28
13A-239	3½" G-Series	Metal	3.83 x 2.27"	3.718 x 2.156"	2.10	1.68	1.58
13A-235	4½" G-Series	Plastic	4.92 x 2.85"	4.812 x 2.750"	1.70	1.36	1.28
13A-236	4½" G-Series	Metal	4.92 x 2.85"	4.812 x 2.750"	2.10	1.68	1.58

DC MICROAMMETERS

2.5" MODELS 220-G, 221-T AND 227-T

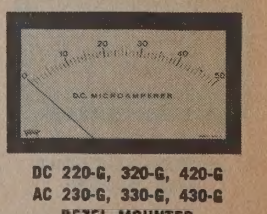
Range	Resis., Ohms	220-G Number	221-T Number	227-T Number	Net Each, Lots of 1-24	25-49	50 Up
0-50*	2300	1069615	1062515	1062815	$21.50	$17.20	$16.12
0-100*	825	1069618	1062518	1062818	20.00	16.00	15.00
0-200*	360	1069620	1062520	1062820	18.50	14.80	13.87
0-500*	156	1069625	1062525	1062825	17.50	14.00	13.12
0-5	15000	8069608	8062508	8062808	41.50	33.20	31.12
0-10	7500	8069610	8062510	8062810	35.50	28.40	26.62
0-20	2500	8069612	8062512	8062812	30.50	24.40	22.87
0-50	825	8069615	8062515	8062815	24.00	19.20	18.00
0-100	360	8069618	8062518	8062818	21.50	17.20	16.12
0-200	156	8069620	8062520	8062820	20.50	16.40	15.37
0-500	40	8069625	8062525	8062825	20.00	16.00	15.00
0-1000†	12.5	8069629	8062529	8062829	19.50	15.60	14.62
0-50‡	360	8069639	8062539	8062839	21.50	17.20	16.12
0-100‡	156	8069640	8062540	8062840	20.50	16.40	15.37
0-500‡	12.5	8069643	8062543	8062843	19.50	15.60	14.62



DC 220-G, 320-G, 420-G
AC 230-G, 330-G, 430-G

3.5" MODELS 320-G, 321-T AND 327-T

Range	Resis., Ohms	320-G Number	321-T Number	327-T Number	Net Each, Lots of 1-24	25-49	50 Up
0-50*	2300	1069715	1065615	1065715	$22.50	$18.00	$16.87
0-100*	825	1069718	1065618	1065718	21.00	16.80	15.75
0-200*	360	1069720	1065620	1065720	19.50	15.60	14.62
0-500*	156	1069725	1065625	1065725	18.50	14.80	13.87
0-5	15000	8069708	8065608	8065708	42.50	34.00	31.87
0-10	7500	8069710	8065610	8065710	36.50	29.20	27.37
0-20	2500	8069712	8065612	8065712	31.50	25.20	23.62
0-50	825	8069715	8065615	8065715	25.00	20.00	18.75
0-100	360	8069718	8065618	8065718	22.50	18.00	16.87
0-200	156	8069720	8065620	8065720	21.50	17.20	16.12
0-500	40	8069725	8065625	8065725	21.00	16.80	15.75
0-1000†	12.5	8069729	8065629	8065729	20.50	16.40	15.37
0-50‡	360	8069739	8065639	8065739	22.50	18.00	16.87
0-100‡	156	8069740	8065640	8065740	21.50	17.20	16.12
0-500‡	12.5	8069743	8065643	8065743	20.50	16.40	15.37

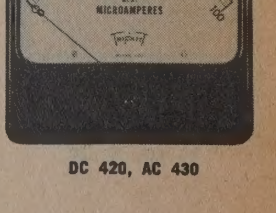


DC 220-G, 320-G, 420-G
AC 230-G, 330-G, 430-G
BEZEL MOUNTED

4.5" MODELS 420-G AND 420

Range	Resis., Ohms	420-G Number	420 Number	Net Each, Lots of 1-24	25-49	50 Up
0-50*	2300	1069815	1066215	$23.50	$18.80	$17.62
0-100*	825	1069818	1066218	22.00	17.60	16.50
0-200*	360	1069820	1066220	20.50	16.40	15.37
0-500*	156	1069825	1066225	19.50	15.60	14.62
0-5	15000	8069808	8066208	43.50	34.80	32.62
0-10	7500	8069810	8066210	37.50	30.00	28.12
0-20	2500	8069812	8066212	32.50	26.00	24.37
0-50	825	8069815	8066215	26.00	20.80	19.50
0-100	360	8069818	8066218	23.50	18.80	17.62
0-200	156	8069820	8066220	22.50	18.00	16.87
0-500	40	8069825	8066225	22.00	17.60	16.50
0-1000†	12.5	8069829	8066229	21.50	71.20	16.12
0-50‡	360	8069839	8066239	23.50	18.80	17.62
0-100‡	156	8069840	8066240	22.50	18.00	16.87
0-500‡	12.5	8069843	8066243	21.50	17.20	16.12

*Indicates pivot and jewel movement; all others suspension type.
†Scale: 0-1 mA. ‡Zero-center scale (50-0-50, etc.).
★**Quantity prices available on request.**

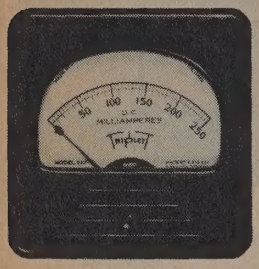


DC 420, AC 430

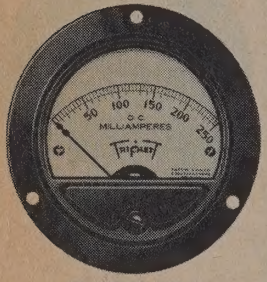
ALL PRICES ARE SUGGESTED U.S.A. USER NET, SUBJECT TO CHANGE, SPECIFICATIONS SUBJECT TO REVISION.

IPLETT ELECTRICAL INSTRUMENT COMPANY

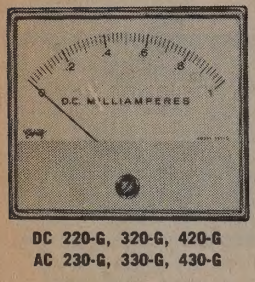
TRIPLETT INSTRUMENTS



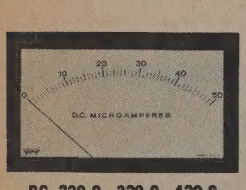
DC 227-T, 327-T
AC 237-S, 337-S



DC 221-T, 321-T
AC 231-S, 331-S



DC 220-G, 320-G, 420-G
AC 230-G, 330-G, 430-G



DC 220-G, 320-G, 420-G
AC 230-G, 330-G, 430-G
BEZEL MOUNTED

DC 420, AC 430

SELF-CONTAINED DC AMMETERS

For higher ranges, use external shunts (below).

2.5" MODELS 220-G, 221-T AND 227-T

Range	Scale Div.	220-G Number	221-T Number	227-T Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	50	1029602	1022502	1022802	$17.00	$13.60	$12.75
0–3	60*	1029606	1022506	1022806	17.00	13.60	12.75
0–5	50	1029608	1022508	1022808	17.00	13.60	12.75
0–10	50	1029610	1022510	1022810	17.00	13.60	12.75
0–15	75*	1029611	1022511	1022811	17.00	13.60	12.75
0–25	50	1029613	1022513	1022813	17.00	13.60	12.75
0–30	60*	1029614	1022514	1022814	17.00	13.60	12.75
0–50	50	1029615	1022515	1022815	17.00	13.60	12.75

*For 220-G only; scale division, 30 for 221-T and 227-T.

3.5" MODELS 320-G, 321-T AND 327-T

Range	Scale Div.	320-G Number	321-T Number	327-T Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	50	1029702	1025602	1025702	$18.00	$14.40	$13.50
0–3	60	1029706	1025606	1025706	18.00	14.40	13.50
0–5	50	1029708	1025608	1025708	18.00	14.40	13.50
0–10	50	1029710	1025610	1025710	18.00	14.40	13.50
0–15	75	1029711	1025611	1025711	18.00	14.40	13.50
0–25	50	1029713	1025613	1025713	18.00	14.40	13.50
0–30	60	1029714	1025614	1025714	18.00	14.40	13.50
0–50	50	1029715	1025615	1025715	18.00	14.40	13.50

4.5" MODELS 420-G AND 420

Range	Scale Div.	420-G Number	420 Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	50	1029802	1026202	$19.00	$15.20	$14.25
0–3	60	1029806	1026206	19.00	15.20	14.25
0–5	50	1029808	1026208	19.00	15.20	14.25
0–10	50	1029810	1026210	19.00	15.20	14.25
0–15	75	1029811	1026211	19.00	15.20	14.25
0–25	50	1029813	1026213	19.00	15.20	14.25
0–30	60	1029814	1026214	19.00	15.20	14.25
0–50	50	1029815	1026215	19.00	15.20	14.25

DC AMMETER SHUNTS

Number	Amps	mV	Net*	Number	Amps	mV	Net*
91A-599	0–1	50	$ 9.40	91A-608	0–500	50	$ 16.50
91A-600	0–2	50	9.40	91A-609	0–600	50	19.30
91A-601	0–5	50	9.40	91A-610	0–750	50	22.90
91A-602	0–10	50	9.40	91A-611	0–800	50	23.90
91A-603	0–20	50	9.40	91A-585	0–1000	50	41.60
91A-604	0–50	50	9.40	91A-586	0–1200	50	43.00
91A-605	0–100	50	9.40	91A-587	0–1500	50	50.20
91A-606	0–150	50	9.40	91A-588	0–2000	50	60.20
91A-607	0–200	50	9.40	91A-589	0–2500	50	77.90
91A-593	0–250	50	9.90	91A-590	0–3000	50	92.30
91A-594	0–300	50	10.90	91A-591	0–4000	50	152.20
91A-595	0–400	50	13.50	91A-592	0–5000	50	180.00

NULL METERS

Suspension-type, in G-Series case. Sensitivity at null point, 0.3 μA per degree. End scale value is 40–0–40 (±20%). Center spot mirrored to eliminate parallax. Resistance, 1700 ohms.

Triplett Number 8069752 Model 320-G, 3½". Net Ea. **$39.00***
Triplett Number 8069852 Model 420-G, 4½". Net Ea. **40.40***

DC VOLTMETERS

Film type resistors; 1000 ohms/volt.

2.5" MODELS 220-G, 221-T AND 227-T

Range	Scale Div.	220-G Number	221-T Number	227-T Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	50	1049602	1042502	1042802	$18.00	$14.40	$13.50
0–3	60†	1049606	1042506	1042806	18.00	14.40	13.50
0–5	50	1049608	1042508	1042808	18.00	14.40	13.50
0–10	50	1049610	1042510	1042810	18.00	14.40	13.50
0–15	75†	1049611	1042511	1042811	18.00	14.40	13.50
0–25	50	1049613	1042513	1042813	18.00	14.40	13.50
0–30	60†	1049614	1042514	1042814	18.00	14.40	13.50
0–50	50	1049615	1042515	1042815	18.00	14.40	13.50
0–100	50	1049618	1042518	1042818	18.00	14.40	13.50
0–150	75†	1049619	1042519	1042819	18.00	14.40	13.50
0–200	40	1049620	1042520	1042820	18.00	14.40	13.50
0–250	50	1049621	1042521	1042821	18.00	14.40	13.50
0–300	60†	1049622	1042522	1042822	18.00	14.40	13.50
0–500*	50	1049625	1042525	1042825	18.50	14.80	13.87
0–750*	75†	1049627	1042527	1042827	18.50	14.80	13.87
0–1000*	50	1049629	1042529	1042829	23 50	18.80	17.62
0–2000*	40	1049630	1042530	1042830	23.50	18.80	17.62
0–3000*	60†	1049631	1042531	1042831	23.50	18.80	17.62
0–5000*	50	1049633	1042533	1042833	23.50	18.80	17.62

3.5" MODELS 320-G, 321-T AND 327-T

Range	Scale Div.	320-G Number	321-T Number	327-T Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	50	1049702	1045602	1045702	$19.00	$15.20	$14.25
0–3	60	1049706	1045606	1045706	19.00	15.20	14.25
0–5	50	1049708	1045608	1045708	19.00	15.20	14.25
0–10	50	1049710	1045610	1045710	19.00	15.20	14.25
0–15	75	1049711	1045611	1045711	19.00	15.20	14.25
0–25	50	1049713	1045613	1045713	19.00	15.20	14.25
0–30	60	1049714	1045614	1045714	19.00	15.20	14.25
0–50	50	1049715	1045615	1045715	19.00	15.20	14.25
0–100	50	1049718	1045618	1045718	19.00	15.20	14.25
0–150	75	1049719	1045619	1045719	19.00	15.20	14.25
0–200	40	1049720	1045620	1045720	19.00	15.20	14.25
0–250	50	1049721	1045621	1045721	19.00	15.20	14.25
0–300	60	1049722	1045622	1045722	19.00	15.20	14.25
0–500	50	1049725	1045625	1045725	19.50	15.60	14.62
0–750*	75	1049727	1045627	1045727	19.50	15.60	14.62
0–1000*	50	1049729	1045629	1045729	24.50	19.60	18.37
0–2000*	40	1049730	1045630	1045730	24.50	19.60	18.37
0–3000*	60	1049731	1045631	1045731	24.50	19.60	18.37
0–5000*	50	1049733	1045633	1045733	24.50	19.60	18.37

4.5" MODELS 420-G AND 420

Range	Scale Div.	420-G Number	420 Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	50	1049802	1046202	$20.00	$16.00	$15.00
0–3	60	1049806	1046206	20.00	16.00	15.00
0–5	50	1049808	1046208	20.00	16.00	15.00

DC VOLTMETERS

4.5" MODELS 420-G AND 420 (continued)

0–10	50	1049810	1046210	20.00	16.00
0–15	75	1049811	1046211	20.00	16.00
0–25	50	1049813	1046213	20.00	16.00
0–30	60	1049814	1046214	20.00	16.00
0–50	50	1049815	1046215	20.00	16.00
0–100	50	1049818	1046218	20.00	16.00
0–150	75	1049819	1046219	20.00	16.00
0–200	40	1049820	1046220	20.00	16.00
0–250	50	1049821	1046221	20.00	16.00
0–300	60	1049822	1046222	20.00	16.00
0–500	50	1049825	1046225	20.50	16.40
0–750	75	1049827	1046227	20.50	16.40
0–1000*	50	1049829	1046229	25.50	20.40
0–2000*	40	1049830	1046230	25.50	20.40
0–3000*	60	1049831	1046231	25.50	20.40
0–5000*	50	1049833	1046233	25.50	20.40

*2000 ohms/volt; external resistor board supplied. †Scale for 220-G only; 30 divisions for 221-T and 227-T.

DC MILLIVOLTMETERS

2.5" MODELS 220-G, 221-T AND 227-T

Range	Resis., Ohms	220-G Number	221-T Number	227-T Number	Net Each, L 1-24	25-49
0–50	6.7	1039615	1032515	1032815	$17.00	$13.60
0–100	13.5	1039618	1032518	1032818	17.00	13.60
0–150	20.2	1039619	1032519	1032819	17.00	13.60

3.5" MODELS 320-G, 321-T AND 327-T

Range	Resis., Ohms	320-G Number	321-T Number	327-T Number	Net Each, L 1-24	25-49
0–50	6.7	1039715	1035615	1035715	$18.00	$14.40
0–100	13.5	1039718	1035618	1035718	18.00	14.40
0–150	20.2	1039719	1035619	1035719	18.00	14.40

4.5" MODELS 420-G AND 420

Range	Resis., Ohms	420-G Number	420 Number	Net Each, L 1-24	25-49
0–50	6.7	1039815	1036215	$19.00	$15.20
0–100	13.5	1039818	1036218	19.00	15.20
0–150	20.2	1039819	1036219	19.00	15.20

DC MILLIAMMETERS

Ranges above 10 mA are shunted and have a drop of approximately 100 mV. Special resistances to order.

2.5" MODELS 220-G, 221-T AND 227-T

Range	Resis., Ohms	220-G Number	221-T Number	227-T Number	Net Each, L 1-24	25-49
0–1	55	1019602	1012502	1012802	$16.50	$13.20
0–1.5	30	1019603	1012503	1012803	16.50	13.20
0–3	14	1019606	1012506	1012806	16.50	13.20
0–5	8.5	1019608	1012508	1012808	16.50	13.20
0–10	3.1	1019610	1012510	1012810	16.50	13.20
0–15	3.3	1019611	1012511	1012811	16.50	13.20
0–25	2.0	1019613	1012513	1012813	16.50	13.20
0–50	1.0	1019615	1012515	1012815	16.50	13.20
0–75	0.67	1019616	1012516	1012816	16.50	13.20
0–100	0.5	1019618	1012518	1012818	16.50	13.20
0–150	0.33	1019619	1012519	1012819	16.50	13.20
0–200	0.25	1019620	1012520	1012820	16.50	13.20
0–250	0.2	1019621	1012521	1012821	16.50	13.20
0–300	0.17	1019622	1012522	1012822	16.50	13.20
0–400	0.12	1019623	1012523	1012823	16.50	13.20
0–500	0.1	1019625	1012525	1012825	16.50	13.20
0–750	0.07	1019627	1012527	1012827	16.50	13.20
0–1000	0.05	1019629	1012529	1012829	16.50	13.20

3.5" MODELS 320-G, 321-T AND 327-T

Range	Resis., Ohms	320-G Number	321-T Number	327-T Number	Net Each, L 1-24	25-49
0–1	55	1019702	1015602	1015702	$17.50	$14.00
0–1.5	30	1019703	1015603	1015703	17.50	14.00
0–3	14	1019706	1015606	1015706	17.50	14.00
0–5	8.5	1019708	1015608	1015708	17.50	14.00
0–10	3.1	1019710	1015610	1015710	17.50	14.00
0–15	3.3	1019711	1015611	1015711	17.50	14.00
0–25	2.0	1019713	1015613	1015713	17.50	14.00
0–50	1.0	1019715	1015615	1015715	17.50	14.00
0–75	0.67	1019716	1015616	1015716	17.50	14.00
0–100	0.5	1019718	1015618	1015718	17.50	14.00
0–150	0.33	1019719	1015619	1015719	17.50	14.00
0–200	0.25	1019720	1015620	1015720	17.50	14.00
0–250	0.2	1019721	1015621	1015721	17.50	14.00
0–300	0.17	1019722	1015622	1015722	17.50	14.00
0–400	0.12	1019723	1015623	1015723	17.50	14.00
0–500	0.1	1019725	1015625	1015725	17.50	14.00
0–750	0.07	1019727	1015627	1015727	17.50	14.00
0–1000	0.05	1019729	1015629	1015729	17.50	14.00

4.5" MODELS 420-G AND 420

Range	Resis., Ohms	420-G Number	420 Number	Net Each, Lo 1-24	25-49
0–1	55	1019802	1016202	$18.50	$14.80
0–1.5	30	1019803	1016203	18.50	14.80
0–3	14	1019806	1016206	18.50	14.80
0–5	8.5	1019808	1016208	18.50	14.80
0–10	3.1	1019810	1016210	18.50	14.80
0–15	3.3	1019811	1016211	18.50	14.80
0–25	2.0	1019813	1016213	18.50	14.80
0–50	1.0	1019815	1016215	18.50	14.80
0–75	0.67	1019816	1016216	18.50	14.80
0–100	0.5	1019818	1016218	18.50	14.80
0–150	0.33	1019819	1016219	18.50	14.80
0–200	0.25	1019820	1016220	18.50	14.80
0–250	0.2	1019821	1016221	18.50	14.80
0–300	0.17	1019822	1016222	18.50	14.80
0–400	0.12	1019823	1016223	18.50	14.80
0–500	0.1	1019825	1016225	18.50	14.80
0–750	0.07	1019827	1016227	18.50	14.80
0–1000	0.05	1019829	1016229	18.50	14.80

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TRIPLETT ELECTRICAL INSTRUMENT COMPA

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TRIPLETT INSTRUMENTS

SELF-CONTAINED AC AMMETERS

on frequencies from 25 to 500 Hz. For ranges above 50, ut current transformers (First page.)

2.5" MODELS 230-G, 231-S AND 237-S

Resis., Ohms	230-G Number	231-S Number	237-S Number	Net Each, Lots of 1-24	25-49	50 Up
.38	1109602	1102502	1102802	$16.00	$12.80	$12.00
.092	1109604	1102504	1102804	16.00	12.80	12.00
.039	1109606	1102506	1102806	16.00	12.80	12.00
.014	1109608	1102508	1102808	16.00	12.80	12.00
.004	1109610	1102510	1102810	16.00	12.80	12.00
.003	1109611	1102511	1102811	16.00	12.80	12.00
.002	1109613	1102513	1102813	16.00	12.80	12.00
.001	1109614	1102514	1102814	16.00	12.80	12.00
.00035	1109615	1102515	1102815	16.00	12.80	12.00

3.5" MODELS 330-G, 331-S AND 337-S

Resis., Ohms	330-G Number	331-S Number	337-S Number	Net Each, Lots of 1-24	25-49	50 Up
.38	1109702	1105602	1105702	$17.00	$13.60	$12.75
.092	1109704	1105604	1105704	17.00	13.60	12.75
.039	1109706	1105606	1105706	17.00	13.60	12.75
.014	1109708	1105608	1105708	17.00	13.60	12.75
.004	1109710	1105610	1105710	17.00	13.60	12.75
.003	1109711	1105611	1105711	17.00	13.60	12.75
.002	1109713	1105613	1105713	17.00	13.60	12.75
.001	1109714	1105614	1105714	17.00	13.60	12.75
.00035	1109715	1105615	1105715	17.00	13.60	12.75
.0002	1109716	1105616	1105716	17.00	13.60	12.75

4.5" MODELS 430-G AND 430

Resis., Ohms	430-G Number	430 Number	Net Each, Lots of 1-24	25-49	50 Up
.38	1109802	1106202	$18.00	$14.40	$13.50
.092	1109804	1106204	18.00	14.40	13.50
.039	1109806	1106206	18.00	14.40	13.50
.014	1109808	1106208	18.00	14.40	13.50
.004	1109810	1106210	18.00	14.40	13.50
.003	1109811	1106211	18.00	14.40	13.50
.002	1109813	1106213	18.00	14.40	13.50
.001	1109814	1106214	18.00	14.40	13.50
.00035	1109815	1106215	18.00	14.40	13.50
.0002	1109816	1106216	18.00	14.40	13.50

AC MILLIAMMETERS

on frequencies from 25 to 500 Hz.

2.5" MODELS 230-G, 231-S AND 237-S

Resis., Ohms	230-G Number	231-S Number	237-S Number	Net Each, Lots of 1-24	25-49	50 Up
4000	1129610	1122510	1122810	$16.00	$12.80	$12.00
1600	1129611	1122511	1122811	16.00	12.80	12.00
470	1129613	1122513	1122813	16.00	12.80	12.00
120	1129615	1122515	1122815	16.00	12.80	12.00
40	1129618	1122518	1122818	16.00	12.80	12.00
9.5	1129620	1122520	1122820	16.00	12.80	12.00
5.9	1129621	1122521	1122821	16.00	12.80	12.00
1.55	1129625	1122525	1122825	16.00	12.80	12.00

3.5" MODELS 330-G, 331-S AND 337-S

Resis., Ohms	330-G Number	331-S Number	337-S Number	Net Each, Lots of 1-24	25-49	50 Up
4000	1129710	1125610	1125710	$17.00	$13.60	$12.75
1600	1129711	1125611	1125711	17.00	13.60	12.75
470	1129713	1125613	1125713	17.00	13.60	12.75
120	1129715	1125615	1125715	17.00	13.60	12.75
40	1129718	1125618	1125718	17.00	13.60	12.75
9.5	1129720	1125620	1125720	17.00	13.60	12.75
5.9	1129721	1125621	1125721	17.00	13.60	12.75
1.55	1129725	1125625	1125725	17.00	13.60	12.75

4.5" MODELS 430-G AND 430

Resis., Ohms	430-G Number	430 Number	Net Each, Lots of 1-24	25-49	50 Up
4000	1129810	1126210	$18.00	$14.40	$13.50
1600	1129811	1126211	18.00	14.40	13.50
470	1129813	1126213	18.00	14.40	13.50
120	1129815	1126215	18.00	14.40	13.50
40	1129818	1126218	18.00	14.40	13.50
9.5	1129820	1126220	18.00	14.40	13.50
5.9	1129821	1126221	18.00	14.40	13.50
1.55	1129825	1126225	18.00	14.40	13.50

AC VOLTMETERS (RECTIFIER TYPE)

3.5" MODELS 350-G, 351-T AND 357-T

Ohms/ Volt	350-G Number	351-T Number	357-T Number	Net Each, Lots of 1-24	25-49	50 Up
2000	1179702	1175602	1175702	$27.00	$21.60	$20.25
2000	1179706	1175606	1175706	27.00	21.60	20.25
1000	1179708	1175608	1175708	25.00	20.00	18.75
1000	1179710	1175610	1175710	25.00	20.00	18.75
1000	1179711	1175611	1175711	25.00	20.00	18.75
1000	1179715	1175615	1175715	25.00	20.00	18.75
1000	1179718	1175618	1175718	25.00	20.00	18.75
1000	1179719	1175619	1175719	25.00	20.00	18.75
1000	1179722	1175622	1175722	25.00	20.00	18.75

4.5" MODELS 450-G AND 450

Ohms/ Volt	450-G Number	450 Number	Net Each, Lots of 1-24	25-49	50 Up
2000	1179802	1176202	$28.00	$22.40	$21.00
2000	1179806	1176206	28.00	22.40	21.00
1000	1179808	1176208	26.00	20.80	19.50
1000	1179810	1176210	26.00	20.80	19.50
1000	1179811	1176211	26.00	20.80	19.50
1000	1179815	1176215	26.00	20.80	19.50
1000	1179818	1176218	26.00	20.80	19.50
1000	1179819	1176219	26.00	20.80	19.50
1000	1179822	1176222	26.00	20.80	19.50

AC VOLTMETERS

Self-contained. For use on frequencies from 25 to 133 Hz.

2.5" MODELS 230-G, 231-S AND 237-S

Range	Ohms/ Volt	230-G Number	231-S Number	237-S Number	Net Each, Lots of 1-24	25-49	50 Up
0–1.5	1.33	1119603	1112503	1112803	$16.00	$12.80	$12.00
0–3	3.33	1119606	1112506	1112806	16.00	12.80	12.00
0–5	4	1119608	1112508	1112808	16.00	12.80	12.00
0–10	10	1119610	1112510	1112810	16.00	12.80	12.00
0–15	16	1119611	1112511	1112811	16.00	12.80	12.00
0–25	20	1119613	1112513	1112813	16.00	12.80	12.00
0–50	50	1119615	1112515	1112815	16.00	12.80	12.00
0–100	91	1119618	1112518	1112818	16.00	12.80	12.00
0–150	125	1119619	1112519	1112819	17.00	13.60	12.75
0–250	144	1119621	1112521	1112821	17.00	13.60	12.75
0–300	144	1119622	1112522	1112822	17.00	13.60	12.75
0–500	125*	1119625	1112525	1112825	22.50	18.00	16.87

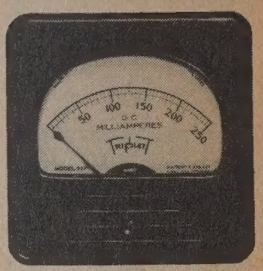
3.5" MODELS 330-G, 331-S AND 337-S

Range	Ohms/ Volt	330-G Number	331-S Number	337-S Number	Net Each, Lots of 1-24	25-49	50 Up
0–1.5	1.33	1119703	1115603	1115703	$17.00	$13.60	$12.75
0–3	3.33	1119706	1115606	1115706	17.00	13.60	12.75
0–5	4	1119708	1115608	1115708	17.00	13.60	12.75
0–10	10	1119710	1115610	1115710	17.00	13.60	12.75
0–15	16	1119711	1115611	1115711	17.00	13.60	12.75
0–25	20	1119713	1115613	1115713	17.00	13.60	12.75
0–50	50	1119715	1115615	1115715	17.00	13.60	12.75
0–100	91	1119718	1115618	1115718	17.00	13.60	12.75
0–150	125	1119719	1115619	1115719	18.00	14.40	13.50
0–250	144	1119721	1115621	1115721	18.00	14.40	13.50
0–300	144	1119722	1115622	1115722	18.00	14.40	13.50
0–500	125*	1119725	1115625	1115725	23.50	18.80	17.62

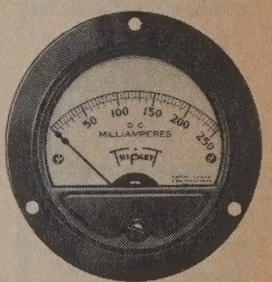
4.5" MODELS 430-G AND 430

Range	Ohms/ Volt	430-G Number	430 Number	Net Each, Lots of 1-24	25-49	50 Up
0–1.5	1.33	1119803	1116203	$18.00	$14.40	$13.50
0–3	3.33	1119806	1116206	18.00	14.40	13.50
0–5	4	1119808	1116208	18.00	14.40	13.50
0–10	10	1119810	1116210	18.00	14.40	13.50
0–15	16	1119811	1116211	18.00	14.40	13.50
0–25	20	1119813	1116213	18.00	14.40	13.50
0–50	50	1119815	1116215	18.00	14.40	13.50
0–100	91	1119818	1116218	18.00	14.40	13.50
0–150	125	1119819	1116219	19.00	15.20	14.25
0–250	144	1119821	1116221	19.00	15.20	14.25
0–300	144	1119822	1116222	19.00	15.20	14.25
0–500	125*	1119825	1116225	24.50	19.60	18.37

*Supplied with external resistor board.



DC 227-T, 327-T
AC 237-S, 337-S

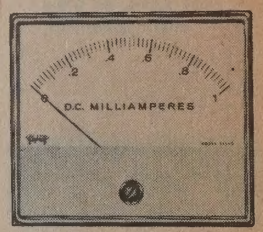


D.C. 221-T, 321-T
A.C. 231-S, 331-S

VU METERS

For measuring sound or noise levels. Essentially a low range rectifier type voltmeter with D'Arsonval element. Internal impedance, 3900 ohms. Steady state reference, 1 mW. For 600 ohm line. Available with "A" (−20+3 VU top arc, 0–100%) or "B" (−20+3 VU bottom arc, 0–100%) scale.

Triplett Number	Model	Size	Scale Type	Net Each, Lots of 1-24	25-49	50 Up
1099746	350-G	3½"	A standard	$30.00	$24.00	$22.50
1099748	350-G	3½"	B standard	30.00	24.00	22.50
1095646	351-T	3½"	A standard	30.00	24.00	22.50
1095647	351-T	3½"	A illuminated	32.50	26.00	24.37
1095648	351-T	3½"	B standard	30.00	24.00	22.50
1095649	351-T	3½"	B illuminated	32.50	26.00	24.37
1095746	357-T	3½"	A standard	30.00	24.00	22.50
1095747	357-T	3½"	A illuminated	32.50	26.00	24.37
1095748	357-T	3½"	B standard	30.00	24.00	22.50
1095749	357-T	3½"	B illuminated	32.50	26.00	24.37
1099846	450-G	4½"	A standard	31.00	24.80	23.25
1099848	450-G	4½"	B standard	31.00	24.80	23.25
1096246	450	4½"	A standard	31.00	24.80	23.25
1096247	450	4½"	A illuminated	33.50	26.80	25.12
1096248	450	4½"	B standard	31.00	24.80	23.25
1096249	450	4½"	B illuminated	33.50	26.80	25.12

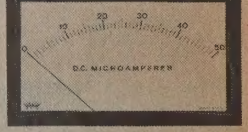


DC 220-G, 320-G, 420-G
AC 230-G, 330-G, 430-G

dB METERS

Power level indicators. Standard range reads up 6, down 10 dB. Zero dB = 1.73 V. Reference level, 6 mW. Internal resistance, 5000 ohms; 2,500 ohms on special order. For 500-ohm line. Standard damping; special high or low damping on special order, at extra cost.

Triplett Number	Model	Size	Type	Net Each, Lots of 1-24	25-49	50 Up
1089750	350-G	3½"	Standard	$26.00	$20.80	$19.50
1089751	350-G	3½"	Illuminated	28.50	22.80	21.37
1085650	351-T	3½"	Standard	26.00	20.80	19.50
1085651	351-T	3½"	Illuminated	28.50	22.80	21.37
1085750	351-T	3½"	Standard	26.00	20.80	19.50
1085751	357-T	3½"	Illuminated	28.50	22.80	21.37
1089850	450-G	4½"	Standard	27.00	21.60	20.25
1086250	450	4½"	Standard	27.00	21.60	20.25
1086251	450	4½"	Illuminated	29.50	23.60	22.12



DC 220-G, 320-G, 430-G
AC 230, 330-G, 430-G
BEZEL MOUNTED

SINGLE-PHASE WATTMETERS

Electrodynamometer type; 3½" size, in choice of three styles.

Range, Watts	Normal V	Normal A	361 Number	367-A Number	Net Ea. 1-24*	360-G1 Number	Net 1-24*
0–75	150	0.5	1185601	1185701	$33.60	1189701	$37.30
0–150	150	1	1185602	1185702	33.60	1189702	37.30
0–300	150	2	1185603	1185703	33.60	1189703	37.30
0–750	150	5	1185604	1185704	33.60	1189704	37.30
0–1500	150	10	1185605	1185705	33.60	1189705	37.30
0–150	300	0.5	1185606	1185706	37.10	1189706	40.90
0–300	300	1	1185607	1185707	37.10	1189707	40.90
0–600	300	2	1185608	1185708	37.10	1189708	40.90
0–1500	300	5	1185609	1185709	37.10	1189709	40.90
0–3000	300	10	1185610	1185710	37.10	1189710	40.90
0–75–150	*	0.5	1185611	1185711	44.70	1189711	48.50
0–150–300	*	1	1185612	1185712	44.70	1189712	48.50
0–300–600	*	2	1185613	1185713	44.70	1189713	48.50
0–750–1500	*	5	1185614	1185714	44.70	1189714	48.50
0–1500–3000	*	10	1185615	1185715	49.10	1189715	52.90

*150/300 volts. *Quantity prices available on request.

DC 420, AC 430

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TRIPLETT ELECTRICAL INSTRUMENT COMPANY

TRIPLETT INSTRUMENTS

RF THERMOAMMETERS

2.5" MODELS 240-G, 241-T AND 247-T

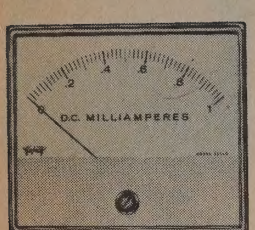
Range	Resis., Ohms	240-G Number	241-T Number	247-T Number	Net Each, Lots of 1-24	25-49	50 Up
0–0.5	.93	1079601	1072501	1072801	$20.50	$16.40	$15.37
0–1	.35	1079602	1072502	1072802	20.50	16.40	15.37
0–1.5	.21	1079603	1072503	1072803	20.50	16.40	15.37
0–2.5	.13	1079605	1072505	1072805	20.50	16.40	15.37
0–5	.06	1079608	1072508	1072808	20.50	16.40	15.37
0–10	.03	1079610	1072510	1072810	20.50	16.40	15.37

3.5" MODELS 340-G, 341-T AND 347-T

Range	Resis., Ohms	340-G Number	341-T Number	347-T Number	Net Each, Lots of 1-24	25-49	50 Up
0–0.5	.93	1079701	1075601	1075701	$21.50	$17.20	$16.12
0–1	.35	1079702	1075602	1075702	21.50	17.20	16.12
0–1.5	.21	1079703	1075603	1075703	21.50	17.20	16.12
0–2.5	.13	1079705	1075605	1075705	21.50	17.20	16.12
0–5	.06	1079708	1075608	1075708	21.50	17.20	16.12
0–10	.03	1079710	1075610	1075710	21.50	17.20	16.12

4.5" MODELS 440-G AND 440

Range	Resis., Ohms	440-G Number	440 Number	Net Each, Lots of 1-24	25-49	50 Up
0–0.5	.93	1079801	1076201	$22.50	$18.00	$16.87
0–1	.35	1079802	1076202	22.50	18.00	16.87
0–1.5	.21	1079803	1076203	22.50	18.00	16.87
0–2.5	.13	1079805	1076205	22.50	18.00	16.87
0–5	.06	1079808	1076208	22.50	18.00	16.87
0–10	.03	1079810	1076210	22.50	18.00	16.87

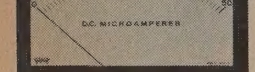


RF 240-G, 340-G, 440-G
DC 520-G, AC 530-G

EDGEWISE 3½" AND 4½" METERS

Two popular sizes, designed for strikingly clean appearance. Occupy minimum panel space, with the performance of conventional meters. Bar-Ring movement permits meter stacking for maximum instrumentation in minimum space. Anti-parallax pointer minimizes reading error. **Scale Length:** 3½" models, 2.75"; 4½" models, 3.87". **Panel Hole Required:** 3½" models, 3.421" x 1.281"; 4½" models, 4.25" x 1.5". **Depth Behind Panel:** 3½" models, 2.583"; 4½" models, 3.53".
To Order: Specify both Model and Triplett Part Number from tables below. Example: Model 320-E, Number 1013502, is a 3½" DC milliammeter, range 0–1 mA.

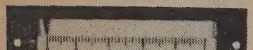
Mounting Bezels for Edgewise Meters: For behind-panel mtg.
Triplett Number 11977A—For 3½" meter. Net Each.... **$1.60**
Triplett Number 11967A—For 4½" meter. Net Each.... **1.60**



RF 240-G, 340-G, 440-G
DC 520-G, AC 530-G
BEZEL MOUNTED

DC MILLIAMMETERS

Range	Resis., Ohms	3½" Edgewise Model 320-E Number	Net	4½" Edgewise Model 420-E Number	Net
0–1	55	1013502	$27.00	1017002	$28.00
0–5	8.5	1013508	27.00	1017008	28.00
0–10	3.1	1013510	27.00	1017010	28.00
0–50	1.0	1013515	27.00	1017015	28.00
0–100	.5	1013518	27.00	1017018	28.00
0–200	.25	1013520	27.00	1017020	28.00
0–300	.17	1013522	27.00	1017022	28.00
0–500	.1	1013525	27.00	1017025	28.00



DC 320-E, 420-E
AC 330-E, 430-E

DC MILLIVOLTMETERS

0–50	6.7	1033515	$27.50	1037015	$28.50

DC MICROAMMETERS (PIVOT AND JEWEL)

0–50	2000	1063515	$32.00	1067015	$33.00
0–100	825	1063518	30.50	1067018	31.50
0–200	360	1063520	29.00	1067020	30.00
0–500	156	1063525	28.00	1067025	29.00

DC MICROAMMETERS (SUSPENSION TYPE)

Range	3½" Model 320-E Resis., Ohms	Triplett Number	Net Each	4½" Model 420-E Resis., Ohms	Triplett Number	Net Each
0–10	7500	8063510	$46.00	15000	8067010	$47.00
0–20	2500	8063512	41.00	7500	8067012	42.00
0–50	825	8063515	34.50	2300	8067015	35.50
0–100	360	8063518	32.00	825	8067018	33.00
0–200	156	8063520	31.00	360	8067020	32.00
0–500	40	8063525	30.50	156	8067025	31.50

DC 320-R, 420-R
AC 330-R, 430-R

DC AMMETERS (50 MILLIVOLT)

Range	Scale Div.	3½" Edgewise Model 320-E Number	Net	4½" Edgewise Model 420-E Number	Net
0–1	50	1023502	$27.50	1027002	$28.50
0–5	50	1023508	27.50	1027008	28.50
0–10	50	1023510	27.50	1027010	28.50
0–25	50	1023513	27.50	1027013	28.50
0–50	50	1023515	27.50	1027015	28.50

DC VOLTMETERS (1000 OHMS/VOLT)

0–5	50	1043508	$28.50	1047008	$29.50
0–10	50	1043510	28.50	1047010	29.50
0–25	50	1043513	28.50	1047013	29.50
0–50	50	1043515	28.50	1047015	29.50
0–150	75	1043519	28.50	1047019	29.50
0–300	60	1043522	28.50	1047022	29.50
0–500	50	1043525	28.50	1047025	29.50

RF 247-T, 347-T

AC EDGEWISE METERS

Range	Resis., Ohms /Volt	3½" Edgewise Model 330-E Number	Net	4½" Edgewise Model 430-E Number	Net
0–1 amps	.38	1103502	$26.50	1107002	$27.50
0–10 mA	4000	1123510	26.50	1127010	27.50
0–150 V	125	1113519	27.50	1117019	28.50

R-SERIES 3½"-4½" AND G-SERIES 5½" M

R-Series (Fig. A): Distinctive modern design in transpar black molded plastic. Provides dominant scale in limite space. Self-shielded for accuracy and reliability. DC mete Bar-Ring movement for high torque, fast response. Fluted shatterproof window, screw-fastened front.
G-Series (Fig. B): 5½" meter with modern design for flexibility and interchangeability. DC meters have self- Bar-Ring magnet and one-piece diecast frame.
To Order: Specify both Model and Triplett Number. F Model 320-R, No. 1015102, a 3½" R-Series 0–1 DC millia

Model	Meter Type	Nom. Size	Fig.	Scale Lgth.	Flange Size, In., W. x H.	Body Dia.
320-R	DC	3½"	A	2.96"	3.954 x 2.673	2.156
420-R	DC	4½"	A	3.456"	4.500 x 2.970	2.203
520-G	DC	5½"	B	5.00"	5.611 x 4.484	2.750
330-R	AC	3½"	A	2.5"	3.954 x 2.673	2.156
430-R	AC	4½"	A	2.874"	4.500 x 2.970	2.203
530-G	AC	5½"	B	4.25"	5.611 x 4.484	2.750

G-Series Half Bezel: For behind-panel mtg. in panels Size, 6.060" x 3.300". For panel hole, 5.875" x 3.156".
Triplett Number 13A-240—Net Each.....

DC MILLIAMMETERS

Range	Resis., Ohms	3½" R-Series Model 320-R Number	Net	4½" R-Series Model 420-R Number	Net	5½" G- Model Number
0–1	55	1015102	$17.50	1017802	$18.50	1019902
0–5	8.5	1015108	17.50	1017808	18.50	1019908
0–10	3.1	1015110	17.50	1017810	18.50	1019910
0–50	1.0	1015115	17.50	1017815	18.50	1019915
0–100	.5	1015118	17.50	1017818	18.50	1019918
0–200	.25	1015120	17.50	1017820	18.50	1019920
0–300	.17	1015122	17.50	1017822	18.50	1019922
0–500	.1	1015125	17.50	1017825	18.50	1019925

DC MICROAMMETERS (PIVOT AND JEWEL)

0–50	2000	1065115	$22.50	1067815	$23.50	1069915
0–100	825	1065118	21.00	1067818	22.00	1069918
0–200	360	1065120	19.50	1067820	20.50	1069920
0–500	156	1065125	18.50	1067825	19.50	1069925

DC MICROAMMETERS (SUSPENSION TYPE)

0–5	15000	8065108	$42.50	8067808	$43.50	. . .
0–10	7500	8065110	36.50	8067810	37.50	8069910
0–20	2500	8065112	31.50	8067812	32.50	8069912
0–50	825	8065115	25.00	8067815	26.00	8069915
0–100	360	8065118	22.50	8067818	23.50	8069918
0–200	156	8065120	21.50	8067820	22.50	8069920
0–500	40	8065125	21.00	8067825	22.00	8069925

DC MILLIVOLTMETERS

0–50	6.7	1035115	$18.00	1037815	$19.00	1039915

DC AMMETERS (50 MILLIVOLT)

Range	Scale Div.	3½" R-Series Model 320-R Number	Net	4½" R-Series Model 420-R Number	Net	5½" G- Model Number
0–1	50	1025102	$18.00	1027802	$19.00	1029902
0–5	50	1025108	18.00	1027808	19.00	1029908
0–10	50	1025110	18.00	1027810	19.00	1029910
0–25	50	1025113	18.00	1027813	19.00	1029913
0–50	50	1025115	18.00	1027815	19.00	1029915

DC VOLTMETERS (1000 OHMS/VOLT)

0–5	50	1045108	$19.00	1047808	$20.00	1049908
0–10	50	1045110	19.00	1047810	20.00	1049910
0–25	50	1045113	19.00	1047813	20.00	1049913
0–50	50	1045115	19.00	1047815	20.00	1049915
0–150	75	1045119	19.00	1047819	20.00	1049919
0–300	60	1045122	19.00	1047822	20.00	1049922
0–500	50	1045125	19.00	1047825	20.00	1049925

AC AMMETERS

Range	Resis., Ohms	3½" R-Series Model 330-R Number	Net	4½" R-Series Model 430-R Number	Net	5½" G- Model Number
0–1	.38	1105102	$17.00	1107802	$18.00	1109902
0–5	.014	1105108	17.00	1107808	18.00	1109908
0–10	.004	1105110	17.00	1107810	18.00	1109910
0–15	.003	1105111	17.00	1107811	18.00	1109911
0–25	.002	1105113	17.00	1107813	18.00	1109913
0–30	.001	1105114	17.00	1107814	18.00	1109914
0–50	.00035	1105115	17.00	1107815	18.00	1109915

AC MILLIAMMETERS

0–10	4000	1125110	$17.00	1127810	$18.00	1129910
0–100	40	1125118	17.00	1127818	18.00	1129918
0–500	1.55	1125125	17.00	1127825	18.00	1129925

AC VOLTMETERS

Range	Ohms/ Volt	3½" R-Series Model 330-R Number	Net	4½" R-Series Model 430-R Number	Net	5½" G-S Model N Number
0–10	10	1115110	$17.00	1117810	$18.00	1119910
0–50	50	1115115	17.00	1117815	18.00	1119915
0–150	125	1115119	18.00	1117819	19.00	1119919
0–300	144	1115122	18.00	1117822	19.00	1119922
0–500	125*	1115125	18.00	1117825	19.00	1119925

*External resistor board supplied.

RF 440

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TRIPLETT ELECTRICAL INSTRUMENT COMPAN

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TRIPLETT INSTRUMENTS

½", 7½" AND 8½" PANEL METERS

626 and 636: Functional phenolic meter design, for ard instrumentation. Long scale length, large glass ale Length: 626, 5.6"; 636, 5.1". Flange: 6.000" w. x n. Body, 3.125" dia. x 1.031" deep.

726 and 736: Similar to above, but 7½" size. Scale 726, 6.11"; 736, 5.47". Flange, 7.531" w. x 6.906" h. 500" dia. x 1.062" deep (736, 1.125" deep).

820-M 8½": Scale Length: 7.00". Flange, 7.64" w. x Body, 3.27" x 2.718" x 1.18" deep.

: Specify both Model and Triplett Part Number.

DC MILLIAMMETERS

tesis., Ohms	6½" Model 626		7½" Model 726		8½" Model 820-M	
	Number	Net	Number	Net	Number	Net
55	1018602	$25.00	1018902	$27.00	1019402	$30.00
8.5	1018608	25.00	1018908	27.00	1019408	30.00
3.1	1018610	25.00	1018910	27.00	1019410	30.00
1.0	1018615	25.00	1018915	27.00	1019415	30.00
0.5	1018618	25.00	1018918	27.00	1019418	30.00
0.25	1018620	25.00	1018920	27.00	1019420	30.00
0.17	1018622	25.00	1018922	27.00	1019422	30.00
0.1	1018625	25.00	1018925	27.00	1019425	30.00

DC MICROAMMETERS

2300	1068615	$30.00	1068915	$32.00	1069415	$35.00
825	1018618	28.50	1068918	30.50	1069418	33.50
360	1068620	27.00	1068920	29.00	1069420	32.00
156	1068625	26.00	1068925	28.00	1069425	31.00
15000	8068610	44.00	8068910	46.00	8069410	49.00
7500	8068612	39.00	8068912	41.00	8069412	44.00
2300	8068615	32.50	8068915	34.50	8069415	37.50
825	8068618	30.00	8068918	32.00	8069418	35.00
360	8068620	29.00	8068920	31.00	8069420	34.00
156	8068625	28.50	8068925	30.50	8069425	33.50

d jewel type; all others suspension type.

DC MILLIVOLTMETERS

6.7	1038615	$25.50	1038915	$27.50	1039415	$30.50

DC VOLTMETERS (1000 OHMS/VOLT)

Scale Div.	6½" Model 626		7½" Model 726		8½" Model 820-M	
	Number	Net	Number	Net	Number	Net
50	1048608	$26.50	1048908	$28.50	1049408	$31.50
50	1048610	26.50	1048910	28.50	1049410	31.50
50	1048613	26.50	1048913	28.50	1049413	31.50
50	1048615	26.50	1048915	28.50	1049415	31.50
75	1048619	26.50	1048919	28.50	1049419	31.50
60	1048622	26.50	1048922	28.50	1049422	31.50
50	1048625	26.50	1048925	28.50	1049425	31.50

DC AMMETERS

50	1028602	$25.50	1028902	$27.50	1029402	$30.50
50	1028608	25.50	1028908	27.50	1029408	30.50
50	1028610	25.50	1028910	27.50	1029410	30.50
50	1028613	25.50	1028913	27.50	1029413	30.50
50	1028615	25.50	1028915	27.50	1029415	30.50

AC VOLTMETERS

Ohms/ Volt	6½" Model 636		7½" Model 736	
	Number	Net	Number	Net
10	1118610	$24.50	1118910	$26.50
50	1118615	24.50	1118915	26.50
125	1118619	25.50	1118919	27.50
125*	1118622	25.50	1118922	27.50
125*	1118625	25.50	1118925	27.50

resistor board supplied.

AC AMMETERS

Ohms Resis.,	6½" Model 636		7½" Model 736	
	Number	Net	Number	Net
.38	1108602	$24.50	1108902	$26.50
.014	1108608	24.50	1108908	26.50
.004	1108610	24.50	1108910	26.50
.003	1108611	24.50	1108911	26.50
.002	1108613	24.50	1108913	26.50
.001	1108614	24.50	1108914	26.50
.00035	1108615	24.50	1108915	26.50

AC MILLIAMMETERS

4000	1128610	$24.50	1128910	$26.50
40	1128618	24.50	1128918	26.50
1.55	1128625	24.50	1128925	26.50

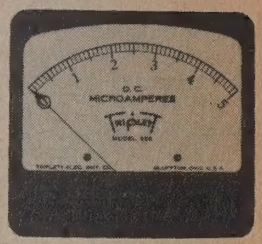
RUGGEDIZED 1½", 2½" AND 3½" METERS

Model 127-HR - Rugged, modern construction with meter front designed for maximum readability. Meets government specifications. Nom. size, 1½". Scale Length: 1.5". Flange, 1.75" sq. Body, 1.51" dia. x .400" deep.

Model 221-HR: 2½" meter meets MIL-M-10304-C specifications. Heavy diecast window bezel seals window to case with gasket and screws for easy servicing. Gasket-sealed studs provide additional protection. Scale Length: 1.76". Flange, 2.695" dia. Body, 2.21" dia. x 1.281" deep.

Model 321-HR: Same as 221-HR, but 3½" size. Scale Length: 2.38". Flange, 3.51" dia. Body, 2.8" dia. x 1.281" deep.

To Order: Specify both Model and Triplett Part Number.



DC 626, 726
AC 636, 736

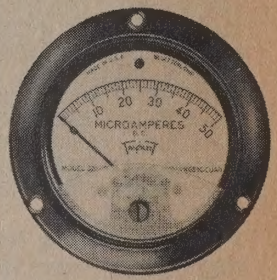
DC MILLIAMMETERS

Range	Resis., Ohms	Model 127-HR		Model 221-HR		Model 321-HR	
		Number	Net	Number	Net	Number	Net
0-1	55	1011202	$26.00	1011602	$27.00	1014102	$28.00
0-5	8.5	1011208	26.00	1011608	27.00	1014108	28.00
0-10	3.1	1011210	26.00	1011610	27.00	1014110	28.00
0-50	1.0	1011215	26.00	1011615	27.00	1014115	28.00
0-100	0.5	1011218	26.00	1011618	27.00	1014118	28.00
0-200	0.25	1011220	26.00	1011620	27.00	1014120	28.00
0-300	0.17	1011222	26.00	1011622	27.00	1014122	28.00
0-500	0.1	1011225	26.00	1011625	27.00	1014125	28.00

DC MICROAMMETERS

0-50	2500†	1061215	$31.00	1061615	$32.00	1064115	$33.00
0-100	1170	1061218	29.50	1061618	30.50	1064118	31.50
0-200	400	1061220	28.00	1061620	29.00	1064120	30.00
0-500	210	1061225	27.00	1061625	28.00	1064125	29.00
0-20*	7500	8061212	40.00	.....	.....	.....	.....
0-50*	2300	8061215	33.50	.....	.....	.....	.....

*Suspension type; others pivot and jewel. †127-HR, 4000 ohms.



DC 221-HR, 321-HR

DC MILLIVOLTMETERS

0-50	6.7	1031215	$26.50	1031615	$27.50	1034115	$28.50

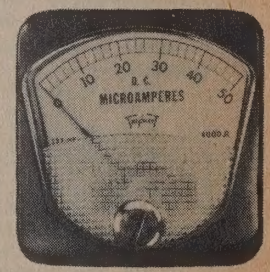
DC VOLTMETERS (1000 OHMS/VOLT)

Range	Scale Div.	Model 127-HR		Model 221-HR		Model 321-HR	
		Number	Net	Number	Net	Number	Net
0-5	25*	1041208	$27.50	1041608	$28.50	1044108	$29.50
0-10	20*	1041210	27.50	1041610	28.50	1044110	29.50
0-25	25*	1041213	27.50	1041613	28.50	1044113	29.50
0-50	25*	1041215	27.50	1041615	28.50	1044115	29.50
0-150	30	1041219	27.50	1041619	28.50	1044119	29.50
0-300	30	1041222	27.50	1041622	28.50	1044122	29.50
0-500	25*	1041225	27.50	1041625	28.50	1044125	29.50

DC AMMETERS

0-1	25*	1021202	$26.50	1021602	$27.50	1024102	$28.50
0-5	50	.....	.....	1021608	27.50	1024108	28.50
0-10	50	.....	.....	1021610	27.50	1024110	28.50

*127-HR only; all others 50 divisions.



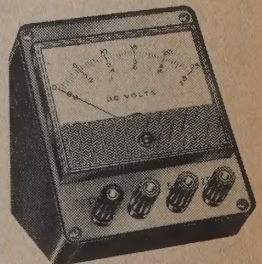
DC 127-HR

G/P PORTABLE LAB INSTRUMENTS

Consists of G-Series 3½" panel meter, mounted in molded plastic case. Choice of 25 models, with 55 standard ranges. Ideal for schools, labs or shop use. DC meters have Bar-Ring self-shielding movements, with diode overload protection. AC movements are fuse-protected. Accuracy, ±2% except AC Rectifier and Ohm models, ±3%. Knife-edge pointers. Aluminum panels, 5-way binding posts. Size, 4¼" x 3⅞" x 4¼". Special ranges available on order, at extra cost.

Triplett Number	Range	Net Each
1193001	0-1-5-25 volts DC (1000 ohms/volt)	$33.00
1193002	0-25-100-500 volts DC (1000 ohms/volt)	34.70
1193003	0-6-60-600 volts DC (1000 ohms/volt)	34.70
1193004	0-10-50-250 μA (suspension type) DC	64.80
1193005	0-50 μA DC	31.60
1193006	500-25-0-25-500 μA DC	35.80
1193007	0-0.25-1-5 mA DC	33.00
1193008	0-25-100-500 mA DC	33.40
1193009	0-1-10-100 mA DC	33.40
1193010	0-1-2-25 amps DC	33.90
1193011	0-50-100-250 mV DC†	33.40
1193012	0-3-15 amps DC	30.60
1193013	40-0-40 μA DC null meter (suspension)	44.50
1193112	0-6-60-600 VAC (rectifier; 1000 ohms/V)	55.00
1193213	0-120-600 VAC (83 ohms/V); 0-12 mA	45.80
1193214	0-5-25 VAC (4 ohms/V); 0-250 mA	34.20
1193215	0-30-120 VAC (17 ohms/V); 0-60 mA	35.50
1193216	0-150 VAC (125 ohms/volt)	27.20
1193217	0-1 amp AC	25.70
1193218	0-5 amps AC	25.70
1193219	0-25 amps AC	25.70
1193320	0-1K-100K ohms (10-1000 center scale)*	37.50
1193321	0-1 meg-100 meg (5K-500K center scale)*	43.30
1193422	0-2.5 volts RF (240 ohms/volt)	52.10
1193523	0-150 watts max. (150 V, 2 amps)	55.10
T-79-127	Test leads for all models	3.30

*With battery and test leads. †Can be used with standard switchboard shunts for higher ranges.



G/P PORTABLE

ALL PRICES ARE SUGGESTED U.S.A. USER NET. SUBJECT TO CHANGE. SPECIFICATIONS SUBJECT TO REVISION.

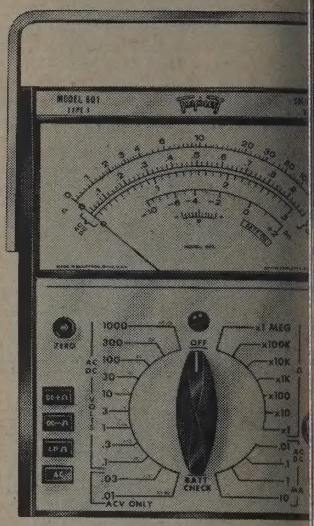
IPLETT ELECTRICAL INSTRUMENT COMPANY

TRIPLETT INSTRUMENTS

MODEL 601 SOLID-STATE V-O-M 11 MEG INPUT

1. **14 Ohmmeter ranges with 7 Low-Power ranges (LPΩ) at 75 mV DC for Transistorized and Integrated circuits.**
2. **Voltage ranges from 10 mV AC and 100 mV DC full scale; plus AC & DC Current ranges from 10 μa full scale.**
3. **Modern easy-to-use push button selection of DC polarity, AC and Low-Power Ohms (LPΩ) functions.**

Single range selector switch, easy to use. Large 4½" Suspension meter movement. Special Low-Power Ohms circuit has only 0.1 mW of power, permits in-circuit resistance measurements in solid state circuitry. Simple to read uncluttered dial provides quick readings using only four scales for all 52 ranges. 11 Megohm input resistance on all voltage ranges. AC and DC current ranges never before available on a similar unit. Accuracy is ±2% of Full Scale on DC, ±3% AC, (Current, ±3% and ±4%).



601 FET VOM

RANGES

Nine DC Volt Ranges: 0-0.1-0.3-1-3-10-30-100-300-1,000 at 11 Meg. **Eleven AC Volt Ranges:** 0-0.01-0.03-0.1-0.3-1-3-10-30-100-300-1,000 at 11 Meg. **Fourteen Ohms Ranges:** 0-1K-10K-100K-1 Meg-10 Meg-100 Meg-1,000 Meg (Standard 1.5 V, 55 mW.) 0-1K-10K-100K-1 Meg-10 Meg-100 Meg-1,000 Meg (Low-Power 0.1 mW, 75 mW). Center Scale value 10 ohms on x1 range. **Four DC Current Ranges:** 0-10-100-1,000-10,000 μA at 100 mV. **Four AC Current Ranges:** 0-10-100-1,000-10,000 μA at 10 mV. **Eleven dB Ranges:** −40 to +60 dB in 10 dB steps. **Case:** Molded, black high impact material, 3¼" x 5⅛" x 6½".

Batteries: 10 "AA" cells NEDA #815. Complete with leads, alligator clips, batteries, instruction manual with complete calibration instructions. Shipping weight 5 lbs.

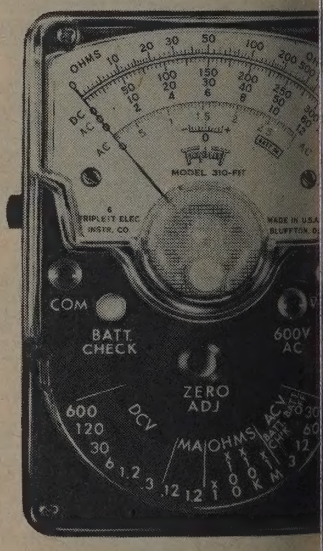
Model 601, Catalog No. 3033.....**$150.00**
High Voltage Probe, 30 kV, Catalog No. 79-270.....**$ 25.20**
RF Probe, 250 MHz/20 V, Catalog No. 79-271.....**$ 9.00**

MODEL 310-F.E.T. VOLT-OHM-MILLIAMMETER HANDSIZE ALL SOLID-STATE V-O-M

1—All Solid-State (F.E.T.) with 10 Megohm input resistance, Battery operated.

2—High sensitivity (300 mV DC fs) for transistor bias measurements, resistance measurements to 5,000 Megohms.

3—Handsize with single selector switch and provision for attaching AC clamp-on adapter.

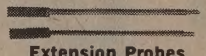


GENERAL

Now, a hand held, battery operated Volt-Ohm-Milliammeter featuring field-effect-transistorized circuitry, 10 megohm input resistance on all DC voltage ranges, sensitivity ten times greater than the conventional bench-type VTVM, and ohms reading to 5000 megohms.

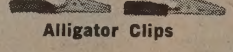
Designed by Triplett to meet the technological requirements of the space age, Model 310-F.E.T. will handle new types of circuit measurements that spring from recent advances in the state of the art.

FEATURES



Extension Probes

All Solid-State (F.E.T.) with 10 Megohm input resistance.
Battery operated, one 7 V NEDA #1501, and one 1½ V ASA Type N.
Battery Check position on range switch reads by touching lead to Battery check button on tester and reading BATT OK area on dial.
High sensitivity (300 mV fs) allows transistor bias measurements.
Resistance Measurements, to 5,000 Megohms. Open ckt. voltage 1.5 V on all ranges. Max. short ckt. current 30 mA. Max. pwr. across device under test 11 mW.
Handsize with provision for attaching Clamp-on AC Ammeter adapter.
Rugged suspension meter movement.
Accuracy is ±3% of Full Scale on DC, and ±4% on AC. ±3% of DC arc on Ohms.
Zero Center mark for null measurements.
Weight is approximately 14 oz.
Leads 42 inches long (1 black, 1 red).
Polarity reversing switch for DC and Ohms.
Case of molded black material measures 2¾" x 4¼" x 1⅛".



Alligator Clips

3" Extension Probes available Catalog Number 11968A. **Suggested U.S.A. User Net Price** .....**$1.70 pr.**

Alligator Clips available for use with probe extensions or standard 310-F.E.T. leads. Catalog Number 2451A-59. **Suggested U.S.A. User Net Price**.....**$ .70 pr.**

Model 310-F.E.T., complete with leads and instruction manual. Catalog Number 3027. **Suggested U.S.A. User Net Price**..... **$70.00**

RANGES

Six DC Volt Ranges
0-0.3-1.2-6-30-120-600 at 10 megohms.

Five AC Volt Ranges
0-3-12-60-300-600 at 5,000 ohms per volt.

Four Resistance Ranges
0-5K-500K-50 Megohms—5,000 Megohms at 50 ohms center scale.

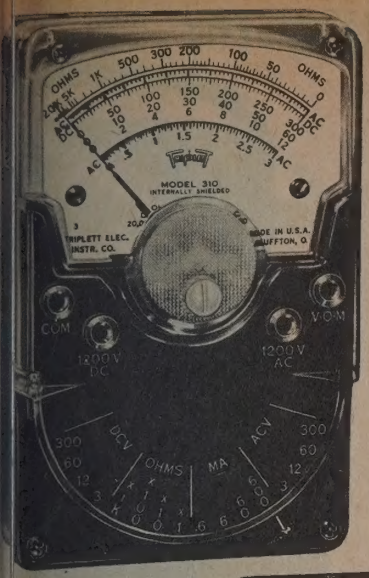
Two DC Current Ranges
0-0.12-1.2 milliamperes at 300 mV.

ALL PRICES ARE SUGGESTED U.S.A. USER NET. SUBJECT TO CHANGE. SPECIFICATIONS SUBJECT TO REVISION.

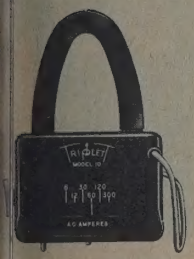
TRIPLETT ELECTRICAL INSTRUMENT COMPAN

Net © United Technical Public

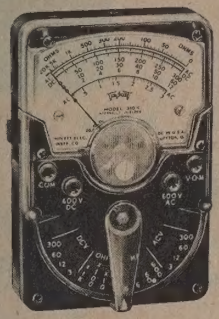
WORLD'S MOST POPULAR MINIATURE V-O-M



310

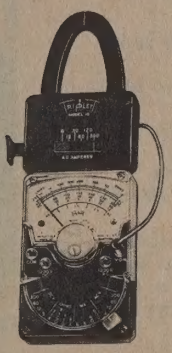


Model 10

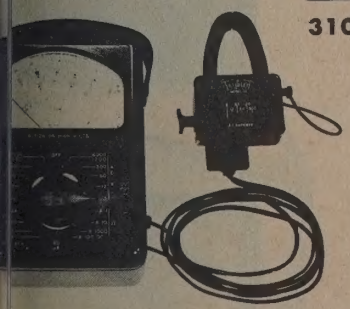


310-C

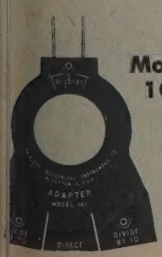
100



310-10



630 Series VOM & Model 10



Model 101

611 Leads

Volt-Ohm-Milliammeter — MODEL 310

1. **Hand size V-O-M with provision for attaching AC clamp-on ammeter.**
2. **20,000 Ohms per volt DC sensitivity; 5,000 AC.**
3. **One selector switch minimizes chance of incorrect settings and burnouts.**

Self-shielded for checking in strong magnetic fields.
Rugged, high torque, bar-ring instrument.
Unbreakable plastic meter window.
Fitting interchangeable test prod into top of tester makes it the common probe, freeing one hand.
Standard sensitivity 20,000 ohms per volt DC, and 5,000 ohms per volt AC.
Spring-backed instrument jewels for ruggedness.
Accuracy 3% DC, 4% AC.

RANGES

DC Volts: 0-3-12-60-300-1,200 (at 20,000 ohms per volt). **AC Volts:** 0-3-12-60-300-1,200 (at 5,000 ohms per volt). **Ohms:** 0-20,000-200,000. **Megohms:** 0-2-20. **DC Microamperes:** 0-600 at 250 millivolts. **DC Milliamperes:** 0-6-60-600 at 250 millivolts. **Weight**—Approx. 14 oz., complete with batteries.

Case—Molded, black, 2¾" x 4¼" x $1\frac{5}{16}$".

Complete with leads, battery and instruction manual. Shipping wt. 2 lbs.

Model 310 Catalog No. 3018 **$44.00**

Volt-Ohm-Milliammeter — MODEL 310-C

New 310-C is the same as Model 310, above, (except 600 volt ranges replace 1200 volt ranges of model 310) plus the following features:

1. **Hand size V-O-M with provision for attaching AC clamp-on ammeter.**
2. **15,000 Ohms per volt AC sensitivity; (20,000 DC same as 310).**
3. **Single fully enclosed lever range switch, plus DC polarity reversing.**

Model 310-C Catalog No. 3022 **$56.00**

V-O-M and Clamp-On Ammeter Set — MODEL 100

Handsomely packaged set includes: Model 310 V-O-M, Model 10 Clamp-on Ammeter Adapter; Model 101 Line Separator; Model 379 Leather Case; Model 311 Leads. ($83.20 Value Separate Unit Purchase Price.)

Model 100, as above, you save $5.20 over individual purchase price. Shipping wt. 7 lbs.

Model 100 Catalog No. 3014 **$78.00**
Model 100-C Same as above but with Model 310-C.
Model 100-C Catalog No. 3010 **$88.00**

Clamp-On Adapter — MODEL 10

CHECKS LINE LOADS WITH MODEL 310 OR 310-C

(Also can be used with Models 630, 630-A, 630-NA, 631, 630-PL, 630-APL, 630-M, 630-NS, 630-PLK, 630-L by means of 611 leads.)

Checks all line loads instantly, accurately, safely—without breaking the circuit or interrupting work. Easy range switching. Model 10 Clamp-On Adapter AC Ammeter ranges: 0-6-12-30-60-120-300. Clips around single wire to read A.C. Amperes direct. Used with Adapter 101 to divide instantly two-conductor cords. A lever securely locks the Model 10 to Model 310 when used in combination. Model 10 can be left attached to Model 310 when the latter tester is used as an AC-DC V-O-M only. The only change is to remove the lead plug from the Model 310 V-O-M jack and insert it in the jack provided in the Model 10 housing.
Case black molded plastic with engraved white markings.

Model 10 Catalog No. 60211 **$20.00**

No. 611 LEADS

In addition to use with the Model 310, the No. 10 Adapter also can be used as a Clamp-On Ammeter with any Volt-Ohm-Milliammeter having a 3 AC Volt scale at 5,000 Ohms per Volt or above, such as Triplett Models 630, 630-A, 630-NA, 630-PL, 630-APL, 630-NS, 630-M, 630-PLK, 630-L, 631, etc. (see illustration). This is done by means of a long lead attachment (No. 611) making possible easy readings in difficult locations.

611 Leads Catalog No. 79-160 **$3.20**

No. 311 LEADS

The Model 10 can be separated from the Model 310 (in the same way as above) by using No. 311 lead attachment. This permits readings in difficult locations.

311 Leads Catalog No. 79-161 **$3.20**

Line Separator — MODEL 101

Plugs into AC outlet to divide instantly two-conductor cords. Increases ammeter sensitivity 10X and 20X. Use up to 30 AC Amperes from 0.3 to 30 in nine steps. Also has provision for Voltmeter prods for voltage measurements. Case, black molded plastic with engraved markings.

Model 101 Catalog No. 60218 **$8.00**

All Prices Are Suggested U.S.A. User Net Subject To Change. Specifications Subject To Revision. (Slightly Higher West of Rockies and in Canada)

TRIPLETT ELECTRICAL INSTRUMENT COMPANY

THE WORKHORSE OF THE ELECTRONIC INDUSTRY

VOLT-OHM-MILLIAMMETER — MODEL 630

1. **One selector switch minimizes chance of incorrect settings and burnouts.**
2. **4.4 Ohm center scale, reads from 0.1 ohm up to 100 megohms resistance in 4 ranges.**
3. **20,000 ohms per volt DC sensitivity; 5,000 AC.**

Popular streamlined tester with long meter scales arranged for easy reading. Outstanding resistance ranges: low reading .1 ohm, high 100 megs. Fuse affords protection to the resistors in the ohmmeter circuit, especially the X1 setting.
Spring-backed instrument jewels for ruggedness. Accuracy ±2% DC, ±3% AC.

RANGES

DC Volts: 0-3-12-60-300-1,200-6,000 at 20,000 ohms per volt.
AC Volts: 0-3-12-60-300-1,200-6,000 at 5,000 ohms per volt.
Ohms: 0-1,000-10,000.
Megohms: 0-1-100.
DC Microamperes: 0-60 at 250 millivolts.
DC Milliamperes: 0-1.2-12-120 at 250 millivolts.
DC Amperes: 0-12.
DB: −20 to +77 (600 ohm line at 1 MW).
Output Volts: 0-3-12-60-300-1,200; jack with condenser in series with AC ranges.
Usable with frequencies through 500 kHz.
Case: Molded, black, 3 3/32" x 5 1/2" x 7 1/2".
Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.
Model 630 Catalog No. 3030 **$61.00**

POCKET VOLT-OHM-MILLIAMMETER — MODEL 666-R

1. **One selector switch.**
2. **Three resistance ranges to 3 megohms.**
3. **Five volt ranges to 5,000 AC and DC volts.**

Hand-size — the ideal tester for electrical maintenance. Recessed range knob enables tester to fit in tool kit.

AC rectifier pre-calibrated unit for easy replacement.

Banana jacks at top of the panel lessen possibility of leads falling over the meter dial. Accuracy 3% DC, 4% AC.

RANGES

DC Volts: 0-10-50-250-1,000-5,000 at 1,000 ohms per volt.
AC Volts: 0-10-50-250-1,000-5,000 at 1,000 ohms per volt.
Ohms: 0-3,000-300,000.
Megohms: 0-3.
DC Milliamperes: 0-10-100 at 250 MV.
DC Amperes: 0-1 at 250 MV.
Output Volts: 0-10-50-250-1,000.
Case: Black molded, streamlined, handy pocket size, 3 1/16" x 5 7/8" x 2 3/16".
Complete with leads, alligator clips, batteries and instruction manual. Shipping wt. 4 lbs.
Model 666-R Catalog No. 3066 **$44.00**

VOLT-OHM-MILLIAMMETER — MODEL 630-PL TYPE 2

1. **One selector switch minimizes chance of incorrect settings and burnouts. Polarity reversing for DC.**
2. **4.4 Ohms center scale, 0.1 ohm to 100 megohms resistance.**
3. **Meter movement diode protected against instantaneous overloads.**

Polarity reversing switch. Tester usable with frequencies through 500 kHz. Instant-vision, wider spread scales; streamlined case, handsome modern design. Unbreakable plastic window.

Fuse affords extra protection to the resistors in the ohmmeter circuit, especially the X1 setting. Spring-backed instrument jewels for ruggedness. High Sensitivity: 5,000 ohms per volt AC; 20,000 ohms per volt DC.

Accuracy ±2% DC, ±3% AC.

RANGES

DC Volts: 0-2.5-10-50-250-1,000-5,000 — at 20,000 ohms/volt. 0-0.25 at 100 microamperes.
AC Volts: 0-3-10-50-250-1,000-5,000 — at 5,000 ohms/volt.
Decibels: −20 to +11, +21, +35, +49, +61, +75; "0" DB at 1 MW on 600 ohm line.
DC Microamperes: 0-100 — at 250 millivolts.
DC Milliamperes: 0-10-100-1,000 — at 250 millivolts.
DC Amperes: 0-10 — at 250 millivolts.
Ohms: 0-1,000-10,000 — (4.4-44 at center scale).
Megohms: 0-1-100—(4,400-440,000 at center scale).
Output V (AC): 0-3-10-50-250-1,000 — at 5,000 ohms/ volt, jack with condenser in series with AC ranges.
Case: Molded, black, 3 11/32" x 5 1/2" x 7 1/2".
Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.
Model 630-PL Catalog No. 3050 **$61.00**

COMBINATION V-O-M AND VTVM — MODEL 631

1. **One selector switch.**
2. **Complete V-O-M in combination with battery operated VTVM.**
3. **11 megohm input to VTVM.**

Two fundamental units at the price of a single tester; VTVM stability assured by long life battery operation.

Sensitivity plus—sensitivity of the 1.2 volt (VTVM) range is equal to over nine million ohms per volt. Usable with frequencies through 500 Kc.

A V-O-M for general use and a VTVM when needed; ranges entirely adequate for servicing needs.

Large meter easy to read; unbreakable meter face. Spring-backed instrument jewels for ruggedness. Accuracy 3% DC, 4% AC, VTVM 4%.

V-O-M RANGES

DC Volts: 0-3-12-60-300-1,200 (20,000 ohms per volt).
AC Volts: 0-3-12-60-300-1,200 (5,000 ohms per volt).
Ohms: 0-1,500-15,000.
Megohms: 0-1.5-150.
DC Microamperes: 0-60 at 250 MV.
DC Milliamperes: 0-1.2-12-120-1,200 at 250 MV.
DC Amperes: 0-12 at 250 MV.
DB: −20 to +63. (600 ohm line at 1 MW).
Output Volts: 0-3-12-60-300-1,200; jack with condenser in series with AC ranges.

VTVM RANGES

DC Volts: 0-1.2-6-30-120.
Case: Molded, black, 3 11/32" x 5 1/2" x 7 1/2".
Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.
Catalog No. 3058 **$78.00**

RF PROBE FOR 631

With this probe and Model 631 RF measurements can be made up to 20 volts at 250 MC. Pt. T-79-A-145. Catalog No. 79-145 **$9.00**

All Prices Are Suggested U.S.A. User Net Subject To Change. Specifications Subject To Revision.
(Slightly Higher West of Rockies and In Canada)

TRIPLETT ELECTRICAL INSTRUMENT COMPANY

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LABORATORY ACCURACY V-O-Ms

ONE MILLION OHMS PER VOLT SENSITIVITY

Volt-Ohm-Milliammeter — MODEL 630-M TYPE 1

630-M

1. **1,000,000 Ohms per volt DC for greater accuracy on high resistance circuits. 20,000 ohms per volt AC.**
2. **1 μa Suspension Meter Movement. No pivots, bearings, or rolling friction. Extremely rugged. Greater sensitivity and repeatability.**
3. **61 Ranges, usable with frequencies through 100 kHz. Temperature compensated. 1½% DC accuracy, 3% AC in horizontal position.**

Now the input impedance of a VTVM with the convenience of a V-O-M. Reads as low as 20 nanoamperes. Components mounted on quality glass epoxy etched circuit board. Meter protected by diodes against accidental overload.

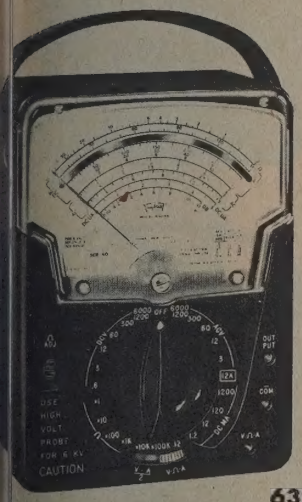
RANGES

D.C. Volts: 0-0.6-3-12-60-300 at 500,000 Ohms/Volt.
0-0.3-1.5-6-30-150 at 1,000,000 Ohms/Volt.
0-1200 at 125,000 Ohms/Volt.
0-600 at 250,000 Ohms/Volt.
A.C. Volts: 0-3-12-60-300-1200 at 10,000 Ohms/Volt.
0-1.5-6-30-150-600 at 20,000 Ohms/Volt.
DB: −20 to +63 in 10 ranges
D.C. Microamperes: 0-1 at 300 M.V.
0-60-600 at 300 M.V.
0-120 at 600 M.V.
D.C. Milliamperes: 0-6-60-600 at 300 M.V.
0-1.2-12-120-1200 at 600 M.V.
D.C. Amperes: 0-6 at 300 M.V.
0-12 at 600 M.V.
Ohms: 0-1K-10K-100K (4.4-44-440 at center scale)
Megohms: 0-1-10-100 (4400-44,000-440,000 Ohms center scale)
Output: Condenser in series with AC Volt ranges
Case—Heavy, molded black case, 3-11/32" x 5½" x 7½", with removable black leather strap handle. Shipping wt. 5 lbs.

Model 630-M Cat. No. 3108 **$220.00**

NOT 20,000 BUT 200,000 OHMS PER VOLT

Volt-Ohm-Milliammeter — MODEL 630-NS



630-NS

1. **200,000 Ohms per volt DC sensitivity for greater accuracy* on high resistance circuits. 20,000 ohms per volt AC.**
2. **Suspension Meter Movement. No pivots, no bearings, no hairsprings; no rolling friction. Extremely rugged.**
3. **62 Ranges. Temperature and frequency compensated. ±1½% DC Accuracy, ±3% AC.**

The unit is precision designed to give maximum covergge, to withstand accidental overloads and to offer greater reading accuracy. Usable with frequencies through 100 kHz. Accuracy 1½% DC, 3% AC.

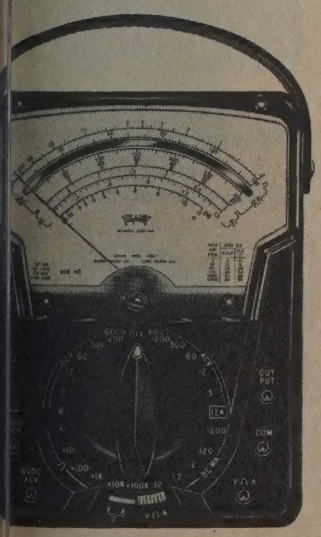
RANGES

DC Volts: 0-0.6-3-12-60-300-1200 at 100,000 Ohms/Volt.
0-0.3-1.5-6-30-150-600 at 200,000 Ohms/Volt.
0-0.150 at 60 microamperes.
AC Volts: 0-3-12-60-300-1200 at 10,000 Ohms/Volt.
0-1.5-6-30-150-600 at 20,000 Ohms/Volt.
DB: −20 to +63 in 10 ranges.
DC Microamperes: 0-60-600 at 150 Mv. 0-5-120 at 300 Mv.
DC Milliamperes: 0-6-60-600 at 150 Mv. 0-1.2-12-120-1200 at 300 Mv.
DC Amperes: 0-6 at 150 Mv. 0-12 at 300 Mv.
Ohms: 0-1K-10K-100K (4.4-44-440 at center scale).
Megohms: 0-1-10-100 (4400-44,000-440,000 Ohms center scale).
Output: Condenser in series with AC Volt ranges.
CASE—Molded, black, 3-11/32" x 5½" x 7½". Shipping wt. 5 lbs.

Model 630-NS Cat. No. 3102 **$110.00**

Volt-Ohm-Milliammeter — MODEL 630-NA TYPE 2

Suspension Movement



630-NA Type 2

1. **One selector switch minimizes chance of incorrect settings and burnouts.**
2. **70 Ranges: 1½% DC accuracy on meter; with mirrored scale and diode overload protection.**
3. **Temperature and frequency compensation.**

The super deluxe of V-O-Ms. Usable with frequencies through 500 kHz.
Large open front meter easy to read.
Unbreakable window. Mirror scale.
Meter has special diode protection against the most severe overloads. A fuse affords protection to resistors in the ohmmeter circuit (especially the X1 setting) should too high a voltage be applied.
Accuracy 1½% DC, 3% AC.

RANGES

DC Volts: 0-.6-3-12-60-300-1,200-6,000 at 10,000 ohms per volt.
0-.3-1.5-6-30-150-600-3,000 at 20,000 ohms per volt.
0-0.120 at 60 microamperes.
AC Volts: 0-3-12-60-300-1,200-6,000 at 5,000 ohms per volt.
0-1.5-6-30-150-600-3,000 at 10,000 ohms per volt.
Ohms: 0-1K-10K-100K.
Megohms: 0-1-10-100.
DC Microamperes: 0-120 at 240 millivolts.
0-60-600 at 120 millivolts.
DC Milliamperes: 0-1.2-12-120-1,200 at 240 millivolts.
0-6-60-600 at 120 millivolts.
DC Amperes: 0-12 at 240 millivolts.
0-6 at 120 millivolts.
DB: −20 to +77 (600 ohm line at 1 MW).
Output Volts: 0-3-12-60-300-1,200; jack with condenser in series with AC ranges.
Case—Molded, black, 3-11/32" x 5½" x 7½".
Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.

Model 630-NA Cat. No. 3042 **$93.00**

1½-3% ACCURACY; 5,000 TO 1 MILLION Ω/V SENSITIVIT

LABORATORY TYPE V-O-M
Volt-Ohm-Milliammeter

MODEL 630-A
TYPE 2

630-A

1. **±1½% DC, ±3% AC accuracy.**
2. **One selector switch minimizes chance of incorrect settings and burnouts.**
3. **Rugged 5½" suspension meter movement with 4½" mirrored scale.**

Other features same as Model 630.

RANGES

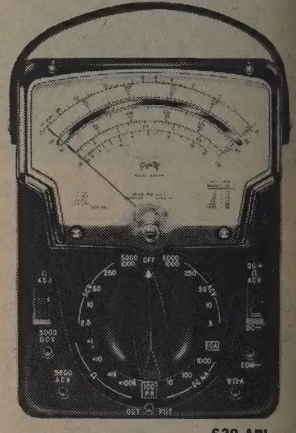
DC Volts: 0-3-12-60-300-1,200-6,000 at 20,000 ohms per volt.
AC Volts: 0-3-12-60-300-1,200-6,000 at 5,000 ohms per volt.
Ohms: 0-1,000-10,000.
Megohms: 0-1-100.
DC Microamperes: 0-60 at 250 millivolts.
DC Milliamperes: 0-1.2-12-120 at 250 millivolts.
DC Amperes: 0-12.
DB: −20 to +77 (600 ohm line at 1 MW).
Output Volts: 0-3-12-60-300-1,200; jack with condenser in series with AC ranges. **Usable** with frequencies through 500 kHz.

Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.

Model 630-A Catalog No. 3034 **$71.00**

Laboratory Type V-O-M

MODEL 630-APL
TYPE 3



630-APL

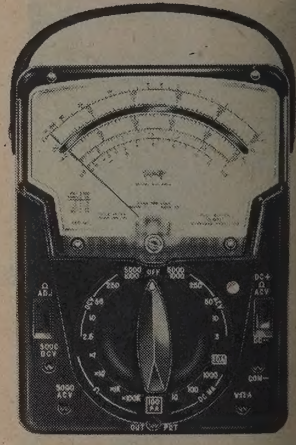
1. **±1½% DC, ±3% AC accuracy.**
2. **One selector switch minimizes chance of incorrect settings and burnouts. Polarity reversing for DC.**
3. **Suspension meter movement diode protected against instantaneous overloads.**

A laboratory type V-O-M featuring ½% resistors for greater accuracy. Ranges and other features same as Model 630-PL above. **Carrying Cases—Page 9**

Model 630-APL Cat. No. 3038 **$71.00**

LABORATORY TYPE V-O-M
WITH OVERLOAD PROTECTION
Volt-Ohm-Milliammeter

MODEL 630-APLK
TYPE 1



630-APLK

1. **Burnout proof solid state overload protection.**
2. **One selector switch minimizes chance of incorrect settings. DC polarity reversing.**
3. **4.4 Ohm center scale, 0.1 ohm to 100 megohms resistance in 4 ranges.**

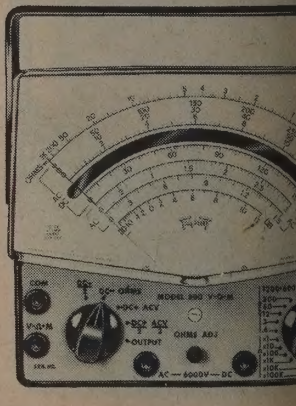
Suspension meter movement, 4½" mirror scale. Lab type V-O-M with ½% resistors for greater accuracy.

±1½% DC, ±3% AC accuracy. Other features same as described for Model 630-PLK.

Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.

Model 630-APLK Cat. No. 3120 **$105.00**

DELUXE LAB STYLE
Volt-Ohm-Milliammeter MODEL 800 TYPE 2



1. **8" Suspension Meter with 6.95" mirror scale for greater readability plus diode overload protection.**
2. **1½% DC and 3% AC accuracy with temperature and frequency compensation.**
3. **67 Ranges with a DC polarity reversing switch and fused ohmmeter circuit.**

No other V-O-M offers all the Deluxe features of the Model 800. 3% AC ACCURACY to 1200 volts; mirror and knife-edge pointer to eliminate parallax; USABLE with frequencies to 100 kHz; WIRED CIRCUIT, HIGH FLUX BARRING self shielded magnet; DUAL SENSITIVITY provides extra ranges, DC volts at 20,000 and 10,000 ohms per volt, AC at 10,000 and 5,000 ohms per volt. Shatterproof meter window, molded transparent plastic; fully antistat treated.

RANGES

DC Volts: 0-0.6-3-12-60-300-1200-6000 at 10,000 Ohms per Volt. 0-0.3-1.5-6-30-150-600-3000 at 20,000 Ohms per Volt. 0-.120 at 60 Microamperes. **AC Volts:** 0-3-12-60-300-1200-6000 at 5,000 Ohms per Volt. 0-1.5-6-30-150-600-3000 at 10,000 Ohms per Volt. **DB:** −20 to +70 in 10 ranges. **DC Microamperes:** 0-60-600 at 120 MV. 0-120 at 240 MV. **DC Milliamperes:** 0-6-60-600 at 120 MV. 0-1.2-12-120-1200 at 240 MV. **DC Amperes:** 0-6 at 120 MV. 0-12 at 240 MV. **Ohms:** 0-1K-10K-100K (4.4-44-440 at center scale). **Megohms:** 0-1-10-100 (4400-44,000-440,000 Ohms center scale). **Output:** Condenser in series with AC volt ranges.

CASE—Heavy, molded black case, 7½" x 6¼" x 3⅞", with an insulated, movable handle, which can also serve as a tester stand. Shipping wt. 7 lbs.

Model 800 Cat. No. 3070 **$110.00**

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TRIPLETT ELECTRICAL INSTRUMENT COMPAN

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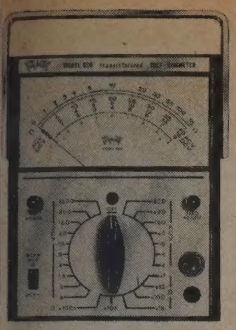
TVO TRANSISTORIZED VOLT-OHMMETER — MODEL 600



600

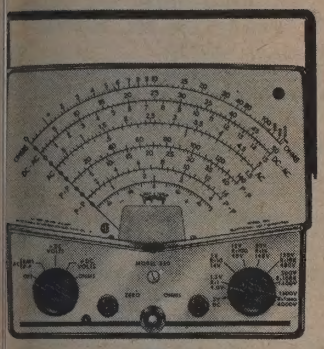
1. **F-E-T Circuitry — Battery Operated with 11 Megohm Input Impedance (Field Effect Transistor).**
2. **400 DC Mv range at 2.7 Megohm Impedance for Solid State circuit testing.**
3. **One Selector Switch with 23 ranges plus a Polarity Reversing Switch.**

Superior voltage Measuring Capabilities plus resistance ranges to 100 Megohms. .4 Volt full scale range on DC. Exceptional for use in low voltage solid state circuits with greater overlapping of ranges providing better reading accuracy. Accuracy is ±3% on both AC and DC. Single unit probe with built-in switch for AC/DC/OHMS. 11 Megohm input resistance on all DC Voltage ranges except .4 and .8. AC impedance is minimum of .75 megohms.

RANGES

DC Volts: 0-0.4-0.8-1.6-4-8-16-40-160-400-1,600.
AC Volts: 0-4-8-16-40-160-400-800.
Ohms: 0-1,000-10,000-100,000-1 Meg.-10 Meg-100 Meg. Center scale value 10 Ohms at X1. Complete with leads, batteries, and instruction manual.
Model 600 Catalog No. 3032 **$82.00**

ELECTRONIC VOLT-OHMMETER — MODEL 850



850

1. **Long 7" easy-to-read scale.**
2. **.5 DCV range for transistor circuits.**
3. **High stability — meter connected in cathode circuit of 12AU7.**

This extremely versatile Electronic Volt-Ohmmeter has superior voltage measuring capabilities, plus resistance ranges to 1000 Megohms.
ELECTRICAL PROTECTION of meter against burnout. FREQUENCY RANGE — from 15 Hz to 3 MHz. SEPARATE SCALE on easy-view meter for Peak-to-peak readings. SINGLE UNIT PROBE — with built-in switch for AC/DC/OHMS. 11 MEGOHM INPUT RESISTANCE on all DC Voltage ranges. Line voltage: 115 VAC 50-60 cycles. Ground type plug. Spring-backed instrument jewels for ruggedness.
Accurate within ±3% on AC and DC. Ohms accurate within ±3% of full scale based on DC scale.

RANGES

Eight DC Volts Ranges: 0-.5-1.5-5-15-50-150-500-1,500.

Seven AC RMS Volts Ranges: 0-1.5-5-15-50-150-500-1,500.
Seven Peak-to-Peak Volts Ranges: 0-4-14-40-140-400-1,400-4,000.
Seven Resistance Ranges: 0-1,000-10,000-100,000-1 Meg-10 Meg-100 Megohms-1,000 Megohms.
Frequency Range: 15 Hz to 3 MHz; (up to 250 MHz with accessory diode probe available extra).
Input Impedance: DC Volts 11 Megohms; AC Volts minimum of .83 Megohms.
CASE — Molded black case, 7⅝" x 6⁷⁄₁₆" x 3¾". Carrying handle also can be used to place the tester at 25° angle for ease in reading.
PANEL — Etched aluminum. Shipping wt. 7 lbs.
Model 850 Catalog No. 3074 **$93.00**
Model 850 (Foreign — 220V, 50 to 60 Hz.) Catalog No. 3075 **$100.00**
Auxiliary Diode Probe for voltages to 20 volts with frequencies to 250 MHz. Catalog No. 79-215 **$9.00**
High Voltage Probe for DC voltages to 50 KV. Catalog No. 79-196 **$25.20**

BURN-OUT PROOF VOLT-OHM-MILLIAMMETER — MODEL 630-PLK TYPE 3

630-PLK

1. **Burnout proof solid state overload protection.**
2. **One selector switch minimizes chance of incorrect settings. DC polarity reversing.**
3. **4.4 Ohm center scale, 0.1 ohm to 100 megohms resistance in 4 ranges.**

Transistorized electronic switching circuit (patent #3,359,457) guards against accidental burn-outs. Now you can virtually eliminate bent pointers, burned-out resistors, damaged pivots, overheated springs, burned-out coils, changes in accuracy due to overheating, in fact nearly any need for repairs. Life of transistor circuit battery is nearly that of shelf life. Automatically checked by using X100K ohms range. Overload protection on meter in addition to transistorized circuit that protects tester.
Accuracy ±2% on DC, ±3% AC. High sensitivity: 20,000 Ω/V DC; 5,000 Ω/V AC. Shipping weight 5 lbs.

RANGES

DC Volts: 0-2.5-10-50-250-1,000-5,000 at 20,000 ohms/volts; 0-0.25 at 100 microamperes.
AC Volts: 0-3-10-250-1,000-5,000 at 5,000 ohms/volt.
Decibels: −20 to +11, +21, +35, +49, +61, +75; "0" DB at 1 MW on 600 ohm line.
DC Microamperes: 0-100 at 250 Mv.
DC Milliamperes: 0-10-100-1000 at 250 Mv.
DC Amperes: -10 at 250 Mv.
Ohms: 0-1,000-10,000 (4.4-44 at center scale).
Megohms: 0-1-100 (4,400-440,000 at center scale)
Output Volts (AC): 0-3-10-50-250-1,000 at 5,000 ohms/volt; jack with condenser in series with AC ranges.
Case: Molded, black, 3¹¹⁄₃₂" x 5½" x 7½".
Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.
Model 630-PLK Cat. No. 3055 **$93.00**

LOW OHMS V-O-M VOLT-OHM-MILLIAMMETER — MODEL 630-L

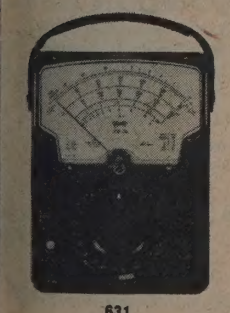
630-L

1. **2 Low power ohms ranges (X1 and X10). 140 Mv. ohmmeter circuit voltage.**
2. **One selector switch minimizes chance of incorrect settings and burnouts.**
3. **Designed for testing in solid-state circuitry.**

RANGES

DC Volts: 0-2.5-10-50-250-1,000-5,000 at 20,000 ohms/volt.
AC Volts: 0-3-10-50-250-1,000-5,000 at 5,000 ohms per volt.
Decibels: −20 to +75; "0" Db at 1 Mw on 600 ohm line.
DC Microamperes: 0-100 at 120 millivolts.
DC Amperes: 0-10 at 120 millivolts.
Ohms: 0-1,000-10,000 (13-130 at center scale).
Megohms: -1-100 (4,400-440,000 at center scale).
Output V (AC: 0-3-10-50-250-1,000 at 5,000 ohms/volt, jack with condenser in series with AC ranges.
Case: Black molded, 3¹¹⁄₃₂" x 5½" x 7½".
Model 630-L Cat. No. 3040 **$66.00**

VTVM COMBINATION V-O-M AND VTVM — MODEL 631



631

1. **Combination Volt-Ohm-Milliammeter and battery operated Vacuum Tube Voltmeter.**
2. **11 Megohm input to VTVM.**
3. **One selector switch, 34 ranges.**

Two fundamental units at the price of a single tester; VTVM stability assured by long life battery operation. Sensitivity plus — sensitivity of the 1.2 volt (VTVM) range is equal to over nine million ohms per volt. Usable with frequencies through 500 kHz.
A V-O-M for general use and a VTVM when needed; ranges entirely adequate for servicing needs.
Spring-backed instrument jewels for ruggedness. Accuracy 3% DC, 4% AC, VTVM 4%.

V-O-M RANGES

DC Volts: 0-3-12-60-300-1,200 (20,000 ohms per volt).
AC Volts: 0-3-12-60-300-1,200 (5,000 ohms per volt).
Ohms: 0-1,500-15,000.
Megohms: 0-1.5-150.
DC Microamperes: 0-60 at 250 MV.
DC Milliamperes: 0-1.2-12-120-1,200 at 250 MV.
DC Amperes: 0-12 at 250 MV.
DB: −20 to +63. (600 ohm line at 1 MW).
Output Volts: 0-3-12-60-300-1,200; jack with condenser in series with AC ranges.

VTVM RANGES

DC Volts: 0-1.2-6-30-120.
Case: Molded, black, 3¹¹⁄₃₂" x 5½" x 7½".
Complete with leads, alligator clips, rubber feet, batteries and instruction manual. Shipping wt. 5 lbs.
Model 631 Catalog No. 3058 **$82.00**

RF PROBE FOR 631

With this probe and Model 631 RF measurements can be made up to 20 volts at 250 MHz.
RF Probe Catalog No. 79-145 **$9.50**

All Prices Are Suggested U.S.A. User Net Subject To Change. Specifications Subject To Revision. (Slightly Higher West of Rockies and in Canada)

TRIPLETT ELECTRICAL INSTRUMENT COMPANY

ACCESSORIES

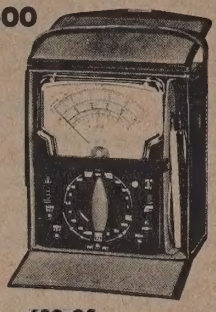
Leather Cases

For Testers 630, 630-A, 630-PL, 630-APL, 630-NA, 630-M, 630-NS, 631, 630-L, 630-PLK, 630-APLK

639-N

639/639-P

600



639-OS

MODEL 639-N

Model 639-N black cowhide leather carrying case. Center-cover flaps snap back allowing full view of scales and permitting complete access to instrument without removal from case. Tester stand is included at no extra cost.

Model 639-N
Catalog Number 10-1189
$12.60

Model 639 black leather case.

Model 639
Catalog Number 10-823
$12.60

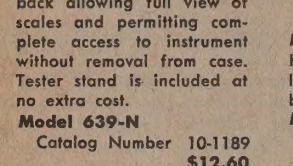
Model 639-P black cowhide leather carrying case lined with ⅜" sponge rubber.

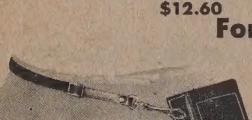
Model 639-P
Catalog Number 10-921
$17.90

Model 639-OS — Black leather case, has built-in stand on back. Flaps open to permit use of tester in case. Compartment for accessories. Used with Model 600.

Model 639-OS
Catalog Number 10B-1793
$14.70

For Models 310-310-C

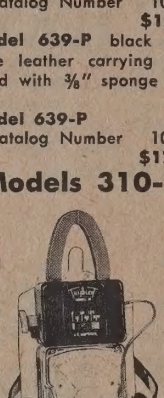




LEATHER CASE 369-S

Model 369-S leather carrying case for use with Models 310 or 310-C. Has removable leather shoulder strap. The case flap folds back to form a handy stand. Contains a retractable hook for hanging from nails, pipes, etc., freeing both hands. Test leads store in case and remain plugged into tester jacks while flap is closed keeping your 310 or 310-C ready for instant use. Soft shock absorbent lining.

Model 369-S
Catalog Number 10-1791
$10.00



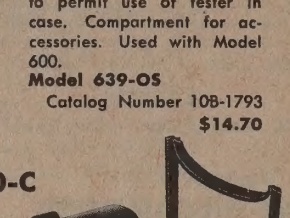
379

Model 379 as above, large 310-10 in combination. Has pocket for 101.

Model 379
Catalog Number 10-1456
$8.00

Model 369-T Neckstrap Carrying Case for Model 310.

Model 369-T
Catalog Number 10B-1608
$9.50



369

369-T

Model 369 — Handsome black cowhide leather carrying case for Model 310. Trouser belt slips through loop on back of the case for out-of-the-way carrying.
Catalog Number 10-1258
$4.20

TESTER STAND

255-35

For Models 800 and 850

Model 859-OP

Black Leather Carrying Case, lined with sponge rubber. Flaps open to permit use of tester without removal from case. Built-in stand on back. Model 859-OP.

Model 859-OP
Catalog Number 10-1669
859-OP **$23.10**

For Model 666-R

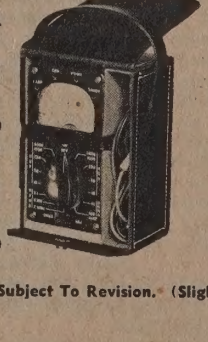
Model 669 black leather case for 666-R. (Similar to Model 639 above).

Model 669
Cat. No. 5616 **$8.40**

Model 669-OS black leather case for Model 666-R. Tester can be used in the case. Built-in stand on back.

Model 669-OS
Cat. No. 10B-1792 **$9.00**

669-OS



ACCESSORIES

Cat. No. P

EXTERNAL SHUNTS—for 630, 630-
30 Amperes (Plug-in) 91-247 $12
60 Amperes (Portable) 91-248 1
120 Amperes (Portable) 91-255 1

EXTERNAL SHUNTS FOR 631
60 Amperes (Portable) 91-248 $1
120 Amperes (Portable) 91-255 1

EXTERNAL SHUNTS FOR 630-NA, 80
0-15-30 Amperes (Plug-in) 91-429 $1
0-30-60 Amperes (Portable) 91-430 2
0-60-120 Amperes (Portable) ..91-431 2

EXTERNAL SHUNTS FOR 666-R, 630-PL, 630-APL, 630-PLK
25 Amperes (Plug-in) 91-243 $12
50 Amperes (Portable) 91-244 1
100 Amperes (Portable) 91-191 1

REPLACEMENT LEADS

LEADS for Models 630, 630-A, 630-PL, APL, 630-PLK, 630-APLK, 631, 666-R, 630-M & 630-NS, 630-L, 800 ....79-127 $

REPLACEMENT LEADS for Models 310, 310-C .....79-153 $

REPLACEMENT AC-DC — Ohms probe assembly for Model 850 .....79-192 $

RF PROBE FOR 631
With this probe and Model 631 RF measu ments can be made up to 20 volts at 250 MHz. .....79-145 $

HIGH VOLTAGE PROBES
Completely insulated polystyrene test pr with guard-type handle. Probe is 11¾" lo with 48" high-voltage wire lead with banc plug at tester end.

MODELS 630, 630-A, and 631
0-30,000 D.C. Volts 79-70 $1
0-30,000 A.C. Volts 79-71 1
0-60,000 A.C. Volts 79-152 1

Models 630-PL, 630-APL, 630-PLK, 63
0-10,000 D.C. Volts 79-83 $1
0-25,000 D.C. Volts 79-130 1
0-25,000 A.C. Volts 79-166 1

Models 630-NA and 800
0-30,000 D.C. Volts 79-152 $1
0-30,000 A.C. Volts 79-71 1
0-60,000 A.C. Volts 79-152 1

For Model 630-NS
0- 6,000 D.C. Volts 79-229 $1
0- 6,000 A.C. Volts 79-230 1
0-30,000 A.C. Volts 79-152 1

For Model 630-M
0-30,000 A.C. Volts 79-152 $1
0- 6,000 A.C. Volts 79-230 1
0- 6,000 D.C. Volts 79-247 1

TESTER STAND
Metal stand holds Model 630, 630-A, 630-APL, 630-NA, 630-NS, 630-PLK, 630-APL 631, 630-M or 630-L tester in approximate a 45° angle; will enable you to make eas readings.

STAND ONLY—Shipping wt. 1 lb. 255-A- $2.

PROBES FOR MODELS 310 AND 310-C
PROBE EXTENSIONS for 310 & 310-C lea insulated, 3 inches long. 11968A $1.
MINIATURE ALLIGATOR CLIPS for use wi 310-310-C Probe extensions. 2451A-59 $.

PROBES FOR MODEL 850
Auxiliary Diode Probe for voltages to volts with frequencies to 250 MHz. 79-2 $9.

High Voltage Probe for DC Voltages to KV .....79-196 $25.

All Prices Are Suggested U.S.A. User Net Subject To Change. Specifications Subject To Revision. (Slightly Higher West of Rockies and in Canada)

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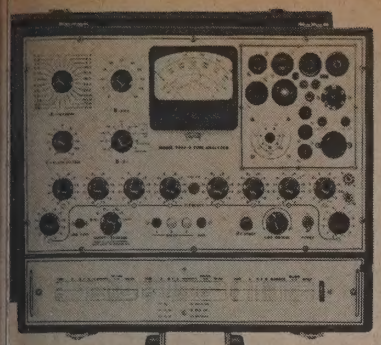
TRIPLETT TEST EQUIPMENT



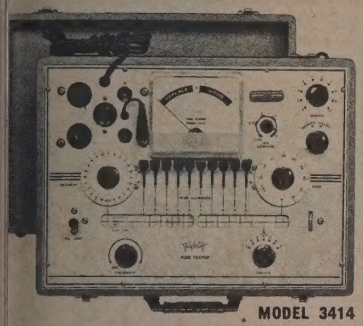
MODEL 3444-A

TRUE DYNAMIC MUTUAL CONDUCTANCE TUBE ANALYZER
MODEL 3444-A

1. **Measures the characteristics at variable currents and voltages.**
2. **Snap-in roll chart in separate compartment for easy removal and updating.**
3. **Reads directly in micromhos with a self-checking true Gm circuit.**

The only tube tester under $1,000 that is simple and fast to operate and will measure tube characteristics at KNOWN readable potentials. Provides readings to: (a) Plot the tube characteristic curves. (b) Measure grid current at known potentials. (c) Compare cutoff characteristics of dual tubes. Reads directly in micromhos with a self checking Gm circuit. CHECKS PLATE current cutoff. CHECKS GAS under actual operating conditions (measures to approximately one UA of gas current). CHECKS RECTIFIERS under load. CHECKS THYRATRON firing voltage and grid current. (To 50 ma. anode current.) CHECKS DUAL section tubes with only one lever movement. PROVIDES SHORTS and leakage measurements from 0-10 megohms using a filtered DC supply of 85 volts. PROVIDES cutoff measurements on voltage amplifiers. **RECESSED SOCKET SAVERS** (under-the-panel-mounted) are easily removable for replacement.

Case: Wood, gray leatherette covered, 15 3/16" x 18 13/16" x 7 3/4". Shipping wt. 30 lbs. **$470.00**



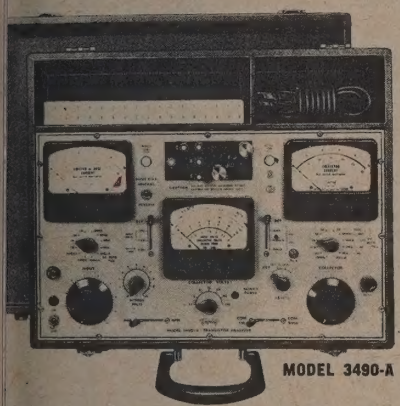
MODEL 3414

FASTER, FLEXIBLE TUBE TESTER
MODEL 3414

1. **Fast, easy to use, GO-NO-GO testing.**
2. **Input filament continuity test.**
3. **Wide range of filament voltages prevents obsolescence.**

Modified circuit for better correlation on Gm. Rejects burned out tubes instantly without waiting for the filament to heat. NEON INDICATOR SHORTS TEST, new, fast and accurate. Full range filament voltages — 0.65 to 117 in 23 steps. Improved lever switching for complete control of each tube element. Quick-change roll chart. TV picture tube test by means of adapter (available extra, see below) without removing tube from receiver. Large, clearview meter has three-color GOOD-?-BAD scale.

COUNTER-PORTABLE TYPE CASE. Ultra-professional appearance; Wood, dark gray leatherette covered; 15 7/8" x 11 1/2 x 6 1/2. Hinged removable cover. Chrome hardware and feet. Etched panel. Shipping wt. 17 lbs. **$132.00**



MODEL 3490-A

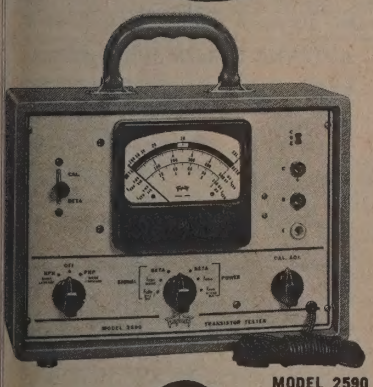
TRANSISTOR ANALYZER FOR COMPLETE TRANSISTOR ANALYSES
MODEL 3490-A

1. **Ideal for schools and labs. Makes H parameter measurements.**
2. **High current and high voltage AC and DC beta measurements.**
3. **Reads leakage current in NANO-AMPERE region.**

Test DC Beta, AC Beta at 1KC, leakages (Ico, Ieo, Iceo), Alpha, Reach Through Voltage, Saturation Voltage, Floating Potential. The 3490-A's flexibility allows plotting of transistor characteristic curves along with setting up nearly any type of transistor test. Input bias reversing switch gives added versatility. THREE INDEPENDENT Power Supplies. Model 3490-A also tests diodes, rectifiers, zener diodes, SCR, etc.

RANGES

Input Current (Emitter or Base): 0-100-300 ua, 0-1-3-10-30 Ma, 0-.1-.3-1-3 Amp.
Collector Current: 0-300 ua, 0-1-10-30 Ma, 0-.1-.3-1-3-10-30 Amp.
Iceo, Ico (Icbo): 0-6 Ma, 0-600 ua, 0-60 ua, 0-6 ua.
Collector Voltage: 0-120 V, 0-60 V, 0-30 V, 0-12 V, 0-6 V, 0-3 V, 0-1.2 V.
Emitter or Base Voltage: 0-12 V, 0-1.2 V.
Tetrode: 0-10 V Calibrated Control. Shipping wt.: 30 lbs.
Case: Wood, gray leatherette covered, 18 13/16" x 15 7/16" x 8" with removable cover, and sloping etched aluminum panel. **$441.00**



MODEL 2590

TRANSISTOR TESTER
MODEL 2590

1. **Tests Beta amplification, Icbo, Iceo for both power and signal type transistors. Tests for shorts and leakage. Checks and forward currents on diodes.**
2. **Simulated operating test conditions.**
3. **Simple and straightforward operation. No roll chart or special data needed, always up-to-date.**

Case: 11 5/8" x 8 5/8" x 5 1/8".

FIVE SCALES

0-1 MA for Signal Transistor ICEO
0-100 MA for Power Transistor ICEO
0-500 Microamp for Signal Transistor ICBO
0-1 MA for Power Transistor ICBO
5-100 Beta Range; also shows on GOOD—?—BAD scale
Shipping wt. 9 lbs. Power—115 volts, 50-60 cycle AC. **$71.00**

MODEL 3432-A

SIGNAL GENERATOR
MODEL 3432-A

1. **High RF output.**
2. **Fundamentals to 110 MHz, harmonics to 220.**
3. **Ideal as marker generator for TV alignment.**

Complete frequency coverage 160 KC to 10 MC fundamental with seven bands (220 MC harmonics). R.F. circuits are double shielded with copper steel shields. Large easily read etched aluminum dial. Cathode follower output provides good stability by acting as a buffer to the oscillator. 400 cycle audio frequency with variable control for 0-100 per cent modulation.

Band	
A	160-370 KC
B	360-735 KC
C	715-1875 KC
D	1825-4950 KC
E	4.85-13 MC
F	12.5-35 MC
G	34-110 MC
G (Harmonics)	68-220 MC

Case: Metal with black baked enamel suede finish, 15 11/32" x 11 1/32" x 6 1/4". Black leather strap handle, rubber feet. Shipping wt. 30 lbs. **$144.00**

All Prices Are Suggested U.S.A. User Net Subject To Change. Specifications Subject To Revision.

TRIPLETT ELECTRICAL INSTRUMENT COMPANY

DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

INSULATORS

Ceramic • Steatite • Standoffs • Feed-thrus • Antenna • Beads

DABURN FEED-THRU INSULATORS

These are quality porcelain insulators smoothly glazed. Heavy nickel plated brass hardware used. Cushion washers supplied.

DABURN No.	Hgt. H	B	H_1	Mounting Hole	H'dwe	Std. Pkg.
10-58	5/8"	11/16"	1/4"	5/16"	6-32	50
10-78	1"	13/16"	5/16"	7/16"	10-32	25
10-125	1 1/4"	7/8"	3/8"	7/16"	10-32	25
10-234	2 3/4"	2"	1"	1 1/4"	1/4-20	10

CORRUGATED FEED-THRU INSULATOR

These numbers have twice the leakage path of the straight type due to the increased surface area. Brass nickel plated hardware and cushion washers supplied.

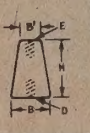
DABURN No.	Hgt. H	B	H_1	Mounting Hole	H'dwe	Std. Pkg.
10-79	1 3/8"	1 1/4"	11/16"	5/16"	10-32	25
10-76	2 3/4"	1 5/8"	1"	3/4"	1/4-20	10
10-52	4 1/2"	2 1/8"	1 1/2"	1"	1/4-20	5

DABURN METAL BASE INSULATORS

Made of hi tensile strength, low absorption ceramic, fully glazed corrugated surface. Provides longer leakage path. Drawn metal bases.

Daburn No.	Hgt. H	B	D	Mtg. Screw	H'dwe	Std. Pkg.
10-67	1 3/8"	17/8"x1 3/16"	1 1/2"	2 #8	10-32	25
10-176	2 3/4"	1 3/4"x1 3/4"	1 3/8"	4 #10	1/4-20	10
10-451	4 1/2"	2 1/4"x2 1/4"	1 3/4"	4 #10	1/4-20	5

DABURN STEATITE CONE INSULATORS



Steatite cones have smooth glaze white. Come complete with brass nickel plated screws and cushion washers

Daburn No.	Hgt. H	B	B_1	T	Mtg. Hole	Std. Pkg.
10-30	5/8"	5/8"	7/16"	6-32	5/32"	100
10-31	1"	11/16"	1/2"	8-32	3/16"	50
10-32	1 1/2"	7/8"	5/8"	10-32	7/32"	50
10-33	2 3/4"	1 1/4"	3/4"	1/4-20	9/32"	25

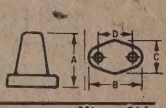
DABURN LEADIN INSULATORS

Sections are each 2 3/4" high hi vitrified porcelain glazed. Comes thru with 2 additional bushings 1/4" and 1/2" long, permitting complete insulation of the threaded rod of any length in multiples of 1/4". Complete with brass nickel plated hardware. Lead and cushion washers permit a water tight seal.

Daburn No.	Description	Std. Pkg.
10-237	10" Rod/Bushings	10
10-238	15" Rod/Bushings	10

DABURN STANDOFF INSULATORS

Quality glazed porce- insulators — mounting surface ground flat. Brass nickel plated hardware supplied.



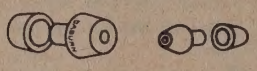
Daburn No.	A	B	C	D	Mtg. Hole	H'dwe	Std. Pkg.
10-16	1"	1 3/8"	7/8"	1"	5/32"	8-32	50
10-17	1 1/2"	1 3/4"	1 1/8"	1 1/4"	5/32"	10-32	25

STEATITE FEED-THRU INSULATORS

Suitable for hi-dielectric and mechanical strength. Made of L5 glazed Steatite. No hardware included.

Daburn No.	Figure	Hgt. H.	Base Diam.	Screw Size Max.	Std. Pkg.
10-200	I	7/8"	1 1/4"	10-32	25
10-201	I	1 1/8"	1 3/4"	1/4-20	25
10-202	II	1 5/8"	2 1/2"	3/8-16	25
10-203	III	1"	3 1/8"	8-32	12

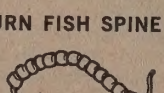
DABURN STEATITE FEED-THRU INSULATORS



Feedthrus come thru with tops and bottoms for chassis, panel, shields, rack mounting. No hardware included. Made of L5 glazed Steatite.

Daburn No.	Hgt. Top	Diam.	Hole Panel	T'kness Panel To	Screw Size Max.	Std. Pkg.
10-204	1/8"	1/2"	5/16"	1/8"	6-32	50
10-205	7/32"	5/8"	7/16"	1/8"	8-32	50
10-206	3/8"	1/2"	1/4"	3/16"	6-32	50
10-207	3/8"	5/8"	3/8"	3/8"	8-32	50
10-208	3/4"	1 1/8"	3/4"	3/8"	10-32	50
10-209	1 5/8"	1 1/4"	1/2"	2"	10-32	50

DABURN FISH SPINE BEADS



Made of L5 Steatite. Suitable for buss and heavy lines insulation. Beads follow bends and curves because of ball and socket style interlocks. Four beads cover approximately 1". 100 will cover 25" of wire. Size: 5/16" O.D. x 1/8" I.D. Beads treated with Dow Corning compound to prevent accumulation of surface moisture.

Daburn No.		Std. Pkg.
10-215	Fish Spine Beads	100, 1000

DABURN AIRPLANE INSULATORS

Suitable for mobile and aircraft or guy wire application. compression type strain insulators. Nos. 10-73, 10-74 made of white glazed low absorption porcelain. No. 10-72 made of wet process porcelain.

10-73, 10-74

10-72

Daburn No.	Description	Std. Pkg.
10-73	2" White	100
10-74	1 1/2" White	100
10-72	2 1/4" Brown	25

DABURN STEATITE AIRPLANE INSULATOR

Compression type Steatite insulator has small wind resistance. Fully glazed.

Daburn No.	Description	Std. Pkg.
10-63	1 1/2" Lgth.; 17/32" Diam. 3/4" Line Spacing	25

DABURN STEATITE STANDOFFS

JAN-I-8 AND JAN-I-10 SPECS.

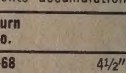
These threaded Steatite pillars are made of L5 glazed Steatite with threaded holes on both sides have one hole mounting.

COLOR: White

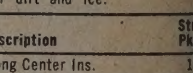
Daburn No.	Conforms to NEW Type	Hgt.	Diam.	L'gth of Thr'd	Thr'd
10-41		1/4"	1/4"	All	6-32
10-41B		3/8"	1/4"	5/32"	6-32
10-41A		1/2"	1/4"	5/32"	6-32
10-44A		3/4"	1/4"	1/4"	6-32
10-45A		1"	1/4"	1/4"	6-32
10-42		3/8"	3/8"	5/32"	6-32
10-42A	NL633W01-004	1/2"	3/8"	5/32"	6-32
10-43A	NL633W01-005	5/8"	3/8"	1/4"	6-32
10-44B	NL633W01-006	3/4"	3/8"	1/4"	6-32
10-45B	NL644W01-008	1"	3/8"	3/8"	6-32
10-46B	NL633W01-010	1 1/4"	3/8"	3/8"	6-32
10-46A	NL633W01-012	1 1/2"	3/8"	3/8"	6-32
10-46C	NL633W01-016	2"	3/8"	3/8"	6-32
10-43		1/2"	1/2"	1/4"	6-32
10-44		3/4"	1/2"	1/4"	6-32
10-45		1"	1/2"	3/8"	6-32
10-46		1 1/2"	1/2"	3/8"	6-32
10-47		2 1/2"	1/2"	3/8"	6-32
10-40	NL633W02-005	5/8"	1/2"	3/16"	8-32
10-40A	NL633W02-006	3/4"	1/2"	1/4"	8-32
10-40B	NL633W02-008	1"	1/2"	3/8"	8-32
10-40C	NL633W02-010	1 1/4"	1/2"	3/8"	8-32
10-40D	NL633W02-012	1 1/2"	1/2"	3/8"	8-32
10-40E	NL633W02-016	2"	1/2"	3/8"	8-32
10-40F	NL633W02-020	2 1/2"	1/2"	3/8"	8-32
10-40G	NL633W02-024	3"	1/2"	3/8"	8-32
10-44C		3/4"	3/4"	1/4"	10-32
10-45C	NL633W03-002	1"	3/4"	3/8"	10-32
10-45D	NL633W03-010	1 1/4"	3/4"	3/8"	10-32
10-45E	NL633W03-012	1 1/2"	3/4"	3/8"	10-32
10-45F	NL633W03-016	2"	3/4"	3/8"	10-32
10-45G	NL633W03-020	2 1/2"	3/4"	3/4"	10-32
10-45H	NL633W03-024	3"	3/4"	3/8"	10-32
10-45S	NL633W03-032	4"	3/4"	3/8"	10-32
10-47B	NL633W04-012	1 1/2"	1"	1/2"	1/4-20
10-47D	NL633W04-016	2"	1"	5/8"	1/4-20
10-47E	NL633W04-020	2 1/2"	1"	5/8"	1/4-20

STD. PKG: 100 except 10-47B, D, E, which are 50.

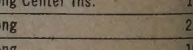
ANTENNA STRAIN INSULATORS



10-68



10-69

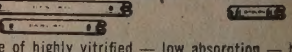


10-70, 10-71

Porcelain glazed to prevent moisture absorption. All have long leakage path — small cross section strength under continuous tension — white glaze prevents accumulation of dirt and ice.

Daburn No.	Description	Std. Pkg.
10-68	4 1/2" Long Center Ins.	10
10-69	4 1/4" Long	25
10-70	7" Long	10
10-71	12" Long	10

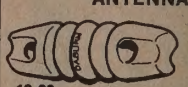
FEEDER SPREADER INSULATORS



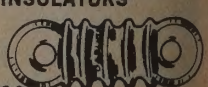
Made of highly vitrified — low absorption — hi tensile strength porcelain, with white glaze overall.

Daburn No.	Description	Std. Pkg.
10-62	2" Long Spreader	25
10-64	4" Long Spreader	25
10-65	6" Long Spreader	25

ANTENNA INSULATORS



10-06



10-0

Daburn No.	Description	Std. Pkg.
10-0	Glass Insulator	100
10-06	Porcelain Insulator — White	100

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DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM. • SWITCHES • ELECTRONIC HARDWARE

-THE-SHELF DABURN TRANSISTOR IMMEDIATE DELIVERY HEAT SINKS and RETAINER CLIPS

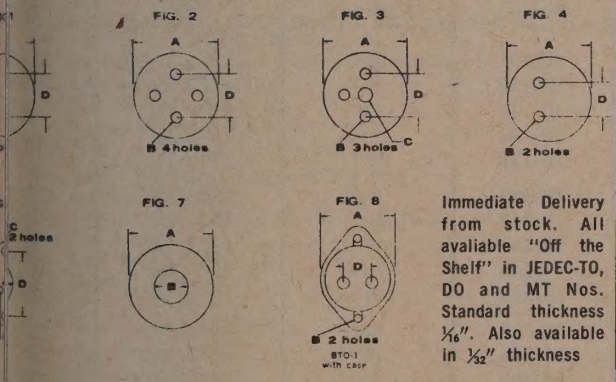
istor heat sinks made with beryllium oxide, which is unique among inorganic materials, ates electrically like a ceramic, but conducts heat like a metal. Where electrical appli- ns require both dielectric insulation and hi-heat transfer from device to chassis, only ium oxide (BeO) can provide a satisfactory solution to design problems. Heat generating es will operate at higher power levels longer and more reliably, with beryllia cooling.

LLIUM OXIDE HEAT SINKS RS THESE ADVANTAGES:

mely resistant to shocks, vibration and ture.
resistivity — low dielectric loss
ased transistor life and output
dom from outgassing, infinite shelf life

PHYSICAL PROPERTIES & DIELECTRIC STRENGTH

GREATER THAN: 300 Volts/MIL
CHEMICAL PURITY: 99+% Beryllium oxide
DENSITY: 2.9 Grams/CC
MELTING POINT: 4650°F
HEAT CAPACITY AT 350°: 0.3 BTU/LB
THERMAL EXPANSION: 3.2 x 10^{-6}/°F
THERMAL CONDUCTIVITY: 140 BTU/FT² HR°F-FT
TRANSVERSE STRENGTH: 25,000 PSI
ELASTIC MODULES: 40 x 10^6 PSI



Immediate Delivery from stock. All avaliable "Off the Shelf" in JEDEC-TO, DO and MT Nos. Standard thickness 1/16". Also available in 1/32" thickness

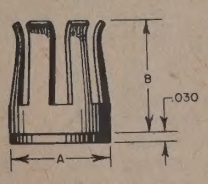
Transistor Case Type For Jedec	Fig.	DIMENSIONS "A" Dim.	"B" Dim.	"C Dim.	"D" Dim.	"E" Dim.
MT-1	7	.781±.015	.328±.015	—	—	—
TO-3	4	.980±.010	.165±.010	—	.435±.015	—
MT-3	7	.625±.005	.320±.005	—	—	—
TO-3C	8	1.125±.030	.140±.015	—	—	—
s of Round TO Insulator with Glass Epoxy Case)						
DO-4	7	.560±.015	.200±.005	—	—	—
TO-5	1	.437±.015	.054±.005	—	.200±.010	—
DO-5	7	.812±.015	.270±.005	—	—	—
MT-5	7	.250±.015	.156±.010	—	—	—
TO-6	3	1.225±.025	.187±.015	.218±.015	.690±.015	—
TO-8	1	.600±.030	.062±.015	—	.282±.015	—
TO-9	1	.437±.015	.054±.005	—	.200±.010	—
MT-10	7	.672±.015	.265±.015	—	—	—
TO-11	1	.437±.015	.054±.005	—	.200±.010	—
TO-12	2	.437±.015	.054±.005	—	.200±.005	—
MT-14	7	1.250±.015	.540±.010	—	—	—
TO-16	1	.437±.015	.054±.005	—	.200±.010	—
TO-18	1	.312±.015	.031±.005	—	.100±.010	—
TO-33	2	.437±.015	.054±.010	—	.200±.005	—
TO-36	3	1.225±.025	.187±.015	.218±.015	.690±.015	—
TO-38	1	.750±.015	.062±.005	—	.200±.010	—
TO-39	1	.437±.015	.054±.005	—	.200±.010	—
TO-43	2	.437±.015	.054±.010	—	.200±.005	—
TO-46	1	.312±.015	.031±.005	—	.100±.010	—
TO-66	6	.700±.010	.094±.010	.155±.010	.960±.010	.200±.010

JT-UP: 5, 25, 100.

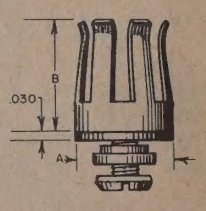
BERYLLIUM OXIDE FOR TRANSISTOR RETAINER CLIPS, HEAT DISSIPATION AND ELECTRICAL INSULATION

TRANSISTOR RETAINERS: Optimum thermal conductivity, with absolute electrical insulation reliability, is offered by spring clip transistor retainers. The retainers provide electrical isolation for the semiconductor by means of a disc of beryllium oxide ceramic brazed to the base of the beryllium copper retainer. Solid ceramic disc, in contrast to a thin insulating coating, is practically immune to loss of insulating value thru cracking, abrasion, chipping or other results of rough treatment in assembly. Heat transfer from the semiconductor to chassis or heat sink is not sacrificed since the high purity BeO has thermal conductivity to that of aluminum metal. Maximum soldering temperature —300°C.

FOR SOLDER MOUNTING



FOR MECHANICAL MOUNTING

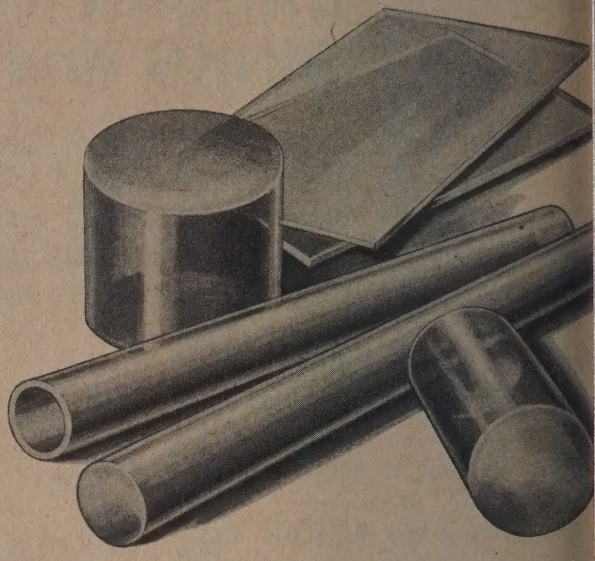


DABURN Cat. No.	Mounting Style	Type	"A" O.D.	"B" Length	"C" Screw Size
DTR-01	Solder	TO-5	3/8"	.37"	—
DTR-02	Screw	TO-5	3/8"	.37"	4-40 x 3/16"
DTR-05	Solder	TO-18	.221"	.28"	—
DTR-06	Screw	TO-18	.221"	.28"	2-56 x 3/16"

STD. PUT-UP: 5, 25, 100

JB® Polystyrene

ROD TUBING SHEET



For radio and electronic applications, because of its very low loss factor at ultra high frequencies, Polystyrene is the ideal material for insulators, coil forms, shields, etc. It has excellent arc resistance, is non-tracking and has splendid insulating properties. Because its water absorption is practically zero it has excellent dimensional stability.

POLYSTYRENE ROD — Transparent

AVAILABLE IN 12" OR 48" LENGTHS

Catalog Number	Diameter	Net Price 12" lgth.	Net Price 48" lgth.
JB-100	1/8"	$ .03	$ .12
JB-101	3/16"	.07	.28
JB-102	1/4"	.12	.48
JB-103	5/16"	.18	.72
JB-104	3/8"	.26	1.04
JB-106	1/2"	.48	1.92
JB-107	5/8"	.72	2.88
JB-108	3/4"	1.00	4.00
JB-109	7/8"	1.42	5.68
JB-110	1"	1.90	7.60
JB-111	1 1/8"	2.50	10.00
JB-112	1 1/4"	3.00	12.00
JB-113	1 3/8"	3.60	14.40
JB-114	1 1/2"	4.30	17.20
JB-116	1 3/4"	6.00	24.00
JB-118	2"	7.50	30.00

POLYSTYRENE TUBING — Satin Finish

AVAILABLE IN 12" OR 48" LENGTHS

Catalog Number	O.D.	I.D.	Net Price 12" lgth.	Net Price 48" lgth.
JB-201	1/4"	1/8"	$ .10	$ .40
JB-202	5/16"	3/16"	.14	.56
JB-203	3/8"	1/4"	.18	.72
JB-205	1/2"	3/8"	.26	1.04
JB-206	5/8"	1/2"	.32	1.28
JB-207	3/4"	5/8"	.40	1.60
JB-208	1"	7/8"	.56	2.24
JB-220	1 1/2"	1 1/4"	1.50	6.00
JB-222	2"	1 3/4"	2.20	8.80

POLYSTYRENE SHEET*

Catalog Number	Thickness	Sheet Size	Net Price
JB-125	1/16"	12" x 12"	$ 4.1
JB-126	3/32"	12" x 12"	4.8
JB-127	1/8"	12" x 12"	5.5
JB-128	3/16"	12" x 12"	7.1
JB-129	1/4"	12" x 12"	8.1
JB-245	1/16"	12" x 24"	7.8
JB-246	3/32"	12" x 24"	9.1
JB-247	1/8"	12" x 24"	10.5
JB-248	3/16"	12" x 24"	13.1
JB-249	1/4"	12" x 24"	15.6
JB-315	1/32"	24" x 24"	9.6
JB-301	1/16"	24" x 24"	11.1
JB-302	3/32"	24" x 24"	13.0
JB-303	1/8"	24" x 24"	14.8
JB-304	3/16"	24" x 24"	18.7
JB-305	1/4"	24" x 24"	23.0
JB-309	3/8"	24" x 24"	31.2
JB-311	1/2"	24" x 24"	38.6
JB-317	5/8"	24" x 24"	50.0
JB-318	3/4"	24" x 24"	69.2
JB-319	1"	24" x 24"	94.1

*Sheets are all crystal clear with smooth surfaces fully protected against abrasion by masking paper on both sides.

JULIUS BLUM & CO., INC.

Net

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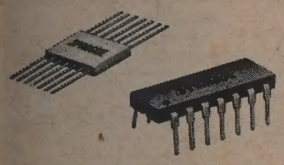
SPRAGUE SEMICONDUCTORS



UNICIRCUIT® INTEGRATED CIRCUITS

For Complete Technical Data, Refer to Applicable Sprague Engineering Bulletins.

CALL YOUR SPRAGUE INDUSTRIAL DISTRIBUTOR FOR CURRENT QUANTITY PRICES

).	Description
STANDARD TTL LOGIC (—55C to +125C . . . DIP)	
A	Quad 2-input NAND Gate
A	Quad 2-input NAND Gate—No Collector Load
A	Quad 2-input NOR Gate
A	Quad 2-input NAND Gate—Open Collector Output
A	Hex Inverter
A	Hex Inverter—Open Collector Output
A	Quad 2-input AND Gate
A	Quad 2-input AND Gate—Open Collector Output
A	Triple 3-input NAND Gate
A	Triple 3-input AND Gate
A	Triple 3-input OR Gate
A	Dual 4-input NAND Gate
A	Single 8-input NAND Gate
A	Quad 2-input OR Gate
A	Dual 4-input NAND Buffer Gate
A	Dual 2-wide, 2-input Expandable AND-OR-Invert Gate
A	Dual 2-wide, 2-input AND-OR-Invert Gate
A	4-wide, 2-input Expandable AND-OR-Invert Gate
A	4-wide, 2-input AND-OR-Invert Gate
A	Dual 2-wide, 2-3-input AND-OR-Invert Gate
A	Dual 4-input Expander
A	D-C Clocked J-K Flip-Flop
A	J-K Master Slave Flip-Flop
A	Dual J-K Master Slave Flip-Flop
A	Dual D-Type Edge Triggered Flip-Flop
A	Quadruple Latch
A	Dual J-K Master-Slave Flip-Flop with Preset and Clear
A	Full Adder
A	2-bit Binary Adder
A	Decade Counter
A	8-bit Shift Register
A	Divide-by-Twelve Counter
A	4-bit Binary Counter
A	4-bit Shift Register
A	5-bit Shift Register
7A	Dual J-K Master Slave Flip-Flop
HIGH SPEED TTL LOGIC (—55C to +125C . . . DIP)	
0A	Quad 2-input NAND Gate
1A	Quad 2-input NAND Gate—No Collector Load
4A	Hex Inverter
5A	Hex Inverter—Open Collector Output
8A	Quad 2-input AND Gate
0A	Triple 3-input NAND Gate
1A	Triple 3-input AND Gate
0A	Dual 4-input NAND Gate
1A	Dual 4-input AND Gate
2A	Dual 4-input AND Gate—Open Collector Output
0A	Single 8-input NAND Gate
0A	Dual 4-input NAND Buffer Gate
0A	Dual 2-wide, 2-input Expandable AND-OR-Invert Gate
1A	Dual 2-wide, 2-input AND-OR-Invert Gate
2A	4-wide, 2-2-2-3-input Expandable AND-OR Gate
3A	4-wide, 2-input Expandable AND-OR-Invert Gate
4A	4-wide, 2-input AND-OR-Invert Gate
5A	2-wide, 4-input Expandable AND-OR-Invert Gate
0A	Dual 4-input Expander
1A	Triple 3-input Expander for AND-OR Gates
2A	3-2-2-3-input AND-OR Expander for AND-OR-Invert Gates
1A	J-K Flip-Flop with AND-OR Inputs
2A	J-K Master Slave Flip-Flop
3A	Dual J-K Master Slave Flip-Flop

Type No.	Description
US54H76A	Dual J-K Master Slave Flip-Flop
US54H78A	Dual J-K Master Slave Flip-Flop
US54H571A	J-K Flip-Flop with AND-OR Inputs
US54H572A	J-K Master Slave Flip-Flop
STANDARD TTL LOGIC (—55C to +125C . . . TO-88)	
US5400J	Quad 2-input NAND Gate
US5401J	Quad 2-input NAND Gate—No Collector Load
US5402J	Quad 2-input NOR Gate
US5404J	Hex Inverter
US5405J	Hex Inverter—Open Collector Output
US5408J	Quad 2-input AND Gate
US5409J	Quad 2-input AND Gate—Open Collector Output
US5410J	Triple 3-input NAND Gate
US5411J	Triple 3-input AND Gate
US5418J	Triple 3-input OR Gate
US5420J	Dual 4-input NAND Gate
US5430J	Single 8-input NAND Gate
US5432J	Quad 2-input OR Gate
US5440J	Dual 4-input NAND Buffer Gate
US5450J	Dual 2-wide, 2-input Expandable AND-OR-Invert Gate
US5451J	Dual 2-wide, 2-input AND-OR-Invert Gate
US5453J	4-wide, 2-input Expandable AND-OR-Invert Gate
US5454J	4-wide, 2-input AND-OR-Invert Gate
US5459J	Dual 2-wide, 2-3-input AND-OR-Invert Gate
US5460J	Dual 4-input Expander
US5470J	D-C Clocked J-K Flip-Flop
US5472J	J-K Master Slave Flip-Flop
US5473J	Dual J-K Master Slave Flip-Flop
US5474J	Dual D-Type Edge Triggered Flip-Flop
US5480J	Full Adder
US5482J	2-bit Binary Adder
US5490J	Decade Counter
US5491J	8-bit Shift Register
US5492J	Divide-by-Twelve Counter
US5493J	4-bit Binary Counter
US5495J	4-bit Right-shift, Left-shift Register
HIGH SPEED TTL LOGIC (—55C to +125C . . . TO-88)	
US54H00J	Quad 2-input NAND Gate
US54H01J	Quad 2-input NAND Gate—No Collector Load
US54H04J	Hex Inverter
US54H05J	Hex Inverter—Open Collector Output
US54H08J	Quad 2-input AND Gate
US54H10J	Triple 3-input NAND Gate
US54H11J	Triple 3-input AND Gate
US54H20J	Dual 4-input NAND Gate
US54H21J	Dual 4-input AND Gate
US54H22J	Dual 4-input AND Gate—Open Collector Output
US54H30J	Single 8-input NAND Gate
US54H40J	Dual 4-input NAND Buffer Gate
US54H50J	Dual 2-wide, 2-input Expandable AND-OR-Invert Gate
US54H51J	Dual 2-wide, 2-input AND-OR-Invert Gate
US54H52J	4-wide, 2-2-2-3-input Expandable AND-OR Gate
US54H53J	4-wide, 2-input Expandable AND-OR-Invert Gate
US54H54J	4-wide, 2-input AND-OR-Invert Gate
US54H55J	2-wide, 4-input Expandable AND-OR-Invert Gate
US54H60J	Dual 4-input Expander
US54H61J	Triple 3-input Expander for AND-OR Gates
US54H62J	3-2-2-3-input AND-OR Expander for AND-OR-Invert Gates
US54H71J	J-K Flip-Flop with AND-OR Inputs
US54H72J	J-K Master Slave Flip-Flop
US54H73J	Dual J-K Master Slave Flip-Flop

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IND-REM-68-6908

Sizes subject to change without notice.

SPRAGUE SEMICONDUCTORS

UNICIRCUIT® INTEGRATED CIRCUITS, continued

Type No.	Description
US54H78J	Dual J-K Master Slave Flip-Flop
US54H571J	J-K Flip-Flop with AND-OR Inputs
US54H572J	J-K Master Slave Flip-Flop
	STANDARD TTL LOGIC (0C to +70C . . . DIP)
US7400A	Quad 2-input NAND Gate
US7401A	Quad 2-input NAND Gate—No Collector Load
US7402A	Quad 2-input NOR Gate
US7403A	Quad 2-input AND Gate—Open Collector Output
US7404A	Hex Inverter
US7405A	Hex Inverter—Open Collector Output
US7408A	Quad 2-input AND Gate
US7409A	Quad 2-input AND Gate—Open Collector Output
US7410A	Triple 3-input NAND Gate
US7411A	Triple 3-input AND Gate
US7418A	Triple 3-input OR Gate
US7420A	Dual 4-input NAND Gate
US7430A	Single 8-input NAND Gate
US7432A	Quad 2-input OR Gate
US7440A	Dual 4-input TTL NAND Buffer Gate
US7441A	BCD-to-Decimal Decoder/Driver
US7450A	Dual 2-wide, 2-input Expandable AND-OR-Invert Gate
US7451A	Dual 2-wide, 2-input AND-OR Gate
US7453A	4-wide, 2-input Expandable AND-OR-Invert Gate
US7454A	4-wide, 2-input AND-OR-Invert Gate
US7459A	Dual 2-wide, 2-3-input AND-OR-Invert Gate
US7460A	Dual 4-input Expander
US7470A	D-C Clocked J-K Flip-Flop
US7472A	J-K Master Slave Flip-Flop
US7473A	Dual J-K Master Slave Flip-Flop
US7474A	Dual D-Type Edge Triggered Flip-Flop
US7475A	Quadruple Latch
US7476A	Dual Master Slave Flip-Flop with Pre-Set and Clear
US7480A	Full Adder
US7482A	2-bit Binary Adder
US7483A	4-bit Binary Adder
US7490A	Decade Counter
US7491A	8-bit Shift Register
US7492A	Divide-by-12 Counter
US7493A	4-bit Binary Counter
US7494A	4-bit Shift Register
US7495A	4-bit Right-shift, Left-shift Register
US7496A	5-bit Shift Register
US74107A	Dual J-K Master Slave Flip-Flop
	HIGH SPEED TTL LOGIC (0C to +70C . . . DIP)
US74H00A	Quad 2-input NAND Gate
US74H01A	Quad 2-input NAND Gate—No Collector Load
US74H04A	Hex Inverter
US74H05A	Hex Inverter—Open Collector Output
US74H08A	Quad 2-input AND Gate
US74H09A	Quad 2-input AND Gate—Open Collector Output
US74H10A	Triple 3-input NAND Gate
US74H11A	Triple 3-input AND Gate
US74H20A	Dual 4-input NAND Gate
US74H21A	Dual 4-input AND Gate
US74H22A	Dual 4-input AND Gate—Open Collector Output
US74H30A	Single 8-input NAND Gate
US74H40A	Dual 4-input TTL NAND Buffer Gate
US74H50A	Dual 2-wide, 2-input Expandable AND-OR-Invert Gate
US74H51A	Dual 2-wide, 2-input AND-OR Gate
US74H52A	4-wide, 2-2-2-3-input Expandable AND-OR Gate
US74H53A	4-wide, 2-input Expandable AND-OR-Invert Gate
US74H54A	4-wide, 2-input AND-OR-Invert Gate
US74H55A	2-wide, 4-input Expandable AND-OR-Invert Gate
US74H60A	Dual 4-input Expander
US74H61A	Triple 3-input Expander for AND-OR Gates
US74H62A	3-2-2-3-input AND-OR Expander for AND-OR-Invert Gates
US74H71A	J-K Flip-Flop with AND-OR Inputs
US74H72A	J-K Master Slave Flip-Flop
US74H73A	Dual J-K Master Slave Flip-Flop
US74H76A	Dual Master Slave Flip-Flop with Pre-set and Clear
US74H78A	Dual J-K Master Slave Flip-Flop
US74H571A	J-K Flip-Flop with AND-OR Inputs
US74H572A	J-K Master Slave Flip-Flop

Type No.	Description
	STANDARD TTL LOGIC (0C to +70C . . . TO-88)
US7400J	Quad 2-input NAND Gate
US7401J	Quad 2-input NAND Gate—No Collector Load
US7402J	Quad 2-input NOR Gate
US7404J	Hex Inverter
US7405J	Hex Inverter—Open Collector Output
US7408J	Quad 2-input AND Gate
US7409J	Quad 2-input AND Gate—Open Collector Output
US7410J	Triple 3-input NAND Gate
US7411J	Triple 3-input AND Gate
US7418J	Triple 3-input OR Gate
US7420J	Dual 4-input NAND Gate
US7430J	Single 8-input NAND Gate
US7432J	Quad 2-input OR Gate
US7440J	Dual 4-input TTL NAND Buffer Gate
US7450J	Dual 2-wide, 2-input Expandable AND-OR-Invert
US7451J	Dual 2-wide, 2-input AND-OR-Invert Gate
US7453J	4-wide, 2-input Expandable AND-OR-Invert Gate
US7454J	4-wide, 2-input AND-OR-Invert Gate
US7459J	Dual 2-wide, 2-3-input AND-OR-Invert Gate
US7460J	Dual 4-input Expander
US7470J	D-C Clocked J-K Flip-Flop
US7472J	J-K Master Slave Flip-Flop
US7473J	Dual J-K Master Slave Flip-Flop
US7474J	Dual D-Type Edge Triggered Flip-Flop
US7480J	Full Adder
US7482J	2-bit Binary Adder
US7490J	Decade Counter
US7491J	8-bit Shift Register
US7492J	Divide-by-Twelve Counter
US7493J	4-bit Binary Counter
US7495J	4-bit Right-shift, Left-shift Register
	HIGH SPEED TTL LOGIC (0C to +70C . . . DIP)
US74H00J	Quad 2-input NAND Gate
US74H01J	Quad 2-input NAND Gate—No Collector Load
US74H04J	Hex Inverter
US74H05J	Hex Inverter—Open Collector Output
US74H08J	Quad 2-input AND Gate
US74H10J	Triple 3-input NAND Gate
US74H11J	Triple 3-input AND Gate
US74H20J	Dual 4-input NAND Gate
US74H21J	Dual 4-input AND Gate
US74H22J	Dual 4-input AND Gate—Open Collector Output
US74H30J	Single 8-input NAND Gate
US74H40J	Dual 4-input TTL NAND Buffer Gate
US74H50J	Dual 2-wide, 2-input Expandable AND-OR-Invert G
US74H51J	Dual 2-wide, 2-input AND-OR-Invert Gate
US74H52J	4-wide, 2-2-2-3-input Expandable AND-OR Gate
US74H53J	4-wide, 2-input Expandable AND-OR-Invert Gate
US74H54J	4-wide, 2-input AND-OR-Invert Gate
US74H55J	2-wide, 4-input Expandable AND-OR-Invert Gate
US74H60J	Dual 4-input Expander
US74H61J	Triple 3-input Expander for AND-OR Gates
US74H62J	3-2-2-3-input AND-OR Expander for AND-OR-Invert
US74H71J	J-K Flip-Flop with AND-OR Inputs
US74H72J	J-K Master Slave Flip-Flop
US74H73J	Dual J-K Master Slave Flip-Flop
US74H78J	Dual J-K Master Slave Flip-Flop
US74H571J	J-K Flip-Flop with AND-OR Inputs
US74H572J	J-K Master Slave Flip-Flop
	LINEAR CIRCUITS
ULN-2111A	F-M Detector and Limiter, +70C, DIP
ULN-2111N	F-M Detector and Limiter, +70C, QIP
ULN-2113A	F-M Detector and Limiter, +85C, DIP
ULN-2113N	F-M Detector and Limiter, +85C, QIP
ULN-2114K	TV Color Demodulator, TO-100
ULN-2117A	F-M Detector/Limiter with Preamp, DIP
ULN-2300M	8-lead Ampifier, SCR Firing Circuit, DIP
ULN-2301M	Diff-Amp SCR Firing Circuit, DIP

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SPRAGUE SEMICONDUCTORS

THIN-FILM HYBRID CIRCUITS

mplete Technical Data, Refer to applicable Sprague ering Bulletin.

Call Your Sprague Industrial Distributor For Current Quantity Prices

No.	Case	Description
		DIGITAL-TO-ANALOG CONVERTER CIRCUITS
00	TO-90	Ladder Network, 4-bits expandable to 12-bits
01	TO-86	Ladder Network, 5-bits expandable to 10-bits
01A	TO-86	Ladder Network, 5-bits expandable, 10-bit accuracy
02	TO-90	Ladder Network Kit, 4-bits expandable to 12-bits
41	TO-90	Binary-to-BCD Adapter Network
51	TO-90	Scale-factor Resistor Network
57	TO-86	Tantalum Resistor Ladder Network, 10-bit accuracy
62	TO-86	Tantalum Resistor Ladder Network, 8-bit
70	TO-90	Tantalum Resistor Ladder Network, 4-bit accuracy
71	TO-90	Tantalum Resistor Ladder Network, 8-bit accuracy
72	TO-90	Tantalum Resistor Ladder Network, 12-bit accuracy
81	TO-90	5-bit Ladder Network, Non-hermetic Seal
81A	TO-90	5-bit Ladder Network, Non-hermetic Seal, 10-bit accuracy
83	TO-90	4-bit Ladder Network, 25K, Non-hermetic Seal
84	TO-90	12-bit Ladder Network, 25K, Non-hermetic Seal
400	DIP	4-bit Moduline®, Hermetic Seal
410	DIP	8-bit Moduline®, Expandable
450	DIP	12-bit Moduline®, in Kit Form
500	DIP	10-bit Moduline®, Hermetic Seal
505	DIP	5-bit Moduline®, Non-hermetic Seal
1504	DIP	4-bit Moduline®, Non-hermetic Seal
1508	DIP	8-bit Moduline®, Non-hermetic Seal
1512	DIP	12-bit Moduline®, Non-hermetic Seal
001	TO-91	Ladder Switch, 4-bits expandable to 12-bits
024	TO-87	Buffer Amplifier, 4-bits expandable to 12-bits
036	TO-87	Ladder Switch, 5-bits expandable to 10-bits
037	TO-87	Buffer Amplifier, 5-bits expandable to 10-bits
074	TO-90	Dual Positive Buffer Switch
080	TO-90	Dual Positive Buffer Switch
146	TO-90	Ladder Switch, 10-bit accuracy
156	TO-90	Ladder Switch, 8-bit accuracy
		PNP/NPN PAIRS AND QUAD TRANSISTORS
005	TO-87	NPN Quad SEPT® Transistors
006	TO-87	PNP Quad SEPT® Transistors
007	TO-87	NPN/PNP Complementary Pair SEPT® Transistors
		QUAD POWER DRIVERS
131	TO-87	40 V Output Voltage, −55C to +125C
181	TO-116	40 V Output Voltage, 0C to +70C

DIGITAL-TO-ANALOG CONVERSION KITS

Type No.	Description
UK-1004	4-bits, −55C to +125C
UK-1005	5-bits, −55C to +125C
UK-1008	8-bits, −55C to +125C
UK-1011	10-bits, −55C to +125C
UK-1012	12-bits, −55C to +125C
UK-1020	10-bits, −55C to +100C
UK-1025	5-bits, −55C to +100C

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Classic

Motors and Gearmotors

Carter Motor ®

Available up to ⅓ hp. Gearmotors from 1 to 750 rpm, up to 13 in. lbs torque, continuous duty. Universal and DC shunt models, induction and variable speed types, base or flange mounted. Ball bearing, high quality die cast construction. Ideal for SCR motor controllers, pumps, la stirrers, machine drives. 3⅝" dia., 6⅛" long. Shaft, ⅝" dia., weigh 5 lbs. Ask for "Classic" catalog.

115 V. DC SHUNT MOTORS

4 lead reversible, self ventilated, totally enclosed available

Model	HP	RPM	List
CSA1840A	1/40	1800	$49.50
CSB1830A	1/30	1800	51.00
CSA3628A	1/20	3600	49.50
CSB3620A	1/20	3600	51.00
CSA5020A	1/20	5000	49.50
CSB5015A	1/15	5000	51.00

Other ratings and voltages from 12 V. to 115 V. DC available.

115 V. AC/DC UNIVERSAL MOTORS

2 lead — uni-directional ventilated only

Model	HP	RPM	Rot.	List
CUA3620A	1/20	3600	CCW	$43.00
CUB7510A	1/10	7500	CCW	45.00
CUB1007A	1/7	10000	CCW	45.00

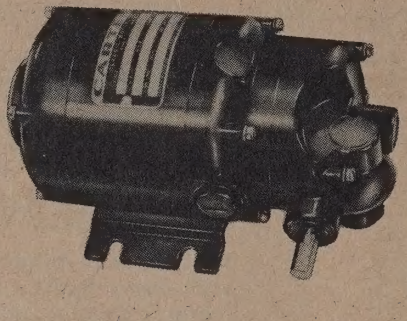
Other ratings and voltages from 12V. to 230 V. DC available.

115 V. CLASSIC PM DC MOTORS

2 lead reversible, base mount totally enclosed

Model	HP	RPM	List
CPA1840E	1/40	1800	$49.50
CPB1830E	1/30	1800	51.00
CPA3628E	1/28	3600	49.50
CPB3620E	1/20	3600	49.50

Other ratings and voltages from 12 V. to 115 V. DC available.



Any of the shunt or PM models listed are available for 12 to 115 volt DC. Universal types from 12 to 230 volts. Add $2.00 to list. Motors can be modified promptly at slight extra cost. Make Carter your specialty motor source.

115 V. "CLASSIC" PM DC GEARMOTORS

2 lead reversible, base mount totally enclosed

SINGLE REDUCTION				DOUBLE REDUCTION			
Model	Torque in. lbs.	RPM	List	Code	Torque in. lbs.	RPM	List
CPA066E3	6	60	$66.50	CPA0024E2	4	2	$75.00
CPA105E3	5	100	66.50	CPA017E2	7	10	75.00
CPA204E3	4	200	66.50	CPA036E2	6	30	75.00
SPA402E3	2.5	400	66.50	CPA056E2	6	50	75.00

115 V. DC SHUNT GEAR MOTORS

4 lead reversible — totally enclosed
3⅝" dia., 6⅛" L., Wt. 3 Lbs., ⅝" dia. Shaft

Model	in lbs.	RPM	List
CSA066E3	6	60	$66.50
CSA105E3	5	100	66.50
CSA302E3	2.5	300	66.50
CSA0057E2	7	5	75.00
CSA036E2	6	30	75.00

Other ratings and rotation available up to 500 RPM.

115 V. AC/DC UNIVERSAL GEAR MOTORS

2 lead — uni-directional
3⅝" dia., 6⅛" L., Wt. 4½ Lbs., ⅝" dia. Shaf

Model	Torque in. lbs.	RPM	Rot.	List
CUA203R3	3	200	CCW	$61.00
CUA302R3	2.5	300	CCW	61.00
CUA0051A2	1.0	5	CCW	69.50
CUA024A2	4	20	CCW	69.50
CUA054A2	4	50	CCW	69.50

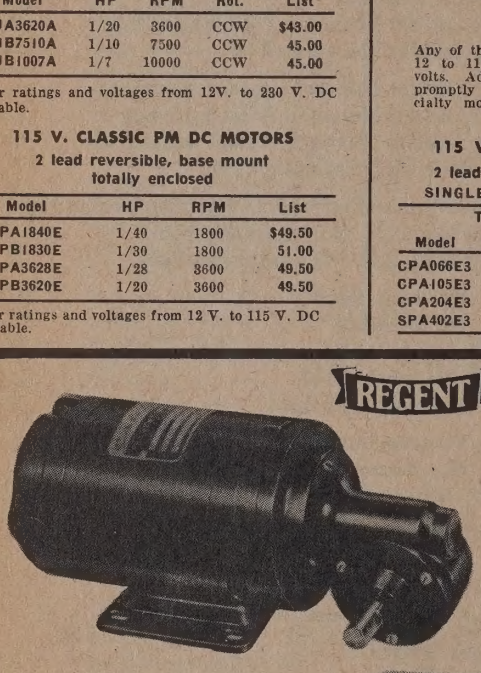
Other ratings and rotation available up to 750 RPM.

"CLASSIC" HEAVY DUTY GEARMOTO

Classic gearmotor for outputs up to 13 in. lb torque. Universal and DC Shunt Models. Hardene ground steel worms with laminated bakelite gea for long life, quiet operation. 3-5/16" dia., 7-3/8 long with 1/2" dia. shaft. Weight 5-1/2 lbs.

Model	Torque in lbs.	RPM	Rot.	List
115 v. DC Shunt 4 lead reversible				
CSA4512A5	12	45	Rev.	$82.00
CSA1805A5	5	180	Rev.	82.00
115 v. AC/DC Universal 2 lead				
CUA1312A5	12	130	CW	73.50
CUA504A5	4.5	500	CW	73.50

Other ratings and rotation available.



REGENT

Motors and Gearmotors

UP TO 22 IN. LBS. TORQUE

Universal and DC Shunt models. Hardened ground steel worm with laminated bakelite gear for long life, quiet operation. 3⅞" dia. 9⅜16" long with ½" dia. shaft. Weight 12 lbs.

GEARMOTORS	Model	Torque in. lbs.	RPM	Rot.	List
115 v. DC Shunt 4 lead reversible	MSB4520A5	20	45	Rev.	$105.00
115 v. DC Shunt 4 lead reversible	MSB1811A5	12	180	Rev.	105.00
115 v. AC/DC Universal 2 lead	MUB5008A5	8	500	CW	102.00
115 v. AC/DC Universal 2 lead	MUB2512A5	12.5	250	CW	102.00

NOTE: Above Classic and Regent models 5000 RPM armature speed or less can be supplied with PM DC Tach Generator mounted to frame for speed reference voltage. Ideal for SCR Feedback Motor Control Applications. Write for details.

115 V. DC SHUNT MOTORS

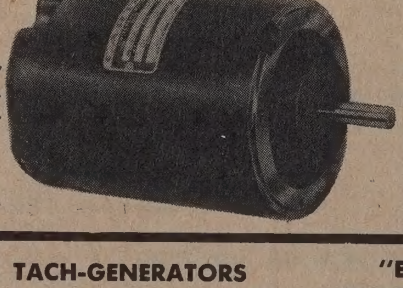
4 lead reversible

⅜" Dia. Shaft, 3⅞" Dia., Wt. 9¾ Lbs.

Face mount listed. Base mount available, same price. Totally enclosed.

Model	HP	RPM	List
MSB1815EF	1/15	1800	$73.00
MSB367EF	1/7	3600	73.00
MSC1812EF	1/12	1800	76.00
MSC366EF	1/6	3600	76.00
MSD188EF	1/8	1800	82.00
MSD364EF	1/4	3600	82.00

Other ratings and rotation available.

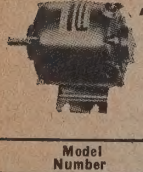


115 AC/DC UNIVERSAL MOTORS

3⅞" Dia., Wt. 9¾ Lbs., ⅜" Shaft Dia.

2 lead uni-directional. Ventilated only. Face mount. Base mount available, same price. Reversible available on order.

CLOCKWISE ROTATION				COUNTER CLOCKWISE			
Model	HP	RPM	List	Model	HP	RPM	List
MUB504RF	1/4	5000	$70.00	MUB504AF	1/4	5000	$70.00
MUB1002RF	1/2	10000	70.00	MUB1002AF	1/2	10000	70.00
MUB753RF	1/3	7500	70.00	MUB753AF	1/3	7500	70.00
MUC503RF	1/3	5000	73.00	MUC503AF	1/3	5000	73.00
MUC10058RF	5/8	10000	73.00	MUC10058AF	5/8	10000	73.00
MUD502RF	1/2	5000	79.00	MUD502AF	1/2	5000	79.00
MUD1001RF	1	10000	79.00	MUD1001AF	1	10000	79.00

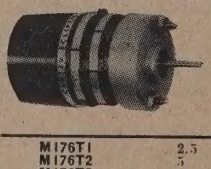


"CLASSIC" PM DC TACH-GENERATORS

A high output DC Tachometer-Generator for slow speed industrial and commercial purposes. Barium ferrite magnet. Couples to motor shaft and to meter for direct readings without belts or gears to step up speed. Requires no batteries, or external excitation. 2 lead reversible. Face or flange mount available. 5/16" dia. shaft. 1% linearity. Up to 15 watts capacity.

Model Number	DC Output per/1000	Mounting	Max. Speed RPM	List
CTA60AA	60 v.	base	5000	$78.00
CTA50AA	50 v.	base	6000	76.00
CTA25AA	25 v.	base	10000	74.00

Built-in capacitor filter assures ripple of less than 3%. Unfiltered models will average 5% or less AC ripple. Other voltages available.



"ECLIPTIC" TACHOMETER GENERATORS

Converts rotation rate into reference voltage for speed indication. Ideal for motor controllers and various industrial applications such as variable speed drives, textile machines, machine tools, etc. Couples direct to drive motor, requires no belts or gears. 2 lead, reversible. Linearity below 1%, 5 to 20 MA capacity. May be connected to a DC meter calibrated for RPM, FPM, GPH or other measurements. Size 1-3/8" x 2-1/4" plus shaft, .118 dia. 19/32" long.

M176T1	2.5	v. per 1000 RPM — 10,000	Max.	$51.00
M176T2	5	v. per 1000 RPM — 10,000	Max.	53.00
M176T3	12	v. per 1000 RPM — 4,000	Max.	56.00
M176T4	20	v. per 1000 RPM — 2,500	Max.	70.00
M176T5	1.25	v. per 1000 RPM — 10,000	Max.	51.00
M176T6	10	v. per 1000 RPM — 5,000	Max.	56.00
M176T7	7	v. per 1000 RPM — 6,000	Max.	56.00

Carter Motor

Carter Motor Company

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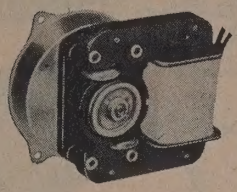
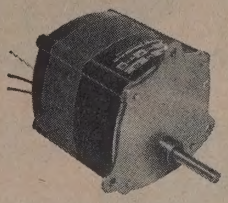
hurst HEAVY DUTY HYSTERESIS SYNCHRONOUS MOTORS

ES: PC-DA PC-SM
AR-DA AR-SM

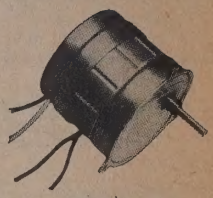
MODELS SM—DA



MODEL EA



MODEL GA



MODEL CA

W! Model HB "HONEYBEE" 1800 RPM 1/50 HP

- Video Recording • Tape Recording
- Data Handling • Instrumentation
- Turn Tables

Inverted Rotor Design For Reduced Flutter

CAPACITOR INCLUDED (REVERSIBLE)

ITITY	PRICE	QUANTITY	PRICE
	$65.00	25-49	$48.84
	62.00	50-99	45.39
4	57.50	100-249	43.24

SHAFT 1" x 5/16" DIA. SEALED BALL BEARINGS
TORQUE: 12 IN. OZ. START — 11 IN. OZ. PULL IN

ITITIES OVER 249, CONTACT FACTORY

L CA (REVERSIBLE, CAPACITOR INCL.) 100 IN. OZ. AT 1 RPM

NTITY	PRICE	AVAILABLE SPEEDS
		RPM: 1/3 — 1/2 — 1 — 1 1/2 — 2 —
	$13.76	2 1/2 — 3 — 4 — 5 — 6 — 8 —
24	12.39	10 — 12 — 15 — 16 — 20 —
49	11.77	24 — 25 — 30 — 32 — 33 1/3 —
99	11.19	40 — 48 — 50 — 60 — 64 —
-249	10.64	80 — 100 — 120 — 150 — 160 — 200 — 240 — 400 — 600 — 800 — 1000

ODEL EA (CW ROTATION ONLY) 150 IN. OZ. AT 1 RPM

TITY	PRICE	PRICE 3600 ONLY	AVAILABLE SPEEDS
	$10.29	$7.62	RPM: 1 — 2 — 4 —
	9.25	6.86	6 — 8 — 10 — 12
	8.79	6.52	20 — 30 — 60
	8.35	6.19	— 120 and 3600
249	7.93	5.89	(3600 3/32" Dia. Shaft)

L PC-DA (REVERSIBLE, CAPACITOR INCL.) 120 IN. OZ. AT 1 RPM

NTITY	PRICE	AVAILABLE SPEEDS
	$22.20	RPM: 1 — 2 — 4 — 6 — 8 — 10 —
24	19.98	12 — 20 — 30 — 60 — 120
49	18.98	
99	18.03	
-249	17.13	

■ 115 VAC 60 Hz—ALL SHAFTS 1" LONG (3/4" USABLE) x 3/16" DIA. FLATTED UNLESS OTHERWISE DESIGNATED

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

MODEL AR-SM (CW ROTATION ONLY) 40 IN. OZ. AT 1 RPM

QUANTITY	PRICE	AVAILABLE SPEEDS
1-9	$23.65	RPM: 1 — 4 — 6 — 10 — 30 — 60
10-24	21.29	
25-49	20.22	
50-99	19.21	
100-249	18.25	

MODEL DA (REVERSIBLE, CAPACITOR INCL.) 150 IN. OZ. AT 1 RPM

QUANTITY	PRICE	AVAILABLE SPEEDS
1-9	$16.06	RPM: 1 — 2 — 4 — 6 — 8 — 10 — 12 — 20 — 30 — 60 — 120
10-24	14.45	
25-49	13.73	
50-99	13.05	
100-249	12.40	

MODEL SM (CW ROTATION ONLY) 40 IN. OZ. AT 1 RPM

QUANTITY	PRICE	AVAILABLE SPEEDS
1-9	$13.51	RPM: 1/2 — 1 — 2 — 3 — 4 — 5 — 6 — 10 — 15 — 30 — 60
10-24	12.16	
25-49	11.55	
50-99	10.98	
100-249	10.43	

MODEL PC-SM (CW ROTATION ONLY) 40 IN. OZ. AT 1 RPM

QUANTITY	PRICE	AVAILABLE SPEEDS
1-9	$19.65	RPM: 1/2 — 1 — 2 — 3 — 4 — 5 — 6 — 10 — 15 — 30 — 60
10-24	17.68	
25-49	16.80	
50-99	15.95	
100-249	15.16	

MODEL AR-DA (REVERSIBLE, CAPACITOR INCL.) 100 IN. OZ. AT 1 RPM

QUANTITY	PRICE	AVAILABLE SPEEDS
1-9	$26.18	RPM: 1 — 4 — 6 — 10 — 30 — 60
10-24	23.56	
25-49	22.39	
50-99	21.26	
100-249	20.20	

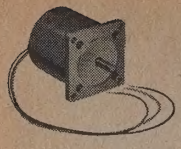
MODEL GA (REVERSIBLE, CAPACITOR INCL.) 600 IN. OZ. AT 1 RPM

ates .75 Ea.	1 RPM THRU 10 RPM	18 RPM AND 30 RPM	60 RPM THRU 300 RPM	3600 RPM	
NTITY	PRICE	PRICE	PRICE	PRICE	AVAILABLE SPEEDS
	$33.55	$31.52	$29.10	$22.44	RPM: 1 — 2 — 3 — 4 — 5 — 6 — 10 — 18 — 30 — 60 — 100 — 120 — 150 — 180 — 225 — 300 — 3600
24	31.88	29.94	27.64	21.32	
49	30.21	28.37	26.19	20.20	
74	28.53	26.80	24.74	19.07	
99	26.86	25.22	23.29	17.95	
-249	23.51	22.08	20.37	15.71	

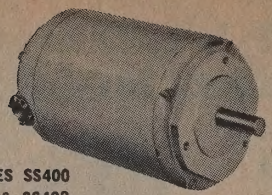
MODEL GA SHAFTS 1/4" DIA, 1" LONG EXCEPT 3600 RPM (1/8" DIA.)

NTITIES OVER 249 PIECES AND FOR OTHER SPEEDS AND MODELS, CONTACT FACTORY

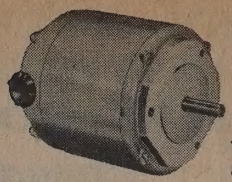
SLO-SYN



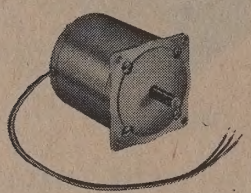
TYPE SS25



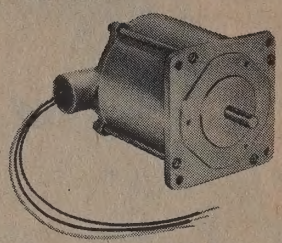
TYPES SS400 & SS402



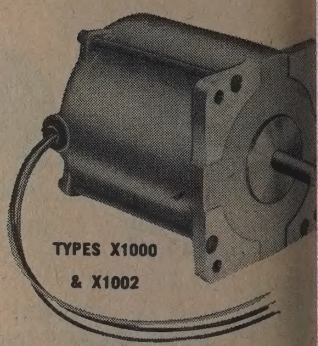
TYPES SS150 & SS152



TYPES HS50 & HS52



TYPES X250 & X252



TYPES X1000 & X1002

A-C OPERATION — Standard SLO-SYN Synchronous/Stepping Motors are permanent magnet a-c motors having extremely rapid starting, stopping and reversing characteristics and a slow basic shaft speed of 72 rpm synchronous with a line frequency of 60 hertz. Three-lead types need only a single-pole, three-position switch for complete forward, reverse and "off" control. No excessive inrush current when energized because starting and operating current are nearly identical. Can be completely stalled without overheating and with no harmful effects on components. Starts or stops in less than 5° of shaft rotation; no need for mechanical or electrical braking. When used with an auxiliary high speed motor, the SLO-SYN motor can remain coupled to the load and safely overdriven. Phase shifting resistor and capacitor must be used when operating from a single-phase source but not from two-phase. All standard motors are rated for continuous duty at maximum ambient temperature of 40°C. Types SS150 and SS152 use Class A insulation; all others have Class B.

D-C STEPPING — When used for phase-switched d-c stepping, the motors can be connected to provide either 100 or 200 steps per revolution. Accuracy of the steps is ±.09° no cumulative. Three-lead types require a center-tapped d-c su ply and single-pole, double-throw switching; four-lead typ require a single-ended power supply and single pole, doubl throw switching. Bifilar motors can also be used with tra sistorized switching circuits. With a suitable control poten ometer instead of switches, a SLO-SYN motor can be mad to rotate steplessly, permitting extremely accurate positionin All motors have lubricated-for-life bearings.

PRECISION STEPPING

For phase-switched d-c stepping, types HS25, HS50, HS5 and HS50L make 200 steps per shaft revolution. Each 1. step is accurate within ±3% (.06°) noncumulative. May operated at speeds greater than 500 steps per second if acc erating and decelerating circuits are used. With proper c cuitry, the motors may be operated at speeds of 1000 steps p second or higher without missing any steps.

200 RPM

Types TS25, TS50 and TS52 are similar to standard mod but operate at synchronous speeds of 200 rpm and take 36 72 steps per revolution when used for d-c stepping.

RATINGS AND SPECIFICATIONS FOR A-C APPLICATIONS

TYPE	MAXIMUM AMPERES	TORQUE (Oz-In)	MAXIMUM MOMENT OF INERTIA OF A RIGIDLY ATTACHED LOAD (Lb-In²)	PHASE-SHIFTING COMPONENTS*				APPRO MOTOR (POU
				RESISTOR	RESISTOR PART NUMBER	CAPACITOR	CAPACITOR PART NUMBER	NET
120 Volts, 50/60 hertz, 1 Phase, 200 RPM at 60 hertz								
TS25	0.2	25	0.12	300 ohm, ±5%, 25 watt	R-TS25/50	1.5 mfd ±6%, 330 VAC	C-TS25	2
TS50	0.3	50	0.25	300 ohm, ±5%, 25 watt	R-TS50	3.75 mfd ±6%, 330 VAC	C-SS150/TS50	4¾
120 volts, 50/60 hertz, 1 phase, 72 RPM at 60 hertz								
SS25§	0.1	25	0.15	500 ohm ±5%, 5 watt	R-SS25	0.75 mfd ±6%, 330 VAC	C-SS25	1¼
SS50§	0.3	50	0.5	250 ohm ±5%, 25 watt	R-SS50/150	2.6 mfd ±6%, 330 VAC	C-SS50	3
SS50M†§	0.3	50	0.5	250 ohm ±5%, 25 watt	R-SS50M/150M	2.6 mfd ±6%, 330 VAC	C-SS50M	3
SS150	0.4	150	1.5	250 ohm ±5%, 25 watt	R-SS50/150	3.75 mfd ±6%, 330 VAC	C-SS150/TS50	6½
SS150M†	0.4	150	1.5	250 ohm ±5%, 25 watt	R-SS50M/150M	3.75 mfd ±6%, 330 VAC	C-SS150M	6½
SS250	0.6	250	3	150 ohm ±5%, 50 watt	R-SS250/400	6.5 mfd ±6%, 330 VAC	C-SS250/400	6½
SS250M†	0.6	250	3	150 ohm ±5%, 50 watt	R-SS250M	6.5 mfd ±6%, 330 VAC	C-SS250M	6½
X250‡	0.6	250	3	150 ohm ±5%, 50 watt	R-SS250/400	6.5 mfd ±6%, 330 VAC	C-SS250/400	7¾
SS400	0.6	400	4.5	150 ohm ±5%, 50 watt	R-SS250/400	6.5 mfd ±6%, 330 VAC	C-SS250/400	12¼
X1000‡	3.0	1000	9	65 ohm ±5%, 160 watt	R-X1000	30 mfd ±6%, 330 VAC	C-X1000	31
X1500	3.0	1500	12	50 ohm ±5%, 375 watt	R-X1500	30 mfd ±5%, 330 VAC	C-X1000/1500	38
SS1800	4.0	1800	16	40 ohm ±5%, 375 watt	R-SS1800	60 mfd ±6%, 330 VAC	C-SS1800	45
240 Volts, 50/60 hertz, 1 Phase, 200 RPM at 60 hertz								
TS52	0.2	50	0.25	1200 ohm ±5%, 25 watt	R-SS152/TS52	1.0 mfd ±6%, 660 VAC	C-SS152/TS52	4¾
240 Volts, 50/60 hertz, 1 Phase, 72 RPM at 60 hertz								
SS52§	0.2	50	0.5	1000 ohm ±5%, 10 watt	R-SS52	0.67 mfd ±6%, 660 VAC	C-SS52	3
SS152	0.2	150	1.5	1200 ohm ±5%, 25 watt	R-SS152/TS52	1.0 mfd ±6%, 660 VAC	C-SS152/TS52	6½
SS252	0.3	250	3	500 ohm ±5%, 50 watt	R-SS252/402	1.75 mfd ±6%, 660 VAC	C-SS252/402	6½
X252‡	0.3	250	3	500 ohm ±5%, 50 watt	R-SS252/402	1.75 mfd ±6%, 660 VAC	C-SS252/402	7¾
SS402	0.3	400	4.5	500 ohm ±5%, 50 watt	R-SS252/402	1.75 mfd ±6%, 660 VAC	C-SS252/402	12¼
X1002‡§	1.5	1000	9	250 ohm ±5%, 200 watt	R-X1002	8 mfd ±6%, 660 VAC	C-X1002	31
SS1802	2.0	1800	16	130 ohm ±5%, 320 watt	R-SS1802	15 mfd ±6%, 660 VAC	C-SS1802	45

*External resistor and capacitor must be ordered separately. †Militarized. ‡Explosion-proof. §For 60 hertz. Other phase-shifting components required for 50

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chronous / Stepping Motors FOR A-C CONSTANT SPEED • FOR D-C STEPPING

THREE-LEAD SLO-SYN SYNCHRONOUS/STEPPING MOTORS — RATINGS FOR STEPPING APPLICATIONS

TYPE	TS25	TS50	TS52	SS25	SS50 SS50M	SS52	SS150 SS150M	SS152	SS250 SS250M X250	SS252 X252	SS400	SS402	X1000	X1002	SS1800	SS1802
LTS	60	50	100	80	50	100	35	70	32	64	30	60	11.5	23	9.5	19
ERES INDING	0.15	0.25	0.13	0.07	0.15	0.08	0.35	0.18	0.50	0.25	0.60	0.30	3.2	1.6	4.7	2.4

R-LEAD SLO-SYN SYNCHRONOUS/STEPPING MOTORS RATINGS FOR STEPPING APPLICATIONS

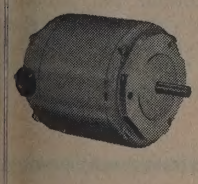
TYPES	D-C INPUT VOLTS PER WINDING	AMPERES PER WINDING
25-1014	16	0.35
25-1012	40	0.14
25-1013	80	0.07
50-1012	2.5	3.1
50-1011	10	0.75
50-1002	25	0.30
50-1014	50	0.15
150-1007	2	6.3
150-1018	7	1.75
150-1015	17.5	0.70
150-1025	35	0.35
250-1010	3	5.3
250-1009	8	2.0
250-1008	16	1.0
250-1007	32	0.50
400-1005	15	1.2
400-1007	30	0.6
000-1005	11.5	3.2
000-1008	23	1.6
1800-1004	9.5	4.7
1800-1005	19	2.4

SLO-SYN PRECISION STEPPING MOTORS RATINGS FOR DC STEPPING APPLICATIONS

TYPES	DC VOLTS	AMPERES PER WINDING
HS25	5.4	1.5
HS50	3	4
HS50L	4.5	3.5

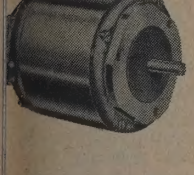
BIFILAR SLO-SYN SYNCHRONOUS/STEPPING MOTORS RATINGS FOR STEPPING APPLICATIONS

TYPE	D-C VOLTS	AMPERES PER WINDING
TS50-1001	3	4.0
SS25-1002	5.9	0.88
SS25-1001	11.8	0.44
SS25-1011	23.6	0.22
SS50-1010	2	3.3
SS50-1009	5.5	1.3
SS50-1008	8	0.85
SS50-1001	14	0.53
SS50-1007	35	0.21
SS150-1023	1.4	8.5
SS150-1009	2.5	4.0
SS150-1010	10	1.25
SS150-1017	25	0.5
SS250-1006	2.5	5.0
SS250-1027	4.6	3.1
SS250-1002	9	1.55
SS250-1004	22.5	0.61
X250-1003	4.6	3.1
X250-1002	9	1.55
SS400-1021	5.3	3.4
SS400-1002	8.3	2.2
SS400-1006	21.2	0.85
X1000-1002	10	3.6
X1000-1007	25.4	1.42
SS1800-1007	11.5	3.9
SS1800-1002	14.4	3.1
SS1800-1006	23	2.0



BIFILAR

Used for d-c stepping where use of push-pull circuitry and center-tapped power supply is not possible or where increased torque at high stepping speeds is required.



SPECIAL ENVIRONMENT

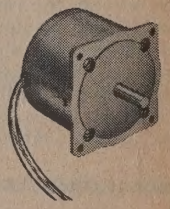
High Vacuum types for vacuums to 10^{-6} Torr; High Temperature types for temperatures to 130°C; High Radiation types withstand dosage of 3,000 megarads. All available from 50 to 1800 oz-in; High Vacuum 25 oz-in also.

PLANETARY GEAR

Basic 50 and 150 oz-in types and type X250 available with planetary gear assemblies in speeds of 16.6, 3.32, 0.665, 0.133 or 0.027 rpm; 16.6 rpm available in other 250 and on 400 oz-in types.

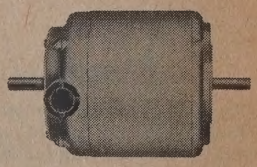
FOUR-LEAD

Designed for d-c stepping to provide the flexibility needed for use with equipment requiring isolated windings with no common connection.



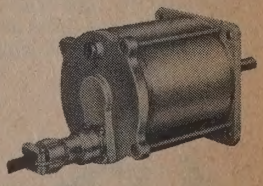
DOUBLE END

Three-lead, bifilar and four-lead types with output shaft at each end of motor available in all listed torque ratings. 50, 150 and 250 oz-in types available also with planetary gear assemblies in 16.6, 3.32, 0.665, 0.133 or 0.027 rpm speeds.



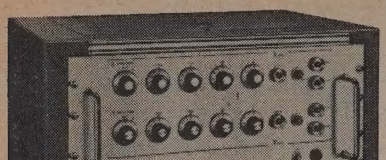
VISCOUS DAMPED

Type HS50D precision stepping motor has a unique fluid system resulting in a step function approaching critical damping. Speed of response and running characteristics are essentially unaffected by the silicone viscous damping fluid. Possesses characteristics of types described under PRECISION STEPPING on facing page.

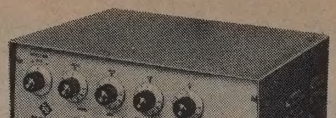


IN SECTIONS 2100, 4000 AND 5600

SLO-SYN® *Preset Indexers*



TWO-AXIS
TYPE 2SP1800-4



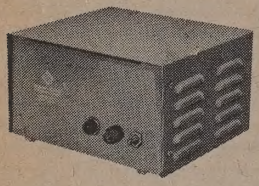
SINGLE-AXIS
TYPE SP1800B-4

ABSOLUTE
TYPE SA1800-5

Used to control indexing of SLO-SYN bifila motors. The index angle, or position, can b preset by dial setting on the control pane the number of 1.8° steps to be driven. Hav provision for actuating any external equip ment needed to perform related operations Index, jog and free run can be initiated man ually from the control panel or from an ex ternal switch. Can be made to cycle auto matically with proper external switching Single- and two-axis models are availabl with counting ranges to 99,999 steps. Two axis models provide independent control o two SLO-SYN motors. Speed adjustabl from 4 steps/second up to maximum possibl with motor used. Optional backlash take-u circuit.

ABSOLUTE PRESET INDEXERS permi either absolute or incremental positionin modes. In the absolute positioning mode, th number set on the controls determines th final position of the motor relative to th starting, or "zero" point. When incrementa positioning is used, the motor will move th preselected number of steps each time th INDEX button is pressed. Optional backlas take-up circuit.

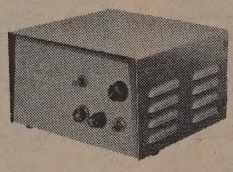
SLO-SYN® *Translator*



TYPE ST1800B

Pulse-to-step converter designed for use with appropriate bifilar SLO-SYN motors converted for incremental stepping. Convert low level signal pulses or square waves into the correct switching sequence needed to step a SLO-SYN motor at 200 steps/revolution (1.8° per step). Input is 105-125 volts a-c, 1 ampere. Signal input impedance is 500 ohms. Used for programmed positioning, indexing and indicating operations.

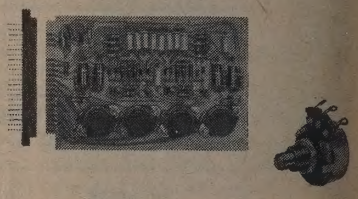
SLO-SYN® *Adjustable Speed Drive*



TYPE ST1800BV

Essentially, SLO-SYN Adjustable Speed Drive type ST1800BV is a translator which includes a built-in oscillator to supply the triggering signals. Oscillator frequency can be adjusted to vary the speed from 4 steps/second up to the maximum permissible with the motor used. Direction of rotation can be controlled either from the front panel or from a remotely located switch.

SLO-SYN *Translator Module*



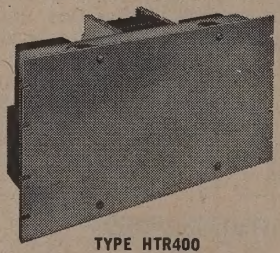
TYPE STM1800V

Plug-in circuit boards with logic capa bilities for stepping a SLO-SYN moto in 1.8° increments. Type STM1800 is basic translator which will provide b directional motor operation. Typ STM1800V is similar but includes built-in oscillator which can be adjuste to drive the motor at speeds from steps/second up to maximum at whic the motor will drive the load.

SLO-SYN® *High Speed Drives*

Translator

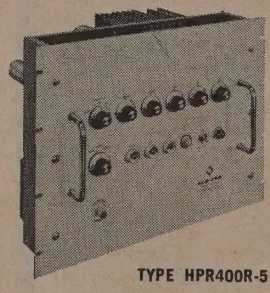
Drive SLO-SYN Precision Stepping Motors up to 2000 steps per second without losing any steps. Triggering the translator circuits is an internal oscillator which can supply a variable frequency range adjustable from 50 to 2000 steps per second. Triggering pulses can be supplied by tape readers, computers, oscillators, pulse generators and other signal producing equipment.



TYPE HTR400

Preset Indexer

Drive SLO-SYN Precision Stepping Motors in indexing and other positioning operations. Acceleration and deceleration circuits permit driving motors up to 2000 steps per second without missing any steps. Decade counter controls on front panel allow the operator to select any desired positioning increment. Optional backlash take-up circuit.



TYPE HPR400R-5

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SEE OTHER SUPERIOR ELECTRIC PRODUCT PAGES IN SECTIONS 2100, 4000 AND 5600

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INVENTORY

While most distributors maintain a large and varied stock, they do not represent that they stock all manufacturers' products shown in this MASTER catalog.

ORDERING

It is important, when ordering, to mention specifically the edition and page number, also the catalog number of each item. This will avoid possible confusion and delay.

PRICES

INQUIRE ABOUT LATEST PRICES AND DELIVERY. Prices in this MASTER should not be considered as final.

DISCOUNTS

Trade discounts apply in most cases where LIST PRICES are shown.

AUTOTRON

Transistorized A725 ON/OFF Control A750 and A750DA Timing Controls

AUTOTRON, INC., Danville, Ill. 61832

Features of A725, A750 and A750DA

One connection changes from LIGHT- to DARK-energized operation (or vice versa).

5.8, 4.7, 3.3, 2.5, 2.2 and 1.1 Light Source Voltages makes available minimum suitable voltage for maximum lamp life and maximum speed of sensing cell response.

Rugged, 5-amp DPDT Plug-in Relay.
- a. **Plug-in mounting** permits replacement in seconds without special skill or tools
- b. **Transparent enclosure** protects against dust, physical injury and tampering.

Rectified output current for positive and QUIET operation of control relay.

Transistors protected from transient voltages.

Cad Cells are exceptionally well shielded from extraneous light.

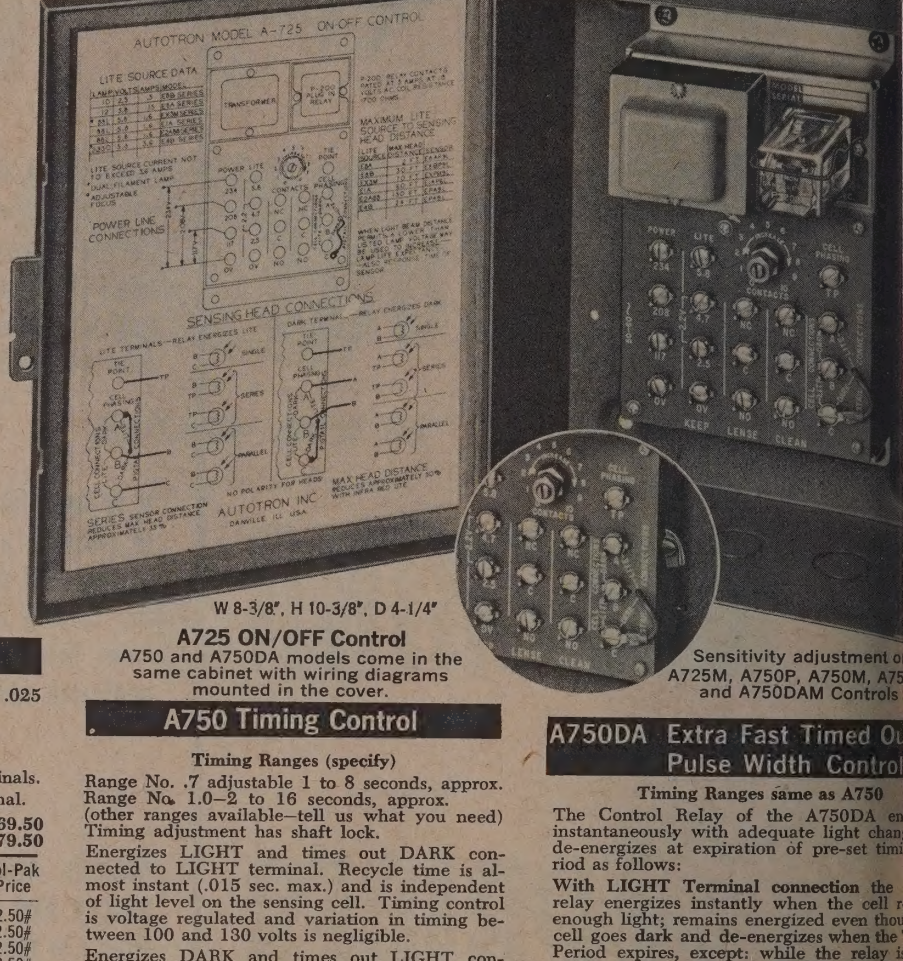
All circuit components are securely mounted on a modern circuit board.

All contacts of the DPDT Relay wired to large, screw type terminals.

Operate at ambient temperatures to 115°F.

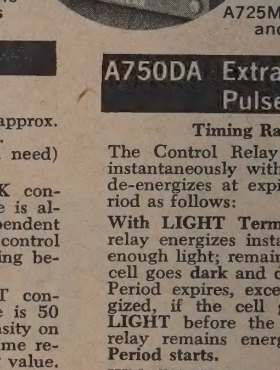
In JIC enclosures at $12.50 extra.

Operate from 234, 208 and 117 V, 50-60 c.



W 8-3/8", H 10-3/8", D 4-1/4"

A725 ON/OFF Control
A750 and A750DA models come in the same cabinet with wiring diagrams mounted in the cover.



Sensitivity adjustment o
A725M, A750P, A750M, A75
and A750DAM Controls

A725 ON/OFF Control

FAST ACTING – .025 sec. light time and .025 sec. dark time minimum.

SENSITIVE – Adjustment has shaft lock.

Power Consumption, 25 VA.

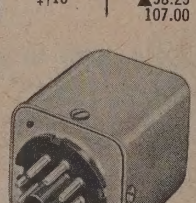
Energizes LIGHT connected to LIGHT terminals.

Energized DARK connected to DARK terminal.

A725 ON/OFF Control less heads.....$69.50
■A725M ON/OFF Control less heads..... 79.50

Control-Pak Numbers Control-Sensor-Light Source	Max. Feet betw. heads	Control-Pak Net Price
A725-E8AAP10LC-E8AC	2	$102.50#
A725-E8AP10LC-E8AC	2	102.50#
A725-E8BAP10LC-E8BAC	10	102.50#
A725-E8BP10LC-E8BC	20	102.50#
●A725-E8ZP10-E8Z10	20	159.50
■A725M-E8BP5AC-E8BC	20	127.50
■●A725M-E8ZP5A-E8Z10	20	184.50
A725-EXPM10LC-EX3ME	50	109.50
A725-E1AP10LC-E1AE	45	104.50
A725-EPB10LC-E3BE	100	109.50
A725-EPB10LC-E4CE	20	127.50
A725-ECP10LC-ECC	2	102.50
A725-EAP12G-ELG	3 in.	93.00
A725-PF10LC-LFE	5	157.50
A725-ELA10TH	‡†10	▲98.25
A725-A700EH-7C		107.00

A870 Solid State AC Switch



Replaces plug-in relay to convert all models of A725, A750 and A750DA series for solid state operation **from 117 VAC power supply ONLY.** Wiring diagram included with each switch.

Output: 117 VAC; 400 watt, 3.4 amperes maximum load, 100 milliamperes minimum.

Ambient Temperature: 115° maximum.

Module temperature increases with load current. At 3 amp. load current, case temperature is normally 130° max.

A870 Solid State AC Switch including Jumper Wires and Fuse Holder with Fuse.....**$52.50**

A870 Solid State Switch can also be furnished for other applications. Information on request.

A750 Timing Control

Timing Ranges (specify)

Range No. .7 adjustable 1 to 8 seconds, approx.
Range No. 1.0–2 to 16 seconds, approx.
(other ranges available–tell us what you need)
Timing adjustment has shaft lock.

Energizes LIGHT and times out DARK connected to LIGHT terminal. Recycle time is almost instant (.015 sec. max.) and is independent of light level on the sensing cell. Timing control is voltage regulated and variation in timing between 100 and 130 volts is negligible.

Energizes DARK and times out LIGHT connected to DARK terminal. Recycle time is 50 milliseconds min. depending on light intensity on the sensing cell. For minimum recycle time reduce light intensity to minimum operating value.

Power consumption, 25 VA.

A750 Timing Control less heads $88.00
■A750M Timing Control less heads..... 98.00

Control-Pak Numbers Control-Sensor-Light Source	Max. Feet betw. heads	Control-Pak Net Price
A750-E8AAP10LC-E8AC	1	$121.00#
A750-E8AP10LC-E8AC	1	121.00#
A750-E8BAP10LC-E8BAC	7.5	121.00#
A750-E8BP10LC-E8BC	15	121.00#
●A750-E8ZP10-E8Z10	15	178.00
■A750M-E8BP5AC-E8BC	15	146.00
●■A750M-E8ZP5A-E8Z10	15	203.00
A750-EXPM10LC-EX3ME	35	128.00
A750-E1AP10LC-E1AE	30	123.00
A750-EPB10LC-E3BE	75	128.00
A750-EPB10LC-E4CE	12	146.00
A750-ECP10LC-ECC	1	121.00
A750-EAP12G-ELG	1.5 in.	111.50
A750-PF10LC-LFE	2.5	176.00
□A750P-ELA10TH	†‡6	▲126.75
A750-A700EH-7C		125.50

■The suffix "M" in A725M, A750M, and A750DAM identifies extremely sensitive controls with sensitivity adjustment that operate with very short light change. The "M" type controls have been developed for operation by photo sensors that have the "5A Feature" described on the opposite page. This combination is used for scanning register marks, for sensing fast moving objects and other applications where light change is short. Sensors with the 5A Feature are also used where the sensing head is exposed to high temperature.

A750DA Extra Fast Timed Ou Pulse Width Control

Timing Ranges same as A750

The Control Relay of the A750DA en instantaneously with adequate light chan de-energizes at expiration of pre-set timi riod as follows:

With LIGHT Terminal connection the relay energizes instantly when the cell r enough light; remains energized even thou cell goes dark and de-energizes when the Period expires, except: while the relay is gized, if the cell goes **DARK and then LIGHT** before the Timing Period expir relay remains energized **and a NEW Period starts.**

With DARK terminal connection, DARK cell produces the same relay action as does in the above.

Timing and Sensitivity Adjustments are cabinet.
Adjustable time delay repeat accuracy 1% Delay adjustment has shaft lock.

Power consumption, 25 VA.

A750DA Timing Control less heads.....$
■A750DAM Timing Control less heads..

Control-Pak Numbers Control-Sensor-Light Source	Max. Feet betw. heads	Con Ne
A750DA-E8AAP10LC-E8AC	2	$
A750DA-E8AP10LC-E8AC	2	
A750DA-E8BAP10LC-E8BAC	10	
A750DA-E8BP10LC-E8BC	20	
●A750DA-E8ZP10-E8Z10	20	
■A750DAM-E8BP5AC-E8BC	20	
●■A750DAM-E8ZP5A-E8Z10	20	
A750DA-EXPM10LC-EX3ME	50	
A750DA-E1AP10LC-E1AE	45	
A750DA-EPB10LC-E3BE	100	
A750DA-EPB10LC-E4CE	20	
A750DA-ECP10LC-ECC	2	
A750DA-EAP12G-ELG	3 in.	
A750DA-PF10LC-LFE	5	
A750DA-ELA10TH	‡†10	▲

● E8ZP10, E8ZP5A and E8Z10 H are UL listed explosion proof but control is not. Information on explo proof enclosures furnished on requ

†Distance between Scanner Lens and Reflector
‡When used with No. P380 Retro-Reflector
▲No. P380 Retro-Reflector, 3" diameter, $1.50 add
□A750P has sensitivity adjustment with shaft lock.

All Sensors and Light Sources listed in these tables are illustrated and described on the opposite page.

Net

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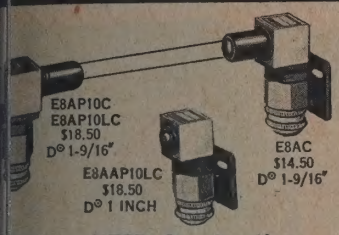
Remote Sensing and Light Source Heads
cluding UL listed, Fiber Optic and Retro-reflective.

AUTOTRON

E8AP/E8A Remote Heads



E8A and E8B Construction

s are machined from aluminum. Lenses nd and polished. Lens assemblies are moved without dismounting to provide lity for inspection or replacement of cell

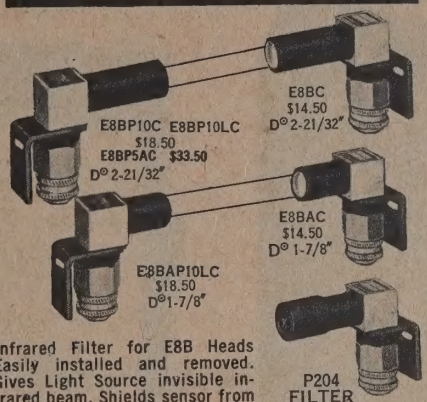
an be turned to any position in the g brackets. Overall height, including e 2¼″; including cord grip, approx. 2½″; idth, including bracket, 15/16″. Dimen- agrams on request.

5A Feature for Speed Sensing and Temperatures.

g Heads with the **5A Feature** rise in 4 seconds and decay in 60 microseconds. nsing cell withstands temperatures up)°F. When required, practically any TRON photo sensing head can be fur- with the 5A Feature at extra cost.

s with the 5A Feature are designed for th A725M, A750M and A750 DAM ed on the facing page.

E8BP/E8B Remote Heads

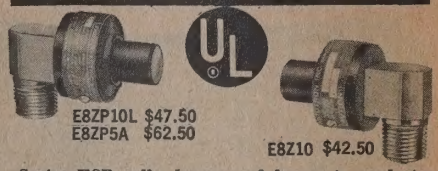


Infrared Filter for E8B Heads Easily installed and removed. Gives Light Source invisible infrared beam. Shields sensor from ambient fluorescent light. Reduces max. distance about 50%

EBP10LC-EBC Subminiature Heads

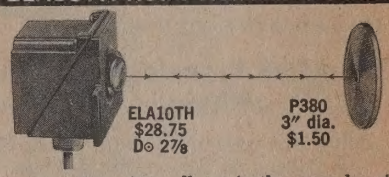
Each head is ¾″ diameter by 2½″ long; equipped with 6-foot cord potted to the head, equipped with ¾ NPT fitting for connection to control. Lamp rating; .38 amps at 2.5 volts. Life expectancy, 7,500 hours. Cell and lamp is easily replaceable.

UL listed E8Z Series Heads



Series E8B cells, lamps and lenses in explosion proof housings, for use in hazardous locations. Underwriters' Laboratories listing: Class I, Groups C and D; Class II, Groups E, F, and G. E8Z10 rated 0.25 w, 2.5 v; E8ZP10L rated 0.125 va. maximum, 40 v. maximum; E8ZP5A rated 0.250 va maximum, 10 v, dc maximum. Mounting threaded for ½-14 NPT. Potted leads, 24″ long. Overall size: Approx. 2 15/16″ long; 2″ high, 1 9/16″ wide.

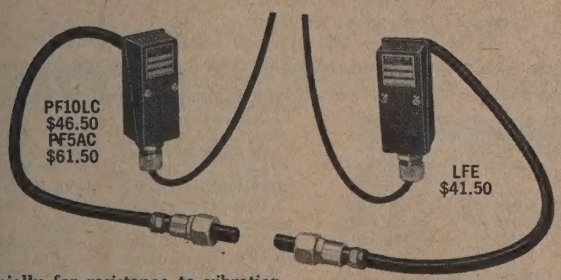
ELA10TH Retro-Reflective Sensor



Lamp and sensing cell are in the same housing. Light projected through the lens strikes a retro-reflective surface and returns through the same lens to the sensing cell. The retro-reflective surface may be tilted up to 15° from perpendicular to the light path.

Gasket-sealed, cast aluminum case with 6-foot multi-conductor cable. Slots in mounting flanges are 1″ long on 3 7/16″ centers. Overall width 3 15/16″, height 2 13/16″.

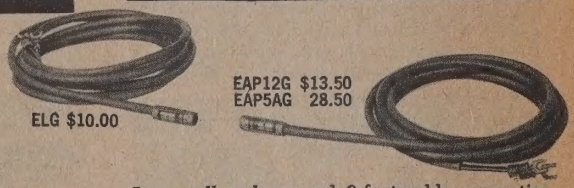
PF10LC-LFE Fiber Optic Remote Heads.



d especially for resistance to vibration as simplicity of application and align- hard-to-get-at places. The Fiber Optic ay be bent in any direction with curves dius or more.

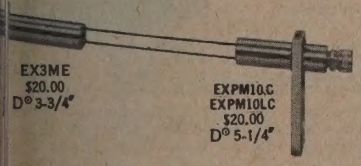
asing head or light source has a gasket ase housing the lamp or cell. The lens assembled to a Fiber Optic Cable, 24″ ch is connected to the housing. A 6-foot nstalled cable connects the lamp or cell to the control. The heads are equipped with infrared filters for screening out fluorescent light. The lamp is rated .38 amperes at 2.5 volts. Life expectancy is 7,500 hours.

EAP12G-ELG Assemblies



Lens, cell or lamp and 6-foot cable connection are potted in a tube, 9/32″ diameter by 1″ long. Potting for protection against application conditions and mechanical injury makes the assembly permanent. In case of failure the entire assembly must be replaced. Lamp rating; .38 amps. at 2.5 volts. Life expectancy, 7,500 hours.

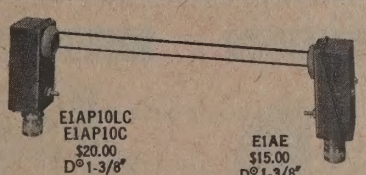
XPM/EX3M Remote Heads



Adjustable Focus Light Source has light djustable from focal size of ⅛″ x ¼″ at length to 7/16″ x 1″ focal size at 6″ ngth. Also adjustable to straight light No. 88, 1.6 ampere lamp is housed with neter lens in brass tube mounted in alu- bracket. Height 4¾″; width 1½″.

C Sensing Head has cad cell housed with neter lens in brass tube mounted in alu- bracket. Height, 4¾″; width, 1½″.

E1AP/E1A Remote Heads

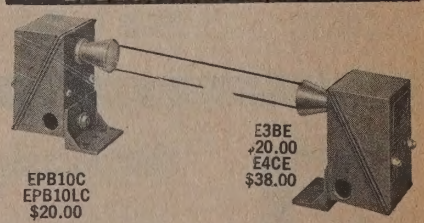


Series E1A heads have ¾″ diameter lenses mounted in flexible silicon rubber. Gasket sealed aluminum cases are tapped for ½″ conduit. May be adjusted with rigidly positioned on ½″ pipe or conduit with lock nut. Case easily opened for inspection of lamp or cell with mounting undisturbed. Depth of case in direction of light beam, 1⅜″; width, 1-7/16″; height 3⅝″.

36-page Catalog including 51 application diagrams mailed promptly on request.

In the illustrations and in the Control-Paks photo sensors and light sources are shown in matched pairs for simplicity of arrangement. Any sensing head can be used with any light source if the light source provides enough light to operate the sensor.

EPB10C-E3BE and E4CE



Each above unit has 1½ inch diameter lens in an aluminum lens holder mounted in a gasket sealed cast aluminum case with adjustable mounting bracket. Case is tapped for ¾″ conduit. Weight 3½ lbs. Depth 5 11/16″, Width 4″, Height 5¼″.

E3BE has No. 88L lamp, rated 1.6 amp. at 5.8 v. Focusing adjustment provides ½x⅛″ focal size at 12″ focal length; ⅞x¼″ focal size at 24″ and 1¼x⅜″ focal size at 36″ focal length.

E4CE has No. 2330B prefocused two-filament lamp rated 3.6 amps. at 5.8 v. The two filaments maintain light source continuity; when one fails a built-in relay switches on the other filament and a signal lamp; also operates SPDT contacts which may be used for remote warning control. The prefocused lamp is replaceable with minimum change in light beam. Extra low voltage connection for prolonged life.

AUTOTRON

A766 Photo-Control with Solid State Switching
A741B High-Speed Counting Eye

A766 - W 8-3/4", H 10-3/8", D 4-1/4"

A766 Transistorized Photo Control with Solid State Switching

A766 Photoelectric Control uses Solid State Switching instead of conventional relays, thereby avoiding weaknesses inherent with mechanical contactors.

Features

24 VDC Fused Output, 30 watt max.—20-ohm load min.

LIGHT- or DARK-actuated—a single connection adjusts phasing.

FAST ACTING—.04 second DARK time; .02 second LIGHT time.

Sensitivity Adjustment with shaft lock.

Transistors are protected from transient voltage.

Choice of 5.8, 4.7, 3.3, 2.5, 2.2 and 1.1 Light Source Voltage provides optimum operating voltage for prolonged lamp life and increased speed of sensing cell response.

All circuit components are securely mounted on printed circuit board.

Operates at ambient temperatures up to 115°F.

Furnished in JIC enclosures at $12.50 extra.

Power consumption, 45 watts, maximum.

Operates from 234, 208, and 117 V, 50-60 C.

A766 Control without pick-up.....$88.50

Control-Pak Numbers Control-Sensor-Light Source	Max. Feet betw. heads	Control-Pak Net Prices
A766-E8AP10LC-E8AC	2 ft.	$121.50#
A766-E8BP10LC-E8BC	20 ft.	121.50#
●A766-E8ZP10-E8Z10	20 ft.	178.50
A766-EXPM9LC-EX3ME	50 ft.	128.50
A766-E1AP10LC-E1AE	45 ft.	123.50
A766-EPB10LC-E3BE	100 ft.	128.50
A766-EPB10LC-E4CE	20 ft.	146.50
Reflective Sensors		
A766-ELA10TH	‡†10 ft.	▲117.25
A766-E8LP12G*	3 in.	117.25
A766-E8S12G*	3 in.	117.25
A766-E8S12G-6A*	fl 3¼ in.	120.75
A766-E8S12G-4A*	fl ⅞ in.	120.75

*Described on page 3
†Distance between Scanner Lens and Reflector
‡When used with No. P380 Retro-Reflector
▲No. P380 Retro-Reflector, 3" diameter, $1.50 additional.
fl Focal length

#Mounting bracket and cord grip are standard. Furnished with cord assembly potted inside housing, without mounting bracket at no extra charge when specified.

Use of infrared filters reduces maximum distance between heads approximately 50%

All sensing, light source and reflector type heads are equipped with factory installed 6-foot cables for connecting to controls.

D⊙ Dimension in direction of Light Beam

A741B
W 8-3/4", H 10-3/8",
D 4-1/4"

A741B Hi-Speed Transistorized Counting

Rectified output current for positive DC actuation of F043 Coun relay contacts to maintain.

25 counts per sec. (.015 sec. min. Light, .025 sec. min. Dark).

Instant Reset 6-digit Plug-in Counter—counts up to 40 million without missing a count. Life expectancy 150 million counts. removed for inspection or replacement.

Provides 5.8, 4.7, 3.3, 2.5, 2.2, and 1.1 Light Source Voltages.

Transistors are protected from transient voltages.

All circuit components are securely mounted on printed circuit boa

Operate at ambient temperatures up to 115°F.

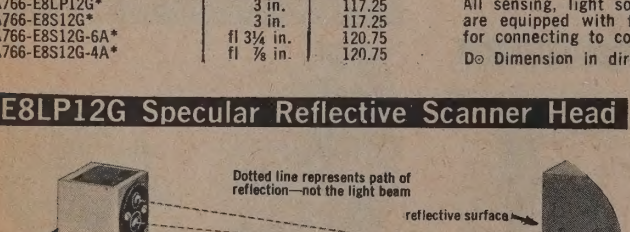
Operate from 234, 208 and117 v, 50-60 c.

Power Consumption 20 watts.

A741B—Includes A741 Control with F043C Counter, Socket and assembly mounted in Control Door Panel and wired as illustrated. $

Counting Eye Pack No. Counter Photo Light Control Sensor Source	Maximum distance	Co Eye P
A741B-E8AP10LC-E8AC	1 ft.	$1
A741B-E8BP10LC-E8BC	8 ft.	1
●A741B-E8ZP10-E8Z10	8 ft.	2
A741B-EXPM9C-EXME	15 ft.	1
A741B-E1AP10C-E1AE	10 ft.	1
A741B-EPB10C-E3BE	30 ft.	1
A741B-EPB10C-E4CE	12 ft.	1
Reflective Sensors		
A741B-E8LP12G*	3 in.	1
A741B-E8S12G*	3 in.	1
A741B-E8S12G-6A*	fl 3¼ in.	1
A741B-E8212G-4A*	fl ⅞ in.	1

E8LP12G Specular Reflective Scanner Head



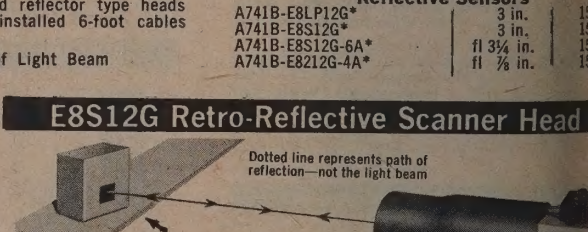
E8LP12G Scanner Head for specular reflective control. Responds to ordinary reflective surface and light beam must be directed perpendicular to the reflective surface for light to bounce back and strike the light sensing cell.

For high speed scanning service in minimum space. E8LP12G Scanner Head combines the fast acting cadmium selenide cell and the light source lamp in a single miniature housing (approximately ⅞ inch in all three dimensions plus ⅜" male pipe thread connection. See dimensional diagram below.)

The light sensing element is a fast response, cadmium selenide cell. The lamp has a built-in lens. An infrared filter helps protect against ambient light. The lamp rating is 2.5 volts at .5 amperes-life expectancy up to 75,000 hours depending on operating voltage.

E8LP12G Scanner Head including mounting bracket, also 6-foot factory-connected cable with cable grip and seal for connecting to 800 control. **$28.75**

E8S12G Retro-Reflective Scanner Head



E8S12G Coaxial Scanner responds to retro-reflective surface (tape, chalk, ink, paint, etc.). Light beam need not be perpendicular to the surface; with an angle of incidence up to 45° and more light bounces straight back to the source.

For use with retro-reflective tape or other retro-reflective material. be used with a retro-reflective mirror when it acts as a sort of limit s or for detecting or identifying objects with retro-reflective mar code marks, labels, etc.

The light beam does not need to be perpendicular to the retro-refle surface; beams at angles up to 15° and more (depending on condi bounce straight back to the cell.

E8S12G Scanner Head† with mounting bracket, 6-foot factory conn cable, cable grip and seal for connection to the control..... $

E8S12G-6A has a fixed pin-point beam; focal size 1/16x5/16 at 3¼"

E8S12G-4A has 1/32x⅛" focal size at ⅞" from the end of the light shie

E8S12G-6A and **E8S12G-4A** complete with mounting bracket, 6-foot tory connected cable, cable seal and grip.....each $

Net

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High Sensitivity, Transistorized, Compact Photoelectric Controls

AUTOTRON

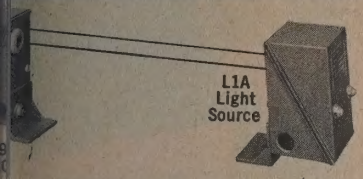
A579C ON/OFF and A579CP Timing Controls

es of above controls

orized. Light Energized
l Cad Cell is shock-protective
1 in fixed alignment.
l is exceptionally well shielded
traneous light.
ting – .02 second light; .03
dark time, minimum.
e–5 fc minimum light.
5-ampere DPDT plug-in re-
lastic enclosure.
" diameter, mounted in flex-
con rubber.
consumption, 5 VA. For 115/
50-60 c.
ls for 2.5 v light source.

Rectified output for positive and QUIET DC control relay operation.
Transistors are protected from transient voltage.
All circuit components are securely mounted on printed circuit board.
All relay contacts are wired to large, screw type terminals.
Cast aluminum case is gasket-sealed.
Maximum ambient temperature is 115°F.
Gasket-sealed cast aluminum case, tapped for ¾" conduit, has adjustable mounting bracket.
D° 3⁹⁄₁₆, W 4", H 5½". Weight 3 lb.

A579C ON/OFF Control

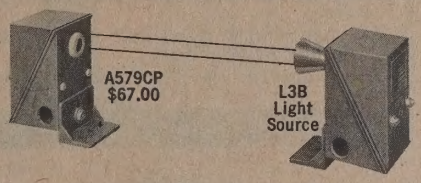


relay energizes when light is on the cell; gizes when light beam is interrupted.
elay is easily added by connecting capac- marked terminals. The delay times out (delays de-energizing of control relay ght beam is interrupted). Instructions in- with each control.

l-Pak Numbers Light Source	Max. Feet betw. heads	Control-Pak Net Prices
1A	15	$ 77.75
2B	30	81.80
3B	30	85.50
4	15	107.50
6C		94.00
6R		106.00

t Sources are described on page 6

A579CP Timing Control



Relay energizes LIGHT: times out DARK (when light beam is interrupted timing elapses before relay de-energizes) Time Delay adjustment from outside case; equipped with shaft lock.

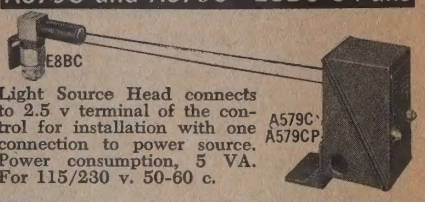
Repeat accuracy 4%.

Timing Ranges { **Adjustable** No. 0.4: 0.1 to 5 sec. / No. 2.0: 1.0 to 20 sec.

Control-Pak Numbers Control-Light Source	Max. Feet betw. heads	Control-Pak Net Prices
A579CP-L1A	15	$ 86.75
A579CP-L2B	30	90.80
A579CP-L3B	30	94.50
A579CP-L4	15	116.50
A579CP-L6C		103.00
A579CP-L6R		115.00

Specify Adjustable Timing Range listed above

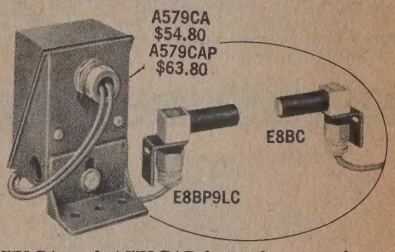
A579C and A579CP-E8BC C-Paks



Light Source Head connects to 2.5 v terminal of the control for installation with one connection to power source. Power consumption, 5 VA. For 115/230 v. 50-60 c.

Control-Pak Numbers Control-Light Head	Max. Feet betw. heads	Control-Pak Net Prices
A579C-E8BC	6	$ 72.50
●A579C-E8Z10	6	100.50
Timing Controls—Specify Timing Range		
A579CP-E8BC	3	81.50
●A579CP-E8Z10	3	109.50

A579CA A579CAP Control-Paks



A579CA and A579CAP have the same features as A579C and A579CP except the lens and sensing element are omitted and terminals are provided for connecting a remote sensing head and a 2.5 v light source.

Control-Pak Numbers Control-Sensor-Light	Max. Feet	Control-Pak Net Prices
A579CA-E8BAP10LC-E8BAC	6	$ 87.80
A579CA-E8BP10LC-E8BC	12	87.80
●A579CA-E8ZP10L-E8Z10	12	144.80
Timing Controls—Specify Timing Range		
A579CAP-E8BAP10LC-E8BAC	3	96.80
A579CAP-E8BP10LC-E8BC	6	96.80
●A579CAP-E8ZP10L-E8Z10	6	153.80

Sensing and Light Source Heads described on Page 2

800C and 800CM Dark-energized ON/OFF Controls

es with the sensing cell DARK.
free relay operation—due to square wave ent to relay coil.
est silicon transistors assure extreme tem- e stability.
ACTING: .02 second light, .03 second inimum. 800CM is exceptionally fast; 4 econds rise time, 60 microseconds decay

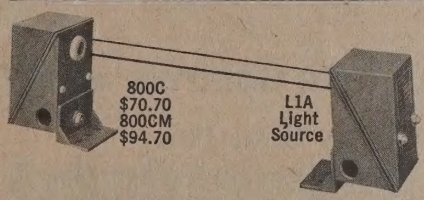
vity adjustment has shaft lock.
rgizing delay can be added by user. tions included with each control.
e at temperatures up to 115°F. 800CM s at temperatures to 200°F.
rminals for 2.5 v light source.
l 5-ampere DPDT Relay, plug-in mounted see-thru" plastic cover.
ntacts of the relay wired to screw type als.
stors are protected from transient voltage.
cuit components are mounted on a circuit

-sealed cast aluminum case, tapped for nduit, has adjustable mounting bracket.
¾" diameter, mounted in flexible silicon

Consumption, 5 VA. For 115/230 v, c.
ie", W 4", H 5½". Weight 3 lbs.

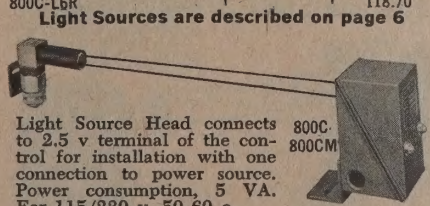
suffix identifies extremely sensitive con- with sensitivity adjustment that operate very short light change. The "M" type ols have been developed for operation oto sensors that have the "5A Feature" ibed on Page 2 This com- on is used for scanning register marks, ensing fast moving objects and other cations where light change is short.

800C ON/OFF Control-Paks



Control-Pak Numbers Control-Light Source	Max. Feet betw. heads	Control-Pak Net Prices
800C-L1A	15	$ 90.45
800C-L2B	30	94.50
800C-L3B	30	98.20
800C-L4	15	120.20
800C-L6C		106.70
800C-L6R		118.70

Light Sources are described on page 6

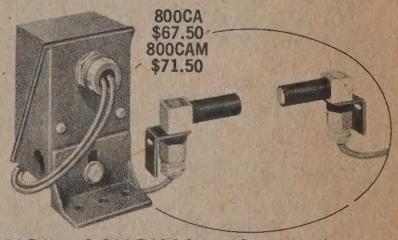


Light Source Head connects to 2.5 v terminal of the control for installation with one connection to power source. Power consumption, 5 VA. For 115/230 v. 50-60 c.

Control-Pak Numbers Control-Light Source	Max. Feet betw. lenses	Control-Pak Net Prices
800C-E8BC	6	$ 85.20
■800CM-E8BP5AC	6	128.20
●800C-E8Z10	6	113.20

Sensors with the 5A Feature are also used where the sensing head is exposed to high temperature.

800CA ON/OFF Control-Paks



800CA and 800CAM have the same features as 800C and 800CM except the lens and sensing element are omitted and terminals are provided for connecting a remote sensing head and a 2.5 v. light source.

Control-Pak Numbers Control-Sensor-Light Source	Max. Feet betw. heads	Control-Pak Net Prices
800CA-E8BAP10LC-E8BAC	12 ft.	$100.50
●800CA-E8ZP10L-E8Z10	12 ft.	157.50
■800CAM-E8BP5AC-E8BC	12 ft.	119.50
800CA-PF10LC-LFE	6 ft.	155.50
800CA-EBP10LC-EBC	2 ft.	100.50
800CA-EAP12G-ELG	4 in.	91.00
800CA-A700EH-7C		105.00
800CA-E8LP12G	6 in.	96.25
800CA-E8S12G	30 in.	96.25
800CA-E8S12G-6A	3¼ in.	99.75
800CA-E8S12G-4A	⅛ in.	99.75
■●800CAM-E8ZP5A-E8Z10	12 ft.	176.50

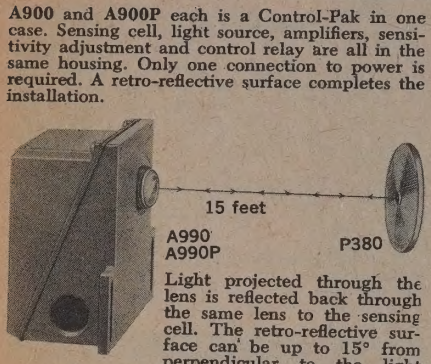
• E8ZP10, E8ZP5A and E8Z10 Heads are UL listed explosion proof but the control is not. Information on controls in explosion proof enclosures furnished on request.

Sensor and Light Source Heads described on Pages 2 and 3

Retro-Reflective Photoelectric Controls
Tube Type Photoelectric Controls

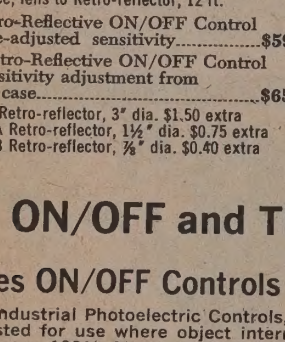
A990 ON/OFF and A990P Timing Controls

A900 and A900P each is a Control-Pak in one case. Sensing cell, light source, amplifiers, sensitivity adjustment and control relay are all in the same housing. Only one connection to power is required. A retro-reflective surface completes the installation.



Light projected through the lens is reflected back through the same lens to the sensing cell. The retro-reflective surface can be up to 15° from perpendicular to the light beam. Retro-reflective tape, paint, etc. may be used. Retro-reflective quality of the target affects operating distance.

A990 ON/OFF Controls



Control relay energizes LIGHT; de-energizes DARK.

Fast Acting: .02 second light; .03 second dark, minimum.

Max. distance, lens to Retro-reflector, 12 ft.

A990 Retro-Reflective ON/OFF Control
Has pre-adjusted sensitivity.....**$59.00***

A990S Retro-Reflective ON/OFF Control
Has sensitivity adjustment from outside case.....**$65.00***

*P380 Retro-reflector, 3" dia. $1.50 extra
*P380A Retro-reflector, 1½" dia. $0.75 extra
*P380B Retro-reflector, ⅞" dia. $0.40 extra

A990 and A990P Features

High Sensitivity. Available with and without sensitivity adjustment.

Provides dependable operation when objects block the light beam; also with limited light change such as may be provided by retro-reflective tape on a moving carton.

Transistorized.

Rugged 5-amp DPDT plug-in relay, with dust cover.

Rectified output for DC operation of Relay.

Transistors protected from transient voltage.

All circuit components securely mounted on modern printed circuit board.

All Relay Contacts wired to screw type terminals.

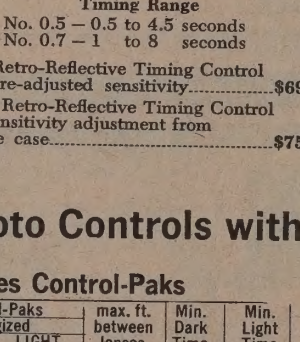
Maximum ambient operating temperature, 115°F.

Gasket-sealed cast aluminum case tapped for ¾" conduit.

D (direction of light beam) 3⅛", W 6¼", H 5 1/16". Shipping weight, 3½ lbs.

Power Consumption, 10 VA. For 115/230 v, 50-60 c.

A990P Timing Controls



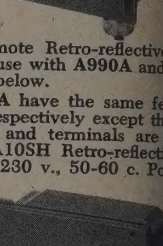
A single switch adjusts Control Relay to **Energize LIGHT and time out DARK** or to **Energize DARK and time out LIGHT.** Max. distance, lens to Retro-reflector, 15 ft.

Timing Range
No. 0.5 — 0.5 to 4.5 seconds
No. 0.7 — 1 to 8 seconds

A990P Retro-Reflective Timing Control
Has pre-adjusted sensitivity.....**$69.00***

A990PS Retro-Reflective Timing Control
Has sensitivity adjustment from outside case.....**$75.00***

Retro-Reflective Control-P

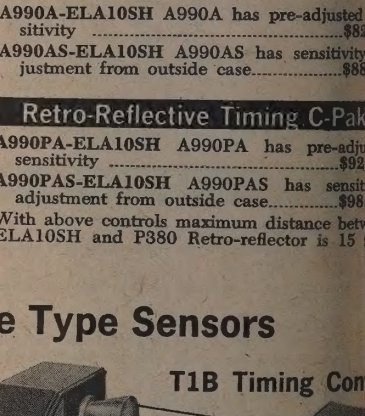


ELA10SH described on Page 2

ELA10SH is a remote Retro-reflective S Head designed for use with **A990A** and A Controls described below.

A990A and **A990PA** have the same feati **A990** and **A990P** respectively except the s element is omitted and terminals are pr for connecting ELA10SH Retro-reflective ner Head. For 115-230 v., 50-60 c. Powe sumption 10 VA.

A990A $54.00
A990AS 60.00
A990PA 64.00
A990PAS 70.00



A990A-ELA10SH A990A has pre-adjusted sitivity $82

A990AS-ELA10SH A990AS has sensitivity justment from outside case.....$88

Retro-Reflective Timing C-Pak

A990PA-ELA10SH A990PA has pre-adju sensitivity $92

A990PAS-ELA10SH A990PAS has sensit adjustment from outside case.....$98

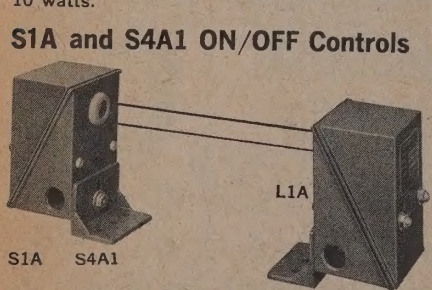
With above controls maximum distance betw ELA10SH and P380 Retro-reflector is 15

ON/OFF and Timing Photo Controls with Tube Type Sensors

S Series ON/OFF Controls

Rugged, industrial Photoelectric Controls, factory adjusted for use where object interrupts the light beam 100%. Minimum dark time, .06 second; minimum light time, .06 second. Control relay contacts, SPDT, rated 8 amps. at 115 VAC, noninductive load. Splashproof cast aluminum case with adjustable bracket; tapped for ¾" conduit. Power consumption 10 watts.

S1A and S4A1 ON/OFF Controls



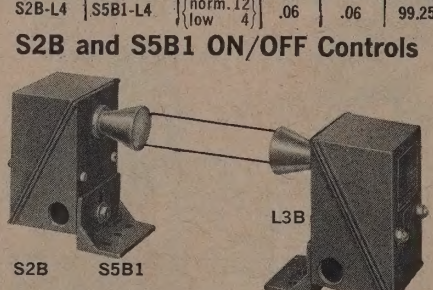
All above controls have ¾" lens mounted in flexible silicon rubber. Require 20 foot-candles minimum light. Weight, 2 lb. Dimensions, diagram 24A.

DARK† energized	LIGHT† energized	50-60 cycles VOLTS	NET each
S1A	S4A1	115/220	$43.75

S Series Control-Paks

Control-Paks energized DARK	Control-Paks energized LIGHT	max. ft. between lenses	Min. Dark Time	Min. Light Time	Net per Set
S1A-L1A	S4A1-L1A	8	.06	.06	$63.50
S1A-L2B	S4A1-L2B	8	.06	.06	67.55
S2B-L1A	S5B1-L1A	12	.06	.06	69.50
S2B-L2B	S5B1-L2B	20	.06	.06	73.55
S2B-L3B	S5B1-L3B	20	.06	.06	77.25
S2B-L4	S5B1-L4	norm. 12 / low 4	.06	.06	99.25

S2B and S5B1 ON/OFF Controls



All above controls have 1½" lens mounted in aluminum lens tube. Requires 10 foot-candles, minimum light. Weight, 3 lb. Dimensions, diagram 24B.

DARK† energized	LIGHT† energized	50-60 cycles VOLTS	NET each
S2B	S5B1	115/230	$49.75

T1B Timing Con

Relay energizes DARK—unit times out DA Time delay with shaft lock adjustment fro to 10 seconds. Repeat accuracy 4% Minin light 40 foot-candles. Control Relay cont SPDT, rated 8 amps at 115 VAC, non-in tive. Splashproof aluminum case tapped ¾" conduit. Adjustable mounting brac Lens dia. 1½" Power consumption 10 wa 115/230 V., 50-60 cycles. Weight 3 lbs. Din sions, Diagram 24B.

T1B Timing Control.....**$62**

T1B Timing Control-Paks

Control-Paks	max. ft. between lenses	Min. dark time	Min. light time	Pric per set
T1B-L1A	5 ft.	—	.5	$82.
T1B-L2B	10 ft.	—	.5	86.
T1B-L3B	10 ft.	—	.5	90.

Light Sources are described on page 6

Net

© United Technical Publicati

Light Sources for use with Photoelectric Controls
Compact Photoelectric Controls

AUTOTRON

eries L1 Light Sources

D and L1DA Light Sources all have
ures—
¼" diameter, mounted in flexible silicon

88L, rated 1.6 amps. at 5.8 volts.
and 4.8V. transformer tap leads for
peration; the EXTRA 4.8V. lead per-
w voltage operation where feasible to
lamp life.
-sealed cast aluminum case that pro-
ccess to the lamp with mounting align-
ndisturbed.

L1A Light Source

D⊙3⅜, W 4, H 5½

Has gasket-sealed cast aluminum case tapped for ¾" conduit with adjustable and reversible mounting bracket. Weight, 3½ lbs.

L1A Light Source.....$19.75

L1AY	L1ARY	L1ABA	L1ARBA
$24.75	$36.75	$29.75	$41.75

L1D Light Source

L1D: D⊙ 1.93", W 3.28", H 5.62"

aving gasket-sealed cast
um case has mounting
front and bottom. Front
have four mounting slots;
flanges have four mount-
es for ¼" bolts on ⅞" x
nters.
perates at low voltage for
d life. Case is tapped for
duit. For 115/230V 50-
/eight 1¾ lbs.

ght Source Net $18.50

L1DA Light Source

L1DA: D⊙ 2.18", W 1.96", H 5.62"

er space saver—Gasket-
cast aluminm case is
in center of bottom for
e. Use of lock nut per-
id positioning. Adjustable
t described below. For
0V 50-60C. Weight 1¼

operates at low voltage
ended life.

Light Source Net $18.50

ustable Mounting Bracket

1DA Light Source and
Control. Clamp fits ¾"
which screws into tapped
in bottom of above hous-
ipe may be raised, lowered
tated. Two socket-head set
lock pipe in desired posi-

Adjustable Mounting Clamp ..... Net $3.25

L2B Light Source

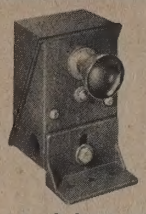
D⊙5⅝, W 4, H 5½

Has 88L lamp, rated 1.6 amps. at 5.8V. 1½" diameter lens in aluminum lens holder. Splashproof cast aluminum case tapped for ¾" conduit with adjustable and reversible mounting bracket. Weight 3½ lbs.

L2B Light Source
.....Net each $23.80

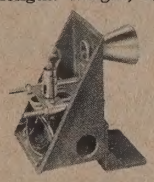
R	L2BY	L2BRY	L2BBA	L2BRBA
0	$28.80	$40.80	$33.80	$45.80

L3B Adjustable Focus Light Source



D⊙5⅝, W 4, H 5½

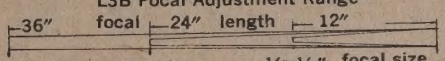
Has 1½" diameter lens in an aluminum lens holder. Gasket sealed cast aluminum case; tapped for ¾" conduit and with adjustable and reversible mounting bracket. Has 88L lamp rated 1.6 amps. at 5.8V. Transformer taps for 5.8 and 4.8 volt lamp operation which permits low voltage operation where feasible to prolong lamp life. Also has 3-way lamp positioning adjustment shown below with focusing adjustment from ½x ⅛" beam at 12" focal length, and ⅞x¼" beam at 24" focal length to 1¼x⅜" beam at 36" focal length. Weight, 3½ lbs.



Three-Way Lamp-positioning Bracket provided in L3B Adjustable Focus Light Source.

The lamp can be positioned to adjust alignment without moving the case. Moving the lamp closer or farther from the lens changes the focus, depending on the size of the lens, as shown in the diagram.

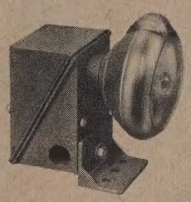
L3B Focal Adjustment Range



L3B Light Source.....$27.50

L3BR	L3BBA	L3BRBA
$39.50	$37.50	$49.50

L6C Hi Intensity Light Source



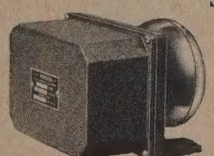
D⊙6¾, W 4½, H 6

L6C Light Source is recommended for adverse conditions such as steam, vapor, fog, and rain fall where extra light intensity is required. Has #4515 sealed beam spot light swivel-mounted for alignment adjustment. Transformer has 5V and 3.8V taps for lamp operation. Average lamp life is 3000 hours at normal voltage and 10000 hours at low voltage. Gasket-sealed cast aluminum case has adjustable and reversible mounting bracket and is tapped for ¾" conduit. Weight, 6 lbs.

L6C High Intensity Light Source.....$36.00

L6R Hi Intensity Light Source

Has High-Intensity Lamp and SAFETY RELAY.



D⊙ 6,
W 7-1/4
H 5-1/4

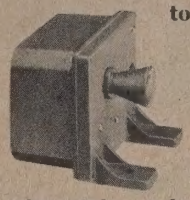
L6R has the same operating features as L6C **plus a built-in SAFETY RELAY.** The SAFETY RELAY energizes when the lamp comes on; de-energizes when the lamp fails or goes off. The Safety Relay may be arranged to stop a machine, close a valve, operate a signal or other circuit in case the lamp burns out. Relay contacts are SPDT, rated 5 amperes at 115 VAC, non-inductive. Gasket-sealed cast-aluminum case with rigid mounting feet, tapped for ½" conduit. Weight 7 lbs.

L6R Light Source.....$48.00

36-page Catalog including 51 application diagrams mailed promptly on request.

L4 Dual Filament Light Source

Has Two-filament Lamp to avoid shutdowns.



D⊙7⅜, W 7¼, H 5¼

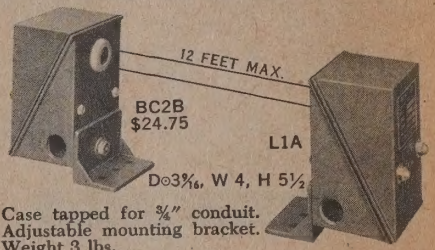
Has 2330B **prefocused two-filament** lamp rated 3.6 amps. at 5.8V. **The two filaments maintain light source continuity:** when one fails, a built-in relay switches on the other filament and a signal lamp in the housing; also operates SPDT contacts which may be used for remote warning control.

The prefocused lamp permits replacement with minimum change in light beam. Extra low voltage connection for prolonged lamp life. 1½" lens in aluminum lens holder. Gasket-sealed cast aluminum case with rigid mounting feet, tapped for ½" conduit. Weight, 6 lbs.

L4 Light Source.....$49.50

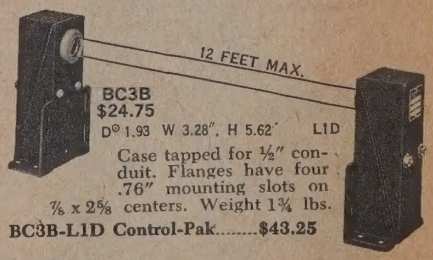
BC2B, BC3B and BC3AB Controls

Light-Energized. Cad Cell sensing element.
¾" lens mounted in flexible silicone rubber
Min. dark time .06 sec.; min. light time .06 sec.
Contacts SPDT, 3-amps at 115 VAC resistive.
Relay plastic enclosed. Power Consumption 0.5 w.
Gasket-sealed cast aluminum cases.
For 115 v. 50-60 cycle operation only.



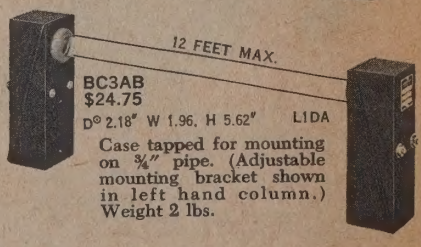
Case tapped for ¾" conduit. Adjustable mounting bracket. Weight 3 lbs.

BC2B-L1A Control-Pak.....$44.50



Case tapped for ½" conduit. Flanges have four .76" mounting slots on ⅞ x 2⅝ centers. Weight 1¾ lbs.

BC3B-L1D Control-Pak.....$43.25



Case tapped for mounting on ¾" pipe. (Adjustable mounting bracket shown in left hand column.) Weight 2 lbs.

BA feature: BEAM INTENSITY ADJUSTMENT

Built-in potentiometer inside light source case but adjustable with screwdriver from outside case, for dimming lamp. To order add suffix BA to Light Source Number and add $10.00 to Price. Example: L1ABA, $29.75.

R feature: SAFETY RELAY

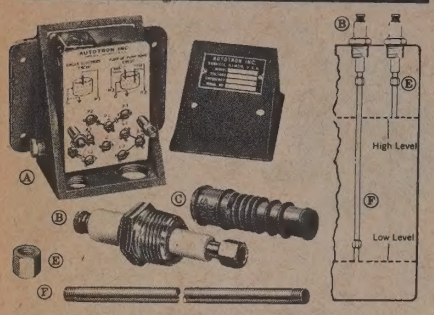
Safety Relay built into the Light Source which may be used to stop a machine, close a valve, operate a signal or other circuit in case the lamp burns out.

The Safety Relay energizes when the light comes on; de-energizes when the lamp fails or goes off. Relay contacts are SPDT, rated 5 amperes at 115 VAC, non-inductive. To order, add suffix R to Light Source number and add $12.00 to price.

AUTOTRON

Specialized Electronic Controls

Electronic Liquid Level Control



For use with liquids up to 750,000 ohms resistance such as acids, bases, salts, milk, beer, water, alcohols, ammonia, distilled water, anti-biotics.

Ⓐ **A744 Control** supplies 20VDC (safe for personnel) maximum probe voltage. Stepless sensitivity adjustment with shaft lock. Plug-in 5 amp. SPDT relay, plastic enclosed. Gasket-sealed cast aluminum case 6-3/16″ wide, 5⅜″ high, 3⅜″ deep. 4 mounting holes for ¼″ bolts on 5⅛″ x 3″ centers. Power Consumption, 5 W. For 115 or 230v (specify) 50-60c.....**Each $74.50**

Ⓑ **P-304 Electrode** has ½″ pipe threads—may be installed in top or side of tank....**Each $10.60**

Ⓒ **P-305 Elastic Seal** for electrode wiring connection ..... **Each $1.00**

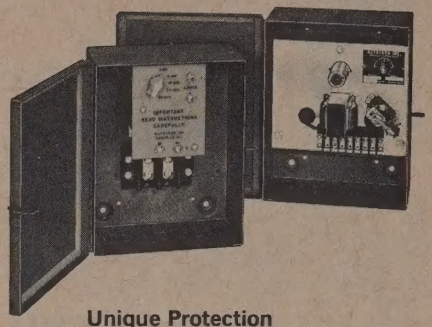
Ⓔ **P-310 hex nut,** stainless steel, ⅝″ long—¼-20 thread.....**Each $1.00**

Ⓕ **P-309 18-8 stainless steel rod** ¼″ x 12″—¼-20 thread both ends.....**Each $1.50**

Type of System Components	One Electrode Quan.	Price	Two Electrode Quan.	Price
Ⓐ A744 Control	1	$74.50	1	$ 74.50
Ⓑ P-304 Electrode	1	10.60	2	21.20
Ⓒ P-305 Dri-Seal	1	1.00	2	2.00
Connecting Cable	10 ft.	3.00	20 ft.	6.00
Price Totals		$89.10*		$103.70*

*P-309 Rod and P-310 Nuts not included

Current Surge Overload Protection



Unique Protection for tools, equipment, personnel

The Surj-Switch uses electronic amplification for instant reaction to variations from normal load current. Easily adjusted on the job to operate at the desired value.

The 10-amp, SPDT Control Relay may operate a warning signal, a lubricating circuit, feeding rate control, etc. without interrupting operation or may be used to stop operation.

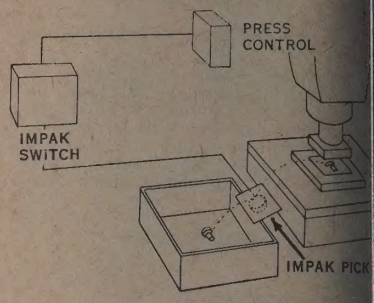
Used on surface grinders to warn when excessive pressures are applied; on machine tools to warn when tools become dull; on automated installations; **whenever load change indicates trouble.**

Model K1 Surj-Pick-up. Required for operation of Surj-Switch Controls—for 50-60 cycle, 0 to 80 amperes, one or 3-phase, any voltage..**$35.00**

Model J Surj-Switch. For overloads,.....**$55.00**

Model JA Surj-Switch. For under loads....**$65.00**

Impak-Switch Die Protectio



In the above diagram each piece properly ej from the die strikes the impact sensing which actuates the Impak Control and the trol re-cycles the press control for another st

The impact of falling parts against the sen plate of the Impak-Pick-up activates the Im Switch. Objects may be of practically reasonably uniform size, ranging from ball b ings to heavy stampings, etc.

In other die protection applications the Im Control has time delay set to barely exceed complete stroke cycle of the press. Each pro ejected piece re-cycles the Impak Control be the timing period expires.

Model V Impak-Pick-up—with 6-ft. shielded tic-covered cable.....Net $3

Model Z Impak-Switch—for use where impa not less than one ounce falling 2 inches and object strikes only once.....Net $6

Model C3 Impak-Switch—for use where im force is limited, where high speed is require where objects may strike more than once. Net $14

A2BX Solar ON/OFF Control

Automatically turns lights "ON" at preset light value—and turns lights "OFF" when light exceeds preset value.

DPDT Control Relay energizes when light exceeds intensity for which control is set; de-energizes when light falls below the preset level.

In case of tube failure the relay de-energizes; providing same control action as when light falls below preset level.

Dual Time Delays prevent operation by either momentary light flashes or shadows. Modern, simple circuitry uses one rugged, premium type power tube. Light intensity adjustment from outside of housing. Gasket-sealed cast aluminum housing, tapped for ½″ conduit. For 115/230 v, 50-60 c. Power consumption, 20 watts

Available with three adjustment ranges:

No. A2BX-.2; 1 to 5 fc for street lighting, parking lots
No. A2BX-.5; 15 to 50 fc for signs, parking lots
No. A2BX-1; 20 to 150 fc for obstruction or tower lights

A2BX Solar Control (all models) Net $76.95

Tubeless Bin Level Control

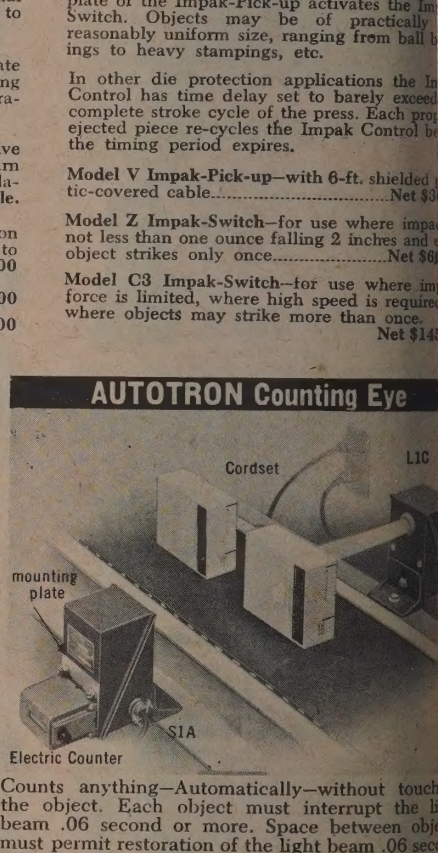
Tubeless Photoelectric actuation—unaffected by pressure of material in the bin. Only rigid, non-moving Lucite probes project into the bin. Cast aluminum, gasket-sealed housing mounts to bin wall as shown. Removal of cover makes all parts accessible. Dust-covered plug-in DPDT 8-ampere relay provides ON/OFF control for either high or low bin level. All wiring connections brought out of case in 3-foot oil-proof cable. For 115/230V, 50-60 C.

A700—Relay operates from cad cell output, light-energized. Power Consumption, 10 watts. .....**Net $68.00**

A700S—has transistor circuit and sensitivity adjustment—dark-energized. Power Consumption, 5 watts.....**Net $98.75**

Includes 3-ft cable, face gasket and template.

AUTOTRON Counting Eye



Counts anything—Automatically—without touch the object. Each object must interrupt the l beam .06 second or more. Space between obj must permit restoration of the light beam .06 sec or more. Max. distance between lenses, 8 feet.

Counting Eye Components

S1A Photoelectric Control (see page 5)
L1A Light Source (see page 6)
Cordset: two 6-foot rubber covered cords with plugs and attachment clamps
Plate and hardware for mounting counter (4 mounting holes on 3-15/16 x 1-23/64″ centers)
CE-600AS602 Electric Counter (6-digit, knob reset)

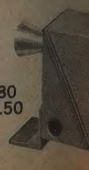
A-138A Counting Eye, 115v, 50-60c. **Net $10**

Includes above items wired ready to plug in.

Photoelectric Controls with Infrared Light Beams

For burglar alarms, safety and other applications where an invisible light beam offers advantages. The control lens is shielded from normal light so operation continues night or day whether lights are on or off.

A880-L160A Infrared Control-Pak.....**$121.00**
For 115/230v, 50-60c. Daylight Range, 50 feet; Night Range, 100 feet.



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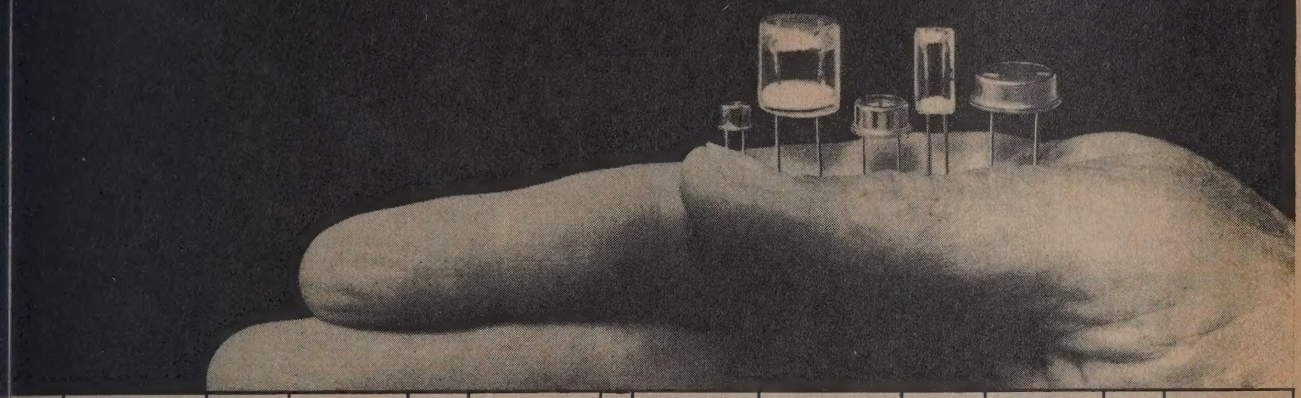
Photoconductive Cells

his listing represents less than half of the Clairex standard and special photocells available. A 16-page design manual is available on request.



ell ng vi- n	Diam. X Length (inches)	Resistance @ 2 fc ± 33⅓%	Minimum resistance ratio from 2 ftc to Dark within 5 sec.	Maximum voltage	Power Dissipation @ 25°C (mw)
2	.55 X .18	55K	1:100	250	2000-500[1]
2	.25 X .5	1 meg.		300	75
2	.36 X .18	1 meg.		300	125
2	.21 X .15	1 meg.		250	50

CdS (photosensitive material designated by last number in ordering abbrevi- . CL5M2). Peak spectral response 5150 angstroms, bluest response photosensi- rial, high stability, lowest temperature error.

3	.5 X .5	7.2K	1:10,000	250	500-250[1]
3	.55 X .18	7.2K		250	2000-500[1]
3	.25 X .5	133K		300	75
3A	.25 X .5	75K		300	75
3AL	.25 X .5	3.5K		170	75
3	.36 X .18	133K		300	125
3A	.36 X .18	67K		300	125
3L	.36 X .18	2.7K		100	125
3	.21 X .15	133K		250	50
3A	.21 X .15	67K		250	50
3L	.21 X .15	6.0K		100	50

CdSe, peak spectral response 7350 angstroms, fast response, and very high light- esistance ratio. Can be used for high speed switching or counting. Sensitive to red. For use with incandescent or neon lamps.

4	.5 X .5	1.5K	1:1000	250	500-250[1]
4	.55 X .18	1.5K		250	2000-500[1]
4L	.5 X .5	0.25K		170	500-250[1]
4L	.55 X .18	0.25K		170	2000-500[1]
4	.25 X .5	30K		300	75
4L	.25 X .5	1.5K		170	75
4	.36 X .18	30K		300	125
4L	.36 X .18	0.6K		100	125
4	.21 X .15	30K		250	50
4L	.21 X .15	2K		100	50

CdSe, peak spectral response 6900 angstroms, lowest resistance photocells . Can be used for "on-off" applications when low resistance is desired. For incandescent or neon lamps.

5	.5 X .5	9K	1:100	250	500-250[1]
5	.55 X .18	9K		250	2000-500[1]
5L	.5 X .5	1.5K		170	500-250[1]
5L	.55 X .18	1.5K		170	2000-500[1]
5	.25 X .5	166K		300	75
5L	.25 X .5	7.5K		170	75
5	.36 X .18	166K		300	125
5L	.36 X .18	3.3K		100	125
5	.21 X .15	166K		250	50
5L	.21 X .15	10K		100	50

CdS, peak spectral response 5500 angstroms (closely matches the human eye), ble, lowest memory photocell available. Can be used in light measuring appli- and precision low speed switching. For use with incandescent, fluorescent or ps.

5HL	.36 X .18	28K	1:1000	100	125
5HL	.21 X .15	100K		100	50
5HN	.21 X .15	700K		100	50

CdS, peak spectral response 5500 angstroms (closely matches the human eye). s high speed, stability, linearity, and uniform color temperature response.

Photocell ordering abbreviation	Diam. X Length (inches)	Resistance @ 2 fc ± 33⅓%	Minimum resistance ratio from 2 ftc to Dark within 5 sec.	Maximum voltage	Power Dissipation @ 25°C (mw)
CL507	.5 X .5	7.2K	1:1000	250	500-250[1]
CL5M7	.55 X .18	7.2K		250	2000-500[1]
CL607	.25 X .5	133K		300	75
CL707	.36 X .18	133K		300	125
CL707L	.36 X .18	2.7K		100	125
CL907	.21 X .15	133K		250	50
CL907N	.21 X .15	66K		100	50

Type 7 CdS, peak spectral response 6150 angstroms, moderate speed and ratio. Can be used in general beam breaking applications. For use with incandescent, neon or fluorescent lamps.

CL707H	.36 X .18	500K	1:1000	300	125
CL707HM	.36 X .18	100K		250	125
CL707HL	.36 X .18	10K		100	125
CL907H	.21 X .15	600K		250	50
CL907HN	.21 X .15	300K		100	50
CL907HL	.21 X .15	24K		100	50

Type 7H CdS Peak Spectral response 6200 angstroms. Very fast decay time coupled with low resistance and high linearity. Ideal for beam breaking applications.

Photocell ordering abbreviation	Diam. X Length (inches)	Resistance @ 2 fc ± 33⅓%	Minimum resistance ratio from 2 ftc to Dark within 5 sec.	Maximum voltage	Power Dissipation @ 25°C (mw)	Type
CL703/2	.36 X .18	50K	1:10,000	300	125	3 CdSe
CL703L/2	.36 X .18	6.5K	1:10,000	100	125	3 CdSe
CL704/2	.36 X .18	17K	1:1000	300	125	4 CdSe
CL704L/2	.36 X .18	1.5K	1:1000	100	125	4 CdSe
CL705/2	.36 X .18	166K	1:100	300	125	5 CdSe
CL705L/2	.36 X .18	7.5K	1:100	100	125	5 CdS

DUAL ELEMENT

Photocells contain two separate elements with two separate leads and one common lead.

PHOTOMOD®

PHOTOCELL-LAMP ASSEMBLIES

Part No.	Rated Lamp Voltage	Resistance (Max. Ohms) @ Rated Lamp Voltage	Max. Allowable Cell Voltage @ Peak AC
CLM3006A	6	160	120V
CLM4006A	6	55	120V
CLM4012A	12	30	120V
CLM3012A	12	160	120V
CLM5H10A	10	3000	120V
CLM7H16A	16	550	170V
CLM3120A	120	1150	120V
CLM4120A	120	160	120V

FOOTNOTE: [1] With and without heat sink.

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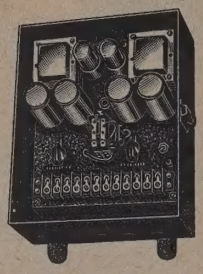
THREE-UNIT CONTROLS

For All General Applications



Model 63 Amplifier Door removed to show components.

Model 63 Series represents a line of four high speed, precision Amplifiers; each engineered for a highly specialized use. Selection enables the user to get the amplification his application requires. Each amplifier is designed for amplification of energy developed by one set of Series 33/23 Fotolectric Heads listed below. Each Amplifier will also respond to light radiance (other than light projected from a Light Source unit) when reflected to the Photocell. Model 63 Series Amplifiers are heavy duty construction throughout, size 9¼" x 11½" x 5". Engineered for 110/120v. 50/60 cy. a.c.

Model 63, the Worner Master Unit, serves most industrial uses. It is generally recommended for supervising fast moving objects and will operate normally up to 750 times a minute.....**Each $144.12**

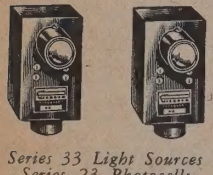
Model 63-A, equipped with Time Delay Circuit giving delay from 0 to 45 seconds .....**Each $160.77**

Model 63-B, has added amplification to operate on less active change of light .....**Each $171.87**

Model 63-C, same as Model 63 but is "dark-energized", and operates when the photocell is dark.....**Each $146.73**

Model 64. Economy Unit. Operates up to 450 times a minute..**Each $87.90**

WIDE RANGE OF FOTOLECTRIC HEADS



Series 33 Light Sources
Series 23 Photocells

Sharp Detection

Selection of any of the following seven combinations, with current flow amplified by a choice of any of the above Amplifiers, provides unbeatable control supervision. Both units are alike externally. Mounting brackets supplied.

Model 33 Series Light Sources and Model 23 Series Photocells are heavy duty units. Components are housed in solid metal castings equipped with conduit fitting. Size of case 3" x 3" x 4½".

CROSS-OVER BEAM supervises small objects under 2" square at high speed. Distances listed are from lens to (cross-over) point of supervision. Moisture-proof units.

DISTANCE	LIGHT SOURCE	EACH	PHOTOCELL	EACH
Up to 3"	**Model 33-3**	**$28.95**	use with **Model 23-3**	**$36.00**
3" to 6"	**Model 33-6**	**28.95**	use with **Model 23-10**	**28.80**
6" to 9"	**Model 33-9**	**28.95**	use with **Model 23-10**	**28.80**
9" to 12"	**Model 33-12**	**28.95**	use with **Model 23-10**	**28.80**

DIRECTIONAL BEAM for objects over 2" square. Distances listed cover area of supervision (between units).

DISTANCE	LIGHT SOURCE	EACH	PHOTOCELL	EACH
1 to 10 ft.	**Model 33-10**	**$23.40**	use with **Model 23-10**	**$28.80**

Made moisture-proof upon order at $7.50 per unit.

10 to 25 ft.	**Model 33-25w**	**$39.78**	use with **Model 23-25w**	**$40.32**

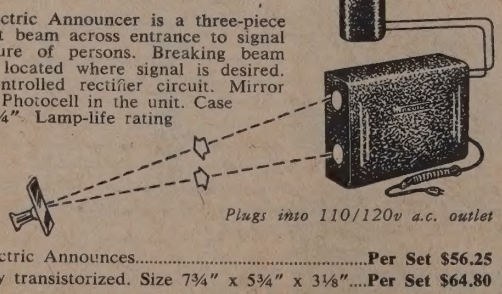
These units are moisture-proof.

FOR SUPERVISING LARGE OBJECTS UP TO 75 FT.

Model 33-C Light Source and Model 23-C Photocell supervise over an indoor distance over 25 ft. up to 75 ft. from unit to unit. 6¼" x 7" x 4½". Use with any of the above Amplifiers.

Model 33-C.....**each $23.88**.....use with **Model 23-C**.....**each $32.76**

THE ELECTRONIC RECEPTIONIST



Plugs into 110/120v a.c. outlet

Model 61 Fotolectric Announcer is a three-piece set. Projects light beam across entrance to signal entry or departure of persons. Breaking beam activates Chime, located where signal is desired. Efficient grid controlled rectifier circuit. Mirror reflects beam to Photocell in the unit. Case 8¼" x 6½" x 3¾". Lamp-life rating 1000 hours.

Model 61. Fotolectric Announces.....**Per Set $56.25**

Model 61-T. Fully transistorized. Size 7¾" x 5¾" x 3⅛"....**Per Set $64.80**

AMPLIFIERS FOR MINIATURE HEADS

Model 66 A fier Door re to show c nents.

Model 66/67 Series Amplifiers are available in a choice of four units. For positive and accurate performance, the maximum speed rating of each unit can be regulated provided light projected to the Photocell will have an "on-period" equal to the "off-period" with wiring to Photocell having zero (0) capacity. 110/120v. 50/60 cy. a.c.

Model 67 Amplifier for general applications where fine detection at high speeds is not a factor or Relay is not required to operate in excess of 450 times per minute .....**Each $97.83**

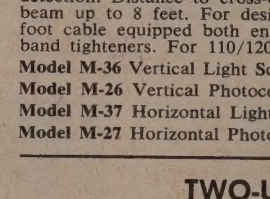
Model 66 Amplifier, operates up to 900 counts a minute. Double-pole, double-throw relay with contact rating 110v. 60 cy. a.c., 10 amp.-non-inductive and 5 amp. inductive. Has light beam intensity control .....**Each $154.80**

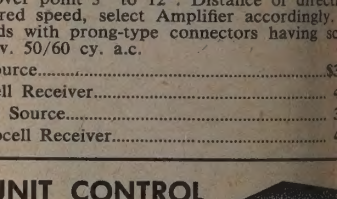
Model 66-A Amplifier, designed for use with ultra high speed elect decade counters. Accurate counts of light beam interruption or vari of intensity up to 10,000 counts per minute. Output pulses up to 50 d.c. regulated by the sensitivity control.....**Each $1**

Model 66-T Amplifier, same operating features as Model 66 with a Time Delay circuit to give regulated time delay from 0 to 45 sec Efficient for synchronizing operations.....**Each $1**

"MINIATURE" FOTOLECTRIC HEADS

Designed for use with Models 66/67 Amplifi





Light Source M-37
Photocell M-27

Machined out of solid aluminum blocks. Light weight, unbreakable, piece, dependable. Only 1¼" x 2½" x ¾". Unsurpassed for pin- detection. Distance to cross-over point 3" to 12". Distance of direct beam up to 8 feet. For desired speed, select Amplifier accordingly. foot cable equipped both ends with prong-type connectors having sc band tighteners. For 110/120v. 50/60 cy. a.c.

Model M-36 Vertical Light Source.....$

Model M-26 Vertical Photocell Receiver.....

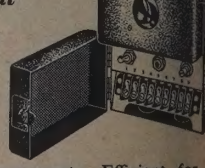
Model M-37 Horizontal Light Source.....

Model M-27 Horizontal Photocell Receiver.....

TWO-UNIT CONTROL

For Industrial Applications (Indoors)

Light Source

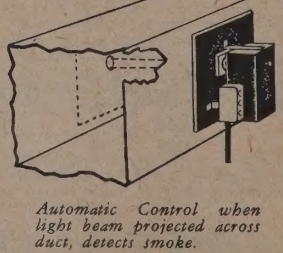


Amplifier

Amplifier includes photocell, Relay and components. Efficient for tances from a few inches to 75 ft. For use where Relay is not requ to operate over 400 times a minute, such as; counting, sorting l objects; limit switches; start, stop operations; opening doors, etc.

Model 62 R & L "Two-Unit Set".....**Per Set $1**

STOP FIRE BEFORE IT SPREADS



Automatic Control when light beam projected across duct, detects smoke.

Most catastrophic fires are due to sp drawn into or originating in air-condit ing ducts, resulting in flames fan-dr throughout a building. The Worner Motor Stop minimizes this hazard by e detection, stopping of fans and soun alarm. Consists of Light Source, Photo Receiver and Control Cabinet. Meets quirements of National Board of Fire derwriters, Factory Insurance Ass'n. Li by U.L. Send for Bulletin 650.

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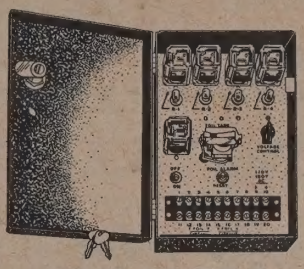
THE WORNER MASTER CONTROL SYSTEM

MODEL 9000 SERIES



…l of Model 9000-S Master Control Panel. Can …e ONE to FOUR Light Source and Photo- …ection sets, hereafter referred to as "Foto- … Sets".

…arate circuit, the Master Control Panel will …pervise foil tape, door traps and window …systems. Both circuits operate independently …ultaneously. Sounds continuous alarm (until …when either of these detection circuits is … or wiring of Fotolectric system is tampered …

…ontrol panel prevents false alarms should …fail or drop momentarily and resets auto- …y when power is restored. Also operates with …e electrical devices employed by professional … alarm companies.

…it contains Relays which energize alarm cir- …he cabinet size is 7" x 10¼" x 4⅜" and its …n is safeguarded by a pick-proof lock. The … installed remotely. Designed for 110/120v. …y. a.c.

…tion shows FOUR Relay plug-in location for … and 4 Relays as needed; one Relay for each …tric (detection) Set used. Model 9000-S Master … Panel is priced "less Relays," as only …elay is automatically supplied with each Model …00 series Fotolectric Set ordered.

9000-S Master Control Panel.....**Each $91.08**

Range	Fotolectric Set	Per Set
100 ft.	Light Source & Photocell	134.67
150 ft.	Light Source & Photocell	153.57
75 ft.	Light Source & Photocell	167.73
250 ft.	Light Source & Photocell	175.71
500 ft.	Light Source & Photocell	207.00

MODEL 7000 SERIES

…ses (light Source and Photocell) Fotolectric …at operate in conjunction with burglar alarm …ies' central control equipment. The Fotolec- …ts do not interfere with operation of Central … Companies', foil tapes or window traps. For …0v. 50/60 cy. a.c. For 24v. 60 cy. use Worner …own Transformer.

Range	Fotolectric Set	Per Set
100 ft.	Light Source & Photocell	$134.67
150 ft.	Light Source & Photocell	153.57
75 ft.	Light Source & Photocell	167.73
250 ft.	Light Source & Photocell	175.71
500 ft.	Light Source & Photocell	207.00

MODEL 5000 SERIES

… are 2 Models. Each model has Light Source …notocell units. The Photocell unit of each Model …as all amplifier components. Thus each Model …wo-Unit alarm set. Each is designed for indoor …d not intended for use with foil systems, etc. …n-off switch, phone jack to test plate current, …vity control. Lock. Alarm can be turned off or …s trap reset only by the possessor of the key. …0/120v. 50/60 cy. a.c.

Range	Fotolectric Set	Per Set
100 ft.	Two-Unit System	$134.67
150 ft.	Two-Unit System	153.57

LIGHT SOURCE & PHOTOCELL SETS

All light beams are infra-red (invisible) light.

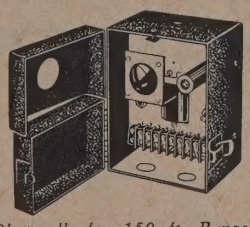
Sets for 100 and 150 ft. ranges are for indoor use. Sets for 75, 250, and 500 ft. ranges are for both indoor and outdoor use.

Sets for 75, 150, 250 and 500 ft. ranges have unwanted light rejector for maximum daytime operating efficiency.

Some cases are similar, but circuits vary greatly.

Light Sources and Photocell Units for 100 ft. Ranges. Models: 9100, 7100, 5100.

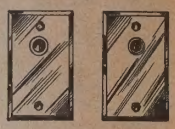
Light Sources for 150 ft. Range. Models: 9150, 7150, 5150.



Photocells for 150 ft. Range. Models: 9150, 7150, 5150.

Sets for 75, 250 and 500 foot ranges have hooded weatherproof cases. Photocell cases have locks.

BURGLAR DETECTION UNITS CONCEALED IN THE WALL

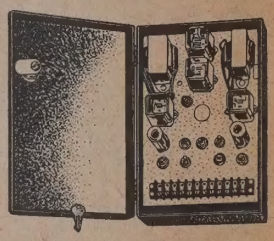


Light Source and Photocell Receiver units concealed behind light-switch-type face plates. Projects invisible light beam ranging up to 30 feet (indoors). Standard size wall plates concealing Fotolectric detection units are high finish stainless steel. Light bulb rated 2000 hours. For guaranteed efficiency Model 81/82 Fotolectric sets must be used only with specially engineered Amplifiers listed below. Complete installation instructions enable any electrician to install.

Model 81 "In-Wall" Light Source.....**Each $32.67**

Model 82 "In-Wall" Photocell Receiver.....**Each 38.22**

AMPLIFIERS FOR ABOVE FOTOLECTRIC SET

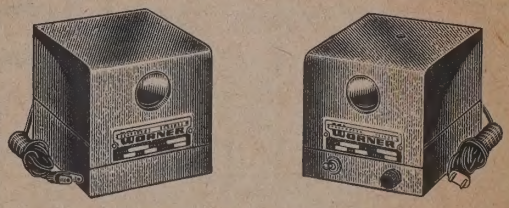


Two specially engineered units for amplifying the energy of the above concealed units.

Circuits with no-voltage control relay prevent false alarms due to line voltage irregularities and will sound alarm if tampered with. Standard alarm continuous, Regulated warning signal "special" upon order. For 110/120v. 60 cy. a.c.

Model 86-1 is a single channel Amplifier Panel that will amplify current flow of one Fotolectric Set.....**Each $140.76**

Model 86-2 is a dual channel Amplifier Panel that will amplify current flow of two Fotolectric Sets, guarding separate areas. Will also supervise one Fotolectric Set, providing for future addition of a second Fotolectric Set **Each $214.83**



TWO-UNIT WORNER WATCHMAN

This Two-Unit Set consists of a Light Source and a Photocell unit that supplies 6-volt energy for activating the alarm circuit.

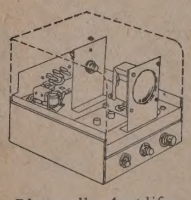
The Light Source is equipped with removable infrared filter providing visible light beam ranging up to 50 feet. The Photocell unit is equipped with toggle switch for either continuous alarm or to sound only while light beam is broken. Extraneous light rejector maintains daylight range. Two-piece case construction enables removal of cover without mounting. Identical cases 5" x 5" x 5½" welded steel, mahogany hammerloid finish. For indoor use; 110/120v. 60 cycle a.c.

Model 4000 Two-Unit Watchman (Indoors).....**Per Set $ 96.30**

Model 4100 Two-Unit Alarm (Weatherproof)...**Per Set 167.73**

TRANSISTORIZED BURGLAR ALARM

Two-Unit Combination. Indoor Use.



Photocell - Amplifier has 2-piece case for convenient installation and servicing.

The Photocell unit supplies 6-volt a.c. energy to activate a 6-volt a.c. alarm, thus providing a Two-Unit alarm set.

Alarm may be sounded at one or more remote locations. Knob control for continuous, limited or reset alarm. Built-in device minimizes unwanted light. Infrared filter provides invisible light beam ranging up to 50 feet. Both units are externally alike, 5" x 5" x 5½". Two-piece hammerloid cases simplify installation and servicing.

Model 8002 R & L, Transistorized Burglar Alarm Set.....**$99.00**

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The RADIO-ELECTRONIC **MASTER**
A United Technical Publication

LOT LIGHTS

PILOT LIGHT ASSEMBLIES

BNE

BNE Series — featuring a 1-piece body construction, this miniature neon pilot is ideally suited to indicate toggle switch positions, or for other display configurations with space limitations. A particular characteristic of this model is the compact lens system protruding slightly above the panel. Operating voltage, 75 VAC without resistor; for 115 VAC operations use external resistors (150K for standard intensity, 33K for high intensity) not supplied. Single 5/16-32 mounting.

BNF

BNF Series — similar to the BNE Series except that the lens system extends a greater distance beyond the panel for a bright illumination. This model has a permanent built-in neon and operates on 75 VAC. An external resistor required for 115 VAC. Turret type lugs are used for simplified hookup. Single 5/16-32 mounting.

BND

BND Series — combines an entirely new look in a space-saving pilot assembly. The neon protrudes beyond the panel to provide maximum light intensity. This model is available with or without built-in series resistor for 75V or 115V operation, and is also available as standard or high intensity. Single 3/8-32 mounting.

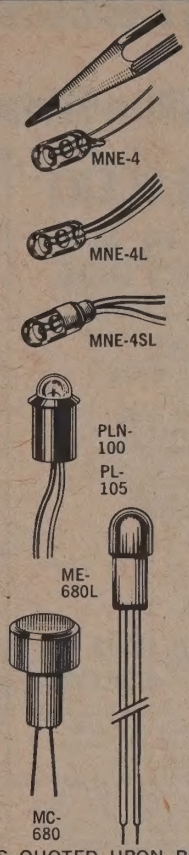
Model	Color	Description	One- 24	25- 99	100- 499	500- 999
NE-2	*	Standard, less resistor	.49	.33	.29	.24
NE-3	*	Hi-Intensity, less res.	.59	.39	.35	.29
NF-2	*	Standard, less resistor	.49	.33	.29	.24
NF-3	*	Hi-Intensity, less res.	.59	.39	.35	.29
ND-2	*	Standard, less resistor	.49	.33	.29	.24
ND-2R	*	Std., with 150K res.	.59	.39	.35	.29
ND-3	*	Hi-Intensity, less res.	.59	.39	.35	.29
ND-3R	*	Hi-Int., with 33K res.	.69	.46	.41	.35

pecify Choice — Red, Amber, Clear, White.

NG SERIES LAMP HOLDERS

co offers a simplified, low-cost, snap-type lamp holder for iniature lamps. Various types are available, each adaptable to particular panel thickness, and can be ordered in red, amber, clear. Detailed information supplied on request. Less lamp.

Model	100-over	500-over	1000-over
BNG( )	.09 ea.	.08 ea.	.07 ea.



BRITE-GLO® NEON LAMPS

Extremely small size lamp (equivalent to T-1¾). Smallest neon in the industry. Bullseye appearance gives the largest glow where needed on top. Rounded top places the illuminated area closer to the viewing point. Metal base (Model MNE-4SL) increases light output and protects lamp from damage.

Model	Description	One- 24	25- 99	100- 499	500- 999
MNE-4	With Short Bare Leads	.49	.33	.29	.24
MNE-4L	With 10″ Insulated Leads	.53	.35	.31	.26
MNE-4SL	With 10″ Insulated Leads and Metal Base	.59	.39	.35	.29

PANEL MOUNTED ASSEMBLIES

PLN-100 Neon — panel mounted neon Brite Glo lamp assembly incorporates the crater electrode T-1 3/8 **MNE-4L** in a black phenolic case. It has 10″ leads and mounts in a ¼″ hole.

PL-105 Incandescent — panel mounted lamp assembly is ultraminiature in size. A mate to the Brite Glo panel mounting series (PLN-100 above) only with incandescent lamp that operates on 5V @ 60 ma. and having 100,000-hr. life. Mounts in ¼″ hole; has 10″ insulated leads.

Model	Panel Mtg. Lamp	One- 24	25- 99	100- 499	500- 999
PLN-100	10″ Leads Neon	.89	.59	.54	.45
PL-105	10″ Leads Incand.	.79	.53	.48	.40

BRITE GLO® INCANDESCENT

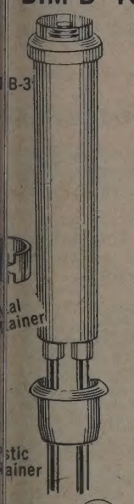
Ultraminiaturized series that mounts in a 3/16″ hole. Available only with the most popular 5V @ 60 ma. rated lamps having a 100,000-hr. life. Sealed high temperature plastic assembly contains a standard #680 T-1 lamp. Supplied either with long wire leads (Type ME-680L), or with pin contacts (ME-680) for PC boards. MC-680 contains a #683 T-1 lamp.

Model	Description	One- 24	25- 99	100- 499	500- 999
*ME-680	With Pin Contacts	.89	.59	.54	.45
*ME-680L	With Long Leads	.89	.59	.54	.45
†MC-680	With Pin Contacts	.99	.67	.60	.49
†MC-680L	With Long Leads	.99	.67	.60	.49

*Specify Choice — Red, White, Green, Blue, Yellow.
†Specify Choice — Red, Green.

LARGER QUANTITY PRICES QUOTED UPON REQUEST

BIM-B 100V NEON LIGHT INDICATORS



General purpose panel indicators have more versatility than similar models. 8 Lens Styles: Allow a greater variety to choose from (see below). **NE2H High Intensity Lamp** is incorporated and contains built-in series resistors for 110V operation. Flexible 6″ leads, tinned conductors, high temperature insulation 105°C. Black wire size: solid 22 AWG. Polypropylene indicator housing (white) with acrylic lens — available in Red, Amber, and Clear — specify. Mounts 5/16″ dia. hole.

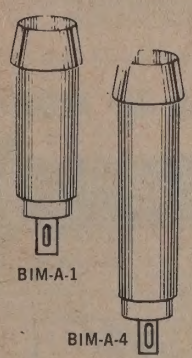
RETAINER — use of the mounting retainer supplied with each BIM indicator allows the installer to have 2 methods of panel installation. One choice is the conventional way where the retainer is pushed against the back of the panel and the indicator is placed through it. An optional choice of mounting is to fit the retainer on the front side of the panel, in a 1 1/32″ dia. hole, and then the pilot is inserted into position. The alternate method has the advantage of replacing the pilot without disassembling the apparatus.

BIM-R Metal Retainer (available separately) provides a snug-fit in a minimum of space. Used only with BIM Series having a 5/16″ hole mounting. Packaged, sold in multiples of 25.

Model	Description*	One- 24	25- 99	100- 499	500- 999
BIM-B-1	With Lens 1*	.59	.39	.35	.29
BIM-B-2	With Lens 2*	.59	.39	.35	.29
BIM-B-3	With Lens 3*	.59	.39	.35	.29
BIM-B-4	With Lens 4*	.69	.46	.41	.35
BIM-B-5	With Lens 5*	.69	.46	.41	.35
BIM-B-6	With Lens 6*	.69	.46	.41	.35
BIM-B-7	With Lens 7*	.69	.46	.41	.35
BIM-B-8	With Lens 8*	.69	.46	.41	.35
BIM-R	Metal Retainer	—	.02	.018	.015

* Specify color: Red, Amber, Green, or Clear.

BIM-A SERIES NEON INDICATORS

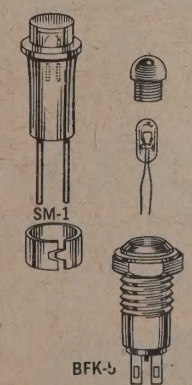


These neon light indicators, with one lens style, are described in the BIM story (at left) but are fitted with solder lugs, and body lengths are shorter. BIM-A-1 has a NE2H lamp and is for use with an external resistor (not supplied); body length is 2 1/32″. BIM/4A has a NE2H lamp and contains a built-in series resistor for 110V operation; body length is 1″. Colors available for both types: Red, Amber, Clear — specify. Retainer is included.

Model	Description*	One- 24	25- 99	100- 499	500- 999
BIM-A-1	Without Resistor	.69	.46	.41	.35
BIM-A-4	With Resistor	.79	.53	.47	.40

* Specify color: Red, Amber, or Clear.

MINIATURE NEON PANEL INDICATORS



General purpose sub-miniature panel indicator for use with an external series resistor. The 1-piece body houses a sub-miniature high intensity neon lamp. The metal mounting retainer push fits into a ¼″ dia. hole. Wire leads, metal retainer included. Choice of colors: Red, Amber, or Clear — specify.

Model	Description*	One- 24	25- 99	100- 499	500- 999
SM-1	Less Resistor	.89	.60	.53	.45

REPLACEABLE LAMP ASSEMBLIES

Ultra small, Brite-Glo lamp assembly has a simple lamp replacement feature. The removable round dome lens unscrews and the tiny T-1 lamp is exposed for easy removal from the front of the panel, without tools. Standard #680 lamp rated 5 volts @ 60 ma, supplied installed. Mounts with 9/32-32 nut. Colors available: Red, Green, Blue, Yellow, or White — specify.

Model	Description*	One- 24	25- 99	100- 499	500- 999
BFK-5	Replaceable Lamp Assy.	1.29	.88	.77	.65

ALCO® ELECTRONIC PRODUCTS, INC.

DIALCO® INDICATOR LIGHTS

DIALIGHT CORPORATION
MANUFACTURERS OF VISUAL INDICATORS

(Illustrations are approx. actual size.)

DATALITES® — Ultra-Miniature Indicator Lights with Data Ca

250-8738-1471-504

INCANDESCENT

MOUNT IN 3/8" CLEARANCE HOLE

INCANDESCENT ■ COMPLETE ASSEMBLIES WITH TURRET TERMINALS		
▲ DATA CAP LENS COLOR	SHORT CYLINDRICAL FOR USE WITH HOT-STAMPED LEGENDS (TRANSLUCENT)	SHORT CYLINDRICAL WITH DIFFUSING RINGS (TRANSPARENT)
Red	250-8738-1471-504	250-8738-3331-504

■ To obtain solder cup terminals change "87" in catalog number to "75". For amp "53" taper pin receptacles, change to "90".

Example: 250-9038-1471-504.

DATALAMP CARTRIDGES

INCANDESCENT DATALAMP CARTRIDGES FOR USE IN DATA CAP ASSEMBLIES				
CATALOG NOS. SHORT CYLINDRICAL LENS SHAPE TRANSPARENT-COLORLESS	VOLTS	MA.	C.P.*	LIFE HOURS
LONG LIFE—HIGH RELIABILITY				
507-3907-1437-600	6.3	40	.03	50,000
507-3909-1437-600	6.3	200	.40	50,000
507-3914-1437-600	14.0	80	.30	50,000
507-3918-1437-600	28.0	40	.30	25,000
STANDARD RATINGS				
507-3902-1437-600	2.5	200	.20	500
507-3906-1437-600	6.0	200	.60	1,000
507-3908-1437-600	6.3	75	.23	500
507-3913-1437-600	14.0	80	.50	750
507-3916-1437-600	18.0	40	.15	1,000
507-3917-1437-600	28.0	40	.34	1,000

*C.P. is the mean spherical candle power of the lamp used. Values are useful for relative effectiveness.

▲ LENS COLOR:

To obtain Data Cap with color other than red, change digit before last dash in catalog number (-1471-) to: Green-2; Amber-3; White Translucent-5; Clear Colorless-7.

Example: 250-8738-1473-504 (Amber)

Note: Green is not recommended for use with Neon lamps.

NEON

MOUNT IN 3/8" CLEARANCE HOLE

250-8745-16

FEATURES

A Datalite Indicator consists of three parts: (a) the main body or **Datalamp Holder** which is adapted for permanent mounting on the panel; (b) the **Datalamp cartridge** which telescopes into the Datalamp Holder and makes electrical contact as the pins enter the receptacle in the holder; and (c) the screw-on **Data Cap.** The Data Cap secures the Datalamp and its lens controls the light emission.

NEON DATALAMP CARTRIDGES		
LAMP BRIGHTNESS	CARTRIDGES WITH BUILT-IN RESISTOR	CARTRIDGES WI NO RESISTOR
HIGH	507-4538-0937-610	507-3836-0937-
STANDARD	507-4537-0937-640	507-3835-0937-

SHORT CYLINDRICAL DATA CAP with diffusing rings.

NEON ■ COMPLETE ASSEMBLIES WITH TURRET TERMINALS			
DATA CAP LENS SHAPE	▲ LENS COLOR	ACCOMMODATES CARTRIDGES WITH BUILT-IN RESISTOR	ACCOMMODA CARTRIDGES NO RESIST
Long Cylindrical	Red	250-8745-1631-504	250-8738-163
Short Cylindrical	Red	250-8745-3331-504	250-8738-333

■ To obtain solder cup terminals change "87" in catalog number to "75". For amp taper pin receptacles, change to "90". Example: 250-9038-3331-

▲ See **LENS COLOR** data at

INCANDESCENT — For use on 6 - 120V Circuits

250-8758-1471-504

250-8758-3331-504

Mount in 3/8" Clearance Hole

This series accommodate longer cartridges that em telephone type bulbs for higher voltages. Sufficient is produced to be effective with either transparen translucent Data Caps.

Datalamp cartridges are provided with 6 supply ages. For levels between nominal ratings, cartridge the next higher value should be chosen.

DATALAMP CARTRIDGES

CATALOG NUMBER	VOLTS	MA.	LIFE HOURS**	RELATIVE LUMINOSITY END-ON
507-5819-0747-600	6	140	5000+	0.7
507-5820-0747-600	12	170	5000+	2.1
507-5821-0747-600	28	40	5000+	1.2
507-5822-0747-600	48	53	5000+	1.5
507-5823-0747-600	60	50	5000+	2.2
507-5824-0747-600	120	25	5000+	1.5

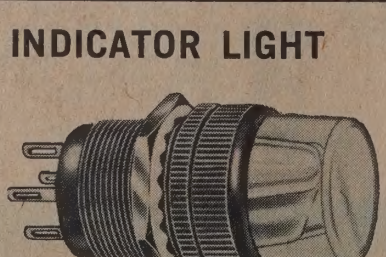
**Based on the lamp manufacturer's statement: "Engineered to give a minimum of 5000 hours under static conditions." Lamps giving this performance are comparable with those rated at 25,000 hours "average" life. All Catalog Numbers above designate Datalamp Cartridges with clear (colorless) convex lens with matted back.

*INDICATOR LIGHTS WITH TURRET TERMINALS		
LENS COLOR	TRANSLUCENT LENS FOR USE WITH HOT-STAMPED LEGENDS	TRANSPARENT LENS WITH REFRACTIVE INNER SURFACES
Red	250-8758-1471-504	250-8758-3331-504
Green	250-8758-1472-504	250-8758-3332-504
Yellow (Amber)	250-8758-1473-504	250-8758-3333-504
Blue	250-8758-1474-504	250-8758-3334-504
White (Translucent)	250-8758-1475-504	250-8758-3335-504
Clear (Colorless)	———	250-8758-3337-504

*To specify Datalites with solder cup terminals, change so much of the catalog number that reads -8758- to -7558-. Example: 250-7558-1473-504.

DATA TWIN INDICATOR LIGHT

Accommodates 2 Neon or Incandescent DATALAMP Cartridges



253-6939-1437-504*

MOUNTS IN 3/4" CLEARANCE HOLE

The Data Twin Indicator Light houses 2 Datalamp Cartrid Each cartridge may be operated independently thus indica 4 possible conditions. The cartridge is removable from fr of panel. The light barrier (between the 2 lamps) is an inte part of the lens cap.

***Examples:** 253-6939-1437-504 — For use with all Inc descent or most Neon cartridges without built-in resis 253-6945-1437-504 — For use with Neon cartridges w built-in resistor only.

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INDICATOR LIGHTS

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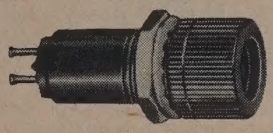
...ations are approx. actual size.)

DATALITES® – Ultra-Miniature Indicator Lights

Incandescent Datalites—For use on 1.35V - 28V Circuits**

...-504 w/507-3909-1471-600

DATALAMP HOLDER

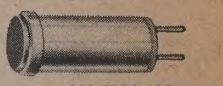


508-8738-504

...3-14-504 w/507-3909-1471-600

TERMINAL TYPE*	DATALAMP HOLDER WITH COLLAR	DATALAMP HOLDER WITHOUT COLLAR
Turret	508–8738–504	250–8738–14–504

*To obtain Datalmp Holder with other than turret terminals change "87" in catalog No. to "75" (solder cup terminals). For amp "53" taper pin receptacles, change to "90". Example: 508–9038–504.



507-3909-0371-600

507-3909-1471-600

Mount 3/8" Clearance Hole

...escent Datalight Indicator Lights consist of: (1) **Datalamp Car-** ... — a plug-in, replaceable light source, with either short cylindri- ... flat lens shape (see chart at right); accommodated by (2) **Data-Holders** — with or without collar (see chart above).

...**rd Finish:** Aluminum, black anodize finish. To obtain optional ...nodize finish, change the first digit in the catalog number suffix ...5 to **-6.** Example: 508-8738-**6**04.

...lamp Cartridges are also available with T-2 type lamps in a range ...ages from 6-120V. For more data, see preceding page. Also, re- ...*Catalog L-160.*

...**COLOR:** See listing below.

DATALAMP CARTRIDGES

CATALOG NOS. SHORT CYLINDRICAL LENS SHAPE *(TRANSLUCENT)	CATALOG NOS. ▲FLAT LENS SHAPE *(TRANSLUCENT)	VOLTS	MA.	C.P.**	LIFE HOURS
LONG LIFE—HIGH RELIABILITY					
507–3907–1471–600	507–3907–0371–600	6.3	40	.03	50,000
507–3909–1471–600	507–3909–0371–600	6.3	200	.40	50,000
507–3914–1471–600	507–3914–0371–600	14.0	80	.30	50,000
507–3918–1471–600	507–3918–0371–600	28.0	40	.30	25,000
STANDARD RATINGS					
507–3902–1471–600	507–3902–0371–600	2.5	200	.20	500
507–3906–1471–600	507–3906–0371–600	6.0	200	.60	1,000
507–3908–1471–600	507–3908–0371–600	6.3	75	.23	500
507–3913–1471–600	507–3913–0371–600	14.0	80	.50	750
507–3916–1471–600	507–3916–0371–600	18.0	40	.15	1,000
507–3917–1471–600	507–3917–0371–600	28.0	40	.34	1,000
LOW POWER RATINGS (TRANSPARENT ONLY)					
507–3901–1431–600	507–3901–0331–600	1.35	60	.006	500
507–3903–1431–600	507–3903–0331–600	2.7	60	.04	500
507–3904–1431–600	507–3904–0331–600	3.0	15	.005	20,000
507–3910–1431–600	507–3910–0331–600	10.0	14	.004	100,000
507–3911–1431–600	507–3911–0331–600	10.0	40	.08	10,000
507–3912–1431–600	507–3912–0331–600	14.0	17	.03	50,000
507–3915–1431–600	507–3915–0331–600	18.0	20	.08	20,000

*If transparent lens is desired, change "7" in the catalog number to "3". Examples: 507–3909–1431–600; 507–3909–0331–600.
▲ Not for use with Datalamp Holders or Data Twin Assembly. Use only with separate 515–0050 or 515–0012 Cartridge Connector and 515–0051 Speed Clip.
**C.P. is the mean spherical candle power of the lamp used. Values are useful for relative effectiveness.

...nt in 3/8" Clearance Hole

...Datalite Indicator Lights consist of: ...talamp Cartridges — a plug-in, re- ...ble light source, with either stove- ...or long cylindrical lens shape — ...r **without** built-in current limiting ...r (see recommended resistance ... and appropriate code nos. below). ...ommodated by **Datalamp Holders** ...rter length when cartridge **without** ...n resistor is used; by Datalamp ...'s of longer length when cartridges ...uilt-in resistor are used. See charts ...t for available selections.

...**rd Finish:** Black anodize. To obtain ...al clear anodize finish, change the ...igit in the catalog number suffix ...5 to **-6.**

Example: 508-8745-**6**04.

...**COLOR:** The digit **before** the last ...n the catalog number indicates that ...lor of the Datalamp Cartridge is ... When color other than red is ...l, change this digit to a figure from ...ting below.

...1; Green—2; Yellow (Amber)—3; Blue—4; ... Translucent—5; Yellow—6; Clear (Color- ...7.

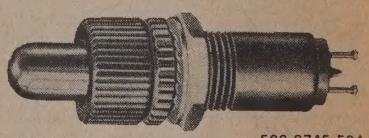
Examples: 507-3901-1432-600 (green).
507-4538-1533-610 (yellow amber)

Blue or **green** lens colors are not available ... with Neon light sources.

NEON DATALITES

For use on
105-125V AC-DC or
110-125V AC CIRCUITS

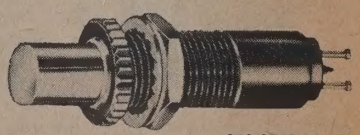
NEON DATALAMP CARTRIDGES		
LENS SHAPE	BUILT-IN RESISTOR HIGH BRIGHTNESS	BUILT-IN RESISTOR STANDARD BRIGHTNESS
Stovepipe	507–4538–0931–610	507–4537–0931–640
Long Cylindrical	507–4538–1531–610	507–4537–1531–640



508-8745-504
w/507-4538-0931-610

TERMINAL TYPE*	DATALAMP HOLDER WITH COLLAR	DATALAMP HOLDER WITHOUT COLLAR
Turret	508–8745–504	250–8745–14–504

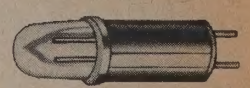
*To obtain Datalamp Holder with other than turret terminals change "87" in catalog No. to "75" (solder cup terminals). For amp "53" taper pin receptacles, change to "90". Example: 508–9045–504.



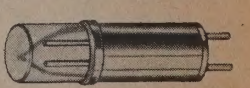
250-8745-14-504
w/507-4538-0931-610

▲ NEON DATALAMP CARTRIDGES		
	WITHOUT BUILT-IN RESISTOR	
LENS SHAPE	HIGH BRIGHTNESS	STANDARD BRIGHTNESS
Stovepipe	507–3836–0931–600	507–3835–0931–600
Long Cylindrical	507–3836–1531–600	507–3835–1531–600

▲ These Datalamp Cartridges are accommodated by Datalamp Holders listed in table for Incandescent Datalites.



507-3836-0931-600
(without built-in resistor)



507-4538-1531-610
(with built-in resistor)

NEON LAMPS and RESISTOR VALUES					
		Bright Light		Long Life	
Neon Lamp	Volts Applied to Terminals	Resistor and Approx. Life		Resistor and Approx. Life	
Standard Brightness	105-125 AC or DC	56K	3000 hrs.	100K	15,000 hrs.
High Brightness	110-125 AC only	22K	5000 hrs.	33K	25,000 hrs.

Change 2nd digit in code no. suffix as follows: (56K) — 640; (22K) — 610; (100K) — 670; (33K) — 630; Example: 507-4538-0931-630.

DIALCO® **INDICATOR LIGHTS**

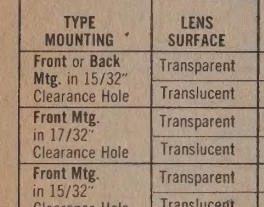
DIALIGHT CORPORATION
MANUFACTURERS OF VISUAL INDICATORS

(Illustrations are approx. actual size.)

Sub-Miniature Indicator Lights for T-1¾ Bulbs

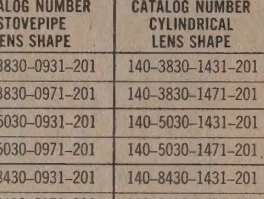
With Midget Flanged Base — INCANDESCENT

MOUNT IN 15/32" CLEARANCE HOLE FRONT OR BACK OF PANEL INSERTION WITH MOVABLE FLANGE



101-3830-0931-201

MOUNT IN 15/32" CLEARANCE HOLE FRONT OF PANEL INSERTION WITH FIXED FLANGE



140-8430-1471-201

TYPE MOUNTING	LENS SURFACE	CATALOG NUMBER STOVEPIPE LENS SHAPE	CATALOG NUMBER CYLINDRICAL LENS SHAPE
Front or **Back Mtg.** in 15/32" Clearance Hole	Transparent	101-3830-0931-201	140-3830-1431-201
	Translucent	101-3830-0971-201	140-3830-1471-201
Front Mtg. in 17/32" Clearance Hole	Transparent	101-5030-0931-201	140-5030-1431-201
	Translucent	101-5030-0971-201	140-5030-1471-201
Front Mtg. in 15/32" Clearance Hole	Transparent	101-8430-0931-201	140-8430-1431-201
	Translucent	101-8430-0971-201	140-8430-1471-201

MOUNT IN 15/32" CLEARANCE HOLE • FRONT OF PANEL INSERTION
WITH FIXED FLANGE • MS25256 2-12

162-8430-0931-502

Note: The inclusion of lamp MS25237-327 in MS25256, formerly designated by the use of odd numbered suffixes, -1 through -11 inclusive, is now superseded by suffix -327 (28 volts .04 amp) or -328 (6 volts .20 amp) after the even numbered dash number. Examples: MS25256-2-327; MS25256-10-328.

CATALOG NUMBER	MS. NO. WITHOUT LAMP*	LENS CAP COLOR**
162-8430-0933-502	MS25256-2	Aviation Yellow
162-8430-0932-502	MS25256-4	Aviation Green
162-8430-0931-502	MS25256-6	Identification Red
162-8430-0937-502	MS25256-8	Aviation White
162-8430-0975-502	MS25256-10	Translucent White
162-8430-0934-502	MS25256-12	Aviation Blue

To specify translucent stovepipe or cylindrical; or transparent cylindrical lens cap **(not covered by MS designations)** write for Cat. L-178.

*Marking: Part number marked on the assembly is the part number for the complete assembly **less lamp.** — **All lens cap colors are transparent with the exception of white.

ROTATABLE LENS

134-3830-0351-201

Specially designed spring mounting facilitates rotation of lens and alignment of legend — **after** installation of the Indicator Light.

LENS SHAPE	LENS FINISH	CATALOG NO. (FRONT OR BACK MTG. 15/32" CLEARANCE HOLE)	CATALOG NO. (FRONT MTG. 17/32" CLEARANCE HOLE)	CATALOG NO. (FRONT MTG. 15/32" CLEARANCE HOLE)
FLAT	Transparent	134-3830-0331-201	134-5030-0331-201	134-8430-0331-201
	Translucent	■134-3830-0351-201	■134-5030-0351-201	■134-8430-0351-201
CONVEX	Unfrosted	134-3830-0131-201	134-5030-0131-201	134-8430-0131-201
	Back Frosted	134-3830-0111-201	134-5030-0111-201	134-8430-0111-201
FACETED	Unfrosted	134-3830-2131-201	134-5030-2131-201	134-8430-2131-201

■ Specify translucent colors as follows: Red — 0351 . . . Green — 0352 . . . Yellow (Amber) — 0373 . . . Blue — 0374 . . . White — 0375 . . . Light Yellow — 0376.

LENS COLOR: The figure before the last dash in the catalog number indicates that the lens is RED. When a color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

RED—1 . . . Green—2 . . . Yellow (Amber)—3 . . . Blue—4 . . .
White Translucent—5 . . . Light Yellow—6 . . . Clear (Colorless)—7.
Example: 101-3830-0932-201 (Green)

Two Terminals — Fully Insulated

Meet or exceed environmental and operational requirements of MIL-L-6723 and MIL-L-3661.

RUGGED CONSTRUCTION
Lamp, socket, and all connections are completely insulated from the bushing and panel to which it is attached. The use of phenolic material for military specification grade assures permanent isolation from ground. These assemblies are solidly made to withstand usual vibration and corrosion resistance tests.

Order Complete with Lamp. Specify Lamp Number.

MANUFACTURER'S RATINGS (Values are as

LAMP NO.	VOLTS	AMPERES	HOURS
▲331	1.35	.06	500
▲338	2.7	.06	500
▲375	3.0	.015	20,000
*328	6.0	.20	1,000
345	6.0	.04	1,000
349	6.3	.20	3,000
380	6.3	.04	50,000
381	6.3	.20	50,000
▲344	10.0	.014	50,000
367X	10.0	.04	5,000
330	14.0	.08	750
382	14.0	.08	50,000
370	18.0	.04	1,000
*327	28.0	.04	1,000
**387	28.0	.04	25,000

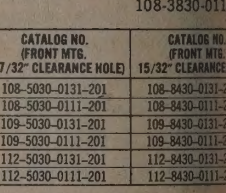
▲ These lamps **only** are for use with transparent caps **without** legends.
*Conforms to MS25237. **MS18209 (B

DIMMERS — MECHANICAL or POLAROID

Choice of mechanical or polaroid dimming device. Polaroid produces some reduced intensity at all settings, but gives full diameter opening.

Mechanical varies opening size to complete blackout or has permanent small opening as in "semi-blackout" type.

MOUNT IN 15/32" CLEARANCE H
FRONT OR BACK OF PANEL INSE
WITH MOVABLE FLANGE



108-3830-011

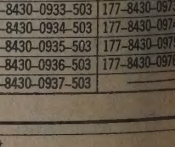
DIMMER TYPE	GLASS LENS TYPE	LENS SURFACE	CATALOG NO. (FRONT OR BACK MTG. 15/32" CLEARANCE HOLE)	CATALOG NO. (FRONT MTG. 17/32" CLEARANCE HOLE)	CATALOG NO. (FRONT MTG. 15/32" CLEARANCE
Complete Blackout	Convex	Unfrosted	108-3830-0131-201	108-5030-0131-201	108-8430-0131-
		Back Frosted	108-3830-0111-201	108-5030-0111-201	108-8430-0111-
Semi-Blackout	Convex	Unfrosted	109-3830-0131-201	109-5030-0131-201	109-8430-0131-
		Back Frosted	109-3830-0111-201	109-5030-0111-201	109-8430-0111-
Polaroid	Convex	Unfrosted	112-3830-0131-201	112-5030-0131-201	112-8430-0131-
		Back Frosted	112-3830-0111-201	112-5030-0111-201	112-8430-0111-

NON-DIMMING TYPE	GLASS LENS TYPE	LENS SURFACE	COMPLETE ASSEMBLIES
Front or **Back Mtg.** in 15/32" Clearance Hole	Convex	Unfrosted	111-3830-0131-201
		Back Frosted	111-3830-0111-201
Front Mtg. in 17/32" Clearance Hole	Convex	Unfrosted	111-5030-0131-201
		Back Frosted	111-5030-0111-201
Front Mtg. in 15/32" Clearance Hole	Convex	Unfrosted	111-8430-0131-201
		Back Frosted	111-8430-0111-201

WATER-TIGHT ASSEMBLIES

Water-tight construction: These Sub-Miniature Lights are completely water-tight on the face of the panel. Water-tightness is achieved by means of **retained O-ring seals.** One **O-ring** is retained within the back of the lens cap, the other behind the flange on the mounting bushing.

MOUNT IN 15/32" CLEARANCE HOLE FRONT OF PANEL INSER WITH FIXED FLANG



177-8430-093

WATER-TIGHT DIMMERS

On the Dimmer type assembly, a third **O-ring** is mounted within the dimmer cap — so positioned as to assure absolutely no leakage through the dimmer slot. For data, request Catalog L-178.

LENS COLOR	COMPLETE ASSEMBLIES TRANSPARENT COLORS	TRANSLUCE COLORS
Red	177-8430-0931-503	177-8430-097
Green	177-8430-0932-503	177-8430-097
Yellow (Amber)	177-8430-0933-503	177-8430-097
Blue	177-8430-0934-503	177-8430-097
White (Translucent)	177-8430-0935-503	177-8430-097
Light Yellow	177-8430-0936-503	177-8430-097
Clear (Colorless)	177-8430-0937-503	

Sub-Sub-Miniatures

Series 252-9951-0971

Conforms to Drawing MS25446 2-7 . . . Requires only .193" Panel Mounting Clearance Hole . . . For complete data, refer to Catalog L-168.

Translucent Lens Cap Color	DIALCO Catalog No.	Military Number
Blue	252-9951-0974	MS25446-2
Green	252-9951-0972	MS25446-3
Red	252-9951-0971	MS25446-4

Translucent Color Lens Cap	Catalog No. DIALCO	Numb Milita
White	252-9951-0975	MS254
Yellow (Amber)	252-9951-0973	MS254
Clear (Transparent)	252-9951-0937	MS254

© United Technical Publica

DIALCO®

INDICATOR LIGHTS

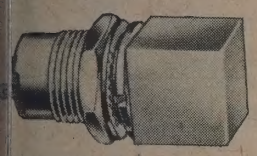
DIALIGHT CORPORATION
MANUFACTURERS OF VISUAL INDICATORS

...ations are approx. actual size.)

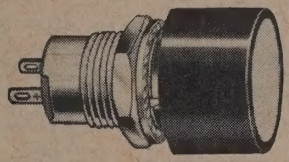
...b-Miniature Indicator Lights for T-1¾ Bulbs with midget flanged base — INCANDESCENT

Use 1/2" or 3/4" Round or Square Friction-Fit Plastic Lens Caps

...UNT IN 15/32" CLEARANCE HOLE — FRONT ...E PANEL INSERTION — WITH FIXED FLANGE

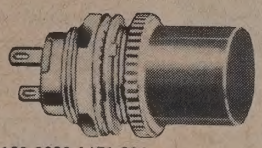


...9730-1871-602

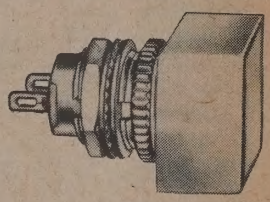


188-9730-5071-602

MOUNT IN 1/2" CLEARANCE HOLE FRONT OR BACK OF PANEL INSERTION — WITH MOVABLE FLANGE



183-9830-1471-604



187-9830-1471-604

...s cap is effectively lighted by T-1¾ bulb with midget flanged base, ...extends completely into the luminous portion. Fine solid color ...are obtained. The two-part construction permits opaque sides with ...e colored faces.

...ps may be rotated, permitting legends or cap edges to be easily ... into alignment after installation of the assembly; or they may be keyed, thus permitting them to be pushed into place only in a **predetermined** position.

Unique anti-rotation (locked) construction provides for secure keyed mounting of mounting bushing on panels.

***LENS FACE COLOR:** See listings at bottom of page.

See lamp listing and range of voltages on Page 942.

WITH 1/2" FRICTION FIT LENS CAP - KEYED (NON-ROTATABLE)

CAP COLOR ...OMBINATION	CAP SHAPE	FRONT MOUNTING 15/32" CLEARANCE HOLE	FRONT OR REAR MTG. 1/2" CLEARANCE HOLE
...olor, Translucent ...id Sides	Round	186-9730-1471-602	186-9830-1471-604
	Square	184-9730-1871-602	184-9830-1871-604
...cent Colored Face, ...paque Sides	Round	186-9730-5071-602	186-9830-5071-604
	Square	184-9730-5071-602	184-9830-5071-604
...cent Colored Face, ...aque Sides	Round	186-9730-5171-602	186-9830-5171-604
	Square	184-9730-5171-602	184-9830-5171-604

WITH 3/4" FRICTION FIT LENS CAP - KEYED (NON-ROTATABLE)

CAP COLOR COMBINATION	CAP SHAPE	FRONT MOUNTING 15/32" CLEARANCE HOLE	FRONT OR REAR MTG. 1/2" CLEARANCE HOLE
Solid Color, Translucent Face and Sides	Round	188-9730-1471-602	188-9830-1471-604
	Square	187-9730-1871-602	187-9830-1871-604
Translucent Colored Face, Black Opaque Sides	Round	188-9730-5071-602	188-9830-5071-604
	Square	187-9730-5071-602	187-9830-5071-604
Translucent Colored Face, Gray Opaque Sides	Round	188-9730-5171-602	188-9830-5171-604
	Square	187-9730-5171-602	187-9830-5171-604

WITH 1/2" FRICTION FIT LENS CAP - ROTATABLE

CAP COLOR ...OMBINATION	CAP SHAPE	FRONT MOUNTING 15/32" CLEARANCE HOLE	FRONT OR REAR MTG. 1/2" CLEARANCE HOLE
...olor, Translucent ...id Sides	Round	183-9730-1471-602	183-9830-1471-604
	Square	185-9730-1871-602	185-9830-1871-604
...cent Colored Face, ...paque Sides	Round	183-9730-5071-602	183-9830-5071-604
	Square	185-9730-5071-602	185-9830-5071-604
...cent Colored Face, ...aque Sides	Round	183-9730-5171-602	183-9830-5171-604
	Square	185-9730-5171-602	185-9830-5171-604

WITH 3/4" FRICTION FIT LENS CAP - ROTATABLE

CAP COLOR COMBINATION	CAP SHAPE	FRONT MOUNTING 15/32" CLEARANCE HOLE	FRONT OR REAR MTG. 1/2" CLEARANCE HOLE
Solid Color, Translucent Face and Sides	Round	191-9730-1471-602	191-9830-1471-604
	Square	190-9730-1871-602	190-9830-1871-604
Translucent Colored Face, Black Opaque Sides	Round	191-9730-5071-602	191-9830-5071-604
	Square	190-9730-5071-602	190-9830-5071-604
Translucent Colored Face, Gray Opaque Sides	Round	191-9730-5171-602	191-9830-5171-604
	Square	190-9730-5171-602	190-9830-5171-604

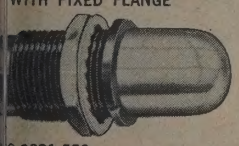
...onnecting a Neon Light to a Circuit Having One Side Grounded, Always Connect the Hot Side of the Circuit to the Terminal Marked + (Center Contact).

...b-Min. Indicator Lights for T-2 Bulb with midget flanged base — NEON

C7A (NE-2D)—Standard Brightness
C9A (NE-2J)—High Brightness

TWO TERMINALS — FULLY INSULATED . . . Meet or exceed environmental and operational requirements of MIL-L-6723 and MIL-L-3661.

...' IN 15/32" CLEARANCE HOLE ...NT OF PANEL INSERTION ... WITH FIXED FLANGE



...6-0931-552

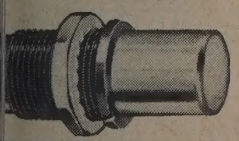
With Built-in Resistor

(A patented DIALCO feature—
U.S. Pat No. 2,421,321)

Conform to MS25257

Accommodates a T-2 Neon Glow Lamp: C7A (NE-2D) (MS25252) for 105-125 Volts A.C. or D.C.; **for Catalog Numbers see below . . . C9A (NE-2J)** (High Brightness) for 110-125 Volts — A.C. only.

...CATALOG NO. ...ITHOUT LAMP	MS NO. WITHOUT LAMP	MS NO. WITH LAMP MS25252- C7A (NE-2D)	LENS COLOR
...-8836-0933-552	MS25257-2	MS25257-1	Aviation Yellow
...-8836-0931-552	MS25257-4	MS25257-3	Identification Red
...-8836-0937-552	MS25257-6	MS25257-5	Clear (Colorless)



...6-1531-552

These assemblies are similar in every respect to the MS assemblies (137-8836-0931-552 Series) above, except that they offer **optional** features not covered by MS. Finishes: Standard — black anodize; **optional** — clear anodize. **Lamps — C7A (NE-2D)** (standard brightness) for 105-125 volts A.C. or D.C.; **C9A (NE-2J)** (high brightness) for 110-125 Volts — A.C. only.

...COLOR	COMPLETE ASSEMBLIES			
	ACCOMMODATE C7A (NE-2D) LAMP		ACCOMMODATE C9A (NE-2J) LAMP	
	STOVEPIPE	CYLINDRICAL	STOVEPIPE	CYLINDRICAL
...ation Red	137-8836-0931-552	137-8836-1531-552	137-8864-0931-512	137-8864-1531-512
...Yellow	137-8836-0933-552	137-8836-1533-552	137-8864-0933-512	137-8864-1533-512
	137-8836-0935-552	137-8836-1535-552	137-8864-0935-512	137-8864-1535-512
...llow	137-8836-0936-552	137-8836-1536-552	137-8864-0936-512	137-8864-1536-512
...olorless)	137-8836-0937-552	137-8836-1537-552	137-8864-0937-512	137-8864-1537-512

LIGHT SOURCE: Tiny Neon Glow Lamps C7A (NE-2D) or C9A (NE-2J)

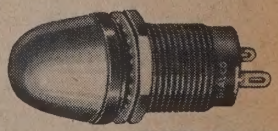
Recommended resistor values:

FOR C7A (NE-2D) AT 105-125 VOLTS AC OR DC	
Bright Light	Long Life
■62,000 ohms	100,000 ohms
FOR C9A (NE-2J) - HIGH BRIGHTNESS - AT 110-125 VOLTS AC ONLY	
Bright Light	Long Life
■22,000 ohms	33,000 ohms

■ Standard values of patented built-in resistors; other values optional.

WATER-TIGHT NEON INDICATOR LIGHTS — with RETAINED O-RING SEALS

MOUNT IN 15/32" CLEARANCE HOLE
FRONT OF PANEL INSERTION
WITH FIXED FLANGE
With Built-in Resistor



181-8836-0931-553

LENS COLOR	COMPLETE ASSEMBLIES		
	WITH BUILT-IN RESISTOR		WITHOUT BUILT-IN RESISTOR
	ACCOMMODATE C7A (NE-2D) LAMP	ACCOMMODATE C9A (NE-2J) LAMP	
Red	181-8836-0931-553	181-8864-0931-513	181-8536-0931-503
Yellow (Amber)	181-8836-0933-553	181-8864-0933-513	181-8536-0933-503
White (Translucent)	181-8836-0935-553	181-8864-0935-513	181-8536-0935-503
Light Yellow	181-8836-0936-553	181-8864-0936-513	181-8536-0936-503
Clear (Colorless)	181-8836-0937-553	181-8864-0937-513	181-8536-0937-503

***LENS COLOR:** The figure before the last dash in the catalog number indicates that the lens is RED. When a color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are always furnished unfrosted. Example: 191-9730-1873-602 (Yellow Amber)

RED—1 . . . Green—2 . . . Yellow (Amber)—3 . . . Blue—4 . . .
White Translucent—5 . . . Light Yellow—6 . . . Clear (Colorless)—7.
Green and Blue are not recommended for use with Neon Lamps.

DIALCO® INDICATOR LIGHTS

DIALIGHT CORPORATION
MANUFACTURERS OF VISUAL INDICATORS

(Illustrations are approx. actual size.)

When Connecting a Neon Light to a Circuit Having One Side Grounded, Always Connect the Hot Side of the Circuit to the Terminal Marked + (Center Co

ASSEMBLIES with BUILT-IN RESISTORS (U. S. Patent No. 2,421,321)

"Recognized under the component program of Underwriters' Labs Inc."
75W., 125V — 75W., 250V

For T-3¼ Bulb with Miniature Bayonet Base—NEON

For operation on 105-125V AC-DC . . . 110-125V AC . . . 210-250V AC-DC

B1A (N
B2A (NE
(High Br

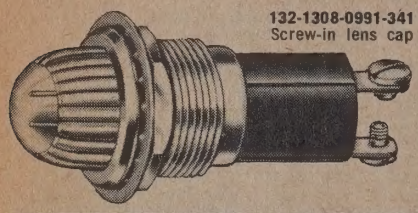
Assemblies conform to MIL-L-3661.

PROPER CHOICE OF LAMP AND BUILT-IN RESISTOR VALUES: The NE-51 glow lamp types are shown with resistor table. Lamps are the **standard brightness** NE-51 and the **high brightness** NE-51H. The latter may be operated at about three times the level of current that may be applied to the standard lamp and it will produce more than **8 times** as much brightness.

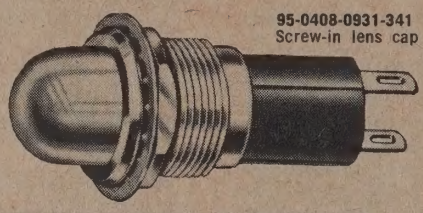
BUILT-IN RESISTOR VALUES (in ohms) for NEON GLOW LAMPS

B2A (NE-51H)—High Brightness			B1A (NE-51)—Standard Brightness	
	Circuit volts applied to terminals 110-125 AC	210-250 AC-DC	Circuit volts applied to terminals 105-125 AC-DC	
BRIGHT LIGHT	■ 22,000	68,000	BRIGHT LIGHT	■ 56,000
LONG LAMP LIFE	33,000	100,000	LONG LAMP LIFE	100,000

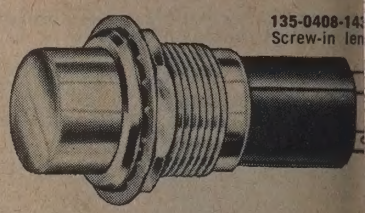
■ **Standard values of patented built-in resistors.**



132-1308-0991-341
Screw-in lens cap

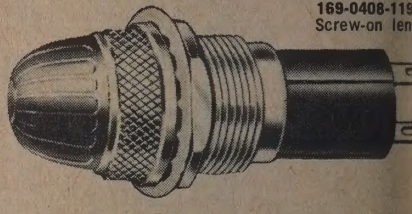


95-0408-0931-341
Screw-in lens cap

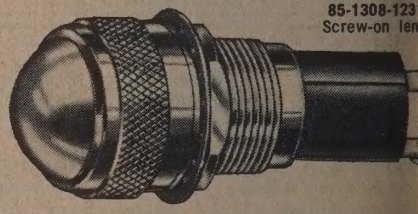


135-0408-14
Screw-in len

LENS HOLDER AND PLASTIC LENS STYLE	LENS FINISH	FOR B2A (NE-51H)—110-125V. AC		FOR B1A (NE-51)—105-125V. AC-DC	
		CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS	CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS
STOVEPIPE (Screw-in)	Internal Fluting	52-1363-0991-311	52-0463-0991-311	52-1308-0991-341	52-0408-0991-341
STOVEPIPE (Screw-in)	Special Internal Fluting	132-1363-0991-311	132-0463-0991-311	132-1308-0991-341	132-0408-0991-341
CYLINDRICAL (Screw-in)	Transparent	135-1363-1431-311	135-0463-1431-311	135-1308-1431-341	135-0408-1431-341
FLAT (Screw-in)	Transparent	81-1363-0331-311	81-0463-0331-311	81-1308-0331-341	81-0408-0331-341
STOVEPIPE (Screw-in)	Transparent	95-1363-0931-311	95-0463-0931-311	95-1308-0931-341	95-0408-0931-341
DOME (Screw-on)	Transparent +	85-1363-1231-311	85-0463-1231-311	85-1308-1231-341	85-0408-1231-341
	Matted Back	85-1363-0841-311	85-0463-0841-311	85-1308-0841-341	85-0408-0841-341
STOVEPIPE (Screw-on)	Internal Fluting +	169-1363-1191-311	169-0463-1191-311	169-1308-1191-341	169-0408-1191-341
	Transparent +	169-1363-1131-311	169-0463-1131-311	169-1308-1131-341	169-0408-1131-341



169-0408-119
Screw-on len



85-1308-123
Screw-on len

+ To specify white translucent color, change so much of the catalog number that reads –1231– to –0835–; from –1131– to –0935–; from –1191– to –0995–. Example: 169-1363-0935-311.

WATER-TIGHT CONSTRUCTION: The assemblies on this page may be made **water-tight** on the face of the panel. To specify, change the last digit in the catalog number suffix to **3**. Example: 95-1308-0931-**343**.

HOW TO DESIGNATE THE THREE DIGIT CATALOG NUMBER SUFFIX (-XXX)

FINISH	RESISTOR	HARDWARE
-1 white nickel	1 - 22K	1 - brass
-2 black nickel	3 - 33K	3 - water-tight on the face of the panel.
-3 polished chrome	4 - 56K	
-4 satin chrome	6 - 68K	
	7 - 100K	

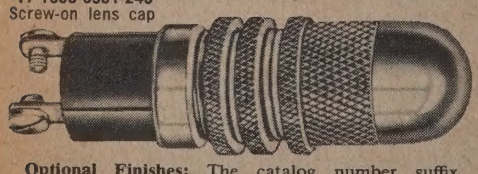
NOTE: The part numbers given in this catalog indicate **standard** indicator lights. The table at left provides the standard and optional designations for **Finish, Resistor** and **Hardware** where appropriate. Example: 85-1308-1231-**273** (black nickel finish, 100K resistor, water-tight construction).

LENS COLOR—The last digit before the 3 digit c number suffix indicates that the lens is RED. color other than red is desired, change this digit figure from the listing below.

Red — 1; Yellow (Amber) — 3; White Translucent Light Yellow — 6; Clear (Colorless) — 7.

9/16" Assemblies mount from BACK of panel only

17-1308-0931-245
Screw-on lens cap



Optional Finishes: The catalog number suffix designates an assembly with **standard black nickel** finish. To specify optional finish, change the first digit of the catalog number suffix to **-3** (polished chrome finish), or **-4** (satin chrome finish).

Example: 17-1308-0931-345

SAMPLES ON REQUEST AT ONCE — NO CHARGE

WITH SCREW-ON LENS CAP

LENS STYLE	LENS FINISH	FOR B2A (NE-51H)—110-125V. AC		FOR B1A (NE-51)—105-125V. AC-DC	
		CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS	CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMI
STOVEPIPE	Transparent	17-1363-0931-215	17-0463-0931-215	17-1308-0931-245	17-0408-0931
	Internal Fluting	17-1363-0991-215	17-0463-0991-215	17-1308-0991-245	17-0408-0991
STOVEPIPE	Transparent +	70-1363-1131-215	70-0463-1131-215	70-1308-1131-245	70-0408-1131
	Internal Fluting +	70-1363-1191-215	70-0463-1191-215	70-1308-1191-245	70-0408-1191
FLAT	Transparent	37-1363-0331-215	37-0463-0331-215	37-1308-0331-245	37-0408-0331

+ See footnote above.

Standard Hardware: 3 knurled rings . . . **Optional Hardware:** 1 ring, 1 lockwash mounting nut. To designate an assembly with "optional hardware," change the last in the catalog number suffix to **6** . . . Example: 37-0408-0331-**246**.

Also Available: Assemblies for T-3¼ Bulb with Miniature Bayonet Base — **INCANDESCENT — 2 to 55V**

For Mounting in 7/16" Clearance Hole . . . Refer to Catalog L-161.

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DIALCO® INDICATOR LIGHTS

DIALIGHT CORPORATION
MANUFACTURERS OF VISUAL INDICATORS

...rations are approx. actual size.)

...3W.) ...with ...ayonet ...descent ...2 volts.

T-3-1/4 Bulb with Miniature Bayonet Base—Incandescent 2 to 55V

...nized under the ...ment program of ...Writers' Labs Inc."

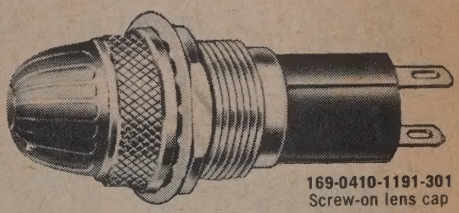
75W., 125V.

▲ LEGENDS: ...ot-stamped or ...graved letters, ...umber or sym... ...ols can be sup... ...lied **only** on ...ese lenses.

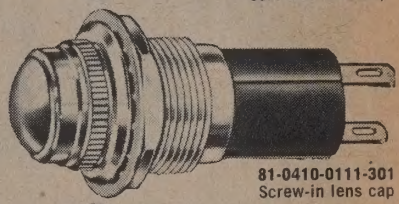
ASSEMBLIES For T-3-1/4 BULB with MIN. BAYONET BASE - INCANDESCENT - 2 to 55 V and T-3 Bulb with Min. Bayonet Base for 120V.

Mount in 11/16" Clearance Hole *For Front of Panel Insertion*

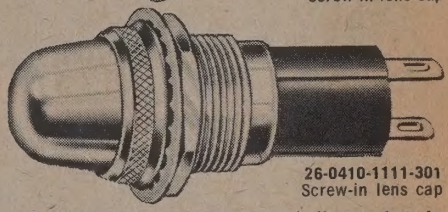
LENS STYLE	LENS FINISH	CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS	CATALOG NO. WITH QUICK CONNECT TERMINALS
STOVEPIPE	Transparent	95-1310-0931-301	95-0410-0931-301	95-5710-0931-301
	Translucent	95-1310-0971-301	95-0410-0971-301	95-5710-0971-301
STOVEPIPE	Internal Fluting	52-1310-0991-301	52-0410-0991-301	52-5710-0991-301
STOVEPIPE	Special Internal Fluting	132-1310-0991-301	132-0410-0991-301	132-5710-0991-301
CYLINDRICAL▲	Transparent	135-1310-1431-301	135-0410-1431-301	135-5710-1431-301
CONVEX *	Unfrosted	81-1310-0131-301	81-0410-0131-301	81-5710-0131-301
	Back Frosted	81-1310-0111-301	81-0410-0111-301	81-5710-0111-301
FLAT *	Back Frosted	81-1310-0211-301	81-0410-0211-301	81-5710-0211-301
	Unfrosted	81-1310-0231-301	81-0410-0231-301	81-5710-0231-301
FLAT▲	Translucent	■81-1310-0351-301	■81-0410-0351-301	■81-5710-0351-301
	Transparent	81-1310-0331-301	81-0410-0331-301	81-5710-0331-301
STOVEPIPE *	Unfrosted	26-1310-1131-301	26-0410-1131-301	26-5710-1131-301
	Back Frosted	26-1310-1111-301	26-0410-1111-301	26-5710-1111-301
	Internal Fluting	26-1310-1191-301	26-0410-1191-301	26-5710-1191-301
STOVEPIPE *	Transparent	169-1310-1131-301	169-0410-1131-301	169-5710-1131-301
	Internal Fluting	169-1310-1191-301	169-0410-1191-301	169-5710-1191-301
DOME	Transparent	85-1310-1231-301	85-0410-1231-301	85-5710-1231-301
	Matted Back	85-1310-0841-301	85-0410-0841-301	85-5710-0841-301



169-0410-1191-301
Screw-on lens cap



81-0410-0111-301
Screw-in lens cap

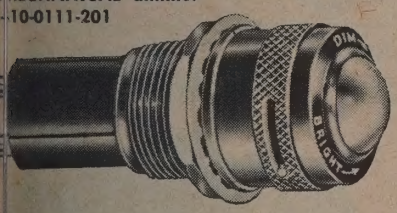


26-0410-1111-301
Screw-in lens cap

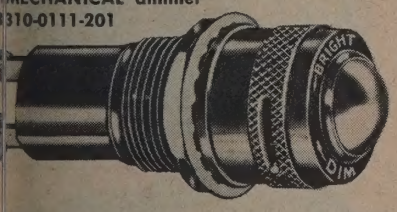
...e assemblies should be specified when lamps **rated ...2 watts** are used.
...fy **translucent** colors as follows: Red — 0351; Green ...52; Yellow (Amber) — 0373; Blue — 0374; Light ...ow — 0376. Example: 81-1310-**0374**-301.

LENS COLOR: The **final figure before the last dash** in the above numbers indicates that the lens has RED color. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted. Red — 1; Green — 2; Yellow (Amber) — 3; Blue — 4; White Translucent — 5; Light Yellow — 6; Clear (Colorless) — 7.

...MECHANICAL dimmer ...10-0111-201



MECHANICAL dimmer 310-0111-201



Mechanical Dimmers

LENS STYLE AND FINISH	MECHANICAL DIMMER TYPE	WITH ROUND FLANGE		WITH OCTAGON FLANGE	
		CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS	CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS
		WITH SCREW-IN LENS CAP			
CONVEX Unfrosted	Semi-Blackout Water-Tight	204-1310-0131-203	204-0410-0131-203	204-5910-0131-203	204-2210-0131-203
	Semi-Blackout Not Water-Tight	204-1310-0131-201	204-0410-0131-201	204-5910-0131-201	204-2210-0131-201
	Complete Blackout Water-Tight	203-1310-0131-203	203-0410-0131-203	203-5910-0131-203	203-2210-0131-203
	Complete Blackout Not Water-Tight	203-1310-0131-201	203-0410-0131-201	203-5910-0131-201	203-2210-0131-201
CONVEX Back Frosted	Semi-Blackout Water-Tight	204-1310-0111-203	204-0410-0111-203	204-5910-0111-203	204-2210-0111-203
	Semi-Blackout Not Water-Tight	204-1310-0111-201	204-0410-0111-201	204-5910-0111-201	204-2210-0111-201
	Complete Blackout Water-Tight	203-1310-0111-203	203-0410-0111-203	203-5910-0111-203	203-2210-0111-203
	Complete Blackout Not Water-Tight	203-1310-0111-201	203-0410-0111-201	203-5910-0111-201	203-2210-0111-201

To obtain assemblies with **screw-on** lens cap, change 204- to 208-; 203- to 207-. Note: Assemblies with screw-on lens caps are **not** available with watertight construction.
LENS COLOR: See Description above.

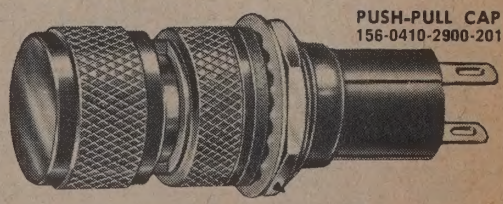
Assemblies with Light Shield Caps

TYPE OF LIGHT SHIELD CAP	SIZE OF OPENING IN CAP	CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS
PUSH-IN CAP WITH SNAP LOCK (1 Opening)	3/16" x 9/16"	89-1310-2900-301	89-0410-2900-301
	3/32" x 1/2"	22-1310-2900-301	22-0410-2900-301
	3/16" x 1/2"	90-1310-2900-301	90-0410-2900-301
	1/2" x 1/2"	21-1310-2900-301	21-0410-2900-301
PUSH-PULL ACTION (Variable Opening)	From 0" to 1/4" x 3/8"	156-1310-2900-201	156-0410-2900-201

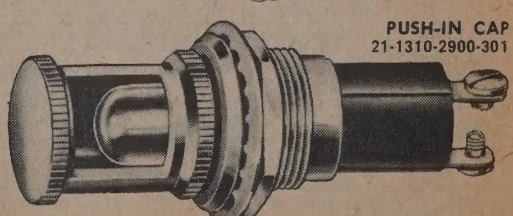
Finishes: **Push-In Cap** — Standard Finish is polished chrome. To obtain optional finish, change the first digit in the catalog number suffix to **2-** black nickel or **4-** satin chrome. **Push-Pull Cap** — Standard finish **2-** black nickel. Optional — **3-** polished chrome.

Examples: 89-1310-2900-201; 156-0410-2900-301.

PUSH-PULL CAP
156-0410-2900-201



PUSH-IN CAP
21-1310-2900-301



DIALCO® INDICATOR LIGHTS

DIALIGHT CORPORATION
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(Illustrations are approx. actual size.)

"Recognized under the component program of Underwriters' Labs Inc."

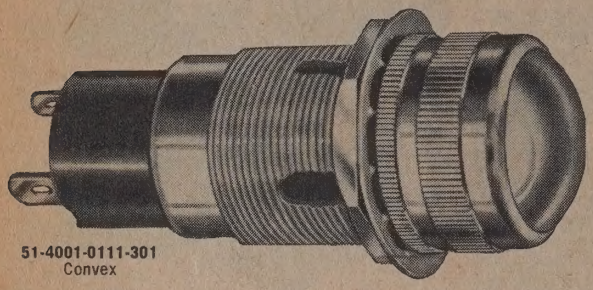
ASSEMBLIES for INCANDESCENT LAMPS

(with double contact bayonet base or candelabra screw base)

Mount in 1" Clearance Hole • Range of Voltage 6 to 145V • Refer to Cat.

75W., 125V.

G-6 with Double Contact Bayonet Base — 6 to 32 volts max. **S-6** (at 6 watts) with Double Contact Bayonet Base or Candelabra Screw Base — 6, 12, 24, 32, 48, 70-80, 125, 130, 135 and 145 volts.



51-4001-0111-301
Convex

Standard Finish — Polished Chrome. To specify **optional finish** change the **first digit** of the catalog number suffix to **-2** (black nickel finish) or **-4** (satin chrome finish). Example: 51-0901-0231-201.

LENS COLORS: See listing below.

Accommodate S-6 Bulb with Candelabra Screw Base

LENS STYLE	LENS FINISH	CATALOG NO. WITH SCREW TERMINALS (SIDE POSITION)	CATALOG NO. WITH SCREW TERMINALS (PROTRUDING)	CATALOG NO. WITH SOLDER TERMINALS	CATALOG NO. QUICK CONNECT TERMINALS
CONVEX	Unfrosted	51-0901-0131-301	51-3101-0131-301	51-4001-0131-301	51-6701-01
	Back Frosted	51-0901-0111-301	51-3101-0111-301	51-4001-0111-301	51-6701-01
FLAT	Unfrosted	51-0901-0231-301	51-3101-0231-301	51-4001-0231-301	51-6701-02
	Back Frosted	51-0901-0211-301	51-3101-0211-301	51-4001-0211-301	51-6701-02
LARGE CONVEX	Unfrosted	61-0901-0231-301	61-3101-0231-301	61-4001-0231-301	61-6701-02
	Back Frosted	61-0901-0211-301	61-3101-0211-301	61-4001-0211-301	61-6701-02
TORPEDO	Unfrosted	80-0901-0531-301	80-3101-0531-301	80-4001-0531-301	80-6701-05
	Back Frosted	80-0901-0511-301	80-3101-0511-301	80-4001-0511-301	80-6701-05
DOME	Unfrosted	80-0901-1231-301	80-3101-1231-301	80-4001-1231-301	80-6701-12
	Back Frosted	80-0901-1211-301	80-3101-1211-301	80-4001-1211-301	80-6701-12
TORPEDO FACETED	Unfrosted	80-0901-1331-301	80-3101-1331-301	80-4001-1331-301	80-6701-13
LARGE TORPEDO	Unfrosted	19-0901-0531-301	19-3101-0531-301	19-4001-0531-301	19-6701-05
FACETED	Unfrosted	51-0901-0431-301	51-3101-0431-301	51-4001-0431-301	51-6701-04

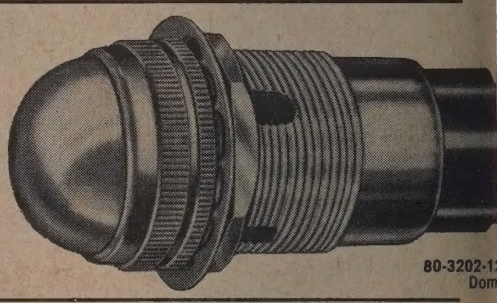
LENS STYLE	LENS FINISH	CATALOG NO. WITH FIXED SCREW TERMINALS	CATALOG NO. WITH FIXED SOLDER TERMINALS	CATALOG NO. WITH QUICK CONNECT TERMINALS
FLAT	Back Frosted	51-3202-0211-301	51-3402-0211-301	51-6602-0211-301
CONVEX	Unfrosted	51-3202-0131-301	51-3402-0131-301	51-6602-0131-301
	Back Frosted	51-3202-0111-301	51-3402-0111-301	51-6602-0111-301
LARGE CONVEX	Unfrosted	61-3202-0231-301	61-3402-0231-301	61-6602-0231-301
	Back Frosted	61-3202-0211-301	61-3402-0211-301	61-6602-0211-301
LARGE TORPEDO	Unfrosted	19-3202-0531-301	19-3402-0531-301	19-6602-0531-301
DOME	Unfrosted	80-3202-1231-301	80-3402-1231-301	80-6602-1231-301
	Back Frosted	80-3202-1211-301	80-3402-1211-301	80-6602-1211-301
TORPEDO FACETED	Unfrosted	80-3202-1331-301	80-3402-1331-301	80-6602-1331-301

Accommodate S-6 Bulb with Double Contact Bayonet Base

To obtain assemblies with **water-tight construction,** change the **last digit** in Cat. No. to **3.**

Example: 61-3202-0211-303

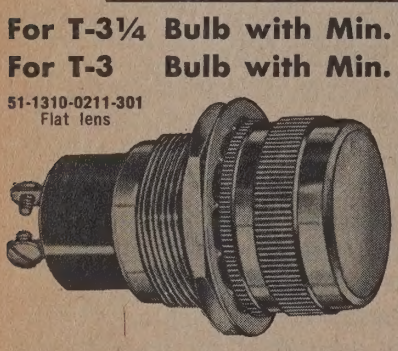
LENS COLOR: See listing below



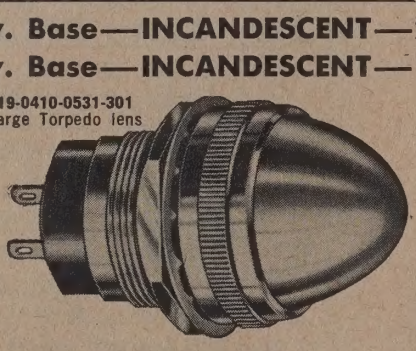
80-3202-1
Dom

For T-3¼ Bulb with Min. Bay. Base—INCANDESCENT—2-55V. • Mount in
For T-3 Bulb with Min. Bay. Base—INCANDESCENT—120V. Clearance H

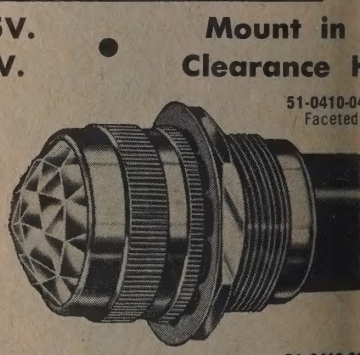
51-1310-0211-301
Flat lens



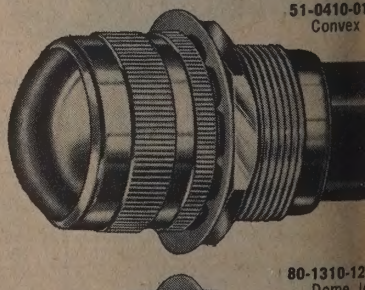
19-0410-0531-301
Large Torpedo lens



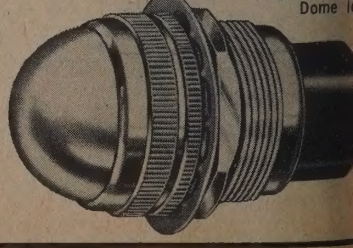
51-0410-0
Faceted



51-0410-0
Convex



80-1310-12
Dome



LENS STYLE	LENS FINISH	CATALOG NO. WITH SCREW TERMINALS	CATALOG NO. WITH SOLDER TERMINALS
FLAT	Unfrosted	51-1310-0231-301	51-0410-0231-301
	Back Frosted	51-1310-0211-301	51-0410-0211-301
TORPEDO	Unfrosted	80-1310-0531-301	80-0410-0531-301
	Back Frosted	80-1310-0511-301	80-0410-0511-301
LARGE CONVEX	Unfrosted	61-1310-0231-301	61-0410-0231-301
	Back Frosted	61-1310-0211-301	61-0410-0211-301
DOME	Unfrosted	80-1310-1231-301	80-0410-1231-301
	Back Frosted	80-1310-1211-301	80-0410-1211-301
CONVEX	Unfrosted	51-1310-0131-301	51-0410-0131-301
	Back Frosted	51-1310-0111-301	51-0410-0111-301
FACETED	Transparent	51-1310-0431-301	51-0410-0431-301
TORPEDO FACETED	Unfrosted	80-1310-1331-301	80-0410-1331-301
LARGE TORPEDO	Unfrosted	19-1310-0531-301	19-0410-0531-301

LENS COLOR: The last digit **before** the 3 digit catalog number suffix indicates that the lens is RED. When color other than red is desired, change this digit to a figure from the listing below. Note that white lenses are translucent and are always furnished unfrosted.

RED — 1; Green — 2; Yellow (Amber) — 3; Blue — 4; White Translucent — 5; Light Yellow — 6; Clear (Colorless) — 7.

The catalog numbers given indicate **Standard finish.** To obtain **optional finishes,** see description above.

The catalog numbers listed indicate complete assemblies with screw-on lens cap. These assemblies may also be obtained with **water-tight construction.** To specify, change, the **last digit** in the catalog number to **3.** Example: 80-1310-1331-303. These assemblies are also available with **friction-fit** or **bayonet lock** lens caps . . . but can not be furnished with water-tight construction.

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DIALCO® **INDICATOR LIGHTS**

DIALIGHT CORPORATION
MANUFACTURERS OF VISUAL INDICATORS

...rations are approx. actual size.)

...gnized under the ...nent program of ...writers' Labs Inc."

75W., 125V.

OIL-TIGHT INDICATOR LIGHTS

OIL-TIGHT • WATER-TIGHT • DUST-TIGHT

With Retained "O" Ring Seal Construction • Mount in 1" Clearance Hole

Rugged, designed for severe vibration conditions. 3 types of Incandescent Lamps may be used: S-6 with Candelabra Screw Base or with Double Contact Bayonet Base; or 10C7/1DC with Double Contact Bayonet Base. The latter is designed to **withstand severe vibration and shock.**

Assemblies feature: 3 retained oil-proof elastometer seals (1 gasket and 2 "O" rings); high impact phenolic insulation; use of legend discs inserted behind a flat lens shape to display letters, numbers or symbols.

...blies for Incandescent Lamps (**S6 Bulb with Candelabra Screw Base**)

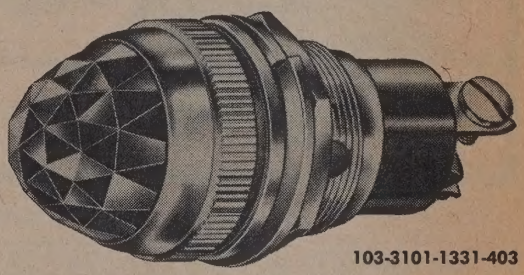
...PE	LENS SURFACE	CATALOG NO. with SCREW terminals in protruding position	CATALOG NO. with SCREW terminals in side position	CATALOG NO. with SOLDERING terminals
	unfrosted back (with disc)	215-3101-0231-403	215-901-0231-403	215-4001-0231-403
	back frosted	104-3101-0211-403	104-901-0211-403	104-4001-0211-403
	unfrosted	103-3101-0531-403	103-901-0531-403	103-4001-0531-403
	back frosted	103-3101-0511-403	103-901-0511-403	103-4001-0511-403
	unfrosted	103-3101-1331-403	103-901-1331-403	103-4001-1331-403
	unfrosted	103-3101-1231-403	103-901-1231-403	103-4001-1231-403
	back frosted	103-3101-1211-403	103-901-1211-403	103-4001-1211-403

...blies for Incandescent Lamps (**S6 Bulb with Double Contact Bayonet Base**)

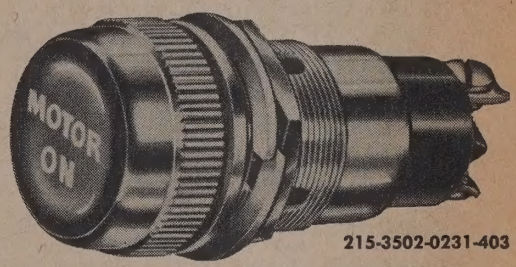
...PE	LENS SURFACE	CATALOG NO. with MOVABLE SCREW terminals	CATALOG NO. with FIXED SCREW terminals	CATALOG NO. with MOVABLE SOLDER. terminals	CATALOG NO. with FIXED SOLDER. terminals
	unfrosted back (with disc)	215-3502-0231-403	215-3202-0231-403	215-3602-0231-403	215-3402-0231-403
	back frosted	104-3502-0211-403	104-3202-0211-403	104-3602-0211-403	104-3402-0211-403
	unfrosted	103-3502-0531-403	103-3202-0531-403	103-3602-0531-403	103-3402-0531-403
	back frosted	103-3502-0511-403	103-3202-0511-403	103-3602-0511-403	103-3402-0511-403
	unfrosted	103-3502-1331-403	103-3202-1331-403	103-3602-1331-403	103-3402-1331-403
	unfrosted	103-3502-1231-403	103-3202-1231-403	103-3602-1231-403	103-3402-1231-403
	back frosted	103-3502-1211-403	103-3202-1211-403	103-3602-1211-403	103-3402-1211-403

...blies for Incandescent Lamps (**C7 Bulb with Double Contact Bayonet Base**)

...PE	LENS SURFACE	CATALOG NO. with MOVABLE SCREW terminals	CATALOG NO. with FIXED SCREW terminals	CATALOG NO. with MOVABLE SOLDER. terminals	CATALOG NO. with FIXED SOLDER. terminals
	unfrosted back (with disc)	215-3527-0231-403	215-3227-0231-403	215-3627-0231-403	215-3427-0231-403
	back frosted	104-3527-0211-403	104-3227-0211-403	104-3627-0211-403	104-3427-0211-403
	unfrosted	103-3527-0531-403	103-3227-0531-403	103-3627-0531-403	103-3427-0531-403
	back frosted	103-3527-0511-403	103-3227-0511-403	103-3627-0511-403	103-3427-0511-403
	unfrosted	103-3527-1331-403	103-3227-1331-403	103-3627-1331-403	103-3427-1331-403
	unfrosted	103-3527-1231-403	103-3227-1231-403	103-3627-1231-403	103-3427-1231-403
	back frosted	103-3527-1211-403	103-3227-1211-403	103-3627-1211-403	103-3427-1211-403



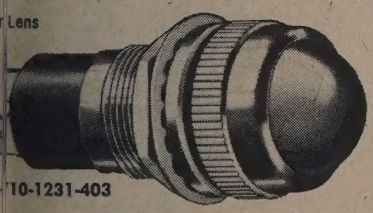
103-3101-1331-403



215-3502-0231-403

ASSEMBLIES for T-3¼ BULB with MIN. BAYONET BASE INCANDESCENT or NEON

For Mounting in 11/16" Clearance Hole

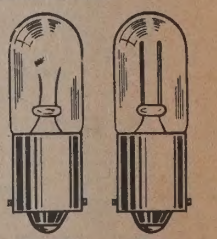


...Lens

...10-1231-403

In these Oil-Tight Indicator Lights, a high degree of resistance to shock and vibration is achieved by the use of the rugged *Neon* lamps on 120 and 240 V; and by choosing low voltage *Incandescent* lamps with short filaments, such as No. 44 or No. 1866 for circuits powered by transformers stepping down to 6.3 V.

Exclusive Features: Assemblies for use with BIA(NE51) Neon Glow Lamps have *"built-in"* resistors—an exclusive *Dialco* feature (U.S. Pat. No. 2,421,321). *Options include:* binding screw, soldering or quick connect terminals. 7 lens colors are available; see bottom of page 946 for method of specifying color.



Incand. Neon
B1A (NE–51)
B2A (NE–51H)
(High Bright.)

...s for the T-3¼ BULB with Miniature Bayonet Base—INCANDESCENT

...PE	LENS SURFACE	CATALOG NO. with SCREW terminals	CATALOG NO. with SOLDER terminals	CATALOG NO. with QUICK CONNECT terminals
	unfrosted	123-1310-1231-403	123-0410-1231-403	123-5710-1231-403
	back frosted	123-1310-1211-403	123-0410-1211-403	123-5710-1211-403
	unfrosted	125-1310-1131-403	125-0410-1131-403	125-5710-1131-403
PE	back frosted	125-1310-1111-403	125-0410-1111-403	125-5710-1111-403
	inside fluted	125-1310-1191-403	125-0410-1191-403	125-5710-1191-403

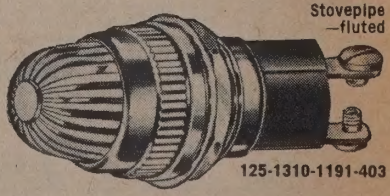
		ASSEMBLIES FOR USE WITH B2A (NE–51H) NEON GLOW LAMP		
...PE	LENS SURFACE	CATALOG NO. with SCREW terminals (210-250V. AC-DC)	CATALOG NO. with SOLDER terminals (210-250V. AC-DC)	CATALOG NO. with QUICK CONNECT terminals (210-250V. AC-DC)
	unfrosted	123-9363-1231-463	123-9463-1231-463	123-5863-1231-463
PE	unfrosted	125-9363-1131-463	125-9463-1131-463	125-5863-1131-463
	inside fluted	125-9363-1191-463	125-9463-1191-463	125-5863-1191-463

OPTIONAL FINISHES
(All assemblies on this page)

The part numbers given indicate **standard** satin chrome finish. To specify optional finish, change the first digit in the catalog number suffix to **-2** black nickel finish; or **-3** polished chrome finish. Examples: 103-3502-1231-**203**; 125-9363-1191-**363**.

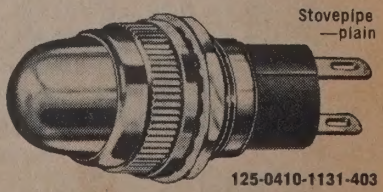
When Connecting a Neon Light to a Circuit Having One Side Grounded, Always Connect the Hot Side of the Circuit to the Terminal Marked + (Center Contact).

Stovepipe —fluted



125-1310-1191-403

Stovepipe —plain

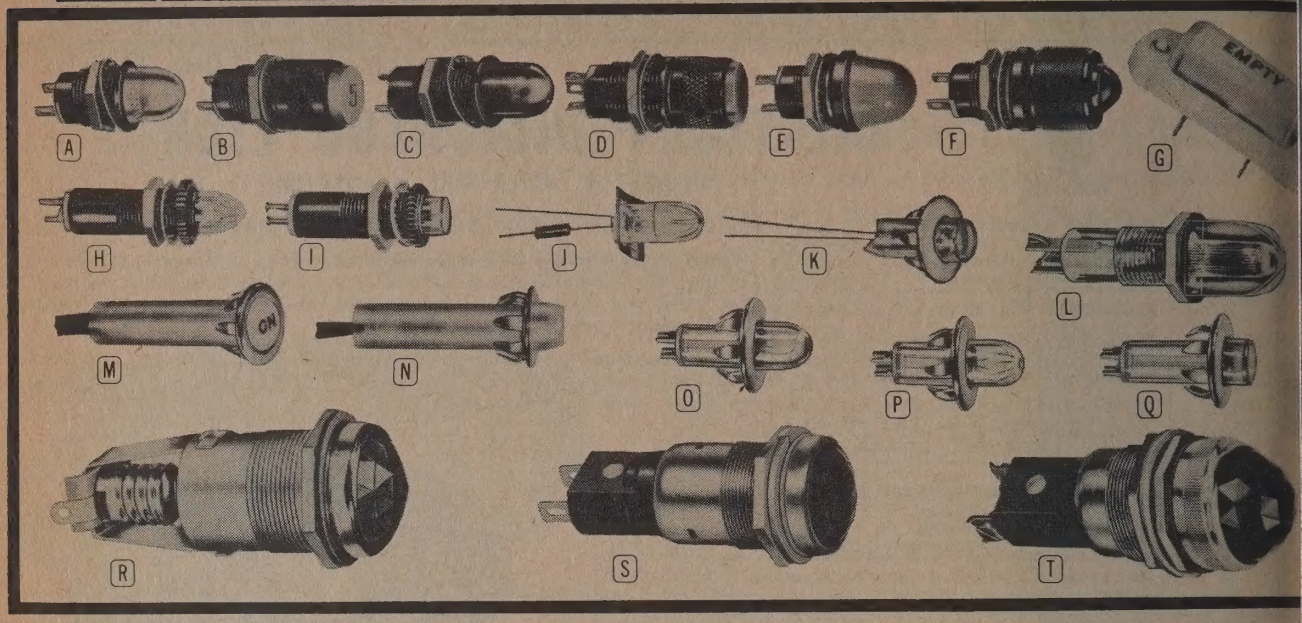


125-0410-1131-403

		ASSEMBLIES FOR USE WITH B2A (NE–51H) NEON GLOW LAMP			ASSEMBLIES FOR USE WITH B1A (NE–51) NEON GLOW LAMP		
...YPE	LENS SURFACE	CATALOG NO. with SCREW terminals (110-125V. AC)	CATALOG NO. with SOLDER terminals (110-125V. AC)	CATALOG NO. with QUICK CONNECT terminals (110-125V. AC)	CATALOG NO. with SCREW terminals (105-125V. AC-DC)	CATALOG NO. with SOLDER terminals (105-125V. AC-DC)	CATALOG NO. with QUICK CONNECT terminals (105-125V. AC-DC)
	unfrosted	123-1363-1231-413	123-0463-1231-413	123-5763-1231-413	123-1308-1231-443	123-0408-1231-443	123-5708-1231-443
	unfrosted	125-1363-1131-413	125-0463-1131-413	125-5763-1131-413	125-1308-1131-443	125-0408-1131-443	125-5708-1131-443
...YPE	inside fluted	125-1363-1191-413	125-0463-1191-413	125-5763-1191-413	125-1308-1191-443	125-0408-1191-443	125-5708-1191-443

Footnote on Page 944

DRAKE — INDICATOR LIGHTS, LAMPHOLDERS & LENSES



"MF" SERIES INDICATOR LIGHTS

MIDGET FLANGE BASE UNITS

Incandescent except for neon -703. Front mounted in 15/32" hole; aluminum body. Both lugs insulated from mounting. Threaded shank lens. Commercial units, clear finish; MIL units, black anodized: †LH-73/1-LC12+N2, ‡LH73/1-LC11+T2, §LH74/1-LC13+T2 respectively.

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
5131-038-303†	A	7/16"	29/64"	3/4"	$1.09	$0.98	$0.91
5132-038-544‡	B	15/32"	35/64"	3/4"	1.48	1.33	1.23
5133-048-703§*	C	7/16"	17/32"	63/64"	1.71	1.54	1.43

*Built-in 62K-ohm resistor. Max. panel th., 15/32"; others, 9/32".
"4" represents one of letters used for color.

"MF" PRESS-TO-TEST UNITS

Provides reliable, instantaneous check of lamp condition. Maximum panel thickness, 5/16".

5132-636-503	D	15/32"	37/64"	13/16"	$2.10	$1.89	$1.75

"MF" OIL-TITE/WATER-TITE UNITS

Recessed rubber "O" rings will withstand up to 25 p.s.i. pressure. Type 5150 has salt shaker dimmer in lens assembly. Maximum panel thickness, 5/16". Per MIL drawing: #D5-15-3217; •SM-B-450166; •SM-C-415155; •ONO20148.

5139-038-304#	E	37/64"	15/32"	25/32"	$1.33	$1.20	$1.11
5150-038-101•	F	13/32"	21/32"	25/32"	2.01	1.81	1.68

NEON INDICATOR LIGHTS — 115 VOLTS

"FLUSHLITE" — U/L AND CSA APPROVED

"One-of-a-kind". Built-in neon lamp and 25K ohm resistor. To be flush with face of panel, mount from rear in panel, up to 11/32" thick, on 5/8" or 1 7/8" centers; or, may be mounted on panel top.

Drake Number	Fig.	Lens Size	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
110-025	G	13/32" x 1 1/4"	11/32" or 5/16"	17/32 or 5/16"	$0.55	$0.49	$0.46

"MINEON"

Similar to "Econoglo"; mounted in black-anodized aluminum body with two turret or solder (*) lugs (specify on order). Mount from rear of panel, up to 3/8" thick, in 3/8" dia. hole on 5/8" centers. Hi-Brite, built-in neon lamp with 22K-ohm resistor; 115 v. AC.

HR118-323*	H	11/32"	13/32"	1 3/16"	$1.01	$0.91	$0.84
HR118T-323	---	11/32"	13/32"	1 3/16"	1.11	1.00	.92
HR118T-603	I	11/32"	9/32"	1 3/16"	1.11	1.00	.92

"POSTLITE"

Extremely decorative. Built-in series resistor, 25K ohms, and neon lamp for 110-125 v. AC. Mount from front of panel, up to 5/16" thick, in 1/2" dia. hole on 7/8" centers. Hi-Brite lamp.

105-025	L	5/8" sq.	3/4"	1 5/16"	$0.76	$0.68	$0.63

"GLO-LITES"

One-piece nylon body and lens with built-in Hi-Brite neon lamp. With two lead terminations, 22 ga. plastic-insulated wire. Mount from front of panel, up to .080" thick, in 1/2" dia. hole on 11/16" centers. Built-in resistor: 25K for 115 V; 100K for 250 V (*).

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
6073-001-544	M	27/64"	1/8"	1 15/32"	$0.61	$0.55	$0.51
6073-001-634	N	27/64"	5/16"	1 9/32"	.51	.46	.42
6075-001-544	M	27/64"	1/8"	1 15/32"	.61	.55	.51
6075-001-634	N	27/64"	5/16"	1 9/32"	.51	.46	.42

*PRICES LESS LAMPS UNLESS BUILT-IN.

WRITE FOR O.E.M. DISCOUNTS ON LARGER QUANTITY ORDERS.

NEON INDICATOR LIGHTS (CONT'D)

"ECONOGLO" — WIRE LEADS

Mount from front of panel. For type 116, mount in 5/16" hole on panel up to 3/4" thick (fastened with tinnerman nut). For type 117, mount in 1/2" hole on panel up to 1/16" thick (chrome snap-in). Lens shapes (last 3 digits) interchangeable on types 116 and 117. Termination; two-wire leads. Built-in 22K-ohm resistor (*); others require external resistors, not supplied. Built-in neon lamp. Low cost 115 v. AC indicator lights.

Drake Number	Fig.	Lens Size	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
116-603	---	11/32"	3/8"	15/32"	$0.24	$0.22	$0.20
HR116-323*	J	11/32"	5/16"	1 1/16"	.31	.28	.26
117-603	K	11/32"	1/4"	5/8"	.32	.29	.27
HR117-323*	---	11/32"	7/16"	13/32"	.38	.34	.32

NEW "ECONOGLO" WITH LUGS

TINNERMAN NUT OR PLUG BUTTON MOUNTING

Mount from front of panel. For type 6140, mounts in 5/16" D hole on panel up to 3/4" thick (fasten with Tinnerman nut). For type 6150, mounts in 1/2" D hole on panel up to 1/16" thick (chrome snap-in plug button). Lens shapes (last three digits) interchangeable on type 6140 and 6150. Termination: Two lugs. Incandescent built-in lamp: Low-cost 28 v. AC—lamp rating .04A (6146 or 6156 types) Also 6.3 v. AC lamp rating .04A (6148 or 6158 types).

Drake Number	Fig.	Lens Size	Projection Front	Projection Rear	Selling Prices Per Each 1-9	10-24	25-99
6146-000-303	---	11/32"	3/8"	45/64"	$1.02	$0.92	$0.85
6146-000-323	---	11/32"	3/8"	45/64"	1.02	.92	.85
6146-000-603	---	11/32"	3/16"	55/64"	1.02	.92	.85
6148-000-303	---	11/32"	3/8"	45/64"	.83	.75	.69
6148-000-323	---	11/32"	3/8"	45/64"	.83	.75	.69
6148-000-603	---	11/32"	3/16"	55/64"	.83	.75	.69
6156-000-303	O	11/32"	7/16"	41/64"	1.08	.98	.90
6156-000-323	P	11/32"	7/16"	41/64"	1.08	.98	.90
6156-000-603	Q	11/32"	1/4"	51/64"	1.08	.98	.90
6158-000-303	O	11/32"	7/16"	41/64"	.90	.81	.75
6158-000-323	P	11/32"	7/16"	41/64"	.90	.81	.75
6158-000-603	Q	11/32"	1/4"	51/64"	.90	.81	.75

1" LENS INDICATOR LIGHTS

CANDELABRA SCREW S-6 — 115 VOLTS
MONEY-SAVER — U/L AND CSA APPROVED

Polished chrome lens holder. Lamps replaceable from front or rear. Mount from front of panel, up to 1/2" thick, in 1" dia. hole on 1 3/8" centers. Slip-fit bezel (*).

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
75-110*	R	1"	7/16"	2 1/4"	$1.28	$1.15	$1.07

STANDARD — U/L AND CSA APPROVED

Easy front replacement of lamps. Snap-in lens assembly.

5756-522-110	S	1"	7/16"	2 5/16"	$1.51	$1.36	$1.26

"TITELITE"

Neoprene gaskets seal out oil, water, dust and dirt.

5796-523-410	T	1"	1 3/16"	1 27/32"	$2.49	$2.24	$2.08

SPECIFY COLOR ON ORDER: Incandescent and Neon—Red, Yellow (Amber), White or Colorless. Incandescent Only—Green or Blue.

Lenses 503, 504, 603 and 604 may be Imprinted; change 0 (2nd digit) to 4 (e.g., 543). Prices on Request.

ALL DRAKE PRICES subject to CHANGE WITHOUT NOTICE — check "United Pricing Reports" at your DISTRIBUTOR

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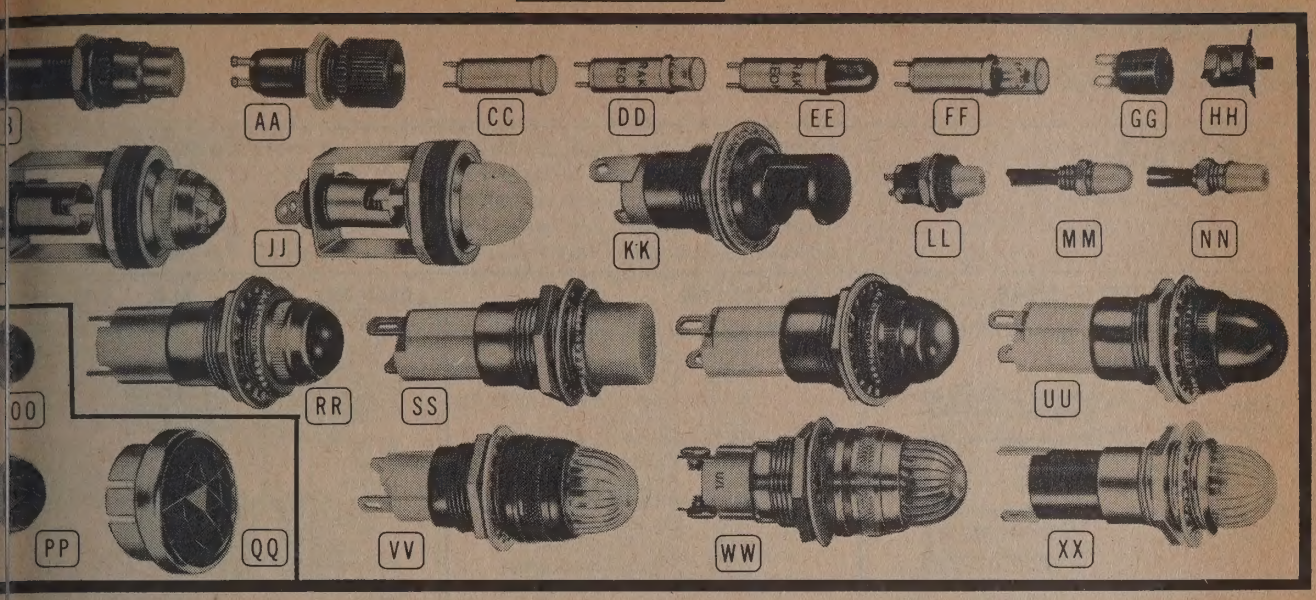


BI-PIN CARTRIDGE LAMPHOLDER

Lampholder has lamp cartridge replaceable from front. Mount from rear of panel, up to 1/4" thick, in 3/8" dia. hole on 31/32" centers. Two tinned turret lugs.

Drake Number	Fig.	Projection Front	Projection Rear	Resis., Ohms	Net Each, Lots of* 1-9	10-24	25-99
1428-001	AA	3/8"	51/64"	None	$1.05	$0.95	$0.88

NEW MIDGET BI-PIN CARTRIDGE — 120 VOLTS INCANDESCENT INDICATOR LIGHTS

Relamped from front. Rear mounted in 3/8" dia. "D" hole. Black anodized body and lens holder. Two turret lugs. Translucent (*) or transparent refracting lenses. Maximum panel thickness, 5/16".

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
5300-428-507*	BB	13/32"	23/64"	1 5/32"	$1.41	$1.27	$1.18
5300-428-596	BB	13/32"	23/64"	1 5/32"	1.41	1.27	1.18

"BI-PIN CARTRIDGE LAMPS"

Small size, easy-plug-in neon or incandescent lamp sealed into aluminum casing. Stainless steel pins. Neon cartridges require a series resistor. Nos. -(*) have built-in 22K ohm resistor.

NEON

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Volts	Net Each, Lots of* 1-9	10-24	25-99
51-603	DD	3/32"	17/64"	53/64"	115	$0.84	$0.75	$0.70
55-703*	EE	3/32"	15/32"	53/64"	115	1.10	.99	.92
55-803*	FF	3/32"	31/64"	53/64"	115	1.10	.99	.92

INCANDESCENT

56-607	DD	3/32"	17/64"	53/64"	6	$0.96	$ .86	$0.80
57-503	CC	3/32"	1/4"	53/64"	10	1.40	1.26	1.17
511-607	DD	3/32"	17/64"	53/64"	28	1.00	.90	.84

CONNECTORS AND FASTENERS

Drake No. 300-058 Connector (Fig. GG)—Used with 763 fastener to mount "Bi-Pin Cartridge Lamps" where conventional method is impractical; or, to save money. Net Each, Lots 1-9 ..... $ .14
Lots 10-24 ..... $ .13 Lots 25-99 ..... $ .12
Drake No. 763 Fastener (Fig. HH)—Net Each, Lots 1-9 ..... $ .04
Lots 10-24 ..... $ .04 Lots 25-99 ..... $ .03

"MONEY-SAVER" INDICATOR LIGHTS

MINIATURE BAYONET BASE T-3 1/4 — 6 TO 28 VOLTS

Nickel-plated lens holder. Lamps replaceable from front. Mount from front of panel, up to 1/4" thick, in 1/16" dia. hole on 1" centers. Rated 2 watts.

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
50-113	II	1/2"	17/32"	1 1/32"	$0.54	$0.48	$0.45
51-304	JJ	5/8"	1/2"	1 1/32"	.44	.40	.37

INSTRUMENT LIGHT

MINIATURE BAYONET BASE T-3 1/4 — 6 TO 28 VOLTS

Threaded hood. Lamps replaceable from front. Mount from front of panel, to 1 3/32" th., in 1/16" dia. hole on 23/32" ctrs.; 2 solder lugs.

168E	KK	.....	1 1/16"	1 3/8"	$1.57	$1.41	$1.31

NEW "GEMLITE"

Replaceable, long-life, sub-midget incandescent lamp T-1, 5 V. Front mounted in 3/4" hole. Brass body; two lugs insulated from ground. Meets MIL applications. Max. panel thickness, 7/32".

5160-458-604	.....	1/4"	1/4"	15/32"	$2.02	$1.82	$1.68
5160-458-644	LL	1/4"	1/4"	15/32"	2.12	1.90	1.76

NEW "ASTROLITE"

Built-in T-1 incandescent lamp with 60,000 hours life, 5 V. Mounts in .191" dia. "D" hole. Stainless steel body. Two Teflon® insulated, 6" leads. Translucent, butyrate lens per MS25446. Maximum panel thickness, 3/16". ®Registered DuPont trademark.

5026-001-704	MM	7/32"	9/32"	17/64"	$3.04	$2.74	$2.53
5026-001-844	NN	7/32"	1/4"	17/64"	3.14	2.83	2.62

DRAKE LENSES

The last three digits of most Drake numbers identify lens shapes and other variations. Below are three popular lenses.

Drake Number	Fig.	Lens Dia.	Shank O.D.	Shank I.D.	Shank Lgth.	Net Each, Lots* 1-9	10-24	25-99
14-15-113	OO	5/16"	5/16"-32 thd.	13/64"	1/4"	$0.14	$0.13	$0.12
16-17-113	PP	1/2"	5/16"-27 thd.	17/32"	3/8"	.18	.16	.15
75A-110	QQ	1"	.887/.889	53/64"	5/16"	.61	.55	.51

"DELUXE MOLDED" INDICATOR LIGHTS

MINIATURE BAYONET BASE T-3 1/4 — 6 TO 28 VOLTS
NEON B2A — 115 & 250 V. — U/L & CSA APPROVED

Polished chrome finish. Assured dependability; fine appearance. Feature E-Z-Tite flange for quick assembly with Drake No. 32 wrench. Lamp replaceable from front. Mount from front of panel, up to 13/32" thick, in 1 1/16" dia. hole on 31/32" centers. Neon lamps have built-in series resistor. Two solder lugs.

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Resis., Ohms	Net Each, Lots* 1-9	10-24	25-99
5200-222-101‡	RR	1/2"	17/32"	1 5/8"	.....	$1.12	$1.01	$0.94
5200-222-604	SS	5/8"	1/2"	1 5/8"	.....	.91	.82	.76
5201-228-101*	TT	1/2"	17/32"	1 5/8"	.....	1.47	1.33	1.23
5201-228-301*	UU	5/8"	1 1/16"	1 5/8"	.....	1.74	1.56	1.45
5200-232-623	.....	5/8"	1/2"	1 5/8"	22K	1.06	.96	.89
5200-242-603	SS	5/8"	1/2"	1 5/8"	100K	1.06	.96	.89
5202-222-301‡	.....	5/8"	1 1/16"	1 7/16"	.....	1.47	1.32	1.22

MAXIMUM VISIBILITY SERIES

Female thread in lens holder permits neon lamp to project into macrodome lens for maximum visibility. U/L and CSA Approved.

5204-238-320*	VV	5/8"	23/32"	1 9/32"	27K	$1.98	$1.78	$1.65

*MIL unit (black anodized) 5201-228-101 (LH 76/3-LC 14+D1) 5201-228-301 (LH 76/3-LC 15+D1), or 5204-238-320 (LH 77/2-LC 20+N1) "+" represents one of letters used for color. Ordering Drake components specify color.

"TITELITE" SERIES

Neoprene gasket seals out oil, water and dust. Front or rear panel mount.

5204-223-320WP‡	WW	5/8"	23/32"	1 7/32"	.....	$1.80	$1.62	$1.50

STANDARD SERIES INDICATOR LIGHTS

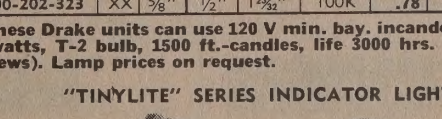
MINIATURE BAYONET T-3 1/4 — 6 TO 28 VOLTS
NEON NE-51H — 115 & 250 V. — U/L & CSA APPROVED

Nickel-plated lens holder and flange. Replace lamps from front. Front-mount in 1 1/16" hole on 31/32" centers in panel up to 13/32" thick. Two solder lugs.

5100-182-110‡	.....	1/2"	17/32"	1 21/32"	.....	$0.84	$0.76	$0.70
5100-182-304	.....	5/8"	1/2"	1 21/32"	.....	.67	.60	.56
5100-192-323	XX	5/8"	1/2"	1 23/32"	25K	.78	.70	.65
5100-202-323	XX	5/8"	1/2"	1 23/32"	100K	.78	.70	.65

‡These Drake units can use 120 V min. bay. incandescent lamp; 3 watts, T-2 bulb, 1500 ft.-candles, life 3000 hrs. (twice cand. screws). Lamp prices on request.

"TINYLITE" SERIES INDICATOR LIGHTS



MIDGET SCREW BASE LAMPS G-2 7 TO 28 VOLTS INCANDESCENT

Lamps replaceable from front. Mount from front of panel, up to 9/32" thick, in 7/16" dia. hole on 13/32" centers. Lamps built-in: 7 V in 121-7; 28 V in 121-28.

Drake Number	Fig.	Lens Dia.	Projection Front	Projection Rear	Net Each, Lots of* 1-9	10-24	25-99
121-7-204	YY	7/16"	21/64"	13/16"	$0.82	$0.74	$0.69
121-7-604†	.....	3/8"	21/64"	13/16"	.82	.74	.69
121-7-644	ZZ	3/8"	21/64"	13/16"	.93	.83	.77
121-28-204	YY	7/16"	21/64"	29/32"	.96	.86	.80
121-28-604†	.....	3/8"	21/64"	29/32"	.96	.86	.80
121-28-644	ZZ	3/8"	21/64"	29/32"	1.06	.95	.88

†Same as -644 type, but unprinted.

***PRICES LESS LAMPS UNLESS BUILT-IN.**

WRITE FOR O.E.M. DISCOUNTS ON LARGER QUANTITY ORDERS.

Lenses 503, 504, 603 and 604 may be Imprinted; change 0 (2nd digit) to 4 (e.g., 543). Prices on Request.

SPECIFY COLOR ON ORDER: Incandescent and Neon—Red, Yellow (Amber), White or Colorless. Incandescent Only—Green or Blue.

ALL DRAKE PRICES subject to CHANGE WITHOUT NOTICE — check "United Pricing Reports" at your DISTRIBUTOR

ELDEMA
INDICATOR LITES

C-LITES

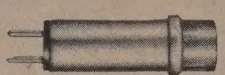
Eldema C-Lites are 2-pin cartridge lamps that are easily inserted from the fron of the panel into the D-Holder assembly. C-Lites are in three basic series CF—incandescent, CG—neon, and CR—neon with built-in resistor.
Clear anodized aluminum case — stainless steel pins — plastic lens cap — hig dielectric insulation — meets Mil-L-3661. Mate with all DH Series holders.

INCANDESCENT C-LITES

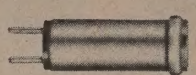
SERIES CF - Mates with all DH Holders

STYLE

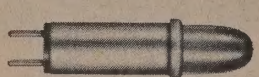
CF03
Short Flat



CF02
Flush



CF01
Dome



LENS COLORS

ACS	Amber Clear
BCS	Blue Clear
CCS	Cloudy Clear
GCS	Green Clear
RCS	Red Clear
WCS	Water Clear
YCS	Yellow Clear
ATS	Amber Translucent
BTS	Blue Translucent
GTS	Green Translucent
RTS	Red Translucent
WTS	White Translucent
YTS	Yellow Translucent

SPECIFY STYLE — LENS COLOR AND LAMP NUMBER

Example: CF03-RTS-2187

LAMP NO.	VOLTS	M.A.	LIFE HRS
2158*	3	15	10,000
680	5	60	50,000
1730	6	40	1,000
2114	6	60	3,000
1784	6	200	1,000
2180	6.3	40	50,000
2181	6.3	200	50,000
1869*	10	15	50,000
2107*	10	40	5,000
2174	12	40	3,000
1705	14	80	750
2182	14	80	50,000
2102	18	40	1,000
1762	28	40	1,000
2187	28	40	25,000

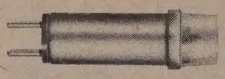
*Use with clear colors only.

NEON C-LITES Mates with DH Holders

SERIES CG- SERIES CR

STYLE

CG03 or CR03



CG01 or CR01

CG04 or CR04

LENS COLORS

CLEAR ONLY

ACS	Amber Clear
CCS	Cloudy Clear
RCS	Red Clear
WCS	Water Clear
YCS	Yellow Clear

SPECIFY STYLE — LENS COLOR LAMP OR LAMP/RESISTOR

Examples: CG03-RCS-N110
CR01-ACS-N123

NEON LAMP-CG SERIES

N110	- Standard brightness
N120	- High brightness

NEON LAMP/RESISTOR-CR SERIES

N114	- Standard brightness medium life - 56K
N117	- Standard brightness long life - 100K
N121	- High brightness medium life - 22K
N123	- high brightness long life - 33K

C-LITES

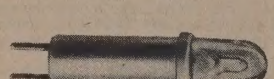
SERIES CN, CL AND CM

These are special purpose C-Lite types, each with mating single lamp D-Holders. The CL and CM have long life, higher voltage incandescent telephone type lamp bulbs. The CN is an older style neon C-Lite with resistor.

NEON C-LITES

SERIES CN- - neon lamp built-in resistor
Mate with DN Holders

CN01-RCS-N117



CN04-WCS-N123

Slightly longer than new CR series. Otherwise the two types are identical. Specify in same manner except use CN instead of CR. CN03 style is available.

INCANDESCENT C-LITES

TYPE CL24

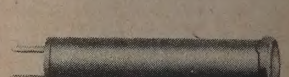
Mate with DL lampholders with D06, D09 or D25 lens caps. Bulb end exposed.

PART NO.	VOLTS	MA	LIFE HRS
CL24-6PS	6	140	5,000+
CL24-12PS	12	170	5,000+
CL24-24PS	24	73	5,000+
CL24-28PS	28	40	5,000+
CL24-48PS	48	53	5,000+
CL24-60PS	60	50	5,000+
CL24-120PS	120	25	5,000+

INCANDESCENT C-LITES

TYPE CM65

Mate with DM lampholders with D06, D09 or D25 lens caps. Light diffusing frosted lens.



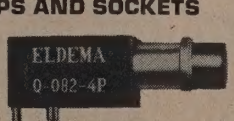
PART NO.	VOLTS	MA	LIFE HRS
CM65-6PS	6	140	5,000+
CM65-12PS	12	170	5,000+
CM65-28PS	28	40	5,000+
CM65-48PS	48	53	5,000+
CM65-60PS	60	50	5,000+
CM65-120PS	120	25	5,000+

LENS MARKING

Eldema flat top lens styles may be provided with hot stamped legends. Normal markings in black-other colors to order. Specify marking requirements in complete detail.

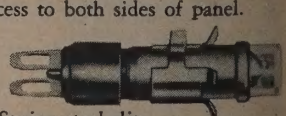
Q-SERIES

CLIPS AND SOCKETS



Q-082-4P P.C. Board Socket with CF03 C-Lite. Socket Mounts in 4 .040 Holes on .200 Centers.

Mounts C-Lites in 19/64" hole — ½" centers. Requires access to both sides of panel.



Q-081-905, Spring steel clip.
Q-082-2K, Socket with solder lug terminal.
Q-082-1M, Socket with solder cup terminals (not illustrated).
Q-145-008, Rubber washer to ease installation (not shown).

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ELDEMA INDICATOR LITES

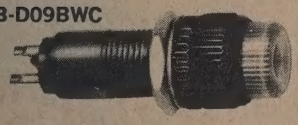
D-HOLDER

Eldema D-Holders mate with the plug-in C-Lite cartridge lamps. The standard DH Series is available in single lampholders, dual lampholders and matching switchlites. Other special length single lamp holders — Series DN, DL and DM to mate with the longer C-Lites are included. Anodized housings, nickel plated hardware — high temperature plastic lens caps — meets MIL-L-3661. RFI/EMI shielded versions are also available.

DHO-10B-D14B with CF03

DHN-10B-D15B with CF03

DHO-30B-D09BWC



DHN-60B-DO6BRT

DHN-60B-D25BRT

DH SERIES SINGLE LAMPHOLDERS

Mate with CF, CG and CR C-Lites

HOLDER STYLE

DHO - Rear mounting, 3/8" hole
DHN - Front mounting, 15/32" hole

HOLDER TERMINAL AND FINISH

10B - Turret pin black housing
30B - Solder cup black housing
60B - Solder lug black housing

SPECIFY HOLDER STYLE — TERMINAL AND FINISH THEN LAMP COLLAR OR LENS CAP STYLE AND LENS COLOR.

For example: DHO-10B-D14B
DHN-60B-D06BRT

For clear anodized finish change letter B in terminal - finish and in lamp collar or lens cap to S - DHN-60S-D06SRT.

An installation wrench that mates with the knurled ring on rear mounting holders and switchlites is available. Part number — Z-090-375

LAMP COLLARS

D14B - Use with DHO
D15B - Use with DHN or DHO

Note: No lens color specified for collars. For use with C-Lite cartridges with colored lenses.

LENS CAP STYLE

D06B - Smooth lens
D07B - Long smooth lens
D09B - Fluted lens, clear colors only
D25B - Shroud lens, translucent colors only.

Note: For use with C-Lite cartridges with water clear lenses.

LENS COLORS

AC - Amber Clear*
BC - Blue Clear
CC - Cloudy Clear*
GC - Green Clear
RC - Red Clear*
WC - Water Clear*
YC - Yellow Clear*
AT - Amber Translucent
BT - Blue Translucent
GT - Green Translucent
RT - Red Translucent
WT - White Translucent
YT - Yellow Translucent

*Recommended for neon C-Lites

DH SERIES - TYPE DHS MOMENTARY SWITCH-LITE

Rear mounting, 3/8" hole
Mate with CF, CG and CR C-Lites

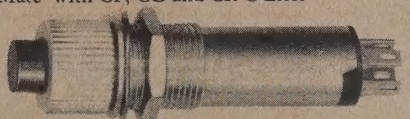
DHS-60B-A-D16B with CF03
Black anodized finish

DHS-60B-A-D16B normally open
DHS-60B-B-D16B normally closed
DHS-60B-P-D16B press-to-test

Black or clear finish — specify B — black, S — clear (underlined letters in part numbers by illustrations, 2 places)

DH SERIES - TYPE DHT MOMENTARY SWITCH-LITE

Front mounting, 15/32" hole
Mate with CF, CG and CR C-Lites



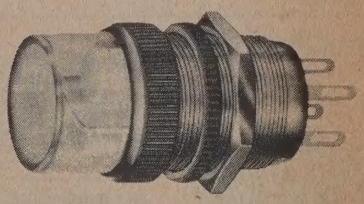
DHT-61S-A-D16S with CF03
Clear anodized finish

DHT - 61B-A-D16B normally open
DHT - 61B-B-D16B normally closed
DHT - 61B-P-D16B press-to-test

Four lug terminals — separate light and switch circuit — 1/2 amp rating for normally open and closed types.

DH SERIES - TYPE DHF DUAL LAMPHOLDER

Front or rear mounting 3/4" hole.



DHF-61B-D17BWC

Mates with any two CF, CG, or CR C-Lites. Four lug terminals — clear lens. Black anodized finish.

DN SERIES SINGLE LAMPHOLDERS

Rear mounting 3/8" Hole.
Mate with CN neon C-Lites

DNO-10B-D14B with CN01

Slightly longer than DHO holder, otherwise identical and specified in same manner except use DNO instead of DHO. Rear mounting 3/8" hole only.

DL SERIES SINGLE LAMPHOLDERS

Rear mounting 3/8" Hole.
Mate with CL24 C-Lites

DLO-10B-D09BWC

Medium length holder for high voltage incandescent CL24. Specify in same manner as DHO — requires lens cap.

DM SERIES SINGLE LAMPHOLDERS

Rear mounting 3/8" Hole.
Mate with CM65 C-Lites

DMO-10B-D06BRT

Long length holder for high voltage CM65 C-Lites. Specify in same manner as DHO — requires lens cap.

For complete Technical information and detailed catalogs contact our representative listed in the EEM yellow pages.

ELDEMA DIVISION
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ELDEMA
INDICATOR LITES

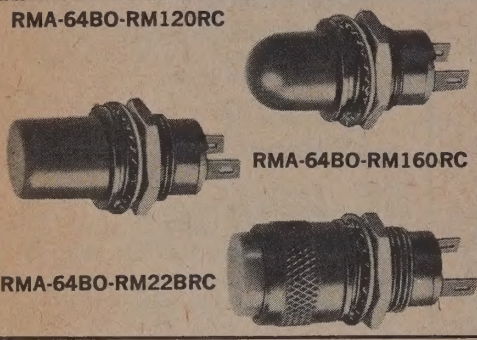
R – LITES

R-Lites are Eldema's product family of relampable holders and lens caps for th midget flange based T-1 ¾ incandescent and T-2 neon bulbs. The lamps and len caps are replaceable from the front of the panel. There are five R-Lite groups – each with its own features – the holder and lens cap part numbers in each grou start with the same two letters to insure mating parts.

RM AND RN SERIES

The RM-RN groups meet MIL-L-3661 and MIL-L-6723. The RM is fo incandescent lamps — the RN Series with a built in resistor is for neo lamps. Standard types RMA and RNA — waterproof types RMW an RNW — two tin plated lug terminals — black anodized aluminum cases — high impact plastic lenses. Mount from the front in 15/32" holes.

RMA-64BO-RM120RC



RMA-64BO-RM160RC

RMA-64BO-RM22BRC

RM SERIES

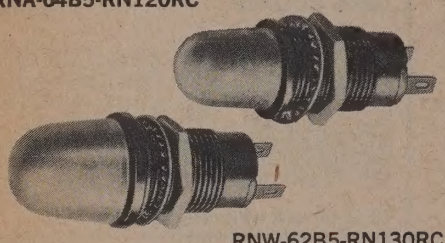
HOLDER P/N

RMA - 64BO Standard — black finish

RMW - 62BO Waterproof — black finish

CAP STYLE	LENS COLORS
RM120 Dome	AC Amber Clear
RM160 Flat top	BC Blue Clear
RM22B Rotating type	CC Cloudy Clear
RM130 Waterproof dome	GC Green Clear
	RC Red Clear
	WC Water Clear
	YC Yellow Clear
	AT Amber Translucen
	BT Blue Translucent
	GT Green Translucent
	RT Red Translucent
	WT White Translucent
	YT Yellow Translucer

RNA-64B5-RN120RC



RNW-62B5-RN130RC

RN SERIES

HOLDER P/N

RNA - 64B5 Standard — black finish with 62KΩ for NE2D lamp

RNA - 64B2 Standard — black finish with 27KΩ for NE2J lamp

RNW - 62B5 Waterproof — black finish with 62KΩ for NE2D lamp

RNW - 62B2 Waterproof — black finish with 27KΩ for NE2J lamp

CAP STYLE	LENS COLORS
RN120 Dome	AC Amber Clear
RN130 Waterproof dome	CC Cloudy Clea
	RC Red Clear
	WC Water Clear
	YC Yellow Clea

SPECIFY HOLDER LENS STYLE AND LENS COLOR

RA SERIES

The RA Series is for flange based T-1 ¾ incandescent bulbs. Three mounting styles are available and three metal finishes. Rugged two terminal lamp holders — brass housings — tin plated lug terminals — high impact strength plastic lens caps.

RAA-6020-RA220RT

RAB-6010-RA210RT

RAC-6030-RA343RT (ROTATING LENS CAP)

HOLDER STYLE

RAA - 15/32" Front mounting
RAB - 17/32" Front mounting
RAC - 15/32" Front or rear mounting

HOLDER FINISH

6010 Bright nickel
6020 Black nickel
6030 Polished chrome

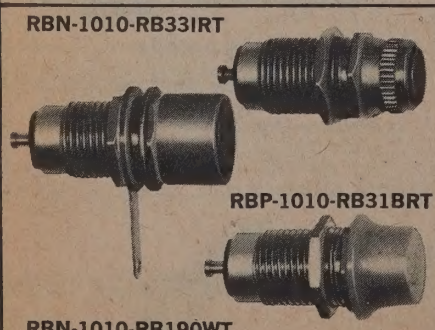
SPECIFY HOLDER STYLE HOLDER FINISH LENS STYLE AND LENS COLOR

CAP STYLE	LENS COLORS
RA210 Dome	AC Amber Clear
RA220 Flat top	BC Blue Clear
RA341 Bright nickel	CC Cloudy Clear
RA342 Black nickel	GC Green Clear
RA343 Polished chrome	RC Red Clear
	WC White Clear
	YC Yellow Clear
	AT Amber Translucer
	BT Blue Translucent
	GT Green Translucen
	RT Red Translucent
	WT White Translucen
	YT Yellow Translucer

RB SERIES

Low cost relampable holders and lens caps for T-1 ¾ based incandescent lamps. The holder is one piece nickel plated brass construction — Type RBN, single center terminal grounded to panel — Type RBP, with insulating washers and external lug terminal added to electrically isolate holder from the panel.

RBN-1010-RB33IRT



RBP-1010-RB31BRT

RBN-1010-RB190WT

HOLDER PART NUMBER

RBN - 1010 Single center terminal Front mounting 3/8" hole.

RBP - 1010 Insulating washers Two terminals, 27/64" hole.

SPECIFY HOLDER, LENS STYLE AND LENS COLOR

CAP STYLE	LENS COLORS
RB190 All plastic, bell shape	AT Amber
RB31B Black shroud lens End on viewing only	BT Blue
RB331 Flat top lens, bright nickel plated ring.	GT Green
	RT Red
	WT White
	CC Cloudy

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ELDEMA INDICATOR LITES

L SERIES

In the RL Series the lamp holders and lens caps accommodate either based incandescent or neon lamps for uniform appearance. Neon holders may have built in resistors. Two tin plated lug terminals — black or clear anodized housings — fresnel ring light diffusing lens caps give maximum brilliance. This series matches Eldema Logic-Lites.

RLD-60BO-RL090WC

D-60SO-RL130CC

RLA-60BO-RL150RC

HOLDER STYLE

RLA - Front mounting, 15/32" Hole
RLD - Rear mounting, 3/8" Hole, 1/8" Panel
RLE - Rear mounting, 3/8" Hole, 3/16" Panel

HOLDER FINISH AND RESISTOR

60B0	- Black finish	No Resistor
60S0	- Clear finish	No Resistor
60B2	- Black finish	with 27KΩ for NE2J lamp
60S2	- Clear finish	with 27KΩ for NE2J lamp
60B5	- Black finish	with 62KΩ for NE2D lamp
60S5	- Clear finish	with 62KΩ for NE2D lamp

SPECIFY HOLDER STYLE, FINISH AND RESISTOR-LENS STYLE AND LENS COLOR

FRESNEL RING LENS CAPS

STYLE	COLORS
RL090 Flat top	AC - Amber Clear*
	BC - Blue Clear
RL130 Dome	CC - Cloudy Clear*
	GC - Green Clear
RL150 Skirted	RC - Red Clear*
	WC - Water Clear*
	YC - Yellow Clear*

*Recommended for neon lamps

SMOOTH FACE LENS CAPS

STYLE	COLORS
RL100 Flat top	AT Amber Translucent
	BT Blue Translucent
RL140 Dome	GT Green Translucent
	RT Red Translucent
RL160 Skirted	WT White Translucent
	YT Yellow Translucent

OGIC-LITES

Indicator lights with built-in transistorized lamp driver networks. Available in neon and relampable incandescent types for operation from IC and discrete component circuits. Matching indicator lights and switchlites are also available. Contact Eldema for more detailed information.

I-LITES

Eldema Series HL holders and lens caps are for sub-miniature based T-1 incandescent lamps. Military type construction — brass housing — either single or two terminal style — relampable from the front of the panel — mount on centers as close as 0.360. RFI/EMI shielded versions available-see H-Lite brochure.

A-1010-HL230WT

HLB-1010-HL321RT

C-2020-HL230WT

HLD-1010-HL321RT

HOLDER PART NUMBER

HLA-1010	Front mounting ¼" hole, single terminal, bright finish.
HLB-1010	Front mounting 5/16" hole, lug and center terminal — bright finish — insulating washers.
HLC-2010	Two terminal — front mounting 5/16" hole, bright finish.
HLC-2020	Two terminal — front mounting 5/16" hole, black finish.
HLD-1010	Two terminal — front or rear mounting — 5/16" hole — bright finish
HLD-1020	Two terminal — front or rear mounting — 5/16" hole — black finish.

LENS CAP STYLE

HL230	All plastic
HL321	Shroud, bright finish
HL321	Shroud, black finish

LENS COLORS

AT	Amber Translucent
BT	Blue Translucent
GT	Green Translucent
RT	Red Translucent
WT	White Translucent
YT	Yellow Translucent
WC	Water Clear
CC	Cloud Clear

SPECIFY HOLDER — LENS STYLE AND LENS COLOR.

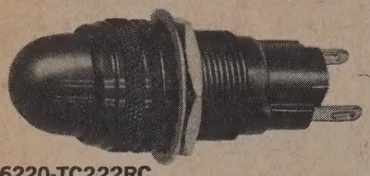
na products are available from au-zed stocking parts distributors ughout the United States and da.

ELDEMA DIVISION
GENISCO TECHNOLOGY CORPORATION

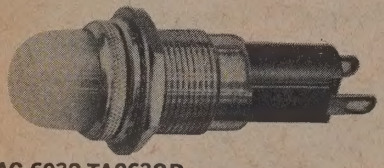
ELDEMA INDICATOR LITES

T-SERIES

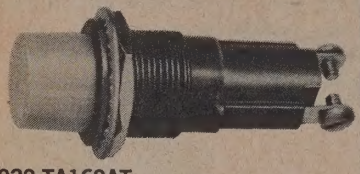
Eldema T-Series lampholders and lens caps are for the T-3¼ bayonet based incandescent and neon lamps. Four basic types – TAF and TCF for incandescents – TAG and TCG with built-in resistors for neons. Meets Mil-L-3661 – polished chrome, black nickel or bright nickel finish – front mounting in 11/16" holes water proof types – lug or screw terminals.



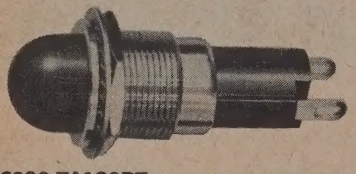
TCF-6220-TC222RC



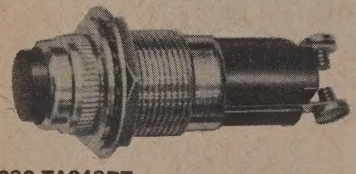
TAG-6032-TA263CD



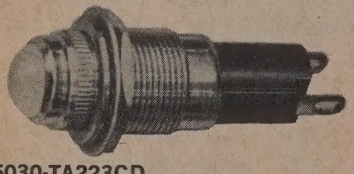
TAF-7020-TA160AT



TAF-6030-TA120RT



TAF-7030-TA243RT



TAF-6030-TA223CD

HOLDER STYLE

TAF - Incandescent lampholder Screw-in lens caps

TAG - Neon lampholder Screw-in lens caps

TCF - Incandescent lampholder Screw-on lens caps

TCG - Neon lampholder Screw-on lens caps

NOTE: TAF and TAG holders mate with lens caps starting with letters TA. TCF and TCG holders mate with TC lens caps.

HOW TO SPECIFY HOLDER FEATURES

Example – 6010

First digit: (Terminals)	6 = Solder lug 7 = Screw terminal
Second digit: (Mounting)	0 = Standard part 2 = Water proof
Third digit: (Finish)	1 = Bright nickel 2 = Black nickel 3 = Polished chrome
Fourth digit: (Resistor)	0 = None (TAF & TCF) 2 = 27KΩ for NE51H lamp 4 = 56KΩ for NE51 lamp 7 = 100KΩ for NE51 lamp 25,000 hour life rating

SCREW-IN LENS CAP STYLE

TA120	- Smooth dome — clear or translucent colors
TA130	- Fluted dome — clear colors only
TA140	- Semi-Fluted dome — clear colors only
TA160	- Flat top — clear or translucent colors
TA223†	- Convex — clear or diffusing colors (no cloudy clear)
TA243†	- Flat top — clear, translucent or diffusing colors
TA263†	- Smooth dome — clear or diffusing colors (no cloudy clear)
TA283†	- Fluted dome — clear colors (no cloudy clear)

SCREW-ON LENS CAP STYLE

TC223† Smooth dome — clear or diffusing colors (no cloudy clear)

TC243† Fluted dome — clear colors only (no cloudy clear)

† These lens caps have a metal ring with polished chrome finish specified by the digit 3. For bright nickel, change to 1, black nickel, change to 2. For example: TA221RC and TC242RC.

To specify water proof lens caps in the TA styles change the first digit as follows: TA100 series to TA400, TA200 series to TA300. For example: TA120RC to TA420RC. Standard TC lens cap may be used. All necessary sealing gaskets are on the TC holder when it is specified water proof.

LENS COLORS

AC — Amber Clear*	AT — Amber Translucent	AD — Amber Diffusing
BC — Blue Clear	BT — Blue Translucent	BD — Blue Diffusing
GC — Green Clear	GT — Green Translucent	GD — Green Diffusing
RC — Red Clear*	RT — Red Translucent	RD — Red Diffusing
WC — Water Clear*	WT — White Translucent	WT — White Translucent
YC — Yellow Clear*	YT — Yellow Translucent	YD — Yellow Diffusing
CC — Cloudy Clear*		CD — Clear Diffusing

* These colors recommended for neon lamps

Diffusing colors have surface nearest lamp frosted — Note white is translucent only.

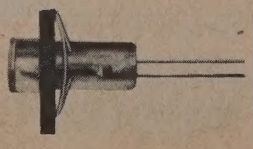
SPECIFY HOLDER STYLE — HOLDER FEATURES — LENS STYLE AND LENS COLOR

SEE PART NUMBERS BY ILLUSTRATIONS FOR EXAMPLES

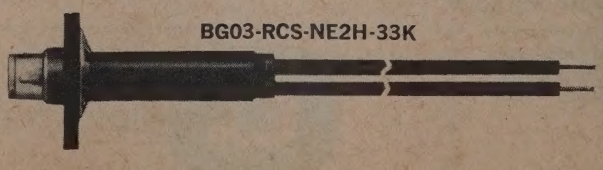
B – LITES

Commercial neon indicators permanently, clip mounted — 5/16" mounting hole all plastic construction — inexpensive — two basic types — neon lamp with resistor and attached wire leads and neon lamps only with bare wire leads. Mounting clips furnished. Designed for 120 volt operation.

BG90-RC-NE2H



BG03-RCS-NE2H-33K



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ELDEMA INDICATOR LITES

J-LITES

Permanent mounting indicators with built-in long life sub-miniature T-1 incandescent lamps. Front panel mounting in 0.193 hole — moisture and dust proof — completely sealed — 6 inch leads — commercial and military versions.

JK8111-050-220WT

JK9151-050-210RT

SPECIFY HOUSING — LAMP NO. LENS SHAPE — LENS COLOR

HOUSING STYLE

JK8111 Commercial - brass case
JK9151 Military - steel case

LAMP NO.	VOLTS	M.A.	LIFE HRS
-050-	5	60	100M
-100-	10	27	10M
-120-	12	60	16M
-280-	28	24	16M

LENS STYLE

210 Dome
220 Flat top

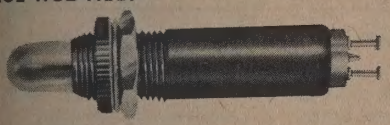
LENS COLORS

AT Amber Translucent
BT Blue Translucent
GT Green Translucent
RT Red Translucent
WT White Translucent
YT Yellow Translucent
WC Water Clear

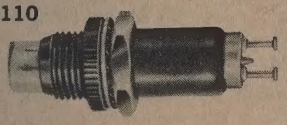
E-LITES

Two basic types — Series EG, neon lamp only — Series ER, neon lamp with built-in resistor — permanent neon lamp indicators — military type construction — black anodized aluminum body — tin plated turret terminals, high impact plastic lens — five lens colors. Use wrench Part number Z-090-375 to simplify installation.

ER01-WCB-N117



EG03-WCB-N110



STYLE - NO RESISTOR

EG01 Dome lens
EG03 Flat lens

STYLE WITH RESISTOR

ER01 Dome lens
ER03 Flat lens

LENS COLORS

ACB Amber Clear
CCB Cloudy Clear
RCB Red Clear
WCB Water Clear
YCB Yellow Clear

LAMP - EG SERIES

N110 Medium brightness
N120 High brightness

LAMP/RESISTOR - ER SERIES

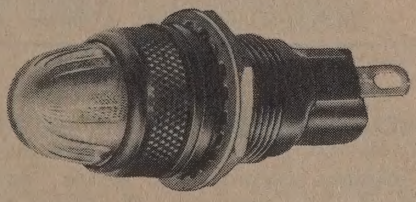
N117 Medium brightness, 25,000 hr — 100KΩ
N123 High brightness, 25,000 hr — 33KΩ

SPECIFY STYLE — LENS COLOR — LAMP OR LAMP/RESISTOR

RFI/EMI SHIELDED INDICATOR LITES

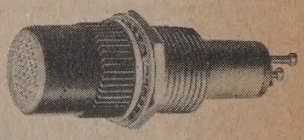
Special lens caps with internally retained wire mesh cloth used in lampholders with a conductive finish provides effective attenuation for interference shielding requirements. Shielded versions of most Eldema products are available and match the standard units. Contact Eldema for the technical bulletin covering complete RFI/EMI tests and results of these shielded indicator lights.

R-LITES



T-SERIES

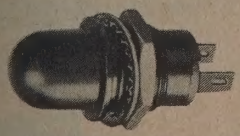
J-LITES

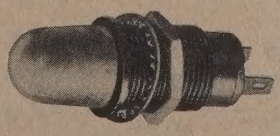


D-HOLDER

MIL-LITES

Specific Eldema parts meet MS25256, MS25257 and MS25446 per MIL-L-6723. Under MIL-L-3661 Eldema meets almost all configurations for lamp holders (LH nos.), Lens caps (LC nos.), and indicator lites (LHC nos.). Complete cross reference information is available upon request.





omplete catalogs and cross-reference nformation to Military parts and those f other manufacturers are available om our representative listed in the EM yellow pages.

ELDEMA DIVISION
GENISCO TECHNOLOGY CORPORATION

E. F. JOHNSON COMPANY

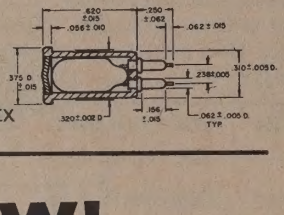
Pilot lights

E. F. Johnson pilot lights are preferred types available at parts distributors throughout the country. Specials, including MIL SPEC types are available in production quantities on request.

Six lens colors available. Refer to lens color Chart below for ordering information.

For detailed specifications and bulb life ratings, write for complete catalog and Design Files on your company letterhead.

INCANDESCENT/CONVEX



RIB-LOC™ MINIATURE PRESS-IN INDICATOR LIGHT

New RIB-LOC light presses into place in a. 312″ diameter ho Ribs bite into sharp edges of hole for positive retention. Dural polycarbonate lens in six colors. Long-life incandescent or ne bulbs. Black polyamide housing; other housing colors availab Incandescent types have 1⁄16″ terminals. Neon types have 1 wire terminals.

ORDERING INFORMATION

Cat. No.	Figure	Voltage	Bulb	Net Price
147-2103-920	C	115 vac*	NE-2H	$0.7
147-2203-100	A	4-6 vdc	Std. T-1 ¾	.8
147-2203-120	B	4-6 vdc	Std. T-1 ¾	.9
147-2203-300	A	10-14 vdc	Std. T-1 ¾	.9
147-2203-320	B	10-14 vdc	Std. T-1 ¾	1.0
147-2203-400	A	22-28 vdc	Std. T-1 ¾	.9
147-2203-420	B	22-28 vdc	Std. T-1 ¾	1.0

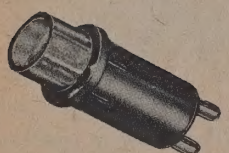
IMPORTANT: LENS COLOR SPECIFICATION

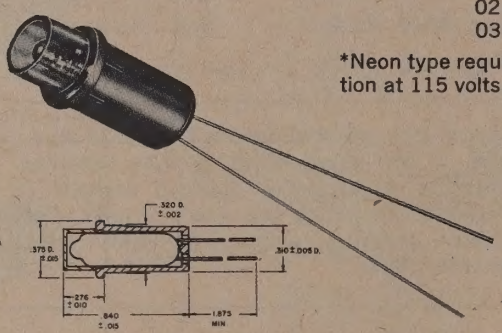
To indicate lens colors, substitute one of the following numbers the final digit of the catalog number. (Green, blue lenses recommended for neon type).

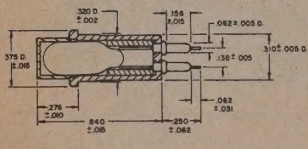
01 Clear	04 Amber
02 Red	05 Blue
03 Green	06 Opal (translucent)

*Neon type requires a 33K ohm current limiting resistor for ope tion at 115 volts a.c.

NEW!

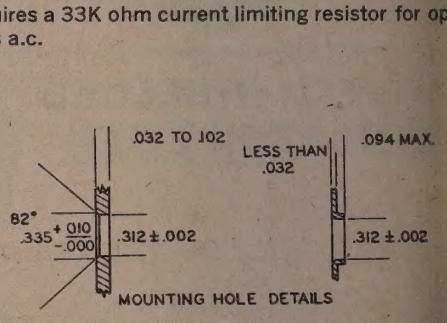






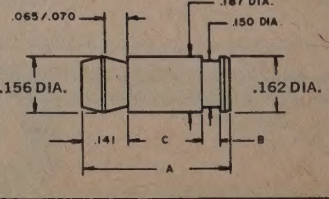
INCANDESCENT/TOP HAT

NEON/TOP HAT



Polyamide spacers

These convenient polyamide spacer bushings make it possible to snap P boards to a chassis and provide a choice of stand-off heights from .125″ .750″. They provide mechanically secure, insulated mounting, yet P boards can be quickly removed. Machined to dimensions shown, t design provides permanent, snap-in insertion into pre-drilled or punch holes in 1/16″ chassis or panel. (Also available as specials for other par and board thicknesses.) The other end of the spacer snaps in or out of t PC board so that the board can be removed for service or modificatio



POLYAMIDE SPACER/BUSHINGS

Cat. No.	Dim. A	B	C	Net Price
115-0260-001	.396	.065/.070	.125	$0.06
115-0260-003	.521	.065/.070	.250	.06
115-0260-005	.646	.065/.070	.375	.06
115-0260-007	.771	.065/.070	.500	.07
115-0260-009	.896	.065/.070	.625	.07
115-0260-011	1.021	.065/.070	.750	.07

Recommended mounting hole .152″ ± .002″.

Net

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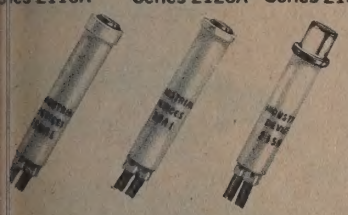
INDUSTRIAL DEVICES, INC.
stock items...off the shelf

neon pilot lights

■ Enhance as well as beautify any product ■ Complement and highlight design ■ Invite attention
■ Rugged and long lived — 10,000 hour life unaffected by vibration or shock ■ Tamper proof housings
■ Mount quickly, securely ■ UL recognized*, CSA approved

.O — DOT Mounting hole— 5/16" diameter.

ies 2110A Series 2120A Series 2150A

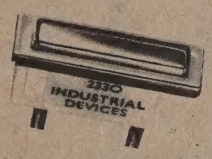


STOCK MODELS AVAILABLE

A1 Red	B2120A1 Red	B2150A1 Red
A2 Clear	——	——
A3 Amber	B2120A3 Amber	B2154A3 Amber
A4 White	B2120A4 White	B2150A4 White
	.98	.58	.59

LINE-O-LITE *Mounting hole— $1\frac{3}{32}$" x .395/.400".

Series 2330D



STOCK MODELS AVAILABLE

MODEL NO.	LENS COLOR
B2330D1	Red
B2330D3	Amber
B2330D4	White

*Will snap-fit into panels .055—.070" thick without speednut

.65

OMNI — GLOW Mounting hole— 1/2" diameter.

Series 1050A Series 1050C Series 1050N

STOCK MODELS AVAILABLE

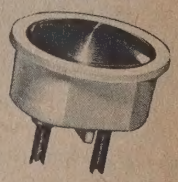
B1050A1 Red	B1050C1 Red	B1050N1 Red
B1050A2 Clear	——	—
B1050A3 Amber	B1050C3 Amber	B1050N3 Amber
B1050A4 White	B1050C4 White	B1050N4 White
.59	.59	.59

OMNI-GLOW Series 2600 Mounting hole— 7/8" diameter.

STOCK MODELS AVAILABLE

MODEL NO.	LENS COLOR
B2620K1	Red
B2620K3	Amber
B2620K4	White

.59



SPECIFICATIONS (COMMON TO ALL STOCK NEON PILOT LIGHTS)

Voltage: 105—125 A.C.
Leads: 4½" 105°C plastic stripped ½" 22AWG
Lamp: High brightness neon with built-in resistor.
Speednut: Hardened spring steel, rust-resistant finish.

INI-SLIDE pilot light assemblies

ight, highly visible ■ Long-lived — rated 5000 hours ■ Available complete
lamps from 6 to 120 volts ■ Variety of colors ■ Utilize miniature slide
incandescent lamps ■ Foolproof installation ■ UL recognized, CSA approved

Model 2800 Series			Model 3060 Series	
Black Bezel	Stainless Bezel	Lens Color	Round Lens	Square Lens
32800A1 • v	B2801A1 • v	Red	B3060C1 • v	B3060D1 • v
32800A2 • v	B2801A2 • v	Clear	B3060C2 • v	B3060D2 • v
32800A3 • v	B2801A3 • v	Amber	B3060C3 • v	B3060D3 • v
32800A4 • v	B2801A4 • v	White	B3060C4 • v	B3060D4 • v
32800A5 • v	B2801A5 • v	Green	B3060C5 • v	B3060D5 • v
32800A6 • v	B2801A6 • v	Blue	B3060C6 • v	B3060D6 • v
32800A7 • v	B2801A7 • v	Yellow	B3060C7 • v	B3060D7 • v

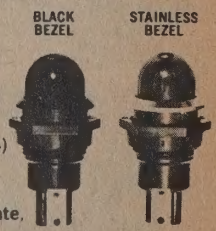
rtant — These units shipped complete with lamp, specify voltage when ordering. See lamps listing

1.24 1.29 .98 .98

SPECIFICATIONS

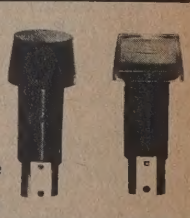
Model 2800 Series

Mounting nut: Nylon, self-locking, torque limiting (U.S. Patent 3352194)
Mtg. Hole: 11/16" Diameter
Lens: Molded polycarbonate, screw in (for easy relamping)



Model 3060 Series

Mounting nut: Speednut, hardened spring steel, rust resistant finish
Mtg. Hole: ½" Diameter
Lens: Molded polycarbonate snap-on for easy front panel relamping



short slide base "pilot" lamps

FOR USE WITH MINI-SLIDE

Design Volts	Lamp Number	Design AMPS	Approx. Hrs. Life	Wattage at Design Volts	Rated End Foot Candles
6	6 PSB	.140	5,000	.8	800
12	12 PSB	.170	5,000	2.0	2400
24	24 PSB	.073	5,000	1.7	2200
28	28 PSB	.040	5,000	1.1	1900
48	48 PSB	.053	5,000	2.5	1500
60	60 PSB	.050	5,000	3.0	2400
120	120 PSB	.025	5,000	3.0	1600

■ Complete line
■ Rugged-long life
■ Miniature up to 120 volts ratings to 3 watts

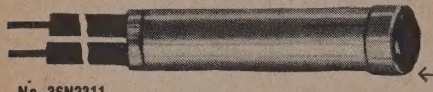
*Recognized under the component program of Underwriters' Laboratories, Inc.

INDICATOR LIGHTS
NEON AND INCANDESCENT AND SPECIAL ASSEMBLIES

SNAPLITE® LEECRAFT

TINEON INDICATOR LIGHTS

Long Life, High Brightness Lamps — Press fit into 5/16" hole — For neon types rated 110-250V — Nylon housing in colors (white standard) — Speed nut furnished — Plastic lens in colors — Legends — Built-in Resistor — Insulated Leads.
All Tineons are available with Incandescent Lamp.



3600 Series (with built-in resistor) Available in 3 flange dimensions

No. 36N2311

4100 Series (with neon less resistor or incandescent)

No. 41N1315

TINEONS 45 Series (Blade Terminals)

No. 45R2111T8

46 Series (Pin Type Terminals)

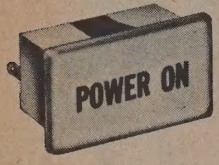
No. 46N2311

WITH ALUMINUM BEZEL
All Tineons may be furnished with aluminum bezel. Please specify when ordering.

No. 36EN2111 (Hi-Hat red lens) With aluminum bezel

RECTANGULAR INDICATOR LIGHTS

Long Life High Brightness Neon Lamps — Snap into panel securely without additional hardware — Choice of lens colors — Series 3100 has chrome bezel and plastic lens — Series 47 has one-piece plastic lens and body — Complete range of voltages — UL and CSA listed.

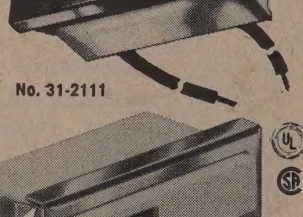


No. 47-3T (legend to specification)
For 1 3/16" x 5/8" hole

DUAL BEZEL
No. 31-ML2
For 1 9/32" x 1 5/16" hole.

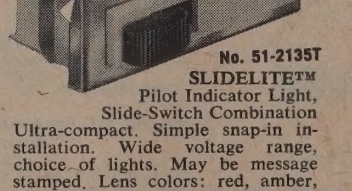
Barrier separates light into two separate message areas. Individual or simultaneous operation.

No. 31D-ORN
Dual Message Lights
For 1 1/32" x 1 3/32" hole



No. 31-2111

2900 Series
REAR - ASSEMBLY, SNAP - IN LIGHTS Neon or incandescent. All voltages. Snap in from rear, lock firmly. Simpler, swifter assembly. Eliminate threading leads as in front-of-panel lights. No additional hardware. Mtg. hole .510-.520".

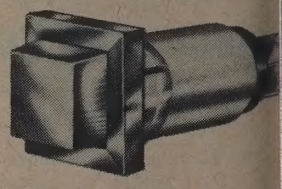


No. 51-2135T
SLIDELITE™
Pilot Indicator Light, Slide-Switch Combination
Ultra-compact. Simple snap-in installation. Wide voltage range, choice of lights. May be message stamped. Lens colors: red, amber, clear, white, blue, green, others on request. Leads or terminals. 1 25/64"x 13/32"x 2 1/32". Rating: 125 V. 6 Amps.

SNAPLITE INDICATOR LIGHTS

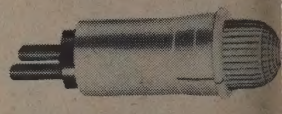
With long-life lamps, high brightness types. Built-in resist when neon lamps — to suit applied circuit voltage, provide re lamp life, eliminating replacement need. Features: Snap into in 1/2" hole with no additional hardware. Wide variety of len housing colors. Tab or solder terminals; or wire leads. AVAIL WITH CHROME RINGS. To specify Chrome Rings add R aft 2 Digits, i.e., 32-2111 becomes 32R2111.

SQUARE LENS
32R2911T 7/32" high

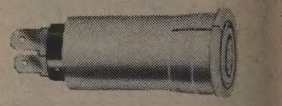


FLAT CYLINDRICAL LENS
32-2111 3/16" high

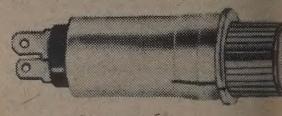
STOVE PIPE LENS
32-2211 13/32" high



FLUSH LENS
32-2311T 1/32" high



HI-HAT LENS
32-2511T 5/16" high



NOTE: Total height above panel equal to lens height plus 1/16" fl thickness. 5/32" flange thickness for Square Lens.

HOW TO ORDER LEECRAFT INDICATORS WITH INCANDESCENT LA

Incandescent lamps to meet low voltage characteristics may be plied in place of neon lamps with all indicators illustrated on page. To specify incandescent in place of neon lamps insert l code after series number. Some of more popular voltages are li

CURRENT (Milliamperes)	VOLTAGE (Volts)	CODE LAMP
200	6	G1
40	6	G2
14	10	G6
80	14	G3
40	28	G5

EXAMPLE: 41N2313 14 Volt 80 Mil. LAMP comes 41N-G3-2313. 32-2111 with 6 volt 200 LAMP becomes 32-G1-2

Leecraft Series	Volts	Terminations
3200	110-125	Insulated wire leads
3500	210-250	Insulated wire leads
3200T	110-125	.187 tab terminals
3500T	210-250	.187 tab terminals

1/3W, 125V
1/3W, 250V

CATALOG NUMBERS • 3200 SERIES WIRE LEADS*

Lens Color	Cylindrical Lens	Flush Lens	Stove Pipe L
Red	32-2111	32-2311	32-2211
Amber	32-2113	32-2313	32-2213
Clear	32-2117	32-2317	32-2217
White (Translucent)	32-2115	32-2315	32-2215

To specify Square Lens, use 32R291 plus 1, 3, 7 or 5 for lens co Example: With red lens—32R2911. To specify Hi-Hat Lens, use 32- plus 1, 3, 7 or 5. Example: With clear lens—32-2517.

* To specify TAB TERMINALS in place of WIRE LEADS, add "T" a number, i.e., 32-2111 becomes 32-2111T.

WRITE FOR PRODUCT LIGHTING GUIDE. PROTOTYPE SAMPLES AVAILABLE ON REQUEST.

LEECRAFT® **Leecraft MANUFACTURING CO., INC**

Net
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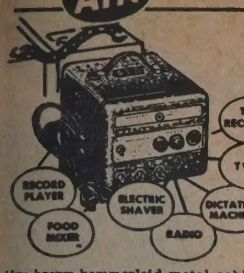
ATR Inverters, Vibrators, "A" Eliminators, etc.



ATR DC TO AC UNIVERSAL INVERTERS

New, universal inverters for operating 110-v., 60 cycle AC equipment from DC voltages in autos, buses, trucks, boats, trains, planes and DC districts. Designed especially for standard 110-volt AC tape recorders, TV sets, radios, PA systems, electric razors, test equipment, etc. Units are carefully engineered and ruggedly constructed to provide long life operation. All feature complete RF interference suppression and exceptional frequency stability. Have operating efficiency in excess of 75%. Four-point voltage regulator corrects output voltage for minimum and maximum loads, and also helps compensate for input voltages lower or higher than normal. Inverters are recommended for use with loads having power factors in excess of 70%. Built-in toggle switch selects most efficient operation for use with TV sets or tape recorders. Inverters are not recommended for use with large motor driven appliances such as refrigerators, washing machines, etc. All have ON-Off switches. Housed in attractive brown hammerloid metal cabinet with convenient leather carrying strap. Sizes: Standard Model RSF, 8¼x9¼x5¼"; Heavy-Duty Model RHG 6¼x11¼x8½". Extra-Heavy-Duty Model HSJ, 6½x12¼x8½". With battery clips for instant connection to power source. Models with "P" suffix equipped with adapter cord for use in auto cigarette lighter receptacles. *Recommended for24 volt battery operation. **Before ordering, check wattage of equipment with which inverter will be used.**

Stock No.	Mfr's Type	Input D.C. Volts	A.C. Output 60 Cycles	Output Watt. Int.	Output Watt. Cont.	Shipping Weight	List Price	Net Price
	6U-RSF	6	110 Volts	100	80	22 lbs.	$ 99.00	$ 66.00
	6U-RSF-P	6	110	100	80	22	99.00	66.00
	6U-RHG	6	110	150	125	27	131.25	87.50
	6U-HSJ	6	110	175	150	37	155.25	103.50
	12U-RSF	12	110	150	125	22	89.75	59.22
	12U-RSF-P	12	110	150	125	22	89.75	59.22
	12U-RHG	12	110	200	175	27	119.50	79.66
	12U-HSJ	12	110	250	225	37	149.50	99.66
*	28U-RSF	28	110	125	100	22	109.50	73.00
*	28U-RHG	28	110	175	150	27	145.00	96.66
*	28U-HSJ	28	110	250	200	37	170.75	113.82
	32U-RSF	32	110	150	100	22	109.50	73.00
	32U-RHG	32	110	200	180	30	131.25	87.50
	32U-HSJ	32	110	325	225	37	170.75	113.82
	50U-RSF	50	110	150	100	22	109.50	73.00
	50U-RHG	50	110	225	200	27	145.00	96.66
	110U-RSF	110	110	250	150	22	89.75	59.82
	110AU-RHG	110	110	325	250	27	109.50	73.00
	110BU-RHG	110	110	450	350	30	145.00	87.50
	110U-HSJ	110	110	600	400	37	170.75	113.82
	220U-RSF	220	110	250	150	22	99.00	66.00
	220U-RHG	220	110	325	250	27	131.25	89.50
	220U-HSJ	220	110	500	300	37	170.75	113.82

PORTABLE PLUG-IN TYPE INVERTERS

SPECIALLY DESIGNED FOR OPERATING STANDARD A. C. DICTATING MACHINES, RECORD PLAYERS, INCANDESCENT LAMPS, ELECTRIC RAZORS, ELECTRONIC TEST EQUIPMENT, AND OTHER SMALL ELECTRICAL AND ELECTRONIC DEVICES FROM D. C. VOLTAGES IN AUTOMOBILES, BUSES, TRUCKS, BOATS, PLANES, TRAINS, AND D. C. DISTRICTS.

Lightweight inverters for operating 110 v. AC equipment from DC voltage sources. Feature excellent frequency stability and high efficiency. 6 and 12-volt units plug into cigarette lighter receptacle of any vehicle; others are equipped with standard 2-prong plugs. All are designed especially for use with dictating machines; record players, electric razors, test equipment, etc. Not recommended for large tape recorders and motor driven appliances such as refrigerators, washing machines, etc. Brown Hammerloid case with leather carrying strap. Sizes: DME, 5½x4¾x2¾"; RME and RMF, 8¾x8x3¾". *Recommended for 24-volt operation. **Check wattage rating of equipment before ordering. RMF/RME Model inverters equipped with voltage regulator.**

Stock No.	Mfr's Type	Input D.C. Volts	A.C. Output 60 Cycles	Output Watt. Int.	Output Watt. Cont.	Shipping Weight	List Price	Net Price
	6-DME (1)	6	110 Volts	40	30	5 lbs.	$33.50	$22.33
	6C-DME (1)	6/12	110	40	30	5	38.35	25.50
	6-RMF (2)	6	110	80	60	12	65.75	43.80
	6C-RMF (2)	6/12	110	80	60	12	72.45	48.30
	12-DME (1)	12	110	50	40	5	29.97	19.98
	12T-RME-1 (2) (3)	12	110	125	110	14	62.95	41.96
*	28-RME (2)	28	110	100	80	12	74.95	49.95
	32-RME (2)	32	110	100	80	12	74.95	49.95
	110-RME (2)	110	110	150	100	12	71.75	47.82
	220-RME	220	110	150	100	12	74.95	49.95

(1) These Inverters primarily recommended for Edison VP dictating machines. May also be used with Model 200 Sound-scriber (with engine of car not running).
(2) Primarily recommended for Dictaphone's Time Master, DeJur Stenorette, and Gray Audograph dictating machines or other similar types. Also recommended for use with Norelco tape recorder Model EL-3516 and Geloso Model G 255-S tape Recorder.
(3) This Inverter specially designed and recommended also for use with portable TV set.

ATR VIBRATORS

FOR ALL AUTO RADIO SETS SINCE 1954 USE ONE OF THE ATR VIBRATORS LISTED BELOW ... ATR VIBRATORS FEATURE

Ceramic Stack Spacers with Two-Bolt Stack construction.

Instant Starting—as a result of highly efficient magnetic circuit with formed base for more uniform operation on both high and low voltages.

Large Oversize Tungsten Contacts having Full Wiping Action—for greater reliability and longer life.

Perforated Reed of Highest Quality Swedish Spring Steel.

Highest Precision Construction and Workmanship—Practically all parts used are held to within a tolerance of 0.0005 of inch.

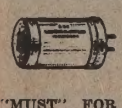
Value Plus—as readily evidenced by the Larger Contacts, Ceramic Spacers and Precision Construction and Workmanship. Available in TEN-PAK.

ATR No. 1400 (Bulk), 4-Prong, 6-Volt For All 6-Volt Sets Since 1954

ATR No. 1843 (Bulk), 3-Prong, 12-Volt For All 12-Volt General Motors Since 1954

ATR No. 1843 also used in following automobiles: 1956 Ford (Philco), Lincoln (Bendix), and Mercury (Bendix)† 1956 Chrysler (Philco); 1955-57 Packard; 1956-57 Plymouth (Philco); 1956 Studebaker (Philco) and 1957 Mercury (Philco)

ATR No. 1840 (Bulk), 4-Prong, 12-Volt For 12 Volt Cars other Than GM Since 1954



ATR ELECTRONIC TUBE PROTECTOR

A "MUST" FOR EVERY TV HOME! WILL DOUBLE OR TRIPLE THE LIFE OF ALL TYPES OF ELECTRONIC TUBES, INCLUDING TV PICTURE TUBE. Automatic in operation, for use with any electronic equipment having input wattage of 100 to 300 watts. Fuse protected; rugged construction; and enclosed in interior decorator's golden brown hammerloid-finish metal case. Wall Model 250 is 1 - 15/16" OD x 3⅛" in length and plugs directly into wall socket. Shipping weight is 1 lb.

—Wall Model 250

(115 volt A.C.) . . . . . Net $2.95

ATR SHAV-PAKS

Every man should have this lightweight ATR Inverter in his car for that "Keep Clean-Shaved Look." Will operate standard A.C. Electric Shavers from your CAR or Boat*. Complete with 3 ft. cord set. Plugs into cigarette lighter receptacle. Fuse protected, rugged construction, and attractively housed in grey hammerloid-finish steel case. Size 4"x2⅜"x 2¼". Shipping weight 2¼ lbs.

Model 6-SPB (6 volt) . . . . . Net $14.75
Model 12-SPB (12 volt) . . . . . Net 12.95

ATR "A" BATTERY ELIMINATOR

FOR DEMONSTRATING AND TESTING TRANSISTOR OR VIBRATOR-TYPE AUTO RADIOS. Designed for testing D.C. Electrical Apparatus on regular 110 volt A. C. lines . . . equipped with full-wave dry disc-type rectifier, assuring noiseless, interference-free operation. Fully Automatic and Fool-Proof; has voltmeter, ammeter, and 8-position voltage control. Fuse protected, and housed in heavy gauge brown hammerloid-finish metal case. 6 ft. cord set included. Size: Model 610C-ELIF, 6½"x9½"x8½"—shipping weight 22 lbs.; Model 620C-ELIT, 6½"x12¼"x8½"—shipping weight 33 lbs.

IDEAL AS A POWER SUPPLY FOR MODEL RAILROAD TRAINS, RADIO SETS, ELECTRO PLATING OUTFITS, AND OTHER 6 OR 12 VOLT, D.C. EQUIPMENT. MAY ALSO BE USED AS A BATTERY CHARGER.

—**Model 610C-ELIF** (6 volt at 10 amps. or 12 volt at 6 amps.) . . . . . Net $59.82

—**Model 620C-ELIT** (6 volt at 20 amps. or 12 volt at 10 amps.) . . . . . Net $79.75

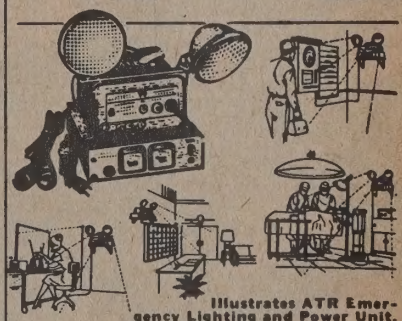
ATR AUTO PLUG-IN, HOME-TYPE PORTABLE BATTERY CHARGERS

No installation . . . just plug into cigarette lighter receptacle! Makes motor starting easy! Keeps your car battery fully charged in your own garage. Operates directly from standard 110 volt A.C. Household Current. Available in three portable sizes for both 6 or 12 volt cars. Light in weight, rugged in construction, economical, and built to last. Each battery charger is housed in grey hammerloid-finish metal case. Complete with cord sets. Size of G1 is 5⅜"x4⅛"x2¾"—shipping weight is 6 lbs.; G2 is 8½"x5½"x3⅛"—shipping weight is 8 lbs.; and G3 is 8½"x5½"x5½"—shipping weight is 10 lbs.

(G-1) —**Model 612CA4** (4 amp.)
6 or 12 volt . . . . . **Net $19.46**

(G-2) —**Model 612CA6** (6 amp.)
6 or 12 volt . . . . . **Net $22.46**

(G-3) —**Model 612CA10** (10 amp.)
6 or 12 volt . . . . . **Net $27.71**



Illustrates ATR Emergency Lighting and Power Unit, Model ETS complete with lamps.

ATR EMERGENCY LIGHTING and POWER UNIT

Completely Automatic Standby-Power Units Specially Designed to Permit the Instantaneous Continued Operation of Critical Lighting Equipment, PA Systems, Amplifiers, Intercom Systems, Burglar Alarms, Fire Alarms, Synchronous Electric Clocks, Electric Time and Recording Clocks, Incubators, Gas Valves, Telephone and Test Equipment, and Similar Critical Devices in the Event of 115 Volt AC Commercial Power Line Failure. For Use: In Hospitals, Banks, Hotels, Theatres, Factories, Office Buildings, Schools, Homes, and Many Other Areas of Operation.

Type	*Storage Battery Input	A.C. Output 60 Cycles	Output Wattage Int.	Output Wattage Cont.	Net With Lamps
661-ETM	6-volts	110-volts	80	60	$231.75
662-ETS	6	110	100	80	253.50
663-ETH	6	110	150	125	275.50
1232-ETS	12	110	125	100	247.50
1233-ETH	12	110	175	150	267.00
1234-ETJ	12	110	250	200	287.25

For Units Without Lamps Deduct $37.50 Net.

All ATR Inverters Listed Above are Frequency Stable and have Automatic Frequency Control

Need custom power supplies?

Acme Electric can design and build to your specs.

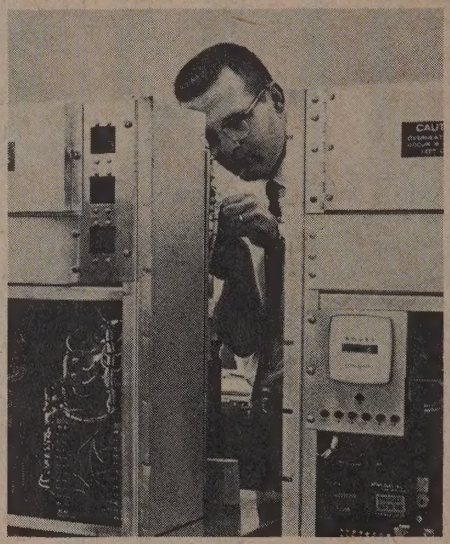
Acme Electric's engineering and experience have developed thousands of custom designed regulated DC power supplies for a variety of industrial markets. You'll find our power supplies in computers and data processing, communications, nuclear research, machine tools, photography, medical apparatus, to name but a few.

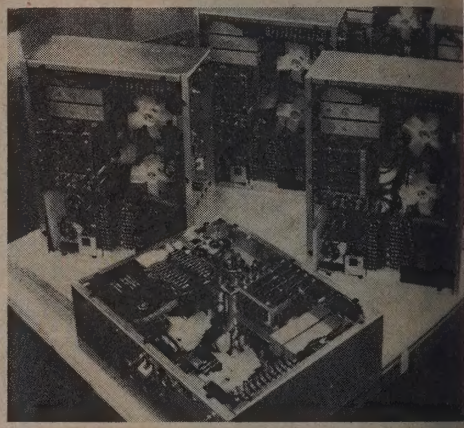
In these and other fields we have solved such knotty power supply problems as: dynamic load regulation of 3000 DC amps at .002%; economically achieved high efficiency at extremely low voltage and high current for IC's; tough packaging problems and programming requirements; many others. We're also specialists at designing and manufacturing CVT regulated power supplies.

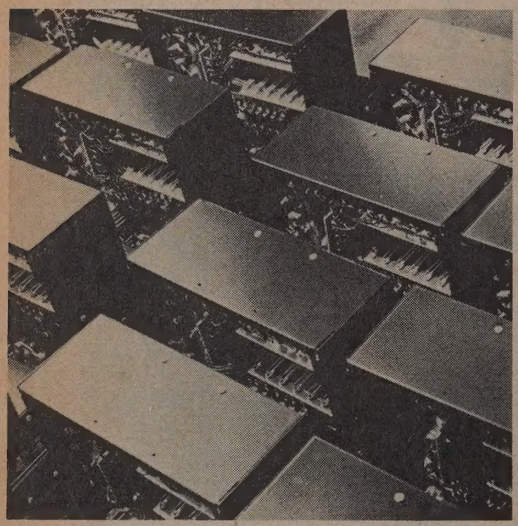
So, if you're looking for high quality, soundly engineered custom units, yet want them made with prod line efficiency, why not draw o engineering know-how of Acme tric Corporation? Our business satisfy the functions of power co conversion and/or regulation, ever the industry or application.

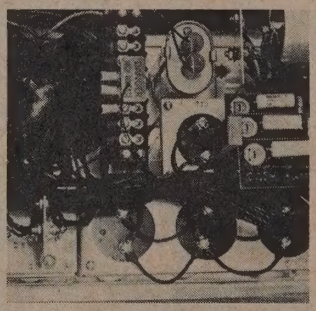
Acme Electr

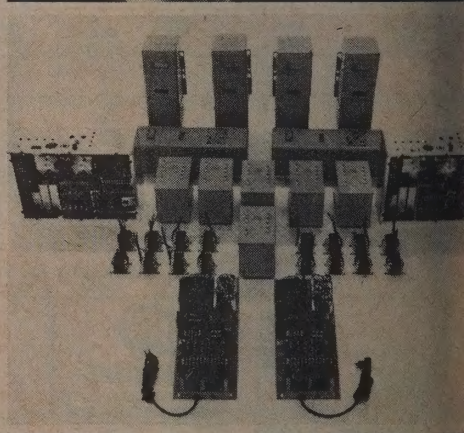
ACME ELECTRIC CORPORA

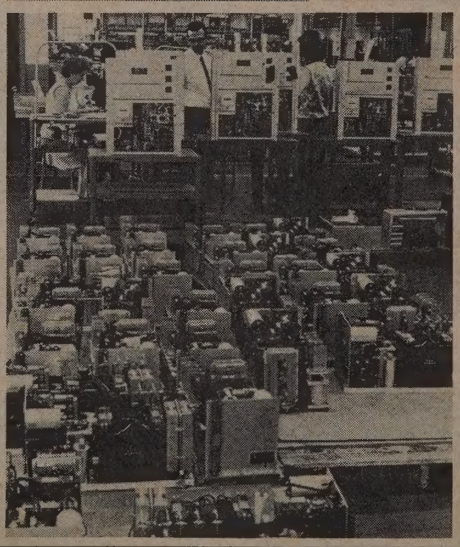


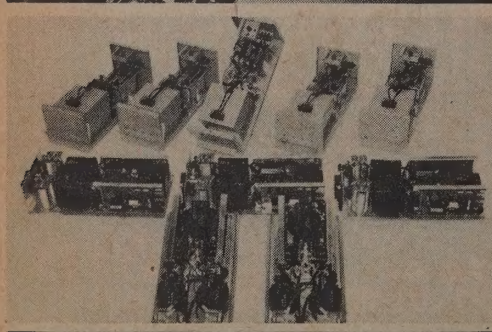


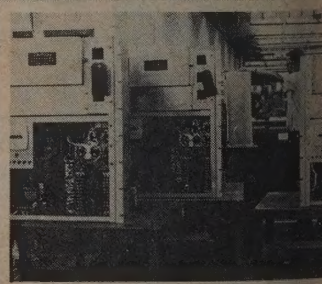


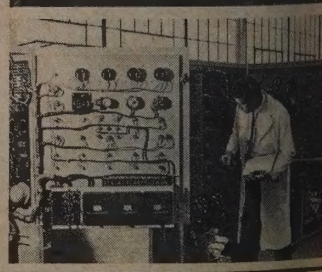












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Beckman® HIGH VOLTAGE POWER SUPPLIES

PORTABLE HIGH VOLTAGE DC POWER SUPPLIES

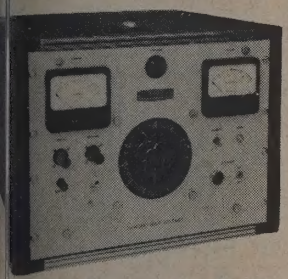
These general purpose supplies are particularly suited for laboratory or production line use to provide a convenient source of high voltage, low current dc power. Widely used for such applications as powering photo-multiplier tubes, image intensifiers, condenser charging, and routine insulation breakdown testing.

tage readings are indicated by a 6" precision mirror scale kilo- ter of 1% accuracy. Polarity is reversible from the front panel applied for). An ac input protection fuse is included as well as t-in limiting ballast lamp restricting maximum current output These levels may be adjusted by changing ballast. A single con- lows continuous adjustment of output voltage from zero to maxi- ated voltage.

output is unregulated (regulation is 20% for 10 to 100% load- urrent rating is 5 milliamperes. The ripple is 5% (rms) at full and current load.

Model	Output Voltage	Output Current	Price
0-1ma-ms	0 to 1kV	5ma	$250.00
0-5ma-ms	0 to 2.5kV	5ma	275.00
5-5ma-ms	0 to 5kV	5ma	300.00
0-5ma-ms	0 to 10kV	5ma	325.00
5-5ma-ms	0 to 15kV	5ma	350.00
5-5ma-ms	0 to 25kV	5ma	400.00

VY DUTY DC POWER SUPPLIES

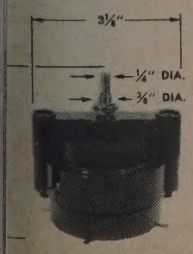


These industrial type power supplies are built for service and efficiency. All are of the transformer type and employ husky components that have been selected for their power handling capacity. Controls are arranged so that operation is simple and the units contain a number of safety features for protection of personnel and equipment. Output is continu- variable from zero to full rated values. These supplies are unregu- and standard ripple is 5% or less. Ripple of from 0.01% to 1%, gulated supplies are available on special order. All power supplies automatic overload cutout control circuits.

odel	Voltage	Current	Price
01	0-1000	2 Amp.	$1000.00
02	0-2000	1 Amp.	1050.00
03-A1	0-3000	100 MA.	660.00
03-AV	0-3000	500 MA.	770.00
03-AK	0-3000	1 Amp.	1150.00
05-A1-H	0-5000	100 MA.	715.00
05-AV	0-5000	500 MA.	1175.00
05-A1K	0-5000	1 Amp.	1325.00
10-AV	0-10,000	500 MA.	2100.00
20-A05	0-20,000	50 MA.	1350.00
30-A3	0-30,000	300 MA.	2500.00

HIGH VOLTAGE SWITCHES

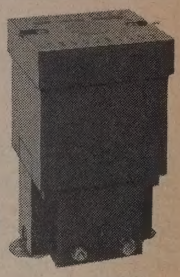
igh voltage, low current circuits requiring complete isolation; al rating 5,000 volts (D.C. or A.C.) Model A or D may be used in duty circuits to 10,000 volts D.C. Steady state current rating 500 milliamperes — 5Ma when switching. Isolated for 15,000 volts D.C. test to ground . . . made of modified Diallyl Phthalate. May be ganged together for 2 gang operations.



Model	Type	Price
A	2 Pole reversible (for polarity reversing of power supplied)	$22.00
B	D.P.D.T.	24.00
D	4 Position (1 Gang)	22.00
E	6 Position (1 Gang)	24.00
F	8 Position (1 Gang)	28.00
G	10 Position (1 Gang)	30.00

PACKAGED POWER SUPPLIES AND ZENER REGULATORS

ZENER REGULATOR



PACKAGED POWER SUPPLY

These new low-cost units make D.C. voltage problems easy. Just wire input and output connections and the unit is ready to operate. Building block construction provides a basic transformer, a rectifier unit, and where necessary a regulating device. These three elements bolt together quickly and maintenance is simplified should any of the components fail. Each of the three basic building blocks are mechanically constructed in a molded Diallyl Phthalate shell and encapsulated with epoxy resin.

The output is completely isolated and either post may be grounded or the unit operated as a floating supply. The D.C. voltage is filtered and provides 5% or less ripple. Output may be varied from full rating down to zero by simply inserting a small adjustable transformer in the input. Most units are rated for 5 MA current. Power supplies 7.5 KV and higher have modified mechanical construction from that described above. Input 115 V. 60 Hz.

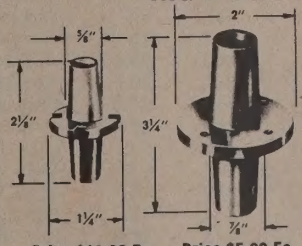
Use with High Voltage Zener Regulators to obtain 1% line and load regulation.

Simply connect in parallel* with any high voltage power supply and automatically obtain line and load voltage regulation as well as ripple reduction. Nominal current rating is 0.5 to 1 MA for better than 1% stabilization. Regulation over range of 0 to 5 MA is 3%. Can be wired in series for high voltage service (five 4,000 volt types to regulate a 20,000 volt power supply). Twenty built-in taps included, each provides a regulated voltage to an accuracy of 20%. Ideal for photomultiplier tubes. Use as a high voltage reference in conjunction with regulator amplifier circuitry.

*If necessary, insert a series resistor to limit zener current to under 5 MA.

	Model	Output Voltage	Total Voltage	Volts at Each Tap	Price
POWER SUPPLY	05-KV-5 MA	500 volts DC			$ 55.00
	1-KV-5 MA	1-KV-DC			65.00
	2-KV-5 MA	2-KV-DC			70.00
	3-KV-5 MA	3-KV-DC			75.00
	5-KV-5 MA	5-KV-DC			80.00
	10-KV-5 MA	10-KV-DC			110.00
	15-KV-5 MA	15-KV-DC			120.00
	20-KV-5 MA	20-KV-DC			200.00
	30-KV-5 MA	30-KV-DC			230.00
ZENER REGULATORS	ZA-1K		1,000 volts	50 volts	60.00
	ZA-2K		2,000 volts	100 volts	70.00
	ZA-3K		3,000 volts	100 & 200	80.00
	ZA-4K		4,000 volts	200 volts	100.00
	ZA-5K		5,000 volts	200 volts	110.00

HIGH VOLTAGE CONNECTORS



Price $10.00 Ea. Sample Kit of 10 (1 of each color) $60.00

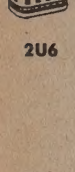
Price $5.00 Ea. Sample Kit of 10 (1 of each color) 30.00

Modified Diallyl Phthalate construction for superior arc resistance and low power factor; convenient miniature size with extra long air paths; sealed center conductor handles up to 20 amperes; neoprene gasket for mounting on oil filled tanks. For quick disconnect (easily mated with standard banana jack) or for permanent service with 10/32" machine bolt; neat styling — available in 10 colors — ideal for mounting on front panels.

Model C-1 rated for 25,000 volts D.C. max.
Model C-0 rated for 5,000 volts D.C. max.

Beckman® INSTRUMENTS, INC.
CEDAR GROVE OPERATIONS

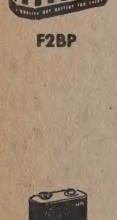
BURGESS BATTERIES



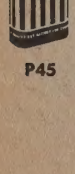
2U6

P6

C5



F2BP



P45

BURGESS Number	NEDA Number	Other	Volts	Terminal Type	Overall Dimensions L	W	H	Unit Package Quantities	Weight of Unit Package in Pounds	Sugg. Dealer Each	Su List E
BURGESS BATTERIES FOR TRANSISTOR CIRCUITS											
130-Disp. 12	14	1035	1½	Flashlight	63/64 (diam.)		1 15/16	12	1 3/8	$.19	
2MN6-Disp. 12	1604D	222	9	Snap Type	1	39/64	1 7/8	12	1	.65	
2N6	1602	246	9	Snap Type	1 3/8	1 3/8	2 3/4	1	3/10	1.30	1
2U6-Disp. 12	1604	216	9	Snap Type	1	39/64	1 7/8	12	1	.48	
230-Disp. 12	13	1050	1½	Flashlight	1 21/64 (diam.)		2 25/64	12	2 5/8	.19	
930-Disp. 12	15	1015	1½	Flashlight	35/64 (diam.)		1 31/32	12	½	.155	
A4	.....	.....	6	Flat Contacts	1 9/32	1 9/32	2 11/32	1	¼	2.48	3
C6X	1612	2356N	9	Snap Type	2 5/16	1 1/32	6 1/16	1	5/8	1.64	2
D5	26	707	7½	Snap Type	2 9/16	2	2 23/32	1	7/8	2.00	2
D6	1603	276	9	Snap Type	2 9/16	2	3 5/32	1	1	1.57	2
D6PI	1601	2506	3, 6, 9	Socket	2 19/32	1 7/16	7 27/32	1	1 3/8	4.20	6
D6S	1608	2761N	9	Socket	2¼	1¼	7 29/32	1	1 1/8	4.80	7
L6	1611	206	9	Flat Contacts	47/64 (diam.)		1 31/32	6	½	.62	
M6	1605	266	9	Snap Type	1 13/16	1 13/16	2 1/16	1	2/5	1.36	1
NE-Disp. 6	910	904	1½	Flashlight	7/16 (diam.)		1 11/64	6	1/8	.095	
P6-Disp. 6	1600	226	9	Snap Type	1 (diam.)		1 15/16	6	3/8	.68	
PM6-Disp.6	1600D	.....	9	Snap Type	1 (diam.)		1 15/16	6	5/8	.80	1
PM8	1810	228	12	Snap Type	1 (diam.)		2 1/16	1	1/8	1.05	1
XX9	1900	239	9, 13½	Socket	3/5	3/5	1 9/10	1	1/8	1.77	2
Y6	1606	.....	9	Snap Type	1 9/32	29/32	2 17/32	1	1/16	.83	1
BURGESS INDUSTRIAL - ELECTRONIC - TRANSISTOR - RADIO "A" BATTERIES											
2F	11	W353	1½	Socket	2 13/32	1 3/8	4¼	1	¾	1.22	1
2F2H	703	W356	3	Binding Post	2 5/8	2 5/8	4 1/16	5	7	1.92	2
2FH	700	711	1½	Binding Post	2 5/8	1 11/32	4 1/8	5	3 3/5	.84	1
2F4	1	718	6	Socket	4	2 13/16	5 1/16	1	2½	2.87	4
20F	719	740	1½	Socket	7 5/8	2 5/16	6 13/16	1	6 4/5	7.65	10
21R	20	964	1½	Flashlight	1 21/64	(diam.)	4 1/8	1	2/5	.52	
4D	...	...	1½	Socket	2 5/8	2 5/8	2 13/16	1	7/8	1.35	1
4F	4	742	1½	Socket	2 5/8	2 5/8	4 3/32	1	1 2/5	1.15	1
422	704	750	3	Brass Straps	1 11/32	23/32	2 5/16	1	2 ozs.	.79	1
432	705	751	4½	Brass Straps	1 31/32	21/32	2¼	1	3 ozs.	2.90	4
532	706	703	4½	Brass Straps	2 15/32	13/16	2 23/32	1	3/10	1.36	1
8R	23	960P	1½	Socket	1 3/32	(diam.)	3 15/16	1	¼	1.85	2
B5	8	713	7½	Socket	3 29/32	7/8	2 29/32	1	½	2.27	3
C5	9	717	7½	Socket	2 7/32	1 15/16	3 1/32	6	4 3/4	1.23	1
F2BP	701	W352	3	Binding Post	2 21/32	1 3/8	4 1/32	6	5	1.33	1
F3	3	736	4½	Socket	4	1 3/16	4 1/8	1	1	1.65	2
F4BP	915	510S	6	Binding Post	2 5/8	2 5/8	4	1	1 2/5	.99	1
F4PI	6	744	6	Socket	2 21/32	2 21/32	4 1/8	1	1½	1.15	1
G3	7	746	4½	Socket	4 1/16	1 7/8	4 11/16	1	1 1/5	3.18	4
Z4	2	724	6	Flat Contacts	1 3/16	1 3/16	2 7/32	1	1/5	.87	1
BURGESS INDUSTRIAL - ELECTRONIC - TRANSISTOR - RADIO "B" BATTERIES											
10308SC	716	W363F	45	Spring Clip	8 1/32	4 1/32	7 3/16	1	12	7.66	10
10308PI	726	W363P	45	Socket	8 1/32	4 1/32	7 3/16	1	11½	7.66	10
21308SC	715	W364F	45	Spring Clip	8 1/8	4 15/32	7 9/32	1	12-4/5	8.25	11
21308PI	727	W364P	45	Socket	8 1/8	4 15/32	7 9/32	1	12-4/5	8.14	12
2308SC	723	W365F	45	Spring Clip	8 3/32	2 31/32	7¼	1	7½	7.66	10
2308PI	717	W365P	45	Socket	8 3/32	2 31/32	7¼	1	7-4/5	11.98	17
4156	710	763	22½	Binding Post	3 17/32	2 1/8	2 29/32	1	1	1.61	2
5156PI	721	...	22½	Socket	4 7/64	2 3/8	2 55/64	1	1 3/5	4.16	5
5156SC	708	778	22½	Spring Clip	4 1/8	2½	2¾	5	8	4.16	5
5308	709	762S	45	Binding Post	4 1/16	2 9/16	5 1/8	1	2½	3.05	4
A30	206	W359	45	Socket	3 9/16	2¼	4 5/16	2	3½	3.46	4
B30	207	484	45	Socket	4 1/16	2 17/32	5 5/16	2	4½	5.40	7
D30	...	487	45	Socket	5 1/16	2 1/32	7 5/16	1	4½	7.70	11
K10	224	417	15	Flat Contact	1¼	7/8	1 17/32	1	2 ozs.	1.57	2
K15	225	420	22½	Flat Contact	1¼	7/8	2 9/32	1	2 ozs.	1.65	2
K20	226	430	30	Flat Contact	1¼	15/16	2 23/32	1	3 ozs.	1.92	2
K45	203	457	67½	Snap Type	2 11/16	1 5/16	2¼	6	3	2.97	4
M30	202	482	45	Socket	3 9/16	1¾	5½	1	2	2.97	4
N60X	216	495	90	Snap Type	1 7/8	1 11/32	7 1/8	1	1	6.50	9
P45	211	477	67½	Snap Type	1 29/32	1	5 9/32	1	¾	2.70	3
P60	214	479	90	Snap Type	1 29/32	1	7 13/32	1	4/5	2.97	4
U10	208	411	15	Flat Contact	1	39/64	1 7/16	1	1 oz.	1.00	1
U15	215	412	22½	Flat Contact	1	39/64	1 31/32	1	1 oz.	1.17	1
U20	210	413	30	Flat Contact	1	39/64	2 17/32	1	2 ozs.	1.30	1
U200	722	493	300	Pin Jacks	2¾	2 9/32	3 7/8	1	1	9.07	12
U30	213	415	45	Snap Type	1 3/32	19/32	3 17/32	1	1/8	1.75	2
UX45	217	416	67½	Snap Type	1 7/32	31/32	3 31/32	1	¼	2.07	2
V45	200C	468	67½	Snap Type	2¾	1 11/32	3 43/64	6	4½	2.77	3
V60	204	490	90	Snap Type	3 23/32	1 9/32	3 11/16	1	1-3/10	3.15	4
W20PI	...	...	30	Socket	1 5/16	1 13/16	3 7/32	1	½	5.15	7
W30	...	...	45	Binding Post	3	1¼	3 25/32	1	3/5	4.78	7
XX15	...	425P	22½	Socket	1 11/32	15/16	3 7/8	1	¼	2.10	3

(Continued on next

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BURGESS BATTERIES

ESS ber	NEDA Number	Other	Volts	Terminal Type	Overall Dimensions L	W	H	Unit Pkg. Quant.	Wgt. Unit Pkg. in Lbs.	Sugg. Dealer Each	Sugg. List Price Each
BURGESS INDUSTRIAL - ELECTRONIC - TRANSISTOR - RADIO "B" BATTERIES (Continued)											
0	201	455	45	Snap Type	$2\frac{17}{32}$	$\frac{31}{32}$	$3\frac{21}{32}$	1	½	$2.27	$3.25
0PI	...	455P	45	Socket	$2\frac{17}{32}$	$\frac{31}{32}$	$4\frac{3}{32}$	1	½	2.84	4.25
5	200	467	67½	Snap Type	2¾	$1\frac{11}{32}$	$3\frac{43}{64}$	1	¾	2.70	3.85
0	212	437	75	Snap Type	$1\frac{27}{32}$	$1\frac{5}{16}$	$6\frac{5}{16}$	1	$\frac{9}{10}$	5.50	8.20
9	227	W361	103½	Flashlight Brass	$1\frac{11}{32}$	$1\frac{11}{32}$	$11\frac{23}{32}$	1	1	4.86	6.95
	220	504	15	Flat Contact	$\frac{19}{32}$	$\frac{19}{32}$	$1\frac{23}{64}$	1	1 oz.	1.00	1.50
	221	505	22½	Flat Contact	$\frac{19}{32}$	$\frac{19}{32}$	$1\frac{31}{32}$	1	1 oz.	1.17	1.75
	223	506	30	Flat Contact	$1\frac{3}{16}$	$\frac{19}{32}$	$1\frac{13}{32}$	1	1 oz.	1.75	2.50
	222	507	30	Flat Contact	$\frac{19}{32}$	$\frac{19}{32}$	$2\frac{9}{16}$	1	1 oz.	1.30	1.85
	205	738	45	Socket	3	$2\frac{5}{16}$	$4\frac{1}{16}$	1	1¼	4.95	7.25
NX	711	W350	45	Binding Post	$3\frac{1}{32}$	1⅞	$4\frac{19}{32}$	5	$7\frac{3}{5}$	2.69	3.85
BURGESS INDUSTRIAL AND ELECTRONIC "C" BATTERIES											
0	712	761T	4½	Binding Post	$3\frac{15}{16}$	1⅜	2⅞	5	$3\frac{7}{10}$	2.10	3.00
0PI	718	771	4½	Socket	$4\frac{1}{64}$	$1\frac{27}{64}$	$2\frac{63}{64}$	1	¾	3.52	5.25
0	714	781	4½	Binding Post	$2\frac{13}{32}$	$\frac{27}{32}$	$2\frac{21}{32}$	1	¼	1.23	1.75
0	713	773	7½	Bndg Post Neg	4	⅞	2¾	5	$1\frac{9}{10}$	1.80	2.50
P	.....	W362	7½	Binding Post	$2\frac{31}{32}$	$\frac{23}{32}$	1¾	6	$\frac{4}{5}$	5.80	8.65
BURGESS FLASHLIGHT AND LANTERN BATTERIES											
sp. 24	13F	950	1½	Flashlight	$1\frac{21}{64}$ (diam.)		2⅜	48	$10\frac{1}{2}$	.1625	.25
lk 50	13F	950	1½	Flashlight	$1\frac{21}{64}$ (diam.)		2⅜	50	$10\frac{1}{2}$	.1625	.25
Disp. 24	13C	1150	1½	Flashlight	$1\frac{21}{64}$ (diam.)		2⅜	48	11	.1675	.29
Bulk 50	13C	1150	1½	Flashlight	$1\frac{21}{64}$ (diam.)		$2\frac{3}{8}$	50	$10\frac{3}{4}$	.1675	.29
sp. 24	14F	935	1½	Flashlight	$\frac{63}{64}$ (diam.)		$1\frac{15}{16}$	24	$2\frac{5}{8}$	.1625	.25
sp. 24	15E	515	1½	Flashlight	$\frac{35}{64}$ (diam.)		$1\frac{31}{32}$	24	1	.095	.15
Disp. 12	15F	915	1½	Flashlight	$\frac{35}{64}$ (diam.)		$1\frac{31}{32}$	12	½	.13	.20
sp. 12	24F	912	1½	Flashlight	$\frac{13}{32}$ (diam.)		1¾	12	¼	.13	.20
isp. 6	910	904	1½	Flashlight	$\frac{7}{16}$ (diam.)		$1\frac{11}{64}$	6	⅛	.095	.15
(Metal)	908	509	6	Spring	2⅝	2⅝	4⅜	12	16⅓	.99	1.49
P	915	510S	6	Binding Post	2⅝	2⅝	4	1	$1\frac{2}{5}$	.99	1.49
C	917	510F	6	Spring Clip	2⅝	2⅝	4½	1	1¼	1.40	2.10
	918	731	6	Binding Post	5⅜	2⅞	$4\frac{15}{16}$	1	$3\frac{1}{5}$	2.15	3.25
-X	918D	.....	6	Binding Post	5⅜	2⅞	$4\frac{15}{16}$	1	$3\frac{1}{5}$	2.40	3.75
	926	732	12	Binding Post	5⅜	2⅞	$4\frac{15}{16}$	1	$3\frac{1}{5}$	2.15	3.25
	.....	.....	69	Flat Contact	2½	$2\frac{1}{16}$	$8\frac{1}{32}$	2	6¼	2.93	4.40
BURGESS IGNITION - TELEPHONE AND PROTECTIVE SYSTEM BATTERIES * Battery also available with spring clip terminals ** Battery also available with screw terminals											
H	.....	.....	12	Binding Post	$8\frac{5}{16}$	$2\frac{13}{16}$	$5\frac{13}{16}$	1	6¼	4.25	6.35
H	922	1463	12	Binding Post	10½	2¾	$7\frac{13}{32}$	1	7½	4.01	5.98
	900E	.....	1½	Screw Terminal	2⅝	2⅝	4	12	16	.99	1.49
H	901	W357	3	Spring Clip	$3\frac{29}{32}$	$2\frac{11}{16}$	$5\frac{13}{32}$	1	$2\frac{3}{5}$	1.92	2.75
H	902	706	6	Binding Post	$8\frac{5}{16}$	$2\frac{13}{16}$	$5\frac{13}{16}$	1	$6\frac{1}{5}$	3.85	5.75
H	903	715	7½	Binding Post	$7\frac{3}{16}$	$3\frac{31}{32}$	$5\frac{13}{16}$	1	$7\frac{2}{5}$	4.86	7.25
H	904	716	9	Binding Post	8½	$3\frac{31}{32}$	$5\frac{13}{16}$	1	9	5.53	8.25
n.	905	6 Ign. S	1½	Screw Terminal	2½ (diam.)		6⅝	12	$21\frac{3}{10}$	.99	1.49
l.	906	6 GL	1½	Spring Clip	2½ (diam.)		6⅝	12	$24\frac{3}{5}$	.99	1.49
d.	911	6 R.R.	1½	Screw Terminal	2½ (diam.)		6⅝	12	25	.99	1.49
1	907	1461	6	Binding Post	10½	2¾	$7\frac{13}{32}$	4	37½	3.85	5.75
BURGESS PHOTO-FLASH BATTERIES											
-Disp. 12	14P	835	1½	Flashlight	1 (diam.)		$1\frac{15}{16}$	24	2¼	.19	.30
-Disp. 12	13P	850	1½	Flashlight	$1\frac{11}{32}$ (diam.)		$2\frac{23}{64}$	12	2½	.19	.30
-Disp. 24	24P	812	1½	Flashlight	$\frac{13}{32}$ (diam.)		1¾	24	1	.1625	.25
-Disp. 24	15P	815	1½	Flashlight	$\frac{35}{64}$ (diam.)		$1\frac{31}{32}$	24	1	.1625	.25
5	215	412	22½	Flat Contact	$\frac{31}{32}$	$\frac{9}{16}$	$1\frac{31}{32}$	1	1 oz.	1.17	1.75
0	220	504	15	Flat Contact	$\frac{19}{32}$	$\frac{19}{32}$	$1\frac{23}{64}$	1	1 oz.	1.00	1.50
5	221	505	22½	Flat Contact	$\frac{19}{32}$	$\frac{19}{32}$	$1\frac{31}{32}$	1	1 oz.	1.17	1.75
0	208	411	15	Flat Contact	1	$\frac{39}{64}$	$1\frac{7}{16}$	1	1 oz.	1.00	1.50
0	210	413	30	Flat Contact	1	$\frac{39}{64}$	$2\frac{17}{32}$	1	2 ozs.	1.30	1.95
150	.....	489	225	Pin Jacks	4¼	2⅝	4¼	1	2½	7.20	10.25
50	.....	491	240	Flat Contact	$2\frac{9}{16}$	$1\frac{5}{16}$	$4\frac{13}{32}$	1	$\frac{4}{5}$	7.20	10.25
20	.....	497	510	Flat Contact	$2\frac{15}{16}$	$1\frac{17}{32}$	$5\frac{7}{16}$	1	1½	13.00	18.50
OP-K	.....	.....	45	Battery & Bulb				1	$\frac{2}{5}$	1.97	2.95
BURGESS POCKET TAPE RECORDER BATTERIES											
T8(3XX7)	1700	.....	12	Flat Contact	$1\frac{5}{16}$	$1\frac{5}{16}$	$3\frac{19}{32}$	1	⅜	2.00	3.00
7	.....	.....	10½	Snap Type	2½	$1\frac{25}{32}$	$2\frac{11}{32}$	1	½	4.00	5.90
BURGESS "A & B" PACKS FOR RADIO AND OTHER ELECTRONIC APPLICATIONS											
A60	410	W369	1½A, 90B	Socket	$9\frac{31}{32}$	2¼	$4\frac{7}{16}$	1	$4\frac{4}{5}$	11.40	16.95
B60	400	752	9A, 90B	Recessed Plug	$13\frac{29}{32}$	$2\frac{13}{16}$	$4\frac{21}{32}$	1	$6\frac{3}{10}$	12.00	17.90

XX45

5540

2

TW1

No. 6 Ignition

BURGESS BATTERIES

220

Hg-9

Y15

5308

5360

BURGESS Number	NEDA Number	Other	Volts	Terminal Type	Overall Dimensions L W H	Unit Pkg. Quant.	Wgt. Unit Pkg. in Lbs.	Sugg. Dealer Each	S List E
BURGESS ALKALINE BATTERIES									
AL1-Disp. 6	14A	E93	1½	Flat Contact	63/64 (diam.) 1 15/16	6	1	$ .49	$
AL133-Disp. 6	1306A	523	4½	Flat Contact	21/32 (diam.) 2	6	½	1.00	1
AL2-Disp. 6	13A	E95	1½	Flat Contact	1 21/64 (diam.) 2 13/32	6	2	.63	
AL7-Disp. 24	24A	E92	1½	Flat Contact	13/32 (diam.) 1¾	24	½	.39	
AL9-4PK.	15A	E91	1½	Flat Contact	17/32 (diam.) 1 31/32	24	2	.39	
ALN-2PK.	910A	E90	1½	Flat Contact	29/64 (diam.) 1⅛	2	1 oz.	.33	
APX19-2PK.	1307	531	4½	Snap Type	21/32 (diam.) 2 13/32	2	⅜	.99	1
APX21-2PK.	.....	523	4½	Flat Contact	21/32 (diam.) 2 1/32	2	⅜	.99	1
APX24-2PK.	1308	532	3	Flat Contact	21/32 (diam.) 2	2	⅜	.82	1
APX825-2PK.	.....	.....	1½	Flat Contact	29/32 (diam.) 15/64	2	1 oz.	.33	
AL912	.....	.....	18	Flat Contact	2 55/64 2 49/64 1 9/32	1	¾	6.48	9
BURGESS MERCURY BATTERIES									
Information on additional Mercury Batteries not listed below is available.									
Hg-1	1100	E1	1.4	Flat	5/8 (diam.) 21/32	4	.13	.62	
Hg-1R	.....	E1N	1.35	Flat	5/8 (diam.) 21/32	4	.13	.69	1
Hg-3R	.....	E3	1.35	Flat	1 (diam.) 21/32	4	.30	1.05	1
Hg-4R	.....	E4	1.35	Flat	1 13/64 (diam.) 21/32	4	.45	1.47	2
Hg-9-4PK.	15M	E9	1.4	Flat	17/32 (diam.) 1 31/32	4	.30	.66	1
Hg-12	1101	E12	1.4	Flat	5/8 (diam.) 2	2	.25	1.00	1
Hg-12R	.....	E12N	1.35	Flat	5/8 (diam.) 2	2	.25	1.05	1
Hg-42R	.....	E42N	1.35	Flat	1 13/64 (diam.) 2⅜	1	.50	3.30	5
H114R	.....	E114	5.4	Flat	43/64 (diam.) 1 3/32	2	.15	1.95	2
H115R	.....	E115N	6.75	Flat	43/64 (diam.) 1 21/64	2	.15	2.14	3
H126-Disp. 6	1611M	E126	8.4	Flat	47/64 (diam.) 2	6	.50	1.48	2
H132R	.....	E132N	2.7	Flat	43/64 (diam.) 1 5/16	2	.15	1.27	1
H133-Disp. 6	1306M	E133	4.2	Flat	21/32 (diam.) 2	6	.60	1.48	2
H133R	.....	E133N	4.05	Flat	21/32 (diam.) 2	2	.20	1.47	2
H134R	.....	E134N	5.4	Flat	43/64 (diam.) 2 5/8	2	.25	1.83	2
H135R	.....	E135N	6.75	Flat	43/64 (diam.) 3 9/32	2	.30	2.14	3
H136R	.....	E136N	8.1	Flat	43/64 (diam.) 3 15/16	2	.35	2.47	3
H137R	.....	E137N	9.45	Flat	43/64 (diam.) 4 19/32	1	.20	2.76	3
H146X-Disp. 6	1604M	E146X	8.4	Snap	1 1/32 21/32 1¾	6	.75	1.32	1
H152R	.....	E152N	2.7	Flat	31/32 (diam.) 1¾	2	.075	1.15	1
H162R	.....	E162	2.7	Flat	43/64 (diam.) 57/64	2	.15	1.15	1
H163	1305	E163	4.2	Flat	21/32 (diam.) 1 5/16	2	.15	1.48	2
H163R	.....	E163N	4.05	Flat	21/32 (diam.) 1 5/16	2	.15	1.57	2
H164-Disp. 6	1404	E164	5.6	Flat	21/32 (diam.) 1¾	6	.40	1.48	2
H164R	.....	E164N	5.4	Flat	21/32 (diam.) 1¾	2	.20	1.57	2
H165	1500	E165	7.0	Flat	21/32 (diam.) 2 13/64	2	.20	1.83	2
H165R	.....	E165N	6.75	Flat	21/32 (diam.) 2 13/64	2	.20	1.95	2
H169	.....	E169	12.6	Flat	43/64 (diam.) 3 63/64	1	.17	3.50	4
H177-Disp. 6	1606M	.....	9.8	Snap	35/64 (diam.) 1 29/32	6	.15	1.48	2
H233	1300	E233	4.2	Flat	1 1/64 (diam.) 1 31/32	1	.20	2.60	3
H286	.....	E286	8.4	Snap	1 (diam.) 1 15/16	6	.75	1.48	2
H289	.....	E289	12.6	Snap	1 (diam.) 2 25/64	6	1.00	2.75	3
Hg-312	.....	E312	1.4	Flat	5/16 (diam.) 9/64	6	.024	.24	
Hg-400	1106	E400	1.4	Flat	29/64 (diam.) 9/64	6	.024	.33	
Hg-400R	.....	E400N	1.35	Flat	29/64 (diam.) 9/64	6	.024	.50	
Hg-401	910M	E401	1.4	Flat	29/64 (diam.) 1⅛	3	.09	.56	
Hg-401R	.....	E401N	1.35	Flat	29/64 (diam.) 1⅛	2	.05	.63	
Hg-450R	.....	E450	1.35	Flat	29/64 (diam.) 9/16	4	.01	.56	
Hg-502R	.....	E502	1.35	Flat	17/32 (diam.) 1 31/32	2	.16	1.00	1
Hg-520	.....	E520	1.40	Flat	½ (diam.) 9/32	6	.22	.21	
Hg-575	.....	.....	1.4	Flat	29/64 (diam.) ⅛	6	.05	.24	
Hg-625	.....	E625	1.4	Flat	5/8 (diam.) ¼	4	.05	.42	
Hg-625R	.....	E625N	1.35	Flat	5/8 (diam.) ¼	4	.05	.56	
Hg-630	1104	E630	1.4	Flat	5/8 (diam.) ¼	4	.05	.50	
Hg-630R	.....	E630N	1.35	Flat	5/8 (diam.) ¼	4	.05	.56	
Hg-640	1105	E640	1.4	Flat	5/8 (diam.) 7/16	4	.15	.42	
Hg-640R	.....	E640N	1.35	Flat	5/8 (diam.) 7/16	4	.15	.56	
Hg-675	.....	E675	1.4	Flat	29/64 (diam.) 13/64	6	.022	.32	
HPX-4	.....	EPX4	5.6	Flat	21/32 (diam.) 1 61/64	1	.20	1.57	2
HPX-6	.....	EPX6	8.4	Flat	21/32 (diam.) 4 3/32	1	.20	2.75	3
HPX-13	.....	EPX13	1.35	Flat	5/8 (diam.) ¼	4	.05	.50	
HPX-14	.....	EPX14	2.70	Flat	21/32 (diam.) 5/8	4	.34	1.05	1
HPX-23	.....	.....	5.6	Flat	5/8 (diam.) 49/64	6	.11	.60	
HPX-25	.....	.....	4.05	Flat	43/64 (diam.) 27/32	2	.06	1.65	2
HPX-29	.....	.....	4.05	Flat	31/64 (diam.) 21/32	2	.034	1.29	1
303314	.....	.....	16.8	Flat	2⅞ 1 13/16 1 5/16	1	.80	11.20	16
BURGESS PRIMARY SILVER OXIDE BATTERIES									
13SO	.....	MS13	1.5	Flat	19/64 (diam.) 13/64	6	.02	.30	
41SO	.....	MS41	1.5	Flat	⅜ (diam.) 5/32	6	.04	.30	
76SO	.....	MS76	1.5	Flat	⅜ (diam.) 1/5	6	.04	.34	

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BURGESS BATTERIES

BURGESS SEALED RECHARGEABLE NICKEL CADMIUM CELLS AND BATTERIES

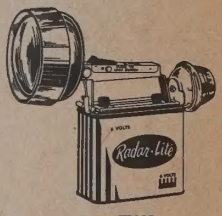
Information on additional Nickel Cadmium Batteries not listed below is available.

RGESS umber	NEDA Number	Other	Volts	Overall Dimensions L	W	H	Unit Pkg. Quant.	Wgt. Unit Pkg. in Lbs.	Sugg. Dealer Each	Sugg. List Price Each
1			1.25	.460 (diam.)		.225	1		$ 1.05	$ 1.50
2			1.25	.610 (diam.)		.236	1		.74	1.06
3			1.25	.984 (diam.)		.232	1		.85	1.21
3L	*(L indicates types		1.25	.984 (diam.)		.257	1		.95	1.36
3			1.25	.984 (diam.)		.275	1		.87	1.24
3L	with solder lugs		1.25	.984 (diam.)		.300	1		.97	1.39
4			1.25	.984 (diam.)		.350	1		.88	1.26
4L	on terminals).		1.25	.984 (diam.)		.375	1		1.03	1.47
5			1.25	1.700 (diam.)		.300	1		1.47	2.10
5L			1.25	1.700 (diam.)		.325	1		1.60	2.29
6(AA)			1.25	.560 (diam.)		1.950	1		1.93	2.75
6L(AA)			1.25	.560 (diam.)		2.275	1		2.10	3.00
9			1.25	.550 (diam.)		3.680	1		3.17	4.55
7(D)			1.25	1.350 (diam).		2.425	1		4.06	5.80
7L(D)			1.25	1.350 (diam.)		2.775	1		4.19	6.00
10(D)			1.25	1.300 (diam.)		2.425	1		5.69	8.15
10L(D)			1.25	1.300 (diam.)		2.775	1		5.84	8.34
11(D)			1.25	1.300 (diam.)		2.425	1		4.53	6.50
(short C)			1.25	.876 (diam.)		1.672	1		2.58	3.70
L(short C)			1.25	.876 (dia.)		1.672+L	1		2.71	3.90
(half D)			1.25	1.273 (diam.)		1.440	1		5.18	7.40
L(half D)			1.25	1.273 (dia.)		1.440+L	1		5.31	7.60
14 (C)			1.25	1.01 (diam.)		1.945	1		3.40	4.85
21			6	1.065 (diam.)		1.525	1		5.32	7.60
22			6	1.065 (diam.)		1.975	1		5.32	7.60
23			6	1.800 (diam.)		1.725	1		9.48	13.54
24			9.6	1.065 (diam.)		2.650	1		9.22	13.17
25			9.6	1.065 (diam.)		3.200	1		9.16	13.09
25L			9.6	1.065 (diam.)		3.200	1		9.09	12.99
26			9.6	1.800 (diam.)		2.575	1		15.52	22.17
27			12	1.065 (diam.)		2.925	1		11.04	15.77
28			12	1.065 (diam.)		3.600	1		11.82	16.89
29			12	1.800 (diam.)		3.100	1		17.86	25.51
30			6	1½	1½	3 13/16	1		19.96	28.51
31			6	3 13/16	1 17/32	3⅜	1		25.65	36.64
33			6	5⅜	2⅞	4 15/16	1		27.70	39.50
100			1.25	1.36	.75	3.36	1		6.43	9.19
101			1.25	1.36	1.36	2.40	1		6.05	8.64
102			1.25	1.36	1.36	3.36	1		7.12	10.17
107			1.25	1.93	1.67	4.25	1		11.17	15.96
108			1.25	3.56	1.05	4.90	1		13.83	19.76
109			1.25	3.56	1.34	4.90	1		16.56	23.66
110			1.25	3.56	1.66	4.90	1		19.87	28.39
111			1.25	3.56	1.97	4.90	1		22.92	32.74

CD3

CD7

CD25



TW3

BURGESS SAFARI LITE AND RADAR LIGHTS (complete with batteries)

RGESS umber	Description	Pkg. Unit Quan.	Wt. of Un. Pkg. in Lbs.	Sugg. Dealer Each	Sugg. List Price Each
5/2	Safari Lite Fluorescent Light (GY-Graytone or GN-Veldt Green)	1	11	$18.31	$29.50
Comp.	with 2 No. Z46 Batteries				
3 Comp.	Radar-Lite Spot-Flasher with 1 No. TW1 Battery (Lamp 4546, 407)	1	5 1/10	9.15	14.25
4 Comp.	Radar-Lite Spot-Without Flasher with No. TW1 Battery (Lamp 4546)	1	4¾	7.25	11.80
7 Comp.	Radar-Lamp Chrome-Finish, TW8 Copper-Finish with 1 No. TW1 Battery (Lamp 1651)	1	4⅕	6.55	10.25
9 Comp.	Radar Bearcat Focusing Lantern with 1 No. TW1 Battery (Lamp 425 or 502)	1	4⅛	5.25	8.25
10 Comp.	Panther Lite Spot-Flasher with 1 No. TW1 Battery (Lamp 4546, 407)	1	5¼	10.65	16.25
11 Comp.	Radar-Lite (Bulb Reflector Model) with 1 No. TW1 Battery (Lamp 425)	1	4¾	6.44	10.25
12 Comp.	12 Volt Radar-Lite with 1 No. TW2 Battery (Lamp 965)	1	5	7.33	11.80
6E Comp.	Power Failure Operated Lantern Flood Beam with 1 No. TW1 Battery (Lamp 4512)	1	6	14.79	21.75
34 Comp.	Radar-Flash with 1 No. TW1 Battery (Lamp 407)	1	4	4.68	7.20

165/2

BURGESS DOLPHIN, RADAR-MATE AND FLASHLIGHTS (less batteries)

4	Dolphin Lantern. Uses 1 No. F4M battery (Lamp PR13)	1	½	1.97	2.95
1	4½ Volt Radar-Mate Lantern. Uses 3 No. 2 (Size D) batteries (Lamp PR3)	1	1¼	3.32	4.98
3	Tuffy-Plastic Flashlight—2 Cell Prefocused (Lamp PR2)	6	1⅝	.69	.99
7	Satellite Torch—2 Cell Junior Prefocused (Lamp PR4)	3	1	1.30	1.95
7	Satellite Torch—2 Cell Prefocused (Lamp PR2)	6	2¾	1.30	1.95
3	2 Cell Magnet-Tough Plastic Industrial Flashlight (Lamp PR2)	6	2½	1.33	1.99
3	2 Cell Industrial—Safety Light (Lamp PR2)	1	½	3.33	5.00
3	Penlight (AAA size) (Lamp 224)	12	1½	.82	1.25
3	Penlight (Heavy Duty AA size) (Lamp 222)	12	1½	.82	1.25
7	Magnet Lazer Lite—2 Cell Prefocused (Lamp PR2)	6	3	1.98	2.95
3	Snap-Lite Pocket Light (AAA size) (Lamp 224)	12	1½	.82	1.25

357

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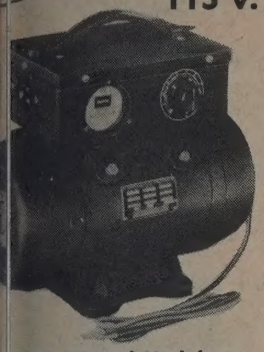
Custom DC to AC CONVERTERS

115 v. AC 60 HZ Output, 250 to 750 Watts

Carter Motor ®



Dependable rotary power for operating office business machines, professional tape recorders, railroad, mobile and marine radio and radar equipment. Finest construction. Sealed ball bearings require no lubrication. Long life, continuous duty, high efficiency on all models. Only popular models listed here. For 50 Hz output, add $7.50 to list prices. All models 100% power factor. Size: 200 watts, 12⅝" l. x 6¾" w. x 7¼" h.; 210 and 300 watts, 11⅝" long; 500 watts, 12⅝" long; 750 watts, 13⅞" long.

ency Control Models

ter ber	DC Input Volts	Amps.	115 AC Watts	List Price
R1CP	115	2.5	210	$360.00
50CP	115	7.0	500	410.00
1CP	28	14.0	210	360.00
0CP	28	20	300	370.00
0CP	28	28	500	410.00
R1CP	24	16	210	360.00
30CP	24	22	300	370.00
50CP	24	33	500	410.00
R1CP	12	29	210	360.00
30CP	12	35	300	370.00
R040CP*	12	56	400	395.00

des meter and control as shown
hour duty cycle

Models listed at left have manually operated frequency control and meter to maintain 60 HZ output over a ±10% input voltage variation. All other custom converters from 210 to 750 watt output can be supplied with frequency control at $90 additional to list price. Add 3" to height.

Filter available; add $50 to list prices, 3" to height. Add $15 for built in capacitor filter.

CUSTOM CONVERTER

Carter Number	DC Input Volts	Amps.	115 AC Watts	List Price
KSX1020C5P	230	1.3	200	$330.00
DSX1020C5P	115	2.6	200	325.00
HSX1020C5P	64	5	200	325.00
CSX1020C5P	32	9	200	325.00
K1025CP	230	1.8	250	285.00
K1030CP	230	2.3	300	290.00
K1040CP	230	2.8	400	320.00
K1050CP	230	3.5	500	325.00
K1075CP	230	4.4	750	365.00
D1021CP	115	2.5	210	270.00
D1025CP	115	3.5	250	275.00
D1030CP	115	4.6	300	280.00
D1040CP	115	5.6	400	305.00
D1050CP	115	7	500	320.00
D1075CP	115	8.8	750	350.00
H1025CP	64	7.8	250	275.00
H1030CP	64	8.2	300	280.00
H1040CP	64	10	400	305.00
H1050CP	64	12.5	500	320.00
H1075CP	64	16	750	350.00
W1025CP	48	9	250	275.00
W1030CP	48	10	300	280.00
W1040CP	48	13	400	305.00
W1050CP	48	16	500	320.00
W1075CP	48	22	750	350.00

Carter Number	DC Input Volts	Amps.	115 AC Watts	List Price
C1025CP	32	15	250	$275.00
C1030CP	32	19	300	280.00
C1040CP	32	21	400	305.00
C1050CP	32	25	500	320.00
C1075CP	32	32	750	350.00
J1021CP	28	14	210	270.00
J1025CP	28	19	250	275.00
J1030CP	28	20	300	280.00
J1040CP	28	24	400	305.00
J1050CP	28	28	500	320.00
J1075CP	28	38	750	350.00
E1025CP	24	18	250	275.00
E1030CP	24	22	300	280.00
E1040CP	24	28	400	305.00
E1050CP	24	33	500	320.00
E1075CP	24	44	750	350.00
B1021CP	12	29	210	270.00
B1025CP	12	35	250	275.00
B1030CP	12	45	300	280.00
BS1040CP*	12	56	400	305.00

* One hour duty cycle.
All models listed are for 115 V. AC 60 HZ single phase output. 100% power factor.

STAND-BY LOAD-TRANSFER CONVERTERS

Starts automatically should AC power fail. Shuts off when power restored. Runs from batteries. Operates paging and control circuits for hospitals, schools, utilities, etc. Popular models listed. Other ratings from 200 to 750 watt output. Batteries or trickle charger not supplied.

For stand-by feature on other custom converters listed above, add Y to code number and $90.00 to list price.

Number	DC Input		AC		List
B1030CPY	12 v	22	A	300 w	$370.00
W1050CPY	48 v	16	A	500 w	410.00
D1050CPY	115 v	7	A	500 w	410.00
D1075CPY	115 v	8.8	A	750 w	440.00

230 v. output also available

Monarch 1000 - 1500 - 2000 WATT CONVERTERS

1000, 1500 and 2000 watt 60 HZ AC output, 24 to 230 volt input models. The Monarch series is ideal for heavy-duty industrial service, marine, mine, crane and railroad communications. Slow speed (1800 rpm), long life. 4-pole design; ball bearing equipped. No filter is necessary for most applications. Size: 19" x 11" x 12" high. Three-phase output available, add $60 to list. 24 v. Input at 1500 w. rating.

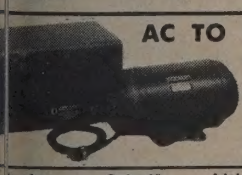
Carter Number	DC Input Volts	Amps	Watts, AC at 60 HZ, 115 v.	List Price
E10100M	24	68	1000	$725.00
J10150M	28	80	1500	775.00
C10150M	32	69	1500	775.00
D10200M±	115	23	2000	875.00
K10200M±	230	12.5	2000	875.00

± Reduced voltage starters necessary, add $110.00 to list price.

"MARK II" SUPER CONVERTERS

Designed for high PF non-inductive AC loads such as amplifiers, lab and medical equipment, standby emergency lighting, telephone and marine communications. Not damaged by intermittent transients or sudden overloads. Will not operate refrigerators, large AC motors or low PF transformers. Ball bearing, con. duty. Size: 8¼" x 4½" x 5" high. Weight: 13 lbs. (*10¼" long, 4½" wide, 5" high. Weight: 19 lbs.)

Carter Number	DC Inputs Volts	Amps	Watts, AC at 60 HZ, 115 v.	List Price
D1010CB	115	1.7	100	$156.00
D1015CB	115	2.0	150	160.00
B1010CB	12	15	100	148.00
B1015CB	12	23	150	150.00
D1020CB*	115	2.6	200	175.00
B1020CB*	12	30	200	170.00



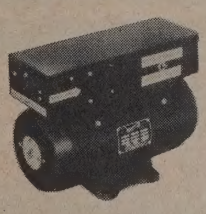
AC TO AC FREQUENCY CHANGERS

Produces 115 v., 50 or 60 HZ AC output from 25 to 400 HZ input. For operating standard equipment on non-standard frequencies. Standard units are for single phase input and output. Three-phase output available on order. For frequency meter, add $50.00 to list price. Non regulated.

lumber	Output*	List
1025CP	250 w	$650.00
1050CP	500 w	685.00
1075CP	750 w	715.00

IZ output. 50 HZ available

Number	Output*	List
FC10100M	1000 w	$1,310.00
FC10150M	1500 w	1,375.00
FC10200M	2000 w	1,450.00



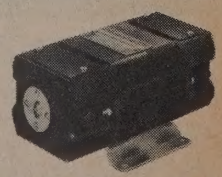
REFRIGERATOR-APPLIANCE MARINE CONVERTERS

Operates standard refrigerators, compressors (up to 1/6 hp only), vacuum cleaners and other appliances from DC; for use aboard commercial and pleasure boats. Converter operates only when power is called for. Has handy AC outlet to run most appliances from DC. Input from 24 to 230 v. DC. Size: 14" x 6¾" x 11" high. Net Weight: 65 lbs. 750 w. con. duty rating. Models from 24 to 230 v. DC input.

Number	Input	List	Number	Input	List
RF34	34 v.	$540.00	RF115	115 v.	$540.00

CARTER DC to AC GENEVERTERS

Compact model for low power marine and industrial applications requiring up to 60 watt 115 v. 60 HZ output. High power factor. Models listed are for 115 v. DC input. Others available for 12, 24, 32 or 48 v. input. Size: 7⅝" x 4¾" x 3½" high. Weight: 10¼ lbs.



Carter Number	DC Input Volts	Amps.	Output Watts	List Price
1020LD	115	.4	20	$104.00
1040LD	115	.6	40	105.00
1060LD	115	.85	60	106.00

"CUSTOM" DYNAMOTORS

For railroad and marine radio-telephone, industrial communications systems, locomotives, telephone emergency standby power, etc. Heavy duty construction. Low rpm speed, small temperature rise assure extra long life. Filter not normally required. Size: 12⅝" x 6-11/16" x 7¼". Weight: 47 lbs.

Number	DC Input	DC Output	Recv.	Trans.	List
KS1220P	236-264 v	12.8 v	5 A	18 A	$350.00
DS1220P	118-132 v	12.8 v	5 A	18 A	340.00
HS1220P	67-74 v	12.8 v	5 A	18 A	340.00
CS1220P	33-37 v	12.8 v	5 A	18 A	340.00
BS2820PV	14 v	28 v		20 A	340.00

Carter Motor

Carter Motor Company reserves the right to make changes without notice, in materials, specifications, prices, and to discontinue models, without obligation.

ELECTRO REGULATED AND INDUSTRIAL POWER SUPPLIES

ELECTRO

Stocked at your franchised **ELECTRO** *distribut*

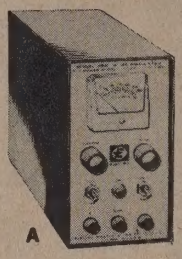
PRECISION BUILT

The ELECTRO line provides a wide range of DC outputs up to 125 volts with adequate filtering for requirements ranging from critical transistor circuitry to applications permitting up to 5% ripple.

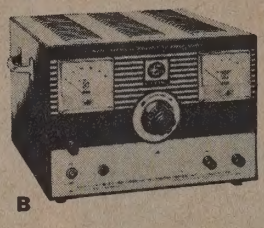
Every model is engineered to give unusual performance life per dollar. Each has an adjustable output voltage r Meters indicating voltage and current are large, easy to Controls clearly marked. Output terminals are isolated the cabinet . . . several are rack mounted. A one-year ranty on every ELECTRO power supply. Designed for pr tion line, industrial and educational laboratory applica

REGULATED

Models PSR-12-25 and PSR-12-50 Regulated Supplies. (Fig. A) Solid state units with continuously variable outputs. Line regulation ±0.01% + 2mV over 105-125V input range. Load regulation 0.01%, no load to full load, max. ripple 100 microvolts. Ideal for transistor circuit development and testing. Front panel controls include: on-off switch; meter function switch, coarse and fine voltage controls for precise adjustment. Rack-mount accessory for up to 4 units available. PSR-12-25 output: 0-25v, 0-500mA; PSR-1250 output: 0-50v, 0-250mA. Input: 105-125 VAC, 60 Hz.



A



B

Model PSR-500 Series (Fig. B) delivers watts of DC power with output voltage lated to less than 1% for load and 0.1 line changes. Maximum ripple less than (All solid-state circuitry. Uses silicon rec and SCR regulation. Fused input, ci breaker output protection.

Three models are available with output vo ranges: 2-32v, 2-55v, and 2-125v. Input 125 VAC, 60 Hz.

INDUSTRIAL

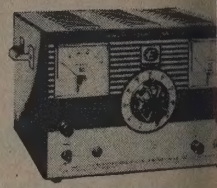
Model EF (Fig. C) provides variable voltage 0-28v or 0-14v at 5 amps continuous, 10 amps. intermittent load. Ripple less than 1%. Uses selenium rectifiers. Input: 117 VAC, 60 Hz.

Models EFB and EFBR (Figs. C, G) designed for very low ripple requirements of transistor work. Continuously variable voltage control. Selenium rectifiers. Employs chokes and capacitors in ripple filter. Model EFB Federal stock number 6130-957-1450. Model EFBR (Fig. G) same except with standard EIA rack panel. Input: 117 VAC, 50/60 Hz.

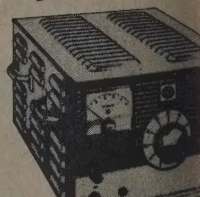
Models NFB and NFBR (Figs. D, G) for continuous heavy-duty. Continuously variable output, 0-32v for loads to 15 amps. Ripple: less than 0.75% at 15 amps. Ripple filter circuit uses chokes and capacitors. Variable autoformer for smooth control. Bridge-type silicon rectifiers. Model NFBR same except with standard EIA rack panel. (Federal stock number 6130-853-3127.) Input: 117 VAC, 50/60Hz.

Models GFL and GFLR (Figs. D, G) low cost, semi-regulated, low ripple, higher voltage. Ideal for designing and testing DC appliances, telephone circuits, relays and solenoids; laboratory work. Continuously variable output 0-125v DC at 5 amps. Ripple: 0.5%. Silicon rectifiers. Overload protection. Model GFLR same except with standard EIA rack panel. Input: 117 VAC, 50/60 Hz.

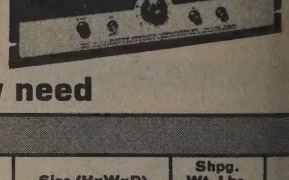
Models PS-5 and PS-5R (Figs. D, G) designed for 48-volt applications. Delivers 550 watts well-filtered DC output continuously variable 0-55v DC. Ripple: 0.5% rms at 10 amps. Silicon rectifiers. Model PS-5R same except with standard EIA rack panel. Input: 117 VAC, 50/60 Hz.



PS-1000 Series (Fig. F) For continuous heavy duty. Continuously variable output. Low ripple. Filter circuit uses chokes and capacitors. Variable autoformer for smooth control. Bridge-type silicon rectifiers. Three models are available with output voltage ranges 0-32v DC at 30 amps, 0-55v DC at 20 amps and 125v DC at 8 amps. Input: 117 VAC, 50/60 Hz.



C



G

Selection Guide — Power Supplies for every need

REGULATED

Model	Figure	Output Volts	Output Current	Line Reg.**	Load Reg.*	Max. Ripple, RMS	Meters††	DC Imp. Ohms*	Size (HxWxD)	Shpg. Wt. Lbs.	P (
PSR-12-25	A	0-25	0-500mA	0.01%+2mV	0.01%	100uV	0-30V/600mA	.006	5-1/4x3-1/8x10	7	$1
PSR-12-50	A	0-50	0-250mA	0.01%+2mV	0.01%	100uV	0-60V/300mA	.02	5-1/4x3-1/8x10	7	1
PSR-500-32	B	2-32	0-15A	0.1%	1.0%	0.5%	0-50V, 0-25A	.02	9-3/4x14-1/4x14-1/4	89	3
PSR-500-55	B	2-55	0-10A	0.1%	1.0%	0.5%	0-75V, 0-15A	.06	9-3/4x14-1/4x14-1/4	88	3
PSR-500-125	B	2-125	0-5A	0.1%	1.0%	0.5%	0-150V, 0-5A	.25	9-3/4x14-1/4x14-1/4	93	4

INDUSTRIAL

Model	Figure	Voltage Output	Amps Output	Load Regulation* (V/A)†	Max. Ripple %	Meters††	DC Impedance (ohms)*	Size (HxWxD) inches	Weight lbs. (net)	Pr (n
EF	C	0-28 0-14	0-5 0-5	0.9 (1-5A) 0.6 (1-5A)	1.0 1.0	0-50V, 0-6A	0.9 (1-5A) 0.6 (1-5A)	7x12x8-1/2	25	$1
EFB	C	0-32 0-16	0-4 0-8	1.25 1.0	0.1 0.1	0-40/20V 0-10A	1.25 1.0	7x12x8-1/2	36	1
EFBR	G	0-32 0-16	0-4 0-8	1.25 1.0	0.1 0.1	0-40, 20V 0-10A	1.25 1.0	8-3/4x19x8-1/2	47	1
GFL	D	0-125	0-5	1.5	0.5	0-150V, 0-5A	1.5	9-3/4x14-1/4x14-1/4	88	3
GFLR	G	0-125	0-5	1.5	0.5	0-150V, 0-5A	1.5	10-1/2x19x14-1/4	100	3
NFB	D	0-32	0-15	0.4	0.75	0-50V, 0-25VA	0.4	9-3/4x14-1/4x14-1/4	84	3
NFBR	G	0-32	0-15	0.4	0.75	0-50V, 0-25A	0.4	10-1/2x19x14-1/4	97	3
PS-5	D	0-55	0-10	0.8	0.5	0-75V, 0-15A	0.8	9-3/4x14-1/4x14-1/4	70	3
PS-5R	G	0-55	0-10	0.8	0.5	0-75V, 0-15A	0.8	10-1/2x19x14-1/4	89	3
PS-1000-32	F	0-32	0-30	0.2	0.75	0-50V, 0-30A	0.2	9-3/4x14-1/4x19-1/4	103	3
PS-1000-55	F	0-55	0-20	0.5	0.5	0-75V, 0-30A	0.5	9-3/4x14-1/4x19-1/4	113	3
PS-1000-125	F	0-125	0-8A	1.0	Less than 1%	0-150V, 0-10A	1.0	9-3/4x14-1/4x19-1/4	120	4

*No-load to full-load unless otherwise specified.

**From 105-125 VAC.

†Output voltage change for each ampere of output current change.

††All 2% accuracy except 5% for general purpose units. Rectifiers: Selenium and Silicon ("avalanche" characteristics on industrial units).

ELECTRO PRODUCTS LABORATORIES, INC.

Net

© United Technical Public

ELECTRO GENERAL PURPOSE POWER SUPPLIES • INVERTERS

Available through your electronic distributor. Prices and models subject to change.

GENERAL PURPOSE

Model D-612T (Fig. E), **Model H** (Fig. I) low ripple, less than ½% rms up to 5 amps; for servicing transistor auto and portable radios. Maximum output power in this price range. Ideal for citizens' band transceivers, battery charging, solenoids, etc., requiring up to 16v DC. Model H heavy duty; dual range. Ideal as storage battery replacement in school laboratories, thermoelectric power source, and other high-current, low-voltage applications. Both types have voltage and current output meters. Input: 117 VAC, 60 Hz.

Model EC-1 (Fig. J) reliable, low cost. 12v DC with 5 amp output for school labs and industrial research, production testing, etc. Low-cost source for FM and AM auto radio demonstrations. Maximum ripple ½%. Four-position voltage adjustment switch; off, low, medium and high. EPL patented rectifier conduction cooling. Used vertically or horizontally. Input: 117 VAC, 60 Hz.

Model EC-2 (Fig. H) low priced unit for auto, tape disk and transistor radio servicing. Wide applications in research and development. Continuously variable voltage adjustment provides versatility. Maximum ripple ½% rms at 5 amps. Patented conduction cooling. Used vertically or horizontally. Output: 0-16 VDC combination edge-view voltmeter/ammeter. Input: 117 VAC, 60 Hz.

Models PS-30 and PS-50 (Fig. L) heavy duty adjustable 12-volt units for servicing auto, aircraft and marine communications equipment. Useful in industrial and educational labs, thermoelectric cooling power source, etc. Maximum ripple at maximum current 1%. Eight-position tap switch output voltage adjustable. Model PS-50 delivers 50 amps continuously. Model PS-30 delivers 30 amps continuously. Input: 117 VAC, 50/60 Hz.

Model 3301 (Fig. K) specifically designed for high school and college electrical and electronic experiments in science labs. Provides both AC and DC low-voltage outputs, adjustable and metered. Two circuit breakers protect primary and outputs, and line isolated transformer and three-wire line cord and safety features. Free 48-page manual of experiments supplied with each unit. Input: 117 VAC, 60 Hz.

GENERAL PURPOSE

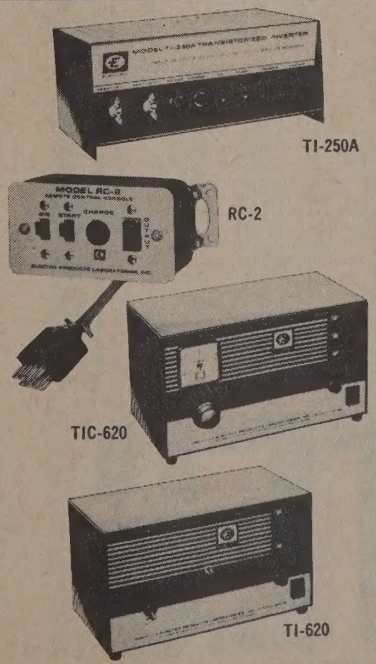
odel	Figure	Voltage Output	Amps Output	Load Regulation* (V/A)†	Max. Ripple %	Meters††	DC Impedance (ohms)*	Size (HxWxD) inches	Weight lbs. (net)	Price (net)
2T	E	0-16 0-8	0-10 0-10	0.44 (3-10A) 0.3 (3-10A)	0.5@5A 2@10A	0-20V, 0-10A	0.44 (3-10A) 0.3 (3-10A)	7x12x8-1/2	22	$79.50
	I	12 (adj.) 6 (adj.)	0-10 0-20	0.23 (3-10A) 0.15 (3-20A)	5 5	0-20V, 0-30A	0.23 (3-10A) 0.15 (3-20A)	7x12x8-1/2	30	99.50
	J	12 (adj.)	0-5	1.4	0.5	None	1.4	10-3/4x4-3/8x6-1/2	12	39.50
	H	0-16	0-5	1.8	0.5	0-20V/10A	1.8	10-3/4x4-3/8x6-1/2	11	49.50
0	L	12 (adj.)	0-30	0.12 (6-30A)	1	0-20V, 0-50A	0.27	9-3/4x14-1/4x14-1/4	68	198.00
0	L	12 (adj.)	0-50	0.17	1	0-20V, 0-50A	0.17	9-3/4x14-1/4x19-1/4	87	298.00
U	K	0-16DC 0-20AC	0-3	1.8 (1-3A)	0.5	0-20V/0-5A DC 0-20V/0-5A AC	2.4 DC 0.5 AC	4-3/4x10-3/4x6-1/2	11	89.50

voltage change for each ampere of output current change. ††All 2% accuracy except 5% for general purpose units. *No-load to full-load unless otherwise specified.

ELECTRO DC TO AC TRANSISTORIZED INVERTERS

Convert 12v DC to 117v AC from car, boat or plane battery. Ample power for TV sets, lights, recorders, PA systems, etc.

ate portable TV, radio, lights, PA systems, tape ders, CB, small appliances, etc., from car, boat or battery. All models feature on-off switch, AC tacle on control panel, battery-protecting fuse. matic electronic turn-off circuitry protects trans from overload. Charge indicator light gives low ge or overload warning. Compact, lightweight, ed metal cases.



Model TI-250A has 250 watt output for a wide range of applications. Features (1) relay in circuit insures 100% reverse polarity protection, (2) electronic overload protection, (3) start switch, (4) battery indicator light, (5) includes cables for connection to battery or DC source.

Model RC-2 Remote Control. A remote control console is available for the Model TI-250A inverter. An 8 ft. cord is provided for operation from remote location.

New Dual Purpose TIC-620 Inverter/Charger incorporates a built-in 25 amp charger. A three-position switch provides low, medium and high charge rate. The 620 VA rated inverter has a nominal output of 5 amps at 120 volts. A fused secondary circuit protects the inverter and battery from overload.

TI-620 Inverter only. Identical with TIC-620 except without charger.

INVERTERS

Conversion	Output	Freq. Reg.	Size (in.)	Sh. wt. (lb.)	Price (Net)
12 Volt DC to 117V 60 Hz	250 VA	4 Hz NL to FL	4½x10x7½	11	$ 79.50
	620 VA	.5 Hz	6⅝x12x8⅞	25	$320.00
INVERT 12 VDC to 117V 60 Hz	620 VA	.5 Hz	6⅝x12x8⅞	30	$400.00
CHARGE 117 VAC to 14 VDC	25 Amp. Max.				

ACCESSORIES

Description	Size (in.)	Sh. wt. (lb.)	Price
Remote Control Console for Model TI-250A (with 8-ft. cord for operation from remote location)	2⅛x4⅛x2⅛	2	$ 12.50
Battery Clip Adaptor for Model TI-250A	4 ft. cable	1	$ 4.40

ELECTRO PRODUCTS LABORATORIES, INC.

GATES POWER SUPPLIES

SILICON POWER RECTIFIER

For transistor circuits & electronic equipment
MODEL G92F

INPUT: 115 volts AC 60 cycles, 1 phase
OUTPUT: 0-32 Volts DC, 0-10 Amperes D.C. continuous duty
REGULATION: No load to full load 15%
RIPPLE: Less than 0.3% RMS
METERS: 2% Accuracy
DIMENSIONS: 17" x 9" x 9"
PRICE: $169.50 NET
*Also available in 5 Amperes
PRICE: $114.50 NET

INDUSTRIAL POWER UNITS

MODEL A10

INPUT 115 or 230 AC Volts, 60 cycles—Single Phase.
DC OUTPUT 115 Volts DC 125 Watts
APPLICATION: Power sources for operating DC Motors, Relays, Solenoids, Magnetic Chucks.
DIMENSIONS: 11" H x 9" W x 6½" D
PRICE $63.00 NET
250 Watts — $72.50

MODEL G48-6FM

SELENIUM POWER SUPPLY

INPUT: 115 Volts AC 60 Cycles—Single Phase
OUTPUT: 0-48 Volts DC, 0-6 Amperes
CONTROL: Continuously variable over entire range
RIPPLE: 1% RMS
DIMENSIONS: 19" W x 13" D x 10½" H, Fits RETMA, Western Electric racks
PRICE: $190.00 NET

MODEL #GS 14-15F

SILICON POWER SUPPLY

INPUT: 115 Volts AC, 1 Phase, 60 cycles
OUTPUT: 0-14 Volts DC, 0-15 Amperes, continuous duty
RIPPLE: Less than 1% RMS
METER ACCURACY: 2%
DIMENSIONS: 9" H x 17½" W x 9" D
PRICE: $159.50 NET
Rack Model Same Price

MODEL #GX30-10

SILICON RACK MOUNT SUPPLY

INPUT: 115 Volts AC 60 Cycles, Single Phase
OUTPUT: 26, 28, 30 Volts DC 0-10 Amperes Continuous Duty
REGULATION: 10% No Load to Full Load
RIPPLE: 0.3% RMS
DIMENSIONS: 8¾" H x 19" W x 10" D
PRICE: $137.50 NET

AIRCRAFT BATTERY ELIMINATOR

MODEL #G101F

INPUT: 115 Volts AC 60 cycles, single phase
OUTPUT: 0-32 Volts DC, 0-20 Amperes, continuous duty
RIPPLE: 0.5% RMS
Unique overload device prevents needle slam and shows overload condition
REGULATION: D.C.V. at full load: 30
D.C.V. at 1/10 load: 35
METERS: 2% Accuracy
DIMENSIONS: 19" x 14¼" x 12¼"
PRICE: $275.00 NET
May be used for Rack or Bench

ECONOMY RANGE DC POWER SUPPLIES — Less Than 1% Ripple - Good Regulation - Rack Mount Type - Heavy Duty Construction - Powerstat - Fused 2% Meters - 115 Vac Input

MODEL GT 12-5:	Output 0.12V,	5A	$ 80.
MODEL GT 12-10:	Output 0-12V,	10A	$ 130.
MODEL GT 12-15:	Output 0-12V,	15A	$ 145.
MODEL GT 12-25:	Output 0-12V,	25A	$ 154.
MODEL GT 12-100:	Output 0-12V,	100A	$ 395.
MODEL GT 14-5:	Output 0-14V,	5A	$ 120.
MODEL GT 14-15:	Output 0-14V,	15A	$ 135.
MODEL GT 14-20:	Output 0-14V,	20A	$ 145.
MODEL GT 14-30:	Output 0-14V,	30A	$ 276.
MODEL GT 14-40:	Output 0-14V,	40A	$ 285.
MODEL GT 14-50:	Output 0-14V,	50A	$ 350.
MODEL GT 14-75:	Output 0-14V,	75A	$ 375.
MODEL GT 14-100:	Output 0-14V,	100A	$ 425.
MODEL GT 16-5:	Output 0-16V,	5A	$ 85.
MODEL GT 16-10:	Output 0-16V,	10A	$ 90.
MODEL GT 16-25:	Output 0-16V,	25A	$ 155.
MODEL GT 16-30:	Output 0-16V,	30A	$ 195.
MODEL GT 16-40:	Output 0-16V,	40A	$ 260.
MODEL GT 16-50:	Output 0-16V,	50A	$ 370.
MODEL GT 16-70:	Output 0-16V,	70A	$ 390.
MODEL GT 16-80:	Output 0-16V,	80A	$ 405.
MODEL GT 28-5:	Output 0-28V,	5A	$ 90.
MODEL GT 28-12:	Output 0-28V,	12A	$ 169.
MODEL GT 28-24:	Output 0-28V,	24A	$ 275.
MODEL GT 32-5:	Output 0-32V,	5A	$ 105.
MODEL GT 32-8:	Output 0-32V,	8A	$ 149.
MODEL GT 32-12:	Output 0-32V,	12A	$ 179.
MODEL GT 32-15:	Output 0-32V,	15A	$ 194.
MODEL GT 32-24:	Output 0-32V,	24A	$ 295.
MODEL GT 32-30:	Output 0-32V,	30A	$ 325.
MODEL GT 32-50:	Output 0-32V,	50A	$ 425.
MODEL GT 32-60:	Output 0-32V,	60A	$ 561.
MODEL GT 48-5:	Output 0-48V,	5A	$ 138.
MODEL GT 48-10:	Output 0-48V,	10A	$ 164.
MODEL GT 48-15:	Output 0-48V,	15A	$ 170.
MODEL GT 48-25:	Output 0-48V,	25A	$ 250.
MODEL GT 48-35:	Output 0-48V,	35A	$ 300.
MODEL GT 48-50:	Output 0-48V,	50A	$ 350.
MODEL GT 48-60:	Output 0-48V,	60A	$ 425.
MODEL GT 48-80:	Output 0-48V,	80A	$ 500.
MODEL GT 48-100:	Output 0-48V,	100A	$ 550.
MODEL GT 80-5:	Output 0-80V,	5A	$ 220.
MODEL GT 80-10:	Output 0-80V,	10A	$ 275.
MODEL GT 80-20:	Output 0-80V,	20A	$ 450.
MODEL GT 80-50:	Output 0-80V,	50A	Inquire
MODEL GT 80-100:	Output 0-80V,	100A	
MODEL GT 115-5:	Output 0-115V,	5A	
MODEL GT 115-10:	Output 0-115V,	10A	
MODEL GT 115-15:	Output 0-115V,	15A	
MODEL GT 115-20:	Output 0-115V,	20A	
MODEL GT 115-25:	Output 0-115V,	25A	
MODEL GT 115-30:	Output 0-115V,	30A	
MODEL GT 115-40:	Output 0-115V,	40A	
MODEL GT 115-50:	Output 0-115V,	50A	
MODEL GT 115-60:	Output 0-115V,	60A	
MODEL GT 115-70:	Output 0-115V,	70A	
MODEL GT 120-5:	Output 0-120V,	5A	
MODEL GT 130-2:	Output 0-130V,	2A	
MODEL GT 130-5:	Output 0-130V,	5A	
MODEL GT 130-10:	Output 0-130V,	10A	
MODEL GT 200-10:	Output 0-220V,	10A	

PRICES SUBJECT TO CHANGE

3 PHASE MODEL POWERSTAT METERS

MODEL GP 125-40:	Output	40A,	0-125V
MODEL GP 125-80:	Output	80A,	0-125V
MODEL GP 125-125:	Output	125A,	0-125V
MODEL GP 250-15:	Output	15A,	0-250V
MODEL GP 250-25:	Output	25A,	0-250V
MODEL GP 250-40:	Output	40A,	0-250V
MODEL GP 250-75:	Output	75A,	0-250V
MODEL GP 500-5:	Output	5A,	0-500V
MODEL GP 500-10:	Output	10A,	0-500V
MODEL GP 500-25:	Output	25A,	0-500V
MODEL GP 500-35:	Output	35A,	0-500V

LOW-COST BASIC/OEM SUPPLIES

MODEL L6.3-30	6.3VDC	@	30A/1%
MODEL L12-12	12VDC	@	12A/Rip. 1Mv/.01%
MODEL L12-15	12VDC	@	15A/1%
MODEL L12-24	12VDC	@	24Amp.
MODEL L12-24	12VDC	@	24A/1%
MODEL L12-50	12VDC	@	50Amp.
MODEL L12-50	12VDC	@	50A/Rip. 1%
MODEL L24-30	24VDC	@	30A/Rip. 1%
MODEL L28-1	28VDC	@	1A/0.5%
MODEL L28-2	28VDC	@	1A/Rip. .05%
MODEL L28-5	28VDC	@	5Amp.
MODEL L28-8	28VDC	@	8Amp.
MODEL L28-12	28VDC	@	12Amp.
MODEL L28-24	28VDC	@	24Amp. (N.F.)
MODEL L28-24	28VDC	@	24Amp.
MODEL L28-30	28VDC	@	30Amp.
MODEL L28-50	28VDC	@	50Amp. (N.F.)
MODEL L28-50	28VDC	@	50Amp.
MODEL L28-50	28VDC	@	50Amp. −1% R.
MODEL L28-100	28VDC	@	50Amp. −1% R.
MODEL L115-2.5	115VDC	@	2.5A
MODEL L115-5	115VDC	@	5A
MODEL L115-10	115VDC	@	10A (N.F.)
MODEL L115-10	115VDC	@	10A
MODEL L220-5	220VDC	@	5A
MODEL L220-10	220VDC	@	10A
MODEL L440-5	440VDC	@	5A

(N.F.) means not filtered

12 VOLT POWER SUPPLIES — 1% Ripple

MODEL GS 12-1,	Output	1A,	12V
MODEL GS 12-3,	Output	3A,	12V
MODEL GS 12-5,	Output	5A,	12V
MODEL GS 12-10,	Output	10A,	12V
MODEL GS 12-15,	Output	15A,	12V
MODEL GS 12-20,	Output	20A,	12V
MODEL GS 12-25,	Output	25A,	12V
MODEL GS 12-30,	Output	30A,	12V

GATES
ELECTRONIC COMPANY, INC.

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ALL TYPES OF POWER SUPPLIES

ICON POWER RECTIFIER
Model G50-50R

220 Volts AC, 60
as, 3 phase

T: 0-50 volts DC,
amperes con-
ous duty

: .3% RMS

ATION: No Load to Full Load 8%

S: 2% Accuracy

SIONS: 21" x 15" x 19"

SILICON INDUSTRIAL POWER UNIT
Model G30-100

INPUT: 220 Volts AC, 60 cycles, 3 phase

OUTPUT: 0-32 Volts DC, 0-100 amperes continuous duty

RIPPLE: .3% RMS

REGULATION: 5-8% 1/10th load to full load with constant input and at maximum output voltage setting

METERS: 2% Accuracy

DIMENSIONS: 21" x 15" x 19"

SILICON AIRCRAFT BATTERY ELIMINATOR
Model G30-200

INPUT: 220 Volts AC, 60 cycles, 3 phase

OUTPUT: 0-32 Volts DC, 0-200 amperes continuous duty also avail. 300A

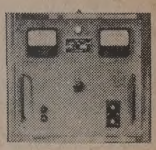
RIPPLE .5% RMS

REGULATION: 5-8% 1/10th load to full load with constant input and maximum output voltage setting

METERS: 2% Accuracy

DIMENSIONS: 25" x 25" x 43"

SILICON REGULATED POWER SUPPLY
Model G530-40M



INPUT: 115 Volts AC, 60 cycles, 1 phase

OUTPUT: 5-30 Volts DC, 0-40 amperes

RIPPLE: 1% RMS

REGULATION: ±1% from no load to full load

METERS: 2% Accuracy

DIMENSIONS: 21" x 15" 19"

ICON POWER SUPPLY

MODEL GX 30-5

: 115 Volts AC 80 cycles,
ile phase

T: 28-30-32 Volts DC, 0-5
eres, DC Continuous Duty

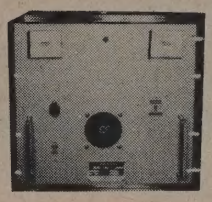
ATION: 12% No Load to
Load

E: .5% RMS

ISIONS: 5" W x 13½" L x
Overall Height 9"

E: $85.00 — 6 Amps $95.00

SILICON GENERAL PURPOSE RECTIFIER



MODEL G-115

INPUT: 115 Volts AC 60 cycles, 1 Phase

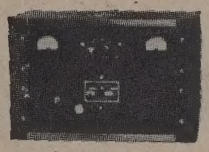
OUTPUT: 0-32 Volts DC, 0-50 Amperes DC, Continuous duty variable over entire range

RIPPLE: 1% RMS

DIMENSIONS: 22"H x 19"W x 15"D

PRICE: $522.00 NET

DC POWER SUPPLY



MODEL G94F

INPUT: 115 Volts AC 60 cycles, 1 Phase
DC

OUTPUT: 0-300 Volts DC Continuous Variable 0-1 Amperes.

RIPPLE: 3 MV RMS

DIMENSIONS: Rack 8¾" H x 19" L x 9½" D

CABINET: 10½"Hx22"Lx12"D

PRICE: $275.00

Also 0-2 Amp. **PRICE: $340.00**

SILICON POWER SUPPLY

MODEL GX30-20

INPUT: 115 Volts, 1 Phase, 60 cycles

OUTPUT: 0-34, Volts, DC 0-20 Amperes, continuous duty

REGULATION: No load to full load: 18%

RIPPLE: Below 1% Silicon Rectifiers, High Efficiency

DIMENSIONS: 10" x 17" x 3"

PRICE: $185.00 NET

SE — BENCH MODEL PLATING SUPPLIES

iL 6-50	6V	50A	$204.00
iL 9-50	9V	50A	$212.00
iL 12-50	12V	50A	$220.00
iL 18-50	18V	50A	$236.00
iL 6-75	6V	75A	$256.00
iL 9-75	9V	75A	$264.00
iL 12-75	12V	75A	$276.00
iL 18-75	18V	75A	$292.00
iL 6-100	6V	100A	$268.00
iL 9-100	9V	100A	$284.00
iL 12-100	12V	100A	$300.00
iL 18-100	18V	100A	$316.00
iL 6-150	6V	150A	$300.00
iL 9-150	9V	150A	$328.00
iL 12-150	12V	150A	$352.00
iL 18-150	18V	150A	$372.00
iL 6-200	6V	200A	$330.00
iL 9-200	9V	200A	$352.00
iL 12-200	12V	200A	$372.00
iL 6-250	6V	250A	$372.00
iL 9-250	9V	250A	$396.00
iL 12-250	12V	250A	$460.00

LT POWER SUPPLIES — Rack Type — 1% Ripple

24-6R	24VDC	6A	$ 95.00
24-15R	24VDC	15A	$105.00
24-25R	24VDC	25A	$125.00
24-50R	24VDC	50A	$210.00

PRICES SUBJECT TO CHANGE

GR LINE REGULATED POWER SUPPLIES — 2% Meters 1% Ripple

MODEL GR 12-5	0-12V	5A	$120.00
MODEL GR 12-10	0-12V	10A	$155.00
MODEL GR 12-20	0-12V	20A	Inquire
MODEL GR 12-30	0-12V	30A	$175.00
MODEL GR 16-5	0-16V	5A	$175.00
MODEL GR 16-10	0-16V	10A	$125.00
MODEL GR 8-10	0-8V	10A	$155.00
MODEL GR 28-5	0-28V	5A	$ 95.00
MODEL GR 14-5	0-14V	5A	$125.00
MODEL GR 32-4	0-32V	4A	$ 79.00
MODEL GR 16-8	0-16V	8A	$135.00
MODEL GR 32-15	0-32V	15A	$225.00
MODEL GR 55-10	0-55V	10A	$210.00
MODEL GR 125-1	0-125V	1A	$375.00
MODEL GR 125-5	0-125V	5A	$215.00
MODEL GR 125-10	0-125V	10A	$485.00

INDUSTRIAL POWER UNITS — SINGLE PHASE

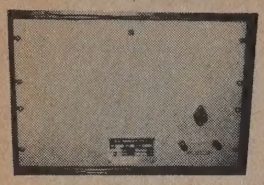
MODEL GK 115-125A	Output 115V	125W	Input 115V	$ 63.00
MODEL GK 115-125B	Output 115V	125W	Input 230V	$ 63.00
MODEL GK 115-125C	Output 115V	125W	Input 440V	$ 63.00
MODEL GK 115-250A	Output 115V	250W	Input 115V	$ 72.50
MODEL GK 115-250B	Output 115V	250W	Input 230V	$ 72.50
MODEL GK 115-250C	Output 115V	250W	Input 440V	$ 72.50
MODEL GK 115-375A	Output 115V	375W	Input 115V	$ 89.00
MODEL GK 115-375B	Output 115V	375W	Input 230V	$ 89.00
MODEL GK 115-375C	Output 115V	375W	Input 440V	$ 89.00
MODEL GK 115-500A	Output 115V	500W	Input 115V	$105.00
MODEL GK 115-500B	Output 115V	500W	Input 230V	$105.00
MODEL GK 115-500C	Output 115V	500W	Input 440V	$105.00
MODEL GK 115-750A	Output 115V	750W	Input 115V	$130.00
MODEL GK 115-750B	Output 115V	750W	Input 230V	$130.00
MODEL GK 115-750C	Output 115V	750W	Input 440V	$130.00
MODEL GK 115-1000A	Output 115V	1000W	Input 115V	$150.00
MODEL GK 115-1000B	Output 115V	1000W	Input 230V	$150.00
MODEL GK 115-1000C	Output 115V	1000W	Input 440V	$150.00
MODEL GK 230-125A	Output 230V	125W	Input 115V	$ 67.00
MODEL GK 230-125A	Output 230V	125W	Input 230V	$ 67.00
MODEL GK 230-125C	Output 230V	125W	Input 440V	$ 67.00
MODEL GK 230-250A	Output 230V	250W	Input 115V	$ 75.00
MODEL GK 230-250B	Output 230V	250W	Input 230V	$ 75.00
MODEL GK 230-250C	Output 230V	250W	Input 440V	$ 75.00
MODEL GK 230-375A	Output 230V	375W	Input 115V	$110.00
MODEL GK 230-375B	Output 230V	375W	Input 230V	$110.00
MODEL GK 230-375C	Output 230V	375W	Input 440V	$110.00
MODEL GK 230-500A	Output 230V	500W	Input 115V	$115.00
MODEL GK 230-500B	Output 230V	500W	Input 230V	$115.00
MODEL GK 230-500C	Output 230V	500W	Input 440V	$115.00
MODEL GK 230-750A	Output 230V	750W	Input 115V	$172.00
MODEL GK 230-750B	Output 230V	750W	Input 230V	$172.00
MODEL GK 230-750C	Output 230V	750W	Input 440V	$172.00
MODEL GK 230-1000A	Output 230V	1000W	Input 115V	$180.00
MODEL GK 230-1000B	Output 230V	1000W	Input 230V	$180.00
MODEL GK 230-1000C	Output 230V	1000W	Input 440V	$180.00

GATES

LECTRONIC COMPANY, INC.

GATES POWER SUPPLIES

MODEL G230-25



INPUT: 208/440, 3ph 60 cy
OUTPUT: 230 @ 25A
RIPPLE: 4.5%
REGULATION: 1/10 Load 8%
METERS: None
DIMENSIONS: 21″ W x 15″ D x 14″ H

PRICE: $575.00
METERS $50.00 EXTRA

MODEL G12-250

INPUT: 208, 3ph 60 cy
OUTPUT: 0-12V @ 250A
RIPPLE: 4.5%
REGULATION: 1/10 Load 8%
METERS: YES
DIMENSIONS: 20″ W x 20″ D x 35″ H

PRICE: $575.00

MODEL G220-10

INPUT: 115VAC
OUTPUT: 220VDC @ 10A
RIPPLE: 48%
METERS: NONE
DIMENSIONS: 21″ W x 15″ D x 10″ H

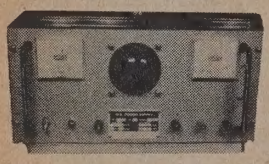
PRICE: $425.00
METERS $50.00 EXTRA

SILICON INDUSTRIAL POWER UNIT MODEL G30-40F

INPUT: 115 Volts AC, 60 cy
single phase.
OUTPUT: 0-32 Volts DC,
Amperes DC, continuous dut
RIPPLE: 1% RMS
DIMENSIONS: 12¼″H x 19″W x
REGULATION: D.C.V. at full
32 minimum D.C.V. at 1/10
35 maximum

PRICE: $425.00

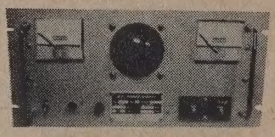
MODEL GT125-5F



INPUT: 115VAC
OUTPUT: 0-125 @ 5A
RIPPLE: 0.5%
REGULATION: UNREGULATED
METERS: YES
DIMENSIONS: 21″ W x 15″ D x 10½″ H

PRICE: $325.00

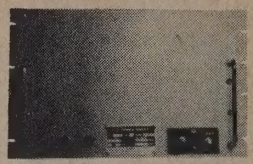
MODEL GT14-40



INPUT: 115VAC
OUTPUT: 0-14 @ 40A
RIPPLE: 0.1%
REGULATION: UNREGULATED
METERS: YES
DIMENSIONS: 19″ W x 13½″ D x 8-3/6″ H

PRICE: $275.00 — RACK MOUNTED

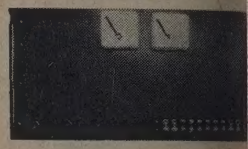
MODEL GX28-50



INPUT: 115VAC
OUTPUT: 28 @ 50A
RIPPLE: 0.5%
REGULATION: UNREGULATED
METERS: NONE
DIMENSIONS: 19″ W x 13½″ D x 12¼″ H

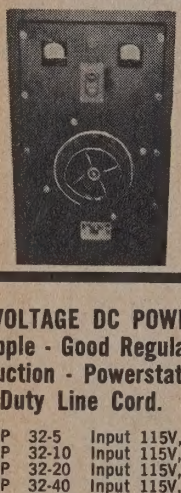
PRICE: $325.00 — RACK MOUNTED

MODEL G45-30



INPUT: 115VAC
OUTPUT: 45, 42, 40, 36, 32, 29, 28, 26 @ 30A
RIPPLE: 1%
REGULATION: FAN COOLED
METERS: 5%
DIMENSIONS: 19″ W x 10″
8-3/6″ H

PRICE: $375.00

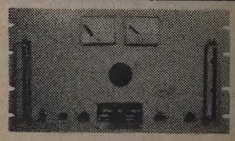


MODEL GT20-200

INPUT: 220 VAC 60 cy. 1 Phase
OUTPUT: 0-22 VDC @ 200A
RIPPLE: 1%
CABINET: 35″ x 20″ x 20″
METERS: VOLT & AMP.

PRICE $625.00

NEW SCR REGULATED POWER SUPPLIES



GCR32-30 115VAC 24-32 @ 30A 1% ±1% Meters 19″Wx17″Dx12¼
PRICE: $550.00 — Cabinet $25.00 more

GCR32-25 115VAC 24-32 @ 25A 1% ±1% Meters 19″Wx17″Dx12¼
PRICE: $505.00 — Cabinet $25.00 more

GCR32-20 115VAC 24-32 @ 20A 1% ±1% Meters 19″Wx17″Dx10½
PRICE: $475.00 — Cabinet $25.00 more

HIGH VOLTAGE DC POWER SUPPLIES

1% Ripple - Good Regulation - Cabinets - Meters - Heavy Duty Construction - Powerstat - Fused 1% Meters - 115 Vac Input Heavy Duty Line Cord.

MODEL GP	32-5	Input 115V, 60c, 1ph.	Output 0-32V	@	5A	.....$ Inquire
MODEL GP	32-10	Input 115V, 60c, 1ph.	Output 0-32V	@	10A	.....$ Inquire
MODEL GP	32-20	Input 115V, 60c, 1ph.	Output 0-32V	@	20A	.....$ Inquire
MODEL GP	32-40	Input 115V, 60c, 1ph.	Output 0-32V	@	40A	.....$ Inquire
MODEL GP	32-100	Input 220V, 60c, 3ph.	Output 0-32V	@	100A	....$ Inquire
MODEL GP	32-150	Input 220V, 60c, 3ph.	Output 0-32V	@	150A	....$ Inquire
MODEL GP	60-6	Input 115V, 60c, 1ph.	Output 0-60V	@	6A	.....$ Inquire
MODEL GP	60-10	Input 115V, 60c, 1ph.	Output 0-60V	@	10A	.....$ Inquire
MODEL GP	60-12	Input 115V, 60c, 1ph.	Output 0-60V	@	12V..	....$ Inquire
MODEL CP	60-20	Input 115V, 60c, 1ph.	Output 0-60V	@	20A	.....$ Inquire
MODEL GP	60-50	Input 220V, 60c, 3ph.	Output 0-60V	@	50A	.....$ Inquire
MODEL GP	60-80	Input 220V, 60c, 3ph.	Output 0-60V	@	80A	.....$ Inquire
MODEL GP	60-250	Input 220V, 60c, 3ph.	Output 0-60V	@	250A	....$ Inquire
MODEL GP	125-2.5	Input 117V, 60c, 1ph.	Output 0-125V	@	2.5A	....$ Inquire
MODEL GP	125-3	Input 117V, 60c, 1ph.	Output 9-124V	@	3A	.....$ Inquire
MODEL GP	125-5	Input 117V, 60c, 1ph.	Output 0-125V	@	5A	.....$ Inquire
MODEL GP	125-10	Input 117V, 60c, 1ph.	Output 0-125V	@	10A	.....$ Inquire
MODEL GP	125-20	Input 117V, 60c, 1ph.	Output 0-124V	@	20A	.....$ Inquire
MODEL GP	125-24	Input 220V, 60c, 3ph.	Output 0-125V	@	24A	....$
MODEL GP	125-40	Input 220V, 60c, 3ph.	Output 0-125V	@	40A	.....$
MODEL GP	125-80	Input 220V, 60c, 3ph.	Output 0-125V	@	80A	.....$
MODEL GP	125-120	Input 220V, 60c, 3ph.	Output 0-125V	@	120A	....$
MODEL GP	250-5	Input 117V, 60c, 1ph.	Output 0-250V	@	5A	.....$
MODEL GP	250-10	Input 117V, 60c, 1ph.	Output 0-250V	@	10A	.....$
MODEL GP	250-12	Input 220V, 60c, 3ph.	Output 0-250V	@	12A	.....$
MODEL GP	250-20	Input 220V, 60c, 3ph.	Output 0-250V	@	20A	.....$
MODEL GP	250-40	Input 220V, 60c, 3ph.	Output 0-250V	@	40A	.....$
MODEL GP	250-60	Input 220V, 60c, 3ph.	Output 0-250V	@	60A	.....$
MODEL GP	300-1	Input 220V, 60c, 3ph.	Output 0-250V	@	1A	.....$
MODEL GP	300-1.5	Input 220V, 60c, 3ph.	Output 0-250V	@	1.5A	....$
MODEL GP	300-2	Input 220V, 60c, 3ph.	Output 0-250V	@	2A	.....$
MODEL GP	300-3	Input 220V, 60c, 3ph.	Output 0-250V	@	3A	.....$
MODEL GP	300-5	Input 220V, 60c, 3ph.	Output 0-250V	@	5A	.....$
MODEL GP	500-1	Input 220V, 60c, 3ph.	Output 0-500V	@	1A	.....$
MODEL GP	500-1.5	Input 220V, 60c, 3ph.	Output 0-500V	@	1.5A	....$
MODEL GP	500-2	Input 220V, 60c, 3ph.	Output 0-500V	@	2A	.....$
MODEL GP	500-3	Input 220V, 60c, 3ph.	Output 0-500V	@	3A	.....$
MODEL GP	500-5	Input 220V, 60c, 3ph.	Output 0-500V	@	5A	.....$
MODEL GP	500-5	Input 220V, 60c, 3ph.	Output 0-500V	@	5A	.....$
MODEL GP	500-10	Input 220V, 60c, 3ph.	Output 0-500V	@	10A	.....$
MODEL GP	500-20	Input 220V, 60c, 3ph.	Output 0-500V	@	20A	.....$
MODEL GP	500-30	Input 220V, 60c, 3ph.	Output 0-500V	@	30A	.....$

GATES

ELECTRONIC COMPANY, INC.

FIXED VOLTAGE, 1% LINE AND LOAD REGULATED POWER SUP

SPECIFICATIONS

AC INPUT: 105 - 125V, 57 - 63 Hz, 1 phase
REGULATION: ±1% for ±10% line change
±1% for no load to full load
RIPPLE: 0.1% +10MV rms maximum
GROUNDING: Floating output; either positive or negative may be gro
PROTECTION: Automatic short-circuit protection

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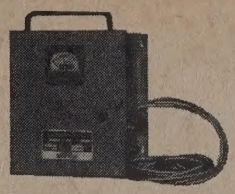
IGHEST QUALITY-LOWEST PRICE

SILICON POWER SUPPLY
Model GX24-1

INPUT: 115 Volts AC, 60 cycles, 1 phase
OUTPUT: 24 Volts DC, 0-1 ampere DC, continuous duty
RIPPLE: 0.3% RMS
REGULATION: 8% no load to full load
DIMENSIONS: 3" x 5" x 10"
PRICE: $75.00
0-2 Amps **PRICE: $85.00**



PORTABLE SILICON BATTERY CHARGER
Model G612-20

INPUT: 115 volts AC, 60 cycles, 1 phase
OUTPUT: 6/12 Volts DC, 20 amperes continuous duty
METER: Amp. meter 2% Accuracy
DIMENSIONS: 11"H x 9"W x 6½"D
PRICE: $57.50

SILICON RECTIFIER
Model GT32-30

T: 115 Volts, 50-60 cycles, 1 phase
UT: 30 amperes, 0-32 Volts DC
IFIER: Full wave silicon rectifier
LE: 1% RMS
AGE CONTROL: Powerstat
RS: 2% Accuracy volt meter, amp. meter
NSIONS: 10½" x 13½" x 19"
PRICE: $350.00 — WT. 92 Lbs.

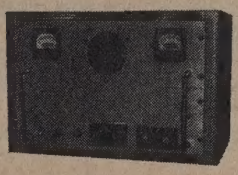
SILICON RECTIFIER
Model GT32-24

INPUT: 115 Volts, 50-60 cycles, 1 phase
OUTPUT: 24 amperes, 0-32 Volts DC
RECTIFIER: Full wave silicon rectifier
RIPPLE: 1%
VOLTAGE CONTROL: Powerstat
DIMENSIONS: 8¾" x 13½" x 19"
METERS: 2% Accuracy volt meter, amp. meter
PRICE: $325.00 — WT. 75 Lbs.

NCH PLATING RECTIFIER
Model G50-8

T: 115 volts, 50-60 cycles, phase
UT: 50 amperes, 0-8 Volts
TIFIER: Full wave silicon ctifier
LE: 2% $75. extra
AGE CONTROL: Powerstat
ER: 2% Accuracy, volt meter, p. meter
NSIONS: 21" x 15" x 10"
PRICE: $175.00

BENCH PLATING RECTIFIER
Model G100-8



INPUT: 115 Volts, 50-60 cycles, 1 phase
OUTPUT: 100 amperes, 0-8 Volts DC
RECTIFIER: Full wave silicon rectifier
RIPPLE: 2% $75. extra
VOLTAGE CONTROL: Powerstat
METERS: 2% Accuracy, volt meter, amp. meter
DIMENSIONS: 21" x 15" x 10"
PRICE: $275.00

BENCH PLATING RECTIFIER
Model G200-6

INPUT: 115 Volts, 50-60 cycles, 1 phase
OUTPUT: 200 amperes, 0-6 Volts DC
RECTIFIER: Full wave silicon rectifier
RIPPLE: 2% $100 extra
COOLING: Fan
VOLTAGE CONTROL: Powerstat
METERS: 2% Accuracy, volt meter, amp. meter
DIMENSIONS: 21" x 15" x 19"
PRICE: $385.00

BENCH PLATING RECTIFIER
Model G50-15

INPUT: 115 Volts, 50-60 cycles, 1 phase
OUTPUT: 50 amperes, 0-15 Volts DC
RECTIFIER: Full wave silicon rectifier
RIPPLE: 2% $125 extra
VOLTAGE CONTROL: Powerstat
METERS: 2% Accuracy, volt meter, amp. meter
DIMENSIONS: 21" x 15" x 10"
PRICE: $210.00

CN RECTIFIERS FOR EXITATION OF SYNCHRONOUS
S. HEAVY DUTY, INDUSTRIAL CONSTRUCTION. PROVEN
:..

125 DCV	28 DCA	$ Inquire
125 DCV	40 DCA	$ Inquire
125 DCV	56 DCA	$ Inquire
125 DCV	80 DCA	$ Inquire
125 DCV	168 DCA	$ Inquire
125 DCV	440 DCA	$ Inquire

CURRENT POWER SUPPLIES†

G	300 Output 300A, 24-30V	$ Inquire
G	500 Output 500A, 24-30V	$ Inquire
G	1000 Output 1000A, 24-30V	$ Inquire

ble Reactor.

ETIC AMP. REG. UNITS CONTROL
eg. 1%

C	40A 115 VAC In.	$ Inquire
C	50A 220 VAC In. 1φ	$ Inquire
C	75A 208 VAC In. 3φ	$ Inquire

BENCH MODEL PLATING SUPPLIES

MODEL GI 10-6	6V	10A	$ 62.00
MODEL GI 10-6F*	6V	10A	$ 96.00
MODEL GI 10-9	9V	10A	$ 76.00
MODEL GI 10-9F	9V	10A	$100.00
MODEL GI 10-12	12V	10A	$ 88.00
MODEL GI 10-12F	12V	10A	$112.00
MODEL GI 25-6	6V	25A	$ 96.00
MODEL GI 25-6F	6V	25A	$120.00
MODEL GI 25-9	9V	25A	$104.00
MODEL GI 25-9F	9V	25A	$128.00
MODEL GI 25-12	12V	25A	$124.00
MODEL GI 25-12F	12V	25A	$152.00
MODEL GI 25-18	18V	25A	$156.00
MODEL GI 25-18F	18V	25A	$184.00
MODEL GI 25-24	24V	25A	$172.00
MODEL GI 25-24F	24V	25A	$196.00
MODEL GI 35-6	6V	35A	$108.00
MODEL GI 35-6F	6V	35A	$140.00
MODEL GI 35-9	9V	35A	$120.00
MODEL GI 35-9F	9V	35A	$148.00
MODEL GI 35-12	12V	35A	$132.00
MODEL GI 35-12F	12V	35A	$160.00
MODEL GI 35-18	18V	35A	$164.00
MODEL GI 35-18F	18V	35A	$192.00
MODEL GI 35-24	24V	35A	$184.00
MODEL GI 35-24F	24V	35A	$208.00
MODEL GI 50-6	6V	50A	$128.00

VOLTAGE, 1% LINE AND LOAD REGULATED POWER SUPPLIES

	OUTPUT	RATING
	3.6 - 9V	30 Watts
	9 - 17V	or 2.5
	17 - 30V	Amperes
	30 - 60V	Maximum
	3.6 - 9V	60 Watts
	9 - 17V	or 5
	17 - 30V	Amperes
	30 - 60V	Maximum
21	3.6 - 9V	120 Watts
22	9 - 17V	or 10
23	17 - 30V	Amperes
24	30 - 60V	Maximum

GATES
ELECTRONIC COMPANY, INC.

ALL TYPES OF POWER SUPPLIES

BENCH MODEL PLATING SUPPLIES

MODEL GI 50-6F	6V	50A	$168.00
MODEL GI 50-9	9V	50A	$132.00
MODEL GI 50-9F	9V	50A	$176.00
MODEL GI 50-12	12V	50A	$144.00
MODEL GI 50-12F	12V	50A	$188.00
MODEL GI 50-18	18V	50A	$176.00
MODEL GI 50-18F	18V	50A	$220.00
MODEL GI 75-6	6V	75A	$156.00
MODEL GI 75-6F	6V	75A	$204.00
MODEL GI 75-9	9V	75A	$172.00
MODEL GI 75-9F	9V	75A	$220.00
MODEL GI 75-12	12V	75A	$176.00
MODEL GI 75-12F	12V	75A	$234.00
MODEL GI 75-18	18V	75A	$236.00
MODEL GI 75-18F	18V	75A	$284.00
MODEL GI 100-6	6V	100A	$180.00
MODEL GI 100-6F	6V	100A	$238.00
MODEL GI 100-9	9V	100A	$188.00
MODEL GI 100-9F	9V	100A	$244.00
MODEL GI 100-12	12V	100A	$240.00
MODEL GI 100-12F	12V	100A	$302.00
MODEL GI 100-18	18V	100A	$288.00
MODEL GI 100-18F	18V	100A	
MODEL GI 150-6	6V	150A	
MODEL GI 150-6F	6V	150A	
MODEL GI 150-9	9V	150A	
MODEL GI 150-9F	9V	150A	
MODEL GI 150-12	12V	150A	
MODEL GI 150-12F	12V	150A	
MODEL GI 200-9	9V	200A	
MODEL GI 200-9F	9V	200A	
MODEL GI 200-12	12V	200A	
MODEL GI 200-12F	12V	200A	

* FILTERED (F) **PRICES SUBJECT TO CHANGE**

TECHNICIAN SPECIALS

MODEL G28-2	28V	2A	1% R	$55
MODEL G48-3	48V	3A	1% R	$75
MODEL G115-1	115V	1A	1% R	$65

MAGNETICALLY REGULATED D.C. POWER SUPPLIES

REGULATION: Line ±1% for ±15% line voltage change load ±2% for any load change between ½ load and full load. Ripple 1% RMS Maximum. Rack or cabinet types.

VOLTS	D.C. OUTPUT AMPS	VA	CATALOG NUMBER	LOAD REGULATION 20% F.L.	50% F.L.	PRICE
6	10	60	6GDCV10	9	7	$130.00
6	15	90	6GDCV15	9	7	140.00
12	5	60	12GDCV5	7	5	92.00
12	10	120	12GCDV10	7	5	120.00
12	15	180	12GDCV15	7	5	155.00
18	5	90	18GDCV5	5	4	96.00
18	10	180	18GDCV10	7	5	141.00
24	6	144	24GDCV6	5	4	116.00
24	10	240	24GDCV10	6	4	144.00
24	15	360	24GDCV15	5	4	200.00
24	25	600	24GDCV25	6	4	275.00
28	8	224	28GDCV8	6	4	144.00
28	15	420	28GDCV15	7	5	200.00
48	4	192	48GDCV4	3.5	2.5	109.00
48	4	480	48GDCV4	4	2	149.00
48	20	960	48GDCV20	3	2	223.00
125	2	250	125GDCV2	2.5	1.5	117.00
150	2	300	150GDCV2	2	1.5	117.00
150	1	200	200GDCV1	3	2	112.00
250	1	250	250GDCV1	3	2	120.00

PORTABLE HIGH VOLTAGE DC POWER SUPPLIES

- Compact solid state metered portable High Voltage DC Power Supplies
- Featuring continuously variable output from zero to rated output
- Low Ripple less than 5% Ripple RMS
- Overload protected

MODEL	OUTPUT VOLTAGE	OUTPUT CURRENT	PRI
GHV1-5	0-1KV	5MA	$ 2
GHV1-1	0-1KV	10MA	$ 2
GHV1-5	0-1KV	50MA	$ 2
GHV2.5-5	0-2.5KV	5MA	$ 2
GHV2.5-50	0-2.5KV	50MA	$ 3
GHV2.5-100	0-2.5KV	100MA	$ 5
GHV2.5-1A	0-2.5KV	1AMP	$1,0
GHV5-1A	0-5KV	1AMP	$1,2
GHV10-1	0-10KV	1MA	$ 1
GHV10-3	0-10KV	3MA	$ 3

GATES

ELECTRONIC COMPANY, INC.

A single source for all possible types of "brute" force regulated power supplies that can fill 90% of your c and application needs. Gates Power Supplies give you lutely lowest cost and long life. The units are excel constructed of high rated components for trouble free, of service.

Silicon or Selenium. Single and three-phase units. 1000 volts, 1 to 1000 Amps. Metered and unmetered or variable outputs. Rack, cabinet or chassis mounts. or hundred quantities 48 hour delivery. Two year guara Power supplies for OEM Application, Testing Prototype type units, Plating, Motor Control, Cathode Protection, sistor power, Anodizing, Battery Charging, Battery C sions, Marine types, Aircraft Starting.

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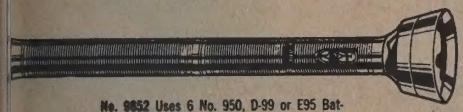
the world's most trusted brand for over 60 years!

ALL PRICES WITHOUT BATTERIES.

CAPTAIN" FLASHLIGHTS . . . Classic Design

- Heavy-Duty Copper/Nickel/Chrome/Plated Steel
- Exclusive 3-Way Lock Switch and Flasher
- End-Loading . . . Ring Hanger

No. 9851 Magnet Lite. Uses 2 No. 950, D-99 or E95 Batteries, No. PR2 Lamp.



No. 9852 Uses 6 No. 950, D-99 or E95 Batteries, No. PR18 Lamp. Also available: **No. 9352**—Uses 3 No. 950, D-99 or E95 Batteries, No. PR3 Lamp.

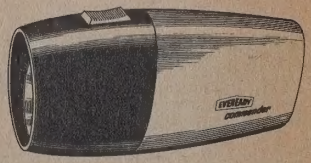
No. 9251 Uses 2 No. 950, D-99 or E95 Batteries, No. PR2 Lamp. Also available: **No. 9351**—Uses 3 No. 950, D-99 or E-95 Batteries, No. PR3 Lamp and **No. 9231**—Uses 2 No. 935 or E93 Batteries, No. PR4 Lamp.

	No. 9231	No. 9251	No. 9351	No. 9352	No. 9652	No.9951
List Each	$2.29	$2.29	$2.95	$3.95	$5.95	$2.95
Sugg. Dealer	1.53	1.53	1.97	2.64	3.81	1.97

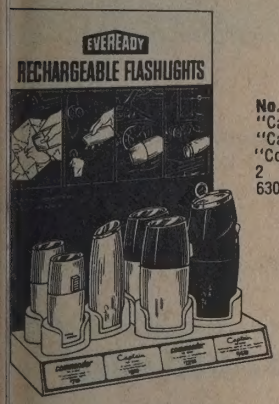
Rechargeable Devices

- —Never need batteries
- —Retain a charge up to a year when not in use
- —One year warranty

No. 3210 "Captain" Rechargeable Mini-Spotlight — Smooth roll action switch. Ideal for pocket or purse. Available in Harbor Blue or Jet Black.



No. 6300 "Commander" Rechargeable Flashlight—Handy for pocket or purse. Available in Diablo Red/Oyster White finish. Gift boxed or blister packed.



No. 71 Display 1 "Captain" 3200BL, 1 "Captain" 3300, 2 "Commander" 6200's, 2 "Commander" 6300's.

No. 3112 "Commander" Rechargeable Lantern — Modern, easy-to-hold, cantilever handle with thumb-tip, pushbutton control.

No. 3300 "Captain" Rechargeable Flashlight—Twice the light of standard 2-Cell Flashlights . . . never needs batteries! Uses rechargeable battery, No. PR-3 Lamp. Gift boxed or blister packed.

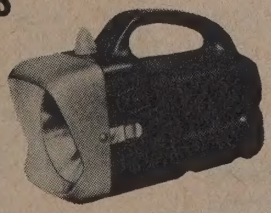
No. 3400 "Captain" Rechargeable Lantern—Twice the light of other rechargeable lanterns, powerful sealed beam lamp generates 13,000 candle power, ruggd carrying case. Easy grip cantilever handle with finger tip switch.

	No. 71	No. 3112	No. 3210	No. 3300	No. 3400	No. 6300
List Each	$66.70	$19.95	$10.95	$14.95	$39.95	$12.95
Sugg. Dealer	40.02	11.97	6.57	8.97	23.97	7.77

WEATHERPROOF LANTERNS

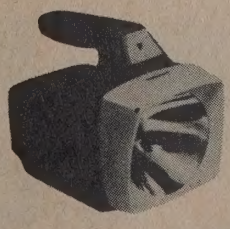
No. 100WB "Big Jim" Lantern w/flasher and 1 No. 731 Battery, No. 4546 Lamp, No. 407 Signal Lamp.

No. 101WB Same without flasher.



No. 108A Waterproof All American Lantern. "Cordahide" polyethylene construction. Uses 1 No. 509 Battery. No. PR13 Lamp.

No. 68A Display—Contains 3 No. 108A All American Lanterns in Colors (white, red, black).



No. 112 Individually boxed (red) All American Lantern with unique power cartridge. "Cordahide" polyethylene construction. Uses No. PR12 Lamp, 5 No. 950, D99 or E95 batteries.

No. 72 Display. 3 No. 112 All American Lanterns in colors (red, blue, gray).

No. 459 Hercules Waterproof/Floating Lantern. Explosion-proof, insulated case impervious to gasoline, alcohol, most oils and greases.

	No. 68A	No. 72	No. 100WB	No. 101WB	No. 108A	No. 112	No. 459
List Each	$15.92	$8.94	$15.25	$13.25	$3.98	$2.98	$7.95
Sugg. Dealer	10.60	5.97	10.15	8.82	2.65	1.99	5.30

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the world's most trusted brand for over 60 years!

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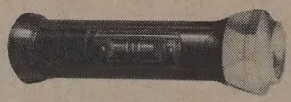
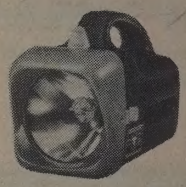
INDUSTRIAL and SPECIAL PURPOSE LITES

No. 308CT Combination spotlight/continuity tester . . . a high-quality tool for professionals.

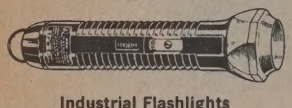


No. 330 Utility Lite. Uses 2 No. 950, D-99 or E95 Batteries, No. PR2 Lamp. Available individually boxed (**No. 330**).



No. 459 Hercules Waterproof/Floating Lantern. Explosion-proof, insulated case impervious to gasoline, alcohol, most oils and greases.

	No. 51	No. 308CT	No. 330	No. 337	No. 459
List Each	$16.68	$6.95	$1.19	$1.39	$7.95
Sugg. Dealer	11.16	4.50	0.79	0.94	5.30



Industrial Flashlights

No. 1251—2 Cell, No. PR6 Lamp. **No. 1351**—3 Cell, No. PR7 Lamp. Uses Nos. 950, 1050, D99 or E95 Batteries. Will not shatter crack or dent.

Safety Flashlights

No. 1259—2 Cell, No. PR6 Lamp. **No. 1359**—3 Cell, No. PR7 Lamp. Uses Nos. 950, 1050, D99 or E95 Batteries. Approved by U.S. Bureau of Mines, Listed by Underwriters' Laboratories, Inc.

No. 3452 Head-Lite. Uses 1 No. 510S Battery and No. PR13 Lamp. Rainproof pouch also available (No. 1348).

Torch Lite

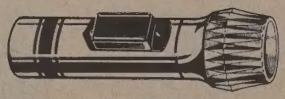
No. 273—3" wand. **No. 275**—5" wand. Uses 2 No. 950, D99 or E95 Batteries and No. PR2 Lamp.

	No. 273	No. 275	No. 1251	No. 1259	No. 1348	No. 1351	No. 1359	No. 345
List Each	$1.49	$1.59	$3.30	$4.60	$1.00	$3.75	$4.90	$3.79
Sugg. Dealer	.99	1.05	2.20	3.07	0.67	2.50	3.26	2.52

HEAVY-GAUGE, CHROME-PLATED METAL FLASHLIGHTS

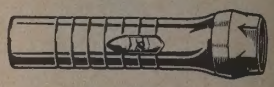
America's Standard

No. 2251 All-Purpose Flashlight—2 Cell, No. PR2 Lamp. Use Nos. 950, D-99 or E95 Batteries. Available individually.



Magnet Lites

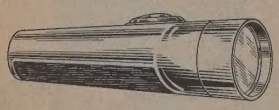
No. 5MF Magnet Lite—2 Cell, No. PR2 Lamp. No. 7MF—3 Cell, No. PR3 Lamp. Use Nos. 950, D-99 or E95 Batteries. Available individually boxed. **No. 5MF** available in display of 6 with Selling Tags (**No. 6-5MF**).



Leader Lites

No. 356 Leader Lite—Uses 2 No. 950, D-99 or E95 Batteries. No. PR2 Lamp. Available in Displayer **No. 16A** (containing 12 No. 356 Lites).

	No. 4MF	No. 5MF	No. 5	No. 6-5MF	No. 7MF	No. 16A	No. 44	No. 26	No. 131	No. 2251	No. 4251	No. 5251
List Each	$2.49	$2.29	$11.88	$13.74	$2.79	$11.88	$14.94	$13.74	$16.68	$1.99	$2.29	$.99
Sugg. Dealer	1.66	1.53	7.14	9.18	1.85	7.56	9.96	9.18	11.16	1.33	1.53	.595



No. 26 Display 6 "Eveready" Wrangler No. 4251 flashlights in pre-packed, pre-loaded displayer.

No. 4251 Wrangler Flashlight Luxurious, inset, walnut grain vinyl, chrome-plated lens ring, 4-position switch, optically perfect reflector. Available individually boxed. Uses 2 No. 950, D-99 or E95 Batteries. No. PR-2 lamp.

No. 5 Display contains 12 No. 5251 flashlights.

No. 5251 "Commander" Flashlight Triple-plated chrome finish, sturdy, safety-glow lens ring. Positive action switch. Uses 2 No. 950, D-99 or E95 batteries. No. PR-2 Lamp.

No. 44 Assortment—Contains 6 No. 4MF "Eveready" Magnet Lites (2 red, 2 gold, 2 blue).

No. 4MF "Pop-Out" Magnet Flashlight Hidden magnet bulb into sleek case pops out when placed near steel, retracts into case when removed.

Trade Discount Applies To List Prices Only

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FLASHLIGHTS, LANTERNS and BATTERIES

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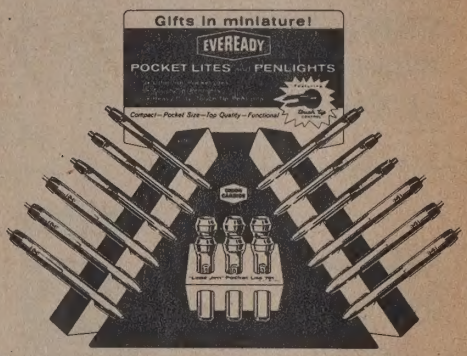
IINIATURE FLASHLIGHTS

115 "Little Jim" Pocket Lite—Uses 1 No. 915 or E91 Battery, . 112 Lamp. Available in Counter Display of 12 (No. 15).

No. 315 Heavy-Duty Penlite. Uses 2 No. 915 or E91 Batteries and No. 222 Lamp. Available individually boxed or in Counter Display of 12 (No. 22).

No. 312 Slim Penlite. Uses 2 No. 912 or E92 Batteries and No. 224 Lamp. Available individually boxed or in Counter Display of 12 (No. 12).

	No. 12	No. 15	No. 22	No. 170	No. 312	No. 315
List Each	$15.48	$9.48	$15.48	$20.22	$1.29	$1.29
Sugg. Dealer	10.20	6.30	10.20	13.35	0.85	0.85



No. 170 Display-combination miniature lite assortment contains: 6 each of Slim and Heavy Duty Penlites and 6 "Little Jim" Pocket Lites.

EVEREADY® BATTERIES with *POWER TO SPARE*

(See complete line listing for prices)

'OPULAR 'LASHLIGHT 'ATTERIES

No. 915 Size AA

No. 935 Size C

No. 950 Size D

No. 099 Heavy-Duty Size D

NERGIZERS 'OR TRANSISTOR ADIOS

nd other lectronic applications

No. 206 9 Volts

No. 216 9 Volts

No. 226 9 Volts

No. 333 4½ Volts

No. 1015 Size AA 1½ Volts

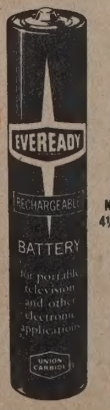
No. 1035 Size C 1½ Volts

SUPER POWER ALKALINE BATTERIES

or radios, ameras, toys, lashlights, and high rain applications, echargeable TV

No. E90 Size N 1½ Volts

No. E91 Size AA 1½ Volts



No. 563 4½ Volts

No. E93 Size C 1½ Volts

No. E95 Size D 1½ Volts

No. E92 Size AAA 1½ Volts

No. 523 4½ Volts

No. 561 15 Volts

EVEREADY COMPLETE LINE SPECIFICATIONS EVEREADY

MERCURY BATTERIES

No. E9
1.4 Volts

No. E146X
8.4 Volts

No. E133
4.2 Volts

SEALED NICKEL CADMIUM RECHARGEABLE BATTERIES

B50
1.25 Volts

C450
1.25 Volts

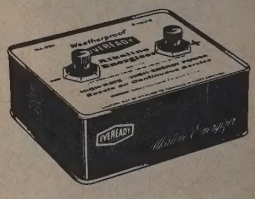
CH4
1.25 Volts

R2
1.25 Volts

LANTERN BATTERIES

No. 509 — Spring
No. 510S — Screws
No. 510F — Fahnestock
6 Volts

No. 731
6 Volts



No. 520
6 Volts
Alkaline

OTHER BATTERIES

No. 6 "Ignitor"
1½ Volts

"HOT SHOT"
No. 1461 6 Volts
No. 1462 6 Volts
No. 1463 12 Volts
No. 1562 7½ Volts
No. 1662 9 Volts

EMERGENCY LIGHTING
No. 715 7½ Volts
No. 706 6 Volts
No. 716 9 Volts

"Eveready" Battery Number	NEDA Number	Chemical System	Overall Dimensions in inches L W H	Terminals & Voltages	Battery Weight lbs.	Battery Weight ozs.	Unit Pkg. Quan.	Sugg. Dealer Each	List Each	Major Use
B1	—	Nickel Cad.	1.980 Diam. x 0.394	Flat Contacts—, +1.25	—	2.0	1	2.58	3.70	
•B1T	—	Nickel Cad.	1.980 Diam. x 0.406	Solder Tabs—, +1.25	—	2.0	1	2.71	3.90	
BH1	—	Nickel Cad.	1.980 Diam. x 0.394	Flat Contacts—, +1.25	—	2.0	1	3.05	4.35	
•BH1T	—	Nickel Cad.	1.980 Diam. x 0.406	Solder Tabs—, +1.25	—	2.0	1	3.18	4.55	Instr., Hobby, Trans. Appl., M
CH-1.0	—	Nickel Cad.	1.034 Diam. x 1.167	Flat Contacts—, +1.25	—	1.8	1	2.32	3.35	
•CH1.0T	—	Nickel Cad.	1.034 Diam. x 1.177	Solder Tabs—, +1.25	—	1.8	1	2.45	3.55	
E1	1100	Mercury	0.625 Diam. x 0.645	Flat Contacts—, +1.35	—	0.43	4	0.63	0.95	
E1N	—	Mercury	0.625 Diam. x 0.645	Flat Contacts—, +1.35	—	0.43	4	0.63	0.95	
EPX-1	—	Mercury	0.625 Diam. x 0.650	Flat Contacts—, +1.35	—	0.43	4	0.63	0.95	Meters, Instr., Misc.
C1.2	—	Nickel Cad.	0.900 Diam. x 1.684	Flat Contacts—, Solder Tab +1.25	—	1.7	1	2.34	3.35	
•C1.2T	—	Nickel Cad.	0.900 Diam. x 1.689	Solder Tabs—, +1.25	—	1.7	1	2.47	3.55	Instr., Trans Appl., Misc.
CH1.2	—	Nickel Cad.	0.900 Diam. x 1.684	Flat Contact—, Solder Tab +1.25	—	1.9	1	2.58	3.70	
CH1.2T	—	Nickel Cad.	0.900 Diam. x 1.689	Solder Tabs—, +1.25	—	1.9	1	2.71	3.90	Camera Light Meter
CH1.5	—	Nickel Cad.	1.031 Diam. x 1.969	Flat Contact—, Solder Tab +1.25	—	2.3	1	4.52	6.45	
•CH1.5T	—	Nickel Cad.	1.031 Diam. x 1.974	Solder Tabs—, +1.25	—	2.3	1	4.65	6.65	
B2	—	Nickel Cad.	1.984 Diam. x 0.689	Flat Contact—, +1.25	—	3.3	1	4.21	6.00	
•B2T	—	Nickel Cad.	1.984 Diam. x 0.701	Solder Tabs—, +1.25	—	3.3	1	4.34	6.20	
C2	—	Nickel Cad.	1.344 Diam. x 2.406	Flat Contact—, Solder Tab +1.25	—	5.0	1	obs.	obs.	Instr., Hobby, Trans. Appl., M
•C2T	—	Nickel Cad.	1.344 Diam. x 2.416	Solder Tabs—, +1.25	—	5.0	1	obs.	obs.	
R2	—	Nickel Cad.	1 25/64 x 1 25/64 x 2 13/32	Nut, Stud & Tab, +1.25	—	6.0	1	6.86	9.80	
CH2.3	—	Nickel Cad.	1.344 Diam. x 1.508	Flat Contacts—, +1.25	—	3.2	1	5.62	8.00	
CH2.3T	—	Nickel Cad.	1.344 Diam. x 1.518	Solder Tabs—, +1.25	—	3.2	1	5.75	8.20	
B3	—	Nickel Cad.	1.984 Diam. x 0.984	Flat Contacts—, +1.25	—	5.0	1	5.31	7.59	Instr., Misc.
•B3T	—	Nickel Cad.	1.984 Diam. x 0.996	Solder Tabs—, +1.25	—	5.0	1	5.44	7.80	
E3	—	Mercury	0.985 Diam. x 0.660	Flat Contacts—, +1.35	—	1.0	4	1.05	1.50	Meters, Instr., Misc.
NP3.5-6T	—	Lead Acid	2 13/16 x 1 7/8 x 4 3/32	Solder Tabs—, +6	1	10.0	1	12.94	18.50	
PDA3.5-6W	—	Lead Acid	2 13/16 x 1 7/8 x 3 13/16	Wire Leads—, +6	1	5.0	1	8.62	12.50	Appl., Instr., Misc.
R3.5	—	Nickel Cad.	1 25/64 x 25/64 x 3 1/16	Nut, Stud & Tab—, +1.25	—	9.2	1	8.08	11.55	
CH4	—	Nickel Cad.	1.344 Diam. x 2.406	Flat Contact—, Solder Tab +1.25	—	5.4	1	6.30	9.00	Instr., Hobby, Trans. Appl., Mi
•CH4T	—	Nickel Cad.	1.344 Diam. x 2.416	Solder Tabs—, +1.25	—	5.4	1	6.43	9.20	
E4	—	Mercury	1.195 Diam. x 0.660	Flat Contacts—, +1.25	—	1.6	4	1.48	2.25	Meters, Instr., Misc.
EPX-4	—	Mercury	0.662 Diam. x 1.965	Flat Contacts—, +5.4	—	1.2	1	1.57	2.25	Camera
RH-4	—	Nickel Cad.	1 5/8 x 6 1/64 x 4 1/64	Nut & Stud—, +1.25	—	9.5	1	8.75	12.50	
R4.5	—	Nickel Cad.	1 31/32 x 4 5/64 x 3 5/32	Nut & Stud—, +1.25	—	13.4	1	9.12	13.00	Instr., Trans. Appl., Misc.
No. 6 "Ignitor" Gen. Purpose	905	Carb. Zinc	2 5/8 Diam. x 6 21/32	**Knurled Nut & Screw—, +1.5	2	1.0	1	0.99	1.49	Ign. Lighting
No. 6 "Gray Label" Telephone	906	Carb. Zinc	2 5/8 Diam. x 6 21/32	***Fahnestock—, +1.5	2	2.0	1	0.99	1.49	Tele.
No. 6 Railroad & Industrial	911	Carb. Zinc	2 5/8 Diam. x 6 21/32	**Knurled Nut & Screw—, +1.5	2	3.0	1	0.99	1.49	Ign., Tele.
EPX-6	—	Mercury	0.662 Diam. x 4.415	Flat Contacts—, +4.05, +8.1	—	1.6	1	2.75	3.95	Camera
NP6-6/T	—	Lead Acid	4 1/2 x 2 1/16 x 3 21/32	Solder Tabs—, +6	2	2.2	1	18.83	26.95	Appl., Instr., Misc.

*NEDA number same as an "Eveready" battery number on a different battery. Omitted to prevent errors in shipping.

**Equipped with screw terminals unless Fahnestock spring terminals are specified.

***Equipped with Fahnestock spring terminals unless screw terminals are specified.

•Items differ from corresponding sizes in that they have tabs enabling the user to solder leads to battery without damage.

□Flashlight types.

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EVEREADY

COMPLETE LINE SPECIFICATIONS

EVEREADY

NEDA Number	Chemical System	Overall Dimensions in inches L W H	Terminals & Voltages	Battery Weight lbs.	Battery Weight ozs.	Unit Pkg. Quan.	Sugg. Dealer Each	List Each	Major Use
—	Nickel Cad.	2 31/32 x 1 45/64 x 3 45/64	Nut & Stud—, +1.25	—	15.7	1	10.36	14.80	Instr., Trans. Appl.,Misc.
—	Nickel Cad.	1 5/8 x 3/4 x 4 1/4	Nut & Stud—, +1.25	—	14.7	1	14.47	20.75	
—	Nickel Cad.	2 31/32 x 1 45/64 x 4 1/4	Nut & Stud—, +1.25	1	1.2	1	11.40	16.25	
—	Lead Acid	6 x 2 x 3 7/8	Solder Tabs—, +6	3	6.0	1	20.55	29.50	Appl., Instr., Misc.
15M	Mercury	0.550 Diam. x 1.968	Flat Contacts—, +1.4	—	1.05	4	0.66	1.00	Trans. Radio
—	Nickel Cad.	3 19/32 x 1 1/16 x 4 45/64	Nut & Stud—, +1.25	1	12.0	1	14.52	20.75	Instr., Trans. Appl., Misc.
1101	Mercury	0.640 Diam. x 1.968	Flat Contacts—, +1.4	—	1.4	2	1.00	1.50	Trans. Radio
—	Mercury	0.640 Diam. x 1.968	Flat Contacts—, +1.35	—	1.4	2	1.05	1.50	Instr., Misc.
—	Mercury	0.310 Diam. x 0.210	Flat Contacts—, +1.4	—	0.04	6	0.27	0.40	Elec. Dev.
—	Silver	0.310 Diam. x 0.210	Flat Contacts—, +1.5	—	0.04	6	0.30	0.45	
—	Mercury	0.615 Diam. x 0.238	Flat Contacts—, +1.35	—	0.14	4	0.50	0.75	
—	Mercury	0.655 Diam. x 0.607	Flat Contacts—, +2.7	—	0.3	4	1.00	1.50	Camera Light Meter
—	Nickel Cad.	3 19/32 x 1 25/64 x 4 45/64	Nut & Stud—, +1.25	2	3.0	1	17.43	24.95	
—	Nickel Cad.	3 19/32 x 1 1/16 x 4 31/32	Nut & Stud—, +1.25	1	11.0	1	24.49	35.00	
—	Nickel Cad.	3 19/32 x 1 45/64 x 4 45/64	Nut & Stud—, +1.25	2	10.0	1	19.90	28.50	Instr., Trans. Appl. Misc.
—	Nickel Cad.	0.457 Diam. x 0.213	Flat Contacts—, +1.25	—	.4	1	1.16	1.65	
—	Nickel Cad.	0.457 Diam. x 0.223	Solder Tabs—, +1.25	—	.4	1	1.29	1.85	
—	Mercury	0.590 Diam. x 0.767	Flat Contacts—, +5.6	—	0.12	6	0.63	0.95	Photoflash
—	Nickel Cad.	3 19/32 x 2 1/64 x 4 45/64	Nut & Stud—, +1.25	3	2.0	1	22.83	32.75	Instr. Misc.
—	Mercury	0.660 Diam x 0.845	Flat Contacts—, +4.05	—	0.45	2	1.65	2.50	Photo.
—	Mercury	0.475 Diam. x 0.680	Flat Contacts—, +4.05	—	0.3	2	1.29	1.95	Photo.
—	Carb. Zinc	1 1/32 Diam. x 1 15/16	Flat Contacts—, +1.5	—	1.4	6	0.39	0.60	Elec. Clock
—	Mercury	0.455 Diam. x 0.162	Flat Contacts—, +1.4	—	0.07	6	0.27	0.40	Elec. Dev.
—	Silver	0.455 Diam. x 0.165	Flat Contacts—, +1.5	—	0.04	6	0.30	0.45	Novelties
13M	Mercury	1 7/32 Diam. x 2.390	Flat Contacts—, +1.4	—	5.85	1	3.20	4.75	Instr., Trans. Appl., Miscl.
—	Mercury	1 7/32 Diam. x 2.390	Flat Contacts—, +1.35	—	5.85	1	3.27	4.90	
—	Nickel Cad.	0.610 Diam. x 0.235	Flat Contcats—, +1.25	—	0.12	1	0.88	1.25	
—	Nickel Cad.	0.610 Diam. x 0.245	Solder Tabs—, +1.25	—	0.12	1	1.01	1.45	
—	Carb. Zinc	1 11/32 Diam. x 2 13/32	Flat Contacts—, +1.5	—	3.3	6	0.48	0.75	
—	Nickel Cad.	2.81 x 2.81 x 1.32	Spade Terminals—, +14.4	—	12.5	1	29.09	41.50	Elec. Clock
—	Nickel Cad.	1 31/64 x 1 33/64 x 4 13/64	Wire Leads—, +6.25	—	8.3	1	17.92	25.50	Instr., Trans. Appl., Misc.
—	Nickel Cad.	3 7/8 x 1 5/16 x 4 31/32	Wire Leads—, +6.25	1	12.0	1	27.27	38.95	
—	Silver	0.455 Diam. x 0.200	Flat Contacts—, +1.5	—	0.08	6	0.33	0.50	Novelties
1107A	Alkaline	0.455 Diam. x 0.220	Flat Contacts—, +1.5	—	0.09	6	0.66	1.00	Camera Lt. Meter
910A	Silver	0.470 Diam. x 1.130	Flat Contacts—, +1.5	—	0.35	2	0.33	0.50	Radio, Electr. Dev.
15A	Alkaline	5/16 Diam. x 1 31/32	Flat Contacts—, +1.5	—	0.75	24	0.39	0.60	
24A	Alkaline	0.410 Diam. x 1.745	Flat Contacts—, +1.5	—	0.4	12	0.39	0.60	Electr. Photoflash
14A	Alkaline	1 1/32 Diam. x 1 15/16	Flat Contacts—, +1.5	—	2.2	12	0.49	0.75	Radio, Electr. Dev.
927	Alkaline	1 11/32 Diam. x 1 13/64	Flat Contacts—, +1.5	—	2.1	12	0.52	0.80	Spec. Lighting Appl.
13A	Alkaline	1 11/32 Diam. x 2 13/32	Flat Contacts—, +1.5	—	4.5	12	0.63	0.95	Electr. Photoflash, Comm. Equip.
13D	Carb. Zinc	1 11/32 Diam. x 2 13/32	Flat Contacts—, +1.5	—	3.3	48	.2225	0.35	Flashlight, Toys
—	Nickel Cad.	0.992 Diam. x 0.252	Flat Contacts—, +1.25	—	0.32	1	0.95	1.35	Instr.
—	Nickel Cad.	0.992 Diam. x 0.264	Solder Tabs—, +1.25	—	0.32	1	1.08	1.55	
—	Mercury	0.660 Diam. x 0.845	Flat Contacts—, +4.05	—	0.43	2	1.80	2.70	
—	Mercury	0.660 Diam. x 1.08	Flat Contacts—, +5.40	—	0.57	2	1.97	2.95	
—	Mercury	0.660 Diam. x 1.4	Flat Contacts—, +7	—	0.71	2	2.14	3.25	
—	Mercury	0.660 Diam. x 1.4	Flat Contacts—, +6.75	—	0.71	2	2.14	3.25	
1611M	Mercury	0.724 Diam. x 2	Flat Contacts—, +8.4	—	1.65	1	1.48	2.25	Trans. Radio
1200	Mercury	0.662 Diam. x 1.315	Flat Contacts—, +2.8	—	0.94	2	1.15	1.75	Instr., Trans. Appl.
—	Mercury	0.662 Diam. x 1.315	Flat Contacts—, +2.7	—	0.94	2	1.15	1.75	
1306M	Mercury	0.662 Diam. x 1.965	Flat Contacts—, +4.2	—	1.42	12	1.48	2.25	
—	Mercury	0.662 Diam. x 1.965	Flat Contacts—, +4.05	—	1.42	2	1.48	2.25	
—	Mercury	0.662 Diam. x 2.620	Flat Contacts—, +5.6	—	1.89	2	1.57	2.25	
—	Mercury	0.662 Diam. x 2.620	Flat Contacts—, +5.4	—	1.89	2	1.80	2.70	
—	Mercury	0.662 Diam. x 3.275	Flat Contacts—, +7	—	0.4	2	1.97	2.95	
—	Mercury	0.662 Diam. x 3.275	Flat Contacts—, +6.75	—	0.4	2	2.14	3.25	
—	Mercury	0.662 Diam. x 3.930	Flat Contacts—, +8.4	—	0.4	2	2.27	3.25	
—	Mercury	0.662 Diam. x 3.930	Flat Contacts—, +8.1	—	0.4	2	2.50	3.75	
—	Mercury	0.662 Diam. x 4.585	Flat Contacts—, +9.8	—	3.34	1	2.63	3.95	
—	Mercury	0.662 Diam. x 4.585	Flat Contacts—, +9.45	—	0.2	1	2.83	4.25	
—	Mercury	2 1/32 Diam. x 1 3/16	Flat Contacts—, +7	—	0.7	2	1.83	2.25	
1604M	Mercury	1 1/32 x 5/8 x 2	Min. Snap, +8.4	—	1.6	6	1.32	1.95	
—	Nickel Cad.	0.992 Diam. x 0.272	Flat Contacts—, +1.25	—	0.4	1	0.97	1.40	Instr., Trans. Appl., Misc.
—	Nickel Cad.	0.992 Diam. x 0.284	Solder Tabs—, +1.25	—	0.41	1	1.10	1.60	
—	Mercury	0.485 Diam. x 1.140	Flat Contacts—, +2.8	—	0.4	2	1.00	1.50	
—	Mercury	0.485 Diam. x 1.140	Flat Contacts—, +2.7	—	0.2	2	1.15	1.75	
—	Mercury	0.485 Diam. x 1.708	Flat Contacts—, +4.2	—	0.6	2	1.27	1.85	Instr.
—	Mercury	0.485 Diam. x 1.708	Flat Contacts—, +4.5	—	3.2	2	1.48	2.25	
—	Mercury	0.662 Diam. x 0.887	Flat Contacts—, +2.7	—	0.58	2	1.15	1.75	
1305	Mercury	0.662 Diam. x 1.327	Flat Contacts—, +4.2	—	0.9	2	1.48	2.25	
—	Mercury	0.662 Diam. x 1.327	Flat Contacts—, +4.05	—	0.87	2	1.65	2.45	
1404	Mercury	0.662 Diam. x 1.767	Flat Contacts—, +5.6	—	1.2	12	1.48	2.25	Instr., Trans. Appl.
—	Mercury	0.662 Diam. x 1.767	Flat Contacts—, +5.4	—	1.16	2	1.57	2.25	
1500	Mercury	0.662 Diam. x 2 7/32	Flat Contacts—, +7	—	1.2	2	1.48	2.25	
—	Mercury	0.662 Diam. x 2 7/32	Flat Contacts—, +6.75	—	1.45	2	1.97	2.95	
1901	Mercury	0.622 Diam. x 3 3/64	Flat Contacts—, +12.6	—	4.2	1	3.50	4.95	
1501	Mercury	1/2 Diam. x 1 3/32	Flat Contacts—, +7	—	1.0	1	1.15	1.75	
1606A	Mercury	3/4 Diam. x 1 23/32	Min. Snap—, +9	—	0.8	1	1.48	2.25	Trans. Radio
1611	Carb. Zinc	3/4 Diam. x 2	Flat Contact, Neg. Recess.—, +9	—	1.2	6	0.62	0.89	
1604	Carb. Zinc	1 1/32 x 2 1/32 x 1 23/32	Min. Snap—, +9	—	1.5	12	0.48	0.69	
1604D	Carb. Zinc	1 1/32 x 2 1/32 x 1 23/32	Min. Snap—, +9	—	1.5	12	0.64	0.98	
—	Nickel Cad.	0.992 Diam. x 0.35	Flat Contacts—, +1.25	—	0.44	1	1.00	1.45	Instr., Hobby Trans. Appl. Misc.
—	Nickel Cad.	0.992 Diam. x 0.363	Solder Tabs—, +1.25	—	0.45	1	1.16	1.65	
—	Nickel Cad.	0.992 Diam. x 0.358	Flat Conatcts—, +1.25	—	0.46	1	1.13	1.60	
—	Nickel Cad.	0.992 Diam. x 0.370	Solder Tabs—, +1.25	—	0.47	1	1.26	1.80	
1600	Carb. Zinc	1 Diam. x 1 15/16	Snap Type—, +9	—	2.0	6	0.68	0.98	Trans. Radio
1810	Carb. Zinc	1 Diam. x 2 7/16	Snap Type—, +12	—	2.3	1	1.05	1.50	
1300	Mercury	1 1/64 Diam. x 1 31/32	Flat Contacts—, +4.2	—	3.0	1	2.60	3.95	Instr.
—	Mercury	1 1/64 Diam. x 1 31/32	Flat Contacts—, +4.05	—	3.2	1	2.83	4.25	
—	Mercury	1 1/64 Diam. x 2 5/8	Flat Contacts—, +5.6	—	4.2	1	2.70	3.95	
—	Mercury	1 1/64 Diam. x 2 5/8	Flat Contacts—, +5.4	—	3.88	1	3.17	4.75	
—	Mercury	1.015 Diam. x 3 5/16	Flat Contacts—, +6.75	—	5.0	1	3.80	5.70	
—	Mercury	1.015 Diam. x 3 23/32	Flat Contacts—, +8.1	—	5.6	1	4.33	6.50	
1900	Carb. Zinc	1 31/64 x 1 1/32 x 2 11/16	Socket—, +9, +13.5	—	3.0	1	1.36	1.95	Trans. Radio Instr.
1610	Carb. Zinc	1 13/32 x 1 11/32 x 2 3/4	Min. Snap—, +4.5	—	4.5	1	1.36	1.95	
1602	Carb. Zinc	1 13/16 x 1 13/16 x 2 3/4	Min. Snap—, +9	—	4.5	1	1.36	1.95	
1605	Carb. Zinc	1 13/16 x 1 13/16 x 2 7/16	Snap Type—, +9	—	7.0	1	1.36	1.95	
1603	Carb. Zinc	2 5/16 x 2 1/32 x 3 3/32	Snap Type—, +9	—	15.0	1	1.57	2.25	
1600M	Mercury	1 Diam. x 1 15/16	Flat Contacts—, +8.4	—	1.6	1	1.48	2.25	
1810M	Mercury	1 Diam. x 2 13/32	Snap Type—, +12.6	—	3.6	1	2.70	3.95	
—	Mercury	0.312 Diam. x 0.140	Flat Contacts—, +1.4	—	0.03	6	0.245	0.35	

A number same as an "Eveready" battery number on a different battery.
ted to prevent errors in shipping.

ilight types.

• Items differ from corresponding sizes in that they have tabs enabling the user to solder leads to battery without damage.

■ Furnished with Fahnestock spring terminals. If socket terminals required specify W-363P. W-364P. W-365P.

EVEREADY

COMPLETE LINE SPECIFICATIONS

EVEREADY

"Eveready" Battery Number	NEDA Number	Chemical System	Overall Dimensions in inches L	W	H	Terminals & Voltages	Battery Weight lbs.	Battery Weight ozs.	Unit Pkg. Quan.	Sugg. Dealer Each	List Each	Major Use
S312	—	Silver	0.312 Diam. x 0.140			Flat Contacts—, +1.4	—	0.02	6	0.27	0.40	Electr. Dev.
333	1306	Carb. Zinc	0.662 Diam. x 1.965			Flat Contacts—, +4.5	—	0.9	6	0.68	0.98	Trans. Radio
W-350	*	Carb. Zinc	3 1/16	1 7/8	4 31/32	Knurled Nut & Screw—, +22.5, +45	—	14.5	1	2.69	3.85	Instr.
W-352	701	Carb. Zinc	2 5/8	1 5/16	4 1/32	Knurled Nut & Screw—, +3	—	12.0	1	1.33	1.90	Electr. Dev. Instr.
W-353	11	Carb. Zinc	2 1/32	1 3/8	4 3/32	Socket—, +1.5	—	12.5	1	1.22	1.75	Port. Radio
W-356	*	Carb. Zinc	2 5/8	2 5/8	4 3/16	Knurled Nut & Screw—, +3	1	6.0	1	1.92	2.75	Radio & Electr. Dev.
W-357	901	Carb. Zinc	3 25/32	2 1/16	5 13/16	Fahnestock—, +3	2	12.0	1	1.92	2.75	Model Ign., Tele.
W-359	*	Carb. Zinc	3 1/16	2 1/4	4 1/2	Socket—, +45	1	11.8	1	3.46	4.95	Port. "B"
W-361	227	Carb. Zinc	1 3/8	1 3/8	11 25/32	Flat Contacts—, +103.5	1	4.0	1	4.86	6.95	
W-362	—	Carb. Zinc	2 27/32	1 25/32	1 29/32	Knurled Nut & Screw+, −4.5, −7.5	—	1.5	1	2.45	3.50	Radio "C"
■W-363F	*	Carb. Zinc	8 1/32	4 1/16	7 5/8	Fahnestock—, +22.5, +45	10	5.0	1	7.66	10.95	Heavy Duty Radio "B"
W-364F	*	Carb. Zinc	8 1/8	4 7/16	7 11/16	Fahnestock—, +22.5, +45	11	14.0	1	8.37	11.95	
*W-365F	723	Carb. Zinc	8 1/16	2 1/4	4 23/32	Fahnestock—, +22.5, +45	7	7.5	1	7.66	10.95	Ind. "B"
E400	1106	Mercury	0.445 Diam. x 0.135			Flat Contacts—, +1.4	—	0.04	6	0.33	0.50	Trans. Appl.
E400N	—	Mercury	0.445 Diam. x 0.135			Flat Contacts—, +1.35	—	0.04	6	0.50	0.75	
E401	910M	Mercury	0.470 Diam. x 1.130			Flat Contacts—, +1.4	—	0.4	3	0.56	0.85	
E401N	—	Mercury	0.470 Diam. x 1.130			Flat Contacts—, +1.35	—	0.4	2	0.63	0.95	
409	908C	Carb. Zinc	2 5/8	2 5/8	4 13/32	Coil Springs—, +6	1	6.5	1	—	—	Lanterns
411	208	Carb. Zinc	1 1/32	5/8	1 29/64	Flat Contacts—, +15	—	0.95	1	1.00	1.50	Lanterns
412	215	Carb. Zinc	1 1/32	5/8	2	Flat Contacts—, +22.5	—	1.3	1	1.17	1.75	
413	210	Carb. Zinc	1 1/32	5/8	2 5/16	Flat Contacts—, +30	—	1.6	1	1.30	1.95	
415	213	Carb. Zinc	1 3/64	5/8	3 1/16	Min. Snap—, +45	—	2.5	1	1.75	2.50	
416	217	Carb. Zinc	1 3/64	6 3/64	3 1/2	Min. Snap—, +67.5	—	4.0	1	2.07	2.95	
417	224	Carb. Zinc	1 2/64	6 3/64	3 1/2	Flat Contacts—, +15	—	1.8	1	1.56	2.25	
420	225	Carb. Zinc	1 5/16	1 1/32	1 1/16	Flat Contacts—, +22.5	—	2.5	1	1.65	2.35	
425P	—	Carb. Zinc	1 2/64	1 1/32	3 1/16	Socket—, +22.5	—	4.1	1	2.10	3.00	Instr.
430	*	Carb. Zinc	1 5/16	1	2 13/16	Flat Contacts—, +30	—	3.2	1	1.92	2.75	Port. Radio "B"
437	212	Carb. Zinc	1 13/16	1 13/32	6 13/32	Snap Type—, +75	—	14.8	1	3.15	4.50	Port. Radio "B"
B450	—	Nickel Cad.	1.697 Diam. x 0.315			Flat Contacts—, +1.25	—	1.16	1	1.51	2.15	Instr., Hobby, Trans. Appli., M
•B450T	—	Nickel Cad.	1.697 Diam. x 0.327			Solder Tabs—, +1.25	—	1.16	1	1.64	2.35	
C450	—	Nickel Cad.	0.563 Diam. x 1.969			Flat Contacts—, +1.25	—	obs.	1	obs.	obs.	
•450T	—	Nickel Cad.	0.563 Diam. x 1.969			Solder Tabs—, +1.25	—	obs.	1	obs.	obs.	
E450	—	Mercury	0.455 Diam. x 0.570			Flat Contacts—, +1.35	—	0.18	4	0.56	0.85	Instr.
455	*	Carb. Zinc	2 31/32	1	3 11/16	Snap Type—, +45	—	7.8	1	2.27	3.25	Port. Radio "B"
455P	—	Carb. Zinc	2 27/32	1 1/64	3 29/32	Sockets—, +45	—	8.6	1	2.27	3.25	Instr.
457	203	Carb. Zinc	2 13/16	1 3/8	2 1/2	Snap Type—, +67.5	—	7.4	1	2.70	3.85	Port. Radio "B'
†460K	—	Carb. Zinc	1 29/64	1 3/8	2 3/8	Flat Contacts—, +45	—	5.3	1	1.97	2.95	Photoflash
467	200	Carb. Zinc	2 13/16	1 3/8	3 45/64	Snap Type—, +67.5	—	12.0	1	2.70	3.85	Port. Radio "B"
468	200C	Carb. Zinc	2 13/16	1 3/8	3 45/64	Snap Type—, +67.5	—	12.0	1	2.77	3.95	Radio, Electr. Dev.
477	211	Carb. Zinc	1 29/32	6 3/64	5 7/16	Snap Type—, +67.5	—	8.6	1	2.70	3.85	Port. Radio "B"
479	214	Carb. Zinc	1 31/32	1 1/32	7 13/32	Snap Type—, +90	—	12.0	1	2.97	4.25	
482	202	Carb. Zinc	3 19/32	2 7/32	5 1/2	Socket—, +45	1	15.0	1	2.97	4.25	
484	207	Carb. Zinc	3 31/32	2 17/32	5 5/32	Socket—, +45	3	2.0	1	3.47	4.95	Flour. Lantern
487	—	Carb. Zinc	5 1/8	2 1/16	7 1/4	Socket—, +22.5, +54	4	2.0	1	3.84	5.50	Farm Radio "B"
489	—	Carb. Zinc	4 11/32	2 11/16	4 3/16	Socket—, +225	2	12.0	1	6.96	9.95	Electr. Flash
490	204	Carb. Zinc	3 25/32	1 3/8	3 45/64	Snap Type—, +90	—	15.0	1	3.15	4.50	Port. Radio "B"
491	—	Carb. Zinc	2 13/32	1 5/16	4 1/2	Flat Recessed & Socket—, +240	—	13.0	1	6.26	8.95	Electr. Flash
492	—	Carb. Zinc	3 1/16	2 25/32	4 23/32	Socket—, +180, +225	2	8.0	1	8.35	11.95	
493	722	Carb. Zinc	2 11/16	2 7/32	3 29/32	Pinjacks—, +300	—	14.5	1	9.07	12.95	Geiger Counter
495	*	Carb. Zinc	1 15/16	1 13/32	7 1/8	Snap Type—, +90	1	—	1	3.86	5.50	Port. Radio "B"
497	—	Carb. Zinc	3	1 13/32	5 5/8	Flat Recessed—, +180, +510	1	10.0	1	11.87	16.95	Electr. Flash
BH500	—	Nickel Cad.	1.360 Diam. x 0.394			Flat Contacts—, +1.25	—	1.0	1	1.82	2.60	Instr., Hobby, Trans. Appl., M
•BH500T	—	Nickel Cad.	1.360 Diam. x 0.416			Solder Tabs—, +1.25	—	1.0	1	1.95	2.80	
CH500	—	Nickel Cad.	0.563 Diam. x 1.969			Flat Contacts—, +1.25	—	0.8	1	2.24	3.20	Instr., Hobby, Misc.
•CH500T	—	Nickel Cad.	0.563 Diam. x 1.974			Solder Tabs, +1.25	—	1.4	1	2.08	3.00	
E502	—	Mercury	0.550 Diam. x 1.968			Flat Contacts—, +1.35	—	1.05	2	1.00	1.50	Trans. Appl.
504	220	Carb. Zinc	5/8	1 3/32	1 3/8	Flat Contacts—, +15	—	0.6	1	1.00	1.50	Instr.
505	21	Carb. Zinc	5/8	1 9/32	1 45/64	Flat Recessed—, +22.5	—	0.9	1	1.17	1.75	
506	223	Carb. Zinc	1 13/16	5/8	1 37/64	Flat Contacts—, +30	—	0.9	1	1.75	2.50	
507	*	Carb. Zinc	5/8	1 3/32	2.605	Flat Contacts—, +30	—	0.9	1	1.30	1.85	
509	908	Carb. Zinc	2 5/8	2 5/8	4 13/32	Coil Springs—, +6	1	5.5	1	0.99	1.49	Lantern
510F	917	Carb. Zinc	2 5/8	2 5/8	4 15/16	Fahnestock—, +6	1	4.0	1	1.06	1.59	Misc.
510S	*	Carb. Zinc	2 5/8	2 5/8	4 5/16	Knurled Nut & Screw—, +6	1	7.0	1	0.99	1.49	
520	930	Alkaline	5 17/32	4 1/32	2 21/32	Ins. Screw—, +6	2	8.0	1	3.57	5.50	Lantern
E520	—	Mercury	0.495 Diam. x 0.286			Flat Contacts—, +1.4	—	0.07	6	1.00	1.50	Trans. Appl.
523	1306A	Alkaline	0.662 Diam. x 1.965			Flat Contacts—, +4.5	—	1.17	1	1.00	1.50	Photoflash, Trans. Radio
531	1307	Alkaline	0.664 Diam. x 2.290			Min. Snap—, +4.5	—	1.25	1	1.00	1.50	Auotomatic Camera
532	1308	Alkaline	0.664 Diam. x 1.670			Snap Type—, +3	—	0.8	1	0.82	1.25	
544	1460A	Silver Oxide	0.510 Diam. x 0.990			Flat Contacts—, +6	—	0.5	1	1.57	2.50	Photo.
560	—	Alk. Sec.	2 21/32	1 17/32	7 5/32	Socket—, +7.5	1	9.0	1	4.62	6.95	Electr. Dev.
561	—	Alk. Sec.	8 5/16	2 13/32	5 7/8	Socket—, +15	6	—	1	10.62	15.95	Micro Television
563	—	Alk. Sec.	1 25/64	Diam. x 7 5/32		Flat Contacts—, +4.5	—	15.0	3	2.76	4.15	
564	—	Alk. Sec.	8 5/16	2 13/16	x 5 7/8	Socket—, +13.5	5	8.0	1	9.94	14.95	
596	—	Alk. Sec.	1.375 Diam. x 3713			Flat Contacts—, +1.5	—	7.5	1	1.20	1.75	
E601	—	Mercury	0.627 Diam. x 1.140			Flat Contacts—, +1.35	—	1.22	2	1.00	1.50	Instr.
621	—	Carb. Zinc	2 1/16	Diam. x 13		Knurled Nut & Screw—, +3	4	10.0	1	3.68	5.50	Fishing Buoy
E625	—	Mercury	0.615 Diam. x 0.238			Flat Contacts—, +1.4	—	0.15	4	0.43	0.65	Trans. Appl.
E625N	—	Mercury	0.615 Diam. x 0.238			Flat Contacts—, +1.35	—	0.15	4	0.56	0.85	
EPX-625	—	Mercury	0.615 Diam. x 0.238			Flat Contacts—, +1.35	—	0.15	4	0.50	0.75	Camera Light Meter
E630	1104	Mercury	0.615 Diam. x 0.238			Flat Contacts—, +1.4	—	0.17	4	0.50	0.75	Trans. Radio
E630N	—	Mercury	0.615 Diam. x 0.238			Flat Contacts—, +1.35	—	0.05	4	0.56	0.85	Instr.
E640	1105	Mercury	0.625 Diam. x 0.440			Flat Contacts—, +1.4	—	0.28	4	0.42	0.60	Trans. Radio
640N	—	Mercury	0.625 Diam. x 0.440			Flat Contacts—, +1.35	—	0.15	4	0.56	0.85	Instr.
EPX640	—	Mercury	0.625 Diam. x 0.440			Flat Contacts—, +1.35	—	0.13	2	0.50	0.75	Photo.
E675	—	Mercury	0.445 Diam. x 0.210			Flat Contacts—, +1.4	—	0.09	6	0.32	0.45	Instr.
EPX675	—	Mercury	0.445 Diam. x 0.210			Flat Contacts—, +1.35	—	0.09	6	0.50	0.75	Photo.
703	*	Carb. Zinc	2 1/16	x 27/32	x 3 1/16	Spring—, +4.5	—	5.0	1	1.36	1.95	Instr,
706	902	Carb. Zinc	8 5/16	x 2 13/16	x 6 7/16	Ins. Screw—, +6	5	14.0	1	4.01	5.98	Ign., Emerg. Lighting
707	26	Carb. Zinc	2 5/16	x 2 1/32	x 2 13/16	Snap Type—, +7.5	—	12.0	1	1.15	1.65	Port. Radio "A"
711	700	Carb. Zinc	2 5/8	x 1 5/16	x 4 1/32	Knurled Nut & Screw—, +1.5	—	12.0	1	0.84	1.25	Model Ign. "Glo-Plug"
713	8	Carb. Zinc	3 29/32	x 53/64	x 2 27/32	Socket—, +7.5	—	9.0	1	2.27	3.25	Port. Radio "A"
714	—	Carb. Zinc	3 31/32	x 1 11/32	x 3 1/2	Knurled Nut & Screw—, +4.5	—	14.5	1	1.57	2.25	Tele. Test Sets
715	903	Carb. Zinc	7 1/4	x 4 1/16	x 6 7/16	Ins. Screw—, +7.5	7	10.0	1	4.86	7.25	Ign., Emerg. Lighting
716	*	Carb. Zinc	8 37/64	x 4 1/16	x 6 7/16	Ins. Screw—, +9	8	8.0	1	5.53	8.25	
717	9	Carb. Zinc	2 5/32	x 1 13/16	x 3 1/32	Socket—, +7.5	—	8.0	6	1.23	1.75	
718	1	Carb. Zinc	3 19/32	x 2 3/4	x 5 1/16	Socket—, +6	2	4.0	1	2.87	4.10	
720	18	Carb. Zinc	2 25/32	x 1 13/32	x 3 1/32	Socket—, +1.5	—	6.5	1	1.15	1.65	Port. Radio "A"
724	2	Carb. Zinc	1 7/32	x 1 7/32	x 2 1/32	Flat Contacts—, +6	—	2.5	1	0.87	1.25	
726	19	Carb. Zinc	4 1/32	x 1 7/16	x 2 15/16	Socket—, +4.5	—	10.5	1	1.23	1.75	

*NEDA number as an "Eveready" battery number on a different battery. Omitted to prevent errors in shipping.

**Equipped with screw terminals unless Fahnestock spring terminals are specified.

***Equipped with Fahnestock spring terminals unless screw terminals are specified.

•Items differ from corresponding sizes in that they have tabs enabli user to solder leads to battery without damage.

□Flashlight types.

■Furnished with Fahnestock spring terminals. If socket terminals re specify W-363P, W-365P.

†Contains 1 "Eveready" No. 460 battery, and No. 428 lamp.

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EVEREADY

COMPLETE LINE SPECIFICATIONS

EVEREADY

NEDA Number	Chemical System	Overall Dimensions in inches L	W	H	Terminals & Voltages	Battery Weight lbs.	Battery Weight ozs.	Unit Pkg. Quan.	Sugg. Dealer Each	List Each	Major Use
425	Carb. Zinc	3 27/32	2 1/32	7 13/16	Socket— "A", +1.5 "A", —"B", +90 "B"	2	7.0	1	5.33	7.65	Port. Radio "A-B"
918	Carb. Zinc	5 11/32	2 27/32	4 15/16	Ins. Screw—, +6	3	4.0	1	2.15	3.25	Lantern
926	Carb. Zinc	5 11/32	2 27/32	4 15/16	Ins. Screw—, +12	3	4.0	1	2.33	3.50	Lantern
900	Carb. Zinc	5 5/8	5 5/8	4 3/8	Knurled Nut & Screw—, +1.5	1	7.0	1	0.99	1.49	Model Ign. "Glo-Plug"
3	Carb. Zinc	3 1/16	1 5/16	4	Socket—, +4.5	1	—	1	1.23	1.75	Port. Radio "A"
205	Carb. Zinc	3	2 5/16	4 1/8	Socket—, +22.5, +45	1	3.0	1	2.97	4.25	Port. Radio "B"
17	Carb. Zinc	3 25/32	2 11/16	5 3/8	Socket—, +1.5	2	10.0	1	2.90	4.15	Port. Radio "A"
4	Carb. Zinc	2 5/8	2 5/8	3 27/32	Socket—, +1.5	1	6.0	1	1.15	1.65	
5	Carb. Zinc	3 1/16	2 5/8	4 1/32	Socket—, +1.5	1	15.0	1	2.69	3.85	
*	Carb. Zinc	2 5/8	2 5/8	3 27/32	Socket—, +6	1	6.0	1	1.15	1.65	
7	Carb. Zinc	3 1/16	1 15/16	4 11/32	Socket—, +4.5	1	3.0	1	1.76	2.50	
704	Carb. Zinc	1 11/32	1 1/16	2 21/32	Spring—, +3	—	2.0	1	0.79	1.15	Instr.
—	Nickel Cad.	0.900 Diam. x 1.684			Flat Contacts—, +1.25	—	1.4	1	2.08	3.00	Instr., Trans. Appl., Misc.
—	Nickel Cad.	0.900 Diam. x 1.689			Solder Tabs—, +1.25	—	1.4	1	2.21	3.20	
705	Carb. Zinc	2 x 1 1/16 x 2 21/32			Spring—, +4.5	—	3.0	1	0.87	1.25	Instr.
400	Carb. Zinc	14 1/16 x 2 1/16 x 4 1/16			Recessed Plug— "A", +9 "A", —"B", +90 "B"	6	2.0	1	7.20	10.50	Port. Radio "A-B"
401	Carb. Zinc	9 1/32 x 2 23/32 x 4 5/16			Socket—"A", +7.5 "A", +9 "A", —"B", + "B"	4	12.0	1	6.92	9.95	
403	Carb. Zinc	8 5/16 x 3 3/4 x 2 7/16			Socket— "A", +6 "A", +7.5 "A", —"B", +75 "B"	3	9.0	1	6.27	8.95	
405	Carb. Zinc	8 7/8 x 2 1/8 x 3 23/32			Socket—"A", +7.5 "A", +9 "A", —"B" +90 "B"	2	14.0	1	5.96	8.50	
406	Carb. Zinc	9 1/32 x 2 23/32 x 4 7/32			Recessed Plug— "A", +9 "A", —"B", +90 "B"	4	12.0	1	7.20	10.50	Farm Radio "A-B"
*	Carb. Zinc	15 1/16 x 4 1/32 x 6 13/16			Socket— "A", +1.5 "A", — "B", +90 "B"	16	4.0	1	8.91	11.95	Tele. Test Sets
712	Carb. Zinc	4 1/16 x 1 13/32 x 3 1/2			Knurled Nut & Screw—, +1.5, +3, +4.5	—	14.0	1	1.76	2.50	Instr.
709	Carb. Zinc	4 3/32 x 2 3/16 x 5 7/16			Knurled Nut & Screw—, +22.5, +45	2	12.0	1	3.05	4.35	
710	Carb. Zinc	3 1/2 x 2 3/32 x 2 15/16			Knurled Nut & Screw—, +22.5	—	14.0	1	1.61	2.35	
702	Carb. Zinc	6 3/4 x 4 1/8 x 3 15/16			Fahnestock—, +16.5, +18, +19.5, +21, +22.5	4	10.0	1	5.56	7.95	Switchbd. Testing
*	Carb. Zinc	3 29/32 x 7/8 x 3 1/8			5 Knurled Nut & Screws, 1 wire+, —1.5, —3, —4.5, —7.5	—	9.0	1	1.75	2.50	Radio "C"
708	Carb. Zinc	4 1/8 x 2 11/32 x 3 7/16			Fahnestock+, —3, —4.5, —6, —9, —10.5, —16.5, —22.5	1	8.0	1	4.16	5.95	Instr.
*	Carb. Zinc	2 15/32 x 5 5/64 x 3			Knurled Nut & Screw—, +4.5	—	5.0	1	1.23	1.75	
—	Carb. Zinc	5 9/32 x 1 7/16 x 3 1/4			Flat Contacts—, +3	1	1.5	1	2.97	4.25	Fingerprint Camera
—	Carb. Zinc	8 5/32 x 4 1/4 x 8 13/32			Fahnestock—, +22.5, +45, +49.5	13	5.0	1	10.47	14.95	Camera Cranking
24P	Carb. Zinc	13/32 Diam. x 1 3/4			Flat Contacts—, +1.5	—	0.3	12	0.1625	0.25	Photoflash
15P	Carb. Zinc	5/16 Diam. x 1 31/32			Flat 2 Cntacts—, +1.5	—	0.6	24	0.1625	0.25	
325 —	Alkaline	0.905 Diam. x 0.228			Flat Contacts—, +1.5	—	0.026	2	0.33	0.50	
14P	Carb. Zinc	1 1/32 Diam. x 1 15/16			Flat Contacts—, +1.5	—	1.4	24	0.19	0.30	
13P	Carb. Zinc	1 11/32 Diam. x 2 13/32			Flat Contacts—, +1.5	—	3.3	12	0.19	0.30	
—	Nickel Cad.	5/16 Diam. x 3 35/64			Solder Tabs—, +1.25	—	1.4	1	3.09	4.40	Trans. Appl.
910F	Carb. Zinc	0.455 Diam. x 1.180			Flat Contacts—, +1.5	—	0.22	6	0.095	0.15	Novelties
24F	Carb. Zinc	13/32 Diam. x 1 3/4			Flat Contacts—, +1.5	—	0.3	12	0.13	0.20	Flashlight, Toys
15F	Carb. Zinc	5/16 Diam. x 1 31/32			Flat Contacts—, +1.5	—	0.6	24	0.13	0.20	
14F	Carb. Zinc	1 1/32 Diam. x 1 15/16			Flat ontacts—, +1.5	—	1.4	1	0.87	1.25	
13F	Carb. Zinc	1 11/32 Diam. x 2 13/32			Flat Contacts—, +1.5	—	3.0	24	0.1625	0.25	
23	Carb. Zinc	1 11/32 Diam. x 4 1/16			Socket—, +1.5	—	5.0	48	0.1625	0.25	Port. Radio "A"
20	Carb. Zinc	1 11/32 Diam. x 4			Flat Contacts—, +1.5	—	5.9	1	0.52	0.75	
—	Nickel Cad.	6 13/32 x 3 7/32 x 3 1/8			Socket—, +10	3	13.0	1	49.00	58.00	Port. Tools
—	Nickel Cad.	2 3/16 x 1 1/16 x 3 15/16			Ins. Screw—, +1.25	—	4.0	1	5.30	7.95	Model Ign. "Go-Plug"
15	Carb. Zinc	5/16 Diam. x 1 31/32			Flat Contacts—, +1.5	—	0.6	24	0.155	0.25	Trans. Radio
14	Carb. Zinc	1 1/32 Diam. x 1 15/16			Flat Contacts—, +1.5	—	1.4	24	0.19	0.30	
13	Carb. Zinc	1 11/32 Diam. x 2 13/32			Flat Contacts—, +1.5	—	3.0	48	0.19	0.30	
13C	Carb. Zinc	1 11/32 Diam. x 2 13/32			Flat Contacts—, +1.5	—	3.3	48	—	—	Ind. Flashlights
907	Carb. Zinc	10 7/16 x 2 23/32 x 7 7/32			Knurled Nut & Screw—, +6	9	4.0	1	3.85	5.75	Ign., Fence oCnt.
—	Carb. Zinc	5 1/4 x 5 1/4 x 7 1/4			Knurled Nut & Screw—, +6	9	7.0	1	4.33	6.50	
922	Carb. Zinc	10 7/16 x 2 23/32 x 7 7/32			Knurled Nut & Screw—, +12	7	8.0	1	4.01	5.98	Toys Cars
*	Carb. Zinc	7 27/32 x 4 31/32 x 7 7/32			Knurled Nut & Screw—, +7½	11	4.0	1	5.17	7.75	Ign., Lights
913	Carb. Zinc	7 13/16 x 5 5/32 x 7 1/4			Knurled Nut & Screw—, +9	13	8.0	1	5.83	8.75	
1612	Carb. Zinc	2 3/16 x 1 5/32 x 6 1/4			Snap Type—, +9	—	11.0	1	1.64	2.35	
1601	Carb. Zinc	8 x 2 13/16 x 1 5/16			Socket—, +3, +6, +9	1	8.0	1	1.92	2.75	
1613	Carb. Zinc	1 13/32 x 47/64 x 4 11/16			Snap Type, +9	—	2.5	1	1.05	1.50	Trans. Radio
1403	Carb. Zinc	1 13/32 x 47/64 x 4 11/16			Min. Snap—, +6	—	3.5	1	1.36	1.95	
1303	Carb. Zinc	2 13/16 x 1 3/4 x 8 13/32			Socket—, +4.5	1	9.0	1	2.76	3.95	
920	Carb. Zinc	2 5/8 x 2 5/8 x 3 27/32			Socket—, +6	1	7.0	1	0.99	1.49	Flasher, Misc.
924	Carb. Zinc	2 5/8 x 2 5/8 x 4 11/32			Coil Spring—, +6	1	7.0	1	0.99	1.49	
925	Carb. Zinc	2 5/8 x 2 5/8 x 4 5/16			Knurled Nut & Screw—, +6	1	7.0	1	0.99	1.49	Lighting, Misc.
1608	Carb. Zinc	2 3/32 x 1 1/4 x 7 31/32			Socket—, +9	1	3.0	1	2.76	3.95	Trans. Radio
1609	Carb. Zinc	2 13/16 x 1 3/4 x 8 11/32			Socket—, +9	1	9.0	1	2.76	3.95	
923	Carb. Zinc	5 11/32 x 2 27/32 x 4 5/32			Socket—, +12	3	—	1	2.37	3.40	Flasher, Misc.
2157	— Mercury	2 1/2 x 1 3/8 x 4 1/4			Socket—, +1.35	—	13.5	1	12.50	17.75	Rad. Det. Equip.
2250	— Mercury	1 1/16 Diam. x 1 29/32			Tabs—, +9.45	—	1.0	1	3.15	4.50	
2351	— Mercury	1 1/16 Diam. x 2 5/8			Flat Contacts—, +5.4	—	4.5	1	6.53	9.35	Fire Alarm
2358	— Mercury	3/4 Diam. x 2 3/32			Wire Leads—, +10.8	—	1.3	1	4.10	5.95	Rad. Det. Equip.
2362	— Mercury	23/32 Diam. x 3 5/32			Wire Leads—, +16.2	—	1.8	1	5.60	8.00	
2435	— Mercury	1 1/16 Diam. x 1 1/2			Flat Contacts—, +6.75	—	0.75	1	3.46	4.95	
2462	— Mercury	2 13/16 x 1 11/32 x 6 3/8			Wire Leads—, +97.2	2	—	1	40.00	56.00	Transmt. "B"
2465	— Mercury	2 3/16 Diam. x 3 3/4			Wire Leads—, +47.25	1	1.0	1	22.50	32.00	Geophys.
2478	— Mercury	1 3/32 Diam. x 3 5/8			Flat Contacts—, +9.8	—	9.0	1	6.90	9.80	Wire Recorder
2497	— Mercury	1 1/16 Diam. x 4 1/8			Screw—, +6.75	—	6.0	1	9.33	13.35	Test Equip.
2579	— Mercury	1 13/32 x 3/4 x 3 3/16			Wire Leads—, +29.7	—	5.0	1	12.50	18.00	
2580	— Mercury	2 23/32 x 2 23/32 x 3 23/32			Sockets—, +27.0	2	1.6	1	33.60	48.00	Instr.
2642	— Mercury	1 3/32 Diam. x 2 5/8			Flat Contacts—, +7	—	6.0	1	5.33	7.60	
2651	— Mercury	1 5/16 Diam. x 2 7/16			Special Leads—, +1.35	—	6.14	1	4.80	6.90	
2702	— Mercury	1 1/16 Diam. x 1 5/8			Wire Leads—, +2.7	—	2.0	1	4.00	5.70	Geophys.
2904	— Mercury	1 11/32 Diam. x 2 31/32			Wire Leads—, +5.4	—	6.0	1	7.33	10.45	Meter
2905	— Mercury	1 11/32 Diam. x 3 13/32			Wire Leads—, +6.75	—	9.0	1	8.40	12.00	Test Equip.
2907	— Mercury	1 5/16 Diam. x 4 7/8			Wire Leads—, +9.45	—	11.6	1	10.67	15.25	Instr.
2908	— Mercury	1 11/32 Diam. x 5 5/16			Wire Leads—, +10.8	—	12.0	1	12.00	17.15	Rad. Det. Equip.
3145	1614 Mercury	2 5/16 x 7/8 x 4 7/16			Snap Type—, +8.4	—	9.34	1	6.75	9.95	Dept Finder
3219	— Mercury	.515 Diam. x 1 5/8			Flat Contacts—, +9.8	—	1.0	1	2.06	2.95	Radio Conv. (FM)
3236	— Mercury	23/32 x 23/32 x 1 29/32			Flat Contacts—, +4.2	—	1.28	1	1.31	1.85	Paging Sys.
3314	2200M Mercury	2.81 x 2.85 x 1.320			Recessed Flat Contacts—, +16.8	—	12.8	1	11.00	16.00	Comm. Equip.
3394	— Mercury	2 1/2 x 1 3/4 x 2 1/4			Snap Type—, +11.2	—	14.0	1	10.15	14.50	Tape Recorder
3462	2100M Mercury	2.14 x 2.12 x 1.8			Reces. Flat Contacts—, +15.4	1	0.8	1	11.25	16.50	Transceiver
3496	— Mercury	0.655 Diam. x 1.300			Flat Recessed—, +4.2	—	0.87	1	1.31	1.85	Paging Dev.

A number same as an "Everady" battery number on a different ery. Omitted to prevent errors in shipping.
nlight types.
differs from corresponding sizes in that it has tabs enabling user to solder leads to battery without damage.

These complete line specifications contain the basic data on all "Eveready" batteries in production at the time of preparation. Since the characteristics of individual batteries are sometimes modified, manufacturers who are designing their product to use a particular battery should contact the nearest Union Carbide Consumer Products Division Sales Office for verification of specifications.

AC VOLTAGE STABILIZERS

For Electronic and Electric Equipment

General Electric a-c voltage stabilizers are static-magnetic transformer-type products which provide voltage maintained within ±1% variation while input line voltage fluctuates ±15%. They are offered in the following variations:

Unfiltered output: output voltage waveform is relatively flat-topped, with harmonic content from 15 to 20%.

Harmonic filtered output: output voltage is filtered to near sinusoidal waveshape, with a maximum of 3% harmonic content.

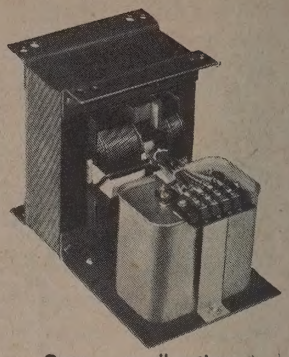
Enclosed construction: completely metal enclosed for safe external mounting.

Open construction: for installation within electronic or electric equipment.

Cord/Receptacle units: for convenient temporary connections.

SINGLE PHASE — Magnetic-capacitor circuitry is frequency sensitive. Stabilizers designed for one frequency are not suitable for use on another.

THREE PHASE — Standard single-phase a-c voltage stabilizers can be connected for 3-phase, 4-wire loads with input connected delta. However, single-phase models cannot be connected for 3-phase, 3-wire loads: select from 3-phase delta-delta models.



Open — small ratings

Enclosed — small ra

Single Phase

Volt-amp Output Capacity	Input Voltage Range	Stabilized Output Voltage	Unfiltered Output		Harmonic Filtered Output	
			Model Number	List Price	Model Number	List Price
ENCLOSED — FOR 60 HERTZ						
15	95-130	118	9T91Y4070	$31.70	.....	.....
30	95-130	118	9T91Y4090	36.30	.....	.....
60	95-130	118	9T91Y4110	47.90	.....	.....
120	95-130	118	9T91Y4130	65.90	.....	.....
250	95-130	118	9T91Y4140‡	110.00	9T91Y7140‡	$114.00
250	190-260	118	9T91Y4142‡	110.00	.....	.....
250	190-260X380-520	118/236	9T91Y4144‡	122.00	.....	.....
250	380-520	118	9T91Y4145‡	110.00	.....	.....
500	95-130	118	9T91Y4150‡	173.00	9T91Y7150‡	178.00
500	190-260	118	9T91Y4152‡	173.00	.....	.....
500	380-520	118	9T91Y4155‡	173.00	.....	.....
1000	95-130	118	9T91Y4170	265.00	9T91L7170	273.00
1000	95-130X175-235X190-260	118/236	.....	.....	9T91Y7173	307.00
1000	190-260	118	9T91Y4172	265.00	9T91Y7172	273.00
1000	190-260X380-520	118/236	.....	.....	9T91Y7174	302.00
1000	380-520	118	9T91Y4175	265.00	.....	.....
2000	95-130X175-235X190-260	118/236	9T91Y4183	531.00	9T91Y7183	557.00
2000	190-260X380-520	118/236	9T91Y4184	523.00	9T91Y7184	543.00
2000	380-520	236/472	9T91Y4186	503.00	.....	.....
3000	95-130X175-235X190-260	118/236	9T91Y4193	714.00	9T91Y7193	750.00
3000	190-260X380-520	118/236	9T91Y4194	699.00	.....	.....
3000	380-520	236/472	9T91Y4196	680.00	.....	.....
5000	190-260X380-520	118/236	9T91Y4204	1077.00	9T91Y7204	1136.00
5000	95-130X175-235X190-260	118/236	9T91Y4203	1094.00	9T91Y7203	1157.00
5000	380-520	236-472	9T91Y4206	1044.00	.....	.....
7500	95-130X175-235X190-260	118/236	9T91Y4213	1632.00	.....	.....
7500	190-260X380-520	118/236	9T91Y4214	1600.00	9T91Y7214	1764.00
10000	95-130X175-235X190-260	118/236	.....	.....	9T91Y7223	2339.00
10000	190-260X380-520	118/236	9T91Y4224	2090.00	9T91Y7224	2295.00
15000	190-260X380-520	118/236	9T91Y4244	3068.00	9T91Y7244	3385.00
OPEN — FOR 60 HERTZ						
15	95-130	118	9T91Y5070	$30.00	.....	.....
30	95-130	118	9T91Y5090	34.20	.....	.....
60	95-130	118	9T91Y5110	44.70	.....	.....
120	95-130	118	9T91Y5130	62.00	.....	.....
250	95-130	118	9T91Y5140	104.00	9T91Y8140	$107.00
250	190-260	118	9T91Y5142	104.00	.....	.....
500	95-130	118	9T91Y5150	163.00	9T91Y8150	166.00
500	190-260	118	9T91Y5152	163.00	.....	.....
750	95-130	118	9T91Y5160	205.00	9T91Y8160	212.00
1000	95-130	118	9T91Y5170	248.00	9T91Y8170	256.00
1000	190-260	118	9T91Y5172	248.00	9T91Y8172	256.00
1500	95-130	118	9T91Y5010	344.00	9T91Y8010	361.00
2000	95-130X175-235X190-260	118/236	9T91Y5183	498.00	9T91Y8183	523.00
ENCLOSED — FOR 50 HERTZ						
250	95-130	118	9T91Y4147‡	$127.00	9T91Y7147‡	$131.00
250	95-130X175-235X190-260	118/236	9791Y4148‡	143.00	9T91Y7148‡	148.00
500	95-130X175-235X190-260	118/236	9T91Y4158	225.00	9T91Y7158	231.00
500	190-260X380-520	118/236	9T91Y4159	220.00	9T91Y7159	227.00
1000	95-130X175-235X190-260	118/236	9T91Y4178	344.00	9T91Y7178	355.00
2000	95-130X175-235X190-260	118/236	9T91Y4188	611.00	9T91Y7188	641.00
3000	95-130X175-235X190-260	118/236	9T91Y4198	821.00	9T91Y7198	861.00
5000	95-130X175-235X190-260	118/236	9T91Y4208	1260.00	9T91Y7208	1323.00
7500	95-130X175-235X190-260	118/236	9T91Y4218	1873.00	9T91Y7218	2060.00
7500	190-260X380-520	118/236	9T91Y4219	1842.00	9T91Y7219	2027.00

‡ Can be used with adapter kit for quick conversion to a cord and receptacle unit.

3 Phase Delta Delta

Freq.	VA	Input Voltage Range	Stabilized Output Voltage	Model Number	List Price
ENCLOSED					
60	6000*	190 to 260/380 to 520 delta	230/236 delta	9T91Y3506	$2306.00
60	10000*	190 to 260 delta	236 delta	9T91Y3501G2	3324.00
50	10000*	190 to 260 delta	236 delta	9T91Y3510	3633.00

*Minimum recommended load 20% of rated; maximum harmonic content 5%.

Cord/Receptacle Units

Integral single-phase units with a 2-prong cord se female receptacle in the case.

Volt-amp Output Capacity	Input Voltage Range	Stabilized Output Voltage	Model Number	List
ENCLOSED — UNFILTERED OUTPUT — FOR 60 HERTZ				
15	95-130	118	9T91Y4070G19	$36.
30	95-130	118	9T91Y4090G19	40.
60	95-130	118	9T91Y4110G19	52.
120	95-130	118	9T91Y4130G19	70.

Adapter kits are available for use with 250 and volt-amp stabilizers to provide quick conversion cord and receptacle unit.

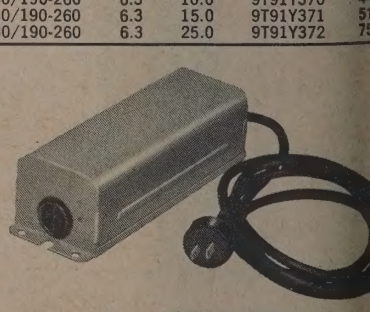
For Use With Stabilizer Model Number	Order Adapter Kit Model Number		
	2-prong	3-prong	List P
9T91Y4140	9T91Y4140G55	9T91Y4140G75	
9T91Y4142	9T91Y4140G55	9T91Y4140G75	
9T91Y4144	9T91Y4140G55	9T91Y4140G75	2-pro
9T91Y4145	9T91Y4140G55	9T91Y4140G75	Kit
9T91Y4147	9T91Y4140G55	9T91Y4140G75	$4.6
9T91Y4148	9T91Y4140G55	9T91Y4140G75	
9T91Y4150	9T91Y4140G55	9T91Y4140G75	
9T91Y4152	9T91Y4140G55	9T91Y4140G75	
9T91Y4155	9T91Y4140G55	9T91Y4140G75	
9T91Y7140	9T91Y7140G55	9T91Y7140G75	3-pro
9T91Y7150	9T91Y7150G55	9T91Y7150G75	Kit
9T91Y7147	9T91Y7147G55	9T91Y7147G75	$5.7
9T91Y7148	9T91Y7147G55	9T91Y7147G75	

Filament Ratings—Single Phase—60 H

For stabilized power for 6-volt nominal filaments, stabilizers are suitable for operation with other 6 loads of rated or lower output current requirem Current-limiting characteristic protects cold filan from high current surges.

Volt-amp Output Capacity	Input Voltage Range	Output		Model Number	List
		Volts	Amps		
OPEN					
15	95-130	6	2.5	9T91Y365	$3
15	95-130	6.3	2.4	9T91Y367	3
31.5	95-130/190-260	6.3	5.0	9T91Y369	3
63	95-130/190-260	6.3	10.0	9T91Y370	4
94.5	95-130/190-260	6.3	15.0	9T91Y371	5
157.5	95-130/190-260	6.3	25.0	9T91Y372	7

Typical cord/receptacle unit



Prices subject to change without

GENERAL ELECTR

Trade Discount Applies To List Prices Only

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STABILTRON* AC VOLTAGE STABILIZERS

For Electronic and Electric Equipment Requiring PRECISE Voltage Control

ral Electric Stabiltron a-c voltage ers can be used in a wide variety ronic equipment applications where control of voltage is required. The on consists entirely of static com- — there are no tubes to burn out ing parts to replace or maintain.

Stabiltron senses deviations from etermined output voltage level by r detector. The error signal, through con-controlled rectifier circuit, aug- the voltage stabilizer action and s almost instantaneous correction ut voltage.

cal applications include computers, and communications equipment, ial process control, and X-ray ent.

Voltage — The most common power voltages can be handled by the d models listed. Stabiltron units provided for special voltage levels uest.

Voltage — Stabiltron voltage stabi- maintain extremely precise voltage in spite of wide fluctuations of line , frequency, load, load power factor, nbient temperatures.

table below illustrates the effect output of the maximum steady state ions, within rated limits of some of variables.

1 — TYPICAL OUTPUT VOLTAGE CTERISTICS

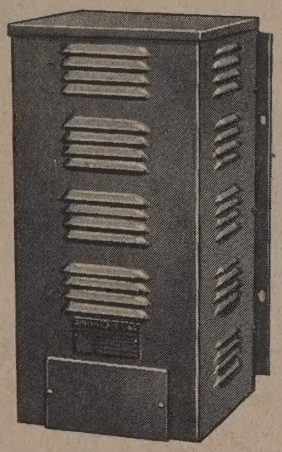
ble	Excursion	Output Voltage Bandwidth¶
ltaget	95 to 130	0.02 to 0.2%
ncy	57 to 63 Hertz	0.15 to 0.4%
	0 to 100% rated load	0.02 to 0.1%
wer r	0.4 lagging to unity	0.01 to 0.1%
t erature	—25C to 40C	0.01%/degree C

ge is indicated because exact amounts are dent on the static level of other variables. the Stabiltron unit is operated at less than load, the line voltage can be reduced con- bly below 95 volts without serious de- ation of the output voltage.

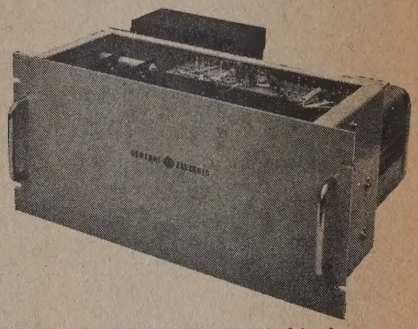
nse — Under transient line or load tions, elapsed time for correction of t voltage and transient excursion the normal bandwidth are key con- tions to equipment operation.

e Stabiltron provides fast response mall transient excursion through its e combination of solid state and mag- circuitry.

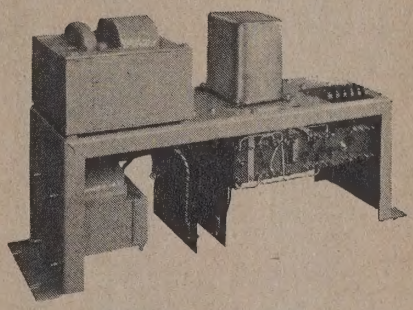
-name of General Electric Co.



ENCLOSED CONSTRUCTION - 2-kva units are suitable for either wall or floor mounting. 5- and 10-kva units can be floor mounted only.



PANEL CONSTRUCTION is suitable for standard 19-inch rack mounting.



OPEN CONSTRUCTION is suitable for horizontal or vertical mounting surfaces in equipment enclosures.

57-63CPS; 3% HARMONIC: 0.4 LAG TO UNITY LOAD PF

Kva	Model Number	List Price	Input Voltage Range	Output Voltage (Adjustable ±4%)	Approx Net Weight (Pounds)	Construction Type	Approx. Dim. (in.) H	W	D
0.5	9T91Y3021	$422	95-130/190-260	118	70	Panel	7	19	14¾
0.5	9T91Y3021G2	414	95-130/190-260	118	70	Open	7	19	13¼
1.0	9T91Y3022	497	95-130/190-260	118	125	Panel	8¾	19	15½
1.0	9T91Y3022G2	490	95-130/190-260	118	125	Open	8¾	19	14
2.0	9T91Y3023	665	95-130/190-260	118/236	185	Enclosed	25	14½	11¼
2.0	9T91Y3023G2	654	95-130/190-260	118/236	180	Open	23½	14½	10¼
5.0	9T91Y3027	1428	95-130/175-235/190-260	118/236	570	Enclosed	26½	28	14
10.0	9T91Y3030	2206	190-260/380-520	118/236	975	Enclosed	28	39	17

TABLE 2 — TYPICAL TRANSIENT RESPONSE CHARACTERISTICS

Transient Change	Percent Peak Output Voltage Excursion	Response‡ Time	Total Recovery§ Time
0 to 115V input	14%	4 Hertz	13 Hertz
95 to 130V input	14%	3 Hertz	8 Herzt
130 to 95V input	9%	5 Hertz	9 Hertz
0 to 100% rated load	24%	1 Hertz	2 Hertz
20% to 100% rated load	21%	1 Hertz	2 Hertz
100% to 20% rated load	34%	1 Hertz	10 Hertz

‡ The time required for the output to recover 63.3% from its maximum excursion.
§ The time required for the output to recover to normal bandwidth limits.

Harmonic Content — Under all rated ranges of line variation and most load conditions, the total harmonic content of the output wave form will not exceed three percent for a sine wave power source. Even under adverse conditions, when the power source is not a sine wave, the Stabiltron voltage stabilizer will correct the wave form to the load to approximately three percent harmonic content.

Rectifier-filter Loading — Since the output wave form is low in harmonic content, the Stabiltron voltage stabilizer can be connected successfully to a rectifier (capacitor input) filter load to the input of a d-c power supply having capacitor input filters.

Prices subject to change without notice.

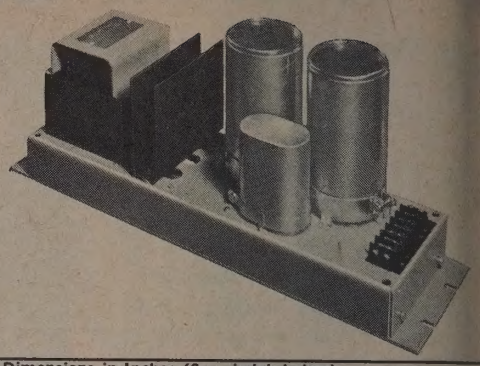
GENERAL ELECTRIC

REGULATED DC POWER SUPPLIES

Improve Performance of Computers and Other Electronic Equipment

These component power supplies can be used in a wide variety of applications where relatively constant d-c voltage is required despite fluctuating line voltages. Computers, process control equipment, and electronic measuring devices are typical applications where demands for accuracy require constant regulation of voltage.

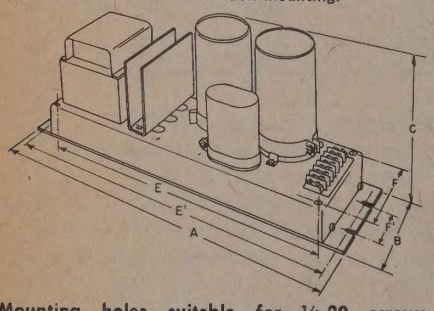
Performance-proved GE d-c power supplies can be designed to suit your needs for either 50- or 60-Hertz power sources.



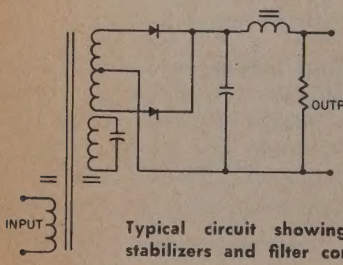
97- TO 130-VOLT INPUT RANGE, 40C AMBIENT

DC OUTPUT†				LOAD REGULATION‡		Dimensions in Inches (See sketch below)						
						OVER-ALL			MOUNTING			
				100% to	100% to				Chassis		Rack	
Volts	Amps	MODEL NO.	List Price	50% load	20% load	A	B	C	F	E	F′	E′
60 HERTZ												
10.0	16.0	9T66Y8	$165.00	5%	8%	19	7	6⅝	6¼	16¼	4	18⅜
12.0	5.0	9T66Y51	140.00	5%	6%	19	3½	7⅝	2¾	16¼	3	18⅜
12.0	15.0	9T66Y53	170.00	5%	7%	19	5¼	8	4½	16¼	2¼	18⅜
12.0	20.0	9T66Y978	185.00	5%	7%	19	7	8	6¼	16¼	4	18⅜
18.0	5.0	9T66Y61	128.00	4%	5%	19	3½	7⅝	2¾	16¼	3	18⅜
18.5	6.0	9T66Y966	133.00	4%	5%	19	5¼	7	4½	16¼	2¼	18⅜
18.5	12.0	9T66Y967	158.00	5%	7%	19	5¼	7¾	4½	16¼	2¼	18⅜
±18.5	24.0	9T66Y965	373.00	5%	8%	19	8¾	7	8	16¼	5¾	18⅜
24.0	2.5	9T66Y987	121.00	4%	6%	19	3½	6⅛	2¾	16¼	3	18⅜
24.0	6.0	9T66Y988	143.00	3%	5%	19	5¼	6½	4½	16¼	2¼	18⅜
24.0	10.0	9T66Y989	166.00	3%	5%	19	5¼	8	4½	16¼	2¼	18⅜
24.0	20.0	9T66Y990	217.00	3%	5%	19	7	9⅜	6¼	16¼	4	18⅜
24.0	50.0	9T66Y991	383.00	3%	5%	19	10½	11⅜	9¾	16¼	§	18⅜
28.0	8.0	9T66Y83	159.00	3%	5%	19	5¼	8	4½	16¼	2¼	18⅜
28.0	20.0	9T66Y85	236.00	3%	5%	19	7	9⅜	6¼	16¼	4	18⅜
28.0	50.0	9T66Y6	429.00	3%	5%	19	10½	12⅛	10½	17½	10½	18⅜
48.0	4.0	9T66Y93	133.00	3%	5%	19	5¼	8	4½	16¼	2¼	18⅜
48.0	10.0	9T66Y94	182.00	2%	4%	19	5¼	8	4½	16¼	2¼	18⅜
90.0	1.0	9T66Y69	115.00	2%	3%	19	3½	7⅛	2⅝	16¼	3	18⅜
90.0	10.0	9T66Y985	253.00	3%	4%	20⅞	7⅜	7	6⅛	20	¶	¶
125.0	2.0	9T66Y980	143.00	2%	3%	19	5¼	6½	4½	16¼	2¼	18⅜
125.0	4.0	9T66Y970	185.00	2%	3%	19	7	7⅝	6½	16¼	4	18⅜
150.0	2.0	9T66Y981	151.00	2%	3%	19	5¼	6½	4½	16¼	2¼	18⅜
200.0	1.0	9T66Y982	134.00	2%	3%	19	5¼	6½	4½	16¼	2¼	18⅜
50 HERTZ												
12.0	15.0	9T66Y53G5	$179.00	5%	7%	19	5¼	6½	4½	16¼	2¼	18⅜
24.0	10.0	9T66Y989G5	174.00	3%	5%	19	5¼	8	4½	16¼	2¼	18⅜
24.0	20.0	9T66Y990G5	228.00	3%	5%	19	7	8½	6½	16¼	4	18⅜
28.0	8.0	9T66Y83G5	167.00	2%	5%	19	5¼	8	4½	16¼	2¼	18⅜
48.0	4.0	9T66Y93G5	140.00	3%	5%	19	4¼	8	4½	16¼	2¼	18⅜
48.0	10.0	9T66Y94G5	191.00	2%	4%	19	5½	9	4½	16¼	2¼	18⅜
125.0	2.0	9T66Y980G5	150.00	2%	3%	19	5¼	7⅜	4½	16¼	2¼	18⅜

† May vary ±1%. All standard units come equipped with a plate for 19-inch rack mounting.
‡ Indicates approximate percent increase in output voltage due to decrease of load current from full load.
§ Rack mounting plate has four mounting slots on each end. Distance between centers of two outer slots is 7½ in., between two inner slots 3 in.
¶ Not available for 19-inch rack mounting.



Mounting holes suitable for ¼-20 screws. Length of screw may vary with chassis height.



Typical circuit showing voltage stabilizers and filter components.

EFFECT OF INPUT VOLTAGE VARIATION

D-c power supplies can be designed for various input voltages and ranges. With all other variables constant, the output voltage will not vary more than ±1 percent for a change in input voltage over the rated range of 97 to 130 volts input.

EFFECT OF TEMPERATURE CHANGE

For every 40C change in the ambient temperature, the output voltage level will change approximately one percent.

EFFECT OF FREQUENCY

A change of one percent in frequency will change output voltage level approximately one and one-half percent.

ISOLATION

All d-c power supplies provide electrical isolation between the a-c power source and the d-c load.

POLARITY

GE d-c power supplies can be signed with the polarity you requ All standard units listed can be insta with either plus or minus grounded.

RIPPLE

Ripple levels of one percent R meet most requirements. However, ot levels of ripple content can be desig into GE power supplies.

EFFICIENCY

Efficiency ranges from 70 to 85 p cent for normal output voltage lev For unusually low output voltages low power ratings, some decrease efficiency may occur.

REGULATION

Load regulation characteristics dep on the rated output voltage and ra power level of the power supply.

Prices subject to change without no

GENERAL ELECTR

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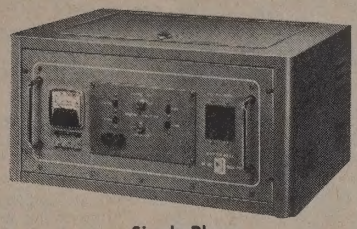
volt-pac® VOLTAGE REGULATORS

w solid-state control • **Precise output voltage control**

t voltage-correction rate • **Cabinet or rack-mounted models**

gnetic circuit-breaker protection



Single-Phase

Three-Phase

l Electric's new automatic voltage regulator line provides regulated output voltages from varying input voltages. normally include a motor-operated Volt-Pac variable rmer, associated buck-boost transformers which handle range of input-voltage variation, and a new solid-state ontrol.

automatic regulators maintain a preselected output voltvel within 1 percent bandwidth, and are temperature nsated from −20 to +40C. They can be bench or floor ed, or in smaller sizes, mounted in standard relay racks.

rt ge ge Max.	Nom. Output Volt-age	Adjustable Output Voltage† Min.	Max.	Correc-tion Rate Volts/ Sec.	Load Max. Amps	KVA ‡	Rack-mounted Model No.	List Price	Approximate Dimensions (In.) Width	Height	Depth	Net Wt.	Cabinet-mounted Model No.	List Price	Approximate Dimensions (In.) Width	Height	Depth	Net Wt.
OLTS — SINGLE-PHASE																		
135	115	110	120	10.4	10	1.15	9T92Y130G3	$430	19	6¾	12¼	50	9T92Y130G1	$460	22½	9⅛	17	70
135	115	110	120	10.4	25	2.9	9T92Y131G3	460	19	8¾	15¼	70	9T92Y131G1	490	22½	10⅞	17	95
135	115	110	120	10.4	50	5.75	9T92Y132G3	515	19	8¾	15¼	100	9T92Y132G1	545	22½	10⅞	17	125
135	115	110	120	10.4	100	11.5	9T92Y133G3	625	19	12¼	19⅛	120	9T92Y133G1	655	22½	14	19⅜₁₆	150
135	115	110	120	10.4	150	17.2	.....	.....	....	.....	.....	.....	9T92Y134G1	700	21½	20	18¼	170
OLTS — SINGLE-PHASE																		
260	230*	220	240	17.2	13	3.0	9T92Y135G3	$515	19	8¾	15¼	70	9T92Y135G1	$545	22½	10⅞	17	95
260	230*	220	240	17.2	32.5	7.5	9T92Y136G3	570	19	8¾	15¼	100	9T92Y136G1	600	22½	10⅞	17	125
260	230*	220	240	17.2	52	12.0	9T92Y137G3	660	19	12¼	19⅛	120	9T92Y137G1	690	22½	14	19⅜₁₆	150
260	230*	220	240	17.2	130	30.0	.....	.....	....	.....	.....	.....	9T92Y138G1	800	22½	20	18¼	170
OLTS — SINGLE-PHASE																		
520	460	440	480	34.4	13	6.0	9T92Y139G3	$675	19	8¾	18⅜₁₆	85	9T92Y139G1	$705	22½	10½	19¾	110
520	460	440	480	34.4	32.5	15.0	9T92Y140G3	745	19	8¾	18⅜₁₆	115	9T92Y140G1	775	22½	10½	19¾	140
520	460	440	480	34.4	52	24.0	.....	.....	....	.....	.....	.....	9T92Y141G1	890	21¾	20	18¼	220
520	460	440	480	34.4	130	60.0	.....	.....	....	.....	.....	.....	9T92Y142G1	1110	25¾	30⅝₁₆	18½	350
OLTS — THREE-PHASE																		
260	230*	220	240	17.2	12.5	5.0	9T92Y143G3	$995	19	8¾	18⅜₁₆	75	9T92Y143G1	$985	22½	10½	19¾	100
260	230*	220	240	17.2	34	13.5	.....	.....	....	.....	.....	.....	9T92Y144G1	1095	25¾	13⅝	17¼	140
260	230*	220	240	17.2	68	27.0	.....	.....	....	.....	.....	.....	9T92Y145G1	1325	25¾	13⅝	17¼	200
260	230*	220	240	17.2	136	54.0	.....	.....	....	.....	.....	.....	9T92Y146G1	1755	20¾	30⅜	18½	300
260	230*	220	240	7.5	170	67.5	.....	.....	....	.....	.....	.....	9T92Y147G1	1950	25¾	30⅝₁₆	18½	500
OLTS — THREE-PHASE																		
520	460	440	480	34.4	13	10.4	.....	.....	....	.....	.....	.....	9T92Y148G1	$1115	25¾	13⅝	17¼	140
520	460	440	480	34.4	32.5	26.0	.....	.....	....	.....	.....	.....	9T92Y149G1	1245	25¾	13⅝	17¼	200
520	460	440	480	34.4	52	41.5	.....	.....	....	.....	.....	.....	9T92Y150G1	1600	20¾	30⅜	18½	300
520	460	440	480	34.4	100	80.0	.....	.....	....	.....	.....	.....	9T92Y151G1	1900	25¾	30⅝₁₆	18½	500
520	460	440	480	15.0	130	104.0	.....	.....	....	.....	.....	.....	9T92Y152G1	2000	28⅜	30⅜	18½	600

oit nominal output voltage operation requires no change in power connection, but does require selecting correct control transformer ratio. When operated at ninal 208 volts output, the regulator will correct for an input range of 181 to 236 volts, with the output voltage adjustable from 199 to 217 volts.

pecified input voltage range is applicable for nominal output voltage. When operating at any other output voltage within specified range, the input voltage will change proportionately with the change in output voltage level selected.

kva based on nominal output voltage.

aveform Distortion

rmonic waveform distortion is introduced at any load or with any voltage. The output voltage waveform is a precise reproduction of l input waveform.

able Output Voltage

voltage for units nominally rated 115 volts is adjustable from 110 volts. Output voltage also is adjustable from 220 to 240 volts for ated 230 volts; from 440 to 480 volts for nominally ratetd units of lts. Please note that the specified input-voltage range is applicable minal output voltage. When operating at any other output voltage specified range, the input voltage range shifts in proportion with ected output voltage.

te Static-sensing Control

state control combined with the new Sylvan-Kettler static-sensing achieve the optimum in automatic accuracy. The voltage regulator erned automatically by a dead-band-type voltage-sensitive control ng either lamp or zener bridges. The circuit includes magnetic input breakers and an output voltmeter.

TYPICAL SPECIFICATIONS

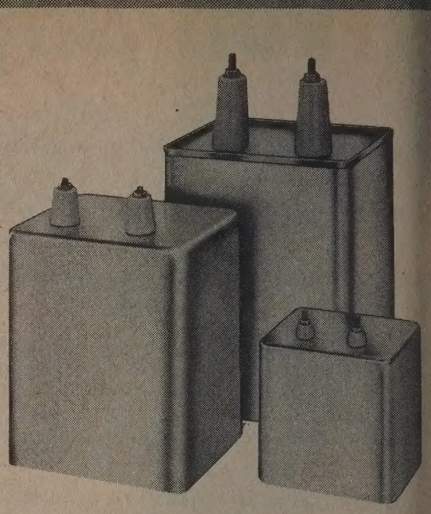
Regulation Accuracy	±1.0%
Speed of correction	10.4 volt/sec
Output voltage	Adjustable from 110-120 volts
Input voltage	95 to 135, single-phase
Frequency	60-Hertz
Load Range	Zero to full load
Efficiency	Up to 99%
Power Factor Range	0 to 100%
Wave Form Distortion	None
Output Meter	0-150 Volts AC
Ambient Temperature Operating Range	−20C to +40C
Protection	Magnetic Circuit Breaker in Power Input Line — Control Circuitry Fused

Prices subject to change without notice.

GENERAL ELECTRIC

HIPOTRONICS INC.

HIGH VOLTAGE POWER PACKS



The Hipotronics wide range of compact miniaturized power packs with output voltages from 2 to 100 KV and current ratings of 2, 5 or 10 milliamperes are designed for long life and trouble free operation. Advanced high voltage techniques developed by Hipotronics permit greater size and weight reduction than previously possible.

All units are housed in a hermetically sealed MIL-T-27A can and vacuum filled with mineral type transformer oil or epoxy. The insulating medium insures corona-free operation and allows for running the supply at 3 or 4 times normal current rating for long periods of time. The corona free operation precludes component failure caused by long term corona degradation of insulation and guarantees a pure DC output free of any interfering high frequency signals which might possibly influence or affect the system which it is powering.

Every component in the supply is operated at well below its design rating and pre-assembly hipotted at one and one half times its operating voltage.

The output connections are high voltage ceramic type on models 30 KV and below and through plug in re-entrant receptacles for coaxial cables on greater than 30 KV units. Three foot cable assemblies are supplied with each re-entrant bushing type and longer ones are easily assembled if required.

Output Voltage Kilovolts	Current Milliamperes	Model	Height	Width	Depth	Price
2.5 KV	2 ma.	2.5A	3½″	3¾″	2¾″	$ 50
2.5 KV	5 ma.	2.5B	3½″	3¾″	2¾″	60
2.5 KV	10 ma.	2.5C	4¼″	3⅞″	3⅞″	70
5 KV	2 ma.	5A	4¼″	3⅞″	3⅜″	65
5 KV	5 ma.	5B	4¼″	3⅞″	3⅜″	75
5 KV	10 ma.	5C	5¼″	3⅞″	3⅜″	90
7.5 KV	10 ma.	7.5C	5¼″	3⅞″	3⅜″	110
10 KV	2 ma.	10A	5¼″	3⅞″	3⅜″	75
10 KV	5 ma.	10B	5¼″	3⅞″	3⅜″	95
10 KV	10 ma.	10C	6⅛″	4⅝″	4″	125
15 KV	5 ma.	15B	6⅛″	4⅝″	4″	125
15 KV	10 ma.	15C	6⅛″	4⅝″	4″	150
20 KV	2 ma.	20A	6⅛″	4⅝″	4″	135
20 KV	5 ma.	20B	6⅛″	4⅝″	4″	180
25 KV	10 ma.	25C	10″	6″	5″	350
30 KV	2 ma.	30A	10″	6″	5″	190
30 KV	5 ma.	30B	10″	6″	5″	250
40 KV	2 ma.	40A	12″	6″	5″	270
50 KV	5 ma.	50B	10″	6″	8″	390
60 KV	2 ma.	60A	10″	6″	8″	325
100 KV	2 ma.	100A	15½″	8⅛″	9¼″	625

Consult factory for quotation on special requirements

FEATURES

- **Hermetically sealed, oil or epoxy filled**
- **Solid state rectifiers**
- **10 year life**
- **Low ripple**
- **Good regulation**
- **Compact, highly miniaturized**
- **Reversible polarity**

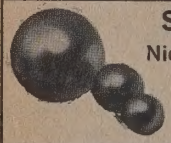
Inquiries are invited for units with outputs different than our standards, with built in line regulation, short circuit current limited units, lower output ripple, with 220V, 50/60 cycle inputs or with center tapped output etc.

SPECIFICATIONS FOR ALL MODELS

Input	0-125 volts, output voltages and currents stated for nominal 117 volt input.
Regulation	10 to 15% no load to full load
Ripple	1/2% rms per milliampere output
Life	10 years at 25°C ambient with rated output voltage and current
Terminations	Ceramic bushings on 30 KV and below models Re-entrant receptacles with 3 foot mating coaxial cables on 40 KV and up models

Prices and specifications subject to change without notice

HV TERMINATIONS



SPHERES
Nickel plated with threaded insert

Diameter		Diameter	
1″	$2.00	6″	$10.00
2″	3.00	8″	20.00
3″	4.00	10″	40.00
4″	5.00	12″	50.00

TOROIDS

Cross Section Diameter	Outside Diameter	Inside Diameter	Price
2″	10″	6″	$ 30.00
3″	12″	6″	$ 50.00
5″	20″	10″	$125.00

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High-Potential Electronics

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HIPOTRONICS INC.

HIGH VOLTAGE POWER SUPPLIES AND POWER PACKS

Hipotronics has a complete line of unregulated high voltage power supplies with output voltages ranging from 1 to 600 KV and with current outputs from 2.5 ma to 10 amperes.

All units are conservatively designed for continuous use and are available with fully instrumented control consoles or less controls for use in OEM equipment or with existing controllers.

They are designed for maximum equipment and operator protection. The surge devices preclude injury to any component from repeated short circuits at full output and the many safety devices insure operator protection.

FEATURES

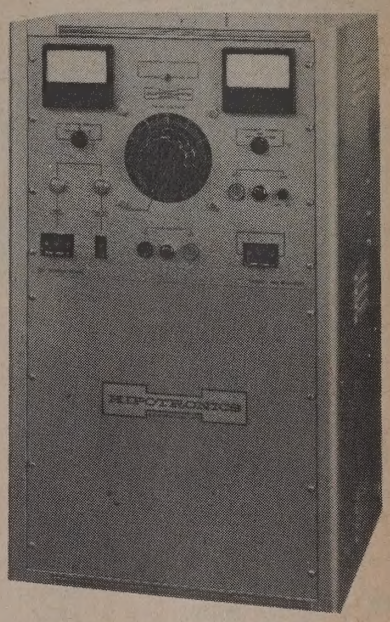
- **Reversible polarity**
- **Output shorting relay with discharge resistor**
- **Surge limiting resistor in output lead**
- **Continuously variable output control**
- **Continuously variable overvoltage control (optional extra)**
- **Continuously variable overcurrent control**
- **Zero start interlock**
- **External interlock provision**
- **Door interlocks**
- **HV on and off push buttons**
- **Circuit breaker input**
- **Functional pilot lights**
- **Triple range KV meter, 2% accuracy**
- **Triple range current meter, 2% accuracy**
- **Surge protection on meters, relays, transformers**
- **Vernier output (optional extra)**

CURRENT IN MILLIAMPERES

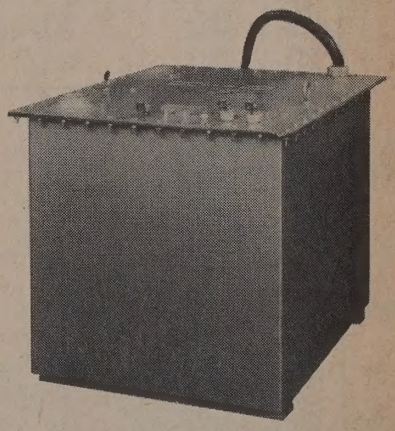
OUTPUT KILOVOLTS	1	2.5	5.0	10	25	50	100	250	500	1000	2000	3000	4000	5000	10,000
0-1				←											→
0-2			←												→
0-3			←												→
0-5			←												→
0-10		←													→
0-15		←												→	
0-20		←												→	
0-25	←											→			
0-30	←											→			
0-50	←									→					
0-60	←								→						
0-75	←								→						
0-100	←							→							
0-120	←						→								
0-150	←						→								
0-200	←					→									
0-250	←					→									
0-300	←					→									
0-400	←				→										
0-500			←		→										
0-600				←	→										

VOLTAGE IN KILOVOLTS

MODEL NUMBER FORMED BY PREFIXING 8 to KV and hyphenating current i.e. 60KV, 50ma is Model No. 860-50; 1KV at 1000 ma. is Model 81-1000. WRITE FACTORY for size, weights, prices, specifications etc. of any model in arrowed area. If your requirement can not be satisfied with one of our standard models listed above, send us specifications for prompt proposal.



Model 810-500



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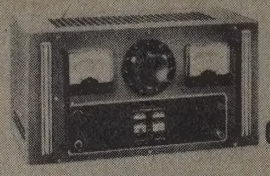
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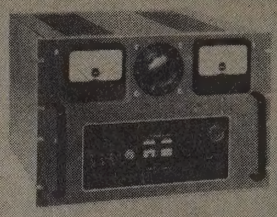
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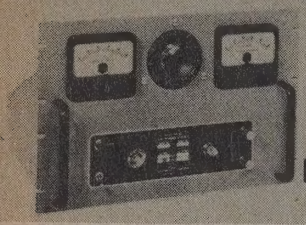
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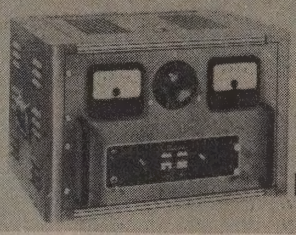
E

G

D.C. VOLTS	D.C. AMPS	MODEL	STYLE	MAX. RIPPLE	DIMENSIONS H X W X D	FIG.	A.C. INPUT	WRITE F BULLETI
0-32	0-5	KM75	RACK	100MV	8¾" X 19" X 9½"	A	115 VOLTS A.C. 60 Hz SINGLE PHASE	1020A
	0-5	KM75B	BENCH	100MV	9" X 17" X 9"	C		
	0-10	KM81	RACK	100MV	8¾" X 19" X 9½"	A		
	0-10	KM81B	BENCH	100MV	9" X 17" X 9"	C		
	0-20	KM87	RACK	100MV	8¾" X 19" X 9½"	A		
	0-20	KM87B	BENCH	100MV	10½" X 22" X 12"	D		
	0-40	KM93	RACK	100MV	12¼" X 19" X 13"	B		
	0-40	KM93B	BENCH	100MV	14" X 22" X 15"	E		
	0-100	KM100	RACK	160MV	12¼" X 19" X 17¼"	F	208-230 VAC 60 Hz 3 PHASE*	1040
	0-150	KM150	BENCH	160MV	19¼" X 22" X 18"	G		
0-60	0-10	KN5	RACK	100MV	10½" X 19" X 13½"	B	115 VOLTS A.C. 60 Hz SINGLE PHASE	1060
	0-10	KN5B	BENCH	100MV	12¼" X 22" X 15"	E		
	0-20	KN10	RACK	100MV	12¼" X 19" X 13½"	B		
	0-20	KN10B	BENCH	100MV	14" X 22" X 15"	E		
0-125	0-5	RS20	RACK	1.25V	10½" X 19" X 13"	B	117 VOLTS A.C. 60 Hz SINGLE PHASE	2040A
	0-5	RS20B	BENCH	1.25V	12¼" X 22" X 15"	E		
	0-10	RS30	RACK	1.25V	12¼" X 19" X 13"	B		
	0-10	RS30B	BENCH	1.25V	14" X 22" X 15"	E		
	0-20	RS40	RACK	1.25V	17½" X 19" X 13"	—		
	0-20	RS40B	BENCH	1.25V	19¼" X 22" X 15"	G		
	0-24	RS50	RACK	250MV	12¼" X 19" X 17¼"	F	208-230 VAC 60 Hz 3 PHASE*	2050
	0-40	RS60	BENCH	250MV	19¼" X 22" X 18"	G		
	0-80	RS70	FLOOR	1.25V	48" X 22" X 18"	H		
	0-120	RS80	FLOOR	1.25V	48" X 22" X 24"	H		
0-250	0-5	RU60	RACK	2.5V	12¼" X 19" X 13½"	B	117 VOLTS A.C. 60 Hz SINGLE PHASE	2060
	0-5	RU60B	BENCH	2.5V	14" X 22" X 15"	E		
	0-10	RU70	RACK	2.5V	17½" X 19" X 13½"	—		
	0-10	RU70B	BENCH	2.5V	19" X 22" X 15"	G		
	0-12	RU80	RACK	625MV	12¼" X 19" X 17¼"	F	208-230 VAC 60 Hz 3 PHASE*	2070
	0-20	RU90	BENCH	625MV	19¼" X 22" X 18"	G		
	0-40	RU100	FLOOR	625MV	48" X 22" X 18"	H		
	0-60	RU150	FLOOR	625MV	48" X 22" X 24"	H		
0-500	0-5	RW80	RACK	500MV	12¼" X 19" X 17¼"	F	208-230 VAC 60 Hz 3 PHASE*	2100
	0-10	RW90	BENCH	500MV	19¼" X 22" X 18"	G		
	0-20	RW100	FLOOR	500MV	48" X 22" X 18"	H		
	0-30	RW150	FLOOR	500MV	48" X 22" X 24"	H		
	0-40	RW200	FLOOR	500MV	52" X 22" X 24"	H		
0-1000	0-2.5	SX80	RACK	1V	12¼" X 19" X 17¼"	F	208-230 VAC 60 Hz 3 PHASE*	2150
	0-5	SX90	BENCH	1V	19¼" X 22" X 18"	G		
	0-10	SX100	FLOOR	1V	48" X 22" X 18"	H		
	0-15	SX150	FLOOR	1V	48" X 22" X 24"	H		
	0-20	SX200	FLOOR	1V	52" X 22" X 24"	H		
0-1500	0-1.5	TY80	RACK	3.75V	12¼" X 19" X 17¼"	F	208-230 VAC 60 Hz 3 PHASE*	2170
	0-3	TY90	BENCH	3.75V	19¼" X 22" X 18"	G		
	0-7	TY100	FLOOR	3.75V	48" X 22" X 18"	H		
	0-10	TY150	FLOOR	3.75V	48" X 22" X 24"	H		
	0-13	TY200	FLOOR	3.75V	52" X 22" X 24"	H		
0-2000	0-1.25	VZ80	RACK	5V	12¼" X 19" X 17¼"	F	208-230 VAC 60 Hz 3 PHASE*	2190
	0-2.25	VZ90	BENCH	5V	19¼" X 22" X 18"	G		
	0-5	VZ100	FLOOR	5V	48" X 22" X 18"	H		
	0-7.5	VZ150	FLOOR	5V	48" X 22" X 24"	H		
	0-10	VZ200	FLOOR	5V	52" X 22" X 24"	H		

* Three-phase units, incorporating the exclusive FAZEGUARD Sensor (Patented), a solid state phase failure circuit that will turn off the power supply if one or more of the three input phases opens.

Opad

OPAD ELECTRIC COMPANY, INC.

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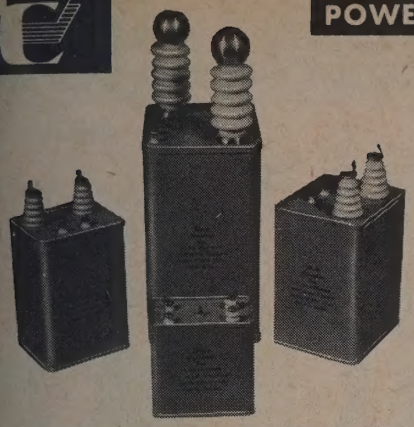
POWER SUPPLIES

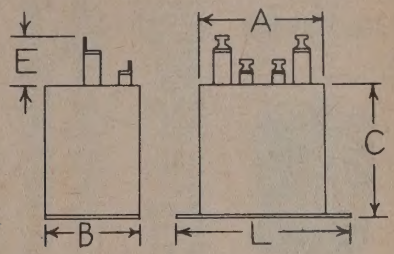
POWER SUPPLIES — COMPACT "M" SERIES



HV-M SERIES Power Packs have these important features:
Input Voltage 0 to rated input voltage* at 50 to 500 CPS.
Output Ratings 0 to 10 milliamperes in accordance with the rating of the power pack.
Ripple 1% RMS or 2.75% peak to peak at rated voltage.
Output Voltage can be varied from 0 to rated voltage and load by means of a variable auto transformer.
Two Output Terminals are isolated from the container, permitting either terminal or both to be operated away from ground. EXCEPTION: The HV750-152M and HV750-502M has a small and a large output terminal. The power pack is normally furnished to deliver a positive output.
Ambient Temperature Range is minus 55° C to plus 85° C (with limited ratings). EXCEPTION: The HV300-502M, HV500-502M and the HV750-502M are limited to operation at an ambient temperature of 50° C maximum.
Design Life 40,000 hours at 35° C and 25,000 hours at 65° C at rated output. Life is 5000 hours at 85° C if the output current is no more than 80% of the rated current. Useful life is generally double the figure given above if an approximately 3% drop in voltage is tolerable.
Mounting Position: Any.
Altitude up to 10,000 feet operating 50,000 feet non-operating.
Vibration 10 to 55 CPS with a total of 0.06 inches for 2 hours in each plane for all power packs which have a base dimension of 3 3/4" x 9/16" or less.
Salt Spray per MIL-Q-151 for 50 hours.
Rectifiers are long life selenium type.
Filter Capacitors are special film types designed for long life.
Hermetically Sealed Container.
Oil Filled Container prevents corona.
Container Finish Zinc chromate primer and light blue-gray lacquer per MIL-L-7178.
Terminals are steatite, solder seal type with solder lug terminals.

*HOW TO ORDER

Select the part number for output voltage and current. This number has a rated input voltage of 118V. If a 220V. input is needed, add the suffix "X" to the part number. For 230V. input, add the suffix "Y", and for 240V. input, add the suffix "Z".



PART NUMBER	KV RANGE	MAX. MA.	DIMENSIONS A	B	C	E	WEIGHT LBS.
HV20-152M	0-2	1.5	3 3/4	1 3/4	3 3/4	3/8	2
HV50-152M	0-5	1.5	3 3/4	2 1/4	3 3/8	5/8	2
HV100-152M	0-10	1.5	3 3/4	3 3/16	4 1/2	1 1/16	4
HV150-152M	0-15	1.5	3 3/4	3 3/16	5 1/2	1 1/16	5
HV200-152M	0-20	1.5	3 3/4	4 9/16	5 7/8	2 1/8	9
HV300-152M	0-30	1.5	3 3/4	4 9/16	7 1/2	3 1/4	11
HV500-152M	0-50	1.5	4 11/16	6	8 1/2	4 5/16	18
HV750-152M	0-75	1.5	5 5/8	7 5/8	12 3/16	7 1/2	26
HV20-502M	0-2	5	3 3/4	2 1/4	3 3/8	3/8	2
HV50-502M	0-5	5	3 3/4	2 1/4	3 3/4	5/8	3
HV100-502M	0-10	5	3 3/4	4 9/16	5 7/8	1 1/16	8
HV150-502M	0-15	5	3 3/4	4 9/16	6 1/8	1 11/16	9
HV200-502M	0-20	5	3 3/4	4 9/16	8	2 1/8	12
HV300-502M	0-30	5	4 11/16	6	8 1/2	3 1/4	18
HV500-502M	0-50	5	5 5/8	7 3/8	12 3/16	4 5/16	26
HV750-502M	0-75	5	11 1/8	14 1/16	16 1/4	7 1/2	124
HV10-103M	0-1	10	3 3/4	2 1/4	3 3/8	3/8	2
HV25-103M	0-2.5	10	3 3/4	2 1/4	3 3/4	5/8	3
HV50-103M	0-5	10	3 3/4	4 9/16	5 7/8	5/8	8
HV100-103M	0-10	10	3 3/4	4 9/16	8	1 1/16	12
HV150-103M	0-15	10	4 11/16	6	8 1/2	1 11/16	18
HV250-103M	0-25	10	5 5/8	7 3/8	12 3/16	3 1/4	26
HV375-103M	0-37.5	10	11 1/8	14 1/16	16 1/4	4 5/16	124

ntact your distributor for prices

WER SUPPLIES — LV SERIES — REGULATED LOW VOLTAGE

Input 105 to 125 volts. 50 to 420Hz.

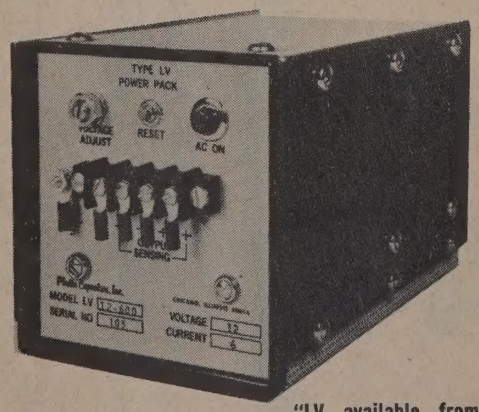
Output Voltage Catalog items are ilable in the most commonly used volt- s between 12 vdc and 100 vdc.

gulation
1% for line voltages 105 to 125 vac.
5% for no load to full load.
nperature coefficient is negative 0.015% degree centigrade over the temperature ge.

SPECIAL FEATURES

- All Solid Sate
- All Silicon Semiconductors
- ±2% Output Voltage Control
- Remote Sensing Terminals
- Less than 3 MV P-P Ripple and Noise
- 0 to 55°C Temperature Operating Range
- Unique Heatsink Design
- Natural Convection Cooling (NO FORCED AIR)
- Control Circuit maintained in a stable environment
- Input electrically isolated from Output
- Protected from Overload and Short Circuit
- Floating Output Potential allows Positive or Negative Output
- Output terminal, control, pilot light and reset button are mounted on the front panel
- Any mounting position

MODEL LV-	OUTPUT VOLTAGE RANGE	MAXIMUM OUTPUT CURRENT AMPERES	DIMENSIONS A X B X C	WT. LBS.
5-250	4.9-5.1	2.5	3 X 5 X 5	5.0
5-1000	4.9-5.1	10.0	5 X 5 X 12	20.0
12-200	11.75-12.25	2.0	3 X 5 X 5	5.0
12-600	11.75-12.25	6.0	5 X 5 X 8	15.0
12-800	11.75-12.25	8.0	5 X 5 X 12	20.0
24-100	23.5-24.5	1.0	3 X 5 X 6	5.0
24-200	23.5-24.5	2.0	5 X 5 X 7	9.0
24-400	23.5-24.5	4.0	5 X 5 X 8	15.0
24-600	23.5-24.5	6.0	5 X 5 X 12	20.0
28-400	27.4-28.6	4.0	5 X 5 X 8	15.0
36-200	35.3-36.7	2.0	4 X 5 X 7	9.0
48-200	47.0-49.0	2.0	5 X 5 X 8	15.0
00-150	98.0-102.0	1.5	5 X 5 X 12	20.0



"LV available from factory only. Contact your distributor for information on series "LVE" which offers a wide voltage adjustment and is regulated."

Plastic Capacitors, Inc.

RCA

BATTERIES

RADIO • FLASHLIGHT • FARM • TRANSISTOR HEARING AID • INDUSTRIAL • PHOTO FLASH

FEBRUARY 24,

PORTABLE "A" TYPES

Type	Distr. Resale Price Ea.*	List Price Ea.*	Volts	Suggested Current Range mA	Max. Dimensions Inches L.	W. or Dia.	Overall Ht.	Standard Package Units	Lbs. (Appr.)	NEDA• Type No.	Replaces Eveready	Burgess	M
VS004	1.15	1.65	1.5	0-1000	2 5/8	2 5/8	3 27/32	6	8.5	4	742	4F	
VS034A♦	.13	.20	1.5	0-25	—	9/16	1 31/32	192	7	15F	915	Z	
VS035A♦	.1635	.25	1.5	0-80	—	1 1/32	1 15/16	192	18.5	14F	935	1	
VS036♦	.1625	.25	1.5	0-150	—	1 11/32	2 13/32	192	39	13F	950	2R	
VS065	1.23	1.75	7.5	0-70	2 5/32	1 15/16	3 1/32	12	7.3	9	717	C5	
VS067	1.23	1.75	4.5	0-250	3 15/16	1 5/16	4 3/32	6	6	3	736	F3	
VS068♦	.87	1.25	6	0-250	1 7/32	1 7/32	2 11/32	6	1	2	724	Z4	
VS069	1.15	1.65	1.5	0-300	2 25/32	1 13/32	3 1/32	6	3	18	720	2D	
VS070	.87	1.25	1.5	0-250	—	1 11/32	4 1/16	6	4.5	23	960P	8R	
VS072	1.23	1.75	4.5	0-150	4 3/32	1 7/16	2 15/16	3	2	19	726	D3	
VS129	2.27	3.25	7.5	0-50	3 29/32	53/64	2 27/32	6	2.5	8	713	B5	
VS141	1.22	1.75	1.5	0-500	2 1/32	1 3/8	4 5/32	6	4.5	11	W353	2F	
VS236♦	.52	.75	1.5	0-300	—	1 11/32	4 3/16	12	4.5	20	964	21R	
VS315▲	1.15	1.65	7.5	0-80	2 9/16	2 1/32	2 13/16	6	4.7	26	707	D5	
VS343♦	.19	.30	1.5	0-150	—	1 11/32	2 13/32	192	40	13D	D99	—	
VS345	1.15	1.65	6	0-250	2 5/8	2 5/8	3 27/32	6	8.5	6	744	F4P1	
VS734♦	.16	.25	1.5	0-25	—	9/16	1 31/32	192	7	15P	815	920	
VS735♦	.19	.30	1.5	0-80	—	1 1/32	1 15/16	192	17	14P	835	120	
VS736♦	.19	.30	1.5	0-150	—	1 11/32	2 13/32	72	13	13P	850	220	

PORTABLE "B" TYPES

Type	Distr. Resale Price Ea.*	List Price Ea.*	Volts	Suggested Current Range mA	Max. Dimensions Inches L.	W. or Dia.	Overall Ht.	Standard Package Units	Lbs. (Appr.)	NEDA• Type No.	Replaces Eveready	Burgess	M
VS013	2.97	4.25	45	0-40	3 13/32	1 27/32	5 1/2	6	13.8	202	482	M30	
VS014	3.46	4.95	45	0-40	3 9/16	2 1/4	4 1/2	5	9.5	206	W359	A30	
VS015	2.76	4.25	22.5, 45	0-25	3	2 15/16	4 1/8	6	6.5	205	738	Z30	
VS016▲	2.70	3.85	67.5	0-10	2 13/16	1 3/8	3 45/64	12	10.5	200	467	XX45	
VS055▲	2.27	3.25	45	0-10	2 27/32	1	3 11/16	12	6.7	201	455	XX30	
VS082▲	2.70	3.85	67.5	0-6	2 13/16	1 3/8	2 1/2	12	6.3	203	457	K45	
VS084	1.17	1.75	22.5	0-25	1 1/32	5/8	2	12	1	215	412	U15	
VS086▲	1.75	2.50	45	0-4	1 3/64	5/8	3 11/16	12	2	213	415	U30	
VS090▲	3.15	4.50	90	0-10	3 23/32	1 3/8	3 45/64	6	6.5	204	490	V60	
VS125▲	2.77	3.95	67.5	0-10	2 13/16	1 3/8	3 23/32	12	9.8	200C	468	V45	
VS217▲	3.15	4.50	75	0-10	1 15/16	1 15/32	6 15/32	12	12.6	212	437	XX50	
VS218▲	2.70	3.85	67.5	0-8	1 29/32	63/64	5 1/16	12	6.4	211	477	P45	M
VS219▲	2.97	4.25	90	0-8	1 31/32	1 1/32	7 15/32	12	9.1	214	479	P60	
VS316▲	3.86	5.50	90	0-10	1 15/16	1 15/32	7 1/8	6	6.5	216	495	N60X	
VS318▲	2.07	2.95	67.5	0-3	1 21/64	63/64	3 1/2	6	1.5	217	416	UX45	
VS344	3.47	4.95	45	0-70	3 31/32	2 17/32	5 5/16	6	19.3	207	484	B30	

PORTABLE "A-B" TYPES

Type	Distr. Resale Price Ea.*	List Price Ea.*	Volts A	Volts B	Current Range mA A	Current Range mA B	Max. Dimensions Inches L.	W. or Dia.	Overall Ht.	Standard Package Units	Lbs. (Appr.)	NEDA• Type No.	Replaces Eveready	Burgess	M
VS019	6.92	9.95	7.5, 9	90	0-50	0-15	9 7/32	2 23/32	4 5/16	1	5.3	401	753	F6A60	
VS047	7.20	10.50	9	90	0-50	0-15	14 1/16	2 11/16	4 1/16	1	6.5	400	752	G6B60	
VS050	6.27	8.95	6, 7.5	75	0-50	0-12	8 5/16	2 7/16	3 3/4	1	2.4	403	755	T5Z50	
VS057W	5.96	8.50	7.5, 9	90	0-50	0-12	8 7/8	2 1/8	3 25/32	1	2.9	405	756	T6Z60	
VS058	7.20	10.50	9	90	0-50	0-15	9 7/32	2 23/32	4 7/32	1	5.5	406	757	F6A60P	
VS064	5.33	7.65	1.5	90	0-300	0-14	3 27/32	2 7/32	7 13/16	1	2.3	425	729	4TZ60	

HEARING AID TYPES

Type	Distr. Resale Price Ea.*	List Price Ea.*	Volts	Suggested Current Range mA	Max. Dimensions Inches L.	W. or Dia.	Overall Ht.	Standard Package Units	Lbs. (Appr.)	NEDA• Type No.	Replaces Eveready	Burgess	M
VS312■	.24	.35	1.4	0-2	—	0.312	0.140	60	3	—	E312	HG312	RM
VS400■	.33	.50	1.4	0-7	—	0.455	0.135	60	0.5	1106	E400	HG400	RM
VS401■	.56	.85	1.4	0-50	—	0.470	1.130	24	1	910M	E401	HG401	RM
VS575■	.24	.35	1.4	0-3	—	0.455	0.132	60	0.5	—	E575	HG575	RM
VS625■	.42	.60	1.4	0-5	—	0.615	0.238	40	0.5	—	E625	HG625	RM
VS630■	.50	.75	1.4	0-20	—	0.615	0.238	40	0.5	1104	E630	HG630	RM
VS675■	.32	.45	1.4	0-10	—	0.455	0.210	60	0.75	—	E675	HG675	RM
VS1713	.30	.45	1.5	0-1.5	—	0.310	0.206	60	0.5	—	S13	—	MS
VS1741	.30	.45	1.5	0-2.5	—	0.455	0.160	60	0.5	—	S41	—	MS
VS1776	.34	.50	1.5	0-10	—	0.455	0.210	60	0.5	—	S76	—	MS

TYPES FOR TRANSISTOR APPLICATIONS

Type	Distr. Resale Price Ea.*	List Price Ea.*	Volts	Suggested Current Range mA	Max. Dimensions Inches L.	W. or Dia.	Overall Ht.	Standard Package Units	Lbs. (Appr.)	NEDA• Type No.	Replaces Eveready	Burgess	M
VS1■	.62	.95	1.4	0-75	—	0.627	0.650	40	2	1100	E1	HG1	
VS9■	.66	1.00	1.4	0-200	—	0.555	1.968	24	1 3/4	15M	E9	HG9	
VS12■	1.00	1.50	1.4	0-250	—	0.640	1.968	10	1 1/4	1101	E12	HG12	R
VS126■	1.48	2.25	8.4	0-50	—	0.730	2.000	24	2	1611M	E126	H126	TR
VS132■	1.15	1.75	2.8	0-75	—	0.662	1.315	10	3/4	1200	E132	H132	TR
VS133■	1.48	2.25	4.2	0-75	—	0.662	1.965	24	2.3	1306M	E133	H133	TR
VS146X■	1.32	1.95	8.4	0-30	1.031	0.660	1.641	24	1 1/4	1604M	E146X	H146X	TR
VS163■	1.48	2.25	4.2	0-50	—	0.662	1.327	10	3/4	1305	E163	H163	TR
VS164■	1.48	2.25	5.6	0-50	—	0.662	1.767	24	2 1/4	1404	E164	H164	TR
VS165■	1.83	2.75	7	0-50	—	0.662	2.217	10	1	1500	E165	H165	TR
VS177■	1.48	2.25	9.8	0-10	—	0.547	1.906	24	1	1606M	E177	H177	TR
VS233■	2.60	3.95	4.2	0-60	—	1.016	1.969	10	2.5	1300	E233	H233	TR
VS300A	.68	.98	9	0-9	—	1	1 15/16	36	4	1600	226	P6	MI
VS301	1.92	2.75	3, 6, 9	0-150	8	1 9/16	2 13/16	6	8	1601	2506	D6P1	
VS304	1.36	1.95	13.5	0-10	1 11/32	1 1/32	2 11/16	12	2.3	1900	239	XX9	
VS305	1.36	1.95	9	0-15	1 13/32	1 11/32	2 3/4	12	3.8	1602	246	2N6	MI
VS306	1.57	2.25	9	0-30	2 9/16	2 1/32	3 5/32	6	5.6	1603	276	D6	MI
VS322	1.36	1.95	9	0-20	1 13/16	1 13/16	2 7/16	12	5.3	1605	266	M6	MI
VS323	.48	.69	9	0-8	1 1/32	21/32	1 29/32	72	6	1604	216	2U6	MI
VS324	1.36	1.95	4.5	0-40	1 13/32	1 1/32	2 3/4	6	1.5	1610	243	2Z3	
VS327	.62	.89	9	0-7	—	3/4	2	12	1	1611	206	L6	MI
VS329	1.05	1.50	12	0-9	—	1	2 7/16	12	1.8	1810	228	PM8	
VS330	1.64	2.35	9	0-80	2 3/16	1 5/32	6 1/4	6	6.5	1612	2356N	C6X	
VS331	2.76	3.95	9	0-30	2 9/32	1 1/4	7 31/32	6	8 1/4	1608	2761N	D6S	
VS332	.68	.98	4.5	0-12	—	0.662	1.965	12	0.9	1306	333	—	
VS334	.155	.25	1.5	0-25	—	9/16	1 31/32	192	7.6	15	1015	930	MI
VS335	.19	.30	1.5	0-80	—	1 1/32	1 15/16	192	17.6	14	1035	130	MI
VS336	.19	.30	1.5	0-150	—	1 11/32	2 13/32	192	40	13	1050	230	MI
VS337	2.76	3.95	4.5	0-200	2 13/16	1 3/4	8 1/32	6	15.5	1303	2731N	—	
VS338	1.36	1.95	6	0-25	1 13/32	47/64	4 1/16	6	1.4	1403	2713N	—	
VS339	1.05	1.50	9	0-20	1 13/32	47/64	4 1/16	6	1.5	1613	2709N	—	
VS640■	.42	.60	1.4	0-50	—	0.625	0.440	20	3/4	1105	E640	HG640	RM

* Optional. • National Electronic Distributors Association. ♦ Flashlight Type Terminals. ■ Mercury Types. ▲ 2 snap-faste

Trade Discount Applies To List Prices Only

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RCA

BATTERIES

RADIO • FLASHLIGHT • FARM • TRANSISTOR HEARING AID • INDUSTRIAL • PHOTO FLASH

LANTERN TYPES

FARM TYPES

INDUSTRIAL and SPECIAL-PURPOSE TYPES

PHOTO FLASH

ALKALINE TYPES

Type	Distr. Resale Price Ea.*	List Price Ea.*	Volts	Suggested Current Range mA	Max. Dimensions Inches W. or Dia. L.	W. or Overall Ht.	Standard Package Units	Lbs. (Appr.)	NEDA• Type No.	Replaces Eveready	Burgess	Mallory
VSPX14	1.05	1.50	2.7	0-5	—	—	20	1.0	—	EPX14	—	—
VSPX23	.62	.95	5.6	0-10	—	—	24	—	—	EPX23	—	—
VS034A♦	.13	.20	1.5	0-25	—	9/16 1 31/32	192	7	15F	915	Z	M15F
VS035A♦	.1625	.25	1.5	0-80	—	1 1/32 1 15/16	192	18.5	14F	935	I	M14F
VS036♦	.1625	.25	1.5	0-150	—	1 11/32 2 13/32	192	39	13F	950	2R	M13F
VS040C	.99	1.49	6	0-250	2 5/8	2 5/8 4 13/32	12	17	908	509	F4H	M908
VS040S	.99	1.49	6	0-250	2 5/8	2 5/8 4 5/16	12	18	915	510S	F4BP	M915
VS073	.095	.15	1.5	0-20	—	0.445 1.180	96	1.5	910	904	N	910F
VS074	.13	.20	1.5	0-20	—	13/32 1 3/4	48	1	24F	912	7	M24F
VS103	4.01	5.98	6	0-1000	8 5/16	2 13/16 6 7/16	4	26	902	706	4F4H	—
VS134	.79	1.15	3	0-25	1 7/32	5/8 2 21/32	10	1	704	750	422	—
VS138	1.92	2.75	3	0-1000	3 7/8	2 11/16 5 13/16	5	13.5	901	W357	4F2H	—
VS139	4.86	7.25	7.5	0-1000	7 1/4	4 1/16 6 7/16	4	30	903	715	4F5H	M903
VS140	5.53	8.25	9	0-1000	8 19/32	4 1/16 6 7/16	4	37	904	716	4F6H	M904
VS142	.87	1.25	4.5	0-25	1 25/32	5/8 2 21/32	10	1.5	705	751	432	—
VS317	2.15	3.25	6	0-500	5 11/32	2 27/32 4 15/16	6	20	918	731	TW1	M918
VS342	2.33	3.50	12	0-250	5 11/32	2 27/32 4 15/16	6	20	926	732	TW2	—
VS343	.19	.30	1.5	0-150	—	1 11/32 2 13/32	192	40	13D	D99	—	—
			A B	A B								
VS022	8.91	11.95	1.5 90	0-300 0-12	15 11/16	4 1/32 6 15/16	1	16.5	413	759	17GD60	—
VS1	.62	.95	1.4	0-75	—	0.627 0.650	40	2	1100	E1	HG1	RM1
VS12	1.00	1.50	1.4	0-250	—	0.640 1.968	10	1 1/4	1101	E12	HG12	RM12
VS006C	.99	1.49	1.5	0-1500	—	2 5/8 6 21/32	12	26	906	6GL	6TEL	M906
VS006S	.99	1.49	1.5	0-1500	—	2 5/8 6 21/32	12	25	905	6IGN	6IGN	M905
VS028	1.23	1.75	4.5	0-50	2 7/16	2 7/32 3	5	1 1/2	714	781	5360	—
VS029	1.75	2.50	1.5, 3, 4.5, 6, 7.5	0-50	3 29/32	2 7/32 3	5	2 1/2	713	773	5540	—
VS039	3.85	5.75	6	0-1500	10 7/16	2 23/32 7 7/32	4	37.5	907	1461	S461	M907
VS040C	.99	1.49	6	0-250	2 5/8	2 5/8 4 13/32	12	17	908	509	F4H	M908
VS040S	.99	1.49	6	0-250	2 5/8	2 5/8 4 5/16	12	18	915	510S	F4BP	M915
VS070	.87	1.25	1.5	0-250	—	1 11/32 4 1/16	6	4.5	23	960P	8R	—
VS083	1.00	1.50	15	0-2.5	1 1/32	5/8 1 29/64	6	0.4	208	411	U10	M208
VS084	1.17	1.75	22.5	0-2.5	1 1/32	5/8 2	12	1	215	412	U15	M215
VS085	1.30	1.95	30	0-2.5	1 1/32	5/8 2 9/16	12	1.3	210	413	U20	M210
VS093	9.07	12.95	300	0-2.5	2 11/16	2 7/32 3 29/32	3	3.7	722	493	U200	—
VS100	1.33	1.90	3	0-250	2 21/32	1 11/32 4 5/16	5	3.5	701	W352	F2BP	—
VS101	.84	1.25	1.5	0-500	2 5/8	1 5/16 4 1/32	6	7	700	711	2FH	—
VS102	1.61	2.35	22.5	0-40	3 1/2	2 3/32 3 1/16	6	4.6	710	763	4156	—
VS103	4.01	5.98	6	0-1000	8 5/16	2 13/16 6 7/16	4	26	902	706	4F4H	—
VS106	.99	1.49	1.5	0-1000	2 5/8	2 5/8 4 13/32	12	18	900	735	4FH	M900
VS112	3.05	4.35	22.5, 45	0-50	4 3/32	2 1/16 5 7/16	6	20	700	762S	5308	—
VS114	2.69	3.85	22.5, 45	0-20	3 1/16	1 7/8 4 31/32	5	5	711	W350	Z30NX	—
VS127W	7.66	10.95	22.5, 45	0-250	8 1/32	4 1/16 7 5/8	4	44	724	W363F	10308SC	—
VS130	1.76	2.50	1.5, 3, 4.5	0-150	4 1/16	1 13/32 3 1/32	5	4.5	712	761T	2370ST	—
VS131	4.16	5.95	3, 4.5, 6, 9, 10.5, 16.5, 22.5	0-50	4	2 7/16 3 1/8	4	6.5	708	778	5156SC	—
VS132	1.15	1.75	2.8	0-75	—	0.662 1.315	10	3/4	1200	E132	H132	TR132
VS133	1.48	2.25	4.2	0-75	—	0.662 1.965	24	2.3	1306M	E133	H133	TR133
VS134	.79	1.15	3	0-25	1 1/32	5/8 2 21/32	10	1	704	750	422	—
VS136	1.92	2.75	3	0-500	2 5/8	2 5/8 4 5/16	5	7.5	703	W356	2F2H	—
VS138	1.52	2.75	3	0-1000	3 25/32	2 11/16 5 13/16	5	13.5	901	W357	4F2H	—
VS139	4.86	7.25	7.5	0-1000	7 1/4	4 1/16 6 7/16	4	30	903	715	4F5H	M903
VS140	5.53	8.25	9	0-1000	8 37/64	4 1/16 6 7/16	4	37	904	716	4F6H	M904
VS142	.87	1.25	4.5	0-25	1 25/32	5/8 2 21/32	10	1.5	705	751	432	—
VS157W	8.37	11.95	22.5, 45	0-300	8 1/8	4 7/16 7 11/16	4	51	715	W364F	21308SC	—
VS163	1.48	2.25	4.2	0-50	—	0.662 1.327	10	3/4	1305	E163	H163	TR163
VS164	1.48	2.25	5.6	0-50	—	0.662 1.767	24	2 1/4	1404	E164	H164	TR164
VS317	1.96	2.95	6	0-500	5 11/32	2 27/32 4 15/16	6	20	918	731	TW1	M918
VS340	4.01	5.98	12	0-600	10 7/16	2 23/32 7 7/32	4	32	922	1463	2G8H	—
VS342	2.33	3.50	12	0-250	5 11/32	2 27/32 4 15/16	6	20	926	732	TW2	—
VS346	1.36	1.95	4.5	0-50	2 7/16	2 7/32 3 1/16	10	3	706	703	532	—
VS400	.33	.50	1.4	0-7	—	0.455 0.135	60	1/2	1106	E400	HG400	RM400
VS630	.50	.75	1.4	0-20	—	0.615 0.238	40	1/2	1104	E630	HG630	RM630
VS640	.42	.60	1.4	0-50	—	0.625 0.440	20	3/4	1105	E640	HG640	RM640
VS704	1.00	1.50	15	0-1.5	5/8	19/32 1 3/8	12	0.4	220	504	Y10	M504
VS705	1.17	1.75	22.5	0-1.5	5/8	19/32 2	12	0.5	221	505	Y15	M505
VS734♦	.16	.25	1.5	0-25	—	9/16 1 31/32	192	7	15P	815	920	M15P
VS735♦	.19	.30	1.5	0-80	—	1 1/32 1 15/16	192	17	14P	835	120	M14P
VS736♦	.19	.30	1.5	0-150	—	1 11/32 2 13/32	72	13	13P	850	220	M13P
VSP3204**	1.97	2.95	4.5	0-6	1 3/8	1 13/16 2 3/4	12	4.9	—	460K	—	—
VS1073	.33	.50	1.5	0-150	—	0.470 1.130	24	.6	910A	E90	AL-N	Mn9100
VS1074	.39	.60	1.5	0-200	—	0.410 1.735	48	2	24A	E92	AL-7	Mn2400
VS1149▲	1.00	1.50	4.5	0-100	—	0.662 1.965	24	2	1306A	523	AL-133	Mn1306
VS1323▲	1.00	1.50	9	0-15	—	— —	24	2.5	—	—	2U6	Mn1604
VS1334	.39	.60	1.5	0-300	—	0.550 1.960	96	5	15A	E91	AL-9	Mn1500
VS1335	.49	.75	1.5	0-500	—	1 1/32 1 15/16	48	8	14A	E93	AL-1	Mn1400
VS1336	.63	.95	1.5	0-1000	—	1 5/16 2 3/8	48	18	13A	E95	AL-2	Mn1300
VS1337	.99	1.50	4.5	0-15	—	— —	10	2	—	531	APX-19	PX19
VS1338	.99	1.50	4.5	0-15	—	— —	10	2	—	—	APX-21	PX21
VS1339	.82	1.25	3	0-70	—	— —	10	1	—	532	APX-24	PX24
	RECHARGEABLE											
VS1560	4.62	6.95	7.5	0-625	2.656	1.531 7.156	12	19.5	—	560	—	—
VS1561	10.62	15.95	15	0-1250	8.313	2.813 5.875	4	25.5	—	561	—	—
VS1563	2.76	4.15	4.5	0-625	—	1.359 7.156	12	11.0	—	563	—	—
VS1564	9.94	14.95	13.5	0-1250	8.313	2.813 5.875	4	24.0	—	564	—	—

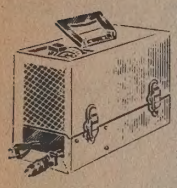
onal. ▲ Alkaline types specially designed for transistor radios. ♦ Flashlight-type terminals. • National Electronic Distributors Association.

terado CHARGERS, INVERTERS AND VOLTAGE ADJUSTERS

CHANGES BATTERY CURRENT TO 110 VAC, 60 CYCLE, ±½ CYCLE, REGARDLESS OF LOAD*
CAN BE ADAPTED FOR 50 CYCLE USE †

PORTABLE 117 VOLT A.C. POWER SUPPLY

TRAV-ELECTRIC*†



Operates anything using 117 VAC, 60 cps from 25 amps rechargeable wet storage battery enclosed. Capacity, 175 watts; 125 watts continuous. Frequency stable within ½ cps with load change. Plugs into AC outlet or car cigarette lighter to recharge battery. Charger has automatic overcharge protection. Meter shows charge rate and hours of anticipated output. Size: 12"x 5½"x8". Wt.: Net, 30 lbs. including battery; shpg., 36 lbs.
Terado No. 50-160— Net Each **$74.19**

INVERTERS

FREQUENCY STABLE

DUAL CONTINENTAL*†
Transistorized, 600 watts

Converts 12 VDC to 110 V, 60 cycle, 550 to 600 watts. Filtered for tape recorders. Frequency stable within ½ cycle with changing input voltage load. Includes battery cables, remote control, variable AC output. Size: 10¾" w. x 13" d. x 6" h. Shpg. Wt., 60 lbs.
Terado No. 50-202—Net Each..... $327.74

CONTINENTAL*†
Transistorized, 300 watts

Same as DUAL CONTINENTAL except: 275-300 watts capacity. Size: 10¾" w. x 6" d. x 6" h. Shpg. Wt., 30 lbs.
Terado No. 50-191—Net Each..... $158.40

ATLAS*†
Transistorized, 200 watts

Same as DUAL CONTINENTAL except: 175-200 watts capacity. Size: 10¾" w. x 6" d. x 6" h. Shpg. Wt., 21 lbs.
Terado No. 50-200—Net Each..... $114.53

TITAN*†
Transistorized, 175 watts

Same as DUAL CONTINENTAL except: less remote control; 150-175 watts capacity; on-off switch; AC receptacle. Size: 10¾" w. x 6" d. x 6" h. Shpg. Wt., 20 lbs.
Terado No. 50-201—Net Each..... $100.51

SUPREME*†

Non-transistorized. Converts 12 VDC to AC. Power output, 175-200 W, filtered. Remote control has variable AC output switch and signal light. Size: 10¾" w. x 6" d. x 6" h. Shpg. Wt., 20 lbs.
Terado No. 50-153—Net Each..... $84.07

RECORDER*†

150-175 watt version of SUPREME, less remote control. Plugs into cigarette lighter. Size: 10¾" w. x 6" d. x 6" h. Shpg. Wt., 21 lbs.
Terado No. 50-175—Net Each..... $76.67

CHIEF*†

Operates tape recorders, power tools, dictation machines, mixers, blenders, etc. Front AC receptacle connects direct to battery. Toggle switch output control. Ventilated steel case. Size: 3½" w. x 6½" d. x 4" h. Shpg. Wt., 8 lbs.
Terado No. 50-137—Input, 6 V; AC power output, 75-100 watts. Net Each..... $53.90
Terado No. 50-138—Input, 12 V; AC power output, 100-125 watts. Net Each..... $53.90

AUTOMATIC*†

Operates automatically from 6 or 12 VDC without vibrator change or switching (6 V, 55-75 watts; 12 V, 85-110 watts). Easy installation into cigarette lighter. For dictation machines, radios, tape recorders, phonographs, heating pads, etc. Steel case. Seal brown baked enamel. Size: 3½" w. x 6½" d. x 4" h. Shpg. Wt., 8 lbs.
Terado No. 50-134—Net Each..... $44.52

SUPER*†

Single input version of AUTOMATIC above. Size: 3½" w. x 6½" d. x 4" h. Shpg. Wt., 8 lbs.
Terado No. 50-126—Input, 6 V; AC power output, 60-75 watts. Net Each..... $38.47
Terado No. 50-127—Input, 12 V; AC Power output, 75-100 watts. Net Each..... $38.47

MASTER*†

Voltage input, 12 V; AC power output, 60-75 watts. Size: 3½" w. x 6½" d. x 4" h. Shpg. Wt., 6 lbs.
Terado No. 50-122—Net Each..... $32.55

ELECTRAL*

Glove compartment size inverter, available in 12 volt input. Easy installation into cigarette lighter. Vinyl coated steel case with leatherette appearance. Size: 3" w. x 2¼" d. x 5½" h. Shpg. Wt., 3 lbs.
Terado No. 50-167—Voltage input, 12 V; AC power output, 42-52 watts. Net Each..... $21.30

SENIOR*

Operates radios, lights, phonographs and small tape recorders. Available in 6 V or 12 V input. Simple to install into cigarette lighter. Aluminum case. Seal brown baked enamel. Size: 2½" w. x 4½" d. x 2¼" h. Shpg. Wt., 3 lbs.
Terado No. 50-115—Voltage input, 6 V; AC power output, 35-40 watts. Net Each..... $18.47
Terado No. 50-116—Voltage input, 12 V; AC power output, 40-50 watts. Net Each..... $18.47

DYNAMO*

Permits operating AC radios and electric shavers on 12 VDC battery. Power output, 25-30 watts. Size: 2" x 2" x 3¾". Shpg. Wt., 2 lbs.
Terado No. 50-197—Net Each..... $13.80

AUTO SHAVER*

Operates all electric shavers. Available in 6 V (10-15 W) or 12 V (15-20 W) input. Plugs into cigarette lighter. Polyethylene non-breakable case. Size: 3⅝" w. x 2¼" d. x 4¼" h. Shpg. Wt., 2 lbs.
Terado No. 50-102—6 V. Net Each..... $11.85
Terado No. 50-103—12 V. Net Each..... $11.85

SOLID STATE

ULTRA FINE FREQUENCY STABLE INVERTERS

DUAL CONTINENTAL-3

Converts 12 VDC to 110 VAC, 60 Hz, 550-600 watts. Frequency variation plus or minus ¼ Hz with changing input and load. Ideal for operation of fine or critical equipment as: video-tape equipment and instruments. Includes battery cables, remote control and variable AC output. Size: 10¾"x13"x6"; shipping weight 60 lbs.
Terado No. 50-202-3—Net Each..... $417.64

CONTINENTAL-3

Same as DUAL CONTINENTAL-3 Except 275-300 watts, capacity — Frequency stable to plus or minus ¼ Hz. Size: 10¾"x6"x6"; shipping weight 30 lbs.
Terado No. 50-191-3—Net Each..... $233.40

24 VOLT TRANSISTORIZED INVERTERS WITH ULTRA FINE FREQUENCY CONTROL

DUAL CONTINENTAL — 24 VOLT

Converts 24 VDC to 110 VAC, 60 Hz. 700-800 Watts, Frequency stable to ± ¼ Hz with changing input and load Designed for duty in aircraft or other 24 volt D.C. applications. Includes battery cables, remote control and variable A.C. output. Size: 10¾"x13"x7¼"; shipping weight 60 lbs.
Terado No. 50-152—Net Each..... $621.23

CONTINENTAL — 24 VOLT

Same as 24 Volt Dual Continental; except 350-400 watt capacity—Frequency stable to ± ¼ Hz; Size: 10¾"x6"x-6"; Shipping weight 30 lbs.
Terado No. 50-190—Net Each..... $305.35

BATTERY CHARGERS

DYN-A-MITE

Baked seal brown paint over aluminum case. Charge rate 1 amp, both 6 and 12 volts. Size: 1¾" x 1¾" x 3¼". Wt., 1 lb.
Terado No. 50-186—Net Each..... $7.19

CHARGRITE

Brown baked enamel, ventilated steel case. Charge rate 5 amps. tapers to trickle. 12 volts only. Charge rate meter. Brackets for coiling wire provided. Size: 4"x5"x6". 10 lbs.
Terado No. 50-194—Net Each..... $23.30

TAPERITE

Brown baked enamel case. Charges 6 amps, or in low position charge automatically tapers to 0. Will not overcharge battery; has charge rate meter. Size: 4" x 5" x 6". Wt., 7½ lbs.
Terado No. 50-192—Net Each..... $28.42

CHALLENGER

Brown baked enamel, ventilated steel case. Charge rate 6 amps, both 6 and 12 volts. Charge rate meter. Brackets for coiling wire provided. Size: 4" x 5" x 6". Wt., 5 lbs.
Terado No. 50-189—Net Each..... $23.92

SUPER CHARGER

Brown baked enamel, ventilated steel case. Charge rate 10 amps, both 6 and 12 volts. Color coded meter shows condition of battery and charge rate. Size: 4" x 5" x 6". Wt., 7½ lbs.
Terado No. 50-181—Net Each..... $29.05

POWERHOUSE

Heavy duty, heavy copper clad, ventilated steel case with handle. Full fast 20 amp charge rate on either 6 or 12 volt batteries, plus trickle charge. Full wave type with 4 silicon rectifiers. Complete with charge rate meter and 6 ft. cable with battery clamps. Size: 11" x 6" x 5". Ship. Wt., 20 lbs.
Terado No. 50183—Net Each..... $54.15

VOLTAGE ADJUSTERS

POLARIS & SATURN

For TV, hi-fi and AC motorized equipment. Change high or low voltage over range of 95-135 V to normal. Input: 110 VAC line. Size: 3" x 2¼" x 5½".
Terado No. 50-204 Polaris—Cap., 300 W cont., 500 W int. Wt. 3 lbs. Net Each..... $11.40
Terado No. 50-172 Saturn—Same as Polaris, but with accurate AV voltmeter. Net Each..... $18.77

APPOLLO

Cap. 1200 W Cont. 1500 W int. Wt. 8 lbs. Size: 3½" x 6½" x 4".
Terado No. 50-141—Net Each..... $22.75

KORECT-A-LINE

For CB and Ham radio equipment, monitor and correct abnormal voltage; accurate AC voltmeter. Cap., 300 W cont. Wt. 3 lbs.
Terado No. 50-150—Net Each..... $18.77

INVERTER-CHARGER COMBINATION
Transistorized — Solid State
Frequency Not Controlled

MARK I

Copper baked enameled case. Changes battery voltage to 117 volts, AC capacity 450 to 500 watts. Charges 12 volt storage battery at 20 amps, 10 amps or trickle. Has charge meter. Size: 12½" x 6" x 6". Shpg. Wt., 21 lbs.
Terado No. 50-131—Net Each..... $104.50

MARK II

Same specifications as MARK I above except inverter capacity is 275-300 watts.
Terado No. 50-132—Net Each..... $89.50

12 VDC POWER SUPPLIES with BATTERY CHARGING FEATURE

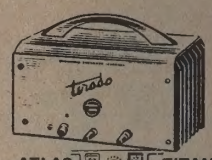
POWR-MITE

Brown baked enamel, ventilated steel case. Supply and charge rate 10 amps. 12 volts D.C. Filtered for 1 amp. loads. Includes output meter. Size: 3½" x 4" x 6½". Wt. 10 lbs.
Terado No. 50-105—Net Each..... $32.90

POWR-ALL

Same type as Powr-Mite except: Capacity 25 amperes—continuous 40 amps. intermittent. Two complete circuits. SEPARATE CIRCUIT BREAKERS. Battery Charge rate 25 amps. to trickle. Filtered for 1 amp. loads.
Size: 12½" x 6" x 6". Wt. 21 lbs.
Terado No. 50-106—Net Each..... $61.20

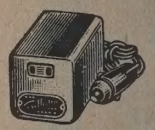
POLARIS


ATLAS TITAN
SUPREME, CONTINENTAL

RECORDER

AUTOSHAVER

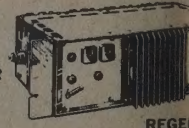
GALAXY, TEMPEST


SENIOR, DYNAMO

DYN-A-MIT

CHALLENGER, SUPER CHARGER

MARK I MARK II


REGE

TRANSISTORIZED INVERTERS
Frequency Not Stabilized

REGENT
(Transistorized, 900 to 1000 watts)

Transistorized 12 VDC to 110 Volt AC. Desig operating non-frequency sensitive equipment. F varies with changing input and load. Has rach adaptability in std. 5¼"x19" rack. Complete wit size: 16"x13¼"x5½"; shpg. wt. 40 lbs.

Terado No. 50-135—Net Each.....
Remote Control No. 50-130—Net Each.....

GEMINI
(Transistorized, 450 to 500 watts)

Transistorized 12 VDC to 110 VAC. Desi operate equipment not sensitive to frequency Size: 12½" x 6" x 6". Shpg. Wt., 20 lbs.
Terado No. 50-128—Net Each.....
Remote Control No. 50-130—Net Each.....

FALCON
(Transistorized, 275 to 300 watts)

Transistorized 12 VDC to 110 VAC. Desi operate equipment not sensitive to frequency Size: 12½" x 6" x 6". Shpg. Wt., 20 lbs.
Terado No. 50-129—Net Each.....
Remote Control No. 50-130—Net Each.....

GALAXY

Transistorized 12 VDC to 110 VAC, 140-175 w tered. Adjustable voltage and frequency. Idea frequency is not critical. Size: 10¾" w. x 6" d. Shpg. Wt., 9½ lbs.
Terado No. 50-205—Net Each.....

TEMPEST

Transistorized 12 VDC to 110 VAC, 125-15 Ideal where frequency is not important. Size: 1 x 6" d. x 6" h. Shpg. Wt., 9½ lbs.
Terado No. 50-170—Net Each.....

TERADO CORPORATIO

Net

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SOLA ELECTRIC SB

IVISION OF SOLA BASIC INDUSTRIES

SOLATRON® ±½% LINE VOLTAGE REGULATORS

hat It Is

T Solatron® LVR is the first regulator to combine in one unit the qual-s of **fast response, "tight" voltage regulation, no moving parts, ustable output, remote sensing, compactness, and high KVA capacity.** he Solatron is a solid-state device with no moving parts, requiring no ustment, maintenance, or attention. It combines the ruggedness ical of transformers with the light weight of electronic control cir-try, resulting in a regulator of remarkable compactness. It has great satility in mounting, and installation.

olatron® regulators are available as standard units in KVA ranges m ½ to 500 KVA, and yet they furnish a degree of regulation as-iated in the past with small VA capacity constant-voltage transform-and power supplies.

Units are available for single or three-phase applications, for either ta or wye connection depending on the service available or the load uirements of your equipment.

nd What It Does

gulation: ±0.5% for line changes. ±1% maximum for any combin-on of line, load, temperature and frequency changes within limits ed below.

iation limits: line ±10%, or + 10%/—20%. Frequency 57-63 cycles, 47-53 cycles, or 380-420 cycles depending on model chosen (see catalog listings). Load zero to full load. Temperature 15° to 40°C.

Response: correction begins in first ½ cycle and is typically 100% complete in less than 10 cycles of the AC frequency.

Harmonic content: no harmful wave-form distortion.

Adjustable output: output voltage is adjustable ±10% of nominal output voltage.

No maintenance: contains no relays, switches, contacts, solenoids, tap, bearings, or other moving parts. No drive motors, servos, or hand cranks. Requires no maintenance: operates completely unattended.

Current capability: withstands high inrush load currents and momentary overloads.

Motor loads: will handle inrush starting current without serious voltage collapse; provides adequate starting torque; no necessity to oversize KVA rating.

Mounting flexibility: may be mounted on wall, floor, or in equipment being regulated. Large terminal compartment, stud or screw-type terminals, knockouts for ease of wiring and installing.

Remote sensing: sensing leads easily connected to load for remote location of Solatron® LVR or for line drop compensation where desired.

SINGLE-PHASE (60 Hz ±3 Hz)

Maximum Output VA Rating 1	Nominal Output Voltage 2	Output Voltage Adjustability 3	Input Voltage Range 4	Maximum Harmonic Content 5	Catalog Number	Approx. Shipping Weight	Suggested User Price F.O.B. Factory
.5	120	108-132	±10%	3%	31-16-150	30	275.00
.5	120	108-132	+10/—20%	5%	33-16-150	40	300.00
.5	240	216-264	±10%	3%	31-26-150	30	275.00
.5	240	216-264	+10/—20%	5%	33-26-150	40	300.00
1	120	108-132	±10%	3%	31-16-210	40	295.00
1	120	108-132	+10/—20%	5%	33-16-210	58	330.00
1	240	216-264	±10%	3%	31-26-210	40	295.00
1	240	216-264	+10/—20%	5%	33-26-210	58	330.00
2	120	108-132	±10%	3%	31-16-220	55	330.00
2	120	108-132	+10/—20%	5%	33-16-220	100	440.00
2	240	216-264	±10%	3%	31-26-220	55	330.00
2	240	216-264	+10/—20%	5%	33-26-220	100	440.00
3	120	108-132	±10%	7% 6	31-16-230	78	410.00
3	120	108-132	+10/—20%	5%	33-16-230	130	490.00
3	240	216-264	±10%	7% 6	31-26-230	78	410.00
3	240	216-264	+10/—20%	5%	33-26-230	130	490.00
5	120	108-132	±10%	7% 6	31-16-250	100	470.00
5	120	108-132	+10/—20%	5%	33-16-250	185	600.00
5	208	188-228	+10/—20%	5%	33-06-250	185	600.00
5	240	216-264	±10%	7% 6	31-26-250	100	470.00
5	240	216-264	+10/—20%	5%	33-26-250	185	600.00
5	277	250-304	+10/—20%	5%	33-36-250	185	600.00
5	480	432-528	±10%	7% 6	31-46-250	100	470.00
5	480	432-528	+10/—20%	5%	33-46-250	185	600.00
7.5	120	108-132	±10%	7% 6	31-16-275	132	540.00
7.5	120	108-132	+10/—20%	5%	33-16-275	275	730.00
7.5	208	188-228	+10/—20%	5%	33-06-275	275	730.00
7.5	240	216-264	±10%	7% 6	31-26-275	132	540.00
7.5	240	216-264	+10/—20%	5%	33-26-275	275	730.00
7.5	277	250-304	+10/—20%	5%	33-36-275	275	730.00
7.5	480	432-528	±10%	7% 6	31-46-275	132	540.00
7.5	480	432-528	+10/—20%	5%	33-46-275	275	730.00
10	120	108-132	±10%	7% 6	31-16-310	170	600.00
10	120	108-132	+10/—20%	5%	33-16-310	310	810.00
10	208	188-228	+10/—20%	5%	33-06-310	310	810.00
10	240	216-264	±10%	7% 6	31-26-310	170	600.00
10	240	216-264	+10/—20%	5%	33-26-310	310	810.00
10	277	250-304	+10/—20%	5%	33-36-310	310	810.00
10	480	432-528	±10%	7% 6	31-46-310	170	600.00
10	480	432-528	+10/—20%	5%	33-46-310	310	810.00
15	120	108-132	±10%	7% 6	31-16-315	275	750.00
15	120	108-132	+10/—20%	5%	33-16-315	400	960.00
15	208	188-228	+10/—20%	5%	33-06-315	400	960.00
15	240	216-264	±10%	7% 6	31-26-315	275	750.00
15	240	216-264	+10/—20%	5%	33-26-315	400	960.00
15	277	250-304	+10/—20%	5%	33-36-315	400	960.00
15	480	432-528	±10%	7% 6	31-46-315	275	750.00
15	480	432-528	+10/—20%	5%	33-46-315	400	960.00
25	120	108-132	±10%	7% 6	31-16-325	400	900.00
25	120	108-132	+10/—20%	5%	33-16-325	520	1275.00
25	208	188-228	+10/—20%	5%	33-06-325	520	1275.00
25	240	216-264	±10%	7% 6	31-26-325	400	900.00
25	240	216-264	+10/—20%	5%	33-26-325	520	1275.00
25	277	250-304	+10/—20%	5%	33-36-325	520	1275.00
25	480	432-528	±10%	7% 6	31-46-325	400	900.00
25	480	432-528	+10/—20%	5%	33-46-325	520	1275.00
37.5	120	108-132	±10%	8% 6	31-16-337	525	1100.00
37.5	240	216-264	±10%	8% 6	31-26-337	525	1100.00
37.5	480	432-528	±10%	8% 6	31-46-337	525	1100.00
50	120 9	114-126	±10%	9%	31-16-350-5	1050	1840.00 10
50	240 9	228-252	±10%	9%	31-26-350-5	1050	1840.00 10
50	480 9	456-504	±10%	9%	31-46-350-5	1050	1840.00 10
75	120 9	114-126	±10%	9%	31-16-375-5	1625	2305.00 10
75	240 9	228-252	±10%	9%	31-26-375-5	1625	2305.00 10
75	480 9	456-504	±10%	9%	31-46-375-5	1625	2305.00 10
100	120 9	114-126	±10%	9%	31-16-410-5	1900	2760.00 10
100	240 9	228-252	±10%	9%	31-26-410-5	1900	2760.00 10
100	480 9	456-504	±10%	9%	31-46-410-5	1900	2760.00 10
150	120 9	114-126	±10%	9%	31-16-415-5	2200	3305.00 10
150	240 9	228-252	±10%	9%	31-26-415-5	2200	3305.00 10
150	480 9	456-504	±10%	9%	31-46-415-5	2200	3305.00 10

ther Capacities available on order from factory. Contact your nearest Sola lectric distributor or representative. (6 to 8 week delivery).
OTE: 50Hz units are also available.

THREE-PHASE DELTA (60 Hz ±3 Hz)

Maximum Output KVA Rating 1 11	Nominal Output Voltage 2	Line-to-Line Output Voltage Adjustability	Input Voltage Range	Maximum Harmonic Content	Catalog Number	Approximate Shipping Weight	Suggested User Price F.O.B. Factory
13	208△	188-228	+10/—20%	5%	39-09-313	905	1975.00
17	208△	188-228	+10/—20%	5%	39-09-317	1045	2190.00
26	208△	188-228	+10/—20%	5%	39-09-326	1300	2600.00
43	208△	188-228	+10/—20%	5%	39-09-343	1645	3450.00

Other Capacities available on order from factory. Contact your nearest Sola Electric distributor or representative. (6 to 8 week delivery).

NOTE: 50Hz units are also available.

THREE-PHASE WYE (60 Hz ±3 Hz)

Maximum Output KVA Rating 1	Nominal Output Voltage 2	Line-to-Neutral Output Voltage Adjustability 3	Input Voltage Range 4	Maximum Harmonic Content 5	Catalog Number	Approximate Shipping Weight	Suggested User Price F.O.B. Factory
15	208/120 Y	108-132	+10/—20%	5%	39-06-315	695	1625.00
30	208/120 Y	108-132	+10/—20%	5%	39-06-330	1045	2190.00
45	208/120 Y	108-132	+10/—20%	5%	39-06-345	1300	2600.00

Other Capacities available on order from factory. Contact your nearest Sola Electric distributor or representative. (6 to 8 week delivery).

NOTE: 50 Hz units are also available.

FOOTNOTES

1. At unity power factor and nominal output voltage. Although the KW efficiency is greater than 90%, the VA efficiency under worst-condition operation can be 60% for +10/—20% input voltage range units.
2. The output voltage regulation is ±0.5% for line voltage changes or ±1% for any combination of line voltage, frequency, load or temperature changes within the limits specified.
3. The output voltage adjustability is accomplished by an internal multi-turn potentiometer. Regulation in accordance with note (2) will be maintained at any output voltage setting within the specified adjustable range.
4. The input voltage range (either ±10% or +10/—20%) is based on the output voltage setting. The output voltage is adjustable ±10% of the rated nominal output by means of an internal multi-turn potentiometer. Therefore, the input voltage range shifts lineally with the setting of this control.
5. Maximum additive RMS harmonic content at nominal frequency.
6. 3% maximum additive RMS harmonic content may be obtained by using an auxiliary harmonic filter. See selection chart A.
7. 3% maximum additive RMS harmonic content may be obtained by using three auxiliary harmonic filters (one each line-to-neutral). See selection chart B.
8. 3% maximum additive RMS harmonic content may be obtained by using three auxiliary harmonic filters (one each line-to-line). See selection chart C.
9. Special sensing circuit filters must be ordered when feeding a rectified load. These are furnished at no additional charge.
10. F.O.B. Goldsboro, North Carolina. All other units are F.O.B. Elk Grove Village, Illinois.
11. The lowest line-to-line load should not be less than 70% of the highest line-to-line load, and the highest line-to-line load equal to, or less than, ⅓ d of the three-phase delta nameplate KVA rating. Additionally, the lowest line current should not be less than 90% of the highest line current.

SOLA ELECTRIC STB

DIVISION OF SOLA BASIC INDUSTRIES

scrdc-III

THE THIRD DIMENSION IN POWER SUPPL

Silicon Controlled Rectifier Regulated D.C. Power Supply . . . Sola

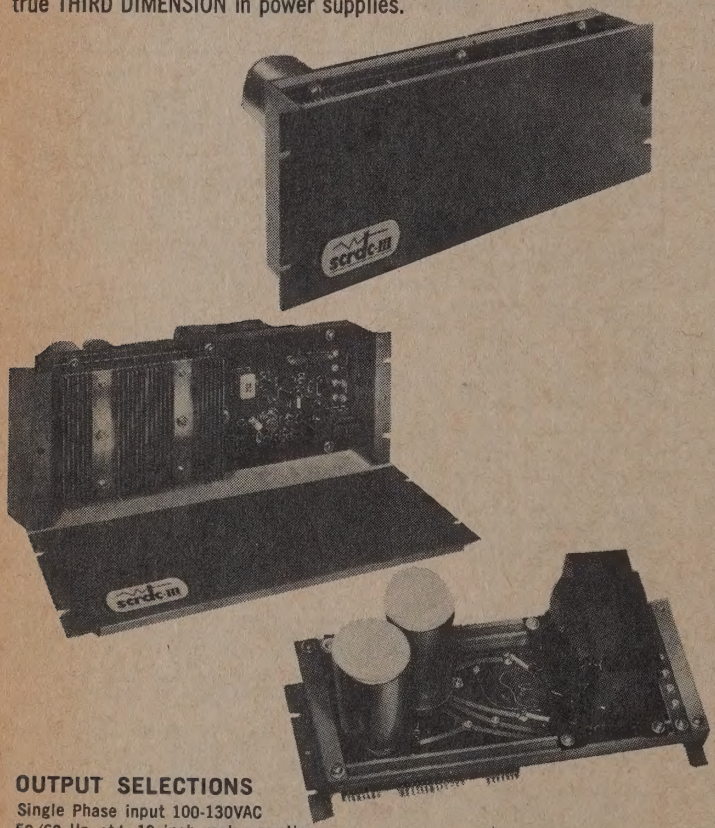
Until now, the user or specifier of regulated power supplies has had two basic choices:

(1) The CVDC or constant Voltage transformer bulk supply — a simple device gaining all of its regulation from the CV transformer. Under a given set of conditions the CVDC provides a total regulation envelope of about ± 10 percent. The CVDC type supply is typically quite economical. (2) A closely regulated transistorized supply . . . usually a series regulated unit providing an overall regulation envelope of ± .1 percent. The cost of this unit is about two to four times the cost of the CVDC.

In between these two cost and regulation extremes, there has always been a need for a supply that performs better than the CVDC but that does not have to be quite as "good" or expensive as the transistorized series regulator.

The SCRDC-III fills this long time void. Now there is a power supply delivering overall static regulation of ± 3 percent costing little more than a CVDC type supply. Generally speaking, the SCRDC-III line is priced about 20 percent higher than the cost of a CVDC.

The SCRDC-III is especially designed for use with logic circuitry and as a bulk power source for point-of-use IC regulators. Here is the true THIRD DIMENSION in power supplies.



SCRDC-III FEATURES . .

Long Life . . . SOLA SCRDC-III supplies are conservatively design quality controlled components, testing, and inspection to insure tenance operation and long life.

Multiple Operation to Increase Current . . . To achieve higher current ratings than are available as stock designs, paralleling three stock units is recommended. Two modes of parallel operat possible, master/slave or paralleled outputs. Contact your Sola tion engineer for details.

Series Connectable . . . To achieve higher output voltage tha two or three supplies may be connected in series.

Three-phase Operation . . . Balancing heavy loads on three-phas lines can be achieved by connecting the inputs of three stock the same catalog number to the three-phase line and connect outputs in parallel as indicated above in "multiple operation."

SCRDC-III PERFORMANCE CHARACTERISTIC

Static Line Regulation . . . The SOLA SCRDC-III power supplies signed to hold output voltage variations to within ± 0.1% of or 50 mv., whichever is greater for an input voltage range of volts, 50/60 Hz.

Static Load Regulation . . . The SOLA SCRDC-III power supplies signed to hold output voltage variations to within ± 0.5% of or less for static output load changes within the range of zero load.

Ripple/Pard . . . The SOLA SCRDC-III will maintain the output within ±2% of the nominal or less for both periodic and random tions. The RMS ripple does not exceed 1% of the nominal, or 3 volts, whichever is greater.

Dynamic Line Regulation . . . The SOLA SCRDC-III power supplies signed to hold output voltage variations to within ±1.0% of or less for step line voltage changes of ±10% within the stati given above.

Dynamic Load Regulation . . . The SOLA SCRDC-III power suppl designed to hold output voltage variations to within ±2.0% nominal or less, for step load changes of up to 25% of the f rating within the load range of 25 to 100% of full load.

Frequency . . . The SOLA SCRDC-III will meet the above regulat teria over an input frequency range of 47 to 63 Hz without custo changing or jumpering.

Response . . . The SOLA SCRDC-III supply will recover from changes within the specified range given above to levels wit specified static band in less than 250 milliseconds.

Efficiency . . . The efficiencies of the SOLA-SCRDC-III supplies load will vary directly as the output voltage and load. Figure below plot efficiencies as a function of load and output voltag respectively.

Operating Temperature . . . The SOLA SCRDC-III power supply is d to operate with convection cooling over a range of input ambients supply of 0°C to 40°C. The output voltage will vary less than .0 over the operating range. Derate 2.5%/°C up to 50°C.

Isolation . . . Isolation between the primary and secondary of th transformer provides electrical separation between the AC sou the DC load.

OUTPUT SELECTIONS

Single Phase input 100-130VAC
50/60 Hz std. 19 inch rack mounting

DC OUTPUT Volts	Amps	Watts	Catalog Number	Panel ht. (in.)	Mtg. ctrs. (in.)	Depth Max. (in.)	Ship. Wt. Lbs.	Price
4.5	10	45	39312	7	4	8¼	19	$180.00
4.5	20	90	39322	7	4	8¼	29	210.00
4.5	40	180	39342	8¾	5¾	9½	34	270.00
6	10	60	39313	7	4	8¼	20	185.00
6	20	120	39323	7	4	8¼	30	215.00
6	40	240	39343	8¾	5¾	9½	35	280.00
12	10	120	39314	7	4	8¼	28	190.00
12	20	240	39324	7	4	8¼	32	225.00
12	40	480	39344	8¾	5¾	10¾	48	290.00
24	10	240	39316	7	4	8¼	31	215.00
24	20	480	39326	7	4	9	46	265.00
24	40	960	39346	8¾	5¾	10¾	60	335.00
48	10	480	39319	7	4	9	48	230.00
48	20	960	39329	8¾	5¾	10¾	60	295.00

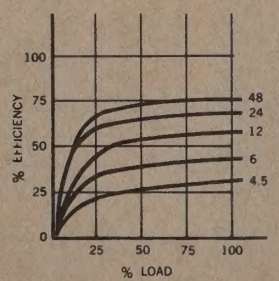


FIGURE 1

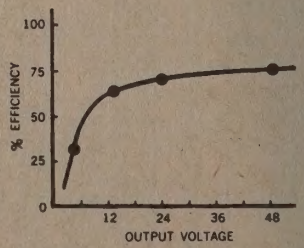


FIGURE 2

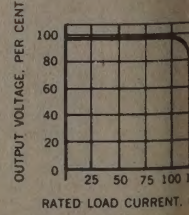


FIGURE 3

Fig. 3 Current-limiting action causes output voltage to collapse on

Net

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SOLA® CVDC power supplies, available off-the-shelf.

Sola offers a wide range of CVDC type power supplies which are available from stock of your local electronic parts distributor or the factory. These standard designs are available in any quantity and are the result of Sola custom engineering efforts.

Inherently highly reliable, the CVDC supplies are rugedly built and use simple circuitry. Fast and dependable regulation, current limiting, and high efficiency are provided by the heart of the supply: the famous Sola Constant Voltage Transformer.

Constant-voltage Sola transformer provides ±1% regulation for line voltage variations as great as ±15%, serves as the heart of CVDC power supplies for voltage-sensitive equipment.

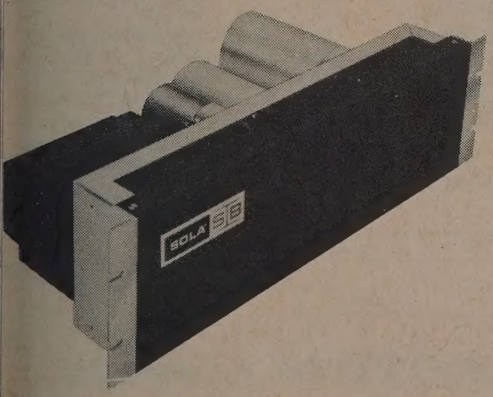
CHARACTERISTICS

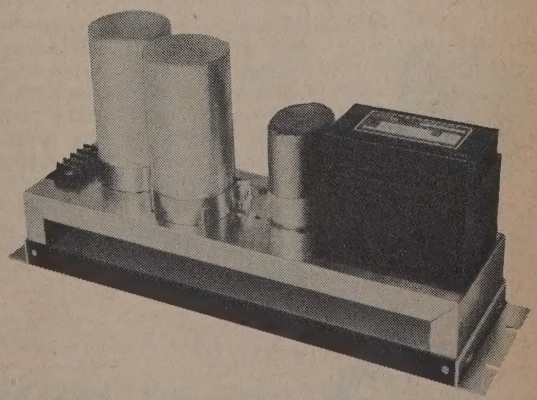
- Fast, dependable line-voltage regulation: within ±1% for fluctuations of ±15%; voltage will return to regulation envelope in approximately 50 milliseconds.
- Load regulation: from 1/2% to 8%, one half to full load.
- Automatic current limiting: short circuit protection; withstands load faults; high overloads cannot damage power supply or equipment components.
- High efficiency: upwards of 75%; low input-power requirements.
- Simplified operation: no adjustments or maintenance; continuous duty.
- Convection cooling.
- Ripple: 1% rms maximum.
- Ambient operating temperature: 50° C maximum.

STANDARD CVDC MODELS

(fixed output for pulse, variable, intermittant and fixed loads-Inputs 100-130 volts, 60Hz)

CATALOG NO.	OUTPUT RATINGS VOLTS	AMPS	VA	PANEL HT.	WT. LBS.	PRICE 1-4
281513-2	6	10	60	3½	27	$105.00
282123	6	15	90	5¼	38	115.00
281514-2	12	5	60	3½	18	105.00
282124	12	10	120	5¼	31	120.00
281515-2	18	5	90	3½	20	110.00
282125	18	10	180	5¼	45	145.00
281024-1	24	6	144	5¼	30	105.00
282126	24	10	240	5¼	48	125.00
281203	24	15	360	8¾	64	155.00
282127	24	25	600	7	72	202.00
28626-1	28	8	224	5¼	42	120.00
282128	28	15	420	7	55	195.00
281048	48	4	192	5¼	32	110.00
281561	48	10	480	5½	48	155.00
282129	48	20	960	8¾	95	250.00
281125	125	2	250	5¼	44	125.00
281150	150	2	300	5¼	48	130.00
281200	200	1	200	5¼	39	110.00
281250	250	1	250	5¼	45	115.00





SOLA ELECTRIC SB

DIVISION OF SOLA BASIC INDUSTRIES

Manufacturers of AC & DC Power Supplies ● Sola Constant-Voltage Transformers ● Solatron Line-Voltage Regulators ● DC-to-AC Inverters ● Lighting Ballasts

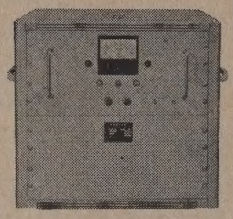
STABILINE® automatic VOLTAGE REGULATOR

- THE MOST EXTENSIVE LINE OF AUTOMATIC VOLTAGE REGULATORS
- RATED OUTPUTS FROM 0.25 TO 275 KVA

Deliver a constant output voltage regardless of variations in inp voltage or changes in load current. Conservatively rated, rugged built, precision products. Submit specifications for ratings desired h not given in the charts. Input voltage ranges shown are at nomi output voltage; input voltage range shifts with output voltage setti All are cabinet types; those with other construction also are indicat

EMT series

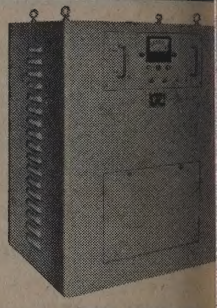
Electro Mechanical Transistorized types in ratings from 2.3 to 118 kva. Control circuit is completely transistorized. POWERKOTE Coils in power section permit higher output ratings. Rated accuracy ±0.75% for all variations of line voltage or load current within stated range of unit.



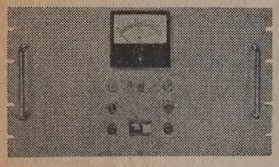
TYPE EMT4115B

EMS series

Electro Mechanical Transistorized types for single or three phase duty with ratings from 25 to 275 kva. Several types available with individual line control for greater application flexibility. Plug-in transistorized control circuit permits quick replacement in event of malfunction.



TYPE EMS42100



TYPE EMK4105R

EMK series

Electro Mechanical high speed, high accuracy assemblies in ratings of 2.5/5.0 KVA. Accuracy ±1.0% of nominal output voltage.

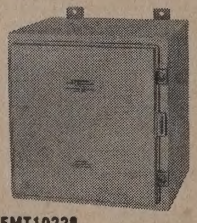
TYPE IES9101

IES series

Solid-state types with accuracy with in 100 millivolts bandwidth, effi ciency up to 95%, fast response, lo distortion and wide operating fre quency range. No vacuum tubes, mo tors, blowers or relays are used. Al units have provision for remote sens ing and have removable plug-i solid-state circuit boards.

All-boost Marine

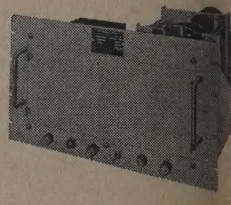
Electro Mechanical Transistorized type EMT10228 is fully enclosed in a weatherproof cabinet. Well suited for marine or industrial applications where equipment must withstand effects of dust and moisture. Has 6 KVA rated output.



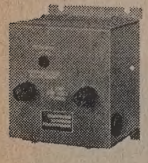
TYPE EMT10228

Militarized

Standard Electro Mechanical and Electro Mechanical Transistorized types that meet the requirements of applicable military specifications. Type EMTH41007MH is 3½ x 6 x 4½"; type EM4108MCR fits standard 19" relay rack. Accuracy ±1.0%.



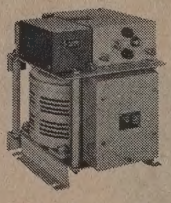
TYPE EM4108MCR



TYPE OVK100

Overvoltage Detector OVK100

Solid-state voltage level detector used with STABILINE Automatic Voltage Regulators. Actuates relay contacts when monitored voltage exceeds preset level. Relay contacts can be used to actuate protective equipment in a latching (relay remains closed) or nonlatching (relay automatically resets) connection. Trip level adjustable from 110 to 150 volts. Adaptable for higher voltage operation.



TYPE EMT4104BUT

Types EMT4104B, (U), (UT)

Have two primary windings for parallel or series (120 or 240 volt) duty. Type EMT4104B is cabinet enclosed; EMT4104BU is of open construction; EMT4104BUT has components screened or enclosed.

THE SUPERIOR ELECTRIC COMPANY

SEE OTHER SUPERIOR ELECTRIC PRODUCT PAG

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EMT SERIES

INAL PUT AGE	OUTPUT VOLTAGE (ADJUSTABLE)	INPUT VOLTAGE RANGE‡‡	MAXIMUM OUTPUT AMPERES	RATED OUTPUT KVA	CORRECTION RATE AT 60 HERTZ (SECONDS/VOLT)	TYPE
50 HERTZ, SINGLE PHASE OPERATION						
5	110-120	95-135	20	2.3	0.075	EMT4102B†
			57	6.6	0.075	EMT4106C§
		90-115	52	6.0	0.12	EMT10228
		105-125	114	13.0	0.15	EMT4112B§*
		95-135	144	16.6	0.125	EMT4115B
0¶	110-120	108-137	35	4.2	0.10	EMT4104B††
0‡	220-240	195-255	36	8.3	0.083	EMT4207B
			93	21.4	0.083	EMT4220
		205-250	130	29.9	0.111	EMT4228C
0‡¶	220-240	228-256	35	8.4	0.10	EMT4104B††
0	440-480	400-520	20	9.2	0.041	EMT4407B
			45	20.7	0.041	EMT4418B
60 HERTZ, THREE PHASE OPERATION						
0‡	220-240	195-255	33	13.1	0.083	EMT6210YB
			48	19.1	0.083	EMT6215YB
			63	25.1	0.083	EMT6220YB
			145	57.8	0.25	EMT6245YB
			188	74.9	0.25	EMT6270DB
0	440-480	400-520	18	14.3	0.041	EMT6412YB
			24	19.1	0.041	EMT6417YB
			35	27.9	0.041	EMT6425YB
			75	59.8	0.125	EMT6450YB
			100	75.0	0.125	EMT6475YB
		420-500	148	118	0.188	EMT64100YB

EMS SERIES

HERTZ, SINGLE PHASE, 2-WIRE						
15	110-120	103.5-126.5	833	100	0.65	EMS41100
30‡	220-240	218.5-241.5	435	100	0.22	EMS42100‡
60 HERTZ, SINGLE PHASE, 3-WIRE, INDIVIDUAL LINE CONTROL						
/120	230-250/115-125	204-276/102-138	104	25.0	.03/.06	EMS14225
			250	60.0	.03/.06	EMS14260
	220-240/110-120	228-252/114-126	417	100	.10/.21	EMS142100††
60 HERTZ, THREE PHASE, SINGLE CONTROL						
30‡	220-240	203-257	339	135	0.28	EMS62135Y‡
50	440-480	445-495	230	180	0.30	EMS64180Y
			347	275	0.30	EMS64275Y
60 HERTZ, THREE PHASE, INDIVIDUAL LINE CONTROL						
/120	191-217/115-125	177-239/102-138	250	90.0	.08/.14	EMS16290Y
		165-233/95-135	525	190	.37/.22	EMS162190Y††

EMK SERIES

60 HERTZ, SINGLE PHASE						
15	110-120	95-135	23	2.6	0.02	EMK4105†
		105-125	46	5.3	0.04	

IES SERIES

OR 60 HERTZ ±10%, SINGLE PHASE						
15	110-120	95-135**	4.4	0.5	—	IES91005
			8.7	1.0	—	IES9101
			26.1	3.0	—	IES9103
			52.2	6.0	—	IES9106
			87.0	10.0	—	IES9110
			130	15.0	—	IES9115
30	220-240	195-255**	13	3.0	—	IES9203
			26.1	6.0	—	IES9206
			43.5	10.0	—	IES9210
			65	15.0	—	IES9215

MILITARIZED TYPES

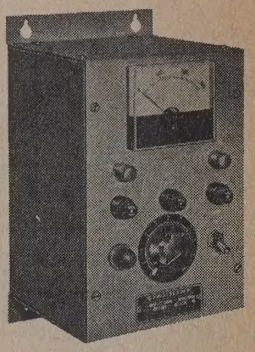
3-66 HERTZ, SINGLE PHASE						
120	115-125	105-135	66.6	8.0	0.10	EM4108MCR
00-420 HERTZ, SINGLE PHASE						
115	115	103.5-126.5	6	0.69	0.13▲	EMTH41007MH

▲At 400 hertz. †Also available as rack model (suffix R when ordering). ¶For 60 hertz operation only.
*Can also be operated on an input range of 95 to 135 volts with a rating of 57 amperes, 6.6 kva and a correction rate of 0.075 seconds per volt.
§Also available as rack (suffix R when ordering) or wall mounted (suffix W when ordering) models.
‡Unit can be converted for 208 volt operation by simple tap changes. Input and output voltage ranges change proportionally.
**At nominal output. Shifts with output voltage setting but not proportionally.
††Also available in open construction (suffix U) and with screened and enclosed (suffix UT) construction.
‡‡At nominal output. Shifts proportionally with output voltage setting.

ECTIONS 2100, 3500 AND 5600

STABILINE®

FULL RANGE REGULATOR CONTROLLERS



TYPE FR500MP

For use with any motor-driven

POWERSTAT® Variable Transformer to provide full range:

1

REGULATED AC VOLTAGE

—Regulates output voltage from any motor-driven 120 or 240 volt 50/60 hertz, single phase POWERSTAT Variable Transformer. For three phase, the unit monitors one line-to-neutral or one line-to-line voltage. Can be used for 480 volt duty by using step-down transformer. Output voltage remains within a 2-volt band on 120 volts and within 4-volt band on 240 volts.

2

REGULATED AC CURRENT

—Combined with POWERSTAT Variable Transformer, current/voltage transformer and current transformer, the unit will maintain constant output current accurate within ±1% of the maximum current setting.

3

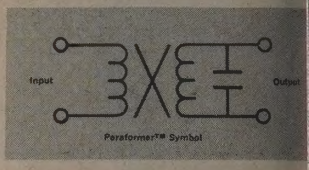
REGULATED DC VOLTAGE—

Combined with a POWERSTAT Variable Transformer and a user-supplied d-c power supply, the unit provides regulated d-c voltage. Supplied for d-c use.

WANLASS TECHNOLOGY

Wanlass Electric Company was founded and is being perpetuated on contribu to technology for improved power conversion and conditioning. Toward this Wanlass has provided the personnel, facilities and motivation to lead the indu in the technologies that apply. In addition to the unique and proprietary t nologies summarized below, the company is widely experienced in all techni of design and construction that lead to better performance to specific req ments. The company's capabilities include the use of all state-of-the-art t niques such as magnetics, SCR, solid-state and high frequency switching; the of conventional magnetic materials and/or ferrites; and the engineering know to produce units in any rating from microwatts to megawatts.

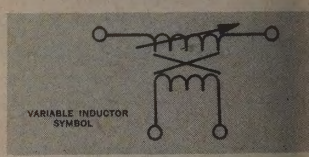
THE WANLASS PARAX^{tm}. This revolutionary concept controls AC power electrically, without mechanical or solid-state elements, by utilizing parametric techniques to eliminate the need for mutual inductance in electrical energy transformation. By rhythmically varying the inductance of a magnetic circuit, the Wanlass PARAFORMER^{tm} achieves transient free energy transfer without relying on mutual inductance. While transient free energy is one of the most significant advantages of this advanced concept, the PARAFORMER^{tm} also regulates voltage, exhibits minimum wave form distortion, provides electrical isolation and transforms voltage.



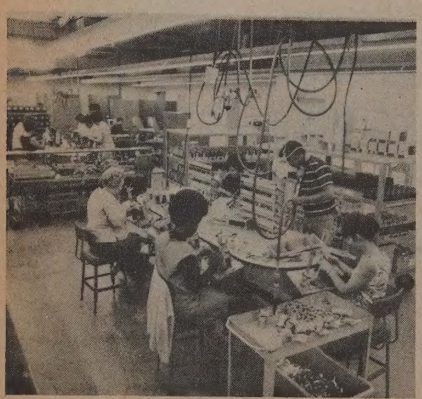
PARAFORMER$_{tm}$ SYMBOL

Another of its useful properties is bilateral filtering . . . the ability to prevent line voltage irregularities from being transmitted to the load and load voltage irregularities from being refle back to the line. A PARAFORMER^{tm} device will actually arrest lightning without damag the secondary winding. This new technology has been applied to voltage regulators, filters, AC and DC power supplies, inverters, DC converters and frequency converters to n custom specifications. A variety of off-the-shelf products utilizing the PARAFORME principle are marketed under the trade name PARAX^{tm}.

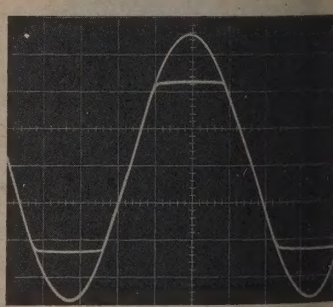
THE WANLASS VARAX^{tm}. The VARAX^{tm} is another all-new magnetic voltage regulating concept invented by Wanlass. The component is an electrically variable inductor which can be controlled over a wide range of inductance through the application of small DC control currents. It is generically related to the Wanlass PARAFORMER^{tm} and is significantly different in concept and performance from the classical saturable reactor. Application of DC current to the control winding increases the effective reluctance of the AC magnetic circuit, hence decreases its inductance. Maximum inductance occurs with zero control current and decreases with increasing control current, reaching a minimum at maximum control current. When compared with conventional saturable reactors, the VARAX^{tm} device offers smaller size, lighter weight, greater reliability, waveform distortion and lower cost. An additional, important characteristic of the VARA is the inherent decoupling of AC power from entering the DC control circuitry. Since t are no semiconductors used in series with the load, extremely high overload currents easily handled. Spike-free regulation to ±0.5% and efficiency to 95% is typical for units ratings from 500VA to 5000VA output from 100-130 VAC single-phase, 47-63 Hz input.



VARIABLE INDUCTOR SYMBOL



THE WANLASS CLIP-AC^{tm}. This proprietary voltage regulating technology utilizes circuitry that symmetrically clips the peaks of unregulated input voltage to produce a constant output waveform, which can then be transformed into a variety of regulated output voltages through the use of an appropriate transformer. The circuit dissipates the peaks of the incident sinusoidal waveform in the following way: Output voltage is monitored by a sensor which uses a zener diode as a reference. In turn, control circuitry adjusts the clipping level of a pass transistor to maintain the desired constant output. Economy of design results from the use of a floated reference and a diode bridge to enable the same pass transistor to be used on both halves of the AC cycle.



Short duration surge currents from capacitor charging, motor or lamp starting loads, e are by-passed around the pass transistor by an SCR triggered by a bias resistor between transistor and sense transformer. By the appropriate choice of the sensor, and the qua of the solid-state componentry, any desired AC voltage regulation precision can be achie with true RMS, average or peak voltage held to a constant, in ratings up to 1KAV.

NOTE: The OEM Products in the catalog are covered by the following United States Pat Numbers where applicable: 3,403,323 - 3,409,822. Other Patents both U. S. Foreign pending.

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WANLASS PARAFORMER™ PRODUCTS FOR OEM AND SYSTEM APPLICATIONS

ODEL
O. PEC-60

ORDER A PARAFORMER™ TODAY AND SEE FOR YOURSELF

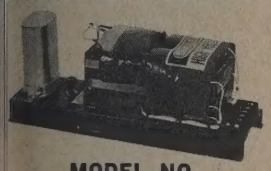
Knowing that every conceptually new component must be carefully tested by prospective users before it can be included within their own equipment. Wanlass Electric has available for immediate delivery a 60 watt Paraformer (Model PEC-60). May we suggest that you buy one of these units and satisfy yourself relative to its amazing properties. When you place your order, be sure to ask for our new book entitled "The Wanlass Paraformer™". This treatise on the subject of parametric power conversion discusses the theory and application of parametric devices and will assist you in evaluating your PEC-60.

PEC-60 SPECIFICATIONS

INPUT VOLTAGE: 115VAC ±10%, 60 Hz, 1φ, (50-150 VAC input voltage range dependent upon load current). OUTPUT VOLTAGE: 117 VAC, 60 Hz, 1φ. OUTPUT CAPACITY: 60 VA. NOISE ATTENUATION: Over 50 DB (0-1MHz). LINE REGULATION: (±10%), ±0.25%. LOAD REGULATION: (0-FL), ±1.5%. SIZE (approx.): 9"Lx4"Wx 4½"H. WEIGHT (approx): 9 LBS. PRICE (including book):

(1-9)	$95.00	(25-49)	$85.50
(10-24)	$90.25	(50-99)	$80.75

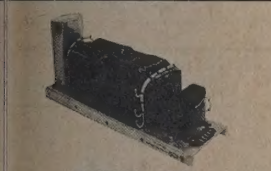
A.C. PARAMETRIC POWER CONDITIONERS — 60Hz — FILTER/REGULATORS



MODEL NO. PEC-150

SPECIFICATIONS ON MODEL NO. PEC-150 — 150 VA

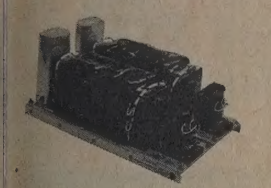
A.C. INPUT: 105-125 V. 1φ, 60 Hz (50-150 VAC Input Voltage Range dependent on load current.)
A.C. OUTPUT: 117 V. 1φ, 60 Hz, 150VA ●
NOISE ATTENUATION: OVER 50DB (0-1 MHz)
REGULATION: ±0.5% Line; ±2% Load
SIZE & WEIGHT: 5.5"H x 4⅝"Wx14⅛"L. 21 Lbs.
PRICE: (1-9) $150.00 (10-24) $142.50 (25-49) $135.00 (50-99) $127.50



MODEL NO. PEC-500

SPECIFICATIONS ON MODEL NO. PEC-500 — 500 VA

A.C. INPUT: 105-125 V. 1φ, 60 Hz (50-150 VAC Input Voltage Range dependent on load current.)
A.C. OUTPUT: 117 V. 1φ, 60 Hz, 500 VA
NOISE ATTENUATION: OVER 50DB (0-1 MHz)
REGULATION: ±0.5% Line; ±2% Load
SIZE & WEIGHT: 7.5"H x 5"W x 17"L. 50 Lbs.
PRICE: (1-9) $225.00 (10-24) $213.75 (25-49) $202.50 (50-99) $191.25



MODEL NO. PEC-1000

SPECIFICATIONS ON MODEL NO. PEC-1000 — 1000 VA

A.C. INPUT: 105-125 V. 1φ, 60 Hz (50-150 VAC Input Voltage Range dependent on load current.)
A.C. OUTPUT: 117 V. 1φ, 60 Hz, 1000 VA
NOISE ATTENUATION: OVER 50DB (0-1 MHz)
REGULATION: ±0.5% Line; ±2% Load
SIZE & WEIGHT: 7.5"H x 10¼"W x 17"L. 90 Lbs.
PRICE: (1-9) $425.00 (10-24) $401.75 (25-49) $382.50 (50-99) $361.30

NOTE: MODELS PEC-2500 & PEC-5000 (2.5 & 5 KVA Paraformers™) are also available and are priced at $725.00 and $1,475.00 each respectively.

A.C. PARAMETRIC POWER CONDITIONERS — 400Hz — FILTER/REGULATORS

MODEL NO. PEC-4-75

SPECIFICATIONS ON MODEL NO. PEC-4-75 — 75 VA

A.C. INPUT: 105-125 V. 1φ, 400 Hz (50-150 VAC input Voltage range dependent on load current.)
A.C. OUTPUT: 117 V. 1φ, 400 Hz, 75 VA
NOISE ATTENUATION: OVER 50DB (0-1 MHz)
REGULATION: ±1% line; ±2.5% load
SIZE & WEIGHT: 5"H x 5"W x 6"L. 7 Lbs.
PRICE: (1-9) $105.00 (10-24) $99.75 (25-49) $94.50 (50-99) $89.25

MODEL NO. PEC-4-500

SPECIFICATIONS ON MODEL NO. PEC-4-500 — 500 VA

A.C. INPUT: 105-125 V. 1φ, 400 Hz (50-150 VAC input Voltage range dependent on load current.)
A.C. OUTPUT: 117 V. 1φ, 400 Hz, 500 VA
NOISE ATTENUATION: OVER 50DB (0-1 MHz)
REGULATION: ±1% line; ±2.5% load
SIZE & WEIGHT: 7"H x 6"W x 7¾"L. 30 Lbs.
PRICE: (1-9) $275.00 (10-24) $261.25 (25-49) $247.50 (50-99) $233.75

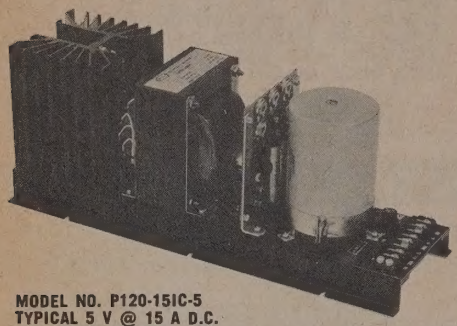
MODEL NO. PEC-4-1000

SPECIFICATIONS ON MODEL NO. PEC-4-1000 — 1000 VA

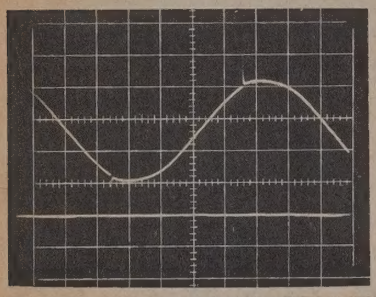
A.C. INPUT: 105-125 V. 1φ, 400 Hz (50-150 VAC input Voltage range dependent on load current.)
A.C. OUTPUT: 117 V. 1φ, 400 Hz, 1000 VA
NOISE ATTENUATION: OVER 50DB (0-1 MHz)
REGULATION: ±1% line; ±2.5% load
SIZE & WEIGHT: 8"H x 5¼"W x 17"L. 60 Lbs.
PRICE: (1-9) $475.00 (10-24) $451.25 (25-49) $427.50 (50-99) $403.75

OTHER WANLASS PARAFORMER™ PRODUCTS FOR OEM AND SYSTEM APPLICATIONS

D.C. POWER FOR INTEGRATED CIRCUITS & MOS/FET APPLICATIONS



MODEL NO. P120-15IC-5
TYPICAL 5 V @ 15 A D.C.
PIC POWER SUPPLY



TOP TRACE: Input Line Voltage Scale:
VERTICAL: 100V/CM (AC)
HORIZONTAL: 2 MS/CM

LOWER TRACE: Output D.C. Voltage Scale:
VERTICAL: 10 Mv/CM (AC)
HORIZONTAL: 2 MS/CM

WANLASS "PIC" LINE — PARAFORMER/SERIES REGULATOR ALL SILICON SOLID-STATE D.C. POWER SUPPLIES

POSITIVE PROTECTION! Provides over 100 DB noise attenuation for all vo sensitive loads! Because the Wanlass Paraformer can be employed in the manner as any other power, isolation or rectifier transformer, combining it w series regulator D.C. Power supply, provides positive protection for voltage s tive loads. The "PIC" line therefore represents truly "fail-safe" load conditio

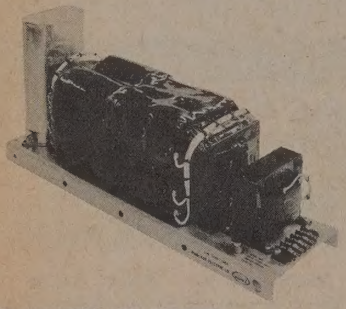
WANLASS PIC STANDARD LINE	GENERAL SPECIFICATIONS	WANLASS PHPI High Performance
100-130 V., 60 Hz, 1ϕ	A.C. INPUT	100-130 V., 60 Hz, 1
SEE TABULATION	D.C. OUTPUT	SEE TABULATION
±5%	OUTPUT VOLTAGE ADJUST	±5%
±0.02% LINE	REGULATION	±0.01% LINE
±0.05% LOAD		±0.02% LOAD
300 uV RMS	RIPPLE	100 uV RMS
25-50 uSec	RECOVERY TIME	25-50 uSec
CURRENT LIMIT REMOTE SENSE	STANDARD FEATURES	CURRENT LIMIT REMOTE SENSE
OVERVOLTAGE CROWBAR @$25.00 Each	OPTIONS	OVERVOLTAGE CRO @$25.00 Each

TABULATION OF MODELS AND RATINGS

Model Number	Rating	PRICES 1-9	10-24	25-49	5
P60-7.5IC-5	5V@7.5A.	$195.00	$185.25	$175.50	$1
P60-5IC-12	12V@5.0A.	$195.00	$185.25	$175.50	$1
P60-2.5IC-24	24V@2.5A.	$195.00	$185.25	$175.50	$1
P120-15IC-5	5V@15A.	$240.00	$228.00	$216.00	$2
P120-10IC-12	12V@10A.	$240.00	$228.00	$216.00	$2
P120-5IC-24	24V@ 5A.	$240.00	$228.00	$216.00	$2
P60HP-7.5IC-5	5V@7.5A.	$220.00	$209.00	$198.00	$1
P60HP-5IC-12	12V@5.0A.	$220.00	$209.00	$198.00	$1
P60HP-2.5IC-24	24V@2.5A.	$220.00	$209.00	$198.00	$1
P120HP-15IC-5	5V@15A.	$265.00	$251.75	$238.50	$2
P120HP-10IC-12	12V@10A.	$265.00	$251.75	$238.50	$2
P120HP-5IC-24	24V@5 A.	$265.00	$251.75	$238.50	$2

DIMENSIONS: P60IC UNITS: 17"L x 4.5"W x 5.88"H Weight: 16 Lbs.
P120IC UNITS: 17"L x 5"W x 9.7"H Weight: 27 Lbs.

WANLASS PHASAC™ — SINGLE TO THREE PHASE CONVERTER



WANLASS MODEL NO. PAC-1000
PHASAC™ 1-3 Phase Converter.

FEATURES:

Operates from a standard single phase wall plug.
Phase Locked.
Economical Packaging for OEM Applications.

DESCRIPTION

Wanlass is pleased to introduce an all solid-state passive static con for conversion of single to three phase A.C. power. The PAC-10 basically a Paraformer™ device which converts single phase AC line through the use of the inherent phase shift phenomena of the PARAF ER™. Both Wye or Delta outputs are available from the device.

SPECIFICATION ON MODEL NO. PAC-1000 — 1 ϕ — 3 ϕ 60 Hz Converter

A.C. INPUT: 105 to 125 VAC, 60 Hz, Single Phase
A.C. OUTPUT Three Phase, 60 Hz, 120 VAC (4-wire), 208 VAC (3-Wire), 240 VAC (3-
POWER: 1 KVA, 333 VA Per Phase Output
CIRCUITRY: Parametric Converter with regulation of ±5%.
CONNECTION: Wye (4-Wire) and Delta (3-Wire) Outputs
SIZE: 7"Hx6"Wx17"L (Suitable for Rack Mounting)
WEIGHT: 48 Lbs.

Prices For Available Model Numbers and Ratings

Model Number	PAC-1000	PAC4-1000
1 - 9	$465.00	$665.00
10 - 24	$442.00	$632.00
25 - 49	$419.00	$599.00
50 - 99	$395.00	$565.00

SPECIFICATIONS ON MODEL NO. PAC-4-1000 — 1 ϕ — 3 ϕ 400 Hz Converte

A.C. INPUT: 105 to 125 VAC, 400 Hz, Single Phase. All other specifications are the as those shown above for the Model No. PAC-1000.
SIZE: 7.5"Hx5"Wx17"L.
WEIGHT: 50 Lbs.

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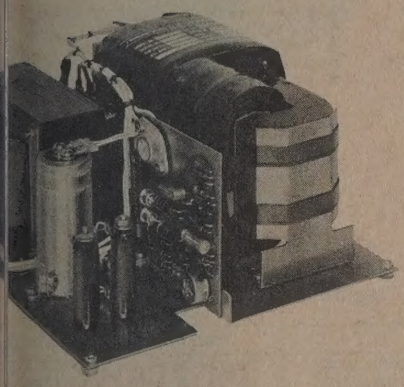
ILASS VARAX MULTIFREQUENCY /ER CONDITIONERS

VARIABLE INDUCTOR TYPE AC VOLTAGE REGULATORS... ALL STATIC-REGULATED A.C. POWER AT LESS THAN 15c PER WATT!



Model No.
VVR-1500

PRICES

No.		
500	1-9	$172.50
501	10-24	$164.00
502	25-49	$155.25
500	50-99	$146.50

00
t Inductor for VVR-1500 $25.00

IS: 10"W. x 10"D. x 4.5"H. maximum
pproximately 32 LBS.

(Designed to replace ferroresonant type constant voltage transformers and silicon controlled rectifier type A.C. Regulators)

GENERAL DESCRIPTION

The Wanlass Variable Inductor Type A. C. Line Voltage Regulator is a major breakthrough in magnetic regulation of A.C. power. Because no silicon controlled rectifiers or transistors are used in the power circuits the reliability of this type of regulator makes it a very desirable device where continuously regulated uninterrupted power is a must! It is especially well suited for remote or unattended locations. Because of the new variable inductor regulation technique, the VVR is very economical, light in weight and small in size. Since it is a closed loop regulating device, it is frequency insensitive and provides true rms regulation for line AND load, with efficiency of up to 95% at maximum load.

VVR units are a ideal source for high starting current loads such as motors, lamps, heaters a combination of these loads and all lagging power factor loads. Because of the series inductor in the line, they inherently provide line transient suppression. VVR units incorporate no moving parts, are completely static and produce no spikes or conducted R. F. I.

SPECIFICATION ON VVR TYPE A.C. VOLTAGE REGULATORS

A. C. INPUT: 105-130 Volts 47-63 Hz, 1 phase

A. C. OUTPUT: See "Tabulation of Available Units"

REGULATION: LINE —±1% for 105 to 130 V. line change
(true RMS) LOAD —±1% for 400 to 1500 W. load change
(±1% for no load to full load with optional ballast inductor)

PROTECTION: Inherent short circuit protection;

TRANSIENT SUPPRESSION: Inherently suppresses 200 volt transients protecting both regulator and load being powered.

OPERATING TEMPERATURES: 0°C to + 55°C up to 85°C with 200 CFM of forced air cooling

EFFICIENCY: Over 90% at full load

TABULATION OF AVAILABLE UNITS

MODEL	MAXIMUM CONTINUOUS RATING	RMS OUTPUT VOLTAGE	INDUCTIVE LOAD REQUIRED*	MOTOR LOAD CORRESPONDING TO INDUCTIVE LOAD REQUIRED
VVR-1500	1500 V.A. (1)	120 volts	1.8A to 3.6A	½ to ¼ HP
VVR-1501	1500 V.A. (1)	120 volts	3.6A to 5.4A	⅛ to ¼ HP
VVR-1502	2000 V.A. (2)	120 volts	5.3A to 8.0A	¼ to ½ HP
VVR-2500	1500 V.A.	230 volts**	1.8A to 3.6A	½ to ⅛ HP

*Because of the unique operating characteristics of this device it functions best with combination inductive-resistive loads. The percentage inductive load indicated will insure operation within the specification indicated above. Where load is purely resistive (1.0 power factor) a ballast inductor Part #BI-1500 is available for use with the Model VVR-1500 Regulator.

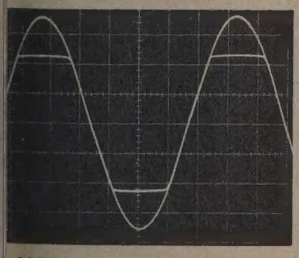
(1) Units capable of 1800 V.A. on basis of 80% duty cycle.

(2) Unit capable of 2250 V.A. on basis of 80% duty cycle.

* Inductive load should be within the lagging power factor range of 0.45 to 0.65.

** For 210-250 V., 50/60 Hz input.

LASS CLIP-AC C-3000 LINE OF E RMS AC VOLTAGE REGULATORS



CLIP-AC™ Input Trace Superimposed
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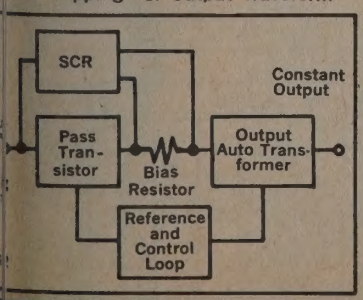


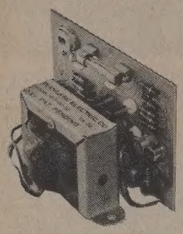
THE CLIP-AC™ PRINCIPLE

The CLIP-AC™ Principle of AC voltage regulation is shown in Fig. 1 and Fig. 2. It will be noted that regulation is achieved by symmetrically clipping (dissipating) the peaks of the incident sinusoidal waveform. The unretouched scope photograph reproduced as Fig. 1 shows that except for these peaks, the CLIP-AC™ output waveform is identical to the input waveform.

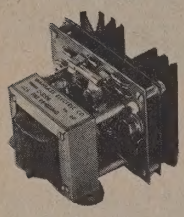
Fig. 2 shows in block diagram form how CLIP-AC™ regulation is achieved. The output voltage is continuously monitored by a sensor which uses a zener diode as a reference. The associated control circuitry in turn adjusts the clipping level of the pass transistor in order to maintain the desired constant output. Economy of design has been realized by using a floated referenced (with RMS sensor) and a diode bridge to make it possible for the same pass transistor to be used on both halves of the AC cycle. The SCR shown in the block diagram is used to accommodate short duration surge currents such as those encountered in charging capacitors, starting motors or starting lamp loads. Under such conditions, the bias resistor triggers the SCR and the excessive current surge is by-passed around the pass transistor. Should these excessive current conditions persist, the input fuse would be blown, thereby protecting the unit. Under normal operating conditions the SCR is inoperative. The output autotransformer steps the output voltage up to the 115V level and acts as a sense transformer as well.

In the C-3000 voltage regulator line, the appropriate choice of the sensor and the quality of the solid state componentry, provides the desired AC voltage regulation precision with true RMS voltage being held constant.

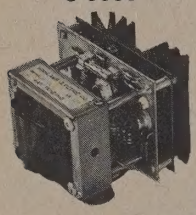
WANLASS CLIP-AC C-3000 117V. A.C. VOLTAGE REGULATORS



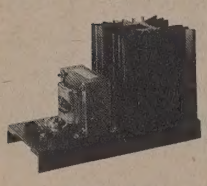
C-3003



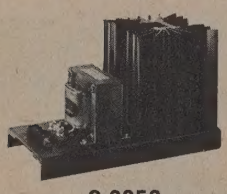
C-3006



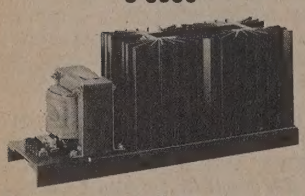
C-3012



C-3025



C-3050



C-3100

HERE ARE SOME OF THE OUTSTANDING CHARACTERISTICS OF WANLASS C-3000 VOLTAGE REGULATORS USING THE CLIP-AC™ PRINCIP

C-3000 FEATURES

- Line and Load Regulator
- Wide Input Voltage & Frequency Range
- Peak Clipping Regulation Technique
- Quiet Operation—No Magnetic Noise
- Repairable All Silicon Solid-State Circuits
- High Efficiency
- Suppresses Line Transients
- Excellent Surge Loading Characteris
- Instantaneous Response
- "Clipped" Sinusoidal Output
- Excellent Temperature Coefficient
- No "Magnetic" Fields Nor RFI

C-3000 APPLICATIONS

- Instruments Pre-Regulator
- Electronic Systems
- Electrical Systems
- Photo-Optical Systems
- Initial Surge Loading Applications
- Motor Starting and Regulation
- All Resistive Loads such as Lightin Heating

APPLICATION

The CLIP-AC™ type AC regulator is the logical successor to the ferroreso transformer for the bulk of the AC regulation requirements for up to 1

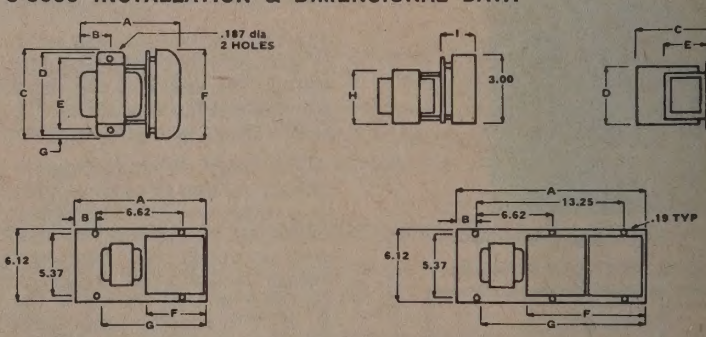
CLIP-AC™ Principle		Ferroresonant Principle
Input Frequency	Wide range acceptable without degradation in regulation (47-420Hz typical)	Single frequency (output volta shifts 1.5% for 1% change in input frequency)
Line Regulation	Any reasonable degree of precision (0.1% easily achievable)	Cannot be modified (1-3% typi
Load Regulation	Load compensation circuitry inherent in design (1% typical)	No compensation (5-7% typica
Power Factor	No problem	Shifts output voltage level appreciably
Phase Shift	None	Appreciable — dependent on l current
Response Time	Typical 10-50 μsec	Typically 25,000 μsec
Cost	Smaller and Cheaper-less	Inherent weight and expense o
Size	material content	iron and copper
Weight	(typically 50%)	

C-3000 SPECIFICATIONS

A.C. INPUT: 100-130V., 1-Phase, 47-420 Hz
A.C. OUTPUT: 117V. nominal (see table of Model Numbers and ratings below)
Surge output rating: 400% of full power rating for 10 seconds
REGULATION (RMS): ±0.5% (for ±10% A.C. line change)
±0.5% (for 10% to full load change)

TYPE OF VOLTAGE REGULATION:	True RMS with RMS sensor type referenc
REGULATION TECHNIQUE:	Peak Clipping
POWER FACTOR REGULATION:	±0.5% (+0.7 to —0.7)
FREQUENCY REGULATION:	±0.5%
EFFICIENCY:	75% minimum at nominal input voltage full load
PHASE SHIFT:	None
RESPONSE TIME:	10-50 microsecond
TEMPERATURE COEFFICIENT:	0.025% per degree C
OPERATING TEMPERATURE:	—20°C to +50°C. Convection self-cooling; no external heat sinking required
OVERLOAD PROTECTION:	Fused against overloads and short circuits

C-3000 INSTALLATION & DIMENSIONAL DATA



MODEL NUMBERS AND RATINGS

Model No.	Ratings	1-9	10-24	25-49	50-99
C-3003	30VA	$39.00	$37.00	$35.00	$33.00
C-3006	60VA	46.00	43.75	41.50	39.00
C-3012	120VA	51.00	48.50	46.00	43.50
C-3025	250VA	89.50	85.00	80.50	76.00
C-3050	500VA	125.00	118.75	112.50	106.00
C-3100	1000VA	210.00	199.50	189.00	178.50

Also see complete installation and dimensional data contained elsewhere in this bulletin.

TABULATION BLOCK

Model	A	B	C	D	E	F	G	H	I	Wt. Lbs.
C-3003	2.80	.875	4.00	3.25	2.81	1.75	.59	1.93	.75	1.5
C-3006	3.75	1.00	4.12	3.81	3.12	4.12	.50	2.25	1.62	2.5
C-3012	4.50	1.25	4.15	4.00	3.60	4.15	.23	2.62	1.62	3.2
C-3025	9.50	1.44	5.50	4.00	4.38	4.25	6.87			6.5
C-3050	10.88	2.12	7.25	5.00	4.38	5.00	8.25			10.25
C-3100	16.00	1.37	7.25	5.00	5.00	10.40	14.20			17.5

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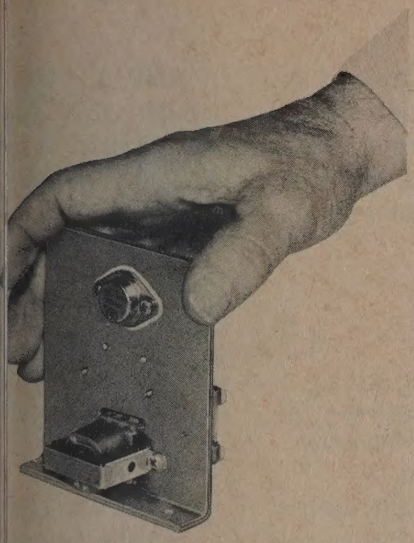
NLASS CLIP-AC CVR-120
. POWER SUPPLY REGULATOR



ANLASS MODEL NO. CVR-120

PRICES	
1-9	$26.50
10-24	25.00
25-49	24.00
50-99	21.75

Patents pending

GENERAL DESCRIPTION

The CVR-120 is a CLIP-AC™ type peak clipping AC regulator designed specifically for use as the regulating component for your D.C. power supply designs. By symmetrically clipping the peaks of the unregulated input voltage, a constant peak-to-peak output waveform is produced as described on the previous page. This voltage can then be transformed into a variety of regulated output voltages through the use of an appropriate transformer. Rectification and passive filtering of these resultant voltages will then produce regulated D.C. output voltages.

IMPORTANT FEATURES INCLUDE:

(1) **LOW COST** — one regulator element provides the regulation for many separate outputs.
(2) **SIZE AND WEIGHT** — 120 watts of regulated power for 10 ounces!
(3) **ADJUSTABLE OUTPUT VOLTAGE** — simple compensation for your manufacturing tolerances.
(4) **FREQUENCY INSENSITIVE** — no variation of output voltage with varying line frequency. Use the same unit for 50, 60 and even 400 Hz power requirements.
(5) **LINE AND LOAD REGULATION** — precision unattainable with ferroresonant transformers.

SPECIFICATIONS:

TYPE OF VOLTAGE REGULATION:	Peak
REGULATION TECHNIQUE:	Peak Clipping
TYPE OF REFERENCE:	Zener Diode
INPUT:	100-130 VAC 47-420 Hz
OUTPUT:	135 Volts (Peak) (270 Volts Peak-to-Peak)
POWER CAPABILITY:	120 VA
LINE REGULATION (±10% line variation):	±1.0%
LOAD REGULATION (0 to Full Load)	±1.0%
POWER FACTOR REGULATION (+0.7 to —0.7):	±1.0%
PHASE SHIFT:	None
RESPONSE TIME:	10-50 μsec
TEMPERATURE COEFFICIENT:	0.025% per degree C
AMBIENT TEMPERATURE:	0-40°C (higher with derating)
DIMENSIONS:	4"W x 4½"H x 2½"D
WEIGHT:	10 ounces

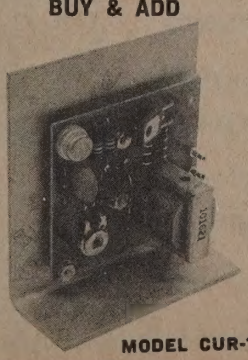
"DO YOUR WN THING"

WANLASS PRESENTS: A BLOCK DIAGRAM OF "THE CHEAPEST MULTI-OUTPUT D.C. POWER SUPPLY IN THE WORLD"

START WITH

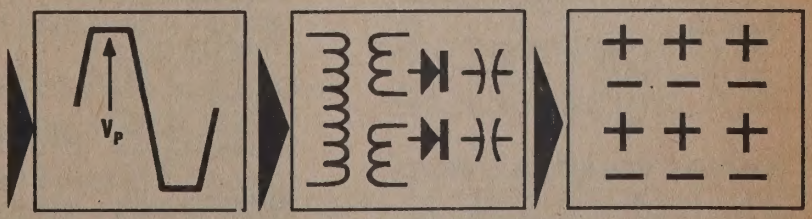
0-130 V.,
7-420 Hz
hase A.C.

BUY & ADD



MODEL CUR-120

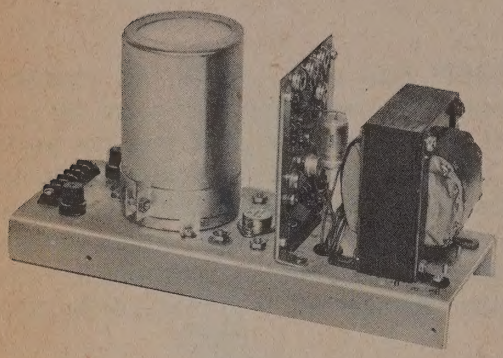
RESULT
Vp = 135 V.



ADD MULTIPLE OUTPUT XFM'R RECTIFIER-FILTER

FINAL RESULT
CHEAPEST MULTIPLE OUTPUT POWER SUPPLY IN THE WORLD

WANLASS ALL SILICON SOLID STATE STATIC D.C. "IC-HPIC" POWER SUPPLIES



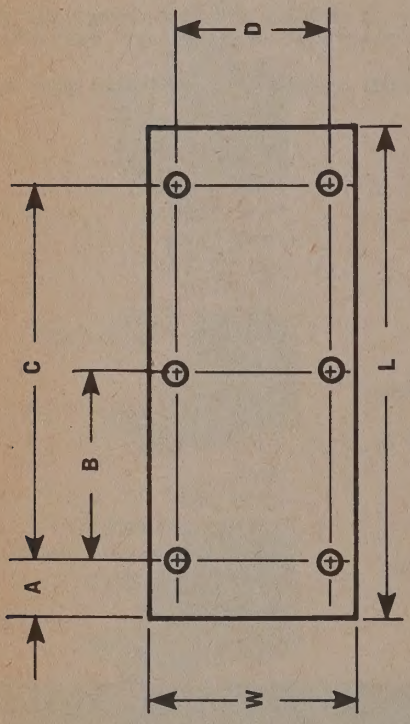
TYPE 60-IC-1-TYPICAL 5V @ 7.5A UNIT

Designed specifically for Integrated Circuit, OP-AMP, and MOS application, the Wanlass IC and HPIC are popular OEM type Power Supplies which provide a very sensible solution to sy powering of integrated circuits, operational amplifiers and MOS circuits. Specifications on these units are as follows:

SPECIFICATIONS

	IC	HPIC
A.C. INPUT	100-130V, 1ϕ, 47-63 Hz	100-130V, 1ϕ, 47-
D.C. OUTPUT	3.6-60V @ 1-25A See Tabulation	3.6-60V @ 1-25A See Tabulation
VOLTAGE ADJUST	±5%	±5%
REGULATION	±0.25% for Line ±0.25% for Load	±0.05% for Line ±0.05% for Load
RIPPLE	5mV RMS	2mV RMS
RESPONSE	50-100 Microseconds	50-100 Microseco
FEATURES	Current Limit Remote Sense	Current Limit Remote Sense
OPERATING TEMPERATURE:	0-45°C (to 70°C with derating)	0-45°C (to 70°C wi derating)
OPTIONAL FEATURES:	Overvoltage Protection @ $20.00 additional	Overvoltage Protec @ $20.00 addition

All of the 60, 120 and 200 Watt nominal rating units are available in separate models as shown in the tabulation of types and ratings available tailed instructions are provided to enable the novice to make the necessa justments for the proper output voltage connections.



OUTLINE DIMENSIONS — INCHES

Model No.	L	W	H
60 IC	11.50	5.20	6.00
120 IC	15.50	5.20	6.25
200 IC	17.00	6.20	8.00

MOUNTING DIMENSIONS — INCHES

A	B	C	D
.60	5.15	10.30	4.62
2.60	5.15	10.30	4.62
1.88	6.62	13.25	5.62

D.C. POWER SUPPLY OUTLINE AND MOUNTING DIMENSIONS

TYPES AND RATINGS AVAILABLE

TYPE	DC OUTPUT VOLTAGE	MAX. DC OUTPUT WATTAGE OR CURRENT	PRICES 1-9	10-24	25-49	5(
60-IC-1 60HPIC-1	3.6 - 6.3V	7.5 A maximum	$125.00 $150.00	$118.75 $142.50	$112.50 $135.00	$10 $12
60-IC-2 60HPIC-2	12-15-18 V	60 Watts	$125.00 $150.00	$118.75 $142.50	$112.50 $135.00	$10 $12
60-IC-3 60HPIC-3	24-28-36 V	60 Watts	$125.00 $150.00	$118.75 $142.50	$112.50 $135.00	$10 $12
60-IC-4 60HPIC-4	48 - 60 V	60 Watts	$125.00 $150.00	$118.75 $142.50	$112.50 $135.00	$10 $12
120-IC-1 120HPIC-1	3.6 - 6.3 V	15 A. maximum	$170.00 $195.00	$161.50 $185.50	$153.00 $175.50	$14 $16
120-IC-2 120HPIC-2	12-15-18 V	120 Watts	$170.00 $195.00	$161.50 $185.50	$153.00 $175.50	$14 $16
120-IC-3 120HPIC-3	24-28-36 V	120 Watts	$170.00 $195.00	$161.50 $185.50	$153.00 $175.50	$14 $16
120-IC-4 120HPIC-4	48 - 60 V	120 Watts	$170.00 $195.00	$161.50 $185.50	$153.00 $175.50	$14 $16
200-IC-1 200HPIC-1	3.6 - 6.3 V	25 A maximum	$225.00 $250.00	$213.50 $237.50	$202.50 $225.00	$19 $21
200-IC-2 200HPIC-2	12-15-18 V	200 Watts	$225.00 $250.00	$213.50 $237.50	$202.50 $225.00	$19 $21
200-IC-3 200HPIC-3	24-28-36 V	200 Watts	$225.00 $250.00	$213.50 $237.50	$202.50 $225.00	$19 $21
200-IC-4 200HPIC-4	48 - 60 V	200 Watts	$225.00 $250.00	$213.50 $237.50	$202.50 $225.00	$19 $21

OPTIONAL OVERVOLTAGE PROTECTION CROWBAR: $20.00 (for any ur

Net

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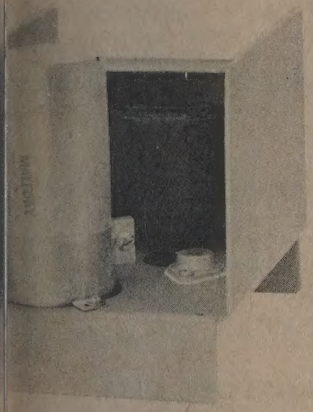
LASS PHASE II OEM POWER SUPPLIES

WANLASS O.E.M. / ECONOMY by DESIGN

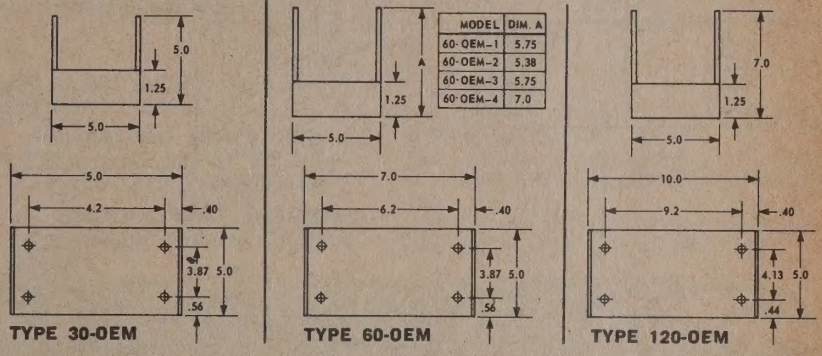


WANLASS TYPES 30, 60, and 120-O.E.M. THREE RATINGS TO CHOOSE FROM — 30-60-120 WATTS WITH FOUR VOLTAGE RANGES EACH!

SPECIFICATIONS:

A.C. INPUT:	105-125V, 57-63 Hz, 1 phase
D.C. OUTPUT:	See tabulation
REGULATION:	±1% for ±10% line change ±1% for No load to full load
RIPPLE:	0.1% +10Mv RMS maximum
GROUNDING:	Floating output; either positive or negative may be grounded
PROTECTION:	Automatic short circuit protection
DIMENSIONS & WEIGHTS:	30-OEM 5"Hx5"Wx5"L; 5 # max. 60-OEM 7"Hx5"Wx7"L; 7 # max. 120-OEM 7"Hx5"Wx10"L; 12 # max.
CONSTRUCTION:	Open Chassis type for OEM systems
TEMPERATURE:	0°C to 45°C

OEM POWER SUPPLY DIMENSIONAL DATA



0-OEM-1
/ @ 2.5A—Unit

ON OF TYPES AND RATINGS

	VOLTAGE RANGE	POWER RATING	APPLICABLE	PRICES
	3.6—9 V	30 Watts	1—9	$46.00
	9—17V	or 2.5	10—24	$43.75
	17—30V	Amperes	25—49	$41.50
	30—60V	Maximum	50—99	$39.00
	3.6—9 V	60 Watts	1—9	$57.50
	9—17V	or 5	10—24	$54.50
	17—30V	Amperes	25—49	$51.75
	30—60V	Maximum	50—99	$49.00
1	3.6—9 V	120 Watts	1—9	$86.25
2	9—17V	or 10	10—24	$82.00
3	17—30V	Amperes	25—49	$77.75
4	30—60V	Maximum	50—99	$73.50

LASS MARK III PRECISION ULATED ECONOMY DC POWER SUPPLIES

WANLASS O.E.M. / ECONOMY by DESIGN

60 WATTS — PRICED AS LOW AS $76.00!

Better regulation and ripple plus "Built-in" current limiting **and** overvoltage protection are featured in the new MARK III power supply line.

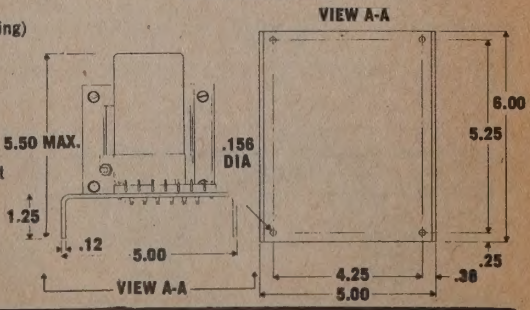
SPECIFICATIONS . . . WANLASS MARK III O.E.M. D.C. POWER SUPPLIES

A.C. INPUT: (Also available for 380-420 Hz A.C.)	115/230V. ±10%, single phase, 47-63 Hz (derate 15% at 50 Hz)
REGULATION:	±0.1% or 10 mV for ±10% line changes ±0.1% or 10 mV for 0 to 100% load changes
RIPPLE:	.01% rms or 1 mV
GROUNDING:	Output floating; either positive or negative may be grounded
VOLTAGE ADJUST:	±2% (±10% w/derating)
OVERLOAD PROTECTION:	Adjustable automatic current limit overload and short circuit protection
OVERVOLTAGE PROTECTION:	Adjustable overvoltage crowbar operates automatically; factory set at approximately 20% above nominal output voltage
TERMINALS:	Terminal strip on chassis for A.C. input and D.C. output
TEMPERATURE RANGE:	0°C to +55°C
CONSTRUCTION:	Open chassis type construction—clear anodized aluminum

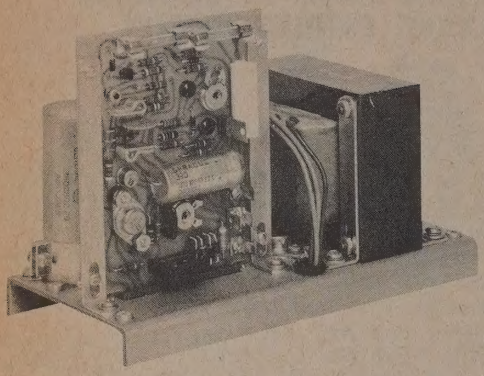
MODELS, RATINGS & PRICES
ems available immediately from distributor stock.

lo.	D.C. Output	Quantity	Prices
5-5*	5 V., 5 A.	1- 9	$89.50
6-5	6 V., 5 A.		
12-5*	12 V., 5 A.	10-24	$85.00
15-4	15 V., 4 A.		
18-3	18 V., 3 A.	25-49	$80.50
24-2.5*	24 V., 2.5 A.		
28-2	28 V., 2 A.	50-99	$76.00
5-10*	5 V., 10 A.	1- 9	$137.50
12-10*	12 V., 10 A.	10-24	$130.60
		25-49	$123.75
24-5*	24 V., 5 A	50-99	$116.85

DIMENSIONAL DATA



WANLASS DUAL OUTPUT D-OEM-1 DC POWER SUPPLIES



Wanlass
Model No. D-OEM-1

PRICES	
1-9	$109.00
10-24	103.50
25-49	98.00
50-99	92.50

WANLASS NEW MODEL NO. D-OEM-1

The new dual output Wanlass Model No. D-OEM-1 is a most economical
tion to system power supply needs for general purpose (lamps-relays, m
etc.) and precision (integrated circuits) D.C. power. The units 24V. D.C. o
provides 2 amperes of general purpose power while the 5V. D.C. output sup
1 ampere of precision D.C.

GENERAL SPECIFICATIONS

A.C. INPUT:
105-130V. A.C., 1 phase, 47-63Hz

D.C. OUTPUT:
+24V. D.C. at 2 amperes
+ 5V. D.C. at 1 ampere

LINE REGULATION:
+24V. D.C. Output: ±1½% (105-130V.
+ 5V. D.C. Output: ±0.1% A.C. range)

LOAD REGULATION:
+24V. D.C. Output: ±1% (N.L.-F.L.)
+ 5V. D.C. Output: ±0.1% (½ load change)

RESPONSE TIME:
0.2 ms for 50% Instantaneous Step Load Change

RIPPLE:
+24V. D.C. Output: 150 mv Peak to Peak
+ 5V. D.C. Output: 10 mv Peak to Peak

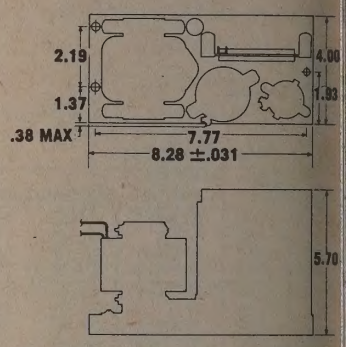
OVERVOLTAGE PROTECTION:
+5V. D.C. Output: Crowbar OVP Set at Approximately 120% Voltage

AMBIENT TEMPERATURE:
0-45°C Operating Temperature

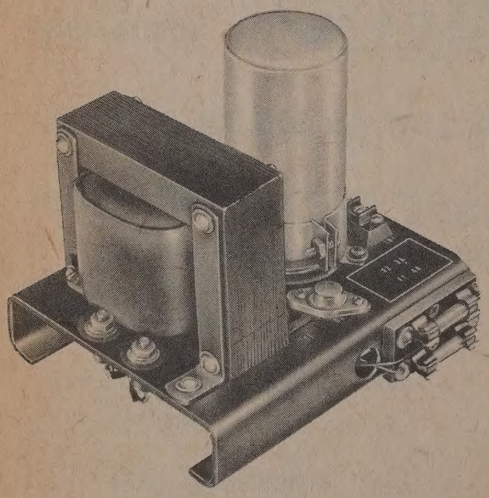
TEMPERATURE COEFFICIENT:
+24V. D.C.: 0.1% per Degree C.
+ 5V. D.C.: 0.5% per Degree C.

OVERLOAD PROTECTION (FUS
+24V. D.C. Output: A3, 3AG Sl
Blo
+ 5V. D.C. Output: 2A, 3AG Sl
Blo

DIMENSIONAL DATA



WANLASS MODEL NO. C-214 ECONOMY 60 WATT OEM TYPE D.C. POWER SUPPLY



C-214

PRICES	
1-9	$46.00
10-24	43.50
25-49	41.50
50-99	39.00

IDEAL 28 V. D.C. SOURCE FOR RELAY, SOLENOID, MOTOR AND ALL SURGE LOADING

SPECIFICATIONS

A.C. INPUT: 115 (105-125)/230 (210-250) V.
1 Phase, 60/50 Hz

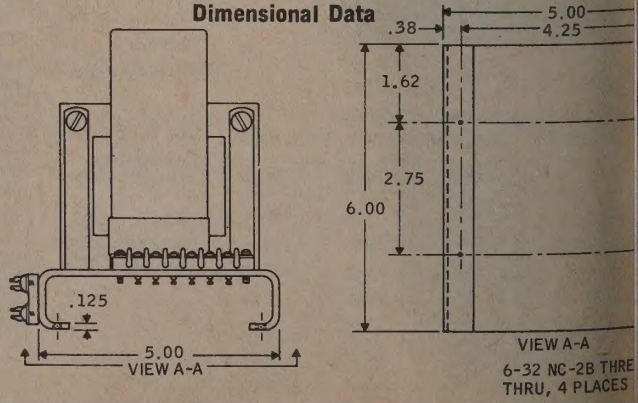
D.C. OUTPUT: 28 volts @ 2.5A
(Note: Also designed for pulsed loading of up to 4 an
total when operating with 1 ampere continuous loa
pulsed at 20 MS intervals

REGULATION: Line: ±2% (105-125/210-250V. line voltage range)
Load: ±2% (no-load to full load range)

RIPPLE: 0.1% +10 MV RMS Max.

TEMPERATURE: 0-40°C. (up to 70°C with derating)

Dimensional Data



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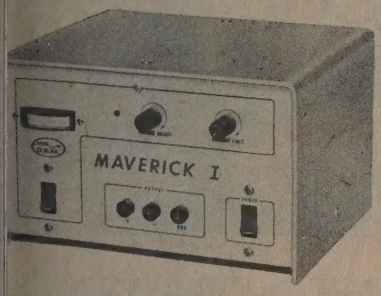
ILASS "MAVERICK I" AND IVERICK II" BENCH POWER SUPPLIES

WANLASS O.E.M. ECONOMY by DESIGN



"MAVERICK I" 0-7V. @ 0-5A. REGULATED D.C. POWER SUPPLY

REGULATED ECONOMY VARIABLE BENCH AND DUAL RACK MOUNT D.C. POWER SUPPLIES DESIGNED ESPECIALLY FOR INTEGRATED CIRCUIT, MOS/FET AND OPERATIONAL AMPLIFIER CIRCUIT LOADS.

Available in two different models, one providing 0 to 7 volts at 5 amps and the other a dual output of 0-18 volts at 1.25 amps each. The units are so designed that in the case of the MAVERICK I it can be seriesed or paralleled with a like unit to provide higher voltage and/or current while the dual output MAVERICK II can have its dual output seriesed or paralleled to provide higher voltage and/or current.

SPECIFICATIONS:

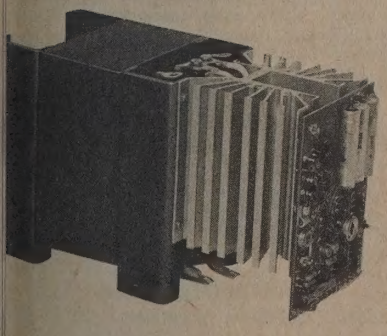
A.C. INPUT: 105-125 volts, 1 phase, 47-63 Hz.
D.C. OUTPUT: See Tabulation of Models and Ratings Available
REGULATION: ±0.1% or 5 Mv for line and ±0.1% or 5 Mv for load
RIPPLE: 0.01% or 1 Mv RMS maximum
OUTPUT IMPEDANCE: 10 Milliohms maximum from DC-1 KC
FEATURES: Adjustable Automatic Current Limiting for overload and short circuit conditions. Adjustable from 0-110% current.
Remote Sensing with auto-revert to local in the case of a disconnected or broken sense lead.
5 Ft. 3-wire input cord with grounded plug
Front & Rear output terminals
On-Off & Meter Selector Switches on Front Panel
Combination Voltmeter/Ammeter
Front Panel Voltage Adjust
Front Panel Current Limit Adjust
Reset-Circuit Breaker on rear panel for A.C. Input protection against catastrophic failure. (No fuse to replace!)
Floating Output — Either positive or negative may be grounded
Dual Rack Mount — ½ of Rack Mounting Hardware is furnished with each unit
Natural Convection Cooling for 0-45°C operating temperature
DIMENSIONS: 8.5"Wx5.25"Hx8"D (Dual Rack Mount: 19"Wx5.25"Hx8"D)
WEIGHT: 9 Lbs.

ILATION OF MODELS & RATINGS AVAILABLE

Maverick I	Maverick II
0-7 V @ 0-5A	(#1) 0-18 V @ 0-1.25A (#2) 0-18 V @ 0-1.25A
$89.00 $84.50 $80.00 $75.50	$125.00 $118.75 $112.50 $106.25

NLASS "BRUTES" — HIGH POWER SLOT SUPPLIES

WANLASS O.E.M. ECONOMY by DESIGN



S BRUTE II; REGULATED T 5-50 V @ 12 A and/or 2 24A.

FOR HIGH POWER D.C. SLOT SUPPLY REQUIREMENTS, CHOOSE ONE OF THE THREE WANLASS WIDE VOLTAGE RANGE "BRUTES"!!; AT LOWER THAN "SLOT" SUPPLY PRICES!

NO NEED TO STOCK A VARIETY OF "SLOT" SUPPLIES — ONE UNIT PROVIDES WIDE OUTPUT CONTINUOUSLY ADJUSTABLE VOLTAGE RANGE OF 5 TO 50 VOLTS OR 2-25 VOLTS IN RATINGS OF 300, 600 and 1200 WATTS!

GENERAL DESCRIPTION

High Efficiency, High Power, Low Cost, Quiet Operation and Immediate Availability are features of the new WANLASS "BRUTES"!
These Silicon Controlled Rectifier Regulated D.C. Power Supplies employ high reliability phase control for power regulation. The efficient, noise-free operation is achieved through the use of a series inductance and capacitor filter circuit.

SPECIFICATIONS:

A.C. INPUT: 115/230 V ± 10%, 1ϕ, 47-63 Hz
D.C. OUTPUT: See Tabulation
REGULATION:
Line: ± 0.1% or 50 mV
Load: ± 0.1% or 50 mV
RIPPLE: 1% or 500 mV RMS
PROTECTION: Adjustable Current limiting for overload & short circuit protection.
NOTE: Unit also features adjustable "damping" for reactive loads.

TABULATION OF MODELS

NO.	D.C. OUTPUT		DIMENSIONS	WEIGHT	PRICES			
	Voltage*	Current	H" x W" x D"	LBS.	1-9	10-24	25-49	50-99
E I	5-50/2-25	6/12 A	6.75" x 8" x 11.5"	20	$148.	$141.	$133.	$126.
E II	5-50/2-25	12/24 A	6.75" x 8" x 12"	30	$195.	$185.	$176.	$166.
E III	5-50/2-25	24/50 A	10" x 12" x 14"	50	$315.	$299.	$284.	$268.

e connected either for 5 to 50 volt or 2 to 25 volt depending upon output current desired.

IAL EQUIPMENT: K1 — Ten Turn Potentiometer Kit for Fine Voltage Adjust — $20.00 each
K2 — Ripple Reduction Kit (Reduces Ripple by 50%) — $25.00

QST. Ranks high among the leading technical publications of the world. The oldest continuously published radio magazine (it was founded in 1915), its technical articles are aimed at all classes of radio enthusiasts. Construction articles are clearly illustrated with pictures and diagrams. Typography and clarity are tops. General interest articles and special columns abound. Complete advertising coverage. Truly, the "complete magazine on amateur radio."..... QST and ARRL membership, **$6.50** in USA and Canada (US Funds), **$7.00** Elsewhere.

The RADIO AMATEUR'S HANDBOOK. Internationally recognized as one of the most valuable and widely used books in electronics, the Radio Amateur's Handbook is universally consulted by both amateur and professional alike. Its more than 700 pages are annually revised and modified in the light of current application and technique. The Handbook is found on the desks of executives, engineers, technicians and purchasing agents of the radio industry as often as in the shacks of radio amateurs throughout the world. Twenty-five chapters plus a catalog section including data on all types of vacuum tubes and semiconductors **$4.00**

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LEARNING THE RADIOTELEGRAPH CODE. Supplying the key toward mastery of the International Morse Code, this publication trains you to handle the code skillfully and easily. Based on the accepted method of "sound conception," it is a boon to the beginner without access to the help of an experienced operator or code machine. Practical material for both home study and classroom use is included **50c**

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MINILOG. Mobile and portable operational needs are met by this pocket size log. Spiral bound, 4 by 6 inch pages. Headings for all necessary information. **30c**

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The AMERICAN RADIO RELAY LEAGUE, Inc.

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TECHNICAL LITERATURE
THE MOST AUTHORITATIVE IN THE INDUSTRY

CHNICAL MANUALS

se 9 easy-to-understand and l illustrated manuals (8¼" ¼") cover theory, applica- and circuits, as well as formance data, for RCA tronic components and de- s. Inexpensive and current rence sources on receiving es, transmitting tubes, photo- sitive devices, transistors, tunnel diodes, other semiconductor products.

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EFERENCE *and*
V SERVICE PUBLICATIONS

RADIOTRON DESIGNER'S HANDBOOK — RDH-05. Price $7.00.*

TRANSISTOR SERVICING GUIDE — IA1673. rice $3.50.

COLOR TV SERVICE HANDBOOKS — IA1553 — 960 - 1966. Price $1.50.
A1759 — 1967 - 1968. Price $2.00.

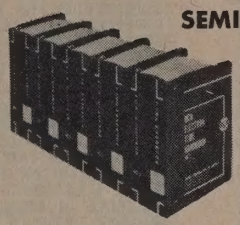
FIELD SERVICE GUIDES — RCA COLOR TV ECEIVERS, 1955 - 1968. **ERT-200,** 1955 - 1966. rice. 2.00. **ERT-201** — 1967 - 1968. Price 1.60.

COLOR TV TROUBLE SHOOTING PICT-O-GUIDE — 1A1389. Price $5.75.

"BY-STAGE" GUIDE TO COLOR-TV RECEIVERS — ERT-205. Price 40 cents.

TV SERVICING — TVS-1032. Price 50 cents.

ELECTRON TUBE HANDBOOK HB-3
SEMICONDUCTOR PRODUCTS DATABOOK SPD-100



Featuring over 7000 pages of design data, these Handbooks represent the most complete and up-to-date reference source for the design engineer. They contain definitive data on over 2300 tubes and semiconductor devices, as well as comprehensive selection and application charts. Frequent mailing service keeps the subscriber up-to-date on the latest new type developments and revisions. Prices for the RCA Electron Tube Handbook and the RCA Semiconductor Products Databook (including subscription service for the first year) are $20 and $15 (foreign $25 and $20), respectively. Both are available at a special rate of $30 (foreign, $35).

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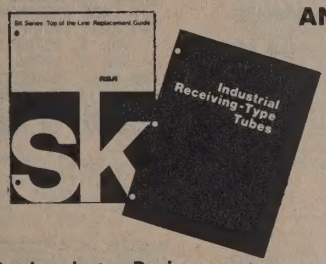
AND APPLICATION BOOKLETS



These fact-filled publications are a valuable guide to the practical use of electron tubes, semiconductor products, integrated circuits, memory products, and batteries. Convenient 10⅞" x 8⅜" size handy for 3-ring binders. (For complete technical data on individual RCA tubes and semiconductor devices, RCA Technical Bulletins contain authoritative and up-to-date specifications, and fully descriptive design curves.)

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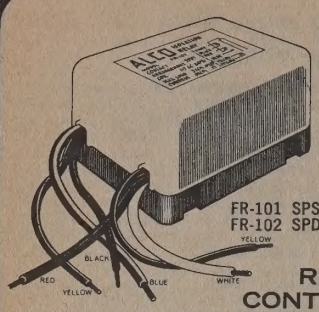
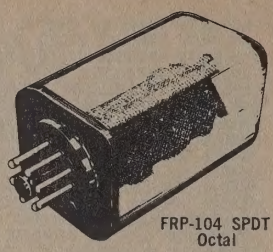
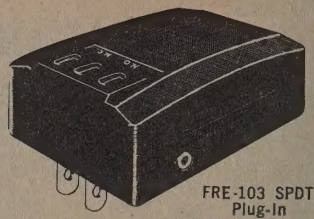
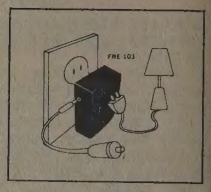
RELAYS • CERAMIC TERMINAL STRIPS




FRP-104 SPDT Octal


FRE-103 SPDT Plug-In

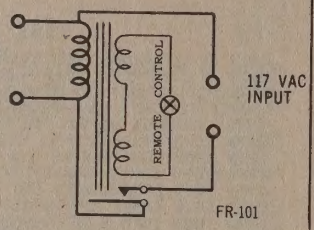

One of 28 Design Ideas Remote Switching Lamp

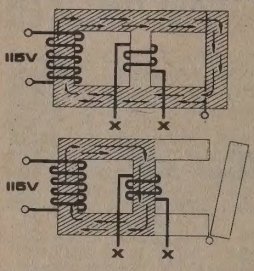
RELAY FOR REMOTE CONTROL APPLICATIONS

MODELS FR-101 SPST AND FR-102 SPDT —— This remote control component combines an isolated step-down transformer and a sensitive AC relay in a single laminated core that fits in a compact midget size package measuring on 2⅛" x 1¾" x 1¼". It converts a 95-125 VAC power source to 30V that can be run through ordinary surface wiring without shocks and hazards. Operations of devices and machinery from remote distances are made possible for low voltage requirements. Typical uses are for safe switching and remote control applications, modern appliances, machine tools, and other automatic apparatus demanding remote control circuits thereby eliminating shock hazards. Contact rating 5 amp @ 117 VAC.

Maximum Load:
5 amps @ 117 volts.
Operating Voltage:
95 to 125 volts.
Current Consumed:
Under 40 ma.
Isolated Voltage:
Under 30 volts.
Terminals:
6-inch leads for FR-101 & 2.
Plug-in for FRE-103.
Octal Base for FRP-104
Life:
Over 50,000 operations.
Size With Cover:
2⅛" x 1¾" x 1¼" (FR-101 & 2).

SCHEMATIC DIAGRAM For FR-101

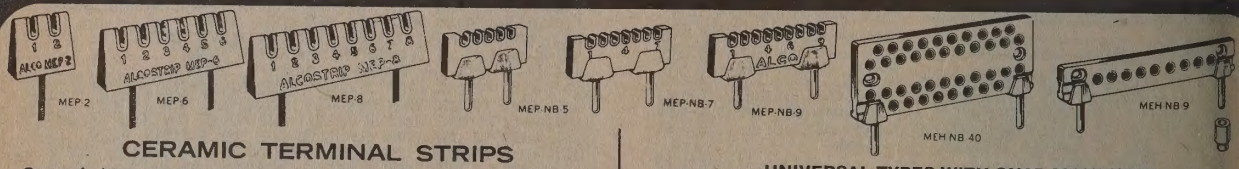




28 Design Idea Booklet Supplied (Free) shows circuits on how to build typical remote control circuits of appliances; machine tools; TV commercial killers; fire, smoke and burglar alarms; garage doors; sprinklers — and other apparatus requiring safe, remote control circuitry.

FRP-104 SPDT OCTAL PLUG — A standard octal base plug feature is added to the basic relay for the industrial user. The relay is protected by a plastic dust cover. SPDT @ 5 amps. Specifications are the same as FR-102.
FR-103 SPDT PLUG-IN — Simply plug relay into outlet; it provides the actuating voltage to a 115 VAC alarm or remote accessory. Has a 3-way receptacle to select N.O. or N.C. circuit. Side jack serves as plug-in for remote switch or sensor. Specs same FR-102.

Model	Contacts	Description	One-99	100-499	500-999
FR-101	SPST	Basic Relay for 117 VAC	3.85	3.01	2.62
FR-101-230	SPST	Basic Relay for 230 VAC	4.25	3.32	2.89
FR-102	SPDT	Basic Relay for 117 VAC	4.45	3.47	3.03
FR-102-230	SPDT	Basic Relay for 230 VAC	4.85	3.78	3.30
FRE-103	SPDT	Plug-in	4.95	3.82	3.37
FRP-104	SPDT	Octal	5.45	4.25	3.71
FR-105	SPDT	Basic Relay	4.45	3.47	3.03



CERAMIC TERMINAL STRIPS

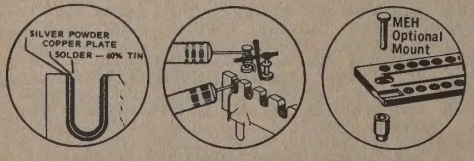
Ceramic-base terminal strips with fired silver, copperplated and tinned terminals to facilitate high-temperature soldering of components and leads. Features permanent bond between metal and ceramic. Standard 2-56 threaded studs are extra long for cutting to any required dimension. Board ht. 0.590" from base. Depth of slots, 0.197". Dielectric Strength: more than 10 seconds at 1500 VDC between terminals. Insulated Resistance: over 1000 megohms at 500 VDC megger. Dip Solder Test: no exfoliation at 250°C for 5 seconds.

STANDARD TYPES WITH THREAD MOUNTING

Model	No. of Terminal Slots	Size Overall Width	Mtg. Ctrs.	One-24	25-99	100-499	500-999
MEP-2	2	0.650	———	.36	.24	.216	.198
MEP-4	4	1.161	0.512	.45	.30	.27	.248
MEP-6	6	1.673	1.024	.60	.40	.36	.33
MEP-8	8	2.185	1.535	.75	.50	.45	.413
MEP-10	10	2.697	2.047	.87	.58	.522	.479
MEP-12	12	3.209	2.560	.99	.66	.594	.545

MINIATURE TYPES WITH SNAP MOUNTING

MEP-NB-3	3	0.600	———	.48	.32	.288	.264
MEP-NB-5	5	0.885	0.490	.66	.44	.396	.363
MEP-NB-7	7	1.165	0.490	.81	.54	.486	.446
MEP-NB-9	9	1.445	0.750	.87	.58	.522	.479
MEP-NB-13	13	2.140	1.500	1.11	.74	.666	.611
MEP-NB-16	16	2.440	1.500	1.35	.90	.81	.743
MEP-NB-20	20	3.020	2.520	1.65	1.10	.99	.908



UNIVERSAL TYPES WITH SNAP MOUNTING

ALCO's new concept allows for horizontal or vertical mounting of terminal strips. Each strip is supplied with 2 types of mounting hardware. The selected positioning of the terminals permits the use of more components in a limited space (either singly or in pairs). Silverplated copper eyelets are swedged to the ceramic base.

Model	No. of Terminal Slots	Size Overall Width	Mtg. Ctrs.	One-24	25-99	100-499	500-999
MEH-NB-9	9	3.000	2.500	.80	.53	.48	.44
MEH-NB-18	18	3.000	2.500	1.45	.96	.87	.798
MEH-NB-19	19	3.000	1.750	1.45	.96	.87	.798
MEH-NB-40	40	3.000	2.500	2.20	1.46	1.32	1.21

USE WITH MEP-NB SERIES DESCRIBED AT LEFT!

Simplify Circuitry With These
DESIGN BOARDS
and Plug-in Terminal Strips

Ceramic Alcostrips are ideal for breadboarding which may be quickly inserted or removed as desired to simplify circuit design. A mating circuit board measuring only 5" x 6" is provided to form a base for experimental design work. Complete ceramic kit includes 16 strips (8 sizes) and one board.

	One-24	25-99
CB-2 Kit	10.97	7.67
CB-1 Board only	.95	.67

ALCOSTRIPS ARE MANUFACTURED UNDER A LICENSE GRANTED BY TEKTRONIX, INC.

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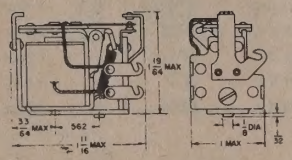
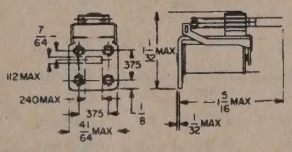
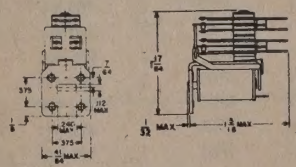
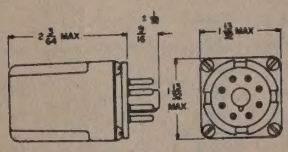
ALLIED CONTROL

ALLIED CONTROL COMPANY INC.

RELAYS AND SOCKETS

GENERAL PURPOSE RELAYS

RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE	OUTLINE DRAWING	DESCRIPTION
S								
AS-3A	115v a-c	SPDT	5	3.5 va	850	$5.40		Compact design, single hole mounting, terminal board on the front and contacts on top for easy inspection. **Terminals:** .078 x .107 hook **Weight:** 2.0 ounces max. **Mounting:** (1) 6-32 NC-2B tapped hole 7-32 deep
AS-3D	26.5v d-c	SPDT	5	1.3 w	528	4.60		
AT								
TAT-2C	6v d-c	DPDT	2	700 mw	52	2.96		Subminiature with the performance of a miniature plus extra long life **Terminals:** Elongated holes .080 x .040 **Weight:** 0.70 ounces max. **Mounting:** (4) 4-48 NF-2B tapped holes
TAT-2C	12v d-c	DPDT	2	700 mw	185	2.96		
TAT-2C	24v d-c	DPDT	2	700 mw	700	2.96		
TAT-2C	48v d-c	DPDT	2	700 mw	2500	2.96		
TAT-2C	115v d-c	DPDT	2	700 mw	15000	4.66		
TAT-4C	6v d-c	4PDT	2	700 mw	52	3.34		Subminiature with the performance of a miniature plus extra long life **Terminals:** Elongated holes .080 x .040 **Weight:** 0.75 ounces max. **Mounting:** (4) 4-48 NF-2B tapped holes
TAT-4C	12v d-c	4PDT	2	700 mw	185	3.34		
TAT-4C	24v d-c	4PDT	2	700 mw	700	3.34		
TAT-4C	48v d-c	4PDT	2	700 mw	2500	3.34		
TAT-4C	115v d-c	4PDT	2	700 mw	15000	5.04		
FMDO EFDO								
TFMDO-2C	6v d-c	DPDT	5	700 mw	52	6.02		Enclosed in a transparent polycarbonate cover and rigidly secured to base. **Enclosure:** Dust cover **Weight:** 2.5 ounces **Socket:** Any std. RETMA or EIA octal
TFMDO-2C	12v d-c	DPDT	5	700 mw	185	6.02		
TFMDO-2C	24v d-c	DPDT	5	700 mw	700	6.02		
TFMDO-2C	115v d-c	DPDT	5	700 mw	15000	7.72		
TEFDO-2C	6v a-c	DPDT	5	1.2 va	6.4	4.92		
TEFDO-2C	12v a-c	DPDT	5	1.2 va	31.8	4.92		
TEFDO-2C	24v a-c	DPDT	5	1.2 va	112.5	4.92		
TEFDO-2C	115v a-c	DPDT	5	1.2 va	2580.0	4.92		
TEFDO-2C	220v a-c	DPDT	5	2.4 va	6000.0	5.42		

ALLIED CONTROL

ALLIED CONTROL COMPANY INC.

GENERAL PURPOSE RELAYS

RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE	OUTLINE DRAWING	DESCRIPTION
TF154-2C								Features no internal w contact arms extended t combination solder and in terminals **Terminals:** Elongated ho .080 x .040 **Enclosure:** Dust cover **Weight:** 0.80 ounces m **Socket:** Allied type 300
TF154-2C	6v d-c	DPDT	5	700 mw	52	$3.37		
TF154-2C	12v d-c	DPDT	5	700 mw	185	3.37		
TF154-2C	24v d-c	DPDT	5	700 mw	700	3.37		
TF154-2C	48v d-c	DPDT	5	700 mw	2500	3.37		
TF154-2C	115v d-c	DPDT	5	700 mw	15000	5.07		
TF154-4C								Features no internal w contact arms extended t combination solder and in terminals **Terminals:** Elongated ho .080 x .040 **Enclosure:** Dust cover **Weight:** 0.95 ounces ma **Socket:** Allied type 3005
TF154-4C	6v d-c	4PDT	5	700 mw	52	3.87		
TF154-4C	12v d-c	4PDT	5	700 mw	185	3.87		
TF154-4C	24v d-c	4PDT	5	700 mw	700	3.87		
TF154-4C	48v d-c	4PDT	5	700 mw	2500	3.87		
TF154-4C	115v d-c	4PDT	5	700 mw	15000	5.57		
TF154-6C								Features no internal w contact arms extended to combination solder and in terminals **Terminals:** Elongated hol .080 x .040 **Enclosure:** Dust cover **Weight:** 1.0 ounces max. **Socket:** Allied type 30055
TF154-6C	6v d-c	6PDT	5	1.5 w	25	5.02		
TF154-6C	12v d-c	6PDT	5	1.5 w	90	5.02		
TF154-6C	24v d-c	6PDT	5	1.5 w	430	5.02		
TF154-6C	48v d-c	6PDT	5	1.5 w	1550	5.02		
TF154-6C	115v d-c	6PDT	5	1.5 w	9000	5.92		

CRADLE MAGNETIC LATCHING

T351—SINGLE COIL						Designed for pulse operati In the single coil versio pulse of 10 milliseconds n imal duration is required activate the armature. **Weight:** 2C-2 oz. 4C-4 oz. **Socket:** 2C-30055-1 4C-30055-2
T351-2C	6v d-c	DPDT	1	900 mw	40	$5.00
T351-2C	12v d-c	DPDT	1	900 mw	166	5.00
T351-2C	24v d-c	DPDT	1	900 mw	630	5.00
T351-2C	48v d-c	DPDT	1	900 mw	2640	5.20
T351-2C	110v d-c	DPDT	1	900 mw	13800	6.40
TF351-2C	6v d-c	DPDT	5	900 mw	40	5.12
TF351-2C	12v d-c	DPDT	5	900 mw	166	5.12
TF351-2C	24v d-c	DPDT	5	900 mw	630	5.12
TF351-2C	48v d-c	DPDT	5	900 mw	2640	5.32
TF351-2C	110v d-c	DPDT	5	900 mw	13800	6.52
T351-4C	6v d-c	4PDT	1	900 mw	40	5.50
T351-4C	12v d-c	4PDT	1	900 mw	166	5.50
T351-4C	24v d-c	4PDT	1	900 mw	630	5.50
T351-4C	48v d-c	4PDT	1	900 mw	2640	5.70
T351-4C	110v d-c	4PDT	1	900 mw	13800	6.90
T351—DUAL COIL						The dual coil functions sim larly to the single wound v sion except that while t armature is actuated by pulse applied to one windi it is reset by pulsing the se ond winding. **Weight:** 2C-2 oz. 4C-4 oz. **Socket:** 2C-30055-1 4C-30055-2
T351-2C	2/6v d-c	DPDT	1	1.2 w	31.5	6.00
T351-2C	2/12v d-c	DPDT	1	1.2 w	134	6.00
T351-2C	2/24v d-c	DPDT	1	1.2 w	485	6.00
T351-2C	2/48v d-c	DPDT	1	1.2 w	1760	6.40
T351-2C	2/110v d-c	DPDT	1	1.2 w	9600	8.80
T351-4C	2/6v d-c	4PDT	1	1.2 w	31.5	6.74
T351-4C	2/12v d-c	4PDT	1	1.2 w	134	6.74
T351-4C	2/24v d-c	4PDT	1	1.2 w	485	6.74
T351-4C	2/48v d-c	4PDT	1	1.2 w	1760	7.14
T351-4C	2/110v d-c	4PDT	1	1.2 w	9600	9.54
TF351-2C	2/6v d-c	DPDT	5	1.2 w	31.5	6.12
TF351-2C	2/12v d-c	DPDT	5	1.2 w	134	6.12
TF351-2C	2/24v d-c	DPDT	5	1.2 w	485	6.12
TF351-2C	2/48v d-c	DPDT	5	1.2 w	1760	6.52
TF351-2C	2/110v d-c	DPDT	5	1.2 w	9600	8.92

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ALLIED CONTROL

ALLIED CONTROL COMPANY INC.

MINIATURE TYPE RELAYS

RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE	OUTLINE DRAWING	DESCRIPTION
CH								**Vibration:** 20g to 2000 cps **Shock:** 50g operational **Operate:** 15 milliseconds **Release:** 10 milliseconds **Temp:** —65°C to +125°C **Weight:** 5.0 ounces max. **Mounting:** (3) 6-32 NC-2A thd. studs
	CH-12D 26.5v d-c	4PDT	10	4.0 w	180	$30.00		
MH-6								**Vibration:** 15g to 1000 cps **Shock:** 50g operational **Operate:** 8 milliseconds **Release:** 5 milliseconds **Temp. MH:** —55°C to +85°C **MHB:** —65°C to +125°C **Weight:** 2.0 ounces max. **Mounting:** (2) 0.125 dia. holes
	MH-6D 26.5v d-c	DPDT	5	1.75 w	400	$14.25		
	MHB-6D 26.5v d-c	DPDT	5	1.25 w	325	14.25		
MH-12*								**Vibration** 15g to 1000 cps **Shock:** 50g operational **Operate:** 10 milliseconds **Release:** 5 milliseconds **Temp. MH:** —55°C to +85°C **MHB:** —65°C to +125°C **Weight:** 3.0 ounces max. **Mounting:** (3) 6-32 NC-2A thd. studs
	MH-12D 26.5v d-c	4PDT	5	2.5 w	300	$20.90		
	MHB-12D 26.5v d-c	4PDT	5	3.0 w	250	20.90		
MH-18*								**Vibration** 15g to 1000 cps **Shock:** 50g operational **Operate:** 10 milliseconds **Release:** 5 milliseconds **Temp. MH:** —55°C to +85°C **MHB:** —65°C to +125°C **Weight:** 4.2 ounces max. **Mounting:** (3) 6-32 NC-2A thd. studs
	MH-18D 26.5v d-c	6PDT	5	3.0 w	240	$23.75		
	MHB-18D 26.5v d-c	6PDT	5	3.5 w	200	23.75		
MHUO-12								**Vibration:** 15g to 1000 cps **Shock:** 50g operational **Operate:** 10 milliseconds **Release:** 5 milliseconds **Temp:** —55°C to +85°C **Weight:** 3.0 ounces max. **Mounting:** (2) .144 dia. holes **Socket:** Allied type 16188-1 above chassis mtg.
	MHUO-12D 26.5v d-c	4PDT	5	2.5 w	300	$20.90		
MHUO-18								**Vibration:** 15g to 1000 cps **Shock:** 50g operational **Operate:** 10 milliseconds **Release:** 5 milliseconds **Temp:** —55°C to +85°C **Weight:** 4.2 ounces max. **Mounting:** (2) .144 dia. holes **Socket:** Allied type 16189-1 above chassis mtg.
	MHUO-18D 26.5v d-c	6PDT	5	3.0 w	240	$23.75		
MHY								**Vibration:** 20g to 500 cps **Shock:** 50g operational **Operate:** 10 milliseconds **Release:** 5 milliseconds **Temp:** —65°C to +125°C **Weight:** 4.2 ounces max. **Mounting:** (2) #6-32 NC-2A thd. studs
	MHY-12D 26.5v d-c	4PDT	10	3.5 w	200	$25.41		

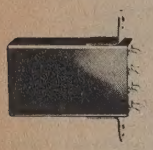
A available as MHJ-12D & MHJ-18D for 20G up to 2000 CPS vibration.

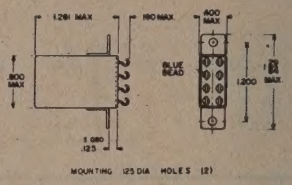
ALLIED CONTROL

ALLIED CONTROL COMPANY INC.

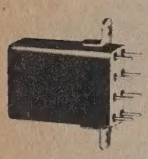
SENSITIVE and PLATE CIRCUIT RELAYS

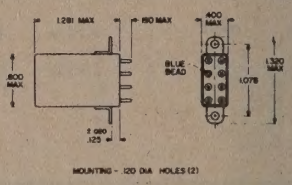
RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE
WJS						
WJS-3D	3.2 ma d-c	SPDT	3	25 mw	2500	$11.57
WJS-3D	2.2 ma d-c	SPDT	3	25 mw	5000	11.57
WJS-3D	1.6 ma d-c	SPDT	3	25 mw	10000	13.50
WJS-6D	4.0 ma d-c	DPDT	3	40 mw	2500	11.83
WJS-6D	2.8 ma d-c	DPDT	3	40 mw	5000	11.83
WJS-6D	2.0 ma d-c	DPDT	3	40 mw	10000	13.83
WJSO						
WJSO-6D	2.8 ma d-c	DPDT	3	40 mw	5000	11.83
WJSO-6D	2.0 ma d-c	DPDT	3	40 mw	10000	13.83
TFMDO						
TFMDO-2C	9.5 ma d-c	DPDT	5	220 mw	2500	6.32
TFMDO-2C	7.0 ma d-c	DPDT	5	250 mw	5000	6.83
TFMDO-2C	5.5 ma d-c	DPDT	5	300 mw	10000	7.22
TFT						
TFT-2C	9.5 ma d-c	DPDT	5	220 mw	2500	3.39
TFT-2C	7.0 ma d-c	DPDT	5	250 mw	5000	3.89
TFT-2C	5.5 ma d-c	DPDT	5	300 mw	10000	4.29
TS154-2C						
TS154-2C	5.8 ma d-c	DPDT	1	85 mw	2500	3.55
TS154-2C	4.1 ma d-c	DPDT	1	85 mw	5000	4.05
TS154-2C	3.1 ma d-c	DPDT	1	85 mw	10000	4.45
TS154-4C						
TS154-4C	8.4 ma d-c	4PDT	1	175 mw	2500	3.96
TS154-4C	6.2 ma d-c	4PDT	1	175 mw	5000	4.46
TS154-4C	4.5 ma d-c	4PDT	1	175 mw	10000	4.86



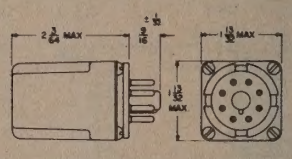


Vibration: 15g to 2000 cps
Shock: 50g operational
Operate: 15 milliseconds
Release: 10 milliseconds
Temp: −65°C to +125°C
Weight: 1.0 ounces max.
Welded Construction

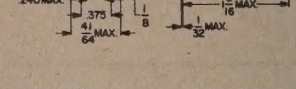




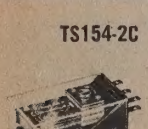
Vibration: 15g to 2000 cps
Shock: 50g operational
Operate: 15 milliseconds
Release: 10 milliseconds
Temp: −65°C to +125°C
Weight: 1.0 ounces max.
Socket: Armel type HRC-1 equiv.
Welded Construction

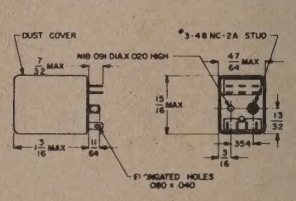


Inclosed in a transparent polycarbonate cover and rigidly secured to base.
Enclosure: Dust cover
Weight: 2.5 ounces max.
Socket: Any std. RETMA EIA octal

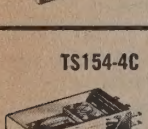


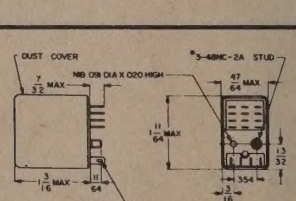
Subminiature with small moving parts resulting in quick release and exceptio contact rating.
Terminals: Elongated holes .080 x .040
Weight: 0.70 ounces max.
Mounting: (4) 4-48NF 2B tapped holes





Features no internal wiri Contact arms extend to fo combination solder and p in terminals.
Terminals: Printed circuit available as type TSP-154
Enclosure: Dust cover
Weight: 0.80 ounces max.
Socket: Allied type 30055-1

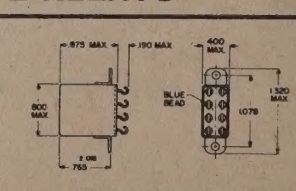




Features no internal wiri Contact arms extend to fo combination solder and p in terminals.
Terminals: Printed circuit available as type TSP-154
Enclosure: Dust cover
Weight: 0.95 ounces max.
Socket: Allied type 30055-2

SUBMINIATURE TYPE RELAYS

RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE
WKJ						
WKJ-6D	6v d-c	DPDT	3	1.5 w	40	$ 8.25
WKJ-6D	12v d-c	DPDT	3	1.5 w	150	8.25
WKJ-6D	26.5v d-c	DPDT	3	1.5 w	600	8.25
WKJ-6D	48v d-c	DPDT	3	1.5 w	2320	8.75
WKJ-6D	115v d-c	DPDT	3	1.5 w	10000	10.17
WKJO-6D	26.5v d-c	DPDT	3	1.5 w	600	8.25



Vibration: 20g to 2000 cp
Shock: 100g operational
Operate: 5 milliseconds
Release: 3 milliseconds
Temp: 65°C to +125°C
Weight: 0.5 ounces max.
Plug-in: Type WKJO (not sh
Socket: Armel type HRC-1 equivalent

Net

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ALLIED CONTROL

ALLIED CONTROL COMPANY INC.

POWER RELAYS

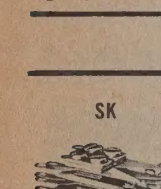
RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE	OUTLINE DRAWING	DESCRIPTION
BO-6A	6v a-c	DPDT	15	5.0 va	1.07	$5.80		Compact, rugged design for industrial control applications.
BO-6A	24v a-c	DPDT	15	5.0 va	17	5.80		**Terminals:** .096 diameter holes, tin dipped
BO-6A	115v a-c	DPDT	15	5.0 va	445	5.80		**Weight:** 5.5 ounces max.
BO-6A	220v a-c	DPDT	15	5.0 va	1700	5.92		**Mounting:** (4) 6-32 elastic stop nuts
BO-6D	6.3v d-c	DPDT	15	2.5 w	14.2	5.12		
BO-6D	13.2v d-c	DPDT	15	2.5 w	70	5.12		
BO-6D	26.5v d-c	DPDT	15	2.5 w	230	5.12		
BO-6D	115v d-c	DPDT	15	2.5 w	5000	5.70		
BOT-6A	6v a-c	DPDT	15	5.0 va	1.07	5.50		Compact, rugged design for industrial control applications.
BOT-6A	24v a-c	DPDT	15	5.0 va	17	5.50		**Terminals:** .096 diameter holes, tin dipped
BOT-6A	115v a-c	DPDT	15	5.0 va	445	5.50		**Weight:** 5.0 ounces max.
BOT-6A	220v a-c	DPDT	15	5.0 va	1700	5.62		**Mounting:** #6-32NC-2B tapped holes (4)
BOT-6D	6v d-c	DPDT	15	2.5 w	14.2	4.82		
BOT-6D	12v d-c	DPDT	15	2.5 w	70	4.82		
BOT-6D	26.5v d-c	DPDT	15	2.5 w	230	4.82		
BOT-6D	110v d-c	DPDT	15	2.5 w	5000	5.40		
BOHR-6A	115v a-c	DPDT	10	5.0 va	445	11.33		**Vibration:** 10-55 cps at .062" double amplitude
BOHR-6D	26.5v d-c	DPDT	10	2.5 w	230	10.88		**Shock:** 30g operational
BOHRO-6A	115v a-c	DPDT	15	5.0 va	445	11.33		**Temp:** −55°C to +71.5°C
BOHRO-6D	26.5v d-c	DPDT	15	2.5 w	230	10.88		**Weight:** 9.5 ounces max.
								Plug-in: Type BOHRO (not show
								Socket: Any std. RETMA or EIA octal
CNA-13A	115v a-c	SPST NO DB	25	10.5 va	145	8.60		Heavy duty, compact relay with double break contact construction eliminating pigtails
CNAS-13A	115v a-c	SPST NO DB	50	10.5 va	145	10.60		**Terminals:** Coil (1 & 2) 3-32 dia. holes Contacts (3 & 4) 10-32 screw type
								Weight: 9.5 ounces max.
								Mounting: (4) 6-32 elastic stop nuts
PB-9A	115v a-c	3PDT	10	6.0 va	380	7.60		Small design with semi-balanced armature construction
PB-12A	115v a-c	4PDT	10	6.0 va	380	8.10		**Operate:** 25 milliseconds
								Release: 4 milliseconds
								Temp: —55°C to +71.5°C
								Weight: 4.0 ounces max.
PO-9A	24v a-c	3PDT	15	10.5 va	8.0	7.03		Low cost, compact, multi pole
PO-9A	115v a-c	3PDT	15	10.5 va	145.0	7.03		**Terminals:** .079 x .164 hook, tin dipped
PO-9D	13.2v d-c	3PDT	15	2.5 w	70	6.71		**Weight:** 7.5 ounces max.
PO-9D	24 v d-c	3PDT	15	2.5 w	230	6.71		**Mounting[5]:** (4) 6-32 tapped holes (as shown) Type PON-(4) 6-32 elastic stop nuts
PO-9D	115 v d-c	3PDT	15	2.5 w	5000	7.38		
PO-12A	115v a-c	4PDT	15	10.5 va	145	7.90		Low cost, compact, multi pole
PO-12D	13.2v d-c	4PDT	15	2.5 w	70	7.44		**Terminals:** .079 x .164 hook, tin dipped
PO-12D	24v d-c	4PDT	15	2.5 w	230	7.44		**Weight:** 8.0 ounces max.
								Mounting[5]: (4) 6-32 tapped holes (as shown) Type PON-(4) 6-32 elastic stop nuts

ALLIED CONTROL

ALLIED CONTROL COMPANY INC.

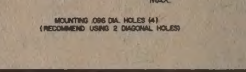
WELDED SUBMINIATURE TYPE RELAYS

WKY



RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE
WKY-6D	6v d-c	DPDT	3	1.5 w	40	$10.08
WKY-6D	12v d-c	DPDT	3	1.5 w	150	10.08
WKY-6D	26.5v d-c	DPDT	3	1.5 w	600	10.08
WKY-6D	48v d-c	DPDT	3	1.5 w	2320	10.58
WKY-6D	115v d-c	DPDT	3	1.5 w	10000	11.80
WKYO-6D	26.5v d-c	DPDT	3	1.5 w	600	10.08

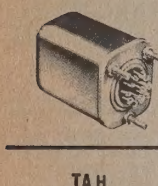
NOTE: Conforms to MIL-R-5757-10.



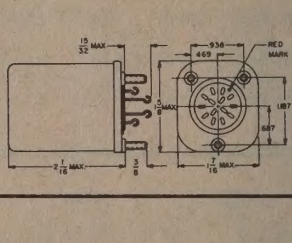
Vibration: 20g to 2000 cp
Shock: 50g operational
Operate: 5 milliseconds
Release: 3 milliseconds
Temp: −65°C to +125°C
Weight: 0.5 ounces max.
Plug-in: Type WKYO (not si
Socket: Armel type HRK- equivalent

TELEPHONE TYPE RELAYS

SK

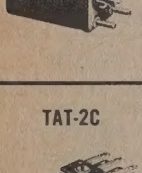


SK-4C	24v d-c	4PDT	2	1.5 w	425	$6.30

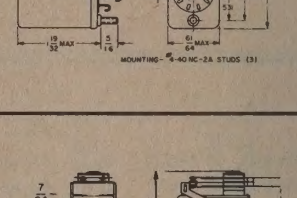


Miniature size for fron panel wiring with an effi metal to metal hinge.
Terminals: elongated hole .062 x .125
Weight: 2.5 ounces max.
Mounting: (2) 4-40 NC-2B tapped holes

SKH

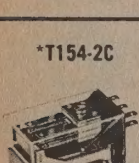


SKH-4C	24v d-c	4PDT	2	1.5 w	425	12.80

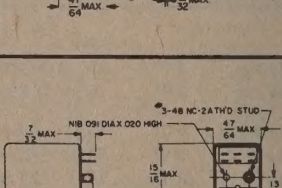


SK type hermetically sealed.
Temp: −55°C to +85°C
Weight: 5.0 ounces max.
Mounting: (3) 6-32 NC-2A

TAH



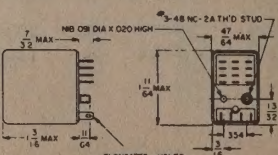
TAH-2C	24v d-c	DPDT	2	700 mw	700	7.41
TAH-4C	24v d-c	4PDT	2	700 mw	700	8.90



Compact, rugged design extremely long life
Operate: 15 milliseconds
Release: 8 milliseconds
Temp: −55°C to +71°C
Weight: 2.5 ounces max.

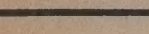
TAT-2C

TAT-2C	6v d-c	DPDT	2	700 mw	52	2.96
TAT-2C	12v d-c	DPDT	2	700 mw	185	2.96
TAT-2C	24v d-c	DPDT	2	700 mw	700	2.96
TAT-2C	48v d-c	DPDT	2	700 mw	2500	2.96
TAT-2C	115v d-c	DPDT	2	700 mw	15000	4.66



Subminiature with the performance of a minial plus extra long life
Terminals: Elongated hole .080 x .040
Weight: 0.70 ounces max
Mounting: (4) 4-48 NF-2B tapped holes

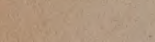
*T154-2C



T154-2C	6v d-c	DPDT	2	700 mw	52	3.25
T154-2C	12v d-c	DPDT	2	700 mw	185	3.25
T154-2C	24v d-c	DPDT	2	700 mw	700	3.25
T154-2C	48v d-c	DPDT	2	700 mw	2500	3.25
T154-2C	115v d-c	DPDT	2	700 mw	15000	4.95

Features no internal w contact arms extended to combination solder and in terminals
Terminals: Printed circui available as type TP-154
Enclosure: Dust cover
Weight: 0.80 ounces ma
Socket: Allied type 3005

*T154-4C



T154-4C	6v d-c	4PDT	2	700 mw	52	3.63
T154-4C	12v d-c	4PDT	2	700 mw	185	3.63
T154-4C	24v d-c	4PDT	2	700 mw	700	3.63
T154-4C	48v d-c	4PDT	2	700 mw	2500	3.63
T154-4C	115v d-c	4PDT	2	700 mw	15000	5.33

Features no internal w contact arms extended to combination solder and in terminals
Terminals: Printed circu available as type TP-154
Enclosure: Dust cover
Weight: 0.95 ounces ma
Socket: Allied type 3005

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ALLIED CONTROL

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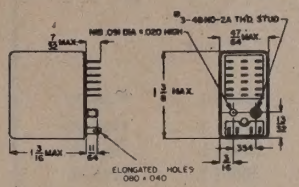
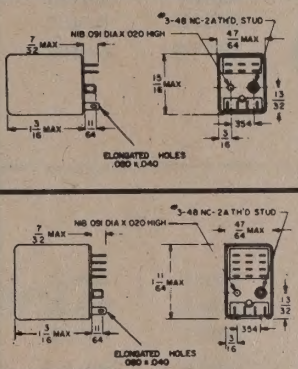
TELEPHONE TYPE RELAYS

RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	COIL POWER AT 25°C	COIL RESIST. OHMS[3]	NET PRICE	OUTLINE DRAWING	DESCRIPTION
*T154-6C								Features no internal wiring, contact arms extended to form combination solder and plug-in terminals
T154-6C	6v d-c	6PDT	2	1.5 w	25	$4.66		**Terminals:** Printed circuit available as type TP-154
T154-6C	12v d-c	6PDT	2	1.5 w	90	4.66		**Enclosure:** Dust cover
T154-6C	24v d-c	6PDT	2	1.5 w	430	4.66		**Weight:** 1.0 ounces max.
T154-6C	48v d-c	6PDT	2	1.5 w	1550	4.66		**Socket:** Allied type 30055-20
T154-6C	115v d-c	6PDT	2	1.5 w	9000	5.56		

*Available with bifurcated contacts type T163



T-163-2C	6v d-c	DPDT	2	700 mw	52	3.65		Same as T-154-2C except for bifurcated contacts.
T-163-2C	12v d-c	DPDT	2	700 mw	185	3.65		
T-163-2C	24v d-c	DPDT	2	700 mw	700	3.65		
T-163-2C	48v d-c	DPDT	2	700 mw	2500	3.65		
T-163-2C	115v d-c	DPDT	2	700 mw	15000	5.35		

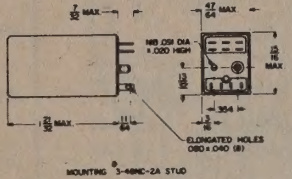


T-163-4C	6v d-c	4PDT	2	700 mw	52	4.16		Same as T-154-4C except for bifurcated contacts.
T-163-4C	12v d-c	4PDT	2	700 mw	185	4.16		
T-163-4C	24v d-c	4PDT	2	700 mw	700	4.16		
T-163-4C	48v d-c	4PDT	2	700 mw	2500	4.16		
T-163-4C	115v d-c	4PDT	2	700 mw	15000	5.86		

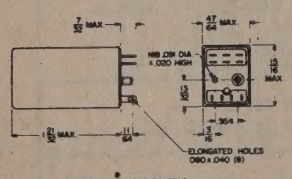
ALSO AVAILABLE WITH 6PDT CONTACTS AS TYPE T-163-6C WITH LOWER RESISTANCE VALUES

A. C. CRADLE SERIES

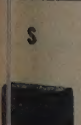
RELAY TYPE[1]	COIL VOLTAGE OR CURRENT	CONTACTS FORMS	CONTACTS AMPS[2]	NOMINAL COIL POWER MAX.	COIL RESISTANCE OHMS[3]	NET PRICE	OUTLINE DRAWING	DESCRIPTION
T255-2C	6v a-c	DPDT	2	1.2 va	6.4	$4.28		New design for quiet hum-free operation, long life, low cost versatile cradle series relay.
T255-2C	12v a-c	DPDT	2	1.2 va	31.8	4.28		**Enclosure:** Dust cover
T255-2C	24v a-c	DPDT	2	1.2 va	112.5	4.28		**Weight:** 1.3 ounces max.
T255-2C	48v a-c	DPDT	2	1.2 va	460.0	4.28		**Socket:** 30054-1
T255-2C	115v a-c	DPDT	2	1.2 va	2580.0	4.28		
TF255-2C	6v a-c	DPDT	5	1.2 va	6.4	4.40		
TF255-2C	12v a-c	DPDT	5	1.2 va	31.8	4.40		
TF255-2C	24v a-c	DPDT	5	1.2 va	112.5	4.40		
TF255-2C	115v a-c	DPDT	5	1.2 va	2580.0	4.40		
TF255-2C	220v a-c	DPDT	5	2.4 va	6000.0	4.90		



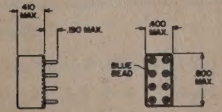
T255-4C	6v a-c	4PDT	2	1.2 va	6.4	4.88		New design for quiet hum-free operation, long life, low cost versatile cradle series relay.
T255-4C	12v a-c	4PDT	2	1.2 va	31.8	4.88		**Enclosure:** Dust cover
T255-4C	24v a-c	4PDT	2	1.2 va	112.5	4.88		**Weight:** 1.3 ounces max.
T255-4C	48v a-c	4PDT	2	1.2 va	460.0	4.88		**Socket:** 30054-2
T255-4C	115v a-c	4PDT	2	1.2 va	2580.0	4.88		
TF255-4C	6v a-c	4PDT	5	2.4 va	4.45	5.12		
TF255-4C	12v a-c	4PDT	5	2.4 va	20.0	5.12		
TF255-4C	24v a-c	4PDT	5	2.4 va	65.0	5.12		
TF255-4C	115v a-c	4PDT	5	2.4 va	1575.0	5.12		
TF255-4C	220v a-c	4PDT	5	2.4 va	6000.0	5.62		



NOTE: Available without dust cover type TE and TEF. with bifurcated contacts type TEB (open) and T266 (dust cover) Retainer springs for above type 30040-4 T255-2C 30040-5 T255-4C



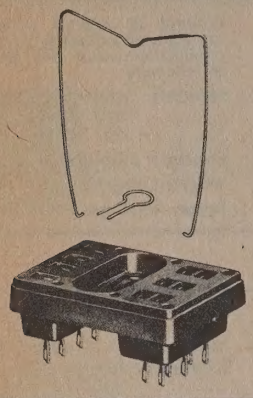
S6A1	26.5v d-c	DPDT	2	1w	700	$9.91		Half crystal can relay in all welded construction with solder hook or plug in terminals.
S6H3	26.5v d-c	DPDT	2	1w	700	9.91		**Weight:** 0.3 ounces
SL6A1	26.5v d-c	DPDT	2	1w	700	9.91		
SL6H3	26.5v d-c	DPDT	2	1w	700	9.91		



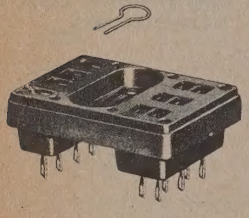
NOTE: relay conforms to MIL-R-5757/9

ALLIED CONTROL ALLIED CONTROL COMPANY INC.

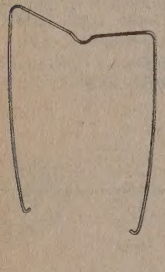
SOCKETS — RETAINERS



SOCKET NUMBER	RELAY TYPE		
30055-1	T154-2C	30055-1	$.55
30055-1	T163-2C	30055-2	.60
30055-1	T351-2C	30055-3	.72
30055-2	T154-4C	30055-4	.88
30055-2	T163-4C	30055-5	.55
30055-2	T351-4C	30055-6	.70
30055-20	T154-6C	30055-8	.70
30055-20	T163-6C	30055-20	.95
		30055-24	.95



30054-1	T154-2C	30054-1	.50
30054-1	T163-2C	30054-2	.55
30054-1	T255-2C	30054-20	.90
30054-2	T154-4C	30040-1	.05
30054-2	T163-4C	30040-2	.05
30054-2	T255-4C	30040-3	.05
30054-20	T154-6C	30040-4	.05
30054-20	T163-6C	30040-5	.05



30040-1	T154-2C	16479-1	1.25
30040-1	T163-2C	16185-1	1.42
30040-2	T154-4C	16188-1	1.42
30040-2	T163-4C	16187-1	1.64
30040-3	T154-6C	16189-1	1.64
30040-3	T163-6C		
30040-4	T255-2C		
30040-5	T255-4C		

NOTE: STANDARD PACKAGE FOR SOCKETS—20
STANDARD PACKAGE FOR RETAINERS—100

DESCRIPTION

Hardware: Ground wire
Hardware Material: Stainless steel 18-8, Type 302
Contacts: Beryllium copper, gold plated
Insulator: Black phenolic per Mil-P-14D CFG
Chassis Thickness: .062 recommended

SOCKET NUMBER	RELAY TYPE	PANEL LAYOUT
16479-1	MHO-6D (Above chassis mtg.)	.136 DIA. HOLE 2 FOR MOUNT; $\frac{21}{32}$ DIA. HO; .437; .875
16185-1	MHLO-12D (Below chassis mtg.)	.219 DIA. HOLE 2 FOR MOUNTIN; $1\frac{3}{32}$ DIA; .765; 1.531
16188-1	MHUO-12 (Above chassis mtg.)	.166 DIA. HOLE 2 FOR MOUNTIN; $1\frac{1}{32}$ DIA.; .703; 1.406
16187-1	MHLO-18D (Below chassis mtg.)	.219 DIA. HOLE 2 FOR MOUNTING; $1\frac{7}{32}$ DIA.; .843; 1.687
16189-1	MHUO-18 (Above chassis mtg.)	.166 DIA. HOLE 2 FOR MOUNTIN; 1.140 DIA.; .781; 1.562

DESCRIPTION

Hardware: Saddle, spacers, screws and washers
Hardware Finish: Cadmium plated
Contacts: Beryllium copper, silver plated, tin dipped
Insulator: Mica-filled phenolic
Chassis Thickness: .062 recommended

GENERAL INFORMATION

1—Relay type—the letter H designates a hermetically sealed unit.
2—Contact ratings are for a resistive load at 29 volts d-c. Low level contacts are available except on Power Relays and Types AS, BJ, CH, MHY and MHYO.
3—Ohms—d-c resistance, standard tolerance ±10%
4—Contact ratings are for a resistive load at 29 volts d-c or 115 v
5—Other mounting variations are available.

How to order: Specify Allied relay type and coil voltage or current Example: MHYO-12D 26.5v d-c TS154-4C 8.4 ma d-c

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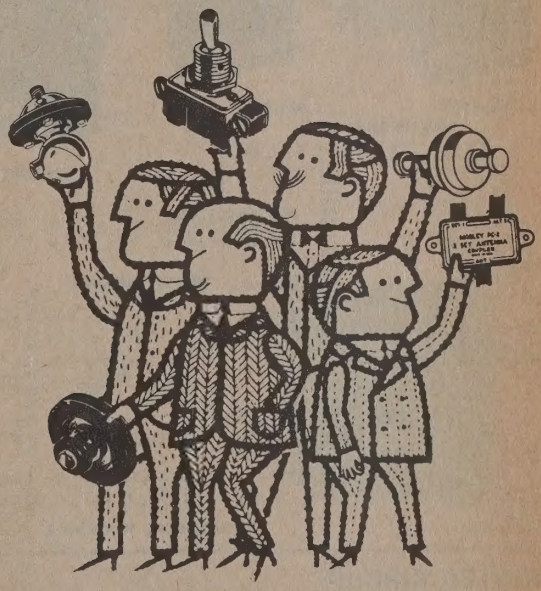


American Zettler, inc.

STANDARD AZ 420 AND 430 SERIES RELAYS

General purpose miniature relays in plastic dust cover — Interchangeable with other cradle type relays — Combination s and plug-in terminals.

CONTACTS RATED 2 AMPS FINE SILVER GOLD PLATED

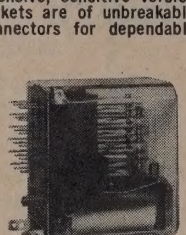
AZ Type	Coil Specifications: Nominal Voltage (Volts)	Must Operate (mA)	Resistance (Ohms)	Contacts	NET Price 1-24 (Dollars)
AZ 420-15-4L	6 DC	37	52	DPDT	3.23
AZ 420-1011-4L	12 DC	20	185	DPDT	3.23
AZ 420-70-4L	24 DC	12	700	DPDT	3.23
AZ 420-56-4L	48 DC	5.4	2.5K	DPDT	3.23
AZ 420-035-4L	115 DC	2.4	15K	DPDT	4.88
AZ 421-15-1L	6 DC	57	52	4PDT	3.61
AZ 421-1011-1L	12 DC	30	185	4PDT	3.61
AZ 421-70-1L	24 DC	18	700	4PDT	3.61
AZ 421-56-1L	48 DC	8.3	2.5K	4PDT	3.61
AZ 421-035-1L	115 DC	3.5	15K	4PDT	5.26
AZ 431-18-1L	6 DC	106	25	6PDT	4.61
AZ 431-13-1L	12 DC	59	90	6PDT	4.61
AZ 431-80-1L	24 DC	29	430	6PDT	4.61
AZ 431-06-1L	48 DC	13.5	1.8K	6PDT	4.61
AZ 431-04-1L	115 DC	6.5	9K	6PDT	5.51

SERIES AZ 420 — MINIATURE GENERAL PURPOSE RELAYS — UP TO 6 FORM C

• International Standard type • Combination plug in/wire or PC terminals • Low level bifurcated, 2 amp or 5 amp contacts • Life expectancy more than 100 million operations • Form A, B, C and D contacts are available • Molded cradle eliminates phenolic dust inside the relay • Balanced, spring-held armature allows dependable operation in any position • Round core and larger coil volume provides more pull force, eliminating expensive, sensitive version • Slim profile mounting with right-angle socket • Sockets are of unbreakable fiberglass-filled base and have unique knife-type connectors for dependable contact • Available from stock.

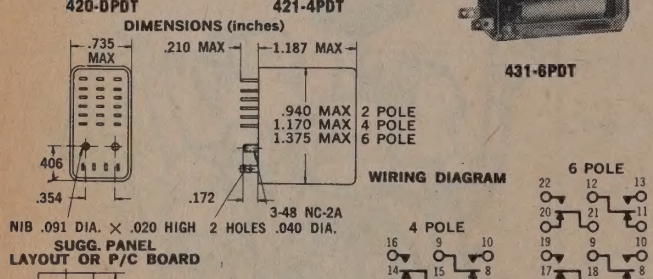
420-DPDT

421-4PDT



431-6PDT

DIMENSIONS (inches)



BIFURCATED CONTACTS RATED 2 AMPS FINE SILVER GOLD PLATED

AZ Type	Coil Specifications: Nominal Voltage (Volts)	Must Operate (mA)	Resistance (Ohms)	Contacts	Pric (D
AZ-420-15-40L	6 DC	49.3	52	DPDT	
AZ 420-1011-40L	12 DC	26.6	185	DPDT	
AZ 420-70-40L	24 DC	16	700	DPDT	
AZ 420-56-40L	48 DC	7	2.5K	DPDT	
AZ 420-035-40L	115 DC	3.2	15K	DPDT	
AZ 421-15-10L	6 DC	76	52	4PDT	
AZ 421-1011-10L	12 DC	40	185	4PDT	
AZ 421-70-10L	24 DC	24	700	4PDT	
AZ 421-56-10L	48 DC	11.1	2.5K	4PDT	
AZ 421-035-10L	115 DC	4.7	15K	4PDT	
AZ 431-18-10L	6 DC	140	25	6PDT	
AZ 431-13-10L	12 DC	78	90	6PDT	
AZ 431-80-10L	24 DC	38	430	6PDT	
AZ 431-06-10L	48 DC	18	1.8K	6PDT	
AZ 431-04-10L	115 DC	8.5	9K	6PDT	

CONTACTS RATED 5 AMPS SILVER CADMIUM

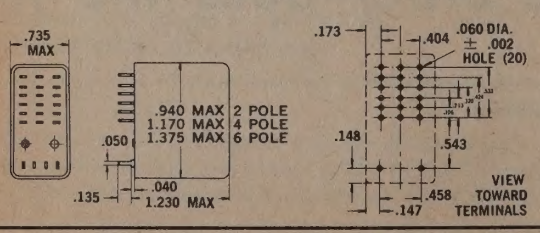
AZ 420-15-4H	6 DC	49.3	52	DPDT	3
AZ 420-1011-4H	12 DC	26.6	185	DPDT	3
AZ 420-70-4H	24 DC	16	700	DPDT	3
AZ 420-56-4H	48 DC	7	2.5K	DPDT	3
AZ 420-035-4H	115 DC	3.2	15K	DPDT	4
AZ 421-15-1H	6 DC	76	52	4PDT	3
AZ 421-1011-1H	12 DC	40	185	4PDT	3
AZ 421-70-1H	24 DC	24	700	4PDT	3
AZ 421-56-1H	48 DC	11.1	2.5K	4PDT	3
AZ 421-035-1H	115 DC	4.7	15K	4PDT	5
AZ 431-18-1H	6 DC	140	25	6PDT	4
AZ 431-13-1H	12 DC	78	90	6PDT	4
AZ 431-80-1H	24 DC	38	430	6PDT	4
AZ 431-06-1H	48 DC	18	1.8K	6PDT	4
AZ 431-04-1H	115 DC	8.5	9K	6PDT	5

ELECTRICAL SPECIFICATIONS

CONTACT RATING — noninductive load
Light Duty (Code L): Fine silver goldplated — low level to 2 amps @ 2
or 1 amp @ 115 VAC
Heavy Duty (Code H): Silver cadmium oxide — 5 amp @ 26 VDC or 3
@ 115 VAC (other contact material available)
LIFE EXPECTANCY — Mechanical Operations: 10^8 — Operations at Rated Loa
CONTACT RESISTANCE — 50 milliohms max. initially — 200 milliohms at end
OPERATE TIME — at two times "must operate" voltage or current: ≤ 8ms
RELEASE TIME — at two times "must operate" voltage or current: ≤ 3ms
CONTACT BOUNCE — at 10 ma contact current: 2 ms max. at operate, N.O. co
3 ms max. at release, N.C. co
DIELECTRIC STRENGTH — 1000 V rms; 500 V rms across contact gap
INSULATION RESISTANCE — 1000 megohms minimum @ 25°C, 100 VDC, 50
COIL TEMPERATURE — Max. 105°C (220°F)
AMBIENT TEMPERATURE — Operating: −55°C (−72°F) to 80°C (175°
nominal operating voltage
Storage: −55°C (−72°F) to 105°C (220°F)
VIBRATION — Operating: .062 DA @ 5-55 Hz; 10g @ 55-110 Hz
Non Operating: 10g @ 5-500 Hz
SHOCK — Operating: 20g @ 11 ms — Non Operating: 30g @ 11 ms
WEIGHT — 23 to 35 grams (approx. 1 oz.)

Basic Types	Description
AZ 420, 421, 431	Polycarbonate dustcover, combined solder/plug-in terminals, stud-mounting

PRINTED CIRCUIT TYPES AZ428, AZ429, AZ439



CONTACTS RATED 2 AMPS FINE SILVER GOLD PLATED

AZ Type	Coil Specifications: Nominal Voltage (Volts)	Must Operate (mA)	Resistance (Ohms)	Contacts	NE Price (Dolla
AZ 428-15-4L	6 DC	37	52	DPDT	3.2
AZ 428-1011-4L	12 DC	20	185	DPDT	3.2
AZ 428-70-4L	24 DC	12	700	DPDT	3.2
AZ 428-56-4L	48 DC	5.4	2.5K	DPDT	3.2
AZ 428-035-4L	115 DC	2.4	15K	DPDT	4.8
AZ 429-15-1L	6 DC	57	52	4PDT	3.6
AZ 429-1011-1L	12 DC	30	185	4PDT	3.6
AZ 429-70-1L	24 DC	18	700	4PDT	3.6
AZ 429-56-1L	48 DC	8.3	2.5K	4PDT	3.6
AZ 429-035-1L	115 DC	3.5	15K	4PDT	5.2
AZ 439-18-1L	6 DC	106	25	6PDT	4.6
AZ 439-13-1L	12 DC	59	90	6PDT	4.6
AZ 439-80-1L	24 DC	29	430	6PDT	4.6
AZ 439-06-1L	48 DC	13.5	1.8K	6PDT	4.6
AZ 439-04-1L	115 DC	6.5	9K	6PDT	5.5

Also available with 2 amp bifurcated contacts or 5 amp heavy duty conta

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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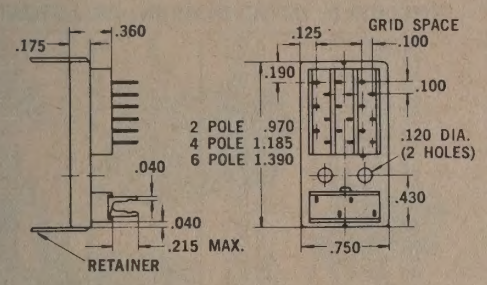
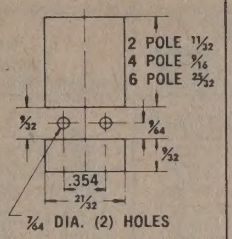
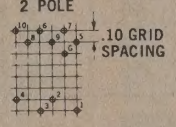
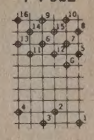
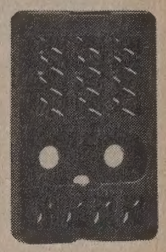
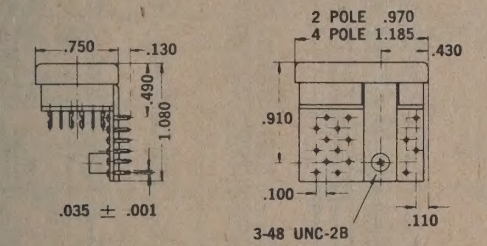
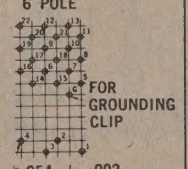
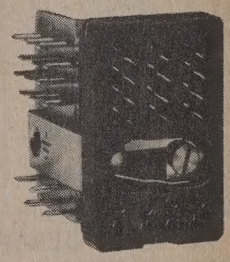
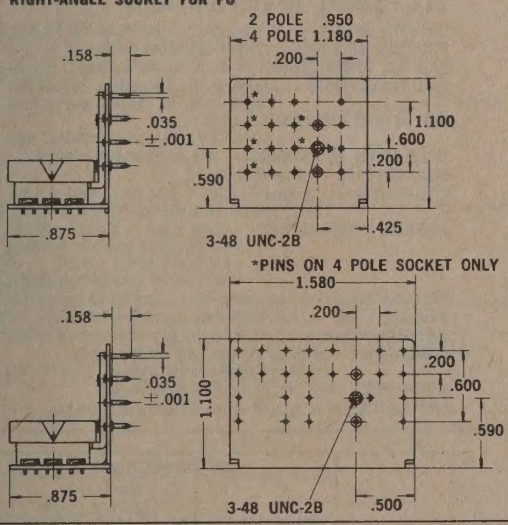
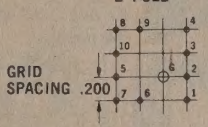
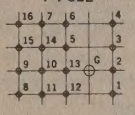
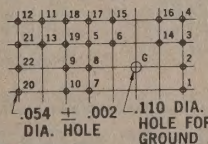
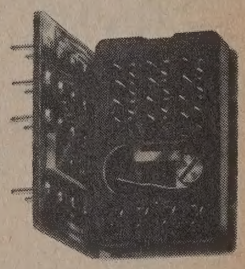
American Zettler, inc.

SOCKETS FOR MINIATURE GENERAL PURPOSE RELAYS — AZ 420, 421, 431 AND ACCESSORIES

PART NO.	NO. OF POLES	DIMENSIONS (inches)	SUGGESTED PANEL LAYOUT OR P/C BOARD †	
T-140-A1 OAZ 420 T-141-A1 OAZ 421 T-145-A1 OAZ 431	2 4 6	**DIAGRAM A** SOCKET FOR WIRING OR PC 	 2 POLE  4 POLE 	 ACTUAL SIZE 4 POLE
T-142-A1 OAZ 420 T-150-A1 OAZ 421 TA. F	2 4 6	**DIAGRAM B** RIGHT-ANGLE SOCKET FOR PC 	6 POLE  VIEW TOWARD TERMINALS .054 ± .002 DIA. HOLE	 ACTUAL SIZE 4 POLE
T149-A1 F AZ 420 T143-A1 F AZ 421 T154-A1 F AZ 431	2 4 6	**DIAGRAM C** RIGHT-ANGLE SOCKET FOR PC 	2 POLE  4 POLE  6 POLE 	 ACTUAL SIZE 4 POLE

TOLERANCES: ±.010 Standard sockets have silver-plated terminals and are dipped in flux for easy machine soldering.
† Hole numbers correspond with relay wiring diagram.

ORDER INFORMATION

AZ Type	Description	Diagram Identification	Contacts	NET Price 1-24 (Dollars)
T-140-A1	Socket	A	DPDT	.38
T 342-A1	Right Angle for PC	B	DPDT	1.46
T 349-A1	Right Angle for PC	C	DPDT	1.46
T 140-1	Retainer		DPDT	.06
T 141-A1	Socket	A	4PDT	.51
T 343-A1	Right Angle for PC	C	4PDT	1.75
T 350-A1	Right Angle for PC	B	4PDT	1.75
T 141-1	Retainer		4PDT	.06

AZ Type	Description	Diagram Identification	Contacts	NET Price 1-24 (Dollars)
ST 345-A1	Socket	A	6PDT	.69
ST 354-A1	Right Angle for PC	C	6PDT	2.29
ST 345-1	Retainer		6PDT	.06
ST 140-2	Ground Clip for all			.09

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Order socket, retainer and grounding clip (if desired) by separate part numbers. To specify sockets with gold plated terminals, substitute -A2 for -A1.

American Zettler, inc.

STANDARD AZ 480 SERIES

Enclosed plug-in version with octal type sockets (8 or 11 pins) or open type with wire terminals, silver cadmium-oxide 10 contacts in SPDT through 4PDT. AC or DC coils.

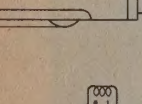
ENCLOSED, OCTAL PLUG-IN, AC ACTUATED

AZ Type	Coil Specifications: Voltage, VAC (Volts) Nominal	Max.	Min.	Nominal Current (mA)	Contacts	NET Price 1-24 (Dollars)
AZ 481-2-1	6 AC	9	5	410	SPDT	5.48
AZ-481-3-1	12 AC	19	10	205	SPDT	5.48
AZ 481-4-1	24 AC	37	21	100	SPDT	5.48
AZ 481-7-1	120 AC	184	102	20	SPDT	5.65
AZ 481-2-2	6 AC	9	5	410	DPDT	5.95
AZ 481-3-2	12 AC	19	10	205	DPDT	5.95
AZ 481-4-2	24 AC	37	21	100	DPDT	5.95
AZ 481-7-2	120 AC	184	102	20	DPDT	6.00
AZ 481-2-3	6 AC	9	5	410	3PDT	7.45
AZ 481-3-3	12 AC	19	10	205	3PDT	7.45
AZ 481-4-3	24 AC	37	21	100	3PDT	7.45
AZ 481-7-3	120 AC	184	102	20	3PDT	7.60

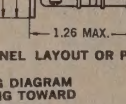
OPEN, WIRE TERMINALS, AC ACTUATED

AZ Type	Coil Specifications: Voltage, VAC (Volts) Nominal	Max.	Min.	Nominal Current (mA)	Contacts	NET Price 1-24 (Dollars)
AZ 483-2-1	6 AC	9	5	410	SPDT	3.21
AZ 483-3-1	12 AC	19	10	205	SPDT	3.21
AZ 483-4-1	24 AC	37	21	100	SPDT	3.21
AZ 483-7-1	120 AC	184	102	20	SPDT	3.30
AZ 483-2-2	6 AC	9	5	410	DPDT	3.80
AZ 483-3-2	12 AC	19	10	205	DPDT	3.80
AZ 483-4-2	24 AC	37	21	100	DPDT	3.80
AZ 483-7-2	120 AC	184	102	20	DPDT	3.90
AZ 483-2-3	6 AC	9	5	410	3PDT	4.25
AZ 483-3-3	12 AC	19	10	205	3PDT	4.25
AZ 483-4-3	24 AC	37	21	100	3PDT	4.25
AZ 483-7-3	120 AC	184	102	20	3PDT	4.30
AZ 483-2-8	6 AC	9	5	410	4PDT	5.35
AZ 483-3-8	12 AC	19	10	205	4PDT	5.35
AZ 483-4-8	24 AC	37	21	100	4PDT	5.35
AZ 483-7-8	120 AC	184	102	20	4PDT	5.40

SERIES AZ 480 — GENERAL PURPOSE RELAYS — 10 AMP CONTACTS

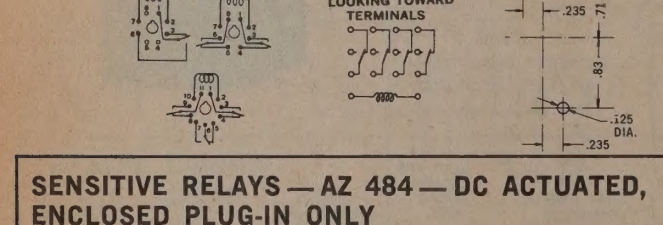


AZ 480 & AZ 481

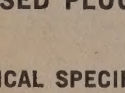


AZ 482 & AZ 483

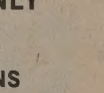
DIMENSIONS

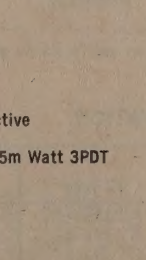


SUGGESTED PANEL LAYOUT OR PC BOARD



WIRING DIAGRAM LOOKING TOWARD TERMINALS





ELECTRICAL SPECIFICATIONS

CONTACT RATING — 10 amp @ 115 volts AC 60 Hz non inductive
CONTACT MATERIAL — Silver-cadmium-oxide
CONTACT ARRANGEMENT — 1, 2, 3 and 4 form C (up to 4PDT)
LIFE EXPECTANCY — Mechanical: 10 million operations
Rated Load: ¼ million operations
DIELECTRIC STRENGTH — 1500 v rms
500 v rms across contact gap
INSULATION RESISTANCE — 100 megohms minimum
COIL VOLTAGE — to 280 volts AC
COIL POWER — Nominal — DC: 1.2 watts — AC: 2.5 VA
Max. Continuous Dissipation: 2.5 watts @ 35°C (95°F) amb
AMBIENT TEMPERATURE — Open relay −45°C (−50°F) to +70°C (158°F)
[at nominal operate voltage]
Enclosed relay −45°C (−50°F) to +50°C (125
[at nominal operate voltage]
OPERATE TIME — Less than 15ms at nominal operate voltage (DC coils onl
RELEASE TIME — Less than 8ms at nominal operate voltage (DC coils only)
WEIGHT — Open relay: 2.3 oz (65 gr) — Enclosed relay: 3 oz (85 gr)
TERMINALS — Open relay: pierced solder lugs
Enclosed relay: octal plug-in
MOUNTING — See mechanical specifications
ENCLOSURE: Heat and shock resistant clear plastic

ENCLOSED, OCTAL PLUG-IN, DC ACTUATED

AZ Type	Coil Specifications: Voltage, VAC (Volts) Nominal	Max.	Min.	Resistance (Ohms) ±10%	Contacts	Pri (D
AZ 480-2-1	6 DC	9	4.5	32	SPDT	
AZ 480-3-1	12 DC	19	9	130	SPDT	
AZ 480-4-1	24 DC	37	18	500	SPDT	
AZ 480-6-1	48 DC	75	36	2,100	SPDT	
AZ 480-9-1	110 DC	165	83	10,500	SPDT	
AZ 480-2-2	6 DC	9	4.5	32	DPDT	
AZ 480-3-2	12 DC	19	9	130	DPDT	
AZ 480-4-2	24 DC	37	18	500	DPDT	
AZ 480-6-2	48 DC	75	36	2,100	DPDT	
AZ 480-9-2	110 DC	165	83	10,500	DPDT	
AZ 480-2-3	6 DC	9	4.5	32	3PDT	
AZ 480-3-3	12 DC	19	9	130	3PDT	
AZ 480-4-3	24 DC	37	18	500	3PDT	
AZ 480-6-3	48 DC	75	36	2,100	3PDT	
AZ 480-9-3	110 DC	165	83	10,500	3PDT	

OPEN, WIRE TERMINALS, DC ACTUATED

AZ Type	Coil Specifications: Voltage, VAC (Volts) Nominal	Max.	Min.	Resistance (Ohms) ±10%	Contacts	
AZ 482-2-1	6 DC	9	4.5	32	SPDT	3
AZ 482-3-1	12 DC	19	9	130	SPDT	3
AZ 482-4-1	24 DC	37	18	500	SPDT	3
AZ 482-6-1	48 DC	75	36	2,100	SPDT	3
AZ 482-9-1	110 DC	165	83	10,500	SPDT	3
AZ 482-2-2	6 DC	9	4.5	32	DPDT	3
AZ 482-3-2	12 DC	19	9	130	DPDT	3
AZ 482-4-2	24 DC	37	18	500	DPDT	3
AZ 482-6-2	48 DC	75	36	2,100	DPDT	3
AZ 482-9-2	110 DC	165	83	10,500	DPDT	4
AZ 482-2-3	6 DC	9	4.5	32	3PDT	4
AZ 482-3-3	12 DC	19	9	130	3PDT	4
AZ 482-4-3	24 DC	37	18	500	3PDT	4
AZ 482-6-3	48 DC	75	36	2,100	3PDT	4
AZ 482-9-3	110 DC	165	83	10,500	3PDT	4
AZ 482-2-8	6 DC	9	4.5	32	4PDT	4
AZ 482-3-8	12 DC	19	9	130	4PDT	4
AZ 482-4-8	24 DC	37	18	500	4PDT	4
AZ 482-6-8	48 DC	75	36	2,100	4PDT	5
AZ 482-9-8	110 DC	165	83	10,500	4PDT	5

SENSITIVE RELAYS — AZ 484 — DC ACTUATED, ENCLOSED PLUG-IN ONLY

ELECTRICAL SPECIFICATIONS

CONTACT RATING — 2 amp @ 30 VDC or 70 VAC non inductive

COIL POWER — 125m Watt SPDT — 250m Watt DPDT — 375m Watt 3PDT

OPERATE TIME — Less than 16ms at nominal power

RELEASE TIME — Less than 12ms at nominal power

TERMINALS — Plug in only

All other data see standard relays

AZ Type	Coil Specifications: Resistance (Ohms) ±5%	Voltage (Volts)	Must Operate Current (mA)	Nom. Voltage (Volts)	Contacts	NE Price 1 (Dolla
Coil power: 125m Watt						
AZ 484-1-1	2500	20	7.2	27	SPDT	5.8
AZ 484-2-1	5000	27	5	36	SPDT	5.9
AZ 484-3-1	10,000	40	3.6	52	SPDT	6.2
Coil power: 250m Watt						
AZ 484-1-2	2500	27	10	36	DPDT	6.2
AZ 484-2-2	5000	40	7.2	52	DPDT	6.3
AZ 484-3-2	10,000	55	5	74	DPDT	6.6
Coil power: 375m Watt						
AZ 484-1-3	2500	34	12.3	45	3PDT	7.6
AZ 484-2-3	5000	49	8.7	65	3PDT	7.7
AZ 484-3-3	10,000	68	6.2	90	3PDT	8.0

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Net

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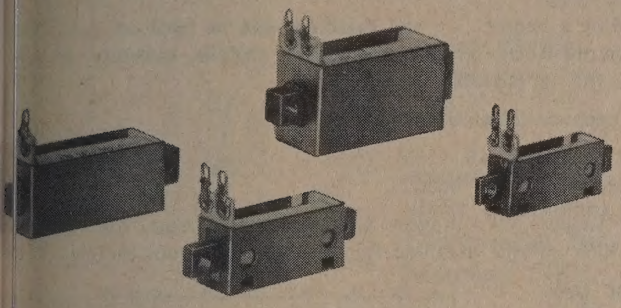
American Zettler, inc.

ES AZM 260 — ATURE PULL SOLENOIDS DC OPERATION

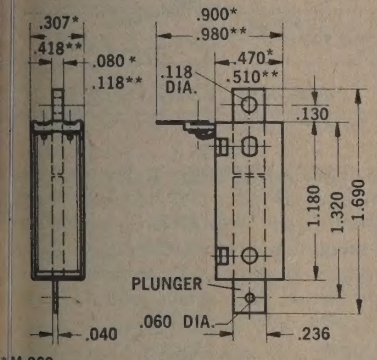
pact design • Rectangular shape for highest space-power efficiency hole mounting • Maximum stroke 5/16" • Molded bobbin • Brass g • Wire terminals • Available from stock



STANDARD AZM 260 SERIES SOLENOIDS FOR 100% DUTY CYCLE

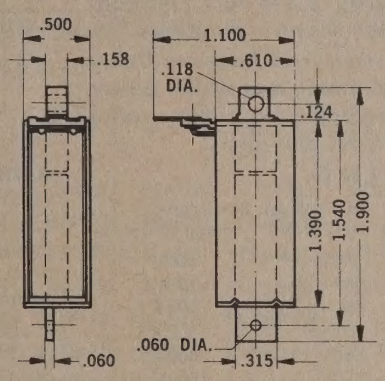
AZ Type	Coil Specifications: Operate Voltage (Volts)	Coil Specifications: Resistance (Ohms)	Pull Force @ 1/8" Stroke (Ounces)	NET Price 1-24 (Dollars)
AZM 260-10	6 DC	10	3/4 (20 gr)	2.20
AZM 260-32	12 DC	32	3/4 (20 gr)	2.20
AZM 260-150	24 DC	150	3/4 (20 gr)	2.25
AZM 260-760	48 DC	760	3/4 (20 gr)	2.25
AZM 260-3700	115 DC	3700	3/4 (20 gr)	2.44
AZM 261-8.6	6 DC	8.6	1 1/8 (33 gr)	2.33
AZM 261-30	12 DC	30	1 1/8 (33 gr)	2.33
AZM 261-130	24 DC	130	1 1/8 (33 gr)	2.53
AZM 261-460	48 DC	460	1 1/8 (33 gr)	2.53
AZM 261-2500	115 DC	2500	1 1/8 (33 gr)	2.92
AZM 262-5.7	6 DC	5.7	1 3/8 (45 gr)	2.47
AZM 262-21	12 DC	21	1 3/8 (45 gr)	2.47
AZM 262-80	24 DC	80	1 3/8 (45 gr)	2.47
AZM 262-300	48 DC	300	1 3/8 (45 gr)	2.76
AZM 262-2300	115 DC	2300	1 3/8 (45 gr)	3.17
AZM 263-4.2	6 DC	4.2	4 1/2 (130 gr)	2.80
AZM 263-16	12 DC	16	4 1/2 (130 gr)	2.80
AZM 263-73	24 DC	73	4 1/2 (130 gr)	2.80
AZM 263-290	48 DC	290	4 1/2 (130 gr)	3.18
AZM 263-1450	115 DC	1450	4 1/2 (130 gr)	3.65

AZM 260, 261

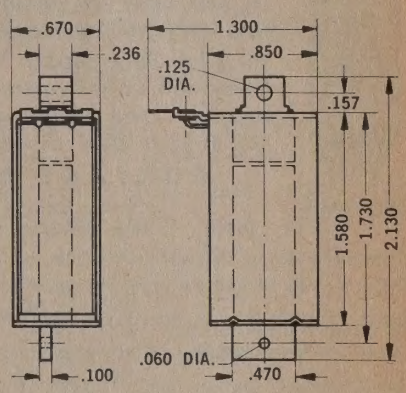


*M 260
*M 261
lerances: ±.010

AZM 262



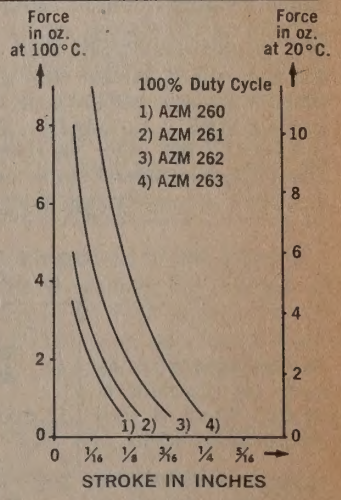
AZM 263



TRICAL SPECIFICATIONS

TYPE	AZM 260	AZM 261	AZM 262	AZM 263
ax. pull force at a) / " stroke and 20°C coil temp. b)	2¼ oz (70 gr) / 10 oz (280 gr)	3¼ oz (90 gr) / 14 oz (400 gr)	6¼ oz (175 gr) / 20 oz (570 gr)	12½ oz (350 gr) / 72 oz (2000 gr)
ax. stroke (inches)	5/16			
fe expectancy	Up to 10^6 operations depending on impact at end of stroke			
perate voltage	Up to 115vdc			
ax. coil temp.	110°C (240°F)			
ielectric strength coil to frame	750 vrms			
emp. rise °C/Watts	20	15	12	9
ax. cont. power dissipation at 20°C 8°F) ambient temp. (watts)	3.5	4.5	6	8.5
ull in time	3-30ms	3.5-35ms	4-40ms	5-50ms
eight	½ oz (12.5 gr)	¾ oz (22 gr)	1 oz (28 gr)	2½ oz (70 gr)
erminals	Pierced solder lugs, pretinned or lead wires available on special order			

for continuous duty
for intermittent duty (10% on)



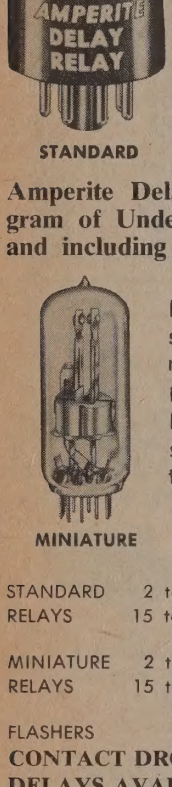
Typical pull curve for 100% duty cycles at 20°C and 100°C coil temperature

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

American Zettler, inc.

THERMOSTATIC **AMPERITE** DELAY RELAYS

GLASS ENCLOSED • HERMETICALLY SEALED • A.C., D.C., OR PULSATING CURRENT



STANDARD

AMPERITE THERMOSTATIC DELAY RELAYS

Amperite Thermostatic Delay Relays are manufactured on automatic high production equipment — resul a low price — and top quality. Quality is not sacrificed at any point. For example, although contacts are r 3 amps, 10 amp contacts are actually used. Similarly with all other parts—only the best available are used.

Amperite Thermostatic Delay Relays are actuated by a heater . . . and therefore can be used on A.C., D. pulsating current. Being hermetically sealed, Amperite Relays are not affected by altitude, moisture, or oth mospheric conditions. REPLACED AS EASILY AS A RADIO TUBE.

CIRCUITS SPST: Available only — normally open or normally closed.

HEATER VOLTAGES AVAILABLE: 2.5, 5.0, 6.3, 12.6, 26, 50, 115V.
For 220V use a 6000 ohm-5 watt resistor in series, with 115V heater.

HEATER WATTAGE: Standard and Miniature Relays—all voltages—2.3w prox. All heaters may be ope continuously. Heaters will not be damaged by a 50% voltage overload for duration of 1 hour or less.

Amperite Delay Relays are recognized under component program of Underwriters' Laboratories, Inc. for all voltages up to and including 115V.

MINIATURE

VARIATION OF DELAY WITH HEATER VOLTAGE

FIG. 1—Effect of change in heater voltage on delay in seconds. Only low voltage heaters (2.5 to 26 V.) incorporate heater voltage regulations as shown in diagram.

For 22 to 30 V. supply: We recommend Amperite Delay Relays with 26 V. heaters for airplanes and similar power supplies. These heaters are regulated for battery variation of 22 to 30 V. as shown in this diagram.

Figure 1

CONTACT RATING

	Delay	Contact Rating Non-Inductive	DC Voltage Breakdown Contact-to-Contact	Heater-to-Contact
STANDARD	2 to 10 Sec.	115V - 3a AC	250V	500V
RELAYS	15 to 180 Sec.	115V - 3a AC	800V	800V
		220V - 1a AC	800V	800V
MINIATURE	2 to 10 Sec.	115V - 2a AC	250V	500V
RELAYS	15 to 180 Sec.	115V - 2a AC	800V	800V
		220V - 1a AC	800V	800V
FLASHERS		- ½a AC		

AMBIENT TEMPERATURES: Relays are con sated for temperatures of −55° to +80°C. (R can be operated from −80°C to +125°C wi damage). Ambient temperature tolerances depen type. Low voltage heaters 26V or less have l ambient compensation than relays with 115V he

If the relays are actually to be used over ambien −55°C to +80°C it is advisable to have each tested at the factory over the ambient. A no charge is made for this service.

CONTACT DROP: — 0.1V — Prox. at 1A.

DELAYS AVAILABLE:—From 2 to 180 seconds. Relays can be used in series to obtain longer delays. The delay of any indiv relay up to 120 seconds can be increased up to 25% by using a resistor in series with the heater. Delays above 120 seconds ca be increased. Relays with short delays such as 2 to 5 seconds can be increased 50%.

LIFE of any individual relay will depend on the service the contacts are subjected to. With a 115V — 2A A.C. non inductive the contacts will withstand at least 250,000 operations. SHELF LIFE of Amperite Delay Relays is over 10 years.

INDUCTIVE A.C. LOADS: When breaking an inductive A.C. load, use a condenser of .01 to .1 mfd across contacts. In some c putting a 20,000 ohm, 5w. resistor across the contacts reduces the arcing considerably.

Relay Contacts should not be used on voltages above 220V.

FOR INSTANTANEOUS RECYCLE AND ELIMINATION OF CHATTER

For instantaneous recycle and elimination of chatter. Cannot be used with Sensitive Relays.

Magnetic Relay requires extra N.O. contact as shown at "E".

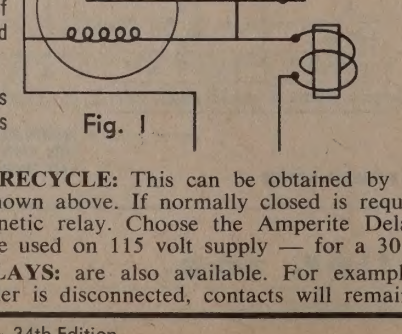


Fig. 1

For instantaneous recycle and elimination of chatter when Sensitive Relay is used.

Magnetic Relay requires an extra SPDT contact as shown at "F".

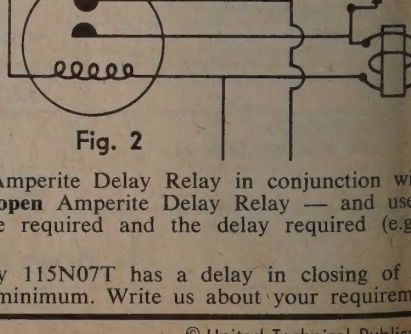


Fig. 2

INSTANTANEOUS RECYCLE: This can be obtained by using a normally open Amperite Delay Relay in conjunction wi Magnetic Relay as shown above. If normally closed is required — use a **normally open** Amperite Delay Relay — and use contacts on the magnetic relay. Choose the Amperite Delay Relay for the voltage required and the delay required (e.g 115N030 — would be used on 115 volt supply — for a 30 second delay).

LONG CYCLE RELAYS: are also available. For example, Amperite Delay Relay 115N07T has a delay in closing of 7 seconds. After heater is disconnected, contacts will remain closed for 30 seconds minimum. Write us about your requirem

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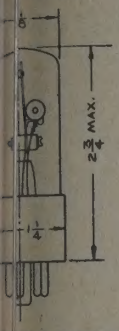
THERMOSTATIC AMPERITE DELAY RELAYS

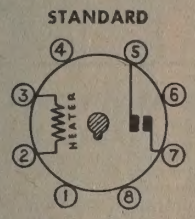
GLASS ENCLOSED • HERMETICALLY SEALED • A.C., D.C., OR PULSATING CURRENT

REAKING D.C. CURRENT: When Relay contacts open D.C. urrent above 50 volts, a condenser with a resistor in eries with the condenser must be connected across the ntacts. The following condenser values are approximate.

	50 V. D.C.	115 V. D.C.	230 V. D.C.
0 to .5 Amp.	None	.1 MF	.25 MF
.5 to 1.5 Amps.	"	.25 "	.25 "
1.5 to 3 Amps.	.25 MF	1 "	.5 "



ard Octal Base



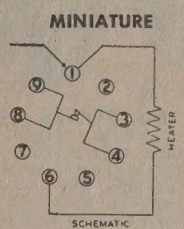
Bottom View
Schematic Diagram

SPECIFICATIONS:

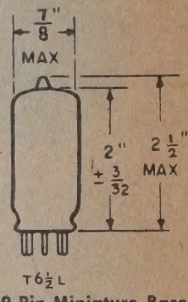
Base Wiring:
Standard Radio Octal:
Prongs 2-3-heater;
Prongs 5-7-contacts.

Base Wiring:
9-Pin Miniature:
Prongs 1-6 heater;
Prongs 3-4, 1 contact;
Prongs 8-9, 2nd contact

Amperite Delay Relays are recognized under component program of Underwriters' Laboratories, Inc. for all voltages up to and including 115V.



Bottom View
Schematic Diagram



9-Pin Miniature Base

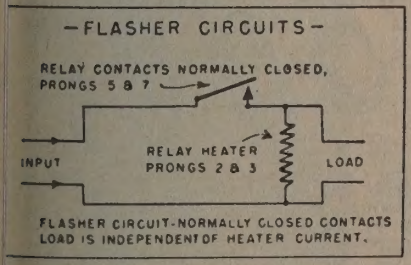
STANDARD AND MINIATURE TYPES OF AMPERITE DELAY RELAYS AND FLASHERS... Net $2.40 each

NDARD RELAYS: Available in 2 to 180 Seconds Delay. MINIATURE RELAYS: Available in 2 to 120 Seconds Delay.

Types shown in Bold type in the chart below are more popular relays and are more readily available.

MINIATURE TYPES: Designated by letter T (e.g. 6N05T)

ay-onds	Tolerance Seconds at 20°C	NORMALLY OPEN CONTACTS — HEATER VOLTAGES							NORMALLY CLOSED CONTACTS — HEATER VOLTAGES						
		2.5 V.	5.0 V.	6.3 V.	12.6 V.	26 V. (22-30)	50 V.	115 V.	2.5 V.	5.0 V.	6.3 V.	12.6 V.	26 V. (22-30)	50 V.	115 V.
2	± 1½	2N02	5N02	6N02	12N02	26N02	50N02	115N02	2C2	5C2	6C2	12C2	26C2	50C2	115C2
3	± 1½	2N03	5N03	**6N03**	12N03	**26N03**	50N03	**115N03**	2C3	5C3	**6C3**	12C3	**26C3**	50C3	**115C3**
5	± 2½	2N05	5N05	**6N05**	12N05	**26N05**	50N05	**115N05**	2C5	5C5	**6C5**	12C5	**26C5**	50C5	**115C5**
8	± 3	2N08	5N08	**6N08**	12N08	**26N08**	50N08	**115N08**	2C8	5C8	**6C8**	12C8	**26C8**	50C8	**115C8**
0	± 4	2N010	5N010	**6N010**	12N010	**26N010**	50N010	**115N010**	2C10	5C10	**6C10**	12C10	**26C10**	50C10	**115C10**
5	± 4	2N015	5N015	**6N015**	12N015	**26N015**	50N015	**115N015**	2C15	5C15	**6C15**	12C15	**26C15**	50C15	**115C15**
0	± 5	2N020	5N020	**6N020**	12N020	**26N020**	50N020	**115N020**	2C20	5C20	**6C20**	12C20	**26C20**	50C20	**115C20**
0	±10	**2N030**	**5N030**	6N030	**12N030**	26N030	50N030	**115N030**	2C30	5C30	**6C30**	12C30	**26C30**	50C30	**115C30**
5	±10	2N04[illegible]	5N045	**6N045**	12N045	**26N045**	50N045	**115N045**	2C45	5C45	**6C45**	12C45	**26C45**	50C45	**115C45**
0	±15	**2N060**	5N060	**6N060**	12N060	**26N060**	50N060	**115N060**	2C60	5C60	**6C60**	12C60	**26C60**	50C60	**115C60**
5	±15	2N075	5N075	**6N075**	12N075	**26N075**	50N075	**115N075**	2C75	5C75	**6C75**	12C75	**26C75**	50C75	**115C75**
0	±20	2N090	5N090	**6N090**	12N090	**26N090**	50N090	**115N090**	2C90	5C90	**6C90**	12C90	**26C90**	50C90	**115C90**
0	±35	2N0120	5N0120	**6N0120**	12N0120	**26N0120**	50N0120	**115N0120**	2C120	5C120	**6C120**	12C120	**26C120**	50C120	**115C120**
0	±35	2N0150	5N0150	**6N0150**	12N0150	**26N0150**	50N0150	**115N0150**	2C150	5C150	**6C150**	12C150	**26C150**	50C150	**115C150**
0	±45	2N0180	5N0180	**6N0180**	12N0180	**26N0180**	50N0180	**115N0180**	2C180	5C180	**6C180**	12C180	**26C180**	50C180	**115C180**



lashers operate approximately ⅓ on, ⅔ off. The percentage time on can be ncreased by reducing voltage of heater.

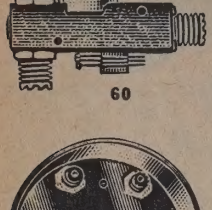
15V Flashers ONLY made in quanities of 12 or less. Cannot be supplied n production quantities.

Normally closed flashers are standard, and are indicated by the letter "F." The number following letter "F" denotes flashes per minute. *For example a 6F30 flasher,* has 6.3V heater, normally closed 30 FPM with a ± 15 flashes per minute tolerance. A 6F30T, would be the same type but in 9-pin miniature. Flashers are available from *30 to 90 Flashes per minute* with tolerances as shown in the chart below:

FLASHERS have contact rating of ½a 115V AC, non-inductive.

Tol. FPM — 20°C	Standard Flashers Available		
30 ± 15	6F30	26F30	115F30
45 ± 15	6F45	26F45	115F45
60 ± 20	6F60	26F60	115F60
75 ± 20	6F75	26F75	
90 ± 25	6F90	26F90	

DOW-KEY COAXIAL RELAYS, SWITCHES AND CONNECTORS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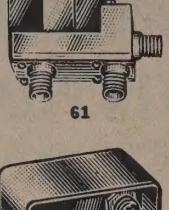
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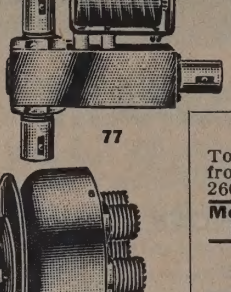
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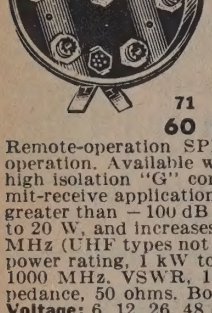
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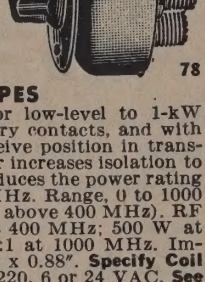
78

60 SERIES SPDT TYPES

Remote-operation SPDT coaxial relays for low-level to 1-kW operation. Available with 2 Form C auxiliary contacts, and with high isolation "G" connector at NC or receive position in transmit-receive applications. The "G" connector increases isolation to greater than — 100 dB at up to 500 MHz, reduces the power rating to 20 W, and increases VSWR above 400 MHz. Range, 0 to 1000 MHz (UHF types not recommended for use above 400 MHz). RF power rating, 1 kW to 100 MHz; 750 W at 400 MHz; 500 W at 1000 MHz. VSWR, 1.05:1 0–50 MHz; 1.3:1 at 1000 MHz. Impedance, 50 ohms. Body size, 3.00″ x 0.88″ x 0.88″. **Specify Coil Voltage:** 6, 12, 26, 48 or 110 VDC; or 115, 220, 6 or 24 VAC. **See Coil Voltage Table.**

Dow-Key Model	Conn. Type	With 2 Form C Aux Contacts	Net Each, Lots of 1-4	5-9	10-24	25-49
60-XX04*	UHF	No	$14.85	$13.50	$12.15	$10.80
60-XX0442*	UHF	Yes	16.50	15.00	13.50	12.00
60-XX28*†	UHF	No	16.35	14.85	13.35	11.90
60-XX2842*†	UHF	Yes	18.00	16.35	14.70	13.10
60-XX02*	BNC	No	16.60	15.05	13.55	12.05
60-XX0242*	BNC	Yes	18.25	16.55	14.90	13.25
60-XX26*†	BNC	No	18.05	16.40	14.80	13.15
60-XX2642*†	BNC	Yes	19.70	17.90	16.15	14.35
60-XX19	Solder	No	16.10	14.60	13.15	11.70
60-XX1942	Solder	Yes	17.75	16.10	14.50	12.90
60-XX35†	Solder	No	17.55	15.95	14.35	12.80
60-XX3542†	Solder	Yes	19.20	17.45	15.70	14.00

61 SERIES SPDT TYPES

Small switches for military and severe environmental requirements. Withstand applicable requirements of MIL-S-3928B specifications. Balanced armature actuator prevents contact chatter under high-frequency vibration and severe shock. Offered with many connector types and 1 or 2 Form C microswitch aux contacts. RF power rating, 150 W to 50 MHz; 75 W at 1000 MHz. VSWR, 1.03:1 0–50 MHz; 1.18:1 at 1000 MHz. Operating time, 15 msec max. Aux contact rating, 5 A at 115 VAC. Life expectancy, 1,000,000 cycles. Body size, 1.58″ x 0.64″ x 1.20″ h. max. Wt., 3½ to 4 oz. **Specify Coil Voltage:** 6, 12, 26, 48 or 110 VDC; or 115 VAC. **See Coil Voltage Table.**

Dow-Key Model	Conn. Type	With Aux Cont. 1 Form C	2 Form C	Net Each, Lots of 1-4	5-9	10-24	25-49
61-XX02*	BNC	No	No	$28.95	$26.30	$23.70	$21.05
61-XX0212*	BNC	Yes	No	29.80	27.05	24.35	21.65
61-XX0222*	BNC	No	Yes	30.60	27.80	25.05	22.25
61-XX03	TNC	No	No	28.95	26.30	23.70	21.05
61-XX0312	TNC	Yes	No	29.80	27.05	24.35	21.65
61-XX0322	TNC	No	Yes	30.60	27.80	25.05	22.25
61-XX19	Solder	No	No	27.20	24.75	22.25	19.80
61-XX1912	Solder	Yes	No	28.05	25.50	22.95	20.40
61-XX1922	Solder	No	Yes	28.85	26.25	23.60	21.00

77 SERIES SPDT TYPES

Medium-size, lightweight, low-priced coaxial switches for industrial and less critical military uses. T-shaped connector configuration has common connector at one end and NO and NC types 180° apart at other. Available with or without 1 Form C aux contact. RF power rating, 150 W to 50 MHz; 60 W at 1200 MHz. Impedance, 50 ohms. Size, 1.88″ x 0.68″ x 0.68″. Weight, 3 oz. (Other specifications similar to 61 Series above.) **Specify Coil Voltage:** 6, 12, 26, 48 or 110 VDC (115 VAC available at additional cost). **See Coil Voltage Table.**

Dow-Key Model	Conn. Type	With 1 Form C Aux Cont.	Net Each, Lots of 1-4	5-9	10-24	25-49
77-XX0202*	BNC	No	$11.50	$10.50	$ 9.45	$8.40
77-XX0232*	BNC	Yes	12.75	11.60	10.45	9.30
77-XX0302	TNC	No	11.50	10.50	9.45	8.40
77-XX0332	TNC	Yes	12.75	11.60	10.45	9.30
77-XX0902	Phono	No	10.50	9.60	8.65	7.70
77-XX0932	Phono	Yes	11.75	10.70	9.65	8.60

*Available with mating plugs; prices on request. †With NC "G" connector as described.

Space does not permit listing various modifications or variations of the standard relays shown. The following types and variations of relays however, are also available.
1. Additional types of coaxial connectors on many relays.
2. 72-ohm type in some relays (50-ohm standard).
3. Gold plated contacts and others (silver contacts standard).

COIL VOLTAGE TABLE

To specify voltage desired, substitute two digits (21 thru 29) from this table for **XX** in the Dow-Key Model No.; e.g., 260-XX04 with 6 VDC coil becomes 260-2104, etc.

Model No. Digits	Nominal Voltage	Model No. Digits	Nominal Voltage	Model No. Digits	Nominal Voltage
21	6 VDC	24	48 VDC	27	220 VAC
22	12 VDC	25	110 VDC	28	6 VAC
23	26 VDC	26	115 VAC	29	24 VAC

260/260B SERIES DPDT TYPES

Remote-operation switches for low-level to 1-kW operation. T 260B Series is a standard DPDT switch with six connectors; 260 Series similar but has internal connection between its NC co tacts, leaving only four connectors; 260B is widely used for inser ing a circuit element between two normally connected elemen (e. g., inserting power amplifier between exciter and antenna). F power rating, 1 kW to 100 MHz; 750 W at 400 MHz. VSW 1.05:1 0–50 MHz; 1.06:1 100 MHz; 1.12:1 at 400 MHz. I pedance, 50 ohms. Aux contacts rated 5 A, 115 VAC. Operati time 25 msec approx. Life, 1,000,000 cycles. With UHF connecto (others available). Body size, 3.00″ x 1.75″ x 0.88″. Weight, 12 o approx. **Specify Coil Voltage:** 6, 12, 26, 84 or 100 VDC; or 11 220, 6 or 24 VAC. **See Coil Voltage Table.**

Dow-Key Model	With 2 Form C Aux Contacts	Net Each, Lots of 1-4	5-9	10-24	25-4
260-XX04	No	$24.75	$22.50	$20.25	$18.0
260-XX0442	Yes	26.40	24.00	21.60	19.2
260B-XX04	No	23.90	21.75	19.55	17.4
260B-XX0442	Yes	25.55	23.25	20.90	18.6

71/72 SERIES MULTI-POSITION TYPES

Weatherproof, high power switches for switching antennas, tran mitters or receivers up to 500 MHz. Separate actuating coil f each position. RF power rating, 1 kW to 200 MHz; 750 W at 5 MHz. VSWR, 1.06:1 0–50 MHz; 1.3:1 at 500 MHz. Impedance, ohms. Operating time, 25 msec approx. Life, 500,000 cycles p position. With UHF connectors (BNC, C, N, TNC connecto available). Body size, 71 Series, 4″ x 3.5″ x 2.62″; 72 Series, 5.7 dia. x 2.75″ d. Wt., 71 Series, 3 lbs. approx.; 72 Series, 1½ lb approx. **Specify Coil Voltage:** 6, 12, 26, 48 or 110 VDC; or 11 220, 6 or 24 VAC. **See Coil Voltage Table.**

Dow-Key Model	Description	Net Each, Lots of 1-4	5-9	10-24	25-4
71-XX0401	SP6T shorting	$57.75	$52.50	$47.25	$42.0
71-XX0402	SP6T non-shorting	61.85	56.25	50.60	45.0
72-XX0401	SP3T shorting	27.20	24.75	22.25	19.8
72-XX0402	SP3T non-shorting	31.35	28.50	25.65	22.8

78 SERIES MULTI-POSITION TYPES

Manually operated switches with true coaxial switching membe (not wafer switches). Useful frequency range, 0 to 500 MHz. F power rating, 1.5 kW at 50 MHz; 1 kW at 100 and 400 MH VSWR, 1.05:1 at 50 MHz; 1.15:1 at 400 MHz. Impedance, ohms. Crosstalk, 60 dB at 50 MHz; 45 dB at 400 MHz. Insertio loss, .03 dB at 50 MHz; .05 dB at 400 MHz. Dial plate and kn included. With UHF connectors (also available with BNC, C, TNC connectors). Size, 3″ dia. x 1″ deep. Weight, 10 oz. appro

Dow-Key Model	Function	Net Each, Lots of 1-4	5-9	10-24	25-4
78-0204	SPDT	$14.00	$12.75	$11.45	$10.2
78-0304	SP3T	14.45	13.10	11.80	10.5
78-0404	SP4T	15.05	13.80	12.40	11.0
78-0604	SP6T	15.65	14.25	12.80	11.4
78-0704	D&DT	17.65	16.10	14.50	12.9
78-0904	Transfer	16.65	15.20	13.70	12.2

UHF CONNECTORS AND ADAPTERS

A B C D E F

Types C-201, C-60P and C-60PT have UHF female or male co nector to solder terminal, and mount through panels ⅛″ thi max. C-201 mounts through ⅝″ hole. C-60P mounts into ⅝- tapped hole or through ⅝″ hole. C-60PT similar to C-60P exce Teflon* insulation and better impedance match.

*Registered DuPont T

Dow-Key Model	Fig.	Description	Lg., In.	Net Each, Lots of 1-4	5-9	10-24	25-
A-F2	A	UHF double male	1.00	$0.76	$0.69	$0.62	$0.
C-60P	B	UHF panel-mount female	1.19	.69	.63	.57	
C-60PT	B	UHF panel-mount female	1.19	.99	.90	.81	
C-201	C	UHF panel-mount male	1.40	1.07	.97	.87	
A-202	D	UHF double female	1.12	.82	.75	.67	
A-210	E	UHF fem. to male phono	1.30	1.24	1.12	1.01	
A-211	F	UHF male to male phono	1.34	1.32	1.20	1.08	

420-68A

Net

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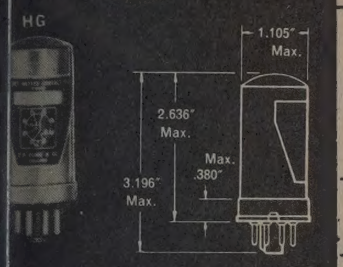
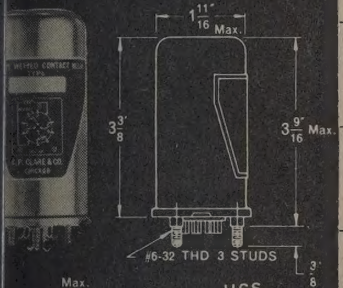
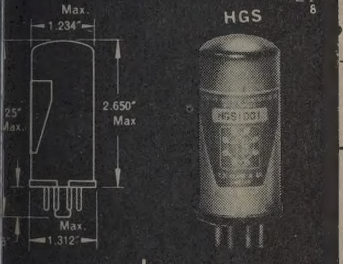
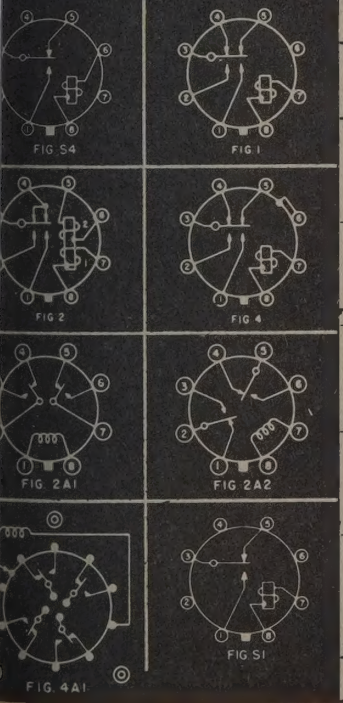
MERCURY-WETTED CONTACT RELAYS









HG Series

HG relays have SPDT make-before-break form D contacts rated at 5 amps, 500 volts, 250 VA max. Operating time can be as short as 2 milliseconds. The Series **HG2** relay utilizes two switch capsules to furnish DPDT, operating time can be as short as 2¼ milliseconds. Series **HG3** relay utilizes three capsules providing 3 PDT, operating time can be as short as 2½ milliseconds. Series **HG4** relay utilizes four capsules providing 4 PDT, operating time can be as short as 3¾ milliseconds. Life expectancy is 22 x 10^9 at specified ratings. Resistance, ±10% tolerance at 25 degrees C. Typical applications include computers, data logging and low-level dry circuits.

Part No.	Coil Resistance	Must Operate Current (ma-dc)	Must Release Current (ma-dc)	Must Operate Voltage (vdc)	Max. Voltage (vdc)	Base Figure	PRICES 1-9	10-24	25-49	50-99	100
HG-1019	40	67	30	2.9	11	4	$16.15	$12.11	$11.30	$10.50	$ 9.69
HG-1012	130	37	16	5.4	20	4	16.15	12.11	11.30	10.50	9.69
HG-1026	500	20	8.7	11	39	1	16.15	12.11	11.30	10.50	9.69
HG-1004	700	19	8.3	15	45	1	16.15	12.11	11.30	10.50	9.69
HG-1043	1000	15	6.6	17	55	1	16.15	12.11	11.30	10.50	9.69
HG-1001	2500	10	4.4	28	87	1	16.45	12.34	11.51	10.69	9.87
HG-1002	4000	7.5	3.3	33	110	1	9.35	7.01	6.54	6.08	5.61
HG-1017	4000	7.5	3.3	33	110	4	17.00	12.75	11.90	11.05	10.20
HG-1009	7000	5.8	2.6	45	145	1	17.00	12.75	11.90	11.05	10.20
HG-1011	11,000	5.0	2.2	61	180	1	17.00	12.75	11.90	11.05	10.20
HG-1024	25,000	3.4	1.5	94	275	1	17.00	12.75	11.90	11.05	10.20
HG-1003†	700/3300	32/13	14/4.9	25/47	46/99	2	18.65	13.99	13.05	12.12	11.19
HG2A-1042	140	67	28	10	24	2A1	26.20	19.65	18.34	17.03	15.72
HG2A-1003	315	44	19	15	36	2A2	26.20	19.65	18.34	17.03	15.72
HG2A-1017	500	35	15	19	45	2A2	26.20	19.65	18.34	17.03	15.72
HG2A-1009	700	31	13	24	53	2A1	26.20	19.65	18.34	17.03	15.72
HG2A-1002	700	31	13	24	53	2A2	26.20	19.65	18.34	17.03	15.72
HG2A-1015	1250	22	9.3	30	71	2A2	26.20	19.65	18.34	17.03	15.72
HG2A-1068	2500	17	7.0	46	100	2A1	26.20	19.65	18.34	17.03	15.72
HG2A-1001	5000	11	4.7	62	142	2A1	26.20	19.65	18.34	17.03	15.72
HG2A-1004	5000	11	4.7	62	142	2A2	26.20	19.65	18.34	17.03	15.72
HG2A-1013	10,000	8.6	3.6	94	200	2A2	26.20	19.65	18.34	17.03	15.72
HG3A-1004	315	44	19	15	36	2A1	33.95	25.46	23.76	22.07	20.37
HG3A-1006	500	35	15	19	45	2A2	33.95	25.46	23.76	22.07	20.37
HG3A-1002	700	31	13	24	53	3A1	33.95	25.46	23.76	22.07	20.37
HG3A-1008	1250	22	9.3	30	71	3A1	33.95	25.46	23.76	22.07	20.37
HG3A-1005	2500	17	7.0	46	100	3A1	33.95	25.46	23.76	22.07	20.37
HG3A-1003	5000	11	4.7	62	142	3A1	33.95	25.46	23.76	22.07	20.37
HG3A-1010	10,000	8.6	3.6	94	200	3A1	33.95	25.46	23.76	22.07	20.37
HG4A-1011	390	42	18	18	40	4A1	43.70	32.78	30.59	28.41	26.22
HG4A-1001	700	35	15	27	53	4A1	43.70	32.78	30.59	28.41	26.22
HG4A-1007	1400	23	9.9	35	75	4A1	43.70	32.78	30.59	28.41	26.22
HG4A-1003	4000	16	6.7	69	126	4A1	43.70	32.78	30.59	28.41	26.22
HG4A-1006	10,000	8.6	3.7	94	200	4A1	43.70	32.78	30.59	28.41	26.22

HGS Series

HGS Mercury-wetted relay offer increased speed and reliability along with high sensitivity. **HGS 1000** Series provide SPDT make-before-break and **HGS 5000** Series provides SPDT break-before-make. Both are rated at 2 amps, 500 Volts, 100 VA max. Operate time as fast as 1 millisecond. Standard design available only in single element assemblies, they come in the following, single side stable, bi-stable and chopper. Life expectancy is 22 x 10^9 at specified ratings.

Part No.	Coil Resistance	Must Operate Current (ma-dc)	Must Release Current (ma-dc)	Must Operate Voltage (vdc)	Max. Voltage (vdc)	Base Figure	PRICES 1-9	10-24	25-49	50-99	100
HGS-1015‡	90	6.3	1.1	.63	13	S1	$13.35	$10.01	$ 9.48	$ 8.68	$ 8.01
HGS-1045‡	350	3.6	0.61	1.4	26	S1	13.35	10.01	9.48	8.68	8.01
HGS-1018‡	500	2.9	0.50	1.6	31	S1	13.35	10.01	9.48	8.68	8.01
HGS-1009‡	600	2.9	0.69	1.9	34	S1	13.35	10.01	9.48	8.68	8.01
HGS-1046‡	700	2.9	0.49	2.2	37	S1	13.35	10.01	9.48	8.68	8.01
HGS-1014‡	1000	2.2	0.38	2.4	44	S1	13.35	10.01	9.48	8.68	8.01
HGS-1006‡	2500	1.4	0.17	3.9	70	S1	13.70	10.28	9.59	8.91	8.22
HGS-1005‡	4000	1.25	0.25	5.5	90	S1	14.25	10.69	9.97	9.26	8.55
HGS-1048‡	4000	1.25	0.25	5.5	90	S4	14.25	10.69	9.97	9.26	8.55
HGS-1016‡	7000	0.87	0.14	6.7	118	S1	14.25	10.69	9.97	9.26	8.55
HGS-1017‡	11,000	0.72	0.12	8.7	148	S1	14.25	10.69	9.97	9.26	8.55
HGS-1113*	1000	‡1.2		1.4	45	S1	13.35	10.01	9.48	8.68	8.01
HGS-1114*	2500	‡0.82		2.3	70	S1	13.70	10.28	9.59	8.91	8.22
HGS-1026*	4000	‡0.48		2.1	90	S1	14.25	10.69	9.97	9.26	8.55
HGS-1056*	7000	‡0.48		3.7	118	S1	14.25	10.69	9.97	9.26	8.55
HGS-1096*	25,000	‡0.29		3.0	223	S1	14.25	10.69	9.97	9.26	8.55
HGS-1004§	600			6.3 Vac		S1	13.90	10.43	9.73	9.04	8.34
HGS-5011‡	350	3.6	0.61	1.4	26	S1	13.35	10.01	9.34	8.68	8.01
HGS-5015‡	1000	2.2	0.38	2.4	44	S1	13.35	10.01	9.34	8.68	8.01
HGS-5003‡	2500	1.4	0.17	3.9	70	S1	13.70	10.28	9.59	8.91	8.22
HGS-5008‡	4000	1.25	0.25	5.5	90	S5	14.25	10.69	9.97	9.26	8.55
HGS-5047‡	11,000	0.72	0.12	8.7	148	S1	14.25	10.69	9.97	9.26	8.55
HGS-5016‡	25,000	0.52	0.09	14.3	224	S1	14.25	10.69	9.97	9.26	8.55
HGS-5006*	1000	1.2		1.4	45	S1	13.35	10.01	9.34	8.68	8.01
HGS-5004*	4000	0.48		2.1	90	S1	14.25	10.69	9.97	9.26	8.55
HGS-5017§	600			6.3 Vac		S1	13.90	10.43	9.73	9.04	8.34

† Double Wound. ‡ Single Side Stable. * Bi-Stable. †* Bi-Stable Double Wound. § Chopper.

C. P. CLARE & COMPANY

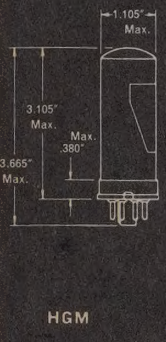
MERCURY-WETTED CONTACT RELAY

HGP

FIG 1

FIG 3

FIG 4



HGP Series

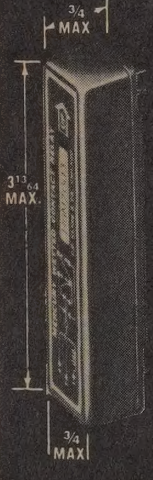
HGP is similar to the HG series except for the inclusion of permanent magnets making a sli increase in height. Magnets provide single-side-stable, bi-stable and chopper operations. C tacts are SPDT make-before-break rated at 5 amps, 500 Volts, 250 VA maximum with oper time as short as 2 milliseconds. Life expectancy is 22 x 10^9 at specified rating.

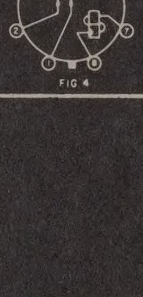
Part No.	Coil Resistance	Must Operate Current (ma-dc)	Must Release Current (ma-dc)	Must Operate Voltage (vdc)	Max. Voltage (vdc)	Base Figure	PRICES 1-9	10-24	25-49	50-99
HGP-1001‡	90	16	1.3	1.6	16	1	$17.50	$13.13	$12.25	$11.35
HGP-1005‡	1000	5.6	0.4	6.2	55	1	17.50	13.13	12.25	11.35
HGP-1002‡	4000	3.0	0.24	13	110	1	18.75	14.06	13.12	12.19
HGP-1008‡	4000	4.7	1.7	21	110	1	18.75	14.06	13.12	12.19
HGP-1055‡	7000	2.2	0.19	17	145	1	18.75	14.06	13.12	12.19
HGP-1052‡	11,000	1.9	0.21	23	180	1	18.75	14.06	13.12	12.19
HGP-1050‡	25,000	1.3	0.15	36	275	1	18.75	14.06	13.12	12.19
HGP-1006†‡	700/3300	14/5.7	2.8	11/21	46/99	1	20.40	15.30	14.28	13.26
HGP-1047*	600	±3.4		±2.2	43	1	17.50	13.13	12.25	11.38
HGP-1003*	4000	±1.5		±6.6	110	1	18.75	14.06	13.12	12.19
HGP-1012†	700/3300	6.0/2.4		4.6/3.7	46/99	3	20.40	15.30	14.28	13.26
HGP-1031†*	7500/7500	±1.7/1.7		±14/14	150/150	3	20.40	15.30	14.28	13.26
HGP-1028§	500			6.3 VAC		4	18.10	13.58	12.67	11.77
HGP-1009§	4000			18.5 VAC		4	19.35	14.51	13.54	12.58

HGM Series

HGM relays are Clare standard HG switch capsules in module form, are provided with plat steel covers for excellent mechanical protection and magnetic shielding. The standard HG swit in the HGM is not polarity sensitive. Contacts are SPDT make-before-break rated at 5 amp 500 Volts, 250 VA maximum. Life expectancy is 22 x 10^9 at specified ratings.

HGM





Part No.	Coil Resistance	Must Operate Current (ma-dc)	Must Release Current (ma-dc)	Must Operate Voltage (vdc)	Max. Voltage (vdc)	PRICES 1-9	10-24	25-49	50-99
HGM-1005	40	119	52	5.24	12.6	$12.55	$ 9.41	$ 8.78	$ 8.16
HGM-1008	150	53	23	8.75	24	12.55	9.41	8.78	8.16
HGM-1002	450	32.9	14.5	16.3	42	12.55	9.41	8.78	8.16
HGM-1001	750	18.6	8.2	15.4	55	12.55	9.41	8.78	8.16
HGM-1012	1100	21.6	9.5	26.2	66	12.55	9.41	8.78	8.16

HGSM Series

HGSM Relay modules for Printed Circuit Board mounting are available in **HGSM 1000** seri SPDT make-before-break **HGSM 5000** series SPDT break-before-make. Contacts are rated in amps, 500 Volts, 100 VA maximum at rated load. Maximum dissipation 2 watts continuous at degrees C. The temperature rise is 30 degrees C per watt at 25 degrees C ambient. Life expe tancy is 22 x 10^9.

HGSM

Part No.	Coil Resistance	Must Operate Current (ma-dc)	Must Release Current (ma-dc)	Must Operate Voltage (vdc)	Max. Voltage (vdc)	PRICES 1-9	10-24	25-49	50-99
HGSM-1005‡	65	37.4	6.2	2.7	11.4	$10.80	$ 8.10	$ 7.56	$ 7.02
HGSM-1007‡	90	37.7	6.3	3.8	13.4	10.80	8.10	7.56	7.02
HGSM-1009‡	275	17.0	2.8	5.2	23.4	10.80	8.10	7.56	7.02
HGSM-1010‡	450	12.9	2.1	6.4	30.00	10.80	8.10	7.56	7.02
HGSM-1011‡	675	11.6	1.9	8.6	36.7	10.80	8.10	7.56	7.02
HGSM-1002‡	940	10.1	1.7	10.5	43.3	10.80	8.10	7.56	7.02
HGSM-1001‡	1425	8.3	1.4	13	53.4	10.80	8.10	7.56	7.02
HGSM-1003‡	2400	7.35	1.2	20.6	69.2	10.80	8.10	7.56	7.02
HGSM-1063†*	460/460	±7.8/7.8		±3.95/3.95	30.3/30.3	11.50	8.63	8.05	7.48
HGSM-1016†*	1100/1100	7.25/5.7		8.77/6.9	46.9/46.9	11.50	8.63	8.05	7.48
HGSM-5021‡	65	37.4	6.2	2.7	11.4	10.80	8.10	7.56	7.02
HGSM-5035‡	275	17.0	2.8	5.2	23.4	10.80	8.10	7.56	7.02
HGSM-5009‡	450	12.9	2.1	6.4	30.0	10.80	8.10	7.56	7.02
HGSM-5010‡	675	11.6	1.9	8.6	36.7	10.80	8.10	7.56	7.02
HGSM-5011‡	940	10.1	1.7	10.5	43.3	10.80	8.10	7.56	7.02
HGSM-5001‡	1425	8.3	1.4	13	53.4	10.80	8.10	7.56	7.02
HGSM-5002‡	1950	7.5	1.2	17.6	62.4	10.80	8.10	7.56	7.02
HGSM-5064‡	2400	7.35	1.2	20.6	69.2	10.80	8.10	7.56	7.02
HGSM-5003†*	1100/1100	±7.25/5.7		±8.77/6.9	46.9/46.9	11.50	8.63	8.05	7.48

† Double Wound. ‡ Single Side Stable. * Bi-Stable. †* Bi-Stable Double Wound. § Chopper.

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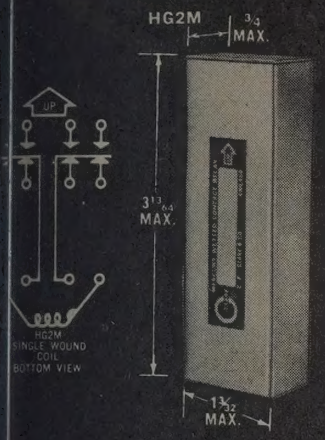
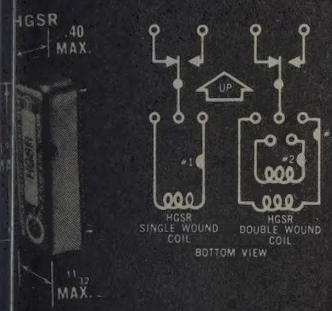
MERCURY-WETTED CONTACT RELAYS



HG2M Series

HG2M has the same characteristics as the HGM but contains 2 capsules to give you double-pole, double-throw configuration make-before-break. This results in saving space and cost over single element units. Contacts are rated at 5 amps 500 Volts, 100 VA maximum with life expectancy of 22 x 10^9.

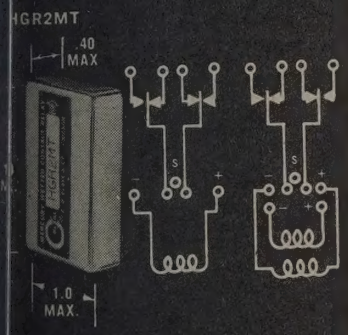
Part No.	Coil Resistance	Must Operate Current (ma-dc)	Must Release Current (ma-dc)	Must Operate Voltage (vdc)	Max. Voltage (vdc)	PRICES 1-9	10-24	25-49	50-99	100
HG2M-1007	90	82.2	28.6	8.2	19	$17.60	$13.20	$12.32	$11.44	$10.56
HG2M-1008	350	42.0	14.6	16.2	37	17.60	13.20	12.32	11.44	10.56
HG2M-1020	580	32.5	11.2	20.7	48	17.60	13.20	12.32	11.44	10.56
HG2M-1026	1250	23.0	8.0	31.8	70	17.60	13.20	12.32	11.44	10.56



HGSR Series

The subminiature **HGSR** relay module combines sensitive, high speed operation with a small size, low profile enclosure for extremely compact printed circuit board mounting. **HGSR 11111** Series are SPDT, make-before-break. **HGSR 51111** are SPDT break-before-make. Contacts are rated at 2 amps 500 V max., 100 VA max., with a carry load of 5 amps maximum (not switched). Life expectancy is 20 x 10^9 operations when operated within contact ratings.

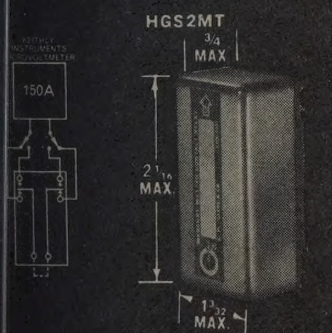
Part No.	Coil Resistance	Must Operate Current (ma-dc)	Must Operate Voltage (vdc)	Max. Voltage (vdc)	PRICES 1-9	10-24	25-49	50-99	100
HGSR-11111H00‡	50	25	1.40	9.4	$10.80	$ 8.10	$ 7.56	$ 7.02	$ 6.48
HGSR-11111K00‡	125	16	2.30	15	10.80	8.10	7.56	7.02	6.48
HGSR-11111M00‡	325	11	3.80	24	10.80	8.10	7.56	7.02	6.48
HGSR-11111Q00‡	1120	5.9	7.2	44	10.80	8.10	7.56	7.02	6.48
HGSR-11111V00‡	6100	2.6	17	103	10.80	8.10	7.56	7.02	6.48
HGSR-51111H00‡	50	25	1.40	9.4	10.80	8.10	7.56	7.02	6.48
HGSR-51111K00‡	125	16	2.30	15	10.80	8.10	7.56	7.02	6.48
HGSR-51111M00‡	325	11	3.80	24	10.80	8.10	7.56	7.02	6.48
HGSR-51111Q00‡	1120	5.9	7.2	44	10.80	8.10	7.56	7.02	6.48
HGSR-51111V00‡	6100	2.6	17	103	10.80	8.10	7.56	7.02	6.48



HGR2MT Series

The subminiature Clare **HGR2MT** is a high-speed two-pole relay designed for low-level switching applications. Available with "common open time" characteristics, the **HGR2MT** is specifically designed for applications which make use of the "capacitor transfer" analog multiplexing technique. This module combines sensitive, high-speed operation with a small-sized, low profile enclosure for extremely compact printed circuit board mounting. Life expectancy is 20 x 10^9 operations when operated within contact rating. Contacts are rated 2 amps 500 V max., 100 VA max.

Part No.	Nominal Volts (dc)	Coil Resistance	Must Operate Voltage (vdc)	Must Release Voltage (vdc)	PRICES 1-9	10-24	25-49	50-99	100
HGR2MT-5001‡	6	55.5	2.5	0.6	$20.90	$15.68	$14.63	$13.59	$12.54
HGR2MT-5002‡	12	250	5.0	1.25	20.90	15.68	14.63	13.59	12.54
HGR2MT-5003‡	24	870	10	2.5	20.90	15.68	14.63	13.59	12.54
HGR2MT-5004‡	48	3500	20	5.0	20.90	15.68	14.63	13.59	12.54



HGS2MT

Mercury-wetted relay is designed to minimize the noise and thermal problems of low level switching circuits. They are capable of handling the input switching functions for any type of reasonable high speed, low level data acquisition system. Contacts are rated at 2 amps 500 Volts, 100 VA maximum DPDT. Form C break-before-make. Life expectancy 22 x 10^9.

Part No.	Nominal Volts (dc)	Coil Resistance	Must Operate Voltage (vdc)	Must Release Voltage (vdc)	PRICES 1-9	10-24	25-49	50-99	100
HGS2MT-5001	6	130	3.0	0.5	$20.90	$15.68	$14.63	$13.59	$12.54
HGS2MT-5008	12	520	5.3	1.1	24.75	18.56	17.32	16.09	14.85
HGS2MT-5009	24	2200	11.0	2.2	24.75	18.56	17.32	16.09	14.85

† Double Wound. ‡ Single Side Stable. * Bi-Stable. †* Bi-Stable Double Wound. § Chopper.

REED RELAYS

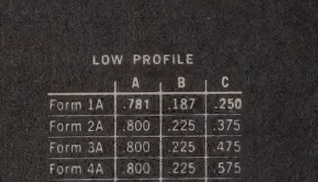
Picoreed Series PRA and PRB

The Clare **Picoreed** relays represent a state-of-the-art advancement in sealed contact reed relays; they are the fastest and smallest reed-contact relays made. Their response time, physical size, sensitivity, and reliability characteristics combine to give the **Picoreed** complete electrical and packaging compatibility with IC solid-state devices. These characteristics provide an answer for economical and reliable solid-state input-output isolation buffering.

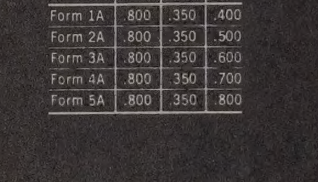
High speed — up to 500 μs operate time, including bounce, at nominal coil power.
Contact rating — 0.5 amperes max., 100 volts max., 10 va max.
1.0 ampere max., carry load.
Life expectancy — 100 x 10^4 operations at low-level loads.
5 x 10^6 operations at 28 vdc, 0.125 ampere.

* The 5 volts series of **Picoreed** relays have been designed especially for compatibility with standard 5 volt DTL and TTL logic families. These relays have a must operate voltage value of 3.75 volts @ +25°C.

PRA Series has axial leads. **PRB Series** has straight pin. High sensitive relays allow P.C.B. spacing of .500 inch centers. H in part number denotes more sensitive unit. Low profile units allow .375 spacing.



PRA



PRB

LOW PROFILE

	A	B	C
Form 1A	.781	.187	.250
Form 2A	.800	.225	.375
Form 3A	.800	.225	.475
Form 4A	.800	.225	.575
Form 5A	.800	.225	.675

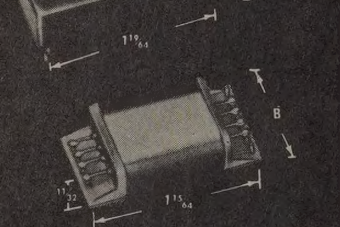
HIGH SENSITIVITY

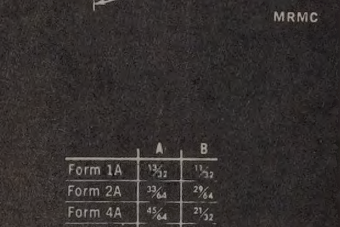
	A	B	C
Form 1A	.800	.350	.400
Form 2A	.800	.350	.500
Form 3A	.800	.350	.600
Form 4A	.800	.350	.700
Form 5A	.800	.350	.800

Part Number		Nom. Voltage	Coil Resistance	Contact Form	PRICES 1-9	10-24	25-99	100-249	25
LOW PROFILE									
PRB-2010	PRA-2010	6	387	1A	$3.50	$3.20	$2.89	$2.59	$2.4
PR2B-2007	PR2A-2007	6	136	2A	4.25	3.91	3.58	3.24	3.0
PR3B-2006	PR3A-2006	6	117	3A	5.00	4.63	4.27	3.90	3.7
PR4B-2005	PR4A-2005	6	88	4A	5.95	5.53	5.12	4.70	4.5
PR5B-2005	PR5A-2005	6	105	5A	7.15	6.66	6.17	5.68	5.4
PRB-2013	PRA-2013	12	1200	1A	3.50	3.20	2.89	2.59	2.4
PR2B-2011	PR2A-2011	12	740	2A	4.25	3.91	3.58	3.24	3.0
PR3B-2009	PR3A-2009	12	483	3A	5.00	4.63	4.27	3.90	3.7
PR4B-2008	PR4A-2008	12	351	4A	5.95	5.53	5.12	4.70	4.5
PR5B-2008	PR5A-2008	12	419	5A	7.15	6.66	6.17	5.68	5.4
PRB-2016	PRA-2016	24	5380	1A	4.05	3.69	3.33	2.95	2.7
PR2B-2014	PR2A-2014	24	3042	2A	4.80	4.41	4.02	3.63	3.4
PR3B-2013	PR3A-2013	24	2254	3A	5.50	5.08	4.67	4.25	4.0
PR4B-2012	PR4A-2012	24	1856	4A	5.95	5.53	5.18	4.70	4.5
PR5B-2011	PR5A-2011	24	1424	5A	7.15	6.66	6.17	5.68	5.4
HIGH SENSITIVITY									
PRB-2009H	PRA-2009H	6	535	1A	4.00	3.65	3.29	2.94	2.7
PR2B-2007H	PR2A-2007H	6	297	2A	4.75	4.36	3.98	3.59	3.4
PR3B-2006H	PR3A-2006H	6	228	3A	5.50	5.08	4.67	4.25	4.0
PR4B-2005H	PR4A-2005H	6	155	4A	6.45	5.98	5.52	5.05	4.8
PR5B-2005H	PR5A-2005H	6	180	5A	7.65	7.11	6.57	6.03	5.7
PRB-2013H	PRA-2013H	12	2870	1A	4.00	3.65	3.29	2.94	2.7
PR2B-2010H	PR2A-2010H	12	1180	2A	4.75	4.36	3.98	3.59	3.4
PR3B-2009H	PR3A-2009H	12	877	3A	5.50	5.08	4.67	4.25	4.0
PR4B-2008H	PR4A-2008H	12	663	4A	6.45	5.98	5.52	5.50	4.8
PR5B-2008H	PR5A-2008H	12	771	5A	7.65	7.17	6.57	6.03	5.7
PRB-2016H	PRA-2016H	24	11900	1A	4.55	4.14	3.73	3.35	3.1
PR2B-2013H	PR2A-2013H	24	3780	2A	5.30	4.86	4.42	3.98	3.7
PR3B-2013H	PR3A-2013H	24	4700	3A	6.00	5.33	5.07	4.60	4.3
PR4B-2012H	PR4A-2012H	24	3620	4A	6.45	5.98	5.52	5.05	4.8
PR5B-2011H	PR5A-2011H	24	3150	5A	7.65	7.11	6.57	6.03	5.7
LOW PROFILE									
PRB-3010	PRA-3010	5*	387	1A	4.50	4.10	3.69	3.29	3.0
PR2B-3007	PR2A-3007	5*	136	2A	5.25	4.81	4.38	3.94	3.7
PR3B-3006	PR3A-3006	5*	117	3A	6.00	5.53	5.07	4.60	4.3
PR4B-3005	PR4A-3005	5*	88	4A	6.95	6.43	5.92	5.40	5.1
PR5B-3005	PR5A-3005	5*	105	5A	8.15	7.56	6.97	6.38	6.0
HIGH SENSITIVITY									
PRB-3009H	PRA-3009H	5*	535	1A	5.00	4.55	4.09	3.64	3.4
PR2B-3007H	PR2A-3007H	5*	297	2A	5.75	5.26	4.78	4.29	4.0
PR3B-3006H	PR3A-3006H	5*	228	3A	6.50	5.98	5.47	4.45	4.7
PR4B-3005H	PR4A-3005H	5*	155	4A	7.45	6.88	6.32	5.75	5.4
PR5B-3005H	PR5A-3005H	5*	180	5A	8.65	8.06	7.37	6.73	6.4

MicroClareed Series MRMC and MRME

The Clare **MRME** and **MRMC** MicroClareed relays offer you the same high standard Clareed relays in only one-fifth the size. They provide isolation between coil and contacts. They are immune to false operation by the type of transients that affect solid state devices. They are insensitive to overload transients that would damage a solid state device. They offer switching speed as fast as 500 microseconds, which is fully compatible with other mechanics of process control. Type **MRME** is an epoxy molded module and Type **MRMC** is an open type module. Both types are designed for printed circuit board application. Operation and internal construction of both types are the same. Contacts rated at 15 VA maximum ¾ amp maximum.





MRMC

	A	B
Form 1A	13/32	13/32
Form 2A	33/64	29/64
Form 4A	45/64	21/32
Form 3A	39/64	35/64

Part No.	Volts	Coil Resistance	Contact Form	PRICES 1-9	10-24	25-99	100-249	250
MRME-1041	6	218	1A	$3.95	$3.59	$3.24	$2.88	$2.7
MR2ME-1041	6	168	2A	4.95	4.53	4.12	3.70	3.4
MR3ME-1041	6	125	3A	5.85	5.38	4.92	4.45	4.2
MR4ME-1041	6	95	4A	6.90	6.57	6.04	5.51	5.2
MRME-1042	12	790	1A	3.95	3.59	3.24	2.88	2.7
MR2ME-1042	12	635	2A	4.95	4.53	4.12	3.70	3.4
MR3ME-1042	12	510	3A	5.85	5.38	4.92	4.45	4.2
MR4ME-1042	12	410	4A	6.90	6.57	6.04	5.51	5.2
MRME-1043	24	3060	1A	4.55	4.13	3.72	3.30	3.1
MR2ME-1043	24	2580	2A	5.50	5.03	4.56	4.09	3.8
MR3ME-1043	24	1950	3A	6.40	5.88	5.36	4.84	4.5
MR4ME-1043	24	1500	4A	6.90	6.57	6.04	5.51	5.2
MRME-1044	48	12200	1A	6.65	6.02	5.40	4.77	4.4
MR2ME-1044	48	9450	2A	6.85	6.24	5.64	5.03	4.7
MR3ME-1044	48	7450	3A	7.25	6.64	6.04	5.43	5.1
MR4ME-1044	48	5750	4A	7.65	7.04	6.44	5.83	5.5
MRMC-1041	6	218	1A	3.20	2.92	2.64	2.36	2.2
MR2MC-1041	6	168	2A	4.15	3.81	3.48	3.14	2.9
MR3MC-1041	6	125	3A	5.00	4.62	4.24	3.86	3.6
MR4MC-1041	6	95	4A	5.95	5.51	5.08	4.64	4.4
MRMC-1042	12	790	1A	3.20	2.92	2.64	2.36	2.2
MR2MC-1042	12	635	2A	4.15	3.81	3.48	3.14	2.9
MR3MC-1042	12	510	3A	5.00	4.62	4.24	3.86	3.6
MR4MC-1042	12	410	4A	5.95	5.51	5.08	4.64	4.4
MRMC-1043	24	3060	1A	3.75	3.41	3.08	2.74	2.5
MR2MC-1043	24	2580	2A	4.70	4.31	3.92	3.53	3.3
MR3MC-1043	24	1950	3A	5.50	5.07	4.64	4.21	3.9
MR4MC-1043	24	1500	4A	5.95	5.51	5.08	4.64	4.4
MRMC-1044	48	12200	1A	5.90	5.26	4.72	4.18	3.9
MR2MC-1044	48	9450	2A	6.10	5.57	5.04	4.51	4.2
MR3MC-1044	48	7450	3A	6.50	5.97	5.44	4.91	4.6
MR4MC-1044	48	5750	4A	6.90	6.37	5.84	5.31	5.0

C. P. CLARE & COMPANY

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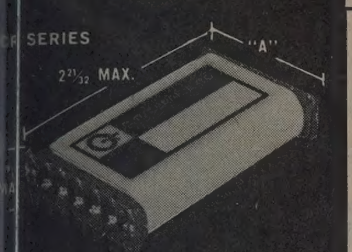
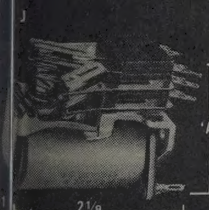
REED RELAYS TELEPHONE RELAYS

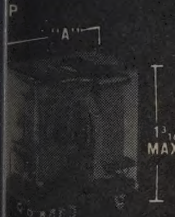


"A" Dimension	
Form 1A	$^{5}/_{8}$
Form 2A	$^{27}/_{32}$
Form 4A	$1^{9}/_{32}$
Form 6A	$1^{49}/_{64}$



"A" Dimension	
Form 2C	$1^{15}/_{32}$
Form 4C	$1^{15}/_{32}$
Form 6C	$1^{21}/_{32}$

"A" Dimension	
Form 2C	$1^{23}/_{32}$
Form 4C	$1^{23}/_{32}$
Form 6C	$2^{7}/_{64}$



"A" Dimension	
Form 2C	$^{31}/_{32}$
Form 4C	$1^{3}/_{16}$
Form 6C	$1^{27}/_{64}$

Clareed — CRT Series

Ultra reliable reed relays for printed circuit boards. Reed contacts are sealed in an inert gas atmosphere within a glass tube. Coils wound on molded bobbins capable of accepting up to six Clareed switch capsules. The standard Clareeds are Form A. Life expectancy is over 20 million operations at rated load. Contacts rated at 15 VA Maximum, non-inductive, 1 amp maximum, 250 Volts maximum with carry load 5 amps maximum (not switched).

Part No.	Volts	Coil Resistance	Contact Form	PRICES 1-9	10-24	25-99	100-249	250
CRT-1007	6	160	1A	$3.00	$2.70	$2.40	$2.10	$1.95
CR2T-1004	6	88	2A	3.95	3.56	3.16	2.77	2.57
CR4T-1105	6	56	4A	5.45	4.90	4.36	3.81	3.54
CR6T-1003	6	31	6A	6.75	6.08	5.40	4.73	4.39
CRT-1010	12	600	1A	3.00	2.70	2.40	2.10	1.95
CR2T-1006	12	235	2A	3.95	3.56	3.16	2.77	2.57
CR4T-1107	12	136	4A	5.50	4.95	4.40	3.85	3.58
CR6T-1006	12	120	6A	5.45	4.90	4.36	3.81	3.54
CRT-1013	24	2500	1A	3.50	3.15	2.80	2.45	2.28
CR2T-1010	24	1400	2A	4.30	3.87	3.44	3.01	2.80
CR4T-1111	24	835	4A	5.45	4.90	4.36	3.81	3.54
CR6T-1009	24	510	6A	6.75	6.08	5.40	4.73	4.39
CRT-1016	48	9450	1A	4.40	3.96	3.52	3.08	2.86
CR2T-1013	48	5400	2A	5.40	4.86	4.32	3.78	3.51
CR4T-1113	48	2195	4A	5.80	5.22	4.64	4.06	3.77
CR6T-1012	48	1900	6A	7.15	6.44	5.72	5.01	4.65

LB Series — New (Telephone Relays)

Designed for the user who must have a high quality at a reasonable price. This miniature relay has extraordinary switching capacity and versatility for its size. 6PDT contacts rated at 2 amps with life of 100 million operations (Mechanical). **LB Series** is for direct P.C.B. mounting; **LBP Series,** for direct plug into socket mounting. This relay is an ideal component for military, industrial and commercial application.

VP Series (Telephone Relays)

Has contact configuration of 2 P., 4 P., 6P. DT; contacts rated at 1 amp 100 volts 30 watts D.C. resistive load. Operating temperature −40°C to +80°C. Operating time is 3-13 milliseconds. **VP** is protected from dust and contamination by a polycarbonate cover. Can be used for P.C.B. mounting with socket. Typical applications are business machines, process controls, communication equipment, digital instruments and many others.

J & JDP Series (Telephone Relays)

Compact, industrial telephone-type relay, for applications ranging from simple switching in alarm circuits to complex computer functions. Switch combination of 2, 4, and 6 pole DT with contacts rated at 4 amps 150 watts with an operate time of 5 milliseconds minimum. Mechanical life of 70 x 10^6 operations. **Series JDP** is dust cover enclosed, socket with soldering lug terminals. **Series J** is open type.

Part Number		Volts	Coil Resistance	Contact Form	PRICES 1-9	10-24	25-99	100-249	250
LB0060B00	LBP0060B00	12	130	6 DPT	$ 5.75	$ 5.18	$ 4.89	$ 4.31	$4.03
LB0060H00	LBP0060H00	14	200	6 PDT	5.75	5.18	4.89	4.31	4.03
LB0060C00	LBP0060C00	18	330	6 PDT	5.75	5.18	4.89	4.31	4.03
LB0060D00	LBP0060D00	24	590	6 PDT	5.75	5.18	4.89	4.31	4.03
LB0060K00	LBP0060K00	30	915	6 PDT	5.75	5.18	4.89	4.31	4.03
LB0060J00	LBP0060J00	34	1150	6 PDT	6.00	5.40	5.10	4.50	4.20
RP-15450G5 (Socket, Solder Lug for LBP)					1.15	1.04	.98	.86	.81
RP-15450G6 (Socket, PCB for LBP)					1.15	1.04	.98	.86	.81
VP2CAB12		12	185	DPDT	2.95	2.66	2.51	2.21	2.07
VP4CAB12		12	185	4 PDT	3.45	3.11	2.93	2.59	2.42
VP6CAB12M		12	110	6 PDT	4.25	3.83	3.61	3.19	2.98
VP2CAB26		26	700	DPDT	2.95	2.66	2.51	2.21	2.07
VP4CAB26		26	700	4 PDT	3.45	3.11	2.93	2.59	2.42
VP6CAB26M		26	530	6 PDT	4.25	3.83	3.61	3.19	2.98
VP2CAB47		47	2500	DPDT	2.95	2.66	2.51	2.21	2.07
VP4CAB47		47	2500	4 PDT	3.45	3.11	2.93	2.59	2.42
VP6CAB47M		47	1700	6 PDT	4.25	3.83	3.61	3.19	2.98
VP2CAB120		120	15,000	DPDT	3.95	3.56	3.36	2.96	2.77
VP4CAB120		120	15,000	4 PDT	4.40	3.96	3.74	3.30	3.08
VP6CAB120M		120	11,750	6 PDT	4.95	4.46	4.22	3.71	3.47
VP2 Socket, PCB RP 15223-5					.55	.50	.47	.41	.39
VP2 Socket, Solder Lug RP 15223-2					.55	.50	.47	.41	.39
VP4 Socket, PCB RP 15223					.65	.59	.55	.49	.46
VP4 Socket, Solder Lug RP 15223-1					.65	.59	.55	.49	.46
VP6/8 Socket, PCB RP 15223-7					.75	.68	.64	.56	.53
VP6/8 Socket, Solder Lug RP 15223-6					.75	.68	.64	.56	.53
J242C24		24	500	DPDT	6.90	6.21	5.86	5.17	4.83
J244C24		24	500	4 PDT	9.50	8.55	8.08	7.13	6.65
J246C24		24	300	6 PDT	11.65	10.49	9.90	8.74	8.16
J482C24		48	1300	DPDT	6.95	6.26	5.91	5.21	4.87
J484C24		48	1300	4 PDT	9.65	8.69	8.20	7.24	6.76
J486C24		48	1000	6 PDT	11.70	10.53	9.95	8.78	8.19
J1102C24		110	6500	DPDT	7.20	6.48	6.12	5.40	5.04
J1104C24		110	6500	4 PDT	10.00	9.00	8.50	7.50	7.00
J1106C24		110	5000	6 PDT	12.00	10.80	10.20	9.00	8.40
JDP242C24		24	500	DPDT	8.25	7.43	7.01	6.19	5.78
JDP244C24		24	500	4 PDT	10.90	9.81	9.27	8.18	7.63
JDP246C24		24	300	6 PDT	13.55	12.20	11.52	10.16	9.49
JDP482C24		48	1300	DPDT	8.35	7.52	7.10	6.26	5.85
JDP484C24		48	1300	4 PDT	11.00	9.90	9.35	8.25	7.70
JDP486C24		48	1000	6 PDT	13.65	12.29	11.60	10.24	9.56
JDP1102C24		110	6500	DPDT	8.65	7.78	7.35	6.49	6.05
JDP1104C24		110	6500	4 PDT	11.30	10.17	9.60	8.47	7.91
JDP1106C24		110	5000	6 PDT	13.90	12.51	11.82	10.43	9.73

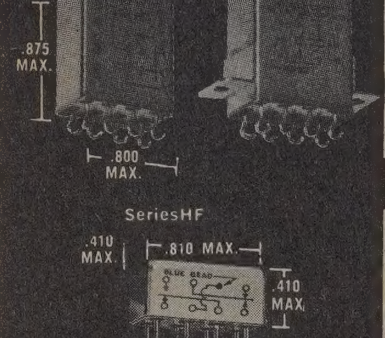
C. P. CLARE & COMPANY

MILITARY TYPE RELAYS
STEPPING SWITCHES

Type F & HF

Clare provides full and half-size military-type relays of unusual versatility, capable of relia long life operation under adverse environments. These relays are ideal for use in indust application as well as airborne and aerospace. Relays employ a rigid frame to maintain per nent alignment of all elements. Contact arrangement are 2 form C. These relays are manu tured to meet Mil-R-5757/10 and 5757/19.

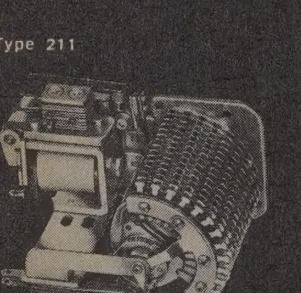
Series F



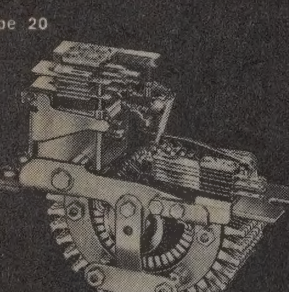
SeriesHF

Part No.	D.C. Volt	Coil Resistance	CONTACTS Arrangements	CONTACTS Rated in Amps	Terminal Type	Enclosure Variations	PRICES 1-9	10-24	25-99	100-249
"TYPE F"										
RP7631G12	26.5	675	DPDT	2	S.H.	Side Plate Mtg	$11.00	$ 9.90	$ 9.35	$ 8.25
RP7632G1	26.5	675	DPDT	2	S.H.	Std Ear Brkts	11.00	9.90	9.35	8.25
RP7633G4	26.5	675	DPDT	2	S.H.	Stud Mtg Top	11.00	9.90	9.35	8.25
RP7640G1	26.5	675	DPDT	2	S.H.	Stud Mtg Side	11.00	9.90	9.35	8.25
RP7641G2	26.5	675	DPDT	2	3" Leads	Plain Case	11.00	9.90	9.35	8.25
RP7641G8	26.5	675	DPDT	2	3/16" Plug in	Plain Case	11.00	9.90	9.35	8.25
RP9809G1	26.5	675	DPDT	2	3/16" Plug in	Std Ear Brkts	11.00	9.90	9.35	8.25
RP9817G1(B)	26.5	675	DPDT	2	S.H.	Std Ear Brkts	12.00	10.80	10.20	9.00
RP9817G1	26.5	675	DPDT	2	S.H.	Std Ear Brkts	11.00	9.90	9.35	8.25
RP9895G3	26.5	675	DPDT	2	3" Leads	Side Plate Mtg	11.00	9.90	9.35	8.25
RP9896G9	26.5	675	DPDT	2	S.H.	Side Plate Mtg	11.00	9.90	9.35	8.25
"TYPE HF"										
HF1201D00	26.5	1250	DPDT	2	3/16" Plug in	Plain Case	15.00	13.50	12.75	11.25
HF1201K00	26.5	700	DPDT	2	3/16" Plug in	Plain Case	15.00	13.50	12.75	11.25
HF1205K00	26.5	700	DPDT	2	3/16" Plug in	Std Ear Brkts	15.00	13.50	12.75	11.25
HF1301K00	26.5	700	DPDT	2	3" Leads	Plain Case	15.00	13.50	12.75	11.25

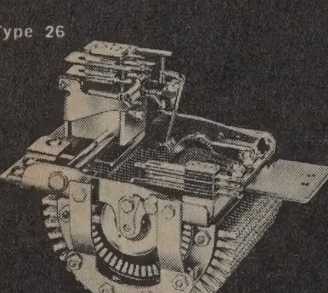
Type 210



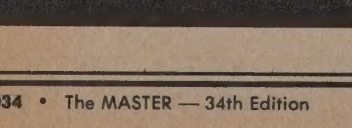
Type 211



Type 20



Type 26



Stepping Switches

Clare stepping switches offer an economical answer to switching problems by providing t most working capacity in the smallest space.

Type 20 offers up to 16 levels of 20 points or 12 levels of 40 points with a life expectancy 50 million steps at 16 levels. Contacts rated at 0.1 amps 115 VAC or 30 VDC with ca of 3 amps. Operate time of approx. 20 MS at 25 degrees C. Release time approx. 10 MS 25 degrees C. Standard terminals are solder lug.

Type 26 has the same characteristic as above but has the capability of 16 levels of 26 poin or 10 levels of 52 points.

Type 210 offers up to 12 levels of 10 points with life expectancy of 100 million steps at 12 leve Contacts rated at 0.1 amps 115 VAC or 30 VD resistive will carry 3 amps; operate time is appro 20 MS at 25 degrees C. Standard terminals are solder lug.

Type 211 has the same characteristic as above but has the capability of 12 levels of 11 point

ALL SWITCHES LISTED ARE NON-BRIDGING WITH 1C OFF-NORMAL CONTACTS AND 1C INTERRUPTER CONTACTS.

RP8047 Rectifier Unit $6.70 **RP9466 Lube Kit $5.60** **RP11375 Tool Kit $28.**

Part No.	D.C. Volts	Coil Resistance	No. of Levels	No. of Points	Overall Dimensions H	W	D	PRICES 1-9	10-24	25-99	1
20-2404	24	35	4	20	4 5/8	5 5/16	2 1/8	$31.90	$30.31	$28.71	$2
20-2408	24	35	8	20	4 5/8	5 5/16	2 1/8	40.75	38.71	36.68	3
20-2412	24	20	12	20	4 5/8	5 5/16	2 3/4	51.45	48.88	46.31	4
20-2416	24	20	16	20	4 5/8	5 5/16	3 5/16	62.25	59.14	56.03	5
20-2428	24	35	8	40	4 5/8	5 5/16	3 7/16	62.25	59.14	56.03	5
20-11004	110	600	4	20	4 5/8	5 5/16	2 1/8	31.90	30.31	28.71	2
20-11008	110	600	8	20	4 5/8	5 5/16	2 1/8	40.75	38.71	36.68	3
20-11012	110	400	12	20	4 5/8	5 5/16	2 3/4	51.45	48.88	46.31	4
26-2403	24	35	3	26	4 7/8	6 5/16	2 1/2	31.10	29.55	27.99	2
26-2404	24	35	4	26	4 7/8	6 5/16	2 1/2	33.20	31.54	29.88	2
26-2406	24	35	6	26	4 7/8	6 5/16	2 1/2	37.45	35.58	33.71	3
26-2410	24	20	10	26	4 7/8	6 5/16	2 1/2	48.50	46.08	43.65	4
26-2416	24	20	16	26	4 7/8	6 5/16	3 1/2	63.30	60.14	56.97	5
26-11004	110	600	4	26	4 7/8	6 5/16	2 1/2	33.20	31.54	29.88	2
26-11006	110	600	6	26	4 7/8	6 5/16	2 1/2	37.45	35.58	33.71	3
26-11010	110	400	10	26	4 7/8	6 5/16	2 1/2	48.50	46.08	43.65	4
26-11016	110	400	16	26	4 7/8	6 5/16	3 1/2	63.30	60.14	56.97	5
26-11026	110	600	6	52	4 7/8	6 5/16	2 3/4	53.10	50.45	47.79	4
26-110210	110	400	10	52	4 7/8	6 5/16	4 1/16	72.25	68.64	65.03	6
210-2402	24	24	2	10	2 3/4	4 5/16	1 13/64	20.10	19.10	18.09	1
210-2403	24	24	3	10	2 3/4	4 5/16	1 13/64	21.35	20.28	19.22	1
210-2406	24	24	6	10	2 3/4	4 5/16	1 13/16	25.75	24.46	23.18	2
210-2409	24	20	9	10	2 3/4	4 5/16	2 5/16	32.25	30.64	29.03	2
210-2412	24	20	12	10	2 3/4	4 5/16	2 13/16	36.90	35.06	33.21	3
210-11002	110	600	2	10	2 3/4	4 5/16	1 13/64	20.10	19.10	18.09	1
210-11003	110	600	3	10	2 3/4	4 5/16	1 13/64	21.35	20.28	19.22	1
210-11006	110	600	6	10	2 3/4	4 5/16	1 13/16	25.75	24.46	23.18	2
210-11012	110	400	12	10	2 3/4	4 5/16	2 13/16	36.90	35.06	33.21	3
211-2402	24	24	2	11	2 3/4	4 5/16	1 13/64	20.10	19.10	18.09	1
211-2403	24	24	3	11	2 3/4	4 5/16	1 13/64	21.35	20.28	19.22	1
211-2406	24	24	6	11	2 3/4	4 5/16	1 13/16	25.75	24.46	23.18	2
211-2409	24	20	9	11	2 3/4	4 5/16	2 5/16	32.25	30.64	29.03	2
211-2412	24	20	12	11	2 3/4	4 5/16	2 13/16	36.90	35.06	33.21	3
211-11002	110	600	2	11	2 3/4	4 5/16	1 13/64	20.10	19.10	18.09	1
211-11003	110	600	3	11	2 3/4	4 5/16	1 13/64	21.35	20.28	19.22	1
211-11006	110	600	6	11	2 3/4	4 5/16	1 13/16	25.75	24.46	23.18	2
211-11012	110	400	12	11	2 3/4	4 5/16	2 13/16	36.90	35.06	33.21	3

Net

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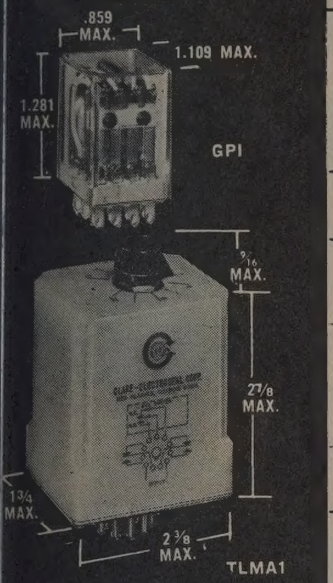
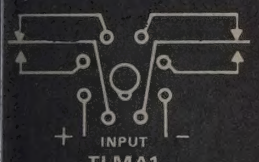
GENERAL PURPOSE RELAYS
TIME DELAY RELAYS TO-5 TYPE RELAYS



GP1 Series — General Purpose

GP1 Relays are miniature 4PDT relays available for AC or DC operation with dust cover enclosure built to meet UL Component recognition. Contacts are fine silver-gold flashed, rated 3 amps at 30 VDC or 120 VAC resistive. Life expectancy in excess of 100 million operations AC. Solder terminals are standard. Sockets come in both solder terminals and printed circuit.

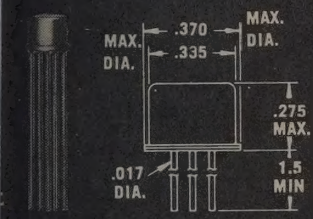
Part No.	Volts	Coil Resistance	CONTACTS Arrangement	CONTACTS Rated in Amps	PRICES 1-24	25-49	50-99	100-249	250-499	500
GP1R11A0000	6 AC	10.5	4 PDT	3	$5.00	$4.85	$4.55	$3.75	$3.50	$3.10
GP1R11A1000	12 AC	43	4 PDT	3	5.00	4.85	4.55	3.75	3.50	3.10
GP1R11A2000	24 AC	160	4 PDT	3	5.00	4.85	4.55	3.75	3.50	3.10
GP1R11A6000	120 AC	3900	4 PDT	3	5.20	5.05	4.75	3.95	3.70	3.30
GP1R11D0000	6 DC	40	4 PDT	3	4.30	4.00	3.75	3.40	3.00	2.80
GP1R11D1000	12 DC	160	4 PDT	3	4.30	4.00	3.75	3.40	3.00	2.80
GP1R11R2000	24 DC	650	4 PDT	3	4.30	4.00	3.75	3.40	3.00	2.80
GP1R11D3000	48 DC	2600	4 PDT	3	4.40	4.10	3.85	3.50	3.10	2.90
GP1R11D4000	90 DC	9000	4 PDT	3	4.60	4.20	3.95	3.60	3.20	3.00
GP1R11D5000	110 DC	11,000	4 PDT	3	4.85	4.45	4.20	3.85	3.45	3.25
GPS1001 (Socket, .375 Long Solder Lug)					.60	.57	.54	.42	.39	.38
GPS1002 (Socket, .187 Long Solder Lug)					.60	.57	.54	.42	.39	.38
GPS1003 (Socket, PCB)					.60	.57	.54	.42	.39	.38



TLMA1 Series — Time Delays

Clare Time-delay relays with delay of 1 second to 180 seconds is available in both AC and DC series will provide ±5% repeat accuracy of timer setting at nominal voltage and room temperature. Reset time is 100 milliseconds. DPDT contacts are rated for 1,000,000 cycles at 10 amps 120 VAC resistive.

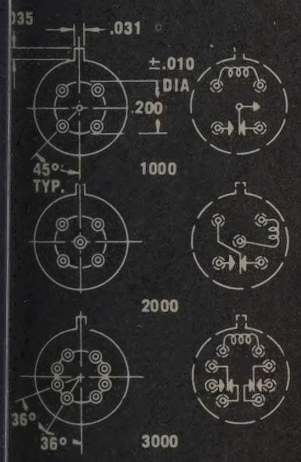
Part No.	Volts	Delay in Sec.	CONTACTS Form	CONTACTS Amps	PRICES 1-24	25-49	50-99	100
TLMA1-A0010	120 AC	1.0 to 10	DPDT	10	$18.50	$17.58	$16.65	$14.80
TLMA1-A0060	120 AC	1.0 to 60	DPDT	10	18.50	17.58	16.65	14.80
TLMA1-A0180	120 AC	1.0 to 180	DPDT	10	18.50	17.58	16.65	14.80
TLMA1-CA0010	24 DC	1.0 to 10	DPDT	10	18.50	17.58	16.65	14.80
TLMA1-CA0060	24 DC	1.0 to 60	DPDT	10	18.50	17.58	16.65	14.80
TLMA1-CA0180	24 DC	1.0 to 180	DPDT	10	18.50	17.58	16.65	14.80



Type TF — TO-5 Military Type

The Clare TF relay is a TO-5 transistor case relay engineered to meet or exceed Mil-R-5757/38 and 40. The relay offers you a dependable relay which combines electromechanical performance with packaging compatible with solid state circuitry. Operating temperature range is from −65 degrees C to +125 degrees C, with a 2.0 MS maximum operate time. Must operate voltage at +25°C is 13.0 VDC. All with 1.5″ straight leads.

Part No.	Coil Resistance	CONTACTS Arrangements	CONTACTS Rated in Amps	Nom. Voltage	PRICES 1-9	10-24	25-49	50-99	100-249	250
TF1201T00*	2000	SPDT	1	26.5	$19.00	$18.05	$17.10	$16.15	$15.20	$14.25
TF2201T00†	2000	SPDT	1	26.5	21.00	19.95	18.90	17.85	16.80	15.75
TF3201R00†	1560	DPDT	1	26.5	27.50	26.13	24.75	23.38	22.00	20.63



Type TFC — TO-5 Commercial Type

The Clare TFC industrial relay is a TO-5 transistor case relay with the consistent high standards of the well-known Clare Military type relay. Operating temperature range is from −55 degrees C +75 degrees C with a 4.0 MS maximum operate time. Must operate voltage at +25°C is 17.0 VDC. All with 1.5″ straight leads.

Part No.	Coil Resistance	CONTACTS Arrangements	CONTACTS Rated in Amps	Nom. Voltage	PRICES 1-9	10-24	25-49	50-99	100-249	250
TFC1201T00*	2000	SPDT	1	26.5	$9.40	$9.30	$9.20	$8.95	$8.10	$7.65
TFC2201T00†	2000	SPDT	1	26.5	9.40	9.30	9.20	8.95	8.10	7.65
TFC3201R00†	1560	DPDT	1	26.5	9.90	9.80	9.70	9.40	8.50	8.05

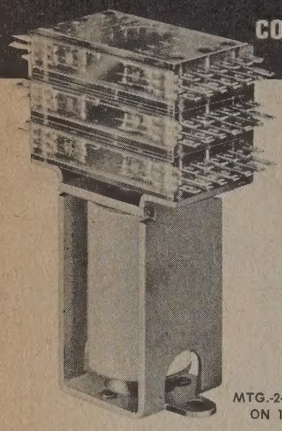
* Movable contact connected to case

† All contacts insulated from case

C. P. CLARE & CO.

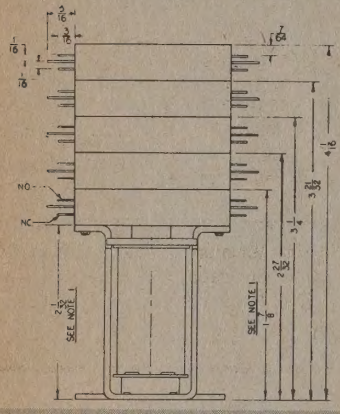
electronic controls, inc.

T-BAR® Switch/Relays



T-BARS are for switching more circuits in less space ...up to 60 circuits simultaneously!

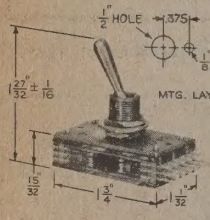
MTG.-2-#6-32 NF HOLES ON 1.375 CENTERS



SERIES 801 T-BAR RELAY COIL CHARACTERISTICS*

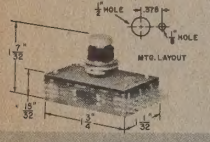
	12 POLES 1 WAFER RELAY Wt: 4.5 oz.			24 POLES 2 WAFER RELAYS Wt: 6.75 oz.			36 POLES 3 WAFER RELAYS Wt: 7.25 oz.			48 POLES*** 4 WAFER RELAYS Wt: 8.5 oz.			60 POLES 5 WAFER RELAYS Wt: 9 oz.		
Voltage	Resistance Ohms	Current Amps	Power Watts	Resistance Ohms	Current Amps	Power Watts	Resistance Ohms	Current Amps	Power Watts	Resistance Ohms	Current Amps	Power Watts	Resistance Ohms	Current Amps	Power Watts
6 VDC	11.9	0.504	3.01	11.09	0.541	3.24	7	0.857	5.06	5.5	1.09	6.54	5.5	1.09	6.54
12 VDC	49.1	0.244	2.96	45	0.267	3.19	28	0.429	5.16	22	.545	6.54	22	.545	6.54
24 VDC	193	0.124	2.98	174	0.138	3.32	111	0.216	5.15	94	.255	6.12	94	.255	6.12
28 VDC	258	0.109	3.03	227	0.123	3.44	150	0.187	5.23	120	.233	6.52	120	.233	6.52
48 VDC	778	0.062	2.98	674	0.071	3.41	438	0.110	5.26	350	.137	6.58	350	.137	6.58
110 VDC	3963	0.028	3.05	3450	0.032	3.54	2355	0.047	5.18	1930	.057	6.27	1930	.057	6.27
115 VAC**	3963	0.024	2.80	3450	0.027	3.10	2355	0.041	4.72	1930	.049	5.62	1930	.049	5.62

*All characteristics are nominal and subject to normal manufacturing tolerances, other voltages available on special order.
**115 VAC units are made with a full wave bridge rectifier and use the same coils as listed under 110 VDC units.
***Four-wafer relays with all "A" form contacts use three-wafer relay coils.
NOTE 1: ONE WAFER RELAYS USE A SHORTER ACTUATOR ASS'Y. — INSTEAD OF 2-1/32 AS SHOWN. THE ACTUATOR IS 1-15/32 HIGH.



SERIES 802
Bat Handle T-Bar Switches

SERIES 803
Push Button Switch



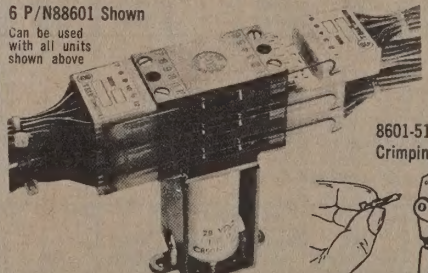
Series 802 & 803	
No. of Poles	Weights Oz. Approx.
12	2.0
24	2.5
36	3.0

Ganged T-Bar Switches

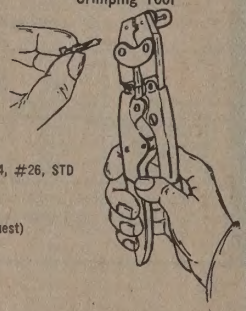
Toggles may be ganged for controlling additional circuits . . . 48, 72, 108, etc. Shown here, 108 poles.

T-BAR Connectors save time and reduce installation costs using individual snap-in crimp terminals crimped to pre-stripped wire and then snapped into a contact block, which forms the connector. The connector is pushed onto the wafer terminals, eliminating soldering. Because we offer a connector, rather than a receptacle, harness work can be completed outside the chassis and therefore no fancy chassis work is required to accept a receptacle. It not only makes the metal work simpler, but it also saves layout engineering and drafting time. Since T-Bar Switch/Relays are so easily mounted, they are often found on the back of meter panels or on their own brackets.

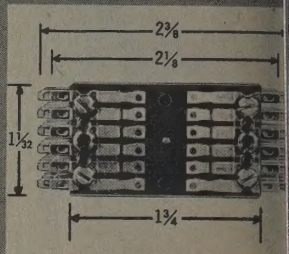
6 P/N88601 Shown
Can be used with all units shown above



8601-51 Crimping Tool



PHYSICAL PROPERTIES:
Wire Accommodated: (1) #18, #20, #22, #24, #26, STD (2) #22, #24, #26 STR
Connector Material: Nylon Zytel or Lexan®
Snap-in Contact Material: Phosphor Bronze
Snap-in Contact Finish: Tin Plated (other on request)
Retaining Clip Material: Stainless Steel
Connector Weight: Approximately 0.3 oz.



GENERAL FEATURES:

The series 801 T-Bar Relays are solenoid actuated multi-pole relays with a unique design permitting stack-up of enclosed contact "wafers." Each wafer has a maximum of 12 pole double throw contacts thereby allowing ECI to supply the 801 relay with any combination from 4 to 60 poles.

CONTACT RATING:
3 amp, resistive load 150 watt maximum make or break;
5 amp, 500 watt maximum carry.

CONTACT MATERIAL:
Gold bonded, fine silver, standard. Others available on special order.

CONTACT FORMS:
"A" single throw N.O.
"B" single throw N.C.
"C" double throw, break before make
"D" double throw, make before break

NUMBER OF POLES (RELAYS):
One Wafer — 12 poles
Two Wafers — 24 poles
Three Wafers — 36 poles
Four Wafers — 48 poles
Five Wafers — 60 poles ("A" form only)

OPERATE VOLTAGE:
Min. voltage: 80% of nominal at 25°C

RELEASE VOLTAGE:
Max. voltage: 20% of nominal at 25°C

OPERATE TIME:
One Wafer Relay — 15 ms. max.
Two Wafer Relay — 25 ms. max.
Three Wafer Relay — 30 ms. max.
Four Wafer Relay — 35 ms. max.
Five Wafer Relay — 40 ms. max.

RELEASE TIME:
5 ms. max. (36 pole) — 10 ms. max. (12 pole)

TERMINALS:
Solder tab that also mates with T-Bar connector P/N 88601 (two required per wafer)

ENCLOSURE:
Contacts enclosed in dust tight plastic enclosure that is separated from the actuator assembly. Withstands Mil. Std. — 202 method 106B moisture resistance test.

LIFE:
Mechanical — 20,000,000 operations minimum for relay
Electrical — 20,000,000 operations minimum at 100 milliamps to 100,000 minimum at 5 amps, 150 watts resistive load.

DIELECTRIC:
1000 vrms terminals to case at sea level and 25°C
1000 vrms terminal to terminal at sea level and 25°C
1000 vrms coil to case at sea level and 25°C

TEMPERATURE RANGE:
−55°C to +85°C

INSULATION RESISTANCE:
5,000 megohms @ 25°C minimum

ORDERING INFORMATION:
Specify Series No. — number of poles plus contact form letter-coil voltage. For example a 36 pole double throw relay with a 24 VDC coil is: 801-36C-24

MANUFACTURED BY:
electronic controls, inc.
T-Bar Switch/Relay Div. •

Manufactured under 1 or more of the following patents: 3,206,990, 3,226,508

® "T-Bar" — Reg. T.M.

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RBM CONTROLS
ESSEX INTERNATIONAL, INC

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FACTORY PRICES

ODUCTION PART NUMBER IS RBM MANUFACTURING NUMBER WHICH IS STAMPED ON EACH UNIT

Standard Catalog Number	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499	500/999
-901	59-21	3.42	3.08	2.74	2.40	2.26	2.18
-902	59-20	4.12	3.71	3.30	2.89	2.84	2.72
-903	59-22	4.12	3.71	3.30	2.89	2.84	2.72
-901	60-108025-0	3.24	2.92	2.60	2.27	2.14	1.90
-902	60-111025-0	3.32	2.99	2.66	2.33	2.19	1.95
-903	60-117025-0	3.78	3.41	3.03	2.65	2.50	2.21
-901	70-108224-5	4.00	3.60	3.20	2.80	1.70	1.70
-902	70-111224-5	4.00	3.60	3.20	2.80	1.89	1.89
-903	70-117224-5	4.00	3.60	3.20	2.80	1.95	1.95
-904	70-120224-5	4.00	3.60	3.20	2.80	2.04	2.04
-905	70-108221-5	6.90	6.21	5.52	4.83	3.18	3.18
-906	70-111221-5	6.90	6.21	5.52	4.83	3.36	3.36
-907	70-117221-5	6.90	6.21	5.52	4.83	3.59	3.59
-908	70-120221-5	6.90	6.21	5.52	4.83	3.77	3.77
-909	70-308221-5	10.50	9.45	8.40	7.35	5.18	5.18
-910	70-311221-5	10.50	9.45	8.40	7.35	5.33	5.33
-911	70-317221-5	10.50	9.45	8.40	7.35	5.55	5.55
-912	70-320221-5	10.50	9.45	8.40	7.35	5.62	5.62
-913	70-108225-5	4.00	3.60	3.20	2.80	1.53	1.53
-914	70-111225-5	4.00	3.60	3.20	2.80	1.73	1.73
-915	70-117225-5	4.00	3.60	3.20	2.80	1.81	1.81
-916	70-120225-5	4.00	3.60	3.20	2.80	1.90	1.90
-917	70-108226-5	4.00	3.60	3.20	2.80	1.53	1.53
-918	70-111226-5	4.00	3.60	3.20	2.80	1.73	1.73
-919	70-117226-5	4.00	3.60	3.20	2.80	1.81	1.81
-920	70-120226-5	4.00	3.60	3.20	2.80	1.90	1.90

Standard Catalog Number	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499	500/999
70-921	70-308224-5	9.40	8.46	7.52	6.58	4.33	4.33
70-922	70-311224-5	9.40	8.46	7.52	6.58	4.63	4.63
70-923	70-317224-5	9.40	8.46	7.52	6.58	4.70	4.70
70-924	70-320224-5	9.40	8.46	7.52	6.58	4.78	4.78
75-901	75-840301-2906A	4.59	4.14	3.68	3.22	2.74	2.74
75-902	75-840301-2910A	4.59	4.14	3.68	3.22	2.74	2.74
75-903	75-840301-2913A	4.59	4.14	3.68	3.22	2.74	2.74
75-904	75-250301-2506A	4.59	4.14	3.68	3.22	2.74	2.74
75-905	75-250301-2510A	4.59	4.14	3.68	3.22	2.74	2.74
75-906	75-250301-2513A	4.59	4.14	3.68	3.22	2.74	2.74
80-901	80-312111-1000	7.27	6.55	5.82	5.09	4.75	4.75
80-902	80-312131-1000	7.27	6.55	5.82	5.09	4.75	4.75
80-904	80-312171-1000	7.27	6.55	5.82	5.09	4.75	4.75
84-901	84-20405-101	3.06	2.76	2.45	2.15	1.98	1.38
84-902	84-20105-101	3.06	2.76	2.45	2.15	1.98	1.38
84-903	84-20205-101	3.37	3.04	2.70	2.36	2.18	1.52
84-904	84-20305-101	3.67	3.31	2.94	2.57	2.38	1.66
84-905	84-20406-301	3.32	2.99	2.66	2.33	2.15	1.50
84-906	84-20106-301	3.37	3.04	2.70	2.36	2.18	1.52
84-907	84-20206-301	3.65	3.29	2.92	2.56	2.36	1.64
84-908	84-20306-301	4.00	3.60	3.20	2.80	2.59	1.81
84-912	84-20102-101	3.03	2.73	2.43	2.13	1.96	1.37
84-913	84-20202-101	3.29	2.97	2.64	2.31	2.13	1.48

Consult your RBM Controls authorized distributor for factory prices in larger quantities.

2 **RBM CONTROLS**
ESSEX INTERNATIONAL, INC.

FACTORY PRICES

PRODUCTION PART NUMBER IS RBM MANUFACTURING NUMBER WHICH IS STAMPED ON EACH UN

Standard Catalog Number	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499	500/999
84-914	84-20302-101	3.65	3.29	2.92	2.56	2.36	1.64
84-916	84-20103-301	3.29	2.97	2.64	2.31	2.13	1.48
84-917	84-20203-301	3.60	3.24	2.88	2.52	2.33	1.62
84-918	84-20303-301	3.90	3.51	3.12	2.73	2.52	1.76
84-922	84-50102-101	2.98	2.69	2.39	2.09	1.93	1.35
84-923	84-50202-101	2.98	2.69	2.39	2.09	1.93	1.35
84-924	84-50302-101	3.70	3.30	2.96	2.59	2.39	1.67
84-926	84-50103-301	3.32	2.99	2.66	2.33	2.15	1.50
84-927	84-50203-301	3.60	3.24	2.88	2.52	2.33	1.62
84-928	84-50303-301	3.98	3.59	3.19	2.79	2.57	1.79
84D-902	84-31506-301	3.37	3.04	2.70	2.36	2.18	1.52
84D-903	84-31106-301	3.37	3.04	2.70	2.36	2.18	1.52
91-180-1	None	.60	.54	.48	.42	.39	.37
91-901	91-132006-13000	5.87	5.29	4.70	4.11	2.66	2.35
91-902	91-131006-13000	6.47	5.83	5.18	4.53	2.93	2.59
91-903	91-133006-13000	6.33	5.70	5.07	4.44	2.87	2.53
91-904	91-192006-13000	5.79	5.22	4.64	4.06	2.62	2.32
91-905	91-191006-13000	5.99	5.40	4.80	4.20	2.71	2.39
91-906	91-193006-13000	6.27	5.65	5.02	4.39	2.84	2.51
91-907	91-192006-19000	5.34	4.81	4.28	3.74	2.42	2.14
91-908	91-191006-19000	5.69	5.13	4.56	3.99	2.58	2.27
91-909	91-193006-19000	5.99	5.40	4.80	4.20	2.71	2.39
91D-912	91-227004-22000	5.78	5.21	4.63	4.05	2.62	2.31
91D-913	91-222004-22000	5.79	5.22	4.64	4.06	2.62	2.32
92-901	192-321111-11607	7.31	6.58	5.85	5.12	3.31	2.92
92-902	192-311111-11607	7.22	6.50	5.78	5.06	3.27	2.89
92-903	192-331111-11607	7.50	6.75	6.00	5.25	3.40	3.00
92-904	192-321177-11607	6.96	6.27	5.57	4.88	3.16	2.78
92-905	192-311177-11607	6.78	6.11	5.43	4.75	3.07	2.71
92-906	192-331177-11607	7.59	6.84	6.08	5.32	3.44	3.04
92D-912	192-373333-33507	7.13	6.42	5.71	5.00	3.23	2.85
92D-913	192-323333-33507	7.22	6.50	5.78	5.06	3.27	2.89
93-153-1	None	.60	.54	.48	.42	.39	.37
93-901	93-208030-13000B	3.42	3.08	2.74	2.40	2.00	1.64
93-902	93-208303-13000B	4.15	3.74	3.32	2.91	2.34	1.92
93-903	93-208333-13000B	4.62	4.16	3.70	3.24	2.60	2.14
93-904	93-202030-13300B	3.42	3.08	2.74	2.40	2.02	1.66
93-905	93-202303-13300B	4.15	3.74	3.32	2.91	2.34	1.92
93-906	93-202333-13300B	4.62	4.16	3.70	3.24	2.60	2.14
93-907	93-201030-13000B	3.42	3.08	2.74	2.40	2.02	1.66
93-908	93-201303-13000B	4.15	3.74	3.32	2.91	2.34	1.92
93-909	93-201333-13000B	4.62	4.16	3.70	3.24	2.60	2.14
93-910	93-203030-13000B	3.84	3.46	3.08	2.69	2.28	1.87
93-911	93-203303-13000B	4.57	4.12	3.66	3.20	2.62	2.15
93-912	93-203333-13000B	5.04	4.54	4.04	3.53	2.88	2.37
93-913	93-508030-13300B	3.26	2.94	2.61	2.29	2.02	1.66
93-914	93-508303-13300B	3.68	3.32	2.95	2.58	2.34	1.92
93-915	93-508333-13300B	4.20	3.78	3.36	2.94	2.60	2.14
93-916	93-507030-13300B	3.26	2.94	2.61	2.29	2.02	1.66
93-917	93-507303-13300B	3.68	3.32	2.95	2.58	2.34	1.92
93-918	93-507333-13300B	4.20	3.78	3.36	2.94	2.60	2.14
93-919	93-502030-13300B	3.26	2.94	2.61	2.29	2.02	1.66
93-920	93-502303-13300B	3.68	3.32	2.95	2.58	2.34	1.92
93-921	93-502333-13300B	4.20	3.78	3.36	2.94	2.60	2.14
93-922	93-501030-13300B	3.89	3.51	3.12	2.73	2.46	2.02
93-923	93-501303-13300B	4.47	4.03	3.58	3.13	2.80	2.30
93-924	93-501333-13300B	4.83	4.45	3.87	3.39	3.05	2.51
93-931	93-208090-13000A	3.36	3.03	2.69	2.36	2.06	1.69
93-932	93-208909-13000A	4.05	3.65	3.24	2.84	2.44	2.00
93-933	93-208999-13000A	4.47	4.03	3.58	3.13	2.79	2.29
93-934	93-202090-13300A	3.36	3.03	2.69	2.36	2.06	1.69
93-935	93-202909-13300A	4.05	3.65	3.24	2.84	2.44	2.00
93-936	93-202999-13300A	4.47	4.03	3.58	3.13	2.79	2.29

Standard Catalog Number	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499	5/9
93-937	93-201090-13000A	3.36	3.03	2.69	2.36	2.07	1
93-938	93-201909-13000A	4.05	3.65	3.24	2.84	2.45	2
93-939	93-201999-13000A	4.47	4.03	3.58	3.13	2.80	2
93-940	93-203090-13000A	3.78	3.41	3.03	2.65	2.32	1
93-941	93-203909-13000A	4.47	4.03	3.58	3.13	2.72	2
93-942	93-203999-13000A	4.89	4.41	3.92	3.43	2.97	2.
93-943	93-508090-13300A	3.36	3.03	2.69	2.36	2.07	1
93-944	93-508909-13300A	4.02	3.62	3.22	2.82	2.44	2.
93-945	93-508999-13300A	4.47	4.03	3.58	3.13	2.79	2.
93-946	93-507090-13300A	3.36	3.03	2.69	2.36	2.07	1.
93-947	93-507909-13300A	4.02	3.62	3.22	2.82	2.44	2.
93-948	93-507999-13300A	4.47	4.03	3.58	3.13	2.79	2.
93-949	93-502090-13300A	3.36	3.03	2.69	2.36	2.07	1.
93-950	93-502909-13300A	4.02	3.62	3.22	2.82	2.44	2.
93-951	93-502999-13300A	4.47	4.03	3.58	3.13	2.76	2.
93-952	93-501090-13300A	4.15	3.74	3.32	2.91	2.51	2.
93-953	93-501909-13300A	4.79	4.32	3.84	3.36	2.90	2.
93-954	93-501999-13300A	5.33	4.80	4.27	3.74	3.23	2.
93-964	93-202090-30300A	3.36	3.03	2.69	2.36	2.07	1.
93-965	93-202909-30300A	4.05	3.65	3.24	2.84	2.46	2.
93-966	93-202999-30300A	4.47	4.03	3.58	3.13	2.81	2.
93-967	93-201090-30000A	3.36	3.03	2.69	2.36	2.07	1.
93-968	93-201909-30000A	4.05	3.65	3.24	2.84	2.46	2.
93-969	93-201999-30000A	4.47	4.03	3.58	3.13	2.81	2.
93-976	93-507090-30300A	3.36	3.03	2.69	2.36	2.07	1.
93-977	93-507909-30300A	4.05	3.65	3.24	2.84	2.46	2.
93-978	93-507999-30300A	4.47	4.03	3.58	3.13	2.81	2.
93-979	93-502090-30300A	3.36	3.03	2.69	2.36	2.07	1.
93-980	93-502909-30300A	4.47	4.03	3.58	3.13	2.46	2.
93-981	93-502999-30300A	4.47	4.03	3.58	3.13	2.81	2.
93-985	93-207030-13000B	3.42	3.08	2.74	2.40	2.02	1.
93-986	93-207303-13000B	4.15	3.74	3.32	2.91	2.34	1.
93-987	93-207333-13000B	4.62	4.16	3.70	3.24	2.60	2.
93-988	93-207090-13000A	3.36	3.03	2.69	2.36	2.06	1.
93-989	93-207909-13000A	4.05	3.65	3.24	2.84	2.44	2.
93-990	93-207999-13000A	4.47	4.03	3.58	3.13	2.79	2.
93-991	93-207090-30000A	3.36	3.03	2.69	2.36	2.07	1.
93-992	93-207909-30000A	4.05	3.65	3.24	2.84	2.46	2.
93-993	93-207999-30000A	4.47	4.03	3.58	3.13	2.81	2.
93P-901	93-208030-70000B	5.78	5.21	4.63	4.05	3.32	2.
93P-902	93-208303-60000B	6.46	5.82	5.17	4.53	3.99	3.
93P-903	93-208333-90000B	8.04	7.24	6.44	5.63	4.69	3.
93P-904	93-202030-70300B	5.78	5.21	4.63	4.05	3.33	2.
93P-905	93-202303-60300B	6.46	5.82	5.17	4.53	3.99	3.
93P-906	93-202333-90300B	8.04	7.24	6.44	5.63	4.69	3.
93P-907	93-201030-70000B	5.78	5.21	4.63	4.05	3.26	2.
93P-908	93-201303-60000B	6.46	5.82	5.17	4.53	3.96	3.
93P-909	93-201333-90000B	8.04	7.24	6.44	5.63	4.69	3.
93P-910	93-203030-70000B	6.20	5.58	4.96	4.34	3.60	2.
93P-911	93-203303-60000B	6.88	6.20	5.51	4.82	4.26	3.
93P-912	93-203333-90000B	8.46	7.62	6.77	5.93	4.98	4.
93P-913	93-508030-70300B	5.73	5.16	4.59	4.02	3.32	2.
93P-914	93-508303-60300B	6.41	5.77	5.13	4.49	4.01	3.
93P-915	93-508333-90300B	7.98	7.19	6.39	5.59	4.69	3.
93P-916	93-507030-70300B	5.73	5.16	4.59	4.02	3.32	2.
93P-917	93-507303-60300B	6.41	5.77	5.13	4.49	4.01	3.
93P-918	93-507333-90300B	7.98	7.19	6.39	5.59	4.69	3.
93P-919	93-502030-70300B	5.73	5.16	4.59	4.02	3.32	2.
93P-920	93-502303-60300B	6.41	5.77	5.13	4.49	3.99	3.
93P-921	93-502333-90300B	7.98	7.19	6.39	5.59	4.69	3.
93P-922	93-501030-70300B	6.36	5.73	5.09	4.46	3.77	3.
93P-923	93-501303-60300B	7.04	6.34	5.64	4.93	4.44	3.
93P-924	93-501333-90300B	8.61	7.75	6.89	6.03	5.15	4.
93P-931	93-208090-70000A	5.73	5.16	4.59	4.02	3.36	2.

Consult your RBM Controls authorized distributor for factory prices in larger quantities.

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DUCTION PART NUMBER IS R B M MANUFACTURING NUMBER WHICH IS STAMPED ON EACH UNIT

ndard talog mber	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499	500/999
932	93-208909-60000A	6.36	5.73	5.09	4.46	4.07	3.35
933	93-208999-90000A	7.88	7.10	6.31	5.52	4.87	4.00
934	93-202090-70300A	5.73	5.16	4.59	4.02	3.36	2.76
935	93-202909-60300A	6.37	5.74	5.10	4.46	4.07	3.35
936	93-202999-90300A	7.88	7.10	6.31	5.52	4.87	4.00
937	93-201090-70000A	5.73	5.16	5.59	4.02	3.36	2.76
938	93-201909-60000A	6.36	5.73	5.09	4.46	4.07	3.35
939	93-201999-90000A	7.88	7.10	6.31	5.52	4.89	4.02
940	93-203090-70000A	5.67	5.11	4.54	3.97	3.36	2.79
941	93-203909-60000A	6.78	6.11	5.43	4.75	4.07	3.35
942	93-203999-90000A	8.30	7.47	6.64	5.81	4.87	4.00
943	93-508090-70300A	5.67	5.11	4.54	3.97	3.36	2.79
944	93-508909-60300A	6.30	5.67	5.04	4.41	4.07	3.35
945	93-508999-90300A	7.83	7.05	6.27	5.49	4.90	4.03
946	93-507090-70300A	5.67	5.11	4.54	3.97	3.36	2.79
947	93-507909-60300A	6.30	5.67	5.04	4.41	4.07	3.35
948	93-507999-90300A	7.83	7.05	6.27	5.49	4.87	4.00
949	93-502090-70300A	5.67	5.11	4.54	3.97	3.36	2.79
950	93-502909-60300A	6.30	5.67	5.04	4.41	4.07	3.35
951	93-502999-90300A	7.98	7.19	6.39	5.59	4.69	3.86
952	93-501090-70300A	5.78	5.21	4.63	4.05	3.26	2.68
953	93-501909-60300A	6.66	6.00	5.33	4.67	3.65	3.00
954	93-501999-90300A	8.46	7.62	6.77	5.93	5.33	4.38
955	93-207030-70000B	5.05	4.55	4.04	3.54	2.77	2.28
956	93-207303-60000B	5.66	5.10	4.53	3.97	3.11	2.55
957	93-207333-90000B	6.35	5.72	5.08	4.45	3.49	2.86
958	93-20709C-70000A	4.47	4.03	3.58	3.13	2.81	2.31
959	93-207909-60000A	5.84	5.26	4.68	4.09	3.21	2.63
960	93-207999-90000A	6.68	6.02	5.35	4.68	3.67	3.01
901	93-208030-25000B	3.94	3.55	3.16	2.76	2.41	1.98
902	93-208303-25000B	4.73	4.26	3.79	3.32	2.76	2.27
903	93-208333-25000B	5.25	4.73	4.20	3.58	3.01	2.48
904	93-202030-25300B	3.94	3.55	3.16	2.76	2.41	1.98
905	93-202303-25300B	4.73	4.26	3.79	3.32	2.76	2.27
906	93-202333-25300B	5.25	4.73	4.20	3.68	3.01	2.48
907	93-201030-25000B	3.78	3.41	3.03	2.65	2.41	1.98
908	93-201303-25000B	4.73	4.26	3.79	3.32	2.76	2.27
909	93-201333-25000B	5.25	4.73	4.20	3.68	3.01	2.48
910	93-203030-25000B	4.36	3.93	3.49	3.06	2.67	2.20
911	93-203303-25000B	5.15	4.64	4.12	3.61	3.02	2.49
912	93-203333-25000B	5.67	5.11	4.54	3.97	3.29	2.70
913	93-508030-25300B	3.78	3.41	3.03	2.65	2.41	1.98
914	93-508303-25300B	4.73	4.26	3.79	3.32	2.76	2.27
915	93-508333-25300B	4.83	4.35	3.87	3.39	3.01	2.48
916	93-507030-25300B	3.78	3.41	3.03	2.65	2.41	1.98
917	93-507303-25300B	4.73	4.26	3.79	3.32	2.76	2.27
918	93-507333-25300B	4.83	4.35	3.87	3.39	3.01	2.48
919	93-502030-25300B	3.78	3.41	3.03	2.65	2.41	1.98
920	93-502303-25300B	4.73	4.26	3.79	3.32	2.76	2.27
921	93-502333-25300B	4.83	4.35	3.87	3.39	3.01	2.48
922	93-501030-25300B	4.65	4.18	3.72	3.25	2.86	2.35
923	93-501303-25300B	5.15	4.64	4.12	3.61	3.21	2.63
924	93-501333-25300B	5.46	4.92	4.37	3.83	3.46	2.84
931	93-208090-25000A	3.89	3.51	3.12	2.73	2.45	2.01
932	93-208909-25000A	4.62	4.16	3.70	3.24	2.84	2.34
933	93-208999-25000A	5.10	4.59	4.08	3.57	3.19	2.62
934	93-202090-25300A	4.05	3.65	3.24	2.84	2.45	2.01
935	93-202909-25300A	4.62	4.16	3.70	3.24	2.84	2.34
936	93-202999-25300A	5.10	4.59	4.08	3.57	3.19	2.62
937	93-201090-25000A	4.05	3.65	3.24	2.84	2.45	2.01
938	93-201909-25000A	4.62	4.16	3.70	3.24	2.84	2.34
939	93-201999-25000A	5.10	4.59	4.08	3.57	3.18	2.61
940	93-203090-25000A	4.31	3.88	3.45	3.02	2.73	2.24
941	93-203909-25000A	5.04	4.54	4.04	3.53	3.11	2.55

Standard Catalog Number	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499	500/999
93Q-942	93-203999-25000A	5.52	4.97	4.42	3.87	3.46	2.84
93Q-943	93-508090-25300A	4.05	3.65	3.24	2.84	2.45	2.01
93Q-944	93-508909-25300A	4.62	4.16	3.70	3.24	2.84	2.34
93Q-945	93-508999-25300A	5.10	4.59	4.08	3.57	3.19	2.62
93Q-946	93-507090-25300A	4.05	3.65	3.24	2.84	2.45	2.01
93Q-947	93-507909-25300A	4.62	4.16	3.70	3.24	2.84	2.34
93Q-948	93-507999-25300A	5.10	4.59	4.08	3.57	3.19	2.62
93Q-949	93-502090-25300A	4.05	3.65	3.24	2.84	2.45	2.01
93Q-950	93-502909-25300A	4.62	4.16	3.70	3.24	2.84	2.34
93Q-951	93-502999-25300A	5.10	4.59	4.08	3.57	3.19	2.62
93Q-952	93-501090-25300A	4.79	4.32	3.84	3.36	2.90	2.38
93Q-953	93-501909-25300A	5.67	5.11	4.54	3.97	3.29	2.70
93Q-954	93-501999-25300A	6.60	5.94	5.28	4.62	3.64	2.99
93Q-955	93-207030-25000B	3.94	3.55	3.16	2.76	2.31	1.90
93Q-956	93-207303-25000B	4.73	4.26	3.79	3.32	2.76	2.27
93Q-957	93-207333-25000B	5.25	4.73	4.20	3.68	3.01	2.48
93Q-958	93-207090-25000A	3.89	3.51	3.12	2.73	2.45	2.01
93Q-959	93-207909-25000A	4.62	4.16	3.70	3.24	2.84	2.34
93Q-960	93-207999-25000A	5.10	4.59	4.08	3.57	3.19	2.62
129-901	129990-1220	4.13	3.72	3.31	2.90	2.60	2.14
129-902	129115-6880Z	4.11	3.70	3.29	2.89	2.59	2.13
129-903	129115-6810Z	4.35	3.92	3.48	3.05	2.74	2.25
129-904	129115-6830Z	4.62	4.16	3.70	3.24	2.91	2.39
129-905	129990-1230	5.20	4.68	4.16	3.64	3.28	2.69
129-906	129117-5480Z	5.11	4.60	4.09	3.58	3.22	2.65
129-907	129117-5410Z	5.37	4.84	4.30	3.76	3.39	2.78
129-908	129117-5430Z	5.71	5.14	4.57	4.00	3.60	2.96
129-911	129115-7180Z	4.08	3.68	3.27	2.86	2.55	2.09
129-912	129115-7110Z	4.26	3.84	3.41	2.99	2.69	2.21
129-913	129115-7130Z	4.55	4.10	3.64	3.19	2.87	2.36
129-914	129117-6780Z	5.20	4.68	4.16	3.64	3.28	2.69
129-915	129117-6710Z	5.44	4.90	4.36	3.81	3.43	2.82
129-916	129117-6730Z	5.64	5.08	4.52	3.95	3.56	2.92
129AR-901	129515-3180Z	6.13	5.52	4.91	4.30	3.86	3.17
129AR-902	129505-3110Z	6.40	5.76	5.12	4.48	4.03	3.31
129AR-903	129505-3130Z	6.66	6.00	5.33	4.67	4.20	3.45
129AR-904	129517-5380Z	7.17	6.46	5.74	5.02	4.53	3.72
129AR-905	129507-5310Z	7.46	6.72	5.97	5.23	4.71	3.86
129AR-906	129507-5330Z	7.75	6.98	6.20	5.43	4.88	4.02
143-901	143-121520-14400A	4.78	4.31	3.83	3.35	2.85	2.85
143-902	143-121120-14400A	4.78	4.31	3.83	3.35	2.85	2.85
143-903	143-121220-14400A	4.78	4.31	3.83	3.35	2.85	2.85
143-914	143-621520-14400A	8.00	7.20	6.40	5.60	4.80	4.80
143-915	143-621120-14400A	8.00	7.20	6.40	5.60	4.80	4.80
143-916	143-621220-14400A	8.00	7.20	6.40	5.60	4.80	4.80
150-901	150-13	3.00	2.70	2.40	2.10	1.75	1.36
150-902	150-10	3.00	2.70	2.40	2.10	1.75	1.36
150-903	150-20	3.00	2.70	2.40	2.10	1.75	1.36
150-904	150-19	3.45	3.11	2.76	2.42	2.10	1.55
150-905	150-8	3.45	3.11	2.76	2.42	2.10	1.55
150-906	150-9	3.45	3.11	2.76	2.42	2.10	1.55
187-901	187-290201-1	14.06	12.66	11.25	9.85	8.52	7.00
187-902	187-290201-3	15.00	13.50	12.00	10.50	8.60	7.11
189-901	189-111101-12100	9.24	8.32	7.40	6.47	4.19	3.70
189-902	189-111102-12100	10.11	9.10	8.09	7.08	4.58	4.04
189-903	189-111103-12100	10.97	9.88	8.78	7.68	4.97	4.39
987-902	98756-7160	4.10	3.69	3.28	2.87	2.38	2.10
987-903	98756-6142	4.20	3.78	3.36	2.94	2.62	2.31
987-904	98756-3194	4.44	4.00	3.56	3.11	2.75	2.42
987-906	98706-7162	4.22	3.80	3.38	2.96	2.46	2.17
987-907	98706-6144	4.35	3.92	3.48	3.05	2.65	2.34
987-908	98706-3196	4.55	4.10	3.64	3.19	2.71	2.39
987-910	98750-7161	4.66	4.20	3.73	3.27	3.00	2.65
987-911	98750-6143	4.79	4.32	3.84	3.36	3.11	2.74
987-912	98750-3195	4.99	4.50	4.00	3.50	3.22	2.84

Consult your RBM Controls authorized distributor for factory prices in larger quantities.

4 **RBM CONTROLS**
ESSEX INTERNATIONAL, INC.

FACTORY PRICES

PRODUCTION PART NUMBER IS R B M MANUFACTURING NUMBER WHICH IS STAMPED ON EACH U

Standard Catalog Number	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499	500/999
BRM-902	96-311001-	1.25	1.13	1.00	.88	.74	.62
BRMR1-901	97-101700-16	5.11	4.60	4.09	3.58	2.17	1.91
BRMR1-902	97-101700-17	5.16	4.65	4.13	3.62	2.18	1.93
BRMR1-903	97-101700-18	5.26	4.74	4.21	3.69	2.24	1.97
BRMR2-901	97-104700-20	7.15	6.44	5.72	5.01	3.20	2.82
BRMR2-902	97-104700-21	7.18	6.47	5.75	5.03	3.20	2.83
BRMR2-903	97-104700-22	7.24	6.52	5.80	5.07	3.25	2.87
BRS-901	98-611002	1.25	1.13	1.00	.88	.60	.60
BRSR1-901	99-401242-3	4.77	4.30	3.82	3.34	2.62	2.31
BRSR1-902	99-401242-4	4.83	4.35	3.87	3.39	2.64	2.33
BRSR1-903	99-401242-5	4.87	4.39	3.90	3.41	2.77	2.44
BRSR2-901	99-404242-6	6.22	5.60	4.98	4.36	3.84	3.38
BRSR2-902	99-404242-7	6.28	5.66	5.03	4.40	3.89	3.43
BRSR2-903	99-404242-8	6.33	5.70	5.07	4.44	3.97	3.50
CA-901	45997-23	5.76	3.24	—	—	—	—
CA-902	45997-24	7.80	4.40	—	—	—	—
CA-903	45997-30	10.40	5.85	—	—	—	—
CA-904	45997-29	9.66	5.44	—	—	—	—
C10-901	109214-105	12.60	11.34	10.08	8.82	8.68	8.54
C10-902	109214-101	12.60	11.34	10.08	8.82	8.68	8.54
C10-903	109214-102	12.60	11.34	10.08	8.82	8.68	8.54
C15-901	109202-105	18.72	16.85	14.98	13.11	12.90	12.69
C15-902	109202-101	18.72	16.85	14.98	13.11	12.90	12.69
C15-903	109202-102	18.72	16.85	14.98	13.11	12.90	12.69
C30-901	109196-105	19.95	17.96	15.96	13.97	9.15	9.05
C30-902	109196-101	19.95	17.96	15.96	13.97	9.15	9.05
C30-903	109196-102	19.95	17.96	15.96	13.97	9.15	9.05
C50R-901	109423-705	27.90	25.11	22.32	19.53	12.85	12.65
C50R-902	109423-701	27.90	25.11	22.32	19.53	12.85	12.65
C50R-903	109423-702	27.90	25.11	22.32	19.53	12.85	12.65
CR15-901	109203-101	40.73	36.66	32.59	28.52	28.05	27.61
CR15-902	109203-102	40.73	36.66	32.59	28.52	28.05	27.61
CR30-901	109197-101	49.28	44.36	39.43	34.50	33.79	33.25
CR30-902	109197-102	49.28	44.36	39.43	34.50	33.79	33.25
MC-901	45225-5	4.68	2.64	—	—	—	—
MC-902	45225-1	4.68	2.64	—	—	—	—
MC-903	45225-2	4.68	2.64	—	—	—	—
MC-904	45225-3	4.68	2.64	—	—	—	—
MC-905	45225-4	4.68	2.64	—	—	—	—
MC-911	45225-35	4.68	2.64	—	—	—	—
MC-912	45225-31	4.68	2.64	—	—	—	—
MC-913	45225-32	4.68	2.64	—	—	—	—
MC-914	45225-33	4.68	2.64	—	—	—	—
MC-915	45225-34	4.68	2.64	—	—	—	—
MS25-901	62-981	2.29	2.07	1.84	1.61	1.15	1.09
MS25-902	62-982	2.34	2.11	1.88	1.64	1.17	1.12
MS25-903	62-983	2.60	2.34	2.08	1.82	1.30	1.24
MS25-904	62-984	2.43	2.19	1.95	1.71	1.22	1.16
MS25-905	62-985	2.86	2.58	2.29	2.01	1.43	1.37
MS25-906	62-986	3.39	3.06	2.72	2.38	1.70	1.62
MS25P-901	62-551	5.10	4.59	4.08	3.57	2.55	2.43
MS25P-902	62-552	5.14	4.63	4.12	3.60	2.58	2.46
MS25P-903	62-553	5.41	4.87	4.33	3.79	2.71	2.58
MS25P-904	62-554	5.24	4.72	4.20	3.67	2.62	2.50
MS25P-905	62-555	5.67	5.11	4.54	3.97	2.84	2.71
MS25P-906	62-556	6.20	5.58	4.96	4.34	3.10	2.96

Standard Catalog Number	Production Part Number	FACTORY PRICES 1/24	25/49	50/99	100/249	250/499
MS40-901	61-360	2.11	1.90	1.69	1.48	1.06
MS40-902	61-361	2.18	1.97	1.75	1.53	1.09
MS40-903	61-362	2.18	1.97	1.75	1.53	1.09
MS40-904	61-363	2.26	2.04	1.81	1.59	1.13
MS40-905	61-364	2.26	2.04	1.81	1.59	1.13
MS40-906	61-365	2.35	2.12	1.88	1.65	1.18
MS40-907	61-366	2.44	2.20	1.96	1.71	1.23
MS40-908	61-367	2.67	2.41	2.14	1.87	1.33
MS40-909	61-368	2.89	2.61	2.32	2.03	1.45
MS50-901	62-931	4.36	3.93	3.49	3.06	2.18
MS50-902	62-932	4.36	3.93	3.49	3.06	2.18
MS50-903	62-933	4.63	4.17	3.71	3.25	2.32
MS50-904	62-934	4.86	4.38	3.89	3.41	2.43
MS50-905	62-935	5.13	4.62	4.11	3.60	2.57
MS50-906	62-936	5.66	5.10	4.53	3.97	2.83
MS50-921	62-941	5.53	4.98	4.43	3.88	2.76
MS50-922	62-942	5.53	4.98	4.43	3.88	2.76
MS50-923	62-943	5.60	5.04	4.48	3.92	2.80
MS50-924	62-944	6.03	5.43	4.85	4.22	3.02
MS50-925	62-945	6.31	5.67	5.07	4.41	3.15
MS50-926	62-946	6.83	6.14	5.49	4.78	3.41
MS50P-901	62-561	8.05	7.25	6.44	5.64	4.02
MS50P-902	62-562	8.05	7.25	6.44	5.64	4.02
MS50P-903	62-563	8.32	7.49	6.66	5.83	4.16
MS50P-904	62-564	8.55	7.70	6.84	5.99	4.42
MS50P-905	62-565	8.83	7.95	7.07	6.19	4.41
MS50P-906	62-566	9.35	8.42	7.48	6.55	4.67
MS50P-921	62-571	9.88	8.90	7.91	6.92	4.94
MS50P-922	62-572	9.88	8.90	7.91	6.92	4.94
MS50P-923	62-573	9.96	8.97	7.97	6.98	4.98
MS50P-924	62-574	10.44	9.40	8.35	7.31	5.23
MS50P-925	62-575	10.88	9.78	8.70	7.62	5.45
MS50P-926	62-576	11.75	10.67	9.45	8.23	5.88
MS64-901	64-901	2.21	1.99	1.77	1.55	1.11
MS64-902	64-902	2.27	2.05	1.82	1.59	1.14
MS64-903	64-903	2.50	2.25	2.00	1.75	1.25
MS64-904	64-904	2.69	2.43	2.16	1.89	1.35
MS64-911	64-911	2.27	2.05	1.82	1.59	1.14
MS64-912	64-912	2.34	2.11	1.88	1.64	1.17
MS64-913	64-913	2.56	2.31	2.05	1.80	1.28
MS64-914	64-914	2.76	2.49	2.21	1.94	1.38
RP-901	45997-32	4.28	2.42	—	—	—
RP-902	45997-31	6.92	3.90	—	—	—
RP-903	45997-33	7.83	4.41	—	—	—
S30-901	109660-1051	11.55	10.40	9.24	8.09	6.45
S30-902	109660-1011	11.55	10.40	9.24	8.09	6.45
S30-903	109660-1021	11.55	10.40	9.24	8.09	6.45
S40-901	109710-1051	13.10	11.79	10.48	9.17	8.90
S40-902	109710-1011	13.10	11.79	10.48	9.17	8.90
S40-903	109710-1021	13.10	11.79	10.48	9.17	8.90
TRM-901	96-5	5.00	4.50	4.00	3.50	3.22
TRMR1-901	97-1	10.07	9.07	8.06	7.05	4.67
TRMR1-902	97-2	10.12	9.11	8.10	7.09	4.69
TRMR1-903	97-3	10.22	9.20	8.18	7.16	4.74
TRMR2-901	97-4	14.59	13.14	11.68	10.22	8.13
TRMR2-902	97-5	14.62	13.16	11.70	10.24	8.13
TRMR2-903	97-6	14.68	13.22	11.75	10.28	8.16

Consult your RBM Controls authorized distributor for factory prices in larger quantities.

Net

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A.C. ENGINEERING DESIGN DATA

	Magnet Coil Rating (Volt Amperes)			Operation in % of Nom. Coil Rating		Breakdown Voltage All Terminals - 60 cy. RMS			Contact Material		Electrical Life		**Mechanical Life		Maximum Operating Ambient Degrees Fahrenheit
	Inrush	Sealed Nom.	Sealed Max.	Pick-up	*Max. Safe Operate	Opposite Polarity	Open Contacts Same Polarity	To Ground	Power Rating	Pilot Rating	Oper. At Rated Load	Oper. Per Min.	Oper. At No Load	Oper. Per Min.	
	No Magnet Coil			85%	110%	1500	1000	1500	—	Fine Silver	100,000	1	1,000,000	1	140
	16	10	12	85%	110%	1500	1000	1500	Silver Alloy	—	†100,000	6	1,000,000	60	140
	27	15.6	17	85%	110%	1500	1500	1500	Silver Alloy	—	†100,000	3	1,000,000	60	130
	4	2.8	3	85%	110%	1500	1000	1500	Silver Alloy	Fine Silver	100,000	6	1,000,000	60	140
	9	2.8	3	85%	110%	1500	1000	1500	—	Gold Alloy	100,000	6	1,000,000	60	140
	90	19	23	85%	110%	2200	2200	2200	Silver Alloy	—	†100,000	6	500,000	10	130
	22	8	10	85%	110%	1500	1000	1500	Fine Silver	•Gold Alloy	†100,000	6	750,000	60	130
	24	8.9	12	85%	110%	1500	1000	1500	Fine Silver	•Gold Alloy	†100,000	6	750,000	60	130
	4.5	3.0	4	85%	110%	1500	1000	1500	Fine Silver	•Gold Alloy	100,000	6	10,000,000	60	160
	10	4.5	5	85%	110%	1500	1000	1500	Silver Alloy	—	†100,000	3	500,000	60	130
AR	10	4.5	5	85%	110%	1500	1000	1500	Silver Alloy	—	†100,000	3	500,000	60	130
	24	8.9	12	85%	110%	1500	1000	1500	Silver Alloy	—	†100,000	6	500,000	30	130
	1.3	1.3	1.5	85%	110%	1000	1000	1000	—	Silver Alloy	†100,000	6	10,000,000	60	150
	No Magnet Coil			85%	110%	1500	1000	1500	Silver Alloy	Silver Alloy	100,000	1	200,000	1	140
	9	5.5	6.5	85%	110%	1500	1000	1500	Fine Silver	•Gold Alloy	100,000	6	1,000,000	60	140
	90	18	21	85%	110%	2200	2200	2200	Silver Alloy	—	†100,000	6	1,000,000	10	130
	90	18	21	85%	110%	2200	2200	2200	Silver Alloy	—	†100,000	6	1,000,000	10	130
	50	14.5	17	85%	110%	2200	2200	2200	Silver Alloy	—	†100,000	6	500,000	10	130

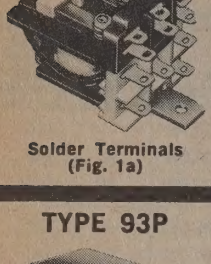
gnet coils designed for continuous duty. Do not operate at rate higher than indicated under Mechanical Life.
sed on steady state test under laboratory environmental conditions. Consult factory if application involves unusual load, speed of operation, off-on ratio, vironmental or operating conditions. Electric life substantially greater when operated below rated load.
ad tests — making inrush ratings (0.4 to 0.5 P.F.) — breaking 125% continuous rating (0.65 to 0.8 P.F.).
oss-bar contacts.

D.C. ENGINEERING DESIGN DATA

pe	Nominal Magnetic Coil Rating (Watts)	Operation in % of Nom. Coil Rating: Pick-up	Operation in % of Nom. Coil Rating: *Max. Safe Operate	Breakdown Voltage All Terminals - 60 cy. RMS: Opposite Polarity	Breakdown Voltage All Terminals - 60 cy. RMS: Open Contacts Same Polarity	Breakdown Voltage All Terminals - 60 cy. RMS: To Ground	Contact Material: Power Rating	Contact Material: Pilot Rating	Electrical Life: Oper. At Rated Load	Electrical Life: Oper. Per Min.	**Mechanical Life: Oper. At No. Load	**Mechanical Life: Oper. Per Min.	Maximum Operating Ambient Degrees Fahrenheit
	2	75%	110%	1000	1000	1000	Fine Silver	—	100,000	4	250,000	4	122
	9	75%	110%	500	500	500	Copper or Silver	—	100,000	4	250,000	4	122
	3	75%	110%	1500	1000	1500	—	Silver Alloy	100,000	6	1,000,000	60	140
	6.5	75%	110%	1500	1000	1500	Fine Silver	—	100,000	6	750,000	60	140
	7	75%	110%	1500	1000	1500	Fine Silver	—	100,000	6	750,000	60	140
	1.5	75%	110%	1500	1000	1500	Fine Silver	•Gold Alloy	100,000	6	10,000,000	60	160
	2	75%	110%	500	500	500	Silver Alloy	—	500,000	12	1,000,000	12	122
M	Switch Only—No Magnet Coil			500	250	250	—	Special Alloy	5,000,000	60	2,000,000,000	7200	185
MR1	0.100	60%	110%	500	250	250	—	Special Alloy	2,000,000	60	2,000,000,000	7200	185
MR2	0.150	60%	110%	500	250	250	—	Special Alloy	2,000,000	60	2,000,000,000	7200	185
S	Switch Only—No Magnet Coil			500	500	250	—	Special Alloy	20,000,000	60	2,000,000,000	7200	185
SR1	0.125	75%	110%	500	500	250	—	Special Alloy	20,000,000	60	2,000,000,000	7200	185
SR2	0.250	75%	110%	500	500	250	—	Special Alloy	20,000,000	60	2,000,000,000	7200	185
ype MS	Current Sensitive			1000	1000	1000	—	•Gold Alloy	100,000	60	10,000,000	180	185
M	Switch Only—No Magnet Coil			250	250	250	—	Special Alloy	2,000,000	60	2,000,000,000	7200	185
MR1	0.150	70%	110%	250	250	250	—	Special Alloy	2,000,000	60	2,000,000,000	7200	185
MR2	0.250	70%	110%	250	250	250	—	Special Alloy	2,000,000	60	2,000,000,000	7200	185

gnet coils designed for continuous duty. Do not operate at rate higher than indicated under Mechanical Life.
sed on steady state test under laboratory environmental conditions. Consult factory if application involves unusual load, speed of operation, off-on ratio, vironmental or operating conditions. Electric life substantially greater when operated below rated load.
oss-bar contacts.

TYPE 93

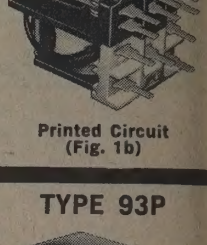


Solder Terminals
(Fig. 1a)

Solder terminal type has combined front, single hole screw and stud mounting, screw and stud included. All terminals out front. One piece molded bobbin and terminal board construction. Highly resistant to arc tracking. Printed circuit type may be controlled by SCR if firing angle, is no more than 10 degrees.*

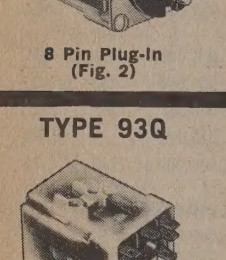
Size: 1 15/16" x 1 5/16" x 1 5/16" U.L. and C.S.A.

TYPE 93



Printed Circuit
(Fig. 1b)

TYPE 93P

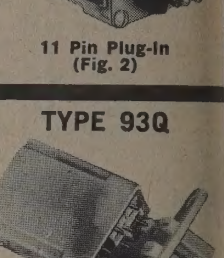


8 Pin Plug-In
(Fig. 2)

8 pin octal base for single and two pole. 11 pin base for three pole. High impact case. Standard pin connections.

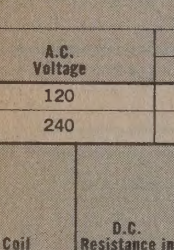
Size: 2 1/8" x 1 7/16" x 1 7/16". U.L. and C.S.A.

TYPE 93P



11 Pin Plug-In
(Fig. 2)

TYPE 93Q

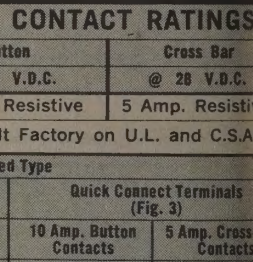


Quick Connect
(Fig. 3)

Enclosed quick connect type designed for front mounting or polarized socket mounting. For socket mounting use 93-153-1 socket kit. Front mounting relay has .20 x .187 terminals. High impact case.

Size: 2 1/8" x 1 7/16" x 1 7/16". U.L. and C.S.A.

TYPE 93Q



Relay Receptacle
93-153-1

A.C. CONTACT RATINGS

A.C. Voltage	Fine Silver Button		Gold-Alloy Cross Bar	
	Inductive	Resistive	Inductive	Resistive
120	1/6 H.P.	10 Amp.	1/10 H.P.	5 Amp.
240	1/3 H.P.	5 Amp.	1/6 H.P.	3 Amp.

D.C. CONTACT RATINGS

Button	Cross Bar
@ 28 V.D.C.	@ 28 V.D.C.
5 Amp. Resistive	5 Amp. Resisti
Consult Factory on U.L. and C.S.A	

Coil Voltage	D.C. Resistance in Ohms @ 25°C	Contact Form	Open Type			Enclosed Type			
			Solder Terminals (Fig. 1a)		Printed Circuit (Fig. 1b)	Plug-In (Fig. 2)		Quick Connect Terminals (Fig. 3)	
			10 Amp. Button Contacts	5 Amp. Cross-Bar Contacts	5 Amp. Cross-Bar Contacts	10 Amp. Button Contacts	5 Amp. Cross-Bar Contacts	10 Amp. Button Contacts	5 Amp. Cross Contacts
			Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Num
6 (50/60 CY.)	3.5	1PDT	93-901	93-931	—	93P-901	93P-931	93Q-901	93Q-93
		2PDT	93-902	93-932	—	93P-902	93P-932	93Q-902	93Q-93
		3PDT	93-903	93-933	—	93P-903	93P-933	93Q-903	93Q-93
12 (50/60 CY.)	14	1PDT	93-985	93-988	*93-991	93P-955	93P-958	93Q-955	93Q-95
		2PDT	93-986	93-989	*93-992	93P-956	93P-959	93Q-956	93Q-95
		3PDT	93-987	93-990	*93-993	93P-957	93P-960	93Q-957	93Q-96
24 (50/60 CY.)	55	1PDT	93-904	93-934	*93-964	93P-904	93P-934	93Q-904	93Q-93
		2PDT	93-905	93-935	*93-965	93P-905	93P-935	93Q-905	93Q-93
		3PDT	93-906	93-936	*93-966	93P-906	93P-936	93Q-906	93Q-93
120 (50/60 CY.)	1400	1PDT	93-907	93-937	*93-967	93P-907	93P-937	93Q-907	93Q-93
		2PDT	93-908	93-938	*93-968	93P-908	93P-938	93Q-908	93Q-93
		3PDT	93-909	93-939	*93-969	93P-909	93P-939	93Q-909	93Q-93
208/240 (50/60 CY.)	4850	1PDT	93-910	93-940	—	93P-910	93P-940	93Q-910	93Q-94
		2PDT	93-911	93-941	—	93P-911	93P-941	93Q-911	93Q-94
		3PDT	93-912	93-942	—	93P-912	93P-942	93Q-912	93Q-94
6 D.C.	24	1PDT	93-913	93-943	—	93P-913	93P-943	93Q-913	93Q-94
		2PDT	93-914	93-944	—	93P-914	93P-944	93Q-914	93Q-94
		3PDT	93-915	93-945	—	93P-915	93P-945	93Q-915	93Q-94
12 D.C.	96	1PDT	93-916	93-946	*93-976	93P-916	93P-946	93Q-916	93Q-94
		2PDT	93-917	93-947	*93-977	93P-917	93P-947	93Q-917	93Q-94
		3PDT	93-918	93-948	*93-978	93P-918	93P-948	93Q-918	93Q-94
24 D.C.	384	1PDT	93-919	93-949	*93-979	93P-919	93P-949	93Q-919	93Q-94
		2PDT	93-920	93-950	*93-980	93P-920	93P-950	93Q-920	93Q-95
		3PDT	93-921	93-951	*93-981	93P-921	93P-951	93Q-921	93Q-95
110 D.C.	8000	1PDT	93-922	93-952	—	93P-922	93P-952	93Q-922	93Q-95
		2PDT	93-923	93-953	—	93P-923	93P-953	93Q-923	93Q-95
		3PDT	93-924	93-954	—	93P-924	93P-954	93Q-924	93Q-95

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A.C.-D.C. GENERAL PURPOSE RELAYS

TYPE 84

FIGURE 1

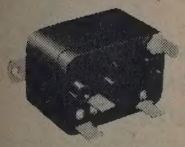


FIGURE 2

SIZE 2⅜" x 1⅝" x 1½"

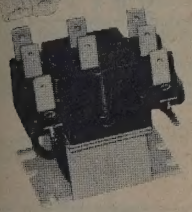
Totally Enclosed
•
Low Cost
•
Screw or ¼" Quick Connect Termination
•
Hardware Included
•
Operates Any Position
•
Isolated Coil
•
I or T Mounting Brackets
•
A.C. Coils Rated 50/60 cy
•
U.L. and C.S.A.

SINGLE POLE NORMALLY OPEN and SINGLE POLE DOUBLE THROW

Coil Voltage A.C.	Catalog Number Figure 1		Contact Rating 125/250 V.A.C.	
	1PNO	1PDT	Inductive	Resistive
6	84-901	84-905	N.O. 8 Amps. Continuous 25 Amps. Inrush D.T. 8 Amps. Continuous 18 Amps. Inrush	N.O. 16 Amps. Continuous D.T. 8 Amps. Continuous
24	84-902	84-906		
120	84-903	84-907		
230/240	84-904	84-908		
Coil Voltage A.C.	**Catalog Number Figure 2**			
	1PNO	1PDT		
24	84-912	84-916		
120	84-913	84-917		
230/240	84-914	84-918		
24	84-922	84-926	3 Amps. @ 125 V.A.C. or 1.5 Amps. @ 250 V.A.C. Pilot Duty	
120	84-923	84-927		
230/240	84-924	84-928		

Coil Voltage D.C.	Resistance in Ohms @ 25°C	Catalog Number Figure 1	D.C. Contact Rating Inductive	
			Voltage	Current
12	90	84D-902	12	3 Amp.
24	280	84D-903	24	1.5 Amp.

TYPE 91



ARATE 91-180-1 SOCKET AND TERMINAL KIT
SIZE 2⅛" x 1⅞" x 2⅜"

¼" Quick Connect Termination
•
U.L. and C.S.A.
•
Enclosed Contacts
•
Operates Any Position
•
Solenoid Action
•
Wiring Terminals Included
•
A.C. Coils Rated 50/60 cy.
•
Can Be Panel Mounted

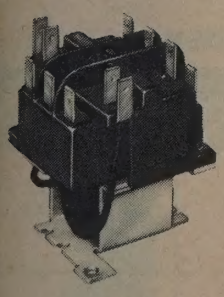
TWO POLE DOUBLE THROW

Coil Voltage A.C.	Catalog Number	Circuit Rating Terminals		Power Rating (A)	
		1-2-3	4-5-6	Inductive	Resistive
24	91-901	(A)	(A)	12 Amp. Cont. 60 Amp. Inrush 125 V.A.C. 6 Amp. Cont. 35 Amp. Inrush 250 V.A.C.	15 Amp. 277 V.A.C. Max.
120	91-902				
230/240	91-903				
24	91-904	(A)	(B)		
120	91-905				
230/240	91-906				
24	91-907	(B)	(B)		
120	91-908				
230/240	91-909				

			Pilot Rating (B)	
			Inductive	Resistive
			125 V.A. 1/10 H.P. 125/250 V.A.C.	3 Amp. 277 V.A.C. Max.

Coil Voltage D.C.	Catalog Number	Resistance in Ohms @ 25°C	D.C. Contact Rating - Resistive
6	91D-911	7	10 Amps. @ 32 V. Max.
12	91D-912	29	
24	91D-913	115	

TYPE 92



SIZE 2⅜" x 2⅜" x 2¾"

¼" Quick Connect Termination
•
U.L. and C.S.A.
•
Enclosed Contacts Operates Any Position
•
Solenoid Action
•
Wiring Terminals Included
•
Manual Operating Button
•
A.C. Coils Rated 50/60 cy

THREE POLE DOUBLE THROW

Coil Voltage A.C.	Catalog Number	Circuit Rating			Power Rating (A)	
		X	Y	Z	Inductive	Resistive
24	92-901	(A)	(A)	(A)	12 Amp. Cont. 60 Amp. Inrush 125 V.A.C. 6 Amp. Cont. 35 Amp. Inrush 250 V.A.C.	15 Amp. 277 V.A.C. Max.
120	92-902					
230/240	92-903					
24	92-904	(A)	(B)	(A)		
120	92-905					
230/240	92-906					
24	92-907	(B)	(A)	(B)		
120	92-908					
230/240	92-909					

			Pilot Rating (B)	
			Inductive	Resistive
24	92-910	(B)	(B)	(B)	120 V.A. 1/10 H.P. 125/250 V.A.C.	3 Amp. 277 V.A.C. Max.
120	92-911					
230/240	92-912					

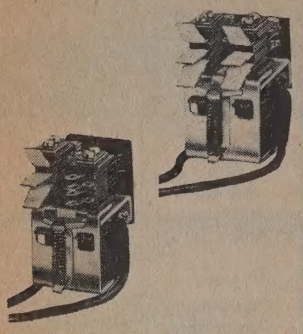
Coil Voltage D.C.	Catalog Number	Resistance in Ohms @ 25°C	D.C. Contact Rating - Resistive
6	92D-911	6.5	10 Amps. @ 32 V. Max.
12	92D-912	26	
24	92D-913	104	

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

8 **RBM CONTROLS** ESSEX INTERNATIONAL, INC.

A.C. GENERAL PURPOSE RELAYS

TYPE 987



SIZE 2⅛" x 1" x 2"

- 9" Lead Wire Coil
- Front or Rear Mounting
- Hardware Included
- Quick Connect Terminals on 15 Amp Poles
- Solder Terminals on 3 Amp Poles

TWO POLE and THREE POLE DOUBLE THROW

Coil Voltage 60 cy.	Contact Form	Catalog Number	Contact Rating — Non-Inductive 125/250 V.A.C.	
			Left Stack	Right Stack
24	2PDT	987-902	SPDT - 15 AMP.	SPDT - 3 AMP.
120	2PDT	987-903		
240	2PDT	987-904		
24	2PDT	987-906	SPDT - 15 AMP.	SPDT - 15 AMP.
120	2PDT	987-907		
240	2PDT	987-908		
24	3PDT	987-910	SPDT - 15 AMP.	2PDT - 3 AMP.
120	3PDT	987-911		
240	3PDT	987-912		

A.C. POWER RELAYS

TYPE 129

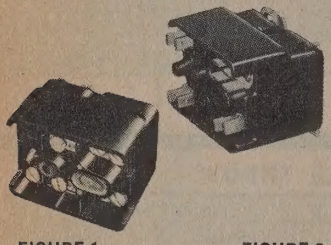


FIGURE 1 FIGURE 2

SIZE 2⅜" x 1⅞" x 1⅞"

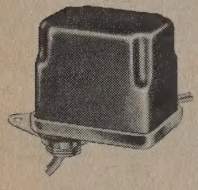
- Double-Break Contacts
- Totally Enclosed
- Hi-Impact Case
- Screw or ¼" Quick Connect Termination
- Hardware Included
- U.L. and C.S.A.
- Non-Positional

SINGLE POLE NORMALLY OPEN and SINGLE POLE DOUBLE THROW

Coil Voltage (50/60 cy.)	Catalog Number				Contact Rating 250 V.A.C. Max.	
	Figure 1		Figure 2			
	1PNO	†1PDT	1PNO	†1PDT	Inductive	Resistive
6	129-901	129-905	—	—	18 Amp. Continuous 1 H.P.-125 V. 2 H.P.-250 V.	18 Amp. Continuous
24	129-902	129-906	129-911	129-914		
120	129-903	129-907	129-912	129-915		
208/230	129-904	129-908	129-913	129-916		

† All contact terminals must be wired same polarity.

TYPE 129AR



SIZE 2¾" x 2⅛" x 3⅛"

- Totally Enclosed
- Hi-Impact Case
- Double-Break Contacts
- Easy to Mount
- U.L. and C.S.A.
- Pre-Wired
- No Enclosure Required
- Low Cost

SINGLE POLE NORMALLY OPEN and SINGLE POLE DOUBLE THROW

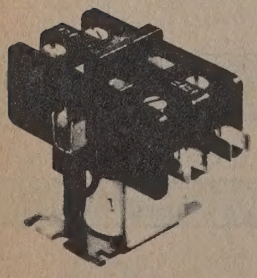
Coil Voltage (50/60 cy.)	Catalog Number		Contact Rating — 250 V.A.C. Max.	
	1PNO	†1PDT	Inductive	Resistive
24	129AR-901	129AR-904	18 Amp. Continuous 1 H.P.-120 V. 2 H.P.-250 V.	18 Amp. Continuous
120	129AR-902	129AR-905		
208/230	129AR-903	129AR-906		

FITS ANY ½" KNOCK-OUT. MEETS STANDARD CODE REQUIREMENTS. Underwriters Lab. white card listed. File E12139D 184N13.13 7/17/63. Aluminum die-cast base and bushing. High impact phenolic enclosure. Locknuts and position locking washer included. Color coded 8" lead wires.

† All contact terminals must be wired same polarity.

A.C. POWER CONTACTORS

TYPE 143



SIZE 3¼" x 2⅜" x 2½"

- Straight-Through Wiring
- Low Cost
- Auxiliary Quick-Connect Terminals
- U.L. and C.S.A.
- Hardware Included
- Screw Power Terminals For #10 Solid Wire Max.
- 25 Amp Unit Has Cover
- Double-Break Contacts

TWO POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating	
		Inductive	Resistive
24	143-901	18 Amp. Cont. 90 Amp. Inrush @ 277 V.A.C. Per Pole	25 Amp. @ 277 V.A.C. Per Pole
120	143-902		
208/240	143-903		
24	143-914	25 Amp. Cont. 150 Amp. Inrush @ 277 V.A.C. Per Pole	35 Amp. @ 277 V.A.C. Per Pole
120	143-915		
208/240	143-916		

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RBM CONTROLS
ESSEX INTERNATIONAL, INC.

A.C. POWER CONTACTORS

TYPE 75

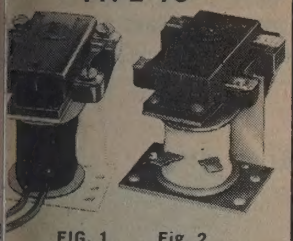


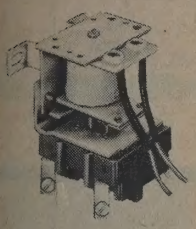
FIG. 1 Fig. 2
SIZE 2½" x 2⅛" x 2¼"

- Screw Power Termination #8 Solid Wire Max.
- 13" Lead Wire or Quick Connect Coil Terminals
- Hardware Included

TWO POLE NORMALLY OPEN

Coil Voltage (60 cy.)	Catalog Number Fig. 1	Catalog Number Fig. 2	Contact Rating (A.C.) Inductive	Contact Rating (A.C.) Resistive
24	75-901	75-904	1 H.P. Per Pole 115/230 V. 2 Pole Rating 2 H.P. — 230 V. or 18 Amp. Cont. 90 Amp. Inrush	25 Amp. 240 V. Per Pole
115/120	75-902	75-905		
230/240	75-903	75-906		

TYPE 80



SIZE 3⅛" x 2⅝" x 2⅞"

- Screw Power Termination #8 Solid Wire Max.
- Double-Break Contacts
- Hi-Dielectric
- 9" Coil Leads
- Mount as Shown
- Low Cost

TWO POLE NORMALLY OPEN

Coil Voltage (60 cy.)	Catalog Number	Contact Rating (A.C.) Inductive
24	80-901	25 Amp. Continuous 150 Amp. Inrush 250 V. Max.
120	80-902	
240	80-904	

TYPE 85

SIZE 3½" x 3⅛" x 2⅝"

- Screw Terminals
- #8 Solid Wire Max.
- Double Break Contacts
- ¼" Auxiliary Wiring Terminals
- Straight-Thru Wiring
- Hi-Dielectric Materials

THREE POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.) — Inductive 250 V.	Contact Rating (A.C.) — Inductive 600 V.
24	85-901	25 Amp. Cont. 150 Amp. Inrush	12.5 Amp. Cont. 75 Amp. Inrush
120	85-902		
208/240	85-903		

TYPE S30

SIZE 3⅞" x 2⅜" x 2½"

- Solenoid Action
- Enclosed Contacts
- Resilient Mounting
- Screw Power Termination For #8 Solid Wire Max.
- Epoxy Coil
- Hi-Dielectric
- Double Break Contacts

THREE POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.) — Inductive Voltage	Continuous	Inrush
24	S30-901	250 600	30 Amp. 15 Amp.	180 Amp. 90 Amp.
115	S30-902			
230	S30-903			

TYPE S40

SIZE 3⅞" x 2¾" x 2½"

- Pressure Power Termination For #6 Solid Wire Max.
- Solenoid Action
- Enclosed Contacts
- Resilient Mounting
- Hi-Dielectric
- Epoxy Coil
- Double Break Contacts

THREE POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.) Inductive
24	S40-901	40 Amp. Continuous 200 Amp. Inrush 250 V. Max.
115	S40-902	
230	S40-903	

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGES 17 — PRICES PAGES 1, 2, 3, 4

A.C. INDUSTRIAL CONTACTORS

UNIQUE DESIGN PERMITS COMMON BASE, COIL & MAGNET FOR CONTACTOR RATINGS FROM 10 TO 50 AMPERES • DOUBLE BREAK "NO-KISS" C
ACTION • REPLACEABLE CONTACTS & COIL • EPOXY SEALED MOLDED MAGNET COIL HOUSING • LAMINATED CORROSION RESISTANT E-TYPE MA
SELF-ALIGNING ARMATURE • HI-DIELECTRIC ARC RESISTANT MOLDED CONTACT BLOCK & CARRIER • 50/60 CYCLE MAGNET COIL • RESILIENT MO

TYPE C10

SIZE 3⅝" x 2¾" x 3⅜"

10 Amp.
600 Volts

•

Pressure Type
Power Terminals
#10 Solid Wire Max.

•

All Contacts
Convert to N.C.
See Page 11

•

Double Break
Contacts

FOUR POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.)		
			Horsepower	
		Voltage	Single Phase	Three
24	C10-901	110	½	3
		220	¾	1
110	C10-902	600	1	1
		Resistive		
220	C10-903	10 Amp. 600 V. Max. (Per Pole)		

TYPE C15

SIZE 3⅝" x 2¾" x 3⅜"

15 Amp.
600 Volts

•

Pressure Type
Power Terminals
#10 Solid Wire Max.

•

All Contacts
Convert to N.C.
See Page 11

•

Double Break
Contacts

FOUR POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.)		
			Horsepower	
		Voltage	Single Phase	Three
24	C15-901	110	1	1½
		220	1½	2
110	C15-902	600	1½	2
		Resistive		
220	C15-903	15 Amp. 600 V. Max. (Per Pole)		

TYPE C30

SIZE 3⅝" x 2¾" x 3⅜"

30 Amp.
600 Volts

•

Pressure Type
Power Terminals
#8 Solid Wire Max.

•

Double Break
Contacts

FOUR POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.)		
			Horsepower	
		Voltage	Single Phase	Three
24	C30-901	110	2	3
		220	3	7½
110	C30-902	600	5	10
		Resistive		
220	C30-903	30 Amp. — 600 V. Max. (Per Pole)		

TYPE C50R

SIZE 3⅝" x 2¾" x 3⅜"

50 Amp.
480 Volts

•

Pressure Type
Power Terminals
#6 Stranded Wire
Max.

•

Double Break
Contacts

FOUR POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.)
24	C50R-901	Resistive Only For Electric Heating 50 Amp. — 480 Volt Max.
110	C50R-902	
220	C50R-903	

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

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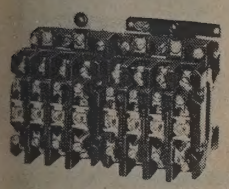
TYPE C CONTACTORS MOUNTED SIDE BY SIDE ON COMMON STEEL BASE • RESILIENT MOUNTING • HARDENED STEEL MECHANICAL INTERLOCK VENTS SIMULTANEOUS CLOSING OF BOTH CONTACTORS • NO CROSS-PHASE WIRING • SUITABLE FOR MOTOR REVERSING & TRANSFORMER TAP NGING APPLICATION.

TYPE CR15



SIZE 3⅝" x 5¹⁵⁄₁₆" x 3⅜"

15 Amp.
600 Volt

•

Pressure Type
Power Terminals
#10 Solid Wire Max.

•

All Contacts
Convert to N.C.
See Below

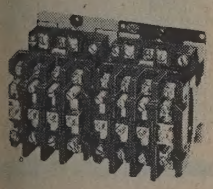
•

Double Break
Contacts

FOUR POLE NORMALLY OPEN REVERSING

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.)		
		Voltage	Horsepower	
			Single Phase	Three Phase
110	CR15-901	110	1	1½
220	CR15-902	220	1½	2

TYPE CR30



SIZE 3⅝" x 5¹⁵⁄₁₆" x 3⅜"

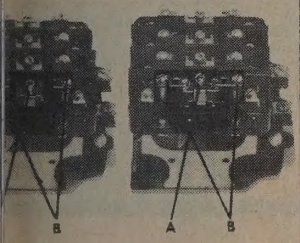
30 Amp.
600 Volt

•

Double Break
Contacts

FOUR POLE NORMALLY OPEN REVERSING

Coil Voltage (50/60 cy.)	Catalog Number	Contact Rating (A.C.)		
		Voltage	Horsepower	
			Single Phase	Three Phase
110	CR30-901	110	2	3
220	CR30-902	220	3	7½



rmally Open Normally Closed

CONVERSION INSTRUCTIONS

All 10 and 15 ampere contact assemblies on RBM standard type C contactors are normally open. To convert to normally closed, use screwdriver. No special parts needed.

1. Remove movable contact assembly and lock washer by backing off terminal nut "A".
2. Loosen screws "B" and remove stationary contact assemblies.
3. Invert movable contact assembly, and replace on contactor with flat "I" spring resting on contact block. Contacts facing out.
4. Remove screws "B" from, and reinsert into opposite end of, stationary contact assembly. Re-install stationary contact assemblies; holding contacts in alignment with movable contacts while tightening screws.

TYPE C REPLACEMENT PARTS

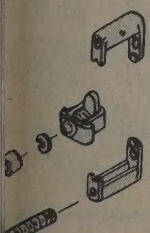


Figure 1*

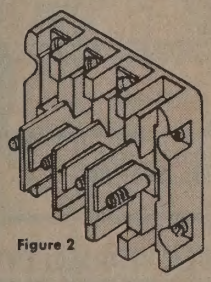


Figure 2

MAGNET COILS — Figure 4

Voltage (50/60 cy.)	*Standard		*Special	
	Catalog Number	Replaces	Catalog Number	Replaces
24	MC-901	45225-5	MC-911	45225-35
110	MC-902	45225-1	MC-912	45225-31
220	MC-903	45225-2	MC-913	45225-32
440	MC-904	45225-3	MC-914	45225-33
550	MC-905	45225-4	MC-915	45225-34

* Do not substitute standard for special coils or vice versa.

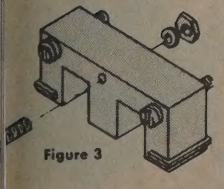


Figure 3

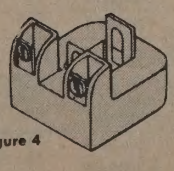


Figure 4

oveable — 8 Stationary per kit.

CONTACT ASSEMBLIES — Figure 1

USED ON TYPE	CATALOG NUMBER	CONTACT RATING	REPLACES
C10, C15, CR15	CA-901	15 Amp.	45997-3 45997-4
C30, CR30	CA-902	30 Amp	45997-5
C5GR	CA-903	50 Amp Resistive	45997-22
†109153 †109453	CA-904	30 Amp - 4 Pole 50 Amp - 2 Pole	45997-16 45997-20

** Reversing type — 2 sets required. † Not standard catalog items.

ARMATURE & MAGNET Figure 3

Catalog Number
RP-901

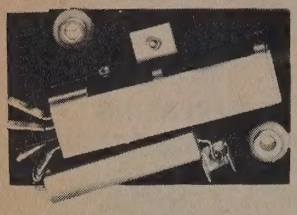
CONTACT BLOCK & CARRIER — Figure 2

4 Pole	5 Pole
Catalog Number	Catalog Number
RP-902	RP-903

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

A.C. TIME DELAY RELAYS

TYPE 59



SIZE 3⅜" x 2⅛" x ⅞"

Ambient Compensated
•
¼" Quick-Connect Termination
•
Wire Terminals Included
•
Resilient Mounting
•
Non-Positional

THERMAL TYPE
SINGLE POLE NORMALLY OPEN

FIXED TIME DELAY TO CLOSE — AFTER ENERGIZATION — 15 TO 45 S

Operating		Catalog Number	Contact Rating
Voltage (50/60 cy.)	Watts		
24	3.0	59-901	3 Amp. 125/250 V.A.C Pilot Duty
115/120	7.0	59-902	
230/240	10.0	59-903	

Reset time — approx. 60 seconds.

TYPE 84T

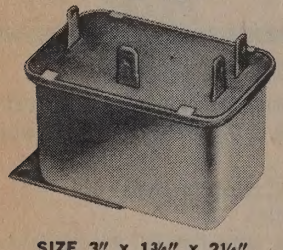
SIZE 2⅝" x 2¼" x 1½"

Fixed Timing
•
¼" Quick-Connect Termination
•
Wiring Terminals Included
•
Totally Enclosed
•
Approx. Reset Time 4 Seconds

RECTIFIER/CAPACITOR TYPE
SINGLE POLE DOUBLE THROW

Coil (50/60 cy.)	Contact Action		Catalog Number	Time Delay in Seconds ±25%	Contact R (A.C. Induct
	Delay After Coil Energized	Delay After Coil De-Energized			
115/120	X	—	84TE-902	2	3 Amp. 1 1.5 Amp. Continu
230/240	X	—	84TE-903	2	
115/120	—	X	84TD-902	2	
230/240	—	X	84TD-903	2	

TYPE 187



SIZE 3" x 1¾" x 2¼"

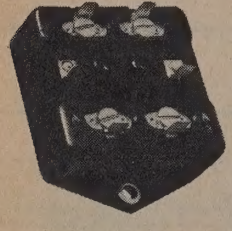
Metal Case
•
Totally Enclosed
•
Flat Bracket
•
¼" Quick-Connect Termination
•
Repeat ±2% @ 25°C and Nom. Voltage

SOLID STATE — FIELD ADJUSTABLE TYPE
SINGLE POLE NORMALLY OPEN

Coil Voltage (50/60 cy.)	Time Delay on Pick-up	Catalog Number	Contact Rating
			Inductive
24 V.	.5 - 90 seconds	187-901	1 Amp. @ 120 V.
120 V.	.5 - 90 seconds	187-902	

Hidden trimming resistor for tamper-proof field timing adjustment. Rese 100 M.S. Can use Types 93, 84, 91, 92, 129, 143 or 75 as slave relay.

TYPE 189



SIZE 3½" x 2¾" x 1½"

¼" Quick-Connect Coil Terminals
•
Screw and Quick-Connect Power Termination
•
Hi-Impact Case
•
Non Positional
•
Ambient Compensated

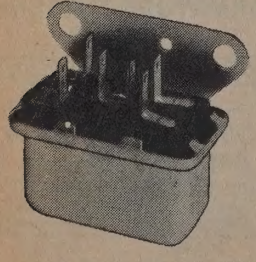
THERMAL TYPE
TWO POLE NORMALLY OPEN

Operating		Catalog Number	Contact Rating	
A.C. Voltage	Watts		Inductive	Resistiv
24 V	6	189-901	12 Amp. Cont. 72 Amp. Inrush @ 250 V.A.C.	25 Amp @ 277 V.A.
120 V	6	189-902		
240 V	12	189-903		

Fixed time to close — after energization 20-40 seconds. Reset time — a 60 seconds.

TYPE 150 D.C. POWER RELAYS

TYPE 150



SIZE 2¼" x 1½" x 2"

Metal Case
•
Totally Enclosed
•
Isolated Coil
•
Side Bracket
•
¼" Quick-Connect Termination
•
Hardware Included
•
Low Cost

SINGLE POLE NORMALLY OPEN

D.C. Coil Voltage	Resistance in Ohms	Catalog Number	Contact Rating	
			Voltage	Current
6	11	150-901	6	25 Amp.
12	44	150-902	12	25 Amp.
24	176	150-903	24	12 Amp.

SINGLE POLE DOUBLE THROW

D.C. Coil Voltage	Resistance in Ohms	Catalog Number	Contact Rating	
			Voltage	Current
6	11	150-904	6	15 Amp
12	44	150-905	12	15 Amp
24	176	150-906	24	7.5 Amp

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

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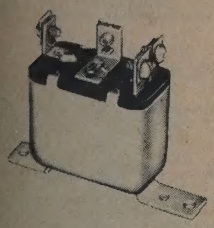
TYPE 60



SIZE 2⅞" x 1⅛" x 2⅝"

Metal Case
•
Totally Enclosed
•
Isolated Coil
•
Screw Terminals
•
Screws Included
•
Low Cost

SINGLE POLE NORMALLY OPEN

Coil Voltage (D.C.)	Resistance In Ohms @ 25°C	Catalog Number	Contact Rating D.C. Inductive Voltage	Contact Rating D.C. Inductive Current
6	11	60-901	6	15 Amp.
12	35	60-902	12	15 Amp.
24	160	60-903	24	7.5 Amp.

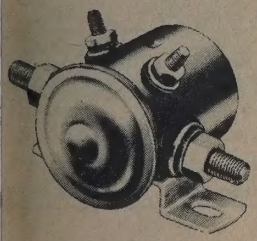
TYPE 70 D.C. POWER CONTACTORS

-TURNING STUDS • DRAWN STEEL
T PROOF ENCLOSURE • COPPER STUD
ER & COIL TERMINALS • DOUBLE
AK ROTATING DISC MOVABLE CON-
T • SOLENOID ACTUATED • SUGGESTED
NTING — CAP DOWN

CONTACT RATING
D.C. INDUCTIVE LOAD — 36 V. MAX.

Voltage (D.C.)	Normally Open Continuous	Normally Open Inrush	Normally Closed Continuous	Normally Closed Inrush
6	80 Amp.	300 Amp.	60 Amp.	100 Amp.
12	80 Amp.	150 Amp.	60 Amp.	60 Amp.
24-36	50 Amp.	50 Amp.	30 Amp.	30 Amp.

4 TERMINAL



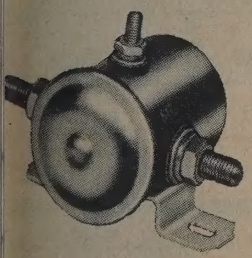
SIZE 2½" x 3½" x 2½"

Four Terminal
•
Isolated Coil
•
Silver or Copper Contacts
•
Hardware Included
•
Continuous Duty Coil
•
Ease In Wiring

SINGLE POLE NORMALLY OPEN

Coil Voltage (D.C.)	Resistance in Ohms @ 25°C	Catalog Number	Contact Material
6	4	70-901	Copper
12	19	70-902	
24	60	70-903	
36	114	70-904	
6	4	70-905	Silver
12	19	70-906	
24	60	70-907	
36	114	70-908	

3 TERMINAL



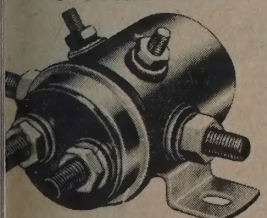
SIZE 2½" x 3½" x 2½"

Three Terminal
•
Continuous Duty Coil
•
Copper Contacts
•
Hardware Included
•
Coil Common to Case or Coil Common to Battery
•
Rugged Construction

SINGLE POLE NORMALLY OPEN

Coil Voltage (D.C.)	Resistance in Ohms @ 25°C	Catalog Number	Contact Material
6	4	70-913	Copper — Coil Grounded to Case
12	19	70-914	
24	60	70-915	
36	114	70-916	
6	4	70-917	Copper — Coil Common to Load
12	19	70-918	
24	60	70-919	
36	114	70-920	

6 TERMINAL



SIZE 3⅜" x 3⅛" x 2½"

Six Terminal
•
Continuous Duty Coil
•
Isolated Coil
•
Hardware Included
•
Choice of 2 Types Contacts

SINGLE POLE DOUBLE THROW

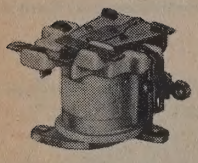
Coil Voltage (D.C.)	Resistance in Ohms @ 25°C	Catalog Number	Contact Material
6	4	70-909	N.O. and N.C. Silver
12	19	70-910	
24	60	70-911	
36	114	70-912	
6	4	70-921	N.O. Copper and N.C. Silver
12	19	70-922	
24	60	70-923	
36	114	70-924	

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

SINGLE POLE DOUBLE THROW — TWO POLE DOUBLE THROW — THREE POLE DOUBLE THROW

Electrical Life				Mechanical Life	Operate Time (Incl. Bounce)	Vibration	Shock	Opera Amb
NON-INDUCTIVE LOAD	0.5 Amp.	1.0 Amp.	2.0 Amp.	100,000,000 At 180 Operations Per Minute (No Load)	20 Milliseconds	2G 10-55 Cycles	2G Operate 10G Non-Operate	−55 +8
NUMBER OPERATIONS	1,000,000	300,000	100,000					

TYPE MS40



SIZE 1⅛" x 1⅛" x 1⅝"

Solder Terminals • 4-40 Mounting • Armature Common to Frame • Long Life • Low Cost

SINGLE POLE DOUBLE THROW — OPEN TYPE

Contact Rating	Coil Power	
2 Amp. Non-Inductive 28 V.D.C. — 115 V.A.C.	Minimum Required	0.050 Watts
	Maximum Capacity	1.0 Watts

D.C. Magnet Coil At 25°C			
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number
6 V.	4.5 V.	250	MS40-901
13.5 MA.	10 MA.	500	MS40-902
11.0 MA.	8.2 MA.	750	MS40-903
12 V.	9.0 V.	1000	MS40-904
7.7 MA.	5.8 MA.	1500	MS40-905
6.0 MA.	4.5 MA.	2500	MS40-906
4.3 MA.	3.2 MA.	5000	MS40-907
24 V.	18.0 V.	7500	MS40-908
2.9 MA.	2.2 MA.	10000	MS40-909

*D.O. Approx. 35% of PU. †Nominal ±10%.

TYPE MS64

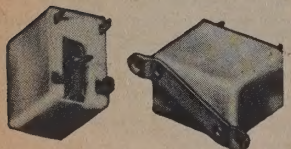


FIG. 1 FIG. 2

SIZE 1³⁄₁₆" x ¾" x 1⅛"

Printed Circuit Terminals or Bracket Mounting • Isolated Contacts • Snap-on Cover • Molded Construction

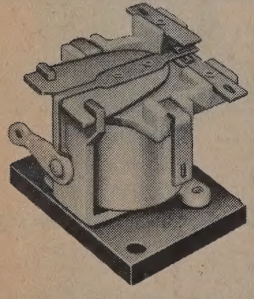
SINGLE POLE DOUBLE THROW — ENCLOSED TYPE

Contact Rating	Coil Power	
2 Amp. Non-Inductive 28 V.D.C. — 115 V.A.C.	Minimum Required	0.050 Watts
	Maximum Capacity	1.0 Watts

D.C. Magnet At 25°C				
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number Fig. 1	Catalog Number Fig. 2
6 V.	4.5 V.	400	MS64-901	MS64-91
12 V.	9.0 V.	1600	MS64-902	MS64-91
24 V.	18.0 V.	6500	MS64-903	MS64-91
3. MA.	2.3 MA.	10000	MS64-904	MS64-91

*D.O. Approx. 35% of PU. †Nominal ±10%.

TYPE MS25



SIZE 1¼" x 1½" x 1⅞"

Solder Terminals • Isolated Contacts • Insulating Fiber Base

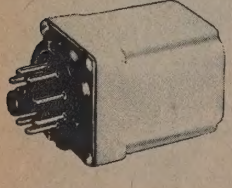
SINGLE POLE DOUBLE THROW — OPEN TYPE

Contact Rating	Coil Power	
2 Amp. Non-Inductive 28 V.D.C. — 115 V.A.C.	Minimum Required	0.040 Watts
	Maximum Capacity	1.5 Watts

D.C. Magnet Coil At 25°C			
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number
6 V.	4.5 V.	510	MS25-901
12 V.	9.0 V.	2025	MS25-902
24 V.	18.0 V.	8100	MS25-903
3.7 MA.	2.8 MA.	5000	MS25-904
2.7 MA.	2.0 MA.	10000	MS25-905
2.1 MA.	1.6 MA.	15000	MS25-906

*D.O. Approx. 35% of PU. †Nominal ±10%.

TYPE MS25P



SIZE 2" x 1⅜" x 1⅜"

8 Pin Plug-In • Isolated Contacts • High Impact Case

SINGLE POLE DOUBLE THROW — PLUG-IN

D.C. Magnet Coil At 25°C			
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number
6 V.	4.5 V.	510	MS25P-901
12 V.	9.0 V.	2025	MS25P-902
24 V.	18.0 V.	8100	MS25P-903
3.7 MA.	2.8 MA.	5000	MS25P-904
2.7 MA.	2.0 MA.	10000	MS25P-905
2.1 MA.	1.6 MA.	15000	MS25P-906

*D.O. Approx. 35% of PU. †Nominal ±10%.

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

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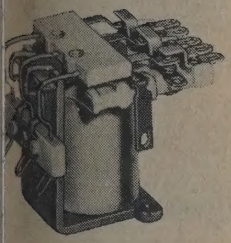
MINIATURE D.C. SENSITIVE RELAYS

TYPE MS50



SIZE 1⅝" x 1⅛" x 1¼"

Solder Terminals

•

Isolated Contacts

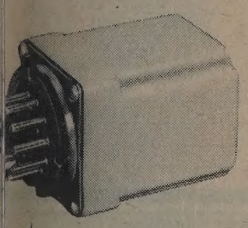
TWO POLE DOUBLE THROW — OPEN TYPE

Contact Rating	Coil Power	
2 Amp. Non-Inductive 28 V.D.C. — 115 V.A.C.	Minimum Required	0.125 Watts
	Maximum Capacity	1.5 Watts

D.C. Magnet Coil At 25°C			
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number
6 V.	4.5 V.	160	MS50-901
12 V.	9.0 V.	650	MS50-902
24 V.	18.0 V.	2600	MS50-903
6.7 MA.	5.0 MA.	5000	MS50-904
4.7 MA.	3.5 MA.	10000	MS50-905
3.9 MA.	2.9 MA.	15000	MS50-906

*D.O. Approx. 35% of PU. †Nominal ±10%.

TYPE MS50P



SIZE 2" x 1⅜" x 1⅜"

8 Pin Plug-In

•

Isolated Contacts

•

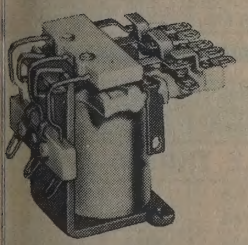
High Impact Case

TWO POLE DOUBLE THROW — PLUG-IN

D.C. Magnet Coil At 25°C			
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number
6 V.	4.5 V.	160	MS50P-901
12 V.	9.0 V.	650	MS50P-902
24 V.	18.0 V.	2600	MS50P-903
6.7 MA.	5.0 MA.	5000	MS50P-904
4.7 MA.	3.5 MA.	10000	MS50P-905
3.9 MA.	2.9 MA.	15000	MS50P-906

*D.O. Approx. 35% of PU. †Nominal ±10%.

TYPE MS50



SIZE 1⅝" x 1⅛" x 1¼"

Solder Terminals

•

Isolated Contacts

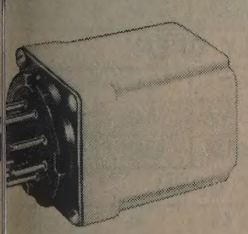
THREE POLE DOUBLE THROW — OPEN TYPE

Contact Rating	Coil Power	
2 Amp. Non-Inductive 28 V.D.C. — 115 V.A.C.	Minimum Required	0.200 Watts
	Maximum Capacity	1.5 Watts

D.C. Magnet Coil At 25°C			
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number
6 V.	4.5 V.	100	MS50-921
12 V.	9.0 V.	400	MS50-922
24 V.	18.0 V.	1600	MS50-923
8.5 MA.	6.4 MA.	5000	MS50-924
6.0 MA.	4.5 MA.	10000	MS50-925
4.9 MA.	3.7 MA.	15000	MS50-926

*D.O. Approx. 35% of PU. †Nominal ±10%.

TYPE MS50P



SIZE 2" x 1⅜" x 1⅜"

11 Pin Plug-In

•

Isolated Contacts

•

High Impact Case

THREE POLE DOUBLE THROW — PLUG-IN

D.C. Magnet Coil At 25°C			
Nominal Voltage or Current	*Max. Pick-up Voltage or Current	†Resistance in Ohms	Catalog Number
6 V.	4.5 V.	100	MS50P-921
12 V.	9.0 V.	400	MS50P-922
24 V.	18.0 V.	1600	MS50P-923
8.5 MA.	6.4 MA.	5000	MS50P-924
6.0 MA.	4.5 MA.	10000	MS50P-925
4.9 MA.	3.7 MA.	15000	MS50P-926

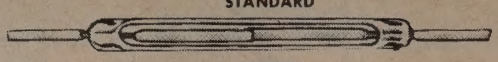
*D.O. Approx. 35% of PU. †Nominal ±10%.

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

BRM-902 MINIATURE

BI-REED

BRS-901 STANDARD



BI-REED

TRM-901 MINIATURE

TRI-REED

Contact Form		Single Pole Normally Open						Single Pole Double Thro		
Miniature or Standard		Miniature			Standard			Miniature		
Catalog Number		BRM-902			BRS-901			TRM-901		
Non-Inductive Contact Rating	Make and Break	15 VA. A.C. — 5 Watts D.C. ¼ Amp. Maximum up to 250 Volts			15 VA. A.C. — 15 Watts D.C. 1.0 Amp. Maximum up to 250 Volts			15 VA. A.C. — 5 Watts D. ¼ Amp. Maximum up to 125 V. A.C. or 32 V. D		
	No Make or Break	1.0 Amp. 250 V.			5 Amp. 250 V.			1 Amp. 125 V. A.C. or 32 V.		
Contact Life Based on 10 Ohm Miss Test	Resistive Load (D.C.)	10 Micro-Amp. @ 10 Milli-Volts	⅛ Amp. @ 32 Volts		10 Micro-Amp. @ 10 Milli-Volts	⅛ Amp. @ 32 Volts		10 Micro-Amp. @ 10 Milli-Volts	⅛ Amp 32 Vo	
	Number Operations	100,000,000	10,000,000		200,000,000	125,000,000		100,000,000	10,000	
Approximate Overall Dimensions		Over Leads	Glass Length	Glass Diameter	Over Leads	Glass Length	Glass Diameter	Over Leads	Glass Length	Glass Di
		1.5″	0.75″	0.100″	3.35″	2.1″	0.200″	1.5″	0.60″	0.12
Weight		0.315 Grams			2.5 Grams			0.295 Grams		
Minimum Breakdown Voltage (60 cy. R.M.S.)		250 V.			500 V.			250 V.		
Minimum Insulation Resistance (Megohms)		500 K.			500 K.			100 K.		
Initial Contact Resistance (Milliohms Max.)		150			50			150		
Maximum Operate Time (Milliseconds)		Pull-In (Including Bounce)		Release	Pull-In (Including Bounce)		Release	Pull-In (Including Bounce)		Rel
		1.0		0.5	2.0		0.5	1.0		.0
Ampere-Turns To Operate		Pull-In			Pull-In			Pull-In		
		Nominal	Minimum	Drop Out	Nominal	Minimum	Drop Out	Nominal	Minimum	Drop O
		50 ±15	20	50% of P.U.	100 ±15	60	30% of P.U.	50 ±15	35	70% of
Nominal Coil Power		0.335 Watts			0.360 Watts			0.335 Watts		
Vibration		15G — 2000 C.P.S.			20G — 750 C.P.S.			15G — 2000 C.P.S.		
Shock (JAN S-44)		50G (Min.)			40G (Min.)			50G (Min.)		
Ambient Temperature Range		−55° to +85°C			−55° to +85°C			−55° to +85°C		
Standard Test Coil Specifications See Page 18	Wire Size	#44			#36			#44		
	Number Turns	10,000			10,000			10,000		
	Tube I.D.	0.150″			0.210″			0.150″		
	Tube O.D.	0.200″			0.375″			0.200″		
	Tube Length	0.75″			1.75″			0.75″		

TYPE BRMR MINIATURE

FIGURE 1 FIGURE 2

SIZE Fig. 1 - 1¾″ x 5/16″ x 35/64″
SIZE Fig. 2 - 1¾″ x 47/64″ x 35/64″
PLUS LEADS

See BRM-902 For Contact Rating

•

Operate Time 1 M.S. Including Bounce

•

Release Time 0.5 M.S. Max.

•

Magnetically Shielded

Coil Power	Nominal Voltage	Max. Pick-up Voltage	Minimum Drop-out Voltage	Max. Pick-up Current	Resistance in Ohms ±10%	Catalo Numbe
SINGLE POLE NORMALLY OPEN — Figure 1						
1.0 Watts Max. @ 25°C	6 V.	3.25 V.	0.8 V.	27.0 MA.	105	BRMR1-S
	12 V.	6.5 V.	1.0 V.	15.5 MA.	420	BRMR1-S
	28 V.	15.2 V.	2.5 V.	6.5 MA.	2350	BRMR1-S
TWO POLE NORMALLY OPEN — Figure 2						
1.5 Watts Max. @ 25°C	6 V.	3.25 V.	0.8 V.	46.5 MA.	70	BRMR2-S
	12 V.	6.5 V.	1.0 V.	25.2 MA.	280	BRMR2-S
	28 V.	15.2 V.	2.5 V.	9.8 MA.	1540	BRMR2-S

TYPE TRMR MINIATURE

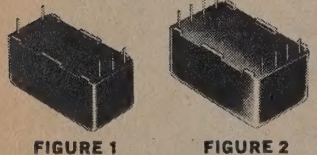


FIGURE 1 FIGURE 2

SIZE Fig. 1 - 1¾″ x 5/16″ x 35/64″
SIZE Fig. 2 - 1¾″ x 47/64″ x 35/64″
PLUS LEADS

See TRM-901 For Contact Rating

•

Operate Time 1 M.S. Including Bounce

•

Release Time 0.5 M.S. Max.

•

Shielded

Coil Power	Nominal Voltage	Max. Pick-up Voltage	Minimum Drop-out Voltage	Max. Pick-up Current	Resistance in Ohms ±10%	Catalo Numbe
TRUE FORM — SINGLE POLE DOUBLE THROW — Figur						
1.0 Watts Max. @ 25°C	6 V.	4 V.	1.5 V.	42 MA.	105	TRMR1-S
	12 V.	8 V.	3 V.	21 MA.	420	TRMR1-S
	28 V.	19 V.	6 V.	8 MA.	2350	TRMR1-S
TRUE FORM — TWO POLE DOUBLE THROW — Figure						
1.5 Watts Max. @ 25°C	6 V.	4 V.	1.5 V.	64 MA.	70	TRMR2-S
	12 V.	8 V.	3 V.	32 MA.	280	TRMR2-S
	28 V.	19 V.	6 V.	12 MA.	1540	TRMR2-S

TYPE BRSR STANDARD

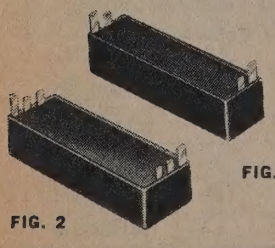


FIG. 1

FIG. 2

SIZE Fig. 1 - 2.55″ x .675″ x .625″
SIZE Fig. 2 - 2.55″ x .925″ x .625″

See BRS-901 For Contact Rating

•

Operate Time 2 M.S. Including Bounce

•

Release Time 0.5 M.S. Max.

•

Shielded

Coil Power	Nominal Voltage	Max. Pick-up Voltage	Minimum Drop-out Voltage	Max. Pick-up Current	Resistance in Ohms ±10%	Catalo Numbe
SINGLE POLE NORMALLY OPEN						
3.0 Watts Max. @ 25°C	6 V.	4.5 V.	0.55 V.	43.0 MA.	115	BRSR1-S
	12 V.	9.0 V.	1.10 V.	22.5 MA.	445	BRSR1-S
	28 V.	18.0 V.	2.50 V.	7.8 MA.	2550	BRSR1-S
TWO POLE NORMALLY OPEN						
3.2 Watts Max. @ 25°C	6 V.	4.5 V.	0.51 V.	86.5 MA.	58	BRSR2-S
	12 V.	9.0 V.	1.00 V.	45.0 MA.	220	BRSR2-S
	28 V.	18.0 V.	2.10 V.	13.3 MA.	1500	BRSR2-S

DESIGN DATA PAGE 5 — MOUNTING DIMENSIONS PAGE 17 — PRICES PAGES 1, 2, 3, 4

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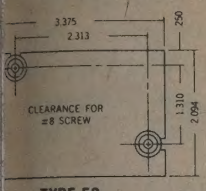
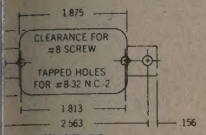
NSIONS ARE APPROX. CONSULT FACTORY FOR EXACT DIMENSIONS.

*ASTERISK DENOTES BOTTOM VIEW—ALL OTHERS TOP VIEW



TYPE 59



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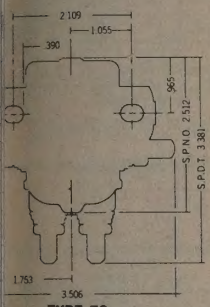

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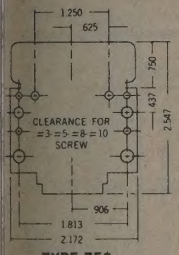

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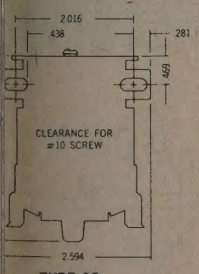
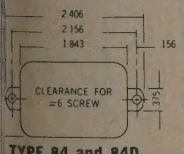
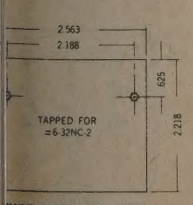


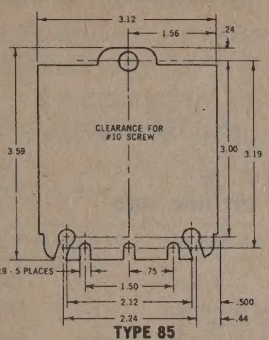
TYPE 80



TYPE 84 and 84D



TYPE 84T and 84TE



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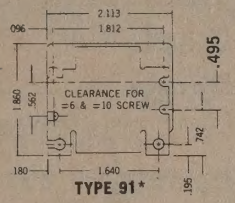

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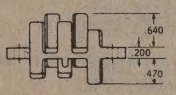
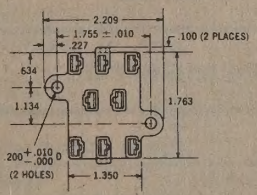
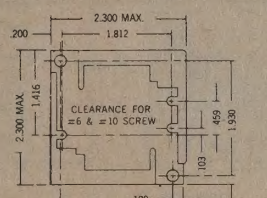
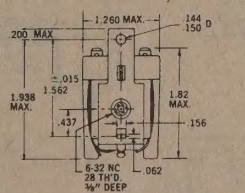




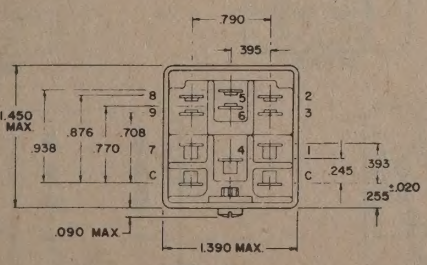
TYPE 91 SOCKET



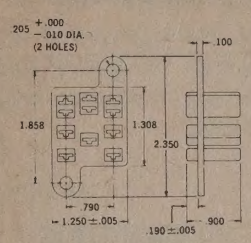
TYPE 92* and 92D*



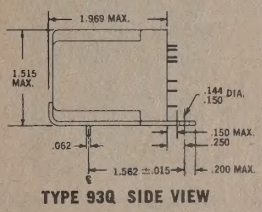
TYPE 93*
SOLDER TERMINAL



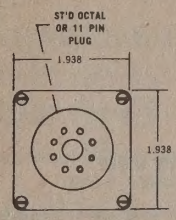
TYPE 93
PRINTED CIRCUIT



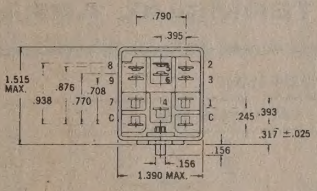
TYPE 93Q SOCKET



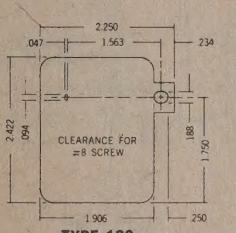
TYPE 93Q SIDE VIEW



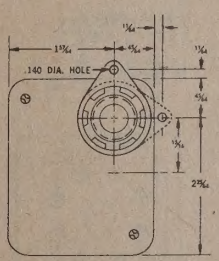
TYPE 93P



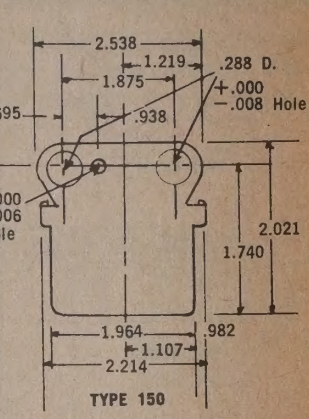
TYPE 93Q*



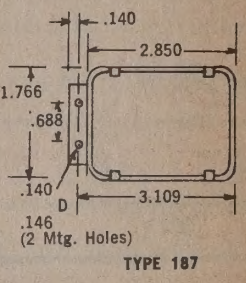
TYPE 129



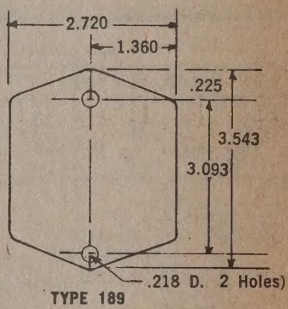
TYPE 129AR



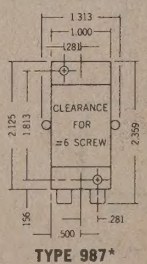
TYPE 150



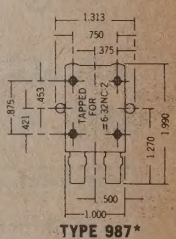
TYPE 187



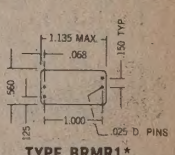
TYPE 189



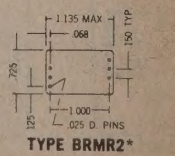
TYPE 987*
FRONT



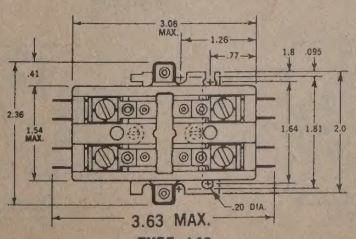
TYPE 987*
REAR



TYPE BRMR1*



TYPE BRMR2*



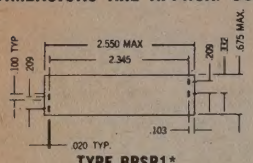
TYPE 143

Continued on page 18

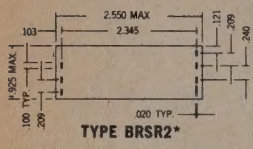
MOUNTING DIMENSIONS

DIMENSIONS ARE APPROX. CONSULT FACTORY FOR EXACT DIMENSIONS

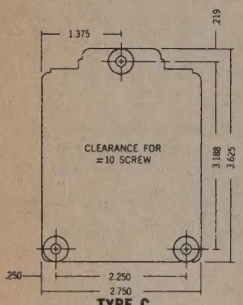
*** ASTERISK DENOTES BOTTOM VIEW — ALL OTHERS TOP V**



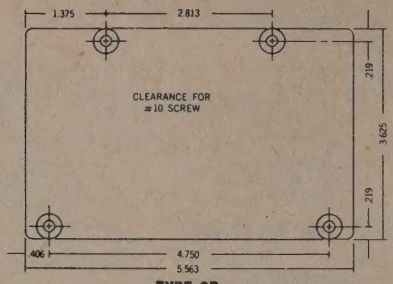
TYPE BRSR1*



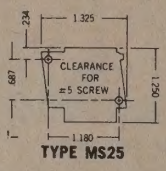
TYPE BRSR2*



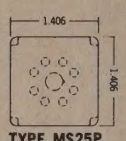
TYPE C



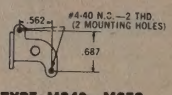
TYPE CR



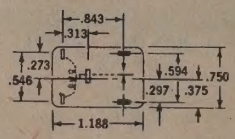
TYPE MS25



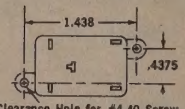
TYPE MS25P
TYPE MS50P (2 Pole)



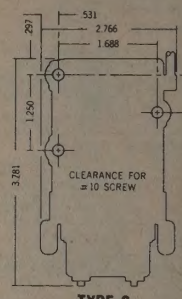
TYPE MS40 - MS50



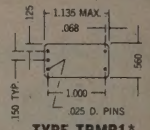
TYPE MS84
P.C. MTG.



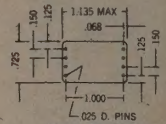
TYPE MS84
BRACKET MTG.



TYPE S



TYPE TRMR1*



TYPE TRMR2*

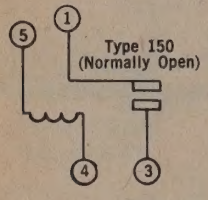
TERMINAL ARRANGEMENTS

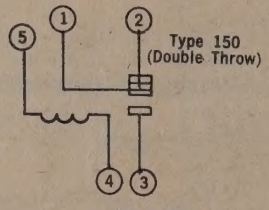
TYPE 91 CONTACT TERMINAL ARRANGEMENT

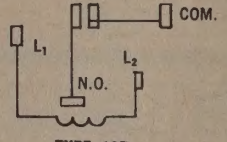
Mounting Hole Side			Coil Terminal Side		
1	2	3	4	5	6
COMMON	N.C.	N.O.	COMMON	N.C.	N.O.

TYPE 92 CONTACT TERMINAL ARRANGEMENT

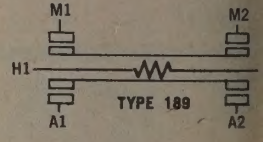
Cricuit-X			Circuit-Y			Circuit-Z		
C1	NC2	NO3	C4	NC5	NO6	C7	NC8	NO9



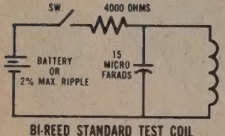




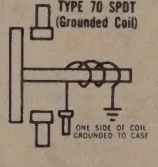
TYPE 187



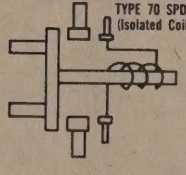
TYPE 189



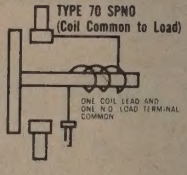
BI-REED STANDARD TEST COIL



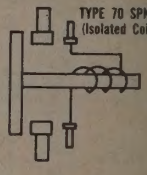
TYPE 70 SPDT
(Grounded Coil)



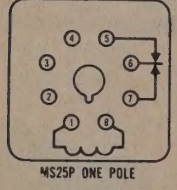
TYPE 70 SPDT
(Isolated Coil)



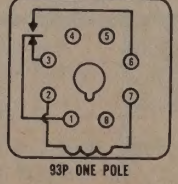
TYPE 70 SPNO
(Coil Common to Load)



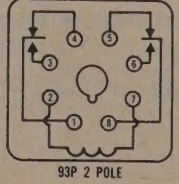
TYPE 70 SPNO
(Isolated Coil)



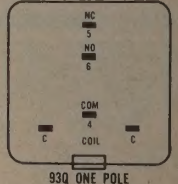
MS25P ONE POLE



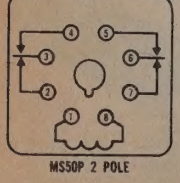
93P ONE POLE



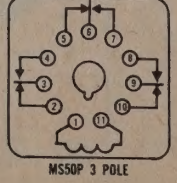
93P 2 POLE



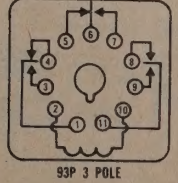
93Q ONE POLE



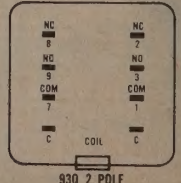
MS50P 2 POLE



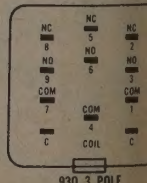
MS50P 3 POLE



93P 3 POLE



93Q 2 POLE



93Q 3 POLE

ALL ENCLOSED RELAYS HAVE CIRCUIT DIAGRAMS STAMPED ON UNIT

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ien requiring U.L. and/or C.S.A. approval, refer to the file number which will save you time and money. proval is simplified when product includes components having prior approvals. Regulations then require it a component be checked only for the application within its approved ratings. If a component does have prior approval — the component must undergo complete testing to determine if it meets U.L. uirements. This entails added expense and time.

e following A.C. Controls have U.L. and C.S.A. recognition.

RBM Type	*U.L. Recognition File #	*C.S.A. Recognition File #
59	E34447	None
75	E12139	LR13360
80	E12139	LR13360
84	E12139 or E22381	LR13360
85	E12139	LR13360
91	E12139	LR13360

RBM Type	*U.L. Recognition File #	*C.S.A. Recognition File #
92	E12139	LR13360
93	E12139	LR13360-31
129, 129AR	E12139	LR13360
S30, S40	E12139	LR13360
189	SA-1984	

.. and C.S.A. listing covers RBM production part number stamped on relay. Production part number (not standard catalog part number) should ubmitted with file number. RBM will supply report date when required.

CONSULT FACTORY FOR POSSIBLE U.L. AND C.S.A. RECOGNITION FOR OTHER THAN ABOVE.

OBSOLETE LISTING

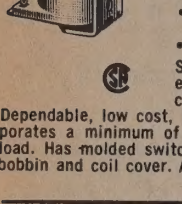
e following standard catalog controls are obsolete as of 3/1/69. Units will be available until 2/28/70 m Chicago warehouse subject to prior sale or discontinuance from RBM production.

talog Number	Production Part Number
9-904	59-24
9-905	59-23
9-906	59-19
BRMR1-903	97-701360-138
BRMR1-901	97-701360-151
BRMR1-902	97-701360-152
BRSR1-903	99-801170-185
BRSR1-902	99-801170-186
BRSR1-901	99-801170-187
BRSR1-907	99-803971-266
BRSR1-908	99-803971-267

Catalog Number	Production Part Number
OBRSR1-909	99-803971-268
OBRSR2-903	99-804170-195
OBRSR2-902	99-804170-196
OBRSR2-901	99-804170-197
OBRSR3-903	99-807170-205
OBRSR3-902	99-807170-206
OBRSR3-901	99-807170-207
142TE-901	142-133023-40024
142TE-911	142-133026-40025
142TE-921	142-133027-40026
142TE-903	142-134023-40021

Catalog Number	Production Part Number
142TE-913	142-134026-40022
142TE-923	142-134027-40023
142TE-902	142-163023-40027
142TE-912	142-163026-40028
142TE-922	142-163027-40029
143-912	143-321120-14400A
143-913	143-321220-14400A
143-911	143-321520-14400A
129TD-901	129990-1260
129TD-902	129990-1270

GUARDIAN® ELECTRI



SERIES 900 & 910 10 AMP RELAY

- *U/L Recognized Component
- Designed with reduced number of parts for long, trouble-free service
- Has keyed and locked lifters

Series 910 is exactly the same as the 900 relay, both electrically and mechanically, but with 3/16 quick disconnects instead of soldered termination.

Dependable, low cost, DPDT relay featuring new, trouble-free design that incorporates a minimum of parts. Contacts all rated 10 amps, 115V., AC resistive load. Has molded switches, one-piece mounting clip and return spring; molded bobbin and coil cover. Average shpg. wt., 6 oz.

SIZE: 2 11/16" x 1 11/16" x 1 25/32" — **QUANTITIES**

Guardian No.	Coil Res.	Coil Voltage	Net Each, Lots of 1-9	10-24	25-49
900-2C-24A	24	24 AC	$1.90	$1.80	$1.65
900-2C-115A	550	115 AC	1.90	1.80	1.65
900-2C-230A	2950	230 AC	1.90	1.80	1.65
905-2C-6D	8	6 DC	1.90	1.80	1.65
905-2C-12D	32	12 DC	1.90	1.80	1.65
905-2C-24D	130	24 DC	1.90	1.80	1.65

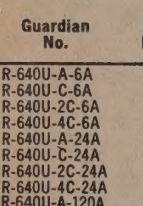
*U/L Recognition File #E-23524B

QUANTITIES

Guardian No.	Coil Res.	Coil Voltage	Net Each, Lots of 1-9	10-24	25-49
910-2C-24A	24	24 AC	$1.90	$1.80	$1.65
910-2C-115A	550	115 AC	1.90	1.80	1.65
910-2C-230A	2950	230 AC	1.90	1.80	1.65
915-2C-6D	8	6 DC	1.90	1.80	1.65
915-2C-12D	32	12 DC	1.90	1.80	1.65
915-2C-24D	130	24 DC	1.90	1.80	1.65

*U/L Recognized Component File #E-23524B

Further savings are available when Series 900 relays are purchased in bulk packs of 50 units. Relays are supplied nested in new convenient "form fitted assembly line trays . . . one package of 50—$76.50 ea.; 2 and up—$67.00 ea.



ALL PURPOSE ECONOMY RELAY

IR-640U AC—IR-645U DC—10 AMPERE

A compact, lightweight relay capable of unusually heavy power control for its size. Long life, high quality relay available in a variety of AC and DC voltages with a selection of contact combinations. All contact ratings are 10 amps. Contact ratings at 60 cycles, 115V. non-inductive load. 8-32 single screw, center pole mounting. Shpg. wt., 3.5 oz.

*U/L Recognized Component File #E-17260

SIZE: 1 11/16" x 1 1/2" x 1" — **QUANTITIES**

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	1-24	Net Each, Lots of 25-49	50-99	100-249	250-up
IR-640U-A-6A	1.7	6AC	SPST*	$2.90	$2.61	$2.47	$2.32	$2.03
IR-640U-C-6A	1.7	6AC	SPDT	3.15	2.84	2.68	2.52	2.21
IR-640U-2C-6A	1.7	6AC	DPDT	3.40	3.06	2.89	2.72	2.38
IR-640U-4C-6A	1.7	6AC	4PDT	5.00	4.50	4.25	4.00	3.50
IR-640U-A-24A	24	24AC	SPST*	2.90	2.61	2.47	2.32	2.03
IR-640U-C-24A	24	24AC	SPDT	3.15	2.84	2.68	2.52	2.21
IR-640U-2C-24A	24	24AC	DPDT	3.40	3.06	2.89	2.72	2.38
IR-640U-4C-24A	24	24AC	4PDT	5.00	4.50	4.25	4.00	3.50
IR-640U-A-120A	550	120AC	SPST*	2.90	2.61	2.47	2.32	2.03
IR-640U-C-120A	550	120AC	SPDT	3.15	2.84	2.68	2.52	2.77
IR-640U-2C-120A	550	120AC	DPDT	3.40	3.06	2.89	2.72	2.38
IR-640U-4C-120A	550	120AC	4PDT	5.00	4.50	4.25	4.00	3.50
IR-640U-2C-240A	2950	240AC	DPDT	4.20	3.78	3.57	3.36	2.94
IR-645U-A-6D	12	6DC	SPST*	2.90	2.61	2.47	2.32	2.03
IR-645U-C-6D	12	6DC	SPDT	3.15	2.84	2.68	2.52	2.21
IR-645U-2C-6D	12	6DC	DPDT	3.40	3.06	2.89	2.72	2.38
IR-645U-4C-6D	12	6DC	4PDT	5.00	4.50	4.25	4.00	3.50
IR-645U-A-12D	50	12DC	SPST*	2.90	2.61	2.47	2.32	2.03
IR-645U-C-12D	50	12DC	SPDT	3.15	2.84	2.68	2.52	2.21
IR-645U-2C-12D	50	12DC	DPDT	3.40	3.06	2.89	2.72	2.38
IR-645U-4C-12D	50	12DC	4PDT	5.00	4.50	4.25	4.00	3.50
IR-645U-A-24D	200	24DC	SPST*	2.90	2.61	2.47	2.32	2.03
IR-645U-C-24D	200	24DC	SPDT	3.15	2.84	2.68	2.52	2.21
IR-645U-2C-24D	200	24DC	DPDT	3.40	3.06	2.89	2.72	2.38
IR-645U-4C-24D	200	24DC	4PDT	5.00	4.50	4.25	4.00	3.50
IR-645U-A-110D	4000	110DC	SPST*	3.40	3.06	2.89	2.72	2.38
IR-645U-C-110D	4000	110DC	SPDT	3.70	3.33	3.15	2.96	2.59
IR-645U-2C-110D	4000	110DC	DPDT	3.95	3.56	3.36	3.16	2.77
IR-645U-4C-110D	4000	110DC	4PDT	5.25	4.73	4.46	4.20	3.68

*Normally Open.

SERIES 240U AC—245U DC

Designed for contact ratings up to 15 amps, G series 240 AC and 245 DC relays are compact, r inexpensive. Factory pretested and adjusted to be for assembly into your product. Contact rating is 15 amp, 115V., 60 cycl inductive load. Easy assembly with 8-32 single-screw, center-hole mo Shpg. wt., 4.5 oz.

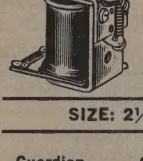
*U/L Recognized Component File #E-23524A

SIZE: (4PDT) 2 23/32" x 1 3/32" x 2 1/4" — **QUANTITIES**

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	1-24	Net Each, Lots of 25-49	50-99	100-249	25
240U-A-6A	1.7	6AC	SPST*	$3.15	$2.84	$2.68	$2.52	$
240U-2C-6A	1.7	6AC	DPDT	3.95	3.56	3.36	3.16	
240U-4C-6A	1.7	6AC	4PDT	5.80	5.22	4.93	4.64	
240U-A-24A	24	24AC	SPST*	3.15	2.84	2.68	2.52	
240U-2C-24A	24	24AC	DPDT	3.95	3.56	3.36	3.16	
240U-4C-24A	24	24AC	4PDT	5.80	5.22	4.93	4.64	
240U-A-120A	550	120AC	SPST*	3.15	2.84	2.68	2.52	
240U-2C-120A	550	120AC	DPDT	3.95	3.56	3.36	3.16	
240U-4C-120A	550	120AC	4PDT	5.80	5.22	4.93	4.64	
245U-A-6D	12	6DC	SPST*	3.15	2.84	2.68	2.52	
245U-2C-6D	12	6DC	DPDT	3.95	3.56	3.36	3.16	
245U-4C-6D	12	6DC	4PDT	5.80	5.22	4.93	4.64	
245U-A-12D	50	12DC	SPST*	3.15	2.84	2.68	2.52	
245U-2C-12D	50	12DC	DPDT	3.95	3.56	3.36	3.16	
245U-4C-12D	50	12DC	4PDT	5.80	5.22	4.93	4.64	
245U-A-24D	200	24DC	SPST*	3.15	2.84	2.68	2.52	
245U-2C-24D	200	24DC	DPDT	3.95	3.56	3.36	3.16	
245U-4C-24D	200	24DC	4PDT	5.80	5.22	4.93	4.64	

*Normally Open.

PLATE CIRCUIT DC RELAY IR-625—10 AMPE

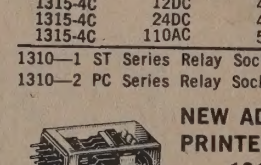


Has extra long coil for greater sensitivity. Adaptable voltage operation as well as sensitive plate circuit con installations. Coil impregnated for reliability and lor life. Average power requirement, 0.2 watt. Contacts, silver. Contact ratings, 10 amps. Mounting: One (NC-2) center hole. Shpg. wt., 5.5 oz.

SIZE: 2 1/8" x 2" x 1 1/2" — **QUANTITIES**

Guardian No.	Oper. Mils.	Coil Res.	Cont. Comb.	1-24	Net Each, Lots of 25-49	50-99	100-249	250
IR-625-2.5	9 M.A.	2,500	DPDT	$4.45	$4.01	$3.78	$3.56	$3.
IR-625-5	6.3 M.A.	5,000	DPDT	4.75	4.28	4.04	3.80	3.
IR-625-10	4.5 M.A.	10,000	DPDT	5.80	5.22	4.93	4.64	4.

LONG LIFE 4 PDT, 5 AMP-MINIATURE RELAY 1310 AC, 1315



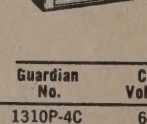
4DPT . . . 5 AMP Plug-In Relay available or DC. Contacts rated 5 amps at 30VDC 115VAC resistive. Heat resistant; Lexan co Life in excess of 100 million operations. size: 1 17/64" x 55/64" x 1 7/64". Weight: 1 1/8 oz

*U/L and CSA Recognized File #E-23524

Guardian No.	Coil Voltage	1-24	25-49	Net Each, Lots of 50-99	100-249	250-499	500
1310-4C	6AC	$5.50	$4.95	$4.67	$4.40	$3.85	$3.5
1310-4C	12AC	5.50	4.95	4.67	4.40	3.85	3.5
1310-4C	24AC	5.50	4.95	4.67	4.40	3.85	3.5
1310-4C	120AC	5.85	5.26	4.97	4.68	4.09	3.8
1315-4C	6DC	$4.50	$4.05	$3.82	$3.60	$3.15	$2.9
1315-4C	12DC	4.50	4.05	3.82	3.60	3.15	2.9
1315-4C	24DC	4.50	4.05	3.82	3.60	3.15	2.9
1315-4C	110AC	5.25	4.72	4.46	4.20	3.67	3.4

1310—1 ST Series Relay Socket (SOLDER TERMINALS)..... .60¢

1310—2 PC Series Relay Socket (PRINTED CIRCUIT)..... .60¢



NEW ADDITION TO MINIATURE RELAY—PRINTED CIRCUIT TERMINATION

1310P AC AND 1315P DC

4DPT . . . 5 Amp Plug-in Relay available AC or DC. Co tacts rated 5 amps at 30VDC or 115VAC resistive. He resistant; Lexan cover; Life in excess of 100 milli operations. A/C size: 1 17/64" x 55/64" x 1 7/64". Weigh 1 1/8 oz.

Guardian No.	Coil Voltage	1-24	25-49	Net Each, Lots of 50-99	100-249	250-499	500 u
1310P-4C	6AC	$5.50	$4.95	$4.67	$4.40	$3.85	$3.5
1310P-4C	12AC	5.50	4.95	4.67	4.40	3.85	3.5
1310P-4C	24AC	5.50	4.95	4.67	4.40	3.85	3.5
1310P-4C	120AC	5.85	5.26	4.97	4.68	4.09	3.8
1315P-4C	6DC	$4.50	$4.05	$3.82	$3.60	$3.15	$2.9
1315P-4C	12DC	4.50	4.05	3.82	3.60	3.15	2.9
1315P-4C	24DC	4.50	4.05	3.82	3.60	3.15	2.9
1315P-4C	120DC	5.25	4.72	4.46	4.20	3.67	3.4

Net

© United Technical Publica

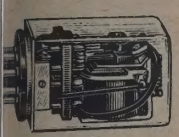
SMALL SIZE—EFFICIENT MEDIUM POWER AC-DC RELAY—1200 AC—1205 DC—10 AMPERE

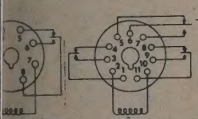
Small-sized, highly efficient relay applicable to automation, communications, remote control, switching devices and experimental uses. Heavy solder lug type terminals molded in phenolic block, with barriers for over-surface insulation. s rated 10 amps at 60 cycles, 115V., AC, non-inductive load. Mounting: nounting hole, 6-32 TAP. Shpg. wt., 2.5 oz.

ecognized Component File #E-17260A

SIZE: 1⅝" x 1" x 1¼"				QUANTITIES					
ian	Coil Res.	Coil Voltage	Cont. Comb.	1-24	25-49	Net Each, Lots of 50-99	100-249	250-499	500-up
-6A	8	6AC	DPDT	$3.75	$3.38	$3.19	$3.00	$2.63	$2.44
-6A	4	6AC	3PDT	4.25	3.83	3.61	3.40	2.98	2.76
-24A	59	24AC	DPDT	3.75	3.38	3.19	3.00	2.63	2.44
-24A	50	24AC	3PDT	4.25	3.83	3.61	3.40	2.98	2.76
-120A	1,190	120AC	DPDT	3.75	3.38	3.19	3.00	2.63	2.44
-120A	1,000	120AC	3PDT	4.25	3.83	3.61	3.40	2.98	2.76
-240A	5,340	240AC	DPDT	4.00	3.60	3.40	3.20	2.80	2.60
-240A	4,750	240AC	3PDT	4.50	4.05	3.83	3.60	3.15	2.93
-6D	18	6AC	DPDT	3.40	3.06	2.89	2.72	2.38	2.21
-6D	18	6DC	3PDT	3.85	3.47	3.27	3.08	2.70	2.50
-12D	75	12DC	DPDT	3.40	3.06	2.89	2.72	2.38	2.50
-12D	75	12DC	3PDT	3.85	3.47	3.27	3.08	2.70	2.50
-24D	300	24DC	DPDT	3.40	3.06	2.89	2.72	2.38	2.21
-24D	300	24DC	3PDT	3.85	3.47	3.27	3.08	2.70	2.50
-110D	6,500	110DC	DPDT	3.75	3.38	3.19	3.00	2.63	2.44
-110D	6,500	110DC	3PDT	4.25	3.83	3.61	3.40	2.98	2.76

ENCLOSED PLUG-IN RELAY 1210 AC—1215 DC—10 AMPERE





A powerful and economical relay enclosed in a transparent, lightweight Lexan case which has high impact strength; unaffected by weather, and is resistant to temperatures of 200°F. Relay available with 8 pin octal plug for DPDT and 11 pin for 3PDT. Contacts rated for 10 amps at 60 cycles, 115V., AC, non-inductive load.

r DPDT 11 pin for 3PDT Shpg. wt., 3.5 oz.

ecognized Component File #E-17260A (5 amp only)

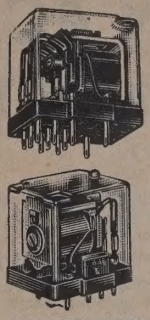
SIZE: 2²³⁄₃₂" x 1⅜" x 1⅜"				QUANTITIES					
rdian o.	Coil Voltage	Coil Res.	Cont. Comb.	1-24	25-49	Net Each, Lots of 50-99	100-249	250-499	500-up
C-6A	6AC	33	DPDT	$6.00	$5.40	$5.10	$4.80	$4.20	$3.90
C-6A	6AC	33	3PDT	7.50	6.75	6.38	6.00	5.25	4.88
C-24A	24AC	54	DPDT	6.00	5.40	5.10	4.80	4.20	3.90
C-24A	24AC	54	3PDT	7.50	6.75	6.38	6.00	5.25	4.88
C-120A	120AC	1,100	DPDT	6.00	5.40	5.10	4.80	4.20	3.90
C-120A	120AC	1,100	3PDT	7.50	6.75	6.38	6.00	5.25	4.88
C-240A	240AC	5,000	DPDT	6.25	5.63	5.31	5.00	4.38	4.06
C-240A	240AC	5,000	3PDT	7.75	6.98	6.59	6.20	5.43	5.04
C-6D	6DC	18	DPDT	6.00	5.40	5.10	4.80	4.20	3.90
C-6D	6DC	18	3PDT	7.50	6.75	6.38	6.00	5.25	4.88
C-12D	12DC	75	DPDT	6.00	5.40	5.10	4.80	4.20	3.90
C-12D	12DC	75	3PDT	7.50	6.75	6.38	6.00	5.25	4.88
C-24D	24DC	300	DPDT	6.00	5.40	5.10	4.80	4.20	3.90
C-24D	24DC	300	3PDT	7.50	6.75	6.38	6.00	5.25	4.88
C-110D	110DC	6,500	DPDT	6.50	5.85	5.53	5.20	4.55	4.23
C-110D	110DC	6,500	3PDT	8.00	7.20	6.80	6.40	5.60	5.20

ENCLOSED PLATE CIRCUIT PLUG-IN RELAY

SIZE: 2²³⁄₃₂" x 1⅜" x 1⅜"				QUANTITIES					
ardian No.	Coil Mills	Coil Res.	Cont. Comb.	1-24	25-49	Net Each, Lots of 50-99	100-249	250-499	500-up
-2C-2.5	10 MA	2,500	DPDT	$6.20	$5.58	$5.27	$4.96	$4.43	$4.03
-3C-2.5	12 MA	2,500	3PDT	7.25	6.53	6.16	5.80	5.08	4.71
-3C-5	7.2 MA	5,000	DPDT	6.30	5.67	5.36	5.04	4.41	4.10
-3C-5	8.5 MA	5,000	3PDT	7.50	6.75	6.38	6.00	5.25	4.88
-2C-10	5 MA	10,000	DPDT	6.50	5.85	5.53	5.20	4.55	4.23
-3C-10	5 MA	10,000	3PDT	7.75	6.98	6.59	6.20	5.43	5.04

SERIES 1220 AC — 1225 DC RELAY

VERSATILE ENCLOSED RELAYS • PLUG-IN • SOLDER TO OR QUICK CONNECT TERMINALS 1220AC — 1225DC — 10 AMP 1220/1220AC — 1225/1225DC LATCHING — 1220M-AC — 1225M-DC MANUAL RESET



Newly designed relay is reduced in height and cost by the elimination of the radio-type plug, extra wiring and sub-assembly between relay and plug. Features "UNI-GUARD," continuous loop moving blades; snap lock cover; and terminals that can be used as solder lug, AMP Faston 110 Series quick connect or socket plug-in. The 1220 Relay comes complete with mounting bracket. 1220/1220 is an electrical reset relay. 1220M is a manual reset relay with same concept design as the standard 1220 series.

* U/L Recognized Component File #E-23524

SIZE: 1³²⁄₃₂" x 1¹¹⁄₁₆" x 1³⁄₁₆"				QUANTITIES					
Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	1-24	25-49	Net Each, Lots of 50-99	100-249	250-499	500-up
IR-1220-2C-6A	6AC	3.3	DPDT	$4.00	$3.60	$3.40	$3.20	$2.80	$2.60
IR-1220-2C-24A	24AC	54	DPDT	4.00	3.60	3.40	3.20	2.80	2.60
IR-1220-2C-120A	120AC	1,100	DPDT	4.00	3.60	3.40	3.20	2.80	2.60
IR-1220-2C-240A	240AC	5,000	DPDT	4.25	3.83	3.61	3.40	2.98	2.76
IR-1220-3C-6A	6AC	3.3	3PDT	4.50	4.05	3.83	3.60	3.15	2.93
IR-1220-3C-24A	24AC	54	3PDT	4.50	4.05	3.83	3.60	3.15	2.93
IR-1220-3C-120A	120AC	1,100	3PDT	4.50	4.05	3.83	3.60	3.15	2.93
IR-1220-3C-240A	240AC	5,000	3PDT	4.75	4.28	4.04	3.80	3.33	3.09
IR-1225-2C-6D	6DC	18	DPDT	4.00	3.60	3.40	3.20	2.80	2.60
IR-1225-2C-12D	12DC	75	DPDT	4.00	3.60	3.40	3.20	2.80	2.60
IR-1225-2C-24D	24DC	300	DPDT	4.00	3.60	3.40	3.20	2.80	2.60
IR-1225-2C-110D	110DC	6,500	DPDT	4.25	3.83	3.61	3.40	2.98	2.76
IR-1225-3C-6D	6DC	18	3PDT	4.50	4.05	3.83	3.60	3.15	2.93
IR-1225-3C-12D	12DC	75	3PDT	4.50	4.05	3.83	3.60	3.15	2.93
IR-1225-3C-24D	24DC	300	3PDT	4.50	4.05	3.83	3.60	3.15	2.93
IR-1225-3C-110D	110DC	6,500	3PDT	4.75	4.28	4.04	3.80	3.33	3.09
IR-1220/1220-2C-24A	24A	54	DPDT						
IR-1220/1220-2C-120A	120A	1100	DPDT	$12.50	$11.25	$10.62	$10.00	$8.75	$6.87
IR-1225/1225-2C-24D	24D	300	DPDT						
1220M-2C-24A	24A	54	DPDT						
1220M-2C-120A	120A	1110	DPDT	$5.50	$4.95	$4.67	$4.40	$3.85	$3.75
1225M-2C-24D	24D	300	DPDT						

SOC-1

IR-1220 — SOCKET

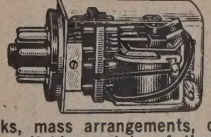
1-9 — Net 60¢ each 10-up — Net 55¢ each

The 1220 snap-in socket has U/L component recognition. Socket terminal lugs can be soldered to or will accept AMP Series 110 quick connects.

SOC-2

ENCLOSED PLUG-IN AC RELAY — 1210-N

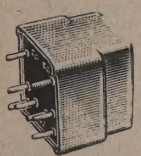
With Built-In Neon Lamp to Indicate Circuit Faults — 10 AMPERE



This plug-in relay utilizes a miniature neon lamp connected across coil terminals. The lamp lights each time the coil is energized, or indicates a circuit fault when lamp is "dark." Ideal for detecting circuit faults in relay banks, mass arrangements, or where relays are visibly located at intermediate switching points of the circuitry. Precludes the use of circuit testers. Available with 8 pin octal plug for DPDT and 11 pin for 3PDT. Contacts rated 10 amps at 115V., AC. 60 cycles, non-inductive load. Shpg. wt., 3.5 oz.

SIZE: 2²³⁄₃₂" x 1⅜" x 1⅜"				QUANTITIES				
Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	1-24	25-49	Net Each, Lots of 50-99	100-249	250-up
1210N-2C-115A	120AC	1,100	DPDT	$6.75	$6.08	$5.74	$5.40	$4.73
1210N-3C-115A	120AC	1,100	3PDT	8.00	7.20	6.80	6.40	5.60

NEW 1350PC AND 1355PC PRINTED CIRCUIT RELAYS 2PDT SWITCHING



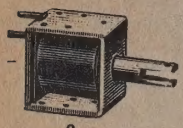
For low power solid state circuitry. All terminals on .1 grid spacing for standard printed circuit board. Solders right on PC board. Conform to UL requirements for Office Appliances and Business Equipment. 1 watt normal power . . . ½ watt on request. 3500 OHMS coil resistance (120 VAC-60 Hz). Mechanical life in excess of 10 million operations. 3 amp resistive 115V 60 Hz contact rating. DPDT switching.

Size: 1¹⁄₁₆" x ³¹⁄₃₂" overall.

Guardian No.	Coil Voltage	Net Each, Lots of 1-24	25-49	50-99	100-249	250-up
IR-1350PC-2C-24A	24AC	$4.20	$3.78	$3.57	$3.36	$2.94
IR-1350PC-2C-120A	120AC	4.55	4.09	3.87	3.64	3.18
IR-1355PC-2C-6D	6DC	$4.20	3.78	3.57	3.36	2.94
IR-1355PC-2C-12D	12DC	4.20	3.78	3.57	3.36	2.94
IR-1355PC-2C-24D	24DC	4.20	3.78	3.57	3.36	2.94

GUARDIAN® ELECTRI

1A1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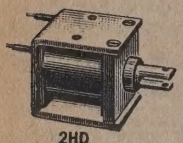
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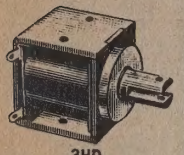
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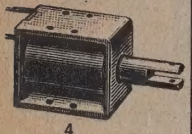
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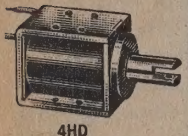
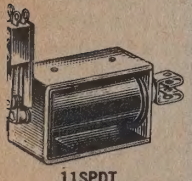

4HD

11HD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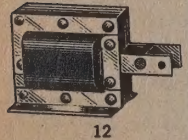
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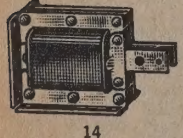
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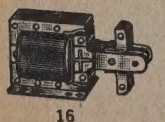
16

GUARDIAN AC SOLENOIDS and SOLENOID SWITCHES

Solenoids available in both intermitttent and continuous duty types. Intermittent types should not be energized for more than 5 co minutes, or be permitted to rise more than 85°C. above 24°C. ambient, without giving sufficient time to cool between operation cyc tinuous duty types are designed so they will not rise more than 85°C. above the 24°C. ambient temperature when operated at ra Plunger has slotted end with ⅛" diameter hole for coupling.

When Ordering give the following information: (1) Solenoid Number; (2) Operating voltages and AC or DC current; (3) Continuous or int duty (if intermittent, give the cycle of operation, length of time current will be passed through the coil, and any other pertinent info (4) Maximum stroke and maximum pull required.

Pull Data listed in this bulletin obtained during "cold" operation.

"S" indicates single pole double throw switch, rated at 10 amps 115 vac.

MFG. NO.	VOLTS DC	DUTY	OHMS	MINIMUM — MAXIMUM STROKES and LIFT		SIZE, INCHES L. x W. x H.	SHIPPING WT. OZS.	NET EACH, LOTS OF 1-24	25-49	50-99	100-249	250-499
1A1	115A	Inter.	300	8 oz. at ⅛"	2 oz. at ½"	1¾ x 1⅜ x 1 1/16	4.5	$3.15	$2.84	$2.68	$2.52	$2.21
1A1	115A	Cont.	675	3 oz. at ⅛"	0.5 oz. at ⅜"	1¾ x 1 1⅜ x 1 1/16	4.5	3.15	2.84	2.68	2.52	2.21
2	115A	Inter.	60	33 oz. at ⅛"	1.5 oz. at ⅞"	1 5/16 x 1 7/16 x 1⅝	10	3.68	3.31	3.13	2.95	2.58
2	115A	Cont.	166	10.5 oz. at ⅛"	3 oz. at ⅞"	1 5/16 x 1 7/16 x 1⅝	10	3.68	3.31	3.13	2.95	2.58
2HD	115A	Inter.	39	38 oz. at ⅛"	16 oz. at ¾"	1 13/16 x 1 7/16 x 1 11/16	13	8.66	7.79	7.36	6.93	6.06
2HD	115A	Cont.	113	17 oz. at ⅛"	4 oz. at ¾"	1 13/16 x 1 7/16 x 1 11/16	13	8.66	7.79	7.36	6.93	6.06
3HD	115AC	Inter.	25	96 oz. at 1/16"	13 oz. at ⅞"	1 25/32 x 1 7/16 x 1⅝	14	6.00	5.40	5.10	4.80	4.50
3HD	115AC	Cont.	100	24 oz. at 1/16"	2 oz. at ⅞"	1 25/32 x 1 7/16 x 1⅝	14	6.00	5.40	5.10	4.80	4.50
4	115A	Inter.	37	24 oz. at ⅛"	22 oz. at 1"	2 x 1 7/16 x 1⅝	14.5	4.20	3.78	3.57	3.36	2.94
4	115A	Cont.	133	8 oz. at ⅛"	6 oz. at 1"	2 x 1 7/16 x 1⅝	14.5	4.20	3.78	3.57	3.36	2.94
4HD	115AC	Inter.	15	107 oz. at 1/16"	30 oz. at 1¼"	2 1/64 x 1 7/16 x 1⅝	15	6.41	5.77	5.45	5.13	4.81
4HD	115AC	Cont.	53	26 oz. at ⅛"	8 oz. at 1¼"	2 1/64 x 1 7/16 x 1⅝	15	6.41	5.77	5.45	5.13	4.81
11	24A	Inter.	5.1	25 oz. at ⅛"	6 oz. at 1"	1 5/16 x 1 27/32 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21
11	24A	Cont.	12	12 oz. at ⅛"	1 oz. at 1"	1 5/16 x 1 27/32 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21
11	115A	Inter.	125	25 oz. at ⅛"	6 oz. at 1"	1 5/16 x 1 27/32 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21
11	115A	Cont.	300	12 oz. at 1/16"	1 oz. at 1"	1 5/16 x 1 27/32 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21
11S-SPDT	115A	Inter.	125	25 oz. at ⅛"	6 oz. at 1"	1¾ x 1 27/32 x 2 15/64	7.5	4.15	3.73	3.53	3.32	2.90
11S-SPDT	115A	Cont.	300	12 oz. at ⅛"	1 oz. at 1"	1¾ x 1 27/32 x 2 15/64	7.5	4.15	3.73	3.53	3.32	2.90
12	115A	Inter.	100	32 oz. at ⅛"	4 oz. at 1"	1⅝ x 1 13/16 x 1 7/16	6	4.46	4.01	3.79	3.57	3.12
12	115A	Cont.	150	22 oz. at ⅛"	3 oz. at ⅞"	1⅝ x 1 13/16 x 1 7/16	6	4.46	4.01	3.79	3.57	3.12
14	115A	Inter.	11	110 oz. at ⅛"	52 oz. at 1½"	2 7/16 x 1 15/16 x 2 1/16	19	6.04	5.44	5.13	4.83	4.23
14	115A	Cont.	18	65 oz. at ⅛"	37 oz. at 1½"	2 7/16 x 1 15/16 x 2 1/16	19	6.04	5.44	5.13	4.83	4.23
16	115A	Inter.	41	90 oz. at ⅛"	30 oz. at ¾"	1⅝ x 1¼ x 1 7/16	7.5	3.68	3.31	3.13	2.94	2.58
16	115A	Cont.	85	50 oz. at ⅛"	10 oz. at ¾"	1⅝ x 1¼ x 1 7/16	7.5	3.68	3.31	3.13	2.94	2.58
16	230A	Inter.	200	90 oz. at ⅛"	30 oz. at ¾"	1⅝ x 1¼ x 1 7/16	7.5	3.94	3.55	3.35	3.15	2.76
16	230A	Cont.	350	50 oz. at ⅛"	10 oz. at ¾"	1⅝ x 1¼ x 1 7/16	7.5	3.94	3.55	3.35	3.15	2.76
18	115A	Inter.	8.8	280 oz. at ⅛"	80 oz. at 1"	2½ x 1 13/16 x 2 1/16	16.5	4.99	4.49	4.24	3.99	3.49
18	115A	Cont.	19.7	145 oz. at ⅛"	40 oz. at 1"	2½ x 1 13/16 x 2 1/16	16.5	4.99	4.49	4.24	3.99	3.49
18	230A	Inter.	45	280 oz. at ⅛"	80 oz. at 1"	2½ x 1 13/16 x 2 1/16	16.5	5.25	4.73	4.46	4.20	3.68
18	230A	Cont.	78	145 oz. at ⅛"	40 oz. at 1"	2½ x 1 13/16 x 2 1/16	16.5	5.25	4.73	4.46	4.20	3.68
24	115A	Inter.	310	16 oz. at 1/16"	3 oz. at ⅝"	1¼ x 27/32 x 1	3	3.41	3.07	2.90	2.73	2.39
24	115A	Cont.	500	10.5 oz. at 1/16"	2 oz. at ⅝"	1¼ x 27/32 x 1	3	3.41	3.07	2.90	2.73	2.39
24S-SPDT	115A	Inter.	310	16 oz. at 1/16"	3 oz. at ⅝"	1 1/16 x 27/32 x 2 3/64	3	4.41	3.97	3.75	3.52	3.09
24S-SPDT	115A	Cont.	500	10.5 oz. at 1/16"	2 oz. at ⅝"	1 1/16 x 27/32 x 2 3/64	3	4.41	3.97	3.75	3.52	3.09
26	115AC	Inter.	140	28 oz. at 1/16"	3 oz. at ⅞"	2 3/32 x ⅞ x 15/16	4	3.60	3.24	3.06	2.88	2.70
26	115AC	Cont.	250	13 oz. at 1/16"	4 oz. at ¾"	2 3/32 x ⅞ x 15/16	4	3.60	3.24	3.06	2.88	2.70
28	24A	Inter.	7.5	35 oz. at 1/16"	5 oz. at ½"	1⅛ x 1 5/16 x 1 3/16	3.5	3.15	2.84	2.68	2.52	2.21
28	24A	Cont.	17.4	20 oz. at 1/16"	2.5 oz. at ½"	1⅛ x 1 5/16 x 1 3/16	3.5	3.15	2.84	2.68	2.52	2.21
28	115A	Inter.	220	35 oz. at 1/16"	5 oz. at ½"	1⅛ x 1 5/16 x 1 3/16	3.5	3.41	3.07	2.90	2.73	2.39
28	115A	Cont.	400	20 oz. at 1/16"	2.5 oz. at ½"	1⅛ x 1 5/16 x 1 3/16	3.5	3.41	3.07	2.90	2.73	2.39
28S-SPDT	115A	Inter.	220	35 oz. at 1/16"	5 oz. at ½"	1 5/16 x 1 5/16 x 2 15/64	3.5	3.94	3.54	3.30	3.15	2.75
28S-SPDT	115A	Cont.	400	20 oz. at 1/16"	2.5 oz. at ½"	1 5/16 x 1 5/16 x 2 15/64	3.5	3.94	3.54	3.30	3.15	2.75
34	115A	Inter.	400	15 oz. at 1/16"	1 oz. at ½"	1⅛ x ¾ x 1 7/64	2.5	2.31	2.08	1.96	1.85	1.62
34	115A	Cont.	865	7 oz. at 1/16"	.5 oz. at ½"	1⅛ x ¾ x 1 7/64	2.5	2.31	2.08	1.96	1.85	1.62
34S-SPDT	115A	Inter.	400	15 oz. at 1/16"	1 oz. at ½"	1 5/16 x ¾ x 2 3/64	2.5	3.31	2.98	2.81	2.65	2.32
34S-SPDT	115A	Cont.	865	7 oz. at 1/16"	5 oz. at ½"	1 5/16 x ¾ x 2 3/64	2.5	3.31	2.98	2.81	2.65	2.32

Net

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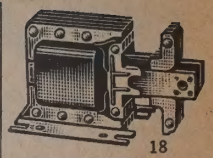
UARDIAN DC SOLENOIDS

NO.	VOLTS DC	DUTY	OHMS	MINIMUM — MAXIMUM STROKES and LIFT		SIZE, INCHES L. x W. x H.	SHIPPING WT. OZS.	NET EACH, LOTS OF 1-24	25-49	50-99	100-249	250-499	500-up
	24D	Inter.	42.6	5 oz. at 1/8"	1 oz. at 3/8"	1 3/4 x 1 5/16 x 1 1/16	4.5	$2.89	$2.60	$2.46	$2.31	$2.02	$1.88
	115D	Cont.	74.4	2 oz. at 1/8"	0.5 oz. at 1/4"	1 3/4 x 1 5/16 x 1 1/16	4.5	2.89	2.60	2.46	2.31	2.02	1.88
	115D	Inter.	803	5 oz. at 1/8"	1 oz. at 3/8"	1 3/4 x 1 5/16 x 1 1/16	4.5	3.41	3.07	2.90	2.73	2.39	2.22
	115D	Cont.	2070	2 oz. at 1/8"	0.5 oz. at 1/4"	1 3/4 x 1 5/16 x 1 1/16	4.5	3.41	3.07	2.90	2.73	2.39	2.22
	24D	Inter.	1.2	100 oz. at 1/8"	5 oz. at 3/4"	1 25/32 x 1 7/16 x 1 11/16	13	8.93	8.04	7.59	7.14	6.25	5.81
	24D	Cont.	.4	50 oz. at 1/8"	1 oz. at 5/8"	1 25/32 x 1 7/16 x 1 11/16	13	8.93	8.04	7.59	7.14	6.25	5.81
	24DC	Inter.	21	160 oz. at 1/16"	8 oz. at 3/4"	2 19/32 x 1 7/16 x 1 5/8	14	6.00	5.40	5.10	4.80	4.50	3.90
	24DC	Cont.	52	100 oz. at 1/16"	3 oz. at 3/4"	2 15/16 x 1 7/16 x 1 5/8	14	6.00	5.40	5.10	4.80	4.50	3.90
	24D	Inter.	15	110 oz. at 1/8"	4 oz. at 1"	2 1/16 x 1 7/16 x 1 5/8	14.5	4.20	3.78	3.57	3.36	2.94	2.73
	24D	Cont.	50	55 oz. at 1/8"	2.5 oz. at 7/8"	2 1/16 x 1 7/16 x 1 5/8	14.5	4.20	3.78	3.57	3.36	2.94	2.73
	115D	Inter.	346	90 oz. at 1/8"	4 oz. at 1"	2 1/16 x 1 7/16 x 1 5/8	14.5	4.46	4.01	3.79	3.57	3.12	2.90
	115D	Cont.	1210	55 oz. at 1/8"	2.5 oz. at 7/8"	2 1/16 x 1 7/16 x 1 5/8	14.5	4.46	4.01	3.79	3.57	3.12	2.90
	24D	Inter.	15	156 oz. at 1/8"	21 oz. at 3/4"	2 1/16 x 1 7/16 x 1 5/8	15	6.41	5.77	5.45	5.13	4.49	4.17
	24D	Cont.	50	70 oz. at 1/8"	1 oz. at 3/4"	2 1/16 x 1 7/16 x 1 5/8	15	6.41	5.77	5.45	5.13	4.49	4.17
	110D	Inter.	330	156 oz. at 1/8"	21 oz. at 3/4"	2 1/16 x 1 7/16 x 1 5/8	15	6.41	5.77	5.45	5.13	4.49	4.17
	110D	Cont.	1200	70 oz. at 1/8"	1 oz. at 3/4"	2 1/16 x 1 7/16 x 1 5/8	15	6.41	5.77	5.45	5.13	4.49	4.17
	6D	Inter.	2	34 oz. at 1/8"	2 oz. at 7/8"	1 7/8 x 1 13/16 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21	2.05
	6D	Cont.	5	25 oz. at 1/8"	1 oz. at 5/8"	1 7/8 x 1 13/16 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21	2.05
	24D	Inter.	32	25 oz. at 1/8"	1 oz. at 3/4"	1 7/8 x 1 13/16 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21	2.05
	24D	Cont.	72	34 oz. at 1/8"	2 oz. at 3/4"	1 7/8 x 1 13/16 x 1 3/16	7.5	3.15	2.84	2.68	2.52	2.21	2.05
PDT	24D	Inter.	32	34 oz. at 1/8"	2 oz. at 3/4"	2 5/16 x 1 13/16 x 2 15/64	7.5	4.15	3.73	3.53	3.32	2.90	2.69
PDT	24D	Cont.	72	25 oz. at 1/8"	2 oz. at 3/4"	2 5/16 x 1 13/16 x 2 15/64	7.5	4.15	3.73	3.53	3.32	2.90	2.69
	6D	Inter.	4.7	24 oz. at 1/16"	1 oz. at 3/8"	1 1/4 x 3/4 x 3/4	2.5	2.94	2.65	2.50	2.35	2.06	1.91
	6D	Cont.	9	13 oz. at 1/16"	0.5 oz. at 1/4"	1 1/4 x 3/4 x 3/4	2.5	2.94	2.65	2.50	2.35	2.06	1.91
	24D	Inter.	60	24 oz. at 1/16"	1 oz. at 5/16"	1 1/4 x 3/4 x 3/4	2.5	2.94	2.65	2.50	2.35	2.06	1.91
	24D	Cont.	144	13 oz. at 1/16"	0.5 oz. at 3/8"	1 1/4 x 3/4 x 3/4	2.5	2.94	2.65	2.50	2.35	2.06	1.91
PDT	24D	Inter.	60	24 oz. at 1/16"	1 oz. at 7/16"	1 5/16 x 3/4 x 2 1/64	2.5	3.94	3.54	3.30	3.15	2.75	2.56
PDT	24D	Cont.	144	13 oz. at 1/16"	0.5 oz. at 3/8"	1 5/16 x 3/4 x 2 1/64	2.5	3.94	3.54	3.30	3.15	2.75	2.56
	24DC	Inter.	52	36 oz. at 1/16"	3 oz. at 1/2"	1 1/4 x 27/32 x 5/64	3	3.41	3.07	2.90	2.73	2.56	2.22
	24DC	Cont.	114	18 oz. at 1/16"	0.5 oz. at 1/2"	1 1/4 x 27/32 x 5/64	3	3.41	3.07	2.90	2.73	2.56	2.22
PDT	24D	Inter.	52	32 oz. at 1/16"	2 oz. at 1/2"	1 11/16 x 27/32 x 2 5/64	3	4.41	3.97	3.75	3.52	3.09	2.87
PDT	4D	Cont.	114	17 oz. at 1/16"	2 oz. at 1/2"	1 11/16 x 27/32 x 2 5/64	3	4.41	3.97	3.75	3.52	3.09	2.87
	24DC	Inter.	33	65 oz. at 1/16"	0.5 oz. at 3/8"	2 3/32 x 7/8 x 1 5/16	3	3.40	3.06	2.89	2.72	2.55	2.21
	24DC	Cont.	85	36 oz. at 1/16"	1.5 oz. at 1/2"	2 3/32 x 7/8 x 1 5/16	3	3.40	3.06	2.89	2.72	2.55	2.21
	6D	Inter.	3.3	35 oz. at 1/16"	2 oz. at 1/2"	1 1/8 x 1 5/16 x 1 3/16	3.5	2.94	2.65	2.50	2.35	2.06	1.91
	6D	Cont.	7.7	24 oz. at 1/16"	1 oz. at 3/8"	1 1/8 x 1 5/16 x 1 3/16	3.5	2.94	2.65	2.50	2.35	2.06	1.91
	12D	Inter.	13	35 oz. at 1/16"	2 oz. at 1/2"	1 1/8 x 1 5/16 x 1 3/16	3.5	2.94	2.65	2.50	2.35	2.06	1.91
	12D	Cont.	27	24 oz. at 1/16"	1 oz. at 3/8"	1 1/8 x 1 5/16 x 1 3/16	3.5	2.94	2.65	2.50	2.35	2.06	1.91
	24D	Inter.	50	35 oz. at 1/16"	2 oz. at 1/2"	1 1/8 x 1 5/16 x 1 3/16	3.5	2.94	2.65	2.50	2.35	2.06	1.91
	24D	Cont.	104	24 oz. at 1/16"	1 oz. at 3/8"	1 1/8 x 1 5/16 x 1 3/16	3.5	2.94	2.65	2.50	2.35	2.06	1.91
PDT	24D	Inter.	50	35 oz. at 1/16"	2 oz. at 1/2"	1 5/16 x 1 5/16 x 2 15/16	3.5	3.94	3.54	3.30	3.15	2.75	2.56
PDT	24D	Cont.	104	24 oz. at 1/16"	1 oz. at 3/8"	1 5/16 x 1 5/16 x 2 15/16	3.5	3.94	3.54	3.30	3.15	2.75	2.56
	6D	Inter.	4.3	17 oz. at 1/16"	1 oz. at 7/16"	1 1/8 x 3/4 x 1 7/64	2.5	2.31	2.08	1.96	1.85	1.62	1.50
	6D	Cont.	9.1	8.5 oz. at 1/16"	0.5 oz. at 1/4"	1 1/8 x 3/4 x 1 7/64	2.5	2.31	2.08	1.96	1.85	1.62	1.50
	24D	Inter.	66	17 oz. at 1/16"	1 oz. at 7/16"	1 1/8 x 3/4 x 1 7/64	2.5	2.31	2.08	1.96	1.85	1.62	1.50
	24D	Cont.	145	8.5 oz. at 1/16"	0.5 oz. at 1/4"	1 1/8 x 3/4 x 1 7/64	2.5	2.31	2.08	1.96	1.85	1.62	1.50
PDT	24D	Inter.	66	17 oz. at 1/16"	1 oz. at 7/16"	1 5/16 x 3/4 x 2 5/64	2.5	3.31	2.98	2.81	2.65	2.32	2.15
PDT	24D	Cont.	145	8.5 oz. at 1/16"	0.5 oz. at 1/4"	1 5/16 x 3/4 x 2 5/64	2.5	3.31	2.98	2.81	2.65	2.32	2.15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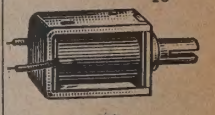
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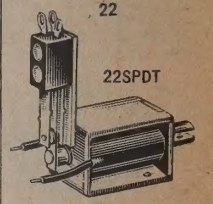
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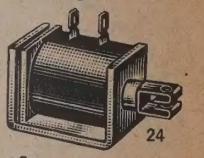
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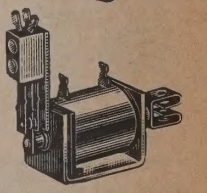

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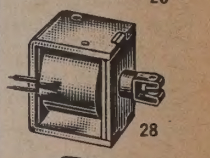
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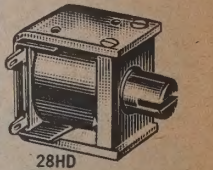
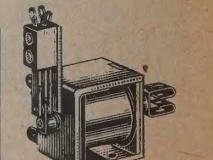

28HD

ARDIAN NEW ULAR ENOIDS - 24VDC

New tubular type solenoids pull type with lift up to 11 lbs. Clean design permits side-by-side mounting with ease. Threaded bushing is inserted through mounting hole and secured with furnished nut. Life at rated load 10,000,000 operations minimum. Tubular solenoids from a 7/16 to a 1 1/2" diameter available in both Intermittent and Continuous Duty 24VDC. Computers, Aircraft and Missiles, Office Equipment and Copy Machines are some of the typical applications.

TYPE	VOLTS	DUTY	STROKE and LIFT MINIMUM	MAXIMUM	SIZE, INCHES L x DIA.	OHMS	WATTS	NET EACH, LOTS OF 1-24	25-49	50-99	100-249	250-499	500-up
x 9	24VDC	Inter.	11 oz. at 1/32"	.5 oz. at 1/2"	1 1/8 x 7/16"	57	10	$3.10	$2.79	$2.64	$2.48	$2.17	$2.01
x 9	24VDC	Cont.	8 oz. at 1/32"	.25 oz. at 5/16"	1 1/8 x 7/16"	195	3	3.20	2.88	2.72	2.57	2.24	2.08
7	24VDC	Inter.	10 oz. at 1/32"	.5 oz. at 1/4"	7/8 x 1/2"	82	7	4.20	3.78	3.57	3.36	2.94	2.73
7	24VDC	Cont.	4 oz. at 1/32"	.25 oz. at 5/32"	7/8 x 1/2"	240	2.4	4.30	3.87	3.65	3.44	3.01	2.80
12	24VDC	Inter.	15 oz. at 1/32"	.5 oz. at 5/8"	1 1/2 x 1/2"	48	12	4.50	4.05	3.83	3.60	3.15	2.92
12	24VDC	Cont.	6 oz. at 1/32"	.25 oz. at 5/16"	1 1/2 x 1/2"	220	2.6	4.60	4.14	3.91	3.68	3.22	3.05
16	24VDC	Inter.	17 oz. at 1/32"	.5 oz. at 13/16"	2 x 1/2"	29	20	4.80	4.32	4.08	3.84	3.36	3.12
16	24VDC	Cont.	10 oz. at 1/32"	.5 oz. at 7/8"	2 x 1/2"	145	4	4.90	4.41	4.16	3.92	3.43	3.18
12	24VDC	Inter.	35 oz. at 1/16"	1 oz. at 5/8"	1 1/2 x 3/4"	48	12	5.00	4.50	4.25	4.00	3.50	3.25
12	24VDC	Cont.	20 oz. at 1/16"	1 oz. at 1/2"	1 1/2 x 3/4"	125	4.8	5.10	4.59	4.33	4.08	3.57	3.31
9	24VDC	Inter.	50 oz. at 1/16"	1 oz. at 5/16"	1 1/8 x 1"	30	19	5.15	4.63	4.38	4.12	3.60	3.35
9	24VDC	Cont.	15 oz. at 1/16"	1 oz. at 3/8"	1 1/8 x 1"	130	4.5	5.20	4.68	4.42	4.16	3.64	3.38
16	24VDC	Inter.	80 oz. at 1/16"	2 oz. at 1 1/4"	2 x 1"	15	38	5.40	4.86	4.59	4.32	3.78	3.51
16	24VDC	Cont.	40 oz. at 1/16"	2 oz. at 1 1/16"	2 x 1"	95	6	5.50	4.95	4.65	4.40	3.85	3.57
x 13	24VDC	Inter.	150 oz. at 1/8"	4 oz. at 7/8"	1 5/8 x 1 1/2"	14	40	6.50	5.85	5.52	5.20	4.55	4.22
x 13	24VDC	Cont.	48 oz. at 1/8"	1 oz. at 3/4"	1 5/8 x 1 1/2"	90	6.6	6.70	6.03	5.69	5.36	4.69	4.35
x 19	24VDC	Inter.	175 oz. at 1/8"	6 oz. at 1 1/2"	2 3/8 x 1 1/2"	9.5	60	7.10	6.39	6.03	5.68	4.97	4.61
x 19	24VDC	Cont.	80 oz. at 1/8"	1 oz. at 1 1/4"	2 3/8 x 1 1/2"	59	10	7.20	6.48	6.12	5.76	5.04	4.68


28SPDT

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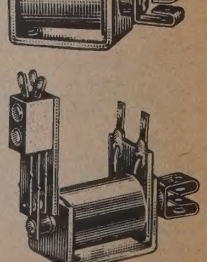
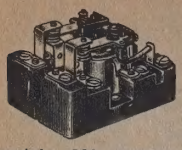

34SPDT

GUARDIAN POWER RELAYS



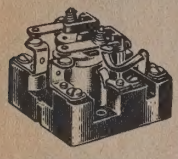
2100U DPDT — **Contacts:** double pole, double throw. **Size:** 3⅜" L. x 2½" W. x ¾" H. **Shipping Weight:** 11 ounces.

Series 2100 and 2110 power relays are rated at 25 amperes, continuous duty at 230 Volts AC, with 75% power factor. Operating power requirement for AC is 9.5 volt amperes, 60 cycles. Coil drain approximately .080 amperes at 115 volts, 60 cycles. Approximate weight of replacement coil assemblies is 6 ounces.

MOUNTING: 2 holes .196" dia. on 1⅞" centers.

*UL/Recognized Component File #E23524

Guardian	Volts	QUANTITIES 1-24	25-49	50-99	100-249	250 UP
2100U-DPDT-6	6AC	$6.75	$6.08	$5.74	$5.40	$4.73
2100U-DPDT-24	24AC	6.75	6.08	5.74	5.40	4.73
2100U-DPDT-120	120AC	6.75	6.08	5.74	5.40	4.73
2100U-DPDT-240	240AC	7.25	6.53	6.16	5.80	5.08

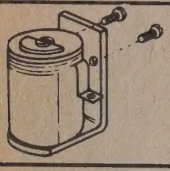


2110U DPSTNO

Contacts: Double pole, single throw, normally open. **Size:** 2¹⁵⁄₁₆" L. x 2½" W. x ¾" H. **Shipping Weight:** 10 ounces.

*UL/Recognized Component File #E23524

Guardian	Volts	1-24	25-49	50-99	100-249	250 UP
2110U-DPST-N.O.-6	6AC	$5.75	$5.18	$4.89	$4.60	$4.03
2110U-DPST-N.O.-24	24AC	5.75	5.18	4.89	4.60	4.03
2110U-DPST-N.O.-120	120AC	5.75	5.18	4.89	4.60	4.03
2110U-DPST-N.O.-240	240AC	6.10	5.49	5.19	4.98	4.37



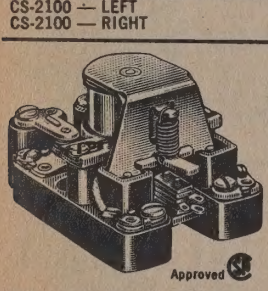
Interchangeable Coil Assemblies (No Solder Connections)... By removing two easy accessible screws, coil assembly can be replaced by coil of another value. Complete instructions for this operation are included with each unit. Solder connections are not required when changing coils.

REPLACEMENT COILS FOR EITHER RELAY

Guardian	Volts	QUANTITIES 1-24	25-49	50-99	100-249	250 UP
2100-6A	6AC	$2.35	$2.12	$2.00	$1.88	$1.65
2100-24A	24AC	2.35	2.12	2.00	1.88	1.65
2100-120A	120AC	2.35	2.12	2.00	1.88	1.65
2100-240A	240AC	2.65	2.39	2.25	2.12	1.86

Power Relay Replacement Contact Switch Parts — Available for Series 2100, only — Replacement Contact Switch Parts for easy right or left SPDT assembly. No solder needed. Package contains one normally open and one normally closed contact bracket, complete moving blade and terminal. Left or Right Switch Assemblies determined by viewing relay from armature hinge end with contacts up.

Guardian	QUANTITIES 1-24	25-49	50-99	100-249	250 UP
CS-2100 — LEFT	$1.95	$1.76	$1.66	$1.56	$1.37
CS-2100 — RIGHT	1.95	1.76	1.66	1.56	1.37



GUARDIAN SERIES 2300U AC SERIES 2305 DC POWER RELAY

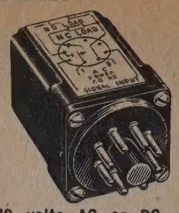
15 Amperes

Size: 3⅝" x 2½" x 2¹⁵⁄₁₆". **Shipping Weight:** 8 ounces. **Mounting:** Two .196" Diam. holes on 1⅞" centers.

In power applications that require up to 15 ampere contacts the Guardian Series 2300 AC, or Series 2305 DC Power Relays are Specified. Both have standard DPDT contacts rated for 15 amperes non-inductive, or 1 HP at 115/230 volts, 60 cycles. Series 2300 standard coil voltages are 6, 12, 24 and 120 VAC. Series 2305 standard coil voltages are 6, 12, 24 and 110 VDC. Inverted coil construction protects armature and contacts. Armature extension permits manual circuit testing. Screw type terminals easily accessible for top or bottom connections. Easy to mount recessed auxiliary switch, up to SPDT for 10 ampere operation, available for both AC and DC versions.

*U/L Recognized Component File #E-23524

Guardian No.	Volts	Rating Amps.	QUANTITIES 1-24	25-49	50-99	100-249	250 Up
2300U-DPDT-6	6AC	15	$6.25	$5.63	$5.31	$5.00	$4.38
2300U-DPDT-24	24AC	15	6.25	5.63	5.31	5.00	4.38
2300U-DPDT-120	120AC	15	6.25	5.63	5.31	5.00	4.38
2300U-DPDT-240	240AC	15	6.50	5.85	5.53	5.20	4.55
2305-DPDT-6	6DC	15	6.25	5.63	5.31	5.00	4.38
2305-DPDT-12	12DC	15	6.25	5.63	5.31	5.00	4.38
2305-DPDT-24	24DC	15	6.25	5.63	5.31	5.00	4.38
2305-DPDT-110	110DC	15	6.75	6.08	5.74	5.40	4.73
2300-SPDT-AUX Auxiliary Switch		10	1.35	1.22	1.15	1.08	.95

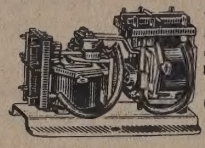


NEW SOLID STATE RELAY 6100 AC - 6300 DC

Universal AC or DC control voltage with circuit isolation from load switching cir ternally-adjustable pull-in voltage level 130 volts AC or DC, with close differential between pull-in and where accurate voltage sensing is required. Control of high inrus inductive or normal resistive loads from 10ma to 3 amps. Internal prevents random turn-on of "off" contacts.

Guardian No.	Size	Wt.	QUANTITIES Net Each, Lot 1-49	50-99
6100-THA-1 Amp-SPST N.O.	2"x1¹⁵⁄₁₆"x1¹¹⁄₁₆"	4 oz.	$17.95	$16.16
6110-OHA-1 Amp-SPST N.O.	2¾"x1⅜"x1⅜"	4 oz.	18.50	16.65
6100-THC-1 Amp-SPDT	2"x1⅞"x1¹¹⁄₁₆"	4 oz.	22.95	20.66
6110-OHC-1 Amp-SPDT	2¾"x1⅜"x1⅜"	4 oz.	23.50	21.15
6300-THA-3 Amp-SPST N.O.	3"x1⅝"x1¹⁵⁄₁₆"	8 oz.	20.45	18.40
6310-OHA-3 Amp-SPST N.O.	3⅜"x1¹³⁄₁₆"x1¹³⁄₁₆"	8 oz.	20.95	18.86
6300-THC-3 Amp-SPDT	3"x1⅝"x1¹⁵⁄₁₆"	8 oz.	27.45	24.71
6310-OHC-3 Amp-SPDT	3⅜"x1¹³⁄₁₆"x1¹³⁄₁₆"	8 oz.	28.95	26.06

INTERLOCKING RELAY — AC IR-1200/1200 — 10 AMP



Two interlocking AC relays in sturdy metal frame Used to maintain circuits continuously without coi consumption. Unit is electrically pulse operate mechanical hold and electrical release. Contacts r 10 amps, at 60 cycles, 115V., AC, non-inductiv Coil resistance is 1,100 ohms. Shpg. wt., 5.5 oz.

SIZE: 1¹³⁄₁₆" x 1⅜" x 3¾" Guardian No.	Cont. Comb.	Coil Voltage	QUANTITIES Net Each, Lots of: 1-24	25-49	50-99	100-249
IR-1200/1200-4C-120A	4PDT	120AC	$10.40	$9.36	$8.84	$8.32

SERIES 200 RELAY WITH COMPLETELY INTERCHANGEABLE COIL AND CONTACT ASSEMBLIES

MIDGET CONTACT ASSEMBLY. Dotted line shows size of standard unit.

The coil consists of the coil and field piece; the contact assembly c of switch blades, armature, return spring and mounting bracket. The G Midget Assembly is interchangeable with the standard Series 200 c sembly. Available with SPDT, DPDT or 4PDT contact switch assemblies interchangeable with all AC or DC coils.

SERIES 200 RELAY

Guardian No.	Volts	Coil	Net Each, Lots of 1-24	25-49	50-99	100-249
200-6A	6	AC	$1.85	$1.67	$1.57	$1.48
200-12A	12	AC	1.85	1.67	1.57	1.48
200-24A	24	AC	1.85	1.67	1.57	1.48
200-115A	115	AC	2.15	1.94	1.83	1.72
200-230A	230	AC	2.85	2.57	2.42	2.28
200-6D	6	DC	2.00	1.80	1.70	1.60
200-12D	12	DC	2.00	1.80	1.70	1.60
200-24D	24	DC	2.00	1.80	1.70	1.60
200-32D	32	DC	2.00	1.80	1.70	1.60
200-110D	110	DC	2.65	2.39	2.25	2.12
200-5,000D	†	DC	2.30	2.07	1.96	1.84
200-10,000D	†	DC	2.65	2.39	2.25	2.12

† Plate.

CONTACT SWITCH ASSEMBLIES

Guardian No.	Type	Cont. Amps	Cont. Comb.	Net Each, Lots of 1-24	15-49	50-99	100-249
200-1	Standard	8	SPDT	$1.60	$1.44	$1.36	$1.28
200-2	Standard	8	DPDT	2.10	1.89	1.79	1.68
200-4	Standard	12.5	DPDT	2.35	2.12	2.00	1.88
200-5	Standard	8	4PDT	3.70	3.33	3.15	2.96
200-M1	Midget	10	SPDT	1.50	1.35	1.28	1.20
200-M2	Midget	10	DPDT	1.85	1.67	1.57	1.48
200-M5	Midget	8	4PDT	3.00	2.70	2.55	2.40

CONTACT SWITCH PARTS

Guardian No.	Type	Net Each, Lots of 1-24	25-49	50-99	100-249
200-3	Standard	$1.60	$1.99	$1.36	$1.28
200-M3	Midget	1.60	1.99	1.36	1.28

Use contact switch parts 200-3 for adding poles to contact switch asse 200-1 and 200-2. Use midget contact switch parts 200-M3 for adding to midget contact switch assemblies 200-M1 and 200-M2.

Net

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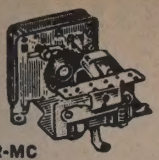
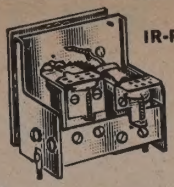
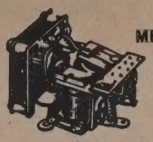
PING CONTROLS—For accurate sequence selecting, pulse multiplying, pulse dividing, circuit selecting, automatic homing, remote homing, counting and g. Guardian steppers are specified for automatic control of electrically operated business machines, accumulators (coin and other), animated displays, al scoreboards, automatic overhead garage doors, assembly line controls, automatic packaging (loading) controls, sump pump controls, commercial slide ors, among others. All Guardian steppers are **intermittent duty** direct-drive units with switching operations completed upon energization.

IR-PC


IR-MC


IR-PER

MER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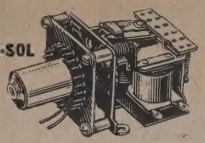
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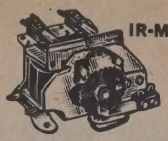
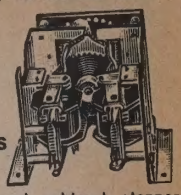

IR-PAS



CONTINUOUS ROTATION

ircuit selection wiper on Continuous Rotation ers moves in one direction only, upon energiza- f the step coil. This type of stepper is available andard 24 point (MC) or 40 point (PC). The ian MC Midget Continuous Rotation Stepper is ularly adaptable to repetitive sequence func- The 24 bridging contact deck is evenly divisible ght possible sequences. The PC stepper features tepping speeds up to 30 steps per second and anical life expectancy of over 4,000,000 steps. ircuit selecting wiper on Electrical Reset Step- can be reset to zero or home from any desired on, by energization of the reset magnet. They equently employed to record counts by various ical groups, then resetting automatically.

ELECTRICAL RESET

Type M.E.R. A direct drive (steps on energization) with positive mechanical reset interlock actuated by the reset magnet and unlocked on the first energization of the step magnet. Assures positive reset on as short a pulse as one-hundreth of a second. By interconnecting two or more Steppers, count can be increased to any desired total counting by tens, or any convenient multiple. Will control a sequence of operation and then automatically reset to starting position.

Type P.E.R. Operation same as M.E.R. but with up to 36 active contacts.

Add and subtract steppers are basically continuous rotation types with the added feature of being able to reserve the movement of the selecting wiper when required.

ADD AND SUBTRACT

Type IR-MAS A midget add and subtract stepper incorporating a cam actuated switch which operates at zero position. Used primarily to indicate a zero balance between pulses supplied to the "add" coil as compared to pulses received by the "subtract" coil.

Type MER-SOL All features of the widely used Guardian MER 24 point electrical reset stepper... PLUS Solenoid "lifts" wiper contacts when stepping to reduce friction . . . and arcing. Increased contact ratings to 5 amps resistive at 120 volts AC. Increased function capability. Increased dependability. Increased life expectancy — now up to 10,000,000 steps. Compact design.

Type IR-PAS New Bi-directional steppers whereby the selector wiper moves either direction depending on which of the coils are energized. This unit replaces the RAS-Supplied with 45 amp quick-connect terminals and also includes a form "C" cam switch.

pper contact points are rated 1½ amps resistive, at 115 V., 60 cps. Coil* Voltages are 120 AC, 60 Hz and 24 DC.

an No.	Watts	Volt Amperes	No. of Points	No. of Active Contacts***	Max. Steps Per Second	Shipping Weight Ounces	SIZE Length	Width	Height	QUANTITIES Net Each, Lots of 1-24	25-49	50-99	100-249	250-up
-120AC	30	40	40	40	20	17	3⅜	3⅜	3½	$19.95	$17.96	$16.96	$15.96	$13.97
-120AC	17	30	24	24	20	9½	3¼	3	2⅜₆	14.75	13.28	12.54	11.80	10.32
R-120AC	35-7**	50-10**	40	36	20	22	3	3⅜	3⅜	26.25	26.63	22.31	21.00	18.37
20AC	20-8**	35- 9**	24	22	20	11½	2⅜₆	3⅜₆	2⅜₆	15.75	14.18	13.39	12.60	11.03
24DC	20-8**	35- 9**	24	22	20	11½	2⅜₆	3⅜₆	2⅜₆	15.75	14.18	13.39	12.60	11.03
SOL-120AC	20-8	20- 9	24	22	20	14	4⅜	3⅜₆	2⅜₆	22.50	20.25	19.13	18.00	15.75
SOL-24DC	20-8	20- 9	24	22	20	14	4⅜	3⅜₆	2⅜₆	22.50	20.25	19.13	18.00	15.75
S-120AC	9	12	30	***	10	11	3¼	3⅛	1⅜₆	17.35	15.62	14.75	13.88	12.15
S-120VAC	35	50	40	40	29	22	3¼	3⅜	3⅜₆	26.25	23.63	22.31	21.00	18.37

— *Steppers will operate satisfactorily at 15% below or 10% above rated voltage. **Listings are for stepping coil and reset coil, respectively. ***Includes) position. ****Zero (0) position switch only.

ROTOMITE STEPPER—DC IR-705-12P

An entirely new concept in stepper design, the Guardian "Rotomite" is first with maxmium stepper control in minimum space. Offering high contact rating of 3 amps resistive, 1 amp inductive (50% PF). Featuring **continuous duty operation** with life well in excess of one million steps, the completely enclosed Rotomite is geared for continuous rotation of 12 positions. A few Rotomite applications presently include computers, business machines, lighting and vending controls, counting and sorting devices, and model trains. Shpg. wt., 5 oz.

IZE: 2" Long x 1⅜" Dia. — **QUANTITIES**

ardian No.	No. Points	Coil Voltage	Net Each, Lots of 1-24	25-49	50-99	100-249	250-up
5-12P-6D	12	6DC	$6.60	$5.94	$5.61	$5.28	$4.62
5-12P-12D	12	12DC	6.60	5.94	5.61	5.28	4.62
5-12P-24D	12	24DC	6.60	5.94	5.61	5.28	4.62

TCHING ON/OFF RELAY—AC—IR-640L—5 AMPERE

Midget Latching Relay with single coil and 5 amp contact rating for SPST, or SPDT, contact combinations. Recommended for positive ON/OFF control of positioning devices, remote controls, lighting circuits and many additional applications. Impulse as short as 20 M.S. energizes coil to reverse position of snap-action switches. Holds last position of switch with coil de-energized. Contacts rated for 5 amps, at 60 cycles, 115 V., AC, non-inductive load. Shpg. wt., 4 oz.

SIZE: 2⅛" x 1⅛" x 1⅝" — **QUANTITIES**

uardian No.	Cont. Comb.	Coil Voltage	Net Each, Lots of 1-24	25-49	50-99	100-249	250-up
40L-A-120A	SPST	115AC	$4.45	$4.01	$3.78	$3.56	$3.12
40L-C-120A	SPDT	115AC	4.75	4.28	4.04	3.80	3.33

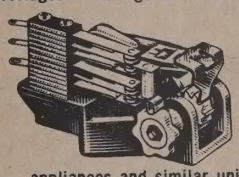
VY DUTY INDUSTRIAL AC RELAY—IR-220—20 AMPERE

This rugged unit makes and breaks up to 20 amps, at 230 volts. Armature is equipped with phenolic contact mounting block carrying ¾" dual contacts. Phenolic is tested at 1500 volts breakdown to ground. Contacts are silver alloy. Relay is available in dual SPST, normally open contact combination only. Contact rating 20 amps at 60 cycles, 230V., AC, non-inductive load. Mounting: Mounting holes—clearance for 8-32 with 2¹⁹⁄₃₂" centers. Shpg. wt., 5.5 oz.

ZE: 3" x 1⅞" x 1¾" — **QUANTITIES**

dian o.	Coil Voltage	Coil Res.	Cont. Comb.	Net Each, Lots of 1-24	25-19	50-99	100-249	250 Up
-A-24A	24AC	25	SPST*	$4.50	$4.05	$3.83	$3.60	$3.15
-A-115A	120AC	600	SPST*	5.05	4.55	4.29	4.04	3.54
-A-230A	240AC	2,500	SPST*	5.55	5.00	4.72	4.44	3.89

nally Open.



SERIES 660 AC— 665 DC SEQUENCE RELAY

Intended to perform switching operations in a desired, repetitive sequence. Each electrical impulse moves the relay contacts to the next position in the sequence. Applications include lights, signs, motors, appliances and similar units. Contacts rated up to 12½ amps, 115V., 60 cycles, non-inductive load. Shpg. wt., 8 oz. Mounting: 4 holes 8-32 (NC-2B).

SIZE: (DPDT) 3" x 1¾" x 2⅛" — **QUANTITIES**

Guardian No.	Coil Voltage	Cont. Comb.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-up
660-C-24A	24AC	SPDT	$6.85	$6.17	$5.82	$5.48	$4.80
660-2C-24A	24AC	DPDT	7.40	6.66	6.29	5.92	5.18
660-4C-24A	24AC	4PDT	10.75	9.68	9.14	8.60	7.53
660-C-120	115VAC	SPDT	6.85	6.17	5.82	5.48	4.80
660-2C-120	115VAC	DPDT	7.40	6.66	6.29	5.92	5.18
660-4C-120	115VAC	4PDT	10.75	9.68	9.14	8.60	7.53
665-C-24D	24DC	SPDT	6.85	6.17	5.82	5.48	4.80
665-2C-24D	24DC	DPDT	7.40	6.66	6.29	5.92	5.18
665-4C-24D	24DC	4PDT	10.75	9.68	9.14	8.60	7.53

ELECTRICAL RESET OVERLOAD RELAY—X-300-ER

Applicable for use in industrial panel installation, provides precise protection from current surges and continuous overloads. Remote panel installation of control potentiometer simplifies adjustment of relay to operate on any current value from 250 to 750 milliamperes, DC. Auxiliary for pilot light indication of "overload" or "clear" position. Reset relay can be operated from any point convenient to operator. Insulation between coil and ground rated at 3,000 volts. Shpg. wt., 13 oz.

SIZE: 4¾" x 2" x 1¹⁵⁄₁₆" — **QUANTITIES**

Guardian No.	Reset Coil	Net Each, Lots of 1-24	25-49	50-99	100-249	250-up
X-300-ER	6VAC	$10.00	$8.55	$8.50	$8.00	$7.00

32 POLE GROUP SELECTOR DC RELAY—IR-805-S

Group selector relay can simultaneously make common up to 32 circuits. All circuits insulated from ground. Contact blades molded in thermosetting phenolic. All contacting members completely enclosed. Shipping weight 6 oz.

SIZE: 2⁷⁄₃₂" x 1¹⁷⁄₃₂" x 2⅛" — **QUANTITIES**

Guardian No.	Coil Voltage	Coil Res.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-up
IR-805-S	24VDC	72	$5.00	$4.50	$4.25	$4.00	$3.50

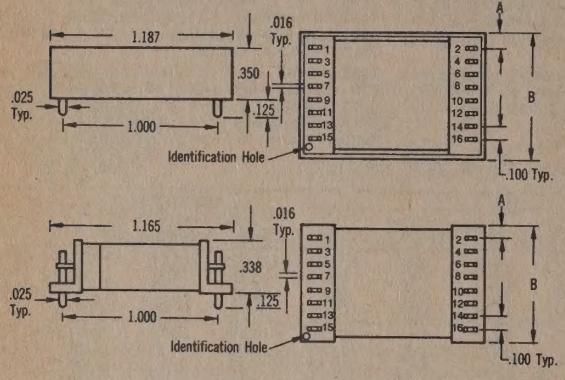
HI-G INDUSTRIAL PRODUCTS

MINIATURE GLASS REED RELAYS

PHYSICAL DIMENSIONS

PC MOUNTING TYPES, .100 GRID

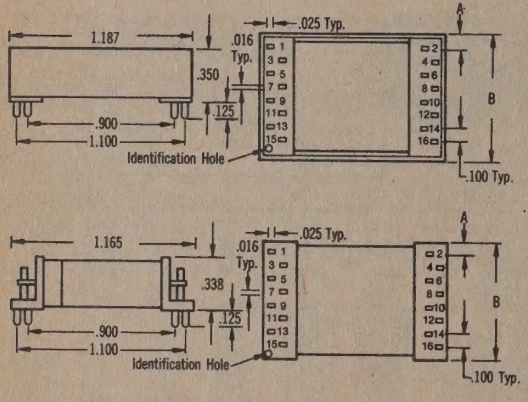
SERIES 3500 — Inline Pins



Box Shield

Foil Shield

SERIES 3700 — Staggered Pins

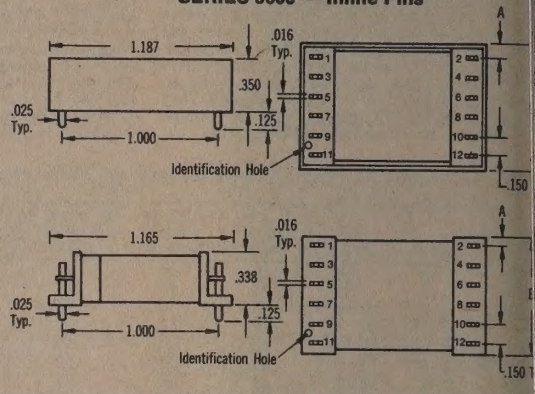


Box Shield

Foil Shield

PC MOUNTING TYPES, .150 GRID

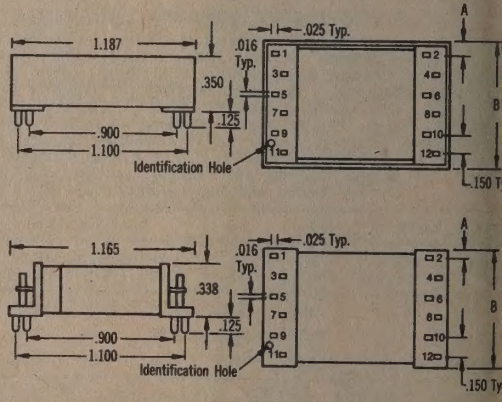
SERIES 3600 — Inline Pins



Box Shield

Foil Shield

SERIES 3800 — Staggered Pins



Box Shield

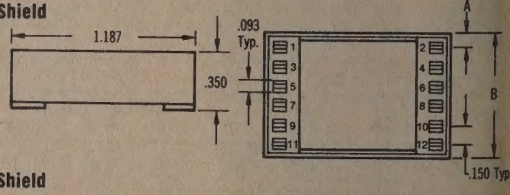
Foil Shield

RELAY DIMENSIONS

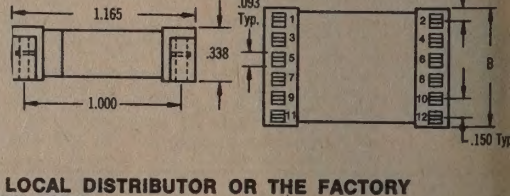
	.100 Grid Models			.150 Grid Models		
	Poles	Dim. "A"	Dim. "B"	Poles	Dim. "A"	Dim. "B"
Box Shield Models	1	.130	.464	1	.080	.464
	2	.155	.614	2	.080	.614
	3	.080	.764	3	.080	.764
	4	.106	.914	4	.080	.914
	Poles	Dim. "A"	Dim. "B"	Poles	Dim. "A"	Dim. "B"
Foil Shield Models	1	.120	.440	1	.070	.440
	2	.145	.590	2	.070	.590
	3	.070	.740	3	.070	.740
	4	.096	.890	4	.070	.890

SERIES 3600 — Plug-in (Berg Pins)

Box Shield



Foil Shield



SUGGESTED INQUIRY DATA:

1) Definition of Life
2) Contact Resistance at end of Life
3) Contact Loading(s)
4) Speed and Bounce Requirement(s)

CONTACT YOUR LOCAL DISTRIBUTOR OR THE FACTORY FOR PRICE INFORMATION.

5) Shielding, Electrostatic and/or Magnetic
6) Environmental Conditions
7) Potting

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HI-G INDUSTRIAL PRODUCTS

IATURE GLASS REED RELAYS

TYPICAL COIL DATA @ 25°C

tated Coil Voltage		5VDC	6VDC	12VDC	24VDC	48VDC
e	Resistance	245Ω	245Ω	965Ω	4,200Ω	7,385Ω
	Coil Power @ PI	.066W	.100W	.100W	.100W	.200W
e	Resistance	180Ω	180Ω	377Ω	1,520Ω	5,730Ω
	Coil Power @ PI	.086W	.140W	.260W	.260W	.260W
e	Resistance	125Ω	125Ω	500Ω	1,330Ω	4,300Ω
	Coil Power @ PI	.130W	.185W	.185W	.280W	.340W
e	Resistance	107Ω	107Ω	195Ω	794Ω	3,460Ω
	Coil Power @ PI	.160W	.230W	.500W	.500W	.500W
l-In Voltage, Max.		4.0	4.8	9.6	19.2	38.2
p-Out Voltage, Min.		1.0	.5	1.0	2.0	4.0

TYPICAL RELAY DATA

Operate Time	1 Millisecond Max.
Release Time	.1 Millisecond Max.
Insulation Resistance	$1 \times 10^{11}\Omega$ Min. at 50 % RH
Coil to Contact Capacitance	2 Picofarads Max.
Operating Temp. Range	−65°C to +85°C
Shock	50G
Vibration	(500-2000 Hz) at 30G
Breakdown Voltage (coil to contact)	500 VRMS

TYPICAL CAPACITANCE VALUES

Electrostatic Shielding	Across Open Contacts	Coil to Contact
None	0.2 pf	2.0 pf
Partial	0.2 pf	0.2 pf
Full	0.2 pf	0.002 pf

TYPICAL CONTACT DATA

tact Configuration	FORM A				FORM B				TRUE FORM C	
tact Code	A O	A V	A M	A Q	B O	B V	B M	B Q	C O	C C
tures	General Purpose	High Voltage	Mercury Wetted	High Speed	General Purpose	High Voltage	Mercury Wetted	High Speed	General Purpose	Heavy Duty
ng, DC Watts	10	10	25	3	10	10	25	3	3	10
t. Voltage, DC	250	1500	100	28	250	1500	100	28	28	100
t. Current, Amps	.500	.003	1.0	.100	.500	.003	1.0	.100	.100	.500
rate Time, ms	.700	.700	2.0	.200	.700	.700	2.0	.200	2.0	.800
nce Time, ms	.200	.200	none	.150	.200	.200	none	.150	.500	.200
@ Rated Loads	20×10^6	10×10^6	50×10^6	10×10^6	20×10^6	10×10^6	50×10^6	10×10^6	5×10^6	5×10^6
@ Signal Loads	100×10^6	100×10^6	200×10^6	100×10^6	100×10^6	100×10^6	200×10^6	100×10^6	100×10^6	100×10^6
ial Contact Resistance	.200Ω	.200Ω	.050Ω	.200Ω	.200Ω	.200Ω	.050Ω	.200Ω	.200Ω	.200Ω
akdown Voltage	300	1500	1000	250	300	1500	1000	250	250	250

RING INFORMATION

Series Number — determines terminal Grid:

3500 = Inline Pins, 3700 = Stagger Pins } .100 Grid

3600 = Inline & Plug-in, 3800 = Stagger Pins } .150 Grid

Variation Code — **00** through **99** determines shielding and special features.

Number of Poles — **1** through **4.**

Contact "form" or configuration — **A, B,** or **C.**
- **A** = Normally open contacts
- **B** = Normally closed contacts
- **C** = one normally open and one normally closed contact

Contact code — **A** through **Z** describes specific plating and blade designs.

Coil Voltage (rated) — **5, 6 ,12, 24** or **48** dc.

IPLE: **3520 — 4CC — 12**

Series: 3500 = Inline Pins, 3700 = Stagger Pins (.100 Grid); 3600 = Inline & Plug-in, 3800 = Stagger Pins (.150 Grid)

Variation: 00 through 99 determines shielding and special features.

Poles: 1 through 4.

Contact Form: A = Normally open contacts; B = Normally closed contacts; C = one normally open and one normally closed contact

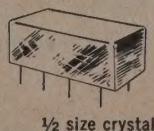
Contact Code: A through Z describes specific plating and blade designs.

Rated Coil Voltage: 5, 6 ,12, 24 or 48 dc.

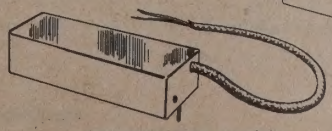
describes a .100 grid PC mounted relay with external magnetic shielding. It has 4 form C contacts designed for the heavy duty switching of 10 watts and a coil rated at 12 volts dc.

SPECIALS: Special versions of Series 3500/3600 relays are limited only by the bounds of imagination and budget. Let our APPLIED IMAGINATION work to produce specials such as these for you!

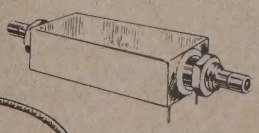
board
ds permit
ping off leads
eplace relay
nout special desoldering tools



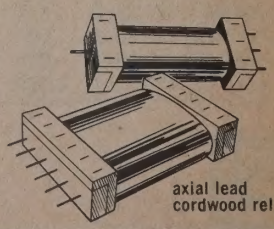
½ size crystal can glass reed relay



low capacitance specials



RF reed relay



axial lead cordwood relays

RELAYS WITH EXTRA DIMENSIO

TO-5 MICROMINIATURE RELAYS — SERIES MA AND MS

NEW

Product Bulletin 90

All welded, DPDT relays manufactured in accordance with MIL-R-5757.

CONTACT RATING

1 ampere at 32 volts DC max, low level 0 to 0.1 ampere at 50 mV DC or AC, minimum current per MIL-R-5757/40 and /70.

UNIQUE PROCESSING TECHNIQUES ENSURE LONG LIFE

All handling and processing techniques are fully controlled and documented. Complete identification and traceability records are maintained. All parts are 100 percent inspected and cleaned prior to assembly. Critical assembly and inspection stations are housed within laminar flow work stations.

HI-G'S CLEANING PROCESS REMOVES ALL TYPES OF CONTAMINATES

A unique cleaning system entirely housed in a laminar flow bench utilizing vapor degreasing, ultrasonic agitation, spray cleaning, and use of solvents with an organic base, water and detergent is capable of removing organic as well as inorganic soils. A special spray cleaning process using a highly volatile solvent is used as a final cleanup of the completed assembly.

VACUUM DEGASSING

After final cleaning, the relays are immediately placed into a vacuum outgassing station. The vacuum system is fully pro against contamination with molecular sieve traps, liquid nit and water cooled optical baffles. A high temperature vacuu with controls capable of maintaining temperature limit gradients within ±1°C is connected to the pumping station. are outgassed above 200°C at vacuum levels of 10^{-6} torr micron) for 16 hours.

FULL SIZE

FINAL SEAL OPERATION

At the conclusion of the outgassing cycle, the open rela passed from the vacuum oven through an interlock into an spheric controlled dry box. The back filling gas is contin recirculated through an inert gas purification system, capa changing the entire volume of gas within the dry box every utes. Within the dry box is a projection seal welder, whic metically seals the housing to the relay assembly.

FINAL TEST

All relays are checked for contact resistance, pull in and out, dielectric strength, insulation resistance, contact bo operate and release time, and coil resistance. Additionally, relay is submitted to a 5000 cycle low level miss test.

ELECTRICAL CHARACTERISTICS

Sensitivity at 25°C: MA Series — 125 mW.
MS Series — 65 mW.

Life: 50,000 operations at min current loads.
100,000 operations min at max rated load.
1,000,000 operations min at low level.

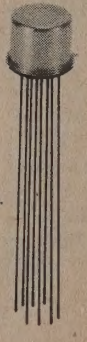
Overload: 2 amps at 32 VDC for 100 operations min.

Contact Resistance: (a) 100 milliohms initial at rated load.
(b) 200 milliohms after rated life.
(c) 3Ω max during min current life. 0.5Ω after life.
(d) 50Ω max at 15 μA and 15 mV rms.

Contact Bounce: 1.5 ms max.

Operate Time: 2.0 ms max at nom coil voltage at 25°C (MA Series).
4.0 ms max at nom coil voltage at 25°C (MS Series).

Release Time: 1.5 ms at 25°C (MA Series).
2.0 ms max at 25°C (MS Series).



Dielectric Strength: 500 V rms between all mutually insulate points at sea level.

Insulation Resistance: 5000 MΩ min between mutually insula terminals.

ENVIRONMENTAL CHARACTERISTICS

Temperature Range: −65°C to +125°C.

Vibration: 0.5″ DA from 5-34 Hz, 30 G from 34-3000 Hz, 10 μs contact opening.

Shock: 75 G (11 ms duration), saw tooth, 10 μs max contact opening.

Acceleration: 100 G.

Leakage Rate: 1×10^{-8} cc/s max.

WEIGHT

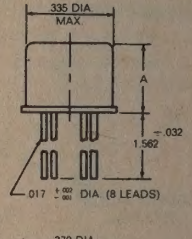
Series MA: 2.9 grams max.

Series MS: 4.5 grams max.

SERIES MA Long Lead Part No.	Plug In Part No.	DC Coil Voltage Max	DC Coil Voltage Nom	DC Coil Resistance Ohms ±10% at 25°C	Max DC Pull-In Voltage at 125°C	Max DC Drop-Out Voltage
MAW-6	MAP-6	8	6	98	4.5	3.2
MAW-9	MAP-9	12	9	220	6.8	4.9
MAW-12	MAP-12	16	12	390	9.0	6.5
MAW-18	MAP-18	24	18	880	13.5	10.0
MAW-26	MAP-26	32	26.5	1560	18.0	13.0

SERIES MS Long Lead Part No.	Plug In Part No.	DC Coil Resistance Ohms ±10% at 25°C	Min DC Pull-In Current mA	Min DC Drop-Out Current mA	Max Continuous Voltage at 125°C
MSW-200	MSP-200	200	17.3	1.7	10
MSW-850	MSP-850	850	8.4	0.8	21
MSW-3.3K	MSP-3.3K	3300	4.3	0.4	41
MSW-6.5K	MSP-6.5K	6500	3.0	0.3	57
MSW-11K	MSP-11K	11000	2.4	0.2	75

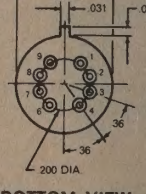
ENCLOSURE AND HEADER STYLES:



DIMENSION A

Series MA = 0.275 max
Series MS = 0.375 max

NOTE: Terminal numbers are for reference only and do not appear on part.



BOTTOM VIEW

ELECTRICAL DIAGRAM

Authorized Hi-G Relay Distributors are located throughout the U.S. and Ca

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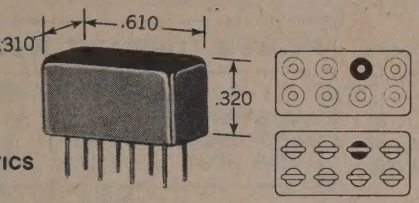
RELAYS WITH EXTRA DIMENSION

.150 GRID RELAY — SERIES G Product Bulletin 95

All welded, DPDT relay manufactured in accordance with MIL-R-5757.

NEW

the MINI-G™



ELECTRICAL CHARACTERISTICS

Insitivity at 25°C: 135 mW.

Life: 100,000 operations min at rated load and 125°C.

Overload: 2 amps at 30 VDC for 100 operations min.

Contact Resistance: (a) 50 milliohms initial at rated load.
(b) 150 milliohms after rated life.
(c) 3Ω max during min current life.
(d) 50Ω max at 10 mA and 30 mV rms.

Contact Bounce: 1.2 ms max measured at 100 mA at 6 VDC.

Operate Time: 4.0 ms max at nom coil voltage at 25°C (including bounce)

Release Time: 4.0 ms max at 25°C (including bounce)

Dielectric Strength: 500 V rms between all mutually insulated points at sea level; 750 V rms between contacts and case.

Insulation Resistance: 1000 MΩ min between mutually insulated terminals.

™ Trademark pending registration

CONTACT RATING

1 ampere resistive at 30 volts DC max, 0.125 ampere resistive at 115 volts rms, 400 Hz, case grounded, low level 0 to 0.1 ampere at 50 mV DC or AC, minimum current per MIL-R-5757/37.
2 ampere resistive at 30 volts DC max (50,000 operations min)

ENVIRONMENTAL CHARACTERISTICS

Temperaure Range: −65°C to +125°C.

Vibration: 0.5" DA from 5-34 Hz, 30 G from 34-3000 Hz, 10 μs max contact opening.

Shock: 100 G (11 ms duration), saw tooth, 10 μs max contact opening.

Acceleration: 100 G.

Leakage Rate: 1×10^{-8} cc/s max.

WEIGHT
0.13 oz.

Voltage Code	DC Coil Voltage		DC Coil Resistance Ohms ±10% at 25°C	Max DC Pull-In Voltage at 125°C	Max DC Drop-Out Voltage at 25°C
	max	nom			
106	8	6	56	3.6	1.6
112	16	12	210	7.2	3.2
126	32	26.5	1350	18.0	8.1

QPL PRODUCTS

The following relays are manufactured to meet the requirements of MIL-R-5757.

HALF SIZE CRYSTAL CAN RELAY — SERIES 2K-2299

Hi-G Part Number	MIL Part Number	MIL Type Designation
2K-2299-1	M5757/9-001	RY4XX4B3L11
2K-2299-2	M5757/9-002	RY4XX4B3L12
2K-2299-3	M5757/9-003	RY4YY4B3P11
2K-2299-4	M5757/9-004	RY4YY4B3P12

Coil resistance		700 ohms ±15% @ 25°C
Pull-in	18 Vdc max.	over temperature range
Drop-out	1.5 Vdc min.	over temperature range
Temperature range		−65°C to +125°C
Contact bounce		1 ms max.
Operate and release time		4 ms max.
Vibration		20G @ 10-2000 Hz
Shock		100 G

CRYSTAL CAN RELAY SERIES 2B-1506

Coil resistance		675 ohms ±10% @ 25°C
Pull-in	18 Vdc max.	over temperature range
Drop-out	1.5 Vdc min.	over temperature range
Temperature range		−65°C to +125°C
Operate and release time		6 ms max
Vibration		20 G @ 10-2000 Hz
Shock		100 G

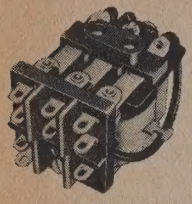
Hi-G Part Number	MIL Part Number	Hi-G Part Number	MIL Part Number	Hi-G Part Number	MIL Part Number	Hi-G Part Number	MIL Part Number
2B-1506-1	M5757/10-001	2B-1506-12	M5757/10-012	2B-1506-23	M5757/10-023	2B-1506-35	M5757/10-035
2B-1506-2	M5757/10-002	2B-1506-13	M5757/10-013	2B-1506-24	M5757/10-024	2B-1506-36	M5757/10-036
2B-1506-3	M5757/10-003	2B-1506-14	M5757/10-014	2B-1506-25	M5757/10-025	2B-1506-37	M5757/10-037
2B-1506-4	M5757/10-004	2B-1506-15	M5757/10-015	2B-1506-26	M5757/10-026	2B-1506-38	M5757/10-038
2B-1506-5	M5757/10-005	2B-1506-16	M5757/10-016	2B-1506-27	M5757/10-027	2B-1506-39	M5757/10-039
2B-1506-6	M5757/10-006	2B-1506-17	M5757/10-017	2B-1506-28	M5757/10-028	2B-1506-40	M5757/10-040
2B-1506-7	M5757/10-007	2B-1506-18	M5757/10-018	2B-1506-29	M5757/10-029	2B-1506-41	M5757/10-041
2B-1506-8	M5757/10-008	2B-1506-19	M5757/10-019	2B-1506-30	M5757/10-030	2B-1506-42	M5757/10-042
2B-1506-9	M5757/10-009	2B-1506-20	M5757/10-020	2B-1506-31	M5757/10-031	2B-1506-43	M5757/10-043
2B-1506-10	M5757/10-010	2B-1506-21	M5757/10-021	2B-1506-32	M5757/10-032	2B-1506-44	M5757/10-044
2B-1506-11	M5757/10-011	2B-1506-22	M5757/10-022	2B-1506-33	M5757/10-033	2B-1506-141	M5757/10-141
				2B-1506-34	M5757/10-034		

Authorized Hi-G Relay Distributors are located throughout the U.S. and Canada.

LINE ELECTRIC COMPANY

RELAYS • BUZZERS • FOOT SWITCHES

GENERAL PURPOSE RELAYS



MINIATURE OPEN TYPE (SERIES MK)

Open type relay in standard contact arrangements up to 3PDT. 5 or 10 amp contact rating. Voltages up to 230 volts, A.C. or D.C. Factory adjusted to pull in at 75% max. of nominal voltage D.C. and 80% max. of nominal voltage A.C. Designed to pass 1,000 volt A.C. Hipot test between all elements. UL File #36213

	5 amp contact rating	6, 12, 24, 115V	220V
AC	MK1A SPDT	$3.10	$3.55
	MK2A DPDT	3.75	4.15
	MK3A 3PDT	4.15	4.55

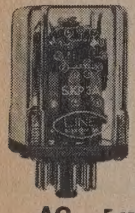
	5 amp contact rating	6, 12, 24V	110V
DC	MK1D SPDT	$3.05	$3.45
	MK2D DPDT	3.40	3.85
	MK3D 3PDT	3.85	4.25

PLATE CIRCUIT RELAYS 5 amp. open type

	2500Ω	5000Ω	10,000Ω	20,000Ω
MKC-1 SPDT	$3.15	$3.25	$3.80	$4.05
MKC-2 DPDT	3.65	3.80	4.30	4.55
MKC-3 3PDT	4.10	4.20	4.75	5.00

10 amp models ask for series MKCO

All models available in 10 amps. DIMENSIONS: 1-11/16 × 1-3/16 × 29/32
All models available in 10 amps. Ask for series MKO.



MINIATURE PLUG-IN (SERIES MKP)

Plug-in type relay, same factory tested, quality features as above. Will operate continuously in ambient temperature ranges of 45° to 75°C. for D.C. coils and −45° to 55°C. for A.C. coils. Metal or clear C-11 Styrene dust cover.
UL File #36213

	5 amp contact rating	6, 12, 24, 115V	220V
AC	MKP1A SPDT	$5.45	$5.90
	MKP2A DPDT	6.05	6.45
	MKP3A 3PDT	7.50	7.95

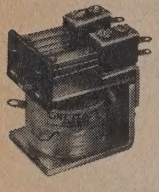
	5 amp contact rating	6, 12, 24V	110V
DC	MKP1D SPDT	$5.40	$5.85
	MKP2D DPDT	6.00	6.40
	MKP3D 3PDT	7.45	7.90

PLATE CIRCUIT RELAYS 5 amp. enclosed type

	2500Ω	5000Ω	10,000Ω	20,000Ω
MKF-1 SPDT	$5.90	$6.00	$6.40	$6.65
MKF-2 DPDT	6.30	6.40	6.80	7.10
MKF-3 3PDT	7.75	7.90	8.40	8.65

10 amp models ask for series MKFO

All models available in 10 amps. Ask for series MKH. DIMENSIONS: 2-1/4 × 1-5/8 × 1-3/8



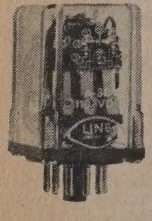
MINIATURE MULTIPLE LEAF (SERIES MW)

A small, versatile relay available in a variety of contact configurations consisting of forms A, B, C or D (make before break), up to a maximum of 12 springs. Coils can be supplied for operation on D.C. or A.C. 60 cps. Operation on 400 cps. source is available with self-contained rectifiers on relays with covers.

	10 amp contact rating	6, 12, 24, 115V	220V
AC	MW1A SPDT	$2.70	$3.10
	MW2A DPDT	3.30	3.75
	MW3A 3PDT	3.80	4.20
	MW14A 4PDT	6.35	6.75

		6, 12, 24V	110V
DC	MW1D SPDT	$2.60	$3.10
	MW2D DPDT	3.25	3.65
	MW3D 3PDT	3.75	4.15
	MW14D 4PDT	6.35	6.80

DIMENSIONS: 1-17/32 × 1-21/32 × 1-0



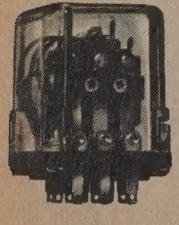
SPOTLIGHT RELAYS (SERIES A)

High quality, general purpose plug-in relay with built-in circuit indicator lamp. Available in C-11 Styrene colored cases for circuit identification or in metal can. Saves panel space, reduces costly labor. UL File #36213.

	5 amp contact rating	6, 12, 24, 115V	220V
AC	A-1A SPDT	$6.40	$6.85
	A-2A DPDT	7.00	7.40
	A-3A 3PDT	8.45	8.85

		6, 12, 24V	110V
DC	A-1D SPDT	$6.35	$6.75
	A-2D DPDT	6.95	7.35
	A-3D 3PDT	8.40	8.80

All models available in 10 amps. AH series.
DIMENSIONS: 2-1/4 × 1-3/8 × 1-3/8



SPOTLIGHT RELAYS. LOW COST. (SERIES ATR)

A plug-in relay which is identical in construction to our miniaturized low profile SERIES MKTR (see page 3) but with built-in circuit indicator lamp. It can be used in conjunction with our 92-67 or 92-82 sockets and 91-49 spring clip. UL File #36213.

	5 amp contact rating	6, 12, 24, 115V	220V
AC	ATR1A SPDT	$5.25	$5.60
	ATR2A DPDT	5.90	6.30
	ATR3A 3PDT	6.35	6.80

	5 amp contact rating	6, 12, 24V	110V
DC	ATR1D SPDT	$5.15	$5.55
	ATR2D DPDT	5.55	6.00
	ATR3D 3PDT	6.05	6.45

All models available in 10 amps AHTR Series.
DIMENSIONS: 1-3/16 × 1-3/8 × 1-3/8

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RELAYS • BUZZERS • FOOT SWITCHES

GENERAL PURPOSE RELAYS

PRINTED CIRCUIT or TAPER TAB (SERIES MKT)

Printed circuit type relay incorporating coil, frame and load contacts of standard Series MK. Connector lugs fit standard amp terminal #41355. Series MKTE is the MKT with plastic dust cover. Available with studs for chassis mount or taper tab connectors. Price same as MKTR . UL File #36213

	5 amp contact rating	6, 12, 24, 115V	220V
AC	MKT1A SPDT	$3.25	$3.65
	MKT2A DPDT	3.95	4.35
	MKT3A 3PDT	4.40	4.85
		6, 12, 24V	110V
DC	MKT1D SPDT	3.20	$3.60
	MKT2D DPDT	3.60	4.05
	MKT3D 3PDT	4.10	4.50

All models available in 10 amps. Series MKTO
DIMENSIONS: 2-1/32 × 1-7/32 × 29/32
Also available as a Plate Circuit Relay

QUICK CONNECT TERMINAL RELAYS (SERIES MKA)

Quick connect terminal type miniature relay incorporating coil, frame and load contacts of the standard Series MK. The connector lugs fit standard .110" quick connect terminals. UL File #36213

(SERIES MKD

The MKD has the same quality features as our SERIES MK (see page 1) but the panel is wider and .187 quick connect lugs are used throughout the series. This is also an open type relay. UL File #36213

	5 amp contact rating	6, 12, 24, 115V	220V
AC	MKA1A SPDT	$3.25	$3.65
	MKA2A DPDT	3.95	4.35
	MKA3A 3PDT	4.40	4.85
DC	MKA1D SPDT	$3.20	$3.60
	MKA2D DPDT	3.60	4.05
	MKA3D 3PDT	4.10	4.50

All models available in 10 amps. DIMENSIONS: 29/32 × 1-7/32 × 1-11/16
Also available as a Plate Circuit Relay

SERIES MKD. OPEN TYPE WITH .187 QUICK CONNECT LUGS

	5 amp contact rating	6, 12, 24, 115V	220V
AC	MKD-1A SPDT	$3.25	$3.65
	MKD-2A DPST	3.95	4.35
	MKD-3A 3PDT	4.40	4.80

	5 amp contact rating	6, 12, 24V	110V
DC	MKD-1D SPDT	$3.20	$3.60
	MKD-2D DPDT	3.60	4.05
	MKD-3D 3PDT	4.10	4.50

SERIES MKDO. OPEN TYPE WITH .187 QUICK CONNECT LUGS

	10 amp contact rating	6, 12, 24, 115V	220V
AC	MKDO-1A SPDT	$3.30	$3.75
	MKDO-2A DPDT	4.05	4.45
	MKDO-3A 3PDT	4.55	5.00

	10 amp contact rating	6, 12, 24V	110V
DC	MKDO-1D SPDT	$3.25	$3.65
	MKDO-2D DPDT	3.75	4.15
	MKDO-3D 3PDT	4.25	4.65

SERIES MKDC. PLATE CIRCUIT RELAYS WITH .187 QUICK CONNECT LUGS

5 amp open type	2500Ω	5000Ω	10,000Ω	20,000Ω
MKDC-1 SPDT	$3.30	$3.45	$4.05	$4.30
MKDC-2 DPDT	3.85	4.00	4.55	4.85
MKDC-3 3PDT	4.25	4.60	5.00	5.25

10 amp open type	2500Ω	5000Ω	10,000Ω	20,000Ω
MKDCO-1 SPDT	$3.35	$3.50	$4.10	$4.35
MKDCO-2 DPDT	3.95	4.10	4.65	4.95
MKDCO-3 3PDT	4.40	4.75	5.15	5.40

MINIATURE PLUG-IN *LOW PROFILE LOW COST*

(SERIES MKTR)

Despite its compact size this new totally enclosed, low cost, low profile miniature relay has not compromised the high quality of its progenitor the Series MK open relay. The low mounting profile (dust cover included) has been made possible by incorporating the frame of the relay with the connector-header. Thus a certain basic hardware has been eliminated resulting in important size reduction. Versatility is also assured since the standard terminals can be used with Amp snap-on connectors, printed circuits, or plug-in receptacles. Also available with studs for chassis mounting. Termination can be used for soldered connections. The plug-in-receptacle is true 10 ampere construction. Lugs can be used for either solder or snap-on connections.
UL File #36213 10 Amps series MKTRO

	5 amp contact rating	6, 12, 24, 115V	220V
AC	MKTR1A SPDT	$4.25	$4.65
	MKTR2A DPDT	4.95	5.35
	MKTR3A 3PDT	5.40	5.85
		6, 12, 24V	110V
DC	MKTR1D SPDT	$4.20	$4.60
	MKTR2D DPDT	4.60	5.05
	MKTR3D 3PDT	5.10	5.50

AVAILABLE 3 WAYS: Plate circuit relay. Spotlight relay (with or without colored dust cover). Hermetic seal or any combination.
DIMENSIONS: 1-27/32 × 1-3/8 × 1-3/8

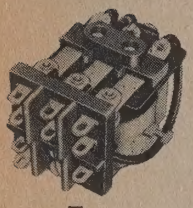
92-67 RECEPTACLE .30 net.
92-82 Clip-on Receptacle .50
91-49 Hold down Spring .12

LINE ELECTRIC COMPANY

RELAYS • BUZZERS • FOOT SWITCHES

GENERAL PURPOSE RELAYS

NEW MINIATURE SENSITIVE RELAYS (SERIES SK) 60 MILLIWATTS PER POLE



Type SK

Type SKA

This entire series of SK type relays is identical in construction to our MK series miniature relays, with one essential difference —the special alloy used in pole and frame increases the magnetic flux many times thus making the relays very sensitive low power levels—only 60 milliwatts per pole.

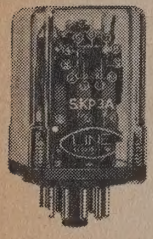
SERIES SK OPEN TYPE 5 AMPS

	up to 2500Ω	5000Ω	10,000Ω	15,000Ω	20,000Ω
SK-1 SPDT	$4.15	$4.25	$4.80	$4.80	$5.05
SK-2 DPDT	4.65	4.80	5.30	5.30	5.55
SK-3 3PDT	5.10	5.20	5.75	5.75	6.00

UL File #39077

SERIES SKT PRINTED CIRCUIT TYPE 5 AMPS

	up to 2500Ω	5000Ω	10,000Ω	15,000Ω
SKT-1 SPDT	$4.30	$4.45	$5.10	$5.10
SKT-2 DPDT	4.85	5.00	5.55	5.55
SKT-3 3PDT	5.25	5.40	6.00	6.00

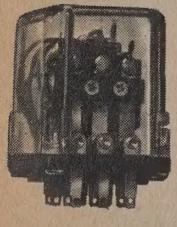


SERIES SKA OPEN TYPE 5 AMPS .110 QUICK CONNECT LUGS

	up to 2500Ω	5000Ω	10,000Ω	15,000Ω	20,000Ω
SKA-1 SPDT	$4.30	$4.45	$5.05	$5.05	$5.30
SKA-2 DPDT	4.85	5.00	5.55	5.55	5.85
SKA-3 3PDT	5.25	5.60	6.00	6.00	6.25

SERIES SKD OPEN TYPE 5 AM .187 QUICK CONNECT LUGS

	up to 2500Ω	5000Ω	10,000Ω	15,000Ω
SKD-1 SPDT	$4.30	$4.45	$5.05	$5.05
SKD-2 DPDT	4.85	5.00	5.55	5.55
SKD-3 3PDT	5.25	5.60	6.00	6.00



SERIES SKP PLUG-IN PLASTIC HOUSING 5 AMPS

	up to 2500Ω	5000Ω	10,000Ω	15,000Ω	20,000Ω
SKP-1 SPDT	$6.90	$7.00	$7.40	$7.40	$7.65
SKP-2 DPDT	7.30	7.40	7.80	7.80	8.10
SKP-3 3PDT	8.75	8.90	9.40	9.40	9.65

PRINTED CIRCUIT TYPE ENCLOSED

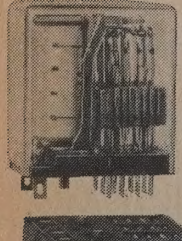
SKTE1 SPDT	$5.30	$5.45	$6.05	$6.30
SKTE2 DPDT	5.85	6.00	6.55	6.85
SKTE3 3PDT	6.25	6.60	7.00	7.25

SERIES SKTR LOW COST PLATE CIRCUIT RELAYS

PLUG-IN TYPE

5 AMP. DC	Up to 2500Ω	5000Ω	10,000Ω
SKTR1 SPDT	$5.30	$5.45	$6.05
SKTR2 DPDT	5.85	6.00	6.55
SKTR3 3PDT	6.25	6.60	7.00

NEW MINIATURE CRADLE TYPE RELAYS (SERIES JMR) AND (SERIES JMRB BIFURCATED)



The JMR is an imported miniature cradle type relay incorporating a unique reed hinge. The reed hinge eliminates the possibility of binding and wear, thereby providing exceptional long life.
All contact connections are molded directly through the base; the only solder connections in the relay are those to the coil.
The JMR features gold diffused, silver contacts which are suitable for low level as well as full rated 5 amp. loads. The relay is enclosed in a high impact polycarbonate housing and the relay base is black bakelite. All internal phonoelic spacers are baked and out-gassed prior to assembly, thereby assuring reliable operation under the most adverse conditions.

Model Number	Poles	6, 12, 24 VDC	48 VDC	11
JMR- 2D	2PDT	$3.30	$3.35	$
JMR-14D	4PDT	3.80	3.85	
JMR-16D	6PDT	4.80	4.95	

Model Number	Poles	6, 12, 24 VDC	48 VDC	11
JMRB- 2D	2PDT	$3.60	$3.65	$
JMRB-14D	4PDT	4.20	4.25	
JMRB-16D	6PDT	5.10	5.25	

Net

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LINE ELECTRIC COMPANY

RELAYS • BUZZERS • FOOT SWITCHES

GENERAL PURPOSE RELAYS

MINIATURE 4-POLE RELAY (SERIES JA)

The series JA is a high quality, miniature 4PDT relay for AC or DC operation. The JA relay features nylon dust cover, gold flashed fine silver contacts rated at 3 amps. This imported relay features exceptional quality and rugged design to meet the most exacting requirements. It is excellent for computers, logic systems and data processing. Standard configuration features solder terminals and 3-48, 23/64" mounting stud. Can be used with our 92-79 solder lug socket or 92-80 P.C. socket (50c each)

	Voltage	Resistance	Nominal Power	Price
DC	6 VDC	40 OHMS	800 MW	$4.10
	12 VDC	160 OHMS	800 MW	4.10
	24 VDC	650 OHMS	800 MW	4.10
	48 VDC	2500 OHMS	800 MW	4.20
	90 VDC	10000 OHMS	800 MW	4.90
	110 VDC	10000 OHMS	800 MW	4.90
AC	6 VAC	10.5 OHMS	1.1 VA	$4.40
	12 VAC	43 OHMS	1.1 VA	4.40
	24 VAC	160 OHMS	1.1 VA	4.40
	115 VAC	3900 OHMS	1.1 VA	4.90

MEDIUM POWER RELAY OPEN TYPE (SERIES LR)

Open type, heavy-duty type relay designed for many applications. Standard fine silver contacts rated at 10 amperes, optional Silver Cadmium load contacts rated at 15 amps. Ambient temperature operating range, continuous duty: A.C., —45° to 55°C.; D.C., —45° to 75°C.

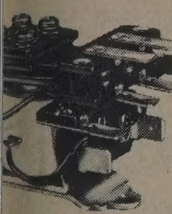
AC

10 amp contact rating	6, 12, 24, 115V	220V
LR1A SPDT	$4.00	$4.20
LR2A DPDT	4.85	5.05
LR12A SPDT-DB(15A)	5.05	5.25

DC

10 amp contact rating	6, 12, 24V	110V
LR1D SPDT	$3.80	$4.00
LR2D DPDT	4.65	4.85
LR12D SPDT-DB(15A)	5.85	5.05

DIMENSIONS: 2-3/8 × 1-1/2 × 1-21/32



NEW

MEDIUM POWER RELAY OPEN TYPE (SERIES LRT)

Same quality features of the LR series (above) but in a special configuration utilizing .250 quick connect terminals.

AC

10 amp contact rating	6, 12, 24, 115V	220V
LRT-1A SPDT	$4.50	$4.70
LRT-2A DPDT	5.35	5.55
LRT-12A SPDT-DB	5.55	5.75

DC

10 amp contact rating	6, 12, 24V	110V
LRT-1D SPDT	$4.30	$4.50
LRT-2D DPDT	5.15	5.35
LRT-12D SPDT-DB	5.35	5.55

MEDIUM POWER RELAY PLUG-IN TYPE (SERIES LRP)

This relay is available in either metal or plastic enclosures, equipped with a standard octal plug in header for single and double pole types. Eleven pin headers are also available. The standard LRP plastic enclosure is a clear C-11 Styrene, colors are available at no extra charge. Female sockets for 8 and 11 pin headers are also available.

AC

10 amp contact rating	6, 12, 24, 115V	220V
LRP1A SPDT	$7.00	$7.10
LRP2A DPDT	8.20	8.50
LRP12A SPDT-DB(15A)	8.80	9.00

DC

10 amp contact rating	6, 12, 24V	110V
LRP1D SPDT	$6.80	$7.00
LRP2D DPDT	8.00	8.40
LRP12D SPDT-DB(15A)	8.70	8.80

DIMENSIONS: 3-1/4 × 1-15/16 × 1-15/16

HEAVY DUTY RELAY OPEN TYPE (SERIES LG)

Open type relay, specifically designed for extremely heavy-duty applications. Standard Fine Silver load contacts are rated at 15 amps. with optional Silver Cadmium Oxide contacts where larger inrush loads are encountered. Loads are rated at 115/60 non-inductive. All load contacts are factory gold-flashed to prevent contact oxidation prior to use.

AC

15 amp contact rating	6, 12, 24, 115V	220V
LG1A SPDT	$4.30	$4.50
LG2A DPDT	4.85	5.05
LG3A 3PDT	5.40	5.60

DC

15 amp contact rating	6, 12, 24V	110V
LG1D SPDT	$4.20	$4.40
LG2D DPDT	4.75	4.95
LG3D 3PDT	5.30	5.60

DIMENSIONS: 1-1/2 × 2-3/8 × 1-13/16

LINE ELECTRIC COMPANY

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GENERAL PURPOSE RELAYS

HEAVY DUTY RELAY PLUG-IN TYPE (SERIES LGP)

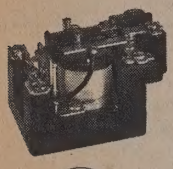
Plug-in type relay, with same quality features as above. Also available in either metal or clear bIC-11 Styrene enclosure. Ambient temperature operating range, continuous duty; A.C., —45° to 55°C.; D.C.,—45° to 75°(

AC

10 amp contact rating	6, 12, 24, 115V	220V
LGP1A SPDT	$7.30	$7.50
LGP2A DPDT	7.85	8.05
LGP3A 3PDT	8.40	8.60

DC

10 amp contact rating	6, 12, 24V	11
LGP1D SPDT	$7.20	$7
LGP2D DPDT	7.75	8
LGP3D 3PDT	8.40	8



HEAVY DUTY POWER RELAYS* (SERIES STA)

A 25 amp. power relay ideally suited for starting motors up to 1 hp, elevator controls, and many other applications which require high current or high voltage switching with maximum dependability. One piece molded base, sturdy two-hole mounting. Top removable coil.

Available with one or two auxiliary 5 ampere contacts.

*See new miniature power relay (series PF) on Pg. 7 of this listing.

AC

25 amp contact rating	6, 12, 24, 115V	220
STA2A DPDT	$7.20	$7.6
STA3A (1. aux. con.)	10.75	11.0
STA14A (2. aux. con.)	14.25	14.6

DC

	6, 12, 24VDC	110V
STA2D DPDT	$7.20	$7.6
STA3D (1. aux. con.)	9.75	10.0
STA14D (2. aux. con.)	12.25	12.6

DIMENSIONS: 2-1/2 × 2-15/16 × 3-3/8

HEAVY DUTY POWER RELAYS (SERIES STM)

Same quality features as Series ST, but assembled on a compact base. Available with one or two auxilliary 5 amp contacts.

AC

25 amp contact rating	6, 12, 24, 115V	220V
STM1A SPDT	$4.85	$5.25
STM4A SPST NO	4.50	4.90
STM5A DPST NO	5.10	5.50
STM7A SPST NC	4.50	4.90
STM10A SPST NO DB	4.75	5.15

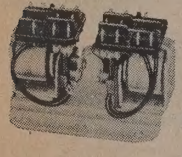
STMC AVAILABLE WITH 1 AUX. CON.
STMCC AVAILABLE WITH 2 AUX. CON.

DC

25 amp contact rating	6, 12, 24V	110V
STM1D SPDT	$4.85	$5.25
STM4D SPST NO	4.50	4.90
STM5D DPST NO	5.10	5.50
STM7D SPST NC	4.50	4.90
STM10D SPST NO DB	4.75	5.50

DIMENSIONS: 2-1/8 × 2-1/2 × 2-5/16

MECHANICAL LATCH RELAYS



OPEN TYPE (SERIES RL)

Open type for use where a sustained relay closure is required, and current drain of a relay coil is to be eliminated. Incorporates two coils, one to close load contacts, the other to reset them. Requires only momentary electrical contact to operate or release. Provides positive mechanical latch, eliminating chatter during sustained relay closure.

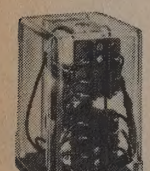
AC

5 amp contact rating	6, 12, 24, 115V	220V
RL1A SPDT	$7.15	$8.00
RL2A DPDT	8.25	9.00
RL3A 3PDT	9.15	9.95
RL14A 4PDT	10.45	11.30
RL15A 5PDT	11.45	12.30
RL16A 6PDT	12.55	13.35

DC

5 amp contact rating	6, 12, 24V	11
RL1D SPDT	$6.50	$7.
RL2D DPDT	7.50	8.
RL3D 3PDT	8.50	9.
RL14D 4PDT	9.50	10.
RL15D 5PDT	10.50	11.
RL16D 6PDT	11.50	12.

Available in 10 amp contact rating. ASK FOR SERIES RLO DIMENSIONS: 2-11/16 × 1-3/4 × 1-3/4



PLUG-IN TYPE (SERIES RLP)

Plug-in type, same factory-tested quality features as above. Available in clear C-11 Styrene enclosure up to 5PDT.

AC

5 amp contact rating	6, 12, 24, 115V	220V
RLP1A SPDT	$9.40	$10.25
RLP2A DPDT	10.50	11.30
RLP3A 3PDT	14.75	15.60
RLP14A 4PDT	16.15	17.00
RLP15A 5PDT	17.25	18.00

DC

5 amp contact rating	6, 12, 24V	11
RLP1D SPDT	$8.75	$10.
RLP2D DPDT	9.85	11.
RLP3D 3PDT	14.10	15.
RLP14D 4PDT	15.55	16.
RLP15D 5PDT	16.65	17.

All models available 3PDT, 4PDT, 5PDT, and in 10 amp contact rating. ASK FOR SERI

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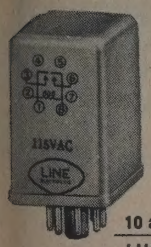
AGE LISTING (6)

LINE ELECTRIC COMPANY

RELAYS • BUZZERS • FOOT SWITCHES

HERMETICALLY SEALED RELAYS



PLUG-IN TYPE (SERIES HKP)

The Series HKP relay incorporates the basic MK frame into hermetically sealed plug-in configuration. All units are thoroughly vacuum baked and out-gassed and back filled with nitrogen before sealing. The HK series will fit any standard octal based receptacle and is in the classification of a general purpose relay.

PLATE CIRCUIT RELAYS 5 Amp

	2500Ω	5000Ω	10,000Ω	20,000Ω
HKF1 SPDT	$8.90	$9.00	$9.40	$9.65
HKF2 DPDT	9.30	9.40	9.80	10.10
HKF3 3PDT	10.75	10.90	11.40	11.65

	10 amp contact rating	6, 12, 24,115V	220V
AC	HKH1A SPDT	$8.50	$8.95
	HKH2A DPDT	9.15	9.55
	HKH3A 3PDT	10.60	11.10

	10 amp contact rating	6, 12, 24V	110V
DC	HKH1D SPDT	$8.45	$8.90
	HKH2D DPDT	9.10	9.50
	HKH3D 3PDT	10.60	10.95

DIMENSIONS: 2-1/16 x 1-21/32 x 1-7/16

PLUG-IN TYPE. LOW COST

(Series HKTR. 5 AMP) (Series HKTRO. 10 AMP)

These relays are hermetically sealed counterparts of our MKTR relays (see page 3) but they are especially designed for use with our 92-67 socket. Low profile general purpose applications.

	10 amp contact rating	6, 12, 24, 115V	220V
AC	HKTRO-1A SPDT	$ 8.50	$ 8.95
	HKTRO-2A DPDT	9.15	9.55
	HKTRO-3A 3PDT	10.60	11.10

	10 amp contact rating	6, 12, 24V	110V
DC	HKTRO-1D SPDT	$ 8.45	$ 8.90
	HKTRO-2D DPDT	9.10	9.50
	HKTRO-3D 3PDT	10.60	10.95

PRINTED CIRCUIT TYPE. LOW COST

(Series HKT. 5 AMP) (Series HKTO. 10 AMP)

The same construction as HKTR and HKTRO (on left) but especially designed for use on printed circuit boards, mounting by means of .030 diameter pins.

	10 amp contact rating	6, 12, 24, 115V	220V
AC	HKTO-1A SPDT	$ 8.25	$ 8.65
	HKTO-2A DPDT	9.70	10.10
	HKTO-3A 3PDT	10.25	10.65

	10 amp contact rating	6, 12, 24V	110V
DC	HKTO-1D SPDT	$ 8.20	$ 8.60
	HKTO-2D DPDT	9.50	9.90
	HKTO-3D 3PDT	10.10	10.50

REED RELAYS — 3 STANDARD TYPES

In computer, data processing and guidance system development, design engineers are enthusiastically applying dry reed relays in place of switching diodes. The reasons: miniature profile—life expectancy exceeding 100,000,000 operations—less heat generated compared with switching diodes—3 millisecond operating time and very high resistance in the open contact stage.

To efficiently serve the growing demand for dry reed relays in these and other applications, Line Electric now stocks these 3 standard types for immediate delivery in prototype quantities.

Open Coil Type—Series FR

6 VDC & 12 VDC & 24 VDC. 6 Contact Arrangements

FR1-SPDT, $ 5.50 ea. FR4-SPST NO, $3.30 ea.
FR2-2PDT, $ 9.00 ea. FR5-2PST NO, $4.50 ea.
FR3-3PDT, $12.75 ea. FR6-3PST NO, $5.50 ea.

Plug-In Type—Series FRP

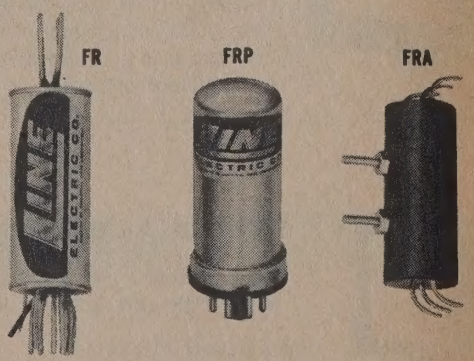
6 VDC & 12 VDC & 24 VDC. 6 Contact Arrangements

FRP1-SPDT, $ 8.50 ea. FRP4-SPST NO, $6.00 ea.
FRP2-2PDT, $12.00 ea. FRP5-2PST NO, $7.50 ea.
FRP3-3PDT, $16.00 ea. FRP6-3PST NO, $8.50 ea.

Lug Mount Type—Series FRA

6 VDC & 12 VDC & 24 VDC. 2 Contact Arrangements

FRA1-SPDT, $7.50 ea. FRA4-SPST NO, $4.50 ea.



SPECIFICATIONS

CONTACT RATING
10 volt-amperes resistive
3 watts D.C. resistive

MAXIMUM CURRENT
0.5 amperes

DIELECTRIC STRENGTH
250 volts
60 cps R.M.S.

MAXIMUM VOLTAGE
110 volts

LIFE EXPECTANCY
Rated load - - -
1 x 10^6 operations
Dry circuit - - -
100 x 10^6 operations

OPERATE TIME
3 milliseconds maximum, including bounce

CONTACT RESISTANCE
50 millohms

INSULATION RESISTANCE
1000 megohms minimum

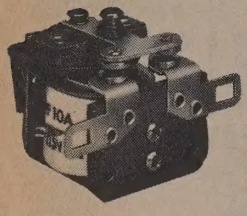
RELEASE TIME
5 milliseconds maximum, including bounce

8 PAGE LISTING (7)

LINE ELECTRIC COMPANY

RELAYS • BUZZERS • FOOT SWITCHES

NEW MINIATURE POWER RELAY (SERIES PF)



The PF Series Relays are especially designed for applications where limited space is a factor. This relay, although small in size, is ideally suited for heavy duty industrial control applications where long life and fast action are a requirement. The PF Relay is supplied with ¼" quick connect terminals on the contacts for ease of installation. Other type terminals are available upon request. Consult factory for details.

CONTACTS

Material ¼" dia. silver cadmium oxide gold flashed.
Contact Terminals ¼" quick connect. Pierced for soldering.

COILS

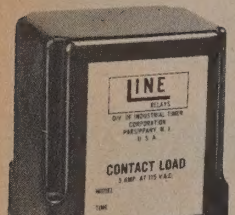
Dielectric Strength 750 V.R.M.S.
Nominal Power D.C. relays - 1.1 watts avg.
A.C. relays - 2.5 volt amps avg.
Over-Voltage D.C. - 140% of nominal. A.C. - 125% of nominal.
Operate Time 15 milliseconds or less.
Weight 3 ounces
Temperature Range —40° C. to +50° C.
Coil Terminals Solder type.

25 amp. contact rating	6-12-24-115V
AC PF10A SPST-NO-DB	$3.90
DC PF10D SPST-NO-DB	3.70

SOLID STATE TIME DELAY RELAYS PLUG-IN TYPE (SERIES XL)

GENERAL DESCRIPTION

The essential difference between solid state electronic timers and other types is the absence of mechanical moving parts within the controlling circuit. For this reason they often require less installation space than the equivalent electro-mechanical models, while delivering longer performance.
Since the circuitry used in Line Electric electronic time delay relays is transistorized no warm-up time is required. To provide extremely stable repetitive timing within wide input voltage fluctuations reference elements are used when required.
Today the incorporation of solid state electronic time cont original equipment is an indication of advanced engineering a strong factor in influencing preference for your com products. We invite your inquiries.



TYPE XLA

SERIES XLA FIXED TIME DELAY

115 VAC input* Isolated load output SPDT Relay. (DPDT available on request.) * Time range within ±5% at 117 VAC line* Repeatability ±5%. * Load Capacity 5 amperes (non-inductive.) * Fixed Delay from 0.125 to 60 seconds. (Specify time when ordering.) * Unit is transient protected.

Model	Time Setting	Price
XLA-0.125s	0.125 sec.	$17.5
XLA-5s	5 sec.	17.5
XLA-10s	10 sec.	17.5
XLA-15s	15 sec.	17.5
XLA-30s	30 sec.	17.5
XLA-60s	60 sec.	17.5

TYPE XLB

SERIES XLB VARIABLE TIME DELAY

This is the same as Series XLA above except that it has a setting potemtiometer (with locking device) for adjusting the time delay.

Model	Min. Setting	Max. Setting	Price
XLB-5s	.1 sec.	5 sec.	$18.5
XLB-10s	.1 sec.	10 sec.	18.5
XLB-15s	.1 sec.	15 sec.	18.5
XLB-30s	.1 sec.	30 sec.	18.5
XLB-60s	.1 sec.	60 sec.	18.5

TYPE XLC

SERIES XLC VARIABLE TIME DELAY

Essentially the same as Series XLB above except that it has a knob and 0-10 scale dial control for adjusting the time delay.
115 VAC input* Isolated load output SPDT Relay. (DPDT available on request.) * Repeatability ±2% of full scale setting. * Load capacity 5 amperes non-inductive at 115/60. * Time accuracy not affected by 95 to 130 volt line fluctuation. * Unit is transient protected. * Longer time delays up to 5 minutes available on request. * Precision temperature compensated units available on request. * DC units available: 12, 24 or 48 VDC

Model	Min. Setting	Max. Setting	Price
XLC-5s	.25 sec.	5 sec.	$23.5
XLC-10s	.25 sec.	10 sec.	23.5
XLC-15s	.25 sec.	15 sec.	23.5
XLC-30s	.25 sec.	20 sec.	23.5
XLC-60s	.25 sec.	60 sec.	23.5

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LINE ELECTRIC COMPANY

RELAYS • BUZZERS • FOOT SWITCHES

MINIATURE TELEPHONE RELAYS

(SERIES GT)

Fast acting miniature telephone type relay. Highly versatile, supplied in contact arrangements up to 6PDT, and in a variety of styles including open, dust cover, and hermetically sealed. Factory will supply enclosure details.

AC

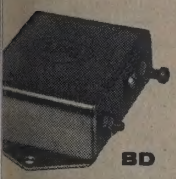
	6, 12, 24V	115V
GT1A SPDT	$5.55	$5.95
GT2A DPDT	6.50	6.75
GT3A 3PDT	7.00	7.45
GT14A 4PDT	7.40	7.85
GT15A 5PDT	8.10	8.50
GT16A 6PDT	8.80	9.30

DC

	6, 12, 24V	110V
GT1D SPDT	$3.55	$4.00
GT2D DPDT	4.50	4.75
GT3D 3PDT	5.00	5.45
GT14D 4PDT	5.40	5.85
GT15D 5PDT	6.10	6.50
GT16D 6PDT	6.80	7.30

DIMENSIONS: Max. 1-9/16 × 17/32 × 3/4

BUZZERS D.C. - A.C.



BD

DH

VARIABLE SOUND AND PITCH D.C. - A.C.

The series BD buzzers are designed for use in offices, plants, etc., where quality, good appearance and dependable operation is demanded. Three sizes of buzzers are available, each size varying in tone and volume of sound. However, the volume of sound and pitch of each size buzzer can be varied by means of double, locking adjustments. The three sizes of buzzers are equipped with phosphor bronze springs and pure hard-drawn silver contacts. They are bug and dust-proof with tight-fitting polished chrome covers.

Model No.	6-8VDC	12VDC	24VDC	48VDC
BD-0	$3.25	$3.50	$3.75	$5.25
BD-1	3.15	3.25	3.40	4.80
BD-2	3.25	3.50	3.75	5.20

(BD-0 Low tone, BD-1 Medium tone, BD-2 Loud tone)

Hermetic Seal				
BDH	8.50	9.00	9.50	10.00

DIMENSIONS: BD0—1-5/8 × 1-1/8 ×1-1/2
BD1—2-1/8 × 2 × 11/16
BD2—2-7/8 × 2-1/2 × 1
BDH—1-9/16 × 3-13/16 × 2-13/16

MD

B

AC BUZZERS

Available for 6, 12, 24, 115, 220, and 440 volts A.C. 60 cps operation, these buzzers are ideally suited for paging, warning, starting and dismissal signals. These buzzers are a non-contact type therefore suitable for continuous duty, providing a clear, penetrating signal.

MC

MA

	6, 12, 24, 115 VAC/60 cy	220VAC/60 cy
MA	$2.25	$2.80
MB	2.50	3.05
MC	3.15	3.70
MD	1.60	2.40
MCH Hermetic Seal	10.00	11.00

PEDALINE FOOT SWITCH

The Pedaline is a compact light weight foot operated switch. The single switch type weighs only 7 ounces; the double switch type 7½ ounces. Baked on light gray hammertone enamel finish with black foot pad. Available with a single pole snap action switch or two single pole double throw switches which operate in sequence.

#PL1 single switch only	$3.15
#PL-1C single switch w/line cord	$4.45
#PL5 double switch	$4.80
#PL-5C double switch w/line cord	$5.65

DIMENSIONS: 3-1/2 × 2-5/8 × 1

SINGER

LINE ELECTRIC COMPANY

Magnecraft® general purpose relays

Magnecraft designed the Class 88 line of clapper type general purpose relays to provide versatility and trouble-free performance in switching control applications. The Class 88 relays have rugged hinge-pin armature bearings with oversize bearing surfaces. This is the same construction as used in the finest telephone type relays for lowest friction and maximum contact effectiveness with stabilized adjustment. Other outstanding features are as follows.

GREATER DIELECTRIC STRENGTH provided by glass insulation wh completely unaffected by humidity and temperature changes.

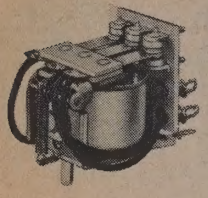
NO POSSIBILITY OF SHORTS thanks to a molded nylon bobbi rugged coil terminal inserts.

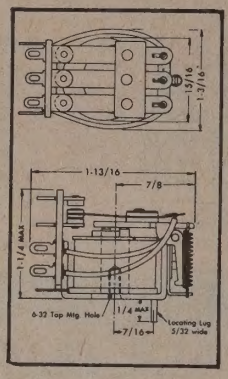
BUILT-IN CONTACT WIRE with riveted contacts further advance life reliability.

AVAILABLE IN STOCK across the nation from many Magnecraft distributors.

CLASS 88 OPEN TYPE RELAYS

Small, 10 Amps., AC & DC
Wt. — 2 ozs. approx.



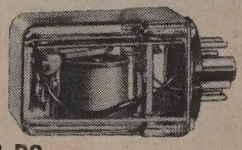


- Silver alloy contacts rated 10 amps. Gold flashed.
- Solder terminals for easy wiring.
- One #6-32 tapped mounting hole with locating boss.

Stock Part No.	††Contacts 10 Amps.	COIL †Volt or Current	*Res. Ohms	Nominal Power	Prices 1-9
Alternating Current Voltage Actuated					
W88AX1	SPDT	6VAC			3.45
W88AX2		12VAC			3.45
W88AX3		24VAC		3 VA	3.50
W88AX4		115VAC			3.66
W88AX34		230VAC			4.12
W88AX5	DPDT	6VAC			4.07
W88AX6		12VAC			4.07
W88AX7		24VAC		3 VA	4.12
W88AX8		115VAC			4.27
W88AX32		230VAC			4.74
W88AX9	3PDT	6VAC			4.56
W88AX10		12VAC			4.56
W88AX11		24VAC		3 VA	4.62
W88AX12		115VAC			4.77
W88AX36		230VAC			5.26
Direct Current Voltage Actuated					
W88X2	SPDT	6VDC	25		3.20
W88X3		12VDC	100	1.5W	3.20
W88X4		24VDC	400	1.5W	3.28

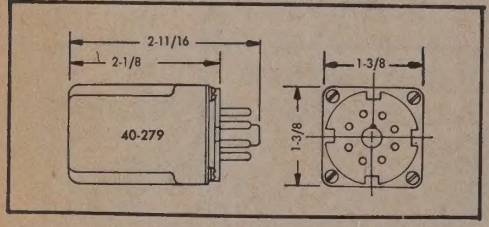
Stock Part No.	††Contacts 10 Amps.	COIL †Volt or Current	Ohms *Res.	Power Nominal
Direct Current Voltage Actuated Cont'd.				
W88X5	SPDT	110VDC	8000	
W88X6	DPDT	6VDC	25	
W88X7		12VDC	100	
W88X8		24VDC	400	1.5W
W88X9		110VDC	8000	
W88X10	3PDT	6VDC	25	
W88X11		12VDC	100	
W88X12		24VAC	400	1.5W
W88X13		110VDC	8000	
DC Current Actuated For Plate Circuit Opera				
W88X14	SPDT	7.2 MA	2500	
W88X15		5.0 MA	5000	125MW
W88X16		3.6 MA	10000	
W88X17	DPDT	10 MA	2500	
W88X18		7.2 MA	5000	250MW
W88X19		5 MA	10000	
W88X20	3PDT	12.3 MA	2500	
W88X21		8.7 MA	5000	375MW
W88X22		6.1 MA	10000	

CLASS 88CP PLUG-IN RELAYS



Small, 10 Amps., AC & DC
Wt. — 3 ozs. approx.

- Silver alloy contacts rated 10 amps. Gold flashed.
- Furnished with 8 or 11-pin standard octal plug.
- Encl. 40-279 crackproof dust cover of polycarbonate resins — clear as glass; tough as steel.

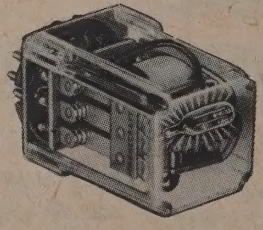


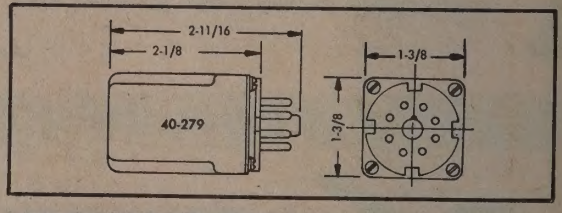
Stock Part No.	††Contacts 10 Amps.	COIL †Volt or Current	*Res. Ohms	Nominal Power	Plug	Prices 1-9
Alternating Current Voltage Actuated						
W88ACPX1	SPDT WD-1	6VAC		3 VA	8-pin	5.56
W88ACPX2		12VAC				5.56
W88ACPX3		24VAC				5.61
W88ACPX4		115VAC				5.79
W88ACPX76		230VAC				6.31
W88ACPX5	DPDT WD-2	6VAC		3 VA	8-pin	6.24
W88ACPX6		12VAC				6.24
W88ACPX7		24VAC				6.29
W88ACPX8		115VAC				6.44
W88ACPX32		230VAC				6.99
W88ACPX9	3PDT WD-3	6VAC		3 VA	11-pin	7.66
W88ACPX10		12VAC				7.66
W88ACPX11		24VAC				7.81
W88RCPX12		115VAC				7.97
W88ACPX39		230VAC				8.51
Direct Current Voltage Actuated						
W88CPX1	SPDT WD-1	6VDC	25			5.35
W88CPX2		12VDC	100	1.5W	8-pin	5.35
W88CPX3		24VDC	400	1.5W	8-pin	5.40

Stock Part No.	††Contacts 10 Amps.	COIL †Volt or Current	*Res. Ohms	Nominal Power	Plug
Direct Current Voltage Actuated Cont'd.					
W88CPX4		110VDC	8000		
W88CPX5	DPDT WD-2	6VDC	25		
W88CPX6		12VDC	100		
W88CPX7		24VDC	400	1.5W	8-pin
W88CPX8		110VDC	8000		
W88CPX9	3PDT WD-3	6VDC	25		
W88CPX10		12VDC	100		
W88CPX11		24VDC	400	1.1W	11-pin
W88CPX12		110VDC	8000		
DC Current Actuated For Plate Circuit Operat					
W88CPX13	SPDT WD-1	7.2 MA	2500		
W88CPX14		5.0 MA	5000	125MW	8-pin
W88CPX15		3.6 MA	10000		
W88CPX16	DPDT WD-2	10 MA	2500		
W88CPX17		7.2 MA	5000	250MW	8-pin
W88CPX18		5 MA	10000		
W88CPX19	3PDT WD-3	12. MA	2500		
W88CPX20		8.7 MA	5000	375MW	11-pin
W88CPX21		6.1 MA	10000		

CLASS 88ANCP PLUG-IN RELAYS WITH NEON "ON" LIGHT

Small, 10 Amps., AC
Wt. — 3 ozs. approx.

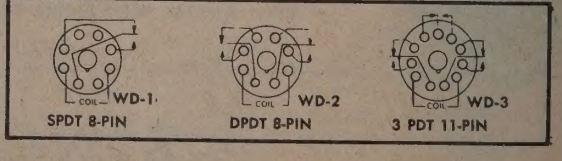




Stock Part No.	Contacts ††10 Amps	Wiring Diagrams	†Volt. AC	Nominal Power	Prices 1-9
W88ANCPX-1	SPDT	WD-1	115	3VA	6.64
W88ANCPX-2	DPDT	WD-2	115		7.29
W88ANCPX-3	3PDT	WD-3	115		8.81

- Silver alloy contacts rated 10 amps. Gold flashed.
- Built-in neon circuit indicator light comes on when coil is energized. Eliminates need for expensive pilot lamp assemblies, saves panel space and shows circuit condition at a glance.
- Encl. 40-279 crackproof dust cover of polycarbonate resins — clear as glass; tough as steel.

Wiring Diagrams for Class 88 Plug-in Mounted Relays.



WD is Abbreviation for Wiring Diagram
† Voltage Operated Relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.
†† 10 Ampere Silver Alloy contacts — Gold Flashed.
* Resistance values ±10%, measured at 25°C.

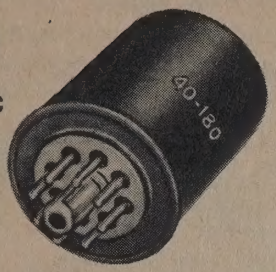
Net

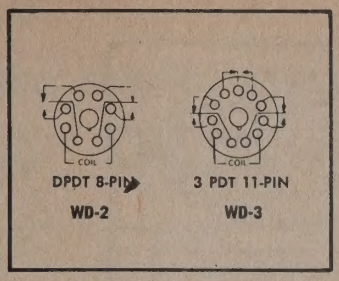
© United Technical Publica

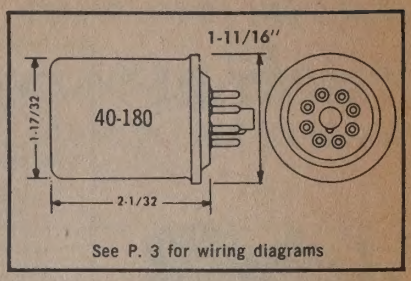
Magnecraft® general purpose relays

CLASS 88HP ERMETICALLY SEALED RELAYS††

g-in, 10 Amps., AC & DC
Wt. — 5 ozs. approx.







See P. 3 for wiring diagrams

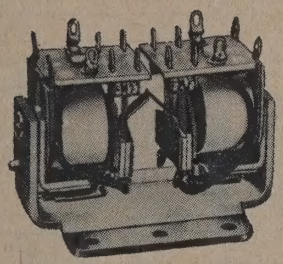
ermetically sealed and filled with a dry high purity gas to afford aximum protection against severe ambient conditions.
l-180 Hermetically sealed enclosure.
lver alloy contacts rated 10 amps.
andard 8 or 11 pin octal style plug mates with standard 8 or 11 n octal style socket.
ailable in DPDT or 3PDT Contact Combinations.

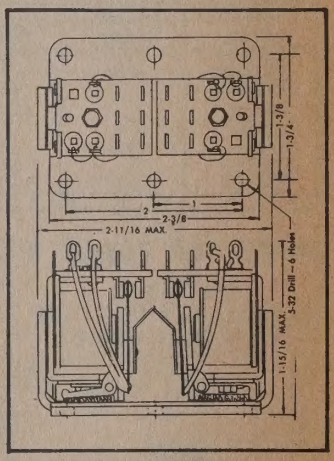
Stock Part No.	Contacts 10 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W88AHPX-21	DPDT WD-2	6VAC	—	3VA	8.59
W88AHPX-22		12VAC	—		8.59
W88AHPX-23		24VAC	—		8.64
W88AHPX-24		115VAC	—		8.79
W88HPX-32	DPDT WD-2	6VDC	25	1.5W	8.19
W88HPX-33		12VDC	100		8.19
W88HPX-34		24VDC	400		8.24
W88HPX-35		110VDC	8000		9.29
W88AHPX-36	3PDT WD-3	115VAC	—	3VA	10.60
W88HPX-51		24VDC	400	1.5W	10.03

††See additional hermetically sealed stock relays on Page 12.

CLASS 88L ATCHING REALAYS 4PDT & 6PDT

all, 10 Amps., AC & DC
t. — 6½ ozs. approx.



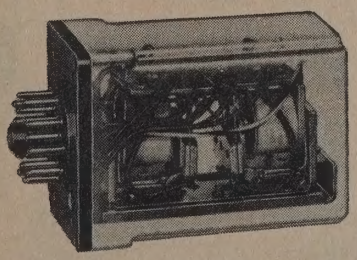


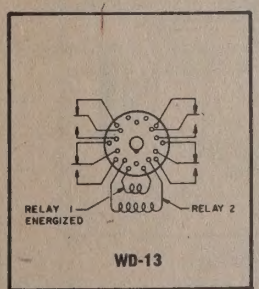
ilver alloy contacts rated 10 amps. Gold flashed.
old flashed.
ombination of two Class 88 relays
ith interlocking latch-in levers
ounted on common base.
ach armature latches when pulled in. Energizing one rmature releases or rests the other.
ach relay is complete with independent operating coil.
esigned for continuous duty.

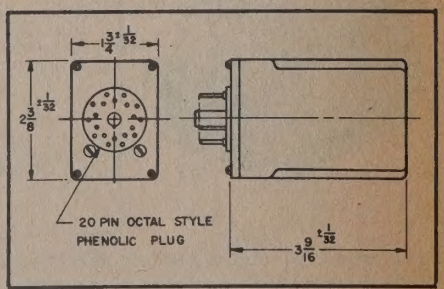
Stock Part No.	Contacts 10 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W88ALX-2	4PDT	6VAC	—	6VA prox.	10.60
W88ALX-3		24VAC	—		10.60
W88ALX-4		115VAC	—		10.60
W88ALX-5	6PDT	6VAC	—	6VA prox.	12.80
W88ALX-6		24VAC	—		12.80
W88ALX-7		115VAC	—		12.80
W88LX-1	4PDT	6VDC	12	3W	9.65
W88LX-2		12VDC	50		9.65
W88LX-3		24VDC	200		9.65
W88LX-4		110VDC	4000		10.85
W88LX-5	6PDT	6VDC	12	3W	11.75
W88LX-6		12VDC	50		11.75
W88LX-7		24VDC	200		11.75
W88LX-8		110VDC	4000		12.95

CLASS 88LCP CLOSED PLUG-IN TCHING RELAYS 4PDT

) Amps., AC & DC
t. — 8 ozs. approx.







Silver alloy contacts rated 10 amps. Gold flashed.
Combination of two Class 88 relays with interlocking latch-in levers mounted on common base.
Each armature latches when pulled in. Energizing one armature releases or rests the other.
Enc. 40-418 crackproof dust cover of polycarbonate resins — clear as glass; tough as steel.
Mounting is by molded phenolic 20-pin octal style plug. Mates with standard 20-pin octal style socket.

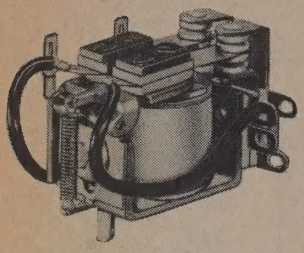
Stock Part Number	Contacts 10 Amps	COIL †Volts	COIL *Ohms	Prices 1-9
W88ALCPX-10	4PDT (20 Pins) WD-13	6VAC	—	15.81
W88ALCPX-11		24VAC	—	16.00
W88ALCPX-12		120VAC	—	16.14
W88LCPX-9	4PDT (20 Pins) WD-13	6VDC	12	15.47
W88LCPX-10		12VDC	50	15.56
W88LCPX-11		24VDC	200	15.62
W88LCPX-12		120VDC	4000	15.79

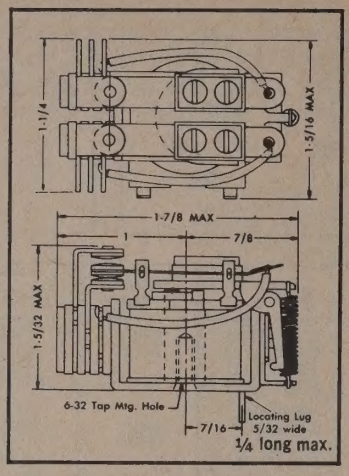
WD is abbreviation for Wiring Diagram.
† Class 88HP voltage operated relays pull in at 85% of nominal voltage. Class 88LCP and Class 88L voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.
* Resistance values ±10%, measured at 25°C.

Magnecraft® general purpose relays

CLASS 88R POWER RELAYS

DPDT
Small, 15 Amps., AC & DC
Wt. — 3 ozs. approx.



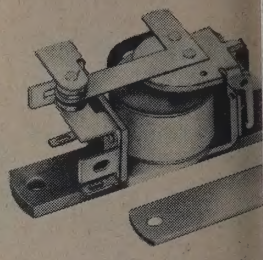


- Designed for High Current Switching in small space.
- Silver alloy contacts, gold flashed rated 15 amps.
- Highly reliable clapper type for industrial control applications.
- Solder terminals for easy wiring.
- Easy mounting — one #6-32 tapped mtg. hole and locating boss.

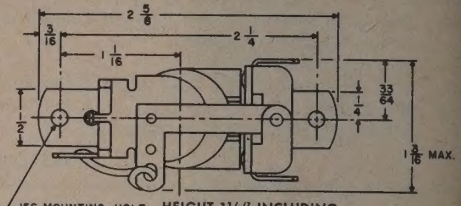
Stock Part No.	Contacts 15 Amps	COIL †Volts	COIL **Ohms	Nominal Power	Prices 1-9
W88ARX-1	DPDT	6VAC	—	3VA	5.97
W88ARX-2		12VAC	—		5.97
W88ARX-3		24VAC	—		6.02
W88ARX-4		115VAC	—		6.17
W88RX-1	DPDT	6VDC	25	1.5W	5.90
W88RX-2		12VDC	100		5.90
W88RX-3		24VDC	400		5.95
W88RX-4		110VDC	8000		6.40

CLASS 88K LOW COST RELAYS

SPDT
15 Amps., AC & DC
Wt. — 3 ozs. approx.



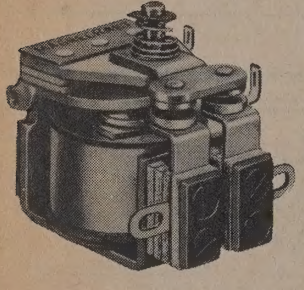
- 15 amps silver alloy, gold flashed contacts for power switching.
- Terminal boards designed to accept AMP Faston "250" series receptacles on contacts and "110" series on coil or equivalent.
- Standard soldering connections can be used.
- Mounting base ins furnished.

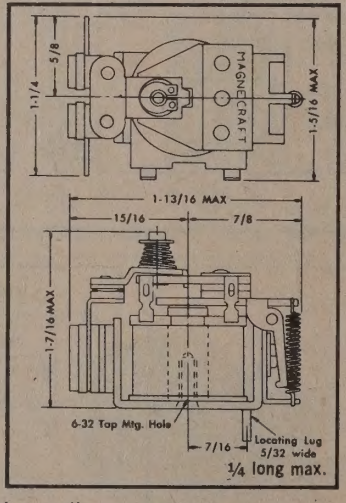


Stock Part No.	Contacts 15 Amps	COIL †Volts	COIL **Ohms	Nominal Power	P
W88AKX-1	SPDT	24VAC	—	3VA	4
W88AKX-2		115VAC	—		4
W88AKX-3		230VAC	—		5
W88KX-1	SPDT	6VDC	25	1.5W	4
W88KX-2		12VDC	100		4
W88KX-3		24VDC	400		4
W88KX-4		110VDC	8000		5

CLASS 88D POWER RELAYS

SPST-NO-DB
50 Amps., AC & DC — 1 HP
Wt. — 3 ozs. approx.



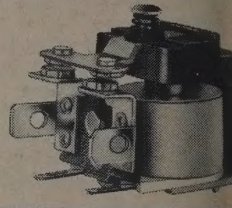


- 50 amps SPST, double break and normally open contacts.
- Designed for heavy current switching in minimum space.
- Provides positive wiping action.
- One #6-32 tapped mounting hole and locating boss.
- Heavy duty silver alloy gold flashed contacts.

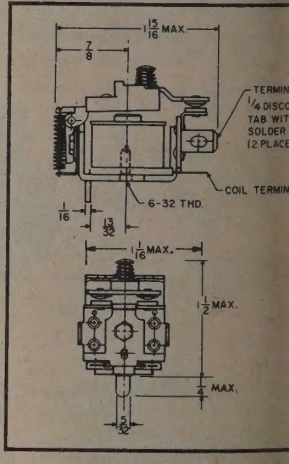
Stock Part No.	Contacts 50 Amps	COIL †Volts	COIL **Ohms	Nominal Power	Prices 1-9
W88ADX-1	50 Amps SPST Double Break Normally Open	24VAC	—	3VA	5.15
W88ADX-2		115VAC	—		5.25
W88ADX-3		230VAC	—		5.70
W88DX-1		6VDC	25	1.5W	4.65
W88DX-2		12VDC	100		4.65
W88DX-3		24VDC	400		4.70
W88DX-4		110VDC	8000		5.94

CLASS 88KD LOW COST POWER RELAYS

SPST-NO-DB
50 Amps., AC & DC — 1 HP
Wt. — 3 ozs. approx.



- New improved version of Class 88D.
- 50 amps heavy duty silver alloy, gold flashed contacts for power switching.
- Contacts assembled to glass melamine terminal and molded phenolic blade insulator.
- Terminal boards designed to accept AMP Faston "250" series receptacles on contacts and "110" series on coil or equivalent.
- Standard soldering connections can be used.
- One #6-32 tapped mounting hole and locating boss.



Stock Part No.	Contacts 50 Amps	COIL †Volts	COIL **Ohms	Nominal Power	Pr
W88KDX-1	SPST-NO-DB	6VDC	25	2W	4.
W88KDX-2		12VDC	100		4.
W88KDX-3		24VDC	400		4.
W88KDX-4		110VDC	8000		5.
W88KADX-1	SPST-NO-DB	24VAC	—	3VA	4.
W88KADX-2		115VAC	—		4.
W88KADX-3		230VAC	—		5.

†Voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.
**Resistance values ±10%, measured at 25°C.

Net

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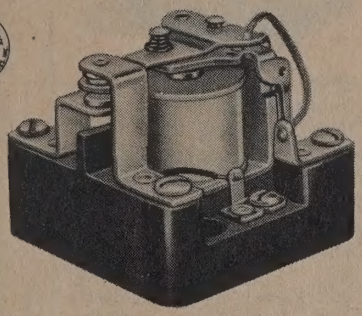
Magnecraft® heavy duty power relays

CLASS 99 — HEAVY DUTY INDUSTRIAL CONTROL POWER RELAYS — UL LISTED

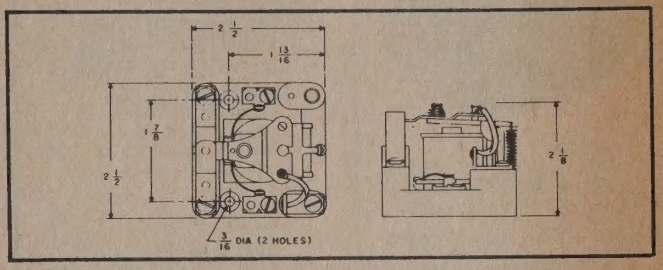
h three Class 99 Power Relays featured in this section are
d by Underwriters' Laboratories under Motor Controllers,
netic, Across-the-line starters: Open (File No. E43641).

The one exception is the Class W99AX-7 DPDT 440 VAC relay indicated below with two asterisks (**).

ISS 99
AMP. — 1 HP
)T
— 8 ozs. approx.

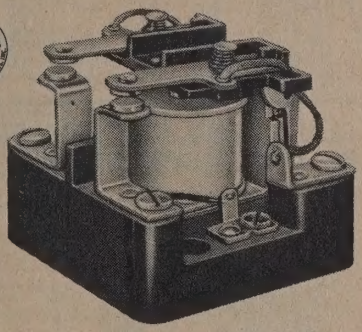


ensionally interchangeable with relays made by others. erior quality hinge-pin design, molded nylon bobbin and ad- nent stability features give it longer life. 5/16" contacts of r alloy, gold flash. Standard dielectric strength: 1500 RMS. Screw type terrminals and molded phenolic base.

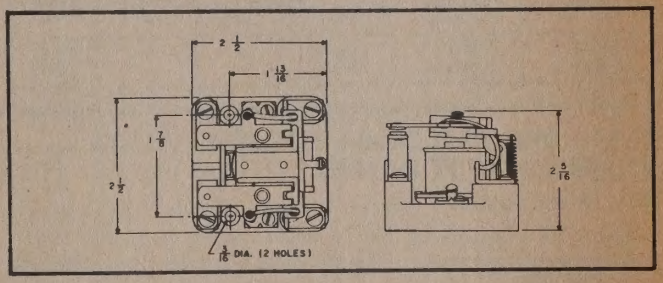


Stock Part No.	Contacts Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W99AX-1	SPDT 25 Amps	24VAC	—	3VA	5.66
W99AX-2		115VAC	—		5.68
W99AX-3		230VAC	—		5.86
W99X-1	SPDT 25 Amps	6VDC	18	2.0W	5.42
W99X-2		12VDC	70		5.42
W99X-3		24VDC	290		5.44
W99X-4		110VDC	6000		5.83

ASS 99
AMP. — 1 HP
ST-NO
— 9 ozs. approx.

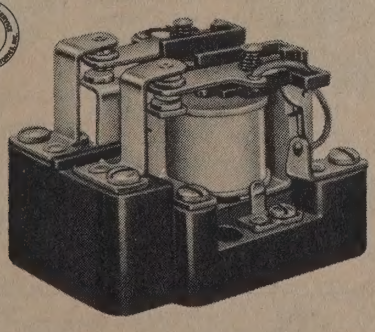


nensionally interchangeable with relays made by others. perior quality hinge-pin design, molded nylon bobbin and ustment stability features give it longer life. 5/16" contacts silver alloy, gold flash. Standard dielectric strength: 1500 C, RMS. Screw type terminals and molded phenolic base.

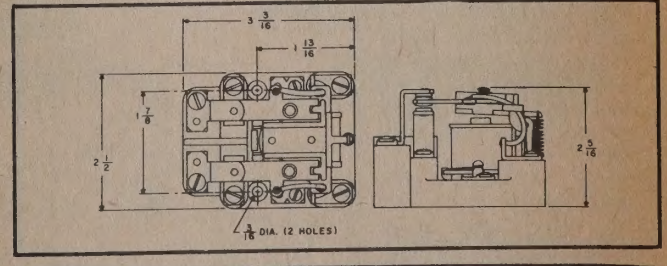


Stock Part No.	Contacts Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W99AX-8	DPST-NO 25 Amps	24VAC	—	3VA	6.65
W99AX-9		115VAC	—		6.67
W99AX-10		230VAC	—		6.85
W99X-9	DPST-NO 25 Amps	6VDC	18	2.0W	6.36
W99X-10		12VDC	70		6.36
W99X-11		24VDC	290		6.38
W99X-12		110VDC	6000		6.77

ASS 99
AMP. — 1 HP
PDT
— 11 ozs. approx.



nensionally interchangeable with relays made by others. perior quality hinge-pin design, molded nylon bobbin and ustment stability features give it longer life. 5/16" contacts silver alloy, gold flash. Standard dielectric strength: 1500 C, RMS. Screw type terminals and molded phenolic base.



Stock Part No.	Contacts Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W99AX-4	DPDT 25 Amps	24VAC	—	3VA	8.43
W99AX-5		115VAC	—		8.43
W99AX-6		230VAC	—		8.63
**W99AX-7		440VAC	—		8.68
W99X-5	DPDT 25 Amps	6VDC	18	2.0W	8.12
W99X-6		12VDC	70		8.12
W99X-7		24VDC	290		8.14
W99X-8		110VDC	6000		8.53

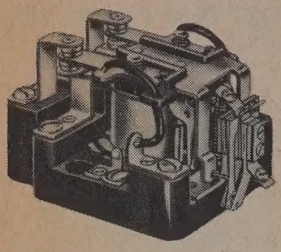
**W99AX-7 440 VAC relay not UL Listed

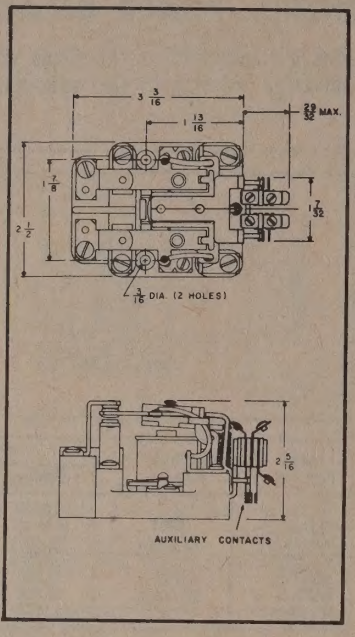
†Voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.
**Resistance values ±10%, measured at 25°C.

Magnecraft® heavy duty power relays

CLASS 99 POWER RELAYS
25 AMP. — DPDT WITH SPDT AUX. CONTACTS

Wt. — 11½ ozs. approx.



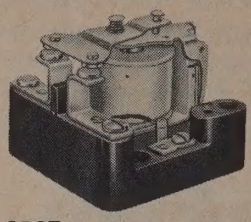


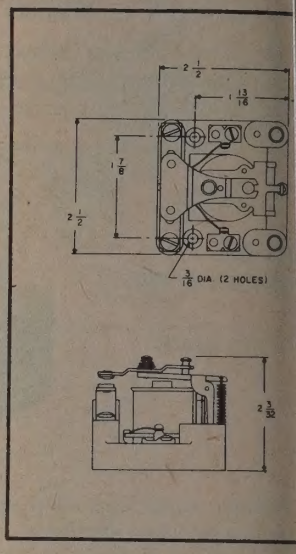
- Basic Class 99 relay equipped with SPDT Auxilary Contacts.
- DPDT Power Contacts rated 25 amps or 1 HP SPDT Auxilary Contacts rated 5 amps.
- Availability of auxilary contacts increases relay switching capabilities.
- Panel or chassis mtg. — Two 3/16 dia. mtg. holes.
- Screw terminals

Stock Part No.	Contacts 25 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W99AX-15	DPDT (Relay)	115VAC	—	3VA	10.43
W99AX-16		230VAC	—		10.63

CLASS 99D POWER RELAYS
50 AMP.— SPST-NO-DB — 2 HP

Wt. — 8 ozs. approx.





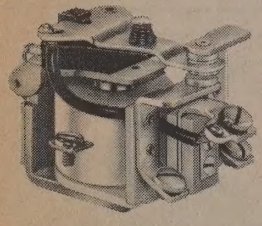
SPST
Double Break
Normally Open

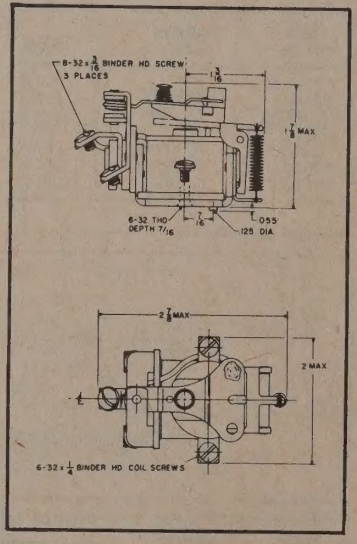
Dimensionally interchangeable with relays made by others. Superior quality hinge-pin design, molded nylon bobbin and adjustment stability features give it longer life. 5/16" contacts of silver alloy, gold flash. Standard dielectric strength: 1500 VAC, RMS. Screw type terminals and molded phenolic base.

Stock Part No.	Contacts Amps	COIL †Volts	COIL *Ohms	Nominal Power	Pr
W99ADX-1	SPST-NO-DB 50 Amps	24VAC	—	3VA	5
W99ADX-2		115VAC	—		5
W99ADX-3		230VAC	—		5
W99DX-1	SPST-NO-DB 50 Amps	6VDC	18	2.0W	5
W99DX-2		12VDC	70		5
W99DX-3		24VDC	290		5
W99DX-4		110VDC	6000		5

CLASS 99S SPACE-SAVER POWER RELAYS
25 AMP. — SPDT —1 HP

Wt. — 6 ozs. approx.



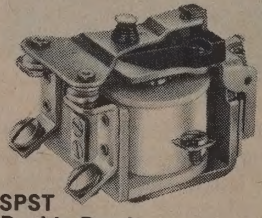


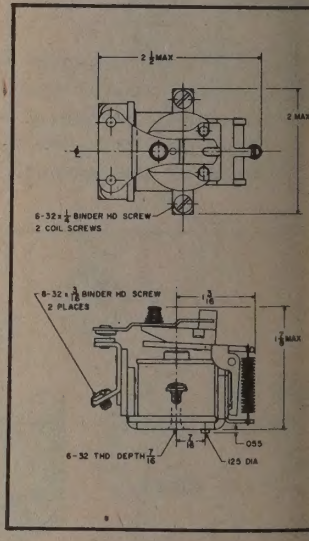
- Designed for Power Switching in small space.
- SPDT Silver Alloy — gold flashed contacts rated @ 25 amps or 1 HP.
- Highly reliable power relay for industrial control applications.
- Screw terminals — (no soldering).
- Easy Mtg. — One #6-32 tapped mtg. hole and locating boss.

Stock Part No.	Contacts 50 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W99SAX-1	SPDT 25 Amps	24VAC	—	3VA	7.35
W99SAX-2		115VAC	—		7.40
W99SAX-3		230VAC	—		7.62
W99SX-1	SPDT 25 Amps	6VDC	18	2.0W	7.11
W99SX-2		12VDC	70		7.13
W99SX-3		24VDC	290		7.15
W99SX-4		110VDC	6000		7.47

CLASS 99SD SPACE-SAVER POWER RELAYS
50 AMP. — SPST-NO-DB — 2 HP

Wt. — 6 ozs. approx.





SPST
Double Break
Normally Open

- Designed for power switching in small space.
- SPST — NO — Double Break Silver Alloy — gold flashed Contacts rated @ 50 amps or 2 HP.
- A highly-reliable power relay for heavy-duty industrial control applications.
- Screw terminals — (no soldering).
- Easy Mtg. — one #6-32 tapped mtg. hole and locating boss.

Stock Part No.	Contacts 50 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Pri
W99SADX-1	SPST-NO-DB 50 Amps	24VAC	—	3VA	6.
W99SADX-2		115VAC	—		6.
W99SADX-3		230VAC	—		6.
W99SDX-1	SPST-NO-DB 50 Amps	6VDC	18	2.0W	6.
W99SDX-2		12VDC	70		6.
W99SDX-3		24VDC	290		6.
W99SDX-4		110VDC	6000		6.

*Resistance values ±10%, measured at 25°C.

†Voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.

Net

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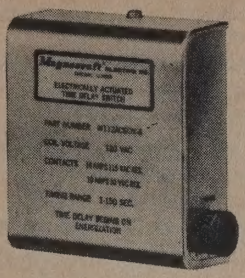
Magnecraft® air dashpot time delay relays

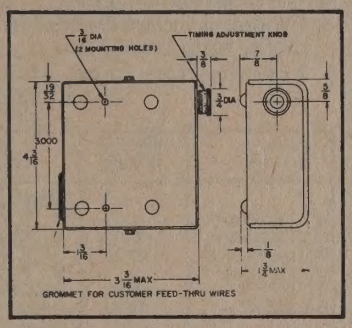
CLASS 112C AIR DASHPOT TIME DELAY RELAY

DPDT 10 Amps.

Operate and release delay adjustable 1 to 150 seconds
Wt. — 20 ozs. approx.



Class 112C features rugged all metal enclosure with grommet for customer feed through wires. Internally wired by customer to .187 quick disconnect terminals. The solenoid assembly added to air dashpot/snap switch combination initiates time switching function by electrical actuation. Available in operate or release delay. Release delay accomplished without standby power. Time repeat accuracy ±10%. Mounting: two 3/16" diameter holes on 3" centers.



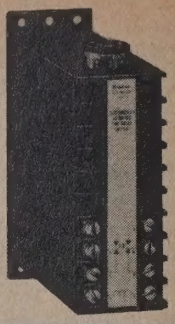
Stock Part No.	Contacts 10 Amps	COIL †Volts	COIL *Ohms	Prices 1-9
		SLOW OPERATE		
W112ACSOX-4		120VAC	—	24.30
W112CSOX-3	DPDT	24VDC	80	24.30
		SLOW RELEASE		
W112ACSRX-4		120VAC	—	24.30
W112CSRX-3	DPDT	24VDC	80	24.30

Operate and release delay adjustable 1-150 sec.

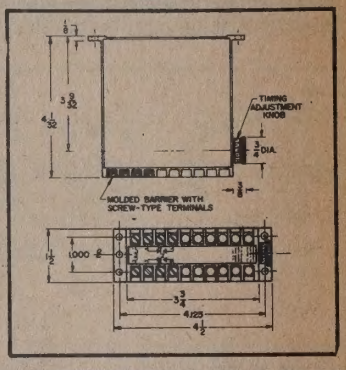
CLASS 112M AIR DASHPOT TIME DELAY RELAY

DPDT 10 Amps.

Plastic enclosure — screw type terminals — operate and release delay adustable 1 to 150 seconds
Wt. — 14 ozs. approx.



Class 112M comes in molded high impact plastic enclosure and built-in screw type terminals for easy customer wiring. The solenoid assembly added to air dashpot/snap switch combination initiates time switching function by electrical actuation. Available in operate or release delay. Release delay accomplished without standby power. Timing adjustable with knob or capped Allen screw. Factory wired internally. Time repeat accuracy ±10%. Flange mounting: Six 3/16" diameter holes ½"x4⅛" centers.



Stock Part No.	Contacts 10 Amps	COIL †Volts	COIL *Ohms	Adjustment Type	Prices 1-9
		SLOW OPERATE			
W112MASOX-1		120VAC	—	Knob	28.23
W112MASOX-2	DPDT	120VAC	—	Screw	28.23
W112MSOX-2		24VDC	7	Knob	28.23
W112MSOX-3	DPDT	24VDC	80	Screw	28.23
		SLOW RELEASE			
W112MASRX-1		120VAC	—	Knob	28.23
W112MASRX-2	DPDT	120VAC	—	Screw	28.23
W112MSRX-1		24VDC	80	Knob	28.23
W112MSRX-2	DPDT	24VDC	80	Screw	28.23

Operate and Release Delay Adjustable 1-150 seconds.

CLASS 110 AIR DASHPOT TIME DELAY — OPERATE DELAY ADJUSTABLE 0.2 TO 45 SEC.

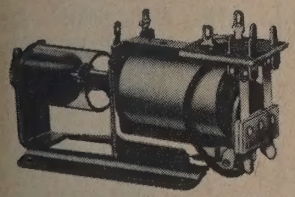
High Reliability and long life assured by —

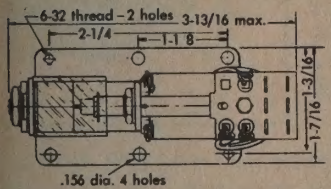
- Proven relay contacts and construction.
- Air Dashpot Timer precision built of nonaging, low friction material.
- Solenoid Assembly completes magnetic circuit instantaneously for positive switching that protects contacts from chattering and fritting.

Operate Delay — adjustable 0.2 to 45 seconds.
Instant Release: Air dashpot reaches "START" position within 0.2 second.
Operates in any position. (Timing should be set in installed position.)
Timing Repeat Accuracy, ±10%.
Power Consumption, DC, 4W; AC, 7VA, nominal.

OPEN TYPE WITH SOLDER TERMINALS

Wt. — 6 ozs. approx.





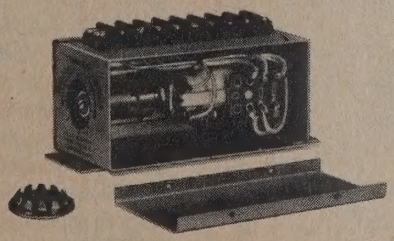
Output contacts DPDT silver alloy gold flashed 10 amps.
Dimensions: 3 13/16 long, 1 15/16 high, 1 7/16 wide.

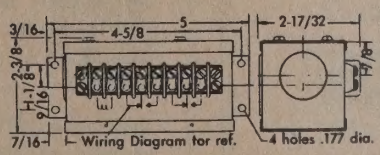
Stock Part No.	Contacts 10-amp	COIL †Volts	COIL *Ohms	Prices 1-9
W110X-9	DPDT	24VDC	100	17.75
W110X-10		110VDC	2500	18.34
W110AX-9		115VAC**	—	20.91

Operate Time Delay-adjustable 0.2 to 45 Seconds

SCREW TERMINALS — 40-348 COVER

Wt. — 15 ozs. approx.





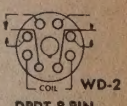
Heavy metal enclosure with snap-on cover. Snap-on cap access to timing adjustment. Screw terminals with phenolic barriers. Wiring diagram, contact specifications, coil voltage and part number on cover. Output contacts DPDT silver alloy gold flashred 10 amps.

Stock Part No.	Contacts 10-amp	COIL †Volts	COIL *Ohms	Prices 1-9
W110CSX-1	DPDT	24VDC	100	28.56
W110CSX-2		110VDC	2500	29.22
W110ACSX-1		115VAC**	—	30.07

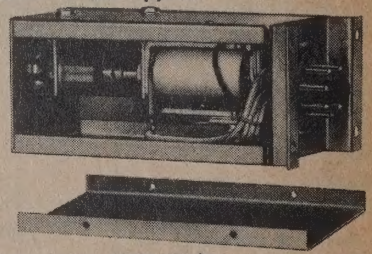
Operate Time Delay-adjustable 0.2 to 45 Seconds

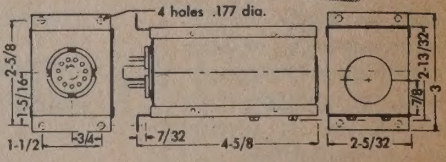
PLUG-IN WITH 40-347 COVER

Wt. — 15 ozs. approx.



DPDT 8-PIN





Phenolic octal plug with hold down bracket. Heavy metal enclosure with snap-on cover. Snap-on cap access to timing adjustment. Wiring diagram, contact specifications, coil voltage and part number on cover. Output contacts DPDT silver alloy gold flashed 10 amps.

Stock Part No.	Contacts 10-amp	COIL †Volts	COIL *Ohms	Prices 1-9
W110CPX-10	DPDT	24VDC	100	26.78
W110CPX-11		110VDC	2500	27.44
W110ACPX-9	WD-2	115VAC**	—	29.79

Operate Time Delay-adjustable 0.2 to 45 Seconds

*Resistance values ±10%, measured at 25°C.
**Internally rectified.
†Voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.

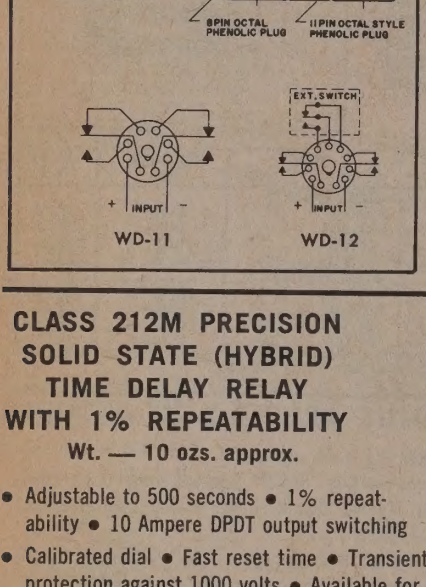
Magnecraft® time delay relays & switches

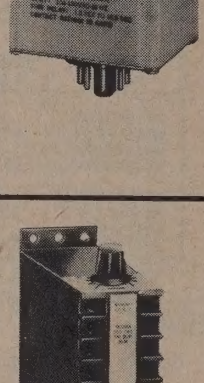
CLASS 211CP LOW COST SOLID STATE (HYBRID) TIME DELAY RELAY WITH 5% REPEATABILITY

Wt. — 10 ozs. approx.

The Class 211CP Solid State Time Delay Relay meets the ever increasing demand for low cost highly reliable industrial electronic control components. This time delay relay makes use of hybrid circuitry combining solid state circuitry for the timing function with an electromechanical relay for DPDT 10 ampere output switching.

A high reliability Magnecraft Class 88 DPDT relay with its long life and precision built hinge pin armature is mounted internally.





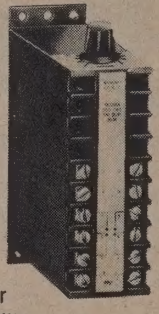
The Class 211CP offers the following outstanding features.

- Available in three adjustable timing ranges, 1 to 10 sec., 1 to 18 and 2 to 300 sec.
- Available for AC and DC operation.
- For delay on operate.
- For delay on release.
- Plug-in mounting (mates with standard octal style sockets).
- Knob adjusting timing.
- Nylon dust cover.
- Reverse polarity protected. (DC models).
- Timing repeatability ±5% of setting at nominal voltage @ 25°C.
- Reset time: 100 ms. typical.
- Transient protection: Protected for twice the nominal input voltag a period not to exceed 8 ms.
- Temperature range: Operate —10°C to +55°C
  Storage —55°C to +85°C

Stock Part No.	Contacts 10 Amps.	Coil Voltage	Time Delay	P
		Operate Delay		
W211ACPSOX-5			1-10 Second	1
W211ACPSOX-7	DPDT	120 VAC	1-180 Second	1
W211ACPSOX-8	WD-11		2-300 Second	1
W211CPSOX-1			1-10 Second	1
W211CPSOX-3	DPDT	24 VDC	1-180 Second	1
W211CPSOX-4	WD-11		2-300 Second	1
		Release Delay		
W211ACPSRX-5			1-10 Second	2
W211ACPSRX-7	DPDT	120 VAC	1-180 Second	2
W211ACPSRX-8	WD-12		2-300 Second	2
W211CPSRX-1	DPDT		1-10 Second	2
W211CPSRX-3	WD-12	24 VDC	1-180 Second	2
W211CPSRX-4			2-300 Second	2

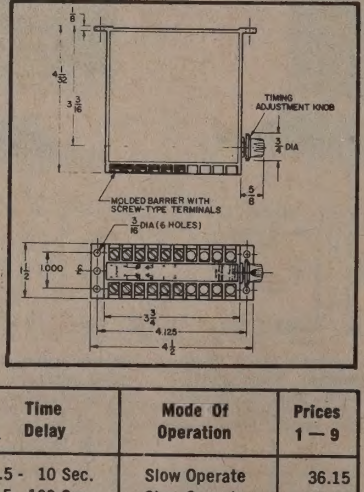
CLASS 212M PRECISION SOLID STATE (HYBRID) TIME DELAY RELAY WITH 1% REPEATABILITY

Wt. — 10 ozs. approx.



- Adjustable to 500 seconds • 1% repeatability • 10 Ampere DPDT output switching
- Calibrated dial • Fast reset time • Transient protection against 1000 volts • Available for AC or DC operation • Molded plastic enclosure for surface mounting • Screw type terminals • Versatility — 2 basic models provide 6 different timing functions possible with a jumper wire to the appropriate terminals:
- Operate Delay
- Non-Totalizer
- Totalizer/Preset Counter
- Release Delay
- Internal
- Momentary Actuation

Will meet the increased demands for highly reliable, precision accurate, industrial electronic control components. Utilizes precise components for close tolerance of operation with 1% repeatability.



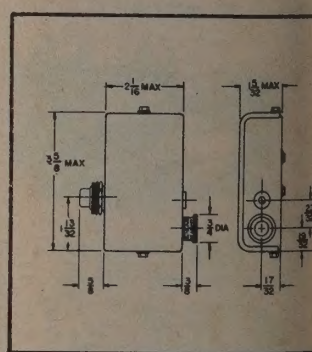
Stock Part Number	Input Voltage	Time Delay	Mode Of Operation	Prices 1 — 9
W212MASOX-2	120VAC	.5 - 10 Sec.	Slow Operate	36.15
W212MASOX-3	120VAC	5 - 100 Sec.	Slow Operate	37.74
W212MASOX-4	120VAC	50 - 500 Sec.	Slow Operate	43.24
W212MASRX-2	120VAC	.5 - 10 Sec.	Slow Release	42.06
W212MASRX-3	120VAC	5 - 100 Sec.	Slow Release	43.82
W212MASRX-4	120VAC	50 - 500 Sec.	Slow Release	49.73

CLASS 113C AIR DASHPOT TIME DELAY SWITCH

Push Button . . . Release Button . . . Time Delay Is On SPDT — 10 Amp. Single hole panel mounting with ⅝" threaded bushing

Wt. — 8 ozs. approx.

The Class 113 Air Dashpot Time Delay Switch is built with a non-aging, low friction graphite and precision ground tempered glass air dashpot timer. All metal parts are corrosion resistant. Pushing the button instantly transfers the SPDT switch. Releasing the button initiates the timing cycle. At the end of the timing period (when the dashpot piston travel is completed) the snap action output contacts are instantly reset, ready to perform another timing operation. Wired by customer thru grommet.



Available in SPDT with 10 ampere contact rating up to 32VDC or 25 resistive load. Knob adjustable timing range from 1 to 180 seco Equipped with ½" diameter push button. This new Class 113 Time D Switch is a masterpiece of simplicity with few moving parts. Ideally su for industrial control applications as machine tool control, supervi control equipment, test equipment, conveyor control, elevator con automation equipment, etc.

Stock Part No.	Contact Comb.	Contact Rating	Timing Range	Button Diameter	Pric 1 —
W113CX-1	SPDT	10 Amps	1-180 Sec.	½" Dia.	12.9

Net

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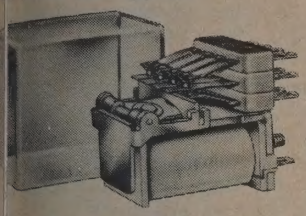
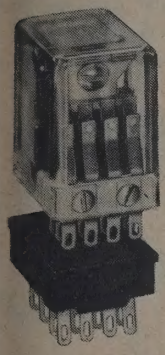
Magnecraft® telephone type relays

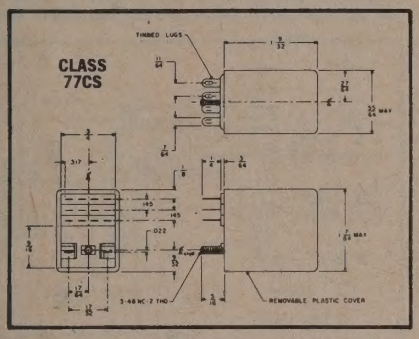
LASS 77CS — MINIATURE — 5 AMP — 4PDT
IJST COVER AND SOCKETS

\. — 2 ozs. approx.



Switches up to 5 amps — has greater contact pressure without increasing coil operating power. No internal wiring, solder connections or pigtails. Hingepin armature bearings with oversize bearing surfaces guarantee longer life. Molded insulation of contact terminals provides higher dielectric strength. Comes in molded insulated snap-on dust cover.





SOLDER TERMINAL TYPE

Stock t No. ††	Contacts 5 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
		77CS Socket Terminal			
7CSX-1		6VDC	40		5.30
7CSX-2		12VDC	160		5.30
7CSX-3	4PDT	24VDC	600	1.0W	5.40
7CSX-4		48VDC	2500		5.55
7CSX-5		110VDC	10000		5.97
7ACSX-1		115VAC	—	3VA	5.58

When relay is required to plug into sockets 70-161-1 or 70-161-3, order part nos. in this table only. Sockets must be ordered separately.

Solder Terminal

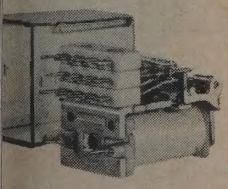
SOCKETS

PC Terminal

70-161-1 Solder Terminal Socket with Retainer ..... .58
70-161-3 Printed Circuit Terminal Socket ..... .58

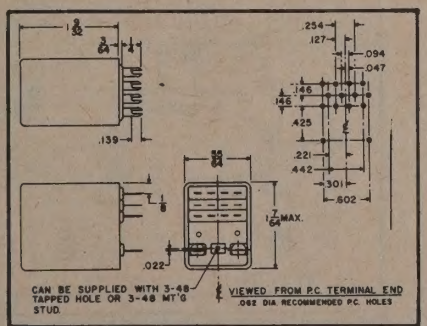
LASS 77PC — 5 AMP. — 4PDT — DUST COVER
IRECT PRINTED CIRCUIT MTG. (NO SOCKET)

t. — 2 ozs. approx.



e Class 77PC relay is design variation of the ass 77CS relay illustrated ove with all terminals apted for direct mounting printed circuit boards. minates the cost of a cket.

PRINTED CIRCUIT TYPE



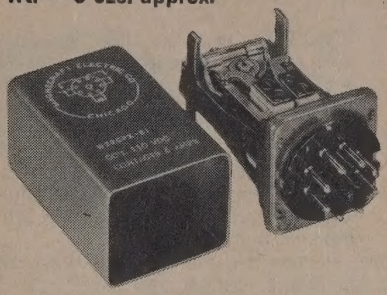
77PC PRINTED CIRCUIT TERMINAL

tock Part No.**	†Nom. Coil Volt.	Coil Ohms	Prices 1-9
W77PCX-12	6VDC	40	5.60
W77PCX-13	12VDC	160	5.60
W77PCX-14	25VDC	600	5.69
W77PCX-15	48VDC	2500	5.84
W77PCX-16	110VDC	10,000	6.25

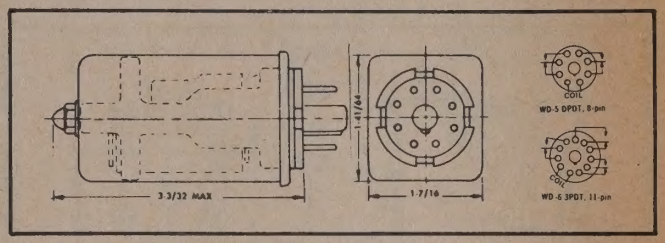
* Do not order this part no. when socket is required.

CLASS 22CP — SMALL AC & DC — 5 AMP. — PLUG-IN WITH REMOVABLE DUST COVER

Wt. — 6 ozs. approx.



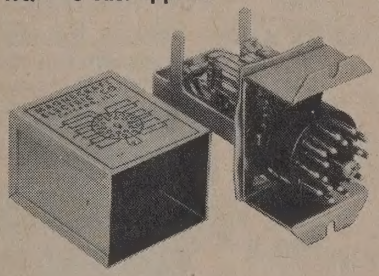
40-284 enclosure with removable dust cover housing Class 22 relay with 8- or 11-pin standard octal plug. Internal bracket supports cover and protects relay. One screw holds cover in place. Silver alloy contacts, 5 ampere rating.



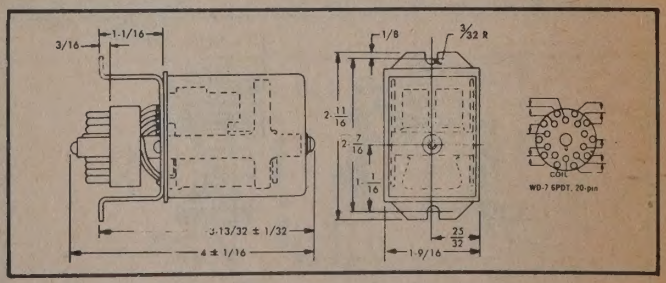
Stock Part No.	Contacts 5 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
		alternating current voltage actuated			
W22ACPX60	DPDT WD-5	115VAC		5VA	10.23
		direct current voltage actuated			
W22CPX49	DPDT WD-5	12VDC	80	2.0W	9.85
W22CPX50		24VDC	375	1.5W	9.90
W22CPX51		110VDC	8000	1.5W	11.14
W22CPX54	3DPT WD-6	24VDC	375	1.5W	11.92
W22CPX56	DPDT WD-5	4.5 MA	10000	200MW	11.14

CLASS 22CP — SMALL DC — 5 AMP. PLUG-IN WITH REMOVABLE DUST COVER

Wt. — 8 ozs. approx.



45-176 removable dust cover with Class 22 relay and 20-pin octal plug. Hold-down bracket permits mounting in any position. Internal bracket supports cover. One screw holds cover. Rubber gasket seals out dust. Silver alloy contacts, 5 ampere rating. Hold down bracket has two mounting holes for 6-32 screws on 2 7/16 centers.



Stock Part No.	Contacts 5 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W22CPX61	6PDT WD-7	6VDC	12	3.0W	16.72
W22CPX62		12VDC	50		16.72
W22CPX63		24VDC	225		16.77
W22CPX64		110VDC	5000		17.35

*Resistance values ±10%, measured at 25°C.

†Voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.

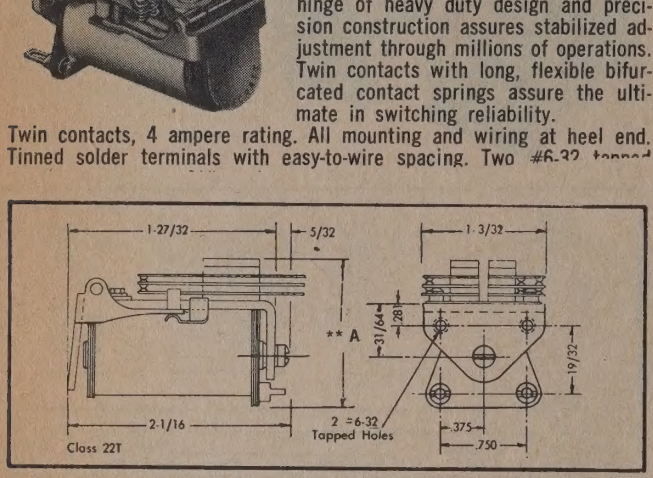
Magnecraft® telephone type relays

CLASS 22T — SMALL DC — 4 AMP. — TWIN CONTACTS

Wt. — 5 ozs. approx.

Class **22T** — miniature long form relay with accuracy, reliability and long life equal and sometimes superior to larger relays. A unique, pin type armature hinge of heavy duty design and precision construction assures stabilized adjustment through millions of operations. Twin contacts with long, flexible bifurcated contact springs assure the ultimate in switching reliability.

Twin contacts, 4 ampere rating. All mounting and wiring at heel end. Tinned solder terminals with easy-to-wire spacing. Two #6-32 tapped

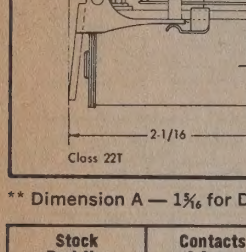


** Dimension A — 1 5/16 for DPDT, 1½ for 4PDT, 1¾ for 6PDT.

Stock Part No.	Contacts 4 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
Direct Current Voltage Actuated					
W22TX267	4PDT	6VDC	20	2.0W	8.44
W22TX268		12VDC	80	2.0W	8.44
W22TX269		24VDC	375	1.5W	8.49
W22TX270	6PDT	110VDC	8000	1.5W	9.97
W22TX272		12VDC	80	2.0W	11.87
W22TX273		24VDC	375	1.5W	11.92
W22TX274		110VDC	8000	1.5W	12.91
DC Current Actuated for Plate Circuit Operation					
W22TX275	DPDT	4.5 MA	10000	200MW	6.93

CLASS 11D — MINIATURE POWER — DC — 50 AMP. — SPST-NO-DB

Wt. — 3 ozs. approx.



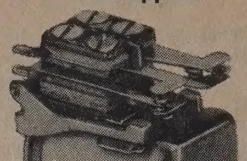
Class **11D** miniature telephone type relay with heavy brass contact arms and large 50-ampere silver alloy, single pole, single throw, normally open, double break contacts. The Class 11 is a small size relay with big relay reliability, accuracy and long life.

Solder terminals, spaced for easy wiring. Four 4-40 tapped mounting holes on ⅜"x7/16" centers.

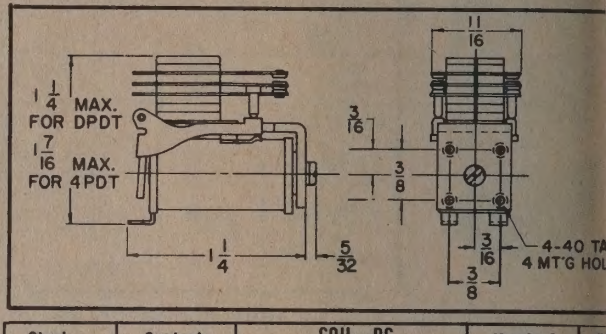
Stock Part No.	Contacts 50 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
W11DX39	SPST-NO Double Break	12VDC	100	1.5W	5.45
W11DX40		24VDC	400		5.45

CLASS 33 — SUB-MINIATURE — DC — 3 AMP

Wt. — 1 oz. approx.



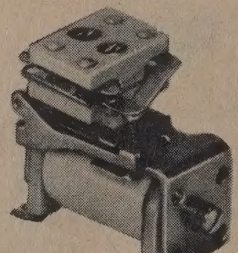
Class **33** midget sub-miniature; the sm telephone type MAGNECRAFT Relay one of the smallest telephone type on the market. Class 33 is also the f operating and inherently more shock ant and vibration resistant. Long lif liability and accuracy fit Class 33 for a wide range of small space re ments. They are extensively used fo craft, computer and mobile applications where small size, light w and resistance to shock and vibration are essential. Contacts; 3 an rating. Four 4-40 tapped mounting holes on ⅜x⅜ centers.



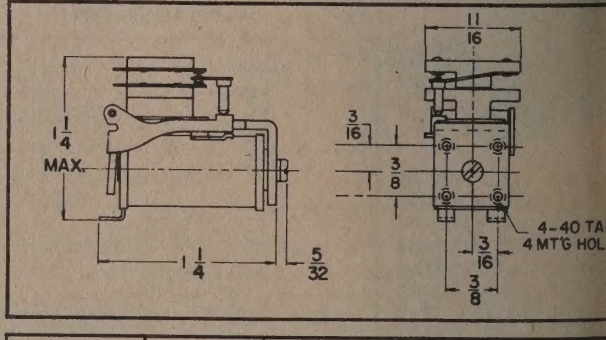
Stock Part No.	Contacts 3 Amps	COIL—DC †Volts	COIL—DC *Ohms	Nominal Power	P
W33X237	DPDT	6VDC	17	2.0W	
W33X238		12VDC	75		
W33X239		24VDC	280		
W33X240		110VDC	6500		
W33X241	4DPT	6VDC	17	2.0W	
W33X242		12VDC	75		
W33X243		24VDC	280		
W33x244		110VDC	6500		

CLASS 33F — RF SWITCHING — SUBMINIATUR 2 AMP. — SPDT

Wt. — 1 oz. approx.



Class **33** telephone type relay designed cially for lowest capacitance betw springs and minimum losses at high quencies. Suitable for antenna change switching. Contact springs have cer insulation. Contacts: 2 ampere rating Tinned solder terminals. Four #4-40 ta mounting holes on ⅜"x⅜" centers.



Stock Part No.	Contacts 2 Amps	COIL—DC †Volts	COIL—DC *Ohms	Nominal Power	Pric 1-9
W33FX20	SPDT	6VDC	28	1.5W	4.0
W33FX21		12VDC	100		4.1
W33FX22		24VDC	500		4.1
W33FX23		110VDC	6500		4.6

*Resistance values ±10%, measured at 25°C.

†Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C.

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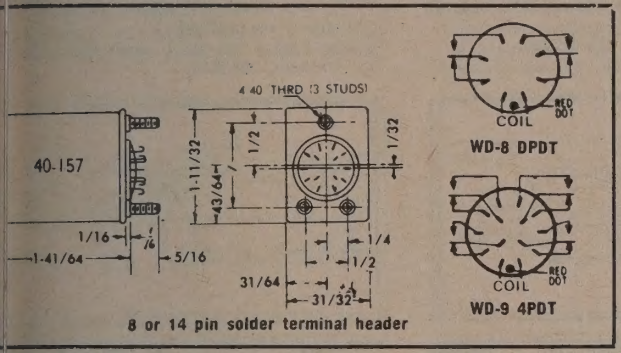
Magnecraft® hermetically sealed relays

CLASS 33HS — HERMETICALLY SEALED SUB-MINIATURE DC — 5 AMP. — DPDT — 4PDT SILVER ALLOY CONTACTS

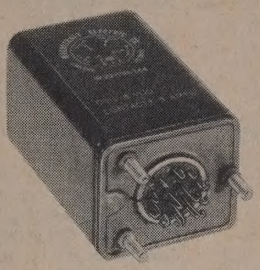
— 3 ozs. approx.

- Maximum telephone type relay reliability.
- Fast operate and release time.
- One of the smallest hermetically sealed telephone type relays.
- Highly adaptable to applications involving shock, vibration and severe atmospheric conditions.
- Widely used in both military and civilian applications such as: aircraft radio equipment, aircraft radar sets, aircraft flight recorders, etc.
- Full 5 ampere 4PDT switching capability.

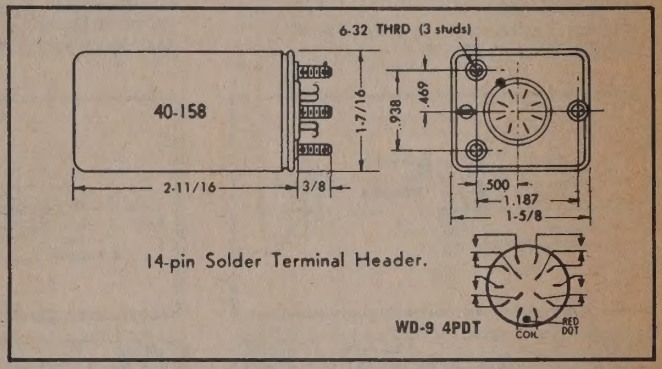


Stock Part No.	Contacts 5 Amps	COIL—DC †Volts	COIL—DC *Ohms	Nominal Power	Prices 1-9
V33HSX177		6VDC	17		13.21
V33HSX178	DPDT	12VDC	280	2.0W	13.21
V33HSX179	WD-8	24VDC	280		13.26
V33HSX180		110VDC	6500		13.87
V33HSX181		6VDC	17		16.65
V33HSX182	4PDT	12VDC	75	2.0W	16.65
V33HSX183	WD-9	24VDC	280		17.70
V33HSX184		110VDC	6500		17.36

CLASS 22HS — HERMETICALLY SEALED — SMALL — AC & DC — 5 AMP. — 4PDT SILVER ALLOY CONTACTS Wt. — 7 ozs. approx.



- Exceptionally long life.
- High contact pressures assure positive switching.
- Reliable hinge pin construction.
- Very efficient, low power sensitivity up to 4PDT.
- Available to meet military specifications for shock, vibration and temperature extremes.

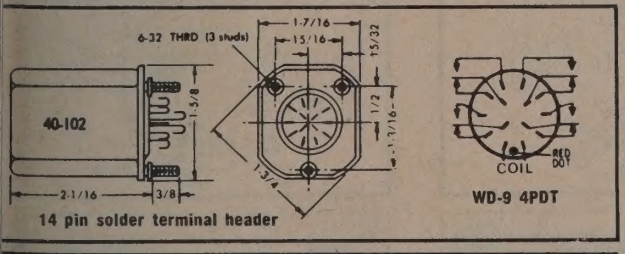


Stock Part No.	Contacts 5 Amps	COIL †Volts	COIL *Ohms	Nominal Power	Prices 1-9
	alternating current voltage actuated				
W22AHSX32	4PDT WD-9	115VAC		5VA	17.30
	direct current voltage actuated				
W22HSX144		6VDC	20	2.0W	17.00
W22HSX145	4PDT	12VDC	80	2.0W	17.00
W22HSX146	WD-9	24VDC	375	1.5W	17.05

CLASS 11HS — HERMETICALLY SEALED MINIATURE DC — 5 AMP. — 4PDT LOW COST SILVER ALLOY CONTACTS

— 6 ozs. approx.

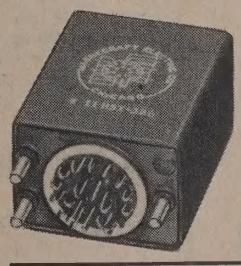
- Developed to provide accuracy, durability and adaptability in a miniature telephone type relay.
- Superior to standard larger telephone type relays.
- Full 5 ampere switching capability.
- Available for AC operation from 50 to 400 cycles.
- Available to meet military specifications for shock, vibration and temperature extremes.



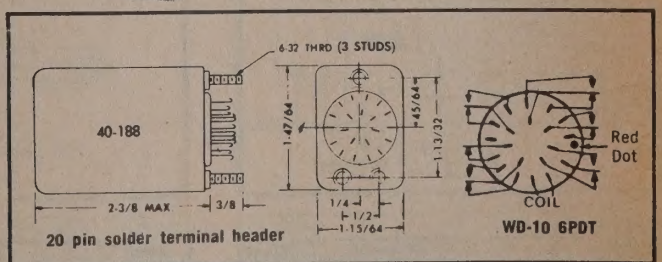
Stock Part No.	Contacts 5 Amps	COIL—DC †Volts	COIL—DC *Ohms	Nominal Power	Prices 1-9
W11HSX321		6VDC	25		15.92
W11HSX322	4PDT	12VDC	100	1.5W	15.97
W11HSX323	WD-9	24VDC	400		15.97

CLASS 11HS — HERMETICALLY SEALED MINIATURE DC — 5 AMP. — 6PDT SILVER ALLOY CONTACTS

Wt. — 6 ozs. approx.



- An outgrowth of the reliable 4PDT relay.
- This six pole, double throw relay has the same extreme environmental protection of its 4PDT counterpart plus the added two poles in a miniature package.
- Full 5 ampere reliable switching capability and also available for AC operation.

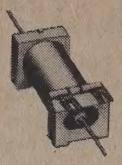


Stock Part No.	Contacts 5 Amps	COIL—DC †Volts	COIL—DC *Ohms	Nominal Power	Prices 1-9
W11HSX327	6PDT	12VDC	56	2.5W	19.91
W11HSX328	WD-10	24VDC	280		19.96

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.

Magnecraft® miniature dry reed relays

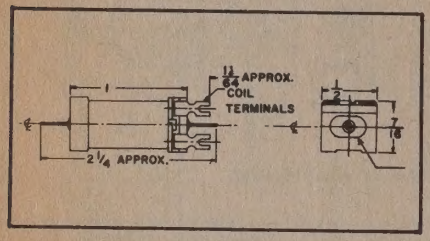
CLASS 101M MINIATURE REED RELAY



In-Line Axial Leads
SPST — NO, .5 Amp.
Nom. Power 600MW
Wt. — 1 oz. approx.

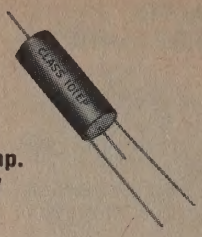
Low Cost!

Operate, 1 ms. aver. Rlease, ½ ms. aver.
Contact Bounce, less than ½ ms. aver.
Contact Load Rating, 10VA at .5 amp. max. or 100V max., non-inductive.
Contact Resistance, 150 milliohms aver.
Life Expectancy, 5 million cycles at full load; 20 million at ½ load.
Capacitance across contacts, 0.3 pf. aver.
Operates in any position.



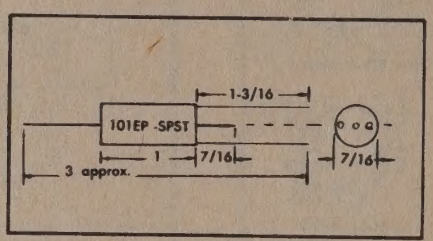
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W101MX-1	SPST-NO	—	6	100	2.20
W101MX-2		—	12	250	2.25
W101MX-3		—	24	500	2.25
W101MX-4		9	—	2500	2.43

CLASS 101EP ENCAPSULATED MINIATURE REED RELAY



In-Line Axial Leads
SPST — NO, .5 Amp.
Nom. Power 600MW
Wt. — 1 oz. approx.

Operate, 1 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than ½ ms. aver.
Contact Load Rating, 10VA at .5 amp. max. or 100V max., non-inductive.
Contact Resistance, 150 milliohms aver.
Life Expectancy, 5 million cycles at full load; 20 million at ½ load.
Capacitance across contacts, 0.5 pf. aver.

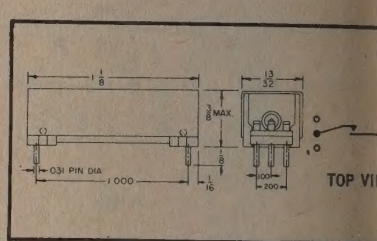


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W101EPX-5	SPST-NO	—	6V	65	3.62
W101EPX-6		—	12V	225	3.62
W101EPX-7		—	24V	1000	4.24
W101EPX-8		8MA	—	5000	4.68

CLASS 101MPC MINIATURE REED RELAY

Printed Circuit Mtg.
SPST — NO, .5 Amp.
Nom. Power 500MW
Wt. — 1 oz. approx.

Operate, 1 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than ½ ms. aver.
Contact Load Rating, 10VA at .5 amp. ma
100V max., non-inductive.
Contact Resistance, 150 milliohms aver.
Life Expectancy, 5 million cycles at full loa
million at ½ load.
Capacitance across contacts, 0.8 pf. aver.
Operates in any position.
Molded bobbin and steel cover provide prot
and magnetic shielding.

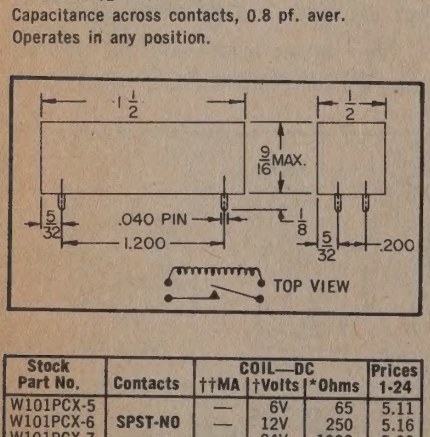


Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	P
W101MPCX-1	SPST-NO	6	70	
W101MPCX-2		12	300	
W101MPCX-3		24	1100	
W101MPCX-4		48	4300	

CLASS 101PC ULTRA-RELIABLE ENCAPSULATED REED RELAY

Printed Circuit Mtg.
SPST — NO, .5 Amp.
Nom. Power 600MW
Wt. — 1 oz. approx.

Operate, 1 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than ½ ms. aver.
Contact Load Rating, 10VA at .5 amp. max. or 100V max., non-inductive.
Contact Resistance, 150 milliohms aver.
Life Expectancy, 5 million cycles at full load; 20 million at ½ load.
Capacitance across contacts, 0.8 pf. aver.
Operates in any position.

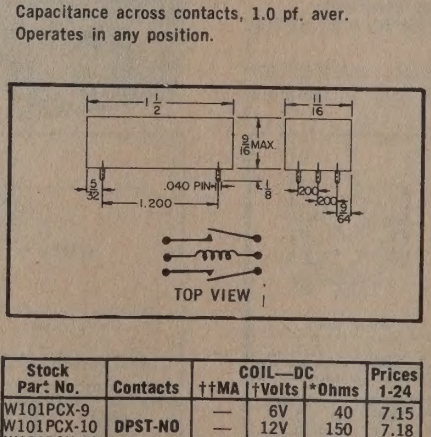


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W101PCX-5	SPST-NO	—	6V	65	5.11
W101PCX-6		—	12V	250	5.16
W101PCX-7		—	24V	1000	5.26
W101PCX-8		8MA	—	5000	5.68

CLASS 101PC ULTRA-RELIABLE ENCAPSULATED REED RELAY

Printed Circuit Mtg.
DPST — NO, .5 Amp.
Nom. Power 900MW
Wt. — 1 oz. approx.

Operate, 1 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than ½ ms. aver.
Contact Load Rating, 10VA at .5 amp. max. or 100V max., non-inductive.
Contact Resistance, 150 milliohms aver.
Life Expectancy, 5 million cycles at full load; 20 million at ½ load.
Capacitance across contacts, 1.0 pf. aver.
Operates in any position.

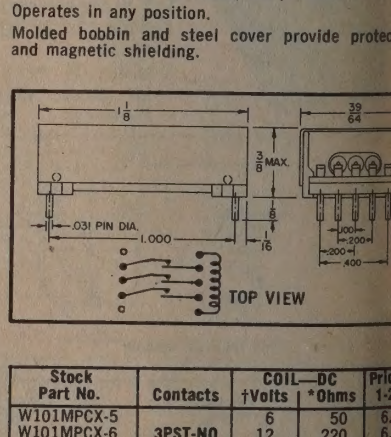


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W101PCX-9	DPST-NO	—	6V	40	7.15
W101PCX-10		—	12V	150	7.18
W101PCX-11		—	24V	650	7.24
W101PCX-12		8MA	—	5000	7.69

CLASS 101MPC MINIATURE REED RELAY

Printed Circuit Mtg.
3PST — NO, .5 Amp.
Nom. Power 700MW
Wt. — 2 ozs. approx.

Operate, 1 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than ½ ms. aver.
Contact Load Rating, 10VA at .5 amp. max
100V max., non-inductive.
Contact Resistance, 150 milliohms aver.
Life Expectancy, 5 million cycles at full load
million at ½ load.
Capacitance across contacts, 1.0 pf. aver.
Operates in any position.
Molded bobbin and steel cover provide protec
and magnetic shielding.



Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	Pric 1-2
W101MPCX-5	3PST-NO	6	50	6.
W101MPCX-6		12	220	6.
W101MPCX-7		24	850	6.
W101MPCX-8		48	3300	6.

*Resistance values ±10%, measured at 25°C. †Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C. ††Current operated relays pull in at specified value or less.

Net
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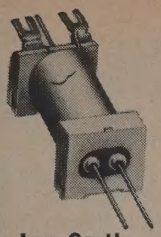
Magnecraft® miniature dry reed relays

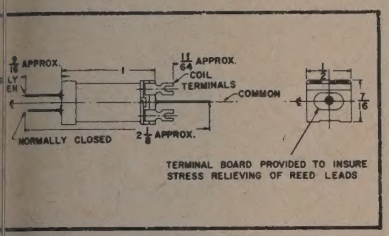
SS 104M IIATURE D RELAY



ine Axial Lead
T, .25 Amp.
ied Bobbin
. Power 500MW
— 1 oz. approx.

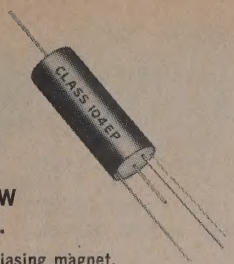
Low Cost!

te, 1 ms. aver. Release, 1 ms. aver.
ct Bounce, less than ½ ms. aver. N.O. con- less than 2 ms. aver. N.C. contacts.
ct Load Rating, 3 VA max. at .25 amp. max. V max., non-inductive.
ct Resistance, 150 milliohms, aver.
itance across contacts, 1.3 pf. aver.
Expectancy, 10 million cycles at full load. ting position, any.



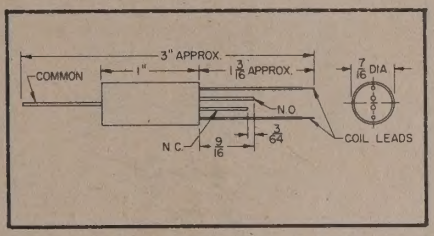
ock No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
MX-1	SPDT	—	6	100	5.63
MX-2		—	12	250	5.68
MX-3		—	24	500	5.68
MX-4		9	—	2500	5.87

CLASS 104EP ENCAPSULATED MINIATURE REED RELAY



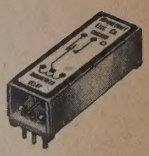
In-Line Axial Lead
SPDT, .25 Amp.
Nom. Power 600MW
Wt. — 1 oz. approx.

SPDT, true form C, no biasing magnet.
Operate, 1 ms. aver. Release, 1 ms. aver.
Contact Bounce, less than ½ ms. aver. N.O. contacts; less than 2 ms. aver. N.C. contacts.
Contact Load Rating, 3VA max. at .25 amp. max. or 28V max., non-inductive.
Contact Resistance, 150 milliohms, aver.
Capacitance across contacts, 1.5 pf. aver.
Life Expectancy, 10 million cycles at full load. Operating position, any.



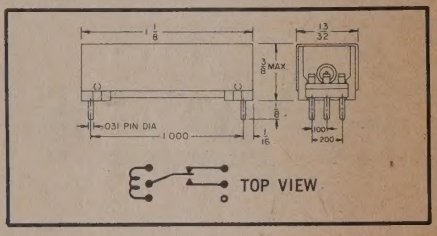
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W104EPX-2	SPDT	—	6	65	7.37
W104EPX-3		—	12	225	7.37
W104EPX-4		—	24	1000	8.05
W104EPX-5		8	—	5000	8.55

CLASS 104MPC MINIATURE REED RELAY



Printed Circuit Mtg.
SPDT, .25 Amp.
Nom. Power 500MW
Wt. — 1 oz. approx.

SPDT, true form C, no biasing magnet.
Operate, 1 ms. aver. Release, 1 ms. aver.
Contact Bounce, less than ½ ms. aver. N.O. contacts; less than 2 ms. aver. N.C. contacts.
Contact Load Rating, 3VA max. at .25 amp. max. or 28V max., non-inductive.
Contact Resistance, 150 milliohms, aver.
Capacitance across contacts, 1.5 pf. aver.
Life Expectancy, 10 million cycles at full load. Operating position, any.
Molded bobbin and steel cover provide protection and magnetic shielding.

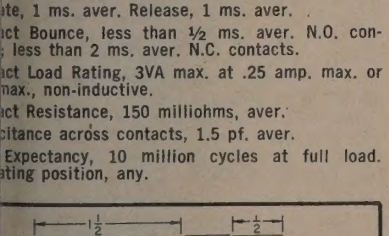


Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	Prices 1-24
W104MPCX-1	SPDT	6	70	6.82
W104MPCX-2		12	300	6.83
W104MPCX-3		24	1100	6.85
W104MPCX-4		48	4300	6.98

SS 104PC RA-RELIABLE APSULATED D RELAY

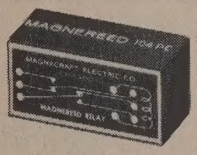
ted Circuit Mtg.
T, .25 Amp.
n. Power 600MW
— 1 oz. approx.

true form C, no biasing magnet.
te, 1 ms. aver. Release, 1 ms. aver.
ct Bounce, less than ½ ms. aver. N.O. con- less than 2 ms. aver. N.C. contacts.
ct Load Rating, 3VA max. at .25 amp. max. or max., non-inductive.
ct Resistance, 150 milliohms, aver.
citance across contacts, 1.5 pf. aver.
Expectancy, 10 million cycles at full load. ting position, any.



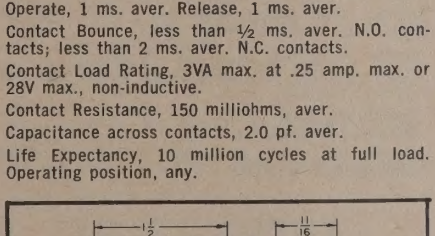
ock t No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1-24
PCX-7	SPDT	—	6V	65	10.07
PCX-8		—	12V	225	10.12
PCX-9		—	24V	1000	10.22
PCX-10		8	—	5000	10.64

CLASS 104PC ULTRA-RELIABLE ENCAPSULATED REED RELAY



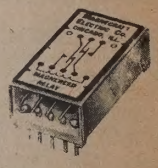
Printed Circuit Mtg.
DPDT, .25 Amp.
Nom. Power 900MW
Wt. — 3 ozs. approx.

DPDT, true 2 Form C, no biasing magnet.
Operate, 1 ms. aver. Release, 1 ms. aver.
Contact Bounce, less than ½ ms. aver. N.O. contacts; less than 2 ms. aver. N.C. contacts.
Contact Load Rating, 3VA max. at .25 amp. max. or 28V max., non-inductive.
Contact Resistance, 150 milliohms, aver.
Capacitance across contacts, 2.0 pf. aver.
Life Expectancy, 10 million cycles at full load. Operating position, any.



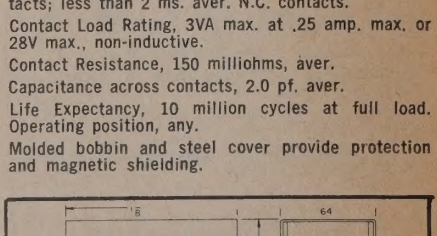
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W104PCX-3	DPDT	—	6V	40	14.59
W104PCX-4		—	12V	150	14.62
W104PCX-5		—	24V	650	14.68
W104PCX-6		8	—	5000	15.13

CLASS 104MPC MINIATURE REED RELAY



Printed Circuit Mtg.
DPDT, .25 Amp.
Nom. Power 700MW
Wt. — 2 ozs. approx.

DPDT, true Form C, no biasing magnet.
Operate, 1 ms. aver. Release, 1 ms. aver.
Contact Bounce, less than ½ ms. aver. N.O. contacts; less than 2 ms. aver. N.C. contacts.
Contact Load Rating, 3VA max. at .25 amp. max. or 28V max., non-inductive.
Contact Resistance, 150 milliohms, aver.
Capacitance across contacts, 2.0 pf. aver.
Life Expectancy, 10 million cycles at full load. Operating position, any.
Molded bobbin and steel cover provide protection and magnetic shielding.

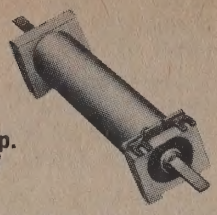


Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	Prices 1-24
W104MPCX-5	DPDT	6	50	11.62
W104MPCX-6		12	220	11.63
W104MPCX-7		24	850	11.65
W104MPCX-8		48	3300	11.73

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C.
††Current operated relays pull in at specified value or less.

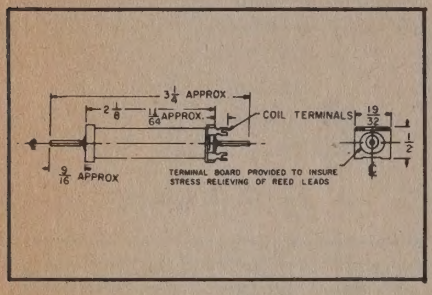
Magnecraft® standard reed relays

CLASS 102M STANDARD SIZE REED RELAY



In-Line Axial Leads
Molded Bobbin
SPST — NO, 1 Amp.
Nom. Power 300MW
Wt. — 1 oz. approx.

Operate, 3 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than 1 ms. aver.
Contact Load Rating, 15VA at 1 amp. max. or 250V max., non-inductive.
Contact Resistance, 100 milliohms, aver.
Life Expectancy, 20 million cycles at full load; 100 million at ½ load.
Capacitance across contacts, 0.9 pf. aver.
Operating position, any.

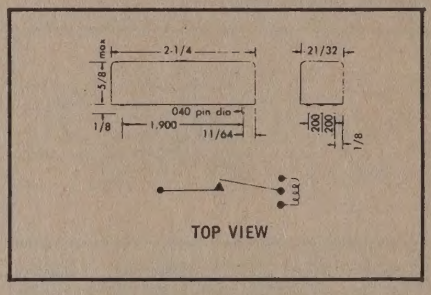


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W102MX-1	SPST-NO	40	—	100	2.18
W102MX-2		—	6	200	2.25
W102MX-3		—	12	500	2.25
W102MX-4		—	24	2000	2.47
W102MX-5		5.5	—	5000	2.63

CLASS 102PC ULTRA-RELIABLE ENCAPSULATED STANDARD SIZE REED RELAY

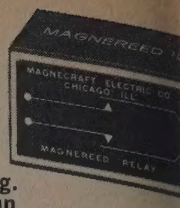
Printed Circuit Mtg.
SPST — NO, 1 Amp.
Nom. Power 400MW
Wt. — 1 oz. approx.

Operate, 3 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than 1 ms. aver.
Contact Load Rating, 15VA at 1 amp. max. or 250V max., non-inductive.
Contact Resistance, 100 milliohms, aver.
Life Expectancy, 20 million cycles at full load; 100 million at ½ load.
Capacitance across contacts, 1.0 pf. aver.
Operating position, any.



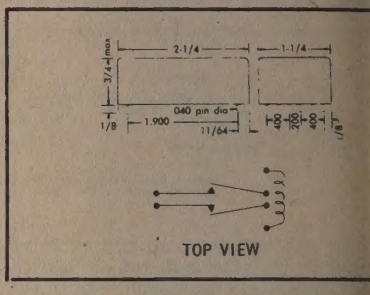
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W102PCX-1	SPST-NO	—	6V	100	4.77
W102PCX-2		—	12V	400	4.83
W102PCX-3		—	24V	1500	4.87
W102PCX-4		6.5MA	—	5000	5.32

CLASS 102PC ULTRA-RELIABLE ENCAPSULATED STANDARD SIZE REED RELAY



Printed Circuit Mtg.
DPST — NO, 1 Amp.
Nom. Power 700MW
Wt. — 2 ozs. approx.

Operate, 3 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than 1 ms. aver.
Contact Load Rating, 15VA at 1 amp. ma
250V max., non-inductive.
Contact Resistance, 100 milliohms, aver.
Life Expectancy, 20 million cycles at full loa
million at ½ load.
Capacitance across contacts, 1.2 pf. aver.
Operating position, any.

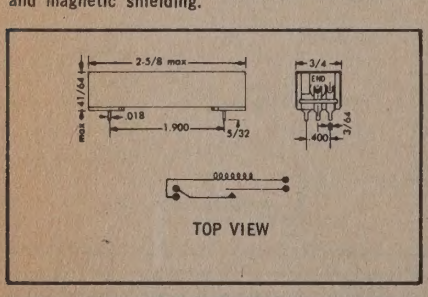


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms
W102PCX-5	DPST-NO	—	6	50
W102PCX-6		—	12	200
W102PCX-7		—	24	800
W102PCX-8		9MA	—	5000

CLASS 102MPC STANDARD SIZE REED RELAY

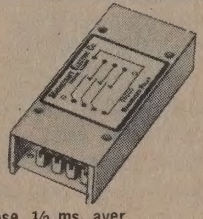
Printed Circuit Mtg.
SPST — NO, 1 Amp.
Nom. Power 500MW
Wt. — 1 oz. approx.

Operate, 3 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than 1 ms. aver.
Contact Load Rating, 15VA at 1 amp. max. or 250V max., non-inductive.
Contact Resistance, 100 milliohms, aver.
Life Expectancy, 20 million cycles at full load; 100 million at ½ load.
Capacitance across contacts, 1.0 pf. aver.
Operating position, any.
Molded bobbin and steel cover provide protection and magnetic shielding.



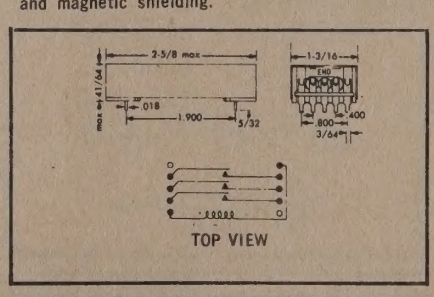
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W102MPCX-5	SPST-NO	140	—	30	3.29
W102MPCX-6		—	6VDC	70	3.29
W102MPCX-7		—	12VDC	250	3.29
W102MPCX-8		—	24VDC	1000	3.29
W102MPCX-9		—	48VDC	4000	3.46
W102MPCX-10		9	—	7000	4.14

CLASS 102MPC STANDARD SIZE REED RELAY



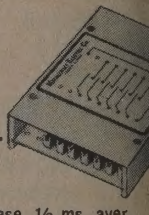
Printed Circuit Mtg.
3PST — NO, 1 Amp.
Nom. Power 750MW
Wt. — 2 ozs. approx.

Operate, 3 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than 1 ms. aver.
Contact Load Rating, 15VA at 1 amp. max. or 250V max., non-inductive.
Contact Resistance, 100 milliohms, aver.
Life Expectancy, 20 million cycles at full load; 100 million at ½ load.
Capacitance across contacts, 1.2 pf. aver.
Operating position, any.
Molded bobbin and steel cover provide protection and magnetic shielding.



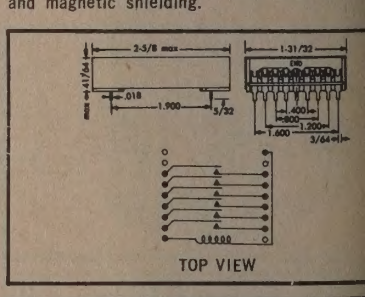
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
W102MPCX-48	3PST-NO	—	6	50	5.62
W102MPCX-49		—	12	175	5.63
W102MPCX-50		—	24	750	5.77
W102MPCX-51		—	48	3000	5.97

CLASS 102MPC STANDARD SIZE REED RELAY



Printed Circuit Mtg.
6PST — NO, 1 Amp.
Nom. Power 1.5W
Wt. — 3 ozs. approx.

Operate, 3 ms. aver. Release, ½ ms. aver.
Contact Bounce, less than 1 ms. aver.
Contact Load Rating, 15VA at 1 amp. n
250V max., non-inductive.
Contact Resistance, 100 milliohms, aver.
Life Expectancy, 20 million cycles at full lo
million at ½ load.
Capacitance across contacts, 1.2 pf. aver.
Operating position, any.
Molded bobbin and steel cover provide pr
and magnetic shielding.



Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms
W102MPCX-52	6PST-NO	—	6	25
W102MPCX-53		—	12	100
W102MPCX-54		—	24	375
W102MPCX-55		—	48	1500

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C.
††Current operated relays pull in at specified value or less.

Net
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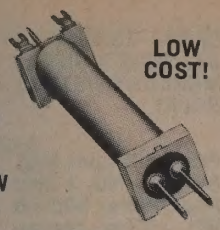
Magnecraft® standard reed relays

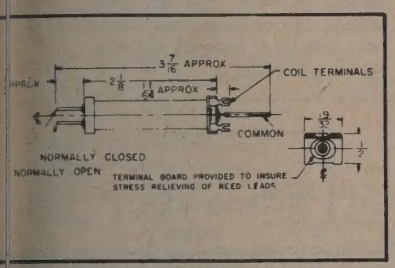
SS 103M NDARD SIZE D RELAY



LOW COST!

ine Axial Leads ded Bobbin DT, .5 Amps. n. Power 300MW — 1 oz. approx.

, true Form C, no biasing magnet.
ate, 2 ms. aver. Release, ½ ms. aver.
act Bounce, 4 ms. average on release, normally d contacts.
act Load Rating, 10VA at ½ amp. max. or max., non-inductive.
act Resistance, 100 Milliohms, aver.
Expectancy, 25 million cycles at full load; 50 on at ½ load.
citance across contacts, 3.0 pf. aver.
ating Position, any.

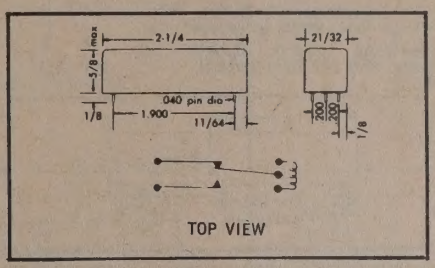


ock t No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1-24
3MX-1	SPDT	—	6	200	4.23
3MX-2		—	12	500	4.23
3MX-3		—	24	2000	4.45
3MX-4		5.5	—	5000	4.62

CLASS 103PC ULTRA-RELIABLE ENCAPSULATED REED RELAY

Printed Circuit Mtg. SPDT, .5 Amps. Nom. Power 400MW Wt. — 1 oz. approx.

SPDT, true Form C, no biasing magnet.
Operate, 2 ms. aver. Release, ½ ms. aver.
Contact Bounce, 4 ms. average on release, normally closed contacts.
Contact Load Rating, 10VA at ½ amp. max. or 250V max., non-inductive.
Contact Resistance, 100 Milliohms, aver.
Life Expectancy, 25 million cycles at full load; 50 million at ½ load.
Capacitance across contacts, 3.0 pf. aver.
Operating Position, any.

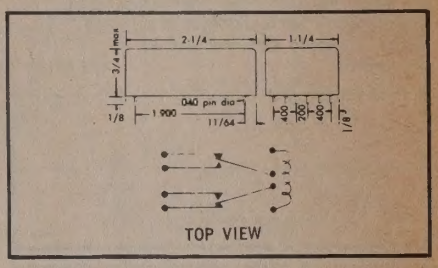


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1-24
W103PCX-1	SPDT	—	6	100	7.22
W103PCX-2		—	12	400	7.27
W103PCX-3		—	24	1500	7.32
W103PCX-4		6.5MA	—	5000	7.76

CLASS 103PC ULTRA-RELIABLE ENCAPSULATED REED RELAY

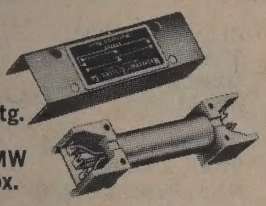
Printed Circuit Mtg. DPDT, .5 Amps. Nom. Power 700MW Wt. 2 ozs. approx.

DPDT, true 2 Form C, no biasing magnet.
Operate, 2 ms. aver. Release, ½ ms. aver.
Contact Bounce, 4 ms. average on release, normally closed contacts.
Contact Load Rating, 10VA at ½ amp. max. or 250V max., non-inductive.
Contact Resistance, 100 Milliohms, aver.
Life Expectancy, 25 million cycles at full load; 50 million at ½ load.
Capacitance across contacts, 3.5 pf. aver.
Operating Position, any.



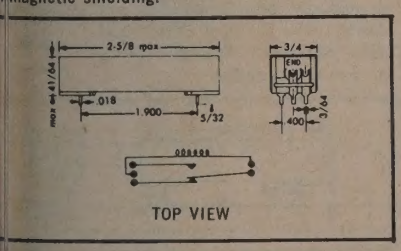
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1-24
W103PCX-5	DPDT	—	6	50	10.77
W103PCX-6		—	12	200	10.79
W103PCX-7		—	24	800	10.84
W103PCX-8		9MA	—	5000	11.31

SS 103MPC NDARD SIZE D RELAY



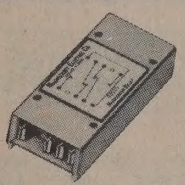
ted Circuit Mtg. DT, .5 Amps. n. Power 500MW — 1 oz. approx.

, true Form C, no biasing magnet.
ate, 2 ms. aver. Release, ½ ms. aver.
act Bounce, 4 ms. average on release, normally ed contacts.
act Load Rating, 10VA at ½ amp. max. or max., non-inductive.
act Resistance, 100 Milliohms, aver.
Expectancy, 25 million cycles at full load; 50 on at ½ load.
citance across contacts, 2.0 pf. aver.
ating Position, any.
led bobbin and steel cover, provide protection magnetic shielding.



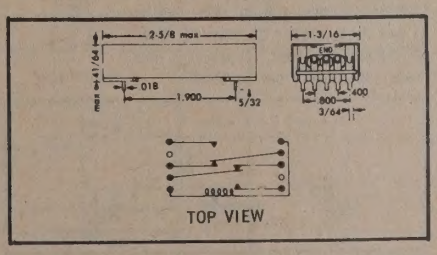
tock rt No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1-24
3MPCX-1	SPDT	140	—	30	5.83
3MPCX-2		—	6	70	5.83
3MPCX-3		—	12	250	5.83
3MPCX-4		—	24	1000	5.83
3MPCX-5		—	48	4000	6.00
3MPCX-6		9	—	7000	6.68

CLASS 103MPC STANDARD SIZE REED RELAY



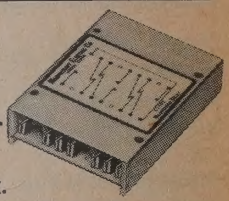
Printed Circuit Mtg. DPDT, .5 Amps. Nom. Power 750MW Wt. — 2 ozs. approx.

DPDT, true 2 Form C, no biasing magnets.
Operate, 2 ms. aver. Release, ½ ms. aver.
Contact Bounce, 4 ms. average on release, normally closed contacts.
Contact Load Rating, 10VA at ½ amp. max. or 250V max., non-inductive.
Contact Resistance, 100 Milliohms, aver.
Life Expectancy, 25 million cycles at full load; 50 million at ½ load.
Capacitance across contacts, 3.0 pf. aver.
Operating Position, any.
Molded bobbin and steel cover, provide protection and magnetic shielding.



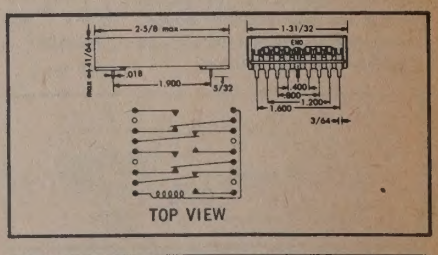
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1 to 24
W103MPCX-30	DPDT	—	6	50	8.33
W103MPCX-31		—	12	175	8.33
W103MPCX-32		—	24	750	8.47
W103MPCX-33		—	48	3000	8.67

CLASS 103MPC STANDARD SIZE REED RELAY



Printed Circuit Mtg. 4PDT, .5 Amps. Nom. Power 1.5W Wt. — 3 ozs. approx.

4PDT, 4 true Form C, no biasing magnets.
Operate, 2 ms. aver. Release, ½ ms. aver.
Contact Bounce, 4 ms. average on release, normally closed contacts.
Contact Load Rating, 10VA at ½ amp. max. or 250V max., non-inductive.
Contact Resistance, 100 Milliohms, aver.
Life Expectancy, 25 million cycles at full load; 50 million at ½ load.
Capacitance across contacts, 3.0 pf. aver.
Operating Position, any.
Molded bobbin and steel cover, provide protection and magnetic shielding.

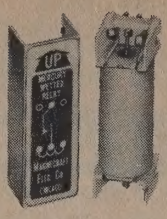


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1-24
W103MPCX-34	4PDT	—	6	25	14.60
W103MPCX-35		—	12	100	14.70
W103MPCX-36		—	24	375	14.77
W103MPCX-37		—	48	1500	14.88

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays, at 25°C.
††Current operated relays pull in at specified value or less.

Magnecraft® mercury-wetted relays

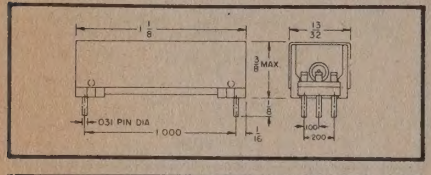
CLASS 131MPC MINIATURE MERCURY-WETTED RELAY



Printed Circuit Mtg.
SPST — NO, 1 Amp.
Nom. Power 500MW
Wt. — 1 oz. approx.

Operate, 1 ms. aver. Release 1 ms. aver. Contact bounce, none. Contact Load Rating, 28VA at 1.0 amps. max. or 100V max., non-inductive. Contact Resistance, 50 milliohms aver. Capacitance across contacts, 1.2 pf. aver. Dielectric Strength, 500 VAC, RMS. Life Expectancy, 25 million cycles at full load, longer at reduced load. Operating Position, Upright, no more than 30° from vertical. Snap-on Steel Cover provides protection, magnetic shielding and no interaction.

TOP VIEW

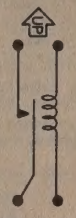


Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	PRICES 1-24
W131MPCX-2	SPST-NO	6	70	6.40
W131MPCX-3		12	300	6.48
W131MPCX-4		24	1100	6.53
W131MPCX-5		48	4300	6.98

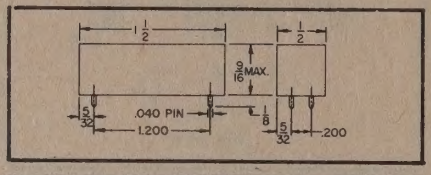
CLASS 131PC ENCAPSULATED MINIATURE MERCURY-WETTED RELAY

Printed Circuit Mtg.
SPST — NO, 1 Amp.
Nom. Power 600MW
Wt. — 1 oz. approx.

Operate, 1 ms. aver. Release, 1 ms. aver.
Contact Bounce, none.
Contact Load Rating, 28VA, 1 amp. max. or 100V max., non-inductive.
Contact Resistance, 50 milliohms aver.
Capacitance across contacts, 1.0 pf. aver.
Life Expectancy, 25 million cycles at full load, longer at reduced load.
Operating Position, Upright, not more than 30° from vertical.



TOP VIEW

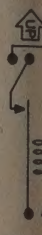


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	PRICES 1-24
W131PCX-8	SPST-NO	—	6	65	8.38
W131PCX-9		—	12	250	8.44
W131PCX-10		—	24	1000	8.55
W131PCX-11		8	—	5000	9.01

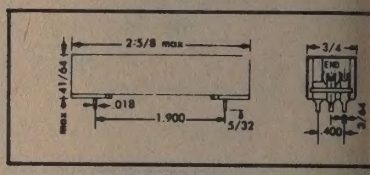
CLASS 132MPC STANDARD SIZE MERCURY-WETTED RELAY

Printed Circuit Mtg.
SPST — NO, 3 Amp.
Nom. Power 500MW
Wt. — 2 ozs. approx.

Operate, 2 ms. aver. Release, 2 ms. aver. Contact bounce, none. Contact Load Rating, 50VA at 3.0 amps., max., or 400V max., non-inductive. Contact Resistance, 50 milliohms aver. Capacitance across contacts, 1.0 pf. aver. Life Expectancy, 25 million cycles at full load, longer at reduced load. Operating Position, Upright, not more than 30° from vertical. Snap-on Steel Cover—provides protection, magnetic shielding and no interaction.



TOP V

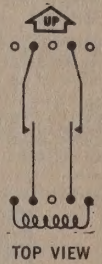


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	P
W132MPCX-1	SPST-NO	140	—	30	
W132MPCX-2		—	6	70	
W132MPCX-3		—	12	250	
W132MPCX-4		—	24	1000	
W132MPCX-5		—	48	4000	
W132MPCX-6		9	—	7000	

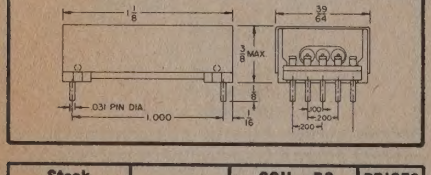
CLASS 131MPC MINIATURE MERCURY-WETTED RELAY

Printed Circuit Mtg.
DPST — NO, 1 Amp.
Nom. Power 700MW
Wt. — 2 oz. approx.

Operate, 1 ms. aver. Release, 1 ms. aver. Contact bounce, none. Contact Load Rating, 28VA at 1.0 amps. max. or 100V max., non-inductive. Contact Resistance: 50 milliohms aver. Capacitance across contacts: 1.2 pf. aver. Dielectric Strength, 500 VAC, RMS. Life Expectancy, 25 million cycles at full load, longer at reduced load. Operating Position, Upright, no more than 30° from vertical.



TOP VIEW

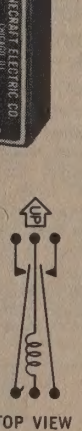


Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	PRICES 1-24
W131MPCX-6	DPST-NO	6	50	11.53
W131MPCX-7		12	220	11.58
W131MPCX-8		24	850	11.65
W131MPCX-9		48	3300	11.93

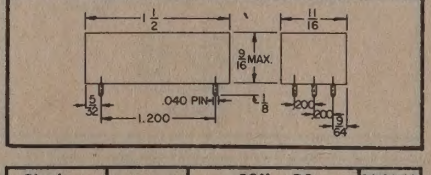
CLASS 131PC ENCAPSULATED MERCURY-WETTED RELAY

Printed Circuit Mtg.
DPST — NO, 1 Amp.
Nom. Power 900MW
Wt. — 2 ozs. approx.

Operate, 1 ms. aver. Release, 1 ms. aver.
Contact bounce, none.
Contact Load Rating, 28VA, 1 amp. max. or 100V max., non-inductive.
Contact Resistance, 50 milliohms aver.
Capacitance across contacts, 1.0 pf aver.
Life Expectancy, 25 million cycles at full load, longer at reduced load.
Operating Position, Upright, not more than 30° from vertical.



TOP VIEW

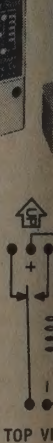


Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	PRICES 1-24
W131PCX-12	DPST-NO	—	6	40	10.62
W131PCX-13		—	12	150	10.66
W131PCX-14		—	24	650	10.71
W131PCX-15		8	—	5000	11.21

CLASS 133MPC STANDARD SIZE MERCURY-WETTED RELAY

Printed Circuit Mtg.
SPDT, 2 Amp.
Nom. Power 500MW
Wt. — 2 ozs. approx.

Operate, 2 ms. aver. Release, 2 ms. aver. Contact bounce, none. Contact Load Rating, 50VA at 2.0 amps. max. or 400V max., non-inductive. Contact Resistance, 50 milliohms aver. Capacitance across contacts, 3.0 pf. aver. Life Expectancy, 25 million cycles at full load, longer at reduced load. Operating Position, Upright, not more than 30° from vertical. Magnetically biased, observe coil polarity. Snap-on Steel Cover—provides protection, magnetic shielding and no interaction.



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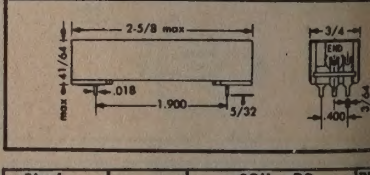

Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	P
W133MPCX-1	SPDT	140	—	30	
W133MPCX-2		—	6	70	
W133MPCX-3		—	12	250	
W133MPCX-4		—	24	1000	
W133MPCX-5		—	48	4000	
W133MPCX-6		9	—	7000	

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C.
††Current operated relays pull in at specified value or less.

Net

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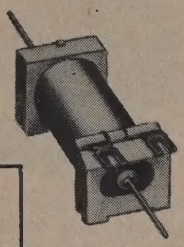
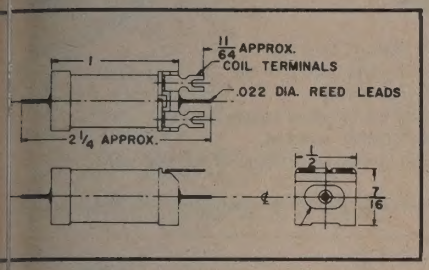
Magnecraft® high voltage reed relays

ASS 101VM MINIATURE HIGH VOLTAGE ED RELAY — SPST — NO, 1000V

ded Bobbin
ine Axial Leads
inal Power 600MW
— 1 oz. approx.



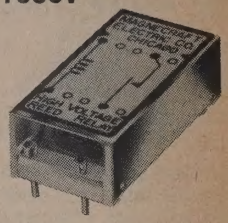


ate, 1 ms aver. Release 0.5 ms aver.
act Load Rating, 1000V peak at .001 ampere max., resistive.
act Resistance, 100 milliohms aver.
citance Across Contacts, 0.2 pf. aver.
Expectancy, 1 million cycles at rated load; longer at reduced loads.

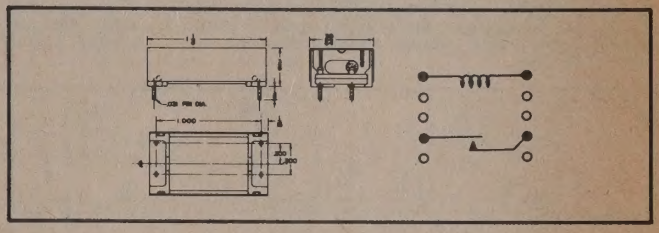
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Prices 1-24
101VMX-1	SPST-NO	—	6	100	10.90
101VMX-2		—	12	250	10.92
101VMX-3		—	24	500	10.93
101VMX-4		9MA	—	2500	11.12

CLASS 101VMPC MINIATURE HIGH VOLTAGE REED RELAY — SPST — NO, 1000V

Printed Circuit Mtg.
Molded Bobbin
Nominal Power 700MW
Wt. — 2 ozs. approx.



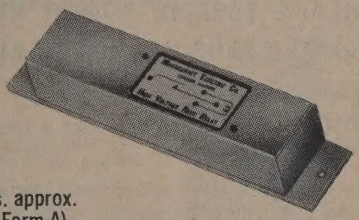
Operate, 1 ms aver. Release 0.5 ms aver.
Contact Load Rating, 1000V peak at .001 ampere max., resistive.
Contact Resistance, 100 milliohms aver.
Capacitance Across Contacts, 0.2 pf. aver.
Life Expectancy, 1 million cycles at rated load; longer at reduced loads.



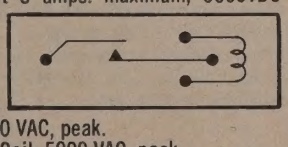
Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	Prices 1-24
W101VMPCX-1	SPST-NO	6	50	11.90
W101VMPCX-2		12	220	11.97
W101VMPCX-3		24	850	12.00
W101VMPCX-4		48	3300	12.22

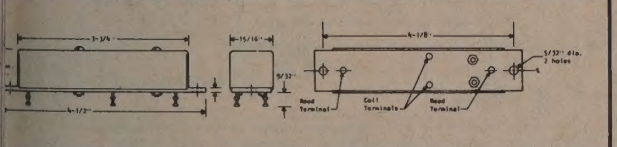
ASS 102V 5000 VOLT HI VOLTAGE ED RELAY — SPST — NO

er Terminal
struction
ching Voltage
ligh As 5000 Peak
— 3 ozs. approx.



Power 500MW Weight, 3 ozs. approx.
act Combination, SPST-NO (1 Form A).
act Load Rating, 50 Volt-Amperes at 3 amps. maximum, 5000VDC or 5000VAC peak, resistive.
nal Coil Power: 500MW.
ate Time, 3.0 ms. average.
se Time, 0.5 ms. average.
act Bounce, 0.5 ms. average.
ctric Strength Between Contacts, 5000 VAC, peak.
ctric Strength Between Contacts and Coil: 5000 VAC, peak.
act Resistance, 100 milliohms average.
citance Across Contacts, 1.0 pf average.
al Life at Rated Load, 10 million operations—longer at reduced loads.

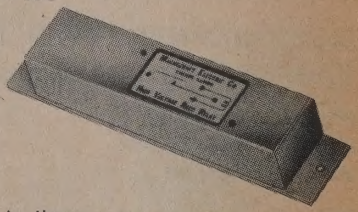




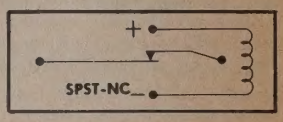
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1-24
102VX-9	SPST-NO	140	—	30	13.69
102VX-10		—	6	70	13.69
102VX-11		—	12	250	13.73
102VX-12		—	24	1000	13.78
102VX-13		—	48	4000	14.15
102VX-14		9	—	7000	14.58

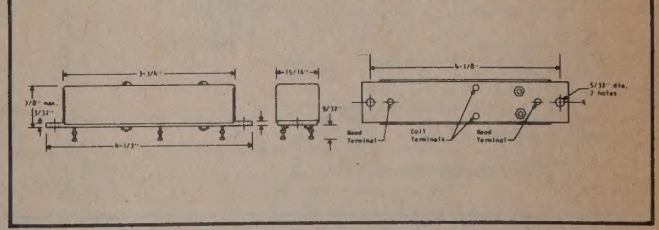
CLASS 102V 5000 VOLT HI VOLTAGE REED RELAY — SPST — NC

Solder Terminal
Construction
Switching Voltage
As High As 5000 Volts Peak
Wt. — 3 ozs. approx.



This relay is similar in design to the 102V SPST-NO Form A High Voltage Relay, and will meet all of the specifications indicated, except for the DC coil power required and DC coil resistance. By the use of a biasing magnet, a normally closed contact is obtained. It should be noted that these are polarity sensitive and voltage of the indicated poliarity must be applied to the proper coil terminals for operation. These relays are designed to pull in at 80%, or less, of the nominal voltage at 25°C. Due to the use of the biasing permanent magnet, it is not recommended that these units be operated on more than 25% higher than the nominal voltage to obtain maximum reliability and proper contact switching.





Stock Part No.	Contacts	COIL—DC †Volts	*Ohms	Nominal Power	Price 1-24
W102VX-26	SPST-NC	24	2900	225 mw	16.76

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays, at 25°C.
††Current operated relays pull in at specified value or less.

Magnecraft® reed relays

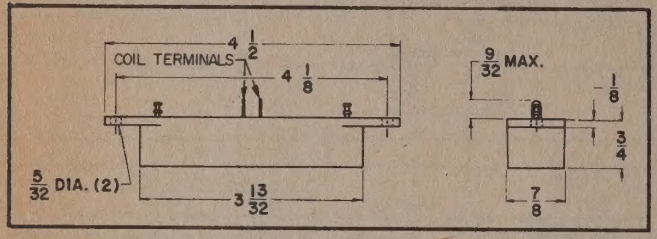
CLASS 102HV 10,000 VOLT HI VOLTAGE REED RELAY — SPST — NO

Solder Terminals
Molded Construction
Switching Voltage
As High As 10,000 Volts Peak
Wt. — 2 ozs. approx.

Contact Combination, SPST-NO (1 form A).
Contact Load Rating, 10,000 volts peak at .001 amperes.
Nominal Coil Power, 1.5W average.
Operate Time, Typically 25 ms including bounce.
Contact Resistance, 100 milliohms average.
Typical Life at Rated Load, 1 million — longer at reduced loads.

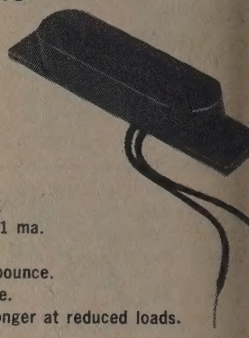
A reliable 10,000 volt high voltage reed relay . . . at a reasonable price.

The Class 102HV 10,000 volt relay is the natural addition to the fast growing line of Magnecraft's high voltage reed relays. Made with contacts of special material, the Class 102HV switches voltage as high as 10,000 volts at .001 amperes with the inherent reliability of reed relay operation. It utilizes a specially designed insulation system which provides maximum dielectric strength to insure utmost safety to the user.



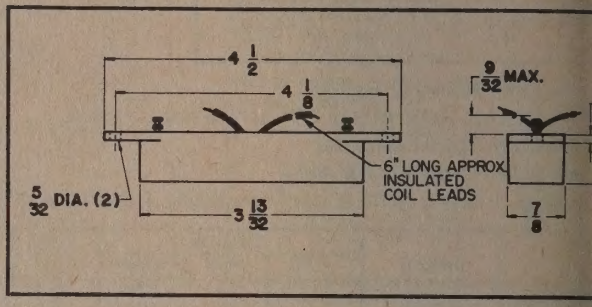
Stock Part No.	COIL—DC †Volts	COIL—DC *Ohms	Prices 1-24
W102HVX-1	6	25	19.88
W102HVX-2	12	100	19.88
W102HVX-3	24	400	19.88

CLASS 102UHV 20,000 VOLT HI VOLTAGE REED RELAY — SPST — NO



Solder Terminals
Molded Construction
Switching Voltage
As High As 20,000 Volts Peak
Wt. — 2 ozs. approx.

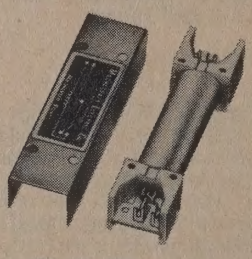
Contact Combination, SPST-NO (1 form A).
Cntact Load Rating, 20,000 volts peak at 1 ma.
Nominal Coil Power, 850 mw average.
Operate Time, Typically 25 ms including bounce.
Contact Resistance, 100 milliohms average.
Typical Life at Rated Load, 1 million — longer at reduced loads.



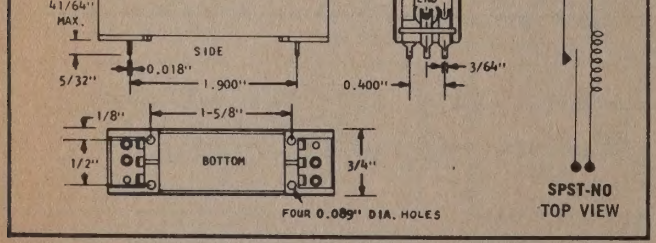
Stock Part No.	COIL—DC Volts	COIL—DC Ohms	Pri 1-
W102UHVX-1	6	25	33
W102UHVX-2	12	100	33
W102UHVX-3	24	400	33

CLASS 102RMPC POWER REED RELAY STANDARD SIZE 3 AMP. — SPST — NO

Printed Circuit Mtg.
Nominal Power 500MW
Wt. — 1 oz. approx.



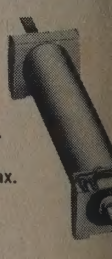
Developed especially to switch higher currents with reed relay reliability and the **MPC** low circuit board profile.
SPST-NO contacts of special material.
Operate, 1 ms. aver. Release, 1 ms. aver.
Contact Bounce, 0.5 ms. average.
Contact Resistance, 150 milliohms, aver.
Contact Load Rating, 100VA, 3 amperes max., or 250 volts, max.
Operating Position, any.



Stock Part No.	Contacts	COIL—DC †Volts	COIL—DC *Ohms	PRICES 1-24
W102RMPCX-1	SPST-NO	6VDC	70	7.87
W102RMPCX-2		12VDC	250	7.88
W102RMPCX-3		24VDC	1000	7.93
W102RMPCX-4		48VDC	4000	8.18

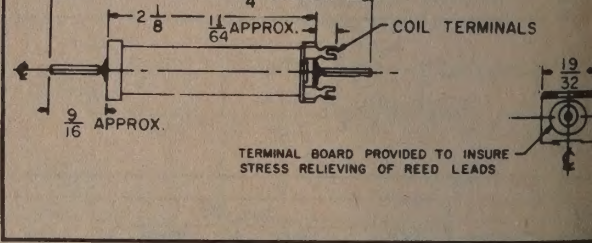
CLASS 102RMX POWER REED RELAY IN-LIN AXIAL LEADS STANDARD SIZE 3 AMP. SPST —

Molded Bobbin
Nominal Power 300MW
Wt. — 1 oz. approx.



Developed to meet the ever increasing demand for higher current switching with reed relay reliability and lower cost.
SPST-NO Contacts of Special Material.
Contact Load Rating, 100VA @ 3 amps. max. or 250VDC max.
Operate Time, 1.5 ms. average.
Release Time, 1 ms. average.
Contact Bounce, 1 ms. average.
Operating Position, Any.

Low



Stock Part No.	Contacts	COIL—DC †Volts	COIL—DC *Ohms	PR 1
W102RMX-5	SPST-NO 3-amps.	6	200	4
W102RMX-6		12	500	4
W102RMX-7		24	2000	4
W102RMX-8		48	5000	4

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C.

Net
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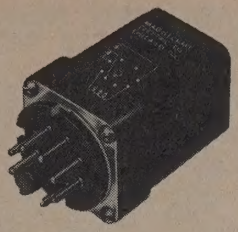
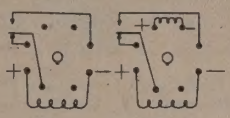
Magnecraft® reed relays

LASS 103LCP PLUG-IN ATCHING REED RELAY

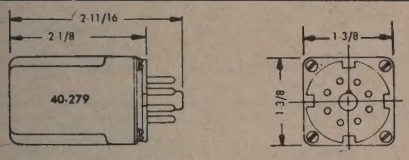


-Stable SPDT, .2 Amp.
. — 5 ozs. approx.

gnetic latching action requires coil current to hold either of latching positions. In the case the single wound coil switching achieved by reversing coil cur- t polarity. The double wound coil separate polarized winding; tching is achieved by use of l input.

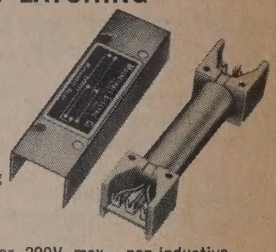


rate, 2 ms. average.
tact Bounce, 2 ms. average.
tact Load Rating, 10VA at 0.2 amp. max. 200VDC max., resistive.
tact Resistance, 150 milliohms average.
acitance across contacts, 4.0 pf. average.
ical Life, 25 million operations — longer at reduced loads.
n. power, single coil 150MW, double coil 300MW.



Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1 to 24
		Single Wound Coil			
/103LCPX-7		—	6V	250	8.30
/103LCPX-8	SPDT	—	12V	1000	8.33
/103LCPX-9	WD-1	—	24V	4000	8.57
/103LCPX-10		4	—	7000	8.80
		Double Wound Coil			
/103LCPX-11		—	6V	120/120	9.87
/103LCPX-12	SPDT	—	12V	460/460	9.97
/103LCPX-13	WD-14	—	24V	1800/1800	10.02
/103LCPX-14		8	—	3000/3000	10.32

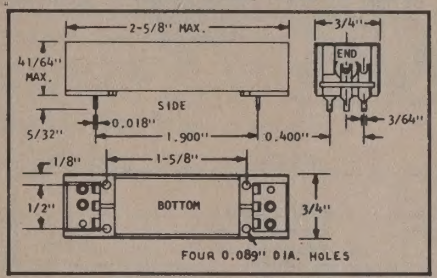
CLASS 103LMPC BI-STABLE LATCHING RELAY — DRY REED

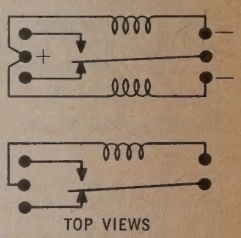


Magnetic Latching Relay
Wt. — 1 oz. approx.

Ideal for memory applications. Bi-stable SPDT Contacts — biased permanent magnet holds either contact position **without coil power until coil polarity is reversed.** Dimensions and wiring same as 103MPC, page 19.

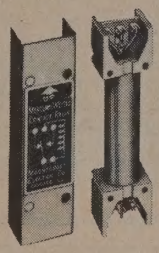
Operate, 2 ms. aver. Bounce, 3 ms. max.
Contact Resistance, 150 milliohms aver.
Contact Load Rating, 10VA, 0.2 amp. max. or 200V max., non-inductive.
Life Expectancy, 25 million cycles at rated load.; longer at reduced loads.
Operating Position, any.
Nom. power, single coil 150MW, double coil 300MW.





Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1 to 24
		Single Wound Coils			
W103LMPCX-3		40	—	70	7.07
W103LMPCX-4		—	6	250	7.07
W103LMPCX-5	SPDT	—	12	1000	7.07
W103LMPCX-6		—	24	4000	7.26
W103LMPCX-7		4	—	7000	8.01
		Double Wound Coils			
W103LMPCX-8		80	—	30/30	8.22
W103LMPCX-9		—	6	120/120	8.33
W103LMPCX-10	SPDT	—	12	460/460	8.33
W103LMPCX-11		—	24	1800/1800	9.00
W103LMPCX-12		8	—	3000/3000	10.04

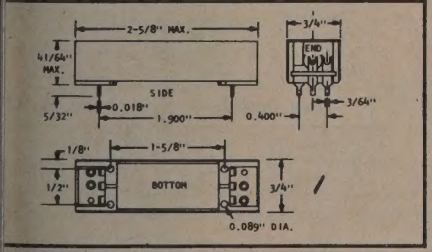
LASS 133LMPC — SPDT — 2 AMP. — TANDARD SIZE

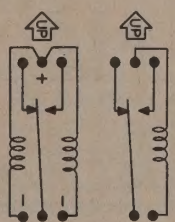


gnetic Latching Relay
rcury-Wetted
. — 2 ozs. approx.

al for memory applications. Bi-stable SPDT Con- ts—biased permanent magnet holds either con- t position without coil power until coil polarity reversed.

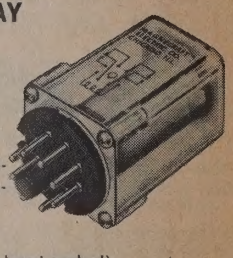
rate, 2 ms aver. Contact bounce, none.
tact Load Rating, 50VA at 2.0 amps. max. or V max., resistive.
tact Resistance, 50 milliohms aver.
acitance across contacts, 3.0 pf. aver.
Expectancy, 25 million cycles at full load; longer at reduced load.
n. power, single coil 150MW, double coil 300MW.
rating Position, Upright, not more than 30° n vertical.





Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1 to 24
		Single Wound Coils			
W133LMPCX-17		40	—	70	9.87
W133LMPCX-18		—	6	250	9.88
W133LMPCX-19	SPDT	—	12	1000	9.92
W133LMPCX-20		—	24	4000	10.07
W133LMPCX-21		4	—	7000	10.17
		Double Wound Coils			
W133LMPCX-22		80	—	30/30	11.23
W133LMPCX-23		—	6	120/120	11.25
W133LMPCX-24	SPDT	—	12	460/460	11.32
W133LMPCX-25		—	24	1800/1800	11.42
W133LMPCX-26		8	—	3000/3000	11.50

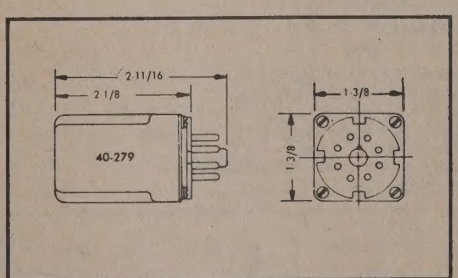
CLASS 103CP DRY REED RELAY PLUG-IN ASSEMBLIES DPDT and 3PDT — .5 Amp.

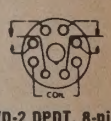


Wt. — 5 ozs. approx.

Each plug-in assembly includes two or three standard size, Form C, break before make switching capsules with operating coil in plastic dust cover.

Operate, 2 ms. aver. — Release, ½ ms. aver.
Contact Bounce, 4 ms. average on release (normally closed contact).
Contact Load Rating, 10VA at ½ amp. max., or 250VAC max., non-inductive.
Contact Resistance, 100 milliohms aver.
Capacitance across contacts, 4.0 pf. aver.
Life Expectancy, 25 million cycles at rated load; longer at reduced load.
Nom. power DPDT 500MW, 3PDT 800MW.





WD-2 DPDT, 8-pin

WD-3 3PDT, 11-pin

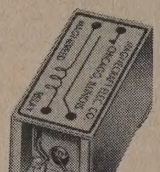
Stock Part No.	Contacts	COIL—DC ††MA	†Volts	*Ohms	Price 1 to 24
W103CPX-7		—	6V	75	12.92
W103CPX-8	DPDT	—	12V	300	12.95
W103CPX-9	WD-2	—	24V	1000	13.01
W103CPX-10		8MA	—	5000	13.57
W103CPX-11		—	6V	40	16.77
W103CPX-12	3PDT	—	12V	150	16.83
W103CPX-13	WD-3	—	24V	650	16.95
W103CPX-14		10MA	—	5000	17.50

esistance values ±10%, measured at 25°C. †Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C.
Current operated relays pull in at specified value or less.

Magnecraft® micro - miniature reed & crystal can relays

CLASS 105MPC MICRO-MINIATURE REED RELAY SPST — NO, 10ma.

Printed Circuit Mtg.
Nominal Power 300MW
Wt. — 1 oz. approx.



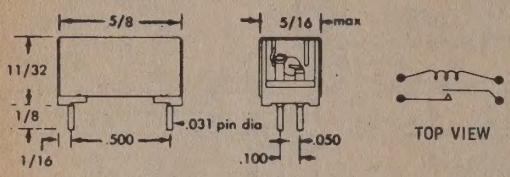
MPC High Reliability Printed Circuit Construction

Operate, ¼ ms. aver.—Release, ½ ms, aver. Contact Bounce, ½ ms. average.

Contact Load Rating, 0.1 VA max. at 10 MA max. or 12V max., non-inductive.

Contact Resistance, 200 milliohms, aver. Capacitance across contacts, 0.5 pf. aver. Life Expectancy, 10 million cycles at rated load.

Operating Position, any.

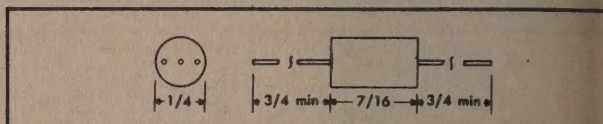


Stock Part No.	Contacts	COIL—DC †Volts	COIL—DC *Ohms	Prices 1-24
W105MPCX-1	SPST-NO	6VDC	120	5.45
W105MPCX-2		12VDC	500	5.47
W105MPCX-3		24VDC	2000	5.58

CLASS 105EP MICRO-MINIATURE ENCAPSULATED REED RELAY SPST — NO

With In-Line Axial Leads
Nominal Power 400MW
Wt. — 1 oz. approx.

Micro-Miniature Reed Switch Capsule and Operating Coil are compl encapsulated in epoxy resin. Highly resistant to mechanical sh Thoroughly protected from humidity and corrosive atmosphere. Operate, ¼ ms. aver.—Release, ½ ms. aver. Contact Bounce, ½ average. Contact Load Rating, 0.1 VA max. at 10 MA max. or 12V non-inductive. Contact Resistance, 200 milliohms, aver. Capacit across contacts, 0.5 pf. aver. Life Expectancy, 10 million cycles at load. Operating Position, any.



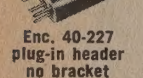
Stock Part No.	Contacts	COIL—DC †Volts	COIL—DC *Ohms	PRI
W105EPX-1	SPST-NO	6VDC	90	6.
W105EPX-2		12VDC	350	6.
W105EPX-3		24VDC	1300	6.

ENGINEERS' RELAY HANDBOOK by NARM

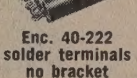
Designed to aid engineers in t understanding, application, selecti and specifying of relays. Covers range of subjects including Rel Terminology and Bibliography of formation Sources. Major divisio are Classes of Service, Relay Cla sifications, Principles of Operatio Relay Application Consideration, R lay Reliability, How to Specify Relay, Testing Procedures, and Go ernment Specifications.

Part No. 60-371 ..... $11.

CLASS 44 MICRO-MINIATURE ROTARY RELAYS CRYSTAL CAN TYPE DPDT — 2 AMPS.

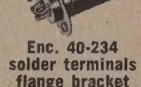


Enc. 40-227
plug-in header
no bracket



Enc. 40-222
solder terminals
no bracket

Enc. 40-224
solder terminals
side bracket



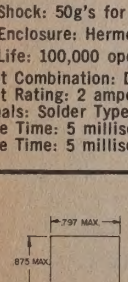
Enc. 40-234
solder terminals
flange bracket

MAGNECRAFT Class "44" Rotary Relays have been developed to provide increased reliability in the crystal can size relay by incorporating rugged bridge construction, balanced armature construction, a sturdy hinge construction (using oversize instrument type bearings at BOTH ends) and the use of the finest high temperature insulation materials available.
Because of this unique design, the **MAGNECRAFT Class "44" Relay** assures trouble free operation even under extreme conditions of shock, vibration and temperature conditions as required in military applications.
Some of the **Class "44"** capabilities are:

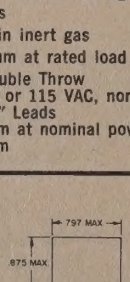
1. Ambient Temperature: —65°C to +125°C
2. Vibration: 10-55 cps. @ 10g's 55-2000 cps. @ 20g's
3. Shock: 50g's for 11 milliseconds
4. Enclosure: Hermetically sealed in inert gas
5. Life: 100,000 operations minimum at rated load

Contact Combination: Double Pole, Double Throw
Contact Rating: 2 amperes @ 28 VDC or 115 VAC, non-inductive
Terminals: Solder Type, Plug-in and 3" Leads
Operate Time: 5 milliseconds maximum at nominal power
Release Time: 5 milliseconds maximum

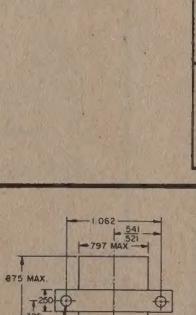
COIL—DC †Volts	COIL—DC *Ohms	Nomi. Power	Stock Part No.	Price 1 to 9	Stock Part No.	F
			Enc. 40-227		Enc. 40-22	
6.5	34		W44HPX-34	17.60		
11	92		W44HPX-35	17.60	W44HSX-104	
26.5	552	1.2W	W44HPX-36	17.60		
38.5	1278		W44HPX-37	18.00		
76	5000		W44HPX-38	19.90		
			Enc. 40-224		Enc. 40-23	
6.5	34		W44HSX-108	17.95	W44HSX-113	
11	92		W44HSX-109	17.95	W44HSX-114	
26.5	552	1.2W	W44HSX-110	17.95	W44HSX-115	



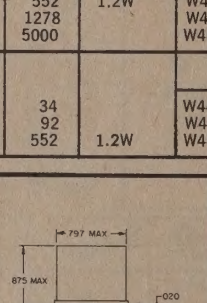
40-227
Bracketless
Plug-in Header
Terminal length .19 max.



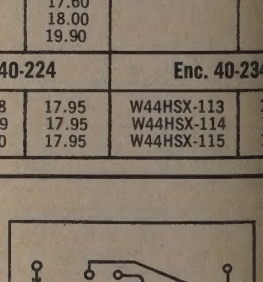
40-222
Bracketless
Solder Terminal Header



40-224
Side Bracket
Solder Terminal Header



40-234
Flange Bracket
In line mounting
Solder Terminal Header



Standard Contact Arrangement

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays at 25°C.

Net
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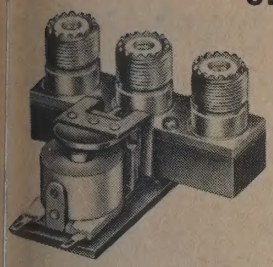
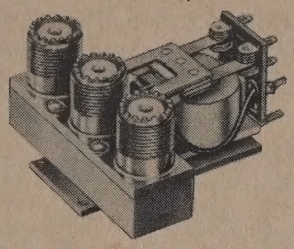
Magnecraft® coaxial relays & plastic plug-in enclosures

CLASS 128 COAXIAL RELAYS FOR RF SWITCHING



Class 128
oaxial Relay



Class 128 Coaxial Relay with
DPDT Auxiliary Contacts

ow Capacity RF Switching Relays See Class 33F.

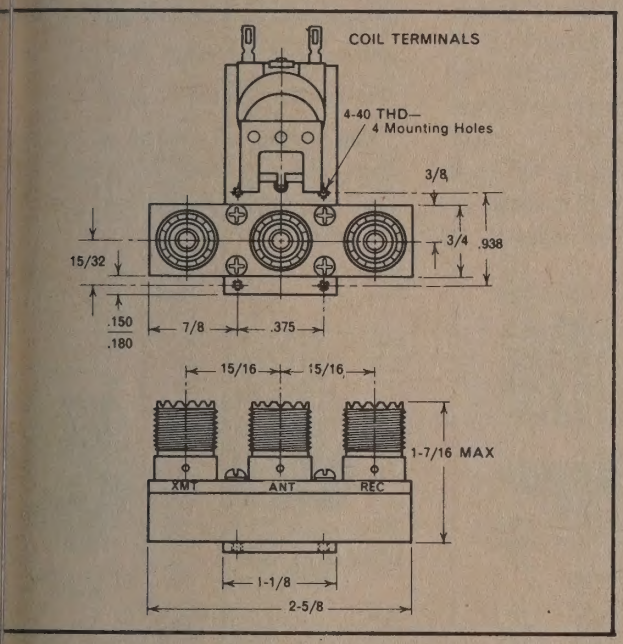
Small compact relay combining a heavy duty coaxial cavity and the MAGNECRAFT 88 Relay structure described on page three. The precision-built, hinge-pin type armature bearings of the Class 88 assure consistent pull-in stability with maximum reliability over long life.

The coaxial contact structure is enclosed in a heavy duty precision machined brass cavity with removable plug for convenient inspection of contacts.

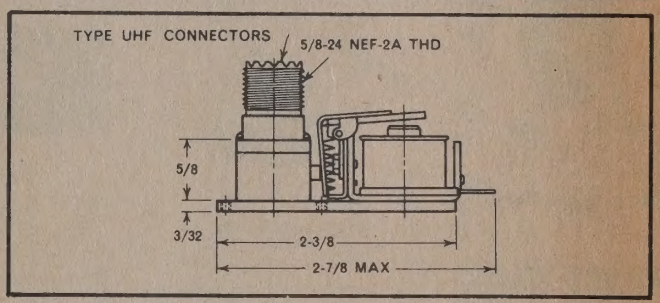
SPDT RF switching contacts are silver cadmium oxide, gold flashed, conservatively rated 100 watts of RF power; impedance matched to 50 ohm cable using standard type UHF connectors. VSWR 1.25: 1 maximum from 0 to 500 megacycles.

Operate time: 25 ms. maximum.

Release time: 25 ms. maximum.



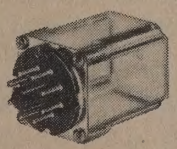
Stock Part No.	Coaxial Contacts	COIL †Volts	COIL *Ohms	Prices 1-9
		Class 128 Relay		
W128AX-7	SPDT	115VAC	—	18.47
W128X-9	SPDT	12VDC	100	18.13
W128X-10	SPDT	24VDC	400	18.20
		Class 128 Relay with DPDT Auxiliary Contacts		
W128AX-11	SPDT	115VAC	—	20.85
W128X-14	SPDT	12VDC	100	20.02
W128X-15	SPDT	24VDC	400	20.08



CLEAR PLASTIC PLUG-IN DUST ENCLOSURES FOR ELECTRONIC ASSEMBLIES

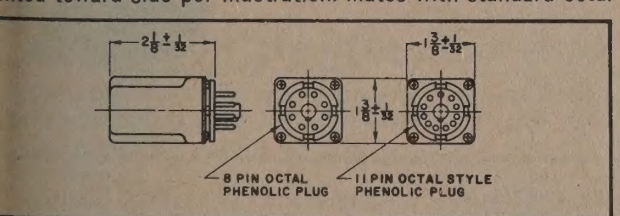
ASS CP-2

Crackproof Polycarbonate Resin
Clear As Glass
Tough As Steel
Lower Cost



CP-2

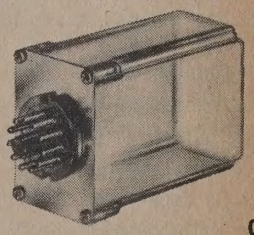
gnecraft's Class "CP-2" and
P-4" see through enclosures
clear as glass and tough as
el. They are made of crackproof polycarbonate resin with
h impact strength and dimensionally stable characteristics.
ilable in two sizes (CP-2 and CP-4) with 8-pin or 11-pin octal
e plugs. Comes complete with four screws. Plug key-ways
nted toward side per illustration. Mates with standard octal



CP-2 — Weight: 2 ounces Approx.

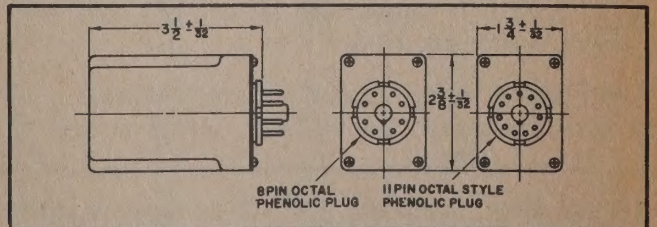
CP2X-1	8-Pin Plug	Price	1-24	0.62
CP2X-2	11-Pin Plug	Price	1-24	0.79

CLASS CP-4



CP-4

style sockets. The "CP" plug-in enclosures are suitable for electronic assemblies, filter networks, amplifier circuits, hybrid devices and other assemblies requiring protection from dust, dirt and human tampering.



CP-4 — Weight: 4 ounces approx.

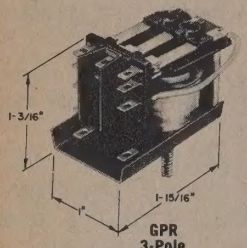
WCP4X-1	8-Pin Plug	Price	1-24	1.50
WCP4X-2	11-Pin Plug	Price	1-24	1.97

*Resistance values ±10%, measured at 25°C.
†Voltage operated relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25°C.

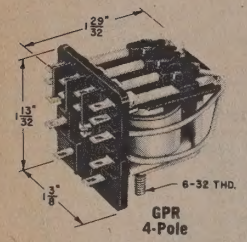
OHMITE general purpose relays

MODEL GPR — INDICATOR, PLATE, THYRATRON AND LATCHING VERSIONS IN UNENCLOSED AND ENCLOSED TYPE

Simple, rugged, low cost relays handling substantial power for small size. Uncomplicated design provides unusual flexibility for making and changing connections and mounting. Stock includes relays in versatile enclosures, some with indicator lig plate, thyratron and latching versions. Wide commerc industrial use where economy and versatility are import



GPR
3-Pole



GPR
4-Pole

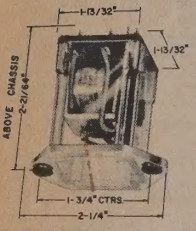
UNENCLOSED RELAYS

Basic (Unenclosed) Relay: All connections terminate on barrier-type terminal panel on combination solder — quick-connect (push-on) lugs which accept AMP 110 female connectors. The terminal panel is conveniently incorporated into printed circuit boards. Fixed contacts are integral inlay on terminal itself. Normally furnished with a 6-32 x ½" mounting stud and non-turn boss (or lug for 4-pole relays). A 6-32 threaded hole is optional. Unenclosed relays can also be mounted by plugging their panels into Ohmite sockets. See "Socket" below.

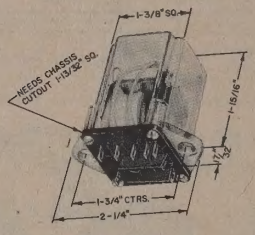
Contact Ratings: Two ratings — fir contacts, 5 amps at 115 VAC or 32 sistive; silver-cadmium contacts, 10

Insulation: Tested at 1500 VAC.

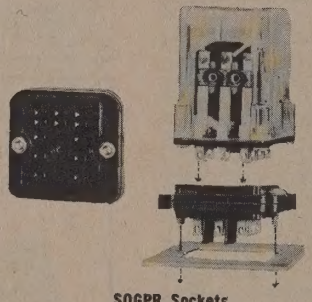
Coil Wattage: 1.4 watts DC operat watts (2.0 volt-amps) AC except 2.4 (3.70 volt-amps) for 4-pole AC and A ing relays.

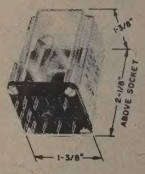


Above - Chassis Mount
GPRTA



Thru-Chassis Mount
GPRTT


SOGPR Sockets



For Socket Mount
GPRTS

For Octal Plug
GPRTP

ENCLOSED RELAYS

(GPRTA-, GPRTT-, GPRTS-, GPRTP-)

Four types of clear plastic enclosures as follows:

Chassis Mounting Types: "GPRTA"—("Terminals-Above-Chassis" type) has terminal panel opposite to mounting flange; "GPRTT" —("Terminals-Through-Chassis" type) has terminal panel on same end as mounting flange, requires chassis cutout; "GPRTS" type (Terminals for Socket Use) is similar to GPRTT but has no mounting flanges. It is intended strictly for plug-in mounting in Ohmite socket "SOGPR" (see "Socket" below).

Plug Base Type: "GPRTP" — employs octal plug for 1 and 2 pole relays; 11-pin plug for 3-pole. The octal plug base is integral with relay for rigidity — is designed with recessed pins which meet UL spacing requirements (150V).

Socket (SOGPR): Unique socket fits the terminal panels of all GPR relays and provides over-the-surface spacing to meet UL requirements for 150 volts. Requires chassis cut-out to Hold down springs (see illustration) for unenclosed and er relays, are provided with each socket but are not required under conditions of vibration or shock. Socket solder te will also accept AMP 11 quick-connectors. See socket li

SOCKETS FOR GPR, GPRTS RELAYS

For up to 3PDT: 1¾" square, requires 1¼" x 1½" cutout.* 2 holes (for No. 6 screws) on 1⅜" centers.
Stock No. SOGPR-9 Net 1-24 $1.10

For 4-pole models, 1¾" x 2", requires 1½" x 1½" cutout.* 2 holes (for No. 6 screws) on 1⅝" centers.
Stock No. SOGPR-12 Net 1-24 $1.25

*Std. punches and dies from Ward Machinery Co., Chicago. No. 2 22N, 1¼ x 1½, for SOGPR-9: No. 28, Style 14R, 1½ x 1½, for SO

Indicator Relay: Incorporates light bulb to indicate energized condition of coil. Stocked only in GPRTP enclosures described in preceding. Neon bulb furnished with coil ratings 70 volts and above; incandescent bulbs for coil ratings below 70 volts.

UL & CSA Approval: Column heads in the stock tables carry the UL (Underwriters' Laboratories) or CSA symbol (Canadian ards Association) where applicable. The grey tint in the indicates the relays are recognized under the "UL comp program." The acceptability of such relays by UL depends their combination with other equipment such as socket

OHMITE PAGE 30

Net
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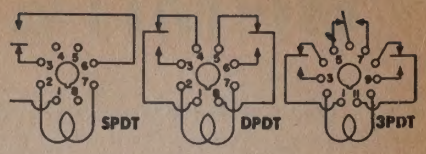
OHMITE general purpose relays



Plug wiring schemes for plug base (GPRTP) relays

DEL GPR — CONTINUED

OC GPR RELAYS*

COIL DATA Volts	Amps	Ohms	5 AMP. CONTACTS: UL SP UNEN-CLOSED Cat. No.[1] Prefix GPRX	ABOVE CHASSIS MTG. ENCLOSED Cat. No.[1] Prefix GPRTAX-†	THRU-CHASSIS MTG. ENCLOSED Cat. No.[1] Prefix GPRTTX-†	SOCKET MOUNT ENCLOSED (UL for SOGPR Socket)‡ SP Cat. No.[1] Prefix GPRTSX-	UL SP PLUG BASE MT. ENCLOSED Cat. No.[1] Prefix GPRTPX-	10 AMP. CONTACTS: UL SP UNEN-CLOSED Cat. No.[1] Prefix GPRX-	SP SOCKET MOUNT ENCLOSED (for SOGPR Socket)‡ Cat. No.[1] Prefix GPRTSX-	SP PLUG BASE MT. ENCLOSED Cat. No.[1] Prefix GPRTPX-	INDICATOR PLUG BASE ENCLOSED Cat. No.[1] Prefix GPRTPX-
6VAC	.334	4.2	-3T	-3T	-3T		-3T	-203T		-203T	
6VAC	.334	4.2	**-6T**	-6T	-6T	-6T	**-6T**	**-206T**	-206T	**-206T**	-291T
6VAC	.334	4.2	**-9T**	**-9T**	-9T	-9T	**-9T**	-209T	-209T	-209T	
6VAC	.650	2.5	-403T			-403T		-433T	-433T		
12VAC	.167	17	-12T	-12T	-12T		-12T	-212T		-212T	
12VAC	.167	17	**-15T**	-15T	-15T	-15T	-15T	-215T	-215T	**-215T**	-292T
12VAC	.167	17	-18T	-18T	-18T	-18T	-18T	-218T	-218T	-218T	
12VAC	.309	10	-406T			-406T		**-436T**	-436T		
24VAC	.084	65	-21T	-21T	-21T		-21T	-221T		-221T	
24VAC	.084	65	**-24T**	**-24T**	-24T	-24T	**-24T**	-224T	-227T	**-224T**	-293T
24VAC	.084	65	**-27T**	-27T	-27T	-27T	-27T	-227T	-224T	-227T	
24VAC	.155	40	-409T			-409T		-439T	**-439T**		
115VAC	.0174	1600	**-30T**	-30T	-30T		**-30T**	**-230T**		-230T	
115VAC	.0174	1600	**-33T**	-33T	-33T	-33T	**-33T**	-233T	**-233T**	**-233T**	**-294T**
115VAC	.0174	1600	**-36T**	**-36T**	-36T	-36T	**-36T**	**-236T**	-236T	**-236T**	
115VAC	.0325	1000	**-412T**			-412T		**-442T**	**-442T**		
230VAC	.0087	7000	-39T	-39T	-39T		-39T	-239T		-239T	
230VAC	.0087	7000	-42T	-42T	-42T	-42T	-42T	-242T	-242T	-242T	-295T
230VAC	.0087	7000	-45T	**-45T**	-45T	-45T	-45T	-245T	-245T	-245T	
230VAC	.0147	4000	-415T			-415T		-445T	-445T		
6VDC	.23	26	-48T	-48T	-48T		-48T	-248T		-248T	
6VDC	.23	26	-51T	-51T	-51T	**-51T**	-51T	-251T	-251T	-251T	-296T
6VDC	.23	26	-54T	-54T	-54T	-54T	-54T	-254T	-254T	-254T	
6VDC	.23	26	-418T			-418T		-448T	-448T		
12VDC	.114	105	**-57T**	-57T	-57T		-57T	-257T		-257T	
12VDC	.114	105	**-60T**	**-60T**	-60T	**-60T**	**-60T**	**-260T**	-260T	**-260T**	-297T
12VDC	.114	105	**-63T**	-63T	-63T	-63T	**-63T**	-263T	-263T	-263T	
12VDC	.114	105	-421T			-421T		-451T	-451T		
24VDC	.060	400	-66T	-66T	-66T		-66T	-266T		-266T	
24VDC	.060	400	**-69T**	**-69T**	-69T	**-69T**	**-69T**	-269T	-269T	**-269T**	-298T
24VDC	.060	400	-72T	**-72T**	-72T	**-72T**	-72T	-272T	-272T	**-272T**	
24VDC	.060	400	**-424T**			-424T		-454T	**-454T**		
110VDC	.0110	10,000	-75T	-75T	-75T		-75T	-275T		-275T	
110VDC	.0110	10,000	-78T	-78T	-78T	**-78T**	-78T	-278T	-278T	**-278T**	-299T
110VDC	.0110	10,000	**-81T**	-81T	-81T	**-81T**	-81T	-281T	-281T	-281T	
110VDC	.0110	10,000	**-427T**			-427T		-457T	-457T		
Approx. weight			2.5 oz.	3.0 oz.	3.0 oz.	3.0 oz.	3.5 oz.	2.5 oz.	3.5 oz.	3.5 oz.	3.5 oz.

n heads carry symbols to indicate UL or CSA (Canadian Standards approval. The grey tint indicates that relay is recognized under UL onents program" (File No. E33069, Guide No. 380W1.14C, Assign- No. 62C3559A). CSA File No. is 21309. See explanation in "UL and pproval."

†4-Pole GPRTS relays are not covered by CSA.

‡GPRTA and GPRTT types as listed by UL, differ slightly from the stock versions above and consequently, are made to order. These UL versions have a "U" added to the catalog number, such as in "GPRTAU." They also have CSA approval.

K GPR PLATE CIRCUIT RELAYS AMP CONTACTS

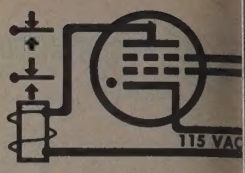
Relays: Feature same physical con- ion as standard general purpose but are adjusted for greater sensi- and can be used as electronic circuit ols, i.e., in the plate circuits of stand- icuum tubes.

Con-tacts	COIL DATA Ohms	Pull-in Max. ma.	UL UNEN-CLOSED Cat. No.[1] Prefix GPRX-	ABOVE CHASSIS MTG. ENCLOSED Cat. No.[1] Prefix GPRTAX-†	THRU-CHASSIS MTG. ENCLOSED Cat. No.[1] Prefix GPRTTX-†	SOCKET MOUNT ENCLOSED (UL for Socket)‡ Cat. No.[1] Prefix GPRTSX-	UL SP PLUG BASE MT. ENCLOSED Cat. No.[1] Prefix GPRTPX-
SPDT	2500	7.2	**-82T**	-82T	-82T		-82T
DPDT	2500	10	-83T	-83T	-83T		-83T
3PDT	2500	12.3	**-84T**	**-84T**	-84T		-84T
4PDT	2500	15.0	-463T			-463T	
SPDT	5000	5	-85T	-85T	-85T		-85T
DPDT	5000	7.2	**-86T**	**-86T**	-86T		**-86T**
3PDT	5000	8.7	-87T	-87T	-87T		-87T
4PDT	5000	11	466T			**-466T**	
SPDT	10,000	3.6	-88T	-88T	-88T		-88T
DPDT	10,000	5	**-89T**	-89T	-89T		**-89T**
3PDT	10,000	6.1	-90T	-90T	-90T		**-90T**
4PDT	10,000	7.5	-469T			-469T	
Approx. weight			2.5 oz.	3.0 oz.	3.0 oz.	3.0 oz.	3.5 oz.

S APPEARING IN BOLD PRINT ARE POPULAR MODELS AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS

OHMITE general purpose relays

Thyratron Plate Relay: Designed specifically for plate circuit of thyratron tubes 2050 and 2D21 with 115 VAC supply (see diagram). Also suitable for operation in series with silicon controlled rectifiers from a 115 VAC supply. Ready to work, no capacitors or adjustments required, no chatter. Available unenclosed and in most GPR enclosures.



Relay in circuit Showing Thyrat

STOCK GPR THYRATRON RELAYS

	5 AMP CONTACTS					10 AMP CONTACTS		
Contacts	UNENCLOSED Cat. No.[1] Prefix GPRX-	ABOVE CHASSIS MTG. ENCLOSED Cat. No.[1] Prefix GPRTAX-†	THRU-CHASSIS MTG. ENCLOSED Cat. No.[1] Prefix GPRTTX-†	SOCKET MOUNT ENCLOSED (for SOGPR Socket)‡ Cat. No.[1] Prefix GPRTSX-	PLUG BASE MT. ENCLOSED Cat. No.[1] Prefix GPRTPX-	UNENCLOSED Cat. No.[1] Prefix GPRX-	SOCKET MOUNT ENCLOSED (for SOGPR Socket)‡ Cat. No.[1] Prefix GPRTSX-	
SPDT	**-191T**	-191T	-191T		-191T	-391T		
DPDT	**-192T**	-192T	-192T		-192T	-392T		
3PDT	-193T	-193T	-193T		-193T	-393T		
4PDT	-473T			-473T		-483T	-483T	

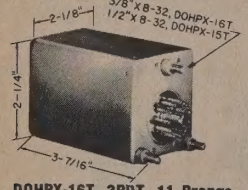
MODEL DO RELAYS AC or DC

Particularly adaptable to aircraft and mobile equipment applications where severe shock and vibration are encountered. Design of molded parts around contact arms protects against mechanical injury. Stocked in 3-pole or 4-pole type, and also in hermetic enclosures and in latching types.

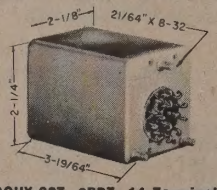
Coil Wattage: 3.00 watts, DC operation; 6.00 watts, 60 cycle AC. Maximum temperature rise 45°C, DC operation; 75°C, AC.
Coil Operating Voltage: Any voltage up to 230 VDC or 440 VAC, 60 cycle. Stock voltages in table.
Contacts: 10 amps nominal. Ratings are for 115 VAC or 32 VDC, resistive load.
Weight: Unenclosed 3-pole, 5 oz.; 4-pole, 6 oz.

DO RELAYS IN HERMETIC ENCLOSURES

Stock DO relays with 115 volt coil in hermetically sealed metal enclosures, filled with dry nitrogen. Enclosures provide protection for relay under most adverse ambient conditions. Both 3 and 4-pole DO relays are supplied in these enclosures with plug (DOHPX-) or solder terminal (DOHX-) connectors as illustrated. See listings in stock table above.
Weights: 3-pole hermetic relay approx. 14 oz.; 4-pole approx. 15 oz.

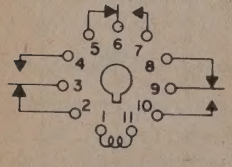


DOHPX-16T, 3PDT, 11 Prongs
DOHPX-15T, 4PDT, 20 Prongs

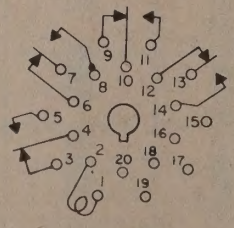


DOHX-22T, 3PDT, 14 Terminals
DOHX-23T, 4PDT, 14 Terminals

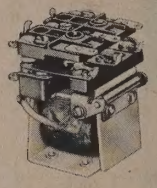
WIRING FOR PLUG-BASE STOCK DO RELAYS

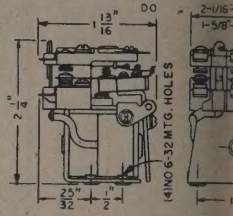


DOHPX-16T
Mates with Amphenol 77 MIP 11 Socket



DOHPX-15T
Mates with Amphenol 77 MIP 20 Socket





STOCK DO RELAYS—10 AMP CONTACTS*

Catalog No.[1]	Type‡	Volts	Coil Data Amps	DC Ohms
UNENCLOSED				
DOX-50T	3PDT	6VAC	2.33	0.36
DOX-183T	4PDT	6VAC	2.33	0.36
DOX-49T	3PDT	12VAC	1.28	1.40
DOX-184T	4PDT	12VAC	1.28	1.40
DOX-181T	3PDT	24VAC	.57	5.50
DOX-185T	4PDT	24VAC	.57	5.50
DOX-226T	DPST*	115VAC	.110	145.0
DOUX-34§	DPST*	115VAC	.110	145.0
DOX-227T	3PST	115VAC	.110	145.0
DOUX-28§	3PST	115VAC	.110	145.0
DOX-46T	3PDT	115VAC	.110	145.0
DOUX-30§	3PDT	115VAC	.110	145.0
DOX-228T	4PST	115VAC	.110	145.0
DOUX-31§	4PST	115VAC	.110	145.0
DOX-53T	4PDT	115VAC	.110	145.0
DOUX-33§	4PDT	115VAC	.110	145.0
DOX-61T	3PDT	230VAC	.070	550.0
DOX-130T	4PDT	230VAC	.070	550.0
DOX-145T	3PDT	6VDC	.487	12.3
DOX-186T	4PDT	6VDC	.487	12.3
DOX-51T	3PDT	12VDC	.231	51.8
DOX-102T	4PDT	12VDC	.231	51.8
DOX-141T	3PDT	24VDC	.105	230.0
DOX-137T	4PDT	24VDC	.105	230.0
DOX-93T	3PDT	110VDC	.022	5,000
DOX-187T	4PDT	110VDC	.022	5,000
DOX-182T	3PDT	220VDC	.014	16,100
DOX-188T	4PDT	220VDC	.014	16,100
IN HERMETIC ENCLOSURE				
DOHPX-16T	3PDT	115VAC	.110	145.0
DOHPX-15T	4PDT	115VAC	.110	145.0
DOHX-22T	3PDT	115VAC	.110	145.0
DOHX-23T	4PDT	115VAC	.110	145.0

*Except DOX-226T, DOUX-34 20 amps, double break contacts.
‡All single-throw (- - ST) relays are normally open.
§Listed by UL.

[1] ITEMS APPEARING IN BOLD PRINT ARE POPULAR MODELS AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS

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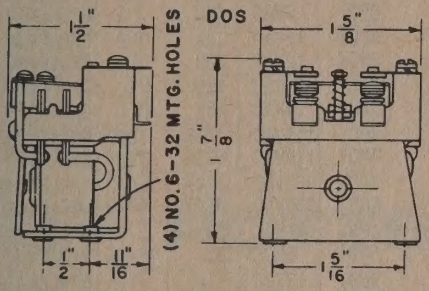
OHMITE general purpose relays

EL DOS RELAYS AC or DC

d application, general purpose relay, compact and lightweight. nes loads usually demanded of much larger relays. Meets us aircraft relay standards.

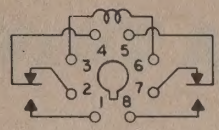


Wattage: 2.5 watts, DC operation; 3 watts, 60 cycle AC. mum temperature rise 45°C, DC operation; 65°C, AC.

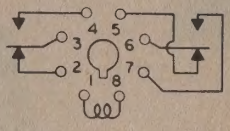
Operating Voltage: Any voltage up to 230 VDC or 440 VAC, /cles. Table lists stock voltages.

acts: 15 amps nominal. Rating is for 115 VAC or 32 VDC, tive load.

ht: Unenclosed, 4 ounces.

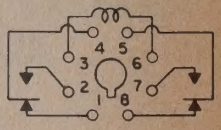


DOSPX-1T



DOSEPX-5T

WIRING FOR PLUG-BASE STOCK DOS RELAYS



DOSHPX-46T, 47T

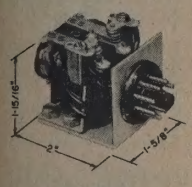
RELAYS WITH PLUG-BASE OR IN T-TIGHT OR HERMETIC ENCLOSURES

relays with 115 volt AC coils are available from stock with a lard octal plug base, unenclosed (DOSPX-1T) or with an octal base and drawn aluminum, removable dust-tight enclosure EPX-5T).

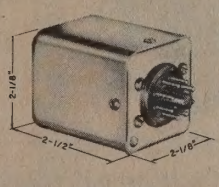
hts: 8 oz. each.

rmetically Sealed non-removable enclosures, filled with dry gen, are also available to provide protection under adverse ent conditions. DOS relays with 115 volt AC or DC coils are ded in these enclosures with either octal plug (DOSHPX-) or r-terminal (DOSHX-) connectors as illustrated. See listings prices in DOS stock table.

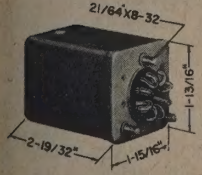
hts: 8 oz. each approx.



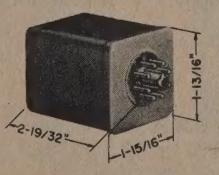
DOSPX-1T
Octal Plug-Base



DOSEPX-5T
Octal Plug Base with Dust Cover



metic Enclosures with 8 Terminals
DOSHX-39T, 115VDC
DOSHX-40T, 115VAC



Hermetic Enclosures with Octal Plugs
DOSHPX-46T, 115VDC
DOSHPX-47T, 115VAC

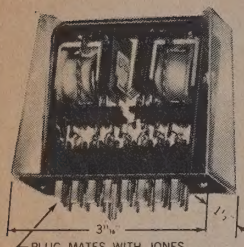
STOCK DOS RELAYS — 15 AMP CONTACTS*

Catalog No.[1]	Type‡	Volts	Coil Data Amps	DC Ohms
UNENCLOSED				
DOSX-229T	SPST*	6VAC	.890	1.07
DOSX-230T	DPST	6VAC	.890	1.07
DOSX-30T	DPDT	6VAC	.890	1.07
DOSX-16T	DPDT	12VAC	.460	4.20
DOSX-231T	SPST*	24VAC	.269	15.5
DOSX-232T	DPST	24VAC	.269	15.5
DOSX-162T	DPDT	24VAC	.269	15.5
DOSX-233T	SPST*	115VAC	.043	450
DOSUX-34§	SPST*	115VAC	.043	450
DOSX-234T	DPST	115VAC	.043	450
DOSUX-31§	DPST	115VAC	.043	450
DOSX-7T	DPDT	115VAC	.043	450
DOSUX-33§	DPDT	115VAC	.043	450
DOSX-235T	SPST*	230VAC	.030	1,450
DOSX-236T	DPST	230VAC	.030	1,450
DOSX-12T	DPDT	230VAC	.030	1,450
DOSX-158T	DPDT	6VDC	.450	13.4
DOSX-66T	DPDT	12VDC	.210	56.2
DOSX-9T	DPDT	24VDC	.105	230.0
DOSX-237T	SPST*	110VDC	.022	5,000
DOSX-238T	DPST	110VDC	.022	5,000
DOSX-59T	DPDT	110VDC	.022	5,000
DOSX-177T	DPDT	220VDC	.013	16,400
WITH PLUG BASE				
DOSPX-1T	DPDT	115VAC	.043	450
WITH DUST COVER				
DOSEPX-5T	DPDT	115VAC	.043	450
IN HERMETIC ENCLOSURE				
DOSHX-40T	DPDT	115VAC	.043	450
DOSHPX-47T	DPDT	115VAC	.043	450
DOSHX-39T	DPDT	110VDC	.022	5,000
DOSHPX-46T	DPDT	110VDC	.022	5,000

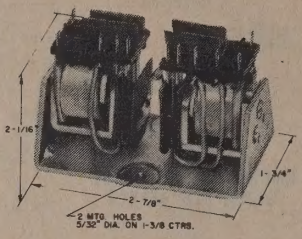
*Except relays with * which have double-break contacts — 25 amp rating.
‡Single throw relays (- - ST) are normally open.
§Listed by UL.

MS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.

OHMITE latching relays



Enclosed Latching Relay (GPRLETP)



6PDT Latching Relay (GPRLE)

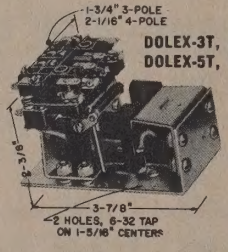
Latching Relay: Consists of two GPR relays with armatures linked so that the n.o. contacts of one are mechanically latched in closed position when, and after, this relay is energized. When 2nd relay is energized, first relay restores and latches 2nd. Permits switching of twice the number of circuits and holding without coil current. Unenclosed type "GPRLE." Enclosed type "GPRLETP" in clear plastic case with Jones plug P-324-SB fitting S-324-AP socket.

STOCK GPR LATCHING RELAYS — 5 AMP CONTACTS

Total Contacts	COIL DATA — (Each Coil) Volts	Amps	Ohms	Unenclosed GPRLE†,	Enclosed Plug-Base GPRLETP†,
4PDT	6VAC	.650	2.5	GPRLEX-1T	GPRLETPX-1T
6PDT	6VAC	.650	2.5	GPRLEX-2T	GPRLETPX-2T
4PDT	12VAC	.309	10.0	**GPRLEX-3T**	GPRLETPX-3T
6PDT	12VAC	.309	10.0	GPRLEX-4T	GPRLETPX-4T
4PDT	24VAC	.155	40.0	GPRLEX-5T	GPRLETPX-5T
6PDT	24VAC	.155	40.0	GPRLEX-6T	GPRLETPX-6T
4PDT	115VAC	.0325	1000	**GPRLEX-7T**	**GPRLETPX-7T**
4PDT	115VAC	.0325	1000	**GPRLEX-8T**	**GPRLETPX-8T**
4PDT	230VAC	.0147	4000	GPRLEX-9T	GPRLETPX-9T
6PDT	230VAC	.0147	4000	GPRLEX-10T	GPRLETPX-10T
4PDT	6VDC	.23	26	GPRLEX-11T	GPRLETPX-11T
6PDT	6VDC	.23	26	GPRLEX-12T	GPRLETPX-12T
4PDT	12VDC	.114	105	**GPRLEX-13T**	**GPRLETPX-13T**
6PDT	12VDC	.114	105	GPRLEX-14T	**GPRLETPX-14T**
4PDT	24VDC	.060	400	**GPRLEX-15T**	**GPRLETPX-15T**
6PDT	24VDC	.060	400	**GPRLEX-16T**	**GPRLETPX-16T**
4PDT	110VDC	.0110	10,000	**GPRLEX-17T**	**GPRLETPX-17T**
6PDT	110VDC	.0110	10,000	GPRLEX-18T	**GPRLETPX-18T**
Approx. weight				7.0 oz.	11.3 oz.

*Column heads carry symbols to indicate UL or CSA (Canadian S Assn.) approval. The grey tint indicates that relay is recognized u "components program" (File No. E33069, Guide No. 380W1.14C, ment No. 62C3559A). CSA File No. is 21309. See explanation in CSA Approval."

MODEL DO LATCHING RELAY (DOLEX-)



Consists of Model DO relay and a "reset magnet" with both armatures mechanically latched so that the normally open contacts of the relay remain closed when the relay energizing voltage is removed. The relay releases to normal position when the res is pulsed. Permits "holding" of without continuous coil curren of stock units (both relays an coils) are 115 VAC. Available or 4-pole DO relays

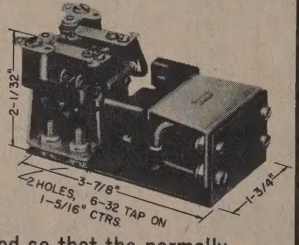
Weights: 3-pole — 16.5 oz.; 4-pole — 17 oz.

LATCHING TYPE

Catalog No.¹	Type	Volts	Coil Data † Amps	DC Ohms
DOLEX-3T	3PDT	115VAC	.110	145.0
DOLEX-5T	4PDT	115VAC	.110	145.0

†Coil data applies to relay part of latching assembly. Reset magnet op 115VAC, 60 cycle also.

MODEL DOS LATCHING RELAY (DOSLEX-)



Consists of Model DOS relay and a "reset magnet" with both armatures mechanically latched so that the normally open contacts of the relay remain closed when the relay energizing voltage is removed. The relay releases to normal position when the reset coil is pulsed. Permits "holding" of circuits without continuous coil current. Coils of stock units (both relay and reset magnet) are 115VAC.

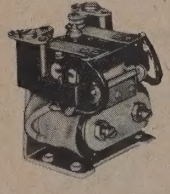
Weight: 14.2 oz.

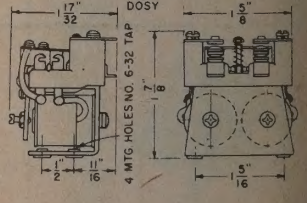
LATCHING TYPE

Catalog No.¹	Type	Volts	Coil Data Amps †	DC Ohms
DOSLEX-1T	DPDT	115VAC	.043	450

†Coil data applies to relay part of latching assembly. Reset magnet operates on 115 VAC, 60 cycle also.

MODEL DOSY RELAY FOR PLATE CIRCUITS





Similar in construction to Model DOS relay but equipped with twin coils for inc sensitivity. The DOSY relay is adaptable to a wide range of electronic contro cations such as plate circuit controls, or as overload or underload controls circuits to signal attainment of predetermined current levels.

Coil Wattage: 1.00 watt, with maximum temperature rise of 45°C. Lower wattages available.

Contacts: Stock combinations as listed. Ratings are for 115 VAC or 32 VDC, resistive load.

Weight: Approximately 4½ ounces.

Catalog No.¹	Type	Coil Data DC Ohms	Max. Pull-in Current	Contact Amps
DOSYX-67T	DPDT	10,000	8 MA	15
DOSYX-68T	DPDT	5,000	11 MA	15
DOSYX-69T	SPDT	10,000	5 MA	15
DOSYX-70T	SPDT	5,000	7 MA	15

ITEMS APPEARING IN BOLD PRINT ARE POPULAR MODELS AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS

OHMITE PAGE 34

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QUALITY RELAYS
FOR EVERY APPLICATION

AMF | POTTER & BRUMFIELD

RELAY INDEX AND ORDERING INSTRUCTIONS

Relay	Page	Relay	Page	Relay	Page	Relay	Page	Relay	Page
AB	4	GM	5	KHP, KHS KHU,	2	LB	7	PC	6
ABC	4	GP	5	KHU Spring	2	LM	7	PM	4
AP	5	GP Kit	5	KL	2	LS, LSP	8	PM Cover	4
BS	8	HC	9	KM	6	MB	8	PR	4
BS Cover	8	HL	9	KR3-H	3	MC	8	PR Cover	4
BU	5	HP	1	KR3P-H	3	MG	8	PW	7
CD, CH, CU	12	HP Socket	1	KRP	3	MH	8	RS	7
CJ	13	JM	11	KRP-N	3	ML	7	SA	6
CS	14	JR, JRM	10	KRP Spring	2	MR	4	SC, SCG	9
FC, FL	9	KA, KAP	2	KT	6	MR Cover	4	SL, SLG	9
GA	1	KB, KBP	5	KUP	3	MS	6	SM	7
GB	6	KCP	6	KUP Sockets	3	MS Cover	6	SS	7
GF	4	KCP Spring	2	KUP Spring	2	P Case	3	TL	9

SUFFIX		STANDS FOR	EXAMPLE
A	—	Alternating Current	BS17A
D	—	Direct Current	BS17D
DD	—	DC in a sealed "D" can	MH23DD
G	—	Silver Cad.-Oxide Contacts	KRP5AG
L	—	Plate Circuit	SM5L
M	—	Sealed in "M" can	MH17DM
N	—	Neon Light	KRP11AN
P	—	Enclosed in Plastic Dust Cover	MG11DP
R	—	With Built-in Rectifier	MH17AMR
S	—	Sealed in can	PW5DS, SM5DS
T	—	Sealed in "T" can	MG11DT
Y	—	U/L Component Recognition or Listing	AB11AY

-O-Matic Sec. 23

elay contacts are rated at 120V, 60 Hz, non inductive load. When ordering specify type and coil voltage or resistance.

ple: PR5AY, 120 Volts AC, 60 Hz or LB5, 2500 ohms resistance.

perate 110V DC relays on 220V DC use a 5 watt wire-wound resistor of a value approximately the relay coil resistance in series with the relay coil.

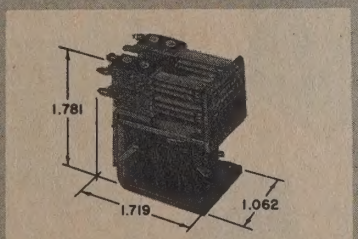
CONTACT LEGEND: S-Single; D-Double; P-Pole; T-Throw; N-Normally; O-Open; C-Closed; B-Break; M-Make.

Prices and Specifications subject to change without notice. For latest prices refer to United Pricing Service.

IN STOCK AT LEADING ELECTRONIC PARTS DISTRIBUTORS

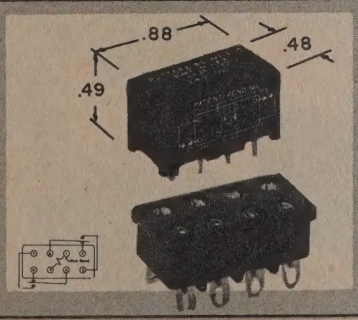
SERIES Low cost, all purpose, multiple act, voltage switching relay. Used for y industrial control applications. Tinned, ced solder type terminals. Contacts: dia. silver, designed for maximum self-ning action. Mounting: No. 8-32 tapped with locating boss. Weight: 3½ ozs.

GF series for similar relays having 10 ratings. (Page 4).



SERIES This commercial microminia- relay is recommended for applications uiring high performance in minimum ce, such as TV cameras, dictating ma- nes, desk top computers, copying ma- nes and others. For circuit board or sock- mounting and encased in a nylon heat- led (non hermetic) cover, the HP is a crystal case size relay with terminals a .200" grid. Weight: .3 oz.

P1 solder terminal socket and retainer HP relay.
of 10 Net $4.75



GENERAL PURPOSE RELAYS

TYPE	COILS		CONTACTS			SUGG. RESALE PRICE
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrange-ment	Rate in Amps	
GA11A	6V	1.7	6VA	DPDT	5	$3.70
GA11A	12V	6.8	6VA	DPDT	5	3.70
GA11A	24V	24	6VA	DPDT	5	3.70
GA11A	120V	690	6VA	DPDT	5	3.70
GA11D	6V	18	2.0W	DPDT	5	3.70
GA11D	12V	72	2.0W	DPDT	5	3.70
GA11D	24V	288	2.0W	DPDT	5	3.70
GA11D	110V	6,050	2.0W	DPDT	5	4.20
GA14A	24V	24	6VA	3PDT	5	4.45
GA14A	120V	690	6VA	3PDT	5	4.45
GA14D	24V	288	2.0W	3PDT	5	4.45
GA17A	6V	1.7	6VA	4PDT	5	5.35
GA17A	12V	6.8	6VA	4PDT	5	5.35
GA17A	24V	24	6VA	4PDT	5	5.35
GA17A	120V	690	6VA	4PDT	5	5.35
GA17A	240V	2,950	6VA	4PDT	5	5.80
GA17D	6V	18	2.0W	4PDT	5	5.35
GA17D	12V	72	2.0W	4PDT	5	5.35
GA17D	24V	288	2.0W	4PDT	5	5.35
GA17D	110V	6,050	2.0W	4PDT	5	5.90
HP11D§	12V	218	.662W	DPDT	2	7.95
HP11D§	24V	870	.662W	DPDT	2	7.95

§Enclosed Relay

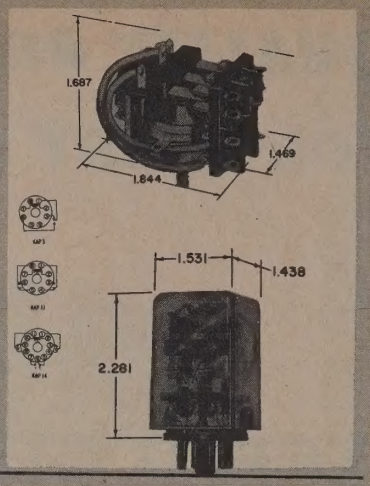
File System Sec. 4500 electronic engineers master

Potter & Brumfield Relays

KA AND KAP SERIES Small, low cost, highly efficient general purpose relays for handling light power loads such as small motors, solenoids and other relays, and general automation work. All KA and KAP relays with "Y" suffix bear CSA* listing and carry U/L component recognition (File No. E22575). Mechanical life expectancy: 10 million operations. Duty: Continuous. Contacts: Movable, ⅛" dia. gold-flashed silver; stationary, $\frac{3}{32}$" dia. wide silver overlay.

The KA is the open version of this series. Mounting: One No. 6-32 threaded stud and locating tab on $\frac{7}{16}$" centers. Weight: 2 ozs. The KAP is the enclosed model and is protected by a clear, high impact plastic dust cover. Terminals: 8 or 11-pin plug. Weight: 3 ozs.

"G" suffix indicates silver-cadmium-oxide contacts on movables rated 10 amps.



HOLD DOWN SPRINGS
Designed to insure secure mounting of relays in any position. Will accommodate machine screws or rivets.

For KAP relays: (shown above)
9KA1 50 per box NET $5.80

For KCP and KRP relays (pages 6 and 3)
9KR15 50 per box NET $5.80

For KUP plain case relays (page 3)
9KU3 50 per box NET $5.25

KHU/KHP/KHS SERIES Small, rugged, 4PDT, available for AC or DC operation. Only KHU relays carry Underwriters' Laboratories component recognition. KHU has Lexan and KHP has nylon dust cover; KHS is hermetically sealed in metal enclosure. These relays are designed to meet the exacting requirements of data processing, computer and process control applications. Contacts are $\frac{3}{32}$" gold-flashed silver and are rated 3 amps @ 30V DC or 120V AC resistive for 100,000 operations. "12" suffix indicates silver-cadmium-oxide contacts. Mounting: Solder terminals with a No. 3-48 $\frac{3}{16}$" long. Adaptable to sockets (below) with printed circuit or solder lug terminals. Weights without sockets; KHU or KHP 1¼ ozs.; KHS 1⅝ ozs.

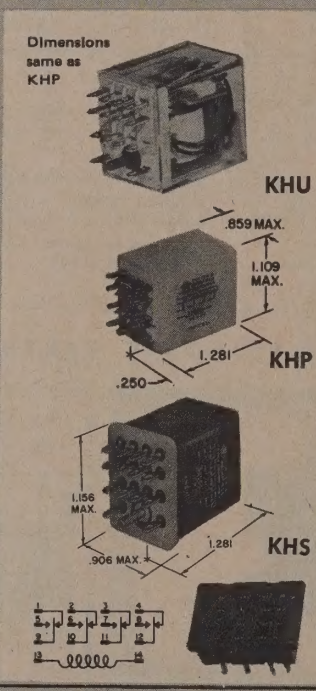
KHU/KHP hold down spring (similar to KCP-KRP, above.)

9KH3 50 per box, weight 3 ozs. Net $5.50

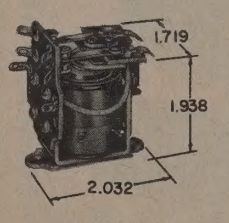
9KH1 Solder terminal sockets and retainers. Box of 10 Net $6.60

9KH2 Printed circuit terminal sockets, Box of 10 Net $6.60

Weight per box: 4 ozs.



KL SERIES Multiple contact relay. Varied contact combinations and high dielectric phenolic insulation affords extreme versatility and utility. Widely used in such applications as industrial controls, elevator controls, communications equipment and electronic measuring devices. Mounting: All models—Two No. 6-32 tapped holes on $1\frac{7}{16}$" centers. Contacts: ⅛" dia. gold-flashed silver. Weight: 5 ozs.



GENERAL PURPOSE RELAYS

TYPE	COILS			CONTACTS		SU RE PR
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrange-ment	Rate in Amps	
KA5AY	6V	6	2VA	SPDT	5	$3
KA5AY	12V	21	2VA	SPDT	5	3
KA5AY	24V	75	2VA	SPDT	5	3
KA5AY	120V	2,250	2VA	SPDT	5	3
KA5AY	240V	9,110	2VA	SPDT	5	4
KA5AG	6V	6	2VA	SPDT	10	3
KA5AG	12V	21	2VA	SPDT	10	3
KA5AG	24V	75	2VA	SPDT	10	3
KA5AG	120V	2,250	2VA	SPDT	10	3
KA5AG	240V	9,110	2VA	SPDT	10	4
KA5DY	6V	32.1	1.2W	SPDT	5	3
KA5DY	12V	120	1.2W	SPDT	5	3
KA5DY	24V	472	1.2W	SPDT	5	3
KA5DY	110V	10,000	1.2W	SPDT	5	4
KA5DG	6V	32.1	1.2W	SPDT	10	3
KA5DG	12V	120	1.2W	SPDT	10	3
KA5DG	24V	472	1.2W	SPDT	10	3
KA5DG	110V	10,000	1.2W	SPDT	10	4
KA11AY	6V	6	2VA	DPDT	5	4
KA11AY	12V	21	2VA	DPDT	5	4
KA11AY	24V	75	2VA	DPDT	5	4
KA11AY	120V	2,250	2VA	DPDT	5	4
KA11AY	240V	9,110	2VA	DPDT	5	4
KA11AG	6V	6	2VA	DPDT	10	4
KA11AG	12V	21	2VA	DPDT	10	4
KA11AG	24V	75	2VA	DPDT	10	4
KA11AG	120V	2,250	2VA	DPDT	10	4
KA11AG	240V	9,110	2VA	DPDT	10	4
KA11DY	6V	32.1	1.2W	DPDT	5	3
KA11DY	12V	120	1.2W	DPDT	5	3
KA11DY	24V	472	1.2W	DPDT	5	3
KA11DY	110V	10,000	1.2W	DPDT	5	4
KA11DG	6V	32.1	1.2W	DPDT	10	3
KA11DG	12V	120	1.2W	DPDT	10	3
KA11DG	24V	472	1.2W	DPDT	10	3
KA11DG	110V	10,000	1.2W	DPDT	10	4
KA14AY	6V	6	2VA	3PDT	5	4
KA14AY	12V	21	2VA	3PDT	5	4
KA14AY	24V	75	2VA	3PDT	5	4
KA14AY	120V	2,250	2VA	3PDT	5	4
KA14AY	240V	9,110	2VA	3PDT	5	5
KA14AG	6V	6	2VA	3PDT	10	4
KA14AG	12V	21	2VA	3PDT	10	4
KA14AG	24V	75	2VA	3PDT	10	4
KA14AG	120V	2,250	2VA	3PDT	10	4
KA14AG	240V	9,110	2VA	3PDT	10	5
KA14DY	6V	32.1	1.2W	3PDT	5	4
KA14DY	12V	120	1.2W	3PDT	5	4
KA14DY	24V	472	1.2W	3PDT	5	4
KA14DY	110V	10,000	1.2W	3PDT	5	4
KA14DG	6V	32.1	1.2W	3PDT	10	4
KA14DG	12V	120	1.2W	3PDT	10	4
KA14DG	24V	472	1.2W	3PDT	10	4
KA14DG	110V	10,000	1.2W	3PDT	10	5
KAP5AG§	24V	75	2VA	SPDT	10	6
KAP5AG§	120V	2,250	2VA	SPDT	10	6
KAP5DG§	24V	472	1.2W	SPDT	10	6
KAP5DG§	110V	10,000	1.2W	SPDT	10	6
KAP11AY§	24V	75	2VA	DPDT	5	6
KAP11AY§	120V	2,250	2VA	DPDT	5	6
KAP11AY§	240V	9,110	2VA	DPDT	5	7
KAP11AG§	6V	.6	2VA	DPDT	10	6
KAP11AG§	24V	75	2VA	DPDT	10	6
KAP11AG§	120V	2,250	2VA	DPDT	10	6
KAP11DG§	24V	472	1.2W	DPDT	10	6
KAP11DG§	110V	10,000	1.2W	DPDT	10	7
KAP11DY§	12V	120	1.2W	DPDT	5	6
KAP11DY§	24V	472	1.2W	DPDT	5	6
KAP11DY§	110V	10,000	1.2W	DPDT	5	7
KAP14AY§	24V	75	2VA	3PDT	5	8
KAP14AY§	120V	2,250	2VA	3PDT	5	8
KAP14AY§	240V	9,110	2VA	3PDT	5	8
KAP14AG§	24V	75	2VA	3PDT	10	8
KAP14AG§	120V	2,250	2VA	3PDT	10	8
KAP14DG§	24V	472	1.2W	3PDT	10	8
KAP14DG§	110V	10,000	1.2W	3PDT	10	9
KAP14DY§	12V	120	1.2W	3PDT	5	8
KAP14DY§	24V	472	1.2W	3PDT	5	8
KAP14DY§	110V	10,000	1.2W	3PDT	5	8
KHU17A11§	6V	10.5	1.2VA	4PDT	3	5
KHU17A11§	12V	43	1.2VA	4PDT	3	5
KHU17A11§	24V	160	1.2VA	4PDT	3	5
KHU17A11§	120V	3,900	1.2VA	4PDT	3	6
KHU17D11§	6V	40	900MW	4PDT	3	5
KHU17D11§	12V	160	900MW	4PDT	3	5
KHU17D11§	24V	650	900MW	4PDT	3	5
KHU17D12§	24V	650	900MW	4PDT	3	5
KHU17D11§	48V	2,600	900MW	4PDT	3	5
KHU17D11§	90V	9,000	900MW	4PDT	3	5
KHU17D11§	110V	11,000	900MW	4PDT	3	5
KHU17D12§	110V	11,000	900MW	4PDT	3	6
KHP17A11§	6V	10.5	1.2VA	4PDT	3	5
KHP17A11§	12V	43	1.2VA	4PDT	3	5
KHP17A11§	24V	160	1.2VA	4PDT	3	5
KHP17A11§	120V	3,900	1.2VA	4PDT	3	6
KHP17D11§	6V	40	900MW	4PDT	3	5
KHP17D11§	12V	160	900MW	4PDT	3	5
KHP17D11§	24V	650	900MW	4PDT	3	5
KHP17D12§	24V	650	900MW	4PDT	3	5
KHP17D11§	48V	2,600	900MW	4PDT	3	5
KHP17D11§	90V	9,000	900MW	4PDT	3	5
KHP17D11§	110V	11,000	900MW	4PDT	3	5
KHP17D12§	110V	11,000	900MW	4PDT	3	6
KHS17A11†	6V	10.5	1.2VA	4PDT	3	9
KHS17A11†	12V	43	1.2VA	4PDT	3	9
KHS17A11†	24V	160	1.2VA	4PDT	3	9
KHS17A11†	120V	3,900	1.2VA	4PDT	3	9
KHS17D11†	6V	40	900MW	4PDT	3	8
KHS17D11†	12V	160	900MW	4PDT	3	8
KHS17D11†	24V	650	900MW	4PDT	3	8
KHS17D11†	110V	11,000	900MW	4PDT	3	9
KL5A	120V	760	2.9VA	SPDT	5	4
KL5D	24V	600	1.1W	SPDT	5	4
KL11A	12V	7.8	2.9VA	DPDT	5	5
KL11A	24V	33	2.9VA	DPDT	5	5
KL11A	120V	760	2.9VA	DPDT	5	5
KL14A	24V	33	2.9VA	3PDT	5	5
KL14A	120V	760	2.9VA	3PDT	5	5
KL14D	24V	600	1.1W	3PDT	5	5
KL14D	110V	10,000	1.1W	3PDT	5	6
KL17A	6V	2.25	2.9VA	4PDT	5	7
KL17A	24V	33	2.9VA	4PDT	5	7
KL17A	120V	760	2.9VA	4PDT	5	7
KL17D	12V	140	1.1W	4PDT	5	6
KL17D	24V	600	1.1W	4PDT	5	6
KL17D	110V	10,000	1.1W	4PDT	5	7

*Canadian Standards Association File No. LR-15734

†Sealed Relay
§Enclosed Relay

See ordering information on page 1

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Potter & Brumfield Relays

-H SERIES Ruggedly constructed but all size, KR3-H is a heavy duty relay ially designed for applications where d space is a factor. Its heavy duty r alloy movable contact carrier has ″ dia. silver-cadmium-oxide contacts 20 amps @ 120V AC 60 Hz resistive, V DC; 1 HP 120/240V 60 Hz. Contact gement is 1 Form X (SPST-NO-DB) Terminals: suitable for ¼″ quick con- also solder; for contacts: solder only oil. Size: 1.6″ x 1.671″ x 1.52″. Seated t: 1.21″. Mounting: One 6-32 stud and ng tab on .437″ center. Weight: 2 ozs.

3-H SERIES All electrical specifica- listed above for the KR3-H series re- apply to the KRP3-H. However, the 3-H is enclosed in a clear, high impact c dust cover and features an octal in base. Weight: Approximately 3 ozs.

SERIES Versatile, multi-contact ar- ment. Enclosed in a clear high impact c dust cover. Standard 8-pin octal-type for KRP5 and KRP11, 11-pin for KRP- Weight: Approx. 3 ozs. Contacts: 5 ⅜″ dia. gold-flashed silver, 10 amp dia. silver cadmium-oxide. See KCP- hold down spring for special mounting cations. See KRP-N indicator lamp re- or current monitoring applications.

-N INDICATOR IP RELAY A general purpose relay porating a lamp to indicate current or ge availability in power circuit. Con- ⅜″ dia. silver cadmium-oxide. En- re: Clear, high impact plastic dust . Mounting: Standard octal plug. ht: Approx. 3 ozs.

down spring (Please see page 2).

— CASE A clear high impact plastic for mounting rectifiers, capacitors, re- rs or a combination of these. Available octal-type plug with 8 or 11-pins. s complete with four screws. Weight: s. each. See KCP-KRP Hold Down g for special mounting applications.

70 Case (8-pin plug) NET $ .65

72 Case (11-pin plug) NET $ .80

SERIES This reliable 10-ampere re- or industrial control is available with a t that is also rated 10 amperes. The terminals of the relay are of the quick- ect/solder type. Sockets are priced sep- ly and their terminals are of the ed solder type. The KUP is enclosed clear, high impact plastic dust cover. r-cadmium-oxide contacts assure long ct life. Operation: Continuous.

SERIES with slotted flange case for t-to-chassis mounting. Identical in both rical and mechanical specifications as KUP described above, except that they not suitable for socket mounting. The terminals are of the quick-connect/ r type. Slot width: .156″. Weight: 3 ozs.

nodels carry U/L Component Recogni-

1 pierced solder terminal sockets and ners for KUP plain case relays. Rated mperes; molded nylon. Two .165″ dia. nting holes.

of 5 NET $3.95

2 printed circuit pin terminal sockets KUP relays. Will accept .187″ terminals UP in plain case. Molded nylon. Two ″ dia. mounting holes.

of 5 NET $4.75

3 hold down spring (See page 2).

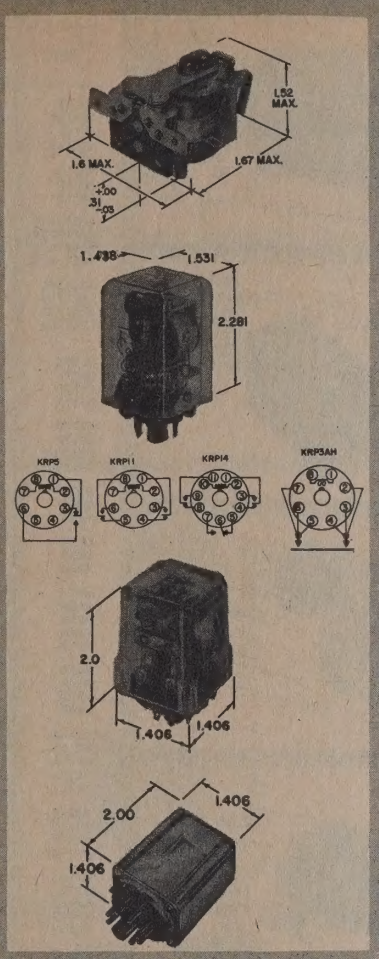
4 screw terminal socket for KUP plain relays to 2 Form C. The nylon socket epts .187″ terminals) is riveted to the lite frame that provides screw terminals.

of 5 NET $13.15

5 sockets with .187″ quick-connect ter- als. Two .165″ dia. mounting holes.

of 5 NET $6.30

sockets except 9KU5 are included in the Component Recognition of the KUP ys.



GENERAL PURPOSE RELAYS

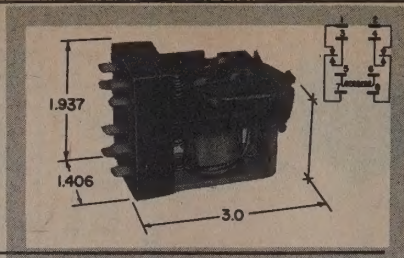
TYPE	COILS			CONTACTS		SUGG. RESALE PRICE
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrangement	Rate In Amps	
KR3AH	12V	21	2VA	SPST-NO-DB	20	$4.30
KR3AH	24V	75	2VA	SPST-NO-DB	20	4.30
KR3AH	120V	2,250	2VA	SPST-NO-DB	20	4.30
KR3DH	12V	120	1.2W	SPST-NO-DB	20	4.10
KR3DH	24V	472	1.2W	SPST-NO-DB	20	4.10
KR3DH	110V	10,000	1.2W	SPST-NO-DB	20	4.70
KRP3AH§	12V	21	2VA	SPST-NO-DB	20	7.00
KRP3AH§	24V	75	2VA	SPST-NO-DB	20	7.00
KRP3AH§	120V	2,250	2VA	SPST-NO-DB	20	7.00
KRP3DH§	12V	120	1.2W	SPST-NO-DB	20	6.75
KRP3DH§	24V	472	1.2W	SPST-NO-DB	20	6.75
KRP3DH§	110V	10,000	1.2W	SPST-NO-DB	20	7.45
KRP5A§	6V	6	2VA	SPDT	5	6.00
KRP5A§	24V	75	2VA	SPDT	5	6.00
KRP5A§	120V	2,250	2VA	SPDT	5	6.00
KRP5AG§	6V	6	2VA	SPDT	10	6.15
KRP5AG§	24V	75	2VA	SPDT	10	6.15
KRP5AG§	120V	2,250	2VA	SPDT	10	6.15
KRP5D§	6V	32.1	1.2W	SPDT	5	5.95
KRP5D§	12V	120	1.2W	SPDT	5	5.95
KRP5D§	24V	472	1.2W	SPDT	5	5.95
KRP5D§	110V	10,000	1.2W	SPDT	5	6.60
KRP5DG§	6V	32.1	1.2W	SPDT	10	6.10
KRP5DG§	12V	120	1.2W	SPDT	10	6.10
KRP5DG§	24V	472	1.2W	SPDT	10	6.10
KRP5DG§	110V	10,000	1.2W	SPDT	10	6.70
KRP11A§	6V	6	2VA	DPDT	5	6.65
KRP11A§	12V	21	2VA	DPDT	5	6.65
KRP11A§	24V	75	2VA	DPDT	5	6.65
KRP11A§	120V	2,250	2VA	DPDT	5	6.65
KRP11A§	240V	9,110	2VA	DPDT	5	7.10
KRP11AG§	6V	6	2VA	DPDT	10	6.90
KRP11AG§	12V	21	2VA	DPDT	10	6.90
KRP11AG§	24V	75	2VA	DPDT	10	6.90
KRP11AG§	120V	2,250	2VA	DPDT	10	6.90
KRP11AG§	240V	9,100	2VA	DPDT	10	7.35
KRP11D§	6V	32.1	1.2W	DPDT	5	6.60
KRP11D§	12V	120	1.2W	DPDT	5	6.60
KRP11D§	24V	472	1.2W	DPDT	5	6.60
KRP11D§	110V	10,000	1.2W	DPDT	5	7.30
KRP11DG§	6V	32.1	1.2W	DPDT	10	6.85
KRP11DG§	12V	120	1.2W	DPDT	10	6.85
KRP11DG§	24V	472	1.2W	DPDT	10	6.85
KRP11DG§	110V	10,000	1.2W	DPDT	10	7.50
KRP14A§	6V	6	2VA	3PDT	5	8.30
KRP14A§	12V	21	2VA	3PDT	5	8.30
KRP14A§	24V	75	2VA	3PDT	5	8.30
KRP14A§	120V	2,250	2VA	3PDT	5	8.30
KRP14A§	240V	9,110	2VA	3PDT	5	8.70
KRP14AG§	6V	6	2VA	3PDT	10	8.60
KRP14AG§	12V	21	2VA	3PDT	10	8.60
KRP14AG§	24V	75	2VA	3PDT	10	8.60
KRP14AG§	120V	2,250	2VA	3PDT	10	8.60
KRP14AG§	240V	9,100	2VA	3PDT	10	9.00
KRP14D§	6V	32.1	1.2W	3PDT	5	8.20
KRP14D§	12V	120	1.2W	3PDT	5	8.20
KRP14D§	24V	472	1.2W	3PDT	5	8.20
KRP14D§	110V	10,000	1.2W	3PDT	5	8.85
KRP14DG§	6V	32.1	1.2W	3PDT	10	8.50
KRP14DG§	12V	120	1.2W	3PDT	10	8.50
KRP14DG§	24V	472	1.2W	3PDT	10	8.50
KRP14DG§	110V	10,000	1.2W	3PDT	10	9.20
KRP11ANS§	6V	6	2VA	DPDT	10	7.90
KRP11ANS§	12V	21	2VA	DPDT	10	7.90
KRP11ANS§	24V	75	2VA	DPDT	10	7.90
KRP11ANS§	120V	2,250	2VA	DPDT	10	7.90
KRP11ANS§	240V	9,110	2VA	DPDT	10	8.30
KRP11DNS§	6V	32.1	1.2W	DPDT	10	7.80
KRP11DNS§	12V	120	1.2W	DPDT	10	7.80
KRP11DNS§	24V	420	1.2W	DPDT	10	7.80
KRP11DNS§	110V	10,000	1.2W	DPDT	10	8.50
KRP14ANS§	6V	6	2VA	3PDT	10	9.60
KRP14ANS§	12V	21	2VA	3PDT	10	9.60
KRP14ANS§	24V	75	2VA	3PDT	10	9.60
KRP14ANS§	120V	2,250	2VA	3PDT	10	9.60
KRP14ANS§	240V	9,110	2VA	3PDT	10	10.05
KUP5A15§	6V	5.1	2VA	SPDT	10	3.90
KUP5A15§	12V	21	2VA	SPDT	10	3.90
KUP5A15§	24V	75	2VA	SPDT	10	3.90
KUP5A15§	120V	2,250	2VA	SPDT	10	3.90
KUP5A15§	240V	9,110	2VA	SPDT	10	4.30
KUP5D15§	6V	32.1	1.2W	SPDT	10	3.75
KUP5D15§	12V	120	1.2W	SPDT	10	3.75
KUP5D15§	24V	472	1.2W	SPDT	10	3.75
KUP5D15§	110V	10,000	1.2W	SPDT	10	4.35
KUP11A15§	6V	5.1	2VA	DPDT	10	4.75
KUP11A15§	12V	21	2VA	DPDT	10	4.75
KUP11A15§	24V	75	2VA	DPDT	10	4.75
KUP11A15§	120V	2,250	2VA	DPDT	10	4.75
KUP11A15§	240V	9,110	2VA	DPDT	10	5.15
KUP11D15§	6V	32.1	1.2W	DPDT	10	4.25
KUP11D15§	12V	120	1.2W	DPDT	10	4.25
KUP11D15§	24V	472	1.2W	DPDT	10	4.25
KUP11D15§	110V	10,000	1.2W	DPDT	10	4.90
KUP14A15§	6V	4.2	2.75VA	3PDT	10	5.30
KUP14A15§	12V	18	2.75VA	3PDT	10	5.30
KUP14A15§	24V	72	2.75VA	3PDT	10	5.30
KUP14A15§	120V	1,700	2.75VA	3PDT	10	5.30
KUP14A15§	240V	7,200	2.75VA	3PDT	10	5.70
KUP14D15§	6V	32.1	1.2W	3PDT	10	4.90
KUP14D15§	12V	120	1.2W	3PDT	10	4.90
KUP14D15§	24V	472	1.2W	3PDT	10	4.90
KUP14D15§	110V	10,000	1.2W	3PDT	10	5.30
KUP14A55§*	6V	4.2	2.75VA	3PDT	10	5.30
KUP14A55§*	12V	18	2.75VA	3PDT	10	5.30
KUP14A55§*	24V	72	2.75VA	3PDT	10	5.30
KUP14A55§*	120V	1,700	2.75VA	3PDT	10	5.30
KUP14A55§*	240V	7,200	2.75VA	3PDT	10	5.70
KUP14D55§*	6V	32.1	1.2W	3PDT	10	4.90
KUP14D55§*	12V	120	1.2W	3PDT	10	4.90
KUP14D55§*	24V	472	1.2W	3PDT	10	4.90
KUP14D55§*	110V	10,000	1.2W	3PDT	10	5.30

*KUP55 with slotted flange case §Enclosed Relay

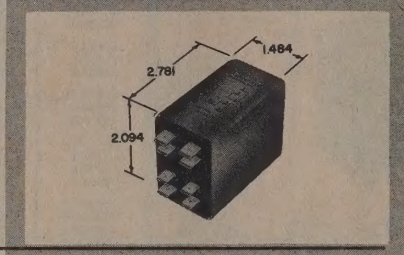
See ordering information on page 1.

Potter & Brumfield Relays

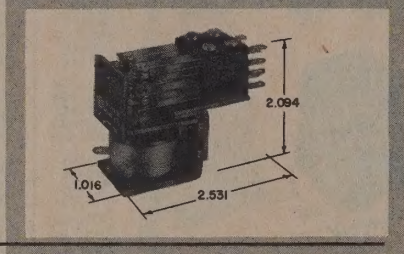
AB SERIES For appliance and general purpose applications where rugged construction, long life and quiet operation are required. All equipped with terminals to fit snap-on connectors and may also be applied to printed circuits using dip soldering. Snap-on screw adaptors packed with each relay. All AC models carry U/L component recognition (File No. E29244) and CSA* listing. Mounting: Two No. 8-32 tapped holes, on 1¾" centers. Silver contacts. Weight: Approx. 5 ozs.



ABC SERIES Medium duty power relay with dust cover. For small motors, industrial control and similar applications. All equipped with terminals to fit snap-on connectors and may also be applied to printed circuits using dip soldering. Snap-on screw adaptors packed with each relay. All AC models carry U/L component recognition (File No. E29244) and CSA* listing. Mounting: One No. 8-32 threaded stud ⅜" long and locating tab on ⅞" centers. Contacts: ¼" dia. silver. Weight: Approx. 7 ozs.



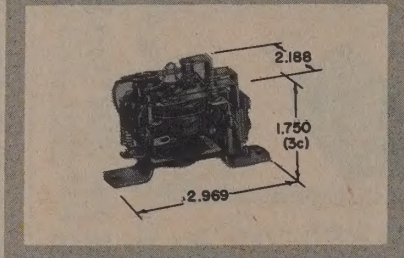
GF SERIES Medium duty power relay for industrial control applications. Long contact arms have ¼" dia. silver contacts rated at 10 amps at 120V AC or 28V DC resistive. Contacts have excellent wipe or self-cleaning action. Tinned, pierced solder terminals. Mounting: 8-32 tapped core with locating boss. Weight: 4.75 ozs. (See GA series, page 1, for similar voltage actuated relays.)



MR SERIES A medium duty power relay that can handle small motors, transmitters, and general purpose applications. Mounting: Two ⅝" dia. holes on 2¼" centers for MR3 and 11, 2⅝" centers for MR2, 5 and 14. Contacts: 7/32" dia. silver. Weight: 4 ozs.

MS/MR Metal dust cover similar to PM/PR shown below. 3⅝" x 2⅛" x 2¹³/₁₆". Weight: 7.5 ozs.

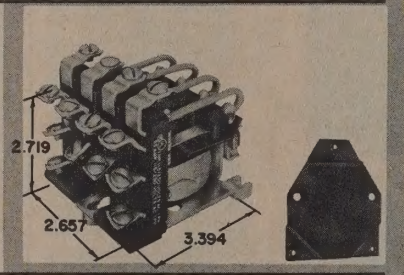
35D130 fits MS/MR NET $2.20



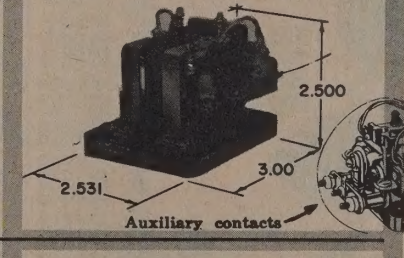
PM SERIES A compact heavy duty 4PDT power relay for polyphase and heavy duty switching applications. Screw terminals. Has ¼" silver-cadium-oxide contacts rated at 25 amps at 120V., 25 amps at 240V. 50/60 Hz resistive AC, 1HP per movable arm at 120V. or 240V. AC single phase, U/L (File No. E22575) and CSA* listed, except 480V. Mounts by one front key-hole and two rear channel slots for 8-32 screws on 2" x 2½" triangular centers. Weight: 14 ozs.

9PM1 Adaptor plates for mounting PM on PR mounting holes. Box of 10 NET $1.75

Enclosures for PM relay — see below.



PR SERIES Heavy duty relay for industrial control applications requiring long life and fast action. Heavy duty screw type terminals. All AC and DC models except PR-11AL5 carry U/L (File No. E22575) and CSA* listing. Mounting: Two ⅝" dia. holes on 1⅞" centers. Weight: 11 ozs. max. Contacts: ⅜" dia. silver. Enclosure: See "PR" cover. The PR11AL5 relay is equipped with ⅜" dia. silver SPDT auxiliary contacts rated at 5 amps.

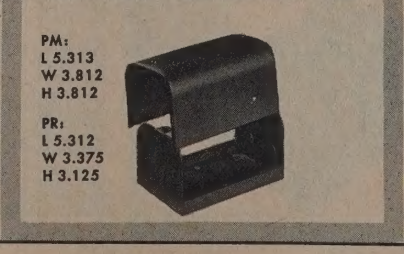


PM and PR DUST COVERS These dust covers have a sheet metal base with knockouts for ½" dia. conduit and an aluminum cover fitted with two screws. Finished in gray hammertone. Mounting: Three No. 10 holes on 1⅞" x 4½" centers. Approx. weight: 1 lb.

35D227 Metal cover for PM only NET $3.45

9PM2 Plastic dust cover for PM only. Box of 4 NET $1.90

35D013 Metal cover for PR only NET $3.45



POWER RELAYS

TYPE	COILS			CONTACTS	
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrangement	Rate in Amp
AB11AY	6V	1.3	6.4VA	DPDT	10
AB11AY	24V	23	6.4VA	DPDT	10
AB11AY	120V	510	6.4VA	DPDT	10
AB11AY	240V	2,050	6.4VA	DPDT	10
AB11D	12V	72	2.0W	DPDT	10
AB11D	24V	288	2.0W	DPDT	10
AB11D	110V	6,050	2.0W	DPDT	10
ABC11AY§	6V	1.3	6.4VA	DPDT	10
ABC11AY§	24V	23	6.4VA	DPDT	10
ABC11AY§	120V	510	6.4VA	DPDT	10
ABC11AY§	240V	2,050	6.4VA	DPDT	10
ABC11D§	6V	18	2.0W	DPDT	10
ABC11D§	12V	72	2.0W	DPDT	10
ABC11D§	24V	288	2.0W	DPDT	10
ABC11D§	110V	6,050	2.0W	DPDT	10
GF17A	12V	6.8	6VA	4PDT	10
GF17A	24V	24	6VA	4PDT	10
GF17A	120V	690	6VA	4PDT	10
GF17A	240V	2,950	6VA	4PDT	10
GF17D	6V	18	2.0W	4PDT	10
GF17D	12V	72	2.0W	4PDT	10
GF17D	24V	288	2.0W	4PDT	10
GF17D	110V	6,050	2.0W	4PDT	10
MR3A	6V	2.75	3.25VA	SPST-NO-DB	10
MR3A	24V	50	3.25VA	SPST-NO-DB	10
MR3A	120V	1,250	3.25VA	SPST-NO-DB	10
MR3D	6V	24	1.6W	SPST-NO-DB	10
MR3D	12V	96	1.6W	SPST-NO-DB	10
MR3D	24V	360	1.6W	SPST-NO-DB	10
MR5A	6V	2.75	3.25VA	SPDT	8
MR5A	12V	13.25	3.25VA	SPDT	8
MR5A	24V	50	3.25VA	SPDT	8
MR5A	120V	1,250	3.25VA	SPDT	8
MR5A	240V	4,600	3.25VA	SPDT	8
MR5D	6V	24	1.6W	SPDT	8
MR5D	12V	96	1.6W	SPDT	8
MR5D	24V	360	1.6W	SPDT	8
MR5D	110V	8,000	1.6W	SPDT	8
MR11A	6V	2.75	3.25VA	DPDT	8
MR11A	12V	13.25	3.25VA	DPDT	8
MR11A	24V	50	3.25VA	DPDT	8
MR11A	120V	1,250	3.25VA	DPDT	8
MR11A	240V	4,600	3.25VA	DPDT	8
MR11D	6V	24	1.6W	DPDT	8
MR11D	12V	96	1.6W	DPDT	8
MR11D	24V	360	1.6W	DPDT	8
MR11D	110V	8,000	1.6W	DPDT	8
MR14A	6V	2.75	3.25VA	3PDT	8
MR14A	12V	13.25	3.25VA	3PDT	8
MR14A	24V	50	3.25VA	3PDT	8
MR14A	120V	1,250	3.25VA	3PDT	8
MR14A	240V	4,600	3.25VA	3PDT	8
MR14D	6V	24	1.6W	3PDT	8
MR14D	12V	96	1.6W	3PDT	8
MR14D	24V	360	1.6W	3PDT	8
MR14D	110V	8,000	1.6W	3PDT	8
PM17AY	6V	.37	14VA	4PDT	25
PM17AY	12V	1.4	14VA	4PDT	25
PM17AY	24V	5.0	14VA	4PDT	25
PM17AY	120V	120	14VA	4PDT	25
PM17AY	240V	587	14VA	4PDT	25
PM17A	480V	1,790	14VA	4PDT	25
PM17DY	6V	8.2	4.4W	4PDT	25
PM17DY	12V	33	4.4W	4PDT	25
PM17DY	24V	132	4.4W	4PDT	25
PM17DY	110V	2,760	4.4W	4PDT	25
PR1AY	24V	12	9.8VA	SPST-NO	25
PR3AY	6V	.86	9.8VA	SPST-NO-DB	25
PR3AY	12V	3.2	9.8VA	SPST-NO-DB	25
PR3AY	24V	12	9.8VA	SPST-NO-DB	25
PR3AY	120V	290	9.8VA	SPST-NO-DB	25
PR3AY	240V	1,200	9.8VA	SPST-NO-DB	25
PR3DY	6V	18	2.0W	SPST-NO-DB	25
PR3DY	12V	71	2.0W	SPST-NO-DB	25
PR3DY	24V	288	2.0W	SPST-NO-DB	25
PR3DY	110V	6,050	2.0W	SPST-NO-DB	25
PR5AY	6V	.86	9.8VA	SPDT	25
PR5AY	12V	3.2	9.8VA	SPDT	25
PR5AY	24V	12	9.8VA	SPDT	25
PR5AY	120V	290	9.8VA	SPDT	25
PR5AY	240V	1,200	9.8VA	SPDT	25
PR5DY	6V	18	2.0W	SPDT	25
PR5DY	12V	71	2.0W	SPDT	25
PR5DY	24V	288	2.0W	SPDT	25
PR5DY	110V	6,050	2.0W	SPDT	25
PR7AY	6V	.86	9.8VA	DPST	25
PR7AY	12V	3.2	9.8VA	DPST	25
PR7AY	24V	12	9.8VA	DPST	25
PR7AY	120V	290	9.8VA	DPST	25
PR7AY	240V	1,200	9.8VA	DPST	25
PR7DY	6V	18	2.0W	DPST	25
PR7DY	12V	71	2.0W	DPST	25
PR7DY	24V	288	2.0W	DPST	25
PR7DY	110V	6,050	2.0W	DPST	25
PR11AY	6V	.86	9.8VA	DPDT	25
PR11AY	12V	3.2	9.8VA	DPDT	25
PR11AY	24V	12	9.8VA	DPDT	25
PR11AY	120V	290	9.8VA	DPDT	25
PR11AY	240V	1,200	9.8VA	DPDT	25
PR11AY	480V	4,500	9.8VA	DPDT	25
PR11AL5	6V	.86	9.8VA	DPDT	20
PR11AL5	12V	3.2	9.8VA	DPDT	20
PR11AL5	24V	12	9.8VA	DPDT	20
PR11AL5	120V	290	9.8VA	DPDT	20
PR11AL5	240V	1,200	9.8VA	DPDT	20
PR11DY	6V	18	2.0W	DPDT	25
PR11DY	12V	71	2.0W	DPDT	25
PR11DY	24V	288	2.0W	DPDT	25
PR11DY	110V	6,050	2.0W	DPDT	25

*Canadian Standards Association File No. LR-15734

§Enclosed Relay

See ordering information on p

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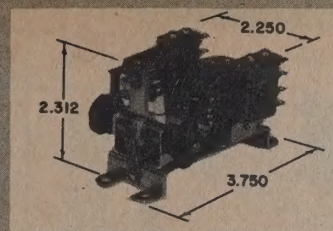
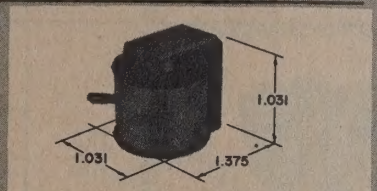
SERIES RATCHET, IMPULSE
liable compact unit for applications re-
ing on-off or reversing action on alter-
operations. Positive ratchet operation
ll speeds on impulses as short as 60 ms.
rmittent operation only. Mounting:
e ⅛" dia. holes on 3⅛" x ⅞" triangular
ers. Contacts: ⅛" dia. silver. Weight: 7
Coils for intermittent duty only.

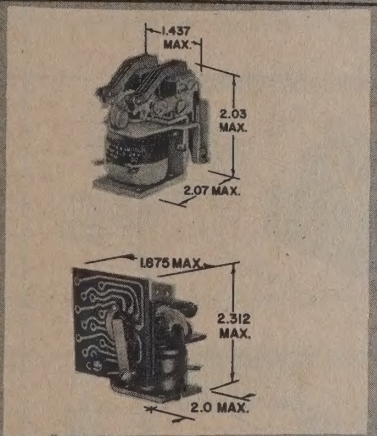


BUZZER AC operated coil with a
g steel armature which buzzes when
is energized. Used extensively in test
pment, laboratories and a host of other
ications where a small light weight, de-
able buzzer is required. Carries U/L
ponent Recognition File No. S1154.
ght: 1⅛ ozs. Mounting: No. 6-32 tapped



SERIES Unusually versatile switch-
makes this impulse/sequencing relay
cially suitable for single coil latching.
2 Form C contact arrangement is
hed alternately by cam action during
-out of the armature. It can also be fur-
d with additional 2 Form C auxiliary
acts (designated by "L"). AC version
ates on a 50% coil duty cycle (5 Min.
). Mounting: 8-32 tapped core with lo-
g boss. Weights: With aux. contacts
s. Without aux. contacts 4 ozs.

e GM1N10 and GM1N12 AC or DC use
asic GM structure with uni-directional
ed circuit boards with 10 or 12-steps,
ectively. The board is attached to an ex-
on of the ratchet shaft. The movable
act arm advances one position each time
armature *drops out*. Contact rating: .25
s. Contact arrangement: SP-10 pos. and
2 pos. Size: 2.312" x 1.875" x 2".

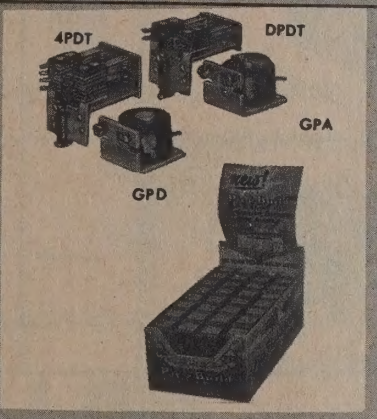


SERIES Separate AC and DC coils to
h with 2PDT or 4PDT switches. AC
(GPA) available in 6, 12, 24, 120 and
olts. DC coils (GPD) available in 6, 12,
nd 110 volts; current coils: 2,500, 5,000
10,000 ohms. Contacts: ⅛" dia. silver.

Switch Assembly DPDT 5 amps $1.90
Switch Assembly 4PDT 5 amps 3.25

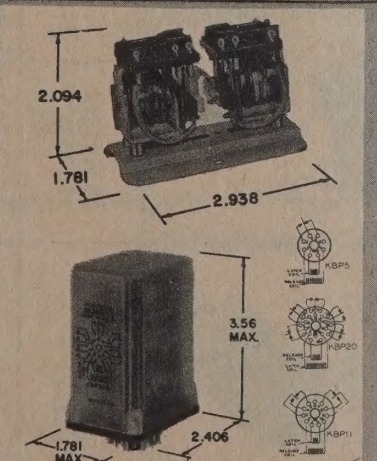
100 A complete kit of GP Series coils
switches consisting of the following:
oils: Two 6V., two 12V., four 24V., six
., two 240V. DC coils: Two 6V., two
two 24V., four 110V. Also two 2,500
four 10,000 ohm coils; eighteen DPDT
h assemblies. Fourteen 4PDT switch
nblies. The complete kit is ideal for ex-
nenters, school and industrial laborato-

NET $147.35



SERIES LATCHING RELAY Both
se and trip coils must be for the same
ge. One coil operates relay to set latch
other coil releases it. Ideal for memory
and overload applications. Operates on
entary impulse to either coil. Mounting:
⅛" dia. holes on 1⅜" centers. Weight:
. Contacts: ⅛" dia. silver rated 5 amps;
suffix indicates silver-cadmium-oxide
acts on movables rated 10 amps. AC re-
with 5 amp. Contacts carry U/L com-
nt recognition (File No. 29244) and are
* listed. AC coil for intermittent duty

SERIES LATCHING RELAY
osed in a translucent polypropylene
cover, the KBP is furnished with 20-pin
type plugs for socket mounting. Con-
arrangements of 4PDT and 5PDT are
able. Otherwise all specifications are
ical to the KB series described above.
component recognition does not apply
e KBP series. Weight: 8 ozs.



SPECIAL PURPOSE RELAYS

TYPE	COILS			CONTACTS		SUGG. RESALE PRICE
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrangement	Rate in Amps	
AP11A	6V	.6	18.5VA	DPDT	5	$ 9.65
AP11A	12V	2.28	18.5VA	DPDT	5	9.65
AP11A	24V	8.8	18.5VA	DPDT	5	9.65
AP11A	120V	240	18.5VA	DPDT	5	9.65
AP11A	240V	900	18.5VA	DPDT	5	10.20
AP11D	6V	4.0	9.0W	DPDT	5	9.65
AP11D	24V	65	9.0W	DPDT	5	9.65
AP11D	110V	1,350	9.0W	DPDT	5	10.40
AP17A	24V	8.8	18.5VA	4PDT	5	11.70
AP17A	120V	240	18.5VA	4PDT	5	11.70
AP17D	12V	15.5	9.0W	4PDT	5	11.70
AP17D	24V	65	9.0W	4PDT	5	11.70
AP17D	110V	1,350	9.0W	4PDT	5	12.45
BU	6V	2.75	4.6VA	—	—	1.95
BU	12V	13.25	4.6VA	—	—	1.95
BU	24V	50	4.6VA	—	—	1.95
BU	120V	1,250	4.6VA	—	—	1.95
GM11A	24V	16	9.4VA	DPDT	3	8.00
GM11A	120V	420	9.4VA	DPDT	3	8.00
GM11AL11	120V	420	9.4VA	DPDT/DPDT	3	11.35
GM11D	12V	36	4W	DPDT	3	7.65
GM11D	24V	144	4W	DPDT	3	7.65
GM11D	110V	3,025	4W	DPDT	3	8.20
GM11DL11	12V	36	4W	DPDT/DPDT	3	11.15
GM11DL11	24V	144	4W	DPDT/DPDT	3	11.15
GM1N10A	120V	510	9.4VA	SP-10 pos.	.25	9.85
GM1N12A	120V	510	9.4VA	SP-12 pos.	.25	10.00
GM1N10D	24V	144	4W	SP-10 pos.	.25	9.60
GM1N12D	24V	144	4W	SP-12 pos.	.25	9.75
GPA	6V	1.7	6VA	None	—	1.85
GPA	12V	6.8	6VA	None	—	1.85
GPA	24V	24	6VA	None	—	1.85
GPA	120V	690	6VA	None	—	1.85
GPA	240V	2,950	6VA	None	—	2.30
GPD	—	2,500	—	None	—	1.70
GPD	—	5,000	—	None	—	1.95
GPD	—	10,000	—	None	—	2.30
GPD	6V	18	2.0W	None	—	2.30
GPD	12V	72	2.0W	None	—	2.30
GPD	24V	288	2.0W	None	—	2.30
GPD	110V	6,050	2.0W	None	—	3.45
KB17AY	6V	2.3	5VA	4PDT	5	11.60
KB17AY	12V	10	5VA	4PDT	5	11.60
KB17AY	24V	42	5VA	4PDT	5	11.60
KB17AY	120V	1,030	5VA	4PDT	5	11.60
KB17AY	240V	4,100	5VA	4PDT	5	12.45
KB17AG	6V	2.3	5VA	4PDT	10	11.70
KB17AG	12V	10	5VA	4PDT	10	11.70
KB17AG	24V	42	5VA	4PDT	10	11.70
KB17AG	120V	1,030	5VA	4PDT	10	11.70
KB17AG	240V	4,100	5VA	4PDT	10	12.55
KB17D	6V	13.1	2.7W	4PDT	5	10.40
KB17D	12V	52	2.7W	4PDT	5	10.40
KB17D	24V	230	2.7W	4PDT	5	10.40
KB17D	110V	4,560	2.7W	4PDT	5	11.75
KB17DG	6V	13.1	2.7W	4PDT	10	10.65
KB17DG	12V	52	2.7W	4PDT	10	10.65
KB17DG	24V	230	2.7W	4PDT	10	10.65
KB17DG	110V	4,560	2.7W	4PDT	10	11.95
KB23AY	24V	27	7.8VA	6PDT	5	13.90
KB23AY	120V	700	7.8VA	6PDT	5	13.90
KB23AG	24V	27	7.8VA	6PDT	10	14.10
KB23AG	120V	700	7.8VA	6PDT	10	14.10
KB23D	24V	230	2.7W	6PDT	5	12.60
KB23DG	24V	230	2.7W	6PDT	10	12.95
KB23DG	110V	4,560	2.7W	6PDT	10	14.30
KBP17A§	120V	1,030	5VA	4PDT	5	16.30
KBP17AG§	120V	1,030	5VA	4PDT	10	16.50
KBP17D§	24V	230	2.7W	4PDT	5	15.15
KBP17DG§	12V	52	2.7W	4PDT	10	15.40
KBP17DG§	24V	230	2.7W	4PDT	10	15.40
KBP20A§	120V	700	7.8VA	5PDT	5	16.80
KBP20AG§	120V	700	7.8VA	5PDT	10	17.05
KBP20DG§	12V	52	2.7W	5PDT	10	16.20
KBP20DG§	24V	230	2.7W	5PDT	10	16.20

SPECIFY COIL VOLTAGE OR RESISTANCE WHEN ORDERING

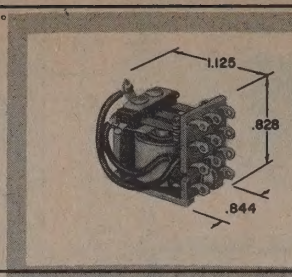
nadian Standards Association File
LR-15734

§Enclosed Relay

See ordering information on page 1.

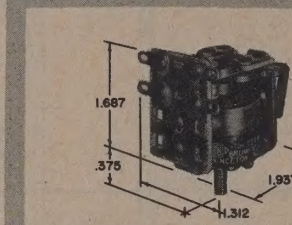
SPECIAL PURPOSE RELAYS

KM SERIES Subminiature relay for applications requiring unusually small relays with up to 3-poles $\frac{3}{32}$" dia. silver contacts. Withstands 30g mechanical shock and .06" excursion 10 to 55 Hz mechanical vibration. Used extensively in small business machines, alarm systems, automatic toys and communications systems. Mounting: One 2-56 tapped core and locating .062" dia. half-punch on .187" centers. Solder terminals. Weight: .58 ozs.



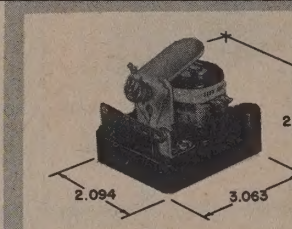
TYPE	COILS			CONTACTS		SUG RES PRI
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrange-ment	Rate in Amps	
KM5D	6V	36	1.1W	SPDT	2	$3
KM5D	12V	144	1.1W	SPDT	2	3
KM5D	24V	500	1.1W	SPDT	2	3
KM11D	6V	36	1.1W	DPDT	2	4
KM11D	12V	144	1.1W	DPDT	2	4
KM11D	24V	500	1.1W	DPDT	2	4
KM14D	6V	36	1.1W	3PDT	2	4
KM14D	12V	144	1.1W	3PDT	2	4
KM14D	24V	500	1.1W	3PDT	2	4

KT SERIES ANTENNA SWITCHING RELAY Glass base insulation for minimum RF loss to switch 300 ohm line. Mounting: One No. 6-32 threaded stud and locating tab on $\frac{1}{16}$" centers. Contacts: $\frac{1}{4}$" dia. gold-flashed silver. Weight: $1\frac{1}{2}$ ozs.



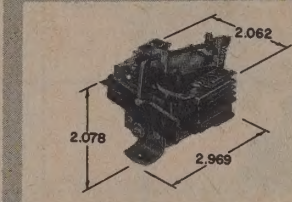
KT11A	6V	6	2VA	DPDT	5	4
KT11A	120V	2,250	2VA	DPDT	5	4
KT11D	6V	32.1	1.2W	DPDT	5	4
KT11D	12V	120	1.2W	DPDT	5	4

MS SERIES MOTOR STARTING RELAYS For starting capacitor start, induction-run motors. Operates on back EMF of start winding. Armature gap can be altered to change pull-in. Carries U/L component recognition (File No. 29245). Mounting: Two $\frac{5}{32}$" dia. holes on $1\frac{5}{16}$" centers. Contacts: $\frac{3}{4}$ HP, $\frac{3}{32}$" dia. fine silver; 3 HP, $\frac{7}{32}$" dia. silver cadmium. Weight: 5 ozs. max. MS/MR Metal dust cover similar to PM/PR shown on page 4. $3\frac{5}{8}$" x $2\frac{3}{8}$" x $2\frac{13}{32}$". Weight: 7.5 ozs.
35D130 fits MS/MR NET $2.20



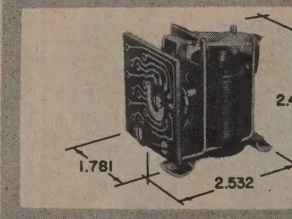
MS2AY	120V	530	5.9VA	SPST-NC	¾HP	4
MS2AY	240V	2,100	5.9VA	SPST-NC	¾HP	4
MS4AY	120V	530	5.9VA	SPST-NC-DB	3HP	4
MS4AY	240V	2,100	5.9VA	SPST-NC-DB	3HP	5

PC SERIES Single coil impulse latching relay for on-off and current reversal switching on alternate pulses. Mounting: Two $\frac{5}{32}$" dia. holes on $2\frac{5}{8}$" centers. Weight: 5 ozs. Contacts: $\frac{1}{4}$" dia. gold-flashed silver-cadmium-oxide. Coils for intermittent duty only.



PC11A	6V	.6	18.5VA	DPDT	7.5	6
PC11A	12V	2.28	18.5VA	DPDT	7.5	6
PC11A	24V	8.8	18.5VA	DPDT	7.5	6
PC11A	120V	240	18.5VA	DPDT	7.5	6
PC11D	6V	4	9.0W	DPDT	7.5	6
PC11D	12V	15.5	9.0W	DPDT	7.5	6
PC11D	24V	65	9.0W	DPDT	7.5	6
PC17A	24V	8.8	18.5VA	4PDT	7.5	8
PC17A	120V	240	18.5VA	4PDT	7.5	8
PC17D	24V	65	9.0W	4PDT	7.5	8

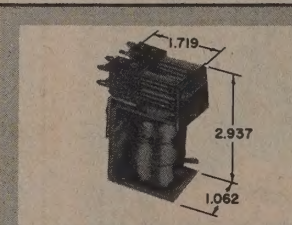
SA SERIES STEPPING SWITCH A twelve position stepping relay with printed circuit strips to switch currents up to 250 milliamps. Armature-driven pawl operates a ratchet wheel to drive the movable contact in steps of 30 degrees over 12 positions. Used widely for audio-level switching in TV remote control units, scoreboards and process controls. Mounting: Two 6-32 holes on $1\frac{13}{16}$" centers. Weight: 4 ozs. AC coil for intermittent duty only.



SA-1N-12A	120V	140	20VA	12-steps	.25	7

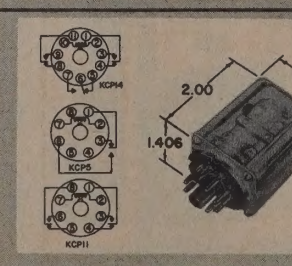
SENSITIVE RELAYS

GB SERIES (See GA series page 1 for similar voltage actuated relays.) Sensitivity 115 milliwatts for single pole and 275 milliwatts for 4 pole. Medium cost, high quality relay. Pick-up is not adjustable. Mounting: No. 8-32 tapped core and locating boss. Contacts: $\frac{3}{16}$" dia. silver. Weight: Approximately 5 ozs.



TYPE	COILS			CONTACTS		SUG RES PRI
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrange-ment	Rate in Amps	
GB5D	6.8MA	2,500	115MW	SPDT	5	$3
GB5D	4.8MA	5,000	115MW	SPDT	5	4
GB5D	3.4MA	10,000	115MW	SPDT	5	4
GB11D	7MA	2,500	125MW	DPDT	5	5
GB11D	5MA	5,000	125MW	DPDT	5	5
GB11D	3.53MA	10,000	125MW	DPDT	5	6
GB17D	10.5MA	2,500	275MW	4PDT	5	6
GB17D	7.4MA	5,000	275MW	4PDT	5	6
GB17D	5.25MA	10,000	275MW	4PDT	5	7

KCP SERIES Low cost sensitive relay enclosed in clear high impact plastic cover. Sensitivity 125 mw single pole; 250 mw double pole; 375 mw three pole. Mounting: Standard octal plug-in type. Eight pin for KCP5 and KCP11. Eleven pin for KCP14. Contacts: $\frac{1}{4}$" dia. gold-flashed silver. Weight: Approximately 3 ozs. Use KCP-KRP hold down spring when vibration is a factor or when using inverted or horizontal mounting. (see page 2).



KCP5§	7.2MA	2,500	125MW	SPDT	2	6
KCP5§	5MA	5,000	125MW	SPDT	2	6
KCP5§	3.6MA	10,000	125MW	SPDT	2	7
KCP11§	10MA	2,500	250MW	DPDT	2	6
KCP11§	7.2MA	5,000	250MW	DPDT	2	7
KCP11§	5MA	10,000	250MW	DPDT	2	7
KCP14§	12.3MA	2,500	375MW	3PDT	2	8
KCP14§	8.7MA	5,000	375MW	3PDT	2	8
KCP14§	6.1MA	10,000	375MW	3PDT	2	9

§Enclosed Relay

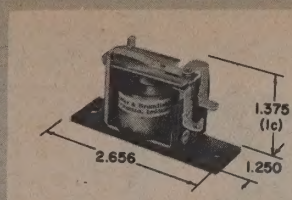
See ordering information on page

© United Technical Publica

Potter & Brumfield Relays

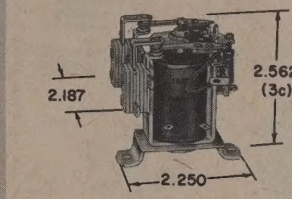
SENSITIVE RELAYS

ERIES Designed for top performance, life at an unusually low cost. Each coil und with a given coil resistance and ry adjusted to operate on minimum cur- requirements. Mounting: Two $\frac{7}{16}$" dia. on $2\frac{3}{32}$" centers. Contacts: $\frac{1}{4}$" dia. sil- Weight: Approximately 2 ozs.



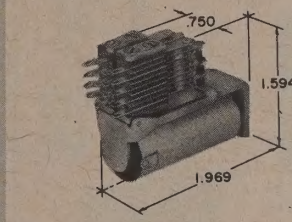
TYPE	COILS			CONTACTS		SUGG. RESALE PRICE
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrange-ment	Rate in Amps	
LB5	9MA	2,500	200MW	SPDT	5	$ 2.85
LB5	6.3MA	5,000	200MW	SPDT	5	3.05
LB5	4.5MA	10,000	200MW	SPDT	5	3.30

SERIES (See KL page 2 for similar ge actuated relays.) Sensitivity: 100 watts for single pole and 200 milliwatts ouble pole. Medium cost, high quality with $\frac{3}{32}$" dia. gold-flashed silver con- Pick-up adjustable by tail spring ad- g screw. Mounting: Two No. 6-32 d holes on $1\frac{1}{8}$" centers. Weight: Ap- mately 5 ozs. DC Coils only.



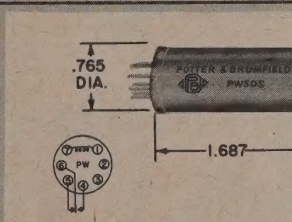
LM5	6.3MA	2,500	100MW	SPDT	5	4.35
LM5	4.5MA	5,000	100MW	SPDT	5	4.55
LM5	3.2MA	10,000	100MW	SPDT	5	4.90
LM11	9MA	2,500	200MW	DPDT	5	6.20
LM11	6.3MA	5,000	200MW	DPDT	5	6.40
LM11	4.5MA	10,000	200MW	DPDT	5	7.05

SERIES A small telephone type relay g excellent sensitivity and outstanding hing capabilities. Ideal for transistor- computer networks, telephone systems attery powered communications equip- Single contact arms have $\frac{1}{4}$" dia. gold- d silver contacts rated at 3 amps for 00 operations. Pierced solder terminals. ting: Four 3-48 holes on $\frac{5}{8}$" centers. ht: 2.5 ozs.



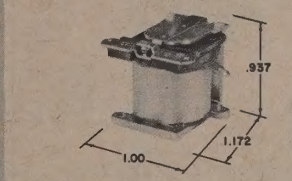
ML11D	4.0MA	2,500	40MW	DPDT	3	$ 7.00
ML11D	2.83MA	5,000	40MW	DPDT	3	7.15
ML11D	2.0MA	10,000	40MW	DPDT	3	7.50
ML17D	5.65MA	2,500	80MW	4PDT	3	8.30
ML17D	4.0MA	5,000	80MW	4PDT	3	8.50
ML17D	2.83MA	10,000	80MW	4PDT	3	8.80
ML23D	6.93MA	2,500	120MW	6PDT	3	9.40
ML23D	4.9MA	5,000	120MW	6PDT	3	9.60
ML23D	3.4MA	10,000	120MW	6PDT	3	9.90

SERIES (In both voltage and current ated models.) Sensitivity: 40 mw for nt actuated models, 180 mw for voltage ated models. Precision, light weight, her- cally sealed relay for aircraft and mis- applications. Will withstand 10g vibra- to 500 Hz. Mounting: Standard 7-pin ature tube base. Weight: Approx. 1 oz.



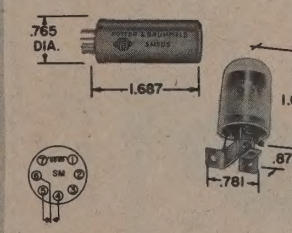
PW5DS†	6V	202	180MW	SPDT	1	11.85
PW5DS†	12V	810	180MW	SPDT	1	11.85
PW5DS†	24V	3,240	180MW	SPDT	1	11.85
PW5LS†	2.8MA	5,000	40MW	SPDT	1	12.25
PW5LS†	2.0MA	10,000	40MW	SPDT	1	12.70

SERIES (In both voltage and current ated models.) 60 mw. sensitivity. Low- small, light weight, sensitive relay for -sonde, light dimmer and model appli- ns. Mounting: Two No. 4-40 tapped on diagonal $\frac{3}{4}$" x $\frac{5}{8}$" centers. Contacts: palladium. Weight: $1\frac{1}{2}$ ozs.



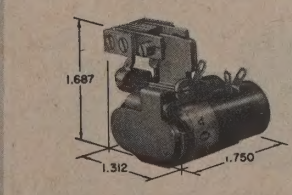
RS5D	6V	335	110MW	SPDT	2	2.90
RS5D	12V	1,350	110MW	SPDT	2	3.05
RS5D	5MA	2,500	60MW	SPDT	2	3.15
RS5D	3.5MA	5,000	60MW	SPDT	2	3.45
RS5D	2.5MA	10,000	60MW	SPDT	2	4.00

SERIES (In both voltage and current ated models.) Sensitivity 75 mw for cur- actuated models. Medium cost, light ht, dust covered (right) or hermetically d (left) relay for light contact loads d in computers, model airplanes and ar applications. Extremely long me- ical life because of reed armature. ting: Sealed, standard 7-pin miniature socket; dust cover, two $\frac{5}{32}$" dia. holes $\frac{5}{8}$" centers. Contacts: Stationary silver; able rhodium. Weight: 1 oz. max.



SM5DS†	6V	80	500MW	SPDT	.25	7.25
SM5DS†	12V	360	500MW	SPDT	.25	7.25
SM5DS†	24V	900	500MW	SPDT	.25	7.25
SM5L§	2.7MA	10,000	75MW	SPDT	.25	6.90
SM5LS†	3.9MA	5,000	75MW	SPDT	.25	7.55
SM5LS†	2.7MA	10,000	75MW	SPDT	.25	8.10

SERIES Ultra sensitive precision relay. nw sensitivity. Dual series-connected with balanced armature on needle-point ings for all low energy circuits such as uments and bridge balancing. May also sed as a differential relay by connecting wo coils in separate circuits. Mounting: No. 6-32 tapped holes on $\frac{3}{32}$" centers. acts: $\frac{1}{4}$" dia. silver. Weight: Approx. zs.



SS5D	1MA	10,000	10MW	SPDT	2	15.25

†Sealed Relay
§Enclosed Relay

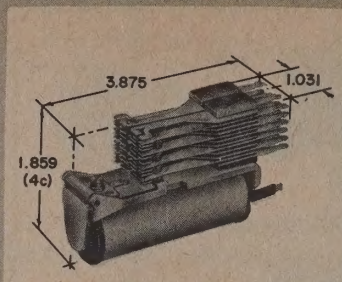
See ordering information on page 1.

Potter & Brumfield Relays

BS SERIES Long coil telephone type. Suited for computer and automatic test equipment applications requiring large number of poles. Tinned, pierced solder terminals for rear panel wiring. Mounting: Two No. 8-32 NC 2B tapped holes on ¾" centers. Contact arms: Bifurcated with $\frac{1}{16}$" dia. twin palladium contacts. Weight: Approximately 9 ozs.

BS DUST COVER Sheet metal enclosures for BS relays up to 6 Form C (6PDT, BS23), measures: H: $2\frac{5}{16}$", W: $1\frac{1}{4}$", L: $3\frac{3}{32}$" exclusive ⅜" knob; weight: 6.5 ozs.

35D188 NET $2.10

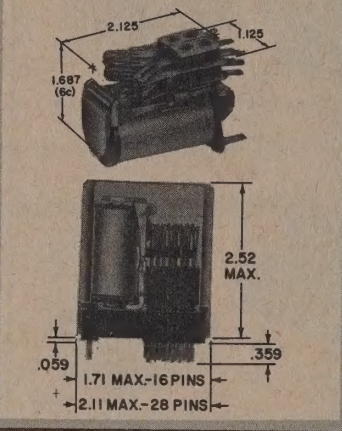


TELEPHONE TYPE RELAYS

TYPE	COILS		CONTACTS			SU RE PI
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrangement	Rate in Amps	
BS17A	120V	103	16.5VA	4PDT	4	$
BS17D	24V	1,000	576MW	4PDT	4	
BS17D	110V	6,500	1.8W	4PDT	4	
BS17L	5.5MA	10,000	300MW	4PDT	4	
BS23A	120V	103	16.5VA	6PDT	4	
BS23D	24V	1,000	576MW	6PDT	4	
BS23D	110V	6,500	1.8W	6PDT	4	

LS SERIES Short springs and light weight armature provide fast action without sacrificing reliability and long life. Stainless steel hinge bearing designed to give 100 million operations. Tinned, pierced solder terminals. Mounting: Two No. 6-32 tapped holes on ¾" centers. Bifurcated contact arms with $\frac{1}{16}$" dia. twin palladium contacts. Weight: Approximately 4 ozs.

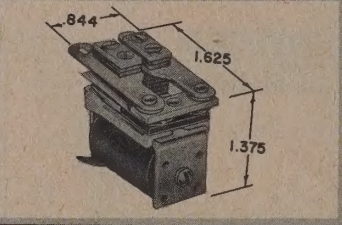
The LSP version has identical specifications as the LS, except that it is enclosed in a high impact, clear plastic cover and is provided with a rectangular socket with combination taper tab or solder terminations. Enables plug-in like any other plug-in component. Two sizes of sockets and covers are available: 16-pin for 4 Form C (4PDT) or 28-pin for 6 Form C (6PDT). Dimensions: LSP17D: 1.71" x 1.39" x 2.52" seated; weight: 4 ozs. LSP23D: 2.11" x 1.39" x 2.52" seated; weight: $4\frac{1}{2}$ ozs.



SPECIFY COIL VOLTAGE OR RESISTANCE WHEN ORDERING

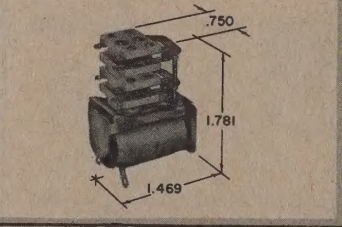
LS17D	24V	300	1.9W	4PDT	4	$
LS17D	48V	1,300	1.8W	4PDT	4	
LS17D	110V	8,000	1.5W	4PDT	4	
LS23D	24V	300	1.9W	6PDT	4	
LS23D	48V	1,300	1.8W	6PDT	4	
LS23D	110V	8,000	1.5W	6PDT	4	
LSP17D§	24V	300	1.9W	4PDT	4	
LSP17D§	48V	1,300	1.8W	4PDT	4	
LSP17D§	110V	8,000	1.5W	4PDT	4	
LSP23D§	24V	300	1.9W	6PDT	4	
LSP23D§	48V	1,300	1.8W	6PDT	4	
LSP23D§	110V	8,000	1.5W	6PDT	4	

MB SERIES Miniature DC contactor. Designed for very high current applications. Extra rugged construction insures long life. Handles 150 ampere surges for 0.3 sec. Contact arms: Stationary, heavy brass, ¼" dia. silver contacts pierced solder terminals. Movable, ¼" x $\frac{13}{16}$" silver bar contact. Mounting: Four No. 3-48 tapped holes on ⅜" x ⅜" centers. Weight: 2 ozs.



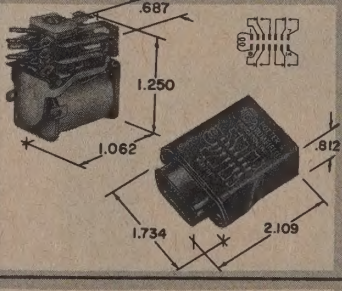
MB3D	6V	13.3	2.7W	SPST-NO-DB	60
MB3D	12V	62.3	2.7W	SPST-NO-DB	60
MB3D	24V	245	2.7W	SPST-NO-DB	60
MB3D	110V	5,000	2.7W	SPST-NO-DB	60

MC SERIES Built with ceramic contact spaces for RF switching to minimize losses at high frequencies. Intercontact capacitance 1.5 mmfd. max. Tinned, pierced solder type terminals. Mounting: Four No. 3-48 tapped holes on ⅜" x ⅜" centers. Contacts: $\frac{3}{32}$" dia. palladium. Weight: 2 ozs.



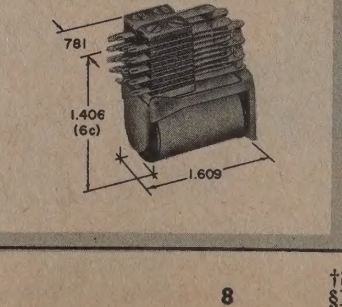
MC5A	6V	2.5	4.6VA	SPDT	1	
MC5D	12V	96	1.6W	SPDT	1	
MC5D	24V	365	1.6W	SPDT	1	
MC11A	120V	680	4.6VA	DPDT	1	
MC11D	24V	365	1.6W	DPDT	1	

MG SERIES Sub-miniature telephone type relay can be furnished open, sealed or in nylon dust cover. Mounting: Open model has four No. 3-48 tapped holes on ⅜" x ⅜" centers. Sealed model has three No. 4-40 threaded studs on 1" x ½" centers. Dust cover model has plug-in header that fits Amphenol receptacle No. 57-20140 or similar. Contacts: $\frac{3}{32}$" dia. silver. Weight: Open 1.2 ozs.; Dust cover 2.0 ozs.; Sealed 2.75 ozs.



MG11D	12V	90	1.6W	DPDT	2	
MG11D	24V	365	1.6W	DPDT	2	
MG11D	110V	7,560	1.6W	DPDT	2	
MG17D	12V	90	1.6W	4PDT	2	
MG17D	24V	365	1.6W	4PDT	2	
MG17DP§	12V	90	1.6W	4PDT	2	
MG17DP§	24V	365	1.6W	4PDT	2	
MG17DP§	110V	7,560	1.6W	4PDT	2	
MG17DT†	24V	365	1.6W	4PDT	2	
MG17DT†	110V	7,560	1.6W	4PDT	2	

MH SERIES MINIATURE TYPE Ideal for applications where space and weight are factors. Mounting: Open model, MH11L, one No. 6-32 threaded stud $1\frac{1}{2}$" long plus locating boss. All other open models have four No. 3-48 holes on ⅜" x ⅜" centers. Sealed models, M enclosures, three 6-32 NC 2 threaded studs on $1\frac{1}{4}$" x ½" centers. D enclosures, three 6-32 threaded studs on $1\frac{3}{16}$" x $\frac{15}{16}$" centers. All sealed models have hook end solder terminals. All models have ¼" dia. gold-flashed silver contacts. Weight: Open models $2\frac{1}{2}$ oz. max. Sealed models 5 ozs. max.



MH11L	4.5MA	10,000	200MW	DPDT	3	
MH11LM†	4.5MA	10,000	200MW	DPDT	3	
MH17D	6V	23	1.6W	4PDT	5	
MH17D	12V	96	1.6W	4PDT	5	
MH17D	24V	365	1.6W	4PDT	5	
MH17DM†	12V	96	1.6W	4PDT	5	
MH17DM†	24V	365	1.6W	4PDT	5	
MH17AMR†	120V	6,200	2VA	4PDT	5	
MH23D	6V	13.3	2.5W	6PDT	5	
MH23D	12V	62.3	2.5W	6PDT	5	
MH23D	24V	245	2.5W	6PDT	5	
MH23D	110V	5,000	2.5W	6PDT	5	
MH23DD†	12V	62.3	2.5W	6PDT	5	
MH23DD†	24V	245	2.5W	6PDT	5	

†Sealed Relay
§Enclosed Relay

See ordering information on page

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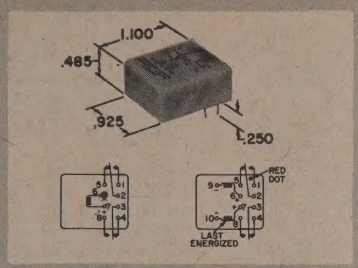
Potter & Brumfield Relays

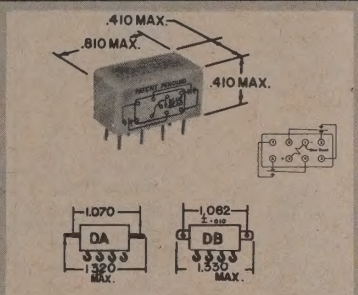
HIGH PERFORMANCE RELAYS

SERIES Conventional micro-miniature lies flat on printed circuit board. With- s 150g shock, 400g linear acceleration, ibration to 2000 Hz. Ambient tempera- range: −65° to +125°C. Hermetically d. Bifurcated contacts. Plugs in on .2" Meets applicable sections of MIL-R- , and MSFC-SPEC-339. Weight: .75 oz.

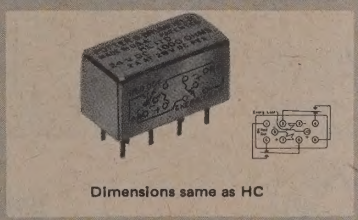
SERIES Dual-coil latching relay has specs as above, except operates by g each coil alternately (observing coil ty); or connecting the coils in series a reversing (polarized) source. Re- latched without coil power.



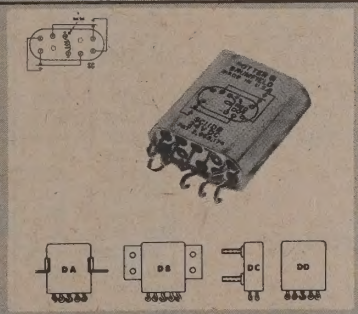
SERIES A micro-miniature, non-po- d, non-latching half-size crystal case for high reliability performance. Its orque motor structure and bifurcated, plated silver DPDT contacts, rated dry t to 2 amps @ 28V DC resistive, pro- positive performance in low level ap- ions. Temperature range: −65°C to °C. Hermetically welded. HC11D has in, plain case; HC11DA has hook-end terminals and shoulder brackets; DB has hook-end solder terminals and nounting plate with 2 holes. The HC meets or exceeds all applicable sec- of MIL-R-5757E, and complies with C-SPEC-339. Size: Plain case .8" x .4" (seated). Weight: ‡ oz.



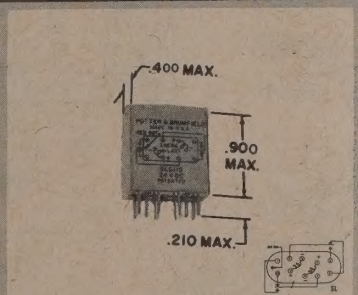
SERIES A companion micro-miniature with identical specifications as the escribed above, except that it is a dual- tching relay. The HL can be operated: L) pulsing each coil alternately, ob- g coil polarity; or (2) from a revers- olarized) power source by connecting olarities. Approximately 150 milliwatts °C coil temperature are required for coil. Coils will operate in less than 3 econds at nominal voltage @ 25°C.



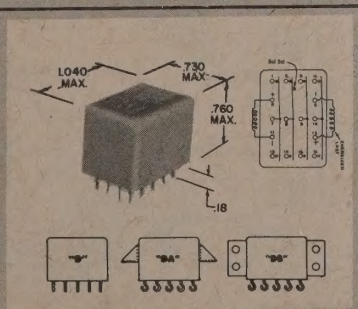
SERIES Micro-miniature permanent et relay for low power, high shock/ ion applications. 200g shock, 30g vi- n to 2000 Hz with no contact openings. ent temperature range: −65°C to °C. Features single coil action and con- to standard micro-miniature coil op- n except polarized connections because nagnetic circuit. Positive terminal ed with red dot. Mounting: SC11D**, , —DB, DC and DD correspond to rly designed SL mountings. SCG11D ectangular header with terminals on id. Weight: ‡ oz. nel No. HRK-1, 8-pin receptables avail- from distributors for plug-in applica-



SERIES Dual coil micro-miniature mag- latching relay with same shock/vibra- resistance and ambient temperature e as SC. Coils may be connected in s for polar operation. Mounting: D* for plug-in applications: —DA has lder flanges with two .104" x .136" holes 1.062" center; —DB has a welded brack- ith four .125" dia. holes on 1.062" x centers; —DC has two No. 4-40 NC hreaded studs on .488" x .220" diagonal ers; —DD has plain case with hook end r terminals. SLG11D has plug-in ter- ls on .2" grid. Weight: 2 ozs. ing No. P/N VB10/3DV 1 10-pin re- acles available from distributor for plug- plications.



SERIES High performance 4PDT mi- iniature magnetic latching relay for re environments. Hermetically welded case. Strong permanent magnetic es keep the contacts locked in desired ion when relay is de-energized. Approx. ms transfer time. Temperature range: °C to +125°C. Meets or exceeds ap- ble sections MIL-R-5757E and MSFC- C-339. Weight: Approx. 1‡ ozs. Mount- : D = plain case, plug-in header. DA = lder bracket .300" from base, hook-end r. DB = flat plate, .593" wide x 1.60" . 4 −.125" dia. holes on .281" x 1.30" ers, hook-end solder.

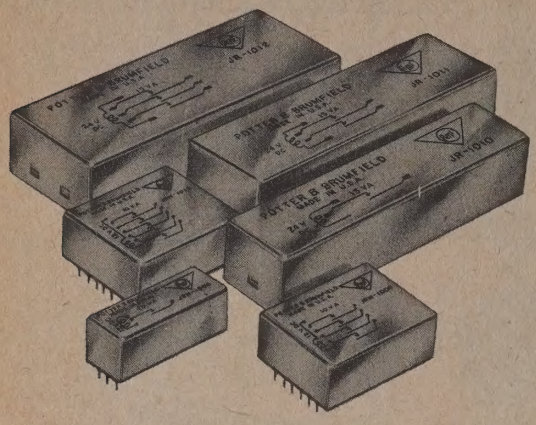


TYPE Hermetically Sealed	COILS Voltage or Current	COILS Resistance in Ohms	COILS Nominal Power	CONTACTS Arrangement	CONTACTS Rate in Amps	SUGG. RESALE PRICE
FC11D	6V	60	.65W	DPDT	3	$18.80
FC11D	12V	210	.65W	DPDT	3	18.80
FC11D	24V	900	.65W	DPDT	3	18.80
FL11D	6V	67.5	.65W	DPDT	3	21.15
FL11D	12V	230	.65W	DPDT	3	21.15
FL11D	24V	1,000	.65W	DPDT	3	21.15
HC11D	24V	814	.72W	DPDT	2	18.40
HC11DA	24V	814	.72W	DPDT	2	18.40
HC11DB	24V	814	.72W	DPDT	2	18.40
HL11D	24V	1,000	.65W	DPDT	2	$36.75
SC11D	6V	35	1W	DPDT	2	19.00
SC11D	12V	135	1W	DPDT	2	19.00
SC11D	24V	550	1W	DPDT	2	19.00
SC11DA	6V	35	1W	DPDT	2	19.00
SC11DA	12V	135	1W	DPDT	2	19.00
SC11DA	24V	550	1W	DPDT	2	19.00
SC11DB	6V	35	1W	DPDT	2	19.00
SC11DB	12V	135	1W	DPDT	2	19.00
SC11DB	24V	550	1W	DPDT	2	19.00
SC11DC	24V	550	1W	DPDT	2	19.00
SC11DD	24V	550	1W	DPDT	2	19.00
SCG11D	24V	550	1W	DPDT	2	19.00
SC7141	26.5V	MIL-R-1575D/10C-141 or RY4NA3B3L01				19.15
SL11D	6V	40	1W	DPDT	2	20.85
SL11D	12V	160	1W	DPDT	2	20.85
SL11D	24V	630	1W	DPDT	2	20.85
SL11DA	6V	40	1W	DPDT	2	20.85
SL11DA	12V	160	1W	DPDT	2	20.85
SL11DA	24V	630	1W	DPDT	2	20.85
SL11DB	6V	40	1W	DPDT	2	20.85
SL11DB	12V	160	1W	DPDT	2	20.85
SL11DB	24V	630	1W	DPDT	2	20.85
SL11DC	24V	630	1W	DPDT	2	20.85
SL11DD	24V	630	1W	DPDT	2	20.85
SLG11D	24V	630	1W	DPDT	2	20.85
TL17D	24V	600	1W	4PDT	3	30.20
TL17DA	24V	600	1W	4PDT	3	30.20
TL17DB	24V	600	1W	4PDT	3	30.20

SPECIFY COIL VOLTAGE OR RESISTANCE WHEN ORDERING

See ordering information on page 1.

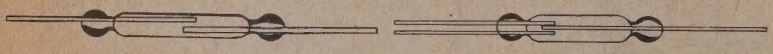
DRY REED RELAYS
TYPE JR STANDARD
TYPE JRM MINIATURE



Fast response, reliable performance, high sensitivity, and long life make JR standard and JRM miniature series relays especially suited for data processing applications, computer equipment, logic circuitry and various other sophisticated control circuits.

TWO TYPES OF BASIC CAPSULES

Both JR and JRM relays employ dry reed glass capsules with two basic types of contact arrangements, Form A (SPST-NO) or Form C (SPDT). Biasing with a permanent magnet changes Form A to a Form B (SPST-NC). This arrangement



requires that coil polarity be observed. It uses a two-cavity bobbin. Combining one Form A with one Form B results in a single Form C (SPDT) break-before-make; this uses a three-cavity bobbin. A "true" Form C (SPDT) uses a reed switch with two stationary and one movable contact. The movable contact is normally closed until the coil is energized, causing a "true" Form C (SPDT) break-before-make; it uses a single-cavity bobbin.

SPECIFICATIONS

Pick-up: 75% of nominal @ 25°C.
Operate Time: At nom. voltage @ 25°C.: JR: 3ms. JRM: 1ms.
Release Time: At 25°C.: JR: .5ms. JRM: .05ms.
Coil Power: Based upon nom. voltage and resistance. JR: 1 capsule — 240 mw; 2 capsules — 360 mw; 3 capsules — 720 mw; 4 capsules — 960 mw; 5 capsules 1.5 w.
JRM: 1 capsule — 180 mw; 2 capsules — 275 mw; 3 capsules — 420 mw; 4 capsules — 540 mw; 5 capsules — 720 mw.
For additional specifications see columnar listings and drawings.

JR STANDARD SERIES

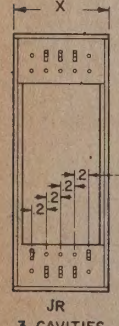
TYPE	Contact Arrangement	Number of Cavities	COILS		Reed Rating Watts	SUG RESA PRIC
			Sugg. Nominal Voltage	Resistance in Ohms		
JR1000	1A	1	6	150	15	$ 3.
JR1001	2A	2	6	100	15	4.
JR1003	4A	4	6	37.5	15	5.
JR1020	1A	1	6	150	50	4.
JR1021	2A	2	6	100	50	6.
JR1040	1C*	1	6	150	10	7.
JR1041	2C*	2	6	100	10	8.
JR1060	1B	2	6	100	15	4.
JR1061	2B	3	6	50	15	5.
JR1084	1A+1B	3	6	50	15	5.
JR1085	2A+2B	5	6	24	15	8.
JR1005	1A	1	12	600	15	3.
JR1006	2A	2	12	400	15	4.
JR1008	4A	4	12	150	15	5.
JR1025	1A	1	12	600	50	4.
JR1026	2A	2	12	400	50	6.
JR1045	1C*	1	12	600	10	7.
JR1046	2C*	2	12	400	10	8.
JR1063	1B	2	12	400	15	4.
JR1064	2B	3	12	200	15	5.
JR1086	1A+1B	3	12	200	15	5.
JR1087	2A+2B	5	12	96	15	8.
JR1010	1A	1	24	2,400	15	3.
JR1011	2A	2	24	1,600	15	4.
JR1013	4A	4	24	600	15	6.
JR1030	1A	1	24	2,400	50	4.
JR1031	2A	2	24	1,600	50	6.
JR1050	1C*	1	24	2,400	10	8.
JR1051	2C*	2	24	1,600	10	8.
JR1066	1B	2	24	1,600	15	4.
JR1067	2B	3	24	800	15	5.
JR1088	1A+1B	3	24	800	15	5.
JR1089	2A+2B	5	24	384	15	8.

*True Form C

JRM MINIATURE SERIES

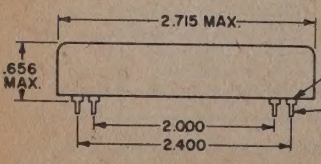
JRM1000	1A	1	6	200	10	3.
JRM1001	2A	2	6	130	10	4.
JRM1003	4A	4	6	67	10	7.
JRM1036	1B	2	6	130	10	4.
JRM1037	2B	3	6	86	10	5.
JRM1048	1A+1B	3	6	86	10	5.
JRM1049	2A+2B	5	6	50	10	8.
JRM1006	1A	1	12	800	10	3.
JRM1007	2A	2	12	520	10	4.
JRM1009	4A	4	12	268	10	7.
JRM1040	1B	2	12	520	10	4.
JRM1041	2B	3	12	344	10	5.
JRM1050	1A+1B	3	12	344	10	5.
JRM1051	2A+2B	5	12	200	10	8.
JRM1012	1A	1	24	3,200	10	3.
JRM1013	2A	2	24	2,080	10	4.
JRM1015	4A	4	24	1,072	10	7.
JRM1044	1B	2	24	2,080	10	4.
JRM1045	2B	3	24	1,376	10	5.
JRM1052	1A+1B	3	24	1,376	10	5.
JRM1053	2A+2B	5	24	800	10	8.

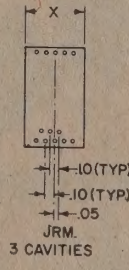
OUTLINE DIMENSIONS

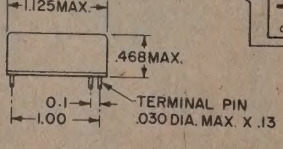


JR Standard Relays — **Weights**
X = 1 Cavity = .687" max.—1.50 ozs.
X = 2 Cavities = .890" max.—2.00 ozs.
X = 3 Cavities = 1.094" max.—2.50 ozs.
X = 4 Cavities = 1.297" max.—3.00 ozs.
X = 5 Cavities = 1.516" max.—3.50 ozs.

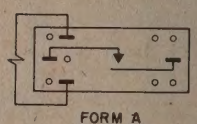
JRM Miniature Relays
X = 1 Cavity = .437" max.—.366 oz.
X = 2 Cavities = .562" max.—.395 oz.
X = 3 Cavities = .703" max.—.530 oz.
X = 4 Cavities = .813" max.—.620 oz.
X = 5 Cavities = .968" max.—.781 oz.

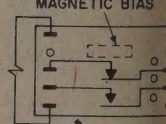


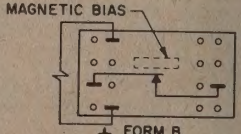


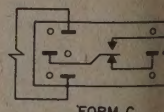


TYPICAL WIRING DIAGRAMS









See ordering information on page

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.M SERIES
/ERCURY-WETTED CONTACT RELAYS

re long life, high speed, and unvarying dependability — all are result of the basic component of these relays: a hermetically led glass capsule. It contains the contact arrangement and a all reservoir of mercury sealed in a high pressure hydrogen at- sphere. A film of mercury is renewed for every operation—that's y you can think in terms of billions of operations without contact nce, pits or welds.

O TYPES OF CAPSULES

capsule used in JMF and JMF2 (with 2 capsules) modules and L relays has a SPDT, break-before-make (Form C), non-bridging tact arrangement. Each capsule used in JMP, and JM1 to JM4 ys has a SPDT, make-before-break (Form D), bridging contact angement. JMF, JMF2, JML and JMP series achieve a high rate ensitivity by factory-adjusted magnet biasing.

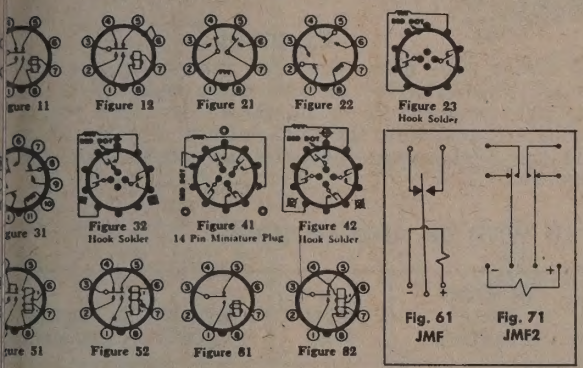
unting Position: Upright mounting required, but deviation from ight up to 30° causes only minor deviation in operating charac- stics.

NTACT RATINGS

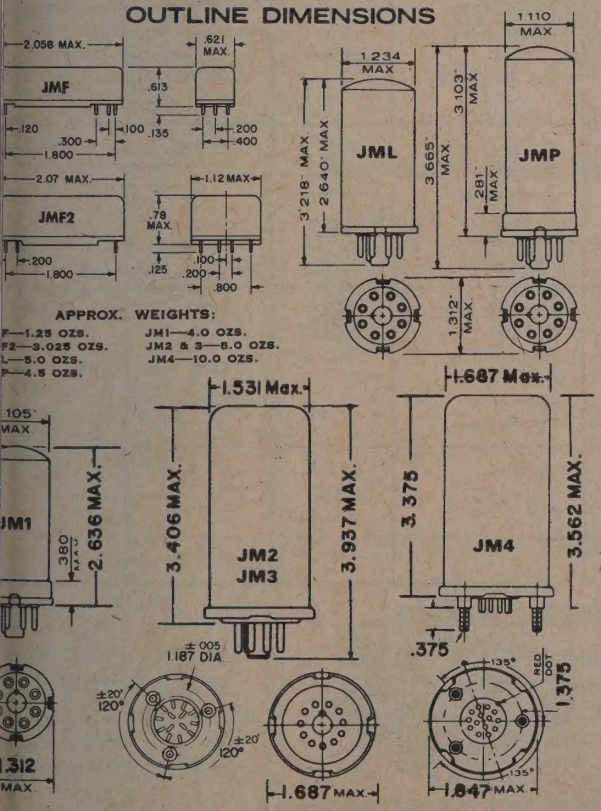
F, JMF2 and JML: 500V max., and 2 amps max., 100VA max.* P and JM1 to JM4: 500V max., and 5 amps max., 250 VA max.

ith contact protection unless in a low level circuit. Details of a ple protection circuit consisting of resistor and capacitor in series packed with each relay.

TERMINATIONS



OUTLINE DIMENSIONS



TYPE	SERIES Capsule	SERIES Coil	SERIES Terminal Figure No.	COIL CHARACTERISTICS Resistance in Ohms ±10%	Sugg. Nominal Operate DC	Soak* ma. DC	Must Operate DC	Must Release DC	SUGG. RESALE PRICE
JMF PRINTED CIRCUIT MODULE. SENSITIVE FORM C NON-BRIDG.	SINGLE-SIDE-STABLE								
	JMF 1070—61			450	16.13 ma.	—	12.9 ma.	2.1 ma.	$10.80
	JMF 1080—61			675	14.50 ma.	—	11.6 ma.	1.9 ma.	10.80
	JMF 1120—61			1425	10.50 ma.	—	8.4 ma.	1.4 ma.	10.80
	JMF 1150—61			2400	9.75 ma.	—	7.8 ma.	1.3 ma.	
	JMF 1160—61			4000	5.00 ma.	—	4.0 ma.	0.67 ma.	11.35
	BI-STABLE								
	JMF 5080—61			675	+6.75 ma.	—	+5.4 ma.	—5.4 ma.	10.80
JMF2 DUAL-CAPSULE FORM C NON-BRIDG.	SINGLE-SIDE-STABLE								
	JMF2 1000—71			130	6.0V DC	—	3.0V DC	0.5V DC	20.70
	JMF2 1001—71			520	12.0V DC	—	6.0V DC	1.0V DC	20.70
	JMF2 1002—71			2200	24.0V DC	—	12.0V DC	2.0V DC	21.25
JML SENSITIVE FORM C NON-BRIDG.	SINGLE-SIDE-STABLE								
	JML 1061—81			40	12.19 ma.	36.0	9.75 ma.	1.68 ma.	13.35
	JML 1110—81			350	4.45 ma.	13.1	3.56 ma.	0.61 ma.	13.35
	JML 1160—81			1000	2.76 ma.	8.1	2.21 ma.	0.38 ma.	13.35
	JML 1190—81			2500	1.79 ma.	4.0	1.43 ma.	0.17 ma.	14.25
	JML 1200—81			4000	1.56 ma.	3.4	1.25 ma.	0.25 ma.	14.25
	JML 1240—81			11000	.90 ma.	2.6	0.72 ma.	0.12 ma.	14.25
	JML 1260—81			25000	.65 ma.	1.9	0.52 ma.	0.09 ma.	14.25
	BI-STABLE								
	JML 5160—81			1000	+1.55 ma.		+1.24 ma.	—1.24 ma.	13.90
	JML 5200—81			4000	+.66 ma.		+0.53 ma.	—0.53 ma.	14.25
	JML 5430—82			(1) 1100 (2) 1100	+2.20 ma.		+1.76 ma.	—1.76 ma.	15.60
	CHOPPER						Voltage RMS 60 Hz		
	JML 8130—81			600	9.0V		6.3V		13.90
JMP POLARIZED FORM D BRIDGING	SINGLE-SIDE-STABLE								
	JMP 1160—11			1000	7.00 ma.	16.2	5.60 ma.	0.40 ma.	17.50
	JMP 1200—11			4000	3.70 ma.	8.55	2.96 ma.	0.24 ma.	18.75
	BI-STABLE								
	JMP 5200—11			4000	+1.88		+1.5 ma.	—1.5 ma.	18.75
	CHOPPER						Voltage RMS 60 Hz		
	JMP 8120—12			500	9.00V		6.3V		18.05
	JMP 8240—11			11000	165.50V		117.0V with 1200 ohm (±5%) ½ watt resistor in series with coil		19.30

*Current to be applied to the coil winding for at least 2 seconds just prior to current flow tests.

TYPE	SERIES Capsule	SERIES Coil	SERIES Terminal Figure No.	COIL CHARACTERISTICS Resistance in Ohms ±10%	Sugg. Nominal Operate DC	MUST OPERATE Current DC	MUST OPERATE Voltage DC @ 25°C	MAX. VOLTAGE (at 35°C)	SUGG. RESALE PRICE
JM1 FORM D BRIDGING 1 CAPSULE SPDT	SPDT Single Coil								
	JM1 106—12			40	83.70 ma.	67.7 ma.	2.98	9.0	16.15
	JM1 109—12			130	47.50 ma.	38.8 ma.	5.55	16.1	16.15
	JM1 112—11			500	25.00 ma.	20.1 ma.	11.10	31.6	16.15
	JM1 114—11			700	25.00 ma.	20.0 ma.	15.40	37.4	16.15
	JM1 114—12			700	12.50 ma.	20.0 ma.	15.40	37.4	16.15
	JM1 118—11			2500	10.00 ma.	10.1 ma.	27.80	70.7	16.40
	JM1 119—11			4000	10.00 ma.	8.1 ma.	35.60	89.5	8.15
	JM1 120—11			7000	6.25 ma.	6.0 ma.	46.20	117.0	17.00
	JM1 121—11			11000	4.50 ma.	5.0 ma.	60.50	148.0	17.00
	JM1 123—11			25000		3.6 ma.	99.00	224.0	17.00
JM2 FORM D BRIDGING 2 CAPSULES DPDT	DPDT Single Coil								
	JM2 104—22			50	137.50 ma.	110.0 ma.	6.04	12.25	26.20
	JM2 106—21			140	81.25 ma.	65.5 ma.	10.00	20.5	26.20
	JM2 109—22			315	55.00 ma.	44.0 ma.	15.30	30.7	26.20
	JM2 110—22			500	42.25 ma.	34.8 ma.	19.20	38.7	26.20
	JM2 111—22			700	37.30 ma.	30.5 ma.	23.50	45.8	26.20
	JM2 112—22			1250	27.50 ma.	22.1 ma.	30.40	61.2	26.20
	JM2 115—21			5000	13.75 ma.	11.3 ma.	62.10	122.0	26.20
	JM2 115—22			5000	13.75 ma.	11.3 ma.	62.10	122.0	26.20
JM3 FORM D BRIDGING 3 CAPSULES 3PDT	3PDT Single Coil								
	JM3 109—31			315	55.00 ma.	44.0 ma.	15.30	30.7	33.90
	JM3 110—31			500	42.25 ma.	34.8 ma.	19.20	38.7	33.90
	JM3 111—31			700	37.30 ma.	30.5 ma.	23.50	45.8	33.90
	JM3 115—31			5000	13.75 ma.	11.3 ma.	62.10	122.0	33.90
JM4 FORM D BRIDGING 4 CAPSULES 4PDT	4PDT Single Coil								
	JM4 106—41			65	125.00 ma.	100.00 ma.	7.15	15.1	43.70
	JM4 110—41			390	52.50 ma.	42.0 ma.	18.00	37.0	43.70

Octal style plugs, except Fig. 23, 32, 42 (Hook Solder), Fig. 41 (14-Pin miniature plug).

See ordering information on page 1

Potter & Brumfield SOLID STATE TIME DELAY RELAYS

● ON DELAY ● OFF DELAY ● KNOB ADJUSTABLE ● RESISTOR ADJUSTABLE ● FIXED TIME DE

A wide selection of solid state time delay controls are represented by Potter & Brumfield. The differences are in their degree of accuracy, the variety available in each series, and their cost.

BASIC TIMING CIRCUIT

The basic timing circuit of all three series consists of a resistor in series with a capacitor. When the input voltage is applied to the resistor-capacitor circuit, the voltage across the capacitor slowly increases. When the firing level is reached a solid state trigger circuit acts to turn on a solid state output switch that energizes a switching relay or external electrical load.

CD SERIES

Remarkably dependable, accurate and flexible, the CD series offers an unusually wide selection of operational configurations, all with accurate time delay values, fast reset time and excellent repeatability. It is available in two types: Knob-adjustable in two versions, one with the relay in the same enclosure as the solid state unit, the other with an auxiliary relay. A second type is adjustable with an external resistor. The CD series is available for time delay on operate or on release.

CH SERIES

The CH series is intended for a wide range of industrial applications where economy is of greater interest than highly critical performance. It is available in two types: Knob-adjustable with the relay in the same enclosur the solid state unit. The second type has a fixed time d period that is set at the factory and cannot be modi its case has no knob. The CH series is available for delay on operate and on release.

CU SERIES

An outstanding value in a solid state time delay rela low cost, the CU series is designed for delay on operat plications in machine tool controls, copiers, office eq ment, coin-operated machines, process controls and n others. It is available in two types: Fixed time delay is set at the factory and cannot be modified. Second, justable with an external resistor. For minimum time terminals, 2 and 5, must be shorted; for maximum time listed external resistor between terminals 2 and 5 mus added. For intermediate times select a lesser value resi or a potentiometer. Either model can be furnished in types of enclosures with the relay in the same enclosur the solid state unit. The CU series is offered with dela operate only.

CJ SERIES

CJ Series time delay dry reed relays combine the b timing characteristics of time delay relays with the life and performance of miniature dry reed relays. series are available, the CJC fixed time delay on ope and the CJH external resistor adjustable time delay operate.

COMPARISON OF SPECIFICATIONS OF CD WITH CH AND CU SERIES

TYPE	DIAL SETTING	TEMP. RANGE	ACCURACY AND TOLERANCE	TRANSIENT PROTECTION	INHERENT FALSE OPERATION	RESET TIME	REPEAT-ABILITY	POLARITY PROTECTIO
CD	Time, calibrated ± 5% of full scale	−40° to +55°C	±5% of nominal	Tested to 1000V, ½ cycle surges (on all 120V AC models)	None	60 Milli-seconds	± 1%	Yes
CH	Reference scale	−10° to +55°C	±10% of nominal	Twice rated input voltage for 8 milli-seconds	Contacts may transfer momentarily if timing interval is interrupted	100 Milli-seconds	± 2%	Yes
CU	Not applicable	Norm. room temp.	Tolerance: Fixed ±5% of nominal; resist. adj. ± 10% of nominal	Twice rated input voltage for 8 milli-seconds	Contacts may transfer momentarily if timing interval is interrupted	150 Milli-seconds	± 3%	Yes
CJ	Not applicable	Norm. room temp.	Tolerance: Fixed ±5% of nominal; resist. adj. ±10% of nominal	Twice rated input voltage for 8 milli-seconds	None	60 Milli-seconds	±2%	No

SOCKETS FOR CU-41 PLAIN CASE RELAYS

All CU series time delays have an internal DPDT 10 amp relay of the KUP series featured on page 3. The cases for the CU and KUP are dimensionally the same. The plain cases*fit the same sockets, and the same hold down spring (9KU3) can be used. Please use the KUP type designations (9KU1, 9KU2 and 9KU4) and prices (page 3) for these accessories when ordering.

*Except the CU resistor-adjustable type.

APPROX. WEIGHTS:

SERIES CD-31 2.00 ozs.
SERIES CD-21 4.25 ozs.
SERIES CH-38 4.00 ozs.
SERIES CJC01 1.25 ozs.
SERIES CJC02 1.38 ozs.
SERIES CJC03 1.63 ozs.
SERIES CD-45 6.00
SERIES CD-38 8.25
ALL CU SERIES 3.25
SERIES CJH01 1.25
SERIES CJH02 1.38
SERIES CJH03 1.63

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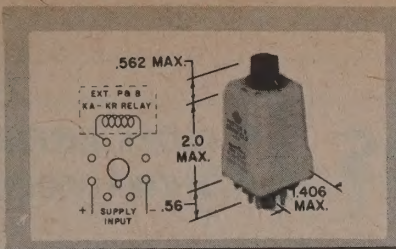
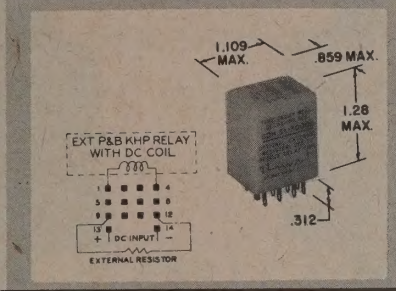
-OOSE FROM CD, CH, CU, OR CJ SERIES RELAYS

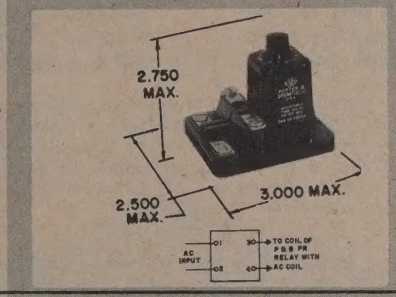
Knob-adjustable. Use P&B KRP relays (see) as listed under Note 2.



Adjustable with ex- resistor (not fur-). Use with KHP relay age 2), Note 4.

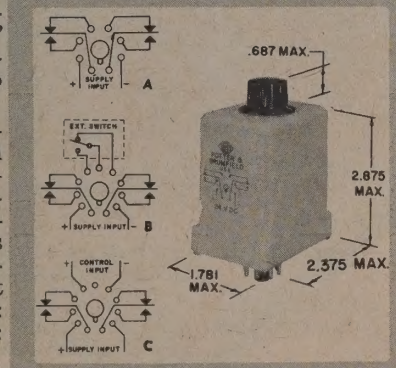


. Knob-adjustable. For duty when used with wer relay (see page 4) ed under Note 6.



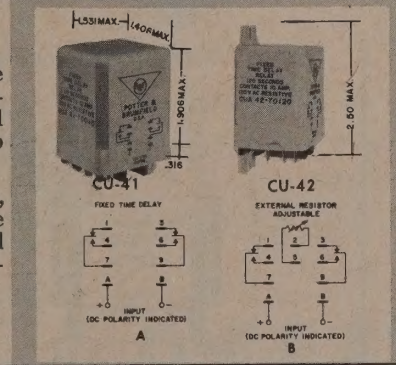
and CD-38. Knob-ad- le delay "on operate" nternally mounted DP- elay. Contacts rated to ps. Diagram A.

"on release" CH re- auxiliary SPDT switch lay contacts: CHB-38- CHB-38-70013, CHD- 11, CHD-38-30013: Dia- B. CD "release" occurs "Control" circuit is de- ized; supply circuit be on continuously: 38-70012, CDD-38-30012: am C.

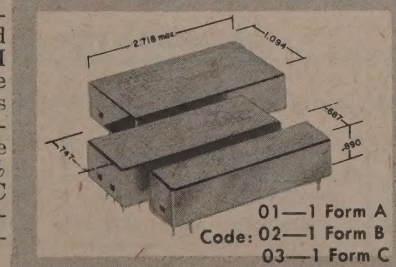


and CUC are fixed time s. **CUF and CUH** are re- adjustable delays. All internal DPDT 10 amp ct relay.

1 is a plain case relay, 2 has a slotted flange Diagram A is for fixed s, diagram B for resis- djustable delays.



SERIES. Fixed time de- hat is factory set and ot be modified. **CJH ES.** Resistor adjustable with terminal provisions xternal resistor or poten- ter for adjusting time period to within ±10% minal voltage at 25°C ent temperature. Pin ter- tions are for printed cir- oard mounting.



WIDE SELECTION OF TIME DELAY RANGES

TYPE	TIME DELAY IN SECONDS	INPUT VOLTAGE	NOTES	SUGG. RESALE PRICE
CDB21-70003	0.1—10	120V AC	2	$ 38.70
CDB21-70001	1.8—180	120V AC	2	38.70
CDD21-30003	0.1—10	24V DC	3	38.35
CDD21-30001	1.8—180	24V DC	3	38.35
CDH31-30005	180 Max.	24V DC	4 & 5	38.90
CHA38-70001	10	120V AC	1	18.45
CHB38-30001	1.0—10	24V AC	1	19.50
CHB38-30003	1.0—180	24V AC	1	19.50
CHB38-70001	1.0—10	120V AC	1	19.50
CHB38-70003	1.0—180	120V AC	1	19.50
CHB38-80001	1.0—10	240V AC	1	20.50
CHD38-30001	1.0—10	24V DC	1	18.50
CHD38-30003	1.0—180	24V DC	1	18.50
CHB38-70011	1.0—10	120V AC	1 & 7	23.50
CHB38-70013	1.0—180	120V AC	1 & 7	23.50
CHD38-30011	1.0—10	24V DC	1 & 7	21.50
CHD38-30013	1.0—180	24V DC	1 & 7	21.50
CDB38-70003	0.1—10	120V AC	1	43.80
CDB38-70004	0.6—60	120V AC	1	43.80
CDB38-70005	1.8—180	120V AC	1	43.80
CDD38-30003	0.1—10	24V DC	1	41.55
CDD38-30004	0.6—60	24V DC	1	41.55
CDD38-30005	1.8—180	24V DC	1	41.55
CDB38-70012	0.6—60	120V AC	1 & 7	52.45
CDD38-30012	0.6—60	24V DC	1 & 7	49.50
CDB45-70002	0.6—60	120V AC	6	37.05
CUA41-70010	10	120V AC	1	13.50
CUA41-70120	120	120V AC	1	15.00
CUC41-30010	10	24V DC	1	13.50
CUC41-30120	120	24V DC	1	15.00
CUA41-30010	10	24V AC	1	13.50
CUA42-70010	10	120V AC	1	13.50
CUA42-70120	120	120V AC	1	15.00
CUC42-30010	10	24V DC	1	13.50
CUC42-30120	120	24V DC	1	15.00
CUA42-30010	10	24V AC	1	13.50
CUF41-70010	1.0—10	120V AC	200 K.*	14.25
CUF41-70120	1.0—120	120V AC	2.4 Meg.*	15.50
CUH41-30010	1.0—10	24V DC	160 K.*	14.25
CUH41-30120	1.0—120	24V DC	2 Meg.*	15.50
CUF41-30010	1.0—10	24V AC	200 K.*	14.25
CUF42-70010	1.0—10	120V AC	200 K.*	14.25
CUF42-70120	1.0—120	120V AC	2.4 Meg.*	15.50
CUH42-30010	1.0—10	24V DC	160 K.*	14.25
CUH42-30120	1.0—120	24V DC	2 Meg.*	15.50
CUF42-30010	1.0—10	24V AC	200 K.*	14.25
CJC01-20003	3	12V DC	8	18.85
CJC01-30003	3	24V DC	8	18.85
CJC02-20003	3	12V DC	8	19.50
CJC02-30003	3	24V DC	8	19.50
CJC03-20003	3	12V DC	8	20.75
CJC03-30003	3	24V DC	8	20.75
CJH01-10120	1—120	6V DC	1.8 Meg.*	22.10
CJH01-20010	0.1—10	12V DC	750 K *	19.35
CJH01-20120	1—120	12V DC	1.8 Meg.	22.10
CJH01-30010	0.1—10	24V DC	750 K *	19.35
CJH01-30120	1—120	24V DC	1.8 Meg.*	22.10
CJH02-10120	1—120	6V DC	1.8 Meg.	22.75
CJH02-20010	0.1—10	12V DC	750 K *	20.00
CJH02-20120	1—120	12V DC	1.8 Meg.*	22.75
CJH02-30010	0.1—10	24V DC	750 K *	20.00
CJH02-30120	1—120	24V DC	1.8 Meg.*	22.75
CJH03-10120	1—120	6V DC	1.8 Meg.	24.00
CJH03-20010	0.1—10	12V DC	750 K	21.25
CJH03-20120	1—120	12V DC	1.8 Meg.	24.00
CJH03-30010	0.1—10	24V DC	750 K	21.25
CJH03-30120	1—120	24V DC	1.8 Meg.	24.00

*External resistor (not furnished) for maximum time.

NOTES

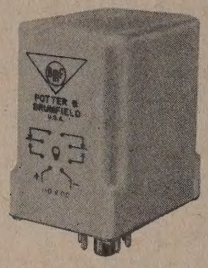
1. Has internal relay with DPDT contacts rated at 10 amperes, 120V AC. 2. Use with Potter & Brumfield relay KRP5AG- 120V AC, KRP11AG— 120V or KRP14AG— 120V AC. 3. Use with Potter & Brumfield KRP5DG— 24V DC, KRP11DG—24V DC or KRP14DG—24V DC relay. 4. Use with Potter & Brumfield KHP17D11—24V DC relay. 5. Supplied with 180 seconds delay; adjustable to 1.8 seconds with external resistor (not furnished). 6. Use with Potter & Brumfield PR11AY—120V AC relay. 7. Provides delay on release; all others have delay on operate. 8. Internal relay contacts rated at 10 VA, other ratings available upon request.

See ordering information on page 1.

Potter & Brumfield Relays

CS SERIES SOLID-STATE VOLTAGE SENSORS

- CLOSE-DIFFERENTIAL
- UNDER-VOLTAGE



Fixed pick-up and fixed drop-out.

Fixed pick-up and adjustable drop-out. One knob for setting drop-out value.

Adjustable pick-up and drop-out. Two knobs for setting desired values.

A voltage sensor is designed to energize and de-energize a relay at predetermined voltages. These solid state voltage sensors actuate an internally-mounted relay when a specific voltage level is reached. This pick-up level is either fixed or knob adjustable. Fixed sensors are factory set and cannot be changed. Knob-adjustable versions allow the pick-up levels to be varied over a predetermined range.

If the sensing voltage decreases to a pre-set level after pick-up occurs, the internal relay de-energizes. This is the drop-out level and may be fixed or knob adjustable. The pick-up voltage point must be set higher than the drop-out voltage point.

Voltage sensors consist of a sensing circuit that acts to turn on a solid state switch, energizing the accompanying relay. Both the solid state switch and a DPDT relay rated at 3 amperes are enclosed in the same molded nylon dust cover.

Three types of voltage sensors are available. They are:

Type 1. A custom series with pick-up and drop-out voltage levels factory set to the customer's specifications.

Type 2. A series with factory fixed pick-up and single knob-adjustable drop-out voltage levels.

Type 3. A series with both knob-adjustable pick-up and drop-out for selecting desired voltage levels.

Type 1 is offered in various AC or DC configurations with voltage levels specified by the customer. This series can be supplied open, in nylon dust enclosures, or hermetically sealed in metal cases with octal plugs or other terminal arrangements. Certain limits as to voltage ranges apply.

The second and third types are offered in three voltage ranges in both AC and DC versions. They are provided with octal plugs for convenient plug-in mounting and are enclosed in nylon dust cove

These reliable solid state voltage sensors can be used as p tective devices in alarm circuits, motor controls and to activ or cut off a system automatically. It is possible to combine certain the above sensors into a custom unit designed for specific individ control functions.

GENERAL:

Operate Time @ 25° C: 25 milliseconds approximately at nomi voltage.

Temperature Range: −10°C to +55°C

Reverse Polarity Protection: Yes, on DC types.

Size: Plain Case: 2.375″ x 1.750″ x 2.875″ seated height.
With Knob: 2.375″ x 1.750″ x 3.593″ seated height.

Approximate Weight: 8 ozs.

Mounting: Octal plug

Enclosures: Nylon dust cover.

CONTACTS:

Load Switching Relay: Arrangement: 2 Form C (DPDT).
Rated: 3 amps @ 28V DC resistive:
120V AC resistive.

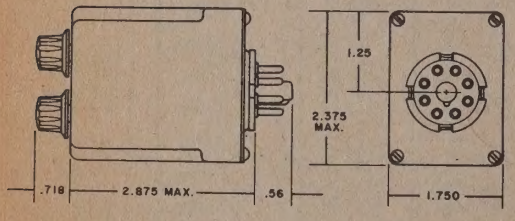
Expected Life: Electrical: 100,000 operations at rated load.
Mechanical: 10,000,000 operations.

COILS

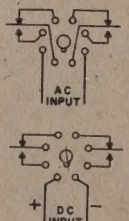
Operate Power: DC: 1.5 watts approximate.
AC: 1.0 volt-ampere approximate.

Duty: Continuous.

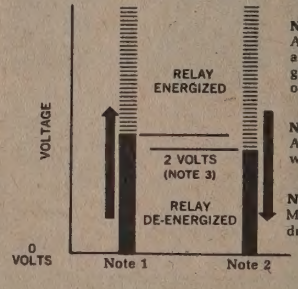
OUTLINE DIMENSIONS



SCHEMATICS



ADJUSTABLE VOLTAGE SENSOR OPERATION



Note 1
As voltage increases, the relay will pick at a predetermined point and remain en gized while voltage is maintained at that le or higher.

Note 2
As voltage decreases, after pick up, the re will drop out at a predetermined point.

Note 3
Minimum difference between pick-up an drop-out points is 2 volts.

FIXED PICK-UP AND ADJUSTABLE DROP-OUT

Type	Pick-up (Volts)	Drop-out Range (Volts)	Type of Voltage	Sugg. Resale Price
CSJ38-71010	105	90-103	AC(50/60Hz)	$28.75
CSL38-31010	22	16-20	DC	22.70

ADJUSTABLE PICK-UP AND DROP-OUT

Type	Pick-up Range (Volts)	Drop-out Range (Volts)	Type of Voltage	Sug Res Pri
CSJ38-30010	20-30	18-28	AC(50/60Hz)	$29.7
CSJ38-70010	92-140	90-138	AC(50/60Hz)	32.5
CSL38-30010	20-30	18-28	DC	25.7

See ordering information on page 1.

Net

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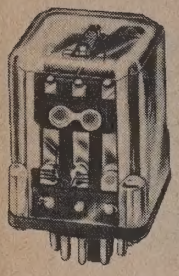
DELIVERY

Delivery is often dependent on availability of raw materials. Check with your distributor for delivery information at the time you place your order.

SCHRACK RELAYS

CAD SERIES

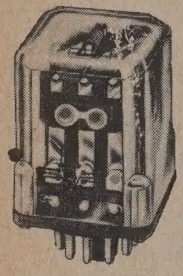


Contacts	10 Amp. Rating SPDT	DPDT	3PDT
Relay Type	CAD5A10	CAD11A10	CAD14A10
6 volts a.c. 12 volts a.c. 24 volts a.c. 115 volts a.c.	$4.95	$5.55	$6.75
230 volts a.c.	$5.50	$5.95	$7.15
Relay Type	CAD5D10	CAD11D10	CAD14D10
6 volts d.c. 12 volts d.c. 24 volts d.c.	$4.95	$5.55	$6.75
110 volts d.c.	$5.50	$5.95	$7.15

5 AMP ALSO AVAILABLE

Same basic design as CA series; however, with clear plastic dust cover and octal-type plug-in base. Case is secured firmly to base by 4 "upset" plastic studs. Contact carrier plate is self-centering. Contact carrier is made of "KERIPOLE," a polyester material with glass fibre filling.

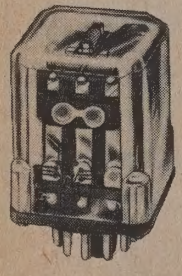
CSD SERIES



A plate circuit relay, similar to the CAD Type; however with increased sensitivity (125 MW per movable arm).

Contacts	SPDT	2 Amp. Rating DPDT	3PDT
Relay Type	CSD5	CSD11	CSD14
2500 ohms	$5.20	$5.60	$6.80
5000 ohms	$5.30	$5.70	$6.90
10,000 ohms	$5.70	$6.10	$7.30

SENSITIVE RELAY — CMD SERIES



In this series there are eleven types in three classifications.

No.	Coil	List Price
CMD-5D	600Ω	$4.95
CMD-5D	2400Ω	4.95
CMD-5D	9600Ω	5.20
CMD-11D	450Ω	6.10
CMD-11D	1890Ω	6.10
CMD-11D	7300Ω	6.10
CMD-5A	540Ω	5.00
CMD-5A	234Ω	4.75
CMD-5A	1000Ω	4.75
CMD-5A	3850Ω	4.75
CMD-5A	6900Ω	5.30

1. D.C. Relays with one form C contact Type CMD 5D—Pull-in sensitivity 40 mw; Coil Windings — 600 ohm, 2400 ohm, 9600 ohm

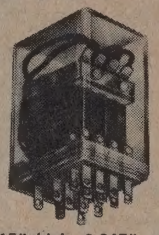
2. D.C. Relays with two form C contacts Type CMD 11D — Pull-in sensitivity 60 mw; Coil Windings — 450 ohm, 1890 ohm, 7300 ohm

3. A.C. Relays with one form C contact Type CMD 5A — Pull-in sensitivity 80 MVA; Coil Windings — 540 ohm, 234 ohm, 1000 ohm, 3850 ohm, and 6900 ohm

Contact ratings are 2 amps at 115 VAC.
Contact points are gold-flashed silver.

NEW MINIATURE UNIVERSAL TYPE RA

A precision piece of equipment at a commercial price —



1.515" high, 0.847" wide with dust cover

designed for use in computers, data processing equipment, communications equipment, process control applications, and other equally important systems.

Type RA is a four pole universal type relay for 4 PDT or double-make, double-break (DPDT-DB) action. 3/32" contacts rated at 3A — normally supplied in gold-flashed silver. Also available in silver cadmium oxide, gold nickel, silver palladium, etc.

STANDARD COIL DATA — **Sockets Available**

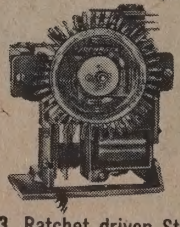
DC Voltage	Resistance in Ohms ± 10% at 25° C	List Prices	AC Voltage	Average AC current in MA (relay closed)	List Prices
6	40	$3.50	6	200	$4.10
12	160	3.50	12	100	4.10
24	650	3.50	24	52	4.10
48	2.600	4.20	48	25	4.80
90	9.000	4.20	115	10.5	4.80
110	11.000	4.20			

Printed Circuit Terminals at Same Prices

TYPE RR REMANENCE RELAYS

Magnetic Latching for miniaturized circuitry. Same physical characteristics as RA. Voltages from 24-220 AC and 12-110 DC. Same electrical characteristics as CRD and CRF on opposite page. Prices range from $4.50-$5.30 list.

ROTARY STEPPING SWITCH TYPE RT



The SCHRACK Rotary Stepping Switch is a combination of three reliable components:

1. Standard Relay with 1 Form C heavy-duty contact.
2. Ratchet driven Rotary Switch consisting of four banks of twelve or ten points each with sliding bifurcated wipers.
3. Ratchet driven Stepping Relay with two cams which actuate one Form C contact each.

Schrack Rotary Stepping Switches have a highly efficient magnetic circuit and a driving mechanism designed for maximum operating safety. All components are mounted on a rigid die-cast light metal frame and contacts are permanently molded in a sturdy melamine plastic.

ROTARY SWITCH terminals are arranged in a circular pattern with four groups of twelve points each. A conversion can make it operate with 3 groups of 16 each. An alternate version with 4 x 10 points is available for applications requiring decimal counting. Each group occupies a quadrant of the circle and contains a common bus which is connected to the twelve or ten insulated points in sequence by means of a sliding wiper as the switch is operated.

TYPE RT 304 — 4 x 12 Contact Points $22.00 ea.
TYPE RT 404 — 4 x 10 Contact Points $22.00 ea.

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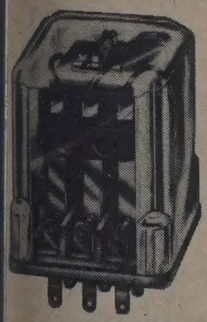
SCHRACK RELAYS

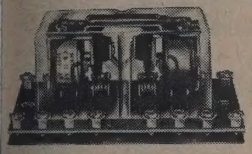
SINGLE COIL MAGNETIC LATCHING RELAYS — TYPES CRD & CRF



This is a bi-stable power relay held in operated position by a strong residual magnetism of the coil core after the coil is de-energized. The coil core is of a special alloy having sufficient remnant magnetic force to hold the armature locked-in for an indefinite period of time after being energized momentarily.

In design, these magnetic latching relays are identical, except for the base, with the Schrack Type CAD plug-in relay. Contacts are rated at 5 or 10 amps depending on materials used. DPDT (2 form C) or 3 DPDT (3 form C) versions are available.

LATCHING RELAY — TYPE CBT



A dual coil mechanical latching relay. Each relay operates on a momentary impulse on either coil and is held in the set position until released by an impulse on the other coil. Both coils must be for the same voltage and are continuously rated.

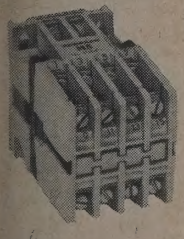
Contact rating: 10 amps. (Based on 600 operations per hour at 115 volts AC 60 cy. resistive load).

May be operated continuously at 1000 cycles per hour.

The CBT relays have a transparent dust cover and a sturdy base plate of insulating material. Screw-type terminals are provided for all contact and coil connections. Available in voltages from 6-230 AC and 6-110 DC.

Plug-in version "CBF" available.

MULTI-POLE CONTACTORS TYPES M4, M6, M8, M10



Small, low-cost units

Versatile — with auxiliary contacts.

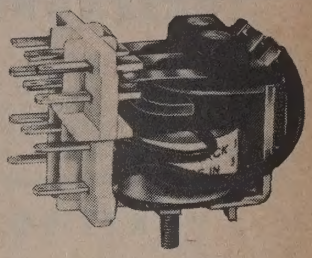
These are compact 8-pole air-break contactors. Principal applications for the M4 type are control circuits (pilot duty), but also may be used for switching of small single-phase or threephase motors. Type M8 has 4 contacts with increased rating and 4 contacts identical with M4. Types M6 and M10 have same features as M4 and M8, but have 3 main contacts and 1 auxiliary contact — intended for industrial applications.

NEW **LIST PRICES:**

M4 — $12.00
M6 — 15.00
M8 — 12.00
M10 — 15.00

STOCKED IN OUR N. Y. WAREHOUSE

OPEN RELAY TYPE CA



Recognized under the components program of Underwriters Laboratories, Inc.

5 AMP RATING

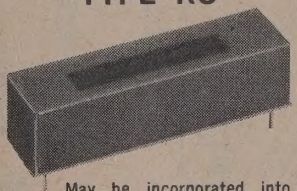
	CA5A5	CA11A5	CA14A5
6 volts a.c.			
12 volts a.c.			
24 volts a.c.	$2.60	$3.00	$3.85
115 volts a.c.			
230 volts a.c.	2.95	3.40	4.20
	CA5D5	**CA11D5**	**CA14D5**
6 volts d.c.			
12 volts d.c.			
24 volts d.c.	$2.60	$3.00	$3.80
60 volts d.c.			
110 volts d.c.	2.95	3.40	4.15

10 AMP RATING

	CA5A10	CA11A10	CA14A10
6 volts a.c.			
12 volts a.c.			
24 volts a.c.	$2.65	$3.05	$3.90
115 volts a.c.			
230 volts a.c.	3.00	3.45	4.30
	CA5D10	**CA11D10**	**CA14D10**
6 volts d.c.			
12 volts d.c.			
24 volts d.c.	$2.65	$3.05	$3.85
60 volts d.c.			
110 volts d.c.	3.00	3.45	4.25

A robust and dependable open-type relay, equipped with lugs suitable for soldering and for mounting of AMP-FASTON Connectors, Series 110. Contact rating: 5 amps or 10 amps; according to contact material. Standard coils available: 6, 12, 24, 115, 230 volts a.c.; 6, 12, 24, 110 volts d.c. **Standard versions include 1, 2, or 3 Form C contacts. Optional: solder lugs and for printed circuit boards.**

DRY REED RELAYS TYPE RU

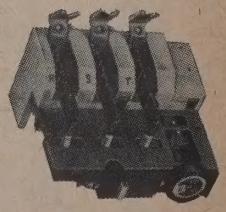


May be incorporated into printed circuits as easily as other components. These are rugged, compact, high-power units available in a wide range of voltages and contact arrangements featuring long mechanical life (100 mill. operations). They are not influenced by mounting position and are fully protected against corrosive atmospheres.

	TYPE	PILE-UP
½ AMP. 3 WATTS	RU510 103 106 112 124	1A
	RU520 103 106 112 124	2A
	RU530 103 106 112 124	3A
.1 AMP 4 WATTS	RU511 103 106 112 124	1C
	RU521 103 106 112 124	2C
	RU531 103 106 112 124	3C
1 AMP 15 WATT	RU512 103 106 112 124 148	1A
3 AMP 50 WATT	RU513 103 106 112 124 148	1A

New types now in production. Prices on request.

LOW COST PROTECTION AGAINST SINGLE PHASING IN A THREE WAY SYSTEM



Operates by the use of bi-metallic strips and dissimilar coefficients of expansion under temperature changes.
When temperature increases due to overload, a microswitch is activated in any leg of a three phase circuit.
Microswitch is normally placed in series with the solenoid of any switching device in the 3 phase line. Reset button may be manually or automatically operated.

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RESISTANCE DEVICES

"GREENOHM V"™ VITREOUS-ENAMEL RESISTORS

Based on years of research and engineering development, these vitreous-enamel wire-wound power resistors offer superlative performance and life as proved by countless tests. "Greenohm V" resistors provide all the outstanding quality which made Clarostat "Greenohm" cement-coated units famous, *plus* a glass-smooth vitreous-enamel coating in a handsome bluish-green for maximum eye appeal. Made to MIL-R-26C specifications.

- Fixed and adjustable
- 5-watt to 200 watt sizes
- ± 5% tolerance, 1 ohm and over. ± 10% tolerance, 0.9 ohms and under. ± 10% for adjustable.

"GREENOHM V"™ FIXED RESISTORS (VITREOUS ENAMEL)

5-WATT SERIES VPR-5-F

Core: 1" x 5/16"
Terminals, wire lead and lug

Resistance Ohms

1	30	350	1250	7000
1.5	35	400	1500	7500
2	40	450	1750	8000
3	50	500	2000	9000
4	75	600	2250	10K
5	100	700	2500	12.5K
7.5	125	750	3000	15K
10	150	800	3500	17.5K
12	200	900	4000	20K
15	225	1000	4500	22.5K
20	250	1100	5000	25K
25	300	1200	6000	

NET PRICES:

1 to 1K	$0.51
1100 to 5K	.54
6K to 10K	.57
12.5K to 15K	.60
17.5K to 20K	.63
22.5K to 25K	.66

10-WATT SERIES VPR-10-F

Core: 1¾" x 5/16"
Terminals, wire lead and lug

Resistance Ohms

0.4	30	500	3000	13.5K
1	35	600	3500	14.3K
1.2	40	700	4000	15K
1.3	50	750	4500	16K
1.5	75	800	5000	17.5K
2	100	900	6000	18K
3	125	1000	7000	20K
4	150	1100	7500	22.5K
5	200	1200	8000	25K
7.5	225	1250	8500	30K
10	250	1500	9000	35K
12	300	1750	10K	40K
15	350	2000	11K	45K
20	400	2250	12K	50K
25	450	2500	12.5K	

NET PRICES:

0.4 to 1K	$0.57
1100 to 5K	.60
6K to 10K	.69
11K to 20K	.78
22.5K to 25K	.81
30K to 50K	.90

100-WATT SERIES VK-100-N

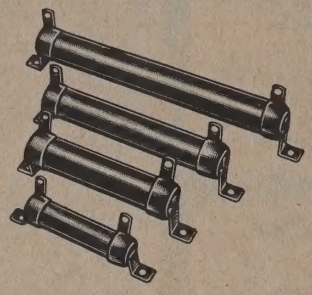
Core: 6½" x ¾"
Lug terminals — Mtg. bracket furnished

Resistance Ohms

1	50	300	3000	25K
2	75	500	4000	30K
3	100	750	5000	40K
4	125	1000	7500	50K
5	150	1500	10K	60K
10	200	2000	15K	75K
25	250	2500	20K	100K
				200K

NET PRICES:

1 to 3	$2.22
4 to 1K	1.59
1500 to 5K	1.68
7500 to 10K	1.80
15K to 20K	1.98
25K to 40K	2.13
50K to 60K	2.22
75K	2.43
100K	2.73



20-WATT SERIES VPR-20-H

Core: 2" x 7/16"
Terminals, wire lead and lug

Resistance Ohms

0.4	350	1850	7500	55K
0.6	400	2000	8000	60K
0.8	500	2250	9000	65K
5	650	2400	10K	70K
10	700	2500	12.5K	75K
25	750	2750	15K	80K
50	800	3000	20K	85K
75	850	3500	25K	90K
100	1000	4000	30K	95K
150	1200	4500	35K	100K
200	1250	5000	40K	
250	1500	6000	45K	
300	1750	7000	50K	

NET PRICES:

0.4 to 1K	$0.66
1200 to 5K	.69
6K to 10K	.81
12.5K to 20K	.84
25K to 40K	.99
45K to 60K	1.14
65K to 80K	1.35
85K to 100K	1.56

160-WATT SERIES VK-160-W

Core: 8½" x 1⅛"
Lug terminals — Mtg. bracket furnished

Resistance Ohms

1	50	750	7500	50K
2	75	1000	10K	60K
3	100	1500	15K	75K
4	125	2000	20K	100K
5	150	2500	25K	
10	250	3000	30K	
25	500	5000	40K	

NET PRICES:

1 to 5	$3.18
10 to 1K	2.28
1500 to 5K	2.31
7500 to 10K	2.52
15K to 20K	2.70
25K to 40K	2.79
50K to 60K	2.88
75K	3.06
100K	3.24

25-WATT SERIES VP-25-K

Core: 2" x 9/16"
Lug terminals — Mtg. bracket furnished

Resistance Ohms

1	50	800	5000	30K
2	75	1000	6000	35K
3	100	1500	7500	40K
4	150	2000	10K	50K
5	200	2500	12K	60K
10	250	3000	15K	70K
15	500	3500	20K	80K
25	750	4000	25K	100K

NET PRICES:

1 to 1K	$0.72
1500 to 10K	.75
6K to 10K	.84
12K to 20K	.90
25K to 40K	1.02
50K to 60K	1.20
70K to 80K	1.41
100K	1.62

50-WATT SERIES VP-50-K

Core: 4" x 9/16"
Lug terminals — Mtg. bracket furnished

Resistance Ohms

1	100	1000	7500	50K
2	150	1250	8000	75K
3	200	1500	10K	100K
4	250	2000	12K	125K
5	300	2500	15K	150K
10	400	3000	20K	175K
25	500	4000	25K	200K
50	750	5000	30K	225K
75	800	6000	35K	250K

NET PRICES:

1	$1.53
2 to 1K	1.11
1500 to 5K	1.14
7500 to 10K	1.26
12K to 20K	1.38
25K to 35K	1.53
50K	1.71
75K	1.95
100K	2.13
125K	2.55
150K	2.70
175K	2.79
200K	2.88
225K	3.24
250K	3.24

200-WATT SERIES VK-200-W

Core: 10½" x 1⅛"
Lug terminals — Mtg. bracket furnished

Resistance Ohms

1	50	750	7500	40K
2	75	1000	10K	50K
3	100	1500	12K	60K
4	150	2000	15K	75K
5	200	2500	20K	100K
10	250	3000	25K	
25	500	5000	30K	

NET PRICES:

1 to 5	$3.42
10 to 1K	2.46
1500 to 5K	2.52
7500 to 10K	2.70
15K to 20K	2.88
25K to 40K	2.97
50K to 60K	3.06
75K	3.24
100K	3.45

Net

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PRODUCTS OF
THE HOUSE OF RESISTORS®
CLAROSTAT®
RESISTORS · CONTROLS
RESISTANCE DEVICES

"GREENOHM V"™ ADJUSTABLE RESISTORS (VITREOUS ENAMEL)

10-WATT SERIES VP-10-FA

Core: 1¾" x 5/16"

Lug terminals — Mtg. brackets furnished

Resistance Ohms

1	25	350	1500	5000
2	50	400	2000	6000
3	75	500	2250	7000
5	100	600	2500	7500
7.5	150	750	3000	8000
10	200	800	3500	8500
15	250	1000	4000	9000
20	300	1250	4500	10K

NET PRICES:

1 to 1K	$1.14
1250 to 5K	1.17
6000 to 10K	1.26

25-WATT SERIES VP-25-KA

Core: 2" x 9/16"

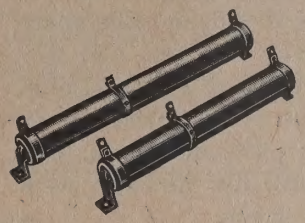
Lug terminals — Mtg. brackets furnished

Resistance Ohms

1	50	750	3500	9000
2	75	800	4000	10K
3	100	1000	4500	12K
5	150	1250	5000	15K
7.5	200	1500	6000	20K
10	250	2000	7000	25K
15	300	2250	7200	
20	400	2500	7500	
25	500	3000	8000	

NET PRICES:

1 to 1K	$1.29
1250 to 5K	1.32
6K to 10K	1.41
12K to 20K	1.47
25K	1.59



50-WATT SERIES VP-50-KA

Core: 4" x 9/16"

Lug terminals — Mtg. brackets furnished

Resistance Ohms

1	100	1250	6000	25K
2	150	1500	7000	30K
3	200	2000	7200	35K
4	250	2250	7500	40K
5	300	2500	8000	50K
10	400	3000	9000	60K
20	500	3500	10K	75K
25	750	4000	12K	80K
50	800	4500	15K	100K
75	1000	5000	20K	

NET PRICES:

1 ohm	$2.10
2 to 1K	1.68
1250 to 5K	1.71
6K to 10K	1.80
12K to 20K	1.92
25K to 40K	2.10
50K to 60K	2.28
80K	2.52
100K	2.70

75-WATT SERIES VP-75-KA

Core: 6" x 9/16"

Lug terminals — Mtg. brackets furnished

Resistance Ohms

1	200	2000	7200	35K
2	250	2250	7500	40K
3	300	2500	8000	45K
4	400	3000	9000	50K
5	500	3500	10K	60K
10	750	4000	12K	80K
15	800	4500	15K	100K
25	1000	5000	20K	
50	1250	6000	25K	
100	1500	7000	30K	

NET PRICES

1 to 2	$2.37
3 to 1K	1.86
1250 to 5K	1.92
6000 to 10K	2.01
12K to 20K	2.13
25K to 40K	2.31
45K to 60K	2.52
80K	2.76
100K	2.91

100-WATT SERIES VK-100-NA

Core: 6½" x ¾"

Lug terminals — Mtg. brackets furnished

Resistance Ohms

1	25	400	3500	40K
2	50	500	5000	50K
3	100	750	10K	75K
4	150	1000	15K	100K
5	200	1500	20K	
10	250	2000	25K	
15	300	2500	30K	

NET PRICES:

1 to 3	$3.00
4 to 1K	2.37
1500 to 5K	2.43
10K	2.55
15K to 20K	2.70
25K to 40K	2.88
50K	3.00
75K	3.12
100K	3.27

160-WATT SERIES VK-160-WA

Core: 8½" x 1⅛"

Lug terminals — Mtg. brackets furnished

Resistance Ohms

1	10	250	5000	30K
2	25	500	10K	40K
3	50	1000	15K	50K
4	100	1500	20K	75K
5	150	2500	25K	100K

NET PRICES:

1 to 5	$4.05
10 to 1K	3.15
1500 to 5K	3.18
10K	3.39
15K to 20K	3.57
25K to 40K	3.66
60K	3.75
75K	3.93
100K	4.14

200-WATT SERIES VK-200-WA

Core: 10½" x 1⅛"

Lug terminals — Mtg. brackets furnished

Resistance Ohms

1	20	200	2500	30K
2	25	250	5000	40K
3	50	300	10K	50K
4	75	500	15K	75K
5	100	1000	20K	100K
10	150	1500	25K	

NET PRICES:

1 to 5	$4.32
10 to 1K	3.33
1500 to 5K	3.42
10K	3.57
15K to 20K	3.75
25K to 40K	3.84
50K	3.96
75K	4.14
100K	4.32

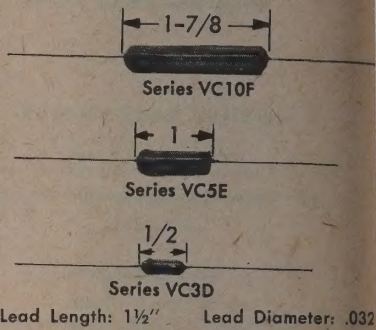
PRODUCTS OF
THE HOUSE OF RESISTORS®

CLAROSTAT®

RESISTORS · CONTROLS
RESISTANCE DEVICES

AXIAL LEAD VITREOUS RESISTORS

Available in three sizes 3, 5 and 10 watts, Series VC3D, VC5E and VC10F. Axial lead resistors are particularly adapted to printed circuit, terminal board, and point-to-point wiring applications. These resistors save considerable space because of the elimination of mounting brackets and terminal lugs. Standard resistance tolerance is ± 5% for 1 ohm and higher and tolerance below 1 ohm is ± 10%. Attractively packaged in a newly designed carton particularly adapted to this new axial lead resistor, beautifully finished with Clarostat's new vitreous shade of teal green.



Lead Length: 1½" Lead Diameter: .032

SERIES VC3D
STOCK VALUES

1	20	68	250	600	1.75K	4.5K
1.5	22	75	270	680	1.8K	4.7K
2	25	82	300	700	2K	5K
3	27	100	330	750	2.2K	5.6K
4	30	120	350	800	2.25K	6K
5	33	125	390	820	2.5K	6.8K
7.5	35	150	400	900	2.7K	7K
10	39	180	450	1K	3K	7.5K
12	40	200	470	1.1K	3.3K	8K
15	47	220	500	1.2K	3.5K	8.2K
18	50	225	560	1.25K	3.9K	9K
	56			1.5K	4K	10K

Net Prices

1	to 1K	$ .51
1.1K	to 5K	.54
6K	to 10K	.57

SERIES VC5E
STOCK VALUES

1	22	82	330	820	2.7K	7.5K
1.5	25	100	350	900	3K	8K
2	27	120	390	1K	3.3K	8.2K
3	30	125	400	1.1K	3.5K	9K
4	33	150	450	1.2K	3.9K	10K
5	35	180	470	1.25K	4K	12.5K
7.5	39	200	500	1.5K	4.5K	15K
10	40	220	560	1.75K	4.7K	17.5K
12	47	225	600	1.8K	5K	18K
15	50	250	680	2K	5.6K	20K
18	56	270	700	2.2K	6K	22K
20	68	300	750	2.25K	6.8K	22.5K
	75		800	2.5K	7K	25K

Net Prices

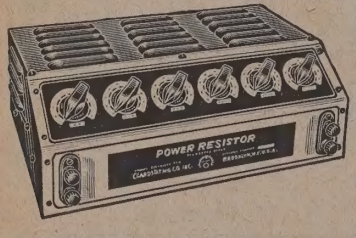
1	to 1K	$ .54
1.1K	to 5K	.57
6K	to 10K	.60
12.5K	to 20K	.72
22.5K	to 25K	.75

SERIES VC10F
STOCK VALUES

1	25	120	400	1.2K	3.5K	8.5K	2
1.5	27	125	450	1.25K	3.9K	9K	2
2	30	150	470	1.3K	4K	10K	2
3	33	180	500	1.5K	4.5K	11K	3
4	35	200	560	1.75K	4.7K	12K	3
5	39	220	600	1.8K	5K	12.5K	3
7.5	40	225	680	2K	5.6K	13.5K	3
10	47	250	700	2.2K	6K	15K	4
12	50	270	750	2.25K	6.8K	16K	4
15	56	300	800	2.5K	7K	17.5K	4
18	68	330	820	2.7K	7.5K	18K	5
20	75	350	900	3K	8K	20K	
22	82	390	1K	3.3K	8.2K	22K	
	100		1.1K				

Net Prices

1	to 1K	$ .60
1.1K	to 5K	.63
6K	to 10K	.72
11K	to 20K	.81
22.5K	to 40K	.84
45K	to 50K	.96



POWER RESISTOR DECADE BOX

The Resistance Decade Box, Model 240-C for bench use — Model 250 for rack mounting, provides any resistance from 1 to 999,999 ohms for working circuits at the flip of a switch. Six front-panel dials enable selection in 1 ohm increments, the total value being read directly from the dial. Each decade has a power rating of 225 watts maximum, 1,000 VDC or 660 VAC maximum.

Resistance changing switches are of the type that prevent a resistance breakdown between steps, thus protecting delicate meters and measuring instruments in the circuit. Knobs indicate the resistance value being used at a glance.

Clarostat GREENOHM Power Resistors are used throughout. These components are wire-wound power resistors on ceramic tubes and coated with an exclusive Clarostat inorganic cold-setting cement, providing the most rugged, long-lasting, trouble-free power resistor available. The resistors are mounted in rigid metal supports.

Overall length: 240C: 13" long x 8½" deep x 5¾" high, weight 11½ lbs. 250: 19" long x 13¾" deep x 7" high (fits in standard 19" relay rack), weight 18½ lbs.

SUGGESTED USES: Resistance determination, Load Resistance, Meter Multiplier, Calibrating Meters, Providing any desired ohmage as a universal power resistor.

Decade No.	1	2	3	4	5	6
Max. Current Rating (amps)	5	1.5	.5	.15	0.5	.005
Resistance Tolerance	5%	2%	2%	2%	2%	2%

NET PRICE: Model 240C $110.00, Model 250 $150.00

SERIES U39

UNIVERSAL "HUMDINGER" CONTROL
2W. WIRE WOUND

Series U39 is a shaftless potentiometer with the contact arm grounded to the housing. The design of terminals and mounting tabs, meets the following requirements: Above chassis mounting, as a potentiometer or rheostat; printed circuit mounting, as a potentiometer or rheostat. The terminal layout meets the popular industry standards. A fiber adapter plate is furnished with each control. Series U39 is ideally suited for radio and television requirements, as well as many industrial applications. Resistance tolerance ±20%. Linear only.

Cat. No.	Total Res. Ohms	Min. Res. Ohms	Cat. No.	Total Res. Ohms	Min. Res. Ohms
U39-1.5	1.5	—	U39-700	700	—
U39-5	5	—	U39-700-200	700	200
U39-8	8	—	U39-800	800	—
U39-15	15	—	U39-800-50	800	50
U39-50	50	—	U39-1000	1000	—
U39-75	75	—	U39-1000-100	1000	100
U39-100	100	—	U39-1500	1500	—
U39-125	125	—	U39-2000	2000	—
U39-150	150	—	U39-2000-100	2000	100
U39-175	175	—	U39-3000	3000	—
U39-200	200	—	U39-3000-700	3000	700
U39-300	300	—	U39-4000	4000	—
U39-500	500	—	U39-4000-350	4000	350
U39-500-100	500	100	U39-4000-1000	4000	1000
U39-600	600	—	U39-5000	5000	—
U39-650	650	—			

NET PRICE $.60

SERIES U39

Net

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PRODUCTS OF
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CLAROSTAT®

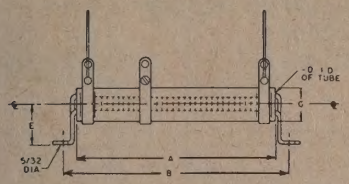
RESISTORS · CONTROLS
RESISTANCE DEVICES

"GREENOHM"* WIRE-WOUND RESISTORS

FIXED TYPES Wire-wound resistors for most rugged applications. Will withstand tremendous overloads and temperature changes without alterating resistance values or appearance. Wire windings on high grade ceramic tubing and coated with special inorganic cement. In accordance with EIA standards, overall tolerances are ± 5% for resistors of 50 ohms and higher. For resistors of 49.9 ohms and lower, overall tolerances are ± 10%.

ADJUSTABLE TYPES Same electrically and mechanically as Fixed types, but incorporating sliding band or bands for tapping any desired resistance values. Slider band tightened by means of screw. In accordance with EIA standards, overall tolerances are ± 10%.

DIMENSIONS BY TYPES



SERIES	WATTS	A	B	C	D	E
PR-5-F	5	1	1 1/16	5/16	3/16	7/16
PR-10-F	10	1 3/4	2 3/16	5/16	3/16	7/16
PR-10-FA	10	1 3/4	2 3/16	5/16	3/16	7/16
PR-20-K	20	2	2 1/2	9/16	3/8	9/16
P-25-K	25	2 1/2	3	9/16	3/8	9/16
P-25-KA	25	2 1/2	3	9/16	3/8	9/16

FIXED RESISTORS

5-WATT SERIES PR-5-F

These resistors conform to E1A specification for type RRW-125 and 128.

Ohms	Ohms	Ohms	Ohms
1	75	800	5,000
2	100	900	6,000
3	125	1,000	7,000
4	150	1,100	7,500
5	200	1,200	8,000
7.5	225	1,250	8,500
10	250	1,500	9,000
12	300	1,750	10K
15	350	2,000	
20	400	2,250	
25	450	2,500	
30	500	3,000	
35	600	3,500	
40	700	4,000	
50	750	4,500	

NET PRICE $0.33

Mounting brackets supplied at extra cost.

25-WATT SERIES P-25-K

Ohms	Ohms	Ohms	Ohms
1	100	2,500	20K
2	150	3,000	25K
3	200	3,500	30K
5	250	4,000	35K
7.5	300	4,500	40K
10	400	5,000	45K
15	500	6,000	50K
20	750	7,000	60K
25	800	7,500	70K
41	1,000	8,000	75K
50	1,250	9,000	80K
51	1,500	10K	85K
60	2,000	12K	90K
75	2,250	15K	100K

NET PRICES:

1 ohm to 5,000	$0.51
6,000 to 15K ohms	.57
20K to 50K ohms	.66
60K ohms	.75
70K ohms	.84
75K ohms	.87
80K ohms	.90
85K ohms	.99
90K ohms	1.05
100K ohms	1.17

Mounting brackets at no extra cost.

10-WATT SERIES PR-10-F

These resistors conform to military specifications for type RW29, and E1A type RRW-126 and 129.

Ohms	Ohms	Ohms	Ohms
1	200	2,000	14.5K
2	225	2,250	15K
3	250	2,500	16K
4	300	3,000	17.5K
5	350	3,500	18K
7.5	400	4,000	20K
10	450	4,500	22.5K
12	500	5,000	25K
15	600	6,000	30K
20	700	7,000	35K
25	750	7,500	40K
30	800	8,000	50K
35	900	8,500	
40	1,000	9,000	
50	1,100	10K	
75	1,200	11K	
100	1,250	12K	
125	1,500	12.5K	
150	1,750	13.5K	

NET PRICE $0.36

Mounting brackets supplied at extra cost.

20-WATT SERIES PR-20-K

These resistors conform to E1A specifications for type RRW-127.

Ohms	Ohms	Ohms	Ohms
5	850	7,000	70K
10	1,000	7,500	75K
25	1,200	8,000	80K
50	1,250	9,000	85K
75	1,500	10K	90K
100	1,750	12.5K	95K
150	1,850	15K	100K
200	2,000	20K	
250	2,250	25K	
300	2,500	30K	
350	2,750	35K	
400	3,000	40K	
500	3,500	45K	
650	4,000	50K	
700	4,500	55K	
750	5,000	60K	
800	6,000	65K	

NET PRICES:

5 ohms to 15K ohms	$0.42
20K to 50K ohms	.57
55K to 100K ohms	.72

Mounting brackets supplied at extra cost.

ADJUSTABLE RESISTORS

These resistors conform to military specification for type RW-29 and E1A specification for type RRW-226.

10-WATT SERIES PR-10-FA

Res.	Res.	Res.	Res.
1	75	750	4,000
2	100	800	4,500
3	150	1,000	5,000
5	200	1,250	6,000
7.5	250	1,500	7,000
10	300	2,000	7,500
15	350	2,250	8,000
20	400	2,500	8,500
25	500	3,000	9,000
50	600	3,500	10K

NET PRICE $0.57

25-WATT SERIES P-25-KA

Res.	Res.	Res.	Res.
1	75	1,000	5,000
2	100	1,250	6,000
3	150	1,500	7,000
5	200	2,000	7,500
7.5	250	2,250	8,000
10	300	2,500	9,000
15	400	3,000	10K
20	500	3,500	12K
25	750	4,000	15K
50	800	4,500	20K
			25K
			50K

NET PRICES:

1 ohm to 5,000 ohms	$0.63
6,000 to 15K ohms	.72
20K to 25K ohms	.84
50K ohms	.99

Above adjustable resistors supplied with mounting brackets at no extra cost. Extra slider bands — 30¢ each.

We make resistors for guys who can't stand failures.

New glass tin oxide film resistors—with tighter, ½ to 5% purchase and load-life tolerances, precision temperature coefficients—make CORNING Resistors more than ever your best buy for stability and reliability. Add these new and improved characteristics to the established physical and electrical inte glass tin oxide film resistors and you will see how CORNING Precision, G purpose, and Power Resistors can add real value to your equipment.

	TYPE AND MIL SPEC	CGW/MIL	RESISTANCE (ohms)		WATTAGE		TOLERA
			±1%	±½%	125°C		
NC	New low ±50 ppm TC with ½ and 1% tolerances for predictable performance. Meets MIL-R 10509F, Char. C.	NC4/RN55C	49.9 to 301K	49.9 to 150K	1/10		±½,
		NC5/RN60C	49.9 to 1 meg.	49.9 to 499K	1/8		±½,
		NC6/RN65C	49.9 to 2 meg.	49.9 to 1 meg.	1/4		±½,
			±1%	±½%	70°C	125°C	
NA	Stable ½% and 1% performance at 70°C and 125°C ratings. Meets MIL-R-10509F, Char. D. 100 ppm TC.	NA55/RN55D	10 to 301K	49.9 to 150K	1/8	1/10	±½,
		NA60/RN60D	10 to 1 meg.	49.9 to 499K	1/4	1/8	±½,
		NA65/RN65D	10 to 2 meg.	49.9 to 1 meg.	1/2	1/4	±½,
		NA70/RN70D	51.1 to 1 meg.	51.1 to 1 meg.	3/4	—	±½,
			100 ppm	200 ppm	70°C	70°C 125°C	
C	Precision stability in a unique multi-use part for both MIL-R-22684B and MIL-R-10509F, Char. D. New C3 style provides ⅛ watt performance in RN50/RC05 size.	C3	100Ω-150K	10Ω-150K	1/8		±1, 2, 5, 1
		C4/RL07S	10Ω-301K		1/4	1/8 1/10	±1, 2, 5%
		C5/RL20S	10Ω-1MEG		1/2	1/4 1/8	±1, 2, 5%
C	General-purpose, low-cost film type. Film resistor performance characteristics at prices comparable to carbon composition types.	C32/RL32S	10 to 1 meg.		1 @ 70°C		±2%, 5
		C42S/RL42S	10 to 1.5 meg.		2 @ 70°C		±2%, 5
					40°	70°C	
FP	Low-power resistors that won't burn, even under 100 times-rated overload. FP Style Resistors open up, fuse, but will not flame. Highly stable and non-inductive performance.	FP-2	9 to 90K		3	2	2, 5, 10%
		FP-3	9 to 40K		4	3	2, 5, 10%
		FP-4	16 to 90K		5	4	2, 5, 10%
		FP-5	19 to 90K		7	5	2, 5, 10%
		FP-7	24 to 90K		—	7	2, 5, 10%
		FP-10	24 to 90K		10	—	2, 5, 10%

STANDARD DECADES* **Precision (Mil-R-10509)** **Semi-precision (Mil-R-22**

Purchase tolerance in %*																Purchase tolerance in %	
D (0.5)	F (1.0)	D (0.5)	F (1.0)	D (0.5)	F (1.0)	D (0.5)	F (1.0)	D (0.5)	F (1.0)	D (0.5)	F (1.0)	D (0.5)	F (1.0)	D (0.5)	F (1.0)	G & J 2.0 & 5.0	
10.0	10.0	13.3	13.3	17.8	17.8	23.7	23.7	31.6	31.6	42.2	42.2	56.2	56.2	75.0	75.0	10	33
10.1	....	13.5	....	18.0	....	24.0	....	32.0	....	42.7	....	56.9	....	75.9	....	11	36
10.2	10.2	13.7	13.7	18.2	18.2	24.3	24.3	32.4	32.4	43.2	43.2	57.6	57.6	76.8	76.8	12	39
10.4	....	13.8	....	18.4	....	24.6	....	32.8	....	43.7	....	58.3	....	77.7	....	13	43
10.5	10.5	14.0	14.0	18.7	18.7	24.9	24.9	33.2	33.2	44.2	44.2	59.0	59.0	78.7	78.7	15	47
10.6	....	14.2	....	18.9	....	25.2	....	33.6	....	44.8	....	59.7	....	79.6	....	16	51
10.7	10.7	14.3	14.3	19.1	19.1	25.5	25.5	34.0	34.0	45.3	45.3	60.4	60.4	80.6	80.6	18	56
10.9	....	14.5	....	19.3	....	25.8	....	34.4	....	45.9	....	61.2	....	81.6	....	20	62
11.0	11.0	14.7	14.7	19.6	19.6	26.1	26.1	34.8	34.8	46.4	46.4	61.9	61.9	82.5	82.5	22	68
11.1	....	14.9	....	19.8	....	26.4	....	35.2	....	47.0	....	62.6	....	83.5	....	24	75
11.3	11.3	15.0	15.0	20.0	20.0	26.7	26.7	35.7	35.7	47.5	47.5	63.4	63.4	84.5	84.5	27	82
11.4	....	15.2	....	20.3	....	27.1	....	36.1	....	48.1	....	64.2	....	85.6	....	30	91
11.5	11.5	15.4	15.4	20.5	20.5	27.4	27.4	36.5	36.5	48.7	48.7	64.9	64.9	86.6	86.6		
11.7	....	15.6	....	20.8	....	27.7	....	37.0	....	49.3	....	65.7	....	87.6	....		
11.8	11.8	15.8	15.8	21.0	21.0	28.0	28.0	37.4	37.4	49.9	49.9	66.5	66.5	88.7	88.7		
12.0	....	16.0	....	21.3	....	28.4	....	37.9	....	50.5	....	67.3	....	89.8	....		
12.1	12.1	16.2	16.2	21.5	21.5	28.7	28.7	38.3	38.3	51.1	51.1	68.1	68.1	90.9	90.9		
12.3	....	16.4	....	21.8	....	29.1	....	38.8	....	51.7	....	69.0	....	92.0	....		
12.4	12.4	16.5	16.5	22.1	22.1	29.4	29.4	39.2	39.2	52.3	52.3	69.8	69.8	93.1	93.1		
12.6	....	16.7	....	22.3	....	29.8	....	39.7	....	53.0	....	70.6	....	94.2	....		
12.7	12.7	16.9	16.9	22.6	22.6	30.1	30.1	40.2	40.2	53.6	53.6	71.5	71.5	95.3	95.3		
12.9	....	17.2	....	22.9	....	30.5	....	40.7	....	54.2	....	72.3	....	96.5	....		
13.0	13.0	17.4	17.4	23.2	23.2	30.9	30.9	41.2	41.2	54.9	54.9	73.2	73.2	97.6	97.6		
13.2	....	17.6	....	23.4	....	31.2	....	41.7	....	55.6	....	74.1	....	98.8	....		

*Standard resistance values are obtained from the decade table by multiplying by multiples of 10. As an example, 1.33 can represent 13.3 ohms, 133 ohms, 1.33k, 13.3k, 133k, 1.33 megohms 2 and 5% decade values for Mil-R-11804 are standard on CORNING® R, S and H Styles.

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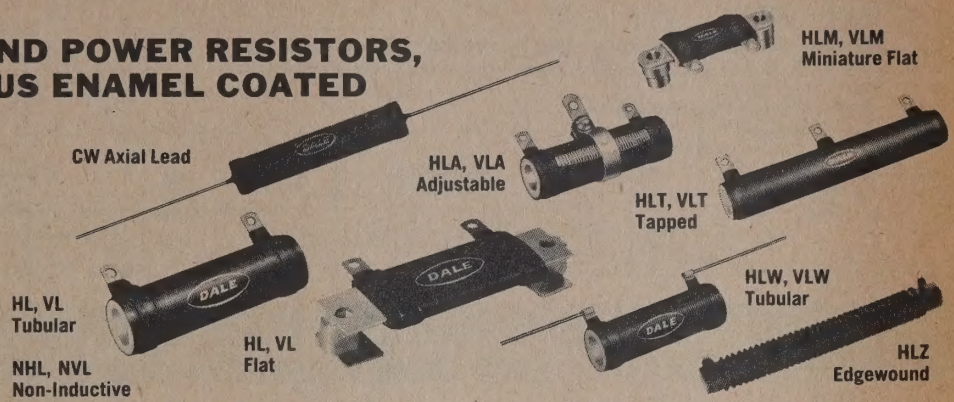
DALE® *for Optimum Value in Wirewound Resistors*

USTRIAL WIREWOUND POWER RESISTORS, ICONE AND VITREOUS ENAMEL COATED

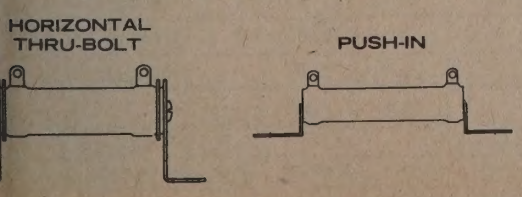
expanded industrial wirewound rovides both silicone and vitre- oated models. Silicone models commended where maintenance rance and T.C. is of primary con- Vitreous models are recom- ed where maximum resistance to cal action is required.

NTACT DISTRIBUTOR FOR PRICES.

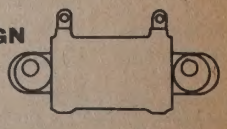


E	APPLICATION	APPLICABLE MIL SPEC AND TYPES	WATTAGE RATING	RESISTANCE RANGE	CORE SIZES	TERMINALS	MOUNTINGS	TOLERANCE
W ial ad	Axial leads. For applications requiring high performance at low cost	MIL-R-26 RW-67, 68, 69	2.5-13 watts	.1 ohm to 100K ohms	Body Dia. .188 to .375" Body Length .500 to 1.781" Leads 1.5 to 2"	Leads	Terminals	±5% (10% below 1 ohm)
L, 'L ular	General purpose wirewound resistors with a broad power range.	MIL-R-26 RW-29, 30, 31, 32, 33, 35, 36, 37, 38, 47	5-225 watts	.1 ohm to 1.3 Megohms	O.D. 1/4 to 1-1/8" Length 1-10½"	Lugs	Push-in bracket or thru-bolt	±5% (10% below 1 ohm)
HL, VL on- ctive	High frequency circuits and applications requiring low inductive effect and minimum distributed capacity	None	5-225 watts	1 ohm to 90K ohms	O.D. 1/4 to 1-1/8" Length 1-10½"	Lugs or Leads	Push-in bracket or thru bolt	±5%
L, 'L lat	For limited space requiring high power-to-size ratio. Vertical or horizontal stacking.	MIL-R-26 RW-20 thru RW-24	24-95 watts	.1 ohm to 150K ohms	Length 1¼ to 6"	Lugs	Spring push-in	±5% (10% below 1 ohm)
M, LM ature lat	For limited space, high power-to-size requirements particularly in high vibration areas.	None	10-20 watts	.1 ohm to 51K ohms	Length 3/4 to 2-1/16"	Lugs	Thru mount with spacers	±5% (10% below 1 ohm)
LA, LA stable	For resistance or voltage adjustment	MIL-R-19365C RX-29, 32, 33, 35, 36 37, 38, 47	12-225 watts	1 ohm to 100K ohms	O.D. 5/16 to 1-1/8" Length 1½ to 10½"	Lugs	Push-in bracket or thru bolt	±5%
LT, 'LT pped	For voltage divider networks	MIL-R-26 RW-22, 23, 24, 33, 35, 36, 37, 38, 47	11-225 watts	.1 ohm to 1.1 Megohms	O.D. 5/16 to 1-1/8" Length 1½ to 10½"	Lugs	Push-in bracket or thru bolt	±10% each section (±10% total)
LW, LW bular	General application where terminal wires are required for direct electrical connection	None	3-20 watts	.1 ohm to 80K ohms	O.D. 13/64 to 7/16" Length 1" to 2"	Lugs with terminal wires	Terminals, thru bolt or push-in bracket	±5% (10% below 1ohm)
LZ ge- und	For heavy duty requirements where space is at a premium. High thermal capacity.	None	35-375 watts	.05 ohm to 32 ohms	O.D. 1/4 to 1-1/8" Length 1 to 10-1/2"	Lugs	Push-in bracket or thru bolt	±10%

NTING BRACKETS for TUBULAR STYLES



EXCLUSIVE BRACKET DESIGN FOR MINIATURE FLAT STYLE



Mounting strap fits snugly through core and is bound tightly against unit by two eccentric spacers. Eliminates expensive cements and improves heat transfer and power handling capabilities.

DALE for Optimum Value in Wirewound Resistors

WIREWOUND PRECISION RESISTORS, SILICONE COATED & MOLDED

TYPE RS

Coated and molded models meet applicable requirements of MIL-R-26E, MIL-R-26C and MIL-R-23379. Non-inductive styles available.

(Available with Weldable Leads)

DALE TYPE	MIL-R-26E TYPE*	DALE RATING U .05% thru 5%	DALE RATING V 3% & 5%	RESISTANCE RANGES (OHMS) .05% .1%, .25%	RESISTANCE RANGES (OHMS) .5%, 1% 3%, 5%	MAX.** WORKING VOLTAGE U	MAX.** WORKING VOLTAGE V	MAX. WT. GRAMS	STANDARD TEMPERATURE COEFFICIENT VALUE RANGES (OHMS)† ± 90 PPM	± 50 PPM	± 30 PPM	± 20 PPM
RS-¼	—	.4 W	—	10 to 950	1 to 3.4K	20	—	.21	Below 1 Ω	1 to 6.9	—	7 to 3.4K
RS-½	—	.75 W	—	10 to 1.3K	1 to 4.9K	29	—	.23	Below 1 Ω	1 to 9.9	—	10 to 4.9K
RS-1A	RW-70	1.0 W	—	1 to 2.7K	.1 to 10.4K	52	—	.34	Below 1 Ω	1 to 9.9	10 to 19	20 to 10.4K
RS-1B	—	1.1 W	—	1 to 4.0K	.1 to 15K	62	—	.40	Below 1 Ω	1 to 9.9	10 to 29	30 to 15K
RS-2	—	4.0 W	5.5 W	1 to 12.7K	.1 to 47.1K	210	250	2.1	Below 1 Ω	1 to 9.9	10 to 79	80 to 47.1K
RS-2A	—	3.25 W	4.75 W	1 to 11.4K	.1 to 42.1K	185	220	.90	Below 1 Ω	1 to 9.9	10 to 79	80 to 42.1K
RS-2B	RW-79	3.0 W	3.75 W	1 to 6.5K	.1 to 24.5K	135	148	.70	Below 1 Ω	1 to 9.9	10 to 49	50 to 24.5K
RS-2C	—	2.5 W	3.25 W	1 to 8.6K	.1 to 32.3K	138	157	1.6	Below 1 Ω	1 to 9.9	10 to 59	60 to 32.3K
RS-2C-23	RW-69	2.5 W	3.25 W	1 to 8.6K	.1 to 32.3K	138	157	1.6	Below 1 Ω	1 to 9.9	10 to 59	60 to 32.3K
RS-5	—	5.0 W	6.5 W	.5 to 25.7K	.1 to 95.2K	330	376	4.2	Below 1 Ω	1 to 9.9	10 to 169	170 to 95.2K
RS-5-69	RW-74	5.0 W	6.5 W	.5 to 24.5K	.1 to 91.0K	323	368	4.2	Below 1 Ω	1 to 9.9	10 to 169	170 to 91.0K
RS-5-70	RW-67	5.0 W	6.5 W	.5 to 25.7K	.1 to 95.2K	330	376	4.2	Below 1 Ω	1 to 9.9	10 to 169	170 to 95.2K
RS-7	—	7.0 W	9.0 W	.5 to 41.4K	.1 to 154K	504	576	4.7	Below 1 Ω	1 to 9.9	10 to 269	270 to 154K
RS-10	—	10 W	13 W	.5 to 73.4K	.1 to 273K	799	911	9.0	Below 1 Ω	1 to 9.9	10 to 469	470 to 273K
RS-10-38	RW-78	10 W	13 W	.5 to 71.3K	.1 to 265K	788	898	9.0	Below 1 Ω	1 to 9.9	10 to 469	470 to 265K
RS-10-39	RW-68	10 W	13 W	.5 to 73.4K	.1 to 273K	799	911	9.0	Below 1 Ω	1 to 9.9	10 to 469	470 to 273K

**Max. working voltage determined at .0008 dia. wire resistance values.

†Consult factory for special T.C. requirements.

*NOTE: The following Dale RS series resistors meet requirements of MIL-R-26C (Char. G & V) and MIL-R-23379:

MIL-R-26C

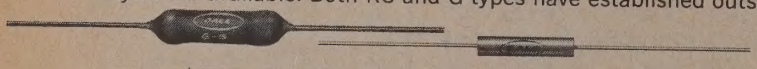
DALE TYPE	RS-2C	RS-5	RS-10
MIL. TYPE	RW-69	RW-67	RW-68

MIL-R-23379

DALE TYPE	RS-1A	RS-2C-23	RS-5	RS-10
MIL. TYPE	RWP-18	RWP-20	RWP-21	RWP-23

WIREWOUND PRECISION RESISTORS, SILICONE COATED & MOLDED

Meets applicable requirements of MIL-R-26E, MIL-R-26C (Char. G & V) and MIL-R-23379. Non-inductive styles are available. Both RS and G types have established outstanding reliability records (write for test reports).



TYPE G

Beryllium oxide core for decreased size, increased stability. Meets applicable specifications of MIL-R-26 and MIL-R-23379.

(Available with Weldable Leads)

DALE TYPE	MIL-R-26E TYPE*	DALE RATING U .05% thru 5%	DALE RATING V 3% & 5%	RESISTANCE RANGES (OHMS) .05% .1%, 25%	RESISTANCE RANGES (OHMS) .5%, 1%, 3%, 5%	MAX.** WORKING VOLTAGE U	MAX.** WORKING VOLTAGE V	MAX. WT. GRAMS	STANDARD TEMPERATURE COEFFICIENT VALUE RANGES (OHMS)† ± 90 PPM	± 50 PPM	± 30 PPM	± 20 PPM
G-1	RW-81	1.0 W	—	10 to 950	1 to 3.4K	33	—	.20	Below 1 Ω	1 to 6.9	—	7 to 3.4K
G-2	—	1.5 W	—	10 to 1.3K	1 to 4.9K	42	—	.21	Below 1 Ω	1 to 9.9	—	10 to 4.9K
G-3	RW-80	2.25 W	—	1 to 2.7K	.1 to 10.4K	80	—	.34	Below 1 Ω	1 to 9.9	10 to 19	20 to 10.4K
G-5	—	4.0 W	5 W	1 to 6.5K	.1 to 24.5K	153	170	.80	Below 1 Ω	1 to 9.9	10 to 49	50 to 24.5K
G-5A	—	4.5 W	6.5 W	1 to 11.4K	.1 to 42.1K	214	257	.95	Below 1 Ω	1 to 9.9	10 to 79	80 to 42.1K
G-5C	—	5 W	7 W	1 to 8.6K	.1 to 32.3K	194	230	1.2	Below 1 Ω	1 to 9.9	10 to 59	60 to 32.3K
G-6	—	6 W	8 W	1 to 12.7K	.1 to 47.1K	258	298	2.0	Below 1 Ω	1 to 9.9	10 to 79	80 to 47.1K
G-10	—	7 W	10 W	.5 to 25.7K	.1 to 95.2K	390	467	3.6	Below 1 Ω	1 to 9.9	10 to 169	170 to 95.2K
G-12	—	10 W	12 W	.5 to 41.4K	.1 to 154K	607	665	4.2	Below 1 Ω	1 to 9.9	10 to 269	270 to 154K
G-15	—	15 W	18 W	.5 to 73.4K	.1 to 273K	979	1072	7.6	Below 1 Ω	1 to 9.9	10 to 469	470 to 273K

**Maximum Working Voltage determined at .0008 dia. wire resistance values.

†Consult factory for special T.C. requirements.

*NOTE: The following Dale G series resistors meet requirements of MIL-R-26C (Char. G & V) and MIL-R-23379:

MIL-R-26C

DALE TYPE	G-5C	G-10	G-15
MIL. TYPE	RW-69	RW-67	RW-68

MIL-R-23379

DALE TYPE	G-1	G-3	G-5C-2	G-10	G-15
MIL. TYPE	RWP-17	RWP-19	RWP-20	RWP-21	RWP-23

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REWOUND POWER RESISTORS, HEAT SINK ENCASED

PE RH

nted design.
sis mounted.
odels exceed
R-18546.

DALE TYPE	MIL-R-18546 TYPE	POWER RATING* (WATTS)		RESISTANCE RANGES (OHMS)		MAX. WORKING VOLTAGE	MAX.† WT. GRAMS	STANDARD TEMPERATURE COEFFICIENT VALUE RANGES (OHMS) ††		
		DALE**	MIL	.05%, .1%, .25%	.5%, 1%, 3%			±50 PPM	±30 PPM	±20 PPM
RH-5	RE-60	7.5 (5)	5	1 to 6.5K	.1 to 24.5K	160	3	1 to 9.9	10 to 49	50 to 24.5K
RH-10	RE-65	12.5 (10)	10	1 to 12.7K	.1 to 47.1K	265	6	1 to 9.9	10 to 79	80 to 47.1K
RH-25	RE-70	25	20	.5 to 25.7K	.1 to 95.2K	550	13	1 to 9.9	10 to 169	170 to 95.2K
RH-50	RE-75	50	30	.5 to 73.4K	.1 to 273K	1250	28	1 to 9.9	10 to 469	470 to 273K

*Rating is based on chassis mounting area and stability.

**NOTE: Figures in parentheses on RH-5 and RH-10 indicate wattage printed on these resistors. New construction allows them to be rated at 7.5 and 12.5 watts – but they will be printed with these higher ratings only upon customer request.

†A weight increase of 10% should be allowed for non-inductive types. ††Consult factory for values below 1 ohm and for special T.C. requirements.

DALE® for Optimum Value in Metal Film Resistors

RECISION METAL FILM RESISTORS

(Available with Weldable Leads)

PE MF

xy molded. Meets MIL-R-10509 and MIL-R-84.

PE MFF

xy conformal coated. Meets electrical and ronmental characteristics of MIL-R-10509F, is dimensionally smaller.

Characteristic F **Characteristic B
olerance MIL-R-10509±1%, ±.5%, ±0.25%, ±0.10% standard, MIL-R-22684 ±2%, ±5%.
pecial tolerances and matching on request.

DALE TYPE	MIL. TYPE	125° C RATING (Char. C&E)	70° C RATING (Char. D)	MIL-R-22684		MAX. WT. (Grams)	MAX. WORKING VOLTAGE
				TYPE	RATING		
MF50	RN-50	1/20 w	1/10 w	–	–	.11	200
MF-1/10	RN-55	1/10 w	1/8 w	RL-07	1/4 w	.35	200
MF-1/8	RN-60	1/8 w	1/4 w	RL-20	1/2 w	.45	300
MF-1/4	RN-65	1/4 w	1/2 w	–	–	.84	350
MFS-1/2	RN-70	1/2 w	3/4 w	–	–	1.6	500
MF-3/4	RN-70F	3/4 w*	–	–	–	1.9	500
MF-1	RN-75	–	1 w**	–	–	4.4	500
MF-2	RN-80	–	2 w**	–	–	7.9	750
MFF-1/8	–	1/8 w	–	–	–	.40	300
MFF-1/4	–	1/4 w	–	–	–	.65	350
MFF-1/2	–	1/2 w	–	–	–	.95	500
MFF-1	–	–	1 w	–	–	2.7	500
MFF-2	–	–	2 w	–	–	4.7	750

RESISTANCE RANGE (OHMS) 1%, .5%, .25%, .1%

	T-0* (Char. D)	T-1* (Char. D)	T-2 (Char. C)	T-9 (Char. E)
MF50	24.9Ω-100KΩ	49.9Ω-100KΩ	100Ω-100KΩ	100Ω-100KΩ
MF-1/10	10Ω-301KΩ	30.1Ω-301KΩ	30.1Ω-301KΩ	30.1Ω-301KΩ
MF-1/8, MFF-1/8	10Ω-1 Meg.	24.9Ω-1 Meg.	30.1Ω-499KΩ	30.1Ω-499KΩ
MF-1/4, MFF-1/4	10Ω-2 Meg.	24.9Ω-2 Meg.	30.1Ω-1 Meg.	30.1Ω-1 Meg.
MFS-1/2, MFF-1/2	10Ω-2.49 Meg.	24.9Ω-2.49 Meg.	24.9Ω-1 Meg.	24.9Ω-1 Meg.
MF-3/4	10Ω-2.49 Meg.	24.9Ω-2.49 Meg.	100Ω-1 Meg.	100Ω-1 Meg.
MF-1, MFF-1	10Ω-5.11 Meg.	24.9Ω-4.02 Meg.	49.9Ω-2.61 Meg.	49.9Ω-2.61 Meg.
MF-2, MFF-2	30.1Ω-10 Meg.	100Ω-8 Meg.	100Ω-6 Meg.	200Ω-5.11 Meg.

-0 and T-1 are available
n tolerance of ±.25%
nd greater only.

EPOSITED CARBON RESISTORS

Contact Distributor for Prices *(Available with Weldable Leads)*

Meet functional requirements of MIL-R-10509F.

PE MC

lded housing. Completely insulated and protected against vironmental or mechanical damage. Specially formulated lding compound gives best humidity protection available.

TYPE DC

Specially coated for complete insulation against moisture, salt spray and other severe environmental factors. Miniature size.

DALE TYPE	MIL. TYPE		POWER RATING (WATTS)		MINIMUM RESISTANCE (OHMS)	MAXIMUM 1% RESISTANCE (OHMS)	MAXIMUM 2% RESISTANCE (OHMS)	MAX. WT. (GRAMS)		MAXIMUM WORKING VOLTAGE
	MC	DC	B	D*				MC	DC	
MC-1/10, DC-1/10	RN-55	–	1/10	1/8	2	400K	400K	.35	.20	200
MC-1/8, DC-1/8	RN-60	–	1/8	1/4	1	3 Megohms	5 Megohms	.45	.30	300
MC-1/4, DC-1/4	RN-65	RN-10	1/4	1/2	2	5 Megohms	6 Megohms	.85	.35	350
MCS-1/2, DCS-1/2	RN-70	RN-20	1/2	3/4	1	10 Megohms	15 Megohms	1.50	.80	500

Tolerance: .5%, 1%, 2%

Operating Temp. Range: –55° C to +165° C

Temperature Coefficient: –200 PPM to –500 PPM, depending on value within normal resistance range.

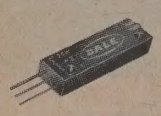
*Applies to MC only.

DALE® for Optimum Value in Potentiometers

TRIMMER QUICK REFERENCE GUIDE

- New rectilinear wirewound and film models
- New square wirewound models
- Expanded low-priced Econo-Trim series with sealability for pennies mo
- Mil-style construction methods used throughout
- Panel mount models available in most series

MILITARY GRADE TRIMMER POTENTIOMETERS (High Temperature, Precision)

SERIES	ILLUSTRATION	MODEL	CONFIGURATION	STANDARD RESISTANCE & TOLERANCE	HUMIDITY PROOF (Mil. Spec.)	POWER RATING	OPERATING TEMP. RANGE	ADJUSTMENT TURNS	HEIGHT	WIDTH	LENG
600	 Mil. Equiv. RT-10	691 680 690* 697* 692*	• Alternate position Printed Circuit Pins 22 AWG • Printed Circuit Pins 22 AWG • Hook Type Wire Solder Terminal • 28 AWG Stranded Teflon Leads • 26 AWG Solid Leads	10 ohms to 100K ohms ±5%	Yes	1 watt at 70° C, derated to 0 at 175° C	−65° C to 175° C	15 ± 2	.18	.32	1.0
1200	Mil. Equiv. RT-11	1287 1288* 1299*	• Printed Circuit Pins 21 AWG • Stranded Teflon Leads 28 AWG • Spade Type Solder Lug	10 ohms to 100K ohms ±5%	Yes	1 watt at 70° C, derated to 0 at 175° C	−65° C to 175° C	25 ± 2	.28	.31	1.25
1600	Mil. Equiv. RT-12	1680 1697* 1692* 1690*	• Printed Circuit Pins 21 AWG • Stranded Teflon Leads 28 AWG • 22 AWG Solid Wire • Solder Lug	10 ohms to 100K ohms ±5%	Yes	1 watt at 70° C, derated to 0 at 175° C	−65° C to 175° C	22 ± 3	.19	.32	1.25
5000	Mil. Equiv. RT-22	5050 5080 5091	• Stranded Teflon Leads 30 AWG • Printed Circuit Pins 21 AWG, Edge Mount • Printed Circuit Pins 21 AWG	10 ohms to 50K ohms ±5%	Yes	1 watt at 70° C, derated to 0 at 175° C	−65° C to 175° C	25 ± 2	.19 .22 .22	.50 .50 .50	.50 .50 .50
5800	Mil. Equiv. RT-24	5850 5891 5880 5887	• Stranded Teflon Leads 30 AWG • Printed Circuit Pins 22 AWG, Base Mount • Printed Circuit Pins 22 AWG, Edge Mount • Printed Circuit Pins 22 AWG Side Adjust	10 ohms to 50K ohms ±5%	Yes	1 watt at 70° C, derated to 0 at 175° C	−65° C to 175° C	25 ± 3	.145 .150 .145 .150	.375 .375 .375 .375	.375 .375 .375 .375

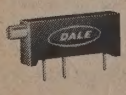
*Indicates model is also available in Panel Mount version.

COMMERCIAL GRADE ECONO-TRIM POTENTIOMETERS

WIREWOUND ELEMENT

SERIES	ILLUSTRATION	MODEL	CONFIGURATION	STANDARD RESISTANCE & TOLERANCE	HUMIDITY PROOF (Mil. Spec.)	POWER RATING	OPERATING TEMP. RANGE	ADJUSTMENT TURNS	HEIGHT	WIDTH	LENGT
2300		2387 2317 2389 2319	• Unsealed } Printed Circuit Terminals, Gold Plated • Sealed • Unsealed } Hook-type Solder Lugs, Gold Plated • Sealed	10 ohms to 50K ohms ±10%	Optional	0.5 watt at 25° C, derated to 0 at 105° C	−55° C to 105° C	15 turns nominal	.36	.28	1.00
2400		2487 2417	• Unsealed } Printed Circuit Terminals, Gold Plated • Sealed	10 ohms to 50K ohms ±10%	Optional	1 watt at 40° C, derated to 0 at 125° C	−55° C to 125° C	20 turns nominal	.31	.16	.75

FILM ELEMENT

8300		8387 8317 8389 8319	• Unsealed } Printed Circuit Terminals Gold Plated • Sealed • Unsealed } Hook-type Solder Lugs, Gold Plated • Sealed	10 ohms to 2 Megohms ±10% 100Ω thru 500K ±20% all other values	Optional	.75 watt at 25° C, derated to 0 at 105° C	−55° C to 105° C	15 turns nominal	.36	.28	1.00
8400		8487 8417	• Unsealed } Printed Circuit Terminals Gold Plated • Sealed	10 ohms to 2 Megohms ±10% 100Ω thru 500K ±20% all other values	Optional	.75 watt at 25° C, derated to 0 at 125° C	−55° C to 125° C	20 turns nominal	.31	.16	.75

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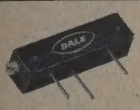
DUSTRIAL GRADE TRIMMER POTENTIOMETERS

/IREWOUND ELEMENT

S	ILLUSTRATION	MODEL	CONFIGURATION	STANDARD RESISTANCE & TOLERANCE	HUMIDITY PROOF (Mil. Spec.)	POWER RATING	OPERATING TEMP. RANGE	ADJUSTMENT TURNS	HEIGHT	WIDTH	LENGTH
00		2187 2188* 2199*	• Printed Circuit Pins 21 AWG • Stranded Vinyl Leads 28 AWG • Spade Type Solder Lug	10 ohms to 100K ohms ±10%	Optional	1 watt at 70° C, derated to 0 at 125° C	−65° C to 125° C	25 ± 2	.28	.31	1.25
00		2280 2292 2297	• Printed Circuit Pins 22 AWG • 26 AWG Solid Leads • 28 AWG Stranded Vinyl Leads	10 ohms to 100K ohms ±10%	Optional	1 watt at 70° C, derated to 0 at 125° C	−65° C to 125° C	15 ± 2	.18	.32	1.00

ILM ELEMENT

00		8187 8188* 8189*	• Printed Circuit Pins 21 AWG • Stranded Vinyl Leads 28 AWG • Gold-plated Solder Lug	10 ohms to 2 Megohms ±10% 100Ω to 500K ±20% other values	Optional	.75 watt at 70° C, derated to 0 at 125° C	−65° C to 125° C	25 ± 2	.28	.31	1.25

*Indicates model is also available in Panel Mount version.

RICE LIST DALE® TRIMMER POTENTIOMETERS

ITARY GRADE

RIES	RESISTANCE VALUES	1-9	10-24	25-49	STANDARD VALUES
0 0, 690, , 692, 7)	10Ω–10K	$5.56	$5.13	$4.71	10Ω 500Ω 15K 20Ω 1K 20K 50Ω 2K 25K 100Ω 5K 50K 200Ω 10K
	Over 10K–30K	6.11	5.64	5.17	
	Over 30K–50K	6.43	5.94	5.47	
00 87, 1288, 89)	10Ω–10K	$5.56	$5.13	$4.71	10Ω 500Ω 15K 20Ω 1K 20K 50Ω 2K 25K 100Ω 5K 50K 200Ω 10K 100K
	Over 10K–30K	6.11	5.64	5.17	
	Over 30K–50K	6.43	5.94	5.47	
	Over 50K–100K	7.83	7.23	6.63	
00 80, 1697, 90)	10Ω–10K	$5.56	$5.13	$4.71	10Ω 500Ω 15K 20Ω 1K 20K 50Ω 2K 50K 100Ω 5K 100K 200Ω 10K
	Over 10K–30K	6.11	5.64	5.17	
	Over 30K–50K	6.43	5.94	5.47	
	Over 50K–100K	7.83	7.23	6.63	
00 50, 5080, 91)	10Ω–10K	$5.47	$5.14	$4.84	10Ω 500Ω 20K 20Ω 1K 50K 50Ω 2K 100Ω 5K 200Ω 10K
	Over 10K–30K	6.02	5.69	5.36	
	Over 30K–50K	7.07	6.68	6.29	
00 50, 5891, 80, 5887)	CONTACT DISTRIBUTOR FOR PRICES				10Ω 500Ω 15K 20Ω 1K 20K 50Ω 2K 25K 100Ω 5K 30K 200Ω 10K 50K

MMERCIAL GRADE

RIES	RESISTANCE VALUES	1-9	10-24	25-49	STANDARD VALUES
00 87, 89)	10Ω–20K	$1.82	$1.67	$1.50	10Ω 500Ω 20K 20Ω 1K 50K 50Ω 2K 100Ω 5K 200Ω 10K
	Over 20K–50K	2.22	2.07	1.90	
00 17, 19)	10Ω–20K	$1.92	$1.77	$1.60	10Ω 500Ω 20K 20Ω 1K 50K 50Ω 2K 100Ω 5K 200Ω 10K
	Over 20K–50K	2.32	2.17	2.00	

COMMERCIAL GRADE (continued)

SERIES	RESISTANCE VALUES	1-9	10-24	25-49	STANDARD VALUES
2400 (2417)	10Ω–20K	$1.72	$1.59	$1.46	10Ω 200Ω 5K 20Ω 500Ω 10K 50Ω 1K 20K 100Ω 2K 50K
	50K	2.12	1.99	1.86	
2400 (2487)	10Ω–20K	1.52	1.39	1.28	
	50K	1.92	1.79	1.68	
8300 (8387, 8389)	10Ω–2 Meg.	$1.82	$1.67	$1.50	10Ω 10K 20Ω 20K 50Ω 25K 100Ω 100K
8300 (8317, 8319)	10Ω-2 Meg.	$1.92	$1.77	$1.60	200Ω 200K 500Ω 250K 1K 500K 2K 1 Meg. 5K 2 Meg.
8400 (8417)	10Ω–2 Meg.	$1.72	$1.59	$1.46	10Ω 1K 100K 20Ω 2K 200K 50Ω 5K 500K 100Ω 10K 1 Meg. 200Ω 20K 2 Meg. 500Ω 25K
(8487)	10Ω–2 Meg.	1.52	1.39	1.28	

INDUSTRIAL GRADE

SERIES	RESISTANCE VALUES	1-9	10-24	25-49	STANDARD VALUES
2100* (2187, 2188, 2189)	10Ω–10K	$3.10	$2.85	$2.62	10Ω 500Ω 15K 20Ω 1K 20K 50Ω 2K 25K 100Ω 5K 50K 200Ω 10K 100K
	Over 10K–30K	3.61	3.31	3.05	
	Over 30K–50K	4.11	3.77	3.47	
	Over 50K–100K	5.20	4.77	4.40	
2200* (2280, 2292, 2297)	10Ω–10K	$3.44	$3.15	$2.91	10Ω 500Ω 15K 20Ω 1K 20K 50Ω 2K 25K 100Ω 5K 50K 200Ω 10K
	Over 10K–30K	3.94	3.62	3.33	
	Over 30K–50K	4.78	4.41	4.05	
8100 (8187, 8188, 8189)	10Ω–2 Meg.	$3.10	$2.85	$2.62	10Ω 1K 100K 20Ω 2K 200K 50Ω 5K 250K 100Ω 10K 500K 200Ω 20K 1 Meg. 500Ω 25K 2 Meg.

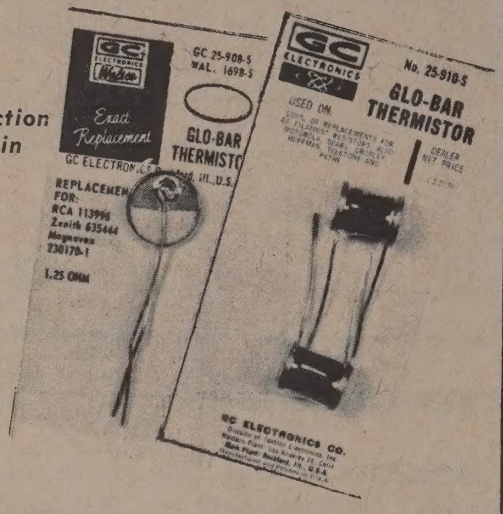
*Add $.13/unit to all 2100 and 2200 price breaks for sealed units. To specify, add "–17" to part number. Example: "2187-17."

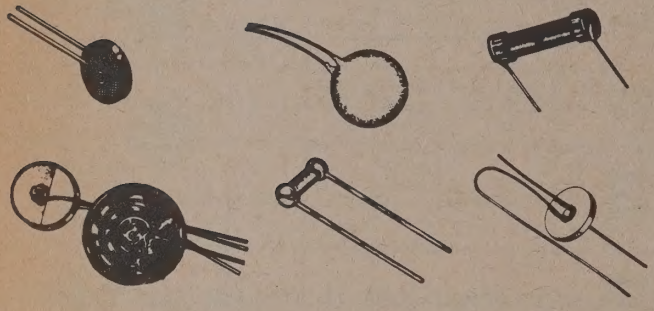
GC ELECTRONICS

RESISTIVE DEVICES

GLO-BAR THERMISTORS

Complete Selection individually skin carded on master display cards





Engineered to the original manufacturer's rigid specifications, GC Chemical Fuses are exact replacements for RCA, Emerson, Zenith, etc. All GC Chemical Fuses are visual packed for quick identification. U.L. approved.

RESISTORS

1/4, 1/2, 1 & 2 watt resistors (10% Tol.) in MOISTURE-PROOF packages EIA approved MIL-R-IIE.

BULK RESISTOR PRICES

WATTAGE	EA. 1-9	10-49	50-99	100-UP
1/4 WATT	.13	.09	.06	$4.32/C
1/2 WATT	.12	.085	.05	$4.15/C
1 WATT	.17	.10	.07	$6.47/C
2 WATT	.22	.19	.14	$12.28/C

BEL® CHEMICAL FUSES

GC PART NO.	WALSCO	COLOR	ORIG.MFRS. PART NO.	MFRS. STOCK NO.	BEL FUSE NO.	SP
25-929-S	40-929-S	Yellow	Emerson 808238		1700-1	10
25-935-S	40-935-S	Pink	RCA 945392-4		450-1	10
25-937-S	40-937-S	Green	Emerson 808238		1200-1	10
25-954-S	40-954-S	Black	RCA 945392-1	RCA 109079	500-1	10
25-956-S	40-956-S	Blue	RCA 945392-2	RCA 109588	400-1	10
25-958-S	40-958-S	Red	RCA 945392-3	RCA 109860	3-1	10
25-995-S	40-995-S	Maroon	Zenith 136-66		2000-1	10
25-997-S	40-997-S	Gray	Emerson 808241		1400-1	10
25-976-S	40-976-S	White	Zenith 136-71		1000-1	10
25-1123-S	25-1123-S	Kelly Green	Admiral 84B28-8			10
25-897-S	25-897-S	Turquoise	Motorola 65C67985-A04			10

AUTO SUPPRESSORS

ILLUSTRATION	PART NO.	DESCRIPTION	STD. PKG.
	31-216	SPARK PLUG CARBON SUPPRESSOR Fits screw-on type terminals	1
	31-218	SLIP-ON TYPE SUPPRESSOR Super wire wound	1
	31-220	DISTRIBUTOR MODEL SUPPRESSOR Super wire wound	1
	31-200	DISTRIBUTOR TYPE SUPPRESSOR Cable type for splicing cables	24
	31-212	SLIP ON CARBON TYPE SUPPRESSOR Fits all cars	1
	31-214	DISTRIBUTOR MODEL SUPPRESSOR Carbon type	1

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

Net

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Charles T. Gamble Industries

PRECISION WIRE WOUND RESISTORS & NETWORKS

Charles T. Gamble Industries has engineered and designed non-inductive precision wire wound resistors to meet the requirements of Mil-R-93D. These resistors are completely sealed against the effects of high humidity and salt water immersion cycling. The material used in the manufacture of our resistors has a very high dielectric strength. The bobbin material used in winding the resistors is one and the same as the encapsulating material. All resistors use resistance wire with very low thermal E.M.F. to the copper leads. Where thermal effects can be disregarded, welded construction with nickel alloy leads may be specified.

Standard temperature coeficient is ±10 PPM/°C. Lower T.C.'s, and T.C.'s as high as 6000 PPM/°C can be supplied.

Tolerance available (non power styles): 1%, 0.5%, 0.1%, 0.05%, 0.025%, 0.02% and 0.01%. Resistors with tolerances of 0.1% and below are stabilized by artificial aging and temperature cycling.

NETWORKS: RC NETWORKS, LADDER NETWORKS, VOLTAGE DIVIDERS, BINARY NETWORKS

Sub-miniature Axial lead Precision resistors have been designed for applications where space is a prime factor.

Encapsulated printed circuit resistors are designed for printed circuit board application, where space is a factor.

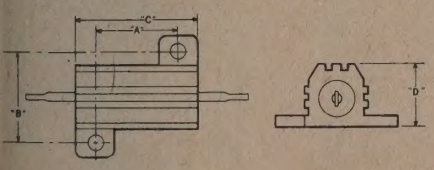
Radial lug type resistors have been designed to meet the requirements of Mil-R-93D.

All resistors are hermetically sealed with epoxy resin to protect the windings against the effects of high humidity and salt water immersion cycling. Resistors can either be inductive or non-inductive wound.

The materials used in the construction of radial lug type resistors are identical to those used in the construction of axial lead types.

These resistors are supplied with a thru hole for mounting to the chassis by means of a #6 thru bolt.

HEAT SINK MOUNTED PRECISION WIREWOUND POWER RESISTORS



OWER ATING	DIMENSIONS A	B	C	D	MAXIMUM OHMS
WATT	.562	.625	.750	.390	20,000
WATT	.718	.781	1.062	.542	60,000
WATT	1.563	.844	1.968	.610	70,000

gs shown are based upon use of appropriate chassis mounting.

STANDARD AXIAL LEAD PRECISION RESISTORS

Type	Military Specs. New	Old	Commercial Wattage Rating	Max. Resist. Based on .0007 E Alloy	Military Wattage Rating	Max. Volts	Size Length	Dia.
0808AL			.125W	300K		200V	¼″	¼″
1108AL	RB56		.125W	350K	.125W	250V	11/32″	¼″
1608AL	RB55	AFRT 10	.250W	400K	.15 W	184V	½″	¼″
1208AL			.200W	350K	.250W	225V	⅜″	¼″
2408AL	RB54	AFRT 11	.333W	1 meg.	.250W	300V	¾″	¼″
2412AL	RB53	AFRT 12	.500W	1.2 meg.	.333W	300V	¾″	⅜″
3212AL	RB52	AFRT 13	1.000W	2 meg.	.400W	600V	1″	⅜″
1616AL			.500W	1.3 meg.		300V	½″	½″
3216AL	RF57	AFRT 14	1.000W	3 meg.	.750W	600W	1″	½″
4816AL	RB58	AFRT 15	2.000W	6 meg.	1.000W	900V	1½″	½″
6416AL	RB59	AFRT 16	2.500W	10 meg.	1.250W	1200V	2″	½″
2008AL			.500W	.425 meg.		300V	⅝″	¼″
1612AL			.400W	.500 meg.		300V	½″	⅜″
2012AL			.750W	.600 meg.		600V	⅝″	⅜″
3208AL			.500W	1.1 meg.		300V	1″	¼″
2016AL			.750W	2 meg.		600V	⅝″	½″
1212AL			.250W	1 meg.		225V	⅜″	⅜″

SUB-MINIATURE AXIAL LEAD PRECISION RESISTORS

Type	Commercial Wattage Rating	Maximum Resistance based on .0007 E Alloy	Maximum Voltage	Size Length	Dia.
500156AL	.1W	70K	85 Volts	½″	5/32″
625156AL	.15W	100K	125 Volts	⅝″	5/32″
375125AL	.125	50K	72 Volts	⅜″	1/8″
109250AL	.120	25K	50 Volts	¼″	7/64″
375187AL	.1W	40K	65 Volts	⅜″	3/16″
375109AL	.120	30K	55 Volts	⅜″	7/64″
375093AL	.1	20K	55 Volts	⅜″	3/32″

ENCAPSULATED PRINTED CIRCUIT RESISTORS

Type	Military Specs.	Commercial Wattage	Military Wattage	Max. Volts	Max. Resist. Based on .0007	Length	Sizes Dia.	Lead Spacing	Lead Length
0808PC		.125W		90V	70K	¼″	¼″	.100	1″
1208PC		.200W		200V	200K	⅜″	¼″	.100	1″
1608PC		.250W		184V	400K	½″	¼″	.100	1″
2408PC		.333W		300V	1 meg.	¾″	¼″	.100	1″
3208PC		.500W		750V	1.1 meg.	1″	¼″	.100	1″
1008PC	RB71	.250W	.125W	240V	250K	5/16″	¼″	.200	1″
1612PC	RB70	.500W	.250W	150V	.301 meg.	½″	⅜″	.200	1″
3212PC		1.000W		1350V	1.75 meg.	1″	⅜″	.250	1″
3232PC		1.250W		1700V	2.50 meg.	1″	½″	.250	1″

STANDARD RADIAL LUG PRECISION RESISTORS

Type	Military Specs. New	Old	Commercial Wattage	Military Wattage Rating	Maximum Voltage	Max. Resist. Based on .0007	Size Length	Dia.
1616RLU	RB08	AFRT 17	.500	¼W	300V	885K	½″	½″
2020RLU	RB16	AFRT 18	.666	⅓W	300V	1 meg.	⅝″	⅝″
3220RLU	RB17	AFRT 19	1.000	½W	600V	2.5 meg.	1″	⅝″
4024RLU	RB18		1.500	¾W	600V	6.5 meg.	1¼″	¾″
6828RLU	RB19		2.000	1W	900V	12 meg.	2⅛″	⅞″

CHARLES T. GAMBLE INDUSTRIES
Precision Wire Wound Resistors

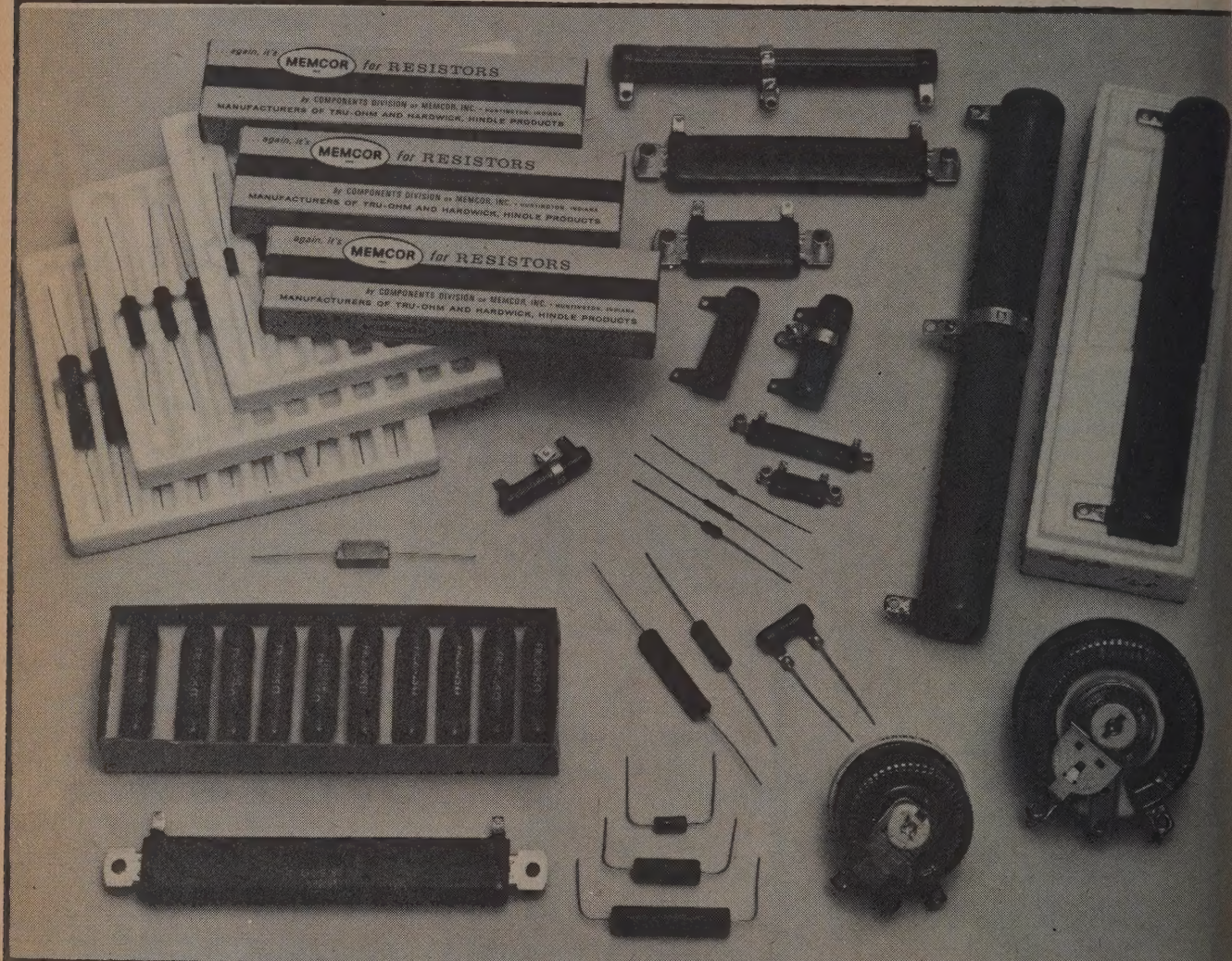
MEMCOR COMPONENTS

POWER WIREWOUND VITREOUS ENAMELED RESISTORS . . . RHEOSTATS

. . . another product of

LTV ELECTROSYSTEMS, INC

COMPONENTS OPERATION — MEMCOR DIVISION



SEE FOLLOWING PAGES
FOR COMPLETE CATALOG
OF ALL TYPES OF
RESISTORS AND RHEOSTATS
AVAILABLE

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MEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.

. . . VAL 3 . . . VAL 5

Originators of TRU-OHM & HARDWICK, HINDLE Products

RESISTORS

POWER
WIRE WOUND
VITREOUS ENAMELED

MEMCOR Components . . . resistors and rheostats . . . are manufactured by the MEMCOR Components facility of the MEMCOR Division of LTV Electrosystems, Inc.

MEMOR Components represent the cumulative design skill and production knowledge of two great lines of resistance products — Tru-Ohm and Hardwick, Hindle. This "second generation" product maintains all of the proven features of both original lines plus the manufacturing refinements that can only result from industry experience.

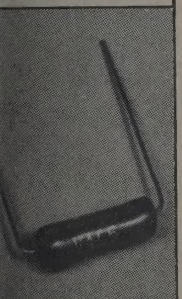
The values of resistance listed in this section are in stock for immediate delivery—special resistance values or terminal diversions are readily available. **When ordering** — identify type and value of resistor by stock number.

ITREOUS IAL LEADS VAL 3

3 WATTS)

RE: 3/32" x 7/16"

IGHT: .002 LBS.



e VAL type ıds itself to plications ıere size is a ctor.

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2701	9.1	2707B	62	2733A	450	2738B	2500	2755
1.1	2701A	10	2708	68	2733B	470	2739	2700	2756
1.2	2701B	11	2708A	75	2724	500	2740	3000	2757
1.3	2701C	12	2709	82	2725	510	2740A	3300	2758
1.5	2702	13	2709A	91	2725A	560	2741	3500	2758A
1.6	2702A	15	2710	100	2726	600	2742	3600	2758B
1.8	2702B	16	2710A	110	2726A	620	2742A	3900	2759
2	2703	18	2711	120	2727	680	2743	4000	2760
2.2	2703A	20	2712	130	2727A	700	2744	4300	2760A
2.4	2703B	22	2713	150	2728	750	2745	4500	2760B
2.7	2703C	24	2713A	160	2728A	800	2746	4700	2761
3	2704	25	2714	180	2729	820	2747	5000	2762
3.3	2704A	27	2715	200	2730	900	2748	5100	2762A
3.6	2704B	30	2716	220	2731	910	2748A	5600	2763
3.9	2704C	33	2717	225	2732	1000	2749	6000	2764
4	2705	35	2717A	240	2732A	1100	2749A	6200	2764A
4.3	2705A	36	2717B	250	2733	1200	2750	6800	2765
4.7	2705B	39	2718	270	2734	1300	2750A	7000	2766
5	2706	40	2719	300	2735	1400	2750B	7500	2767
5.1	2706A	43	2719A	330	2736	1500	2751	8000	2768
5.6	2706B	47	2720	350	2736A	1600	2751A	8200	2769
6.2	2706C	50	2721	360	2736B	1800	2752	9000	2770
6.8	2706D	51	2721A	390	2737	2000	2753	9100	2770A
7.5	2707	56	2722	400	2738	2200	2754	10K	2771
8.2	2707A	60	2723	430	2738A	2400	2754A		

VITREOUS IAL LEADS VAL 5

(5 WATTS)

RE: 1/4" x 7/8"

IGHT: .006 LBS.

ıe VAL type n also be sup- ed taped or eled for auto- atic insertion.

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
2.4	2803B	22	2813	160	2828A	820	2846	5000	2860A
2.7	2803C	24	2813B	180	2829	900	2847	5100	2861
3	2804	25	2814	200	2830	910	2847A	5600	2862
3.3	2804A	27	2815	220	2831	1000	2848	6000	2863
3.6	2804B	30	2816	240	2831A	1100	2848A	6200	2863A
3.9	2804C	33	2817	250	2832	1200	2849	6800	2864
4	2805	35	2817A	270	2833	1300	2849A	7000	2865
4.3	2805A	36	2817B	300	2834	1400	2849B	7500	2866
4.7	2805B	39	2818	330	2835	1500	2850	8000	2867
5	2806	40	2819	350	2835A	1600	2850A	8200	2868
5.1	2806A	43	2819A	360	2835B	1800	2851	9000	2869
5.6	2806B	47	2820	390	2836	2000	2852	9100	2869A
6.2	2806C	50	2821	400	2837	2200	2853	10K	2870
6.8	2806D	51	2821A	430	2837A	2400	2853A	11K	2869B
7.5	2807	56	2822	450	2837B	2500	2854	12K	2871
8.2	2807A	62	2822A	470	2838	2700	2855	13K	2871A
9.1	2807B	68	2823	500	2839	3000	2856	14K	2871B
10	2808	75	2824	510	2839A	3300	2857	15K	2872
11	2808A	82	2825	560	2840	3500	2857A	16K	2872A
12	2809	91	2825A	600	2841	3600	2857B	17K	2872B
13	2809A	100	2826	620	2841A	3900	2858	18K	2873
15	2810	110	2826A	680	2842	4000	2859	20K	2874
16	2810A	120	2827	700	2843	4300	2859A	22K	2875
18	2811	130	2827A	750	2844	4500	2859B	24K	2875A
20	2812	150	2828	800	2845	4700	2860	25K	2876

ıms	Stock No.
	2801A
1	2801B
2	2801C
3	2801D
5	2802
6	2802A
8	2802B
	2803
2	2803A

MEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.

... VAL 10

... FRL 5 ... FRL 10

Originators of TRU-OHM & HARDWICK, HINDLE Products

RESISTOR

POWER
WIRE WOUND
VITREOUS ENAME

VITREOUS AXIAL LEADS

VAL 10

(10 WATTS)

CORE: 5/16" x 1 11/16"
WEIGHT: .014 LBS.

Ohms	Stock No.
1	2901A
1.1	2901B
1.2	2901C
1.3	2901D
1.5	2902
1.6	2902A
1.8	2902B
2	2903
2.2	2903A
2.4	2903B
2.7	2903C
3	2904
3.3	2904A
3.6	2904B
3.9	2904C
4	2905
4.3	2905A

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
4.7	2905B	40	2919	360	2935B	1800	2951	9100	296
5	2906	43	2919A	390	2936	2000	2952	10K	297
5.1	2906A	47	2920	400	2937	2200	2953	11K	297
5.6	2906B	50	2921	430	2937A	2400	2953A	12K	297
6.2	2906C	51	2921A	450	2937B	2500	2954	13K	297
6.8	2906D	56	2922	470	2938	2700	2955	14K	297
7.5	2907	62	2922A	500	2939	3000	2956	15K	297
8.2	2907A	68	2923	510	2939A	3300	2957	16K	297
9.1	2907B	75	2924	560	2940	3500	2957A	17K	297
10	2908	82	2925	600	2941	3600	2957B	18K	297
11	2908A	91	2925A	620	2941A	3900	2958	20K	297
12	2909	100	2926	670	2942	4000	2959	22K	297
13	2909A	110	2926A	680	2942A	4300	2959A	24K	297
15	2910	120	2927	700	2943	4500	2959B	25K	297
16	2910A	130	2927A	750	2944	4700	2960	27K	297
18	2911	150	2928	800	2945	5000	2961	30K	297
20	2912	160	2928A	820	2946	5100	2961A	33K	297
22	2912A	180	2929	900	2947	5600	2962	35K	297
24	2912B	200	2930	910	2947A	6000	2963	36K	297
25	2914	220	2931	1000	2948	6200	2963A	39K	298
27	2915	240	2931A	1100	2948A	6800	2964	40K	298
30	2916	250	2932	1200	2949	7000	2965	43K	298
33	2917	270	2933	1300	2949A	7500	2966	45K	298
35	2917A	300	2934	1400	2949B	8000	2967	47K	298
36	2917B	330	2935	1500	2950	8200	2968	50K	298
39	2918	350	2935A	1600	2950A	9000	2969	51K	298

These widely-used fixed wire wound vitreous enameled resistors have solidly anchored welded tabs (lugs) and shock-absorbing mounting brackets to withstand vibration. Multi-layer vitreous enamel coating locks the uniformly-wound resistance wire in position and also seals out moisture. MEMCOR resistors have a high-temperature stability and a compatible coefficient of expansion which prevents crazing and cracking.

MEMCOR resistors have a standard tolerance of ±5% on all values above one OHM and a ±10% tolerance on resistance values lower than one OHM (available in closer tolerances).

All MEMCOR resistors listed in this section manufactured to the rigid requirements of MIL-R- Specifications . . . MEMCOR res tors meet and exceed all requi ments of this specification.

FR and FRL TYPES

MEMCOR fixed wire wound vit ous enameled types in 5, and 20 watt sizes (FRL) are lig enough to be mounted by attach leads and are also available wit out (FR) tuned leads.

VITREOUS FIXED LEADS

FRL 5

(5 WATTS)

CORE: 5/16" x 3/16" x 1"
WEIGHT: .012 LBS.
MOUNTING BY LEADS

Ohms	Stock No.
.5	1001
1	1002
1.5	1003
2	1004

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock N
3	1005	100	1019	800	1033	4500	1047
4	1006	125	1020	900	1034	5000	1048
5	1007	150	1021	1000	1035	6000	1049
7.5	1008	200	1022	1100	1036	7000	1050
10	1009	225	1023	1200	1037	7500	1051
12	1010	250	1024	1250	1038	8000	1052
15	1011	300	1025	1500	1039	9000	1053
20	1012	350	1026	1750	1040	10K	1054
25	1013	400	1027	2000	1041	12.5K	1055
30	1014	450	1028	2250	1042	15K	1056
35	1015	500	1029	2500	1043	17.5K	1057
40	1016	600	1030	3000	1044	20K	1058
50	1017	700	1031	3500	1045	22.5K	1059
75	1018	750	1032	4000	1046	25K	1060

VITREOUS FIXED LEADS

FRL 10

(10 WATTS)

CORE: 5/16" x 3/16" x 1 3/4"
WEIGHT: .019 LBS.
MOUNTING BY LEADS

Ohms	Stock No.
.5	1101
1	1102
1.5	1103
2	1104

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock N
3	1105	100	1119	800	1133	4500	1147	16K	1162
4	1106	125	1120	900	1134	5000	1148	17.5K	1163
5	1107	150	1121	1000	1135	6000	1149	18K	1164
7.5	1108	200	1122	1100	1136	7000	1150	20K	1165
10	1109	225	1123	1200	1137	7500	1151	22.5K	1166
12	1110	250	1124	1250	1138	8000	1152	25K	1167
15	1111	300	1125	1500	1139	8500	1153	30K	1168
20	1112	350	1126	1750	1140	9000	1154	35K	1169
25	1113	400	1127	2000	1141	10K	1155	40K	1170
30	1114	450	1128	2250	1142	11K	1156	45K	1171
35	1115	500	1129	2500	1143	12K	1157	50K	1172
40	1116	600	1130	3000	1144	12.5K	1158		
50	1117	700	1131	3500	1145	13.5K	1159		
75	1118	750	1132	4000	1146	15K	1161		

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MEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.

...FRL 20

...FR 5 ...FR 10 ...FR 20

Originators of TRU-OHM & HARDWICK, HINDLE Products

RESISTORS

POWER
WIRE WOUND
VITREOUS ENAMELED

ITREOUS ED LEADS

FRL 20

(0 WATTS)

E: 3/16" x 1/4" x 2"
GHT: .033 LBS.
NTING BY LEADS

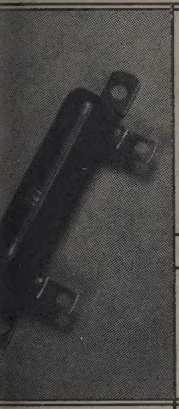
Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
.5	1201	250	1214	1500	1227	7000	1241	45K	1252
1	1202	300	1215	1750	1228	7500	1242	50K	1253
3	1203	350	1216	2000	1230	8000	1243	55K	1254
4	1204A	400	1217	2250	1231	9K	1243A	60K	1255
5	1204	500	1218	2500	1233	10K	1244	65K	1256
10	1205	650	1219	2750	1234	12.5K	1245	70K	1257
15	1206	700	1220	3000	1235	15K	1246	75K	1258
25	1207	750	1221	3500	1236	20K	1247	80K	1259
50	1208	800	1222	4000	1237	25K	1248	85K	1260
75	1209	910	1223A	4500	1238	30K	1249	90K	1261
100	1210	1000	1224	5000	1239	35K	1250	95K	1262
150	1211	1200	1225	6000	1240	40K	1251	100K	1263
200	1213	1250	1226						

e FR type resistors can be unted by brackets, verti- through bolts or by their s.

e sturdy terminals are hot- ned for soldering ease, and e holes in the terminals are suitable size to accommo- te screws.

Mounting brackets are furnished **only** on request at **no** additional cost. If required, please specify bracket stock number.

Standard packaging — 5, 10 and 20 watt sizes are packed 10 units per carton and larger sizes are packed individually.



VITREOUS FIXED FR 5 (5 WATTS)

CORE: 3/16" x 3/16" x 1"
WEIGHT: .012 LBS.

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
.5	4401	4	4406	125	4420	900	4434	5000	4448
1	4402	5	4407	150	4421	1000	4435	6000	4449
1.5	4403	7.5	4408	200	4422	1100	4436	7000	4450
2	4404	10	4409	225	4423	1200	4437	7500	4451
3	4405	12	4410	250	4424	1250	4438	8000	4452
		15	4411	300	4425	1500	4439	9000	4453
		20	4412	350	4426	1750	4440	10K	4454
		25	4413	400	4427	2000	4441	12.5K	4455
		30	4414	450	4428	2250	4442	15K	4456
		35	4415	500	4429	2500	4443	17.5K	4457
		40	4416	600	4430	3000	4444	20K	4458
		50	4417	700	4431	3500	4445	22.5K	4459
		75	4418	750	4432	4000	4446	25K	4460
		100	4419	800	4433	4500	4447		

ITREOUS FIXED FR 10

(10 WATTS)

E: 3/16" x 3/16" x 1 3/4"
GHT: .019 LBS.
. BRKT.: P4989

ms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
	4501	3	4505	100	4519	800	4533	4500	4547	16K	4562
	4502	4	4506	125	4520	900	4534	5000	4548	17.5K	4563
5	4503	5	4507	150	4521	1000	4535	6000	4549	18K	4564
	4504	7.5	4508	200	4522	1100	4536	7000	4550	20K	4565
		10	4509	225	4523	1200	4537	7500	4551	22.5K	4566
		12	4510	250	4524	1250	4538	8000	4552	25K	4567
		15	4511	300	4525	1500	4539	8500	4553	30K	4568
		20	4512	350	4526	1750	4540	9000	4554	35K	4569
		25	4513	400	4527	2000	4541	10K	4555	40K	4570
		30	4514	450	4528	2250	4542	11K	4556	45K	4571
		35	4515	500	4529	2500	4543	12K	4557	50K	4572
		40	4516	600	4530	3000	4544	12.5K	4558		
		50	4517	700	4531	3500	4545	13.5K	4559		
		75	4518	750	4532	4000	4546	15K	4561		

ITREOUS FIXED FR 20

(20 WATTS)

RE: 3/16" x 1/4" x 2"
IGHT: .033 LBS.
G. BRKT.: P3749

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
.5	4601	300	4615	2000	4630	10K	4644	75K	4658
1	4602	350	4616	2250	4631	12.5K	4645	80K	4659
3	4603	400	4617	2500	4633	15K	4646	85K	4660
4	4603A	500	4618	2750	4634	20K	4647	90K	4661
5	4604	650	4619	3000	4635	25K	4648	95K	4662
10	4605	700	4620	3500	4636	30K	4649	100K	4663
15	4606	750	4621	4000	4637	35K	4650		
25	4607	800	4622	4500	4638	40K	4651		
50	4608	910	4623A	5000	4639	45K	4652		
75	4609	1000	4624	6000	4640	50K	4653		
100	4610	1200	4625	7000	4641	55K	4654		
150	4611	1250	4626	7500	4642	60K	4655		
200	4613	1500	4627	8000	4643	65K	4656		
250	4614	1750	4628	9000	4663A	70K	4657		

MEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.
. . . FR 25 . . . FR 50
. . . FR 100 . . . FR 160 . . . FR 200
Originators of TRU-OHM & HARDWICK, HINDLE Products

RESISTOR

POWER
WIRE WOUND
VITREOUS ENAME

VITREOUS FIXED FR 25 (25 WATTS)

CORE: 3/16" x 3/16" x 2"
WEIGHT: .051 LBS.
MTG. BRKT.: P3747

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
1	1301	75	1310	1000	1321	6000	1330	35K	133
2	1302	100	1311	1500	1323	7500	1331	40K	133
3	1303	150	1312	2000	1324	10K	1332	50K	134
4	1304	200	1313	2500	1325	12K	1333	60K	134
5	1305	250	1314	3000	1326	15K	1334	70K	134
10	1306	500	1317	3500	1327	20K	1335	75K	134
25	1308	750	1318	4000	1328	25K	1336	80K	134
50	1309	800	1319	5000	1329	30K	1337	100K	134

VITREOUS FIXED FR 50 (50 WATTS)

CORE: 3/16" x 3/16" x 4"
WEIGHT: .082 LBS.
MTG. BRKT.: P3747

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
1	1401	100	1410	2000	1421	12K	1430	75K	143
2	1402	150	1411	2500	1422	12.5K	1431	100K	144
3	1403	200	1412	3000	1423	15K	1432	125K	144
4	1404	250	1413	4000	1424	20K	1433	150K	144
5	1405	500	1416	5000	1425	25K	1434	175K	144
10	1406	750	1417	6000	1426	30K	1435	200K	144
25	1407	800	1418	7500	1427	35K	1436	225K	144
50	1408	1000	1419	8000	1428	40K	1437	250K	144
75	1409	1500	1420	10K	1429	50K	1438		

VITREOUS FIXED FR 100 (100 WATTS)

CORE: 3/4" x 1/2" x 6 1/2"
WEIGHT: .200 LBS.
MTG. BRKT.: P3689

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
1	1501	75	1509	1500	1518	20K	1529	75K	153
2	1502	100	1510	2000	1519	25K	1530	100K	153
3	1503	125	1511	2500	1520	30K	1531		
4	1504	150	1512	3000	1521	35K	1532		
5	1505	250	1513	5000	1525	40K	1533		
10	1506	500	1514	7500	1526	50K	1534		
25	1507	750	1515	10K	1527	60K	1535		
50	1508	1000	1516	15K	1528	70K	1536		

VITREOUS FIXED FR 160 (160 WATTS)

CORE: 1 1/8" x 3/4" x 8 1/2"
WEIGHT: .445 LBS.
MTG. BRKT.: P4898

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
1	1601	75	1610	1500	1618	20K	1629	80K	163
2	1602	100	1611	2000	1619	25K	1630	100K	163
3	1603	125	1611A	2500	1620	30K	1631		
4	1604	150	1612	3000	1621	35K	1632		
5	1605	250	1614	5000	1625	40K	1633		
10	1606	500	1615	7500	1626	50K	1634		
25	1608	750	1616	10K	1627	60K	1635		
50	1609	1000	1617	15K	1628	75K	1636		

VITREOUS FIXED FR 200 (200 WATTS)

CORE: 1 1/8" x 3/4" x 10 1/2"
WEIGHT: .740 LBS.
MTG. BRKT.: P4898

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	1701	75	1709	2000	1717	25K	1728
2	1702	100	1710	2500	1718	30K	1729
3	1703	150	1711	3000	1719	35K	1730
4	1704	250	1712	5000	1723	40K	1731
5	1705	500	1713	7500	1724	50K	1732
10	1706	750	1714	10K	1725	60K	1733
25	1707	1000	1715	15K	1726	75K	1734
50	1708	1500	1716	20K	1727	100K	1735

ADJUSTABLE VALUE RESISTORS

MEMCOR adjustable resistors are used in applications where it is necessary to make adjustment in resistance periodically . . . where intermediate values of resistance are needed . . . or when multi-tabs are required. The AR types are especially useful in laboratories for experimental work, circuit design, etc.

A section of the winding is exposed on one side to enable the adjustment band to make contact at any desired point. This adjustable band **should not** be moved unless the screw holding it in position is completely loosened to prevent abrading or possible damage to the resistance wire.

Adjustable lugs are formed to the exact co tour of the body of the resistor to assu positive contact with the exposed section winding. Standard adjustable bands are screw driven style and have an embossed area o the lug.

Special adjustable lugs are available with silver contact . . . also, bakelite thumb scre type bands are available.

The AR wattage ratings (and the ±10% tole ance) given in this section are for **the enti** resistor. Never exceed the maximum ratin through any portion of the resistor.

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IEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.

AR 10 . . . AR 25 . . . AR 50 . . . AR 75 . . . AR 100 . . . AR 160 . . . AR 200

Originators of TRU-OHM & HARDWICK, HINDLE Products

RESISTORS

POWER
WIRE WOUND
VITREOUS ENAMELED

VITREOUS ADJUSTABLE AR 10 (10 WATTS)

CORE: 3/16" x 3/16" x 1¾"
WEIGHT: .019 LBS.
MTG. BRKT.: P4989

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2001	75	2011	750	2021	4000	2031
2	2002	100	2012	800	2022	4500	2032
3	2003	150	2013	1000	2023	5000	2033
5	2004	200	2014	1250	2024	6000	2034
7.5	2005	250	2015	1500	2025	7000	2035
10	2006	300	2016	2000	2026	7500	2036
15	2007	350	2017	2250	2027	8000	2037
20	2008	400	2018	2500	2028	8500	2038
25	2009	500	2019	3000	2029	9000	2039
50	2010	600	2020	3500	2030	10K	2040

ITREOUS JUSTABLE AR 25 (25 WATTS)

RE: 3/16" x 3/16" x 2"
IGHT: .052 LBS.
G. BRKT.: P3747

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2101	50	2110	750	2119	3500	2129	10K	2139
2	2102	75	2111	800	2120	4000	2130	12K	2140
3	2103	100	2112	1000	2122	4500	2131	15K	2141
5	2104	150	2113	1250	2133	5000	2132	20K	2142
7.5	2105	200	2114	1500	2124	6000	2133	25K	2143
10	2106	250	2115	2000	2125	7000	2134		
15	2107	300	2116	2250	2126	7500	2136		
20	2108	400	2117	2500	2127	8000	2137		
25	2109	500	2118	3000	2128	9000	2138		

ITREOUS JUSTABLE AR 50 (50 WATTS)

RE: 3/16" x 3/16" x 4"
IGHT: .096 LBS.
G. BRKT.: P3747

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2201	100	2210	1000	2219	4500	2228	15K	2238
2	2202	150	2211	1250	2220	5000	2229	20K	2239
3	2203	200	2212	1500	2221	6000	2230	25K	2240
4	2204	250	2213	2000	2222	7000	2231	30K	2241
5	2205	300	2214	2250	2223	7500	2233	40K	2242
10	2206	400	2215	2500	2224	8000	2234	50K	2243
25	2207	500	2216	3000	2225	9000	2235	60K	2244
50	2208	750	2217	3500	2226	10K	2236	80K	2246
75	2209	800	2218	4000	2227	12K	2237	100K	2247

ITREOUS JUSTABLE AR 75 (75 WATTS)

RE: 3/16" x 3/16" x 6"
IGHT: .150 LBS.
G. BRKT.: P3747

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2301	200	2312	2000	2322	7500	2333	40K	2343
2	2302	250	2313	2250	2323	8000	2334	45K	2344
3	2303	300	2314	2500	2324	9000	2335	50K	2345
4	2304	400	2315	3000	2325	10K	2336	60K	2346
5	2305	500	2316	3500	2326	12K	2337	80K	2348
10	2306	750	2317	4000	2327	15K	2338	100K	2349
15	2307	800	2318	4500	2328	20K	2339		
25	2308	1000	2319	5000	2329	25K	2340		
50	2309	1250	2320	6000	2330	30K	2341		
100	2311	1500	2321	7000	2331	35K	2342		

ITREOUS JUSTABLE AR 100 (00 WATTS)

E: ¾" x ½" x 6½"
GHT: .200 LBS.
. BRKT.: P3689

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2401	100	2409	10K	2424	100K	2433
2	2402	250	2411	15K	2425		
3	2403	500	2413	20K	2626		
4	2404	1000	2415	25K	2427		
5	2405	1500	2416	30K	2428		
10	2406	2500	2418	40K	2429		
25	2407	5000	2421	50K	2430		
50	2408	6000	2422	60K	2432		

Caution — the voltage should be off when making adjustments to prevent any possible injury to the operator from high voltage.

ITREOUS JUSTABLE AR 160 (160 WATTS)

E: 1⅛" x ¾" x 8½"
GHT: .460 LBS.
. BRKT.: P4898

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2501	100	2510	10K	2524	80K	2532
2	2502	250	2512	15K	2525	100K	2534
3	2503	500	2513	20K	2526		
4	2504	1000	2514	25K	2527		
5	2505	1500	2515	30K	2528		
10	2506	2500	2517	40K	2529		
25	2508	3500	2519	50K	2530		
50	2509	5000	2522	60K	2531		

ITREOUS JUSTABLE AR 200 (200 WATTS)

CORE: 1⅛" x ¾" x 10½"
WEIGHT: .670 LBS.
MTG. BRKT.: P4898

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	2601	25	2607	1500	2613	25K	2625
2	2602	50	2608	2500	2615	30K	2626
3	2603	100	2609	5000	2620	40K	2627
4	2604	250	2610	10K	2622	50K	2628
5	2605	500	2611	15K	2623	60K	2630
10	2606	1000	2612	20K	2624	100K	2631

MEMCOR COMPONENTS

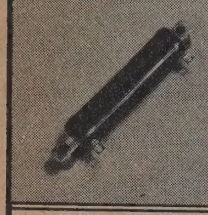
A DIVISION OF LTV ELECTROSYSTEMS, INC.

... MOR 10 ... MOR 20
... OR 30 ... OR 40 ... OR 55

Originators of TRU-OHM & HARDWICK, HINDLE Products

RESISTOR

POWER
WIRE WOUND
VITREOUS ENAME



VITREOUS MIDGET OVAL MOR 10 (10 WATTS)

CORE: ⅜" x ¾"
LENGTH: 1 13/16"
MTG. CENTERS: 1"

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
1	3001	30	3009	250	3017	1500	302
2	3002	40	3010	300	3018	1750	302
5	3003	50	3011	400	3019	2000	302
7.5	3004	75	3012	500	3020	2500	302
10	3005	100	3013	600	3021	3000	302
15	3006	125	3014	750	3022	4000	303
20	3007	150	3015	1000	3023	5000	303
25	3008	200	3016	1250	3024		

VITREOUS MIDGET OVAL MOR 20 (20 WATTS)

CORE: ⅜" x 2"
LENGTH: 2 5/8"
MTG. CENTERS: 2 13/16"

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
1	3201	75	3209	800	3217	4000	3225	25K	323
2	3202	100	3210	1000	3218	5000	3226	30K	323
5	3203	150	3211	1250	3219	6000	3227	35K	323
10	3204	200	3212	1500	3220	7500	3228	40K	323
15	3205	250	3213	2000	3221	10K	3229	50K	323
25	3206	300	3214	2500	3222	12.5K	3230		
40	3207	400	3215	3000	3223	15K	3231		
50	3208	500	3216	3500	3224	20K	3232		

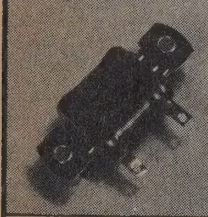
OVAL (FLAT CORE) RESISTORS

MEMCOR wire wound flat core resistors are applicable for individual and/or stack mounting. Their high watt rating per unit of space and the bracket construction which facilitates stacking (integral mounting brackets are supplied as standard)... make the MOR and OR types space savers par excellence.

The line of ovals (OR) was designed particularly for applications where available space is limited ... and the supplementary line of midget ovals (MOR) are very desirable for applications where the size of t components must be kept to an absolute minimu The through bracket helps dissipate heat and duces hot spots. This permits higher wattage d sipation without requiring additional space.

When stack mounted, the OR and MOR resist should be derated. For an ambient temperature higher than 40°C. the maximum rise of these sistors will not exceed 300°C. when mounted or steel panel.

Tapped or adjustable ovals are available.



VITREOUS OVAL OR 30 (30 WATTS)

CORE: 5/16" x 1" x 1¼"
WEIGHT: .055 LBS.

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock
1	3301	40	3306A	500	3313	5000	332
1.5	3301A	50	3307	750	3314	7500	332
2	3302B	75	3307A	1000	3315	10K	332
3	3302	100	3308	1500	3317		
5	3303	150	3309	2000	3318		
10	3304	200	3310	2500	3319		
15	3305	250	3311	3000	3320		
25	3306	400	3312	4000	3322		

VITREOUS OVAL OR 40 (40 WATTS)

CORE: 5/16" x 1" x 2"
WEIGHT: .075 LBS.

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	3401	25	3406	400	3412	3500	3421
1.5	3401A	40	3406A	500	3413	5000	3423
2	3402A	50	3407	750	3414	7500	3424
3	3402	75	3407A	1000	3415	10K	3425
4	3403A	100	3408	1500	3417	15K	3426
5	3403	150	3409	2000	3418	20K	3427
7.5	3404A	200	3410	2500	3419	25K	3428
10	3404	250	3411	3000	3420		

VITREOUS OVAL OR 55 (55 WATTS)

CORE: 5/16" x 1" x 3½"
WEIGHT: .130 LBS.

Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.	Ohms	Stock No.
1	3501	25	3506	400	3512	4000	3522
1.5	3501A	40	3506A	500	3513	5000	3523
2	3502A	50	3507	750	3514	7500	3524
3	3502	75	3507A	1000	3515	10K	3525
4	3503A	100	3508	1500	3517	15K	3526
5	3503	150	3509	2000	3518	20K	3527
7.5	3504A	200	3510	2500	3519	25K	3528
10	3504	250	3511	3000	3520	30K	3529

MOULDED SILICONE RESISTORS

These resistors will operate at 350°C. (660°F.) and will withstand thermal shocks to minus 55°C. Becau of the moulded construction the resistors are effectively hermetically sealed and will withstand seve moisture conditions without deterioration.

The construction of the resistors are uniform in all dimensions within a few thousandths of an inch, whi facilitates their use in automatic-insertion machinery... for which use they may be obtained specia packaged. They will improve the appearance of any assembly in which they are used.

Temperature co-efficients of plus or minus 20 parts per million per C. degree are standard.

The moulding compound used in these resistors was developed through research and development exten ing over several years, and represents a marked advance in the "state-of-the-art" for such compound

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MEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.

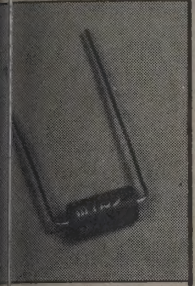
... MAL 3

Originators of TRU-OHM & HARDWICK, HINDLE Products

RESISTORS

SILICONE MOULDED

MOULDED
AIAL LEADS
MAL 3
(3 WATTS)
OSE TOLERANCE
% IN STOCK



hms	Stock No.
00	3M10
21	3M11
50	3M12
82	3M13
00	3M14
21	3M15
49	3M16
74	3M17
32	3M18
92	3M19
75	3M20
99	3M21
62	3M22
81	3M23
50	3M24
25	3M25
.00	3M26
.02	3M27
.05	3M28
.07	3M29
.10	3M30
.13	3M31
.15	3M32
.18	3M33
.21	3M34
.24	3M35
.27	3M36
.30	3M37
.33	3M38
.37	3M39
.40	3M40
.43	3M41
.47	3M42
.50	3M43
.54	3M44
.58	3M45
.62	3M46
.65	3M47
.69	3M48
.74	3M49
.78	3M50
.82	3M51
.87	3M52
.91	3M53
.96	3M54
2.00	3M55
2.05	3M57
2.10	3M58
2.15	3M59
2.21	3M60
2.26	3M61
2.32	3M62
2.37	3M63
2.43	3M64
2.49	3M65
2.55	3M66

Ohms	Stock No.
2.61	3M67
2.67	3M68
2.74	3M69
2.80	3M70
2.87	3M71
2.94	3M72
3.01	3M73
3.09	3M74
3.16	3M75
3.24	3M76
3.32	3M77
3.40	3M78
3.48	3M79
3.57	3M80
3.65	3M81
3.74	3M82
3.83	3M83
3.92	3M84
4.02	3M85
4.12	3M86
4.22	3M87
4.32	3M88
4.42	3M89
4.53	3M90
4.64	3M91
4.75	3M92
4.87	3M93
4.99	3M94
5.11	3M95
5.23	3M96
5.36	3M97
5.49	3M98
5.62	3M99
5.76	3M100
5.90	3M101
6.04	3M102
6.19	3M103
6.34	3M104
6.49	3M105
6.65	3M106
6.81	3M107
6.98	3M108
7.15	3M109
7.32	3M110
7.50	3M111
7.68	3M112
7.87	3M113
8.06	3M114
8.25	3M115
8.45	3M116
8.66	3M117
8.87	3M118
9.90	3M119
9.31	3M120
9.53	3M121
9.76	3M122
10.0	3M123
10.2	3M124
10.5	3M125
10.7	3M126
11.0	3M127
11.3	3M128
11.5	3M129
11.8	3M130
12.1	3M131
12.4	3M132
12.7	3M133
13.0	3M134
13.3	3M135
13.7	3M136
14.0	3M137
14.3	3M138
14.7	3M139
15.0	3M140
15.4	3M141
15.8	3M142

Ohms	Stock No.
16.2	3M143
16.5	3M144
16.9	3M145
17.4	3M146
17.8	3M147
18.2	3M148
18.7	3M149
19.1	3M150
19.6	3M151
20.0	3M152
20.5	3M153
21.0	3M154
21.5	3M155
22.1	3M156
22.6	3M157
23.2	3M158
23.7	3M159
24.3	3M160
24.9	3M161
25.5	3M162
26.1	3M163
26.7	3M164
27.4	3M165
28.0	3M166
28.7	3M167
29.4	3M168
30.1	3M169
30.9	3M170
31.6	3M171
32.4	3M172
33.2	3M173
34.0	3M174
34.8	3M175
35.7	3M176
36.5	3M177
37.4	3M178
38.3	3M179
39.2	3M180
40.2	3M181
41.2	3M182
42.2	3M183
43.2	3M184
44.2	3M185
45.3	3M186
46.4	3M187
47.5	3M188
48.7	3M189
49.9	3M190
51.1	3M191
52.3	3M192
53.6	3M193
54.9	3M194
56.2	3M195
57.6	3M196
59.0	3M197
60.4	3M198
61.9	3M199
63.4	3M200
64.9	3M201
66.5	3M202
68.1	3M203
69.8	3M204
71.5	3M205
73.2	3M206
75.0	3M207
76.8	3M208
78.7	3M209
80.6	3M210
82.5	3M211
84.5	3M212
86.6	3M213
88.7	3M214
90.9	3M215
93.1	3M216
95.3	3M217
97.6	3M218

Ohms	Stock No.
100	3M219
102	3M220
105	3M221
107	3M222
110	3M223
113	3M224
115	3M225
118	3M226
121	3M227
124	3M228
127	3M229
130	3M230
133	3M231
137	3M232
140	3M233
143	3M234
147	3M235
150	3M236
154	3M237
158	3M238
162	3M239
165	3M240
169	3M241
174	3M242
178	3M243
182	3M244
187	3M245
191	3M246
196	3M247
200	3M248
205	3M249
210	3M250
215	3M251
221	3M252
226	3M253
232	3M254
237	3M255
243	3M256
249	3M257
255	3M258
261	3M259
267	3M260
274	3M261
280	3M262
287	3M263
294	3M264
301	3M265
309	3M266
316	3M267
324	3M268
332	3M269
340	3M270
348	3M271
357	3M272
365	3M273
374	3M274
383	3M275
392	3M276
402	3M277
412	3M278
422	3M279
432	3M280
442	3M281
453	3M282
464	3M283
475	3M284
487	3M285
499	3M286
511	3M287
523	3M288
536	3M289
549	3M290
562	3M291
576	3M292
590	3M293
604	3M294

Ohms	Stock No.
619	3M295
634	3M296
649	3M297
665	3M298
681	3M299
698	3M300
715	3M301
732	3M302
750	3M303
768	3M304
787	3M305
806	3M306
825	3M307
845	3M308
866	3M309
887	3M310
909	3M311
931	3M312
953	3M313
976	3M314
1000	3M315
1020	3M316
1050	3M317
1070	3M318
1100	3M319
1130	3M320
1150	3M321
1180	3M322
1210	3M323
1240	3M324
1270	3M325
1300	3M326
1330	3M327
1370	3M328
1400	3M329
1430	3M330
1470	3M331
1500	3M332
1540	3M333
1580	3M334
1620	3M335
1650	3M336
1690	3M337
1740	3M338
1780	3M339
1820	3M340
1870	3M341
1910	3M342
1960	3M343
2000	3M344
2050	3M345
2100	3M346
2150	3M347
2210	3M348
2260	3M349
2320	3M350
2370	3M351
2430	3M352
2490	3M353
2550	3M354
2610	3M355
2670	3M356
2740	3M357
2800	3M358
2870	3M359
2940	3M360
3010	3M361
3090	3M362
3160	3M363
3240	3M364
3320	3M365
3400	3M366
3480	3M367
3500	3M368
3650	9M369
3740	3M370

Ohms	Stock No.
3830	3M371
3920	3M372
4020	3M373
4120	3M374
4220	3M375
4320	3M376
4420	3M377
4530	3M378
4640	3M379
4750	3M380
4870	3M381
4990	3M382
5110	3M383
5230	3M384
5360	3M385
5490	3M386
5620	3M387
5760	3M388
5900	3M389
6040	3M390
6100	3M391
6340	3M392
6400	3M393
6650	3M394
6810	3M395
6980	3M396
7150	3M397
7320	3M398
7500	3M399
7680	3M400
7870	3M401
8060	3M402
8250	3M403
8450	3M404
8660	3M405
8870	3M406
9090	3M407
9310	3M408
9530	3M409
9760	3M410
10K	3M411
10.2K	3M412
10.5K	3M413
10.7K	3M414
11K	3M415
11.3K	3M416
11.5K	3M417
11.8K	3M418
12.1K	3M419
12.4K	3M420
12.7K	3M421
13K	3M422
13.3K	3M423
13.7K	3M424
14K	3M425
14.3K	3M426
14.7K	3M427
15K	3M428
15.4K	3M429
15.8K	3M430
16.2K	3M431
16.5K	3M432
16.9K	3M433
17.4K	3M434
17.8K	3M435
18.2K	3M436
18.7K	3M437
19.1K	3M438
19.6K	3M439
20K	3M440
20.5K	3M441
21K	3M442
21.5K	3M443
22.1K	3M444

INVENTORY

While most distributors maintain a large and varied stock, they do not represent that they stock all manufacturers' products shown in this MASTER catalog.

ORDERING

It is important, when ordering, to mention specifically the edition and page number, also the catalog number of each item. This will avoid possible confusion and delay.

PRICES

INQUIRE ABOUT LATEST PRICES AND DELIVERY. Prices in this MASTER should not be considered as final.

DISCOUNTS

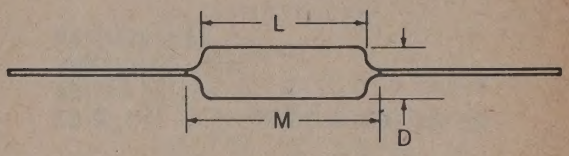
Trade discounts apply in most cases where LIST PRICES are shown.

NYTRONICS, INC.
PRECISION RESISTOR DIVISION

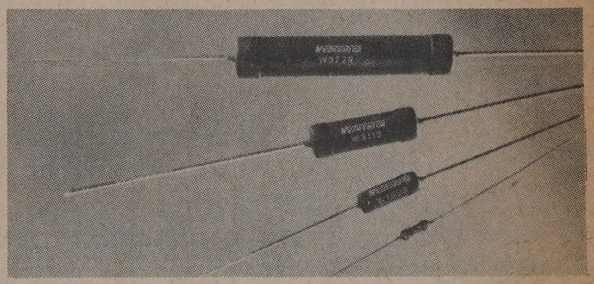
Resistors

NEW! Precision Resistors - WIREWOUND POWER SERIES

tnics Precision Wirewound Power Resistors are engineered
/e maximum performance characteristics and stability.
ed to meet a circuit designer's requirements, Nytronics
Resistors stand out in quality, performance, service,
my, and reliability.



tor Type	Dia. (In.)	Body Length (In.)	Max. Overall Length (In.)	Leads (AWG)	Max. Power (Watts)	Max. Res. (Ohms)	Max. Voltage	Mil. Type	Mil Char.
F4	.078 ± .031	.250 ± .015	.265	24	.40	3.5K	20	—	—
F5	.078 ± .031	.312 ± .015	.327	24	.75	5.0K	30	—	—
F7	.094 ± .031	.406 ± .031	.437	24	1.0	10K	50	RW 70	U
F08	.188 ± .063	.500 ± .063	.563	20	3.0	25K	150	RW 69	V
F10	.187 ± .031	.560 ± .062	.622	20	3.0	25K	150	RW 79	U
F15	.312 ± .031	.875 ± .062	.937	18	5.0	90K	300	RW 74	U
F16	.313 ± .063	1.000 ± .094	1.094	20	6.5	100K	300	RW 67	V
F30	.344 ± .094	1.875 ± .125	1.938	20	11.0	200K	750	RW 68	V
F29	.375 ± .031	1.780 ± .062	1.842	18	10.0	200K	750	RW 78	U

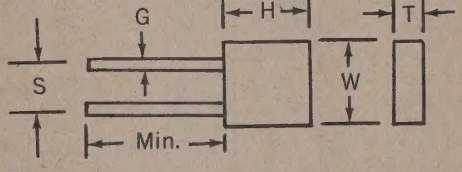


OPTIONAL FEATURES
Tolerance & Ratio Matched Sets
Temperature Coefficient Tracking
Temperature Coefficients 0 ± 5 PPM/C° to +5000 PPM/C°
Tolerances to 0.05%
Weldable Leads—Grade "A" Nickel or
Nickel Variation, Gold Dumet, etc. on request

SPECIFICATIONS
Accuracy to 0.05%
Matching to 0.005%
Temperature Coefficient to ± 5 PPM/C°
Temperature Coefficient Match to 1 PPM/C°

NEW! Molded Resistors - NYTOHMS

onics SQ series, designed for high density packaging in
wood and multiple resistor networks. The SQ series
ts the most stringent requirements of industrial and
mercial applications, and meets all applicable require-
ts of MIL-R-93.



Actual Size

Style	W	H	T	S	G	Max. Ohms	PWR Watts
Q-220*	265	265	140	125	.032	1 M	.12
Q-230**	265	320	140	125	.032	1 M	.12
Q-240**	265	370	140	125	.032	1 M	.12
Q-260***	265	620	140	125	.032	3 M	.25
Q-520*	510	265	140	25	.032	2 M	.25
Q-530**	510	315	140	250	.032	1.7M	.25

otted **Molded ***Molded or Potted

Nytronics Type	Minimum Resistance in Ohms 1%	.5%	.25%	.1%	.05%	Max. Working Volts
SQ-221	10	20	50	100	200	150
SQ-231	10	20	50	100	200	150
SQ-260	5	10	30	100	200	300
SQ-331	5	10	30	80	150	200
SQ-521	5	10	30	80	150	300
SQ-531	5	10	30	80	150	300
SQ-561	1	5	20	50	120	300

	STANDARD SPECIFICATIONS	OPTION SPECIFICATIONS
Winding	Inductive Except (SQ261, SQ561)	Non-Inductive
Operating Temp. Range	—65°C to 145°C	None
Temp. Coefficient of Resistance	Less than 1 ohm: ±90 PPM 1 ohm to less than 10 ohms: ±30 PPM 10 ohms to less than 100 ohms: ±15 PPM 100 ohms and above: ±10 PPM	Special TCR's available From —30 PPM to 6000 PPM
Lead Materials	Tinned Copper	"A" Nickel, Alloy 180 Dumet (also available gold plated)
Military Spec.	Meets or exceeds the requirements of Mil-R-93C, Mil-R-39005	Contact factory

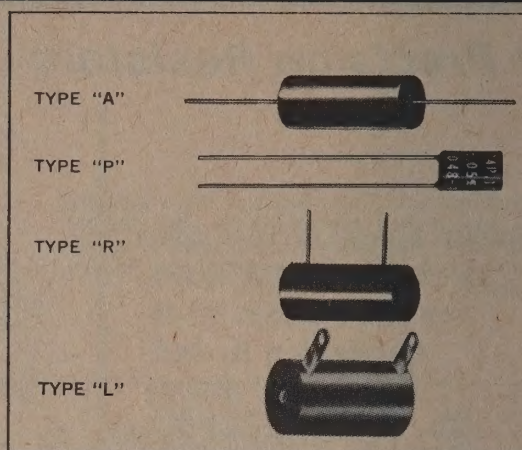
NYTRONICS, INC.
PRECISION RESISTOR DIVISION

Resistors

Precision Wire-Wound Resistors

Miniaturized
High Reliability
Highly Stable
Meets MIL-R-39005 and MIL-R-93

Tolerance 1% to .001%



Nytronics specializes in the design and manufacture of ultra-stable, high reliability, precision wire wound resistors that meet the circuit applications of complex systems.

Note: Lower tolerances also available in molded configurations."

TYPE #	D (IN.)	L (IN.)	LEADS (AWG)	MAX R (OHMS)	MAX P (WATTS)	MAX V (VOLTS)	MIL TYPE #
*A 1003	.100	3/16	24	50K	.050	50	
A 1206	1/8	3/8	22 or 24	130K	.063	150	
A 1208	1/8	1/2	22 or 24	170K	.100	150	
A 1506	.150	3/8	22 or 24	130K	.100	150	
A 1508	.150	1/2	22 or 24	170K	.125	150	
A 1806	3/16	3/8	22 or 24	200K	.125	150	
A 1808	3/16	1/2	22 or 24	260K	.188	150	
A 2504	1/4	1/4	24	250K	.125	150	
A 2505	1/4	5/16	22 or 24	300K	.125	150	
A 2506	1/4	3/8	22 or 24	350K	.188	150	RBR 56
A 2508	1/4	1/2	22 or 24	500K	.250	300	RBR 55
A 2510	1/4	5/8	22 or 24	800K	.333	300	
A 2512	1/4	3/4	20 or 22	1.00M	.500	600	RBR 54
A 2516	1/4	1	20 or 22	1.25M	.500	600	
A 3106	5/16	3/8	22 or 24	1.00M	.250	300	
A 3112	5/16	3/4	20 or 22	1.20M	.500	300	
A 3114	5/16	7/8	20	2.50M	.500	600	
A 3116	5/16	1	20	2.50M	.625	600	
A 3708	3/8	1/2	20	1.75M	.375	300	
A 3709	3/8	9/16	20	2.50M	.438	300	
A 3710	3/8	5/8	20	3.00M	.500	300	
A 3712	3/8	3/4	20	4.00M	.625	600	RBR 53
A 3716	3/8	1	20	5.00M	.750	600	RBR 52
A 3720	3/8	1-3/16	20	5.00M	1.000	600	
A 5008	1/2	1/2	20	3.50M	.500	300	
A 5010	1/2	5/8	20	4.50M	.625	300	
A 5014	1/2	7/8	20	8.00M	.875	600	
A 5016	1/2	1	20	10.00M	1.000	600	RBR 57
A 5020	1/2	1-1/4	20	12.00M	1.250	600	
A 5024	1/2	1-1/2	20	15.00M	1.500	900	RBR 58
A 5028	1/2	1-3/4	20	18.00M	1.750	900	
A 5032	1/2	2	20	20.00M	2.000	1200	RBR 59
A 6209	5/8	9/16	20	4.50M	.750	300	
A 6220	5/8	1-1/4	20	15.00M	1.500	600	
A 7520	3/4	1-1/4	20	20.00M	2.000	600	

TYPE #	D (IN.)	L (IN.)	S (IN.)	LEADS (AWG)	MAX R OHMS)	MAX P (WATTS)	MAX V (VOLTS)	MIL TYPE #
P 2504	1/4	1/4	.150	22	350K	.100	150	
P 2505	1/4	5/16	.150	22	450K	.125	300	
P 2506	1/4	3/8	.150	22	550K	.188	150	
P 2508	1/4	1/2	.150	22	700K	.250	300	
P 2510	1/4	5/8	.150	22	900K	.333	300	
P 2805	.280	5/16	.200	22	450K	.125	300	RBR 71
P 3108	5/16	1/2	.200	22	1.25M	.375	300	
P 3706	3/8	3/8	.200	22	1.00M	.250	300	
P 3708	3/8	1/2	.200	22	1.50M	.375	300	RBR 70
P 3712	3/8	3/4	.200	22	2.00M	.625	600	
P 5008	1/2	1/2	.300	22	1.75M	.500	300	
P 5016	1/2	1	.300	22	3.50M	1.000	600	
L 8734	7/8	2-1/8	1.875	—	40.00M	5.000	1200	RB 19

SPECIFY TYPE "P" FOR PRINTED CIRCUIT LEADS.

MIL STYLE CROSS REFERENCE CHART

OLD MIL-R-9444 PART NUMBER	NYTRONICS' PART NUMBER	NEW USAGE MIL-R-93 PART NUMBER
AFRT 10	A 2508	RB 55
AFRT 11	A 2512	RB 54
AFRT 12	A 3712	RB 53
AFRT 13	A 3716	RB 52
AFRT 14	A 5016	RB 57
AFRT 15	A 5024	RB 58
AFRT 16	A 5032	RB 59
AFRT 17	L 5008	RB 08
AFRT 18	L 5010	RB 16
AFRT 19	L 5016	RB 17
AFRT 20	L 5024	No equivalent
AFRT 21	L 5032	No equivalent
No equivalent	A 2506	RB 56
No equivalent	L 6220	RB 18
No equivalent	L 8734	RB 19
No equivalent	P 2805	RB 71
No equivalent	P 3708	RB 70

*Specify Type "R" for Radial Leads; Type "A" for Axial Leads; and Type "L" for Lug Style Leads.

Nytronics Precision Resistor Division has diversified engineering and production capability on the following additional product lines: Precision Resistor Networks (includes Binary Ladder and Summing, Phase Shift, Timing, and Voltage Divider Networks); Variable RF Attenuators; High Stability Hermetically Sealed Wirewound Resistors; Adjustable Low Value Wirewound Resistors; and Coaxial Termination Type Carbon and Metal Film Resistors.

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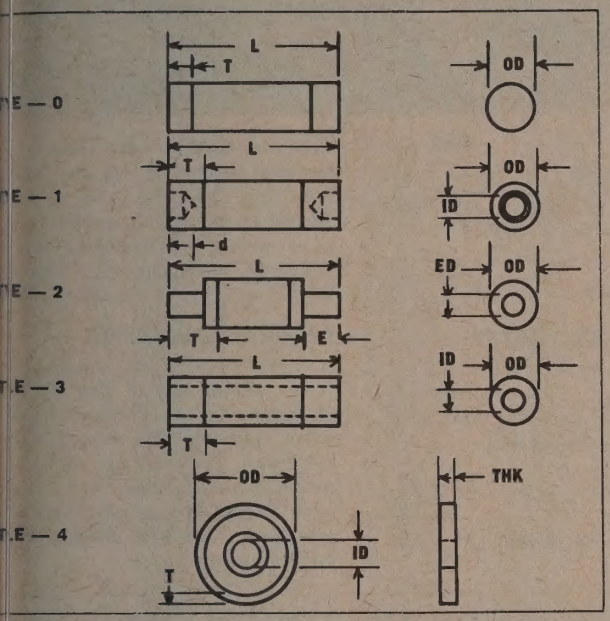
NYTRONICS, INC.
PRECISION RESISTOR DIVISION

Resistors

Thin Film Microwave Resistors



Minimum inductance, no spiralling
D.C. to 10,000 MC
1 to 400 ohms on Discs
10 to 1500 ohms on Rods & Tubes
—55°C to 150°C Carbon
—55°C to 200°C Metal
Temperature Coefficient:
Metal Film ± 75 PPM
Carbon Film —200 PPM

i:

ubstrate: Ceramic (standard)
tandard Resistance Tolerance: Carbon ±1%; Metal ±3%
ne nominal power rating is for units suspended in free r.
ne resistance film on Discs is normally supplied on both des of carbon film and one side of metal film resistors.
erminals: Normally supplied plated; pretinned on special order.
ther sizes, Substrates, Resistances and Tolerances available to meet customer requirements.

CARBON & METAL RODS, TUBES & DISCS

STYLE — 0

CATALOG NO.	OD	L	T	NOM. POWER WATTS METAL	NOM. POWER WATTS CARBON
RC-020-120-0	.020	.120	.031	0.10	*
RC-020-160-0	.020	.160	.031	0.12	*
RC-020-200-0	.020	.200	.047	0.14	*
RC-040-120-0	.040	.120	.031	0.20	*
RC-040-160-0	.040	.160	.031	0.25	*
RC-040-200-0	.040	.200	.047	0 30	*
RC-060-120-0	.060	.120	.031	0.40	*
RC-060-160-0	.060	.160	.031	0.50	*
RC-060-200-0	.060	.200	.047	0.60	*
RC-125-531-0	.125	.531	.094	1.00	0.50
RC-125-625-0	.125	.625	.094	1.50	0.75
RC-125-1000-0	.125	1.000	.094	2.00	1.00
RC-162-750-0	.162	.750	.094	2.00	1.00
RC-250-875-0	.250	.875	.094	5.00	2.50

STYLE — 1

CATALOG NO.	OD	ID	L	d	T	NOM. POWER WATTS METAL	NOM. POWER WATTS CARBON
RC-125-375-1	.125	.062	.375	.093	.062	1.00	0.50
RC-191-500-1	.191	.136	.500	.109	.094	1.50	0.75

STYLE — 2

CATALOG NO.	OD	ED	L	E	T	NOM. POWER WATTS METAL	NOM. POWER WATTS CARBON
RC-073-342-2	.073	.050	.342	.046	.056	0.50	0.25
RC-125-500-2	.125	.093	.500	.062	.094	1.00	0.50

STYLE — 3

CATALOG NO.	OD	ID	L	T	NOM. POWER WATTS METAL	NOM. POWER WATTS CARBON
TC-125-250-3	.125	.070	.250	.047	0.50	0.25
TC-125-500-3	.125	.070	.500	.094	1.00	0.50

STYLE — 4

CATALOG NO.	OD	ID	THK	T	NOM. POWER WATTS METAL & CARBON
DC-250-068-4	.250	.068	.040	.020	0.50
DC-280-093-4	.280	.093	.040	.020	0.50
DC-343-076-4	.343	.076	.045	.031	1.00
DC-368-062-4	.368	.062	.040	.031	1.00
DC-375-076-4	.375	.076	.032	.031	1.00
DC-503-075-4	.503	.075	.064	.047	2.00
DC-503-172-4	.503	.172	.064	.047	2.00
DC-560-137-4	.560	.137	.064	.047	3.00
DC-831-125-4	.831	.125	.094	.062	4.00

INFORMATION FOR ORDERING

Specify:

(1) Resistive Film { Metal — M / Carbon — C }
(2) Catalog No.
(3) Resistance Desired
(4) Resistance Tolerance

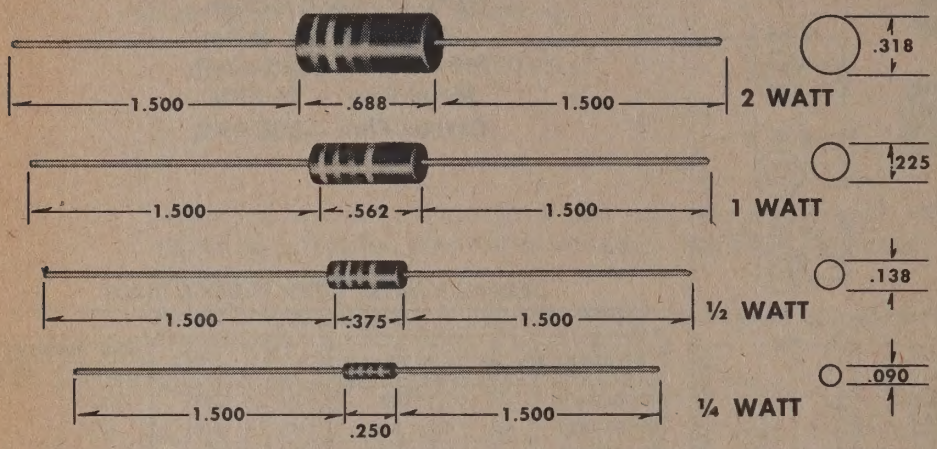
nple:

M — RC-125-531-0 — 50 Ω — 1%

etal / lm — Catalog No. — Resistance — Tolerance

STACKPOLE

FIXED COMPOSITION RESISTORS



Stackpole Resistors offer superior formance in terms of load life, mois resistance, shelf life, and other portant characteristics. Available in ½, 1, and 2 watt insulated type resistance values with 5%, 10% 20% tolerances as shown below.

EASIEST SOLDERING

is asured thanks to an exclusive e solder coating applied after the u tin dipping. Leads of Stackpole Resis solder readily by any method—dip iron—stay tarnish free even a months in storage. And, their bake color codes resist solvent scrubb operations . . . maintain uniform, att tive appearance.

269 STANDARD VALUES FOR MODERN CIRCUITRY

±20%	±10%	±5%	±20%	±10%	±5%	±20%	±10%	±5%	±20%	±10%	±5
10	10	10		390	390	15000	15000	15000		560000	560
		11			430			16000			620
	12	12	470	470	470		18000	18000	680000	680000	680
		13			510			20000			750
15	15	15		560	560	22000	22000	22000		820000	820
		16			620			24000			910
	18	18	680	680	680		27000	27000	1.0 Meg	1.0 Meg	1.0 M
		20			750			30000			1.1 M
22	22	22		820	820	33000	33000	33000		1.2 Meg	1.2 M
		24			910			36000			1.3 M
	27	27	1000	1000	1000		39000	39000	1.5 Meg	1.5 Meg	1.5 M
		30			1100			43000			1.6 M
33	33	33		1200	1200	47000	47000	47000		1.8 Meg	1.8 M
		36			1300			51000			2.0 M
	39	39	1500	1500	1500		56000	56000	2.2 Meg	2.2 Meg	2.2 M
		43			1600			62000			2.4 M
47	47	47		1800	1800	68000	68000	68000		2.7 Meg	2.7 M
		51			2000			75000			3.0 M
	56	56	2200	2200	2200		82000	82000	3.3 Meg	3.3 Meg	3.3 M
		62			2400			91000			3.6 M
68	68	68		2700	2700	100000	100000	100000		3.9 Meg	3.9 M
		75			3000			110000			4.3 M
	82	82	3300	3300	3300		120000	120000	4.7 Meg	4.7 Meg	4.7 M
		91			3600			130000			5.1 M
100	100	100		3900	3900	150000	150000	150000		5.6 Meg	5.6 M
		110			4300			160000			6.2 M
	120	120	4700	4700	4700		180000	180000	6.8 Meg	6.8 Meg	6.8 M
		130			5100			200000			7.5 M
150	150	150		5600	5600	220000	220000	220000		8.2 Meg	8.2 M
		160			6200			240000			9.1 M
	180	180	6800	6800	6800		270000	270000	10.0 Meg	10.0 Meg	10.0 M
		200			7500			300000			11.0 M
220	220	220		8200	8200	330000	330000	330000		12.0 Meg	12.0 M
		240			9100			360000			13.0 M
	270	270	10000	10000	10000		390000	390000	15.0 Meg	15.0 Meg	15.0 M
		300			11000			430000			16.0 M
330	330	330		12000	12000	470000	470000	470000		18.0 Meg	18.0 M
		360			13000			510000			20.0 M
									22.0 Meg	22.0 Meg	22.0 M

AVAILABLE THROUGH LEADING INDUSTRIAL ELECTRONIC PARTS DISTRIBUTORS

Electronic Components Div., STACKPOLE CARBON COMPANY

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OHMITE type 200 *brown devil*® fixed resistors

WN DEVIL® (Type 200) resistors, are vitreous enameled, wirewound units famous for ruggedness and durability in small power resistors. With emphasis towards miniaturization and the current industry trend towards her operating temperatures, Ohmite has been able to increase the ratings two Brown Devil sizes. The 5 watt size is now rated **8 watts** and the 10 t size is now rated **12 watts**. The 20 watt unit retains the same rating. higher ratings may be confidently applied to any 5 or 10 watt unit now the possession of users or distributors. At this time also, to meet the and for lower wattage units, Ohmite introduces two, new, small stock s — 3 and 5¼ watts.

Standard resistance tolerance is ±5% for values 1 ohm or higher; ±10% for values below 1 ohm. Tinned leads 1½" long: 3 and 5¼ watt, 20 AWG; 8, 12 and 20 watt, 18 AWG.

DIMENSIONS, WEIGHTS, CODES

Rating	3W	5¼W	8W	12W	20W
Core Dimen.	7/16x.21D	5/8x1¼D	1x5/16D	1¾x5/16D	2x7/16D
Weight (lbs.)	.003	.005	.01	.015	.03

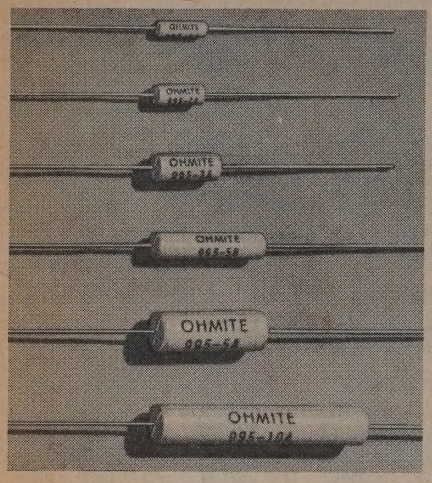
Ohms	3 WATT Cat. No.[1]	3 WATT Amps.	5¼ WATT Cat. No.[1]	5¼ WATT Amps.	8 WATT Cat. No.[1]	8 WATT Amps.	12 WATT Cat. No.[1]	12 WATT Amps.	20 WATT Cat. No.[1]	20 WATT Amps.
5							1700A	4.90	1800A	6.32
10	2712	1.73	2822	2.29	1500	2.83	1701	3.46	1802A	4.47
11	2713	1.65	2823	2.19						
12	2714	1.58	2824	2.09						
13	2715	1.52	2825	2.01						
15	2716	1.41	2826	1.87	1500B	2.30	1704	2.82		
16	2717	1.37	2827	1.81						
18	2718	1.29	2828	1.71						
20	2719	1.22	2829	1.62	1501	2.00	1705	2.45	1802B	3.16
22	2720	1.17	2830	1.54						
24	2721	1.12	2831	1.48						
27	2722	1.05	2832	1.39						
30	2723	1.00	2833	1.32	1502	1.63	1706	2.00	1802C	2.58
33	2724	.95	2834	1.24						
36	2725	.91	2835	1.21						
39	2726	.88	2836	1.16						
40					1503	1.41	1707	1.73	1802D	2.24
43	2727	.83	2837	1.10						
47	2728	.80	2838	1.06						
50					1504	1.26	1708	1.54	1803	2.00
51	2729	.77	2839	1.01						
56	2730	.73	2840	.97						
62	2731	.69	2841	.92						
68	2732	.66	2842	.88						
75	2733	.63	2843	.84	1505	1.00	1709	1.26		
82	2734	.60	2844	.80						
91	2735	.57	2845	.76						
100	2736	.55	2846	.72	1506	.89	1710	1.09	1804	1.41
110	2737	.52	2847	.69						
120	2738	.50	2848	.66	1507	.81	1711	1.00		
130	2739	.48	2849	.64						
150	2740	.45	2850	.59	1508	.73	1712	.89		
160	2741	.43	2851	.57						
180	2742	.42	2852	.54						
200	2743	.39	2853	.51	1509	.63	1713	.77		
220	2744	.37	2854	.49						
240	2745	.35	2855	.47						
250					1510	.56	1714	.69	1805	.89
270	2746	.33	2856	.44						
300	2747	.32	2857	.42	1511	.51	1715	.63		
330	2748	.30	2858	.40						
350					1512	.47	1716	.58		
360	2749	.29	2859	.38						
390	2750	.28	2860	.37						
400					1513	.44	1717	.54		
430	2751	.26	2861	.35						
450					1514	.40	1718	.49	1806	.63
470	2752	.25	2862	.33						
500	2753	.24	2863	.32						
510	2754	.23	2864	.31						
560	2755	.22	2865	.29						
600	2756	.21	2866	.28						
620	2757	.20	2867	.27	1515	.32	1719	.40	1807	.52
680	2758	.19	2868	.25						
700	2759	.18	2869	.24						
750	2760	.17	2870	.23	1516	.28	1720	.34	1808	.45
800	2761	.16	2871	.22						
820	2762	.16	2872	.21						
850					1517	.25	1721	.31		
900	2763	.15	2873	.20						
910	2764	.14	2874	.19	1518	.23	1722	.28	1809	.36
1000	2765	.14	2875	.18						
1100	2766	.13	2876	.17						
1200	2767	.12	2877	.16	1519	.20	1723	.24	1810	.32
1250	2768	.12	2878	.16						
1500					1520	.18	1724	.23		
1600	2769	.11	2879	.15						
1800					1521	.17	1725	.22	1811	.28
2000	2770	.11	2880	.14						
2200	2771	.10	2881	.13	1522	.16	1726	.20	1812	.26
2400	2772	.095	2882	.12						
2500					1523	.15	1727	.18	1813	.24
2700	2773	.091	2883	.12						
3000	2774	.088	2884	.12						
3300					1524	.14	1728	.17	1814	.22
3600	2775	.083	2885	.11						
3900					1525	.13	1729	.16		
4000	2776	.080	2886	.11						

Ohms	3 WATT Cat. No.[1]	3 WATT Amps.	5¼ WATT Cat. No.[1]	5¼ WATT Amps.	8 WATT Cat. No.[1]	8 WATT Amps.	12 WATT Cat. No.[1]	12 WATT Amps.	20 WATT Cat. No.[1]	20 WATT Amps.
500					1526	.12	1730	.15	1815	.20
510	2777	.077	2887	.10						
560	2778	.073	2888	.097						
600					1527	.11	1731	.14		
620	2779	.070	2889	.092						
650									1816	.18
680	2780	.067	2890	.088						
700					1528	.11	1732	.13	1817	.17
750	2781	.063	2891	.084	1529	.10	1733	.12	1818	.16
800					1530	.10	1734	.12	1819	.15
820	2782	.060	2892	.080						
900					1531	.094	1735	.11	1820A	.15
910	2783	.057	2893	.076						
1000	2784	.055	2894	.072	1532	.089	1736	.11	1821	.14
1100	2785	.052	2895	.069	1533	.085	1737	.10		
1200	2786	.050	2896	.066	1534	.081	1738	.10	1822	.13
1250					1535	.080	1739	.097	1823	.12
1300	2787	.048	2897	.063						
1500	2788	.045	2898	.059	1536	.073	1740	.089	1824	.12
1600	2789	.043	2899	.057						
1750					1537	.067	1741	.082	1825	.11
1800	2790	.042	2900	.050						
2000	2791	.039	2901	.047	1538	.063	1742	.077	1827	.10
2200	2792	.037	2902	.045						
2250					1539	.059	1743	.073	1828	.094
2400	2793	.035	2903	.043						
2500					1540	.056	1744	.069	1830	.089
2700	2794	.033	2904	.041						
2750									1831	.085
3000	2795	.032	2905	.039	1541	.046	1745	.063	1832	.081
3300	2796	.030	2906	.037						
3500					1542	.043	1746	.058	1833	.075
3600	2797	.029	2907	.035						
3900	2798	.028	2908	.034						
4000					1543	.040	1747	.054	1834	.070
4300	2799	.026	2909	.032						
4500					1544	.038	1748	.051	1835	.066
4700	2800	.025	2910	.031						
5000					1545	.036	1749	.049	1836	.063
5100	2801	.024	2911	.030						
5600	2802	.023	2912	.028						
6000					1546	.033	1750	.044	1837	.057
6200	2803	.022	2913	.027						
6800	2804	.021	2914	.026						
7000					1547	.030	1751	.041	1838	.053
7500	2805	.020	2915	.025	1548	.029	1752	.036	1839	.051
8000					1549	.029	1753	.035	1840	.050
8200	2806	.019	2916	.023						
8500							1754	.034		
9000					1550	.027	1754A	.033	1840A	.047
9100	2807	.018	2917	.022						
10K	2808	.016	2918	.021	1551	.026	1755	.032	1841	.043
11K			2919	.020			1756	.030		
12K			2920	.019			1757	.029		
12.5K					1552	.023	1758	.028	1842	.032
13K			2921	.019						
13.5K							1759	.027		
15K			2922	.017	1553	.021	1761	.026	1843	.029
16K			2923	.017			1762	.025		
17.5K					1554	.019	1763	.024		
18K			2924	.016			1764	.024		
20K			2925	.014	1555	.018	1765	.022	1844	.026
22.5K					1556	.017	1766	.021		
25K					1557	.015	1767	.020	1845	.023
30K							1768	.018	1846	.021
35K							1769	.017	1847	.019
40K							1770	.016	1848	.018
45K							1771	.015	1849	.017
50K							1772	.014	1850	.016
55K									1851	.015
60K									1852	.015
65K									1853	.014
70K									1854	.014
75K									1855	.013
80K									1856	.013
85K									1857	.012
90K									1858	.012
95K									1859	.012
100K									1860	.011

TEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.

OHMITE PAGE 3

OHMITE Type 995 MOLDED axial lead vitreous enameled resisto

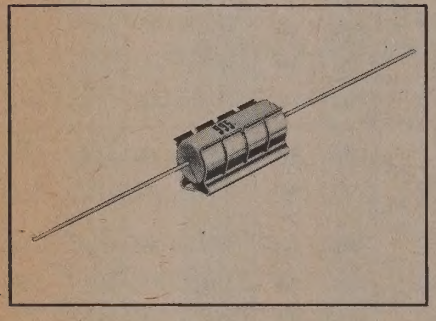


- FIRST MOLDED WIREWOUND, VITREOUS ENAMEL RESISTOR
- INSULATED! Meets 1000 VAC Test
- WITHSTANDS 1500°F Temperatures without Distortion
- RESISTS Chipping, Breaking
- VITRIFIED MARKINGS, Resist Abrasion and Active Solvents
- UNIFORM SIZE Permits Clip-Mounting with Significant Heat Sink Benefits
- HIGH OVERLOAD CAPABILITY

An exclusive technique (U.S. Patent No. 3,229,237) permits application of the vitreous enamel coating by mol stead of the conventional "dip" The dimensionally consistent and coating that results, guarantees VAC insulation rating plus unp capability for withstanding very h peratures, high humidity and in in salt solution.

These resistors are normally by their axial leads. However, th sistent form also permits mou clips with heat sink benefits up t (see "Clips" lower left). Resistor r are also vitreous and will not even under extreme overloads. Re tolerance is ±5%. Series 99 r meet the requirements of MIL-R "insulated" resistors. See Catalog specific MIL types.

MOUNTING CLIPS



Uniform shape and consistent dimensions of Series 99 and 88 (pages 6-7) resistors, permits them to be conveniently mounted in clips. If the clip is on a metal surface, the wattage capability of the resistor can increase by as much as 100%. Holes in clip base permit fastening to chassis by means of machine screws, eyelets or rivets.

CLIPS for TYPE 995 and 884* RESISTORS

Resistor Watts	Resistor Series	Clip Stock No.	Net $ 1-99
1½	99	5900	.20
2¼	99	5902	.20
3	88	5904	.20
3¼	99	5904	.20
5	88	5905	.20
5	99	5906	.20
10	88	5909	.20
11	99	5908	.20

* See pages 6 and 7 for Type 884 resistors.

1½ WATT

.422"x.125" Dia. Style 995-1A Avg. Wt., .0009 lb.

Ohms	Catalog No.[1]	Max. Amps	Ohms	Catalog No.[1]	Max. Amps
1.0	**4030**	1.24	75	4087	.141
1.1	4031	1.17	82	4089	.135
1.2	4032	1.12	91	4091	.128
1.3	4033	1.08	100	**4092**	.123
1.5	4034	1.00	110	4093	.117
1.6	4035	.97	120	4094	.112
1.8	4036	.91	130	4095	.108
2.0	**4037**	.87	150	4096	.100
2.2	4038	.83	160	4097	.097
2.4	4039	.79	180	4098	.091
2.7	4041	.75	200	**4099**	.087
3.0	**4042**	.71	220	**4100**	.083
3.3	4043	.67	240	4101	.079
3.6	4044	.65	250	4102	.077
3.9	4045	.62	270	**4103**	.075
4.0	**4046**	.61	300	4104	.071
4.3	4047	.59	330	**4105**	.067
4.7	4048	.56	350	4105A	.065
5.0	4049	.55	360	4106	.064
5.1	4050	.54	390	4107	.062
5.6	4051	.52	400	4108	.061
6.2	4053	.49	430	4109	.059
6.8	4054	.47	450	4109A	.058
7.5	4056	.45	470	**4110**	.056
8.2	4058	.43	500	**4111**	.055
9.1	4060	.41	510	**4112**	.054
10	**4061**	.39	560	**4113**	.052
11	4062	.37	600	**4114**	.050
12	4063	.35	620	**4115**	.049
13	4064	.34	680	4116	.047
15	4065	.32	700	4117	.046
16	4066	.31	750	4118	.045
18	**4067**	.29	800	4119	.043
20	4068	.27	820	4120	.043
22	4069	.26	900	4121	.041
24	4070	.25	910	4122	.041
25	**4071**	.25	1000	**4123**	.039
27	4072	.24	1100	4124	.037
30	4073	.22	1200	4125	.035
33	**4074**	.21	1300	4126	.034
35	4074A	.207	1400	4126A	.033
36	4075	.200	1500	**4127**	.032
39	4076	.196	1600	4128	.031
40	4077	.193	1800	4129	.029
43	4078	.187	2000	**4130**	.027
47	4079	.179	2200	**4131**	.026
50	**4080**	.173	2400	4132	.025
51	4081	.171	2500	4133	.025
56	4082	.164	2700	4134	.024
62	4084	.156	3000	4135	.022
68	4085	.149			

2¼ WATT

.375"x.188" Dia. Style 995-2A Avg. Wt.

Ohms	Catalog No.[1]	Max. Amps	Ohms	Catalo No.[1]
1.0	3860	1.50	68	3916
1.1	3861	1.43	75	3918
1.2	3862	1.37	82	**3920**
1.3	3863	1.31	91	3922
1.5	3864	1.22	100	3923
1.6	3865	1.18	110	3924
1.8	3866	1.11	120	3925
2.0	3867	1.05	130	3926
2.2	3868	1.01	150	**3927**
2.4	3869	.97	160	3928
2.7	3871	.91	180	3929
3.0	3872	.86	200	3930
3.3	3873	.82	220	3931
3.6	3874	.79	240	3932
3.9	3875	.76	250	3933
4.0	3876	.73	270	3934
4.3	3877	.72	300	3935
4.7	3878	.69	330	3936
5.0	3879	.67	350	3937
5.1	3880	.66	360	3938
5.6	3881	.63	390	3939
6.2	3883	.60	400	3940
6.8	3884	.57	430	3941
7.5	3886	.55	450	3942
8.2	3888	.52	470	**3943**
9.1	3890	.50	500	3944
10	3891	.47	510	3945
11	3892	.45	560	3946
12	3893	.43	600	3947
13	3894	.41	620	3948
15	3895	.39	680	3949
16	3896	.37	700	3950
18	3897	.35	750	3951
20	3898	.33	800	3952
22	3899	.32	820	3953
24	3900	.31	900	3954
25	3901	.30	910	3955
27	3902	.29	1000	**3956**
30	3903	.27	1100	3957
33	3904	.26	1200	**3958**
35	3905	.25	1300	3959
36	3906	.25	1400	3960
39	**3907**	.24	1500	3961
40	3908	.24	1600	3962
43	3909	.23	1800	3963
47	3910	.22	2000	3964
50	3911	.21	2200	3965
51	3912	.21	2400	3966
56	3913	.20	2500	3967
62	3915	.19	2700	3968
			3000	3969

[1] ITEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.

OHMITE PAGE 4

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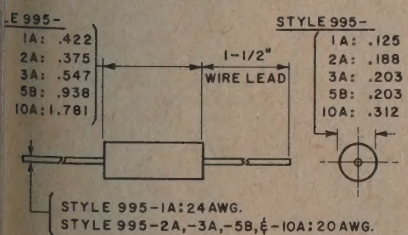
OHMITE type 995 MOLDED axial lead vitreous enameled resistors

3¼ WATT

.203" Dia. Style 995-3A Avg. Wt., .003 lb.

Ohms	Catalog No.[1]	Max. Amps	Ohms	Catalog No.[1]	Max. Amps
0	**4330**	1.80	200	**4399**	.13
1	4331	1.71	220	**4400**	.12
2	4332	1.65	240	4401	.11
3	4333	1.58	250	**4402**	.11
5	**4334**	1.47	270	**4403**	.109
6	4335	1.42	300	**4404**	.100
8	4336	1.34	330	**4405**	.099
0	**4337**	1.27	350	4405A	.096
2	4338	1.22	360	4406	.095
4	**4339**	1.16	390	**4407**	.091
7	4341	1.09	400	**4408**	.090
0	**4342**	1.04	430	**4409**	.087
3	4343	.99	450	**4409A**	.084
6	4344	.95	470	**4410**	.083
9	4345	.91	500	**4411**	.081
0	**4346**	.90	510	4412	.080
3	4347	.87	560	**4413**	.076
7	4348	.83	600	**4414**	.073
0	**4349**	.81	620	**4415**	.072
1	4350	.80	680	**4416**	.069
6	4351	.76	700	4417	.068
2	4353	.72	750	**4418**	.065
8	4354	.69	800	**4419**	.064
5	**4356**	.65	820	4420	.063
2	4358	.63	900	**4421**	.060
1	4360	.60	910	4422	.060
	4361	.56	1000	**4423**	.056
	4362	.54	1100	4424	.054
	4363	.52	1200	**4425**	.052
	4364	.50	1300	4426	.050
	4365	.47	1400	4426A	.048
	4366	.45	1500	**4427**	.047
	4367	.42	1600	4428	.045
	4368	.40	1800	**4429**	.042
	4369	.39	2000	**4430**	.040
	4370	.36	2200	4431	.039
	4371	.36	2400	4432	.036
	4372	.35	2500	**4433**	.036
	4373	.30	2700	4434	.035
	4374	.31	3000	**4435**	.033
	4374A	.30	3300	**4436**	.031
	4375	.30	3500	4436A	.030
	4376	.29	3600	4437	.030
	4377	.28	3900	4438	.029
	4378	.27	4000	**4439**	.028
	4379	.26	4300	4440	.027
	4380	.25	4500	4440A	.027
	4381	.25	4700	**4441**	.026
	4382	.24	5000	**4442**	.025
	4384	.23	5100	4443	.025
	4385	.22	5600	**4444**	.024
	4387	.21	6000	4445	.023
	4389	.20	6200	**4446**	.023
	4391	.19	6800	4447	.022
	4392	.18	7000	**4448**	.021
	4393	.17	7500	**4449**	.021
	4394	.16	8000	4450	.020
	4395	.16	8200	4451	.020
	4396	.15	9000	**4452**	.019
	4397	.14	9100	4453	.019
	4398	.13	10000	**4454**	.018



5 WATT

.938"x.203" Dia. Style 995-5B Avg. Wt., .004 lb.

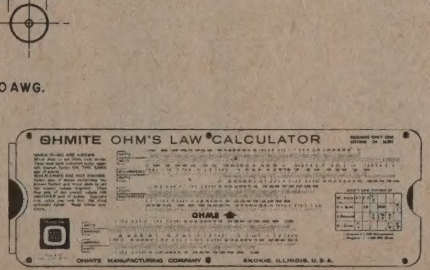
Ohms	Catalog No.[1]	Max. Amps	Ohms	Catalog No.[1]	Max. Amps
1.0	**4530**	2.24	330	**4605**	.12
1.1	4531	2.13	350	**4605A**	.12
1.2	4532	2.04	360	4606	.12
1.3	4533	1.96	390	4607	.11
1.5	**4534**	1.83	400	**4608**	.11
1.6	4535	1.77	430	4609	.11
1.8	4536	1.67	450	4609A	.11
2.0	**4537**	1.58	470	4610	.10
2.2	4538	1.51	500	**4611**	.10
2.4	4539	1.44	510	**4612**	.10
2.7	4541	1.36	560	**4613**	.094
3.0	**4542**	1.29	600	**4614**	.091
3.3	4543	1.23	620	4615	.090
3.6	4544	1.18	680	4616	.086
3.9	4545	1.13	700	4617	.084
4.0	4546	1.11	750	**4618**	.082
4.3	4547	1.07	800	**4619**	.079
4.7	4548	1.03	820	4620	.078
5.0	**4549**	1.00	900	4621	.074
5.1	4550	.99	910	4622	.074
5.6	4551	.94	1000	**4623**	.071
6.2	4553	.90	1100	4624	.067
6.8	4554	.86	1200	**4625**	.065
7.5	4556	.82	1300	4626	.062
8.2	4558	.78	1400	4626A	.059
9.1	4560	.74	1500	4627	.058
10	**4561**	.71	1600	4628	.056
11	4562	.67	1800	**4629**	.053
12	4563	.65	2000	**4630**	.050
13	4564	.62	2200	**4631**	.048
15	**4565**	.58	2400	4632	.046
16	4566	.56	2500	**4633**	.045
18	4567	.53	2700	4634	.043
20	**4568**	.50	3000	**4635**	.041
22	**4569**	.48	3300	**4636**	.039
24	4570	.46	3500	4636A	.038
25	**4571**	.45	3600	4637	.037
27	4572	.43	3900	**4638**	.036
30	**4573**	.41	4000	**4639**	.035
33	4574	.39	4300	4640	.034
35	4574A	.38	4500	4640A	.033
36	4575	.37	4700	4641	.033
39	4576	.36	5000	**4642**	.032
40	**4577**	.35	5100	4643	.031
43	4578	.34	5600	**4644**	.030
47	4579	.33	6000	**4645**	.029
50	**4580**	.32	6200	4646	.028
51	**4581**	.31	6800	4647	.027
56	**4582**	.30	7000	4648	.027
62	4584	.28	7500	**4649**	.026
68	**4585**	.27	8000	4650	.025
75	**4587**	.26	8200	**4651**	025
82	**4589**	.25	9000	**4652**	024
91	4591	.23	9100	4653	023
100	**4592**	.22	10000	**4654**	.022
110	4593	.21	11000	4655	.021
120	**4594**	.20	12000	**4656**	.020
130	4595	.20	13000	4657	.020
150	**4596**	.18	14000	4657A	.018
160	**4597**	.18	15000	**4658**	.018
180	4598	.17	16000	4659	.018
200	**4599**	.16	17000	4659B	.017
220	**4600**	.15	18000	4660	.017
240	4601	.14	20000	**4661**	.016
250	**4602**	.14	22000	**4662**	.015
270	**4603**	.14	24000	4663	.014
300	**4604**	.13	25000	**4664**	.014

11 WATT

1.781"x.312" Dia. Style 995-10A Avg. Wt., .015 lb.

Ohms	Catalog No.[1]	Max. Amps	Ohms	Catalog No.[1]	Max. Amps
1.0	**4730**	3.32	450	4809A	.16
1.1	4731	3.16	470	**4810**	.15
1.2	4732	3.03	500	**4811**	.15
1.3	4733	2.91	510	4812	.15
1.5	4734	2.71	560	4813	.14
1.6	4735	2.62	600	4814	.14
1.8	4736	2.42	620	4815	.13
2.0	4737	2.34	680	4816	.13
2.2	4738	2.24	700	4817	.12
2.4	4739	2.14	750	**4818**	.12
2.7	4741	2.02	800	4819	.12
3.0	**4742**	1.92	820	4820	.12
3.3	4743	1.83	900	4821	.11
3.6	4744	1.75	910	4822	.11
3.9	4745	1.67	1000	**4823**	.11
4.0	**4746**	1.66	1100	4824	.10
4.3	**4747**	1.60	1200	4825	.096
4.7	4748	1.53	1300	4826	.092
5.0	**4749**	1.48	1400	4826A	.089
5.1	4750	1.47	1500	**4827**	.086
5.6	4751	1.40	1600	4828	.083
6.2	4753	1.33	1800	4829	.078
6.8	4754	1.27	2000	4830	.074
7.5	**4756**	1.21	2200	4831	.071
8.2	4758	1.16	2400	4832	.068
9.1	4760	1.10	2500	**4833**	.066
10	**4761**	1.05	2700	**4834**	.064
11	4762	1.00	3000	**4835**	.061
12	4763	.96	3300	4836	.058
13	4764	.92	3500	4836A	.056
15	**4765**	.86	3600	4837	.055
16	4766	.83	3900	4838	.053
18	4767	.78	4000	**4839**	.052
20	**4768**	.74	4300	4840	.050
22	**4769**	.71	4500	4840A	.049
24	4770	.68	4700	**4841**	.048
25	**4771**	.66	5000	**4842**	.047
27	4772	.64	5100	4843	.046
30	4773	.61	5600	4844	.044
33	**4774**	.58	6000	4845	.043
35	4774A	.56	6200	4846	.042
36	4775	.55	6800	4847	.040
39	**4776**	.53	7000	4848	.040
40	**4777**	.52	7500	4849	.038
43	4778	.50	8000	4850	.037
47	4779	.48	8200	4851	.037
50	**4780**	.47	9000	4852	.035
51	4781	.46	9100	4853	.035
56	4782	.44	10000	**4854**	.033
62	4784	.42	11000	4855	.031
68	4785	.40	12000	4856	.030
75	**4787**	.38	13000	4857	.029
82	**4789**	.37	14000	4857B	.028
91	4791	.35	15000	**4858**	.027
100	**4792**	.33	16000	4859A	.026
110	4793	.31	17000	4859C	.025
120	4794	.30	18000	4860	.024
130	4795	.29	20000	4861	.023
150	**4796**	.27	22000	4862	.022
160	4797	.26	24000	4863	.021
180	4798	.24	25000	4864	.021
200	**4799**	.23	27000	**4865**	.020
220	**4800**	.22	30000	**4866**	.019
240	4801	.21	33000	4867	.018
250	**4802**	.21	35000	4867A	.018
270	4803	.20	36000	4868	.017
300	**4804**	.19	39000	4869	.017
330	4805	.18	40000	**4870**	.016
350	**4805A**	.18	43000	4871	.016
360	4806	.17	45000	4871A	.016
390	4807	.17	47000	**4872**	.015
400	4808	.16	50000	**4873**	.015
430	4809	.16	51000	4874	.015

M'S LAW CALCULATOR . . .



Solve Ohm's Law/Parallel Resistance problems with Ohmite's pocket-sized calculator. Also convenient A, B, C, and D slide rule scales for supplementary calculations. Resistance scales from 0.01 ohm to 100 megohms. Varnished cardboard or deluxe plastic model.

Type	Stock No.	Price
Cardboard	5180	$0.25
Plastic	5182	1.50

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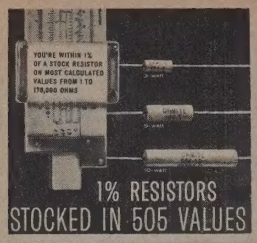
OHMITE type 884 Riteohm® Resistors—1% tolerance



molded for uniform shape and size

miniature precision resistors—1% toleranc

OHMICONE® molded • wirewound • aged for stability • insulated for 1000 volts • low T.C.

Type 884 Riteohm® Resistors are stocked in power ratings of 3, 5 and 10 watts depending upon resistance. Single la wound on ceramic cores, Riteohm resistors feature a pressure-molded coating of tough, resilient Ohmicone® silico ceramic material which meets the MIL-R-26, 1000 VAC insulation test. Riteohms are aged for long term stability a exhibit negligible inductance at audio frequencies. Temperature coefficient of resistance is 0±10ppm/°C¹ for m values. Values shown are based on the MIL-Bell system of standard values. For non-standard values, closer toleranc etc. contact your local Ohmite office.

3 WATTS	Rating in Free Air for Resistance Values to 13.3K Ohms		3 WATTS	Rating in Free Air for Resistance Values to 13.3K Ohms		3 WATTS	Rating in Free Air for Resistance Values to 13.3K Ohms		3 WATTS	Rating in Free for Resistance V to 13.3K Ohr	
Ohms	Catalog No.²	Max. Volts	Ohms	Catalog No.²	Max. Volts	Ohms	Catalog No.²	Max. Volts	Ohms	Catalog No.²	Max Volt
0.100	80013	.547	3.83	80733	3.39	21.5	81453	8.03	121	82173	19.
0.121	80023	.602	3.92	80743	3.43	22.1	81463	8.14	124	82183	19.
0.150	80033	.670	4.02	80753	3.47	22.6	81473	8.23	127	82193	19.
0.182	80043	.739	4.12	80763	3.51	23.2	81483	8.34	130	82203	19.
0.200	80053	.774	4.22	80773	3.56	23.7	81493	8.43	133	82213	20.
0.221	80063	.814	4.32	80783	3.60	24.3	81503	8.54	137	82223	20.
0.249	80073	.864	4.42	80793	3.64	24.9	81513	8.64	140	82233	20.
0.274	80083	.906	4.53	80803	3.69	25.5	81523	8.74	143	82243	20.
0.332	80093	.998	4.64	80813	3.73	26.1	81533	8.84	147	**82253**	21.
0.392	80103	1.08	4.75	80823	3.77	26.7	81543	8.95	150	82263	21.
0.475	80113	1.19	4.87	80833	3.82	27.4	81553	9.06	154	82273	21.
0.499	80123	1.22	4.99	80843	3.87	28.0	81563	9.16	158	82283	21.
0.562	80133	1.30	5.11	80853	3.91	28.7	81573	9.28	162	82293	22.
0.681	80143	1.43	5.23	80863	3.96	29.4	81583	9.39	165	82303	22.
0.750	80153	1.50	5.36	80873	4.01	30.1	81593	9.50	169	82313	22.
0.825	80163	1.57	5.49	80883	4.06	30.9	81603	9.62	174	**82323**	22.
1.00	**80173**	1.73	5.62	80893	4.10	31.6	81613	9.74	178	82333	23.
1.02	80183	1.75	5.76	80903	4.16	32.4	81623	9.86	182	82343	23.
1.05	80193	1.77	5.90	80913	4.20	33.2	81633	9.98	187	82353	23.
1.07	80203	1.79	6.04	80923	4.25	34.0	81643	10.1	191	82363	23.
1.10	80213	1.82	6.19	80933	4.31	34.8	81653	10.2	196	82373	24.
1.13	80223	1.84	6.34	80943	4.36	35.7	81663	10.3	200	82383	24.
1.15	80233	1.86	6.49	80953	4.41	36.5	81673	10.5	205	82393	24.
1.18	80243	1.88	6.65	80963	4.46	37.4	81683	10.6	210	82403	25.
1.21	80253	1.91	6.81	80973	4.52	38.3	81693	10.7	215	82413	25.
1.24	80263	1.93	6.98	80983	4.57	39.2	81703	10.8	221	82423	25.
1.27	80273	1.95	7.15	80993	4.63	40.2	81713	11.0	226	82433	26.
1.30	80283	1.97	7.32	81003	4.68	41.2	81723	11.1	232	82443	26.
1.33	80293	2.00	7.50	81013	4.74	42.2	81733	11.2	237	82453	26.
1.37	80303	2.03	7.68	81023	4.80	43.2	81743	11.4	243	82463	27.
1.40	80313	2.05	7.87	81033	4.86	44.2	81753	11.5	249	82473	27.
1.43	80323	2.07	8.06	81043	4.92	45.3	81763	11.7	255	82483	27.
1.47	80333	2.10	8.25	81053	4.97	46.4	81773	11.8	261	**82493**	28.
1.50	80343	2.12	8.45	81063	5.04	47.5	81783	11.9	267	82503	28.
1.54	80353	2.15	8.66	81073	5.10	48.7	81793	12.1	274	82513	28.
1.58	80363	2.18	8.87	81083	5.16	49.9	81803	12.2	280	82523	29.
1.62	80373	2.20	9.09	81093	5.22	51.1	81813	12.4	287	82533	29.
1.65	80383	2.22	9.31	81103	5.28	52.3	81823	12.5	294	82543	29.
1.69	80393	2.25	9.53	81113	5.34	53.6	81833	12.7	301	82553	30.
1.74	80403	2.28	9.76	81123	5.41	54.9	81843	12.8	309	82563	30.
1.78	80413	2.31	10.0	81133	5.47	56.2	81853	13.0	316	82573	30.
1.82	80423	2.34	10.2	81143	5.53	57.6	81863	13.1	324	82583	31.
1.87	80433	2.37	10.5	81153	5.61	59.0	81873	13.3	332	82593	31.
1.91	80443	2.39	10.7	81163	5.66	60.4	81883	13.4	340	82603	31.
1.96	80453	2.42	11.0	81173	5.74	61.9	81893	13.6	348	82613	32.
2.00	80463	2.45	11.3	81183	5.82	63.4	81903	13.8	357	82623	32.
2.05	80473	2.48	11.5	81193	5.87	64.9	81913	13.9	365	82633	33.
2.10	80483	2.51	11.8	81203	5.95	66.5	81923	14.1	374	82643	33.
2.15	80493	2.54	12.1	81213	6.02	68.1	81933	14.3	383	82653	33.
2.21	80503	2.57	12.4	81223	6.10	69.8	81943	14.5	392	82663	34.
2.26	80513	2.60	12.7	81233	6.17	71.5	81953	14.6	402	82673	34.
2.32	80523	2.64	13.0	81243	6.24	73.2	81963	14.8	412	82683	35.
2.37	80533	2.67	13.3	81253	6.32	75.0	81973	15.0	422	**82693**	35.
2.43	80543	2.70	13.7	81263	6.41	76.8	81983	15.2	432	82703	36.
2.49	80553	2.73	14.0	81273	6.48	78.7	81993	15.4	442	82713	36.
2.55	80563	2.77	14.3	81283	6.55	80.6	82003	15.5	453	82723	36.
2.61	80573	2.80	14.7	81293	6.64	82.5	82013	15.7	464	82733	37.
2.67	80583	2.83	15.0	81303	6.70	84.5	82023	15.9	475	82743	37.
2.74	80593	2.87	15.4	81313	6.80	86.6	82033	16.1	487	82753	38.
2.80	80603	2.90	15.8	81323	6.88	88.7	82043	16.3	499	82763	38.
2.87	80613	2.93	16.2	81333	6.97	90.9	**82053**	16.5	511	82773	39.
2.94	80623	2.97	16.5	81343	7.03	93.1	82063	16.7	523	82783	39.
3.01	80633	3.00	16.9	81353	7.12	95.3	82073	16.9	536	82793	40.
3.09	80643	3.04	17.4	81363	7.22	97.6	82083	17.1	549	82803	40.
3.16	80653	3.08	17.8	81373	7.30	100	**82093**	17.3	562	82813	41.
3.24	80663	3.12	18.2	81383	7.39	102	82103	17.5	576	82823	41.
3.32	80673	3.16	18.7	81393	7.49	105	82113	17.7	590	82833	42.
3.40	80683	3.19	19.1	81403	7.57	107	82123	17.9	604	82843	42.
3.48	80693	3.23	19.6	81413	7.66	110	**82133**	18.2	619	82853	43.
3.57	80703	3.27	20.0	81423	7.74	113	82143	18.4	634	82863	43.
3.65	80713	3.31	20.5	81433	7.84	115	82153	18.6	649	82873	44.
3.74	80723	3.35	21.0	81443	7.94	118	82163	18.8	665	82883	44.

² ITEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.

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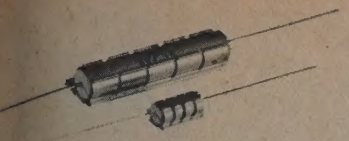
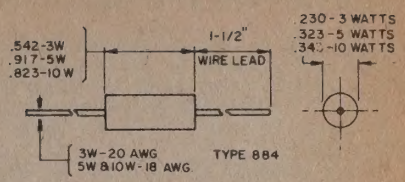
OHMITE



Uniform shape of Riteohms permits clip mounting for extra heat dissipation. The wattage capability can be increased by as much as 100% when clip is mounted to a metal surface. See Series 99 listings for clip ordering information.



Type 884 Riteohm® Resistors — 1% tolerance

3 WATTS	Rating in Free Air for Resistance Values to 13.3K Ohms		3 WATTS	Rating in Free Air for Resistance Values to 13.3K Ohms		3 WATTS	Rating in Free Air for Resistance Values to 13.3K Ohms		3 WATTS	Rating in Free Air for Resistance Values to 13.3K Ohms	
Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts
681	82893	45.2	1,650	83263	70.3	4,020	83633	110	9,760	84003	171
698	82903	45.7	1,690	83273	71.2	4,120	83643	111	10,000	**84013**	173
715	82913	46.3	1,740	83283	72.2	4,220	83653	112	10,200	84023	175
732	82923	46.8	1,780	83293	73.0	4,320	83663	114	10,500	84033	178
750	82933	47.4	1,820	83303	73.9	4,420	83673	115	10,700	84043	179
768	82943	48.0	1,870	83313	74.9	4,530	83683	117	11,000	84053	182
787	82953	48.6	1,910	83323	75.7	4,640	83693	118	11,300	84063	184
806	82963	49.2	1,960	83333	76.6	4,750	83703	119	11,500	84073	186
825	82973	49.7	2,000	**83343**	77.4	4,870	83713	121	11,800	84083	188
845	82983	50.4	2,050	83353	78.4	4,990	83723	122	12,100	84093	190
866	82993	51.0	2,100	83363	79.4	5,110	83733	124	12,400	84103	193
887	83003	51.6	2,150	**83373**	80.3	5,230	83743	125	12,700	84113	195
909	**83013**	52.2	2,210	83383	81.4	5,360	83753	127	13,000	84123	197
931	83023	52.8	2,260	83393	82.3	5,490	83763	128	13,300	84133	200
953	83033	53.4	2,320	83403	83.4	5,620	83773	130	13,700	84143	200
976	83043	54.1	2,370	83413	84.3	5,760	83783	131	14,000	84153	200
1,000	**83053**	54.7	2,430	83423	85.4	5,900	83793	133	14,300	84163	200
1,020	83063	55.3	2,490	83433	86.4	6,040	83803	134	14,700	84173	200
1,050	83073	56.1	2,550	83443	87.4	6,190	83813	136	15,000	84183	200
1,070	83083	56.6	2,610	83453	88.4	6,340	83823	138	15,400	84193	200
1,100	83093	57.4	2,670	83463	89.5	6,490	83833	140	15,800	84203	200
1,130	83103	58.2	2,740	83473	90.6	6,650	83843	141	16,200	84213	200
1,150	83113	58.7	2,800	83483	91.6	6,810	83853	143	16,500	84223	200
1,180	83123	59.5	2,870	83493	92.8	6,980	83863	145	16,900	84233	200
1,210	83133	60.2	2,940	83503	93.9	7,150	83873	146	17,400	84243	200
1,240	83143	61.0	3,010	83513	95.0	7,320	83883	148	17,800	84253	200
1,270	83153	61.7	3,090	83523	96.2	7,500	83893	150	18,200	84263	200
1,300	83163	62.4	3,160	83533	97.4	7,680	83903	152	18,700	84273	200
1,330	83173	63.2	3,240	83543	98.6	7,870	83913	154	19,100	84283	200
1,370	83183	64.1	3,320	83553	99.8	8,060	83923	155	19,600	84293	200
1,400	83193	64.8	3,400	83563	101	8,250	83933	157	20,000	84303	200
1,430	83203	65.5	3,480	83573	102	8,450	83943	159	20,500	84313	200
1,470	83213	66.4	3,570	83583	103	8,660	83953	161	21,000	84323	200
1,500	**83223**	67.0	3,650	83593	105	8,870	83963	163	21,500	84333	200
1,540	83233	68.0	3,740	83603	106	9,090	83973	165	22,100	84343	200
1,580	83243	68.8	3,830	83613	107	9,310	83983	167			
1,620	83253	69.7	3,920	83623	108	9,530	83993	169			

5 WATTS	Rating in Free Air for Resistance Values to 42.2K Ohms		5 WATTS	Rating in Free Air for Resistance Values to 42.2K Ohms		5 WATTS	Rating in Free Air for Resistance Values to 42.2K Ohms		5 WATTS	Rating in Free Air for Resistance Values to 42.2K Ohms	
Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts
22,600	84355	337	31,600	84495	397	44,200	84635	460	61,900	84775	460
23,200	84365	341	32,400	84505	402	45,300	84645	460	63,400	84785	460
23,700	84375	344	33,200	84515	407	46,400	84655	460	64,900	84795	460
24,300	84385	347	34,000	84525	412	47,500	84665	460	66,500	84805	460
24,900	84395	353	34,800	84535	417	48,700	84675	460	68,100	84815	460
25,500	84405	357	35,700	84545	422	49,900	84685	460	69,800	84825	460
26,100	84415	361	36,500	84555	427	51,100	84695	460	71,500	84835	460
26,700	84425	365	37,400	84565	432	52,300	84705	460	73,200	84845	460
27,400	84435	370	38,300	84575	437	53,600	84715	460	75,000	84855	460
28,000	84445	374	39,200	84585	442	54,900	84725	460	76,800	84865	460
28,700	84455	379	40,200	84595	448	56,200	84735	460	78,700	84875	460
29,400	84465	383	41,200	84605	454	57,600	84745	460	80,600	84885	460
30,100	84475	388	42,200	84615	460	59,000	84755	460			
30,900	84485	393	43,200	84625	460	60,400	84765	460			

10 WATTS	Rating in Free Air for Resistance Values to 121K Ohms		10 WATTS	Rating in Free Air for Resistance Values to 121K Ohms		10 WATTS	Rating in Free Air for Resistance Values to 121K Ohms		10 WATTS	Rating in Free Air for Resistance Values to 121K Ohms	
Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts	Ohms	Catalog No.[2]	Max. Volts
32,500	84890	908	105,000	84990	1,020	133,000	85090	1,100	169,000	85190	1,100
34,500	84900	919	107,000	85000	1,030	137,000	85100	1,100	174,000	85200	1,100
36,600	84910	930	110,000	85010	1,050	140,000	85110	1,100	178,000	85210	1,100
38,700	84920	942	113,000	85020	1,060	143,000	85120	1,100	182,000	85220	1,100
90,900	84930	952	115,000	85030	1,070	147,000	85130	1,100	187,000	85230	1,100
93,100	84940	965	118,000	85040	1,090	150,000	85140	1,100	191,000	85240	1,100
95,300	84950	976	121,000	85050	1,100	154,000	85150	1,100	196,000	85250	1,100
97,600	84960	988	124,000	85060	1,100	158,000	85160	1,100	200,000	**85260**	1,100
00,000	84970	1,000	127,000	85070	1,100	162,000	85170	1,100			
02,000	84980	1,010	130,000	85080	1,100	165,000	85180	1,100			

[1] . of values in 3 Watt size under 97.6 ohms is as follows: From 97.6 thru 10 ohms, 0±20ppm/°C; from 9.76 thru 1.0 ohms, 0±50ppm/°C; below 1 ohm, 0±90ppm/°C.

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OHMITE PAGE 7

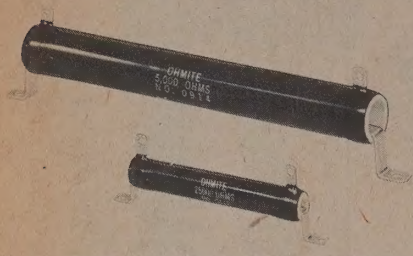
OHMITE type 270 vitreous enameled fixed resistors

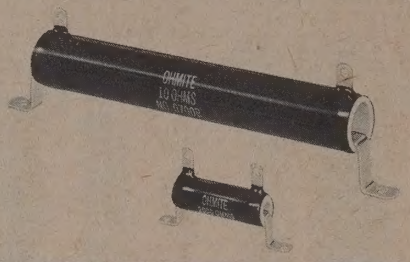
These lug type resistors are wire-wound on high quality ceramic cores, protected and insulated by Ohmite vitreous enamel — the time-proved standard covering that is the best conductor of heat for a material which must also be a good electrical insulator.

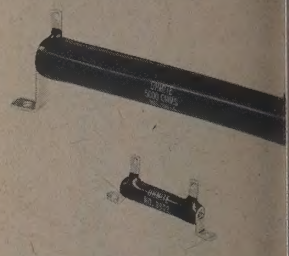
Resistance tolerance is ±5% for values 1 ohm or higher; ±10% below 1 ohm.

Wattage ratings are for use in free air. When resistors are mounted in closed spaces or where the circulation of air is restricted, they sh be used at more than one-half rating. Currents and voltages for ratings can be obtained by multiplying full rating by the following 75% load = .86, 66% = .81, 50% = .71, 33% = .57, 25% =

Mounting brackets are automatically supplied in individual uni supplied only when specified in bulk pack orders. See page 9, "I Brackets for Tubular Resistors" to specify other brackets.







12 WATT Free air rating to 5600 Ohms Core: 1¾"x⅝" Mtg. Ctr: 2⅜"—Av. Wt. .02 lb. Std. Mtg. Brkt.: Cat. No. 5			25 WATT Free air rating to 12,000 Ohms. Core: 2"x⅝" Mtg. Ctr: 2¾" — Av. Wt. .05 lb. Std. Mtg. Brkt.: No. 9		50 WATT Free air rating to 25,000 Ohms. Core: 4"x⅝" Mtg. Ctr:4¾" — Av. Wt. .09 lb. Std. Mtg. Brkt.: No. 9		100 WATT Free air rating to 60,000 Ohms. Core: 6½"x¾" Mtg. Ctr: 7⅜" — Av. Wt. .20 lb. Std. Mtg. Brkt.: No. 12		175 WATT Free air rating for All Values Core: 8½"x1⅛" Mtg. Ctr: 9⅜" — Av. Wt. .50 lb. Std. Mtg. Brkt.: No. 18		225 WATT Free air rating f All Values Core: 10½"x1¼ Mtg. Ctr: 11⅜" Av. Wt. .62 lb. Std. Mtg. Brkt.: N	
Resist. Ohms.	Cat. No.[1]	Max. Amps.	Ohms Res.	Catalog No.[1] Max. Amps.		Catalog No.[1] Max. Amps.		Catalog No.[1] Max. Amps.		Catalog No.[1] Max. Amps.		Catalog No.[1] Max. Amps
.51	**3723**	4.86	1	**0200J** 5.00		**0400J** 7.07		**0600C** 10.00		0700C 13.20		**0900C** 15.00
1.0	**3730**	3.46	2	**0200K** 3.54		**0400K** 5.00		**0600D** 7.07		**0700D** 9.35		**0900D** 10.60
1.5	3734	2.83	3	**0200L** 2.88		**0400L** 4.07		**0600E** 5.77		0700E 7.63		**0900E** 8.67
2.2	3738	2.34	4	**0200N** 2.50		**0400N** 3.53		**0600F** 5.00		0700F 6.60		**0900F** 7.50
3.3	3742	1.91	5	**0200A** 2.24		**0400A** 3.16		**0600A** 4.47		**0700A** 5.92		**0900A** 6.72
4.7	3746	1.60	10	**0200B** 1.58		**0400B** 2.23		**0600B** 3.16		**0700B** 4.18		**0900B** 4.74
6.8	3750	1.33	15	**0200R** 1.29								
10	**3754**	1.10	25	**0200C** 1.00		**0400C** 1.41		**0601** 2.00		0701 2.64		**0901** 3.00
12	3756	1.00	50	**0200D** .71		**0400D** 1.00		**0602** 1.41		**0702** 1.87		**0902** 2.12
15	3758	.89	75	**0200E** .58		**0400E** .82		**0603** 1.15		0703 1.52		**0903** 1.73
18	3760	.82	100	**0200F** .50		**0400F** .71		**0604** 1.00		**0704** 1.32		**0904** 1.50
22	3762	.74	125					0604B .90		0704B 1.18		
27	3764	.67	150	**0200G** .41		**0400G** .58		**0605** .82		**0705** 1.08		**0905** 1.25
33	3766	.60	200	**0200H** .35		**0400H** .50						
39	3768	.55	250	**0201** .32		**0401** .45		**0606** .63		**0706** .84		**0906** .95
47	3770	.53	500	**0202** .22		**0402** .32		**0607** .45		0707 .59		**0907** .67
56	3772	.46	750	**0203** .18		**0403** .26		0608 .37		0708 .48		0908 .55
68	3774	.42	800	**0204** .17		**0404** .25						
82	3776	.38	1,000	**0205** .16		**0405** .22		**0609** .32		0709 .42		**0909** .47
100	**3778**	.35	1,500	**0206** .13		**0406** .18		0610 .26		0710 .34		**0910** .39
120	3780	.32	2,000	**0207** .12		**0407** .16		0611 .22		0711 .30		**0911** .34
150	3782	.28	2,500	**0208** .10		0408 .14		0612 .20		0712 .26		**0912** .30
180	3784	.26	3,000	**0209** .091		0409 .13		0613 .18		0713 .24		**0913** .27
220	**3786**	.23	3,500	**0210** .084								
270	3788	.21	4,000	0211 .079		0410 .11						
330	3790	.19	5,000	**0212** .070		**0411** .10		**0614** .14		0714 .19		**0914** .21
390	3792	.18	6,000	0213 .064								
470	3794	.16	7,500	**0214** .057		0412 .081		0615 .12		0715 .15		0915 .17
560	3796	.15	8,000			0413 .079						
680	3798	.13	10,000	**0215** .050		**0414** .071		0616 .10		0716 .13		**0916** .15
820	3800	.12	12,000	**0216** .045		0415 .064						
1,000	3802	.11	15,000	**0217** .036		0416 .057		0617 .081		**0717** .11		**0917** .13
1,200	3804	.10	20,000	0218 .031		0417 .050		0618 .071		0718 .094		**0918** .11
1,500	**3806**	.089	25,000	**0219** .028		0418 .045		0619 .063		0719 .083		0919 .095
1,800	3808	.082	30,000	0220 .026				0620 .058		0720 .076		0920 .087
2,200	3810	.074	35,000	0221 .024		0419 .032						
2,700	3812	.067	40,000	0222 .022				0621 .050		0721 .066		**0921** .075
3,300	3814	.060	50,000	**0224** .019		**0420** .026		**0622** .045		0722 .059		**0922** .067
3,900	3816	.055	60,000	0225 .016				0623 .041		0723 .054		0923 .061
4,700	**3818**	.051	70,000	0226 .013								
5,600	3820	.046	75,000			0421 .021		0624 .032		0724 .048		0924 .055
6,800	3822	.038	80,000	0227 .012								
8,200	3824	.035	100,000	**0229** .0094		**0422** .018		**0625** .028		0725 .042		**0925** .047
10,000	**3826**	.032	125,000			0423 .017						
12,000	3828	.029	150,000			0424 .015						
15,000	3830	.026	175,000			0425 .014						
18,000	3832	.024	200,000			0426 .012						
22,000	3834	.021	250,000			**0428** .010						
27,000	3836	.019										
33,000	3838	.017										
39,000	3840	.016										
47,000	3842	.015										
51,000	**3843**	.014										

[1] ITEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.

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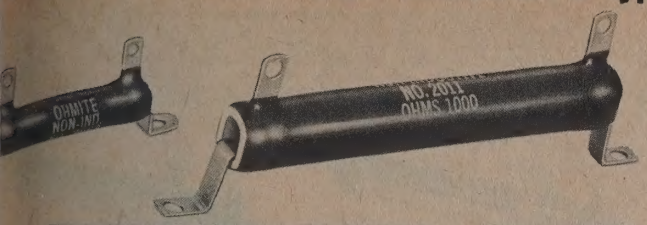
HMITE non-inductive type 270N vitreous enameled fixed resistors



These non-inductively wound power resistors are widely used at radio frequencies for such purposes as dummy antennas, terminating resistors for antennas, and in diathermy apparatus. Their properly proportioned Ayrton-Perry type windings, reduce the inductance to low proportions (less than 1% of regular solenoid type resistors) while the distributed capacity is small. R.F. resistance is the same as the D.C. resistance over the useful range of frequencies.

Change of impedance with frequency is so slight that the resistors can be used throughout the broadcast band and at even higher frequencies, depending on the particular resistance to be used. All the resistors are lug-type tubular units which mount by means of non-magnetic mounting brackets (furnished). Ohmite's high grade ceramic construction and exclusive vitreous enamel coating assure long, reliable performance under full rated load. Resistance tolerance is ±5%.

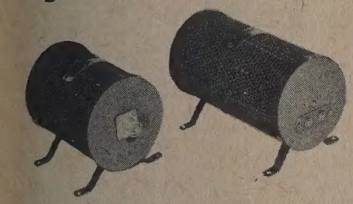
12 WATT
Core: 1¾"x⅝"
Mtg. Ctr: 2⅜"—Av. Wt. .02 lb.
Std. Mtg. Brkt.* No. 5B

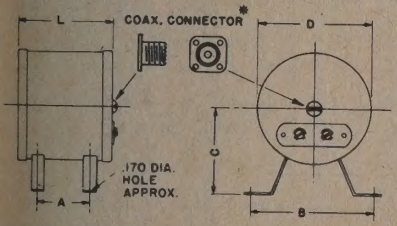
Ohms	Cat. No.[1]	Max. Milli-Amps	Ohms	Cat. No.[1]	Max. Milli-Amps
5	2050	1,540	600	2066	140
10	2051	1,090	700	2067	130
15	2052	890	800	2068	120
20	2053	770	900	2069	110
25	2054	690	1,000	2070	110
30	2055	630	1,500	2071	89
40	2056	550	2,000	2072	77
50	2057	490	2,500	2073	69
75	2058	400	3,000	2074	63
100	2059	340	4,000	2075	54
150	2060	280	5,000	2076	49
200	2061	240	6,000	2077	44
250	2062	220	7,500	2078	40
300	2063	200	8,000	2079	38
400	2064	170	9,000	2080	36
500	2065	150	10,000	2081	35

Resist. Ohms	50 WATT Core: 4"x⅞" Mtg. Ctr: 4¾" Av. Wt. .09 lb. Std. Mtg. Brkt.* No. 9B		100 WATT Core: 6½"x¾" Mtg. Ctr: 7⅜" — Av. Wt. .20 lb. Std. Mtg. Brkt.* No. 12BN		175 WATT Core: 8½"x1⅛" Mtg. Ctr: 9⅜" — Av. Wt. .50 lb. Std. Mtg. Brkt.* No. 18B	
	Cat. No.[1]	Max. Milliamps	Cat. No.[1]	Max. Milliamps	Cat. No.[1]	Max. Milliamps
5	2001	3,160	**2201**	4,470	**2401**	5,920
10	2002	2,230	2202	3,160	**2402**	4,180
25	**2003**	1,410	**2203**	2,000	**2403**	2,640
50	**2004**	1,000	**2204**	1,410	**2404**	1,870
100	**2005**	710	2205	1,000	**2405**	1,320
150	2006	580	2206	816	**2406**	1,090
200	2007	500	2207	707	2407	935
250	2008	450	2208	630	**2408**	840
500	2009	320	2209	450	2409	590
750	**2010**	260	2210	365	2410	480
1000	2011	220	2211	320	2411	420
1500	**2012**	180	2212	260	2412	340
2000	2013	160	2213	224	2413	290
2500	2014	140	2214	200	2414	260
3000	2015	130	2215	180	2415	240
3500	2016	119	2216	169	2416	222
4000	2017	110	2217	158	2417	208
5000	2018	100	2218	140	2418	190

APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.
ng brackets are automatically supplied in individual unit packs; supplied only when specified in bulk packs.

mmy-antenna resistors NON-INDUCTIVE





Ohmite Models D-101 and D-251 Dummy Antenna Resistors provide a simple, accurate, and direct means of measuring R.F. power for the radio amateur, experimenter and manufacturer and for operators of aviation, police and broadcast stations. These units consist of a number of special, vitreous enameled resistors connected in parallel in a concentric arrangement and mounted inside a perforated metal cage. The dummy antenna resistors feature constant R.F. resistance (within their recommended frequency range), low reactance, high wattage dissipation, and compactness. Actual D.C. resistance tolerance is ±5%.

The residual inductance and distributed capacitance have been kept to a minimum, thereby making the natural resonant frequency as high as possible. These factors and the D.C. resistance have been proportioned in such a manner as to give the best possible response characteristics. This resistor may be considered practically a "Non-Reactive Resistor."

Catalog Number	Dimensions (Inches) A	B	C	D	L
D-101-52*, D-101-73*	1½	3½	2⅜	3 5/32	2 23/32
D-101-300, D-101-600	2¾	3½	2⅜	3 5/32	4 7/32
D-251-52*, D-251-73*	3⅛	3⅞	2½	3 23/32	4 19/32
D-251-300, D-251-600	5⅛	3⅞	2½	3 23/32	6 13/16

*Employs coax connector.

NCY CHARACTERISTICS OF OHMITE DUMMY ANTENNAS

ype	D-101				D-251			
stance	52 Ohms	73 Ohms	300 Ohms	600 Ohms	52 Ohms	73 Ohms	300 Ohms	600 Ohms
frequency	22 mc	38 mc	22 mc	31 mc	19 mc	21 mc	15 mc	19 mc
c ± 10%								
s frequency	1.10 R dc	1.10 R dc	1.10 R dc	.90 R dc	1.10 R dc	1.10 R dc	1.10 R dc	.90 R dc
frequency	1.18 R dc	1.14 R dc	1.10 R dc	.99 R dc	1.25 R dc	1.13 R dc	1.15 R dc	1.00 R dc
frequency	18 mc	32 mc	22 mc	60 mc	13 mc	19 mc	13 mc	30 mc
± 10%								
s frequency	1.06 R dc	1.07 R dc	1.10 R dc	.60 R dc	1.03 R dc	1.07 R dc	1.08 R dc	.64 R dc
frequency	1.10 R dc	1.10 R dc	1.10 R dc	.90 R dc	1.10 R dc	1.10 R dc	1.10 R dc	.90 R dc

Cat. No.[1]	Watts	*±5% Ohms*	Net Lbs.	Net Price 1-9 Qty.
D-101-52	100	52	.60	$12.60
D-101-73	100	73	.60	12.60
D-101-300	100	300	.65	8.40
D-101-600	100	600	.65	8.40
D-251-52	250	52	1.25	16.80
D-251-73	250	73	1.25	16.80
D-251-300	250	300	1.50	16.80
D-251-600	250	600	1.50	16.80

Rdc .... D.C. Resistance of Dummy Antenna
Rs .... Effective Series Resistance of Dummy Antenna
Z .... Scalar Value of Impedance of Dummy Antenna

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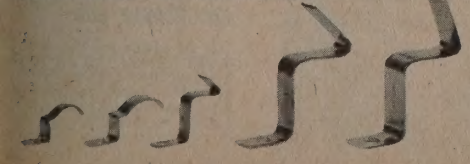
unting brackets for stock resistors

fit inside the cores of tubular resistors and remain in place by friction. dard bracket (indicated by catalog number without suffix) is cadmium eel. An "S" suffix on the catalog number indicates spring steel; a "B" icates brass; a "BN" suffix indicates brass bracket for 100 Watt type -inductive resistor with flat sided core.



Spring steel brackets are excellent where vibration is involved; brass brackets are used with non-inductive resistors or for corrosion resistance. A pair of **standard** brackets is supplied with each individually boxed resistor sold through distributors. Brackets are not automatically supplied for bulk resistor orders. Brackets are sold in lots of 100 pieces (50 pair).

Catalog No.	Mtg. Screw Max.	Fits these Resistors	Weight Lbs. 100 pcs.	Net Price 1-9 Pkgs.*
5, 5S, 5B	6	12 W Brown Devil or Divid.	.17	$1.47
7, 7S, 7B	6	20W Brown Devil	.24	1.58
9, 9S, 9B	6	25, 50W Fixed; 25, 50, 75W Dividohm	.30	1.68
12, 12S, 12BN	10	100W Fixed or Dividohm	1.30	3.15
18, 18S, 18B	10	175, 225W Fixed or Divid.	1.50	4.20

*100 pieces per pkg. — Minimum Order

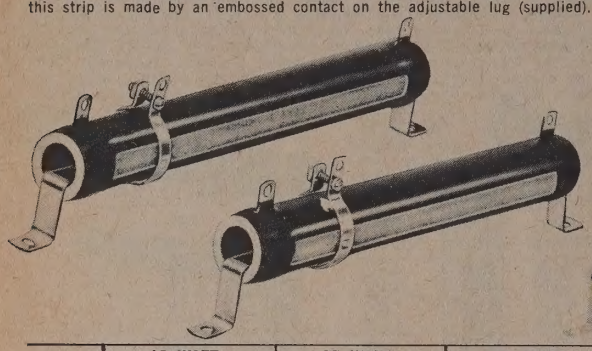
OHMITE PAGE 9

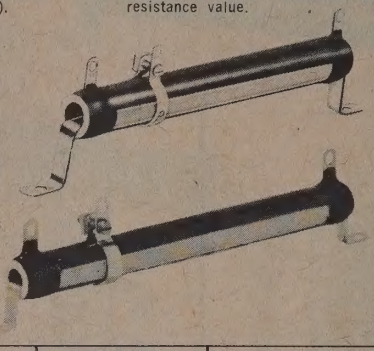
OHMITE dividohm® type 210 adjustable vitreous enameled resistor

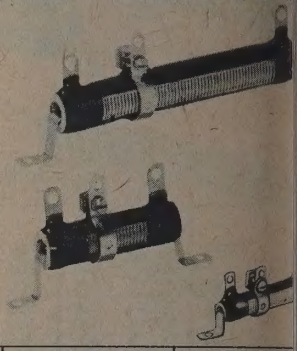
"Dividohm" resistors make ideal voltage dividers for original equipment and replacement in transmitters, rectifiers and other apparatus. Such tapped "bleeders" are made by using one or more adjustable lugs, as required. "Dividohms" are also handy for obtaining odd resistance values, for adjusting circuits, and for use on equipment which must be set to meet various line voltages.

"Dividohm" resistors are vitreous enameled resistors on which a narrow strip has been left uncovered to expose a portion of each turn. Contact to any wire in this strip is made by an embossed contact on the adjustable lug (supplied).

WATT RATING: **The stated wattage rating applies only when the entire re is in the circuit.** When the adjustable lug is set at an intermediate po wattage rating is reduced in approximately the same portion, i.e., if the set at half the resistance, the wattage is reduced by one-half. A safe follow is to make sure that the maximum rated current is not exceede should be carefully checked particularly if the resistor will be used as a divider with several adjustable lugs. Resistance tolerance is ±10% for t resistance value.







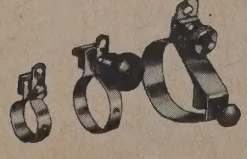
Resist. Ohms	12 WATT Core: 1¾"x¾"D. Mtg. Ctr: 2¾"— Av. Wt. .02 lb. Std. Mtg. Brkt.* No. 5 Catalog No.[1]	Max. Amps.	25 WATT Core: 2"x¾"D. Mtg. Ctr: 2¾"— Av. Wt. .05 lb. Std. Mtg. Brkt.* No. 9 Catalog No.[1]	Max. Amps.	50 WATT Core: 4"x¾"D. Mtg. Ctr: 4¾"— Av. Wt. .09 lb. Std. Mtg. Brkt.* No. 9 Catalog No.[1]	Max. Amps.	75 WATT Core: 6"x¾"D. Mtg. Ctr: 6¾"— Av. Wt. .15 lb. Std. Mtg. Brkt.* No. 9 Catalog No.[1]	Max. Amps.	100 WATT Core: 6½"x¾"D. Mtg. Ctr: 7⅜"— Av. Wt. .20 lb. Std. Mtg. Brkt.* No. 12 Catalog No.[1]	Max. Amps.	175 WATT Core: 8½"x1¼"D. Mtg. Ctr: 9⅜"— Av. Wt. .50 lb. Std. Mtg. Brkt.* No. 18 Catalog No.[1]	Max. Amps.	225 WATT Core: 10½"x1¼ Mtg. Ctr: 11⅜ Av. Wt. .62 l Std. Mtg. Brkt.* N Catalog No.[1]	Max. Amp
1	**1001**	3.46	0360	5.00	**0560A**	7.07	0769A	8.66	**0956A**	10.0	**1156A**	13.2	**1356A**	15.0
2	**1002**	2.45	0360B	3.54	**0560B**	5.00	0769B	6.12	**0956B**	7.07	1156B	9.35	**1356B**	10.6
3	**1003**	2.00	0361	2.88	**0560C**	4.07	0769C	5.00	**0956C**	5.77	1156C	7.63	**1356C**	8.6
4					0560D	3.53	0769D	4.33	**0956D**	5.00	1156D	6.60	**1356D**	7.5
5	**1004**	1.54	0362	2.24	**0560**	3.16	**0769**	3.87	**0956**	4.47	**1156**	5.92	**1356**	6.7
7.5	**1005**	1.26	0362B	1.82										
10	**1006**	1.09	0363	1.58	**0561**	2.23	**0770**	2.74	**0957**	3.16	**1157**	4.18	**1357**	4.7
15	**1007**	.89	0364	1.29			**0771**	2.24						
20	**1008**	.77	0364B	1.12										
25	**1009**	.69	0365	1.00	**0562**	1.41	**0772**	1.73	**0958**	2.00	**1158**	2.64	**1358**	3.0
50	**1010**	.49	0366	.71	**0563**	1.00	**0773**	1.22	**0959**	1.41	**1159**	1.87	**1359**	2.1
75	**1011**	.40	0367	.58	**0564**	.82								
100	**1012**	.34	0368	.50	**0565**	.71	0774	.86	**0960**	1.00	**1160**	1.32	**1360**	1.5
150	**1013**	.28	0369	.41	**0566**	.58								
200	**1014**	.24	0370	.35	**0567**	.50	**0774B**	.61						
250	**1015**	.22	**0371**	.32	**0568**	.45	0775	.55	**0960B**	.63	**1160B**	.84	**1360B**	.9
300	**1016**	.20	**0371B**	.29	**0568B**	.41	**0775B**	.50						
350	1017	.18												
400	**1018**	.17	**0371C**	.25	**0568C**	.35	0775C	.43						
500	**1019**	.15	**0372**	.22	**0569**	.32	**0776**	.39	**0961**	.45	**1161**	.59	**1361**	.6
600	1020	.14												
750	**1021**	.13	**0373**	.18	**0570**	.26	0777	.32						
800	1022	.12	0374	.17	0571	.25	0777B	.30						
1000	**1023**	.11	**0375**	.16	**0572**	.22	0778	.27	**0962**	.32	**1162**	.42	**1362**	.4
1250	**1024**	.098	0375B	.14	0572B	.20	0778B	.24						
1500	**1025**	.089	**0376**	.13	**0573**	.18	0779	.22	**0962B**	.26	1162B	.34	**1362B**	.3
2000	**1026**	.077	**0377**	.12	**0574**	.16	0780	.19						
2250	1027	.073	0377B	.11	0574B	.15	0780B	.18						
2500	**1028**	.069	**0378**	.10	**0575**	.14	0781	.17	**0963**	.20	**1163**	.26	**1363**	.3
3000	**1029**	.063	**0379**	.091	**0576**	.13	0781B	.16						
3500	**1030**	.058	0380	.084	**0576B**	.12	0782	.15						
4000	1031	.055	**0381**	.079	0577	.11	0782B	.14						
4500	1032	.052	0381B	.074	**0577B**	.10	0782C	.13						
5000	**1033**	.049	**0382**	.070	**0578**	.10	0783	.12	**0964**	.14	**1164**	.19	**1364**	.2
6000	1034	.045	**0383**	.064	0578B	.091	0783B	.11						
7000	**1035**	.042	0383B	.060	0578C	.084	0783C	.10						
7500	**1036**	.040	**0384**	.057	0579	.081	0784	.10						
8000	**1037**	.039	0384B	.055	**0580**	.079	0784B	.096						
8500	1038	.037												
9000	1039	.036	0384C	.052	0580B	.074	0784C	.091						
10000	**1040**	.035	**0385**	.050	**0581**	.071	0785	.086	**0965**	.10	1165	.13	**1365**	.1
12000			0386	.042	0582	.064	0785B	.079						
15000			**0387**	.036	0583	.057	0786	.070	0966	.081	1166	.11	1366	.1
20000			**0388**	.031	**0584**	.050	**0787**	.061	0967	.071	1167	.094	**1367**	.1
25000			**0389**	.028	0585	.045	0788	.054	**0968**	.063	1168	.083	1368	.0
30000					0586	.036	0789	.050	0969	.058	1169	.076	1369	.0
35000							0790	.046						
40000					0587	.029	0791	.043	0970	.050	1170	.066	1370	.0
45000							0792	.035						
50000					**0588**	.026	0793	.033	0971	.045	1171	.059	1371	.0
60000					0589	.024	0794	.030						
75000									0972	.032	1172	.048	1372	.0
80000					0590	.021	0795	.026						
100000					**0591**	.018	0796	.023	**0973**	.028	1173	.042	1373	.0

[1] **ITEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.**
* **Mounting brackets are automatically supplied in individual unit packs; supplied only when specified in bulk packs.**

adjustable lugs

One "Screw Driver Type Adjustable Lug" is supplied with each unit. Lugs with a silver contact button can be ordered from the table shown below.

MOVING THE LUGS: Lugs always should be loosened completely before moving and not moved except while the current is off, in order to protect the exposed from mechanical or electrical injury and to protect the operator from dang voltages.



STANDARD

Core Diam. Inches	Screw Driver Type New Cat. No.	Screw Driver Type Old Cat. No.	Bakelite Knob Type New Cat. No.	Bakelite Knob Type Old Cat. No.
5/16	2115	1058	—	—
3/8	2121	0358	2122	0359
3/4	2125	1958	2126	1959
1⅛	2133	2158	2134	2159

With SILVER CONTACT BUTTONS

Core Diam. Inches	Screw Driver Type New Cat. No.	Screw Driver Type Old Cat. No.	Bakelite Knob Type New Cat. No.	Bakelite Knob Type Old Cat. No.
5/16	2116	2161	—	—
3/8	2123	2164	2124	2165
3/4	2127	2166	2128	2167
1⅛	2135	2170	2136	2171

DOUBLE THUMB SCREW ADJUSTABLE LUG

This adjustable lug, which is illus above, features two advantages — of adjustment and less chance of aging the resistance wire while m lugs. Available for 1⅛" cores. Catalog No. **2160** .....Net 1-9

OHMITE PAGE 10

Net

© United Technical Publica

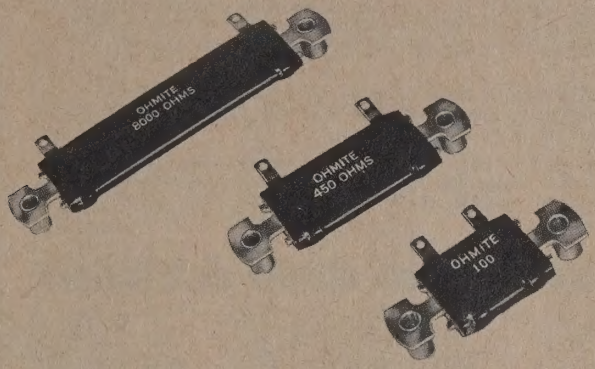
)HMITE type 250 "THIN" vitreous enameled resistors

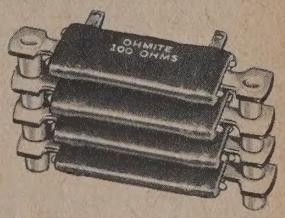
ite "Thin" Resistors are intended for use in equipment where space a premium. They are wound on flat, oval shaped ceramic cores, and red with Ohmite's exclusive vitreous enamel coating. Resistance tol-ce, ±5%.

ntegral mounting brackets extend through the resistor core to equalize distribution and to conduct heat directly to the mounting surface — ides equivalent wattage with less bulk and in less space. Wattage gs assume the use of a metal mounting surface. Reduce ratings 15% on-metallic surfaces.

"Thin" resistors are mounted or compactly stacked by means of bracket studs which are hollow to receive assembly bolts. The load should be reduced for each unit when resistors are stacked or used in confined, poorly ventilated spaces. Total height from bottom of mounting stud to top of resistor is approximately 5/16" for the Standard units and 11/32" for the Miniature units.

For other sizes, closer tolerances, non-stacking brackets, Dividohm adjustable or other features, consult factory.





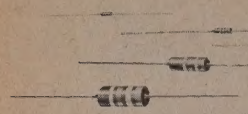
ist. ms	MINIATURE SIZES						STANDARD SIZES											
	10 WATT* Core: 3/4"x3/8"x1/8"— Mtg. Ctr. 1" Stud Hole .125"— Av. Wt. .007 lb.			20 WATT* Core: 2"x3/8"x1/8"— Mtg. Ctr. 2 5/16" Stud Hole .125"— Av. Wt. .015 lb.			30 WATT* Core: 1 1/4"x1"x1/4"— Mtg. Ctr. 2" Stud Hole .196"— Av. Wt. .037 lb.			40 WATT* Core: 2"x1"x1/4"— Mtg. Ctr. 2 3/4" Stud Hole .196"— Av. Wt. .052 lb.			55 WATT* Core: 3 1/2"x1"x1/4"— Mtg. Ctr. 4 1/4" Stud Hole .196"— Av. Wt. .095 lb.		
	Cat. No.[1]	Max. Volts	Max. Amps	Cat. No.[1]	Max. Volts	Max. Amps	Cat. No.[1]	Max. Volts	Max. Amps	Cat. No.[1]	Max. Volts	Max. Amps	Cat. No.[1]	Max. Volts	Max. Amps
1.5	**F101**	3.16	3.16	**F201**	4.47	4.47	F301	5.47	5.47	**F401**	6.32	6.32	F501	7.42	7.42
							F302	6.70	4.47	F402	7.74	5.16	F502	8.25	6.05
2 3	F102	4.47	2.24	F202	6.32	3.16	F303	7.74	3.88	**F403**	8.94	4.47	F503	10.4	5.24
							F304	9.45	3.17	**F404**	10.9	3.65	F504	12.8	4.28
4 5	F103	7.07	1.41	**F203**	10.0	2.00	**F305**	12.2	2.46	F405	12.6	3.16	F505	14.8	3.70
										F406	14.1	2.83	F506	16.6	3.32
7.5	F104	8.66	1.15							F407	17.3	2.31	F507	20.6	2.72
)	**F105**	10.0	1.00	F204	14.1	1.41	F306	17.3	1.73	**F408**	20.0	2.00	F508	23.4	2.34
5)	F106	12.2	0.82	**F205**	17.3	1.16	**F307**	21.2	1.42						
	F107	14.1	0.71												
5)	F108	15.8	0.63	F206	22.3	0.89	F308	27.4	1.10	F409	31.6	1.26	F509	37.1	1.48
	F109	17.3	0.58												
)	F110	20.0	0.50	F207	28.3	0.71	F309	34.6	0.87	**F410**	40.0	1.00	**F510**	46.9	1.17
)	**F111**	22.3	0.45	F208	31.6	0.63	F310	38.7	0.77	F411	44.7	0.89	F511	52.4	1.05
5)	**F112**	27.4	0.36	F209	38.7	0.52	F311	47.4	0.63	F412	54.8	0.73	F512	64.2	0.86
)	**F113**	31.6	0.32	**F210**	44.7	0.45	F312	54.8	0.55	F413	63.2	0.63	F513	74.1	0.74
5)	**F114**	35.3	0.28												
	F115	38.7	0.26	**F211**	54.8	0.36	F313	67.0	0.45	F414	77.4	0.52	F514	82.5	0.61
)	**F116**	44.7	0.22	**F212**	63.2	0.32	F314	77.4	0.39	F415	89.4	0.45	F515	104.0	0.52
)	F117	50.0	0.20	F213	70.7	0.28	F315	86.6	0.35	F416	100.0	0.40	**F516**	117.0	0.47
)	**F118**	54.8	0.18	F214	77.4	0.26									
)	F119	63.2	0.16	F215	89.4	0.22	F316	108.0	0.28	F417	126.0	0.32	F517	148.0	0.37
)	**F120**	70.7	0.14	F216	100.0	0.20	F317	122.0	0.25	F418	141.0	0.28	F518	166.0	0.33
)	F121	77.4	0.13												
) 0	**F122**	86.6	0.12				F318	150.0	0.20	F419	173.0	0.23	F519	206.0	0.27
				F217	126.0	0.16									
)	**F123**	100.0	0.10	F218	141.0	0.14	F319	173.0	0.17	F420	200.0	0.20	F520	234.0	0.23
)	F124	111.0	0.089	F219	158.0	0.12									
)	**F125**	122.0	0.081	F220	173.0	0.12	F320	212.0	0.14	F421	245.0	0.16	1.54	F521	287.0	0.19
)	F126	132.0	0.075												
)	F127	141.0	0.071	F221	200.0	0.10	F321	245.0	0.12	F422	283.0	0.14		F522	332.0	0.17
)	**F128**	158.0	0.063	F222	223.0	0.089	F322	274.0	0.11	F423	316.0	0.13		F523	371.0	0.15
) 0	**F129**	173.0	0.057	F223	245.0	0.081	F323	300.0	0.10	F424	345.0	0.12		F524	406.0	0.14
				F224	264.0	0.075									
)	F130	200.0	0.050	F225	283.0	0.070	F324	346.0	0.087	F425	400.0	0.10		F525	469.0	0.12
)	F131	223.0	0.045	**F226**	316.0	0.063	F325	387.0	0.076	F426	447.0	0.089		F526	524.0	0.10
)				F227	346.0	0.058									
)				F228	387.0	0.052	F326	424.0	0.057	F427	548.0	0.073		F527	642.0	0.086
)				**F229**	445.0	0.045	F327	490.0	0.049	F428	632.0	0.063		F528	741.0	0.074
)				F230	500.0	0.040										
)				F231	555.0	0.036				F429	670.0	0.045		F529	825.0	0.061
)				F232	625.0	0.032				F430	774.0	0.039		F530	1040.0	0.052
)				F233	715.0	0.028				F431	866.0	0.035		F531	1170.0	0.047
)				F234	770.0	0.026								F532	1210.0	0.040
)				F235	835.0	0.024										
)				F236	910.0	0.022										
)				F237	990.0	0.020										

WS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.

tings are based on use of steel panel mounting and should be reduced on non-metallic mounting surface because of reduced thermal conductivity.

OHMITE PAGE 11

OHMITE *Little Devil*® molded composition resistors on "Tally Ta



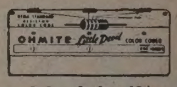
"Tally Tape," Ohmite's wonderfully convenient packaging presently provides for ¼, ½, 1 and 2-watt resistors. Each perforated segment holds 5 resistors — prevents spilling or tangling — simplifies counting — is printed for quick identification — guarantees original, factory-fresh stock.

Now Includes MIL-R-II Types

Little Devils, Ohmite's famous molded composition resistors, find broad use in commercial and military applications. The ⅛, ¼, ½, 1 and 2-watt sizes, which conform respectively to Styles RC05, RC07, RC20, RC32 and RC42 of MIL-R-11, meet all the stringent requirements of this military specification. The five sizes available satisfy a wide range of design and service needs.

Little Devils have molded insulation for high dielectric strength. Noted advantages of these units are great stability, low noise level, low voltage coefficient, high insulation breakdown voltage and rapid heat dissipation. They may be used at full rated wattage at 70°C (158°F) ambient temperature.

Little Devils are available from stock in standard EIA resistance values in the tolerances and resistance ranges shown in the price table. Ratings for maximum continuous RMS voltage drop are high: 150 volts for ⅛ watt units, 250 volts for ¼ watt, 350 volts for ½ watt, 500 volts for 1 watt, and 750 volts for 2 watt units. See "Little Devil" Resistor Assortments, page 14.



Color Coder 10¢

CATALOG NO. 5190

available only from ohmite distributors

⅛ WATT — MIL Type: RC 05* Size: .145"L x .062"D. Leads: .015" D. x 1" L.

Resistance	Catalog Number ±5%	±10%
2.7 ohms	OB27G5	OB27G1
3.0 ohms	OB30G5	
3.3 ohms	OB33G5	OB33G1
3.6 ohms	OB36G5	
3.9 ohms	OB39G5	OB39G1
4.3 ohms	OB43G5	
4.7 ohms	OB47G5	OB47G1
5.1 ohms	OB51G5	
5.6 ohms	OB56G5	OB56G1
6.2 ohms	OB62G5	
6.8 ohms	OB68G5	OB68G1
7.5 ohms	OB75G5	
8.2 ohms	OB82G5	OB82G1
9.1 ohms	OB91G5	
10. ohms	OB1005	OB1001
11. ohms	OB1105	
12. ohms	OB1205	OB1201
13. ohms	OB1305	
15. ohms	OB1505	OB1501
16. ohms	OB1605	
18. ohms	OB1805	OB1801
20. ohms	OB2005	
22. ohms	OB2205	OB2201
24. ohms	OB2405	
27. ohms	OB2705	OB2701
30. ohms	OB3005	
33. ohms	OB3305	OB3301
36. ohms	OB3605	
39. ohms	OB3905	OB3901
43. ohms	OB4305	
47. ohms	OB4705	OB4701
51. ohms	OB5105	
56. ohms	OB5605	OB5601
62. ohms	OB6205	
68. ohms	OB6805	OB6801
75. ohms	OB7505	
82. ohms	OB8205	OB8201
91. ohms	OB9105	
100. ohms	OB1015	OB1011
110. ohms	OB1115	
120. ohms	OB1215	OB1211
130. ohms	OB1315	
150. ohms	OB1515	OB1511
160. ohms	OB1615	
180. ohms	OB1815	OB1811
200. ohms	OB2015	
220. ohms	OB2215	OB2211
240. ohms	OB2415	
270. ohms	OB2715	OB2711
300. ohms	OB3015	
330. ohms	OB3315	OB3311
360. ohms	OB3615	
390. ohms	OB3915	OB3911
430. ohms	OB4315	
470. ohms	OB4715	OB4711
510. ohms	OB5115	
560. ohms	OB5615	OB5611
620. ohms	OB6215	
680. ohms	OB6815	OB6811
750. ohms	OB7515	
820. ohms	OB8215	OB8211
910. ohms	OB9115	
1,000. ohms	OB1025	OB1021
1,100. ohms	OB1125	
1,200. ohms	OB1225	OB1221
1,300. ohms	OB1325	
1,500. ohms	OB1525	OB1521
1,600. ohms	OB1625	
1,800. ohms	OB1825	OB1821
2,000. ohms	OB2025	
2,200. ohms	OB2225	OB2221
2,400. ohms	OB2425	
2,700. ohms	OB2725	OB2721
3,000. ohms	OB3025	
3,300. ohms	OB3325	OB3321
3,600. ohms	OB3625	
3,900. ohms	OB3925	OB3921
4,300. ohms	OB4325	
4,700. ohms	OB4725	OB4721
5,100. ohms	OB5125	
5,600. ohms	OB5625	OB5621
6,200. ohms	OB6225	
6,800. ohms	OB6825	OB6821
7,500. ohms	OB7525	
8,200. ohms	OB8225	OB8221
9,100. ohms	OB9125	
10,000. ohms	OB1035	OB1031
11,000. ohms	OB1135	
12,000. ohms	OB1235	OB1231
13,000. ohms	OB1335	
15,000. ohms	OB1535	OB1531
16,000. ohms	OB1635	
18,000. ohms	OB1835	OB1831
20,000. ohms	OB2035	
22,000. ohms	OB2235	OB2231
24,000. ohms	OB2435	
27,000. ohms	OB2735	OB2731
30,000. ohms	OB3035	
33,000. ohms	OB3335	OB3331
36,000. ohms	OB3635	
39,000. ohms	OB3935	OB3931
43,000. ohms	OB4335	
47,000. ohms	OB4735	OB4731
51,000. ohms	OB5135	
56,000. ohms	OB5635	OB5631
62,000. ohms	OB6235	
68,000. ohms	OB6835	OB6831
75,000. ohms	OB7535	
82,000. ohms	OB8235	OB8231
91,000. ohms	OB9135	
0.1 megs	OB1045	OB1041
0.11 megs	OB1145	
0.12 megs	OB1245	OB1241
0.13 megs	OB1345	
0.15 megs	OB1545	OB1541
0.16 megs	OB1645	
0.18 megs	OB1845	OB1841
0.20 megs	OB2045	
0.22 megs	OB2245	OB2241
0.24 megs	OB2445	
0.27 megs	OB2745	OB2741
0.30 megs	OB3045	
0.33 megs	OB3345	OB3341
0.36 megs	OB3645	
0.39 megs	OB3945	OB3941
0.43 megs	OB4345	
0.47 megs	OB4745	OB4741
0.51 megs	OB5145	
0.56 megs	OB5645	OB5641
0.62 megs	OB6245	
0.68 megs	OB6845	OB6841
0.75 megs	OB7545	
0.82 megs	OB8245	
0.91 megs	OB9145	
1. megs	OB1055	
1.1 megs	OB1155	
1.2 megs	OB1255	
1.3 megs	OB1355	
1.5 megs	OB1555	
1.6 megs	OB1655	
1.8 megs	OB1855	
2.0 megs	OB2055	
2.2 megs	OB2255	
2.4 megs	OB2455	
2.7 megs	OB2755	
3.0 megs	OB3055	
3.3 megs	OB3355	
3.6 megs	OB3655	
3.9 megs	OB3955	
4.3 megs	OB4355	
4.7 megs	OB4755	
5.1 megs	OB5155	
5.6 megs	OB5655	
6.2 megs	OB6255	
6.8 megs	OB6855	
7.5 megs	OB7555	
8.2 megs	OB8255	
9.1 megs	OB9155	
10. megs	OB1065	
11. megs	OB1165	
12. megs	OB1265	
13. megs	OB1365	
15. megs	OB1565	
16. megs	OB1665	
18. megs	OB1865	
20. megs	OB2065	
22. megs	OB2265	

¼ WATT — MIL Type: RC 07 Size: ¼"L. x .090"D. Leads: .025"D. x 1½"L.

Resistance	Catalog Number ±5%	±10%
2.7 ohms	OC27G5	OC27G1
3.0 ohms	OC30G5	
3.3 ohms	OC33G5	OC33G1
3.6 ohms	OC36G5	
3.9 ohms	OC39G5	OC39G1
4.3 ohms	OC43G5	
4.7 ohms	OC47G5	OC47G1
5.1 ohms	OC51G5	
5.6 ohms	OC56G5	OC56G1
6.2 ohms	OC62G5	
6.8 ohms	OC68G5	OC68G1
7.5 ohms	OC75G5	
8.2 ohms	OC82G5	OC82G1
9.1 ohms	OC91G5	
10. ohms	OC1005	OC1001
11. ohms	OC1105	
12. ohms	OC1205	OC1201
13. ohms	OC1305	
15. ohms	OC1505	OC1501
16. ohms	OC1605	
18. ohms	OC1805	OC1801
20. ohms	OC2005	
22. ohms	OC2205	OC2201
24. ohms	OC2405	
27. ohms	OC2705	OC2701
30. ohms	OC3005	
33. ohms	OC3305	OC3301
36. ohms	OC3605	
39. ohms	OC3905	OC3901
43. ohms	OC4305	
47. ohms	OC4705	OC4701
51. ohms	OC5105	
56. ohms	OC5605	OC5601
62. ohms	OC6205	
68. ohms	OC6805	OC6801
75. ohms	OC7505	
82. ohms	OC8205	OC8201
91. ohms	OC9105	
100. ohms	OC1015	OC1011
110. ohms	OC1115	
120. ohms	OC1215	OC1211
130. ohms	OC1315	
150. ohms	OC1515	OC1511
160. ohms	OC1615	
180. ohms	OC1815	OC1811
200. ohms	OC2015	
220. ohms	OC2215	OC2211
240. ohms	OC2415	
270. ohms	OC2715	OC2711
300. ohms	OC3015	
330. ohms	OC3315	OC3311
360. ohms	OC3615	
390. ohms	OC3915	OC3911
430. ohms	OC4315	
470. ohms	OC4715	OC4711
510. ohms	OC5115	
560. ohms	OC5615	OC5611
620. ohms	OC6215	
680. ohms	OC6815	OC6811
750. ohms	OC7515	
820. ohms	OC8215	OC8211
910. ohms	OC9115	
1,000. ohms	OC1025	OC1021
1,100. ohms	OC1125	
1,200. ohms	OC1225	OC1221
1,300. ohms	OC1325	
1,500. ohms	OC1525	OC1521
1,600. ohms	OC1625	
1,800. ohms	OC1825	OC1821
2,000. ohms	OC2025	
2,200. ohms	OC2225	OC2221
2,400. ohms	OC2425	
2,700. ohms	OC2725	OC2721
3,000. ohms	OC3025	
3,300. ohms	OC3325	OC3321
3,600. ohms	OC3625	
3,900. ohms	OC3925	OC3921
4,300. ohms	OC4325	
4,700. ohms	OC4725	OC4721
5,100. ohms	OC5125	
5,600. ohms	OC5625	OC5621
6,200. ohms	OC6225	
6,800. ohms	OC6825	OC6821
7,500. ohms	OC7525	
8,200. ohms	OC8225	OC8221
9,100. ohms	OC9125	
10,000. ohms	OC1035	OC1031
11,000. ohms	OC1135	
12,000. ohms	OC1235	OC1231
13,000. ohms	OC1335	
15,000. ohms	OC1535	OC1531
16,000. ohms	OC1635	
18,000. ohms	OC1835	OC1831
20,000. ohms	OC2035	
22,000. ohms	OC2235	OC2231
24,000. ohms	OC2435	
27,000. ohms	OC2735	OC2731
30,000. ohms	OC3035	
33,000. ohms	OC3335	OC3331
36,000. ohms	OC3635	
39,000. ohms	OC3935	OC3931
43,000. ohms	OC4335	
47,000. ohms	OC4735	OC4731
51,000. ohms	OC5135	
56,000. ohms	OC5635	OC5631
62,000. ohms	OC6235	
68,000. ohms	OC6835	OC6831
75,000. ohms	OC7535	
82,000. ohms	OC8235	OC8231
91,000. ohms	OC9135	
0.1 megs	OC1045	OC1041
0.11 megs	OC1145	
0.12 megs	OC1245	OC1241
0.13 megs	OC1345	
0.15 megs	OC1545	OC1541
0.16 megs	OC1645	
0.18 megs	OC1845	OC1841
0.20 megs	OC2045	
0.22 megs	OC2245	OC2241
0.24 megs	OC2445	
0.27 megs	OC2745	OC2741
0.30 megs	OC3045	
0.33 megs	OC3345	OC3341
0.36 megs	OC3645	
0.39 megs	OC3945	OC3941
0.43 megs	OC4345	
0.47 megs	OC4745	OC4741
0.51 megs	OC5145	
0.56 megs	OC5645	OC5641
0.62 megs	OC6245	
0.68 megs	OC6845	OC6841
0.75 megs	OC7545	
0.82 megs	OC8245	OC8241
0.91 megs	OC9145	
1. megs	OC1055	OC1051
1.1 megs	OC1155	
1.2 megs	OC1255	
1.3 megs	OC1355	
1.5 megs	OC1555	
1.6 megs	OC1655	
1.8 megs	OC1855	
2.0 megs	OC2055	
2.2 megs	OC2255	
2.4 megs	OC2455	
2.7 megs	OC2755	
3.0 megs	OC3055	
3.3 megs	OC3355	
3.6 megs	OC3655	
3.9 megs	OC3955	
4.3 megs	OC4355	
4.7 megs	OC4755	
5.1 megs	OC5155	
5.6 megs	OC5655	
6.2 megs	OC6255	
6.8 megs	OC6855	
7.5 megs	OC7555	
8.2 megs	OC8255	
9.1 megs	OC9155	
10. megs	OC1065	
11. megs	OC1165	
12. megs	OC1265	
13. megs	OC1365	
15. megs	OC1565	
16. megs	OC1665	
18. megs	OC1865	
20. megs	OC2065	
22. megs	OC2265	

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½ WATT — MIL Type: RC 20‡ Size: 3/16"L. x 3/64"D. Leads: .033"D. x 1½"L.

Resistance	Catalog Number ±5%	Catalog Number ±10%
ohms	OE10G5	OE10G1
ohms	OE11G5	
ohms	OE12G5	OE12G1
ohms	OE13G5	
ohms	OE15G5	OE15G1
ohms	OE16G5	
ohms	OE18G5	OE18G1
ohms	OE20G5	
ohms	OE22G5	OE22G1
ohms	OE24G5	
ohms	OE27G5	OE27G1
ohms	OE30G5	
ohms	OE33G5	OE33G1
ohms	OE36G5	
ohms	OE39G5	OE39G1
ohms	OE43G5	
ohms	OE47G5	OE47G1
ohms	OE51G5	
ohms	OE56G5	OE56G1
ohms	OE62G5	
ohms	OE68G5	OE68G1
ohms	OE75G5	
ohms	OE82G5	OE82G1
ohms	OE91G5	
ohms	OE1005	OE1001
ohms	OE1105	
ohms	OE1205	OE1201
ohms	OE1305	
ohms	OE1505	OE1501
ohms	OE1605	
ohms	OE1805	OE1801
ohms	OE2005	
ohms	OE2205	OE2201
ohms	OE2405	
ohms	OE2705	OE2701
ohms	OE3005	
ohms	OE3305	OE3301
ohms	OE3605	
ohms	OE3905	OE3901
ohms	OE4305	
ohms	OE4705	OE4701
ohms	OE5105	
ohms	OE5605	OE5601
ohms	OE6205	
ohms	OE6805	OE6801
ohms	OE7505	
ohms	OE8205	OE8201
ohms	OE9105	
ohms	OE1005	OE1001
ohms	OE1105	
ohms	OE1205	OE1201
ohms	OE1305	
ohms	OE1505	OE1501
ohms	OE1605	
ohms	OE1805	OE1801
ohms	OE2005	
ohms	OE2205	OE2201
ohms	OE2405	
ohms	OE2705	OE2701
ohms	OE3005	
ohms	OE3305	OE3301
ohms	OE3605	
ohms	OE3905	OE3901
ohms	OE4305	
ohms	OE4705	OE4701
ohms	OE5105	
ohms	OE5605	OE5601
ohms	OE6205	
ohms	OE6805	OE6801
ohms	OE7505	
ohms	OE8205	OE8201
ohms	OE9105	
ohms	OE1025	OE1021
ohms	OE1125	
ohms	OE1225	OE1221
ohms	OE1325	
ohms	OE1525	OE1521
ohms	OE1625	
ohms	OE1825	OE1821
ohms	OE2025	
ohms	OE2225	OE2221
ohms	OE2425	
ohms	OE2725	OE2721
ohms	OE3025	
ohms	OE3325	OE3321
ohms	OE3625	
ohms	OE3925	OE3921
ohms	OE4325	
ohms	OE4725	OE4721
ohms	OE5125	
ohms	OE5625	OE5621
ohms	OE6225	
ohms	OE6825	OE6821
ohms	OE7525	
ohms	OE8225	OE8221
ohms	OE9125	
ohms	OE1035	OE1031
ohms	OE1135	
ohms	OE1235	OE1231
ohms	OE1335	
ohms	OE1535	OE1531
ohms	OE1635	
ohms	OE1835	OE1831
ohms	OE2035	
ohms	OE2235	OE2231
ohms	OE2435	
ohms	OE2735	OE2731
ohms	OE3035	
ohms	OE3335	OE3331
ohms	OE3635	
ohms	OE3935	OE3931
ohms	OE4335	
ohms	OE4735	OE4731
ohms	OE5135	
ohms	OE5635	OE5631
ohms	OE6235	
ohms	OE6835	OE6831
ohms	OE7535	
ohms	OE8235	OE8231
ohms	OE9135	
megs	OE1045	OE1041
megs	OE1145	
megs	OE1245	OE1241
megs	OE1345	
megs	OE1545	OE1541
megs	OE1645	
megs	OE1845	OE1841
megs	OE2045	
megs	OE2245	OE2241
megs	OE2445	
megs	OE2745	OE2741
megs	OE3045	
megs	OE3345	OE3341
megs	OE3645	
megs	OE3945	OE3941
megs	OE4345	
megs	OE4745	OE4741
megs	OE5145	
megs	OE5645	OE5641
megs	OE6245	
megs	OE6845	OE6841
megs	OE7545	
megs	OE8245	OE8241
megs	OE9145	
megs	OE1055	OE1051
megs	OE1155	
megs	OE1255	OE1251
megs	OE1355	
megs	OE1555	OE1551
megs	OE1655	
megs	OE1855	OE1851
megs	OE2055	
megs	OE2255	OE2251
megs	OE2455	
megs	OE2755	OE2751
megs	OE3055	
megs	OE3355	OE3351
megs	OE3655	
megs	OE3955	OE3951
megs	OE4355	
megs	OE4755	OE4751
megs	OE5155	
megs	OE5655	OE5651
megs	OE6255	
megs	OE6855	OE6851
megs	OE7555	
megs	OE8255	OE8251
megs	OE9155	
megs	OE1065	OE1061
megs	OE1165	
megs	OE1265	OE1261
megs	OE1365	
megs	OE1565	OE1561
megs	OE1665	
megs	OE1865	OE1861
megs	OE2065	
megs	OE2265	OE2261

1 WATT — MIL Type: RC 32 Size: 3/16"L. x 3/32"D. Leads: .041"D. x 1½"L.

Resistance	Catalog Number ±5%	Catalog Number ±10%
ohms	OG27G5	OG27G1
ohms	OG30G5	
ohms	OG33G5	OG33G1
ohms	OG36G5	
ohms	OG39G5	OG39G1
ohms	OG43G5	
ohms	OG47G5	OG47G1
ohms	OG51G5	
ohms	OG56G5	OG56G1
ohms	OG62G5	
ohms	OG68G5	OG68G1
ohms	OG75G5	
ohms	OG82G5	OG82G1
ohms	OG91G5	
ohms	OG1005	OG1001
ohms	OG1105	
ohms	OG1205	OG1201
ohms	OG1305	
ohms	OG1505	OG1501
ohms	OG1605	
ohms	OG1805	OG1801
ohms	OG2005	
ohms	OG2205	OG2201
ohms	OG2405	
ohms	OG2705	OG2701
ohms	OG3005	
ohms	OG3305	OG3301
ohms	OG3605	
ohms	OG3905	OG3901
ohms	OG4305	
ohms	OG4705	OG4701
ohms	OG5105	
ohms	OG5605	OG5601
ohms	OG6205	
ohms	OG6805	OG6801
ohms	OG7505	
ohms	OG8205	OG8201
ohms	OG9105	
ohms	OG1005	OG1001
ohms	OG1105	
ohms	OG1205	OG1201
ohms	OG1305	
ohms	OG1505	OG1501
ohms	OG1605	
ohms	OG1805	OG1801
ohms	OG2005	
ohms	OG2205	OG2201
ohms	OG2405	
ohms	OG2705	OG2701
ohms	OG3005	
ohms	OG3305	OG3301
ohms	OG3605	
ohms	OG3905	OG3901
ohms	OG4305	
ohms	OG4705	OG4701
ohms	OG5105	
ohms	OG5605	OG5601
ohms	OG6205	
ohms	OG6805	OG6801
ohms	OG7505	
ohms	OG8205	OG8201
ohms	OG9105	
ohms	OG1025	OG1021
ohms	OG1125	
ohms	OG1225	OG1221
ohms	OG1325	
ohms	OG1525	OG1521
ohms	OG1625	
ohms	OG1825	OG1821
ohms	OG2025	
ohms	OG2225	OG2221
ohms	OG2425	
ohms	OG2725	OG2721
ohms	OG3025	
ohms	OG3325	OG3321
ohms	OG3625	
ohms	OG3925	OG3921
ohms	OG4325	
ohms	OG4725	OG4721
ohms	OG5125	
ohms	OG5625	OG5621
ohms	OG6225	
ohms	OG6825	OG6821
ohms	OG7525	
ohms	OG8225	OG8221
ohms	OG9125	
ohms	OG1035	OG1031
ohms	OG1135	
ohms	OG1235	OG1231
ohms	OG1335	
ohms	OG1535	OG1531
ohms	OG1635	
ohms	OG1835	OG1831
ohms	OG2035	
ohms	OG2235	OG2231
ohms	OG2435	
ohms	OG2735	OG2731
ohms	OG3035	
ohms	OG3335	OG3331
ohms	OG3635	
ohms	OG3935	OG3931
ohms	OG4335	
ohms	OG4735	OG4731
ohms	OG5135	
ohms	OG5635	OG5631
ohms	OG6235	
ohms	OG6835	OG6831
ohms	OG7535	
ohms	OG8235	OG8231
ohms	OG9135	
megs	OG1045	OG1041
megs	OG1145	
megs	OG1245	OG1241
megs	OG1345	
megs	OG1545	OG1541
megs	OG1645	
megs	OG1845	OG1841
megs	OG2045	
megs	OG2245	OG2241
megs	OG2445	
megs	OG2745	OG2741
megs	OG3045	
megs	OG3345	OG3341
megs	OG3645	
megs	OG3945	OG3941
megs	OG4345	
megs	OG4745	OG4741
megs	OG5145	
megs	OG5645	OG5641
megs	OG6245	
megs	OG6845	OG6841
megs	OG7545	
megs	OG8245	OG8241
megs	OG9145	
megs	OG1055	OG1051
megs	OG1155	
megs	OG1255	OG1251
megs	OG1355	
megs	OG1555	OG1551
megs	OG1655	
megs	OG1855	OG1851
megs	OG2055	
megs	OG2255	OG2251
megs	OG2455	
megs	OG2755	OG2751
megs	OG3055	
megs	OG3355	OG3351
megs	OG3655	
megs	OG3955	OG3951
megs	OG4355	
megs	OG4755	OG4751
megs	OG5155	
megs	OG5655	OG5651
megs	OG6255	
megs	OG6855	OG6851
megs	OG7555	
megs	OG8255	OG8251
megs	OG9155	
megs	OG1065	OG1061
megs	OG1165	
megs	OG1265	OG1261
megs	OG1365	
megs	OG1565	OG1561
megs	OG1665	
megs	OG1865	OG1861
megs	OG2065	
megs	OG2265	OG2261

2 WATT — MIL Type: RC 42 Size: 1/16"L. x 3/16"D. Leads: .046"D. x 1½"L.

Resistance	Catalog Number ±5%	Catalog Number ±10%
ohms	OH1005	OH1001
ohms	OH1105	
ohms	OH1205	OH1201
ohms	OH1305	
ohms	OH1505	OH1501
ohms	OH1605	
ohms	OH1805	OH1801
ohms	OH2005	
ohms	OH2205	OH2201
ohms	OH2405	
ohms	OH2705	OH2701
ohms	OH3005	
ohms	OH3305	OH3301
ohms	OH3605	
ohms	OH3905	OH3901
ohms	OH4305	
ohms	OH4705	OH4701
ohms	OH5105	
ohms	OH5605	OH5601
ohms	OH6205	
ohms	OH6805	OH6801
ohms	OH7505	
ohms	OH8205	OH8201
ohms	OH9105	
ohms	OH1015	OH1011
ohms	OH1115	
ohms	OH1215	OH1211
ohms	OH1315	
ohms	OH1515	OH1511
ohms	OH1615	
ohms	OH1815	OH1811
ohms	OH2015	
ohms	OH2215	OH2211
ohms	OH2415	
ohms	OH2715	OH2711
ohms	OH3015	
ohms	OH3315	OH3311
ohms	OH3615	
ohms	OH3915	OH3911
ohms	OH4315	
ohms	OH4715	OH4711
ohms	OH5115	
ohms	OH5615	OH5611
ohms	OH6215	
ohms	OH6815	OH6811
ohms	OH7515	
ohms	OH8215	OH8211
ohms	OH9115	
ohms	OH1025	OH1021
ohms	OH1125	
ohms	OH1225	OH1221
ohms	OH1325	
ohms	OH1525	OH1521
ohms	OH1625	
ohms	OH1825	OH1821
ohms	OH2025	
ohms	OH2225	OH2221
ohms	OH2425	
ohms	OH2725	OH2721
ohms	OH3025	
ohms	OH3325	OH3321
ohms	OH3625	
ohms	OH3925	OH3921
ohms	OH4325	
ohms	OH4725	OH4721
ohms	OH5125	
ohms	OH5625	OH5621
ohms	OH6225	
ohms	OH6825	OH6821
ohms	OH7525	
ohms	OH8225	OH8221
ohms	OH9125	
ohms	OH1035	OH1031
ohms	OH1135	
ohms	OH1235	OH1231
ohms	OH1335	
ohms	OH1535	OH1531
ohms	OH1635	
ohms	OH1835	OH1831
ohms	OH2035	
ohms	OH2235	OH2231
ohms	OH2435	
ohms	OH2735	OH2731
ohms	OH3035	
ohms	OH3335	OH3331
ohms	OH3635	
ohms	OH3935	OH3931
ohms	OH4335	
ohms	OH4735	OH4731
ohms	OH5135	
ohms	OH5635	OH5631
ohms	OH6235	
ohms	OH6835	OH6831
ohms	OH7535	
ohms	OH8235	OH8231
ohms	OH9135	
megs	OH1045	OH1041
megs	OH1145	
megs	OH1245	OH1241
megs	OH1345	
megs	OH1545	OH1541
megs	OH1645	
megs	OH1845	OH1841
megs	OH2045	
megs	OH2245	OH2241
megs	OH2445	
megs	OH2745	OH2741
megs	OH3045	
megs	OH3345	OH3341
megs	OH3645	
megs	OH3945	OH3941
megs	OH4345	
megs	OH4745	OH4741
megs	OH5145	
megs	OH5645	OH5641
megs	OH6245	
megs	OH6845	OH6841
megs	OH7545	
megs	OH8245	OH8241
megs	OH9145	
megs	OH1055	OH1051
megs	OH1155	
megs	OH1255	OH1251
megs	OH1355	
megs	OH1555	OH1551
megs	OH1655	
megs	OH1855	OH1851
megs	OH2055	
megs	OH2255	OH2251
megs	OH2455	
megs	OH2755	OH2751
megs	OH3055	
megs	OH3355	OH3351
megs	OH3655	
megs	OH3955	OH3951
megs	OH4355	
megs	OH4755	OH4751
megs	OH5155	
megs	OH5655	OH5651
megs	OH6255	
megs	OH6855	OH6851
megs	OH7555	
megs	OH8255	OH8251
megs	OH9155	
megs	OH1065	OH1061
megs	OH1165	
megs	OH1265	OH1261
megs	OH1365	
megs	OH1565	OH1561
megs	OH1665	
megs		OH1861
megs		OH2261

esistance under MIL-R-11 is 10 ohms.
esistance under MIL-R-11 is 2.7 ohms.

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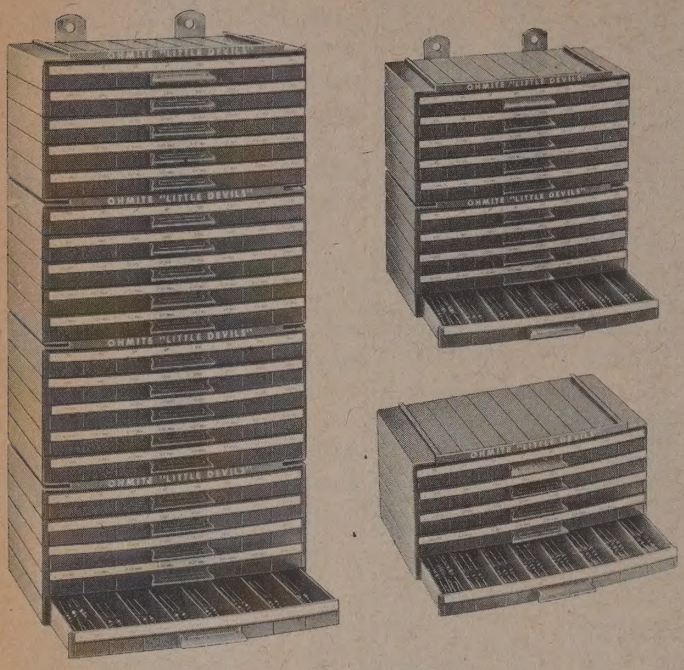
OHMITE *Little Devil*® industrial and service resistor assortments



RESISTORS AND HANDY CABINET FOR THE PRICE OF THE RESISTORS

Select the composition resistor you need, right on the job from time-savi Devil® Assortments. Ohmite now offers **seven industrial** assortments in ad the four service assortments that have been so popular for many years. complete line, there is an assortment to fill every industrial and service attractive plastic cabinet or cabinet assembly is furnished at no extra c each assortment. Each drawer of a single 5-drawer cabinet has eight compa all individually labeled. Dimensions of the single cabinet are 9" long, 43 5¼" deep. Dovetail tops and bottoms facilitate stacking. Cabinet assemt industrial assortments are riveted to metal strips which afford rigidity an hanging of the unit on the wall.

Of the seven industrial assortments, there are three ±10% tolerance ments of ¼, ½ or 1 watt sizes each containing 80 values. A two-cabinet is furnished for these assortments. Four 5% tolerance assortments prov values each of resistors in the ⅛, ¼, ½, or 1 watt sizes. A four-cabinet is furnished for each of these assortments.

The four popular **service** assortments provide ±10% tolerance resist single cabinet in ¼, ½, 1 or 2 watt sizes.

Cabinets are factory packed in accordance with the tables shown belo

11 ASSORTMENTS

Assortment	Catalog No.	Quantity of Resistors	Wattage Size
INDUSTRIAL ±10% Tolerance 80 Resistance Values 2 Cabinets	CAB-25	1000	¼
	CAB-26	1000	½
	CAB-27	600	1
INDUSTRIAL ±5% Tolerance 160 Resistance Values 4 Cabinets	CAB-45	1000	⅛
	CAB-46	1500	¼
	CAB-47	1500	½
	CAB-48	900	1
RADIO & TV SERVICE KITS ±10% Tolerance 37 Values—CAB-4 40 Values—Others 1 Cabinet	CAB-4	150	¼
	CAB-10	150	½
	CAB-2	125	1
	CAB-3	125	2

Prices Subject to Change Without Notice

10% TOLERANCE ASSORTMENTS

10% Resistance Values	Quantities In Each Assortment — Service Assortments CAB-4, ¼ W	CAB-10, ½ W	CAB-2, 1 W	CAB-3, 2 W	Industrial Assortments CAB-25, ¼ W	CAB-26, ½ W	CAB-27, 1 W
2.7					5	5	10
3.3					5	5	5
3.9					5	5	5
4.7					5	5	10
5.6					5	5	5
6.8					5	5	10
10		1	1	1	20	20	10
12					5	5	5
15		1	1	1	5	5	10
18					5	5	5
22					5	5	10
27		1	1	1	5	5	10
33					5	5	10
39					5	5	5
47	5	1	1	1	20	20	10
56					5	5	5
68					5	5	5
82					5	5	5
100	5	5	1	1	30	30	10
120					5	5	5
150	1	1	1	1	20	15	10
180					5	5	5
220					20	20	10
270	3	3	1	1	30	15	10
330	1	1	1	1	20	15	10
390					5	5	10
470	3	3	1	1	20	30	10
560					5	15	10
680	1	1	1	1	20	15	10
820					5	5	5
1,000	10	5	3	3	5	30	10
1,200					5	5	10
1,500	5	1	1	1	20	20	10
1,800					5	15	5
2,200	10	1	1	1	30	30	10
2,700	5	3	3	3	20	15	10
3,300					30	20	10
3,900					20	5	10
4,700	10	10	5	5	30	30	10
5,600					5	20	5
6,800					5	5	10
7,500					5	5	5
8,200					10	10	10
9,100					5	5	5
10,000					10	5	10
11,000					5	5	5
12,000					10	5	5
13,000					5	5	5
15,000					5	5	10
16,000					5	5	5
18,000					5	10	5
20,000					5	5	10
22,000					10	5	10
24,000					5	5	10
27,000					5	10	10
30,000					5	10	5
33,000					5	5	10
36,000					5	5	5
39,000					5	10	10
43,000					5	5	5
47,000					10	10	10
51,000					5	10	10
56,000					5	10	5
62,000					5	5	5
68,000					5	10	10
75,000					5	5	5
82,000					5	10	5
91,000					5	5	5
0.10 meg.					20	30	30
0.11 meg.					5	5	5
0.12 meg.					5	5	5
0.13 meg.					5	5	5
0.15 meg.					5	10	15
0.16 meg.					5	5	5
0.18 meg.					5	5	5
0.20 meg.					5	10	5
0.22 meg.					5	5	15
0.24 meg.					5	5	5
0.27 meg.					5	5	5
0.30 meg.					5	5	5
0.33 meg.					5	5	5
0.36 meg.					5		
0.39 meg.					5		
0.43 meg.					5		
0.47 meg.					5		
0.51 meg.					5		
0.56 meg.					5		
0.62 meg.					5		
0.68 meg.					5		
0.75 meg.					5		
0.82 meg.					5		
0.91 meg.					5		
1.0 meg.					5		
1.1 meg.					5		
1.2 meg.					5		
1.3 meg.					5		
1.5 meg.					5		
1.6 meg.					5		
1.8 meg.					5		
2.0 meg.					5		
2.2 meg.					5		
2.4 meg.					5		
2.7 meg.					5		
3.0 meg.					5		
3.3 meg.					5		
3.6 meg.					5		
3.9 meg.					5		
4.3 meg.					5		
4.7 meg.					5		
5.1 meg.					5		
5.6 meg.					5		
6.2 meg.					5		
6.8 meg.					5		
7.5 meg.					5		
8.2 meg.					5		
10.0 meg.					5		
12.0 meg.					5		
15.0 meg.					5		
18.0 meg.					5		
20.0 meg.					5		
22.0 meg.					5		

5% TOLERANCE ASSORTMENTS

5% Resistance Values	Quantities In Each Assortment — Industrial Assortments CAB-45, ⅛ W	CAB-46, ¼ W	CAB-47, ½ W	CAB-48, 1 W
2.7	5	5	5	5
3.0	5	5	5	5
3.3	5	5	5	5
3.6	5	5	5	5
3.9	5	5	5	5
4.7	5	5	5	5
5.1	5	5	5	5
5.6	5	5	5	5
6.2	5	5	5	5
6.8	5	5	5	5
7.5	5	5	5	5
8.2	5	5	5	5
9.1	5	5	5	5
10	20	25	30	10
12	5	5	5	5
15	5	5	5	5
18	5	5	5	5
20	5	5	5	5
22	5	5	5	5
24	5	5	5	5
27	5	5	15	5
30	5	5	5	5
33	5	5	5	5
36	5	5	5	5
39	5	5	5	5
43	5	5	5	5
47	10	10	5	5
51	10	10	15	10
56	5	5	5	5
62	5	5	5	5
68	5	5	5	5
75	5	5	20	5
82	5	5	5	5
91	5	5	5	5
100	20	30	30	10
110	5	5	5	5
120	5	5	5	5
130	5	5	5	5
150	5	10	15	10
160	5	5	5	5
180	20	5	5	5
200	5	5	15	10
220	10	25	15	10
240	5	5	5	5
270	5	10	15	10
300	5	5	5	5
330	5	25	15	10
360	5	5	5	5
390	5	10	15	5
430	5	5	5	5
470	10	25	20	10
510	5	10	15	10
560	5	10	15	5
620	5	5	15	5
680	5	10	5	10
750	5	5	5	5
820	5	10	5	5
910	5	5	5	5
1,000	20	30	30	10
1,100	5	5	5	5
1,200	10	25	15	10
1,300	5	5	5	5
1,500	20	10	20	5
1,600	5	5	5	5
1,800	5	25	15	5
2,000	20	25	30	10
2,200	20	30	30	10
2,400	5	10	5	5
2,700	10	25	15	5
3,000	5	10	15	5
3,300	5	25	30	5
3,600	5	5	5	5
3,900	10	25	15	5
4,300	5	5	5	5
4,700	20	30	30	10
5,100	10	25	15	5
5,600	5	25	15	5
6,200	5	10	5	5
6,800	5	30	20	5
7,500	5	5	5	5
8,200	5	25	15	5
9,100	5	5	5	5
10,000	20	30	30	10
11,000	5	5	5	5
12,000	10	25	20	5
13,000	5	5	5	5
15,000	5	30	30	5
16,000	5	5	5	5
18,000	5	10	15	5
20,000	5	25	15	5
22,000	5	25	30	10
24,000	5	5	15	5
27,000	5	10	15	5
30,000	5	10	5	5
33,000	5	25	20	5
36,000	5	5	5	5
39,000	5	10	15	5
43,000	5	5	5	5
47,000	10	25	20	10
51,000	5	10	15	5
56,000	5	5	15	5
62,000	5	5	5	5
68,000	5	10	15	5
75,000	5	5	5	5
82,000	5	10	5	5
91,000	5	5	5	5
0.10 meg.	20	30	30	10
0.11 meg.	5	5	5	5
0.12 meg.	5	5	5	5
0.13 meg.	5	5	5	5
0.15 meg.	5	10	15	5
0.16 meg.	5	5	5	5
0.18 meg.	5	5	5	5
0.20 meg.	5	10	5	5
0.22 meg.	5	5	15	5
0.24 meg.	5	5	5	5
0.27 meg.	5	5	5	5
0.30 meg.	5	5	5	5
0.33 meg.	5	5	5	5

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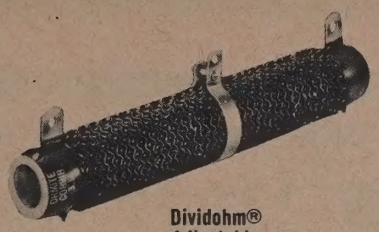
HMITE corrib® HIGH CURRENT LOW OHMS resistors

Fixed



Dividohm® Adjustable

K CORRIBS — 300 WATT SIZE e 280 Fixed; 230 Dividohm®

2x1⅛" Fixed or Adjustable (DIVIDOHM) ght (Fixed) .61 lb.; (Dividohm) .64 lb.

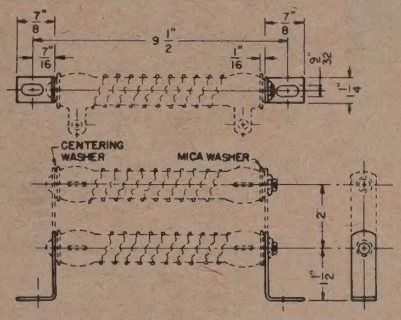
Amps.	Fixed Catalog No.	Dividohm* Catalog No.
54.7	2501	2601
50.0	2502	2602
43.3	2503	2603
38.7	2504	2604
34.6	2505	2605
31.1	2506	2606
27.4	2507	2607
24.5	2508	2608
21.8	2509	2609
19.3	2510	2610
17.3	2511	2611
15.8	2512	2612
13.7	2513	2613
12.2	2514	2614
10.9	2515	2615
9.8	2516	2616
8.6	2517	2617
7.7	2518	2618
6.9	2519	2619
6.1	2520	2620
5.5	2521	2621
5.0	2522	2622
4.3	2523	2623
3.8	2524	2624

ble Lug Stk. No. 1974 supplied with Dividohm.

THRU-BOLT MOUNTING BRACKETS FOR CORRIBS

Includes 2 brackets; bolt; centering, mica, and lock washers; nuts. Diagram below.

No. of Resistors	Catalog No.	Net 1-9
1	6126P8½	$ .55
2	6127P8½	1.08
3	6128P8½	1.49
4	6129P8½	1.76



High current, low resistance, heavy duty units used in motor starting, dynamic braking, etc. "Corrib" type units employ a corrugated ribbon of resistance alloy. This is space-wound edge-wise around a ceramic tube. Vitreous enamel is fused around the alloy ribbon to lock the turns securely in place. Heavy lug terminals. Resistance tolerance is ±10%.

Available in fixed or Dividohm® adjustable types. Dividohm® type is similar to fixed and includes one adjustable lug. Rating of Fixed or Dividohm® stock units—300 watts—reduce unit load for stack-mounted resistors; core size (bare) 8½" long x1⅛" diameter. Other sizes made to order.

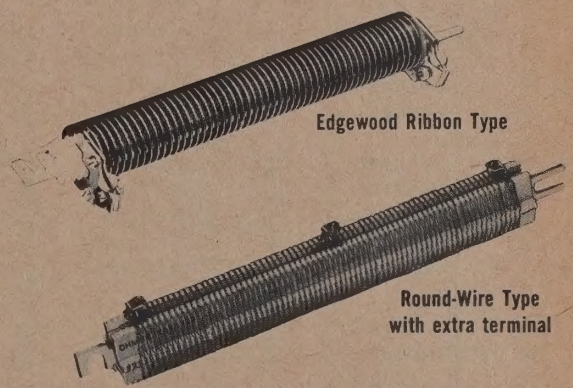
EXTRA ADJUSTABLE LUGS FOR CORRIBS

For Dividohm	Lug Catalog No.	Net $ 1-9
2601 to 2618	1974-B	$ .24
2619 to 2624	1974-A	.24

wr-rib® HIGH CURRENT LOW OHMS resistors

igher power handling capability—approximately 700 to 1000 —is available in stock, "Powr-Rib" resistors. These are TED types and are wound either edgewise with ribbon wound" type) or with round wire (Round-Wire type).

e core of these units consists of ceramic segments on a bar which is slotted on both ends for rapid installation. rd resistance tolerance is ±10%. Terminals clamp onto sistor wire and may be moved in from the ends for inter- e resistance values. Extra terminals available for use as See diagrams for terminals. Terminal Stk. No. 2172G (not has screw connections.

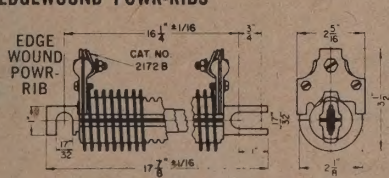


Edgewood Ribbon Type

Round-Wire Type with extra terminal

STYLE 080-5 EDGEWOUND POWR-RIBS

	H ±⅛	D +⅛ —0
	3⅜	2⅛
	3⅛	1⅞
	2⅜	1⅞
4.5, 5.4	2½	1¾
8.5	2⅛	1⅝

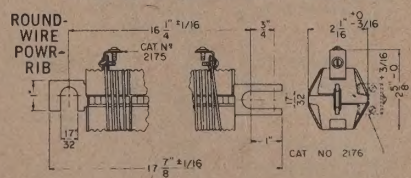


*.10 to 1.00 Ω with terminal No. 2172B
1.3 to 8.5 Ω with terminal No. 2172G

vg. Weight .18Ω or less, 4 lbs.; .22Ω and up, 2 lbs.

Ohms	Max. Amps.	Catalog No.[1]	Ohms	Max. Amps.
.10	100	2318	.67	41
.12	91	2311	.75	39
.14	89	2312	1.00	33
.16	78	2319	1.30	29
.18	75	2313	1.60	26
.22	68	2331A	2.20	18.4
.25	63	2332A	2.80	16.3
.30	57	2333A	3.50	14.6
.33	54	2334A	4.50	12.7
.37	50	2335A	5.40	11.8
.50	47	2336A	6.80	10.3
.60	43	2337A	8.50	9.4

STYLE 082-5 ROUND-WIRE POWR-RIBS



Avg. Weight 3¼ lbs.

Catalog No.[1]	Ohms	Max. Amps.
2338	11.0	8.3
2339	13.0	7.6
2340	17.0	6.6
2341	20.0	5.9
2342	25.0	5.1

EXTRA TERMINALS

For Round Wire Powr-Rib			For Edgewound Powr-Rib		
Descrip	Catalog No.	Net 1 Qty.	Descrip	Catalog No.	Net 1 Qty.
In-Line Mtg.	2175	$ .64	30 Amps & more	2172B	$1.17
90° Mtg.	2176	1.12	29 Amps & less	2172G	.44

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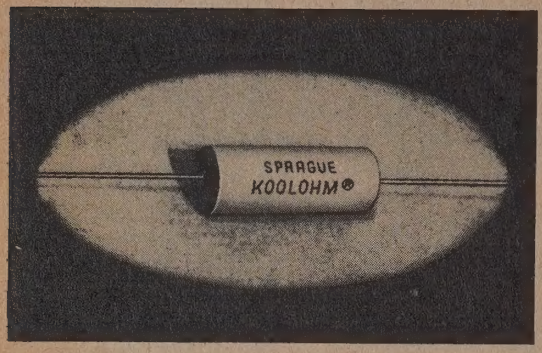
OHMITE PAGE 16

SPRAGUE RESISTORS

KOOLOHM® AXIAL-LEAD WIREWOUND RESISTORS
FOR INDUSTRIAL APPLICATIONS



- Types 450E, 452E, 454E, 456E and 458E are Standard Resistors. Types 451E, 453E, 455E, 457E and 459E are Non-Inductive Resistors

- Insulated-Shell Design for Easy Mounting
- Feature Improved Internal Construction in Which Winding Leads are Welded to End-Cap for Superior Mechanical St
- Ceramic-Insulated Wire is Space Wound and Cemente Prevent Turn-to-Turn Shorting. Permits Higher Resistance in a Given Size Than in Conventional Resistors
- Non-Porous Tubular Ceramic Shells Sealed With High Tem ture Silicone Cement
- Unexcelled Insulation and Mechanical Protection. Can be Mo in Direct Contact With Chassis
- Call Your Sprague Industrial Distributor for Quantity Prices
- For Complete Technical Details, Refer to Latest Issue of Sp Engineering Bulletin 7300

	Type 450E 3 WATTS ¼" x 9/16"		Type 452E 5 WATTS ¼" x 1"		Type 454E 7 WATTS 15/32" x 1 5/16"		Type 456E 10 WATTS 15/32" x 1 29/32"		Type 458E 14 WATTS 15/32" x 1 29/32"	
Ohms	Cat. No.		Cat. No.		Cat. No.		Cat. No.		Cat. No.	
1	450E1R05	Call Your Sprague Industrial Distributor for Current Quantity Prices	452E1R05	Call Your Sprague Industrial Distributor for Current Quantity Prices	454E1R05	Call Your Sprague Industrial Distributor for Current Quantity Prices	456E1R05	Call Your Sprague Industrial Distributor for Current Quantity Prices	458E1R05	
1.5	450E1R55		452E1R55		454E1R55		456E1R55		458E1R55	
2	450E2R05		452E2R05		454E2R05		456E2R05		458E2R05	
3	450E3R05		452E3R05		454E3R05		456E3R05		458E3R05	
4	450E4R05		452E4R05		454E4R05		456E4R05		458E4R05	
5	450E5R05		452E5R05		454E5R05		456E5R05		458E5R05	
7.5	450E7R55		452E7R55		454E7R55		456E7R55		458E7R55	
10	450E1005		452E1005		454E1005		456E1005		458E1005	
12	450E1205		452E1205		454E1205		456E1205		458E1205	
15	450E1505		452E1505		454E1505		456E1505		458E1505	
18	450E1805		———		———		———		———	
20	450E2005		452E2005		454E2005		456E2005		458E2005	
22	450E2205		———		———		———		———	
25	450E2505		452E2505		454E2505		456E2505		458E2505	
27	450E2705		———		———		———		———	
30	450E3005		452E3005		454E3005		456E3005		458E3005	
33	450E3305		———		———		———		———	
35	———		452E3505		454E3505		456E3505		458E3505	
39	450E3905		———		———		———		———	
40	450E4005		452E4005		454E4005		456E4005		458E4005	
47	450E4705		———		———		———		———	
50	450E5005		452E5005		454E5005		456E5005		458E5005	
56	450E5605		———		———		———		———	
68	450E6805		———		———		———		———	
75	450E7505		452E7505		454E7505		456E7505		458E7505	
82	450E8205		———		———		———		———	
100	450E1015		452E1015		454E1015		456E1015		458E1015	
120	450E1215		452E1215		454E1215		456E1215		458E1215	
150	450E1515		452E1515		454E1515		456E1515		458E1515	
180	450E1815		———		———		———		———	

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IND-REM-56-6334

Sizes subject to change without

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SPRAGUE RESISTORS

KOOLOHM AXIAL-LEAD WIREWOUND RESISTORS, continued

Ohms	Type 450E 3 WATTS ¼" x 9/16" Cat. No.	Type 452E 5 WATTS ¼" x 1" Cat. No.	Type 454E 7 WATTS 1 3/32" x 1 5/16" Cat. No.	Type 456E 10 WATTS 1 5/32" x 1 29/32" Cat. No.	Type 458E 14 WATTS 1 5/32" x 1 29/32" Cat. No.
200	450E2015	452E2015	454E2015	456E2015	458E2015
220	450E2215	452E2215	454E2215	456E2215	458E2215
250	450E2515	452E2515	454E2515	456E2515	458E2515
270	450E2715	———	———	———	———
300	450E3015	452E3015	454E3015	456E3015	458E3015
330	450E3315	———	———	———	———
350	———	452E3515	454E3515	456E3515	458E3515
390	450E3915	———	———	———	———
400	450E4015	452E4015	454E4015	456E4015	458E4015
450	———	452E4515	———	———	———
470	450E4715	———	———	———	———
500	450E5015	452E5015	454E5015	456E5015	458E5015
560	450E5615	———	———	———	———
600	450E6015	452E6015	454E6015	456E6015	458E6015
680	450E6815	———	———	———	———
700	450E7015	452E7015	454E7015	456E7515	458E7015
750	———	452E7515	454E7515	———	458E7515
800	450E8015	452E8015	454E8015	456E8015	458E8015
820	450E8215	———	———	———	———
900	450E9015	452E9015	454E9015	456E9015	458E9015
1000	450E1025	452E1025	454E1025	456E1025	458E1025
1100	———	452E1125	454E1125	456E1125	458E1125
1200	450E1225	452E1225	454E1225	456E1225	458E1225
1400	450E1425	452E1425	454E1425	456E1425	458E1425
1500	450E1525	452E1525	454E1525	456E1525	458E1525
1800	450E1825	452E1825	454E1825	456E1825	458E1825
2000	450E2025	452E2025	454E2025	456E2025	458E2025
2200	450E2225	452E2225	454E2225	465E2225	458E2225
2500	450E2525	452E2525	454E2525	456E2525	458E2525
2700	450E2725	———	———	———	———
3000	450E3025	452E3025	454E3025	456E3025	458E3025
3300	450E3325	———	454E3325	456E3325	458E3325
3500	———	452E3525	454E3525	456E3525	458E3525
3900	450E3925	———	454E3925	456E3925	458E3925
4000	450E4025	452E4025	454E4025	456E4025	458E4025
4500	———	452E4525	454E4525	456E4525	458E4525
4700	450E4725	———	———	———	———
5000	450E5025	452E5025	454E5025	456E5025	458E5025
5600	450E5625	———	———	———	———
6000	450E6025	452E6025	454E6025	456E6025	458E6025
6800	450E6825	———	———	———	———
7000	———	452E7025	454E7025	456E7025	458E7025
7500	450E7525	452E7525	454E7525	456E7525	458E7525
8000	450E8025	452E8025	454E8025	456E8025	458E8025
8200	450E8225	———	———	———	———
9000	450E9025	452E9025	454E9025	456E9025	458E9025
10000	450E1035	452E1035	454E1035	456E1035	458E1035
11000	———	———	454E1135	456E1135	458E1135
12000	———	452E1235	454E1235	456E1235	458E1235
14000	———	452E1435	454E1435	456E1435	458E1435
15000	———	452E1535	454E1535	456E1535	458E1535
16000	———	———	454E1635	456E1635	458E1635
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20000	———	452E2035	454E2035	456E2035	458E2035
22000	———	———	454E2235	456E2235	———
25000	———	———	454E2535	456E2535	———
30000	———	———	454E3035	456E3035	———
35000	———	———	454E3535	456E3535	———
40000	———	———	454E4035	456E4035	———
45000	———	———	———	456E4535	———
50000	———	———	———	456E5035	———
60000	———	———	———	456E6035	———
70000	———	———	———	456E7035	———

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SPRAGUE RESISTORS

NON-INDUCTIVE KOOLOHM AXIAL-LEAD WIREWOUND RESISTORS

Ohms	Type 451E 3 WATTS ¼" x 9/16" Cat. No.	Type 453E 5 WATTS ¼" x 1" Cat. No.	Type 455E 7 WATTS 15/32" x 15/16" Cat. No.	Type 457E 10 WATTS 15/32" x 1 29/32" Cat. No.	Type 459E 14 WATTS 15/32" x 1 29/32" Cat. No.
1	451E1R05	453E1R05	455E1R05	457E1R05	459E1R05
1.5	451E1R55	453E1R55	455E1R55	457E1R55	459E1R55
2	451E2R05	453E2R05	455E2R05	457E2R05	459E2R05
3	451E3R05	453E3R05	455E3R05	457E3R05	459E3R05
4	451E4R05	453E4R05	455E4R05	457E4R05	459E4R05
5	451E5R05	453E5R05	455E5R05	457E5R05	459E5R05
7.5	451E7R55	453E7R55	455E7R55	457E7R55	459E7R55
10	451E1005	453E1005	455E1005	457E1005	459E1005
12	451E1205	453E1205	455E1205	457E1205	459E1205
15	451E1505	453E1505	455E1505	457E1505	459E1505
18	451E1805	———	———	———	———
20	451E2005	453E2005	455E2005	457E2005	459E2005
22	451E2205	———	———	———	———
25	451E2505	453E2505	455E2505	457E2505	459E2505
27	451E2705	———	———	———	———
30	451E3005	453E3005	455E3005	457E3005	459E3005
33	451E3305	———	———	———	———
35	451E3505	453E3505	455E3505	457E3505	459E3505
39	451E3905	———	———	———	———
40	451E4005	453E4005	455E4005	457E4005	459E4005
47	451E4705	———	———	———	———
50	451E5005	453E5005	455E5005	457E5005	459E5005
56	451E5605	———	———	———	———
68	451E6805	———	———	———	———
75	451E7505	453E7505	455E7505	457E7505	459E7505
82	451E8205	———	———	———	———
100	451E1015	453E1015	455E1015	457E1015	459E1015
120	451E1215	453E1215	455E1215	457E1215	459E1215
150	451E1515	453E1515	455E1515	457E1515	459E1515
180	451E1815	———	———	———	———
200	451E2015	453E2015	455E2015	457E2015	459E2015
220	451E2215	453E2215	455E2215	457E2215	459E2215
250	451E2515	453E2515	455E2515	457E2515	459E2515
270	451E2715	———	———	———	———
300	451E3015	453E3015	455E3015	457E3015	459E3015
330	451E3315	———	———	———	———
350	451E3515	453E3515	455E3515	457E3515	459E3515
390	451E3915	———	———	———	———
400	451E4015	453E4015	455E4015	457E4015	459E4015
450	451E4515	453E4515	———	———	———
470	451E4715	———	———	———	———
500	451E5015	453E5015	455E5015	457E5015	459E5015
560	———	———	———	———	———
600	———	453E6015	455E6015	457E6015	459E6015
680	———	———	———	———	———
700	———	453E7015	455E7015	457E7015	459E7015
750	———	453E7515	455E7515	457E7515	459E7515
800	———	453E8015	455E8015	457E8015	459E8015

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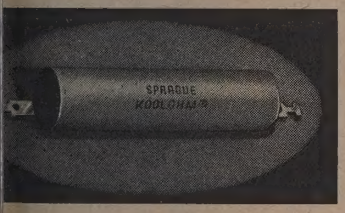
SPRAGUE RESISTORS

NON-INDUCTIVE KOOLOHM AXIAL-LEAD WIREWOUND RESISTORS (Cont.)

Ohms	Type 451E 3 WATTS 1/4" x 9/16" Cat. No.	Type 453E 5 WATTS 1/4" x 1" Cat. No.	Type 455E 7 WATTS 15/32" x 15/16" Cat. No.	Type 457E 10 WATTS 15/32" x 129/32" Cat. No.	Type 459E 14 WATTS 15/32" x 129/32" Cat. No.
820	———	———	———	———	———
900	———	453E9015	455E9015	457E9015	459E9015
1000	———	453E1025	455E1025	457E1025	459E1025
1100	———	453E1125	455E1125	457E1125	459E1125
1200	———	453E1225	455E1225	457E1225	459E1225
1400	———	———	455E1425	457E1425	459E1425
1500	———	———	455E1525	457E1525	459E1525
1800	———	———	455E1825	457E1825	459E1825
2000	———	———	455E2025	457E2025	459E2025
2200	———	———	455E2225	457E2225	459E2225
2500	———	———	455E2525	457E2525	459E2525
3000	———	———	———	457E3025	459E3025
3300	———	———	———	457E3325	459E3325
3500	———	———	———	457E3525	459E3525
3900	———	———	———	457E3925	459E3925
4000	———	———	———	457E4025	459E4025
4500	———	———	———	457E4525	459E4525
5000	———	———	———	457E5025	459E5025

Call Your Sprague Industrial Distributor for Quantity Prices

mmercial Tab-Terminal KOOLOHM® Wirewound Resistors



- Ceramic Outer Jacket. May be Mounted Anywhere—Even Flat Against Chasis or Grounded Parts.
- Each resistor is Tropicallized by a Glazed Ceramic Outer Coating and Improved End Seals Which Offer Complete Protection Against Moisture or Any Other Climatic Conditions
- Extremely High Insulation Resistance—10,000 Volts From Surface of Ceramic Jacket to Inner Resistance Elements
- Insulated Wire Permits Winding Higher Values in Layers Which Means Much Smaller Physical Sizes for Each Wattage Rating
- Insulated Wire Permits True Non-Inductive Wound Designs
- Standard Resistance Tolerance: ±5%
- These Resistors Are Also Available in 5 and 10 Watt Ratings, Axial-Lead Style. See Latest Issue of Sprague Catalog C-618

ıs	Type 25KT 25 Watts Cat. No.	Type 50KT 50 Watts Cat. No.	Type 120KT 120 Watts Cat. No.
	TYPE KT STANDARD RESISTORS		
5	25KT5R05	50KT5R05	120KT5R05
10	25KT1005	50KT1005	120KT1005
25	25KT2505	50KT2505	120KT2505
50	25KT5005	50KT5005	120KT5005
75	25KT7505	50KT7505	120KT7505
00	25KT1015	50KT1015	120KT1015
50	25KT1515	50KT1515	120KT1515
00	25KT2015	50KT2015	120KT2015
50	25KT2515	50KT2515	120KT2515
90	———	———	120KT3915
00	25KT5015	50KT5015	120KT5015
00	25KT6015	50KT6015	120KT6015
50	25KT7515	50KT7515	120KT7515
00	25KT1025	50KT1025	120KT1025
00	25KT1525	50KT1525	120KT1525
00	25KT2025	50KT2025	120KT2025
00	25KT2525	50KT2525	120KT2525
00	25KT3025	50KT3025	120KT3025
00	25KT4025	50KT4025	———
00	25KT5025	50KT5025	120KT5025
00	25KT7525	50KT7525	120KT7525
00	25KT1035	50KT1035	120KT1035
00	25KT1235	50KT1235	120KT1235
00	25KT1535	50KT1535	120KT1535
00	25KT2035	50KT2035	120KT2035
00	25KT2535	50KT2535	120KT2535
00	25KT4035	———	———
00	25KT5035	50KT5035	120KT5035
00	25KT7535	50KT7535	120KT7535
00	25KT1045	50KT1045	120KT1045

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Ohms	Type 25NIT 25NIT Watts Cat. No.	Type 50NIT 50NIT Watts Cat. No	Type 120NIT 120NIT Watts Cat. No.
	TYPE NIT NON-INDUCTIVE RESISTORS		
5	25NIT5R05	50NIT5R05	120NIT5R05
10	25NIT1005	50NIT1005	120NIT1005
25	25NIT2505	50NIT2505	120NIT2505
50	25NIT5005	50NIT5005	120NIT5005
75	25NIT7505	50NIT7505	120NIT7505
100	25NIT1015	50NIT1015	120NIT1015
150	25NIT1515	50NIT1515	120NIT1515
200	25NIT2015	50NIT2015	120NIT2015
250	25NIT2515	50NIT2515	120NIT2515
390	———	———	120NIT3915
500	25NIT5015	50NIT5015	120NIT5015
600	25NIT6015	50NIT6015	120NIT6015
750	25NIT7515	50NIT7515	120NIT7515
1000	25NIT1025	50NIT1025	120NIT1025
1500	25NIT1525	50NIT1525	120NIT1525
2000	25NIT2025	50NIT2025	120NIT2025
2500	25NIT2525	50NIT2525	120NIT2525
3000	25NIT3025	50NIT3025	120NIT3025
4000	25NIT4025	50NIT4025	———
5000	25NIT5025	50NIT5025	120NIT5025
7500	25NIT7525	50NIT7525	120NIT7525
10000	25NIT1035	50NIT1035	120NIT1035
12000	———	50NIT1235	———
15000	———	50NIT1535	120NIT1535
20000	———	50NIT2035	120NIT2035
25000	———	50NIT2535	120NIT2535
50000	———	———	120NIT5035

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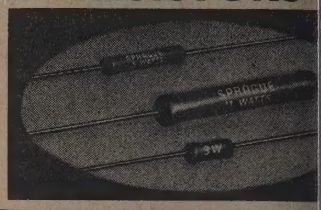
SPRAGUE RESISTORS

BLUE JACKET® INDUSTRIAL WIREWOUND RESISTORS

- Improved Minified Resistors Designed for Thorough Reliability and Stability Under Extreme Operating Conditions
- Matched Coefficient of Expansion Allows Uniform Expansion of Vitreous Enamel Coating, Ceramic Base, and End Caps, Eliminating Crazing, Cracks, and Protects From Fumes and Humidity
- Windings and Leads Welded to End-Caps for Superior Mechanical Strength
- For 2BJ, 3BJ, 5BJ and 10BJ Commercial or Service Equivalents to These Resistors, Refer to the Latest issue of Sprague Catalog C-617
- Call Your Sprague Industrial Distributor for Quantity Prices



Ohms	Type 239E, 1 WATT 1/8" x 3/8" Cat. No.	Type 240E, 2 WATTS 3/16" x 3/8" Cat. No	Type 242E, 3 WATTS 13/64" x 17/32" Cat. No.	Type 243E, 5 WATTS 13/64" x 13/16" Cat. No.	Type 244E, 7 WATTS 5/16" x 1" Cat. No.	Type 247E, 1 5/16" x 13 Cat. No.
1	239E1R05	240E1R05	242E1R05	243E1R05	244E1R05	247E1R05
1.2	239E1R25					
1.5	239E1R55	240E1R55	242E1R55	243E1R55	244E1R55	247E1R55
1.8	239E1R85					
2	239E2R05	240E2R05	242E2R05	243E2R05	244E2R05	247E2R05
2.2	239E2R25					
2.7	239E2R27					
3	239E3R05	240E3R05	242E3R05	243E3R05	244E3R05	247E3R05
3.3	239E3R35					
3.9	239E3R95					
4	239E4R05	240E4R05	242E4R05	243E4R05	244E4R05	247E4R05
4.7	239E4R75					
5	239E5R05	240E5R05	242E5R05	243E5R05	244E5R05	247E5R05
5.6	239E5R65					
6.8	239E6R85					
7.5	239E7R55	240E7R55	242E7R55	243E7R55	244E7R55	247E7R55
8.2	239E8R25					
10	239E1005	240E1005	242E1005	243E1005	244E1005	247E1005
12	239E1205	240E1205	242E1205	243E1205	244E1205	247E1205
15	239E1505	240E1505	242E1505	243E1505	244E1505	247E1505
18	239E1805	240E1805	242E1805			
20	239E2005	240E2005	242E2005	243E2005	244E2005	247E2005
22	239E2205	240E2205	242E2205			
25	239E2505	240E2505	242E2505	243E2505	244E2505	247E2505
27	239E2705	240E2705	242E2705			
30	239E3005	240E3005	242E3005	243E3005	244E3005	247E3005
33	239E3305	240E3305	242E3305			
35				243E3505	244E3505	247E3505
39	239E3905	240E3905	242E3905			
40	239E4005	240E4005	242E4005	243E4005	244E4005	247E4005
47	239E4705	240E4705	242E4705			
50	239E5005	240E5005	242E5005	243E5005	244E5005	247E5005
56	239E5605	240E5605	242E5605			
68	239E6805	240E6805	242E6805			
75	239E7505	240E7505	242E7505	243E7505	244E7505	247E7505
82	239E8205	240E8205	242E8205			
100	239E1015	240E1015	242E1015	243E1015	244E1015	247E1015
120	239E1215	240E1215	242E1215	243E1215	244E1215	247E1215
150	239E1515	240E1515	242E1515	243E1515	244E1515	247E1515
180	239E1815	240E1815	242E1815			
200	239E2015	240E2015	242E2015	243E2015	244E2015	247E2015
220	239E2215	240E2215	242E2215	243E2215	244E2215	247E2215
250	239E2515	240E2515	242E2515	243E2515	244E2515	247E2515
270	239E2715	240E2715	242E2715			
300	239E3015	240E3015	242E3015	243E3015	244E3015	247E3015
330	239E3315	240E3315	242E3315			
350				243E3515	244E3515	247E3515
390	239E3915	240E3915	242E3915			
400	239E4015	240E4015	242E4015	243E4015	244E4015	247E4015
450				243E4515		
470	239E4715	240E4715	242E4715			
500	239E5015	240E5015	242E5015	243E5015	244E5015	247E5015
560	239E5615	240E5615	242E5615			
600	239E6015	240E6015	242E6015	243E6015	244E6015	247E6015
680	239E6815	240E6815	242E6815			
700	239E7015	240E7015	242E7015	243E7015	244E7015	247E7015
750				243E7515	244E7515	247E7515
800	239E8015	240E8015	242E8015	243E8015	244E8015	247E8015
820	239E8215	240E8215	242E8215			
900	239E9015	240E9015	242E9015	243E9015	244E9015	247E9015
1000	239E1025	240E1025	242E1025	243E1025	244E1025	247E1025
1100				243E1125	244E1125	247E1125
1200	239E1225	240E1225	242E1225	243E1225	244E1225	247E1225
1400	239E1425	240E1425	242E1425	243E1425	244E1425	247E1425
1500	239E1525	240E1525	242E1525	243E1525	244E1525	247E1525
1800	239E1825	240E1825	242E1825	243E1825	244E1825	247E1825
2000	239E2025	240E2025	242E2025	243E2025	244E2025	247E2025
2200	239E2225	240E2225	242E2225	243E2225	244E2225	247E2225
2500	239E2525	240E2525	242E2525	243E2525	244E2525	247E2525
2700		240E2725	242E2725			
3000		240E3025	242E3025	243E3025	244E3025	247E3025
3300		240E3325	242E3325		244E3325	247E3325
3500		240E3525		243E3525	244E3525	247E3525
3900			242E3925		244E3925	247E3925
4000			242E4025	243E4025	244E4025	247E4025
4500				243E4525	244E4525	247E4525
4700			242E4725			
5000			242E5025	243E5025	244E5025	247E5025
5600			242E5625			
6000			242E6025	243E6025	244E6025	247E6025
6800			242E6825			
7000				243E7025	244E7025	247E7025
7500			242E7525	243E7525	244E7525	247E7525
8000			242E8025	243E8025	244E8025	247E8025
8200			242E8225			

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SPRAGUE RESISTORS

JE JACKET INDUSTRIAL WIREWOUND RESISTORS, continued

Ohms	Type 239E, 1 WATT 1/8" x 3/8" Cat. No.	Type 240E, 2 WATTS 5/16" x 3/8" Cat. No.	Type 242E, 3 WATTS 13/64" x 17/32" Cat. No.	Type 243E, 5 WATTS 13/64" x 15/16" Cat. No.	Type 244E, 7 WATTS 5/16" x 1" Cat. No.	Type 247E, 10 WATTS 5/16" x 13/4" Cat. No.
000			242E9025	243E9025	244E9025	247E9025
000			242E1035	243E1035	244E1035	247E1035
000					244E1135	247E1135
000				243E1235	244E1235	247E1235
000				243E1435	244E1435	247E1435
000				243E1535	244E1535	247E1535
000					244E1635	247E1635
000					244E1735	
000				243E1835	244E1835	247E1835
000				243E2035	244E2035	247E2035
000				243E2235	244E2235	247E2235
000				243E2535	244E2535	247E2535
000				243E3035	244E3035	247E3035
000						247E3535
000						247E4035
000						247E4535
000						247E5035

Call Your Sprague Industrial Distributor for Quantity Prices

TYPE RW57, RW58, RW59 BLUE JACKET® WIREWOUND RESISTORS

is Series of Blue Jacket Wirewound Resistors Meet All Perform-ce Characeristics of Military Specification MIL R-26C, Character-ics V and G

● Contact Your Sprague Industrial Distributor for Quantity Prices

hms	Type RW59 3 WATTS 3/16" x 1/2" Cat. No.	Type RW57 6.5 WATTS 5/16" x 1" Cat. No.	Type RW58 11 WATTS 11/32" x 17/8" Cat. No.	Ohms	Type RW59 3 WATTS 3/16" x 1/2" Cat. No.	Type RW57 6.5 WATTS 5/16" x 1" Cat. No.	Type RW58 11 WATTS 11/32" x 17/8" Cat. No.
1.0	RW59V1R0	RW57V1R0	RW58V1R0	150	RW59V151	RW57V151	RW58V151
1.1	RW59V1R1	RW57V1R1	RW58V1R1	160	RW59V161	RW57V161	RW58V161
1.2	RW59V1R3	RW57V1R2	RW58V1R2	180	RW59V181	RW57V181	RW58V181
1.3	RW59V1R2	RW57V1R3	RW58V1R3	200	RW59V201	RW57V201	RW58V201
1.5	RW59V1R5	RW57V1R5	RW58V1R5	220	RW59V221	RW57V221	RW58V221
1.6	RW59V1R6	RW57V1R6	RW58V1R6	240	RW59V241	RW57V241	RW58V241
1.8	RW59V1R8	RW57V1R8	RW58V1R8	270	RW59V271	RW57V271	RW58V271
2.0	RW59V2R0	RW57V2R0	RW58V2R0	300	RW59V301	RW57V301	RW58V301
2.2	RW59V2R2	RW57V2R2	RW58V2R2	330	RW59V331	RW57V331	RW58V331
2.4	RW59V2R4	RW57V2R4	RW58V2R4	360	RW59V361	RW57V361	RW58V361
2.7	RW59V2R7	RW57V2R7	RW58V2R7	390	RW59V391	RW57V391	RW58V391
3.0	RW59V3R0	RW59V3R0	RW58V3R0	430	RW59V431	RW57V431	RW58V431
3.3	RW59V3R3	RW57V3R3	RW58V3R3	470	RW59V471	RW57V471	RW58V471
3.6	RW59V3R6	RW57V3R6	RW58V3R6	510	RW59V511	RW57V511	RW58V511
3.9	RW59V3R9	RW57V3R9	RW58V3R9	560	RW59V561	RW57V561	RW58V561
4.3	RW59V4R3	RW57V4R3	RW58V4R3	620	RW59V621	RW57V621	RW58V621
4.7	RW59V4R7	RW57V4R7	RW58V4R7	680	RW59V681	RW57V681	RW58V681
5.1	RW59V5R1	RW57V5R1	RW58V5R1	750	RW59V751	RW57V751	RW58V751
5.6	RW59V5R6	RW57V5R6	RW58V5R6	820	RW59V821	RW57V821	RW58V821
6.2	RW59V6R2	RW57V6R2	RW58V6R2	910	RW59V911	RW57V911	RW58V911
6.8	RW59V6R8	RW57V6R8	RW58V6R8	1000	RW59V102	RW57V102	RW58V102
7.5	RW59V7R5	RW57V7R5	RW58V7R5	1100	RW59V112	RW57V112	RW58V112
8.2	RW59V8R2	RW57V8R2	RW58V8R2	1200	RW59V122	RW57V122	RW58V122
9.1	RW59V9R1	RW57V9R1	RW58V9R1	1300	RW59V132	RW57V132	RW58V132
10	RW59V100	RW57V100	RW58V100	1500	RW59V152	RW57V152	RW58V152
11	RW59V110	RW57V110	RW58V110	1600	RW59V162	RW57V162	RW58V162
12	RW59V120	RW57V120	RW58V120	1800	RW59V182	RW57V182	RW58V182
13	RW59V130	RW57V130	RW58V130	2000	RW59V202	RW57V202	RW58V202
15	RW59V150	RW57V150	RW58V150	2200		RW57V222	RW58V222
16	RW59V160	RW57V160	RW58V160	2400		RW57V242	RW58V242
18	RW59V180	RW57V180	RW58V180	2700		RW57V272	RW58V272
20	RW59V200	RW57V200	RW58V200	3000		RW57V302	RW58V302
22	RW59V220	RW57V220	RW58V220	3300		RW57V332	RW58V332
24	RW59V240	RW57V240	RW58V240	3600		RW57V362	RW58V362
27	RW59V270	RW57V270	RW58V270	3900		RW57V392	RW58V392
30	RW59V300	RW57V300	RW58V300	4300		RW57V432	RW58V432
33	RW59V330	RW57V330	RW58V330	4700		RW57V472	RW58V472
36	RW59V360	RW57V360	RW58V360	5100		RW57V512	RW58V512
39	RW59V390	RW57V390	RW58V390	5600		RW57V562	RW58V562
43	RW59V430	RW57V430	RW58V430	6200		RW57V622	RW58V622
47	RW59V470	RW57V470	RW58V470	6800		RW57V682	RW58V682
51	RW59V510	RW57V510	RW58V510	7500		RW57V752	RW58V752
56	RW59V560	RW57V560	RW58V560	8200		RW57V822	RW58V822
62	RW59V620	RW57V620	RW58V620	9100			RW58V912
68	RW59V680	RW57V680	RW58V680	10,000			RW58V103
75	RW59V750	RW57V750	RW58V750	11,000			RW58V113
82	RW59V820	RW57V820	RW58V820	12,000			RW58V123
91	RW59V910	RW57V910	RW58V910	13,000			RW58V133
00	RW59V101	RW57V101	RW58V101	15,000			RW58V153
10	RW59V111	RW57V111	RW58V111	16,000			RW58V163
20	RW59V121	RW57V121	RW58V121	18,000			RW58V183
30	RW59V131	RW57V131	RW58V131	20,000			RW58V203

Call Your Sprague Industrial Distributor For Current Quantity Prices

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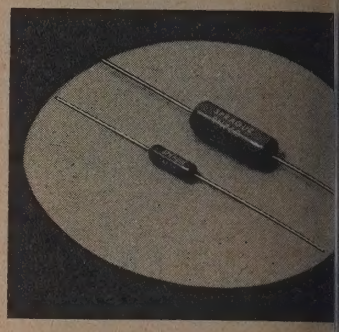
SPRAGUE RESISTORS

FILMISTOR® METAL-FILM RESISTORS

- Filmistor® C Series Resistors are Ideal for Circuits Requiring High Accuracy, Reliability, and Stability with Low Temperature Coefficients.
- Physical Size of Types RN55 and RN60 is Compatible With Those of Other Resistors, Capacitors, and Diodes for "Cordwood" Packaging.
- Designed to Meet the Stringent Performance Requirements of Spec. MIL-R-10509D.
- Low Self-inductance, Low Distributed Capacitance. Equal or Surpass the Characteristics of Precision Wirewound Resistors, Yet Are Smaller in Size.
- Metallic Resistive Film is Firmly Bonded to Special Ceramic Core, Automatically Spiralled to Desired Resistance Value.
- Tough Molded Shell Provides Protection Against Mechanical Damage as Well as Catastrophic Failures From Electrolysis Caused by Moisture Penetration.
- Standard Resistance Tolerance, ±1%
- For Complete Technical Data, Refer to Latest Issue of Engineering Bulletin 7025

Call Your Sprague Industrial Distributor For Current Quantity Prices



STANDARD RESISTANCE VALUES (Ohms)

20.0	57.6	165	475	1.37 K	3.92 K	11.3 K	32.4 K	93.1 K	267 K	750 K
20.5	59.0	169	487	1.40 K	4.02 K	11.5 K	33.2 K	95.3 K	274 K	768 K
21.0	60.4	174	499	1.43 K	4.12 K	11.8 K	34.0 K	97.6 K	280 K	787 K
21.5	61.9	178	511	1.47 K	4.22 K	12.1 K	34.8 K	100 K	287 K	806 K
22.1	63.4	182	523	1.50 K	4.32 K	12.4 K	35.7 K	102 K	294 K	825 K
22.6	64.9	187	536	1.54 K	4.42 K	12.7 K	36.5 K	105 K	301 K	845 K
23.2	66.5	191	549	1.58 K	4.53 K	13.0 K	37.4 K	107 K	309 K	866 K
23.7	68.1	196	562	1.62 K	4.64 K	13.3 K	38.3 K	110 K	316 K	887 K
24.3	69.8	200	576	1.65 K	4.75 K	13.7 K	39.2 K	113 K	324 K	909 K
24.9	71.5	205	590	1.69 K	4.87 K	14.0 K	40.2 K	115 K	332 K	931 K
25.5	73.2	210	604	1.74 K	4.99 K	14.3 K	41.2 K	118 K	340 K	953 K
26.1	75.0	215	619	1.78 K	5.11 K	14.7 K	42.2 K	121 K	348 K	976 K
26.7	76.8	221	634	1.82 K	5.23 K	15.0 K	43.2 K	124 K	357 K	1.00 m
27.4	78.7	226	649	1.87 K	5.36 K	15.4 K	44.2 K	127 K	365 K	1.02 m
28.0	80.6	232	665	1.91 K	5.49 K	15.8 K	45.3 K	130 K	374 K	1.05 m
28.7	82.5	237	681	1.96 K	5.62 K	16.2 K	46.4 K	133 K	383 K	1.07 m
29.4	84.5	243	698	2.00 K	5.76 K	16.5 K	47.5 K	137 K	392 K	1.10 m
30.1	86.6	249	715	2.05 K	5.90 K	16.9 K	48.7 K	140 K	402 K	1.13 m
30.9	88.7	255	732	2.10 K	6.04 K	17.4 K	49.9 K	143 K	412 K	1.15 m
31.6	90.9	261	750	2.15 K	6.19 K	17.8 K	51.1 K	147 K	422 K	1.18 m
32.4	93.1	267	768	2.21 K	6.34 K	18.2 K	52.3 K	150 K	432 K	1.21 m
33.2	95.3	274	787	2.26 K	6.49 K	18.7 K	53.6 K	154 K	442 K	1.24 m
34.0	97.6	280	806	2.32 K	6.65 K	19.1 K	54.9 K	158 K	453 K	1.27 m
34.8	100	287	825	2.37 K	6.81 K	19.6 K	56.2 K	162 K	464 K	1.30 m
35.7	102	294	845	2.43 K	6.98 K	20.0 K	57.6 K	165 K	475 K	1.33 m
36.5	105	301	866	2.49 K	7.15 K	20.5 K	59.0 K	169 K	487 K	1.37 m
37.4	107	309	887	2.55 K	7.32 K	21.0 K	60.4 K	174 K	499 K	1.40 m
38.3	110	316	909	2.61 K	7.50 K	21.5 K	61.9 K	178 K	511 K	1.43 m
39.2	113	324	931	2.67 K	7.68 K	22.1 K	63.4 K	182 K	523 K	1.47 m
40.2	115	332	953	2.74 K	7.87 K	22.6 K	64.9 K	187 K	536 K	1.50 m
41.2	118	340	976	2.80 K	8.06 K	23.2 K	66.5 K	191 K	549 K	1.54 m
42.2	121	348	1.0 K	2.87 K	8.25 K	23.7 K	68.1 K	196 K	562 K	1.58 m
43.2	124	357	1.02 K	2.94 K	8.45 K	24.3 K	69.8 K	200 K	576 K	1.62 m
44.2	127	365	1.05 K	3.01 K	8.66 K	24.9 K	71.5 K	205 K	590 K	1.65 m
45.3	130	374	1.07 K	3.09 K	8.87 K	25.5 K	73.2 K	210 K	604 K	1.69 m
46.4	133	383	1.10 K	3.16 K	9.09 K	26.1 K	75.0 K	215 K	619 K	1.74 m
47.5	137	392	1.13 K	3.24 K	9.31 K	26.7 K	76.8 K	221 K	634 K	1.78 m
48.7	140	402	1.15 K	3.32 K	9.53 K	27.4 K	78.7 K	226 K	649 K	1.82 m
49.9	143	412	1.18 K	3.40 K	9.76 K	28.0 K	80.6 K	232 K	665 K	1.87 m
51.1	147	422	1.21 K	3.48 K	10.0 K	28.7 K	82.5 K	237 K	681 K	1.91 m
52.3	150	432	1.24 K	3.57 K	10.2 K	29.4 K	84.5 K	243 K	698 K	1.96 m
53.6	154	442	1.27 K	3.65 K	10.5 K	30.1 K	86.6 K	249 K	715 K	2.00 m
54.9	158	453	1.30 K	3.74 K	10.7 K	30.9 K	88.7 K	255 K	732 K	
56.2	162	464	1.33 K	3.83 K	11.0 K	31.6 K	90.9 K	261 K	750 K	

1/20 WATT
TYPE 415E/RN50C
.065" Dia. x .140" Long
20 ohms thru 100K

1/10 WATT
TYPE 416E/RN55C
.095" Dia. x .250" Long
49.9 ohms thru 100K

1/8 WATT
TYPE 418E/RN60C
.135" Dia. x .400" Long
49.9 ohms thru 499 K

1/4 WATT
TYPE 419E/RN65C
.200" Dia. x .600" Long
49.9 ohms thru 1 meg.

1/2 WATT
TYPE 420E/RN70C
.250" x Dia. .750" Long
49.9 ohms thru 1 meg.

1 WATT
TYPE 421E/RN75C
.375" Dia. x 1.062" Long
49.9 ohms thru 2 meg.

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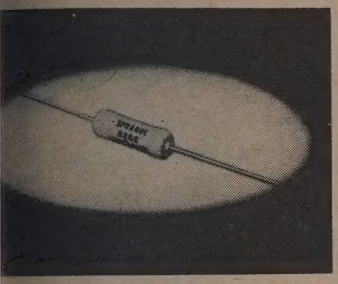
SPRAGUE RESISTORS

ACRASIL® PRECISION/POWER WIREWOUND RESISTORS



- Exclusive Silicone Coating Has Such Excellent Protective Qualities That Extremely Fine Diameter Wire is Used in Winding Resistor Body —Result is Higher Values of Resistance Than Were Previously Available.
- Extended Range of Resistance Values In No Way Impairs the Stability or Reliability of These Resistors, Even Under Extreme Operating Conditions.
- Small Size—Ideal for High-Density Circuitry.
- Both Standard and Non-Inductive Windings Are Available.
- Designed to Meet the Stringent Requirements of MIL-R-26E.
- Standard Resistance Tolerance, ±1%.
- For Complete Technical Data, Refer to Latest Issue of Engineering Bulletin 7450.

Call Your Sprague Industrial Distributor For Current Quantity Prices

STANDARD RESISTANCE VALUES (Ohms)

0	.287	.825	2.37	6.81	19.6	56.2	162	464	1.33 K	3.83 K	11.0 K	31.6 K	90.9 K
2	.294	.845	2.43	6.98	20.0	57.6	165	475	1.37 K	3.92 K	11.3 K	32.4 K	93.1 K
5	.301	.866	2.49	7.15	20.5	59.0	169	487	1.40 K	4.02 K	11.5 K	33.2 K	95.3 K
7	.309	.887	2.55	7.32	21.0	60.4	174	499	1.43 K	4.12 K	11.8 K	34.0 K	97.6 K
0	.316	.909	2.61	7.50	21.5	61.9	178	511	1.47 K	4.22 K	12.1 K	34.8 K	100 K
3	.324	.931	2.67	7.68	22.1	63.4	182	523	1.50 K	4.32 K	12.4 K	35.7 K	102 K
5	.332	.953	2.74	7.87	22.6	64.9	187	536	1.54 K	4.42 K	12.7 K	36.5 K	105 K
8	.340	.976	2.80	8.06	23.2	66.5	191	549	1.58 K	4.53 K	13.0 K	37.4 K	107 K
1	.348	1.0	2.87	8.25	23.7	68.1	196	562	1.62 K	4.64 K	13.3 K	38.3 K	110 K
4	.357	1.02	2.94	8.45	24.3	69.8	200	576	1.65 K	4.75 K	13.7 K	39.2 K	113 K
7	.365	1.05	3.01	8.66	24.9	71.5	205	590	1.69 K	4.87 K	14.0 K	40.2 K	115 K
0	.374	1.07	3.09	8.87	25.5	73.2	210	604	1.74 K	4.99 K	14.3 K	41.2 K	118 K
3	.383	1.10	3.16	9.09	26.1	75.0	215	619	1.78 K	5.11 K	14.7 K	42.2 K	121 K
7	.392	1.13	3.24	9.31	26.7	76.8	221	634	1.82 K	5.23 K	15.0 K	43.2 K	124 K
0	.402	1.15	3.32	9.53	27.4	78.7	226	649	1.87 K	5.36 K	15.4 K	44.2 K	127 K
3	.412	1.18	3.40	9.76	28.0	80.6	232	665	1.91 K	5.49 K	15.8 K	45.3 K	130 K
7	.422	1.21	3.48	10.00	28.7	82.5	237	681	1.96 K	5.62 K	16.2 K	46.4 K	133 K
0	.432	1.24	3.57	10.2	29.4	84.5	243	698	2.00 K	5.76 K	16.5 K	47.5 K	137 K
4	.442	1.27	3.65	10.5	30.1	86.6	249	715	2.05 K	5.90 K	16.9 K	48.7 K	140 K
8	.453	1.30	3.74	10.7	30.9	88.7	255	732	2.10 K	6.04 K	17.4 K	49.9 K	143 K
2	.464	1.33	3.83	11.0	31.6	90.9	261	750	2.15 K	6.19 K	17.8 K	51.1 K	147 K
5	.475	1.37	3.92	11.3	32.4	93.1	267	768	2.21 K	6.34 K	18.2 K	52.3 K	150 K
9	.487	1.40	4.02	11.5	33.2	95.3	274	787	2.26 K	6.49 K	18.7 K	53.6 K	154 K
4	.499	1.43	4.12	11.8	34.0	97.6	280	806	2.32 K	6.65 K	19.1 K	54.9 K	158 K
8	.511	1.47	4.22	12.1	34.8	100	287	825	2.37 K	6.81 K	19.6 K	56.2 K	162 K
2	.523	1.50	4.32	12.4	35.7	102	294	845	2.43 K	6.98 K	20.0 K	57.6 K	165 K
7	.536	1.54	4.42	12.7	36.5	105	301	866	2.49 K	7.15 K	20.5 K	59.0 K	169 K
1	.549	1.58	4.53	13.0	37.4	107	309	887	2.55 K	7.32 K	21.0 K	60.4 K	174 K
6	.562	1.62	4.64	13.3	38.3	110	316	909	2.61 K	7.50 K	21.5 K	61.9 K	178 K
0	.576	1.65	4.75	13.7	39.2	113	324	931	2.67 K	7.68 K	22.1 K	63.4 K	182 K
5	.590	1.69	4.87	14.0	40.2	115	332	953	2.74 K	7.87 K	22.6 K	64.9 K	187 K
0	.604	1.74	4.99	14.3	41.2	118	340	976	2.80 K	8.06 K	23.2 K	66.5 K	191 K
5	.619	1.78	5.11	14.7	42.2	121	348	1.0 K	2.87 K	8.25 K	23.7 K	68.1 K	196 K
1	.634	1.82	5.23	15.0	43.2	124	357	1.02 K	2.94 K	8.45 K	24.3 K	69.8 K	200 K
6	.649	1.87	5.36	15.4	44.2	127	365	1.05 K	3.01 K	8.66 K	24.9 K	71.5 K	205 K
2	.665	1.91	5.49	15.8	45.3	130	374	1.07 K	3.09 K	8.87 K	25.5 K	73.2 K	210 K
7	.681	1.96	5.62	16.2	46.4	133	383	1.10 K	3.16 K	9.09 K	26.1 K	75.0 K	215 K
3	.698	2.00	5.76	16.5	47.5	137	392	1.13 K	3.24 K	9.31 K	26.7 K	76.8 K	221 K
9	.715	2.05	5.90	16.9	48.7	140	402	1.15 K	3.32 K	9.53 K	27.4 K	78.7 K	226 K
5	.732	2.10	6.04	17.4	49.9	143	412	1.18 K	3.40 K	9.76 K	28.0 K	80.6 K	232 K
1	.750	2.15	6.19	17.8	51.1	147	422	1.21 K	3.48 K	10.00 K	28.7 K	82.5 K	237 K
7	.768	2.21	6.34	18.2	52.3	150	432	1.24 K	3.57 K	10.2 K	29.4 K	84.5 K	243 K
4	.787	2.26	6.49	18.7	53.6	154	442	1.27 K	3.65 K	10.5 K	30.1 K	86.6 K	249 K
0	.806	2.32	6.65	19.1	54.9	158	453	1.30 K	3.74 K	10.7 K	30.9 K	88.7 K	

INDUSTRIAL TYPES

1 WATT
TYPE 219E
.093"D. x 250"L.
ohm thru 3K

1.25 WATT
TYPE 221E
.093"D x .406"L.
.1 ohm thru 10K

3 WATTS
TYPE 223E
.187"D x .562"L.
.1 ohm thru 25K

5 WATTS
TYPE 225E
.312"D x .875"L.
.1 ohm thru 75K

10 WATTS
TYPE 227E
.375"D. x 1.781"L.
.1 ohm thru 249K

MILITARY TYPES

1 WATT
TYPE RW70U
.093"D. x .406"L.
.1 ohm thru 3.16K

3 WATTS
TYPE RW79U
.187"D. x .562"L.
.1 ohm thru 10.5K

5 WATTS
TYPE RW74U
.312"D. x .875"L.
.1 ohm thru 38.3K

10 WATTS
TYPE RW78U
.375"D x 1.781"L.
.1 ohm thru 99.9K

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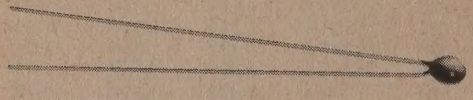
VECO® VICTORY ENGINEERING CORPORATION

Thermistors and varistors for mil. and industrial applications

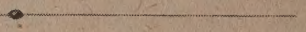
PLUSISTOR® POSITIVE TEMPERATURE COEFFICIENT THERMISTORS—Solid State silicon resistors for temperature control or compensation. Approximate + 0.7%/°C temperature coefficient from −60°C to +150°C...Available in ¼ and ½ watt dissipation rating at 25°C, decade multiples of standard 10% resistance values and a choice of bodies and sizes.

PULSISTOR®—A special thermistor designed into an electric heat sink for surge protection of high wattage loads. Protects or lengthens life of high inrush devices having steady-state dissipations up to 4,000 watts. Effectively applied in filamentary loads, capacitor charging circuits, power supplies, transmitters, modulators.

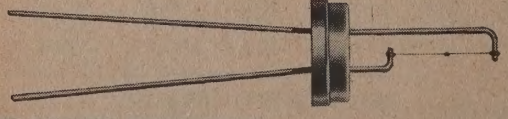
SYNCHRONOUS CONTROLLER—A solid state temperature controller with standard sensitivities of 0.01°F. Adjustable proportional band controllable from 0 to 2°F. Available with plug connector or barrier strip connection for applications including process control equipment, heating and alarm systems, kilns and drying equipment, constant or variable temperature baths, etc.



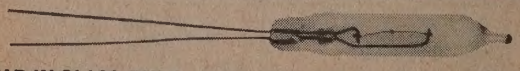
MILITARY GRADE DISK (MIL-T-23648)
Rugged, high reliability, general purpose thermistors . . . temperature range, —55°C to 125°C . . . well-suited for temperature measurement & control applications . . . particularly in transistor circuitry.



BEAD THERMISTORS
For applications involving temperature measurement and control . . . and liquid or gas flow . . . where space is minimal and medium cannot be disturbed by the sensor element . . . such as gas chromatography and thermal conductivity gas analysis. Available in diameters from .005" to .043" for different time constants. Available also with adjacent leads.



BUTT-MOUNTED THERMISTORS
For simplified application . . . where feedthrough terminals are required . . . bead thermistors are available ready-mounted . . . for gas chromatography and thermal conductivity gas analysis.



BEAD-IN-GLASS BULB—Bead-in-glass bulb thermistors . . . are most advantageous . . . in applications where power sensitivity is a primary concern. Also available in nitrogen atmospheres.

INDIRECTLY HEATED BEAD THERMISTOR
Thermistor bead with separate heater . . . for changing or controlli thermistor temperature . . . where electrical circuit resistance nee adjustment without use of moving parts.

BEAD-IN-GLASS RODS
Bead thermistors . . . with sintered-in platinum alloy leads . . . embedd in solid glass structures . . . air or gas never come in contact w thermistor bead.

BEAD-IN-GLASS PROBES
Hermetically sealed in solid glass . . . with dumet leads . . . resist ternal mediums, harsh environments . . . impervious to conductive corrosive mediums . . . unaffected by high density radiation. Available various diameters and lengths, also moisture-proof seal.

THERMISTOR SENSOR ASSEMBLIES
Complete . . . ready-to-mount . . . for a variety of app cations and mounting methods. "SS" series for surfa mounting . . . heat sealing or process controls, he sink and mold temperature measurements, other a plications . . . "SF" series for use in temperatu measurement and control, liquid level and gas contr

VECO LOX THERMISTORS
Thermistor beads & probes . . . developed specifically for measureme and control of fluid temperature . . . level and flow in the temperatu ranges of liquid oxygen and liquid nitrogen.

THERMISTOR DISKS
Characterized by long time constant . . . high power dissipation. Us for temperature compensation of electronic components.

THERMISTOR RODS
Characterized by moderate power dissipation, long time constant, hig resistance . . . for greatest application use in temperature measureme and control elements . . . or in temperature compensators and time dela devices of electronic circuits.

THERMISTOR WASHERS
Designed for mounting in bolted pile-ups . . . in any con bination of series or parallel . . . for applications requi ing higher power dissipation ratings.

THINSTOR® THIN FILM THERMISTORS
The latest advance in thermistor technology . . . tw basic types . . . 5 micron thick films and 20 micron free standing . . . both featuring relatively high dissipatio constants, short thermal response times, extrem sensitivity . . . for application in microcircuitry, ga chromatography, infrared energy detection, medical in strumentation, many, many more.

VARISTORS
Voltage sensitive resistors . . . exhibit a symmetrical non-linear change in electrical resistance with an applie voltage change . . . typically applied as noise suppresso in telephone circuits. Useful in volume limiting an metering protection.

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ORKMAN Electronic PRODUCTS, INC.

REPLACEMENT COMPONENTS

GLOBAR RESISTORS

DESCRIPTION	LIST	DLR.
.49Ω at 3 amps.	1.94	1.17
600kΩ Hot 1 Meg Ω Cold	2.12	1.28
1.3Ω Cold	1.33	.80
Replaces Fil. Resistors	3.63	2.18
3.5Ω Cold	1.33	.80
3.8Ω Cold	1.33	.80
4.5Ω Cold	1.33	.80
500KΩ at 25°C	1.82	1.09
5-8Ω at 450 ma.	2.00	1.20
6Ω Hot-600 ma.	2.00	1.20
9Ω Hot-600 Ma.	2.00	1.20
10Ω Cold	1.33	.80
11Ω Hot-600 ma.	3.03	1.82
11Ω-450 ma. 9.2Ω-600 ma.	2.00	1.20
12.9Ω Cold	1.33	.80
13Ω Cold	1.33	.80
19Ω Hot-600 ma.	1.82	1.09
26.5Ω Cold Thermistor	2.66	1.60
31Ω Hot-600 ma.	2.30	1.38
35Ω Hot-600 ma.	2.30	1.38
43Ω Hot-600 ma.	3.03	1.82
50Ω Hot-150 ma.	1.94	1.17
75Ω Hot-300 ma.	2.66	1.60
20Ω Hot-600 ma.	1.82	1.09
10.5Ω at 125 volts	3.87	2.32
35Ω Hot-600 ma.	3.87	2.32
For Color TV	1.67	1.01
14KΩ at 140 Volts	3.87	2.32
50Ω Hot-150 ma.	1.94	1.17
120Ω Cold	1.94	1.17
79Ω Cold 47Ω Hot	1.45	.87
For Color TV	1.45	.87
100Ω Hot to 200Ω Hot	2.24	1.34
Hvy. Duty Univ. Globar Disc.	2.42	1.45
Resistor Kit for color TV	3.63	2.18
Resistor Kit for color TV	3.63	2.18
.05 to 1.0 ma. @ 100V to 175V	1.16	.70
1.0 ma. @ 500V to 600V	1.16	.70
4.5Ω to 5Ω @ 23°C to 25°C	1.16	.70
15Ω @ 25°C	1.16	.70
150KΩ @ 5 Volts	1.16	.70
1.0 ma. @ 7.5 Volts	1.16	.70
2 ma. @ 950 Volts	1.16	.70
120KΩ to 150KΩ @ 25°C	1.16	.70
1.0 ma. @ 110V to 120V	1.16	.70
1.0 ma. @ 220 Volts	1.16	.70
1.0 ma. @ 870 Volts to 1K V.	1.16	.70
22.8KΩ to 30KΩ @ 25 C	1.16	.70
3KΩ @ 25°C	1.16	.70
1.0 ma. @ 17 Volts	1.16	.70
20Ω @ 37.8°C	1.16	.70
10 ma. @ 560 Volts	1.16	.70
250Ω @ 25°C	1.16	.70
1.6 ma. @ 140 Volts	1.16	.70
1.0 ma. @ 290 Volts to 340 V.	1.16	.70
10 ma. @ 680 Volts to 700 V.	1.16	.70
2.0 ma. @ 20 Volts	1.16	.70
100Ω @ 25°C	1.16	.70
10 ma. @ 29 Volts	1.16	.70
150KΩ @ 25°C	1.16	.70
50K @ 25°C	1.16	.70
2.0 ma. @ 870 Volts	1.16	.70
160Ω @ 25°C	1.16	.70
1.0 ma. @ 80 Volts	1.16	.70
1.0 ma. @ 48 Volts	1.16	.70
200KΩ to 250KΩ @ 25°C	1.16	.70
1.5 meg @ 25°C	1.16	.70
390Ω to 400Ω @ 25°C to 38°C	1.16	.70
30 ma. @ 72 Volts	1.16	.70
5 ma. @ 61 Volts DC	1.16	.70
1.0 ma. @ 34 Volts	1.16	.70
.05 ma. @ 34Volts to 40 volts	1.16	.70
.05 ma. @ 100V to 137 Volts	1.16	.70
.05 ma. @ 80 Volts	1.16	.70
.05 ma. @ 160 V. to 170 Volts	1.16	.70
.05 ma. @ 61 Volts	1.16	.70
100 ma. @ 90 Volts	1.16	.70
5KΩ @ 25°C	1.16	.70
.2 ma. @ 400 Volts	1.16	.70
1.4KΩ @ 25°C	1.16	.70

DIAL LAMPS

	.95	.57
	1.20	.72
Dial Lamps all in 5 Colors	1.11	.67
	.81	.49
	.90	.54
Green, Red,	1.25	.75
Yellow, Blue,	.65	.39
Clear.	.65	.39
	.57	.34
Order	1.10	.66
Model No. plus color.	1.25	.75
	.98	.59
	.98	.59
	.76	.46
	1.05	.63
	.86	.52
	.84	.50

FUSED RESISTORS

F4.7	4.7Ω-5 Watt (Fused)	.61	.36
F5	5Ω-5 Watt (Fused)	.61	.36
F5.6	5.6Ω-5 Watt (Fused)	.61	.36
F6	6Ω-5 Watt (Fused)	.61	.36
F7	7.5Ω-3 Amp. (Fused)	.79	.47
F7-3.6	3.6Ω-7 Watt (Fused)	.61	.36
F7-5	5Ω-7 Watt (Fused)	.79	.47
F9	9Ω-5 Watt (Fused)	.61	.36
F10	10Ω-5 Watt (Fused)	.61	.36
F10-4.5	4.5Ω-10 Watt (Fused)	.83	.50
F12A	150Ω-0.12 amp (Fused)	.61	.36
F15-7.5	7.5Ω-15 Watt (Fused)	1.06	.64
F18	18Ω-5 Watt (Fused)	.61	.36
F22	22Ω-5 Watt (Fused)	.61	.36
F26	AWG 26 Wire Fuse (5 pcs.)	.28	.17
F28	AWG 28 Wire Fuse (5 pcs.)	.28	.17
F47	47Ω-5 Watt (Fused)	.61	.36
F80	7.5Ω-3 Amp. (Fused)	.61	.36
F100	100Ω-5 Watt (Fused)	.61	.36
F145	1.45Ω Philco (Fused)	.79	.47
F150	150Ω-5 Watt (Fused)	.61	.36
FB1	Universal Fuse Replmt.	2.36	1.42
FJ4.7	4.7Ω-3.5 Amp. (Fused)	.83	.50
FJ5.6	5.6Ω-3.5 Amp. (Fused)	.83	.50
FJ7.5	7.5Ω-3.5 Amp. (Fused)	.83	.50
FJR4.7	4.7Ω-3.5 Amp. (Fused)	.83	.50
FJR5.6	5.6Ω-3.5 Amp. (Fused)	.83	.50
FJR7.5	7.5Ω-3.5 Amp. (Fused)	.83	.50

SQUARE OHMS

5W-SQ	5W 81 Values 1-10KΩ	.44	.26
10W-SQ	10W 87 values 1Ω-25KΩ	.48	.29
20W-SQ	20W 87 values 1Ω-35KΩ	.79	.47
25W-SQ	25W 121 values 1-50KΩ	.91	.55

WIREWOUND RESISTORS

6W-B	6W Bendohms, 34 values	.59	.36
25W	25W, 42 values 3.4Ω to 1KΩ	1.00	.61
30W	30W, 18 values 19Ω to 196Ω	1.85	1.11
50W-5	50 Watt-5Ω for color	2.33	1.40
50WJ-5	50 Watt-5Ω heavy duty	3.61	2.16
148	41Ω - 25 watt	1.03	.62
151	51Ω - 30 Watt	1.16	.69
389	1400Ω - 20 watt	.97	.58
792	910Ω - 20 watt	.97	.58
MO1	59Ω - 25 watt	.94	.56
WR	5-15W 50 values each univ.	.67	.40
WS	2W 21 values .22 to 10.Ω	.48	.29

AMP FUSES

W3-1	RCA #945392-3	.75	.45
W200-10	RCA #945309-1	.75	.45
W350-1	Admiral 84B28-8, Zenith 136-75	.75	.45
W400-1	Mot.65C67985-AO1,RCA 945392-2	.75	.45
W450-1	RCA #945392-4	.75	.45
W500-1	Emerson, Olympic, RCA	.75	.45
W700-1	Motorola #65C67985-AO4	.75	.45
W1000-1	Mot. #65C67985-AO3, Zen. 136-71	.75	.45
W1200-1	Em. #808236, Zenith 136-63	.75	.45
W1400-1	Em#808241, Mot.#65C67985-AO2	.75	.45
W1700-1	Em.#808238, Zenith 136-62	.75	.45
W2000-1	Zenith 136-66	.75	.45

CIRCUIT BREAKERS

FA1	Break 1 amp. carry .65 amp.	1.27	.76
FA1.5	Break 1.5 amp. carry 1 amp.	1.27	.76
FA2	Break 2 amp. carry 1.25 amp.	1.27	.76
FA2.5	Break 2.5 amp. carry 1.6 amp.	1.27	.76
FA2.75	Break 2.75 amp. Color TV	1.27	.76
FA3	Break 3 amp. carry 1.9 amp.	1.27	.76
FA3.5	Break 3.5 amp. carry 3.2 amp.	1.27	.76
FA3.25	Break 3.25 amp. Color TV	1.27	.76
FA4	Break 4 amp. carry 2.5 amp.	1.27	.76
FA4.5	Break 4.5 amp. carry 3 amp.	1.27	.76
FA5	Break 5 amp. carry 3.25 amp.	1.27	.76
FA5.5	Break 5.5 amp. carry 3.6 amp.	1.27	.76
FA6	Break 6 amp. carry 3.9 amp.	1.27	.76
FA7	Break 7 amp. carry 4 amp.	1.27	.76
FAD	For Color TV	1.27	.76

COLOR RESISTORS

3G	100Ω thru 39KΩ-3 Watt	.94	.56
4G	73Ω thru 39KΩ-4 Watt	.99	.59
5G	1KΩ thru 39KΩ-5 Watt	1.05	.63
6G	3.3KΩ and 5KΩ-6 Watt	1.05	.63
7G	50Ω thru 16KΩ-7 Watt	1.07	.64
8G	5.1KΩ - 8 Watt	1.18	.71
10G	800Ω thru 12KΩ - 10 Watt	1.34	.80

CHEMICALS

H6	"Wissh" cleaner 6 oz.	1.83	1.09
HF6	"Freez-It" cooler 6 oz.	1.83	1.09
HF15	Extra Dry Super Freez-It 6 oz.	4.58	2.75
HG6	"Spaceage" Cleaner 6 oz.	2.01	1.21
HG24	"Miracle Mist" Cleaner 24 oz.	5.40	3.24
HT6	Magnetic Tape Head cleaner 6 oz	2.01	1.21
S6	Super "Wissh" 6 oz.	1.83	1.09
S24	Super "Wissh" 24 oz. tank	4.87	2.93
SC8	Color Tuner Toner, 8 oz.	2.19	1.31
SG6	Silicone-Lube	1.38	.83

SUPER BRIGHTENERS

W2	9V, parallel, standard base	2.92	1.75
W3	9V, series, standard base	3.19	1.91
W4	8.5V Std. Isolation	4.07	2.44
W5	9V RCA Parallel	4.29	2.57
W6	9V RCA Series	4.29	2.57
W7	9V Sylvania Parallel	4.29	2.57
W8	9V Sylvania Series	4.29	2.57
W9	9V Std. Series-Parallel	4.57	2.74
W10	3.5V RCA Series	3.85	2.31
W11	3.5V Sylvnaia Series	3.85	2.31
W12	9V RCA Series-Parallel	4.95	2.97
W14	9V Sylvania Series-Parallel	4.95	2.97
W15	9V 23EP4 Parallel	4.29	2.57
W16	8.5V RCA Isolation	4.29	2.57
W17	8.5V, Isolation, Sylvania	4.29	2.57
W20	8.5V 70° Color Parallel	10.73	6.44
W21	8.5V 90° Color Parallel	10.73	6.44
W22	6.2V 70° Color Par. Iso.	11.00	6.60
W23	6.2V 90° Color Par. Iso.	11.00	6.60
W24	11SP22 G.E. Porta. Color	10.73	6.44
W25	4.5 and 6.3V Series	3.30	1.98

TRANSISTORS

AA1	PNP Osc. Mixer Converter	1.65	.99
AA2	NPN Osc. Mixer Converter	1.82	1.09
AA3	PNP Hi Freq. Osc. Mixer	2.86	1.72
AA4	PNP Output TO3 Base	2.34	1.41
AA5	PNP Output TO36 Base	4.68	2.81

SERVICE AIDS

BZ1	Buzit	15.97	9.57
C200	Line Matching transformer	4.00	2.40
D1	RCA 110° CRT to Std.	3.49	2.10
D2	Sylva. 110° CRT to Std.	3.49	2.10
D3	RCA 110° CRT to Sylv.	3.49	2.10
D4	Sylv. 110° CRT to RCA	3.49	2.10
D5	23EP4 to Sylv. 8YP4	3.49	2.10
D6	110° to Standard	3.49	2.10
D7	90° Color CRT to 70°	6.66	3.99
D8	70° to 90° Color CRT	6.66	3.99
D9	Duo Decal Stand. to 7GR	3.49	2.10
D10	G.E. 11SP22 to 70° color TV	6.66	3.99
RS1	110° RCA CRT Socket	1.41	.85
RS2	110° Sylvania CRT Socket	1.41	.85
RS3	Standard Socket	1.41	.85
RS4	70° Color CRT Rpl. Socket	2.64	1.58
RS5	23EP4 CRT Repl. Socket	1.41	.85
RS6	90° Color CRT Repl. Socket	3.30	1.98
RS7	7 GR-CRT Repl. Socket	1.41	.85
TM3	Coll. Insulator TO36 Base	.79	.47
TM5	Coll. Insulator TO3 Base	.79	.47
TMA	Alum. Insulator TO3 Base	1.29	.78
TMK	Power Trans. Mtg. Kit	1.15	.69
TMM	Mica Insulator	.79	.47
TMN	TO3 Nylon Screw Insul.	.79	.47
TMS	Trans. Socket diam'd base	.70	.41
X1	RCA 110° CRT Xtend-it	2.75	1.65
X2	Sylv. 110° CRT Xtend-it	2.75	1.65
X3	Std. CRT Xtend-it	2.75	1.65
X4	70° Color CRT Xtend-it	4.07	2.44
X5	23EP4 CRT Xtend-it	2.75	1.65
X6	70° Color CRT Xtend-it	4.51	2.71
X7	90° Color CRT Xtend-it	4.51	2.71

FREE VEST POCKET CROSS REFERENCES

NO. X52 TRANSISTORS
NO. X53 CIRCUIT BREAKERS
NO. X58 AMP FUSES
NO. X61 GLOBARS
NO. X62 CRT BRIGHTENERS

ASK FOR THEM BY NUMBER.

Prices subject to change without notice.

COILS

Over 5000 Numbers IN STOCK

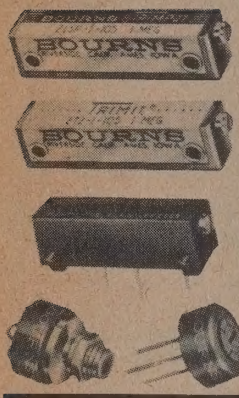
Exact Replacements

FOR OVER 200 MANUFACTURERS
SPECIALIZING IN SHORT RUNS

Workman part numbers for Coils, Fusing Devices, Amp Fuses, Circuit Breakers, Wirewound and Special Purpose Resistors are listed in Howard W. Sams' Photofacts and Counterfacts.

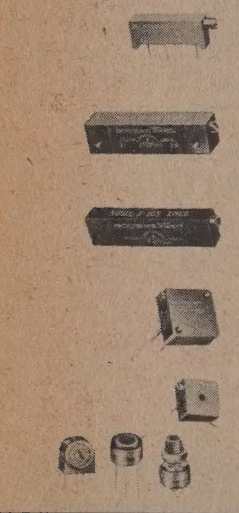
BOURNS ADJUSTMENT POTENTIOMETERS

CARBON ELEMI GENERAL PUR



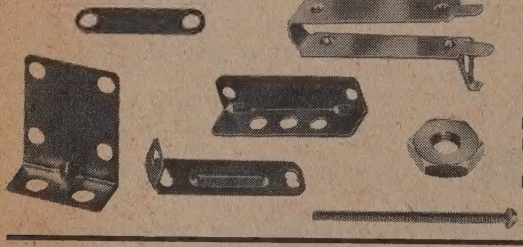
		Dimensions H W L	Termi-nals [1]	Res. Tol. (%)	Power (Watt) at 70°C	Max. Temp. °C	Adj. Turns	Humid-ity [5] Mil Spec	Standard Resis-tances Ω [3]	1-9	Prices 10-24
215	RESISTON[7] ELEMENT	.31x.25x1.25	L,S,P	±20	0.25 at 50°C	135	22	Steady State	5K-5 Meg	4.86	4.50
235	RESISTON[7] ELEMENT	.36x.30x1.34	L,S,P	±20	0.25 at 50°C	135	22	Yes	5K-5 Meg	7.02	6.50
272 274 276	COMMERCIAL TRIMIT RESISTALOY[7] ELEMENT POTENTIOMETER	.31x.25x1.25	L,S,P	±20	0.20 at 25°C	105	25	No	5K-5 Meg	3.78	3.50
3066	HUMIDITY PROOF COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.36x.28x1.0	S,P	±20	0.20 at 25°C	85	15	No	20K-1 Meg	1.95	1.85
3068	COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.36x.28x1.0	S,P	±20	0.20 at 25°C	85	15	No	20K-1 Meg	1.85	1.71
3368	SINGLE-TURN RESISTON[7] ELEMENT	.50 dia. x.24	P	±20	0.25 at 50°C	105	285°	Steady State	20K-1 Meg	5.94	5.50
		.50 dia. x.55	S						20K-1 Meg	6.75	6.25

CARBON ELEMENT HIGH-PERFORMANCE



3001	MICRO-MINIATURE HIGH TEMPERATURE RESISTON[7] ELEMENT	.31x.16x.75	P	±20	0.20	150	15	Yes	20K-1 Meg	9.18	8.50
3011	HIGH TEMPERATURE RESISTON[7] ELEMENT (RJ 11)	.31x.28x1.25	L,P	±20	0.25 at 50°C	150	22	Yes	5K-5 Meg	7.02	6.50
3051	HIGH TEMPERATURE RESISTON[7] ELEMENT (RJ 12)	.31x.19x1.25	L,S,P	±20	0.25 at 50°C	150	22	Yes	5K-5 Meg	7.02	6.50
3251	HIGH TEMPERATURE RESISTON[7] ELEMENT (RJ 22)	.19x.50x.50	L	±20	0.5 at 50°C	150	25	Yes	20K-1 Meg	7.83	7.25
		.22x.50x.50	P,W								
3281	MICRO-MINIATURE RESISTON[7] ELEMENT	.20x.375x.375	L,P,W	±20	0.5 at 50°C	150	25	Yes	20K-1 Meg	7.56	7.00
3301	MICRO-MINIATURE RESISTON[7] ELEMENT	.375x.25x.31	W	±20	0.25	150	300°	Yes	10K-1 Meg	5.94	5.50
		.31 dia. x.19	P								
		.31 dia. x.47	S						10K-1 Meg	8.91	8.25

MOUNTING HARDWARE



H-01 —1½", 2-56 machine screw
H-02 —2-56 Stainless steel rod stock (12" length only)
H-03 —2.56 Hex nut, stainless steel for use on H-01 and H-02
H-04 —1-72 machine screw, 1" long
H-05 —1-72 hex nut, stainless steel (for use on H-04)
H-12S—Stainless steel side bracket for models with 1" mounting centers
H-22S—Stainless steel side bracket for mo with ¾" mounting centers
H-25 —Stainless steel stacking straps for mo with 0.520" mounting centers
H-11E—Stainless steel end bracket for mo with 1" mounting centers
H-21E—Stainless steel end bracket for mo with ¾" mounting centers
H-26S—Stainless steel side bracket for mo with 0.520" mounting centers

NOTES

[1] Key to terminal types: L=Insulated stranded leads. S=Solder Lugs (includes panel mount bushings on models 3300S, 3301S, 3367S, 3368S only). P=Printed circuit pins (flat mounting). W=Printed circuit pins (edge mounting). Additional worm gear terminal classification: W=Printed circuit pins (edge mounting—top adjustment). H=Printed Circuit pins (edge mounting—side adjustment).

[2] Franchised local distributors quote factory prices to 500 pieces. Contact factory for prices in high quantities.

[3] The following resistances are standard if they fall within the limits listed: Wirewound—10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 25K, 50K, 100K. RESISTON, RESISTALOY—5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 Meg., 2 Meg., 5 Meg. PALIRIUM—2, 5, 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 Meg. Other resistances available on special order.

[4] Closer tolerances available on request except commercial models.

[5] All models are sealed against sand and dust.

[6] Humidity-proof versions available on special order. Contact factory for number, price and delivery.

[7] BOURNS, TRIMPOT, TWINPOT, TRIMIT, E-Z-TRIM, RESISTALOY, RESIST PALIRIUM, SILVERWELD, KNOBPOT and QUADRATRON are registered tr marks of Bourns, Inc. Other products made by Bourns, Inc., are identifie trademarks which include: TRIMISTOR, TRIMM, MIL-F-TRIM, CARBO PANLTRIM, MILISEAL, CLOCKPOT, TRIMR, MICROTRIM, RESISTRIM, TRIM JR., B, LABPOT, INFINITRON, DIALPOT, and TRIMPONENT. Bourns, Inc. is owner of rights under the following listed United States Letters Patents r ing to certain of its adjustment potentiometers: 2,706,230/2,777,926/2,8 307/2,831,949/2,873,337/2,882,375/2,922,976/2,935,716/2,945,198/2,9 975/3,010,092/3,018,459/2,898,569/3,089,110/RE 25,412/RE 25,725/3,1 336/RE 25,510/3,124,779/3,124,955/3,139,601. Other patents pending. tain Bourns products are under issued and pending foreign patents.

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BOURNS INC ADJUSTMENT POTENTIOMETERS

CERMET ELEMENT TRIMPOT POTENTIOMETER

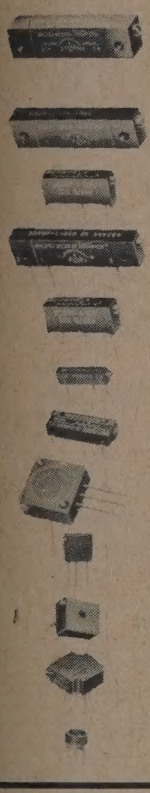
W PRODUCT DEVELOPMENT

vast improvements following the original design and prototype of the adjustment potentiometer has now, as in the past, meant that Bourns the standard for the industry. The new products and processes con-tly being developed – RESISTON® carbon and PALIRIUM® cermet ents, and the virtually indestructible SILVERWELD® termination, to e a few–serve to show that Bourns produces today what others predict omorrow.

Bourns potentiometers – not merely first, but the largest producer in the industry.

PRODUCT ENGINEERING

This group of highly trained, professional personnel utilize their specialized training to provide rapid, accurate technical assistance. Their individual experience and technical knowledge about adjustment potentiometers enables them to provide this service in a concise manner which saves you time and cuts costs. Such vital and time-saving assistance–available, incidentally, only from Bourns–is another part of the Bourns Total Value picture.



		Dimensions H W L	Termi-nals [1]	Res. Tol. (%)	Power (Watt) at 70°C	Max. Temp. °C	Adj. Turns	Humid-ity [5] Mil Spec	Standard Resis-tances Ω [3]	1-9	Prices 10-24	25-49
3012	HIGH TEMPERATURE PALIRIUM[7] CERMET ELEMENT (RJ 11)[2]	.31x.28x1.25	L,P	±10	1.0	175	22	Yes	10-1 Meg	5.94	5.50	4.95
3052	HIGH TEMPERATURE PALIRIUM[7] CERMET ELEMENT (RJ 12)[2]	.31x.19x1.25	L,S,P	±10	1.0	175	22	Yes	10-1 Meg	5.94	5.50	4.95
3009	COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.35x.19x.75	P,Y	±10	0.75 at 25°C	125	20	Yes	10-1 Meg	1.94	1.84	1.75
3059	HIGH TEMPERATURE HUMIDITY PROOF	.32x.19x1.25	L,P,Y,J	±10	1.0	150	22	Yes	10-1 Meg	3.00	2.85	2.70
3069	COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.35x.25x.75	P	±10	0.75 at 25°C	125	20	Yes	10-1 Meg	1.94	1.84	1.75
3082	MICRO-MINIATURE PALIRIUM[7] CERMET ELEMENT	.10x.15x.50	P	±10	0.3 at 85°C	150	10	Yes	10-1 Meg	7.70	7.13	6.42
3099	DUAL IN-LINE CERMET ELEMENT CERMET ELEMENT	.30x.19x.75	P	±10	0.75 at 25°C	125	20	Yes	10-1 Meg	3.75	3.35	3.00
3252	HIGH PERFORMANCE HUMIDITY PROOF	.50x.50x.22	L,P,W,X	±10	1.0	150	23	Yes	10-2 Meg	5.62	5.35	5.06
3262	MICRO-MINIATURE HIGH TEMPERATURE	.25x.17x.25	W,X,P	±10	0.25 at 85°C	175	12	Yes	10-1 Meg	7.70	7.40	7.10
3282	MICRO-MINIATURE PALIRIUM[7] CERMET ELEMENT	.20x.375x.375	L,P,W,H	±10	.5 at 85°C	175	25	Yes	10-1 Meg	6.50	6.18	5.85
3292	THIN LINE PALIRIUM[7] CERMET ELEMENT (RT 24)[2]	.15x.375x.375	L,P,W,X	±10	.5 at 85°C	175	22	Yes	10-1 Meg	6.50	6.18	5.85
3329	HIGH PERFORMANCE PALIRIUM[7] CERMET ELEMENT	.250 Dia. x .180	H,W,P	±20	0.50	150	240°	Yes	10-1 Meg	1.75	1.66	1.57

EWOUND ELEMENT GENERAL PURPOSE

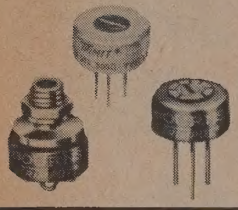
200		.31x.25x.1.25	L,S,P / L	±10	0.5	125	25	Steady State	10-10K 20K & 25K 50K 100K	4.86 6.48 7.56 9.18	4.50 6.00 7.00 8.50	4.05 5.40 6.30 7.65
236	HUMIDITY PROOF	.36x.30x1.34	L,S,P / L	±10	0.8	135	25	Yes	10-10K 20K & 25K 50K 100K	7.02 8.64 9.18 11.34	6.50 8.00 8.50 10.50	5.85 7.20 7.65 9.45
260	HIGH TEMPERATURE	.28x.25x1.25	L,S,P / L	±10	1.0	175	25	Steady State	10-10K 20K & 25K 50K 100K	5.94 7.56 8.10 9.72	5.50 7.00 7.50 9.00	4.95 6.30 6.75 8.10
271 273 275	COMMERCIAL TRIMIT[7] POTENTIOMETER	.28x.25x1.25	L,S,P	±10	0.50 at 25°C	105	25	Steady State	10-10K 20K 50K	3.19 4.32 5.40	2.95 4.00 5.00	2.66 3.60 4.50
3005	SEALED COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.31x.17x.75	P	±10	1.0 at 40°C	125	20	Steady State	10-20K	2.00	1.85	1.75
3007	COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.31x.16x.75	P	±10	1.0 at 40°C	125	20	Steady State	10-25K	1.75	1.62	1.46
3065	HUMIDITY PROOF COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.36x.29x1.0	P	±10	0.5 at 25°C	85	15	Steady State	50-20K	1.95	1.85	1.75
3067	COMMERCIAL E-Z-TRIM[7] POTENTIOMETER	.36x.28x1.0	S,P	±10	0.5 at 25°C	85	15	Steady State	50-20K	1.85	1.71	1.54
3255	COMMERCIAL TRIMIT[7] POTENTIOMETER	.19x.50x.50 / .22x.50x.50	L / P,W,X	±5	1.0 at 50°C	150	25	No	10-10K 20K-25K 50K	4.76 5.25 5.71	4.52 4.99 5.42	4.28 4.73 5.14

REFER TO NOTES—PAGE 4

CONTINUED

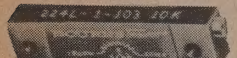
BOURNS ADJUSTMENT POTENTIOMETERS

WIREWOUND ELEME
GENERAL PURP
CONTI



		Dimensions H W L	Termi-nals [1]	Res. Tol. (%)	Power (Watt) at 70°C	Max. Temp. °C	Adj. Turns	Humid-ity [5] Mil Spec	Standard Resis-tances Ω [3]	1-9	Prices 10-24	2
3305	COMMERCIAL TRIMIT[7] POTENTIOMETER	.31x.25x.375	W	±5	1.5 at 70°C	125	280°	Steady State	10-5K 10K 20K	2.25 2.50 3.00	2.16 2.40 2.88	
		.31 dia. x.19	P						10-5K 10K 20K	1.75 2.00 2.50	1.68 1.92 2.40	
3365	INDUSTRIAL TRIMIT[7] POTENTIOMETER	.59x.315x.50	W	±5	1.0 at 25°C	125	280°	Yes	10-10K 20K & 25K 50K	3.55 4.38 4.71	3.23 3.98 4.28	
		.50 dia. x.23	P						10-10K 20K & 25K 50K	3.30 4.13 4.46	3.00 3.75 4.05	
3367	SUB-MINIATURE SINGLE-TURN	.50 dia. x.24	P	±5	0.5	105	285°	Steady State	10-20K 50K	4.86 6.84	4.50 6.33	
		.50 dia. x.54	S						10-20K 50K	5.67 7.65	5.25 7.08	

WIREWOUND ELEMENT HIGH-PERFORMANCE



220	SUB-MINIATURE HIGH TEMPERATURE (RT 10)	.31x.18x1.0	L,W	±5	1.0	175	15	Yes	10-10K 20K & 30K	8.64 10.26	8.00 9.50	
224	HIGH TEMPERATURE (RT 12)	.32x.19x1.25	L,S,P	±5	1.0	175	22	Yes	10-10K 20K & 25K 50K 100K	7.02 8.64 9.18 11.34	6.50 8.00 8.50 10.50	
3000	MICRO-MINIATURE HIGH TEMPERATURE	.31x.16x.75	P	±10	0.5	175	15	Yes	50-10K 20K	9.72 10.80	9.00 10.00	
3010	HIGH TEMPERATURE (RT 11)	.31x.28x1.25	L,P	±5	1.0	175	25	Yes	10-10K 20K & 25K 50K 100K	7.02 8.64 9.18 11.34	6.50 8.00 8.50 10.50	
3070	FINE RESOLUTION	.31 x.31x1.06	H	±5	1.5	175	10	Yes	100-20K 50K	10.50 12.50	10.25 12.25	
		.375x.31x1.06	P									
		.31 x.31x1.06	S,L						100-20K 50K	11.50 13.50	11.20 13.20	
3250	SUB-MINIATURE HIGH TEMPERATURE (RT 22)	.19x.50x.50	L	±5	1.0	175	25	Yes	10-10K 20K & 25K 50K	6.71 7.56 10.00	6.22 7.00 9.27	
		.22x.50x.50	P,W,X						10-10K 20K & 25K 50K	7.23 7.97 10.53	6.69 7.38 9.75	
3260	MICRO-MINIATURE HIGH TEMPERATURE	.25x.25x.17	H,W	±5	0.2	175	11	Yes	10-1K 2K & 5K 10K & 20K 25K	7.50 8.25 10.50 11.00	6.95 7.64 9.72 10.19	
3290	MICRO-MINIATURE HIGH TEMPERATURE	.150x.375x.375	P	±5	1.0	175	25	Yes	10-10K 20K & 25K 50K	7.33 8.75 10.10	6.79 8.10 9.35	
		.145x.375x.375	L									
		.145x.375x.390	W,H									
3300	MICRO-MINIATURE SINGLE-TURN HIGH TEMPERATURE	.37x.25x.31	W	±5	0.5	175	300°	Yes	10-10K 25K	5.94 7.56	5.50 7.00	
		.31 dia. x.18	P									
		.31 dia. x.46	S						10-10K 25K	8.91 10.53	8.25 9.75	

WIREWOUND ELEMENT SPECIAL PURPOSE

207	HIGH POWER (2-WATT)	.81x.28x1.25	L	±10	2.0 at 50°C	175	25	No[6]	100-50K 100K	10.26 11.88	9.50 11.00	
209	DUAL ELEMENT TWINPOT[7] POTENTIOMETER	.31x.50x1.25	L	±10	0.5 (each element)	135	25	No[6]	10-10K 20K & 25K 50K	12.96 14.58 16.20	12.00 13.50 15.00	
224-500	ULTRA-RELIABLE	.32x.19x1.25	L,P	±5	0.5	150	22	Yes	100-10K 20K	14.58 16.20	13.50 15.00	
3020	HIGH POWER HUMIDITY PROOF	.33x.25x1.25	L	±5	3.75	200	25	Yes	100-10K 20K & 25K 50K	14.04 15.66 16.20	13.00 14.50 15.00	
3250-501	HIGH RELIABILITY	.19x.50x.50	L	±5	0.5	150	25	Yes	100-10K 20K	13.50 14.58	12.50 13.50	
		.22x.50x.50	P,W,X									

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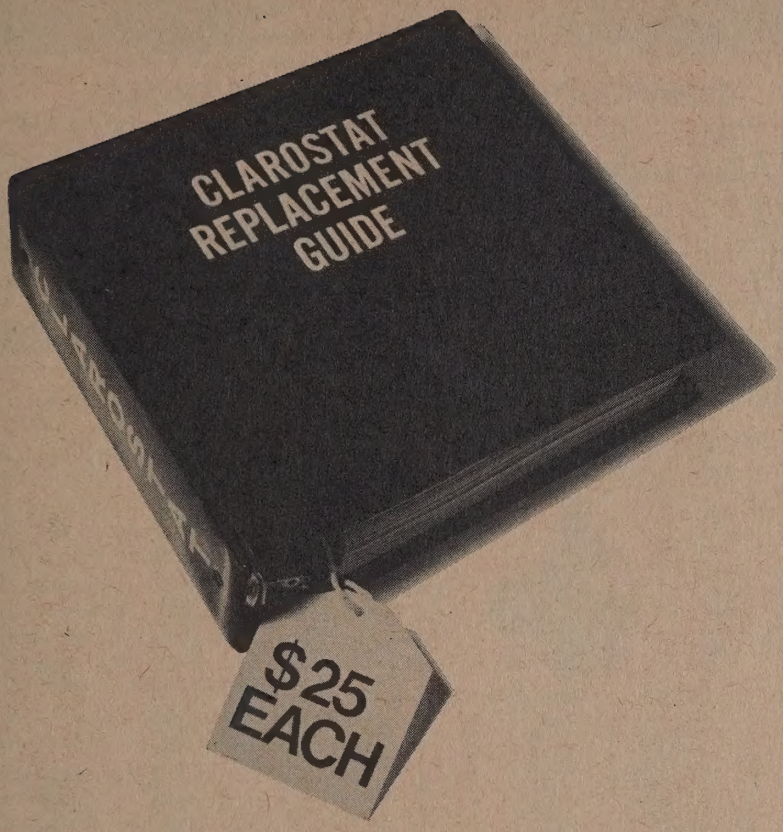

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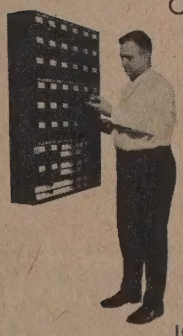
Or the chassis number . . .

and the component function.



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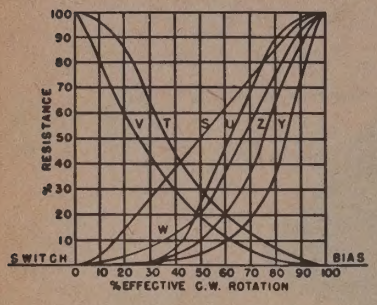
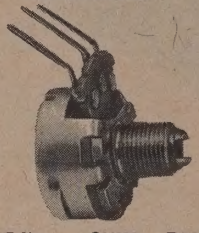
COMPOSITION-ELEMENT CONTROLS



Graph Explanation:
Taper S—Straight or uniform resistance change with rotation.
Taper T — Right-hand 30% resistance at 50% of C.C.W. rotation.
Taper U — Left-hand 1% resistance at 33⅓% of C.W. rotation.
Taper V — Right-hand 20% resistance at 50% of C.C.W. rotation.
Taper W—Left-hand 20% resistance at 50% of C.W. rotation.
Taper Z—Left-hand (Log. audio) 10% resistance at 50% of C.W. rotation.
Taper Y — Left-hand 5% resistance at 50% of C.W. rotation.

SERIES "A47" ½-WATT CONTROLS



Composition-element controls in the popular 15/16" dia. size. Series "A47" controls are field-assembled with the selected "Pick-A-Shaft"* and "Ad-A-Switch"*. These controls are also available with factory-assembled shafts at no extra charge, by omitting prefix "A" from catalog number and designating the type shaft desired when ordering. Example: 47-100K-S with FKS-¼ shaft.

CAT No.	OHMS	TAPER	CAT No.	OHMS	TAPER
A47-500-S	500	S	A47-75K-V	75K	V
A47-750-S	750	S	A47-100K-S	100K	S
A47-1000-S	1000	S	A47-100K-Z	100K	Z
A47-1500-S	1500	S	A47-150K-S	150K	S
A47-2000-S	2000	S	A47-200K-S	200K	S
A47-2500-S	2500	S	A47-250K-S	250K	S
A47-3000-S	3000	S	A47-250K-Z	250K	Z
A47-4000-S	4000	S	A47-300K-S	300K	S
A47-5000-S	5000	S	A47-500K-S	500K	S
A47-7500-S	7500	S	A47-500K-Z	500K	Z
A47-10K-S	10K	S	A47-750K-S	750K	S
A47-10K-V	10K	V	A47-750K-Z	750K	Z
A47-10K-W	10K	W	A47-1 Meg-S	1 Meg.	S
A47-10K-Z	10K	Z	A47-1 Meg-Z	1 Meg.	Z
A47-15K-S	15K	S	A47-1.5 Meg-S	1.5 Meg.	S
A47-15K-V	15K	V	A47-2 Meg-Z	2 Meg.	Z
A47-15K-W	15K	W	A47-2 Meg-S	2 Meg.	S
A47-20K-S	20K	S	A47-2.5 Meg-S	2.5 Meg.	S
A47-25K-S	25K	S	A47-3 Meg-S	3 Meg.	S
A47-25K-W	25K	W	A47-3-Meg.-Z	3 Meg.	Z
A47-25K-V	25K	V	A47-4 Meg-S	4 Meg.	S
A47-30K-S	30K	S	A47-4 Meg-Z	4 Meg.	Z
A47-40K-S	40K	S	A47-5 Meg-Z	5 Meg.	Z
A47-50K-S	50K	S	A47-5 Meg-S	5 Meg.	S
A47-50K-W	50K	W	A47-7.5 Meg-S	7.5 Meg.	S
A47-50K-Z	50K	Z	A47-10 Meg-S	10 Meg.	S
A47-75K-S	75K	S			

NET PRICE $1.08

SERIES "AD47" ½-WATT DUAL CONTROLS

These are the same as "A47" except that they are dual controls.

Cat. No.	Panel	Taper	Rear	Taper
AD47-50K-S	50K	S	50K	S
AD47-100K-S	100K	S	100K	S
AD47-250K-S	250K	S	250K	S
AD47-250K-Z	250K	Z	250K	Z
AD47.500K-S	500K	S	500K	S
AD47-500K-Z	500K	Z	500K	Z
AD47-1 Meg.-S	1 Meg.	S	1 Meg.	S
AD47-1 Meg.-Z	1 Meg.	Z	1 Meg.	Z
AD47-2 Meg.-S	2 Meg.	S	2 Meg.	S
AD47-2 Meg.-V	2 Meg.	V	2 Meg.	V
AD47-5 Meg.-S	5 Meg.	S	5 Meg.	S

NET PRICE $2.25

SERIES "C47S" ½-WATT CONTROLS WITH PUSH-PULL SWITCH

Cat. No.	Cat. No.
C47S-1000-V	C47S-750K-Z
C47S-2500-V	C47S-1MEG-S
C47S-250K-S	C47S-1MEG-Z
C47S-250K-Z	C47S-2MEG-S
C47S-500K-S	C47S-2MEG-Z
C47S-500K-Z	C47S-3MEG-Z
C47S-750K-S	

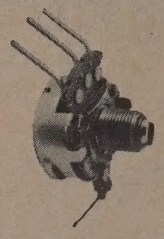
NET PRICE $1.68

SERIES "C47SF" (TAPPED)

Cat. No.	
C47SF-500K	Tap 250K
C47SF1-500K	Tap 150K
C47SF-1MEG	Tap 500K
C47SF1-1MEG	Tap 250K
C47SF-2MEG	Tap 1MEG
C47SF-3MEG	Tap 1.5MEG

NET PRICE $2.15

SERIES "A47F"



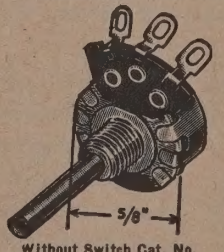
Series "A47F" controls are field-assembled with the selected "Pick-A-Shaft"* and "Ad-A-Switch"*. "A47F" controls have taps 1, 2, 3 located at 40%, 50% and 60% of rotation, double taps at 35 and 65% of electrical position. These controls are also available with factory-assembled shafts at no extra charge, by omitting prefix "A" from catalog number and designating the type of shaft desired when ordering. Example: 47F-200K with FS-3 shaft.

Cat. No.	Res. Ohms.	Tap No. 1 30%	Tap No. 2 50%	Tap No. 3 70%
A47F-15K	15K	5K		10K
A47F-30K	30K	10K		
A47F-50K	50K		25K	
A47F-200K	200K			100K
A47F-250K	250K			50K
A47F1-250K	250k		125K	
A47F2-250K	250K	60K		125K
A47F-350K	350K	75K		
A47F1-350K	350K		75K	
A47F-500K	500K			100K
A47F1-500K	500K	25K		
A47F2-500K	500K			200K
A47F3-500K	500K		100K	
A47F4-500K	500K		50K	
A47F5-500K	500K		250K	
A47F6-500K	500K	100K		300K
A47F-1 Meg.	1 Meg.	250K		
A47F1-1 Meg	1 Meg.			200K
A47F2-1 Meg.	1 Meg.		50K	
A47F3-1 Meg	1 Meg.		100K	
A47F4-1 Meg	1 Meg.		225K	
A47F5-1 Meg	1 Meg.		500K	
A47F-1.5 Meg	1.5 Meg.	250K		500K
A47F-2 Meg.	2 Meg.	20K		
A47F1-2 Meg.	2 Meg.	5000		
A47F2-2 Meg.	2 Meg.	15K		
A47F3-2 Meg.	2 Meg.		1 Meg.	
A47F4-2 Meg.	2 Meg.		200K	
A47F5-2 Meg.	2 Meg.		400K	
A47F6-2 Meg.	2 Meg.		500K	
A47F7-2 Meg.	2 Meg.	250K		1 Meg
A47F-2.5 Meg.	2.5 Meg.	250K		500K
A47F-3 Meg.	3 Meg.		250K	

NET PRICE $1.49

*Reg. U.S. Pat. Off.

SERIES 44 — 0.02 WATT CONTROLS



Composition Element Controls rated at 0.2 watt, designed specifically for miniaturized applications such as transistorized circuits, pocket radios, hearing aids, etc. Stocked controls have Clarostat "W" taper (20% log audio). Other tapers available on special order. Series 44 is without switch, while Series 44S has factory-attached 0.5 am. 25 v.d.c. DPST switch. Other ohmages available on special order. 200 ohms to 5 meg. linear; 1500 to 2.5 meg. tapered. Also available on special order, controls with 0.5 a. 25 v.d.c. SPST switch. Items not listed are special. Prices and information on request.

Without Switch Cat. No.		With SPST Switch Cat. No.	
44-500-W	44-50K-W	44S-500-W	44S-50K-W
44-1K-W	44-100K-W	44S-1K-W	44S-100K-W
44-5K-W	44-250K-W	44S-5K-W	44S-250K-W
44-10K-W	44-500K-W	44S-10K-W	44S-500K-W
44-15K-W	44-1 Meg-W	44S-15K-W	44S-1 Meg-W
44-25K-W		44S-25K-W	

NET PRICE $1.08 — NET PRICE $1.68

SERIES B47 ½-WATT TAB-MOUNT

Composition element controls designed for radio and TV applications, where bushingless controls are required. Phenolic shaft insures insulation if control is used on a "hot" chassis. Items not listed are special, for which information and prices will be supplied on request.

Cat. No.	Cat. No.	Cat. No.	Cat. No.
B47-500-S	B47-10K-S	B47-250K-S	B47-1.5 Meg-S
B47-750-S	B47-25K-S	B47-330K-Z	B47-2 Meg-S
B47-1500-S	B47-50K-S	B47-500K-S	B47-2.5 Meg-S
B47-2500-S	B47-100K-S	B47-500K-Z	B47-3 Meg-S
B47-3000-S	B47-150K-S	B47-1 Meg-S	B47-5 Meg-S
B47-5000-S	B47-200K-S	B47-1 Meg-Z	B47-5 Meg-Z
			B47-7.5 Meg-S

NET PRICE $.75

SERIES B47S ½-WATT TAB MOUNT WITH SWITCH

Cat. No.	Cat. No.
B47S-250K-S	B47S-1 Meg-S
B47S-250K-Z	B47S-1 Meg-Z
B47S-500K-S	B47S-2 Meg-S
B47S-500K-Z	B47S-2 Meg-Z

NET PRICE $1.35

Net

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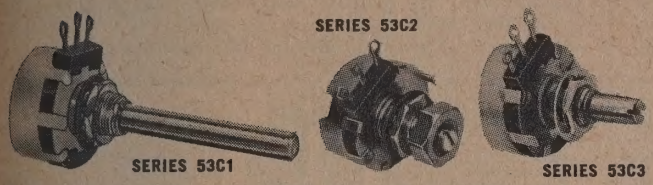
CLAROSTAT®

RESISTORS · CONTROLS
RESISTANCE DEVICES

SERIES 53—2 WATT

MOLDED COMPOSITION ELEMENT POTENTIOMETERS



SERIES 53C1 SERIES 53C2 SERIES 53C3

A 2-watt molded composition element potentiometer totally enclosed and sealed against moisture and other environmentals. Meets the need for a high quality resistance device incorporating high-stability under extreme climatic and operational conditions. For use in critical applications, such as, test equipment, military requirements, computers, servo systems and industrial metering devices.

1 1/16" diameter and 9/16" deep, wiper assembly of one piece construction; carbon to carbon contact insures exceptionally low noise level; brass nickel plated, gold plated terminals. Electrical tolerances are plus/minus 10% for all values up to 1 meg. 1 meg. and above plus/minus 20%.

Fabricated in accordance with MIL-R-94 Style RV4.
Items not listed are special, prices and information supplied upon request.

The C1 designation indicates a 1 5/8" round shaft beyond bushing; 3/8" long bushing with 3/8-32-NEF-2 thread. The C2 designation is a 1/8" screwdriver slotted shaft with a 1/2" split locking bushing. The C3 designation is a 7/8" round shaft FMS, 3/8" long bushing with 3/8-32-NEF-2 thread.

TAPERED POTENTIOMETERS		DUAL POTENTIOMETERS	
"Z" TAPER	REVERSED	Cat. No.	Cat. No.
53C1-100K-Z	"Z" TAPER	D53C1-10K-S	D53C1-100K-S
53C1-250K-Z	53C1-10K-RZ	D53C1-25K-S	D53C1-250K-S
53C1-500K-Z	53C1-25K-RZ	D53C1-50K-S	D53C1-500K-S
53C1-1 Meg-Z	53C1-50K-RZ		D53C1-1 Meg-S
53C1-2.5 Meg-Z			

Cat. No.	Cat. No.	Cat. No.	Res. Ohms	Taper
53C1-50-S	53C2-50-S	53C3-50-S	50	S
53C1-100-S	53C2-100-S	53C3-100-S	100	S
53C1-150-S	53C2-150-S	53C3-150-S	150	S
53C1-250-S	53C2-250-S	53C3-250-S	250	S
53C1-350-S	53C2-350-S	53C3-350-S	350	S
53C1-500-S	53C2-500-S	53C3-500-S	500	S
53C1-750-S	53C2-750-S	53C3-750-S	750	S
53C1-1000-S	53C2-1000-S	53C3-1000-S	1000	S
53C1-1500-S	53C2-1500-S	53C3-1500-S	1500	S
53C1-2000-S	53C2-2000-S	53C3-2000-S	2000	S
53C1-2500-S	53C2-2500-S	53C3-2500-S	2500	S
53C1-3500-S	53C2-3500-S	53C3-3500-S	3500	S
53C1-5000-S	53C2-5000-S	53C3-5000-S	5000	S
53C1-7500-S	53C2-7500-S	53C3-7500-S	7500	S
53C1-10K-S	53C2-10K-S	53C3-10K-S	10K	S
53C1-15K-S	53C2-15K-S	53C3-15K-S	15K	S
53C1-20K-S	53C2-20K-S	53C3-20K-S	20K	S
53C1-25K-S	52C2-25K-S	53C3-25K-S	25K	S
53C1-35K-S	53C2-35K-S	53C3-35K-S	35K	S
53C1-50K-S	53C2-50K-S	53C3-50K-S	50K	S
53C1-7SK-S	53C2-75K-S	53C3-75K-S	75K	S
53C1-100K-S	53C2-100K-S	53C3-100K-S	100K	S
53C1-150K-S	53C2-150K-S	53C3-150K-S	150K	S
53C1-200K-S	53C2-200K-S	53C3-200K-S	200K	S
53C1-250K-S	53C2-250K-S	53C3-250K-S	250K	S
53C1-350K-S	53C2-350K-S	53C3-350K-S	350K	S
53C1-500K-S	53C2-500K-S	53C3-500K-S	500K	S
53C1-750K-S	53C2-750K-S	53C3-750K-S	750K	S
53C1-1 Meg-S	53C2-1 Meg-S	53C3-1 Meg-S	1 Meg	S
53C1-1.5 Meg-S	53C2-1.5 Meg-S	53C3-1.5 Meg-S	1.5 Meg	S
53C1-2 Meg-S	53C2-2 Meg-S	53C3-2 Meg-S	2 Meg	S
53C1-2.5 Meg-S	53C2-2.5 Meg-S	53C3-2.5 Meg-S	2.5 Meg	S
53C1-3 Meg-S	53C2-3 Meg-S	53C3-3 Meg-S	3 Meg	S
53C1-3.5 Meg-S	53C2-3.5 Meg-S	53C3-3.5 Meg-S	3.5 Meg	S
53C1-4 Meg-S	53C2-4 Meg-S	53C3-4 Meg-S	4 Meg	S
53C1-5 Meg-S	53C2-5 Meg-S	53C3-5 Meg-S	5 Meg	S
53C1-7.5 Meg-S	53C2-7.5 Meg-S	53C3-7.5 Meg-S	7.5 Meg	S
53C1-10 Meg-S	53C2-10 Meg-S	53C3-10 Meg-S	10 Meg	S

Field-attached switches are available for the Series 53. The switch is easily and quickly installed on the control, taking less than a minute to install.

Cat. No.	Description
53-12	SPST — 5A-125V. A.C.
53-20	DPST — 3A-125V. A.C.
53-21	(Mod.) DPST — 3A-125V. A.C./D.C.

SERIES "43C1" and "43C2" 2-WATT CONTROLS

Electrical tolerance is plus/minus 5% for all ohmages. Independent linearity is to plus/minus 2%. All controls rated 2 watts.

43C1 Cat. No.	43C2 Cat. No.	Res. Ohms	43C1 Cat. No.	43C2 Cat. No.	Res. Ohms	43C1 Cat. No.	43C2 Cat. No.	Res. Ohms	43C1 Cat. No.	43C2 Cat. No.	Res. Ohms
43C1-5	43C2-5	5	43C1-100	43C2-100	100	43C1-1000	43C2-1000	1000	43C1-10K	43C2-10K	10K
43C1-10	43C2-10	10	43C1-150	43C2-150	150	43C1-1500	43C2-1500	1500	43C1-15K	43C2-15K	15K
43C1-20	43C2-20	20	43C1-200	43C2-200	200	43C1-2000	43C2-2000	2000	43C1-20K	43C2-20K	20K
43C1-25	43C2-25	25	43C1-250	43C2-250	250	43C1-2500	43C2-2500	2500	43C1-25K	43C2-25K	25K
43C1-30	43C2-30	30	43C1-300	43C2-300	300	43C1-3000	43C2-3000	3000	43C1-30K	43C2-30K	30K
43C1-40	43C2-40	40	43C1-400	43C2-400	400	43C1-4000	43C2-4000	4000	43C1-40K	43C2-40K	40K
43C1-50	43C2-50	50	43C1-500	43C2-500	500	43C1-5000	43C2-5000	5000	43C1-50K	43C2-50K	50K
43C1-75	43C2-75	75	43C1-750	43C2-750	750	43C1-7500	43C2-7500	7500			

NET PRICES

43C1-5 to 43C1-10K	$2.25	43C1-30K to 43C1-50K	$3.00	43C2-15K to 43C2-25K	$2.81
43C1-15K to 43C1-25K	2.55	43C2-5 to 43C2-10K	2.50	43C2-30K to 43C2-50K	3.30

SERIES 58C1 AND 58C2 4-WATT CONTROLS

Electrical tolerance is plus/minus 5% for all ohmages. Independent linearity is to plus/minus 1%. All controls rated 3 watts.

58C1 Cat. No.	58C2 Cat. No.	Res. Ohms	58C1 Cat. No.	58C2 Cat. No.	Res. Ohms
58C1-1	58C2-1	1	58C1-500	58C2-500	500
58C1-2	58C2-2	2	58C1-750	58C2-750	750
58C1-4	58C2-4	4	58C1-1000	58C2-1000	1000
58C1-6	58C2-6	6	58C1-1500	58C2-1500	1500
58C1-10	58C2-10	10	58C1-2000	58C2-2000	2000
58C1-15	58C2-15	15	58C1-2500	58C2-2500	2500
58C1-20	58C2-20	20	58C1-3000	58C2-3000	3000
58C1-25	58C2-25	25	58C1-5000	58C2-5000	5000
58C1-30	58C2-30	30	58C1-7500	58C2-7500	7500
58C1-40	58C2-40	40	58C1-10K	58C2-10K	10K
58C1-50	58C2-50	50	58C1-15K	58C2-15K	15K
58C1-60	58C2-60	60	58C1-20K	58C2-20K	20K
58C1-75	58C2-75	75	58C1-25K	58C2-25K	25K
58C1-100	58C2-100	100	58C1-30K	58C2-30K	30K
58C1-200	58C2-200	200	58C1-40K	58C2-40K	40K
58C1-300	58C2-300	300	58C1-50K	58C2-50K	50K
58C1-400	58C2-400	400			

NET PRICES

58C1-1 to 58C1-10K	$2.25	58C2-1 to 58C2-10K	$2.50
58C1-15K to 58C1-25K	2.55	58C2-15K to 58C2-25K	2.81
58C1-30K to 58C1-50K	3.00	58C2-30K to 58C2-50K	3.30

SERIES "10C1" and "10C2" 4-WATT CONTROLS

Electrical tolerance is plus/minus 5% for all ohmages. All controls rated 4 watts.

1 to 50K ohms available on special order. Prices and information on request.

10C1 Cat. No.	10C2 Cat. No.	Res. Ohms
10C1-75K	10C2-75K	75K
10C1-100K	10C2-100K	100K

Net Prices

10C1.....$2.85 10C2.....$3.60

PRODUCTS OF
THE HOUSE OF RESISTORS®

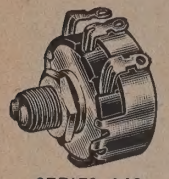
CLAROSTAT®

RESISTORS · CONTROLS
RESISTANCE DEVICES

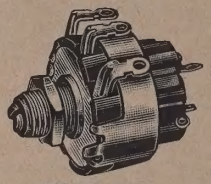
WIRE-WOUND CONTROLS

These are "Pick-A-Shaft"* controls which take any one of 12 shafts listed on page R-24 including High Voltage Coupler and insulated shaft. Your choice of any one of the 12 shafts listed (this does not include insulated shaft) with each control. Tolerances of these controls are in accordance with EIA standards. Overall resistance tolerance of plus/minus 10% for all values. All controls are linear. Available with factory-assembled shafts at no extra charge, by omitting the prefix "A" from the catalog number and designating the type of shaft desired when ordering. Example: 43-500 with FKS-¼ shaft, or 43S-10K with FS-3 shaft and SPST switch.

SERIES "A43" and "A43S" 2-WATT CONTROLS



SERIES A43
(INDUSTRIAL)
SERIES 43



SERIES A43S
(INDUSTRIAL)
SERIES 43S

"A43" is without switch, while "A43S" has factory-attached SPST switch. When ordering "A43S" controls, specify type of switch. Controls with other than SPST switch are special. Prices and information on request.

Without Switch Cat. No.	With SPST Switch Cat. No.	Res. Ohms
A43-5	A43S-5	5
A43-10	A43S-10	10
A43-20	A43S-20	20
A43-25	A43S-25	25
A43-30	A43S-30	30
A43-40	A43S-40	40
A43-50	A43S-50	50
A43-75	A43S-75	75
A43-100	A43S-100	100
A43-150	A43S-150	150
A43-200	A43S-200	200
A43-250	A43S-250	250
A43-300	A43S-300	300
A43-400	A43S-400	400
A43-500	A43S-500	500
A43-750	A43S-750	750

Without Switch Cat. No	With SPST Switch Cat. No.	Res. Ohms
A43-1,000	A43S-1,000	1,000
A43-1,500	A43S-1,500	1,500
A43-2,000	A43S-2,000	2,000
A43-2,500	A43S-2,500	2,500
A43-3,000	A43S-3,000	3,000
A43-4,000	A43S-4,000	4,000
A43-5,000	A43S-5,000	5,000
A43-7,500	A43S-7,500	7,500
A43-10K	A43S-10K	10K
A43-15K		
A43-20K		
A43-25K		
A43-30K		
A43-40K		
A43-50K		

NET PRICES: (Without Switch)
5 to 10KΩ.....$1.25
15K to 25KΩ..... 1.52
30K to 50KΩ..... 1.95
(With Switch)
5 to 10KΩ.....$1.80

SERIES "A58" and "A58S" 3- WATT CONTROLS

"A58" is without switch, while "A58S" has factory-attached SPST switch. Available with factory-assembled shafts, at no extra charge, by omitting prefix "A" from catalog number, and designating type of shaft desired when ordering. Example: 58-50K with KSS-3 shaft, or 58S-25K with RS-3 shaft and SPST switch. Controls with other than SPST switch are special. Prices and information on request.

Without Switch Cat. No.	Res. Ohms
A58-1	1
A58-2	2
A58-4	4
A58-6	6
A58-10	10
A58-15	15
A58-20	20
A58-25	25
A58-30	30
A58-40	40
A58-50	50
A58-60	60
A58-75	75
A58-100	100
A58-200	200
A58-250	250
A58-300	300
A58-400	400
A58-500	500
A58-750	750
A58-1,000	1,000
A58-1,500	1,500
A58-2,000	2,000
A58-2,250	2,250
A58-2,500	2,500
A58-3,000	3,000
A58-4000	4,000

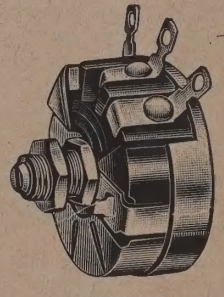
Without Switch Cat. No.	Res. Ohms
A58-5,000	5,000
A58-7,500	7,500
A58-10K	10K
A58-15K	15K
A58-20K	20K
A58-25K	25K
A58-30K	30K
A58-40K	40K
A58-50K	50K

NET PRICES:
1 to 10KΩ.....$1.25
15K to 25KΩ..... 1.52
30K to 50KΩ..... 1.95

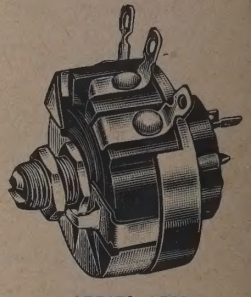
With SPST Switch Cat. No.	Res. Ohms
A58S-1	1
A58S-2	2
A58S-4	4
A58S-6	6
A58S-10	10
A58S-15	15
A58S-20	20
A58S-25	25
A58S-30	30
A58S-40	40

SERIES A10 — 4 WATTS

Cat. No.	Ohms	Net
A10—75K	75K	$2.46
A10—100K	100K	2.97



SERIES A58
(INDUSTRIAL)
SERIES 58

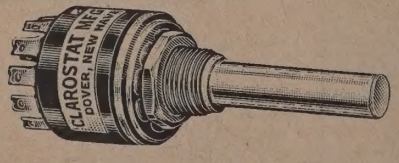


SERIES A58S
(INDUSTRIAL)
SERIES 58S

With SPST Switch Cat. No.	Res. Ohms
A58S-50	50
A58S-60	60
A58S-75	75
A58S-100	100
A58S-200	200
A58S-300	300
A58S-400	400
A58S-500	500
A58S-750	750
A58S-1,000	1,000
A58S-1,500	1,500
A58S-2,000	2,000
A58S-2,500	2,500
A58S-3,000	3,000
A58S-4,000	4,000
A58S-5,000	5,000
A58S-7,500	7,000
A58S-10K	10K
A58S-15K	15K
A58S-20K	20K
A58S-25K	25K
A58S-30K	30K
A58S-40K	40K
A58S-50K	50K

NET PRICES:
1 to 10KΩ.....$1.80
15K to 25KΩ..... 1.91
30K to 50KΩ..... 2.35

SERIES BHM ROTARY SWITCHES



Series BHM switches are rated at 50 ma. at 300 V. a.c. or d.c., and 500 ma. at 30 V. a.c. or d.c. All moving parts and contact mechanism are totally enclosed, and the switch assembly is sealed for protection from dust and atmospheric conditions. They are particularly adapted to portable radios, receivers and transmitters, X-ray and medical instruments, calculating machines and computers.

Current Rating: 50 Milliamps. at 300 volts a.c. or d.c.
500 Milliamps. at 30 volts a.c. or d.c.
Protection: All moving parts and contact mechanisms are totally enclosed and switch is sealed, which protects it from dust and atmospheric conditions.
Shaft: ¼" diameter round 1" beyond bushing.
Finish: Nickel Plating.
Bushing: ⅜" x 32 NEF-2 Thread. ⅜" Long.
Torque: 30 to 50 oz. in.

BHM-SP12P-S	Single Pole 12 Positions — Shorting
BHM-SP12P-NS	Single Pole 12 Positions — Non Shorting
BHM-2P6P-S	2 Pole 6 Positions — Shorting
BHM-2P6P-NS	2 Pole 6 Positions — Non-Shorting
BHM-3P4P-S	3 Pole 4 Positions — Shorting
BHM-3P4P-NS	3 Pole 4 Positions — Non-Shorting
BHM-4P3P-S	4 Pole 3 Positions — Shorting
BHM-4P3P-NS	4 Pole 3 Positions — Non-Shorting

Meets or exceeds test paragraph 4.5.3 thru 4.5.13 of MIL-S-3786.

Net

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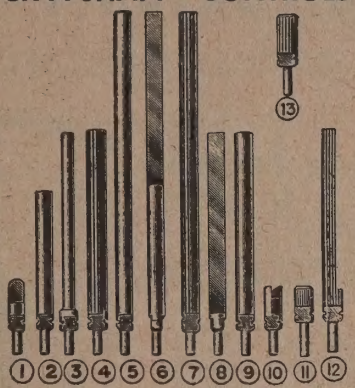
PRODUCTS OF
THE HOUSE OF RESISTORS®

CLAROSTAT®

RESISTORS • CONTROLS
RESISTANCE DEVICES

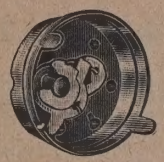
SHAFTS FOR "PICK-A-SHAFT" CONTROLS

For use with all Clarostat "Pick-A-Shaft"* controls, either carbon or wire-wound. Your choice of shaft furnish with each control.



Net Price, Each Shaft $0.33

(1) SS-3/8" length—(Male) to take female fitting.
(2) RS-2 — Round shaft, 2" long.
(3) RS-3/16—Round slotted shaft 3/16" dia., 3" long.
(4) KSS-3—Knurled, split shaft, 3" long.
(5) RS-5—Round shaft, 5" long.
(6) FS-5—Flatted, 5" long.
(7) KSS-5—Knurled, split shaft, 5" long.
(8) FS-3 — Flatted shaft, 3" long.
(9) RS-3 — Round shaft, 3" long.
(10) DFS-1/2—Double flatted Philco Type, 1/2" long.
(11) FKS-1/4—Fine knurled slotted shaft, 1/4" long.
(12) KFS-3—Knurled flatted shaft, 3" long.
(13) FKS-1/2—Fine knurled slotted shaft, 1/2" long.



U.S. PAT. 2,642,506

SERIES "SWE" SWITCHES FOR "AD-A-SWITCH" CONTROLS

For use with "A47" and "A47F" controls. Underwriters' Laboratories Inc. approved.

Cat. No.	Wiring	Net Price
SWE-12	S.P.S.T. — Single Pole Single Throw, 5A.-125V. A.C.	$0.50
SWE-13	S.P.S.T. — Single Pole Single Throw, 15A.-10V. D.C.	.73
SWE-20	D.P.S.T. — Double Pole Single Throw, 3A.-125V. A.C.	.56
SWE-21	Mod. D.P.S.T. one pole on, one off or with Jumper S.P.D.T., 3A.-125V. A.C.-D.C.	.56
SWE-23	D.P.S.T., 15A.-10V. D.C.	.73

(Mod. DPST has one pole "on", one pole "off" or with jumper it is SPDT.)

SERIES "AE" SWITCH

Cat. No.	Wiring
AE-30	SPDT Single Pole Double Throw, 1-A250V., 3A-125V. (AC or DC)

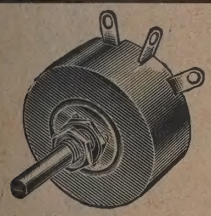
Other "AE" Switches available on request. **Net Price $0.75**

SERIES "BE" ROTARY SWITCH

Underwriters' Laboratories Inc. approved.

Cat. No.	Wiring	Net
BE-12	SPST Single Pole Single Throw, 5A-125V, A.C.	$0.75
BE-20	DPST Double Pole Single Throw, 3A-125V. A.C.	.81
BE-21 (Mod.)	DPST 3A-125V. A.C./D.C.	.81

(Mod. DPST has one pole "on", one pole "off" or with jumper it is SPDT.)



POWER RHEOSTATS

Clarostat Power Rheostats maintain their full power rating at settings as low as one-third rotation without excessive temperature rise. Standard overall resistance tolerance plus/minus 10%. Closer tolerances are available upon special order.

AN Types (aircraft type) are basically the same units mechanically and electrically except that they are encased in a metal housing (versus ceramic). Terminals are screw type lugs to prevent corrosion. Approved under MIL-R-6749.

Units mount through a single hole, a locking pin is provided for rear panel mounting.

SERIES 25 — 25-WATT

Cat. No.	Total Res. Ohms	Net Price
25-1	1	$3.87
25-2	2	3.42
25-3	3	3.42
25-6	6	3.42
25-8	8	3.42
25-10	10	3.42
25-15	15	3.42
25-25	25	3.42
25-35	35	3.42
25-50	50	3.42
25-75	75	3.42
25-100	100	3.42
25-125	125	3.42
25-175	175	3.42
25-250	250	3.42
25-350	350	3.42
25-500	500	3.42
25-750	750	3.42
25-1,000	1,000	3.87
25-1,500	1,500	3.87
25-2,500	2,500	3.87
25-3,500	3,500	4.08
25-5,000	5,000	4.29

SERIES 50 — 50-WATT

Cat. No.	Total Res. Ohms	Net Price
50-0.5	0.5	$4.29
50-1	1	4.29
50-2	2	4.29
50-4	4	3.87
50-6	6	3.87
50-8	8	3.87
50-12	12	3.87
50-16	16	3.87
50-22	22	3.87
50-35	35	3.87
50-50	50	3.87
50-80	80	3.87
50-125	125	3.87
50-150	150	3.87
50-225	225	3.87
50-300	300	3.87
50-500	500	3.87
50-800	800	4.08
50-1,000	1,000	4.08
50-1,600	1,600	4.08
50-2,500	2,500	4.08
50-3,500	3,500	4.29
50-5,000	5,000	4.29
50-8,000	8,000	5.16
50-10K	10K	5.16

AN-3155-25** — 25 WATTS

Cat. No.	Total Res. Ohms	Net Price
AN-3155-25-10	10	$4.80
AN-3155-25-11	11	4.80
AN-3155-25-15	15	4.80
AN-3155-25-25	25	4.80
AN-3155-25-50	50	4.80
AN-3155-25-75	75	4.80
AN-3155-25-100	100	4.80
AN-3155-25-200	200	5.61

AN-3155-50** — 50 WATTS

AN-3155-50-5	5	5.61
AN-3155-50-8	8	5.61
AN-3155-50-10	10	5.61
AN-3155-50-25	25	5.46
AN-3155-50-30	30	5.46
AN-3155-50-50	50	5.46
AN-3155-50-75	75	5.46
AN-3155-50-100	100	5.46
AN-3155-50-150	150	6.16
AN-3155-50-200	200	6.16

Prices include AN-3220 — 2 knob

**25 and 50 watt Power Rheostats when encased in metal housing are derated 50%.

PRODUCTS OF
THE HOUSE OF RESISTORS®

CLAROSTAT®

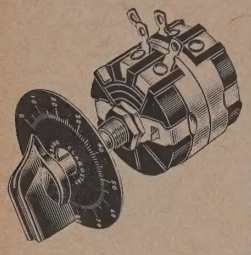
RESISTORS · CONTROLS
RESISTANCE DEVICES

®

SOUND-SYSTEM CONTROLS

For proper control of volume and tone alike, Clarostat offers a choice of several controls, such as L- and T-pads, output attenuators, and individual-speaker volume controls as used for drive-in theatre installations. These are not ordinary radio controls but rather sound-system controls designed and built for critical requirements.

CONSTANT-IMPEDANCE CONTROLS



Self-compensating volume controls known as L-pads and T-pads for use in sound systems. Rated at 2½ watts DC, but will handle up to 10 watts audio. Continuous range from 0.5 to 30 decibels attenuation in 90% rotation. Last 10% affords infinite attenuation. With Clarostat constant-impedance L-pads and T-pads the input and output impedances of associated circuits can be kept within the limits of a constant required value. Knob and dial plate furnished with each control.

CIT Cat. No.	CIL Cat. No.	Res. Ohms
CIT-4	CIL-4	4
CIT-6	CIL-6	6
CIT-8	CIL-8	8
CIT-15	CIL-15	15
CIT-50	CIL-50	50
CIT-100	CIL-100	100
CIT-200	CIL-200	200
CIT-250	CIL-250	250
CIT-500	CIL-500	500
CIT-600	CIL-600	600
CIT-1,000	CIL-1,000	1,000
CIT-2,000	CIL-2,000	2,000
CIT-3,000	CIL-3,000	3,000
	CIL-4,000	4,000
	CIL-5,000	5,000

U. S. Pat. 2,434,248

CIT — NET PRICE $3.15

CIL — NET PRICE $2.79

CONSTANT IMPEDANCE OUTPUT ATTENUATORS

Series "CIB" rated at 10 watts, but will handle up to 30 watts in audio circuit. Linear attenuation provided in 3 decibel steps up to 24db, then 30db followed by infinity. Equipped with dial plate and bar knob. One-hole mounting, ⅜" bushing diameter. 1" shaft. This control has been developed to meet the need for a constant-impedance attenuator capable of handling considerable power without measurable insertion loss. Recommended as an output level control for power amplifiers, or as an input attenuator for individual or for a group of speakers in a public address system.

Cat. No.	Res. Ohms	Cat. No.	Res. Ohms
CIB-6	6	CIB-200	200
CIB-8	8	CIB-250	250
CIB-15	15	CIB-500	500
CIB-50	50	CIB-600	600

NET PRICE $7.70

SPECIAL DRIVE-IN THEATRE L-PAD

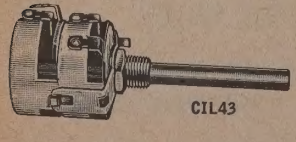
To meet the needs of theater sound systems, more especially those of drive-in theaters, a special 8 ohm L-Pad is now available, containing two separate windings of 5 ohms and 40 ohms. Also 50 ohm linear rheostat and 35 ohm tapered rheostat, as listed. Units have ¾-32 bushing ⅜" long, and 1½" round shaft. (Knob furnished with each control).

Cat. No. CM8727-1 8 ohm L-Pad
Net Price $1.80

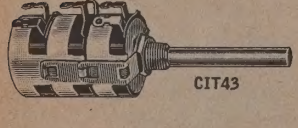
SPACE-SAVER CONSTANT-IMPEDANCE ATTENUATORS

Characterized by reduced depth and diameter, these attenuators are ideal for use in remote control of speakers since they are small enough to be installed in standard electrical boxes in the home, office, stockroom, etc.

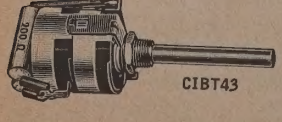
These controls are rated 2 watts D.C., but will handle up to 4 watts of audio, depending upon the type signal being handled. (As the frequency becomes constant, wattage reduces to 2 watts or the same as the D.C. rating).



CIL43



CIT43



CIBT43

Cat. No. CIL43 (L-Pad)	Cat. No. CIT43 (T-Pad)	Cat. No. CIBT43 (Bridged T-Pad)	Impedance
CIL43-4	CIT43-4	CIBT43-4	4 ohms
CIL43-6	CIT43-6	CIBT43-6	6 ohms
CIL43-8	CIT43-8	CIBT43-8	8 ohms
CIL43-15	CIT43-15	CIBT43-15	15 ohms
CIL43-50	CIT43-50	CIBT43-50	50 ohms
CIL43-100	CIT43-100	CIBT43-100	100 ohms
CIL43-200	CIT43-200	CIBT43-200	200 ohms
CIL43-250	CIT43-250	CIBT43-250	250 ohms
CIL43-500	CIT43-500	CIBT43-500	500 ohms
		CIBT43-600	600 ohms

NET PRICE CIL43 $2.79 **NET PRICE CIT43 $3.15**

NET PRICE CIBT43 $3.63

- Attenuation range of 0 to 30 db over 90% of rotation, 60 db in remaining 10% of rotation. Attenuation will increase approximately linearly to 30 db with counter-clockwise rotation.
- Insertion loss less than 0.5 db.
- Input impedance within plus/ minus 20%.
- The CIT43 and CIBT43 (Bridged T Pad) have constant input and output impedances, while the CIL43 has constant impedance in the input only.
- Shafts and bushings are insulated from the circuit elements.
- Pads have ⅜-32 x ⅜" long bushing.
- ¼" dia. round shafts 1½" long beyond bushing.
- All pads supplied with bar knob and dial plates, as shown above.
- Dia. 1⅛". Depth of body from mounting surface: CIL43 — 1$\frac{1}{32}$"; CIT43 — 1¾"; CIBT43 — 1½".

Net

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PRODUCTS OF THE HOUSE OF RESISTORS®

CLAROSTAT®

RESISTORS · CONTROLS RESISTANCE DEVICES

uni-tite FIELD ASSEMBLED CONTROLS

Your Distributor's Uni-Tite Replacement Center will answer more than 95% of your replacement control requirements including 15/16" diameter wirewound controls, push/pull singles, dual controls, dual controls with rotary switches, and single controls with rotary switches. These field-assembled, snap together controls provide you with the exact combination required for radio and TV replacements. In addition, a complete line of Uni-Tite field-assembled, dual controls, operating on a single shaft are available to meet all your audio, hi-fi and sound system requirements.

PANEL CONTROLS — TAPPED

Cat. No.	Ohms	Tap No. 1	Tap No. 2	Tap No. 3
NPF-750	750		500	
NPF1-750	750		250	
NPF-1000	1000		850	
NPF-2000	2000	250		500
NPF-2500	2500		500	
NPF-3000	3000			2500
NPF-15K	15K	3000		
NPF1-15K	15K			10K
NPF-2-15K	15K	5000		10K
NPF-30K	30K	10K		
NPF1-30K	30K			20K
NPF-250K	250K		75K	
NPF-500K	500K		100K	
NPF1-500K	500K			250K
NPF-1 Meg	1 Meg		500K	
NPF1-1 Meg	1 Meg		150K	
NPF-2 Meg	2 Meg		500K	
NPF1-2 Meg	2 Meg		1 Meg	
NPF2-2 Meg	2 Meg	500K		1 Meg
NPF3-2 Meg	2 Meg	250K		500K
NPF-3 Meg	3 Meg		1 Meg	

Net price: $1.08

REAR CONTROLS — TAPPED

NRF-750	750		250	
NRF-2500	2500		500	
NRF-15K	15K			10K
NRF-30K	30K			25K
NRF-250K	250K		125K	
NRF1-250K	250K		75K	
NRF-330K	330K		66K	
NRF-500K	500K		100K	
NRF1-500K	500K		250K	
NRF2-500K	500K		50K	
NRF3-500K	500K	200K		350K
NRF-1 Meg	1 Meg		75K	
NRF1-1 Meg	1 Meg		250K	
NRF2-1 Meg	1 Meg		500K	
NRF3-1 Meg	1 Meg	150K		
NRF4-1 Meg	1 Meg	50K		500K
NRF-1.5 Meg	1.5 Meg		300K	
NRF-2 Meg	2 Meg		500K	
NRF1-2 Meg	2 Meg		1 Meg	
NRF2-2 Meg	2 Meg	200K		
NRF3-2 Meg	2 Meg	650K		
NRF3 Meg	3 Meg		1 Meg	
NRF1-3 Meg	3 Meg	500K		

Net price $1.08

PANEL CONTROLS — PLAIN

Cat. No.	Ohms	Taper	Cat. No.	Ohms	Taper
NP-200-S	200	S	NP-75K-Z	75K	Z
NP-250-S	250	S	NP-100K-S	100K	S
NP-350-S	350	S	NP-150K-S	150K	S
NP-500-S	500	S	NP-200K-S	200K	S
NP-500V	500	V	NP-200K-V	200K	V
NP-750-S	750	S	NP-250K-S	250K	S
NP-750-V	750	V	NP-250K-Z	250K	Z
NP-1000-S	1000	S	NP-300K-S	300K	S
NP-1000-V	1000	V	NP-350K-S	350K	S
NP-1200-V	1200	V	NP-350K-Z	350K	Z
NP-1500-S	1500	S	NP-500K-S	500K	S
NP-1500-V	1500	V	NP-500K-Z	500K	Z
NP-2000-S	2000	S	NP-500K-V	500K	V
NP-2500-S	2500	S	NP-750K-S	750K	S
NP-3000-S	3000	S	NP-750K-Z	750K	Z
NP-3000-V	3000	V	NP-1 Meg-S	1 Meg	S
NP-4000-S	4000	S	NP-1 Meg-Z	1 Meg	Z
NP-5000-S	5000	S	NP-1 Meg-V	1 Meg	V
NP-5000-V	5000	V	NP-1.5 Meg-S	1.5 Meg	S
NP-7000-S	7000	S	NP-1.5 Meg-V	1.5 Meg	V
NP-7500-S	7500	S	NP-2-Meg-S	2 Meg	S
NP-10K-S	10K	S	NP-2 Meg-Z	2 Meg	Z
NP-10K-Z	10K	Z	NP-2 Meg-V	2 Meg	V
NP-10K-V	10K	V	NP-2.5 Meg-S	2.5 Meg	S
NP-11.5K-V	11.5K	V	NP-2.5 Meg-V	2.5 Meg	V

PANEL CONTROLS — PLAIN (Cont'd.)

Cat. No.	Ohms	Taper	Cat. No.	Ohms	Taper
NP-15K-S	15K	S	NP-3 Meg-S	3 Meg	S
NP-15K-V	15K	V	NP-3 Meg-Z	3 Meg	Z
NP-20K-S	20K	S	NP-3 Meg-V	3 Meg	V
NP-25K-S	25K	S	NP-4 Meg-S	4 Meg	S
NP-25K-Z	25K	Z	NP-4 Meg-Z	4 Meg	Z
NP-30K-S	30K	S	NP-5 Meg-S	5 Meg	S
NP-40K-S	40K	S	NP-5 Meg-Z	5 Meg	Z
NP-50K-S	50K	S	NP-5 Meg-V	5 Meg	V
NP-50K-Z	50K	Z	NP-7.5 Meg-S	7.5 Meg	S
NP-75K-S	75K	S	NP-10 Meg-S	10 Meg	S

Net price .....$.66

REAR CONTROLS — PLAIN

NR-200-S	200	S	NR-300K-S	300K	S
NR-1000-S	1000	S	NR-350K-Z	350K	Z
NR-1000-V	1000	V	NR-500K-S	500K	S
NR-1500-S	1500	S	NR-500K-Z	500K	Z
NR-2000-S	2000	S	NR-750K-S	750K	S
NR-2000-V	2000	V	NR-1 Meg-S	1 Meg	S
NR-3000-S	3000	S	NR-1 Meg-Z	1 Meg	Z
NR-3000-V	3000	V	NR-1 Meg-V	1 Meg	V
NR-5000-S	5000	S	NR-1.5 Meg-S	1.5 Meg	S
NR-7500-S	7500	S	NR-2 Meg-S	2 Meg	S
NR-7500-Z	7500	Z	NR-2 Meg-Z	2 Meg	Z
NR-10K-S	10K	S	NR-2 Meg-V	2 Meg	V
NR-10K-V	10K	V	NR-2.5 Meg-S	2.5 Meg	S
NR-25K-S	25K	S	NR-2.5 Meg-Z	2.5 Meg	Z
NR-25K-V	25K	V	NR-3 Meg-S	3 Meg	S
NR-50K-S	50K	S	NR-3 Meg-Z	3 Meg	Z
NR-75K-S	75K	S	NR-3-Meg-V	3 Meg	V
NR-100K-S	100K	S	NR-3.5 Meg-S	3.5 Meg	S
NR-125K-V	125K	V	NR-5 Meg-S	5 Meg	S
NR-150K-S	150K	S	NR-5 Meg-Z	5 Meg	Z
NR-200K-S	200K	S	NR-5 Meg-V	5 Meg	V
NR-250K-S	250K	S	NR-7.5 Meg-Z	7.5 Meg	Z
NR-250K-Z	250K	Z	NR-10 Meg-S	10 Meg	S

Net price .....$.66

TAPER EXPLANATION:

TAPER S Straight or uniform resistance change with rotation.

TAPER V Right-hand 20% resistance at 50% of C.C.W. rotation.

TAPER Z Left-hand (Log. audio) 10% reseistance at 50% C.W. rotation.

WIRE-WOUND PANELS

(Linear Taper Only)

Cat. No.	Ohms
NPW-5	5
NPW-10	10
NPW-20	20
NPW-25	25
NPW-30	30
NPW-40	40
NPW-50	50
NPW-75	75
NPW-100	100
NPW-150	150
NPW-200	200
NPW-250	250
NPW-300	300
NPW-400	400
NPW-500	500
NPW-750	750
NPW-1000	1000
NPW-1500	1500
NPW-2000	2000
NPW-2500	2500
NPW-3000	3000
NPW-4000	4000
NPW-5000	5000
NPW-7500	7500
NPW-10K	10K

Net price: .....$.66

WIRE-WOUND REARS

(Linear Taper Only)

Cat. No.	Ohms
NRW-5	5
NRW-10	10
NRW-20	20
NRW-25	25
NRW-30	30
NRW-40	40
NRW-50	50
NRW-75	75
NRW-100	100
NRW-150	150
NRW-200	200
NRW-250	250
NRW-300	300
NRW-400	400
NRW-500	500
NRW-750	750
NRW-1000	1000
NRW-1500	1500
NRW-2000	2000
NRW-2500	2500
NRW-3000	3000
NRW-4000	4000
NRW-5000	5000
NRW-7500	7500
NRW-10K	10K

Net price: .....$.66

SWITCHES (Rotary)

Cat. No.	Description	Net
NWE-12	SPST (5A-125V. A.C.)	$.45
NWE-13	SPST (15A-10V. D.C.)	.66
NWE-20	DPST (3A-125V. A.C.)	.51
NWE-21	Mod. DPST (3A-125V. A.C./D.C.)	.51
NWE-23	DPST (15A-10V. D.C.)	.66

PUSH-PULL

NWG-18	SPST (3A-125V. A.C.)	.60

SOLID SHAFTS (single controls)

Cat. No.	Description	Shaft Length Dia.	FMS
UP-A-400	Round	¼"	4"
UP-B-400	⅛" Double Slot & Flatted	¼"	4"
UP-C-400	1/16" Double Slot & Knurled	¼"	4"
UP-E-400	Knurled Flatted Shaft	¼"	3"
UP-S-010	Fine Knurled Slotted Shaft	¼"	¼"
UP-S-014	Fine Knurled Slotted Shaft	¼"	½"
SE-F-400	Slotted & Flatted	3/16"	4"

Net price: .....$.27

PUSH-PULL SHAFTS (single controls)

Cat. No.	Description	Shaft Length Dia.	FMS
UPP-A-400	Round	¼"	4"
UPP-B-400	⅛" Double Slot & Flatted	¼"	4"
UPP-C-400	1/16" Double Slot & Knurled	¼"	4"
UPP-H-300	Double Slotted	3/16"	3"

Net price: .....$.27

NON-METALLIC SHAFTS (single control)

Cat. No.	Description	Shaft Length Dia.	FMS
NML-A-300	Round	¼"	3"
NMS-A-300	Round	3/16"	3"

ADAPTER SHAFT

Push-Pull Single Control Cat. No. PPAP Net price: $.25

COUPLER SHAFT

Dual Controls Cat. No. DC-2 Net price $.08

ADAPTER SHAFT

Push-Pull Conc. Dual, Cat. No. PPAR Net price: $.25

MOUNTING ADAPTERS

Twist Tab Mounting — Cat. No. TT-2 Net Price: $.08
Mounting Adapter — Cat. No. DH-2 Net Price: $.25

PANEL SHAFTS

1/16 Double Slot & Knurled

Cat. No.	Shaft Length FMS
UPC-C-012	3/8"
UPC-C-013	13/16"
UPC-C-014	7/8"
UPC-C-015	15/16"
UPC-C-101	1 1/16"
UPC-C-102	1 1/8"
UPC-C-104	1 1/4"
UPC-C-105	1 5/16"
UPC-C-107	1 7/16"
UPC-C-108	1 1/2"
UPC-C-111	1 11/16"
UPC-C-112	1 3/4"
UPC-C-113	1 13/16"
UPC-C-114	7 7/8"
UPC-C-200	2"
UPC-C-204	2 1/4"
UPC-C-206	2 3/8"
UPC-C-207	2 7/16"
UPC-C-212	2 3/4"
UPC-C-214	2 7/8"
UPC-C-308	3 1/2"

Net price: .....$.27

PANEL SHAFTS

(Round)

UPC-A-101	1 1/16"
UPC-A-105	1 5/16"
UPC-A-209	2 9/16"

Net price .....$.27

PANEL SHAFTS

⅛" Double Slot & Flatted

UPC-B-013	13/16"
UPC-B-014	7/8"
UPC-B-015	15/16"
UPC-B-101	1 1/16"
UPC-B-102	1 1/8"
UPC-B-104	1 1/4"
UPC-B-105	1 5/16"
UPC-B-106	1 3/8"
UPC-B-107	1 7/16"
UPC-B-108	1 1/2"
UPC-B-109	1 9/16"
UPC-B-110	1 5/8"
UPC-B-111	1 11/16"
UPC-B-112	1 3/4"
UPC-B-113	1 13/16"
UPC-B-114	1 7/8"
UPC-B-115	1 15/16"
UPC-B-200	2"
UPC-B-201	2 1/16"
UPC-B-202	2 1/8"
UPC-B-203	2 3/16"
UPC-B-204	2 1/4"
UPC-B-205	2 5/16"
UPC-B-206	2 3/8"
UPC-B-207	2 7/16"
UPC-B-208	2 1/2"
UPC-B-209	2 9/16"
UPC-B-210	2 5/8"
UPC-B-212	2 3/4"
UPC-B-213	2 13/16"
UPC-B-300	3"
UPC-B-304	3 1/4"
UPC-B-305	3 5/16"
UPC-B-306	3 3/8"
UPC-B-309	3 9/16"
UPC-B-312	3 3/4"
UPC-B-400	4"
UPC-B-401	4 1/16"
UPC-B-402	4 1/8"

Net price: .....$.27

RETAINING RING

For Push-Pull Shafts Cat. No. R-2

NON-METALLIC SHAFTS

(Reverse Tab Mount)

Cat No.	Shaft Length FMS
UP-N-007	7/16"
NP-N-010	5/8"
UP-N-012	3/4"
UP-N-014	7/8"
UP-N-100	1"
UP-N-102	1 1/8"
UP-N-104	1 1/4"
UP-N-106	1 3/8"
UP-N-108	1 1/2"

.187 DIA. REAR SHAFTS

(Push-Pull Controls)

Combination	Slot & Flat
URP-G-104	1 1/4"
URP-G-108	1 1/2"
URP-G-110	1 5/8"
URP-C-111	1 11/16"
URP-G-113	1 13/16"
URP-G-114	1 7/8"
URP-G-115	1 15/16"
URP-G-200	2"
URP-G-202	2 1/8"
URP-G-204	2 1/4"
URP-G-205	2 5/16"
URP-G-208	2 1/2"
URP-G-213	2 13/16"

Net price .....$.27

REAR SHAFTS

Flatted-Slotted

UR-D-006	3/8"
UR-D-012	3/4"
UR-D-014	7/8"
UR-D-015	15/16"
UR-D-100	1"
UR-D-102	1 1/8"
UR-D-104	1 1/4"
UR-D-105	1 5/16"
UR-D-106	1 3/8"
UR-D-107	1 7/16"
UR-D-108	1 1/2"
UR-D-109	1 9/16"
UR-D-110	1 5/8"
UR-D-112	1 3/4"
UR-D-114	1 7/8"
UR-D-115	1 15/16"
UR-D-200	2"
UR-D-201	2 1/16"
UR-D-202	2 1/8"
UR-D-203	2 3/16"
UR-D-204	2 1/4"
UR-D-205	2 5/16"
UR-D-206	2 3/8"
UR-D-207	2 7/16"
UR-D-208	2 1/2"
UR-D-209	2 9/16"
UR-D-210	2 5/8"
UR-D-211	2 11/16"
UR-D-212	2 3/4"
UR-D-213	2 13/16"
UR-D-214	2 7/8"
UR-D-215	2 15/16"
UR-D-300	3"
UR-D-301	3 1/16"
UR-D-302	3 1/8"
UR-D-304	3 1/4"
UR-D-307	3 7/16"
UR-D-308	3 1/2"
UR-D-309	3 9/16"
UR-D-312	3 3/4"
UR-D-313	3 13/16"
UR-D-400	4"
UR-D-404	4 1/4"
UR-D-407	4 7/16"
UR-D-409	4 9/16"
UR-D-413	4 13/16"

Net price: .....$.27

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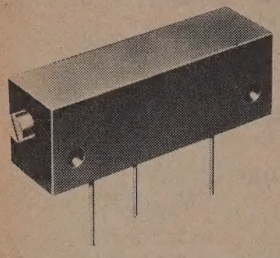
RESISTANCE DEVICES

SERIES 76JA

Multi-turn Trimming Potentiometer

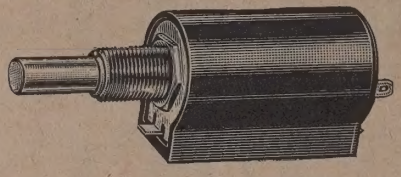


A miniature, 10-turn trimming potentiometer that offers up to 15 times the winding length available in comparable units. This feature results in set-ability and resolution exceeding that of trimming potentiometers several times the size. Brief specifications include a power rating of ¾ watt at 85°C derated to zero power at 150°C, resistances from 100 ohms to 20K ohms standard with other values offered on special order, standard resistance tolerance of ±5%, printed circuit or solder lug mounting, overall dimensions of only 1.250″ x 0.437″ x 0.328″.

Stock Values	Resolution %
100	0.1
200	0.09
500	0.08
1,000	0.075
2,000	0.06
5,000	0.05
10,000	0.04
20,000	0.036

SERIES 62JA

Commercial Multi-turn Potentiometer

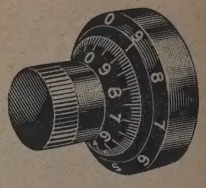


A 10-turn potentiometer offering electrical operating characteristics comparable to units costing far more. Designed specifically for the industrial instrumentation market, the Series 62JA has the inherent advantages of far greater resolution in trimming, better instrument control and settings for all types of electronic equipment. Brief specifications include: ⅞″ diameter, 1¹⁵⁄₁₆″ deep behind panel, bushing and shaft or split-locking bushing with screwdriver slot, 2 watts @ 25°C, derated to zero @ 85°C, 1000 to 100K ohms standard — others available, absolute linearity of ±0.25% standard, closer on order.

Stock Values	Resolution %	Stock Values	Resolution %
100,000	.012	2,500	.022
50,000	.013	2,000	.029
30,000	.016	1,000	.030
25,000	.017	500	.036
20,000	.019	250	.038
10,000	.024	200	.048
5,000	.026	100	.062

CLARODIALS

Ten-Turn Concentric Scale Dials

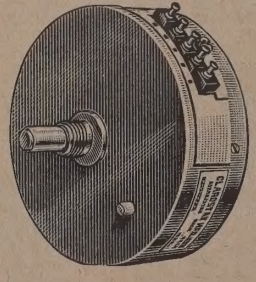


Calibrated dials designed for multi-turn tiometers up to 10 turns or other rotary d CLARODIALS require only one inch of panel The knob attaches directly to the shaft, a body of the dial is mounted rigidly to the As a result, accurate readings with a ratio for ten turns are provided with zero backlas no reading error. CLARODIALS are made of an aluminum for years of attractive use. Mo requirements are ¼″ shaft and ⅜″-32 bushing. Adapters for ⅛″ dia. shafts are ava

Cat. No.	Description
411	Commercial 10 turn, black anodize ¼″ shaft, no
412	Commercial 10 turn, black anodize ¼″ shaft, wit
461	Commercial 10 turn, clear anodize ¼″ shaft, no
462	Commercial 10 turn, clear anodize ¼″ shaft, wit

SERIES 54-48JA

3″ Dia. Vari/Phase Single Turn Potentiometer

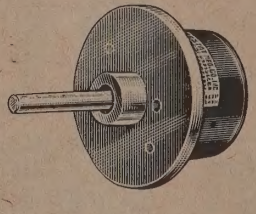


Permits external phasing of electrical rotation to mechanical rotation. Ultra precise unit for professional use. Exclusive Clarostat design eliminates bulky, hard-to-adjust clamping rings. Anodized aluminum housings for minimum weight. Widely used in aircraft instrumentation.

Stock Values	Resolution 100/Total Turns
250,000	.023%
100,000	.031%
50,000	.040%
10,000	.061%
1,000	.083%

SERIES SC42-970 SINE-COSINE

Single-Turn Potentiometer



Used in radar, computer and servomechanisms, or any application requiring two output voltages accurately proportioned to the sine and cosine rotation angle. Due to functional use, units are designed and built for exceptionally long rotational life.

SPECIFICATION

FUNCTION: Sine-Cosine.

TOTAL RESISTANCE: 16,000 Ω ± 1

POWER RATING: 2.46 watts @ 40°C (198 volts R.M.S.)

ROTATION: (Eff., Elec., Mech) 360° (C

MAXIMUM SPEED

RECOMMENDED: 30 RPM (20 gm. con pressure)

EXPECTED LIFE: 500,000 Cycles.

RESOLUTION: 0.14% maximum of p to peak voltage.

CONFORMITY: Standard, ±1% peak peak voltage (Available, ±½% p to peak voltage. Not stocked — n be ordered special price and in mation on request.)

SHAFT TORQUE: 1 oz. in.

WEIGHT: 6 oz.

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PRODUCTS OF
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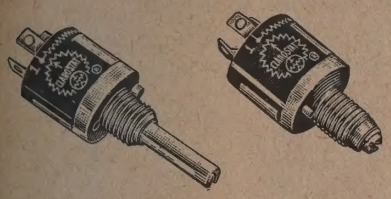
SERIES 57M & 57EJ

½" Single Turn Potentiometers

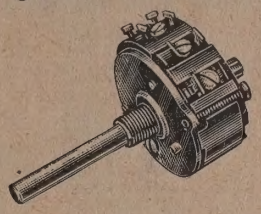


High performance potentiometer packaged in a ½" diameter housing. Quality construction throughout. Available in two models; Series 57M rated at 1.5 watts at 40°C and Series 57EJ rated at 2 watts at 70°C. The high-temperature Series 57EJ features glass-sealed terminals. Both units are corrosion resistant.

SERIES 57M & 57M9 Stock Values	SERIES 57EJA & 57EJB Stock Values	Resistance Ohms	Resolution 100/Total Turns
50 Ω	50 Ω	50	0.91%
100 Ω	100 Ω	100	0.70%
200 Ω	200 Ω	200	0.58%
500 Ω	500 Ω	500	0.45%
1000 Ω	1000 Ω	1,000	0.35%
5000 Ω	5000 Ω	5,000	0.30%
10,000 Ω	10,000 Ω	10,000	0.26%
20,000 Ω	20,000 Ω	20,000	0.19%
50,000 Ω	50,000 Ω	50,000	0.16%

SERIES 42-900

High Versatility Single-Turn Potentiometer



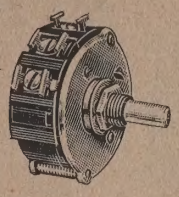
Used and approved by the millions in all types of applications ranging from ultra-critical military systems to ultra-dependable hard-working industrial equipment. Extra tap affords greater electrical versatility. Shaft extension through rear of unit permits addition of switching or other functions actuated by single shaft.

Stock Values	***Terminal Linearity	Resolution 100/Total Turns	Temp. Coefficient of Wire
100,000	±0.25%	.053%	±.00002 Ω/Ω/°C
50,000	±0.25%	.056%	±.00002 Ω/Ω/°C
20,000	±0.25%	.105%	±.00002 Ω/Ω/°C
10,000	±0.25%	.125%	±.00002 Ω/Ω/°C
5,000	±0.25%	.167%	±.00002 Ω/Ω/°C
2,500	±0.25%	.148%	±.00002 Ω/Ω/°C
1,000	±0.25%	.191%	±.00002 Ω/Ω/°C
500	±0.50%	.174%	.00017 Ω/Ω/°C
100	±0.50%	.351%	.00017 Ω/Ω/°C
50	±0.50%	.435%	.00017 Ω/Ω/°C

***Terminal Linearity: The maximum deviation of the actual output characteristic from a straight reference line extending between zero and the total applied voltage over the actual effective rotation.

SERIES 42JA

Single Turn Potentiometer



All the same fine qualities and performance tolerances of the Series 42-900, with the exception of the additional tap, and shaft extension. The ideal unit for extra-dependable potentiometer requirements.

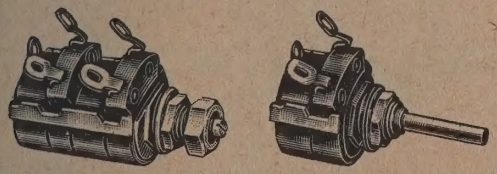
Stock Values	***Absolute Linearity	Resolution 100/Total Turns	Temp. Coefficient of Wire
100,000	±0.5%	.051%	±.00002 Ω/Ω/°C
50,000	±0.5%	.074%	±.00002 Ω/Ω/°C
20,000	±0.5%	.10%	±.00002 Ω/Ω/°C
10,000	±0.5%	.12%	±.00002 Ω/Ω/°C
5,000	±0.5%	.17%	±.00002 Ω/Ω/°C
2,500	±0.5%	.14%	±.00002 Ω/Ω/°C
1,000	±0.5%	.19%	±.00002 Ω/Ω/°C
500	±0.5%	.18%	.00017 Ω/Ω/°C
100	±1.0%	.28%	.00017 Ω/Ω/°C
50	±1.0%	.35%	.00017 Ω/Ω/°C

***Absolute Linearity: The maximum deviation of the actual output characteristic from a straight reference line extending between zero and the total applied voltage over the theoretical effective rotation.

MINIATURIZED POTENTIOMETERS

Consistent with miniaturization in Military and Commercial equipment, such as; Guided Missiles, Aircraft Electronics, Mobile Radio and Radar, Computers, Range Finders, Pocket Radios and Hearing Aids; Clarostat offers miniaturized composition element Series 48M and wire-wound Series 49M Potentiometers, and a Rotary Selector Switch designated as Series BHM to meet the switching requirements of the above mentioned and other applications.

SERIES 48M — 0.3 WATT COMPOSITION ELEMENT



Available in single or dual, standard or shaft locking bushing. Standard bushing potentiometers have ¼" x 32 NEF-2A x ¼" long bushing and ⅛" dia. x ½" long shaft beyond bushing.

Shaft locking bushing potentiometers have ¼" x 32 NEF-2A x ⅜" long bushing and ⅛" dia. x 1/16" long screwdriver slotted shaft.

All potentiometers furnished with mounting nut 1/16" thick x 5/16" across flats, and one internal tooth lockwasher. Potentiometers with split locking bushings furnished with jam nut also.

Insulation: Breakdown test between terminals and ground for 1 minute 1000v.a.c.; 350v.a.c. @ 3.4" Hg.

Resistance Range (Ohms): Linear 200 to 5 Meg. Tapered 1.500 to 2.5 Meg.

Resistance Tolerance: Linear ±10%. Above 100,000 ohms ±20%. Tapered ±20% all values.

Tapers: Linear. Left hand — 10% resistance at 50% rotation. "Z"

Mechanical and Electrical Rotation: 300° ±3°

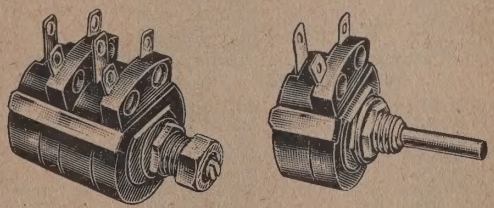
Effective Rotation: 300° ±3°

Torque (oz.-in.): 0.5 to 6

Dual Construction: Available

STOCK VALUES 48M & 48M-9	200	1500	7500	50K	1 Meg.
	250	2K	10K	100K	2.5 Meg.
	500	2500	15K	250K	5 Meg.
	1000	5K	25K	500K	

SERIES 49M — 1.5 WATT WIRE-WOUND



Available in single or dual, standard or shaft locking bushing. Standard bushing potentiometers have ¼" x 32 NEF-2A x ¼" long bushing and ⅛" dia. x ½" long shaft beyond bushing.

Shaft locking bushing potentiometers have ¼" x 32 NEF-2A x ⅜" long bushing and ⅛" dia. x 1/16" long screwdriver slotted shaft. All potentiometers furnished with mounting nut 1/16" thick x 5/16" across flats, and one internal tooth lock-washer. Potentiometers with shaft locking bushings furnished with jam nut also.

Fabricated in accordance with MIL-R-19

Insulation: Breakdown test between terminals and ground for 1 minute. 1000v.a.c.; 500v.a.c. @ 3.4" Hg.

Resistance Range (Ohms): Linear 1 to 20,000

Resistance Tolerance: Linear ±5%. Tapered Linear only.

Mechanical and Electrical Rotation: 300° ±3°

Effective Rotation: 300° ±3°

Torque (oz.-in.): 0.3 to 6

Dual Construction: Available

STOCK VALUES 49M & 49M-9	5	50	250	2K	10K
	10	100	500	2500	15K
	20	150	1K	5K	20K
	25	200	1500	7500	

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MILITARY POTENTIOMETERS

ITEMS IN STOCK FOR IMMEDIATE DELIVERY

RA10 per MIL-R-19 1 WATT WIRE-WOUND POTENTIOMETERS — Commercial Equivalent — Series 49M

RA10NASD150A
RA10NASD250A
RA10NASD500A
RA10NASD750A
RA10NASD101A
RA10NASD151A
RA10NASD201A
RA10NASD251A
RA10NASD351A
RA10NASD501A
RA10NASD751A
RA10NASD102A

RA10NASD152A
RA10NASD202A
RA10NASD252A

RA10NASL150A
RA10NASL250A
RA10NASL500A
RA10NASL750A
RA10NASL101A
RA10NASL151A
RA10NASL201A
RA10NASL251A
RA10NASL351A

RA10NASL501A
RA10NASL751A
RA10NASL102A
RA10NASL152A
RA10NASL202A
RA10NASL252A

RA10LASD150A
RA10LASD250A
RA10LASD500A
RA10LASD750A
RA10LASD101A
RA10LASD151A

RA10LASD201A
RA10LASD251A
RA10LASD351A
RA10LASD501A
RA10LASD751A
RA10LASD102A
RA10LASD152A
RA10LASD202A
RA10LASD252A

RA10LASM150A
RA10LASM250A
RA10LASM500A

RA10LASM750A
RA10LASM101A
RA10LASM151A
RA10LASM201A
RA10LASM251A
RA10LASM351A
RA10LASM501A
RA10LASM751A
RA10LASM102A
RA10LASM152A
RA10LASM202A
RA10LASM252A

RA20 per MIL-R-19 2 WATT WIRE-WOUND POTENTIOMETERS — Commercial Equivalent — Series 43M

RA20NASA3R0A
RA20NASA6R0A
RA20NASA8R0A
RA20NASA100A
RA20NASA150A
RA20NASA200A
RA20NASA250A
RA20NASA350A
RA20NASA500A
RA20NASA750A
RA20NASA101A
RA20NASA151A
RA20NASA201A
RA20NASA251A
RA20NASA351A
RA20NASA501A
RA20NASA751A
RA20NASA102A
RA20NASA152A
RA20NASA202A
RA20NASA252A

RA20NASA352A
RA20NASA502A
RA20NASA752A
RA20NASA103A
RA20NASA153A

RA20NASD3R0A
RA20NASD6R0A
RA20NASD8R0A
RA20NASD100A
RA20NASD150A
RA20NASD200A
RA20NASD250A
RA20NASD350A
RA20NASD500A
RA20NASD750A
RA20NASD101A
RA20NASD151A
RA20NASD201A
RA20NASD251A
RA20NASD351A
RA20NASD501A

RA20NASD751A
RA20NASD102A
RA20NASD152A
RA20NASD202A
RA20NASD252A
RA20NASD352A
RA20NASD502A
RA20NASD752A
RA20NASD103A
RA20NASD153A

RA20LASB3R0A
RA20LASB6R0A
RA20LASB8R0A
RA20LASB100A
RA20LASB150A
RA20LASB200A
RA20LASB250A
RA20LASB350A
RA20LASB500A
RA20LASB750A
RA20LASB101A

RA20LASB151A
RA20LASB201A
RA20LASB251A
RA20LASB351A
RA20LASB501A
RA20LASB751A
RA20LASB102A
RA20LASB152A
RA20LASB202A
RA20LASB252A
RA20LASB352A
RA20LASB502A
RA20LASB752A
RA20LASB103A
RA20LASB153A

RA20LASD3R0A
RA20LASD6R0A
RA20LASD8R0A
RA20LASD100A
RA20LASD150A
RA20LASD200A

RA20LASD250A
RA20LASD350A
RA20LASD500A
RA20LASD750A
RA20LASD101A
RA20LASD151A
RA20LASD201A
RA20LASD251A
RA20LASD351A
RA20LASD501A
RA20LASD751A
RA20LASD102A
RA20LASD152A
RA20LASD202A
RA20LASD352A
RA20LASD502A
RA20LASD752A
RA20LASD103A
RA20LASD153A

RA30 per MIL-R-19 4 WATT WIRE-WOUND POTENTIOMETERS — Commercial Equivalent — Series 58M

RA30NASA3R0A
RA30NASA6R0A
RA30NASA8R0A
RA30NASA100A
RA30NASA150A
RA30NASA200A
RA30NASA250A
RA30NASA350A
RA30NASA500A
RA30NASA750A
RA30NASA101A
RA30NASA151A
RA30NASA201A
RA30NASA251A
RA30NASA351A
RA30NASA501A
RA30NASA751A

RA30NASA102A
RA30NASA152A
RA30NASA202A
RA30NASA252A
RA30NASA352A
RA30NASA502A
RA30NASA752A
RA30NASA103A
RA30NASA153A
RA30NASA203A
RA30NASA253A

RA30NASD3R0A
RA30NASD6R0A
RA30NASD8R0A
RA30NASD100A
RA30NASD150A
RA30NASD200A
RA30NASD250A
RA30NASD350A
RA30NASD500A
RA30NASD750A
RA30NASD101A
RA30NASD151A
RA30NASD201A
RA30NASD251A
RA30NASD351A
RA30NASD501A
RA30NASD751A
RA30NASD102A
RA30NASD152A
RA30NASD202A
RA30NASD252A
RA30NASD352A
RA30NASD502A

RA30NASD752A
RA30NASD103A
RA30NASD153A
RA30NASD203A
RA30NASD253A

RA30LASB3R0A
RA30LASB6R0A
RA30LASB8R0A
RA30LASB100A
RA30LASB150A
RA30LASB200A
RA30LASB250A
RA30LASB350A
RA30LASB500A
RA30LASB750A
RA30LASB101A
RA30LASB151A

RA30LASB201A
RA30LASB251A
RA30LASB351A
RA30LASB501A
RA30LASB751A
RA30LASB102A
RA30LASB152A
RA30LASB202A
RA30LASB252A
RA30LASB352A
RA30LASB502A
RA30LASB752A
RA30LASB103A
RA30LASB153A
RA30LASB203A
RA30LASB253A

RV4 per MIL-R-94 2 WATT CARBON POTENTIOMETERS — Commercial Equivalent — Series 53M — Series 53C

RV4NAYSB101A
RV4NAYSB251A
RV4NAYSB501A
RV4NAYSB102A
RV4NAYSB252A
RV4NAYSB502A
RV4NAYSB103A
RV4NAYSB253A
RV4NAYSB503A
RV4NAYSB104A
RV4NAYSB254A
RV4NAYSB504A
RV4NAYSB105A
RV4NAYSB255B
RV4NAYSB505B

RV4NAYSD500A
RV4NAYSD101A
RVNAYSD151A
RV4NAYSD251A
RV4NAYSD351A
RV4NAYSD501A
RV4NAYSD751A

RV4NAYSD102A
RV4NAYSD152A
RV4NAYSD252A
RV4NAYSD352A
RV4NAYSD502A
RV4NAYSD752A
RV4NAYSD103A
RV4NAYSD153A
RV4NAYSD253A
RV4NAYSD353A
RV4NAYSD503A
RV4NAYSD753A
RV4NAYSD104A
RV4NAYSD154A
RV4NAYSD254A
RV4NAYSD354A
RV4NAYSD504A
RV4NAYSD754A
RV4NAYSD105A
RV4NAYSD155B
RV4NAYSD205B
RV4NAYSD255B

RV4NAYSD355B
RV4NAYSD505B

RV4NAYSK101A
RV4NAYSK251A
RV4NAYSK501A
RV4NAYSK102A
RV4NAYSK252A
RV4NAYSK502A
RV4NAYSK103A
RV4NAYSK253A
RV4NAYSK503A
RV4NAYSK104A
RV4NAYSK254A
RV4NAYSK504A
RV4NAYSK105A
RV4NAYSK255B
RV4NAYSK505B

RV4LAYSA500A
RV4LAYSA101A
RV4LAYSA151A
RV4LAYSA104A
RV4LAYSA351A

RV4LAYSA501A
RV4LAYSA751A
RV4LAYSA102A
RV4LAYSA152A
RV4LAYSA252A
RV4LAYSA352A
RV4LAYSA502A
RV4LAYSA752A
RV4LAYSA103A
RV4LAYSA153A
RV4LAYSA253A
RV4LAYSA353A
RV4LAYSA503A
RV4LAYSA753A
RV4LAYSA104A
RV4LAYSA154A
RV4LAYSA254A
RV4LAYSA354A
RV4LAYSA504A
RV4LAYSA754A
RV4LAYSA105A
RV4LAYSA155B

RV4LAYSA205B
RV4LAYSA255B
RV4LAYSA355B
RV4LAYSA505B

RV4LAYSD101A
RV4LAYSD501A
RV4LAYSD251A
RV4LAYSD102A
RV4LAYSD252A
RV4LAYSD502A
RV4LAYSD103A
RV4LAYSD253A
RV4LAYSD503A
RV4LAYSD104A
RV4LAYSD254A
RV4LAYSR504A
RV4LAYSD105A
RV4LAYSD255B
RV4LAYSD505B

RV6 per MIL-R-94 0.5 WATT CARBON POTENTIOMETERS — Commercial Equivalent — Series 63C

RV6NAYSD101A
RV6NAYSD251A
RV6NAYSD501A
RV6NAYSD102A
RV6NAYSD252A
RV6NAYSD502A
RV6NAYSD103A
RV6NAYSD153A
RV6NAYSD253A
RV6NAYSD503A
RV6NAYSD104A
RV6NAYSD154A

RV6NAYSD254A
RV6NAYSD504A
RV6NAYSD105A

RV6NAYSL101A
RV6NAYSL251A
RV6NAYSL501A
RV6NAYSL102A
RV6NAYSL252A
RV6NAYSL502A
RV6NAYSL103A
RV6NAYSL153A
RV6NAYSL253A

RV6NAYSL503A
RV6NAYSL104A
RV6NAYSL154A
RV6NAYSL254A
RV6NAYSL504A
RV6NAYSL105A

RV6LAYSA101A
RV6LAYSA251A
RV6LAYSA501A
RV6LAYSA102A
RV6LAYSA252A
RV6LAYSA502A

RV6LAYSA103A
RV6LAYSA153A
RV6LAYSA253A
RV6LAYSA503A
RV6LAYSA104A
RV6LAYSA154A
RV6LAYSA254A
RV6LAYSA504A
RV6LAYSA105A

RV6LAYSD101A
RV6LAYSD251A
RV6LAYSD501A

RV6LAYSD102A
RV6LAYSD252A
RV6LAYSD502A
RV6LAYSD103A
RV6LAYSD153A
RV6LAYSD253A
RV6LAYSD503A
RV6LAYSD104A
RV6LAYSD154A
RV6LAYSD254A
RV6LAYSD504A
RV6LAYSD105A

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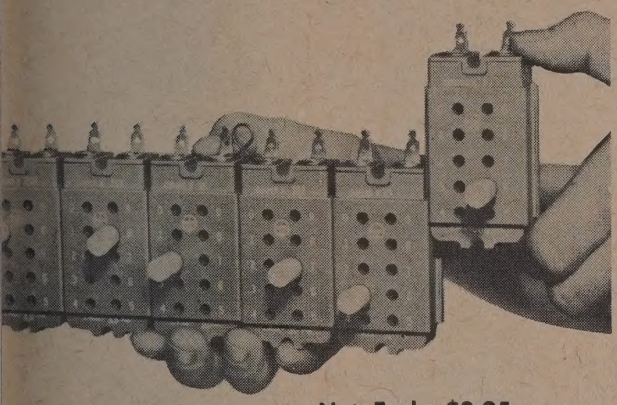
PRODUCTS OF
THE HOUSE OF RESISTORS®

CLAROSTAT®

RESISTORS · CONTROLS
RESISTANCE DEVICES

CLARO-DEC PRECISION RESISTANCE DECADE BOX

most flexible innovation yet in precision resistance decade boxes, the o-Dec serves many applications with all the versatility needed for the Claro-Decs (within established parameters of current) are used whenever rate steps of resistance values between .1 ohms and 900K ohms, ±1%* required. Selection of desired steps of resistance is accomplished by insertion of a banana plug into the proper, marked front panel hole on the unit. Individual or multiple Claro-Dec units are flush panel or breadboard mounted with equal ease. Units may be physically ganged by sliding the molded-in tongue-and-groove together and electrically series connected with a supplied wire jumper or accessory banana plug.



Net Each: $3.95

MODEL	TOTAL RES. OF DECADE	RESISTANCE PER STEP	ACCURACY (+C)*	MAXIMUM CURRENT
260-1	0.9Ω	0.1Ω	±5%	1 Amp.
260-2	9Ω	1.0Ω	±1%	350 Ma
260-3	90Ω	10Ω	±1%	100 Ma
260-4	900Ω	100Ω	±1%	35 Ma
260-5	9KΩ	1KΩ	±1%	10 Ma
260-6	90KΩ	10KΩ	±1%	3.5 Ma
260-7	900KΩ	100KΩ	±1%	1.0 Ma

* C — Contact Resistance, .005 - .03 ohms, typical, .01 ohms.

CONSTRUCTION

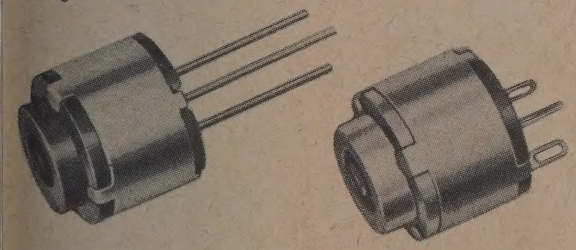
Housing — Two piece molded housing, color — grey.
Marking — Permanently marked with resistance multiplier, current rating, schematic and model number.
Resistors — Plastic coated wirewound for Models 260-1 and 260-2. Plastic coated metal film for all other models. Temperature coefficient less than 100 ppm.
Temperature — 40°C. max. at rated current, de-rated to zero at 85°C.
Weight — 2 oz. (approximate) per individual unit.

SERIES 63M TRIMMING POTENTIOMETERS

gned specifically for application on printed circuit boards, this new con- ration permits extremely close board-to-board spacing. Both metal and tic shafts and faceplates with wire or solder terminal leads provide nting facilities to meet virtually every application.

ECIFICATIONS

er Rating — .25 watt @ 70°C. Rerated to zero power @ 120°C.
king Voltage — 350 V.D.C. across end terminals, but power not to exceed rating.



Resistance Range — 100Ω to 1 megohm, linear.
Resistance Tolerance — ±20%
Mechanical & Electrical Rotation — 295°, ±3°
Voltage Breakdown — 750 V.A.C. between terminals and ground for 1 minute.
Torque — 0.5 to 3 oz. in.

STYLE	DESCRIPTION	TERMINALS
63M1	Plastic Shaft & Faceplate	Solder Lug
63M2	Metal Shaft & Faceplate	Solder Lug
63M4	Plastic Shaft & Faceplate	Wire Leads
63M5	Metal Shaft & Faceplate	Wire Leads

STOCK VALUES

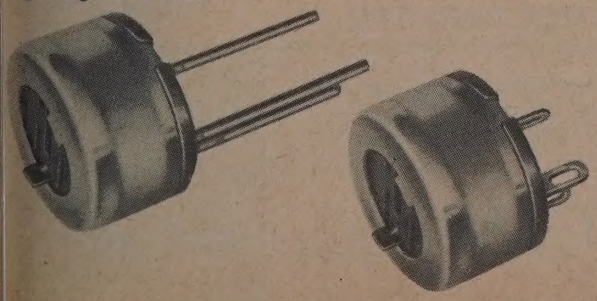
100	2.5K	25K	200K
250	5K	50K	250K
500	10K	100K	500K
1K	15K	150K	1 Meg.

SERIES 371 HOT MOLDED, LOW COST, TRIMMING POTENTIOMETERS

struction consists of a hot molded carbon element, carbon contact brush, ssure spring and cover. Series 371-5 have standoffs to insulate metal er from printed circuit board and a screwdriver adjustment slot.

ECIFICATIONS

er Rating — ⅜ watt @ 70°C derated linearly to zero watts @ 120°C.
king Voltage — 350 V.A.C.



Resistance Range — 100 Ω to 1 megohm.
Resistance Tolerance — ± 20%
Tapers — Linear and audio.
Mechanical & Electrical Rotation — 290° ±5°.
Dielectric Strength — Variable arm hot to case. Case to mounting plane — 750 volts R.M.S. @ atmospheric pressure.
Torque — Operating: 6.0 oz. in. max. Stop: 1 lb. in.

Style	Terminals
371-2	Solder Lugs
371-5	Wire Leads

STOCK VALUE

100	2.5K	25K	200K
250	5K	50K	250K
500	10K	100K	500K
1K	15K	150K	1 Meg.

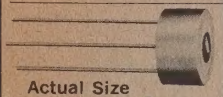
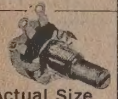
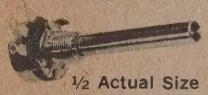
CERATRIM®

CERATROLS®

TRIMMERS AND CONTROLS

Featuring CERMET Elements

SINGLE TURN TRIMMERS

	CTS Series	Description	Element Type	Resistance Range and Tolerance	Power Rating (Watts)	Max. Operating Temp.	PRICES 1-9	10-24	25-
½ Actual Size	220	½" x 7/16" x 5/16"	CARBON	250Ω-2.5 Meg. ±20%	⅛ @ 55°C	85°C	$2.50	$2.35	$2.
½ Actual Size	330P	½" Round	CARBON	100Ω-2.5 Meg. ±10%	½ @ 85°C	150°C	4.00	3.30	2.
⅔ Actual Size	340	¼" Square	CERMET	10Ω-500k ±20%	½ @ 85°C	150°C	2.10	1.90	1.
½ Actual Size	350	½" Round	WIREWOUND	50Ω-20k ±5%	1 @ 55°C	125°C	3.00	2.82	2.
½ Actual Size	K350	½" Round Knob Adjust	WIREWOUND	50Ω 20k ±5%	1 @ 55°C	125°C	3.50	3.15	2.
	360PC	7/16" x 25/64" x 17/64"	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	125°C	1.52	1.42	1.
 Actual Size	385	11/32" Round	CERMET	100Ω-500k ±10%	⅛ @ 125°C	175°C	6.25	5.68	4.
 ½ Actual Size	550R	¾" Panel Mount ⅞" Shaft	CERMET	50Ω-1 Meg. ±10%	2 @ 70°C	150°C	2.99	2.49	2.
 ½ Actual Size	550S	¾" Panel Mount 2" Shaft	CERMET	50Ω-1 Meg. ±10%	2 @ 70°C	150°C	2.99	2.49	2.
½ Actual Size	550LT	¾" Panel Mount Locking Bushing	CERMET	50Ω-1 Meg. ±10%	2 @ 70°C	150°C	3.06	2.56	2.
⅔ Actual Size	RVC6NYD* (600)	½" Dia Per Mil R-23285	CERMET	100Ω-1 Meg. ±10%	½ @ 125°C	175°C	5.44	4.69	4.
⅔ Actual Size	RVC6LYA* (600)	½" Dia. Per Mil R-23285 Locking Bushing	CERMET	100Ω-1 Meg. ±10%	½ @ 125°C	175°C	5.47	4.72	4.

CERMET MICROCIRCUITS

TO-8	850 SINGLE DRIVER	High current single driver with 700 ma output current capability. Supply voltage 4 to 35 VDC. Ideal for use as lamp driver, relay driver, logic level converter, pulse generator or amplifier, line amplifier, etc.	15.00	14.00	13.5
TO-8	851 DUAL DRIVER	Medium current dual driver with 2 independent circuits, 350 ma output current capability. Supply voltage 4 to 35 VDC. Ideal for use as lamp driver, relay driver, logic level converter, pulse generator or amplifier, line amplifier, etc.	19.00	18.00	17.2

Net

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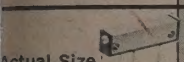
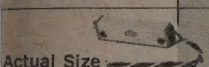
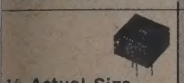
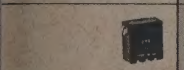
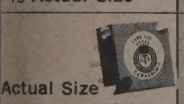
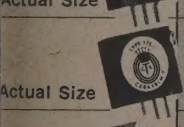
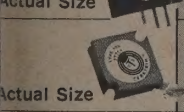
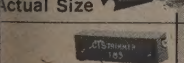
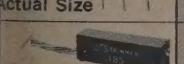
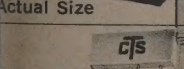
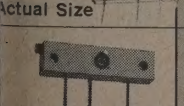
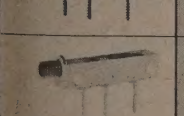
TRIMMERS AND CONTROLS

Featuring CERMET Elements

CERATRIM®
CERATROLS®

MULTI-TURN TRIMMERS

	CTS Series	Description	Element Type	Resistance Range and Tolerance	Power Rating (Watts)	Max. Operating Temp.	Number of Turns	PRICES 1-9	PRICES 10-24	PRICES 25-49
 Actual Size	140PC	1¼" RECTILINEAR	CARBON	100Ω-1 Meg. ±10%	¼ @ 70°C	125°C	25	$4.00	$3.66	$3.30
 Actual Size	140WL	1¼" RECTILINEAR	CARBON	100Ω-1 Meg. ±10%	¼ @ 70°C	125°C	25	4.00	3.66	3.30
 ⅓ Actual Size	RJ24CP† (M164P)	⅜" Square Per Mil R 22097D	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	150°C	25	6.10	5.60	5.35
⅓ Actual Size	RJ24CW† (M165W)	⅜" Square Top Adjust Per Mil R 22097D	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	150°C	25	6.05	5.55	5.30
 ⅓ Actual Size	RJ24CX† (M165X)	⅜" Square Side Adjust Per Mil R 22097D	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	150°C	25	6.05	5.55	5.30
 Actual Size	RJ22CP† (M174)	½" Square Per Mil R 22097D	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	150°C	35	5.60	5.30	5.15
Actual Size	RJ22CW† (M175)	½" Square Top Adjust Per Mil R 22097D	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	150°C	35	5.55	5.25	5.10
 Actual Size	RJ22CX† (M175)	½" Square Side Adjust Per Mil R 22097D	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	150°C	35	5.55	5.25	5.10
 Actual Size	RJ22CL† (M176)	½" Square Per Mil R 22097D	CERMET	50Ω-1 Meg. ±10%	½ @ 85°C	150°C	35	5.50	5.20	5.05
 Actual Size	185PC† (RJ11)	1¼" RECTILINEAR	CERMET	100Ω-1 Meg. ±10%	1 @ 85°C	175°C	25	5.00	4.70	4.40
 Actual Size	185WL† (RJ11)	1¼" RECTILINEAR	CERMET	100Ω-1 Meg. ±10%	1 @ 85°C	175°C	25	5.00	4.70	4.40
 Actual Size	T90	¾" RECTILINEAR	CERMET	50Ω-500K ±10%	½ @ 85°C	125°C	20	2.40	2.15	2.00
	195Y 1-95P (RJ12)	1.25" x .315" x .190" RECTILINEAR	CERMET	50Ω-500K ±10%	¾ @ 85°C	150°C	23	4.42 4.51	4.22 4.31	3.99 4.07
 ⅓ Actual Size	185 MOUNT BUSHING HARDWARE	For Panel Mount Installation						.80	.75	.65

ICATION INFORMATION

CERMET Potentiometers are designed for applins requiring higher power, temperature and sa- than have been previously available with carbon ents and higher resistance and better resolution have been available with wirewound potentiome- They are ideal for applications now using carbon element potentiometers where an ultra conservative rating is desired for high reliability.

CTS CERMET Trimmers are used in applications where wirewound distributed capacitance and inductance are intolerable due to high frequencies and in applications where a trimmer with high stability and better reliability than obtainable from a carbon trimmer is needed.

SHEETS

lete electrical and mechanical data on each of the products covered in this catalogue are available, upon st, from the local CTS industrial distributor.

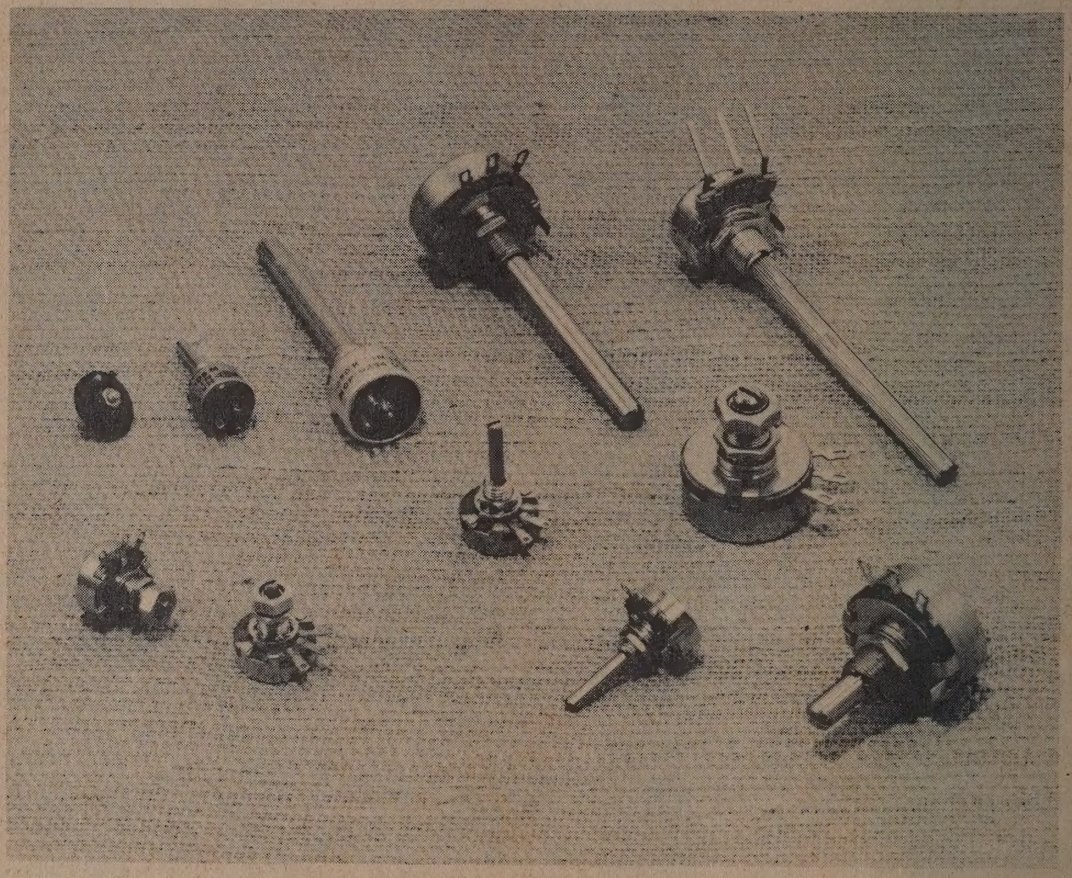
ets or exceeds MIL-R-23285B.

ets or exceeds MIL-R-22097D, CHAR. C.

CTS OF BERNE, INC.

DISTRIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.



CENTRALAB POTENTIOMETERS

Ranging from transistor circuit, highly miniaturized units to heavy-duty types, Centralab controls are outstanding for adaptability and quality of construction.

Included in this product line are carbon film, hot molded carbon and wirewound types. Physical descriptions include the hearing aid transistor radio types as well as the typical ⅛" and ¼" diameter shaft units.

All of the controls shown here are available for immediate delivery at factory prices; your Centralab Industrial Distributor serves you as your field source for controls identical in performance, price and quality to those obtained from the factory.

Centralab controls are quality units that have been satisfactorily applied in the most demanding commercial, industrial and military applications.

	PAGE	SERIES
NEW PRODUCTS	1182	T — ⅕ Watt Miniature, Carbon
	1182	TSV — .6 Watt Slim Trim, Carbon
	1183	JC-JCS — ¼ Watt Miniature, Carbon

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RIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.

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IATURE
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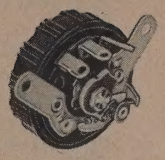
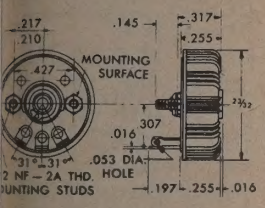
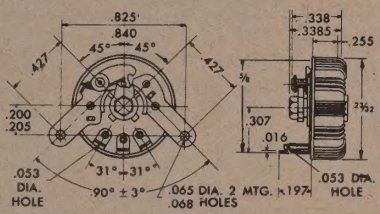


ontrols fulfill needs for a 1/10 watt, 0.625″ dia. unit. Applications include ng aids, miniature radios, laboratory instruments, communication equip- business machines, computers and military equipment. Plain and switch are available.

ced under Patent No. 2,499,711.





RICAL SPECIFICATIONS

TANCE RANGE: 500 ohms to 5 megohms
ANCE: ±20%, except * ±30%
: Linear (C1) log modified clockwise 1/5 watt C1 taper, 1/10 watt C2 taper.
GE RATING: 1/10 watt
TANCE ELEMENT: Composition
CTRIC STRENGTH: 900 VAC-RMS to ground
TIVE ROTATION: Plain type, 260°; Switch type, 225°
IONAL LIFE: Tested to a minimum of 25,000 cycles
H: SPST, factory assembled, 6.5 amperes @ 1.5 VDC; 0.2 amperes at 45 VDC

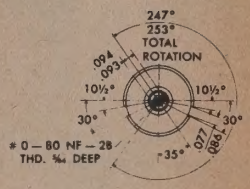
ANICAL SPECIFICATIONS

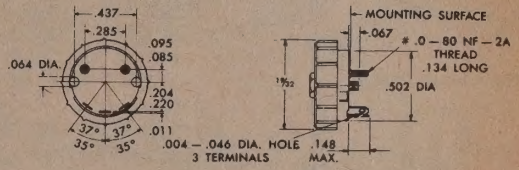
$^{13}/_{32}$″ diameter with knob. Can be reduced to ⅝″ diameter without knob.
ANICAL ROTATION: 260°
TING: Plain Type: Stud mounted. Two No. 1-72-NF-2 thd. x .140″ long studs on centers.
H TYPE: Bracket mounted
CTS: Double wiping phosphor-bronze contact arm to resistor element, combined pecial spiral spring electrical contact between arm and center terminal, assures e smooth variation and extremely low noise level.
IONAL TORQUE: 0.3 inch-ounces
Covers control completely. Removing the knob does not disassemble the control.
GED: One per individual display carton with mounting nuts, and/or screws and ction sheet.

Ohms	Taper	Catalog No. Plain	Catalog No. Switch
500	C1	B16-107	.....
1000	C1	B16-109	.....
2500	C1	B16-111	.....
2500	C2	B16-112	B16-212
5000	C1	B16-113	.....
5000	C2	B16-114	B16-214
10K	C1	B16-115	.....
10K	C2	B16-116	B16-216
25K	C1	B16-125	.....
25K	C2	B16-117	B16-217
50K	C1	B16-119	.....
100K	C1	B16-121	.....
250K	C1	B16-123	.....
500K	C2	B16-118	B16-218
1 Meg.	C2	B16-120	B16-220
2 Meg.	C2	B16-122	B16-222
3 Meg.	C2	*B16-124	*B16-224
5 Meg.	C1	*B16-127	.....
5 Meg.	C2	*B16-128	*B16-228

* ±30%

Model SM
ULTRA MINIATURE
Composition Potentiometers





SM controls (1/10 watt, 0.502″ diameter) were designed for hearing aids, telephone equipment, military communications equipment and other miniature applications. Furnished complete with on-off switch.

Produced under Patent No. 2,887,553.

ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 2500 ohms to 25K ohms
TOLERANCE: ±20%
TAPER: Log modified clockwise (C2)
WATTAGE RATING: 1/10 watt
RESISTANCE ELEMENT: Composition
DIELECTRIC STRENGTH: 500 VAC-RMS to ground
EFFECTIVE ELECTRICAL ROTATION: 205°
ROTATIONAL LIFE: Less than 10% resistance change after 25,000 cycles
SWITCH: SPST, rated 2.5 amperes at 2 VDC; 0.1 amperes at 45 VDC

MECHANICAL SPECIFICATIONS

SIZE: $^{13}/_{32}$″ diameter with knob. Can be reduced to .502″ diameter without knob
MECHANICAL ROTATION: 250°
MOUNTING: Two No. 0-80NF-2A—thread x .134″ long studs on .285″ centers
CONTACTS: Double wiping phosphor-bronze contacts assure smooth, noise-free rotation
ROTATIONAL TORQUE: 0.4-1.0 inch-ounces
KNOB: Covers control completely. Removing the knob does not disassemble the control.
PACKAGED: One per individual display carton with mounting nuts and instruction sheet.

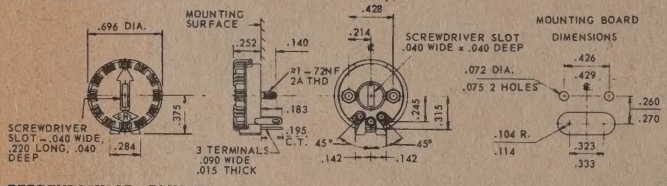
Switch Type Only

Ohms	Taper	Catalog No.
2500	C2	SM2-252-S
5000	C2	SM2-502-S
10K	C2	SM2-103-S
25K	C2	SM2-253-S

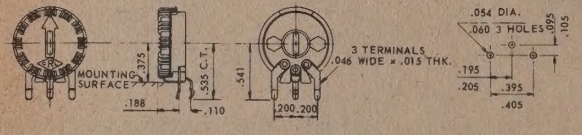
NEW Model 9 1/5 Watt MINIATURE Composition Potentiometers

Designed for printed circuits such as those used in test, measurement and communications equipment. Intended primarily for trimmer applications, but since its rotational life is in excess of 25,000 cycles, is suitable for potentiometer applications. Two mountings for easy application. Screwdriver—adjustable from either side. The knob edge is designed for convenient edge adjustment.

PARALLEL STUD MOUNTING



PERPENDICULAR PLUG-IN



ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 100 ohms to 5 megohms
TOLERANCE: ±20%
TAPER: Linear (C1)
WATTAGE RATING: 1/5 watt
RESISTANCE ELEMENT: Composition
DIELECTRIC STRENGTH: 900 VAC-RMS to ground
EFFECTIVE ROTATION: 260°
ROTATIONAL LIFE: In excess of 25,000 cycles

MECHANICAL SPECIFICATIONS

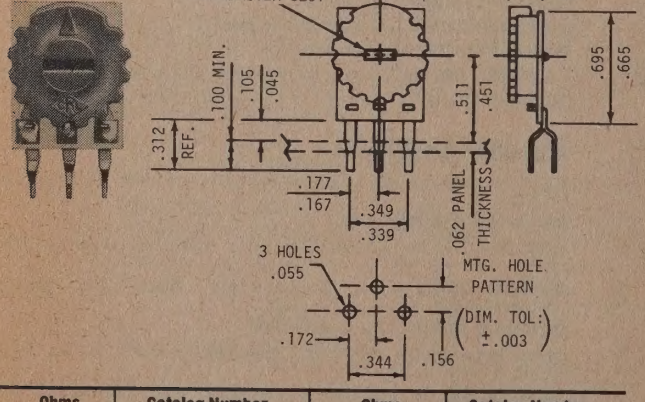
SIZE: .696" diameter
MECHANICAL ROTATION: 260°
MOUNTING: See drawings—perpendicular plug-in and parallel stud mount.
CONTACTS: Double wiping phosphor-bronze contacts assure smooth, noise-rotation
ROTATIONAL TORQUE: 1-3 inch-ounces range
KNOB: Covers potentiometer completely. Not removable.
PACKAGED: One per individual display carton.

Ohms	Vertical Mount	Horizontal Mount	Ohms	Vertical Mount	Horizont Mount
100	T-100	———	15K	T-15K*	———
200	T-200*	———	20K	T-20K*	———
300	T-300*	———	25K	T-25K	TH-25K
500	T-500	———	50K	T-50K	TH-50K
750	T-750*	TH-750	100K	T-100K*	TH-100
1000	T-1000	———	250K	T-250K	TH-250
1500	T-1500*	———	500K	T-500K	TH-500
2500	T-2500*	TH-2500	1 MEG	T-1 MEG*	TH-1 ME
5000	T-5000	TH-5000	2 MEG	T-2 MEG	———
7500	T-7500*	———	4 MEG	T-4 MEG*	———
10K	T-10K	TH-10K	5 MEG	T-5 MEG*	———

* New addition to line.

NEW Model "TSV" 0.6 Watt* SLIM-TRIM Trimmers

TSV Slim-Trim Compact Resistors are designed for applications with space limitations in Entertainment, Military and Industrial equipment. They are built upon a base plate of Alumina to provide more effective heat dissipation. The carbon is bonded directly to the 0.025" thick Alumina base plate for maximum reliability.



Ohms	Catalog Number	Ohms	Catalog Number
100	TSV-100	50K	TSV-50K
150	TSV-150	100K	TSV-100K
250	TSV-250	250K	TSV-250K
500	TSV-500	500K	TSV-500K
1000	TSV-1K	1 MEG	TSV-1M
2500	TSV-2.5K	2.2 MEG	TSV-2.2M
5000	TSV-5K	3 MEG	TSV-3M
10K	TSV-10K	5 MEG	TSV-5M
25K	TSV-25K		

ELECTRICAL SPECIFICATIONS:

RESISTANCE RANGE: 100 Ohms to 5 Megohms
TOLERANCE: ±30%
TAPER: Linear (C1)
***WATTAGE RATING:** 0.6 Watt @ +55°C (+40°C 50K to 250K Ohms)
0.5 Watt @ +70°C (+55°C 50K and 100K Ohms)
0.4 Watt @ +70°C
0.2 Watt @ +85°C
Derate to Zero @ +105°C for 100 Ohms to 250K Ohms and @ +95°C a 250K Ohms.
VOLTAGE RATING: 350VDC @ +70°C (500VDC @ +55°C and under)
LOAD LIFE: 500 cycles
100 Ohms to 1K: 10% maximum change
2.5K to 100K: 4% maximum change
250K to 5 Meg: 1.5% maximum change
STEADY STATE HUMIDITY: 90 - 95% R.H. @ +40°C, 96 hours
Immediate: 100 Ohms to 1K Ohms: 18% maximum change
2.5K to 100K Ohms: 12% maximum change
250K Ohms: 10% maximum change
500K to 5 Megohms: 16% maximum change
After 4 Hrs. Dry @ +25°C @ 50% R.H.: 10% maximum change
After 24 Hrs. Dry @ +40°C: 2.5% Maximum change
TYPICAL AVERAGE TEMPERATURE COEFFICIENT IN PERCENT:

Resistance Value	−55°C	+105°C
250 Ohms to 1K Ohms:	+2% to +3.3%	−2.1% to −2.6%
2.5K to 100K Ohms:	+4% to +4.7%	−3.6% to −4.9%
250K to 5 Megohms:	+5.6% to +7.5%	−4.7% to −5.5%

MECHANICAL SPECIFICATIONS:

SIZE: See outline drawing
MECHANICAL ROTATION: 290° nominal
ROTATIONAL TORQUE: Initial, 0.3 to 6 Oz. In.
MOUNTING: Perpendicular Lock-In Tab lead terminals for insertion into P-C bo and retention while soldering.
KNOB: Edge Adjust with rotational stop. Blue Polypropylene, Flame retardant. (Knob diameter: 0.594" ±0.006")
MARKING: Catalog Number, CRL in Diamond and PEC in Diamond.
PACKAGED: 3 pcs. per plastic bubble, 50 or 200 per carton.

* Another New CENTRALAB Product.

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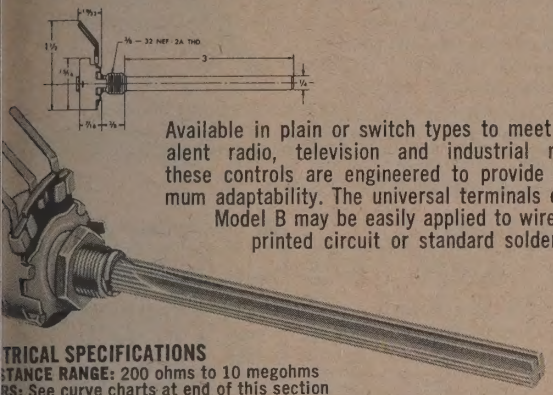
TRIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.

del B 1/2 WATT COMPOSITION POTENTIOMETERS 15/16" Diameter



Available in plain or switch types to meet prevalent radio, television and industrial needs, these controls are engineered to provide maximum adaptability. The universal terminals of the Model B may be easily applied to wirewrap, printed circuit or standard solder use.

TRICAL SPECIFICATIONS

TANCE RANGE: 200 ohms to 10 megohms
RS: See curve charts at end of this section
AGE RATING: ½ watt
LIFE: Less than 10% change after 1000 hours at 40° C.
TANCE ELEMENT: Composition
CTRIC STRENGTH: 900 VAC-RMS to ground
TIONAL LIFE: Tested to a minimum of 25,000 cycles at 600 cycles per hour. than 15% resistance change after 25,000 cycles at no load.
CH: 3 amp, 125VAC. Factory assembled on Model BPL, B-60-S and B-70-S. l B accommodates type KR (snap-on) switches.

HANICAL SPECIFICATIONS

Model B 1¾" diameter, 7/16" deep. Model BPL, 1⅜" diameter, 13/16" deep.
TS: Universal fluted knurl type. Model B, Model B Switch type, BPL: ¼" eter, 3⅜" long from mounting surface.
INALS: Universal type for wirewrap, printed circuit and standard applica- on Model B and B Switch types.
TING LUG: Both right and left
HANICAL ROTATION: 330° ±3°
NTING: Bushing mounted. Suitably plated steel hex nut included.
ING: ⅜" long, ⅜"—32-NEF-2A thread
ACTS: Spring tempered brass, double wiping
STRENGTH: 12 inch-pounds
TIONAL TORQUE: 1.0-6.0 inch-ounces

RONMENTAL SPECIFICATIONS

ERATURE COEFFICIENT: At +105° C. —0.04%/° C. resistance change; at C. +0.09%/° C. resistance change (reference temperature, +25° C.)
IDITY CHARACTERISTICS: Less than 25% change after 96 hours in 95% ive humidity.
KAGED: One per individual display carton with instruction sheet.

MODEL B UNIVERSAL SHAFT TYPE CONTROLS (Plain Type)

Ohms	Taper	Catalog Number
200	C-1	B-2
500	C-1	B-4
1000	C-1	B-5
2000	C-1	B-6
2500	C-1	B-7
5000	C-1	B-10
5000	C-2	B-11
10K	C-1	B-14
10K	C-2	B-15
20K	C-1	B-22
25K	C-1	B-26
50K	C-1	B-31
50K	C-2	B-32
100K	C-1	B-40
100K	C-2	B-41
200K	C-1	B-46
250K	C-1	B-50
250K	C-2	B-51
500K	C-1	B-59
500K	C-2	B-60
1 Meg.	C-1	B-69
1 Meg.	C-2	B-70
1.5 Meg.	C-1	B-742
2 Meg.	C-1	B-75
2 Meg.	C-2	B-76
2.5 Meg.	C-1	B-83
3 Meg.	C-1	B-84
5 Meg.	C-1	B-87
7.5 Meg.	C-1	B-90
10 Meg.	C-1	B-98

MODEL BPL SWITCH TYPE (Push-Pull Switch)

Ohms	Taper	Cat. No. Push-Pull
500K	C-2	BPL-60
1 Meg.	C-2	BPL-70

MODEL B SWITCH TYPE

Factory assembled switch type units are universal D.P.S.T., for S.P.S.T., D.P.S.T., or 3 wire usage. Switch rated 3 amp—125VAC.

Ohms	Taper	Catalog Number
500K	C-2	B-60-S
1 Meg.	C-2	B-70-S

TYPE KR FASTACH® SWITCHES

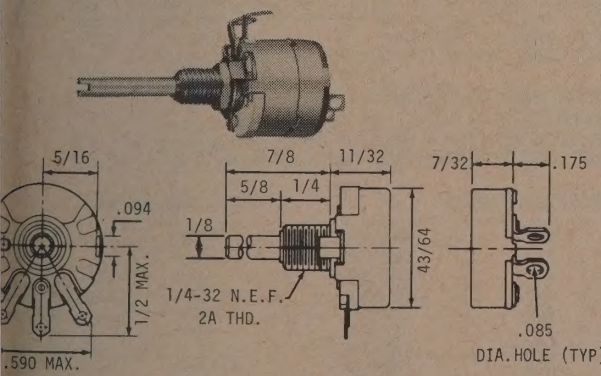
Underwriters approved. Remove label and snap on control. (Patent No. 2,776,356)

Switching	Rating	Cat. No.
SPST	5 amp., 125 v.a.c.	KR-1
DPST	3 amp., 125 v.a.c.	KR-2
DP ... { 1 pole on / 1 pole off }	3 amp., 125 v.a.c.	KR-3*
SPST	15 amp., 10 v.d.c.	KR-4
SPST	15 amp., 10 v.d.c.	KR-6**
DPST	15 amp., 10 v.d.c.	KR-7
(Switch Shield		KR-5)

* Can be used as SPDT by adding a jumper wire between terminals 1 and 3
** With dummy lug

W JC, JCS* Series 1/4 WATT MINIATURE COMPOSITION POTENTIOMETERS

iniature controls are available for commercial applications with or out AC line switch. Ideal for Communications, Instruments, Enter- nent and Miniaturized equipment.



Ohms	Taper	Catalog Number	Ohms	Taper	Catalog Number
500	C1	JC-501	100K	C1	JC-104
1000	C1	JC-102	250K	C1	JC-254
2500	C1	JC-252	500K	C1	JC-504
5000	C1	JC-502	1 MEG	C1	JC-105
10K	C1	JC-103	1000	C1	*JCS-102
25K	C1	JC-253	5000	C1	*JCS-502
50K	C1	JC-503	50K	C1	*JCS-503

ELECTRICAL SPECIFICATIONS:

OPERATING TEMPERATURE: —55°C to +85°C
RESISTANCE RANGE: 500 to 1 Megohm
TOLERANCE: ±20%
TAPER: Linear (C1)
WATTAGE RATING: ¼ watt @ 40°C (derated to 0 watts @ 85°C)
RESISTANCE ELEMENT: Composition on phenolic base
DIELECTRIC STRENGTH: 900 Volts RMS
ROTATIONAL LIFE: 25,000 Cycles minimum.
MAX. OPERATING VOLTAGE: 250 VDC
SWITCH: SPST 1A @ 125 VAC — DC, 4A @ 20 VDC (C.C.W.OFF) Factory Assembled
ELECTRICAL ROTATION: 260° ±3°

MECHANICAL SPECIFICATIONS:

SIZE: JC- 43/64" Diam - 3/16" deep
JCS- 43/64" Diam - 3/16" deep (excluding switch terminals)
SHAFT: Steel, suitably plated to resist corrosion
⅛" Diam, ⅞" Long FMS (Round with screwdriver slot)
TERMINALS: Brass, lead tin plated
LOCATING LUG: Left side only (.094" wide on 3/16" radius)
MECHANICAL ROTATION: 260° (Plain and switch types)
MOUNTING: Bushing type, nut and lockwasher furnished assembled
BUSHING: ¼"-32 NEF-2A Thd., ¼" Long FMS
ROTATIONAL TORQUE: .5 in.-oz Nominal
PACKAGED: 1 per carton

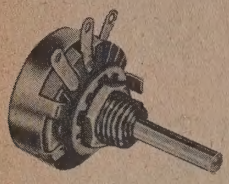
* Switch Type

JMP-JML Models 1/5 WATT MINIATURE Composition Potentiometers

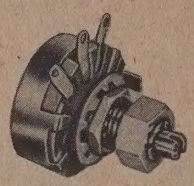
Style RV1, Designed to Meet MIL-R-94B

Model JMP and JML miniature controls are manufactured to meet the requirements of MIL-R-94B, Style RV1.

The resistance elements of these controls are completely enclosed, permitting sealing and potting without damage. Ideally suited for military equipment, geophysical apparatus and miniature amplifiers.

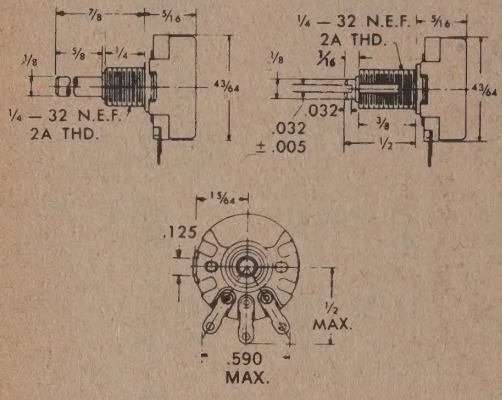


JMP
PLAIN BUSHING TYPE



JML
LOCKING BUSHING TYPE

PHYSICAL DIMENSIONS SAME AS RV1 STYLE MIL-R-94B



ENVIRONMENTAL SPECIFICATIONS

VIBRATION: Meets the requirements of MIL-R-94B
MOISTURE RESISTANCE: Meets the requirements of MIL-R-94B.
PACKAGED: One per individual display carton.

ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 500 ohms to 2.5 megohms
TOLERANCE: ±10%
TAPER: Linear, except JMP2-103 and JMP2-504 which are semi-log (C2)
WATTAGE RATING: 1/5 watt at 70°C. derated to 0 watts at 120°C.
RESISTANCE ELEMENT: Composition
DIELECTRIC STRENGTH: 900 VAC-RMS to ground at atmospheric pressure. VAC at reduced barometric pressure per MIL-R-94B.
ROTATIONAL LIFE: Resistance change less than 10% when tested per MIL-R-

MECHANICAL SPECIFICATIONS

SIZE: 43/64" ±1/64" diameter, 5/16" deep
SHAFTS: Stainless steel, screwdriver slotted shaft, 1/8" diameter. Model JM 7/8" long from mounting surface. Model JML—1/2" long from mounting surfac
TERMINALS: Brass, lead—tin plated
LOCATING LUG: Left only
MECHANICAL ROTATION: 260° ±3°
MOUNTING: Bushing type; mounting nut and lockwasher furnished
BUSHING: Model JMP: 1/4"—32 NEF-2A thd., 1/8" long from mounting surface. Model JML: Locking Type, 1/4"—32 NEF-2A thd., 3/8" long from mounting surf Shaft locking nut furnished.
ROTATIONAL TORQUE: 0.5 to 6.0 inch-ounces

JMP (Plain Bushing)

Ohms	MIL-R-94B Designation	CRL Cat. Number
500	RV1NAXSD501A	JMP-501
1000	RV1NAXSD102A	JMP-102
1500	.....	JMP-152
2500	RV1NAXSD252A	JMP-252
5000	RV1NAXSD502A	JMP-502
7500	.....	JMP-752
10K	RV1NAXSD103A	JMP-103
10K	RV1NAXSD103C	JMP2-103
25K	RV1NAXSD253A	JMP-253
50K	RV1NAXSD503A	JMP-503
100K	RV1NAXSD104A	JMP-104
250K	RV1NAXSD254A	JMP-254
500K	RV1NAXSD504A	JMP-504
500K	RV1NAXSD504C	JMP2-504
1 Meg.	RV1NAXSD105A	JMP-105
2.5 Meg.	.....	JMP-255

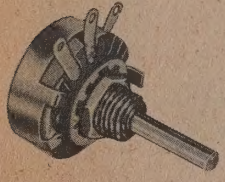
JML (Locking Bushing)

Ohms	MIL-R-94B Designation	CRL Ca Numb
500	RV1LAXSB501A	JML-5
1000	RV1LAXSB102A	JML-1
1500	.....	JML-1
2500	RV1LAXSB252A	JML-2
5000	RV1LAXSB502A	JML-5
7500	.....	JML-7
10K	RV1LAXSB103A	JML-1
25K	RV1LAXSB253A	JML-2
50K	RV1LAXSB503A	JML-5
100K	RV1LAXSB104A	JML-1
250K	RV1LAXSB254A	JML-2
500K	RV1LAXSB504A	JML-5
1 Meg.	RV1LAXSB105A	JML-1
2.5 Meg.	.....	JML-2

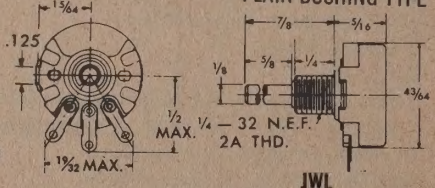
JWP-JWL Models 2 WATT MINIATURE WIREWOUND POTENTIOMETERS

These are high quality miniaturized units; external appearance is similar to JMP and JML controls.

The resistance elements of the JWP and JWL controls are completely enclosed permitting sealing and potting without damage.

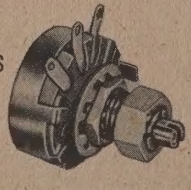


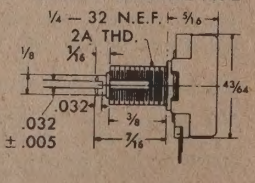
JWP
PLAIN BUSHING TYPE



JWL
LOCKING BUSHING TYPE

PHYSICAL DIMENSIONS
SIMILAR TO RV1
STYLE MIL-R-94B





ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 50 ohms to 30K ohms
TOLERANCE: ±5%
TAPER: Linear
WATTAGE RATING: 2 watts at 70°C. derated to 0 watts at 125° C. when tested to MIL-R-19A.
RESISTANCE ELEMENT: Wirewound
DIELECTRIC STRENGTH: 900 VAC-RMS at atmospheric pressure. 450 VAC at reduced barometric pressure per MIL-R-19A.
ROTATIONAL LIFE: Resistance change less than 10% for units below 10K when tested to MIL-R-19A. For values of 10K and above, less than 10% change for 20,000 cycles rotation.

MECHANICAL SPECIFICATIONS

SIZE: 43/64" ±1/64" diameter, 5/16" deep
SHAFTS: Model JWP: Stainless steel screwdriver slotted shaft 1/8" diameter, long from mounting surface.
Model JWL: Screwdriver slotted stainless steel shaft 1/8" diameter, 7/8" l from mounting surface.
TERMINALS: Nickel-silver, gold plated
LOCATING LUG: Left only
MECHANICAL ROTATION: 250° ±3°
MOUNTING: Bushing Type; mounting nut and lockwasher furnished.
BUSHING: Model JWP: 1/4"—32 NEF-2A thd., 1/4" long from mounting surface. Model JWL: Locking Type, 1/4"—32 NEF-2A thd., 3/8" long from mounting surfa Shaft locking nut furnished.
ROTATIONAL TORQUE: 0.4-6.0 inch-ounces.

ENVIRONMENTAL SPECIFICATIONS

VIBRATION: Meets the requirements of MIL-R-19A.
MOISTURE RESISTANCE: Meets the requirements of MIL-R-19A.
INSULATION RESISTANCE: Meets the requirements of MIL-R-19A.

JWP (Plain Bushing)

Ohms	Cat. No.
50	JWP-500
100	JWP-101
200	JWP-201
300	JWP-301
500	JWP-501
750	JWP-751
1000	JWP-102
1500	JWP-152
2000	JWP-202
2500	JWP-252
3000	JWP-302
4000	JWP-402
5000	JWP-502
7500	JWP-752
10K	JWP-103
15K	JWP-153
20K	JWP-203
25K	JWP-253
30K	JWP-303

JWL (Locking Bushing)

Ohms	Cat. No.
50	JWL-500
100	JWL-101
200	JWL-201
300	JWL-301
500	JWL-501
750	JWL-751
1000	JWL-102
1500	JWL-152
2000	JWL-202
2500	JWL-252
3000	JWL-302
4000	JWL-402
5000	JWL-502
7500	JWL-752
10K	JWL-103
10K	JWL-153
20K	JWL-203
25K	JWL-253
30K	JWL-303

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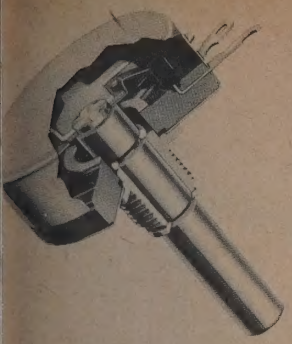
del 12 HOT MOLDED RV-4 POTENTIOMETERS



- **IMMEDIATE DELIVERY at factory prices.**
- **CERTIFIED TEST DATA is on file by lot numbers. Each package shows its lot number.**
- **GOVERNMENT SOURCE INSPECTION**

These units are manufactured to meet all requirements of MIL-R-94C. Available from Centralab Industrial Distributors for immediate delivery, at factory prices.

Install Centralab Hot Molded Potentiometers with complete confidence that they will fulfill your most exacting requirements.

s all environmental rements for Style RV4 MIL-R-94/5C

WARE

TING NUT: Nickel-plated brass. ½" across flats (hex), .093" thick.

WASHER: Nickel-plated phosphor bronze. .507" O.D. x .391" I.D. (internal type).

NUT: Nickel-plated brass. ½" across flats (hex), .156" or .218" thick. shed with HML Series only.)

ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 50 ohms to 5 megohms inclusive.

TOLERANCE: From 50 ohms through 500K ohms, inclusive, ±10%. Above 500K ohms, through 5 megohms, ±20%. Linear taper.

EFFECTIVE ELECTRICAL ROTATION: 312° ±3%.

WATTAGE RATING: 2.25 watts at 70° C., 500 volts.

RESISTANCE ELEMENT: Special carbon composition hot molded with mineral-filled phenolic base.

DIELECTRIC STRENGTH: 900 VAC to ground.

MECHANICAL SPECIFICATIONS

DIMENSIONS: 1 7/64" diameter.

SHAFTS: Solid—.250" diameter. 5/8" long, with ½" long locking bushing (Series HML); 7/8" long with 3/8" long plain bushing (Series HMP), and 2½" long with plain bushing (Series HMS). All lengths measured from mounting surface. Screwdriver slotted.

TERMINALS: Solder lug. Gold plated or hot tin dipped for ease of soldering.

LOCATING LUG: Left (location determined by viewing potentiometer from operating end with terminals down).

EFFECTIVE MECHANICAL ROTATION: 312° ±3°.

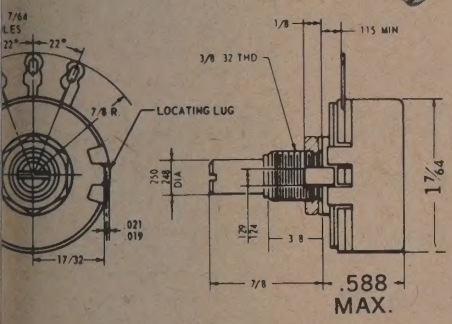
MOUNTING: Clearance hole for the 3/8" bushing and .130" dia. hole at 17/32" radius for locating lug.

CONTACT: Carbon composition pick-up brush.

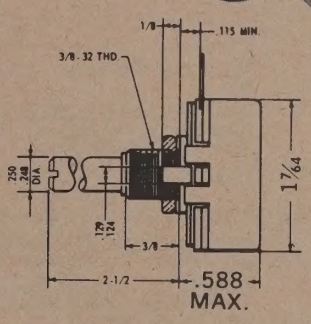
BUSHING: Plain or locking, 3/8" dia.—32 NEF thd. See drawings.

PACKAGED: One per individual display carton.

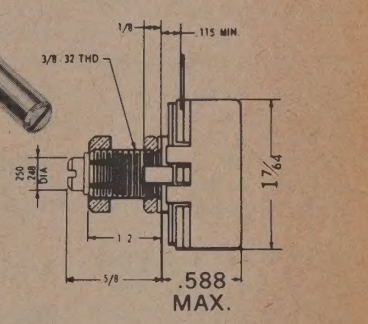
HMP 7/8" SLOTTED SHAFT (Std. 3/8" bushing)



HMS 2½" SLOTTED SHAFT (Std. 3/8" bushing)



HML 5/8" SLOTTED SHAFT (½" locking bushing)

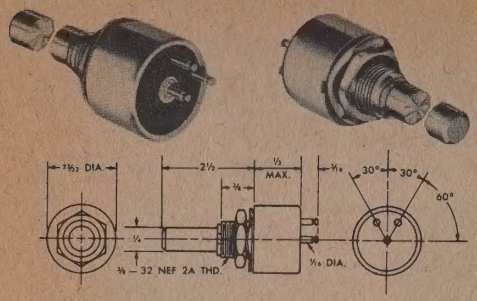


Ohms	MIL Designation	Catalog No.
50	RV4NAYSD500A	HMP- 50
100	RV4NAYSD101A	HMP- 100
150	RV4NAYSD151A	HMP- 150
250	RV4NAYSD251A	HMP- 250
350	RV4NAYSD351A	HMP- 350
500	RV4NAYSD501A	HMP- 500
750	RV4NAYSD751A	HMP- 750
1000	RV4NAYSD102A	HMP-1000
1500	RV4NAYSD152A	HMP-1500
2500	RV4NAYSD252A	HMP-2500
3500	RV4NAYSD352A	HMP-3500
5000	RV4NAYSD502A	HMP-5000
7500	RV4NAYSD752A	HMP-7500
10K	RV4NAYSD103A	HMP- 10K
15K	RV4NAYSD153A	HMP- 15K
25K	RV4NAYSD253A	HMP- 25K
35K	RV4NAYSD353A	HMP- 35K
50K	RV4NAYSD503A	HMP- 50K
75K	RV4NAYSD753A	HMP- 75K
100K	RV4NAYSD104A	HMP-100K
150K	RV4NAYSD154A	HMP-150K
250K	RV4NAYSD254A	HMP 250K
350K	RV4NAYSD354A	HMP-350K
500K	RV4NAYSD504A	HMP-500K
750K	RV4NAYSD754B	HMP-750K
1 Meg.	RV4NAYSD105B	HMP- 1 Meg.
1.5 Meg.	RV4NAYSD155B	HMP-1.5 Meg.
2 Meg.	RV4NAYSD205B	HMP- 2 Meg.
2.5 Meg.	RV4NAYSD255B	HMP-2.5 Meg.
3.5 Meg.	RV4NAYSD355B	HMP-3.5 Meg.
5 Meg.	RV4NAYSD505B	HMP- 5 Meg.

Ohms	MIL Designation	Catalog No.
50	RV4NAYSK500A	HMS- 50
100	RV4NAYSK101A	HMS- 100
150	RV4NAYSK151A	HMS- 150
250	RV4NAYSK251A	HMS- 250
350	RV4NAYSK351A	HMS- 350
500	RV4NAYSK501A	HMS- 500
750	RV4NAYSK751A	HMS- 750
1000	RV4NAYSK102A	HMS-1000
1500	RV4NAYSK152A	HMS-1500
2500	RV4NAYSK252A	HMS-2500
3500	RV4NAYSK352A	HMS-3500
5000	RV4NAYSK502A	HMS-5000
7500	RV4NAYSK752A	HMS-7500
10K	RV4NAYSK103A	HMS- 10K
15K	RV4NAYSK153A	HMS- 15K
25K	RV4NAYSK253A	HMS- 25K
35K	RV4NAYSK353A	HMS- 35K
50K	RV4NAYSK503A	HMS- 50K
75K	RV4NAYSK753A	HMS- 75K
100K	RV4NAYSK104A	HMS-100K
150K	RV4NAYSK154A	HMS-150K
250K	RV4NAYSK254A	HMS-250K
350K	RV4NAYSK354A	HMS-350K
500K	RV4NAYSK504A	HMS-500K
750K	RV4NAYSK754B	HMS-750K
1 Meg.	RV4NAYSK105B	HMS- 1 Meg.
1.5 Meg.	RV4NAYSK155B	HMS-1.5 Meg.
2 Meg.	RV4NAYSK205B	HMS- 2 Meg.
2.5 Meg.	RV4NAYSK255B	HMS-2.5 Meg.
3.5 Meg.	RV4NAYSK355B	HMS-3.5 Meg.
5 Meg.	RV4NAYSK505B	HMS- 5 Meg.

Ohms	MIL Designation	Catalog No.
50	RV4LAYSA500A	HML- 50
100	RV4LAYSA101A	HML- 100
150	RV4LAYSA151A	HML- 150
250	RV4LAYSA251A	HML- 250
350	RV4LAYSA351A	HML- 350
500	RV4LAYSA501A	HML- 500
750	RV4LAYSA751A	HML- 750
1000	RV4LAYSA102A	HML-1000
1500	RV4LAYSA152A	HML-1500
2500	RV4LAYSA252A	HML-2500
3500	RV4LAYSA352A	HML-3500
5000	RV4LAYSA502A	HML-5000
7500	RV4LAYSA752A	HML-7500
10K	RV4LAYSA103A	HML- 10K
15K	RV4LAYSA153A	HML- 15K
25K	RV4LAYSA253A	HML- 25K
35K	RV4LAYSA353A	HML- 35K
50K	RV4LAYSA503A	HML- 50K
75K	RV4LAYSA753A	HML- 75K
100K	RV4LAYSA104A	HML-100K
150K	RV4LAYSA154A	HML-150K
250K	RV4LAYSA254A	HML-250K
350K	RV4LAYSA354A	HML-350K
500K	RV4LAYSA504A	HML-500K
750K	RV4LAYSA754B	HML-750K
1 Meg.	RV4LAYSA105B	HML- 1 Meg.
1.5 Meg.	RV4LAYSA155B	HML-1.5 Meg.
2 Meg.	RV4LAYSA205B	HML- 2 Meg.
2.5 Meg.	RV4LAYSA255B	HML-2.5 Meg.
3.5 Meg.	RV4LAYSA355B	HML-3.5 Meg.
5 Meg.	RV4LAYSA505B	HML- 5 Meg.

Model N 3/4 WATT HOT MOLDED POTENTIOMETERS



Model "N" is a Hot Molded Potentiometer only 23/32" diameter and rated at 3/4 Watt. Minimal physical and electrical noise; all exposed metal parts are corrosion-resistant.

One piece aluminum case is spun over the insulating base to provide a seal and to promote rapid heat dissipation.

Pin-type terminals project to the rear for easy wire attachment.

DISTRIBUTOR PRODU

CENTRALAB
Electronics Division
GLOBE-UNION INC.

ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 500 ohms to 1 megohm
TOLERANCES: ±10% or ±20% as listed
TAPERS: Linear (C1); Log, modified clockwise (C2); Log, modified counterclockwise (C3)
WATTAGE RATING: 3/4 watt at 70° C., 350 volts
RESISTANCE ELEMENT: Hot molded carbon composition
DIELECTRIC STRENGTH: 900 VAC-RMS to ground

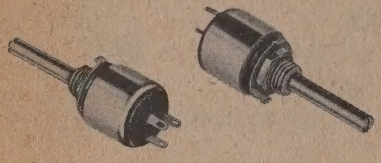
MECHANICAL SPECIFICATIONS

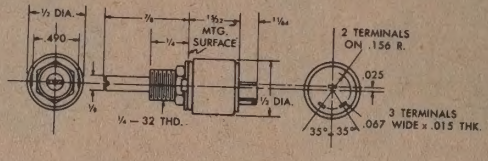
SIZE: 23/32" diameter, 1/2" deep FMS

SHAFT: 1/4" diameter, full round steel, zinc chromate finish. 2 1/4" long from mounting surface
TERMINALS: Silver-plated brass 1/16" diameter, 3/16" long pin type. Terminals are grooved so wires can be crimped into place.
CASE: Cold-formed aluminum alloy, securely swaged to the insulating base. Suitable for encapsulation without affecting operation.
MECHANICAL ROTATION: 300° ±3°
MOUNTING: Single hole, bushing type. Nickel-plated brass nut and internal tooth lock washer furnished.
BUSHING: 3/8"—32NEF-2A thd., aluminum alloy, 3/8" long
ROTATIONAL TORQUE: 5.0 ounce-inches average

Ohms	Taper	Tol.	Catalog
500	C1	±10%	NCP9-5
1000	C1	±10%	NCP9-1
2500	C1	±10%	NCP9-2
5000	C1	±10%	NCP9-5
10K	C1	±10%	NCP9-1
25K	C1	±10%	NCP9-2
50K	C1	±10%	NCP-50
100K	C1	±10%	NCP9-1
250K	C1	±10%	NCP9-2
500K	C1	±10%	NCP9-5
1 Meg	C1	±20%	NCP9-1

Model P 1/2 WATT HOT MOLDED POTENTIOMETERS





Model "P" (RV 6 style) Hot Mol
Potentiometers is only 1/2" diame
rated 1/2 watt at 70°C.

Minimal mechanical and electr
noise.

A stainless steel shaft and anod
aluminum case provide corrosion
sistance equivalent to MIL-R-
Style RV6.

ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 500 ohms to 1 megohm
TOLERANCES: ±10% or ±20% as listed
TAPERS: Linear (C1)
WATTAGE RATING: 1/2 watt at 70° C., 350 volts
RESISTANCE ELEMENT: Hot molded carbon composition
DIELECTRIC STRENGTH: 900 VAC-RMS to ground

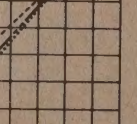
MECHANICAL SPECIFICATIONS

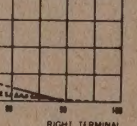
SIZE: 1/2" diameter, 15/32" deep
SHAFTS: 1/8" diameter, full round stainless steel, screwdriver slotted, 7/8" long from mounting surface (seal type)

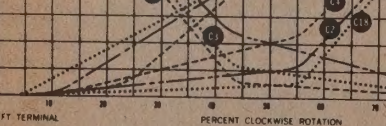
TERMINALS: Nickel silver; .015" thick, .067" wide, 1 1/4" long
CASE: Cold-formed anodized aluminum alloy, securely swaged to the insulating base. Suitable for encapsulation without affecting operation.
LOCATING LUGS: Two, .091" wide on .490" diameter (.245" radius)
MECHANICAL ROTATION: 295° ±3°
MOUNTING: Single hole, bushing type (panel and shaft seal style) nut and lockwasher furnished.
BUSHING: 1/4"—32NEF-2A thd., double flatted, 1/4" long. Formed as part of the aluminum alloy case. Has separate "O" ring panel seal.
ROTATIONAL TORQUE: 1.5 ounce-inches

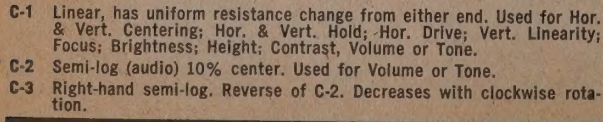
Ohms	Taper	Tol.	Catalog
500	C1	±10%	PNS7-501
1000	C1	±10%	PNS7-102
2500	C1	±10%	PNS7-252
5000	C1	±10%	PNS7-502
10K	C1	±10%	PNS7-103
25K	C1	±10%	PNS7-253
50K	C1	±10%	PNS7-503
100K	C1	±10%	PNS7-104
500K	C1	±10%	PNS7-504
1 Meg	C1	±20%	PNS7-105

Model T 1/3 WATT HOT MOLDED POTENTIOMETERS









C-1 Linear, has uniform resistance change from either end. Used for Hor. & Vert. Centering; Hor. & Vert. Hold; Hor. Drive; Vert. Linearity; Focus; Brightness; Height; Contrast, Volume or Tone.
C-2 Semi-log (audio) 10% center. Used for Volume or Tone.
C-3 Right-hand semi-log. Reverse of C-2. Decreases with clockwise rotation.

The Model T extends Hot Molded construction to the trimmer resistor trimmer potentiometer. All critical parts non-magnetic and silver plated superior performance and long life. Especially designed for printed circuit u May be encapsulated.

ELECTRICAL SPECIFICATIONS

RESISTANCE RANGE: 500 ohms to 500K ohms
TOLERANCE: ±20%
TAPER: Linear (C1)
WATTAGE RATING: 1/3 watt at 70° C.
RESISTANCE ELEMENT: Hot molded carbon composition
DIELECTRIC STRENGTH: 900 VAC-RMS to ground

MECHANICAL SPECIFICATIONS

SIZE: 15/32" diameter, 11/32" deep
SHAFT: Screwdriver adjust with concentric screwdriver lock
TERMINALS: Silver-plated, pin type 5/32 long
MECHANICAL ROTATION: 300° ±3°
MOUNTING: Two stub terminals and a threaded centerpiece serve as both electrical terminals and mounting means. All these terminals may be used in dip soldering on printed wiring board applications; or a nut on the center terminal may be used to mount the Model T to an insulated chassis, with the other two terminals serving as conventional solder lugs.
ROTATIONAL TORQUE: Locking type

ENVIRONMENTAL SPECIFICATIONS

Can be encapsulated in either flexible or rigid encapsulating compounds for endurance to atmospheric attack. All metal parts silver-plated. Temperature stable plastic is used in the insulating base molding.

Single Turn, Locking Type

Ohms	Taper	Tol.	Catalog No
500	C1	±20%	TMX0-501-
1000	C1	±20%	TMX0-102-
2500	C1	±20%	TMX0-252-
5000	C1	±20%	TMX0-502-
10K	C1	±20%	TMX0-103-
25K	C1	±20%	TMX0-253-
50K	C1	±20%	TMX0-503-
100K	C1	±20%	TMX0-104-
500K	C1	±20%	TMX0-504-

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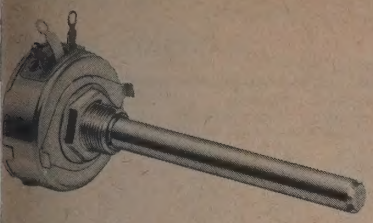
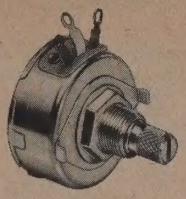
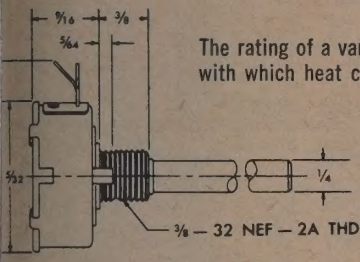
-WN Series 5 WATT
EWOUND POTENTIOMETERS 2 Watt Size—5 Watt Rating







The rating of a variable resistor depends upon the speed with which heat can be transferred from the resistance element to the atmosphere. Centralab "thermapass" insulation combines exceptional heat transfer properties with high dielectric strength. Series WW-WN Radiohms, conservatively rated 5 watt wirewound controls smaller than a conventional 2 watt unit.

TRICAL SPECIFICATIONS

TANCE RANGE: 1 ohm to 100K ohms.
ANCE: ±10%
: Linear
AGE RATING: 5 watts @ 40°C. ambient derated to 0 watts at 105°C.
TANCE ELEMENT: Wirewound
CTRIC STRENGTH: 900 VAC-RMS to ground
CTIVE ELECTRICAL ROTATION: 288° ±2°
TIONAL LIFE: Tested to a minimum of 25,000 cycles at 600 cycles per hour. 5000 cycles OK and above.

ANICAL SPECIFICATIONS

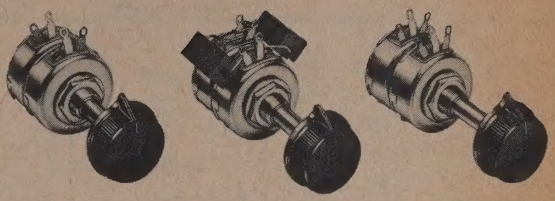
1 5/32" diameter, 9/16" deep
S: Model WW: 1/4" diameter, full round burnished aluminum, 3" long from mounting e.
WN: 1/4" diameter, fingertip knurled cadmium-plated steel, screwdriver slotted, 3/4" rom mounting surface.
ING LUG: Both right and left
ANICAL ROTATION: 295° ±3°
TING: Bushing type; mounting nut furnished
NG: 3/8"—32 NEF-2A thd., 3/8" long
STRENGTH: 14 inch-pounds

ONMENTAL SPECIFICATIONS:

NT TEMPERATURE RANGE: −65°F to +200°F
LIES WITH MIL-R-19B FOR: Insulation Resistance; Load Life; Low Temperature Cycling; ow Temperature Operation; Low Temperature Storage; Moisture Resistance; Rotational ife; Shock; Vibration — Low Frequency and High Frequency.
GED: One per individual display carton.

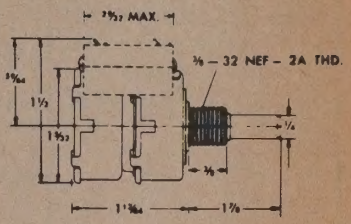
WW Catalog No.	WN Catalog No.	Ohms	WW Catalog No.	WN Catalog No.	Ohms	WW Catalog No.	WN Catalog No.
WW-010	WN-010	60	WW-600	WN-600	4000	WW-402	WN-402
WW-020	WN-020	75	WW-750	WN-750	5000	WW-502	WN-502
WW-030	WN-030	100	WW-101	WN-101	7500	WW-752	WN-752
WW-040	WN-040	200	WW-201	WN-201	10K	WW-103	WN-103
WW-050	WN-050	250	WW-251	WN-251	15K	WW-153	WN-153
WW-060	WN-060	300	WW-301	WN-301	20K	WW-203	WN-203
WW-080	WN-080	400	WW-401	WN-401	25K	WW-253	WN-253
WW-100	WN-100	500	WW-501	WN-501	30K	WW-303	WN-303
WW-150	WN-150	750	WW-751	WN-751	40K	WW-403	WN-403
WW-200	WN-200	1000	WW-102	WN-102	50K	WW-503	WN-503
WW-250	WN-250	1500	WW-152	WN-152	75K	WW-753	WN-753
WW-300	WN-300	2000	WW-202	WN-202	100K	WW-104	WN-104
WW-400	WN-400	2500	WW-252	WN-252			
WW-500	WN-500	3000	WW-302	WN-302			

WL, WDT, WST Series



WL WDT WST

(Reduced Scale)



Centralab's constant impedance L-pads and Bridged T-pads are designed to provide the optimum in sound reproduction quality without altering the original frequency response of the equipment. Anti-backlash construction features a force-fit shaft interlock which prevents relative motion between contact springs of the front and rear units, thus assuring smooth attenuation in either direction without deterioration. The WST Series are linear taper twin controls for stereo speaker installations.

ELECTRICAL SPECIFICATIONS

WATTAGE RATING: WL and WDT Series: 20 watts audio (5 watts DC and sine wave). WST Series: 10 watts audio (5 watts DC and sine wave).

DIELECTRIC STRENGTH: 900 VAC-RMS to ground

MECHANICAL SPECIFICATIONS

SIZE: 1 5/32" diameter, 1 13/64" deep behind panel.
SHAFT: 1/4" diameter, full round brass, 1 7/8" long from mounting surface.

LOCATING LUG: None

MECHANICAL ROTATION: 295° ±3°

MOUNTING: Bushing

BUSHING: 3/8"—32NEF-2A thd., 3/8" long from mounting surface. By adding an AK-31 (brass) adapter bushing, the standard 3/8" long bushing can be extended to 1".

STOP STRENGTH: 14 inch-pounds.

PACKAGED: One per individual display carton, which includes: one AK-36 brushed gold anodized dial plate and one KC-10 set-screw pointer knob. Instruction sheet furnished.

L-PAD

Ohms	Catalog No.
4	WL-4
8	WL-8
16	WL-16
500	WL-500
600	WL-600
1000	WL-1000
1250	WL-1250
2000	WL-2000
2500	WL-2500

BRIDGED T-PAD

Ohms	Catalog No.
4	WDT-4
8	WDT-8
16	WDT-16
500	WDT-500
600	WDT-600

STEREO ATTENUATORS

20	WST-200 (for 4 ohm speakers)
40	WST-400 (for 8 ohm speakers)
80	WST-800 (for 16 ohm speakers)

See CENTRALAB CATALOG 33-GL for Fastatch® II and Buzz Controls

MEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.

Originators of TRU-OHM & HARDWICK, HINDLE Products

12½ thru 225 WATT

RHEOSTAT

POWER

VITREOUS ENAMEL

MEMCOR power vitreous enameled rheostats are exceptionally rugged and are "made better than they need be." They exhibit characteristics that meet the most exacting specifications. Special design features assure long life and protection under extremes of humidity and abnormal atmospheric conditions.

In the 225, 500, 750 and 1000 watt sizes the "buss bar" contact arm automatically adjusts for complete, continuous contact, and smooth, flexible control. MEMCOR high temperature enamel gives increased service life with an extreme factor of safety.

MEMCOR rheostats are stocked in eleven sizes; 12½ through 1000 watts resistance from 0.5 to 10,000 ohms with diameters from ⅞" through 12". All standard stock units are identified by stock number.

TYPE R-12½ (12½ WATTS)

DIAM.: ⅞"
WEIGHT: .035 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
1.	3.53	27	600	25	.71	65	607	250	.22	124	6
2.	2.5	38	601	35	.6	78	608	350	.19	150	6
2.5	2.23	40	601A	50	.5	81	609	500	.16	164	6
3.	2.04	36	602	75	.41	98	610	750	.13	188	6
5.	1.58	55	602A	100	.35	102	611	1000	.11	196	6
6.	1.44	45	603	125	.32	102	612	1500	.091	235	6
8.	1.25	49	604	150	.29	96	612A	2500	.071	260	6
10	1.18	42	605	175	.27	112	613	3500	.06	285	6
15	.91	49	606	200	.25	128	613A	5000	.05	315	6

TYPE R-25 (25 WATTS)

DIAM.: 1⅛"
WEIGHT: .23 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
1.	5.0	26	100	35	.845	100	108	500	.222	215	1
2.	3.54	28	101	50	.707	105	109	750	.182	230	1
3.	2.88	44	102	75	.575	120	110	1000	.155	270	1
6.	2.04	50	103	100	.5	140	111	1500	.129	325	1
8.	1.77	54	104	125	.445	145	112	2500	.1	410	1
10	1.58	60	105	175	.375	153	113	3500	.084	440	1
15	1.29	78	106	250	.316	170	114	5000	.07	480	1
25	1.0	80	107	350	.267	180	115				

TYPE R-50 (50 WATTS)

DIAM.: 2 1⅝"
WEIGHT: .45 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
.5	10.0	22	200	35	1.19	120	209	1000	.223	375	2
1.	7.07	36	201	50	1.0	120	210	1600	.176	465	2
2.	5.0	38	202	80	.79	135	211	2500	.141	560	2
4.	3.54	38	203	125	.63	185	212	3500	.119	585	2
6.	2.88	75	204	150	.574	175	213	5000	.1	600	2
8.	2.5	70	205	225	.47	215	214	8000	.079	710	2
12	2.04	80	206	300	.408	225	215	10K	.07	720	2
16	1.76	90	207	500	.316	295	216				
22	1.5	95	208	800	.25	360	217				

TYPE R-75 (75 WATTS)

DIAM.: 2¾"
WEIGHT: .60 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
.5	12.3	27	300	25	1.73	92	308	750	.316	260	3
1.	8.66	18	301	50	1.23	118	309	1000	.274	290	3
2.	6.12	30	302	75	1.0	135	310	1500	.224	350	3
3.	5.0	30	303	100	.866	147	311	2000	.194	380	3
5.	3.8	45	304	200	.612	180	312	2500	.173	425	3
7.5	3.16	47	305	300	.5	227	313	5000	.123	630	3
10	2.74	50	306	400	.433	232	314	7500	.1	715	3
16	2.17	87	307	500	.388	250	315	10K	.087	820	3

TYPE R-100 (100 WATTS)

DIAM.: 3⅛"
WEIGHT: .72 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
.5	14.1	30	400	25	2.0	105	408	750	.365	280	4
1.	10.0	20	401	50	1.41	140	409	1000	.316	316	4
2.	7.07	32	402	75	1.15	155	410	1500	.258	370	4
3.	5.75	32	403	100	1.0	168	411	2000	.224	420	4
5.	4.47	50	404	200	.707	190	412	500	.2	460	4
7.5	3.65	52	405	300	.575	260	413	5000	.141	650	4
10	3.16	58	406	400	.500	262	414	7500	.115	740	4
16	2.5	97	407	500	.447	270	415	10K	.1	850	4

TYPE R-150 (150 WATTS)

DIAM.: 4"
WEIGHT: 1.50 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
.5	17.3	28	500	35	2.07	133	509	750	.447	370	5
1.	12.3	37	501	50	1.735	160	510	1250	.346	460	5
2.	8.65	38	502	75	1.415	185	511	1800	.288	550	5
3.	7.07	67	503	100	1.225	190	512	2250	.259	570	5
5.	5.48	68	504	150	1.0	230	513	3000	.224	600	5
7.5	4.47	71	505	200	.865	242	514	4500	.182	680	5
10	3.88	70	506	250	.775	250	515	7500	.141	980	5
15	3.163	138	507	350	.655	280	516	10K	.122	990	5
25	2.45	140	508	500	.548	330	517				

TYPE R-225 (225 WATTS)

DIAM.: 5"
WEIGHT: 2.18 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
1.	15.0	55	4001	25	3.0	117	4009	700	.567	495	4
2.	10.61	54	4002	50	2.12	250	4010	900	.5	498	4
3.	8.66	56	4003	75	1.73	306	4011	1200	.43	523	4
4.	7.5	52	4004	100	1.5	322	4012	1500	.39	630	4
5.	6.71	52	4005	150	1.22	385	4013	1750	.358	605	4
7.5	5.48	113	4006	200	1.06	355	4014	2000	.33	710	4
10	4.74	107	4007	300	.866	336	4015	2500	.3	700	4
15	3.87	111	4008	400	.75	352	4016				

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MEMCOR COMPONENTS

A DIVISION OF LTV ELECTROSYSTEMS, INC.

300 thru 1000 WATT

Originators of TRU-OHM & HARDWICK, HINDLE Products

RHEOSTATS

POWER

VITREOUS ENAMELED

EMCOR rheostats e made in a wide sortment of varia- ns, among which e included tapers, - positions, venti- ed enclosures, st - proof enclo- es, tandems, tog- switches, micro itches, switching s and many varia- ns of shaft and nel mountings. Ex- length flattened, nd or screw driver ft assemblies and cial length bush- s or other special uirements per stomer drawing available.

TYPE R-300 (300 WATTS)

DIAM.: 6"
WEIGHT: 3 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
1.	17.32	49	700	25	3.46	117	708	700	.66	492	716
2.	12.25	48	701	50	2.45	259	709	900	.58	510	717
3.	10.0	72	702	75	2.0	308	710	1200	.5	532	718
4.	8.66	76	703	100	1.73	317	711	1500	.45	527	719
5.	7.75	67	704	150	1.41	268	712	1750	.41	497	720
7.5	6.32	70	705	200	1.22	284	713	2000	.38	567	720A
10	5.48	75	706	300	1.0	336	714	2500	.35	560	721
15	4.47	129	707	400	.87	357	715				

TYPE R-500 (500 WATTS)

DIAM.: 8"
WEIGHT: 3.75 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
1.	27.3	61	4101	12.5	6.3	104	4109	250	1.41	570	4117
1.5	18.2	63	4102	16	5.6	192	4110	325	1.24	513	4118
2.	15.81	68	4103	25	4.47	185	4111	500	1.0	620	4119
2.5	14.14	65	4104	40	3.54	208	4112	750	.82	745	4120
3.	12.91	63	4105	50	3.16	208	4113	1000	.71	780	4121
4.	11.18	96	4106	80	2.52	462	4114	1500	.58	940	4122
5.	10.0	95	4107	125	2.0	452	4115	2000	.5	980	4123
8.	7.9	93	4108	175	1.69	500	4116	2500	.45	975	4124

TYPE R-750 (750 WATTS)

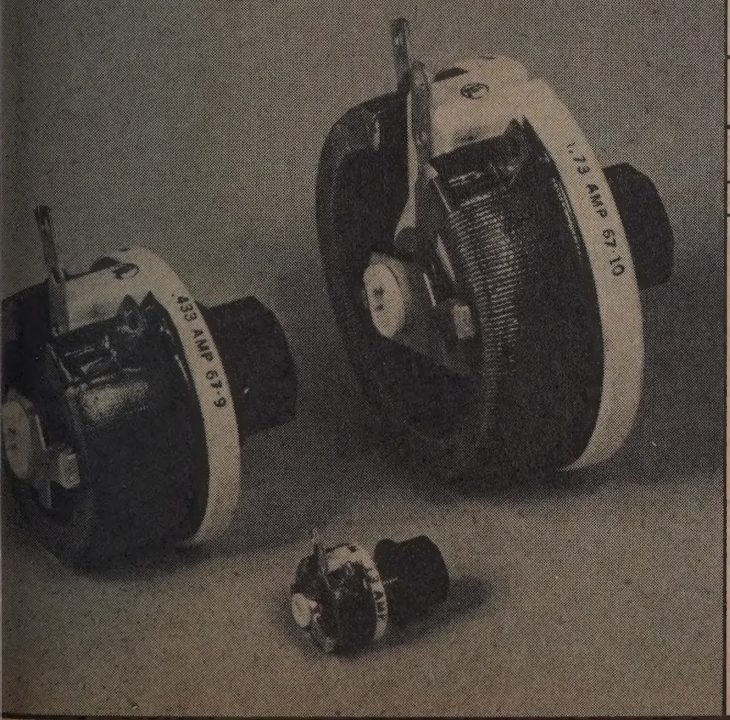
DIAM.: 10"
WEIGHT: 7.31 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
1.	27.4	85	4201	12.5	7.75	115	4210	400	1.37	573	4219
1.5	22.3	85	4202	16	6.82	120	4211	600	1.12	680	4220
2.	19.36	80	4203	25	5.48	216	4212	750	1.0	670	4221
2.5	17.32	87	4204	50	3.87	238	4213	1200	.79	657	4222
3.	15.81	80	4205	80	3.06	240	4214	1800	.646	792	4223
4.	13.69	87	4206	100	2.74	283	4215	2000	.61	906	4224
5.	12.25	122	4207	160	2.17	496	4216	2500	.55	1085	4225
8.	9.65	122	4208	200	1.94	520	4217				
10	8.66	104	4209	300	1.58	440	4218				

TYPE R-1000 (1000 WATTS)

DIAM.: 12"
WEIGHT: 10 LBS.

Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.	Ohms	Max. Amps.	Approx. Steps	Stock No.
1.	31.6	87	4301	10	10.0	103	4309	225	2.11	585	4317
1.5	25.8	84	4302	12.5	8.95	160	4310	300	1.83	750	4318
2.	22.36	109	4303	16	7.9	164	4311	400	1.58	631	4319
2.5	20.0	96	4304	25	6.32	160	4312	500	1.41	635	4320
3.	18.26	100	4305	50	4.47	290	4313	750	1.15	800	4321
4.	15.81	94	4306	75	3.65	303	4314	1000	1.0	1090	4322
5.	14.14	152	4307	100	3.16	321	4315	1500	.82	1000	4323
8.	11.2	113	4308	160	2.5	328	4316	2000	.63	1080	4324



Specify on order if knob and/or dial is required.

HARDWARE

RHEOSTAT - KNOBS

Type	Stock No.
R12½	2400
R25 to R150	2500
R25 to R150	2502
R25 to R150	2503
R25 to R150	2504
R25 to R150	2505
R25 to R150	2506
R25 to R150	2507
R25 to R150	2508
R25 to R150	2510-1
R25 to R150	2510-2
R25 to R150	2511
R25 to R150	2512
R225 to R1000	2520
R225 to R1000	2521
R25 to R225	2514
R225 to R1000	2518
R225 to R1000	2519

RHEOSTAT - DIALS

Type	Stock No.
R12½	3501
R25	3500
R50	3500
R75	3500
R100	3500
R150	3500
R225	3502
R300	3502
R500	3502
R750	3502
R1000	3502

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A United Technical Publication

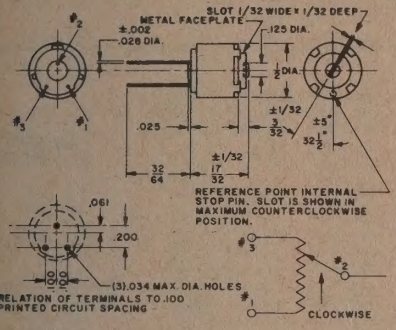
HMITE hot molded single-turn trimmers

AFR — SINGLE TURN

OHMITE type AFR Trimmers are single-turn controls built to withstand severe environmental conditions. Their unique design includes a hot-molded resistor track bridged by a single moving molded contact brush. Resistance material, collector track material, insulation material and metal terminals are all molded together at one time into a single, solid, integral structure. There are no cracks or crevices to admit moisture.

Enclosure of the Ohmite type AFR is non-magnetic, corrosion resistant, and splash-proof. Type AFR Trimmers are designed for screwdriver adjustment. Fixed stops withstand a maximum shaft torque of 2 inch-pounds.

In excess of 50,000 operational cycles with low "noise" level initially — decreasing with use — can be expected in conventional applications.



CHARACTERISTICS:

Power Rating: ¼ watt @ +70° C ambient temperature. Derate power linearly to zero at +120° C ambient for resistance values to 0.5 megohms. Additional derating required for resistance values over 0.1 megohms at ambients higher than 70° C.

Resistance Range: 100 ohms to 5.0 megohms. Resistance change is nominally linear with shaft rotation.

Tolerance: ±20% standard.

Temperature Range: —55° C to +120° C.

Working Voltage: 350 volts, RMS, maximum.

Dielectric Strength: 750 VAC, RMS, at sea level.

Adjustment: Single turn, 295 ±5 degrees.

Torque: 0.25 to 3.0 inch-ounces.

Leads: Designed for mounting directly on printed wiring boards using the terminal leads which are spaced to fit the 0.1" printed wiring board standard spacing.

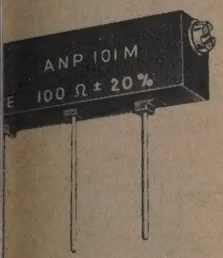
STOCK OHMITE TYPE AFR TRIMMERS

Ohms ±20%	Catalog Number	Ohms ±20%	Catalog Number
100	AFR 101M	25,000	AFR 253M
250	AFR 251M	50,000	AFR 503M
500	AFR 501M	.1 meg	AFR 104M
1,000	AFR 102M	.25 meg	AFR 254M
2,500	AFR 252M	.5 meg	AFR 504M
5,000	AFR 502M	1.0 meg	AFR 105M
10,000	AFR 103M	2.5 meg	AFR 255M
		5.0 meg	AFR 505M

AVAILABLE ONLY FROM OHMITE DISTRIBUTORS

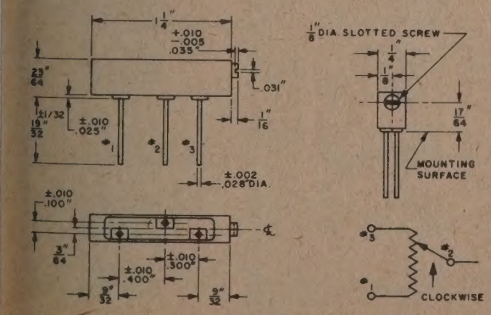
molded 25-turn trimmers

ANP — 25-TURN



Ohmite type ANP Hot-Molded Trimmers are continuously adjustable 25-turn variable resistors intended primarily for trimmer applications. Designed for use on printed circuit boards, these dependable three-terminal devices can be applied as either rheostats or potentiometers with equally satisfactory results. Stepless and relatively non-inductive regardless of resistance value. Unexcelled stability of setting in normal environmental conditions.

e ANP Trimmer is produced by a hot-molding process using a high n material together with a hot molded resistance track, low resistllector track and terminal pins — all combined into a single, solid, structure. The type ANP is splash-proof, dust-tight and can be by its own rugged terminals.



CHARACTERISTICS:

Power Rating: ⅓ watt @ 50° C ambient temperature. Derate power linearly to zero at 100° C.

Resistance Range: 100 ohms to 0.1 megohms. Resistance change is nominally linear with shaft rotation.

Tolerance: Standard resistance tolerance is ±20%.

Temperature Range: —55° C to +100° C.

Working Voltage: 350 volts RMS, maximum at sea level.

Dielectric Strength: 700 volts RMS maximum, at sea level.

Insulation Resistance: 1000 megohms minimum.

Adjustment: 25 ± 3 turns for continuous resistance change. Mechanical release at end positions. Turning torque is 0.10 to 8 inches-ounce. Slotted for screwdriver adjustment.

Leads: Pin type terminals, spaced in accordance with 0.1" printed wiring board grid system.

STOCK OHMITE TYPE ANP TRIMMERS

Ohms ±20%	Catalog Number	Ohms ±20%	Catalog Number
100	ANP-101M	5,000	ANP-502M
250	ANP-251M	10,000	ANP-103M
500	ANP-501M	25,000	ANP-253M
1,000	ANP-102M	50,000	ANP-503M
2,500	ANP-252M	.1 meg	ANP-104M

AVAILABLE ONLY FROM OHMITE DISTRIBUTORS

OHMITE PAGE 17

OHMITE vitreous enameled rheostats (potentiometers

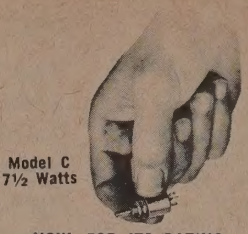
Now, Ohmite offers TWELVE sizes in its line of famous rheostats ranging from 7.5 to 1000 watts. Nothing to shrink or burn, all models are metal and ceramic construction and coated with Ohmite's exclusive vitreous enamel. The revolutionary Model C, 7½ watt miniature unit, **the smallest rheostat of its rating available,** employs this same construction! All Model C stock units and the enclosed Model E unit, are normally supplied in a corrosion-resistant dust-proof case. Model C units are stocked in both standard and locking type bushings.

In all Ohmite rheostats, the resistance wire is wound on a solid ceramic core. The turns are locked in place with tough, protective vitreous enamel. Pivoted, universal action mounting of the brush, assures perfect contact. Metal-graphite contact brushes, varied to fit current and resistance, insure good contact with negligible wear of the wire. Terminals at each end of the winding permit connection of the unit as a potentiometer.

Models H, J, G, K, L, P, and N, marked "Series A," are listed under the Underwriter's Laboratories Reexamination Service. RHEOSTAT KNOBS are listed on page 20. Rheostats can be supplied to meet military specification MIL-R-22.

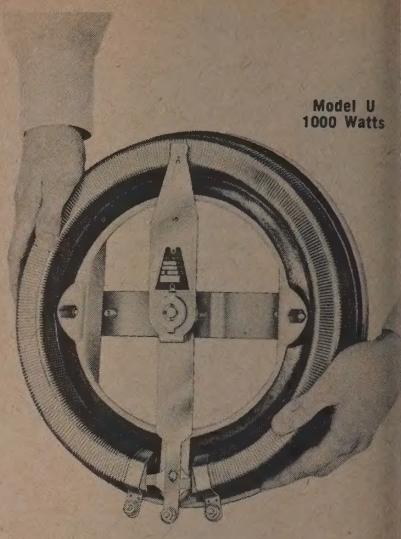
RATINGS: Current ratings shown, assume use in free air. If units are enclosed, currents should be reduced to as much as 50% depending upon ventilation. The rated current causes the rheostat to dissipate its rated wattage when its full resistance is in the circuit.

SPECIAL RHEOSTAT FEATURES: Hundreds of features to meet your special rheostat requirements can be furnished. Submit your specifications.



Model C
7½ Watts

NOW, FOR ITS RATING
INDUSTRY'S SMALLEST
RHEOSTAT!



Model U
1000 Watts

Unenclosed
Model E
12½ Watts

Enclosed
Model E
12½ Watts

MODEL "C" — 7½ WATT* — STANDARD & LOCKING BUSHINGS

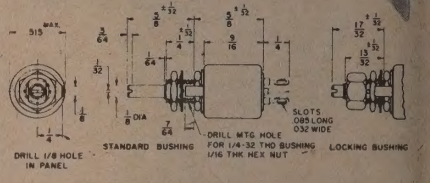
Diameter .515" max. — Depth behind panel 7/8" — Shaft 1/8" diameter, slotted for both types; Std. shaft accommodates knob — Rotation 300° — Mounting for panels up to 1/8" by means of 1/4"-32 bushing and hex. nut — Non-turn lug requires 1/8" hole 1/4" below center of shaft — No. 5151 knob recommended — Solder terminals also fit EIA type TS-E3R100 transistor socket — Wt. 0.27 oz.

Ohms	Amps.	Standard Shaft Catalog No.[1]	Locking Shaft Catalog No.[1]	Ohms	Amps.	Standard Shaft Catalog No.[1]	Locking Shaft Catalog No.[1]
10	.86	4908	4948	250	.17	4917	4957
15	.71	**4909**	4949	350	.15	4918	4958
25	.55	4910	4950	500	.12	4919	4959
35	.46	4911	4951	750	.10	4920	4960
50	.39	4912	4952	1000	.086	4921	4961
75	.32	4913	4953	1500	.071	4922	4962
100	.27	**4914**	4954	2500	.055	4923	4963
150	.22	4915	4955	3500	.046	4924	4964
200	.19	4916	4956	5000	.039	4925	4965

*Rating on metal panel — unit is silicone-ceramic coated.

Locking-type Model C mounted in socket on panel. Solder terminals fit transistor socket.

MODEL C



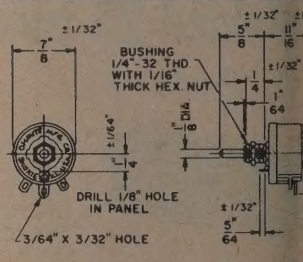
MODEL "E" — 12½ WATT* — UNENCLOSED & ENCLOSED

Diameter 7/8"; Diameter with dust-tight aluminum enclosure 1 3/64" — Depth behind panel 1 1/16"; for enclosed, 1 1/32" — Rotation 300° — Mounts on panels up to 1/8" by means of 1/4"-32 bushing and hex nut — Non-turn lug requires 1/8" hole 1/4" below center of shaft. No. 5151 knob recommended—Wt. 0.6 oz.; enclosed 0.85 oz.

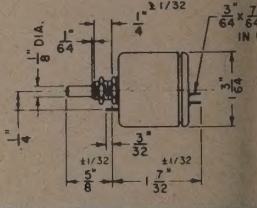
Total Ohms	Max. Amps	Steps Appr.	Unenclosed Catalog No.[1]	Enclosed Catalog No[1]	Total Ohms	Max. Amps	Steps Appr.	Unenclosed Catalog No.[1]	Enclosed Catalog No[1]
1	3.53	28	**0101**	W0101	175	.27	155	**0114**	W0114
2	2.50	29	**0102**	W0102	200	.25	135	0114A	W0114A
2.5	2.24	29	0102A	W0102A	250	.22	170	**0115**	W0115
3	2.04	38	**0103**	W0103	350	.19	190	**0116**	W0116
5	1.58	51	0103A	W0103A	500	.16	210	**0117**	W0117
6	1.44	35	**0104**	W0104	750	.13	200	**0118**	W0118
8	1.25	53	**0105**	W0105	1,000	.11	260	**0119**	W0119
10	1.12	50	**0106**	W0106	1,500	.091	209	**0120**	W0120
15	.91	70	**0107**	W0107	2,500	.071	323	**0121**	W0121
25	.71	72	**0108**	W0108	3,500	.060	400	**0122‡**	W0122†
35	.60	82	**0109**	W0109	5,000	.050	340	**0123†**	W0123†
50	.50	92	**0110**	W0110	7,500	.041*	420	4190†	W4190†
75	.41	105	**0111**	W0111	10,000	.035*	560	**4191†**	W4191†
100	.35	102	**0112**	W0112	12,500	.031*	480	4192†	W4192†
125	.32	110	**0113**	W0113	15,000	.029*	490	4193†	W4193†
150	.29	130	0113A	W0113A					

*Rating on metal panel. †Silicone-ceramic coating — 350V maximum; 7500 ohms = 305V

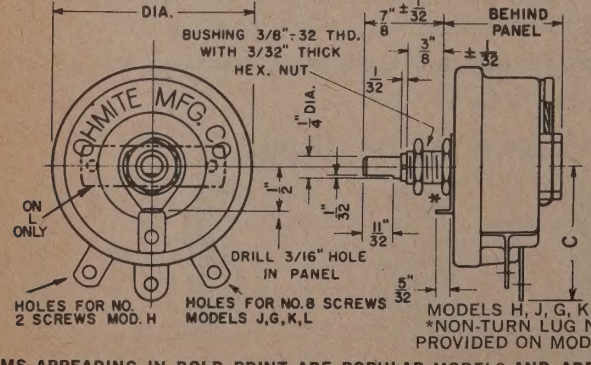
MODEL E



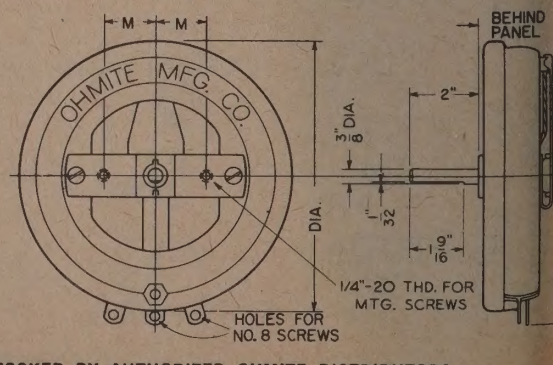
MODEL E ENCLOSED



dimensions: MODELS H, J, G, K, L*



MODELS P, N, R, T, U



[1]ITEMS APPEARING IN BOLD PRINT ARE POPULAR MODELS AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS

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HMITE vitreous enameled rheostats (potentiometers)

ITT SIZE
. "H," SERIES A

" — Depth behind panel Shaft ¼" dia. Rotation Mounts on panels up to neans of ⅜"-32 Bushing x. Nut — Non-turn lug ⅜6" hole ½" below ctr. —No. 5150 knob recom. ension is 1⅜6" — Weight

Total Ohms	Max. Amps	Steps Approx.
1	5.000	30
2	3.540	29
3	2.880	51
6	2.040	50
8	1.770	52
10	1.580	52
15	1.290	74
25	1.000	95
35	.845	107
50	.707	97
75	.575	117
100	.500	123
125	.445	155
175	.375	171
250	.316	159
350	.267	210
500	.222	245
750	.182	286
1,000	.155	305
1,500	.129	380
2,500	.100	300
3,500	.084	335
5,000	.070	380
7,500	.058	590
10,000	.050	525
15,000	.041	750
20,000	.035	750
25,000	.032	700

cone-ceramic coating, 500V c. Not listed UL Ser. A.

50 WATT SIZE
MODEL "J," SERIES A

Dia. 2⅜6" — Depth behind panel 1⅜" — Shaft ¼" dia. Rotation 300° — Mounts on panels up to ¼" by means of ⅜"-32 Bushing and Hex. Nut — Non-turn lug requires ⅜6" hole ½" below ctr. of shaft — No. 5150 knob recom. — C dimension is 1⅜6" — Weight 0.32 lb.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx.
0308	0.5	10.000	25
0309	1	7.070	44
0310	2	5.000	44
0311	4	3.530	44
0312	6	2.880	74
0313	8	2.500	82
0314	12	2.040	85
0315	16	1.760	89
0316	22	1.500	98
0317	35	1.190	126
0318	50	1.000	111
0319	80	.790	143
0320	125	.630	177
0321	150	.575	175
0322	225	.470	203
0323	300	.408	215
0324	500	.316	286
0325	800	.250	286
0326	1,000	.224	360
0327	1,600	.176	368
0328	2,500	.141	463
0329	3,500	.119	510
0330	5,000	.100	442
0331	8,000	.079	560
0332	10,000	.070	567
4210†	15,000	.058	700
4211†	20,000	.050	850
4212†	25,000	.045	950
4213†	30,000	.041	900
4214†	40,000	.035	950
4215†	50,000	.032	1130

† Silicone-ceramic coating, 750V max. Not listed UL Ser. A.

75 WATT
MODEL "G," SERIES A

Dia. 2¾" — Depth behind panel 1¾" — Shaft ¼" dia. Rotation 300° — Mounts on panels up to ¼" by means of ⅜"-32 Bushing and Hex. Nut — Non-turn lug requires ⅜6" hole ½" below ctr. of shaft — No. 5150 knob recom. — C dimension is 1²³⁄₃₂" — Weight 0.52 lb.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx.
1100	0.5	12.300	28
1101	1	8.660	27
1102	2	6.120	28
1103	3	5.000	53
1104	5	3.880	54
1105	7.5	3.160	51
1106	10	2.740	55
1107	16	2.170	131
1108	25	1.730	113
1109	50	1.230	143
1110	75	1.000	134
1111	100	.866	180
1112	200	.612	186
1113	300	.500	217
1114	400	.433	230
1115	500	.388	291
1116	750	.316	345
1117	1,000	.274	351
1118	1,500	.224	434
1119	2,000	.194	450
1120	2,500	.173	448
1121	5,000	.123	590
1122	7,500	.100	544
1123	10,000	.087	568

100 WATT
MODEL "K," SERIES A

Dia. 3⅛" — Depth behind panel 1¾" — Shaft ¼" dia. Rotation 300° — Mounts on panels up to ¼" by means of ⅜"-32 Bushing and Hex. Nut — Non-turn lug requires ⅜6" hole ½" below ctr. of shaft — No. 5150 knob recom. — C dimension is 1²³⁄₃₂" — Weight 0.64 lb.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx
0440	0.5	14.100	33
0441	1	10.000	33
0442	2	7.070	33
0443	3	5.750	30
0444	5	4.470	57
0445	7.5	3.650	60
0446	10	3.160	57
0447	16	2.500	124
0448	25	2.000	107
0449	50	1.410	135
0450	75	1.150	158
0451	100	1.000	168
0452	200	.707	213
0453	300	.575	259
0454	400	.500	270
0455	500	.447	269
0456	750	.365	319
0457	1,000	.316	330
0458	1,500	.258	402
0459	2,000	.224	417
0460	2,500	.200	515
0461	5,000	.141	560
0462	7,500	.115	495
0463	10,000	.100	673

150 WATT
MODEL "L," SERIES A

Dia. 4" — Depth behind panel 2" — Shaft ¼" diameter. Rotation 300° — Mounting for panels up to ¼", ⅜"-32 Bushing and Hex. Nut or two 10-32x¾" flat head screws, mounting centers ⅞" each side of center of shaft on line perpendicular to center terminal. — Stock No. 5150 knob recom. — C dimension is 2³⁄₃₂" — Weight 1.1 lbs.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx.
0524	0.5	17.300	28
0525	1	12.300	44
0526	2	8.650	43
0527	3	7.070	74
0528	5	5.480	78
0529	7.5	4.470	81
0530	10	3.880	77
0531	15	3.163	130
0532	25	2.450	114
0533	35	2.070	125
0534	50	1.735	142
0535	75	1.415	170
0536	100	1.225	177
0537	150	1.000	215
0538	200	.865	229
0539	250	.775	285
0540	350	.655	315
0541	500	.548	366
0542	750	.447	335
0543	1,250	.346	453
0544	1,800	.288	497
0545	2,250	.259	511
0546	3,000	.224	526
0547	4,500	.182	630
0548	7,500	.141	894
0549	10,000	.122	929

/ATT
L "P," SERIES A

— Depth behind panel Shaft ⅜" dia. Rotation Mounting for panels up , two ¼"-20 x 1½" flat crews, mounting centers each side of center of center line of cross-bar. No. 5105 Knob Recom. — C dimension is 2³½" ht 2 lbs.

Total Ohms	Max. Amps	Steps Approx.
1.0	15.000	42
2.0	10.600	42
3.0	8.660	43
4.0	7.500	57
5.0	6.710	57
7.5	5.490	61
10.0	4.740	103
15.0	3.870	109
25.0	3.000	115
50.0	2.120	183
75.0	1.730	192
100	1.500	268
150	1.220	256
200	1.060	337
300	.866	323
400	.750	343
700	.567	484
900	.500	493
1,200	.433	520
1,500	.387	647
1,750	.358	603
2,000	.336	650
2,500	.300	652

300 WATT
MODEL "N," SERIES A

Dia. 6" — Depth behind panel 2⅜" — Shaft ⅜" dia. Rotation 320° — Mounting for panels up to 1¼", two ¼"-20 x 1½" flat head screws, mounting centers (M) 1⅜6" each side of center of shaft on center line of cross-bar. — Stock No. 5105 Knob Recommended — C dimension is 3⅞6" — Weight 2.6 lbs.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx.
0650	1.0	17.320	50
0651	2.0	12.240	52
0652	3.0	10.000	52
0653	4.0	8.660	78
0654	5.0	7.750	78
0655	7.5	6.320	72
0656	10.0	5.480	78
0657	15.0	4.470	144
0658	25.0	3.460	135
0659	50.0	2.450	218
0660	75.0	2.000	225
0661	100	1.730	285
0662	150	1.410	342
0663	200	1.220	363
0664	300	1.000	424
0665	400	.866	454
0666	700	.655	504
0667	900	.578	528
0668	1,200	.500	546
0669	1,500	.447	678
0670	1,750	.414	626
0670A	2,000	.387	700
0671	2,500	.346	708

500 WATT
MODEL "R"

Dia. 8" — Depth behind panel 2⅛" — Shaft ⅜" dia. Rotation 325° — Mounting for panels up to 1¼", two ¼"-20 x 1½" flat head screws, mounting centers (M) 1½" each side of center of shaft on center line of cross-bar. — Stock No. 5105 Knob Recommended — C dimension is 4⅝" — Weight 4 lbs.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx.
0849	1.0	22.300	69
0850	1.5	18.200	79
0851	2.0	15.800	75
0852	2.5	14.100	76
0853	3.0	12.900	78
0854	4.0	11.200	73
0855	5.0	10.000	103
0856	8.0	7.900	103
0857	12.5	6.300	103
0858	16.0	5.600	188
0859	25.0	4.470	204
0860	40.0	3.540	206
0872	50.0	3.160	206
0861	80.0	2.520	327
0862	125	2.000	327
0863	175	1.690	423
0864	250	1.410	488
0865	325	1.240	500
0866	500	1.000	609
0867	750	.817	727
0868	1,000	.707	771
0869	1,500	.577	935
0870	2,000	.500	980
0871	2,500	.447	968

750 WATT
MODEL "T"

Dia. 10" — Depth behind panel 3" — Shaft ⅜" dia. Rotation 330° — Mounting for panels up to 1¼", two ¼"x20 x 1½" flat head screws, mounting centers (M) 1⅞" each side of center of shaft on center line of cross-bar. — Stock No. 5105 Knob Recommended — C dimension is 5⅛" — Weight 7.6 lbs.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx.
1300	1.0	27.400	71
1301	1.5	22.300	91
1302	2.0	19.400	103
1303	2.5	17.300	99
1304	3.0	15.800	94
1305	4.0	13.600	91
1306	5.0	12.200	102
1307	8.0	9.650	98
1308	10.0	8.650	138
1309	12.5	7.750	138
1310	16.0	6.820	140
1311	25.0	5.470	138
1312	50.0	3.870	248
1313	80.0	3.060	250
1314	100	2.740	248
1315	160	2.170	446
1316	200	1.940	442
1317	300	1.580	540
1318	400	1.370	583
1319	600	1.117	684
1320	750	1.000	686
1321	1,200	.791	870
1322	1,800	.646	1,042
1322A	2,000	.610	900
1323	2,500	.547	1,170

1000 WATT
MODEL "U"

Dia. 12" — Depth behind panel 3" — Shaft ⅜" dia. Rotation 335° — Mounting for panels up to 1¼", two ¼"-20 x 1½" flat head screws, mounting centers (M) 3" each side of center of shaft on center line of cross-bar. — Stock No. 5105 Knob Recommended — C dimension is 6⅜" — Weight 10 lbs.

Catalog No.[1]	Total Ohms	Max. Amps	Steps Approx.
1450	1.0	31.600	86
1451	1.5	25.800	89
1452	2.0	22.400	115
1453	2.5	20.000	122
1454	3.0	18.300	125
1455	4.0	15.800	118
1456	5.0	14.100	122
1457	8.0	11.200	116
1458	10.0	10.000	114
1459	12.5	8.950	181
1460	16.0	7.900	164
1461	25.0	6.330	181
1462	50.0	4.470	321
1463	75.0	3.650	301
1464	100	3.160	321
1465	175	2.390	520
1466	225	2.110	608
1467	300	1.830	640
1468	400	1.580	685
1469	500	1.410	687
1470	750	1.150	806
1471	1,000	1.000	855
1472	1,500	.816	1,026
1473	2,500	.633	1,097

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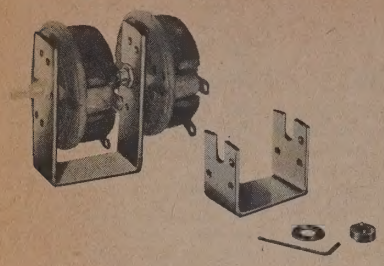
OHMITE rheostat tandem coupling kits



Tandem rheostat assemblies can be ordered from the factory or assembled by the user with these kits which permit assembly of two units. Each kit consists of a steel "U" frame, a coupling with set screw, mica washer, Allen wrench and instructions.

Rheostat shafts are joined by the coupling which is fastened to the shaft of the rear unit. Projections on the coupling fit a recess on the rear of the hub of the front unit.

Three kits are available as follows:

Cat. No. 6532—Mounts Models H or J, also modates Models H, J, G, K or L in rear posit

Cat. No. 6533—Mounts G, K or L units, also modates Models H, J, G, K or L in rear p

Cat. No. 6591—Mounts Model E units only.

Catalog No.	Max. Panel	Weight
6532	5/32"*	.17 lb.
6533	1/8"*	.41
6591	1/16"	.044

*Using No. 5150 Knob.

black bakelite knobs

Catalog No.	Description	Knob Dia.	Hole Dia.	Net 1-2
5102	Bar Knob, 2¼" long		¼"	$ .53
5103	Bar Knob, 1¼" long		¼"	.22
5104	Handwheel with Pointer	3¼"	⅜"	1.45
5105	Handwheel without Pointer	3¼"	⅜"	1.22
5106	Handwheel with Pointer	3¼"	¼"	1.45
5107	Handwheel without Pointer	3¼"	¼"	1.22
5109	Finger-Grip with Pointer	1⅝"	¼"	.93
5110	Finger-Grip without Pointer	1⅝"	¼"	.86
5111	Finger-Grip with Pointer	2⅜"	¼"	1.39
5112	Finger-Grip without Pointer	2⅜"	¼"	1.27
*5115	Bar Knob, 4¾" long		⅜"	3.15
5116	Bar Knob, 1½" long		¼"	.53
5150	Finger-Grip	1½"	¼"	.30
5151	Finger-Grip	¾"	⅛"	.30
5152A	Like 5104 but shorter pointer	3¼"	¼"	1.68

*Requires pin and tapped hole in shaft.

rheostat dials

Handsomely finished dials for Ohmite rheostats and other apparatus, feature bright figu lines on etched black background. Divisions marked from 0 to 100 indicate approximate age of rheostat resistance in circuit.

Catalog No.	For Rheostat	Dial Dia.	Recom'd. Knobs*	Net 1-2
5007	C, E	1¼"	5151	$ .30
5000	H, J, G, K, L	2¾"	5150, 5116, 5103	.30
5001	P, N, R, T, U	5½"	5104, 5106	.74

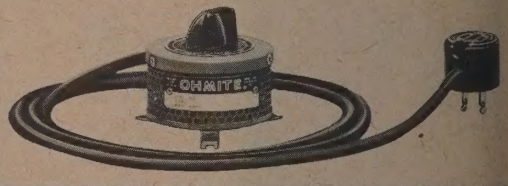
*See Bakelite Knobs above

heat control rheostats

A convenient control for regulating the temperature of soldering irons, melting pots (such as those used for solder, wax, potting material) or other heater loads. With soldering irons, it permits quick adjustment o operating heat for the type of job and grade of solder.

Wattage of Device To Be Controlled		Rheostat Control	Cage Dimensions		Net Weight	Net Price
Watts	Volts	Catalog No.	Dia.	Height	lbs.	1 Qty.
40— 65	115	SRC65	3⅛"	2"	.58	$14.45
85—100	115	SRC100	3⅛"	2"	.58	14.45
120—150	115	SRC150	3¾"	2⅜"	.93	16.40
175—220	115	SRC220	3¾"	2⅜"	1.05	20.00
300—350	115	SRC350	4½"	2⅜"	1.63	22.25
430—500	115	SRC500	7½"	3¼"	2.25	27.50

Consists of vitreous enameled rheostat housed in a perforated met with knob and dial. Supplied with series plug and six feet of hea cord. The cord from the heater load is plugged into the series plu is then plugged into a receptacle. Order in accordance with expecte mum wattage load.



high wattage t-pad and l-pad attenuators

Stepless control of speaker volume with essentially constant impedance is provided by Ohmite attenuators. In use, these units are interposed between high power amplifiers and speaker or speakers.

Housed in grey, perforated metal cage 3⅛" high, 2⅝" wide and extending 4¼" behind panel for L-pads; 6¼" for T-pads. Shaft ¼" and bushing ⅜" diameter; bushing length is for ¼" maximum panel (specify greater thicknesses). Mounted with two 10/32 screws (supplied) on 2⅝" vertical centers.

T-PAD ATTENUATORS			L-PAD ATTENUATOR	
25 WATT Avg. Wt. 1.44 lbs.			25 WATT Avg. Wt. 1 lb.	
Catalog No.	Line Impedance in Ohms	Net Price 1 Qty.	Catalog No.	Line Impedance in Ohms
3001	15	$28.10	3201	15
3002	50	28.10	3202	50
3003	200	28.10	3203	200
3004	500	28.10	3204	500
50 WATT Avg. Wt. 1.88 lbs.			50 WATT Avg. Wt. 1.25 lbs.	
3101	15	$28.65	3301	15
3102	50	28.65	3302	50
3103	200	28.65	3303	200
3104	500	28.65	3304	500

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Net

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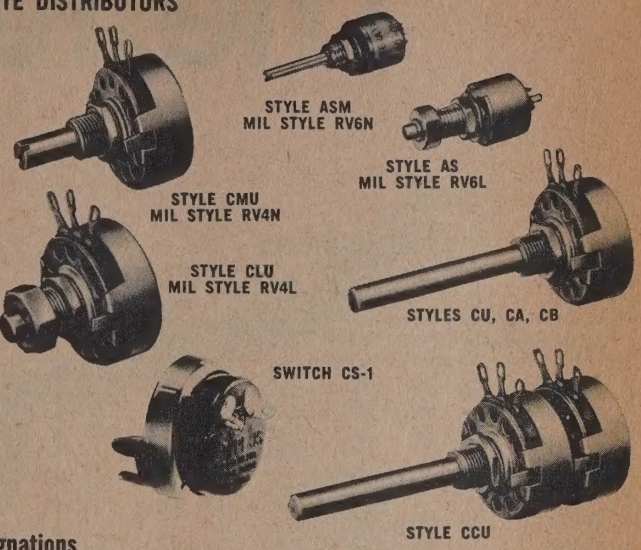
HMITE molded composition potentiometers

AVAILABLE ONLY FROM OHMITE DISTRIBUTORS

molded composition potentiometers are used in commercial and electronic applications where high quality and dependable per- e are important. Type AB is rated 2 watts at 70°C ambient and is e with ⅞" slotted shaft (CMU), 2" unslotted shaft (CU, CA, CB, CCU) king type bushing with slotted shaft (CLU). Type AS is a miniature ed ½ watt. It is available with locking type bushing and slotted tyle AS) and standard bushing with longer (slotted) shaft for knob (Style ASM).

use the resistance element is a thick, solid-molded ring — not a film or paint-type resistor — longer life and smoother operation ined. This is due also to the molded composition contact. Units are l splash proof, fungus and corrosion resistant and meet the require- of military specification MIL-R-94. Styles CMU, CLU, AS and ASM respectively to MIL-R-94, Styles RV4N, RV4L, RV6L and RV6N.

es and tapers are listed in table. Dimensions of all stock units are below. A SPST switch for single AB controls can be supplied (see able).



"POTS" — MIL Units are Stamped with MIL and Commercial Designations

nce	TYPE AB (1 5/32" Dia.) Rated 2 Watts								TYPE AS (½" Dia.) Rated ½ Watt			
	Single Unit ⅞" Shaft		Single Unit 2" Shaft			Locking		Dual	Miniature Locking		Miniature ⅞" Shaft	
	Style CMU Linear	MIL Designation	Style CU Linear	Style CA CW log	Style CB CCW log	Style CLU Linear	MIL Designation	Style CCU Linear	Style AS Linear	MIL Designation	Style ASM Linear	MIL Designation
0	CMU5001	500A	CU5001			CLU5001	500A					
0	CMU1011	101A	CU1011			CLU1011	101A		AS3601	101A	AMS6661	101A
0	CMU1511	151A	CU1511			CLU1511	151A					
0	CMU2511	251A	CU2511			CLU2511	251A		AS3602	251A	ASM6662	251A
0	CMU3511	351A	CU3511			CLU3511	351A					
0	CMU5011	501A	CU5011			CLU5011	501A		AS3603	501A	ASM6663	501A
0	CMU7511	751A	CU7511			CLU7511	751A					
0	CMU1021	102A	CU1021			CLU1021	102A	Resistance Shown is for Each Unit	AS3604	102A	ASM6664	102A
0	CMU1521	152A	CU1521			CLU1521	152A					
0	CMU2521	252A	CU2521			CLU2521	252A		AS3605	252A	ASM6665	252A
0	CMU3521	352A	CU3521			CLU3521	352A					
0	CMU5021	502A	CU5021			CLU5021	502A		AS3606	502A	ASM6666	502A
0	CMU7521	752A	CU7521			CLU7521	752A					
0	CMU1031	103A	CU1031		CB1031	CLU1031	103A	CCU1031	AS3607	103A	ASM6667	103A
0	CMU1531	153A	CU1531			CLU1531	153A					
0	CMU2531	253A	CU2531		CB2531	CLU2531	253A	CCU2531	AS3608	253A	ASM6668	253A
0	CMU3531	353A	CU3531			CLU3531	353A					
0	CMU5031	503A	CU5031		CB5031	CLU5031	503A	CCU5031	AS3609	503A	ASM6669	503A
0	CMU7531	753A	CU7531			CLU7531	753A					
g.	CMU1041	104A	CU1041	CA1041		CLU1041	104A	CCU1041	AS3610	104A	ASM6670	104A
g.	CMU1541	154A	CU1541			CLU1541	154A					
g.	CMU2541	254A	CU2541	CA2541		CLU2541	254A	CCU2541	AS3611	254A	ASM6671	254A
g.	CMU3541	354A	CU3541			CLU3541	354A					
g.	CMU5041	504A	CU5041	CA5041		CLU5041	504A	CCU5041	AS3612	504A	ASM6672	504A
g.*	CMU7542	754B	CU7542			CLU7542	754B					
g.*	CMU1052	105B	CU1052	CA1052		CLU1052	105B	CCU1052	AS3613	105B	ASM6673	105B
g.*	CMU1552	155B	CU1552			CLU1552	155B					
g.*	CMU2052	205B	CU2052			CLU2052	205B		AS3684	205B	ASM6674	205B
g.*	CMU2552	255B	CU2552	CA2552		CLU2552	255B		AS3614	255B	ASM6675	255B
g.*	CMU3552	355B	CU3552			CLU3552	355B					
g.*	CMU5052	505B	CU5052			CLU5052	505B		AS3615	505B	ASM6676	505B
t	.064 lb.		.084 lb.			.070 lb.		.123 lb.	.017 lb.		.017 lb.	

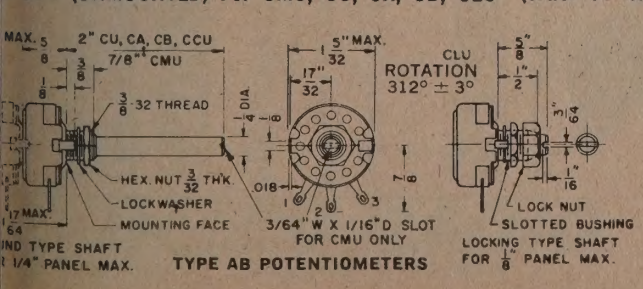
Cat. No. Prefix RV4N-AYSD-

Cat. No. Prefix RV4L-AYSA-

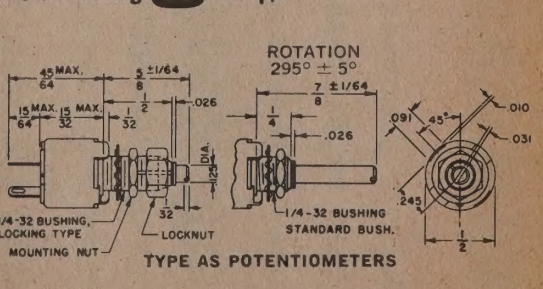
Cat. No. Prefix RV6L-AYSA-

Cat. No. Prefix RV6N-AYSD-

H CS-1 (UNMOUNTED) For CMU, CU, CA, CB, CLU (order CS-1X for potentiometers having stamp).



TYPE AB POTENTIOMETERS

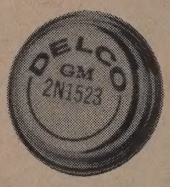


TYPE AS POTENTIOMETERS

The Kokomoans

TRANSISTORS

Type	Ic	VCBO	VCEO	hFE @ Ic Amps		VCE (sat) @ Ic Volts @ Amps	
NPN SILICON TO-36, HIGH VOLTAGE							
2N2580	10	400	400	10/40 4 min	5 10	0.7	5.0
2N2580M†	10	400	400	10/40	5	0.7	5.0
2N2581	10	400	400	25/65 10 min	5 10	1.0	10.0
2N2582	10	500	500	10/40 4 min	5 10	0.7	5.0
2N2583	10	500	500	25/65 10 min	5 10	1.0	10.0
2N3079	10	200	200	10/50	5	0.7	5.0
2N3080	10	300	300	10/50	5	0.7	5.0
NPN SILICON TO-3 HIGH VOLTAGE							
DTS-103	15	80⑧	60	20/55	5.0	1.8	10
DTS-104	15	80⑥	60	50/120	5.0	1.5	10
DTS-105	15	100⑥	80	20/55	5.0	1.8	10
DTS-106	15	110⑥	90	20/55	5.0	1.8	10
DTS-107	15	120⑥	100	20/55	5.0	1.8	10
DTS-401	2.0	400	400	20/100	0.5	.8	1.0
DTS-402	3.5	400	400			.8	1.0
DTS-410	3.5	200	200	30/90	1.0	0.8	1.0
DTS-411	3.5	300	300	30/90	1.0	0.8	1.0
DTS-413	2.0	400	400	20/80	0.5	0.8	0.5
DTS-423	3.5	400	400	30/90	1.0	0.8	1.0
DTS-423M†	3.5	400	400	30/90	1.0	0.8	1.0
DTS-424	3.5	500	500	30/90	1.0	.8	1.0
DTS-425	3.5	500	500	30/90	1.0	.8	1.0
DTS-430	5	400	400	15/45	2.5	0.9	2.5
DTS-431	5	400	400	15/35	2.5	0.7	2.5
DTS-431M†	5	400	400	15/35	2.5	0.7	2.5
DTS-701	0.5	—	800	20/	.15	—	—
DTS-702	3	1200⑥	1000	2.5/	2.0	—	—
2N3902	3.5	400	400	30/90	1.0	.8	1.0
JAN 2N3902	3.5	700⑧	400	30/90	1.0	.8	1.0
2N5157	3.5	700⑨	500	30/90	1.0	.8	1.0
2N5241	5	400	400	15/35	2.5	0.7	2.5
PNP GERMANIUM TO-36 ALLOY BASE							
2N173	15	60	45	35/70	5.0	1.0	12.0
2N174	15	80	55	25/50	5.0	0.9	12.0
JAN 2N174A	15	80	40	40/80	1.2	0.7	12.0
2N277	15	40	25	35/70	5.0	0.3④	12.0
2N278	15	50	30	35/70	5.0	1.0	12.0
2N441	15	40	25	20/40	5.0	0.3④	12.0
2N442	15	50	30	20/40	5.0	0.3④	12.0
2N443	15	60	45	20/40	5.0	1.0	12.0
2N1099	15	80	55	35/70	5.0	0.7	12.0
2N1100	15	100	65	25/50	5.0	0.7	12.0
2N1358	15	80	40	40/80	1.2	0.7	12.0
2N1358A	15	100	60	25/50	5.0	0.7	12.0
JAN 2N1358	15	80	40	25/50	5.0	0.7	12.0
2N1412	15	100	65	25/50	5.0	0.7	12.0
JAN 2N1412A	15	100	70	25/50	5.0	0.6	12.0
2N1518	25	50	40	15/60	15	0.7	25
2N1519	25	80	60	15/60	15	0.7	25
2N1520	35	50	40	17/68	15	0.6	35
2N1521	35	80	60	17/68	15	0.6	35
2N1522	50	50	40	25/100	15	0.5	50
2N1523	50	80	60	25/100	15	0.5	50
2N1970	15	100	50	17/40	5.0	1.0	12.0
2N2075	15	80	65	20/40	5.0	0.7	12.0
2N2076	15	70	55	20/40	5.0	0.7	12.0
2N2077	15	50	45	20/40	5.0	0.9	12.0
2N2078	15	40	25	20/40	5.0	0.9	12.0
2N2079	15	80	65	35/70	5.0	0.7	12.0
2N2080	15	70	55	35/70	5.0	0.7	12.0
2N2081	15	50	45	35/70	5.0	0.9	12.0
2N2082	15	40	25	35/70	5.0	0.9	12.0
JAN 2N2210				use JAN 2N1412A			
2N2490	15	70	50	20/40	5.0	0.7	12.0
2N2491	15	60	40	35/70	5.0	0.7	12.0
2N2492	15	80	65	25/50	5.0	0.5	12.0
2N2493	15	100	75	25/50	5.0	0.5	12.0



TRANSISTORS

Type	Ic	VCBO	VCEO	hFE @ Ic Amps		VCE (sat) @ Ic Volts @ Amps	
PNP GERMANIUM TO-37 NU-BASE							
2N3212	5	100⑥	80	30/90	3.0	0.5	5.0
2N3213	5	80⑥	60	30/90	3.0	0.5	5.0
2N3214	5	60⑥	40	30/90	3.0	0.5	5.0
2N3215	5	40⑥	30	25/100	3.0	0.5	5.0
PNP GERMANIUM TO-41 NU-BASE							
2N1073	10	40②	40②	20/60	5.0	0.6	5.0
2N1073A	10	80②	80②	20/60	5.0	0.6	5.0
2N1073B	10	120③	120③	20/60	5.0	0.6	5.0
PNP GERMANIUM TO-3 NU-BASE							
2N5155	25	140⑥	120⑦	25/100	8.0	0.9	25.0
DTG-110A	25	110⑥	70	50/300	1.0	0.5	5.0
DTG-110B	25	90⑥	40⑦	65/300	1.0	0.5	5.0
DTG-600	25	90⑥	50⑦	50/115⑤	5.0	0.75	25
DTG-601	25	90⑥	60⑦	50/115⑤	5.0	0.75	25
DTG-602	25	100⑥	70⑦	50/115⑤	5.0	0.75	25
DTG-603	25	90⑥	80⑦	50/	5.0	0.75	25.0
DTG-603M†	25	90⑥	80⑦	50/	5.0	0.75	25.0
DTG-1200	15		120⑦	27.5	8.0	0.5	12
DTG-1010	15	325⑥	110⑦	100⑤	8.0	0.5	12
DTG-1110	15	200⑥	80⑦			0.5	10
DTG-2000	25	60⑥	30⑦	25/	8.0	0.9	25
DTG-2100	25	80⑥	60⑦	25/	8.0	0.9	25
DTG-2200	25	100⑥	80⑦	25/	8.0	0.9	25
DTG-2300	25	120⑥	100⑦	25/	8.0	0.9	25
DTG-2400	25	140⑥	120⑦	25/	8.0	0.9	25
DTG-2400M†	25	140⑥	120	25/125	10.0	0.9	25
PNP GERMANIUM TO-3 ALLOY BASE							
2N255A	5	15	15③	25③	.450		
2N301	3	40	32	62.5	.700		
2N301A	3	60	32	62.5	.700		
2N379	7	80⑨	40	20/90	2.0	1.0	2.0
2N380	7	60⑨	30	20/90	2.0	1.0	2.0
2N392	5	60	45	60/150	3.0	0.5	3.0
2N456A	7	40	20	30/90	5.0	0.5	5.0
2N456B	7	40	30	30/90	5.0	0.5	5.0
2N457A	7	60	30	30/90	5.0	0.5	5.0
2N457B	7	60	40	30/90	5.0	0.5	5.0
2N458A	7	80	40	30/90	5.0	0.5	5.0
2N458B	7	80	45	30/90	5.0	0.5	5.0
2N554	5	15	30	30	1.0		
2N669	3	30⑧	30①	250④	.500	0.4⑤	3.0
2N1011	5	80	40	30/75	3.0	1.5	3.0
2N1021	7	100	50	30/90	5.0	0.5	5.0
2N1021A	7	100	50	30/90	5.0	0.5	5.0
2N1022	7	120	50	30/90	5.0	0.5	5.0
2N1022A	7	120	55	30/90	5.0	0.5	5.0
2N1159	5	80	60	30/75	3.0	1.0	3.0
2N1160	7	80	60	20/50	5.0	1.0	5.0
2N1168	5	50	30	60⑤	3.0	.25⑥	3.0
2N1534	5	40	20	35/70	3.0	1.2	3.0
2N1535	5	60	30	35/70	3.0	1.2	3.0
2N1536	5	80	40	35/75	3.0	1.2	3.0
2N1539	5	25	20	50/100	3.0	0.3	.300
2N1540	5	40	30	50/100	3.0	0.3	.300
2N1541	5	55	40	50/100	3.0	0.3	.300
2N1542	5	65	50	50/100	3.0	0.3	.300
2N1543	5	80	60	50/100	3.0	0.3	.300
2N1544	5	25	20	75/150	3.0	0.2	.300
2N1545	5	40	30	75/150	3.0	0.2	.300
2N1546	5	55	40	75/150	3.0	0.2	.300
2N1547	5	65	50	75/150	3.0	0.2	.300
2N5156	10	100	60⑦	25/60	5.0	1.0	10
DTG-110	7	40	40⑧	74/250	1.0	5.0	2.0

① VCES ② VCER ③ Power gain db ④ Max. ⑤ Typical
⑥ VCEX ⑦ VCE SUS ⑧ @ 90° C-REB=100 ohm
⑨ VCBX *RSAT † Military Type Spec.

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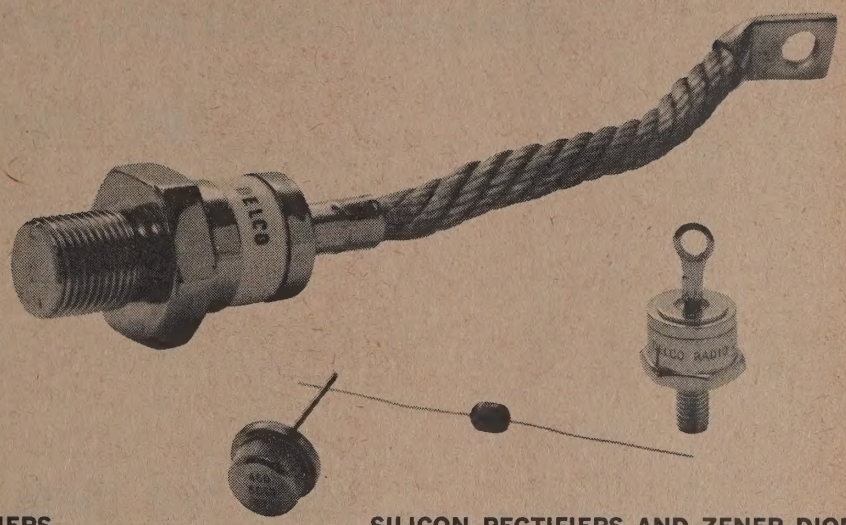

SILICON RECTIFIERS

E	MAXIMUM FORWARD CURRENT	PEAK REVERSE VOLTAGE	PEAK TRANSIENT REVERSE VOLTAGE	REVERSE CURRENT	FORWARD VOLTAGE DROP	REPETITIVE PEAK FORWARD CURRENT
1.5 AMPERE-AXIAL LEAD						
02	1.5A	200V	—	10 μA	0.9V	10A
04	1.5A	400V	—	10 μA	0.9V	10A
06	1.5A	600V	—	10 μA	0.9V	10A
08	1.5A	800V	—	10 μA	0.9V	10A
10	1.5A	1000V	—	10 μA	0.9V	10A
12	1.5A	1200V	—	10 μA	0.9V	10A
15 AMPERE STUD MOUNT						
08	15A	50V	—	10 mA	1.5V	70A
09	15A	100V	—	10 mA	1.5V	70A
10	15A	200V	—	10 mA	1.5V	70A
18 AMPERE PRESS FIT						
91	25A	50V	—	10 mA	0.7V	110A
92	25A	100V	—	10 mA	0.7V	110A
93	25A	200V	—	8 mA	0.7V	110A
160 AMPERE STUD BASE						
63	160A	300V	400V	15 mA	1.45V	2500A(20)
64	160A	400V	525V	15 mA	1.45V	2500A(20)
65	160A	500V	650V	15 mA	1.45V	2500A(20)
66	160A	600V	800V	12 mA	1.45V	2500A(20)
67	160A	700V	925V	12 mA	1.45V	2500A(20)
68	160A	800V	1050V	10 mA	1.45V	2500A(20)
69	160A	900V	1200V	10 mA	1.45V	2500A(20)
200 AMPERE STUD BASE						
03	200A	300V	400V	15 mA	1.4V	3500A(20)
04	200A	400V	525V	15 mA	1.4V	3500A(20)
05	200A	500V	650V	15 mA	1.4V	3500A(20)
06	200A	600V	800V	12 mA	1.4V	3500A(20)
07	200A	700V	925V	12 mA	1.4V	3500A(20)
08	200A	800V	1050V	10 mA	1.4V	3500A(20)
09	200A	900V	1200V	10 mA	1.4V	3500A(20)

SILICON RECTIFIERS AND ZENER DIODES

TYPE	MAXIMUM FORWARD CURRENT	PEAK REVERSE VOLTAGE	PEAK TRANSIENT REVERSE VOLTAGE	REVERSE CURRENT	FORWARD VOLTAGE DROP	REPETITIVE PEAK FORWARD CURRENT
250 AMPERE STUD BASE						
DRS243	250A	300V	400V	15 mA	1.4V	4500A(20)
DRS244	250A	400V	525V	15 mA	1.4V	4500A(20)
DRS245	250A	500V	650V	15 mA	1.4V	4500A(20)
DRS246	250A	600V	800V	12 mA	1.4V	4500A(20)
DRS247	250A	700V	925V	12 mA	1.4V	4500A(20)
DRS248	250A	800V	1050V	10 mA	1.4V	4500A(20)
DRS249	250A	900V	1200V	10 mA	1.4V	4500A(20)
DRS250	250A	800V	1050V	10 mA	1.55V	4500A(20)
DRS251	250A	1000V	1300V	10 mA	1.55V	4500A(20)
DRS252	250A	1200V	1600V	10 mA	1.55V	4500A(20)
DRS253	250A	1400V	2000V	10 mA	1.55V	4500A(20)
DRS254	250A	1600V	2400V	10 mA	1.55V	4500A(20)

TYPE	NOMINAL ZENER VOLTAGE	TEST CURRENT (mA)	MAX. DC ZENER CURRENT	REVERSE LEAKAGE CURRENT*
2 WATT ZENER DIODES-AXIAL LEAD				
2DR6.8Z	6.8	88	294 mA	300 μA
2DR8.2Z	8.2	73	244 mA	75 μA
2DR10Z	10	60	200 mA	25 μA
2DR12Z	12	50	167 mA	5 μA
2DR15Z	15	40	133 mA	5 μA
2DR18Z	18	33	111 mA	5 μA
2DR20Z	20	30	100 mA	5 μA
2DR24Z	24	25	83 mA	5 μA
2DR27Z	27	22	74 mA	5 μA

TYPE	MIN. ZENER VOLTAGE Vz @ 0.25 Adc	MAX. ZENER VOLTAGE PULSE WIDTH=1MS	MAXIMUM CLAMPING FACTOR	MAXIMUM REVERSE CURRENT I_R(mA)
30 KW POWER ZENERS—DO-9 CASE				
DPZ30-30R	30	43 Vdc @ 700 A	1.4	5.0
DPZ30-33R	33	47 Vdc @ 640 A	1.4	5.0
DPZ30-36R	36	52 Vdc @ 580 A	1.4	5.0
DPZ30-39R	39	56 Vdc @ 535 A	1.4	5.0
DPZ30-43R	43	62 Vdc @ 485 A	1.4	5.0
DPZ30-45R	45	65 Vdc @ 460 A	1.4	5.0
DPZ30-47R	47	68 Vdc @ 440 A	1.4	5.0
DPZ30-50R	50	72 Vdc @ 420 A	1.4	5.0

(20) ½ Cycle non-repetitive *Read @ 75% Vz

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UNIVERSAL REPLACEMENT TRANSISTORS

dependable low-cost germanium and silicon transistors lly designed as general replacements for most types of transistors used in Radio and TV Sets and other home entertainment devices.

o.	Unit Type	Application(s)	Configuration	Use	Max. Current	Max. Wattage	Max. Coll/Emit. Volts	Sugg. List Price
	Germanium	Mixer/Oscillator Converter, RF & IF Amplifiers (AM Radio)	TO-5	PNP	100MA	150MW	12V	$2.00
	Germanium	AF Amplifier	TO-5	PNP	200MA	200MW	20V	1.70
	Germanium	AF Power Amplifier	TO-3	PNP	3A	25W	50V	2.95
	Germanium	AF High Power Amplifier	TO-36	PNP	12A	50W	50V	4.90
	Germanium	Mixer/Oscillator Converter, RF & IF Amplifiers (AM Radio)	TO-5	NPN	100MA	150MW	12V	2.80
	Germanium	Mixer/Oscillator Converter, RF Amplifier (AM Radio)	OV-5	NPN	20MA	65MW	15V	3.05
	Germanium	IF Amplifier (AM Radio)	OV-5	NPN	20MA	65MW	15V	2.95
	Germanium	AF Amplifier	TO-5	NPN	200MA	150MW	20V	2.15
	Germanium	Mixer/Oscillator Converter, RF & IF Amplifiers (AM Radio), FM-IF Amplifier	RO-73	PNP	6MA	80MW	12V	2.10
	Germanium	Mixer/Oscillator Converter, RF & IF Amplifiers (AM-FM Radio)	TO-72	PNP	10MA	70MW	30V	2.10
	Silicon	Mixer/Oscillator Converter, RF & IF Amplifiers (AM Radio), AF Amplifier	RO-67	NPN	100MA	200MW	25V	2.00
	Silicon	Mixer/Oscillator Converter, RF & IF Amplifiers (FM Radio), VHF Tuner, UHF Oscillator	RO-67	NPN	25MA	200MW	30V	2.55
	Silicon	AF Power Amplifier (Line Operated Units)	TO-66	NPN	300MA	10W	300V	3.90
MP	Germanium	AF Power Amplifier. Matched Pairs of GE-3	TO-3	PNP	3A	25W	50V	5.90
	Silicon	AF Power Amplifier	TO-3	NPN	15A	115W	100V	5.85
MP	Silicon	AF Power Amplifier. Match Pairs of GE-14	TO-3	NPN	15A	115W	100V	11.70
	Germanium	AF High Power Amplifier	TO-3	PNP	10A	90W	60V	5.25
	Silicon	FM, RF, & Oscillator, TV and Other Low-Noise Circuits 50-100 mHz	RO-97A	NPN	100MA	500MW	30V	2.40
	Silicon	AF Amplifier, Output, or Oscillator	TO-5	NPN	500MA	800MW	80V	2.40
	Silicon	AF Amplifier, Output Oscillator — High Current	TO-3	NPN	4A	90W	50V	5.10
	Silicon	RF & IF Amplifiers, Oscillator, Audio, and Applications to 50 mHz	TO-18	NPN	500MA	500MW	25V	1.85
	Silicon	RF & IF Amplifiers, Oscillator, Audio, and Applications to 50 mHz	TO-5	PNP	500MA	500MW	25V	1.90
	Silicon	RF & IF Amplifier, Oscillator (AM-FM) to 100 mHz	RO-110	PNP	500MA	500MW	25V	1.70
	Silicon	Class A & B AF Power Amplifiers, Communications, Hi-Fi	TO-66	NPN	2A	15W	40V	4.20
MP	Silicon	Class A & B AF Power Amplifiers, etc. Matched Pairs of GE-23	TO-66	NPN	2A	15W	40V	8.40
	Germanium	Horizontal & Vertical TV Sweep Circuits and Other High Voltage, High Current Use	TO-3	PNP	10A	50W	325V	12.50
	Silicon	AF Power Amplifier	TO-66	PNP	2A	20W	50V	5.20
T-1	Silicon	N Channel Field Effect Transistor for Small Signal Use	TO-92	(10MA Gate Current, 200MW)			25V	3.75

TERED JEDEC TRANSISTORS

supplement the Universal Line above. Characteristics m to JEDEC specifications.

o.	Use	Application	Sugg. List Price	Type or JEDEC No.	Use	Application	Sugg. List Price
	PNP	AF	$1.25	2N404	PNP	SW	$0.90
	NPN	IF	1.70	2N508	PNP	AF OUT	1.30
A	PNP	AF OUT	3.05	2N1415	PNP	AF SW	1.70
	PNP	AF	1.40	2N2160	*	OSC	2.75
	PNP	AF	1.20				

Unijunction

E-504A AND GE-509 UNIVERSAL RECTIFIERS

on rectifier with a 100-amp surge rating. Recommended placement for all selenium, germanium and silicon rec- used in TV receivers. The 100-amp surge rating eliminates ed for the surge limiting resistors normally required when rectifiers are used.

	PIV	I_{DC}	Sugg. List Price	Type	PIV	I_{DC}	Sugg. List Price
A	600V	1A	$1.10	GE-509	1000V	1A	$1.25

YPE IN91 GERMANIUM RECTIFIER

op hat, hermetically sealed rectifier is designed for l-purpose applications.

s 100 volts; maximum I_{DC} is 150 mA. Suggested List $1.55.

AC-U-SEL® DOUBLE/DIODES

ure double diodes for TV horizontal phase detector, ment and other applications. 7/16 x 9/16 x 3/16".

	Ifwd	Imr	Description	Max Case Temp.	Sugg. List Price
	1.1 @ 2.5V	4 @ 20V	Common cathode	85°C	$0.90
	1.1 @ 2.5V	4 @ 20V	Series connected	85°C	.90
	1.1 @ 2.5V	4 @ 20V	Common anode	85°C	.90

RYSTAL DIODES

pe	Description	Average Forward Current (ma)	Peak Reverse Voltage (volts)	Sugg. List price
4AS	General Purpose	50	75	$0.55
0	Video Detector	50	30	.55
2A	Silicon UHF Mixer	—	5	1.45
95	50 MC Detector	30	50	.55

RECTIFIERS AND CRYSTALS FOR COLOR TV

GE Selenium Rectifiers

Cat. No.	Type	Sugg. List Price
GECR-1	Focus Rect.	$3.75
GECR-2	Boosted Boost	1.65
GECR-3	Convergence	1.70

GE Quartz Crystals‡

Cat. No.	Type	Sugg. List Price
GE-41	Color burst filter	$5.60
GE-42	Color subcarrier oscillators	3.80

‡ Resonant frequency 3579.545 kc

SILICON ZENER DIODES — CASE SIZE 59

GE Type	Power Dissipation @ 25°C (Watts)	Breakdown Voltage V_Z @ I_{ZT} (Volts)	Test Current I_{ZT} (MA)	Zener Impedance Z_Z @ I_{ZT} (OHMS)	DC Zener Current I_{ZM} (MA)	Sugg. User Price
GE ZD-10-4	400 MW	10	20	17	20	$ .90
GE ZD-3.6	1 Watt	3.6	69	10	253	1.20
GE ZD-5.1	1 Watt	5.1	49	7	178	1.20
GE ZD-5.6	1 Watt	5.6	45	5	162	1.20
GE ZD-6.2	1 Watt	6.2	41	2	146	1.20
GE ZD-9.1	1 Watt	9.1	28	5	100	1.20
GE ZD-12	1 Watt	12	21	9	76	1.20
GE ZD-15	1 Watt	15	17	14	61	1.20
GE ZD-18	1 Watt	18	14	20	50	1.20
GE ZD-20	1 Watt	20	12.5	22	46	1.20
GE ZD-27	1 Watt	27	9.5	35	34	1.20

All Zeners ±10% tolerance in Voltage.
Junction operating and storage temperature −65° to 200°C.

MAINTENANCE INDUSTRIAL REPLACEMENT SEMICONDUCTORS

Cat. No.	Repetitive PRV	Max. I_{DC} @ Transient PRV	Max. I_{DC} @ Stud single Phase	Max. I_{DC} @ Peak 1 Cycle Surge	Max. Rev. Cur. (Full Cycle Av @ Full Load)	Max. Full Load Voltage Drop	Max. Oper. °C	Sugg. User Price
Silicon Rectifiers								
GEMR-1	200	350	12 A	240 A	2.0 mA	0.55 V	200°	$4.80
GEMR-2	400	—	35*A	500 A	10*mAdc	0.65*V	200°	6.90

Cat. No.	PRV and $V_{(BO)}$	Max. I_{DC} @ Temp. °C	Max. Temp. °C Oper.	Max. Temp. °C Stor.	Max. Req'd. Gate Signal @ 25°C T_J	Sugg. User Price
Silicon Controlled Rectifiers						
GEMR-3	400	35 A @ 19°C case	125°	150°	3 V, 40 mA	$8.60
GEMR-4	400	7.4 A @ 80°C case	100°	100°	3 V, 25 mA	3.80

Silicon Controlled Rectifier, Economy Flat Pack Design						
GEMR-5	200	4 A @ 75°C anode tab	110°	150°	0.8 V, 200 uAdc	1.40

Cat. No.	h_{FE} V_{CE} = 1 V I_C = 1A	V_{CEO} I_C = 1 mA	V_{CE}(sat) I_C = 1 A I_B = 50 mA	P_T 70° Tab	Sugg. User Price
Silicon Power Tab Transistor					
GEMR-6	20 min.	40 V	1.0 V (Max.)	8 W	$1.42

* @ 140°C

GENERAL ELECTRIC

SEMICONDUCTORS

OEM Pricing Information begins on Page 1206.

SILICON INLINE INTEGRATED CIRCUITS

Microelectronic hybrid circuits utilize transistor and diode elements in combination with thin-film resistors and capacitors. Offer optimum performance, reliability and space savings possibilities. Integrated circuits feature planar epitaxial passivated construction, fabricated with diffusion techniques in a single silicon epitaxial monolithic substrate. All MOS devices are p-channel enhancement. Inline package except as otherwise noted.

GE Type	Description
PA189*	IF amplifier/discriminator
PA222*	One-watt audio amplifier
PA223	Operational amplifier
PA230	Low level amplifier
PA234*	One-watt audio amplifier
PA237*	Two-watt audio amplifier
PA238	Operation amplifier
PA246*	Five-watt audio amplifier
PA424	Zero voltage switch
PA436	Phase control
PD455	Six-stage bistable frequency divider (MOSFET)
PD460	Eight-stage bistable frequency divider (MOSFET)
PD474	Bistable frequency divider

* With heatsink tab for transferring heat to PC board.

SOLID STATE THYRATRONS

GE Type	Peak Anode Voltage	Cathode Current	May Replace
S26	200 V	1.0 A rms at 30°C	2D21
S27	200 V	1.0 A rms at 30°C	2050

Max. Temp. T_A = 125°C.

STANDARD TRIAC CIRCUIT ASSEMBLIES

Components are mounted on a printed circuit board and equipped with an extruded aluminum heatsink. All current carrying components electrically isolated from heatsink. Applications include resistance heat control, shaded pole or permanent-split capacitor type motor speed control, series universal type motor speed control, incandescent lamp dimming, etc.

V_{rms} = 120 V (suffix **1, 3, 5**); 240 V (suffix **2, 4, 6**).

GE Type			Description
6 Amp	10 Amp	15 Amp	
S100A1 S100A2	S100A3 S100A4	S100A5 S100A6	Basic variable voltage control
S100B1 S100B2	S100B3 S100B4	S100B5 S100B6	Extended range variable voltage circuit
S100C1 S100C2	S100C3 S100C4	S100C5 S100C6	Extended range variable voltage circuit RFI suppressed
S100D1 S100D2	S100D3 S100D4	S100D5 S100D6	Variable voltage circuit and static switch RFI suppressed
S100E1 S100E2	S100E3 S100E4	S100E5 S100E6	Blower motor speed control with set low speed RFI suppressed
S100F1 S100F2	S100F3 S100F4	S100F5 S100F6	Basic variable voltage circuit with RFI suppression
S100G1 S100G2	S100G3 S100G4	S100G5 S100G6	AC static switch

AC POWER CONTROLLERS

Zero voltage switching provides low RFI levels. All solid state control, including monolithic integrated firing circuit, for long life and high reliability. High input impedance allows use of sensors operating at any point from 5K to 100K ohms.

GE Type	Line Voltage 60Hz Vrms	Peak V	Max. Cur. A	Max. P_D W	V_1† Max. V	V_1† Typ. V
S200A1	120	200	10	15	10	8
S200A2	240	400	10	16.8	10	8
S200A3	120	200	15	21.8	10	8
S200A4	240	400	15	23.6	10	8
S200A21	277	500	10	17.5	10	8
S200A41	277	500	15	24.2	10	8

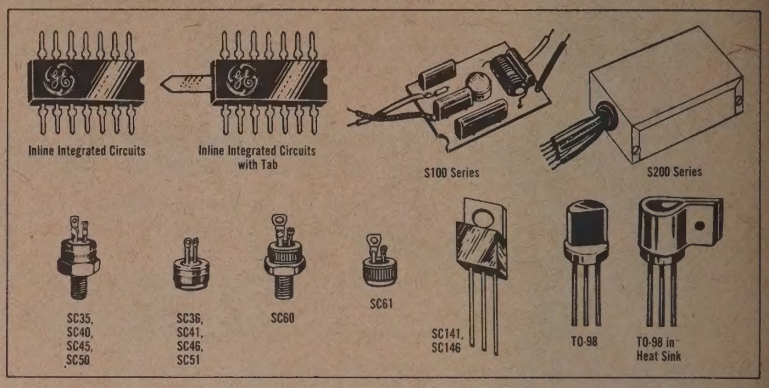
* Resistive load of at least 4.2 amps rms rating be connected at all times. Inductive loads cannot be controlled with these modules. † Voltages developed between S_1 and S_2. Sensor resistance has one side common with AC line (S_1 is common with L_1).

PHASE CONTROL POWER MODULES

All solid-state control, including a monolithic integrated control circuit and a triac power switching device, controls resistive or induction motor loads up to 3600W. Can operate with a wide variety of variable resistance sensors and d-c tachometer signals. High gain trigger circuitry allows wide range of controlled output with small changes in input signal.

GE Type	Line Volts 50/60 Hz Vrms	Peak V	Max. Curr. A	Max. P_D W
S300A1	120	200	6	10.5
S300A2	240	400	6	12.5
S300A3	120	200	10	15.0
S300A4	240	400	10	16.8
S300A5	120	200	15	17.5
S300A6	240	400	15	21.8

Max V_1 = 11.5 V, Typ V_1 = 9.4 V.



SOLID-STATE FAN-MOTOR SPEED CONTROLS

New line of speed controls that consists of a triac a-c power semiconductor and all necessary control circuitry and heatsinking to afford manual speed control of permanent split capacitor and shaded-pole fan motors. All devices are mounted on a printed circuit board and are designed for direct mounting by means of the potentiometer bushing provided.
4A, 120 Vrms

GE Type	Description
S400A1	Basic control circuit
S400A1SC	Basic control circuit plus RFI suppression
S400A1SC1	Basic control circuit plus RFI suppression and automatic line-voltage compensation

SILICON GATE-CONTROLLED AC SWITCHES
BI-DIRECTIONAL TRIODES — TRIAC

For gate control of AC power. P_{GM} = 10 watts; $P_{G(AV)}$ = 0.5 watt. T_{STG} −40°C to +125°C.

GE Type	rms Current On-State	V_{BV}	I_{FM}† (surge)	Oper. Temp. T_J
SC35F SC36F	3 Amp	±50 V	30	−40°C to +100°C
SC35A SC36A		±100 V	30	
SC35B SC36B		±200 V	30	
SC35D SC36D		±400 V	30	
SC40F SC41F	6 Amp	±50 V	50	−40°C to +100°C
SC40A SC41A		±100 V	50	
SC40B SC41B		±200 V	50	
SC40D SC41D		±400 V	50	
SC40E SC41E		±500 V	50	
SC45F SC46F	10 Amp	±50 V	80	−40°C to +100°C
SC45A SC46A		±100 V	80	
SC45B SC46B		±200 V	80	
SC45D SC46D		±400 V	80	
SC45E SC46E		±500 V	80	
SC50F SC51F	15 Amp	±50 V	100	−40°C to +115°C
SC50A SC51A		±100 V	100	
SC50B SC51B		±200 V	100	
SC50D SC51D		±400 V	100	
SC50E SC51E		±500 V	100	
SC60B SC61B	25 Amp	±200 V	250	−40°C to +115°C
SC60D SC61D		±400 V	250	
SC60E SC61E		±500 V	250	
SC141B	6 Amp	±200 V	80	−40°C to +100°C
SC141D		±400 V	80	
SC146B	10 Amp	±200 V	80	
SC146D		±400 V	80	

* Values apply for zero gate voltage only. Maximum case-to-ambient thermal resistance equals 18°C/watt.
† One full cycle of a 60 Hz sine wave.

BI-DIRECTIONAL DIODE — DIAC

For gate trigger of TRIAC's or silicon controlled rectifiers. **GE Type ST2** — Breakover Voltage: ±28 V min., ±36 V max. Breakover Current: ±200 μA, max. Pulse Output: ±3 V, peak min., across 20-ohm load resistor when discharging 0.1 μF capacitor, T_A = 50°C. Peak Current: ±2 amps max., 10 μsec duration, 120 Hz repetition rate, T_A = 50°C.

SMALL SIGNAL AMPLIFIERS
AUDIO TO 30 MHz (TO-98)

P_T = 200 mW. Type Cob pF = 7, ft MHz = 120.

GE Type	h_{FE} I_C=2 mA	V_{CEO} V	Typ. $V_{CE(SAT)}$ V	NF dB
2N2711	30-90	18	0.2	2.8
2N2712	75-225	18	0.2	2.8
2N2923	90-180	25	0.2	15†
2N2924	150-300	25	0.2	15†
2N2925	235-470	25	0.2	15†
2N2926*	35-470	18	0.2	.....
2N3390	400-800	25	0.2	.....
2N3391	250-500	25	0.2	1.9
2N3391A	250-500	25	0.2	5.0
2N3392	150-300	25	0.2	15†
2N3393	90-180	25	0.2	15†
2N3394	55-110	25	0.2	15†
2N3395*	150-500	25	0.2	.....
2N3396*	90-500	25	0.2	.....
2N3397*	55-500	25	0.2	.....
2N3398*	55-800	25	0.2	.....
2N3721	60-660	18	0.2	.....
2N3900	250-500	18	0.2	1.9
2N3900A	250-500	18	0.2	5.0
2N5172	100-500	25	0.25‡	.....

* Supplied in narrow spread, distinctively color-coded beta groups. † Input impedance, ohms. ‡ Maximum.

HIGH FREQUENCY AMPLIFIERS & OSCILLATORS
262.5 kHz TO 100 MHz EPITAXIAL (TO-98)

GE Type	h_{FE} I_C=2 mA	V_{CEO} V	Typ. $V_{CE(SAT)}$ V	Max. NF dB
2N3843	20-40	30	0.065	10.2
2N3843A	20-40	30	0.065	8.5
2N3844	35-70	30	0.065	10.2
2N3844A	35-70	30	0.065	8.5
2N3845	60-120	30	0.065	10.2
2N3845A	60-120	30	0.065	8.5
2N3854	35-70	18	0.085	16*
2N3854A	35-70	30	0.085	16*
2N3855	60-120	18	0.085	16*
2N3855A	60-120	30	0.085	16*
2N3856	100-200	18	0.085	16*
2N3856A	100-200	30	0.085	16*
2N3858	60-120	30	0.055	10*
2N3859	100-200	30	0.055	10*
2N3860	150-300	30	0.055	10*
2N5232	250-500	50	0.055	.....
2N5232A	250-500	50	0.055	5
2N5249	400-800	50	0.055	.....
2N5249A	400-800	50	0.055	5
2N5209	60-120§	50	0.055	.....
2N5310	100-300§	50	0.055	.....
2N5311	250-500§	50	0.055	.....

100 MHz TO 950 MHz EPITAXIAL (TO-98)

2N3662	20 min.†	12	0.6‡	4
2N3663	20 min.†	12	0.6‡	4
D16G6	20 min.¶	12	0.6‡	4

* C_{ib}, pF. † I_C = 8 mA, V_{CE} = 10 V. ‡ Maximum. § I_C = 10 μA. ¶ I_C = 5 mA, V_{CE} = 10 V.

LARGE SIGNAL AMPLIFIERS AND MEDIUM SPEED SWITCHES — EPITAXIAL (TO-98)

GE Type	h_{FE} I_C=2 mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	P_T mW	Typ. C_{obo} pF
2N2713	30-90	18	0.3	200	6.0
2N2714	75-225	18	0.3	200	6.0
2N3402*	75-225	25	0.3	900	6.0
2N3403*	180-540	25	0.3	900	6.0
2N3404*	75-225	50	0.3	900	6.0
2N3405*	180-540	50	0.3	900	6.0
2N3414	75-225	25	0.3	360	6.0
2N3415	180-540	25	0.3	360	6.0
2N3416	75-225	50	0.3	360	6.0
2N3417	180-540	50	0.3	360	6.0
2N3973	35-100†	30	0.3	360	5.2
2N3974	55-200†	30	0.3	360	5.2
2N3975	35-100†	30	0.3	360	5.2
2N3976	55-200†	30	0.3	360	5.2
2N4256	100-500	30‡	0.25	200	4.0
2N4424	180-540	40	0.3	360	6.0
2N4425*	180-540	40	0.3	900	6.0
2N4951	60-200§	30	0.3	360	8¶
2N4952	100-300§	30	0.3	360	8¶
2N4953	200-600§	30	0.3	360	8¶
2N4954	60-600§	30	0.3	360	8¶

* TO-98 in heat sink. † I_C = 50 mA. ‡ V_{CES} value. §I_C = 150 mA. ¶Maximum.

MONOLITHIC DARLINGTON AMPLIFIERS

Ideal for preamplifier input stages requiring high input impedances of several megohms. h_{ie} value at f = 1 kHz. (TO-98).

GE Type	h_{FE} I_C=2 mA V_{CE}=5 V	Max. BV_{CEO} V	Max. h_{ie} I_C=2 mA V_{CE}=5 V	P_T at 25°C mW
D16P1	2,000 min.	12	500 kohms	400
D16P2	7,000-70,000	12	500 kohms	400
2N5305	2,000 min.	25	650 kohms	400
2N5306	7,000-70,000	25	650 kohms	400
2N5307	2,000-20,000	40	800 kohms	400
2N5308	7,000-70,000	40	800 kohms	400

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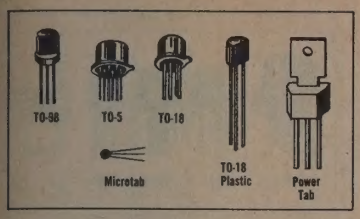
SEMICONDUCTORS

OEM Pricing Information begins on Page 1206.



TO-98 and TO-18 plastic packaged devices engineered to deliver excellent performance with maximum value. NPN construction except as otherwise noted. All TO-98 devices can be supplied with leads formed to fit either a TO-5 or TO-18 socket; prices on request.

HIGH-CURRENT AMPLIFIERS (TO-98)

Typ C_{cbo} pF = 10, f MHz = 2.0.

GE Type	h_{FE} I_C=150 mA V_{CE}=5 V	V_{CEO} V	P_T mW	$V_{CE(SAT)}$ at 150 mA V
D33D1	40-120	30	360	.25
D33D2	100-300	30	360	.25
D33D3	200-600	30	360	.25
D33D4	40-120	60	360	.25
D33D5	100-300	60	360	.25
D33D6	100-300	80	360	.25

PNP SILICON TRANSISTORS (TO-98)

$V_{CE(SAT)}$ = 0.25 V.

GE Type	h_{FE}	V_{CEO} V	P_T mW	Typical C_{cbo} pF	Typical f_t MHz
2N5354	40-120	25	360	8	340
2N5355	100-300	25	360	8	340
2N5356	250-500	25	360	8	340
2N5365	40-120	40	360	5.5	2.0
2N5366	100-300	40	360	5.5	2.0
2N5367	250-500	40	360	5.5	2.0

HIGH VOLTAGE APPLICATIONS — TO 100 MHz (TO-98)

P_T mW = 200.

GE Type	h_{FE} I_C=2 mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{cbo} pF	Typical f_t MHz
2N3858A	60-120	60	0.25	2.5	135
2N3859A	100-200	60	0.25	2.5	135
2N3877	20 min.	70	1.0	2.5	135
2N3877A	20 min.	85	1.0	2.5	135
2N5174*	40-600	75	0.95	2.5	135
2N5175*	55-160	100	0.95	2.5	135
2N5176*	140-300	100	0.95	2.5	135

*I_C = 10 mA.

HIGH SPEED SWITCHES — LOW STORAGE TIMES — EPITAXIAL GOLD DOPED (TO-98)

Max $V_{CE(SAT)}$ = 0.25 V.

GE Type	h_{FE}	V_{CEO} V	P_T mW	Typical C_{cbo} pF	Typical f_t MHz
2N3605	30 min.	14	200	4	350
2N3605A	30-120	15	330	6	300
2N3606	30 min.	14	200	4	350
2N3606A	30-120	15	330	6	300
2N3607	30 min.	14	200	4	350

NPN/PNP COMPLEMENTARY PAIRS

P_T mW = 500*. Typ C_{cbo} pF = 9.4.

GE Type PNP	GE Type NPN	h_{FE} I_C=2 mA	V_{CEO} V	Max. V_{CE} (SAT) V	Typ. f_t MHz
D29E1	D33D21	60-180	25	0.5	150
D29E2	D33D22	150-450	25	0.5	165
D29E4	D33D24	60-120	40	0.75	120
D29E5	D33D25	100-200	40	0.75	135
D29E6	D33D26	150-300	40	0.75	150
D29E7	D33D27	250-500	40	0.75	165
D29E8	D33D28	40-80	60	0.75	100
D29E9	D33D29	60-120	60	0.75	115
D29E10	D33D30	100-200	60	0.75	135

* All units are available with heatsink which raises power dissipation to 1000 min. @ 25°C case temperature.

NPN HIGH-SPEED SWITCHES — EPITAXIAL

TO-18 plastic package. "GET's" are epoxy substitutes for hermetic transistors.

GE Type	h_{FE} I_C=10 mA	V_{CE} (SAT) Max. V	C_{cbo} Max. pF	t nsec On-Off	Storage t_N nsec
GET706	20 min.	.250	6.0	40-75	35
GET708	30-120	.250	5.5	40-75	25
GET914	30-120	.250	5.5	40-40	20
GET2369	40-120	.250	4.5	15-22	18
GET3013	30-120*	.180	4.5	15-16	18
GET3014	30-120*	.180	4.5	16-25	18
GET3646	30-120*	.200	4.5	18-28	18

Typ. f_t MHz for GET 706, 708, 914 = 350; GET 2369, 3013, 3014, 3646 = 400. V_{CEO} = 15 V for all above GET except 3646 with V_{CEO} = 20 V. P_T = 360 mW @ T_A = 25°C.

* V_{CE} = .4 V, I_C = 30 mA.

GENERAL-PURPOSE AMPLIFIERS & SWITCHES

TO-18 plastic package. "GET's" are epoxy substitutes for hermetic transistors.

P_T mW = 360.

GE Type	h_{FE} I_C=2 mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{cbo} pF	Typical f_t MHz
GET929	60-120†	50	.125	2.5	135
GET930	100-300†	50	.125	2.5	135
D32D1	40-120	30	.250	7.1	175
D32D2	100-300	30	.250	7.1	175
D32D3	200-600	30	.250	7.1	175
GET2221	40-120	30	.300	5.6	250
GET2222	100-300	30	.300	5.6	250
GET3638*	20 min.‡	25	.250	5.8	340
GET3638A*	100 min.‡	25	.250	5.8	340

* PNP; all others are NPN. † h_{FE} @ I_C = μA. ‡ V_{CE} = −10V, I_C = −10 mA.

PROGRAMMABLE UNIJUNCTION—PUT (TO-98)

Passivated PNPN devices with anode, anode gate and cathode terminals. Recommended for SCR trigger, pulse and timing circuits, oscillators, sensing and sweep circuits. Gate-cathode forward voltage and gate-anode reverse voltage = 40 V. Anode-cathode voltage = ±40 V.

$I_{F(CONT)}$ = 150 mA. P_T = 300 mW.

GE Type	I_{GAO} V_S=40 V nA	Max. Values at V_S=10 V I_P μA	V_T V	I_V μA
D13T1	10	2	.2-1.6	50
D13T2	10	0.15	.2-0.6	25

SILICON PLANAR CONTROLLED SWITCHES

Four-terminal TO-18 package.

GE Type	Anode Blk. V	Cont. DC I_F mA	Peak Recur. I_F A*	Peak Cath. Gate Cur. mA	Dissipation mW	I_B at VAC V	I_B R_{GC}= 10K μA
3N81	65	200	1.0	500	400	65	20
3N82	100	200	1.0	500	400	100	20
3N83	70	50	0.1	50	200	70	20†
3N84	40	175	0.5	100	320	40	20†
3N85	100	175	0.5	100	320	100	20†
3N86	65	200	1.0	500	400	65	20

* At 100 μsec. † Measured at 125°C; all others at 150°C.

SILICON UNILATERAL SWITCHES (SUS)
6-10 VOLT PLANAR TRIGGER DIODE

V_{ACR} = 30 volts maximum. V_F at 200 mA = 1.5 volts.

GE Type	Max. $I_{F(CONT)}$ mA	T_J −55°C to °C	V_S V	Max. I_S μA	I_B at 5 V μA
2N4983*	175	+125	6-10	500	1.0
2N4984*	200	+150	7.5-9	150	0.1
2N4985*	200	+150	7.5-8.2	300	0.005
2N4986*	175	+125	7-9	200	0.1
2N4987†	175	+125	6-10	500	1.0
2N4988†	200	+150	7.5-9	150	0.1
2N4989†	200	+150	7.5-8.2	300	0.005
2N4990†	175	+125	7-9	200	0.1

* TO-18. † TO-98.

SILICON DUAL DIODES (TO-98)
TV HORIZONTAL PHASE DISCRIMINATORS

P_T = 200 m W at 25°C. Typ C_{ob} pF @ 10 V = 1.1.

GE Type	Features	V_F at 1 mA Volt	V_R V
1N4951	Inherent match, static	0.85 max.	20
1N4952	and dynamic. Common	0.85 max.	50
F16U3	cathode.	0.54-0.66	20
F16U4		0.54-0.66	50

REFERENCE DIODE

GE Type F16H1 — Common anode, Vz = 5.6 to 6.8 V. dVz/dT <.025%/°C.

SILICON BILATERAL SWITCHES (SBS)
6-10 VOLT BIDIRECTIONAL PLANAR TRIGGER DIODE

V_F at 200 mA = 1.7 volts.

2N4991†	175	+125	6-10	500	1.0
2N4992†	200	+150	7.5-9	120	0.1
2N4993*	200	+150	6-10	500	1.0

* TO-18. † TO-98.

SILICON PLANAR EPITAXIAL PASSIVATED NPN MICROTAB

D26B and D26C series designed specifically for fast switching applications. D26E series well suited for high voltage, high gain amplifiers and switches. P26G1 suitable for use as oscillators in UHF television tuners, etc. P_T = 90 mW. C_{ob} value at f = 1 MHz.

GE Type	h_{FE} at I_C Min.-Max.	μA	Maximum V_{CEO} V	V_{EBO} V	V_{CBO} V	$V_{CE(SAT)}$ V
D26B1	20-60	10*	15	4.5	40	0.85
D26B2	40-120	10*	15	4.5	40	0.85
D26C1	30-90	10*	18	5	18	0.05
D26C2	60-180	10*	18	5	18	0.05
D26C3	140-250	10*	18	5	18	0.05
D26E1	100-300	10	45	5	45	1.00
D26E2	40-90	100	18	5	18	0.25
D26E3	70-145	100	18	5	18	0.25
D26E4	115-220	100	18	5	18	0.25
D26E5	180-330	100	18	5	18	0.25
D26E6	40-330	100	18	5	18	0.25
D26G1	20 min.	3*	15	3	30	0.40

* mA.

PNP MICROTAB

PNP complement to NPN D26C series. For amplifier, driver and general purpose switching applications. P_T = 90 mW.

D30A1	30-90	10	−18	−4	−18	−0.25
D30A2	60-180	10	−18	−4	−18	−0.25
D30A3	140-260	10	−18	−4	−18	−0.25

POWER TAB TRANSISTORS

D40D and D41D are complements. D42C and D43C are complements. D40N application: CRT video output. D40C, D; D41D; D42C, D application: audio output 3W-20W, regulators, drivers, inverters, motor controls, lamp controls, relays.

GE Type	h_{FE}	V_{CEO} (Min.)	I_C(A) (Cont/Pk)	$V_{CE(SAT)}$ Max. V	C_{cbo} (pF)
D40C1	10K-60K*	30	0.5/1.0	1.5†	5
D40C2	40K*	30	0.5/1.0	1.5†	5
D40C4	10K-60K*	40	0.5/1.0	1.5†	5
D40C5	40K*	40	0.5/1.0	1.5†	5
D40C7	10K-60K	50	0.5/1.0	1.5†	5

f_t MHz = 60. P_T @ 25°C T_{ab} = 6.0. *V_{CE} = 5 V, I_C = 200 mA. † I_C = 500 mA, I_B = 0.5 mA.

D40N1	30-90*	300†	0.1	2.5‡	3
D40N3	30-90	250	0.1	2.5	3

f_t MHz = 80. P_T @ 25°C T_{ab} = 6.0. *V_{CE} = 10 V, I_C = 20 mA. † V_{CER}. ‡ I_C = 20 mA, I_B = 2 mA.

D40D1	50-150*	30	1.0/1.5	0.5†	8
D40D2	120-360*	30	1.0/1.5	0.5†	8
D40D3	290*	30	1.0/1.5	0.5†	8
D40D4	50-150*	45	1.0/1.5	0.5†	8
D40D5	120-360*	45	1.0/1.5	0.5†	8
D40D7	50-150*	60	1.0/1.5	0.5†	8
D40D8	120-360*	60	1.0/1.5	0.5†	8

f_t MHz = 130. P_T @ 25°C T_{ab} = 6.0. *V_{CE} = 2 V, I_C = 100 mA. † I_C = 500 mA, I_B = 50 mA.

D41D1	50-150*	30	1.0/1.5	0.5†	8
D41D2	120-360*	30	1.0/1.5	0.5†	8
D41D3	290*	30	1.0/1.5	0.5†	8
D41D4	50-150*	45	1.0/1.5	0.5†	8
D41D5	120-360*	45	1.0/1.5	0.5†	8
D41D7	50-150*	60	1.0/1.5	0.5†	8
D41D8	120-360*	60	1.0/1.5	0.5†	8

f_t MHz = 120. P_T @ 25°C T_{ab} = 6.0. *V_{CE} = 2 V, I_C = 100 mA. † I_C = 500 mA, I_B = 50 mA.

D42C1	25*	30	3.0/5.0	0.5‡	100
D42C2	40-120*	30	3.0/5.0	0.5‡	100
D42C3	40-120*†	30	3.0/5.0	0.5‡	100
D42C4	25*	45	3.0/5.0	0.5‡	100
D42C5	40-120*	45	3.0/5.0	0.5‡	100
D42C7	25*	60	3.0/5.0	0.5‡	100
D42C8	40-120*	60	3.0/5.0	0.5‡	100

f_t MHz = 50. P_T @ 25°C T_{ab} = 12.0. *V_{CE} = 1 V, I_C = 200 mA. † h_{FE} = 20 min. @ 1V, 2A. ‡ I_C = −1 A, I_B = 100 mA.

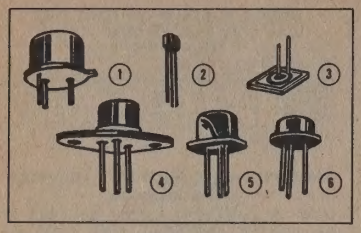
D43C1	25*	30	3.0/5.0	0.5‡	100
D43C2	40-120*	30	3.0/5.0	0.5‡	100
D43C3	40-120*†	30	3.0/5.0	0.5‡	100
D43C4	25‡	45	3.0/5.0	0.5‡	100
D43C5	40-120*	45	3.0/5.0	0.5‡	100
D43C7	25‡	60	3.0/5.0	0.5‡	100
D43C8	40-120*	60	3.0/5.0	0.5‡	100

f_t MHz = 40. P_T @ 25°C T_{ab} = 12.0. *V_{CE} = 1 V, I_C = 200 mA. † h_{FE} = 20 min. @ 1V, 2A. ‡ I_C = −1 A, I_B = 100 mA.

GENERAL ELECTRIC

SEMICONDUCTORS

OEM Pricing Information begins on Page 1206.



Microminiature package versions of discrete transistors and diodes, including TO-46, TO-50, network packages, ceramic tabs (Fig. 2) and kovar tabs (Fig. 3), are available in most popular types. For microminiature types not listed, write for publication no. 450-40.

SILICON POWER TRANSISTORS
NPN PASSIVATED MESA

Typical ft for all types, 15 MHz.

GE Type	Fig.	Maximum V_{CEO} I_C= 250 µA	Maximum I_{CBO} V_{CB}= 30 V µA	Maximum Pwr. Free Air at 25°C Watts	Maximum Dissip. T_C at 25°C Watts	V_{CE} (SAT) Volts
2N497*	1	60	250	0.8	4	5
2N497A	1	60	250	1.0	5	2
2N498*	1	100	250	0.8	4	5
2N498A	1	100	250	1.0	5	2
2N656*	1	60	250	0.8	4	5
2N656A	1	60	250	1.0	5	2
2N657*	1	100	250	0.8	4	5
2N657A	1	100	250	1.0	5	2
2N2017	1	60	250	1.0	5•	2
2N2106	1	60¶	200	1.0	5•	5
2N2107	1	60¶	200	1.0	5•	2
2N2108	1	60¶	200	1.0	5•	2
2N2196	4	60¶	250	2.0	10	2
2N2197	4	60¶	250	2.0	10	2
2N2201	4	100	200	2.0	10	1.7
2N2239	4	50‡	250	1.0	10	3
2N2726	1	200†	100	1.0	5	2
2N2727	1	200†	100	1.0	5	2
2N3589	4	200†	100§	2.0	10	2
2N3590	4	200†	100§	2.0	10	2
D7A30	1	40	10	1.0	5	1■
D7A31	1	30	10	1.0	5	1■
D7A32	1	30	10	1.0	5	1■

* MIL type available. † V_{CER} at I_C = 50 mA, R = 5K. ‡ V_{CER}, R = 5K. ¶ V_{CER} at I_C = 16 mA, R = 1K. ■ Typical. § V_{CB} = 100 V. • 25°C.

NPN SILICON PLANAR PHOTOTRANSISTOR

Typ switching speed: delay 2 µsec, rise-fall 5 µsec.

GE Type	Maximum Volts V_{CEO}	V_{CBO}	V_{ECO}	V_{EBO}	Typ. Light Cur.*	Max. Dark Cur.†
L14A502	45	45	5	5	7 mA	10 nA

* H = 10 mW/cm²; V_{CE} = 5 V, † V_{CE} = 30 V; I_B = 0.

GERMANIUM TRANSISTORS — PNP ALLOY

BV_{CER} at I_C = 600 µA and R_{BE} = 10K except as otherwise noted.

GE Type	Fig.	h_{FE} V_{CE}=1 V I_C=20 mA	Typ. f_{hfb} MHz	Min. BV_{CER} V	Max. P_T mW
2N43A•*	6	34-65	1.3	30	240
2N44•*	6	18-34	1.0	30	240
2N187A•	6	25-42	1.0	25	200
2N188A•	6	34-65	1.2	25	200
2N189•	6	25-42	0.8	25	200
2N190•	6	34-65	1.0	25	200
2N191•	6	53-121	1.2	25	200
2N192•	6	72-176	1.5	25	200
2N241A•	6	50-125	1.3	25	200
2N319	1	25-42	2.0	20	225
2N320	1	34-65	2.5	20	225
2N321	1	53-121	3.0	20	225
2N322	1	34-65	3.0	16	200
2N323	1	53-121	3.5	16	200
2N324	1	72-198	4.0	16	200
2N396A*	1	30-150‡	8.0	20‡	200
2N404	1	.....	8.0	24§	150
2N404A	1	.....	8.0	35§	150
2N413	1	20-100†	6.0	18‡	150
2N414	1	30-120†	7.0	15‡	150
2N461*	1	32-199¶	4.0	35♦	200
2N508	1	100-200	4.5	16	200
2N508A	1	100-200	4.5	25	200
2N524	1	25-42	2.5	30	225
2N525	1	34-65	3.0	30	225
2N526•*	1	53-90	3.5	30	225
2N527	1	72-121	4.0	30	225
2N1057•	6	34-90	1.3	30▲	240
2N1097•	1	34-90	3.0	16	200
2N1098•	1	25-90	3.0	16	200
2N1144•	6	34-90	1.3	16	175
2N1145•	6	25-90	1.3	16	175
2N1175	1	70-140	4.0	25	200
2N1175A	1	70-140	4.0	25	200
2N1303	1	20 min.†	7.0	25§	150
2N1305	1	40-200†	8.0	20§	150
2N1307	1	60-300†	12.0	15§	150
2N1413	1	25-42	3.2	25	200
2N1414	1	34-65	3.6	25	200
2N1415	1	53-90	4.0	25	200
2N1614•	6	18-43	1.3	40■	240
2N1924	1	34-65	3.0	40	225
2N1925	1	53-90	3.5	40	225
2N1926	1	72-121	4.0	40	225

• Not recommended for new designs. † V_{CE} = 1 V, I_C = 10 mA. ‡ BV_{CEO}. § V_{RT}. ¶ V_{CB} = 5 V, I_E = 1 mA, f = 1 kHz. ♦ R = 1K. ▲ V_{RT} = 45 V. ■ V_{RT} = 60 V. *MIL type available.

GERMANIUM TRANSISTORS
NPN RATE GROWN (FIG. 5)

I_{CBO} at I_E = 0 and V_{CB} = 15 V except as otherwise noted. Typ f_{hfb} MHz = 5 for 2N292, 8 for 26293, 9 for all others.

GE Type	h_{FE} V_{CE}=1 V I_C=1 mA	Min. BV_{CER} V	P_G at 455 kHz dB	Max. P_D mW
2N78	45-135	15¶	26.0-31.0	65
2N78A*	45-135	20¶	26.0-31.0	65
2N167A*	17-90†	30¶	.....	75
2N169	34-200	15	23.5	65
2N169A	34-200	25	23.5	65
2N292	8-51	15	21.0-26.0	65
2N293	8-51	15	23.5-28.0	65
2N1086	17-200	9	23.0-29.0§	65
2N1086A	17-200	9	23.0-27.0§	65
2N1087	17-200	9	25.0-29.0§	65
2N1694	15-45‡	20¶	.....	75

¶ BV_{CEO} at I_C = 300 µA. † I_C = 8 mA. § Conversion gain at 1600 kHz. ‡ I_C = 2 mA. * MIL type available.

SILICON DUAL AND MULTICHIP DEVICES
NPN DIFFERENTIAL AMPLIFIERS

Six-terminal packages containing two isolated pellets.

GE Type TO-5	GE Type TO-18	GE Type Network	Min. V_{CEO} Volts	Min. h_{FE} at 100 µA
2N2060	D12A104	.....	60	30
2N2223, A	.....	.....	60	25
2N2453, A	.....	2N3520	30	80*
2N2480	.....	.....	40	20
2N2480A	2N3513	2N3515	40	35
2N2639	.....	.....	45†	50*
2N2640	.....	.....	45†	50*
2N2641	.....	.....	45†	50*
2N2642	.....	.....	45†	100*
2N2643	.....	.....	45†	100*
2N2644	.....	.....	45†	100*
2N2652	.....	.....	60	35
2N2652A	2N3516	2N3518	60	35
2N2910	.....	.....	25	70
2N2913	.....	.....	45	100
2N2914	.....	.....	45	225
2N2915	.....	.....	45	100
2N2916	.....	.....	45	225
2N2917	.....	.....	45	100
2N2918	.....	.....	45	225
2N2919	.....	.....	60	100
2N2920	.....	.....	60	225
2N3521	2N3522	2N3524	45	155*
D12A8	D12A108	.....	30	30
D12E026	D12E126	.....	30	60‡
D12E109	.....	.....	30	80*

* At I_C = 10 µA. † Maximum. ‡ At I_{CC} = 1 mA.

NPN CHOPPERS

Five-terminal packages containing two matched pelletts. Max I_{CBO} or I_{CBO2}§ = 10 nA.

GE Type	JEDEC Outline	Maximum V_O* µV	Maximum at °C	Min. V_{EEO}† Volts	Max. r_s‡ Ohms
2N2356	TO-5	300	−55 to +125	20	40
2N2356A	20-5	50	−55 to +125	20	40
2N3082	TO-18	350¶	−55 to +125	20	40
2N3083	TO-18	75¶	−50 to +125	20	40

* $I_{B1} = I_{B2}$ = 1 mA. $I_{E1} = I_{E2}$ = 0. † I_{E1E2} = 1 mA, $I_{B1} = I_{B2}$. ‡ I_{B1} = 1 mA, I_{EE} = 0.1 mA. § V_{CB1} or V_{CB2} = 25 V. ¶ $I_{B1} = I_{B2}$ = 0.25 mA.

INTEGRATED VOLTAGE REGULATOR (IVR)

The IVR consists of two NPN transistors, a zener diode, and a resistor on a monolithic chip mounted in a TO-98, three-leaded plastic package. It is designed for use as a shunt voltage regulating element and reference amplifier with simple resistor programming.

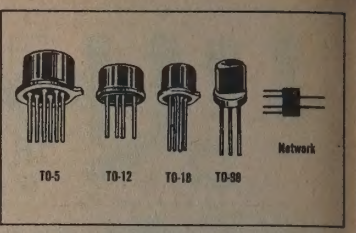
Type D13V characteristics

	Min.	Typ.	Max.
Regulated voltage range, volts	10	....	40
Temp. coefficient of regulated voltage, %/C	....	.03	0.1
Thevenin impedance, ohms	....	10	50
Thevenin reference voltage, volts	....	8.5	10
Total average power in watts	....	....	400

SILICON REFERENCE AMPLIFIERS (TO-12)

Reference Voltage 7.0 ±5% except RA1 Series, ±10%.

GE Type	Max. Max. TC %/°C	Temperature Range	Min. GMC µmho	h_{FE} I_C=.5 mA	Min. BV_{CEO} V
RA1	.02	0°C	3000	10-120	45
RA1A	.005	to			
RA1B	.002	+70°C			
RA1C	.001				
RA2	.02	−55°C	6000	40-120	45
RA2A	.005	to			
RA2B	.002	+150°C			
RA3	.02	−55°C	2000	30-90	45
RA3A	.005	to			
RA3B	.002	+150°C			



SILICON UNIJUNCTION TRANSISTORS

Consists of an "N" type silicon bar mounted between two ohmic base contacts with a "P" type emitter near base two. Three-terminal package.

GE Types Bar Structure TO-18	GE Types Bar Structure TO-5	R_{BBO} V_{BB}=3 V I_E=0 kohms	Intrin. Standoff Ratio†	I_P Max. Emitter µA	I_{EO} Max. V_{B2E}‡
2N2417	2N489			12	60
2N2417A	2N489A*	4.7-6.8	.51-.62	12	60
2N2417B	2N489B			6	30
2N2418	2N490			12	60
2N2418A	2N490A*	6.2-9.1	.61-.62	12	60
2N2418B	2N490B			6	30
.....	2N490C			2	30
2N2419	2N491			12	60
2N2419A	2N491A*	4.7-6.8	.56-.68	12	60
2N2419B	2N491B			6	30
2N2420	2N492			12	60
2N2420A	2N492A*	6.2-9.1	.56-.68	12	60
2N2420B	2N492B			6	30
.....	2N492C			2	30
2N2421	2N493			12	60
2N2421A	2N493A*	4.6-6.8	.62-.75	12	60
2N2421B	2N493B			6	30
2N2422	2N494			12	60
2N2422A	2N494A*	6.2-9.1	.62-.75	12	60
2N2422B	2N494B			6	30
.....	2N494C			2	30
.....	2N1671			25	30
.....	2N1671A	4.7-9.1	.47-.62	25	30
.....	2N1671B			6	30
.....	2N1671C			2	30
.....	2N2160	4.0-12.0	.47-.80	25	30
2N2646•	.....	4.7-9.1	.56-.75	5	30
2N2647•	.....	4.7-9.1	.68-.82	2	30
D5E37•	.....	4.0-12.0	.47-.85	25	30
D5E43•	.....			2	30
D5E44•	.....	4.7-9.1	.68-.82	5	30
D5E45•	.....			2	30

• Cube structure. † V_{BB} = 10 V. ‡ T_J = 25°C. * MIL type available.

SILICON COMPLEMENTARY UNIJUNCTION TRANSISTORS (TO-18)

Ultra-stable and uniform unijunction devices for low frequency oscillators, timers and frequency dividers.

GE Type	R_{BBO} kohms	Intrinsic Standoff Ratio	I_{EO} at 5 V nA	$V_{EB(SAT)}$ at 50 mA V
D5K1	5.5-8.2	.58-.62	10	1.5
D5K2	5-15	.58-.62	10	1.5

NPN SILICON PLANAR ECONOMY PHOTO-DARLINGTON AMPLIFIER (TO-98)

Typ switching†: td 60 µsec, tr 250 µsec, ts 150 µsec.

GE Type	Maximum Ratings at 25°C V_{CEO} V	V_{CBO} V	V_{EBO} V	I_L mA	P_T mW	Typ. I_L* mA	Max. I_D† nA
L14B	12	18	8	100	150	2	100

* V_{CE} = 5 V; H = 2 mW/cm². † V_{CE} = 5 V; I_B = 0. ‡ V_{CE} = 10 V; I_L = 1 mA; R_L = 1,000 ohms.

PNPN SILICON PLANAR PASSIVATED LASCS

Triggering†: Cathode gate cur. to fine = 10 µA, eff. irradiance to fine = 10 mW/cm².

GE Type	Anode to Cathode Fwd. and Reverse	Conducting* V_{FWD} at 175 mA Anode	Conducting* Holding Current
L1V	40 V	2.3 V	2.0 mA

* Max. Ratings at R_{GK} = 27,000 ohms.

NPN DARLINGTONS

Four terminal TO-18 package with two pellets connected in Darlington configuration.

GE Type	Minimum V_{CEO} at I_C Volts	mA	h_{FE} at I_C of 100 mA Min.-Max.	10 mA Min.-Max.	1 mA Min.
2N997	40	30	7000-70k	4000 min.	.....
2N998	60	20	2000 min.	1600-8000	800
2N999	60	30	7000-70k	4000 min.	.....
2N2785	40	20	2000-20k	1200 min.	600

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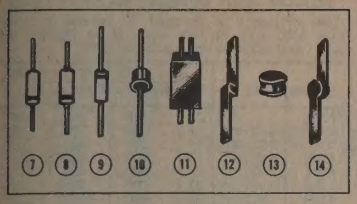
SEMICONDUCTORS

OEM Pricing Information begins on Page 1206.



SILICON SIGNAL DIODES (PEP)
STANDARD DO-7 (FIG. 7)

GE Type	Min. (SAT) Volts	Max. Rev. Cur. μA at V (at 25°C)	Max. Fwd. Cur., mA at Volts	Rev. Recovery, Nanosec
1N251	40	0.2 at −10	5 at 1.0	150
1N252	30	0.1 at −5	10 at 1.0	150
1N625	30	1.0 at −20	4 at 1.0	1000
1N626	50	1.0 at −35	4 at 1.0	1000
1N814	50	0.1 at −20	2 at 1.0	250
1N903	40	0.1 at −40	10 at 1.0	4
1N903A	40	0.1 at −40	20 at 1.0	4
1N904	30	0.1 at −30	10 at 1.0	4

DHD (FIG. 8)

Double heatsink diodes. Specify DO-7 (Fig. 7) or DHD (Fig. 8) package for 1N914 and 1N916 series. t_{rr} value recovery to 1.0 mA reverse, switching from 10 mA fwd to −6.0 V, R_L = 100 ohms.

GE Type	Min. B_V V	Min. B_V μA	V_F at I_F V	V_F at I_F mA	Max. I_R at 25°C nA	Max. I_R at 25°C V	t_{rr} nsec
1N914	100	100	1.0	10	25	20	4
1N914A	100	100	1.0	20	25	20	4
1N914B	100	100	1.0	100	25	20	4
1N916	100	100	1.0	10	25	20	4
1N916A	100	100	1.0	20	25	20	4
1N916B	100	100	1.0	30	25	20	4
1N4148*	100	100	1.0	10	25	20	4
1N4149	100	100	1.0	10	25	20	4
1N4150	50	1	1.0	200	100	50	6†
1N4151	75	5	1.0	50	50	50	2
1N4152	40	5	0.88	20	50	30	2
1N4153	75	5	0.88	20	50	50	2
1N4154	35	5	1.0	30	100	25	2
1N4305	75	5	0.85	10	100	50	2
1N4444	70	5	1.0	100	50	50	7‡
1N4446	100	100	1.0	20	25	20	4
1N4447	100	100	1.0	20	25	20	4
1N4448	100	100	1.0	100	25	20	4
1N4449	100	100	1.0	30	25	20	4
1N4450	40	5	1.0	200	50	30	4‡
1N4451	40	5	1.0	300	50	30	10‡
1N4454*	75	5	1.0	10	100	50	4‡
1N4606	85	100	1.0	200	100	50	4‡
1N4607	85	100	1.0	350	100	50	10‡
1N4608	85	100	1.0	450	100	50	10‡
1N4727	30	5	0.85	10	100	20	§
1N4863	70	5	1.2	100	50	50	7‡
1N4864	125	100	1.1	100	100	80	4
DHD800	2	5	0.8	10	2¶	2	§
DA805	15	5	0.8	10	2¶	12	§
DA806	25	5	0.8	10	2¶	22	§

* JAN and JANTX type available. † I_F = 10 mA, I_R = 1 mA, recovery to 0.1 mA. ‡ I_F = I_R = 10 mA, recovery to 1.0 mA. § Q_S = 40 pC. ¶ μA.

MULTIPELLET STABISTORS (FIG. 8)

Power dissipation = 400 mW. Derate 2.67 mW/°C for T_A above 25°C. Capacitance value at f = 1 MHz.

GE Type	Min. B_V V	Min. B_V μA	Max. V_R V	V_F I_F=10 mA V	Max. I_R at 25°C nA	Max. I_R at 25°C V
1N4156	30	5	20	1.38-1.58	50	20
1N4157	30	5	20	2.12-2.32	50	20
1N4453	30	5	20	.690-.800	50	20
1N4829	30	100	20	1.16-1.61	100	20
1N4830	30	100	20	1.90-2.35	100	20
1N5179	30	5	20	2.60-3.20	50	20
MPD200	30	5	30	1.39-1.54	30	30
MPD300	60	5	60	2.10-2.33	30	30
MPD400	90	5	90	2.80-3.07	30	30
STB567	12	5	12	1.31-1.61	....	....
STB568	12	5	12	2.09-2.31	....	....
STB569	12	5	20	2.72-3.01	....	....

MHD (FIG. 9)

Milli heatsink diodes rated 500 mW at 25°C free air.

GE Type	DHD Type	Max. I_R*	GE Type	DHD Type	Max. I_R*
1N4531	1N914	25 nA	1N4534	1N4153	50
1N4532	1N4454	100 nA	1N4536	1N4154	100
1N4533	1N4152	50 nA			

* At 25°C.

GERMANIUM BACK DIODES (FIG. 10)

GE Type	Max. I_F mA	Max. Total C, pF	Min. V_{R1}* mV	GE Type	Max. I_F mA	Max. Total C, pF	Min. V_{R1}* mV
BD-1	1.0	20	440	BD-5	0.05	10	350
BD-2	0.5	10	420	BD-6	0.02	10	330
BD-3	0.2	10	400	BD-7	0.01	10	300
BD-4	0.1	10	380	1N4090†	0.2	1.5	430

* I_R = I_F max. † Low noise mixer, Fig. 12; all others general purpose.

SILICON SIGNAL DIODES

Capacitance — 2 pF at 0 volts. t_{rr} = 2 nsec at I_f = 10 mA, V_R = 6 V, R_L = 100 ohms, recovery to 1.0 mA. Max V_F* (I_F = 10-50 mA) = 20 mV.

MATCHED PAIRS (FIG. 11)

GE Type	Min. B_V at 5 μA V	V_f at I_f V	V_f at I_f mA	Max. I_R at 25°C nA	Max. I_R at 25°C V
1N4306	75	0.44-0.55	0.10	50	50

MATCHED QUADS

1N4307	75	0.44-0.55	0.10	50	50

* Maximum difference between diodes in pairs and quads at T_A = −55° to +125°C.

GERMANIUM TUNNEL DIODES
GENERAL PURPOSE (FIG. 10)

Series inductance, 0.5 nH. Typical peak voltage, 65 mV except TD-9, 60 mV typical; "A" types, 55 mV ±7.

GE Type	Peak Point I_P mA	Peak Point I_P ±%	Max. Valley Point mA	Max. Cap. pF	Typ. f_{no} GHz
1N3712 (TD-1)	1.0	10	0.18	10	2.3
1N3713*(TD-1A)	1.0	2.5	0.14	5	3.2
1N3714 (TD-2)	2.2	10	0.48	25	2.2
1N3715*(TD-2A)	2.2	2.5	0.31	10	3.0
1N3716 (TD-3)	4.7	10	1.04	50	1.8
1N3717*(TD-3A)	4.7	2.5	0.60	25	3.4
1N3718 (TD-4)	10.0	10	2.20	90	1.6
1N3719*(TD-4A)	10.0	2.5	1.40	50	2.8
1N3720 (TD-5)	22.0	10	4.80	150	1.6
1N3721*(TD-5A)	22.0	2.5	3.10	100	2.6
TD-9	0.5	10	10.0	5	1.3

* MIL type available.

ULTRA-HIGH SPEED SWITCHING DO-18 (FIG. 12)

Subminiature epoxy package with series conductance of 1.5 nH.

GE Type	Peak Point mA (±10%)	Maximum Valley Point mA	Maximum Cap. pF	Voltage, mV Peak Point Typ.	Voltage, mV Fwd I_F=I_P
TD-251	2.2	0.31	3.0	70	500-650
TD-251A	2.2	0.31	1.0	110*	500-650
TD-252	4.7	0.60	4.0	80	500-650
TD-252A	4.7	0.60	1.0	120	500-650
TD-253	10.0	1.40	9.0	75	500-650
TD-253A	10.0	1.40	5.0	80	520-650
TD-253B	10.0	1.40	2.0	120*	550-650
TD-254	22.0	3.80	18.0	90	600 typ.
TD-254A	22.0	3.80	4.0	120*	550-650
TD-255	50.0	8.50	25.0	110	625 typ.
TD-255A	50.0	8.50	5.0	130	640 typ.
TD-256	100	17.50	35.0	150	650 typ.
TD-256A	100	17.50	6.0	180	660 typ.

* Maximum.

MICROWAVE (FIG. 13)

High performance microwave pill package supplied with leads when specified. Dimensions are within JEDEC DO-20 outline with leads (Fig. 14). Series inductance of 0.15 nH. Package capacitance, 0.25 pF. Typical peak point current, 1.85 mA. Negative resistance, 60-80 ohms.

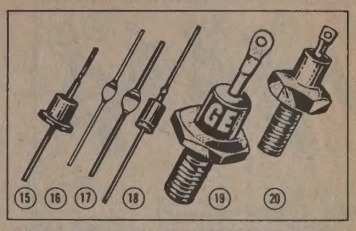
GE Type	Maximum C_J pF	Maximum R_S Ohms	GE Type	Maximum C_J pF	Maximum R_S Ohms
TD-401	3.5	3	TD-405	.60	6
TD-402	1.8	4	TD-406	.48	6
TD-403	1.0	5	TD-407	.37	6
TD-404	.75	5	TD-408	.30	6

SILICON LOW CURRENT RECTIFIER CELLS
LEAD MOUNTED (FIG. 15)

Max. peak 1 Hz surge, 14 amps, 1N599-1N606A; 20 amps, 1N1692-1N1697; 15 amps, all others.

JEDEC or GE Type	PRV Volts	Max. I_{DC} mA	Max. I_{DC} T_A°C	Max. I_R* Cur.	Max. I_R* at °C	Max. Oper.°C
1N536	50	750	50	.4 mA	150	165
1N537	100	750	50	.4 mA	150	165
1N538*	200	750	50	.3 mA	150	165
1N539	300	750	50	.3 mA	150	165
1N540*	400	750	50	.3 mA	150	165
1N547*	600	750	50	.3 mA	150	165
1N1095	500	675	50	.3 mA	150	150
1N1096	600	640	50	.3 mA	150	150
1N1487	100	750	25	.4 mA	125	140
1N1488	200	750	25	.3 mA	125	140
1N1489	300	750	25	.3 mA	125	140
1N1490	400	750	25	.3 mA	125	140
1N1491	500	750	25	.3 mA	125	125
1N1492	600	750	25	.3 mA	125	120
1N1692	100	600	50	.5 mA	100	115
1N1693	200	600	50	.5 mA	100	115
1N1694	300	600	50	.5 mA	100	115
1N1695	400	600	50	.5 mA	100	115
1N1696	500	600	50	.5 mA	100	115
1N1697	600	600	50	.5 mA	100	115

• Full cycle average. † A types for magnetic service. * MIL type available.



GERMANIUM LOW CURRENT RECTIFIER CELLS

Max. peak 1 Hz surge, 25 amps. Max. oper. temp., 95°C.

JEDEC Type	Fig.	PRV Volts	Max. I_{DC} at 55°C A_A mA	Max. Rev. Cur., mA•	Max. FL Voltage Drop
1N91	15	100	150	1.35	.22 V
1N92	15	200	100	0.95	.19 V
1N93*	15	300	75	0.6	.18 V

• Full cycle avg. * MIL type available.

SOLID GLASS RECTIFIERS
A14 (FIG. 16)

Max. peak 1 Hz Surge = 50 amp

JEDEC or GE Type	PRV V	Max. I_{DC} at T_A A	Max. I_{DC} at T_A °C
1N5059(A14B)	200	1.0	100
1N5060(A14D)	400	1.0	100
1N5061(A14M)	600	1.0	100
1N5062(A14N)	800	1.0	100
A14F	50	1.0	100
A14A	100	1.0	100
A14P	1000	1.0	90

A15 (FIG. 17)

Max. peak 1 Hz Surge = 125 amp

A15F	50	3.0	70
A15A	100	3.0	70
A15B	200	3.0	70
A15D	400	3.0	70
A15M	600	3.0	70
A15N	800	3.0	70

MPR (2-PELLET A14)

Utilizes Class 14 construction.
Max. peak 1 Hz Surge = 25 amp

MPR-10	1000	0.5	100
MPR-12	1200	0.5	100
MPR-15	1500	0.5	100

A14 MODULES (POTTED BLOCKS)

A1423BB1AB1*	200	1.5	50
A1423MB1AB1*	600	1.5	50
A1423BF1AB1‡	200	1.4	50
A1423MF1AB1‡	600	1.4	50
A1425MH5AB1§	3000	0.5	50
A1425MH10AB1§	6000	0.4	50
A1425PBH5AB1§	6000	0.2	50
A1425PBH10AB1§	12000	0.16	50

Circuit: * Single-phase FW bridge
‡ Three-phase FW bridge
§ Half-wave series string

Note: Many other circuits/voltages also available.

FLANGELESS (FIG. 18)

Max. peak 1 Hz surge, 30 A (40 A, 1N3600 Series). Max. oper. temp., 175°C.

JEDEC or GE Type	PRV Volts	Max. I_{DC} mA	Max. I_{DC} T_A°C	Max. I_R* mA	Max. I_R* at °C	Max. FL Drop V	Max. FL Drop at °C
1N2610†	100	850	25	0.3	150	0.5	150
1N2611†	200	850	25	0.3	150	0.5	150
1N2612†	300	850	25	0.3	150	0.5	150
1N2613†	400	850	25	0.3	150	0.5	150
1N2614†	500	850	25	0.3	150	0.5	150
1N2615†	600	850	25	0.3	150	0.5	150
1N3189‡*	200	1.0 A	100	0.5	25§	1.0¶	25
1N3190‡*	400	1.0 A	100	0.5	25§	1.0¶	25
1N3191‡*	600	1.0 A	100	0.5	25§	1.0¶	25

• Full cycle average. † Add suffix $ for plastic sleeve. ‡ Diffused. § At rated PRV. ¶ At 750 mA. * MIL type available.

STUD-MOUNTED (FIG. 19)

JEDEC Type	PRV Volts	Max. I_{DC} mA	Max. I_{DC} Case°C	Max. I_R¶ mA	Max. I_R¶ at °C	Max. FL Drop at mA V	Max. FL Drop at mA at °C
1N1115*	100	1.5 A	85	.04	150	.65	150
1N1116*	200	1.5 A	85	.03	150	.65	150
1N1117*	300	1.5 A	85	.03	150	.65	150
1N1118*	400	1.5 A	85	.03	150	.65	150
1N1119†	500	1.3 A	85	.03	150	.65	150
1N1120†	600	1.3 A	85	.03	150	.65	150

STUD-MOUNTED (FIG. 20)

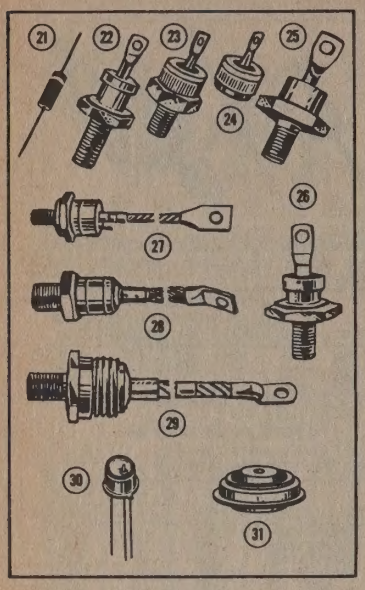
1N1124	200	3.0 A	50‡	0.3	150	1.1	1 A§
1N1124A	200	3.3 A	50‡	0.3	150	1.1	1 A§
1N1125	300	3.0 A	50‡	0.3	150	1.1	1 A§
1N1126	400	3.0 A	50‡	0.3	150	1.1	1 A§
1N1126A	400	3.3 A	50‡	0.3	150	0.5	1 A§
1N1127	500	3.0 A	50‡	0.3	150	1.1	1 A§
1N1128	600	3.0 A	50‡	0.3	150	1.1	1 A§
1N1128A	600	3.3 A	50‡	0.3	150	1.1	1 A§

Max. operating temperature, 150°C except: * 170°C; † 155°C. ‡ Ambient. § At 25°C. ¶ Full cycle average.

GENERAL ELECTRIC

SEMICONDUCTORS

OEM Pricing Information begins on Page 1206.



RECTIFIER DIODE ASSEMBLIES (FIG. 21)

GE Type	PRV	Max. I_{DC} mA	
		T_A=25°C	T_A=100°C
1N1730	1000	200	100
1N1731	1500	200	100
1N1732	2000	200	100
1N1733	3000	150	75
1N2382	4000	150	75
1N1734	5000	100	50
1N2383	6000	100	50
1N2384	8000	70	35
1N2385	10000	70	35

All information JEDEC registration data.

THYRECTOR DIODES

Use as transient voltage suppressors for connection across a-c input of rectifiers. Gives instant response and high dissipation. Temperature stable. Max. operating temp., 100°C. Sizes: 6RS21 1" sq., 6RS20 37/64" dia.

GE Type	RMS Input V	GE Type	RMS Input V
6RS21SA1D1	25	6RS21SA18D18	450
6RS21SA2D2	50	6RS21SA19D19	475
6RS21SA3D3	75	6RS21SA20D20	500
6RS21SA4D4	100	6RS20SP1B1	30
6RS21SA5D5	125	6RS20SP2B2	60
6RS21SA6D6	150	6RS20SP3B3	90
6RS21SA7D7	175	6RS20SP4B4	120
6RS21SA8D8	200	6RS20SP5B5	150
6RS21SA9D9	225	6RS20SP6B6	180
6RS21SA10D10	250	6RS20SP7B7	210
6RS21SA11D11	275	6RS20SP8B8	240
6RS21SA12D12	300	6RS20SP9B9	270
6RS21SA14D14	350	6RS20SP10B10	300
6RS21SA16D16	400		

1 WATT SILICON ZENER DIODES (FIG. 18)

Tolerance ±10%; Z4X5.1B-1N1776 available ±5% (add suffix A); Z4XL6.2B-Z4XL22B available ±20% (no suffix, Z4XL6.2).

JEDEC or GE Type	Nominal V_{ZT} at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ohms	Typ. TC %/°C	I_{ZM} T_A= 50°C mA
Z4X5.1B	5.1	100	7.0	0.013	160
1N1765	5.6	100	1.2	0.021	150
1N1766	6.2	100	1.5	0.030	130
1N1767	6.8	100	1.7	0.037	120
1N1768	7.5	100	2.1	0.044	109
1N1769	8.2	100	2.4	0.050	100
1N1770	9.1	50	3.0	0.056	90
1N1771	10.0	50	3.5	0.062	82
1N1772	11.0	50	4.2	0.067	74
1N1773	12.0	50	5.0	0.071	68
1N1774	13.0	50	5.8	0.074	63
Z4X14B	14.0	50	6.6	0.077	58
1N1775	15.0	50	7.6	0.080	54
1N1776	16.0	50	8.6	0.082	51
Z4XL6.2B	6.2	20	9.0	0.030	123
Z4XL7.5B	7.5	20	12.0	0.044	101
Z4XL9.1B	9.1	20	15.0	0.056	83
Z4XL12B	12.0	20	24.0	0.071	63
Z4XL14B	14.0	20	3.0	0.077	54
Z4XL16B	16.0	20	40.0	0.082	47
Z4XL18B	18.0	20	50.0	0.085	43
Z4XL20B	20.0	20	60.0	0.088	38
Z4XL22B	22.0	20	72.0	0.090	34

SILICON MEDIUM CURRENT RECTIFIER CELLS

Mount directly to a chassis or fin; insulation kit supplied. All units except 1N3569, 1N3670A-73A and 1N3765-1N3768 are also available with reverse polarity. Series 1N248, A, B thru 1N250, A, B, JAN and Series 1N1191-1N1206 also available; complete specs on request. 1N1202A, 1N1204A and 1N1206A also available to JAN and JANTX specifications.

JEDEC or GE Type	Fig.	PRV V★	Max. I_{DC}* A	JEDEC or GE Type	Fig.	PRV V★	Max. I_{DC}* A
1N248C	25	55	20■	1N2158	25	400	25†
1N249C	25	110	20■	1N2159	25	500	25†
1N250C	25	220	20■	1N2160	25	600	25†
1N1183	25	50	35•	1N3208	23	50	15♦
1N1184π	25	100	35•	1N3209	23	100	15♦
1N1185	25	150	35•	1N3210	23	200	15♦
1N1186π	25	200	35•	1N3211	23	300	15♦
1N1187	25	300	35•	1N3212	23	400	15♦
1N1188π	25	400	35•	1N3213	23	500	15♦
1N1189	25	500	35•	1N3214	23	600	15♦
1N1190	25	600	35•	1N3569	19	100	3.5‡
1N1195A	25	300	20■	1N3570	19	200	3.5‡
1N1196A	25	400	20■	1N3571	19	300	3.5‡
1N1197A	25	500	20■	1N3572	19	400	3.5‡
1N1198A	25	600	20■	1N3573	19	500	3.5‡
1N1199A	19	50	12■	1N3574	19	600	3.5‡
1N1200A	19	100	12■	1N3670A	22	700	12■
1N1201A	19	150	12■	1N3671A	22	800	12■
1N1202A	19	200	12■	1N3672A	22	900	12■
1N1203A	19	300	12■	1N3673A	22	1000	12■
1N1204A	19	400	12■	1N3765	26	700	35•
1N1205A	19	500	12■	1N3766	26	800	35•
1N1206A	19	600	12■	1N3767	26	900	35•
1N1341A	19	50	6■	1N3768	26	1000	35•
1N1342A	19	100	6■	1N5331	22	1200	12■
1N1343A	19	150	6■	1N5332	26	1200	35•
1N1344A	19	200	6■	A40A▲	23	100	20§
1N1345A	19	300	6■	A40B▲	23	200	20§
1N1346A	19	400	6■	A40C▲	23	300	20§
1N1347A	19	500	6■	A40D▲	23	400	20§
1N1348A	19	600	6■	A40E▲	23	500	20§
1N1612	19	50	5■	A40F▲	23	50	20§
1N1613	19	100	5■	A40M▲	23	600	20§
1N1614π	19	200	5■	A44A#	24	100	20§
1N1615π	19	400	5■	A44B#	24	200	20§
1N1616π	19	600	5■	A44C#	24	300	20§
1N2154	25	50	25†	A44D#	24	400	20§
1N2155	25	100	25†	A44E#	24	500	20§
1N2156	25	200	25†	A44F#	24	50	20§
1N2157	25	300	25†	A44M#	24	600	20§

FAST RECOVERY TYPES

Max. recovery time, 200 nsec except A28 Series, 100 nsec. For reverse polarity add suffix R (1N3879R, A28AR).

1N3879	19	50	6	1N3902	25	300	20
1N3880π	19	100	6	1N3903	25	400	20
1N3881	19	200	6	1N3909π	25	50	30
1N3882	19	300	6	1N3910π	25	100	30
1N3883π	19	400	6	1N3911π	25	200	30
1N3889π	19	50	12	1N3912π	25	300	30
1N3890π	19	100	12	1N3913π	25	400	30
1N3891π	19	200	12	A28A	19	100	12¶
1N3892π	19	300	12	A28B	19	200	12¶
1N3893π	19	400	12	A28C	19	300	12¶
1N3899	25	50	20	A28D	19	400	12¶
1N3900	25	100	20	A28F	19	50	12¶
1N3901	25	200	20				

★ Repetitive. * Stud single phase at 100°C except: ‡ 85°C; § 110°C; ¶ 135°C; • 140°C; † 145°C; ■ 150°C; ♦ 150°C Tc. For reverse polarity, change to: ▲ A41; # A45. π MIL type available.

RECTIFIER DIODES (FIG. 28)

JEDEC Number 160A Avg, 1Hz Surge of 4500A	JEDEC Number 275A Avg, 1Hz Surge of 5000A	PRV Volts Repetitive	PRV Volts Transient	1ϕ I_R
1N3260	1N4044	50	100	16.0
1N3261	1N4045	100	200	16.0
1N3262	1N4046	150	250	16.0
1N3263	1N4047	200	300	16.0
1N3264	1N4048	250	350	16.0
1N3265	1N4049	300	400	16.0
1N3266	.....	350	450	16.0
1N3267	1N4050	400	525	16.0
1N3268	1N4051	500	650	13.0
1N3269	1N4052	600	800	12.0
1N3270	1N4053	700	925	11.0
1N3271	1N4054	800	1050	9.0
1N3272	1N4055	900	1175	8.0
1N3273	1N4056	1000	1300	7.0

Note: Available also in reverse polarity.

LIGHT ACTIVATED SILICON SCR'S

Effective irradiance (mW/cm²) to trigger at 25°C T_J, 6 VDC, 0.68-10.0 (L9 and L911 Series, 0.68-4.2). L8, L9, TO-5 outline; others same except diamond base heatsink.

PRV/V_{BO}	(Max. I_{DC}= .44 A, 25°C) Type	Type	(Max. I_{DC}= .77 A, 25°C) Type	Type
25	L8U	L9U	L811U	L911U
50	L8F	L9F	.....	L911F
100	L8A	L9A	L811A	L911A
150	L8G	L9G	L811G	L911G
200	L8B	L9B	L811B	L911B

SILICON HIGH CURRENT RECTIFIER CELLS

Also available in forward or reverse polarity: Use A71, A91 or add suffix R to JEDEC no. A291 and A295 reverse polarity only.

GE Type	JEDEC No.	Fig.	PRV Volts Repetitive	PRV Volts Transient	Max. I_{DC} A
A70A	.....	27	100	200	100
A70B	1N3289*	27	200	300	100
A70C	1N3290	27	300	400	100
A70D	1N3291*	27	400	525	100
A70E	1N3292	27	500	650	100
A70M	1N3293*	27	600	800	100
A70N	1N3294*	27	800	1050	100
A70P	1N3295*	27	1000	1300	100
A70PA	.....	27	1100	1400	100
A70PB	1N3296	27	1200	1500	100
A70S	.....	27	700	900	100
A70T	.....	27	900	1100	100
A90A	1N3735	28	100	200	250
A90B	1N3736	28	200	300	250
A90C	1N3737	28	300	400	250
A90D	1N3738	28	400	525	250
A90E	1N3739	28	500	650	250
A90M	1N3740	28	600	800	250
A90N	1N3741	28	800	1050	250
A90P	1N3742	28	1000	1300	250
A90PA	.....	28	1100	1400	250
A90PB	.....	28	1200	1500	250
A90S	.....	28	700	925	250
A90T	.....	28	900	1125	250
A291PC	.....	29	1300	1500	250
A291PD	.....	29	1400	1600	250
A291PE	.....	29	1500	1700	250
A291PM	.....	29	1600	1800	250
A291PN	.....	29	1800	2000	250
A291PS	.....	29	1700	1900	250
A295A	.....	29	100	200	500
A295B	.....	29	200	400	500
A295C	.....	29	300	500	500
A295D	.....	29	400	600	500
A295E	.....	29	500	700	500
A295M	.....	29	600	800	500
A295N	.....	29	800	1000	500
A295P	.....	29	1000	1200	500
A295S	.....	29	700	900	500
A295T	.....	29	900	1100	500
A295PA	.....	29	1100	1300	500
A295PB	.....	29	1200	1400	500
A295PC	.....	29	1300	1500	500
A295PD	.....	29	1400	1600	500
A295PE	.....	29	1500	1700	500
A295PM	.....	29	1600	1800	500
A295PS	.....	29	1700	1900	500
A295PN	.....	29	1800	2000	500

* MIL type available.

IN PRESSURE MOUNTED PACKAGES

FIG. 31

1ϕ avg = 400 A. 1 Hz surge = 4500 A.

GE Type	PRV Volts Repetitive	PRV Volts Transient	1ϕ I_R
A390A	100	200	16
A390B	200	300	16
A390C	300	400	16
A390D	400	525	16
A390E	500	650	15
A390M	600	800	12.5
A390S	700	925	12.5
A396N	800	1050	10
A390T	900	1175	10
A390P	1000	1300	8
A390PA	1100	1400	8
A390PB	1200	1500	8

FIG. 31

1ϕ avg = 400 A. 1 Hz surge = 3300 A.

A396A	100	200	16
A396B	200	300	16
A396C	300	400	16
A396D	400	500	16
A396E	500	600	15
A396M	600	720	12.5
A396S	700	840	12.5
A396N	800	950	10
A396T	900	1075	10
A396P	1000	1200	10

FIG. 31

1ϕ avg = 1000 A. 1 Hz surge = 10,000 A.

A540A	100	200	20
A540B	200	300	20
A540C	300	400	20
A540D	400	500	20
A540E	500	600	20
A540M	600	700	20
A540N	700	800	20
A540S	800	900	20
A540T	900	1000	20
A540P	1000	1100	20
A540PA	1100	1200	20
A540PB	1200	1350	20
A540PC	1300	1450	20
A540PD	1400	1600	20
A540PE	1500	1700	20
A540PM	1600	1800	20
A540PN	1700	1900	20
A540PS	1900	2000	20
A540PT	1900	2100	20
A540L	2000	2200	20

FIG. 49

1ϕ avg = 1500 A. 1 Hz surge = 15,000 A.

A570F	50	100	20
A570A	100	200	20
A570B	200	300	20
A570C	300	400	20
A570D	400	500	20
A570E	500	600	20
A570M	600	700	20

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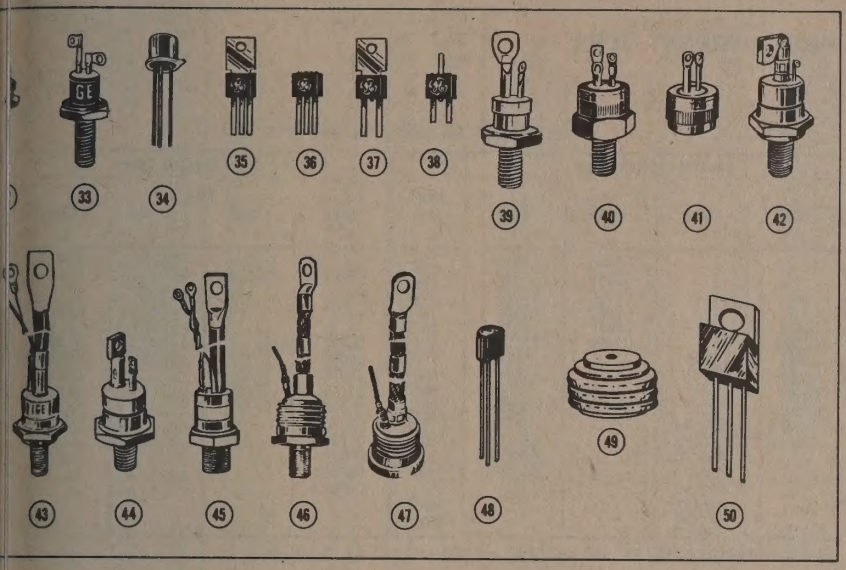
SEMICONDUCTORS

OEM Pricing Information begins on Page 1206.



SILICON LOW CURRENT SCR'S

No.	Fig.	PRV and V_{BO}	Max. I_{DC} A	GE or JEDEC No.	Fig.	PRV and V_{BO}	Max. I_{DC} A
5	30	50	1.6	2N885	34	30	.5
6	30	100	1.6	2N886	34	60	.5
7	30	200	1.6	2N887	34	100	.5
8	30	300	1.6	2N888	34	150	.5
9	30	400	1.6	2N889	34	200	.5
2	30	25	1.6	C6U‡	30	25	1.6
3*	30	50	1.6	C6F‡	30	50	1.6
1*	30	100	1.6	C6A‡	30	100	1.6
5	30	150	1.6	C6G‡	30	150	1.6
3*	30	200	1.6	C6B‡	30	200	1.6
7	30	250	1.6				
8	30	300	1.6	C12U†	33	25	6
9	30	400	1.6	C12F†	33	50	6
				C12A†	33	100	6
2A	30	25	1.6	C12G†	33	150	6
4A*	30	50	1.6	C12B†	33	200	6
6A*	30	100	1.6	C12H†	33	250	6
5A	30	150	1.6	C12C†	33	300	6
3A*	30	200	1.6				
7A	30	250	1.6	C15U	33	25	8
9A	30	300	1.6	C15F	33	50	8
				C15A	33	100	8
4	30	25	.6	C15G	33	150	8
5	30	50	.6	C15B	33	200	8
6	30	100	.6	C15C	33	300	8
7	30	150	.6	C15D	33	400	8
8	30	200	.6	C15E	33	500	8
				C15M	33	600	8
1	32	25	1.1				
2	32	50	1.1	C103Y	48	30	0.6
3	32	100	1.1	C103YY	48	60	0.6
4	32	150	1.1	C103A	48	100	0.6
5	32	200	1.1	C103B	48	200	0.6
6	32	250	1.1				
7	32	300	1.1	C106Q1	35	15	2.0
				C106Y1	35	30	2.0
1A	33	25	7.4	C106F1	35	50	2.0
2A*	33	50	7.4	C106A1	35	100	2.0
4A*	33	100	7.4	C106B1	35	200	2.0
6A	33	150	7.4	C106C1•	35	300	2.0
8A*	33	200	7.4				
9A	33	250	7.4	C106Q2	36	15	2.0
1A*	33	300	7.4	C106Y2	36	30	2.0
3A*	33	400	7.4	C106F2	36	50	2.0
				C106A2	36	100	2.0
	33	25	6	C106B2	36	200	2.0
	33	50	6	C106C2•	36	300	2.0
	33	100	6				
	33	150	6	C103Q3	37	15	2.0
	33	200	6	C106Y3	37	30	2.0
	33	250	6	C106F3	37	50	2.0
	33	300	6	C106A3	37	100	2.0
	33	400	6	C106B3	37	200	2.0
	33	500	6	C106C3•	37	300	2.0
	33	600	6				
				C106Q4	38	15	2.0
	34	30	.5	C106Y4	38	30	2.0
	34	60	.5	C106F4	38	50	2.0
	34	100	.5	C106A4	38	100	2.0
	34	150	.5	C106B4	38	200	2.0
	34	200	.5	C106C4•	38	300	2.0

ff time guaranteed at 12 μsec max. Designed rter applications. ‡For diamond base heat- sion (Fig. 31) of C6 Series use C611-. • X100 or a-c only. *MIL type available.

MEDIUM CURRENT SCR'S (FIG. 39)

Series C20, C30 and C31, Fig. Y; Series C22, C32 and C33, Fig. Z. Series C122, Fig. II.

GE or JEDEC No.	PRV and V_{BO}	Max. I_{DC} A	GE or JEDEC No.	PRV and V_{BO}	Max. I_{DC} A
C20U	25	7.4	2N1850	500	16
C20F	50	7.4	C36M	600	16
C20A	100	7.4	C36S	700	16
C20B	200	7.4	C36N	800	16
C20C	300	7.4			
C20D	400	7.4	2N1842A	25	25
			2N1843A	50	25
C22U	25	7.4	2N1844A	100	25
C22F	50	7.4	2N1845A	150	25
C22A	100	7.4	2N1846A	200	25
C22B	200	7.4	2N1847A	250	25
C22C	300	7.4	2N1848A	300	25
C22D	400	7.4	2N1849A	400	25
			2N1850A	500	25
C30U*	25	25			
C30F*	50	25	C37U	25	25
C30A*	100	25	C37F	50	25
C30B*	200	25	C37A	100	25
C30C*	300	25	C37B	200	25
C30D*	400	25	C37C	300	25
			C37D	400	25
C32U†	25	25	C37E	500	25
C32F†	50	25	C37M	600	25
C32A†	100	25	C37S	700	25
C38B†	200	25	C37N	800	25
C32C†	300	25			
C32D†	400	25	2N5204	600	25
			2N5205	800	25
C35U	25	35	2N5206	1000	25
C35F	50	35	2N5207	1200	25
C35A	100	35	C38U	25	35
C35G	150	35			
C35B	200	35	C38F	50	35
C35H	250	35	C38A	100	35
C35C	300	35	C38G	150	35
C35D	400	35	C38B	200	35
C35E	500	35	C38H	250	35
C35M	600	35	C38C	300	35
C35S	700	35	C38D	400	35
C35N	800	35	C38E	500	35
2N681	25	25	C122D	400	8.0
2N682*	50	25	C122F	50	8.0
2N683*	100	25	C122B	200	8.0
2N684	150	25	C122D	400	8.0
2N685*	200	25			
2N686*	250	25	C137E	500	35
2N687*	300	25	C137M	600	35
2N688*	400	25	C137N	800	35
2N689*	500	25	C137P	1000	35
2N690	600	25	C137PB	1200	35
2N691	700	25	2N3649	50	25
2N692	800	25	2N3650	100	25
			2N3651	200	25
2N1842	25	16	2N3652	300	25
2N1843	50	16	2N3653	400	25
2N1844	100	16			
2N1845	150	16	2N3654‡	50	25
2N1846	200	16	2N3655‡	100	25
2N1847	250	16	2N3656‡	200	25
2N1848	300	16	2N3657‡	300	25
2N1849	400	16	2N3658‡	400	25

For max. required gate signal to 9 mA change no. to: * C31-; † C33-. ‡ Inverter type; turn-off time guaranteed at 10 μsec max. * Mil type available.

HIGH CURRENT SCR'S

Maximum I_{RMS} 55 amps.

GE Type Fig. 42	GE Type Fig. 43	PRV and V_{BO}	GE Type Fig. 42	GE Type Fig. 43	GE Type Fig. 44	PRV and V_{BO}
C45U	C46U	25	C45E	C46E	C145E	500
C45F	C46F	50	C45M	C46M	C145M	600
C45A	C46A	100	C45S	C46S	C145S	700
C45G	C46G	150	C45N	C46N	C145N	800
C45B	C46B	200	C45T	C46T	C145T	900
C45H	C46H	250	.....	.....	C146P	1000
C45C	C46C	300	.....	.....	C145PA	1100
C45D	C46D	400	.....	.....	C145PB	1200

Max. I_{RMS} 110 amps. Guaranteed Turn-Off Time: C55, C56 and inverter type C155 and C157 Series, less than 20 μsec; inverter type C154 and 156 Series, less than 10 μsec.

GE Type Fig. 43	GE Type Fig. 42	PRV and V_{BO}	GE Type Fig. 43	GE Type Fig. 42	PRV and V_{BO}
C55U	C56U	25	C150PA	C152PA	1100
C55F	C56F	50	C150PB	C152PB	1200
C55A	C56A	100	C150PC	C152PC	1300
C55G	C56G	150			
C55B	C56B	200	C154A	C156A	100
C55H	C56H	250	C154B	C156B	200
C55C	C56C	300	C154C	C156C	300
C55D	C56D	400	C154D	C156D	400
C55E	C56E	500	C154E	C156E	500
C55M	C56M	600	C154M	C156M	600
C150E	C152E	500	C155A	C157A	100
C150M	C152M	600	C155B	C157B	200
C150S	C152S	700	C155C	C157C	300
C150N	C152N	800	C155D	C157D	400
C150T	C152T	900	C155E	C157E	500
C150P	C152P	1000	C155M	C157M	600

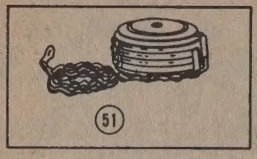
Max. I_{DC} = 235A except C50, C52 and C60 Series, 110A; C290 Series, 470A; C60 Series T_J = 150°C max.

GE Type Fig. 42	GE Type Fig. 43	JEDEC No. Fig. 43	PRV and V_{BO}	GE Type Fig. 45		PRV and V_{BO}
.....	C50U	2N1909	25	C180A	.....	100
C52F	C50F	2N1910*	50	C180B	.....	200
C52A	C50A	2N1911*	100	C180C	.....	300
C52G	C50G	2N1912	150	C180D	.....	400
C52B	C50B	2N1913*	200	C180M	.....	600
C52H	C50H	2N1914	250	C180E	.....	500
C52C	C50C	2N1915*	300	C180S	.....	700
C52D	C50D	2N1916*	400	C180N	.....	800
C52E	C50E	.....	500	C180T	.....	900
C52M	C50M	.....	600	C180P	.....	1000
C52S	C50S	.....	700	C180PA	.....	1100
C52N	C50N	.....	800	C180PB	.....	1200
C52T	C50T	.....	900	C180PC	.....	1300
.....	C60U	2N2023	25	C185A‡	.....	100
C62F	C60F	2N2024	50	C185B‡	.....	200
C62A	C60A	2N2025	100	C185C‡	.....	300
C62G	C60G	2N2026	150	C185D‡	.....	400
C62B	C60B	2N2027	200	C185E‡	.....	500
C62H	C60H	2N2028	250	C185M‡	.....	600
C62C	C60C	2N2029	300	Fig. 46	Fig. 47	
C62D	C60D	2N2030	400	C280S	C281S	700
C62E	C60E	.....	500	C280N	C281N	800
.....	.....	2N2031	50	C280T	C281T	900
C159A	C158A	.....	100	C280P	C281P	1000
C159B	C158B	.....	200	C280PA	C281PA	1100
C159C	C158C	.....	300	C280PB	C281PB	1200
C159D	C158D	.....	400	C280PC	C281PC	1300
C159E	C158E	.....	500	C280PD	C281PD	1400
C159M	C158M	.....	600	C280PE	C281PE	1500
C159S	C158S	.....	700	C280PM	C281PM	1600
C159N	C158N	.....	800	C280PS	C281PS	1700
C159T	C158T	.....	900	C280PN	C281PN	1800
C159P	C158P	.....	1000	C290A	C291A	100
C159PA	C158PA	.....	1100	C290B	C291B	200
C159PB	C158PB	.....	1200	C290C	C291C	300
		Fig. 42		C290D	C291D	400
				C290E	C291E	500
.....	.....	2N1792†	50	C290M	C291M	600
.....	.....	2N1793†	100	C290S	C291S	700
.....	.....	2N1794†	150	C290N	C291N	800
.....	.....	2N1795†	200	C290T	C291T	900
.....	.....	2N1796†	250	C290P	C291P	1000
.....	.....	2N1797†	300	C290PA	C291PA	1100
.....	.....	2N1798†	400	C290PB	C291PB	1200

* MIL type available. † PRV rating shown is 20% higher than V_{BO} rating. ‡ Inverter type.

GENERAL ELECTRIC

SEMICONDUCTORS



HIGH CURRENT SCR's

PRESS PAK SCR'S (FIG. 51)

General Electric Type I_{AVG} = 115A	115A *	115A †	110A ‡	235A	250A †	PRV and V_{BO}
C350A	C354A	C355A	C358A	C380A	C385A	100
C350B	C354B	C355B	C358B	C380B	C385B	200
C350C	C354C	C355C	C358C	C380C	C385C	300
C350D	C354D	C355D	C358D	C380D	C385D	400
C350E	C354E	C355E	C358E	C380E	C385E	500
C350M	C354M	C355M	C358M	C380M	C385M	600
C350S	.....	.....	C358S	C380S	.....	700
C350N	.....	.....	C358N	C380N	.....	800
C350T	.....	.....	C358T	C380T	.....	900
C350P	.....	.....	C358P	C380P	.....	1000
C350PA	.....	.....	C358PA	C380PA	.....	1100
C350PB	.....	.....	C358PB	C380PB	.....	1200
C350PC	.....	.....	C358PC	C380PC	.....	1300

Tg min = *10 μs, †20 μs, ‡40 μs.

PRESSURE MOUNTED SCR'S (FIG. 51)

General Electric Type I_{RMS} = 740A *	850A †	625A ‡	625A §	PRV and V_{BO}	General Electric Type I_{RMS} = 625A ¶	450A π	1125A △	1000A △
.....	.....	C506A	C507A	100	.....	.....	C520F	C530F
.....	.....	C506B	C507B	200	C508A	C510A	C520A	C530A
.....	.....	C506C	C507C	300	.....	.....	C520G	.....
.....	.....	C506D	C507D	400	C508B	C510B	C520B	C530B
C398E	.....	C506E	C507E	500	.....	.....	C520H	.....
C398M	.....	C506M	C507M	600	C508C	C510C	C520C	C530C
C398S	C501S	.....	C507S	700	C508D	C510D	C520D	C530D
C398N	C501N	.....	C507N	800	C508E	C510E	.....	C530E
C398T	C501T	.....	C507T	900	C508M	C510M	.....	C530M
C398P	C501P	.....	C507P	1000	C508S	C510S	.....	.....
C398PA	C501PA	.....	C507PA	1100	C508N	.....	.....	.....
C398PB	C501PB	.....	C507PB	1200	C508T	.....	.....	.....
.....	C501PC	.....	C507PC	1300	C508P	.....	.....	.....
.....	C501PD	.....	C507PD	1400	C508PA	.....	.....	.....
.....	C501PE	.....	.....	1500	C508PB	.....	.....	.....
.....	C501PM	.....	.....	1600				
.....	C501PS	.....	.....	1700				

Tg min = *30 μs, †300 μs, ‡40 μs, §100 μs, ¶60 μs, π15 μs, △150 μs,

OEM Pricing Information

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
1N91	$0.90	$0.60	.....
1N92	1.95	1.30	$1.15
1N93	2.70	1.80	1.60
JAN1N93A	3.45	2.30	2.10
1N248, A, B, C†‡	1.65	1.10	.....
1N249C†	2.03	1.35	.....
1N250, A, B	2.48	1.65	.....
JAN1N250B‡	5.47	3.65	.....
1N250C†‡	2.78	1.85	.....
1N251, -2	.65	.43	.22
1N536	.49	.32	.25
1N537	.55	.37	.28
1N538	.58	.39	.29
JAN1N538	.79	.52	.37
1N539	.65	.44	.34
1N540	.74	.49	.40
JAN1N540	.98	.65	.46
1N547	1.04	.70	.56
JAN1N547	1.39	.92	.64
1N625	.43	.29	.....
1N626	.43	.30	.....
1N814	.80	.54	.....
1N903	1.02	.68	.....
1N903A	1.17	.78	.....
1N904	.99	.66	.....
1N914	.30	.20	.14
1N914A	.40	.26	.15
1N914B	.80	.54	.17
1N916	.52	.34	.16
1N916A	.58	.38	.17
1N916B	1.07	.71	.27
1N1095	.84	.56	.45
1N1096	1.04	.70	.56
1N1115‡	1.05	.70	.....
1N1116‡	1.12	.75	.....

GE Type	Net Each*, Lots of 1-99	100-999
1N1117‡	$1.43	$0.95
1N1118‡	1.73	1.15
1N1119‡	1.80	1.20
1N1120‡	2.40	1.60
1N1124, A‡	1.86	1.24
1N1125, A‡	2.27	1.51
1N1126, A‡	3.45	2.30
1N1127, A‡	4.43	2.95
1N1128, A‡	5.20	3.47
1N1183†‡	1.95	1.30
1N1184†‡	2.40	1.60
JAN1N1184‡	3.90	2.60
1N1185†‡	2.92	1.95
1N1186†‡	3.45	2.30
JAN1N1186‡	5.47	3.65

GE Type	Net Each*, Lots of 1-99	100-999
1N1187†‡	$4.72	$3.15
1N1188†‡	5.85	3.90
JAN1N1188‡	8.89	5.93
1N1189†‡	6.45	4.30
1N1190†‡	6.90	4.60
1N1195, A†‡	4.02	2.68
1N1196, A†‡	4.85	3.30
1N1197, A†‡	6.15	4.10
1N1198, A†‡	6.65	4.45
1N1199, A†‡	1.24	.83
1N1200, A†‡	1.41	.94
1N1201, A†‡	1.81	1.21
1N1202, A†‡	2.62	1.75
1N1203, A†‡	3.60	2.40
1N1204, A†‡	4.57	3.05
1N1205, A†‡	5.32	3.55
1N1206, A†‡	6.37	4.25
1N1341, A†‡	1.12	.75
1N1342, A†‡	1.27	.85
1N1343, A†‡	1.63	1.09
1N1344, A†‡	2.22	1.48
1N1345, A†‡	3.16	2.11
1N1346, A†‡	3.96	2.64
1N1347, A†‡	4.65	3.10
1N1348, A†‡	5.48	3.65

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
1N1487	$0.53	$0.37	$0.28
1N1488	.57	.39	.29
1N1489	.65	.44	.34
1N1490	.73	.49	.40
1N1491	.83	.56	.44
1N1492	1.04	.70	.56
1N1612†‡	1.08	.72	.....
1N1613†‡	1.24	.83	.....
1N1614†‡	1.90	1.27	.....
JAN1N1614‡	3.03	2.02	.....
1N1615†‡	3.75	2.50	.....
JAN1N1615‡	5.25	3.50	.....
1N1616†‡	5.55	3.70	.....
JAN1N1616‡	7.16	4.77	.....
1N1692	.49	.32	.26
1N1693	.52	.34	.28
1N1694	.61	.41	.31
1N1695	.72	.48	.39
1N1696	.78	.52	.42
1N1697	1.01	.67	.55
1N1730	4.80	3.20	.....
1N1731	6.00	4.00	.....
1N1732	6.75	4.50	.....
1N1733	7.80	5.20	.....
1N1734	11.62	7.75	.....
1N1765—1N1768	2.40	.160	.144

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
1N1769—1N1776	$3.00	$2.00	$1.75
1N2154†‡	2.38	1.59	.....
1N2155†‡	3.00	2.00	.....
1N2156†‡	4.38	2.92	.....
1N2157†‡	5.25	3.50	.....
1N2158†‡	5.92	3.95	.....
1N2159†‡	6.15	4.10	.....
1N2160†‡	6.30	4.20	.....
1N2382	9.75	6.50	.....
1N2383	14.25	9.50	.....
1N2384	17.25	11.50	.....
1N2385	21.00	14.00	.....
1N2610	1.02	.68	.38
1N2610S	1.14	.76	.43
1N2611	1.14	.76	.43
1N2611S	1.26	.84	.48
1N2612	1.52	1.01	.48
1N2612S	1.62	1.08	.53
1N2613	1.71	1.14	.56
1N2613S	1.86	1.24	.61
1N2614	1.92	1.28	.56
1N2614S	2.04	1.36	.61
1N2615	2.30	1.53	.83
1N2615S	2.42	1.61	.88
1N3189	2.40	1.60	.96
JAN1N3189	2.70	1.80	1.08
1N3190	3.00	2.00	1.20
JAN1N3190	3.60	2.40	1.44
1N3191	5.10	3.40	2.05
JAN1N3191	5.80	3.85	2.30
1N3208†‡	1.73	1.15	.....
1N3209†‡	1.77	1.18	.....
1N3210†‡	1.82	1.21	.....
1N3211†‡	2.40	1.60	.....
1N3212†‡	2.90	1.93	.....
1N3213†‡	3.53	2.35	.....
1N3214†‡	4.20	2.80	.....

GE Type	Net Each*, Lots of 1-9	10-99
1N3260†	$16.00	$ 9.75
1N3261†	17.00	10.25
1N3262†	18.00	11.00
1N3263†	19.50	11.75
1N3264†	20.50	12.50
1N3265†	22.00	13.25
1N3266†	23.00	14.00
1N3267†	24.50	14.75
1N3268†	27.50	16.50
1N3269†	30.50	18.50
1N3270†	33.00	20.00
1N3271†	35.50	21.50
1N3272†	39.00	23.50
1N3273†	43.00	26.00

GE Type	Net Each*, Lots of 1-9	10-99
1N3289†	$13.00	$ 8.00
JAN1N3289†	23.00	14.00
1N3290†	14.00	8.50
1N3291†	15.00	9.00
JAN1N3291†	25.00	15.00
1N3292†	16.00	9.75
1N3293†	18.00	11.00
JAN1N3293†	30.00	18.00
1N3294†	22.00	13.25
JAN1N3294†	46.00	27.75
1N3295†	26.00	15.75
JAN1N3295†	52.00	31.25
1N3296†	30.00	18.00

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
1N3670, A‡	$7.87	$5.25	.....
1N3671, A‡	8.77	5.85	.....
1N3672, A‡	9.45	6.30	.....
1N3673, A‡	9.90	6.60	.....
1N3712	3.60	2.40	$2.18
1N3713	5.45	3.60	3.27
JAN1N3713	5.78	3.87	3.49
1N3714	3.16	2.12	1.91
1N3715	5.01	3.32	3.00
JAN1N3715	5.40	3.60	3.24
1N3716	2.25	1.50	1.35
1N3717	4.25	2.83	2.56
JAN1N3717	4.69	3.11	2.80
1N3718	2.74	1.83	1.65
1N3719	4.25	2.83	2.56
JAN1N3719	4.69	3.11	2.80
1N3720	3.64	2.42	2.18
1N3721	4.25	2.83	2.56
JAN1N3721	4.69	3.11	2.80

GE Type	Net Each*, Lots of 1-9	10-99
1N3736†	$23.00	$14.00
1N3737†	26.00	15.75
1N3738†	29.00	17.50
1N3739†	32.00	19.25
1N3740†	36.00	21.75
1N3741†	42.00	25.25
1N3742†	50.00	30.00

GE Type	Net Each*, Lots of 1-99	100-999
1N3765‡	$ 8.55	$ 5.70
1N3766‡	9.75	6.50

GE Type	Net Each* 1-99
1N3767‡	$10.72
1N3768‡	11.62
1N3879†‡	3.00
1N3880†‡	3.45
JAN1N3880‡	4.50
1N3881†‡	4.35
JAN1N3881‡	5.55
1N3882†‡	5.25
1N3883†‡	6.15
JAN1N3883‡	7.65
1N3889†‡	3.75
1N3890†‡	4.35
JAN1N3890‡	5.40
JANTX1N3890‡	7.20
1N3891†‡	5.55
JAN1N3891‡	6.75
JANTX1N3891‡	8.40
1N3892†‡	6.75
1N3893†‡	7.95
JAN1N3893‡	9.45
JANTX1N3893‡	10.80
1N3899†‡	5.25
1N3900†‡	6.15
1N3901†‡	7.95
1N3902†‡	9.75
1N3903†‡	11.55
1N3909†‡	6.00
JAN1N3909‡	7.20
1N3910†‡	7.05
JAN1N3910‡	8.40
1N3911†‡	9.15
JAN1N3911‡	10.80
1N3912†‡	11.25
JAN1N3912‡	13.20
1N3913†‡	13.35
JAN1N3913‡	15.60

GE Type	Net Each* 1-9
1N4044†	$16.00
1N4045†	17.00
1N4046†	18.00
1N4047†	19.50
1N4048†	20.50
1N4049†	22.00
1N4050†	29.00
1N4051†	33.00
1N4052†	36.00
1N4053†	39.00
1N4054†	42.00
1N4055†	46.00
1N4056†	50.00

EXPLANATORY NOTES appear at end of pricing information.

* Manufacturer's suggested net price. Prices are subject to change without notice.

Net

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SEMICONDUCTORS

OEM Pricing Information

	Net Each*, Lots of		
	1-99	100-999	1000-9999
	$3.35	$2.20	$2.00
	.30	.20	.14
148	.30	.20	.14
48	2.10	1.40	1.25
	.52	.34	.16
	2.10	1.40	.39
	.75	.50	.19
	.60	.40	.18
	.75	.50	.19
	.33	.22	.15
	.75	.50	.33
	1.04	.69	.39
	.60	.40	.17
	7.00	4.66	4.20
	15.00	10.00	9.00
	1.51	.99	.89
	.36	.24	.15
	.58	.38	.17
	.75	.50	.17
	1.07	.71	.27
	1.45	.97	.40
	1.28	.85	.75
	.54	.36	.26
	.24	.16	.12
1454	.24	.16	.12
54	2.10	1.40	1.25
	.45	.30	.14
	.65	.43	.14
	.69	.46	.24
	1.20	.80	.30
	1.31	.87	.35
	1.44	.94	.89
	.40	.25	.14
	.69	.46	.26
	.93	.62	.36
	1.02	.68	.58
	1.37	.91	.81
	.34	.23	.19
	.38	.26	.21
	.36	.28	.20
	.43	.33	.23
	.57	.45	.32
	.95	.63	.44
	1.32	.88	.49
	10.50	7.00	.....
	21.60	8.40	.....
	4.45	2.96	2.66
3A	5.37	3.58	3.22
	3.15	2.10	1.88
4A	5.00	3.34	3.00
	2.74	1.83	1.65
	3.00	2.00	1.82
8A	3.47	2.32	2.09
A	5.67	3.78	.....
67A	6.25	4.15	.....
	1.75	1.17	.....
	2.68	1.77	.....
	1.61	1.07	.97
	1.77	1.18	1.07
	.84	.56	.45
	.89	.59	.48
	.97	.65	.54
	1.71	1.14	.102
	1.05	.70	.59
	.91	.60	.....
	.99	.66	.....
	.44	.29	.26
	.59	.39	.35
	.65	.43	.....
	.42	.28	.....
	.59	.39	.....
	.72	.48	.....
A	.62	.41	.37
96A	.74	.49	.39
	.42	.28	.24
	.58	.39	.31
4	.42	.29	.24
	1.52	1.01	.91
61	1.92	1.28	1.15
	7.10	4.75	.....
	7.65	5.10	.....
89A	7.80	5.20	.....
	9.15	6.10	.....
	7.80	5.20	.....
	8.35	5.55	.....
90A	8.55	5.70	.....
	9.85	6.55	.....
	11.85	7.90	.....
	8.40	5.60	.....
	8.90	5.95	.....
91A	9.15	6.10	.....
	10.40	6.95	.....
	9.90	6.60	.....
	10.40	6.95	.....

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
JAN2N492A	$10.55	$7.05	.....
2N492B	11.90	7.95	.....
2N492C	13.90	9.28	.....
2N493	10.75	7.20	.....
2N493A	11.20	7.50	.....
JAN2N493A	11.40	7.60	.....
2N493B	12.75	8.50	.....
2N494	10.90	7.30	.....
2N494A	11.40	7.60	.....
JAN2N494A	11.60	7.70	.....
2N494B	12.90	8.60	.....
2N494C	14.95	9.95	.....
2N497§	2.08	1.39	.....
JAN2N497	2.15	1.44	.....
2N497A	2.25	1.51	.....
2N498§	2.18	1.45	.....
JAN2N498	2.40	1.60	.....
2N498A	3.56	2.37	.....
2N508	.69	.46	.....
2N508A	.81	.54	.....
2N524	.59	.39	$0.35
2N525	.80	.53	.48
2N526	1.00	.67	.59
JAN2N526	1.10	.73	.63
2N527	1.00	.67	.60
2N656§	2.10	1.40	.....
JAN2N656	2.16	1.44	.....
2N656A	2.50	1.65	.....
2N657§	2.30	1.52	.....
JAN2N657	2.34	1.56	.....
2N657A	3.00	2.00	.....
2N681‡	3.00	2.00	.....
2N682‡	3.60	2.40	.....
JAN2N682‡	5.52	3.68	.....
2N683‡	4.72	3.15	.....
JAN2N683‡	6.70	4.47	.....
2N684‡	5.47	3.65	.....
2N685‡	5.92	3.95	.....
JAN2N685‡	7.96	5.31	.....
2N686‡	6.30	4.20	.....
JAN2N686‡	8.52	5.68	.....
2N687‡	6.75	4.50	.....
JAN2N687‡	9.07	6.05	.....
2N688‡	8.25	5.50	.....
JAN2N688‡	10.72	7.15	.....
2N689‡	10.12	6.75	.....
JAN2N689‡	12.85	8.57	.....
2N690‡	12.00	8.00	.....
2N691‡	19.27	12.85	.....
2N692‡	27.75	18.50	.....
2N877	3.00	2.00	.....
2N878	3.30	2.20	.....
2N879	5.40	3.60	.....
2N880	6.30	4.20	.....
2N881	7.50	5.00	.....
2N885	8.62	5.75	.....
2N886	10.50	7.00	.....
2N887	13.12	8.75	.....
2N888	14.77	9.85	.....
2N889	15.97	10.65	.....
2N997	14.95	9.95	.....
2N998	13.50	9.00	.....
2N999	14.85	9.90	.....
2N1057	5.65	3.76	3.39
2N1086	1.22	.81	.....
2N1086A	1.75	1.17	.....
2N1087	2.00	1.34	.....
2N1097	.57	.38	.28
2N1098	.53	.35	.25
2N1121	1.75	1.17	1.05
2N1144	.81	.54	.43
2N1145	.73	.48	.38

GE Type	Net Each*, Lots of 1-99	100-999
2N1175	$ 0.93	$ 0.62
2N1175A	1.35	.90
2N1303	.45	.30
2N1305	.52	.35
2N1307	.66	.44
2N1413, -4	.69	.46
2N1415	.80	.53
2N1595	2.25	1.50
2N1596	3.50	2.33
2N1597	6.90	4.60
2N1598	10.65	7.10
2N1599	14.20	9.45
2N1614	2.70	1.77
2N1671	2.95	1.97
2N1671A	3.20	2.13
2N1671B	3.55	2.36
2N1671C	8.25	5.50
2N1694	1.09	.73
2N1770‡	4.05	2.70

GE Type	Net Each*, Lots of 1-99	100-999
2N1770A‡	$ 6.15	$ 4.10
2N1771‡	4.65	3.10
2N1771A‡	6.97	4.65
JAN2N1771A‡	9.37	6.25
JANTX2N1771A‡	11.62	7.75
2N1772‡	5.77	3.85
2N1772A‡	9.00	6.00
JAN2N1772A‡	11.76	7.84
JANTX2N1772A‡	14.01	9.34
2N1773‡	6.97	4.65
2N1773A‡	11.10	7.40
2N1774‡	8.17	5.45
2N1774A‡	13.50	9.00
JAN2N1774A‡	17.04	11.36
JANTX2N1774A‡	19.29	12.86
2N1775‡	9.37	6.25
2N1775A‡	15.75	10.50
2N1776‡	10.65	7.10
2N1776A‡	18.37	12.25
JAN2N1776A‡	22.00	14.67
JANTX2N1776A‡	24.25	16.17
2N1777‡	12.45	8.30
2N1777A‡	23.62	15.75
JAN2N1777A‡	27.36	18.24
JANTX2N1777A‡	29.61	19.74
2N1778‡	18.15	12.10

GE Type	Net Each*, Lots of 1-9	10-99
2N1792	$24.80	$19.20
2N1793	28.80	22.30
2N1794	33.40	25.80
2N1795	38.00	29.40
2N1796	44.50	34.50
2N1797	50.50	39.20
2N1798	66.50	51.50

GE Type	Net Each*, Lots of 1-99	100-999
2N1842‡	$2.70	$1.80
2N1842A‡	2.85	1.90
2N1843‡	3.15	2.10
2N1843A‡	3.45	2.30
2N1844‡	4.12	2.75
2N1844A‡	4.42	2.95
2N1845‡	4.95	3.30
2N1845A‡	5.17	3.45
2N1846‡	5.32	3.55
2N1846A‡	5.62	3.75
2N1847‡	5.70	3.80
2N1847A‡	6.00	4.00
2N1848‡	6.07	4.05
2N1848A‡	6.45	4.30
2N1849‡	7.42	4.95
2N1849A‡	7.87	5.25
2N1850‡	9.00	6.00
2N1850A‡	9.60	6.40

GE Type	Net Each*, Lots of 1-9	10-99
2N1909	$17.00	$10.25
2N1910	18.50	11.00
JAN2N1910	34.00	20.50
2N1911	20.00	12.00
JAN2N1911	37.00	22.25
2N1912	22.00	13.25
2N1913	24.00	14.50
JAN2N1913	44.00	26.50
2N1914	27.00	16.25
2N1915	30.00	18.00
JAN2N1915	52.00	31.25
2N1916	36.00	21.50
JAN2N1916	66.00	39.75

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
2N1924	$1.35	$0.90	$0.81
2N1925	1.56	1.04	.94
2N1926	1.82	1.21	1.09
2N1929	6.15	4.10	.....
2N1930	7.65	5.10	.....
2N1931	10.65	7.10	.....
2N1932	13.20	8.80	.....
2N1933	15.00	10.00	.....
2N1934	18.00	12.00	.....
2N1935	21.97	14.65	.....
2N2017	1.95	1.30	.....

GE Type	Net Each*, Lots of 1-99	100-999
2N2060	$27.00	$18.00
2N2106	1.97	1.32
2N2107	2.09	1.39
2N2108	2.10	1.40
2N2160	1.49	.99
2N2196	4.50	3.00
2N2197	4.62	3.25
2N2223	10.00	6.70
2N2223A	15.00	10.00
2N2239	3.33	2.22
2N2322	2.25	1.50
2N2322A	3.24	2.16
2N2323	2.47	1.65
JAN2N2323	5.05	3.95
2N2323A	3.60	2.40
JAN2N2323A	5.75	4.40
2N2324	4.05	2.70
JAN2N2324	7.40	5.60
2N2324A	5.76	3.84
JAN2N2324A	8.60	6.40
2N2325	5.92	3.95
2N2325A	8.47	5.65
2N2326	7.80	5.20
2N2326A	11.07	7.38
JAN2N2326	12.85	9.40
JAN2N2326A	14.90	10.75
2N2327	9.75	6.50
2N2327A	13.95	9.30
2N2328	12.00	8.00
2N2328A	17.22	11.48
2N2329	15.90	10.60
2N2344	7.95	5.30
2N2345	9.15	6.10
2N2346	13.35	8.90
2N2347	15.45	10.30
2N2348	18.90	12.60
2N2356	20.00	13.40
2N2356A	23.00	15.30
2N2417	7.10	4.75
2N2417A	7.65	5.10
2N2417B	9.15	6.10
2N2418	7.80	5.20
2N2418A	8.35	5.55
2N2418B	9.85	6.55
2N2419	8.40	5.60
2N2419A	8.90	5.95
2N2419B	10.40	6.95
2N2420	9.80	6.55
2N2420A	10.40	6.95
2N2420B	11.90	7.95
2N2421	10.75	7.20
2N2421A	11.20	7.50
2N2421B	12.75	8.50
2N2422	10.90	7.30
2N2422A	11.40	7.60
2N2422B	12.90	8.60
2N2453	24.00	16.00
2N2453A	32.50	21.60
TN2480	12.75	8.50
2N2480A	15.35	10.25
2N2619	21.30	14.20
2N2639	22.00	14.70
2N2640	20.25	13.50
2N2641	7.20	4.80
2N2642	25.50	17.00
2N2643	22.20	14.80
2N2644	8.25	5.50
2N2646	1.05	.70
2N2647	1.89	1.26
2N2652	18.80	12.50
2N2652A	21.70	14.50

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
2N2711	$0.34	$0.23	$0.19
2N2712	.32	.21	.18
2N2713	.41	.27	.23
2N2714	.43	.29	.24
2N2726	5.40	3.60	.....
2N2727	5.60	3.75	.....
2N2785	13.35	8.90	.....
2N2910	12.75	9.35	.....
2N2913	9.10	6.50	.....
2N2914	12.00	8.00	.....
2N2915	22.50	15.00	.....
2N2916	25.50	17.00	.....
2N2917	21.00	14.00	.....
2N2918	24.75	16.50	.....
2N2919	24.00	16.00	.....
2N2920	27.00	18.00	.....
2N2923	.27	.18	.15
2N2924	.29	.20	.17
2N2925	.36	.24	.20
2N2926•	.25	.17	.14
2N3082	27.00	18.00	.....
2N3083	30.50	20.30	.....

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
2N3390	$0.90	$0.60	$0.50
2N3391	.61	.40	.34
2N3391A	.70	.46	.39
2N3392	.27	.18	.15
2N3393	.29	.20	.17
2N3394	.25	.17	.14
2N3395•	.45	.30	.25
2N3396•	.45	.30	.25
2N3397•	.43	.29	.24
2N3398•	.50	.33	.28
2N3402	.34	.23	.19
2N3403	.36	.24	.20
2N3404	.54	.36	.30
2N3405	.70	.46	.39
2N3414	.29	.20	.17
2N3415	.32	.21	.18
2N3416	.50	.33	.28
2N3417	.65	.44	.36
2N3513	19.65	13.60	.....
2N3515	33.85	22.55	.....
2N3516	24.15	16.60	.....
2N3518	38.35	25.55	.....
2N3520	31.85	21.20	.....
2N3521	32.60	21.70	.....
2N3522	35.10	23.40	.....
2N3524	37.50	25.00	.....
2N3589	7.60	5.20	4.75
2N3590	7.80	5.40	4.90
2N3605	.32	.21	.18
2N3605A	.43	.29	.24
2N3606	.29	.20	.17
2N3606A	.36	.24	.20
2N3607	.23	.15	.13
2N3649‡	10.32	6.88	.....
2N3650‡	11.25	7.50	.....
2N3651‡	16.05	10.70	.....
2N3652‡	24.30	16.20	.....
2N3653‡	29.47	19.65	.....
2N3654‡	10.87	7.25	.....
2N3655‡	11.83	7.89	.....
2N3656‡	16.87	11.25	.....
2N3657‡	25.42	16.95	.....
2N3658‡	30.75	20.50	.....
2N3662	.50	.33	.28
2N3663	.54	.36	.30
2N3721	.34	.23	.19
2N3843	.41	.27	.23
2N3843A	.43	.29	.24
2N3844	.43	.29	.24
2N3844A	.45	.30	.25
2N3845	.45	.30	.25
2N3845A	.47	.32	.26
2N3854	.29	.20	.17
2N3854A	.32	.21	.18
2N3855	.32	.21	.18
2N3855A	.34	.23	.19
2N3856	.34	.23	.19
2N3856A	.36	.24	.20
2N3858	.27	.18	.15
2N3858A	.36	.24	.20
2N3859	.29	.20	.17
2N3859A	.36	.26	.21
2N3860	.34	.23	.19
2N3877	.47	.32	.26
2N3877A	.52	.35	.29
2N3900	.59	.39	.33
2N3900A	.65	.44	.36
2N3973	.49	.29	.24
2N3974	.47	.32	.26
2N3975	.38	.26	.21
2N3976	.41	.27	.23
2N4256	.65	.44	.36
2N4424	.41	.27	.23
2N4425	.45	.30	.25
2N4951	.63	.42	.35
2N4952	.68	.45	.38
2N4953	.74	.50	.41
2N4954	.54	.36	.30
2N4983	1.17	.78	.60
2N4984	1.50	1.00	.80
2N4985	2.61	1.75	1.35
2N4986	1.43	.95	.65
2N4987	.84	.56	.41
2N4988	1.23	.82	.65
2N4989	1.73	1.15	.88
2N4990	.89	.59	.45
2N4991	.75	.50	.40
2N4992	1.35	.90	.71
2N4993	1.65	1.10	.99
2N5172	.20	.13	.105
2N5174	.63	.42	.35
2N5175	.68	.45	.38
2N5176	.72	.48	.40
2N5204‡	17.85	11.90	.....
2N5205‡	26.02	17.35	.....
2N5206‡	39.22	26.15	.....
2N5207‡	52.20	34.80	.....

NATORY NOTES appear at end of pricing information.

acturer's suggested net price. Prices are subject to change without notice.

GENERAL ELECTRIC

SEMICONDUCTORS

OEM Pricing Information

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
2N5232	$0.34	$0.23	$0.19
2N5232A	.38	.26	.21
2N5249	.47	.32	.26
2N5249A	.52	.35	.29
2N5305	.36	.24	.20
2N5306	.41	.27	.23
2N5307	.45	.30	.25
2N5308	.50	.33	.28
2N5309	.70	.46	.39
2N5310	.77	.51	.43
2N5311	.86	.57	.48
2N5354	.38	.26	.21
2N5355	.43	.29	.24
2N5356	.50	.33	.28
2N5365	.43	.29	.24
2N5366	.47	.32	.26
2N5367	.54	.36	.30
3N81	3.40	2.25	2.00
3N82	4.95	3.30	2.95
3N83	1.98	1.32	.99
3N84	1.98	1.32	.99
3N85	3.30	2.20	1.98
3N86	6.00	4.00	3.60

GE Type	Net Each*, Lots of 1-49	50-999
6RS20SP-1B1	$0.69	$0.52
6RS20SP-2B2	.80	.60
6RS20SP-3B3	.91	.69
6RS20SP-4B4	1.03	.78
6RS20SP-5B5	1.15	.87
6RS20SP-6B6	1.26	.95
6RS20SP-7B7	1.38	1.04
6RS20SP-8B8	1.50	1.13
6RS20SP-9B9	1.62	1.22
6RS20SP-10B10	1.73	1.31
6RS21SA-1D1	1.87	1.33
6RS21SA-2D2	2.00	1.45
6RS21SA-3D3	2.20	1.63
6RS21SA-4D4	2.38	1.70
6RS21SA-5D5	2.55	1.85
6RS21SA-6D6	2.75	1.97
6RS21SA-7D7	2.90	2.10
6RS21SA-8D8	3.10	2.25
6RS21SA-9D9	3.30	2.40
6RS21SA-10D10	3.47	2.55
6RS21SA-11D11	3.65	2.70
6RS21SA-12D12	3.85	2.88
6RS21SA-13D13	4.00	3.05
6RS21SA-14D14	4.20	3.23
6RS21SA-15D15	4.37	3.40
6RS21SA-16D16	4.55	3.60
6RS21SA-17D17	4.75	3.75
6RS21SA-18D18	4.90	3.95
6RS21SA-19D19	5.10	4.15
6RS21SA-20D20	5.25	4.30

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
A14A	$0.34	$0.26	$0.19
A14F	.30	.23	.16
A14P	1.10	.73	.51
A15A	.62	.42	.32
A15B	.75	.50	.38
A15D	1.00	.67	.51
A15F	.57	.39	.30
A15M	1.40	.95	.73
A15N	3.75	2.50	1.90

GE Type	Net Each*, Lots of 1-99	100-999
A28, 29A‡	$5.25	$3.50
A28, 29B‡	6.75	4.50
A28, 29C‡	8.25	5.50
A28, 29D‡	9.75	6.50
A28, 29F‡	4.50	3.00
A40, A41A‡	1.77	1.18
A40, A41B‡	1.82	1.21
A40, A41C‡	2.40	1.60
A40, A41D‡	2.90	1.93
A40, A41E‡	3.53	2.35
A40, A41F	1.73	1.15
A40, A41M‡	4.20	2.80
A44, A45A	1.10	.73
A44, A45B	1.16	.77
A44, A45C	1.28	.85
A44, A45D	1.49	.99
A44, A45E	2.40	1.60
A44, A45F	1.05	.70
A44, A45M	3.00	2.00

GE Type	Net Each*, Lots of 1-9	10-99
A70-A75A	$12.00	$ 7.25
A70-A75B	13.00	8.00
A70-A75C	14.00	8.50
A70-A75D	15.00	9.00
A70-A75E	16.00	9.75
A70-A75M	18.00	11.00
A70-A75N	22.00	13.25
A70-A75P	26.00	15.75
A70-A75PA	28.00	17.00
A70-A75PB	30.00	18.00
A70-A75S	20.00	12.00
A70-A75T	24.00	14.50
A90, 91A	20.00	12.00
A90, 91B	23.00	14.00
A90, 91C	26.00	15.75
A90, 91D	29.00	17.50
A90, 91E	32.00	20.00
A90, 91M	36.00	21.75
A90, 91N	42.00	25.25
A90, 91P	50.00	30.00
A90, 91PA	54.00	32.50
A90, 91PB	58.00	35.00
A90, 91S	39.00	23.50
A90, 91T	46.00	27.75
A291PC	62.00	37.25
A291PD	66.00	39.75
A291PE	70.00	42.00
A291PM	74.00	44.50
A291PN	82.00	49.25
A291PS	78.00	47.00
A295, 296A	38.00	23.00
A295, 296B	43.00	26.00
A295, 296C	48.00	29.00
A295, 296D	54.00	32.50
A295, 296E	60.00	36.00
A295, 296M	66.00	39.75
A295, 296N	78.00	47.00
A295, 296P	90.00	54.00
A295, 296PA	96.00	57.75
A295, 296PB	102.00	61.25
A295, 296PC	108.00	65.00
A295, 296PD	115.00	69.00
A295, 296PE	122.00	73.25
A295, 296PM	130.00	78.50
A295, 296PN	150.00	90.00
A295, 296PS	138.00	83.00
A295, 296S	72.00	43.25
A295, 296T	84.00	50.50
A390A	18.00	11.00
A390B	21.00	12.75
A390C	23.50	14.25
A390D	26.00	15.50
A390E	29.50	17.75
A390M	32.50	19.50
A390N	38.00	23.00
A390P	45.00	27.00
A390PA	48.50	29.25
A390PB	52.00	31.25
A390S	35.00	21.00
A390T	41.50	25.00
A396A	21.50	13.00
A396B	24.50	14.75
A396C	28.00	17.00
A396D	31.50	19.00
A396E	35.50	21.50
A396M	39.00	23.50
A396N	45.50	27.50
A396P	54.00	32.50
A396S	42.50	25.50
A396T	50.00	30.00
A540A	62.00	37.25
A540B	70.00	42.00
A540C	78.00	47.00
A540D	88.00	53.00
A540E	102.00	61.25
A540L	332.00	200.00
A540M	118.00	71.00
A540N	150.00	90.00
A540P	180.00	108.00
A540PA	194.00	117.00
A540PB	210.00	126.00
A540PC	224.00	135.00
A540PD	240.00	144.00
A540PE	256.00	154.00
A540PM	272.00	164.00
A540PN	300.00	180.00
A540PS	286.00	172.00
A540PT	316.00	190.00
A540S	134.00	80.75
A540T	164.00	98.50
A570A	90.00	54.00
A570B	100.00	60.00
A570C	110.00	66.00
A570D	122.00	73.25
A570E	138.00	83.00
A570F	84.00	50.50
A570M	154.00	92.50

GE Type	Net Each*, Lots of 1-99	100-999
A1423-BB1AB1	$2.42	$1.62
A1423-BF1AB1	3.68	2.42
A1423-MB1AB1	3.42	2.28
A1423-MF1AB1	5.15	3.43
A1425-MH5AB1	4.29	2.86
A1425-MH10AB1	8.57	5.71
A1425-PH5AB1	5.05	3.36
A1425-PH10AB1	10.08	6.72
BD1, 2, 4	5.00	3.30
BD3	3.00	2.00
BD5-7	10.00	6.65
C6A	1.87	1.25
C6B	2.07	1.38
C6F	1.65	1.10
C6G	1.98	1.32
C6U	1.57	1.05
C12A‡	8.40	5.60
C12B‡	13.95	9.30
C12C‡	20.25	13.50
C12F‡	6.60	4.40
C12G‡	11.10	7.40
C12H	16.95	11.30
C12U‡	6.15	4.10
C15A‡	2.10	1.40
C15B‡	3.75	2.50
C15C‡	6.75	4.50
C15D‡	9.75	6.50
C15E‡	15.00	10.00
C15F‡	1.87	1.25
C15G‡	2.17	1.45
C15M	19.50	13.00
C15U‡	1.80	1.20
C20A‡	1.92	1.28
C20B‡	1.98	1.32
C20C‡	2.64	1.76
C20D‡	3.00	2.00
C20F‡	1.77	1.18
C20U‡	1.71	1.14
C22A	1.62	1.08
C22B	1.68	1.12
C22C	2.34	1.56
C22D	2.70	1.80
C22F	1.47	.98
C22U	1.41	.94
C30A‡	4.77	3.18
C30B‡	5.49	3.66
C30C‡	6.39	4.26
C30D‡	7.20	4.80
C30F‡	4.10	2.75
C30U‡	3.75	2.50
C31A‡	5.19	3.46
C31B‡	5.99	3.99
C31C‡	6.98	4.65
C31D‡	7.86	5.24
C31F‡	4.50	3.00
C31U‡	4.00	2.75
C32A	4.23	2.82
C32B	4.95	3.30
C32C	5.85	3.90
C32D	6.66	4.44
C32F	3.75	2.50
C32U	3.35	2.25
C33A	4.65	3.10
C33B	5.45	3.63
C33C	6.43	4.29
C33D	7.33	4.88
C33F	4.10	2.75
C33U	3.75	2.50
C35A‡	4.72	3.15
C35B‡	5.92	3.95
C35C‡	6.75	4.50
C35D‡	8.25	5.50
C35E‡	11.17	7.45
C35F‡	3.60	2.40
C35G‡	5.47	3.65
C35H‡	6.30	4.20
C35M‡	17.62	11.75
C36N‡	30.60	20.40
C35S	24.37	16.25
C35U‡	3.00	2.00
C36M‡	10.65	7.10
C36N‡	18.40	12.25
C36S‡	13.45	8.95
C37A‡	4.12	2.75
C37B‡	5.32	3.55
C37C‡	6.07	4.05
C37D‡	7.42	4.95
C37E‡	9.00	6.00
C37F‡	3.15	2.10
C37M‡	10.65	7.10
C37N‡	18.37	12.25
C37S‡	13.42	8.95
C37U‡	2.70	1.80
C38A‡	6.00	4.00
C38B‡	8.25	5.50
C38C‡	10.65	7.10

GE Type	Net Each*, Lots of 1-99	100-999
C38D‡	$13.50	$ 9.00
C38E‡	18.00	12.00
C38F	4.80	3.20
C38G‡	7.12	4.75
C38H	9.45	6.30
C38U‡	4.35	2.90

GE Type	Net Each*, Lots of 1-9	10-99
C45, C46A	$15.00	$ 9.00
C45, C46B	16.00	9.75
C45, C46C	19.00	11.50
C45, C46D	24.00	14.50
C45, C46E	32.00	19.50
C45, C46G	15.50	9.25
C45, C46H	17.50	10.50
C45, C46M	42.00	25.25
C45, C46N	60.00	36.00
C45, C46S	50.00	30.00
C45, C46T	71.00	42.50
C50, C52A	20.00	12.00
C50, C52B	24.00	14.50
C50, C52C	30.00	18.00
C50, C52D	36.00	21.50
C50, C52E	42.00	25.25
C50, C52F	18.50	11.00
C50, C52G	22.00	13.25
C50, C52H	27.00	16.25
C50, C52M	51.00	30.50
C50, C52N	75.00	45.00
C50, C52S	62.00	37.25
C50, C52T	87.00	52.25
C50, C52U	17.00	10.25
C55, C56A	23.00	13.75
C55, C56B	27.50	16.50
C55, C56C	34.50	20.50
C55, C56D	41.50	25.00
C55, C56E	48.50	29.25
C55, C56F	21.50	13.00
C55, C56G	25.50	15.25
C55, C56H	31.00	18.50
C55, C56M	59.00	35.50
C55, C56U	19.50	11.75
C60, C62A	30.00	18.00
C60, C62B	34.00	20.50
C60, C62C	38.00	23.00
C60, C62D	44.00	26.50
C60, C62E	51.00	30.50
C60, C62F	26.00	15.50
C60, C62G	32.00	19.25
C60, C62H	36.00	21.50
C60, C62U	20.00	12.00

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
C103A	$0.96	$0.64	$0.52
C103B	1.08	.72	.58
C103Y	.75	.50	.40
C103YY	.84	.56	.44
C106A1	1.18	.79	.67
C106A2-4	1.23	.84	.68
C106B1	1.34	.89	.75
C106B2-4	1.39	.94	.76
C106C-1X100	1.70	1.15	.92
C106C(2-4)-X100	1.75	1.20	.93
C106F1	1.10	.73	.62
C106F2-4	1.15	.78	.63
C106Q1	.87	.58	.46
C106Q2-4	.92	.63	.47
C106Y1	.94	.63	.52
C106Y2-4	.99	.68	.52
C122B	1.50	1.00	.....
C122D	2.00	1.35	.....
C122F	1.20	.80	.....
C137E‡	18.90	12.60	.....
C137M‡	22.05	14.70	.....
C137N‡	32.10	21.40	.....
C137P‡	48.45	32.30	.....
C137PA‡	56.70	37.80	.....
C137PB‡	64.50	43.00	.....

GE Type	Net Each*, Lots of 1-9	10-99
C150, 152E	$42.00	$25.25
C150, 152M	50.00	30.00
C150, 152N	75.00	45.00
C150, 152P	106.00	63.75
C150, 152PA	125.00	75.00
C150, 152PB	144.00	86.50

GE Type	Net Each* 1-9
C150, 152PC	$162.00
C150, 152S	62.00
C150, 152T	87.00
C154, 156A	34.00
C154, 156B	39.00
C154, 156C	44.00
C154, 156D	52.00
C154, 156E	62.00
C154, 156M	72.00
C155, 157A	30.00
C155, 157B	34.00
C155, 157C	38.00
C155, 157D	44.00
C155, 157E	51.00
C155, 157M	58.00
C158, 159A	34.00
C158, 159B	39.00
C158, 159C	44.00
C158, 159D	52.00
C158, 159E	62.00
C158, 159M	72.00
C158, 159N	100.00
C158, 159P	138.00
C158, 159PA	158.00
C158, 159PB	180.00
C158, 159S	86.00
C158, 159T	118.00
C180A	52.00
C180B	56.00
C180C	67.00
C180D	78.00
C180E	95.00
C180M	115.00
C180N	165.00
C180P	212.00
C180PA	238.00
C180PB	264.00
C180PC	286.00
C180S	140.00
C180T	190.00
C185A	60.00
C185B	66.00
C185C	74.00
C185D	88.00
C185E	106.00
C185M	124.00
C280N	165.00
C280P	212.00
C280PA	238.00
C280PB	264.00
C280PC	286.00
C280PD	308.00
C280PE	332.00
C280PM	356.00
C280PN	404.00
C280PS	380.00
C280S	140.00
C280T	190.00
C290, 291A	55.00
C290, 291B	63.00
C290, 291C	75.00
C290, 291D	98.00
C290, 291E	120.00
C290, 291M	145.00
C290, 291N	212.00
C290, 291P	268.00
C290, 291PA	300.00
C290, 291PB	330.00
C290, 291S	178.00
C290, 291T	240.00
C350A	18.00
C350B	21.00
C350C	24.00
C350D	29.00
C350E	33.00
C350M	40.00
C350N	60.00
C350P	84.00
C350PA	100.00
C350PB	115.00
C350PC	130.00
C350S	50.00
C350T	69.00
C354A	31.00
C354B	36.00
C354C	41.00
C354D	46.00
C354E	52.00
C354M	58.00
C355A	27.00
C355B	29.00
C355C	33.00
C355D	37.00
C355E	41.00
C355M	46.00
C358A	31.00

EXPLANATORY NOTES appear at end of pricing information.

* Manufacturer's suggested net price. Prices are subject to change without notice.

GENERAL ELECTRIC

Net

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SEMICONDUCTORS

OEM Pricing Information

	Net Each*, Lots of	
	1-9	10-99
	$36.00	$21.75
	41.00	24.75
	46.00	27.75
	52.00	31.25
	58.00	35.00
	78.00	46.75
	109.00	65.50
	126.00	75.75
	144.00	86.50
	65.00	39.00
	93.00	55.75
	40.00	24.00
	48.00	28.75
	54.00	32.50
	65.00	39.00
	80.00	48.00
	93.00	55.75
	136.00	81.50
	170.00	102.00
	190.00	114.00
	210.00	126.00
	228.00	137.00
	112.00	67.25
	152.00	91.25
	54.00	32.50
	58.00	35.00
	64.00	38.75
	74.00	44.50
	86.00	51.50
	100.00	60.00
	160.00	96.00
	188.00	112.00
	244.00	147.00
	300.00	180.00
	328.00	197.00
	360.00	216.00
	216.00	130.00
	272.00	162.00
	190.00	114.00
	240.00	144.00
	264.00	158.00
	290.00	174.00
	316.00	189.00
	340.00	204.00
	364.00	218.00
	390.00	234.00
	416.00	250.00
	170.00	102.00
	216.00	130.00
	92.00	55.25
	112.00	67.25
	136.00	81.75
	164.00	98.50
	192.00	115.00
	224.00	135.00
	86.00	51.75
	92.00	55.25
	100.00	60.00
	112.00	67.25
	124.00	74.50
	138.00	83.00
	171.00	103.00
	216.00	130.00
	238.00	143.00
	260.00	156.00
	284.00	170.00
	306.00	183.00
	153.00	92.00
	194.00	117.00
	93.00	56.00
	102.00	61.25
	112.00	67.25
	124.00	74.50
	144.00	86.50
	168.00	101.00
	220.00	132.00
	270.00	162.00
	296.00	178.00
	324.00	195.00
	194.00	116.00
	244.00	146.00
	112.00	67.00
	136.00	82.00
	164.00	98.00
	192.00	115.00
	224.00	134.00
	256.00	154.00
	292.00	175.00
	146.00	87.75

GE Type	Net Each*, Lots of 1-9	10-99
C520B	$158.00	$ 95.00
C520C	172.00	103.00
C520D	188.00	113.00
C520F	140.00	84.00
C520G	152.00	91.25
C520H	164.00	98.50
C530A	124.00	74.50
C530B	136.00	81.75
C530C	146.00	87.75
C530D	158.00	95.00
C530E	172.00	103.00
C530F	120.00	72.00
C530M	188.00	113.00

GE Type	Net Each*, Lots of 1-99	100-999
D5E37	$ 0.75	$ 0.50
D5E43	1.05	.70
D5E44	.97	.65
D5E45	1.49	.99
D5K1	6.95	4.64
D5K2	2.55	1.70
D7A30	1.01	.67
D7A31	1.08	.72
D7A32	2.25	1.50
D12A8	5.65	3.75
D12A104	30.50	20.00
D12A108	9.15	5.75
D12E026	6.75	4.50
D12E109	33.50	22.00
D12E126	7.80	5.25

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
D13T1	$0.79	$0.53	$0.44
D13T2	1.58	1.06	.89
D13V	.65	.44	.36
D16G6	.43	.29	.24
D16P1	.47	.32	.26
D16P2	.52	.35	.29
D26B1	.75	.52	.47
D26B2	.83	.55	.50
D26C1	.76	.51	.46
D26C2	.80	.53	.48
D26C3	.85	.57	.51
D26E1	1.35	.90	.81
D26E2	.82	.55	.47
D26E3	.86	.57	.51
D26E4	.89	.59	.53
D26E5	.93	.62	.56
D26E6	.75	.49	.44
D26G1	1.02	.68	.62
D29E1	.66	.44	.37
D29E2	.74	.49	.41
D29E4	.61	.41	.34
D29E5	.66	.44	.37
D29E6	.69	.46	.38
D29E7	.77	.51	.43
D29E8	1.01	.68	.56
D29E9	1.09	.72	.60
D29E10	1.17	.78	.65
D30A1	1.16	.77	.69
D30A2	1.20	.80	.72
D30A3	1.28	.86	.77
D33D1	.51	.34	.25
D33D2	.58	.38	.29
D33D3	.65	.43	.32
D33D4	.67	.45	.34
D33D5	.74	.50	.37
D33D6	.82	.54	.41
D33D21	.61	.41	.34
D33D22	.69	.46	.38
D33D24	.58	.39	.32
D33D25	.61	.41	.34
D33D26	.66	.44	.37
D33D27	.69	.46	.38
D33D28	.96	.64	.53
D33D29	1.01	.67	.56
D33D30	1.08	.72	.60
D40C1	.93	.63	.50
D40C2	1.01	.68	.54
D40C4	1.06	.71	.57
D40C5	1.17	.78	.63
D40C7	1.98	1.32	1.05
D40D1	.87	.58	.47
D40D2	.90	.60	.48

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
D40D3	$1.05	$0.70	$0.56
D40D4	1.02	.68	.54
D40D5	1.05	.70	.56
D40D7	1.08	.72	.58
D40D8	1.21	.81	.65
D40N1	1.50	1.00	.80
D40N2	1.65	1.10	.89
D41D1	.99	.66	.53
D41D2	1.02	.68	.54
D41D3	1.17	.78	.62
D41D4	1.14	.76	.61
D41D5	1.17	.78	.62
D41D7	1.20	.80	.64
D41D8	1.32	.88	.71
D42C1	1.21	.81	.65
D42C2	1.30	.87	.70
D42C3	1.29	.96	.77
D42C4	1.35	.90	.72
D42C5	1.44	.96	.77
D42C7	1.50	1.00	.80
D42C8	1.59	1.06	.84
D43C1	1.40	.93	.75
D43C2	1.50	1.00	.81
D43C3	1.65	1.11	.87
D43C4	1.55	1.04	.83
D43C5	1.65	1.11	.87
D43C7	1.71	1.14	.91
D43C8	1.80	1.20	.96
DHD800	.14	.09	.06
DA805	.15	.10	.07
DA806	.17	.11	.08
F16H1	.96	.64	.48
F16U3	.59	.39	.33
F16U4	.68	.45	.38
GET706	.45	.30	.22
GET708	.42	.28	.26
GET914	.51	.34	.31
GET929	.65	.42	.37
GET930	.69	.46	.41
GET2221	.52	.35	.32
GET2222	.57	.38	.34
GET2369	.59	.39	.33
GET3013	.68	.45	.38
GET3014	.79	.53	.44
GET3638	.46	.31	.28
GET3638A	.60	.40	.36
GET3646	.63	.42	.35

GE Type	Net Each*, Lots of 1-99	100-999
L8A	$ 7.00	$ 4.65
L8B	11.85	7.90
L8F	4.90	3.25
L8G	9.45	6.30
L8U	4.50	3.00
L9A	7.65	5.10
L9B	13.05	8.70
L9F	5.40	3.60
L9G	10.45	6.95
L9U	4.95	3.30
L14A502	6.00	4.00
L14B	1.45	.97
L811A△	8.50	5.45
L811B△	13.35	8.65
L811G△	10.95	7.05
L811U△	6.00	3.75
L911A△	9.15	5.85
L911B△	14.55	9.45
L911F△	6.90	4.35
L911G△	11.95	7.70
L911U△	6.45	4.05
LASCS (LIV)	3.15	2.10

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
MPD200	$1.21	$0.81	$0.38
MPD300	1.49	.99	.45
MPD400	1.62	1.08	.63
MPR10	1.00	.70	.49
MPR12	1.10	.80	.52
MPR15	1.50	1.05	.70
PA189	3.75	3.00	2.25
PA222	7.65	6.12	4.59
PA223	14.85	11.88	8.91

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
PA230	$3.35	$2.68	$2.01
PA234	2.75	2.25	1.65
PA237	5.50	4.40	3.30
PA238	6.75	5.40	3.30
PA246	6.65	5.32	3.99
PA424	8.30	6.64	4.98
PA436	12.20	9.76	7.32
PA455	7.50	6.00	4.50
PD474	5.00	4.00	3.00

GE Type	Net Each*, Lots of 1-99	100-999
RA1	$4.50	$ 3.00
RA1A	7.95	5.30
RA1B	14.10	9.40
RA1C	27.75	18.50
RA2	7.95	5.30
RA2A	22.50	15.00
RA2B	49.50	33.00
RA3	8.25	5.50
RA3A	23.40	15.60
RA3B	54.00	36.00
S100A1	6.90	4.60
S100A2	8.95	5.95
S100A3	7.45	4.95
S100A4	9.85	6.55
S100A5	9.50	6.35
S100A6	13.20	8.80
S100B1	7.80	5.20
S100B2	9.75	6.50
S100B3	8.35	5.55
S100B4	10.70	7.15
S100B5	10.40	6.95
S100B6	14.05	9.40
S100C1	8.80	5.85
S100C2	10.80	7.20
S100C3	9.30	6.20
S100C4	11.70	7.80
S100C5	12.45	8.30
S100C6	15.75	10.45
S100D1	8.20	5.45
S100D2	10.20	6.80
S100D3	8.70	5.80
S100D4	11.20	7.45
S100D5	11.85	7.90
S100D6	15.15	10.10
S100E1	8.80	5.85
S100E2	10.80	7.20
S100E3	9.30	6.20
S100E4	11.70	7.80
S100E5	12.35	8.25
S100E6	15.75	10.45
S100F1	8.20	5.45
S100F2	10.20	6.80
S100F3	8.70	5.80
S100F4	11.20	7.45
S100F5	11.85	7.90
S100F6	15.15	10.10
S100G1	5.70	3.80
S100G2	7.75	5.15
S100G3	6.25	4.15
S100G4	8.65	5.75
S100G5	8.30	5.55
S100G6	12.00	8.00
S200A1	22.10	14.75
S200A2	23.20	15.45
S200A3	24.40	16.25
S200A4	26.10	17.40
S200A21	24.00	16.00
S200A41	27.15	18.20
S300A1	22.60	16.95
S300A2	23.30	17.50
S300A3	23.30	17.50
S300A4	23.90	17.95
S300A5	25.30	18.95
S300A6	26.60	19.95
S400A1	7.15	5.35
S400A1S	8.15	6.10
S400A1SC	8.80	6.60
SC35A‡	2.52	1.68
SC35B‡	2.70	1.80
SC35D‡	3.39	2.26
SC35F‡	2.36	1.57
SC36A	2.07	1.38
SC36B	2.25	1.50
SC36D	2.94	1.96
SC36F	1.91	1.27

GE Type	Net Each*, Lots of 1-99	100-999
SC40A‡	$2.84	$1.89
SC40B‡	3.03	2.02
SC40D‡	3.86	2.57
SC40E‡	4.31	2.87
SC40F‡	2.64	1.76
SC41A	2.39	1.59
SC41B	2.58	1.72
SC41D	3.41	2.77
SC41E	3.86	2.57
SC41F	2.19	1.46
SC45A‡	3.65	2.43
SC45B‡	3.93	2.62
SC45D‡	4.98	3.32
SC45E‡	5.64	3.76
SC45F‡	3.38	2.25
SC46A	3.20	2.13
SC46B	3.48	2.32
SC46D	4.53	3.02
SC46E	5.19	3.46
SC46F	2.93	1.95
SC50A‡	3.75	2.50
SC50B‡	4.02	2.68
SC50D‡	5.82	3.88
SC50E‡	8.50	5.67
SC50F‡	3.50	2.33
SC51A	3.30	2.20
SC51B	3.57	2.38
SC15D	5.37	3.58
SC51E	8.05	5.37
SC51F	3.05	2.03
SC60B	7.50	5.00
SC60D	13.05	8.70
SC60E	18.00	12.00
SC61B	6.96	4.64
SC61D	12.51	8.34
SC61E	17.50	11.64
SC141B	1.50	1.00
SC141D	2.08	1.39
SC146B	1.95	1.30
SC146D	2.72	1.81
ST2	.61	.41

GE Type	Net Each*, Lots of 1-99	100-999	1000-9999
STB567	$0.48	$0.32	$0.22
STB568	.64	.43	.33
STB569	.81	.54	.44

GE Type	Net Each*, Lots of 1-99	100-999
TD9	$ 4.00	$ 2.65
TD251	7.50	5.00
TD251A	12.00	8.00
TD252	7.50	5.00
TD252A	12.00	8.00
TD253	6.00	4.00
TD253A	9.00	6.00
TD253B	12.00	8.00
TD254	7.50	5.00
TD254A	12.00	8.00
TD255	7.50	5.00
TD255A	12.00	8.00
TD256	7.50	5.00
TD256A	12.00	8.00

GE Type	Net Each*, Lots of 1-9	10-99
TD401	$ 45.00	$ 30.00
TD402	56.50	37.50
TD403	81.00	54.00
TD404	97.50	65.00
TD405	127.50	85.00
TD406	180.00	120.00
TD407	270.00	180.00
TD408	360.00	240.00

GE Type	Net Each*, Lots of 1-99	100-999
Z4X5.1B	$ 2.40	$ 1.60
Z4X14B	3.00	2.00
Z4XL6.2B-22B	.84	.56

acturer's suggested net price. Prices are subject to change without notice.

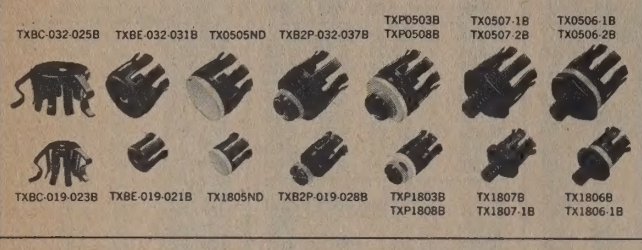
ble in reverse polarity at same price; to order, add suffix R, i.e., 1N248R, 1N248RA, 1N248RB, etc.
include mounting hardware. For insulating hardware add 5¢ per unit, any quantity.
placement use only.
1 type.
ions recommended for new designs.
include mounting hardware. For insulating hardware add 10¢ per unit, any quantity.

GENERAL ELECTRIC

IERC

Semiconductor Heat Sinks/Dissipators

THERMAL-LINK RETAINERS — FOR TO-5, TO-18 TYPE TRANSISTORS



Efficient retainers and heat sinks when mounted to P-C boards due to their excellent conductivity and extra mass. Also efficient thermal links between transistor and chassis or heat sink. Beryllium copper spring fingers firmly retain transistors, fit wide case diameter variations; make transistor insertion and removal easy. Available with BeO washer for high frequency applications. Send for Bulletins 141 and 144.

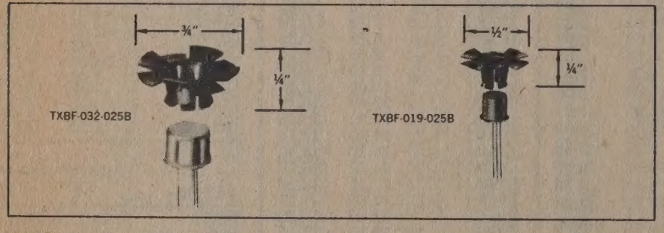
IERC PART NO. THERMAL-LINK WITH BeO	TRANSISTOR CASE SIZE	MOUNTING METHOD	QUANTITY PRICES				
			1-9	10-24	25-49	50-99	100-499
TXP1803B *	ALL TO-18	2-56 SCREW†	1.67	1.53	1.39	1.25	1.12
TXP1808B **	ALL TO-18	2-56 SCREW†	2.70	2.48	2.25	2.03	1.80
TXP0503B *	ALL TO-5	4-40 SCREW†	1.67	1.53	1.39	1.25	1.12
TXP0508B **	ALL TO-5	4-40 SCREW†	2.70	2.48	2.25	2.03	1.80
TX1805ND **	ALL TO-18	SOLDER	2.70	2.48	2.25	2.03	1.80
TX0505ND **	ALL TO-5	SOLDER	2.70	2.48	2.25	2.03	1.80
TX1806B ***	ALL TO-18	4-40 STUD	3.00	2.75	2.50	2.25	2.00
TX1806-1B ***	ALL TO-18	6-32 STUD	3.00	2.75	2.50	2.25	2.00
TX0506-1B ***	ALL TO-5	6-32 STUD	3.00	2.75	2.50	2.25	2.00
TX0506-2B ***	ALL TO-5	10-32 STUD	3.00	2.75	2.50	2.25	2.00

For dimensions of Thermal-Link retainers with BeO add .06" to height dimension of standard Thermal-Link retainers.

IERC PART NO. STANDARD THERMAL-LINK	DIMENSIONS DIA.	DIMENSIONS HEIGHT	TRANSISTOR CASE SIZE	MOUNTING METHOD	QUANTITY PRICES 1-24	25-99	100-499	500-999
TXBC-019-023B	.43"	.23"	ALL TO-18	SPRING CLIP	.35	.305	.27	.24
TXBC-032-025B	.56"	.25"	ALL TO-5	SPRING CLIP	.35	.305	.27	.24
TXBE-019-021B	.22"	.21"	ALL TO-18	RIVET OR SOLDER	.275	.245	.22	.195
TXBE-032-031B	.37"	.31"	ALL TO-5	RIVET OR SOLDER	.275	.245	.22	.195
TXB2P-019-028B	.22"	.28"	ALL TO-18	2-56 SCREW†	.61	.54	.49	.44
TXB2P-032-037B	.37"	.37"	ALL TO-5	4-40 SCREW†	.61	.54	.49	.44
TX1807B	.25"	.50"	ALL TO-18	4-40 STUD	.99	.88	.79	.70
TX1807-1B	.25"	.50"	ALL TO-18	6-32 STUD	.99	.88	.79	.70
TX0507-1B	.37"	.59"	ALL TO-5	6-32 STUD	.99	.88	.79	.70
TX0507-2B	.37"	.59"	ALL TO-5	10-32 STUD	.99	.88	.79	.70
TXBP-050-037B	.54"	.37"	ALL TO-8	4-40 SCREW†	1.70	1.53	1.36	1.19

*Separate BeO washer. **BeO washer brazed to dissipator. ***BeO washer brazed between stud and dissipator. †Screw and shouldered nylon washer included. Letter "B" at end of part number denotes black cadmium finish; delete letter "B" for Insulube 448 finish; for dull nickel, substitute letters "ND". Contact your IERC representative or the factory regarding other transistor case sizes or finishes. Insulube 448 finish is a 500 volt dielectric coating.

"FAN TOP" SERIES — FOR TO-5, TO-18 TYPE TRANSISTORS

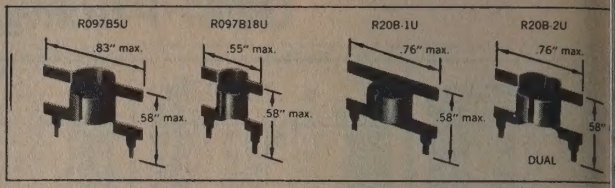


Low cost units give excellent case temperature reductions in natural or forced convection. Design allows location of other components close to transistors; adds virtually nothing to board height. Beryllium copper spring fingers firmly retain transistors, fit wide range of case diameters. Fast, press-fit installation without tools. Send for Bulletin 131.

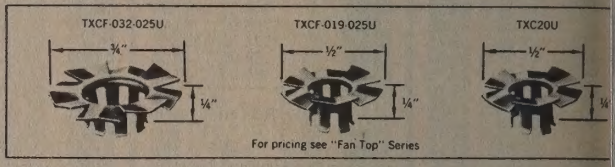
IERC PART NO.	TRANSISTOR CASE SIZE	QUANTITY PRICES 1-24	25-99	100-499	500-999	1000-2499
TXBF-032-025B	All .305" to .335" cases (TO-5, TO-9, etc.)	.21	.185	.165	.145	.125
TXBF-019-025B	All .178" to .196" cases (TO-18, etc.)	.21	.185	.165	.145	.125
TXCF-032-025U	All .305" to .335" cases (TO-5, TO-9, etc.)	.113	.092	.076	.069	.062
TXCF-019-025U	All .178" to .196" cases (TO-18, etc.)	.10	.082	.068	.061	.055
TXC20U	X-20, "D" Style	25-49 .085	50-99 .076	100-249 .068	250-499 .061	500-999 .055

DISSIPATORS/RETAINERS FOR PLASTIC/CERAMIC TRANSISTORS

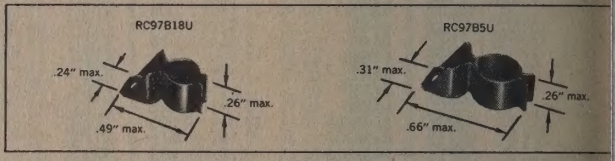
New IERC designs help you get maximum efficiency from epoxy s conductors. Power ratings can be increased from 10% to 33% or tional operating safety margins provided. Send for Bulletin 148.



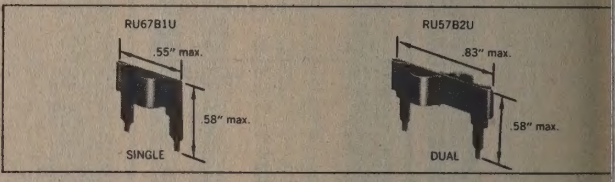
Spade-Type — Excellent dissipator and retainers. "Stand-off" legs pr positive 0.1" grid location for automatic insertion in P-C board; transistor above solder, eliminating possible thermal damage.



Fan-Top — Provides excellent dissipation with no loss in board are vertical clearance space.



Clip-Type — Highly efficient dissipator retainer; also used as thermal or radiating device. Space and clip types excellent for RF shielding

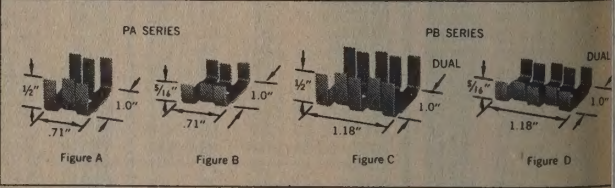


Universal-Type — Unique spring clip retainer accommodates variati in case diameters. Both single and dual models accept all popular D-c transistors. Exceptionally efficient. Permits increased power capabilit higher operational safety margins, and provides good stability in adv environments. Legs hold transistor away from solder heat. Dual m ideal for matched-pair applications. Send for Bulletin 150.

SPADE SERIES	QUANTITY PRICES 1-24	25-49	50-99	100-249	250-499	500-
R097B5U	.072	.061	.054	.047	.040	.03
R097B18U	.066	.056	.049	.043	.036	.03
R20B-1U	.066	.056	.049	.043	.036	.03
R20B-2U	.069	.058	.051	.044	.037	.03
R20DB-1U	.066	.056	.049	.043	.036	.03
R20DB-2U	.069	.058	.051	.044	.037	.03
CLIP SERIES						
RC97B5U	.069	.058	.051	.044	.037	.03
RC97B18U	.066	.056	.049	.043	.036	.03
UNIVERSAL "D" SERIES						
RU67B1U	.072	.061	.054	.047	.040	.03
RU67B2U	.087	.074	.066	.058	.050	.04

*Above items are manufactured from commercial brass, no finish. Parts are also available made from bery copper. Available finishes are black oxide and black cadmium. Contact your IERC representative or the fa for information on alternate finishes.

PA AND PB SERIES — FOR FLAT RECTANGULAR PLASTIC CASES



Accommodates flat, rectangular, medium power thyristors, transist and SCR's. Staggered fingered design and aluminum construction ma mize dissipation. In natural convection a PA will allow a single X-58 case 90 device to be operated with 80% more power. See Bulletin 1

PRICES SUBJECT TO CHANGE WITHOUT NOT

IERC
INTERNATIONAL ELECTRONIC RESEARCH CORPORATION
a corporate division of DYNAMICS CORPORATION OF AMERICA

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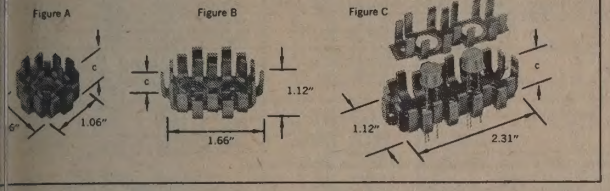
	FIGURE NO.	QUANTITY PRICES					
		1-24	25-49	50-99	100-249	250-499	500-999
	A	.150	.128	.113	.098	.083	.072
	A	.150	.128	.113	.098	.083	.072
	B	.145	.123	.108	.093	.078	.069
	B	.145	.123	.108	.093	.078	.069
	C	.189	.160	.142	.124	.106	.090
	C	.189	.160	.142	.124	.106	.090
	C	.189	.160	.142	.124	.106	.090
	D	.180	.153	.135	.117	.099	.087
	D	.180	.153	.135	.117	.099	.087
	D	.180	.153	.135	.117	.099	.087

al or Military black anodize available on request.

IES — FOR TO-5, TO-18 TYPE TRANSISTORS



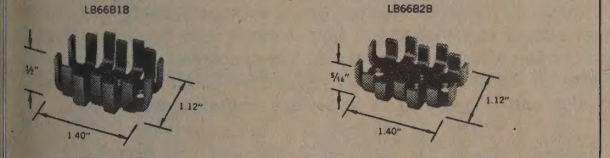
ile transistor cooling devices provide excellent heat dissipation in ations of low to high power transistors of TO-5 and TO-18 configns. IERC's efficient staggered-finger configuration optimizes con- currents and radiating surface area. Available for single and le transistor mounting. Send for Bulletin 135.

O.	DIMENSION "C"	NUMBER OF TRANSISTORS	JEDEC OUTLINE NO.	FIGURE NO.	QUANTITY PRICES			
					1-24	25-99	100-249	250-499
	1/2"	1	TO-5, TO-9	A	.82	.73	.65	.60
	5/16"	1	TO-5, TO-9	A	.80	.71	.63	.58
B	1/2"	1	TO-18	A	.82	.73	.65	.60
B	5/16"	1	TO-18	A	.80	.71	.63	.58
B	1/2"	2	TO-18	A	.98	.87	.78	.72
B	5/16"	2	TO-18	A	.96	.85	.76	.70
	1/2"	1	TO-5, TO-9	B	.85	.76	.68	.62
	5/16"	1	TO-5, TO-9	B	.84	.75	.67	.61
	1/2"	2	TO-5, TO-9	B	1.02	.91	.82	.75
	5/16"	2	TO-5, TO-9	B	1.00	.89	.80	.73
	1/2"	1	TO-5, TO-9	C	.92	.82	.74	.67
	5/16"	1	TO-5, TO-9	C	.87	.78	.70	.64
	1/2"	2	TO-5, TO-9	C	1.08	.96	.87	.80
	5/16"	2	TO-5, TO-9	C	1.04	.93	.84	.77

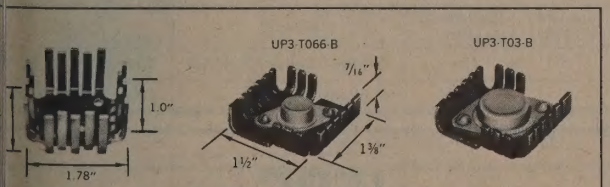
mp sections may be used separately as retaining devices; change first two letters of the part number Base section LB5A1B or LB5A2B may be used separately for TO-37 transistors such as 2N1172 and Delete letter "B" from part number for Insulube 448 finish. Consult your IERC representative or factory il orders.

ATORS FOR CASE MOUNTED SEMICONDUCTORS

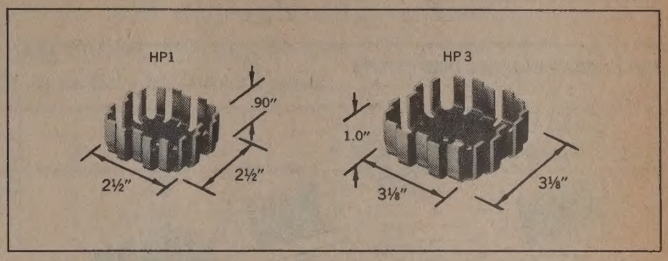
ird LB, UP, HP, E1, E2 and E3 Series parts are aluminum with anodize finish. However, all parts are available unplated, or with be® 448 which provides positive insulation up to 500 volts. For be® 448 finish delete letter "B" at end of part number. For un- parts delete "B" and add "U".



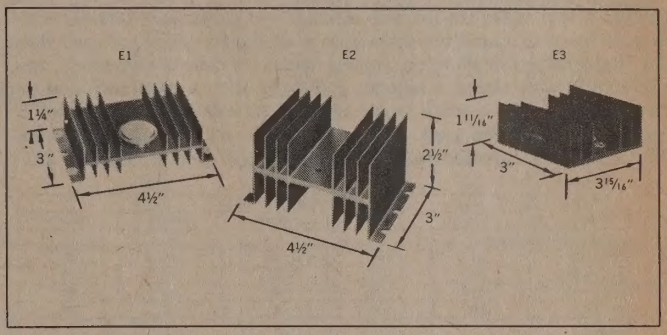
les — For TO-66 Type Transistor Only — In natural convection the fficient staggered-finger design dissipates 9 watts with case tem- re held to less than 150°C. In forced air (1,000 FPM) the LB dis- s 15 watts with case temperature maintained at 90°C. Requires .7 sq. in. of mounting area. Send for Bulletin 146.



ies — For Power Type Transistors and Diodes — Design gives maxi- dissipation in medium power applications at lower cost than comparable finned extrusions. Staggered finger configuration allows maximum efficiency in both natural convection and forced air at less weight and volume. Increased dissipation achieved by mounting dissipators back-to-back on a bracket. Send for Bulletin 134.



HP Series — For Power Type Transistors and Diodes — Heat dissipating performance of IERC's staggered-finger design is comparable to conventional extrusions up to 3 times as heavy and 30% larger. Two sizes: may be used separately or with the smaller unit nested in the larger unit. Send for Bulletin 139.



Extrusions — E1, E2 and E3 Series — Optimized fin design gives the most power dissipation for volume and weight. Standard finish black anodize. Standard units supplied with mounting notches and choice of six popular semiconductor mounting hole patterns. Send for Bulletins 142 (E1 and E2) and 145 (E3).

IERC PART NO.	JEDEC OUTLINE NO.	QUANTITY PRICES			
		1-24	25-49	50-99	100-499
LB66B1B	TO-66	.31	.27	.24	.22
LB66B2B	TO-66	.27	.24	.22	.20
UP-000B *	BLANK	.78	.68	.62	.55
UP-TO3B *	TO-3	.78	.68	.62	.55
UP-TO6B *	TO-6	.78	.68	.62	.55
UP-TO15B *	TO-15	.78	.68	.62	.55
UP-TO66B *	TO-66	.78	.68	.62	.55
UP-TOV-7B *	UNIVERSAL **	.78	.68	.62	.55
UP3-000B	BLANK	.38	.34	.31	.28
UP3-TO3B	TO-3	.38	.34	.31	.28
UP3-TO66B	TO-66	.38	.34	.31	.28
HP1-000B	BLANK	.97	.86	.78	.71
HP1-TO3B	TO-3	.97	.86	.78	.71
HP1-TO6B	TO-6	.97	.86	.78	.71
HP1-TO15B	TO-15	.97	.86	.78	.71
HP1-TO66B	TO-66	.97	.86	.78	.71
HP1-TOV-2B	UNIVERSAL **	.97	.86	.78	.71
HP3-000B	BLANK	1.11	.99	.89	.79
HP3-TO3B	TO-3	1.11	.99	.89	.79
HP3-TO6B	TO-6	1.11	.99	.89	.79
HP3-TO15B	TO-15	1.11	.99	.89	.79
HP3-TO66B	TO-66	1.11	.99	.89	.79
HP3-TOV-2B	UNIVERSAL **	1.11	.99	.89	.79

*Above parts are 1" high; for ¾", add numeral "2" after first two letters of part number; for ½", add numeral "1" after first two letters; example: UP2-TO3-B describes a dissipator ¾" high, with TO-3 hole pattern and black anodize finish. For other hole patterns, see your IERC representative or consult the factory.

EXTRUSION TYPE	IERC PART NO.	TRANSISTOR MOUNTING HOLE PATTERN	QUANTITY PRICES				
			1-24	25-49	50-99	100-249	250-499
E1 and E3 ***	E1003-0600B	TO-3	1.62	1.38	1.30	1.12	.97
	E1006-0600B	TO-6	1.62	1.38	1.30	1.12	.97
	E1015-0600B	TO-15	1.62	1.38	1.30	1.12	.97
	E100V-0600B	UNIVERSAL **	1.62	1.38	1.30	1.12	.97
	E1066-0600B	TO-66	1.62	1.38	1.30	1.12	.97
	E1000-0600B	BLANK	1.38	1.18	1.11	.95	.82
E2	E2003-0600B	TO-3	2.28	1.94	1.86	1.57	1.35
	E2006-0600B	TO-6	2.28	1.94	1.86	1.57	1.35
	E2015-0600B	TO-15	2.28	1.94	1.86	1.57	1.35
	E2066-0600B	TO-66	2.28	1.94	1.86	1.57	1.35
	E200V-0600B	UNIVERSAL **	2.28	1.94	1.86	1.57	1.35
	E2000-0600B	BLANK	2.04	1.74	1.67	1.40	1.20

Note: Other lengths, in ½" increments are available. Specify non-standard hole patterns by JEDEC Outline Number, or by transistor type.

**Combination hole pattern for TO-3, TO-6, TO-36 or studs up to ¼" dia.

***For E3 configuration change first numeral of part no. to 3. For example E3000-0600B.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

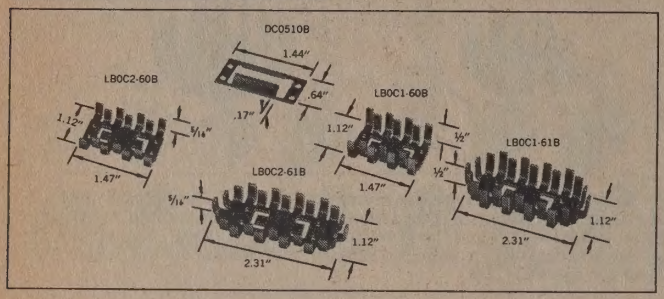
IERC

INTERNATIONAL ELECTRONIC RESEARCH CORPORATION
a corporate division of DYNAMICS CORPORATION OF AMERICA

IERC — Semiconductor Heat Sinks/Dissipators and Tube Shie

PRICES SUBJECT TO CHANGE WITHOUT

MICROCIRCUIT PACKAGE DISSIPATORS

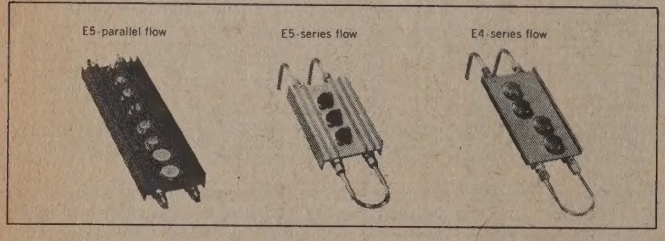


Models in this series consist of a retainer and dissipator. Retainer may be used alone to mount the package to a conduction plane, or used with the dissipator in radiation/convection modes. In natural convection, the LBOC2-60B with clamp dissipates 3.6 watts with a case temperature rise of 103°C. The slightly larger LBOC2-61B with clamp dissipates 5 watts with the same case temperature rise. All models incorporate IERC's efficient, patented staggered-finger design. Send for Bulletin 151.

IERC PART NO.	QUANTITY PRICES				
	1-24	25-49	50-99	100-499	500-999
Dissipator Base Component					
LB0C1-60B	.51	.47	.44	.41	.38
LB0C2-60B	.51	.47	.44	.41	.38
LB0C1-61B	.51	.47	.44	.41	.38
LB0C2-61B	.51	.47	.44	.41	.38
Retainer					
DC0510B	.51	.47	.44	.41	.38
Hardware for above Dissipator/Retainer Components					
Group A4*	.20	.18	.16	.14	.12

Retainer is made of beryllium copper and finished with black cadmium. Dissipator is fabricated of aluminum and finished with black anodize.
*Hardware sets consist of 4 screws, 4 nuts and washers. When ordering, specify quantity of sets required. (Example: 100 sets, Group A4 Hardware)

FLUID COOLED HEAT SINKS

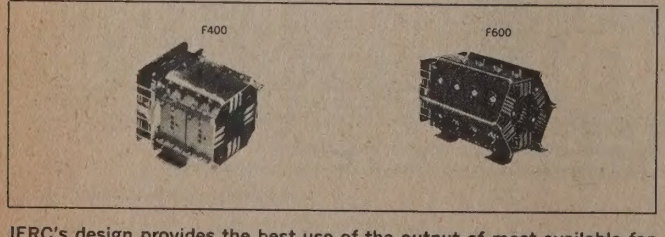


Compact, highly efficient aluminum heat sinks for power transistors and diodes. 1000 watts dissipation in less than 45 cu. in. Parallel or series flow; open or closed loop systems. Standard lengths from 6" to 4' in 1½" increments. All standard transistor hole patterns available. Standard ¼" tube fittings. Various finishes. Send for Bulletin 147.

IERC PART NO.	QUANTITY PRICES—PER FOOT			
	1-9	10-49	50-99	100-Over
E4 Series (one foot section) See Note*	14.00	11.60	9.25	8.25
E5 Series (one foot section) See Note*	14.50	12.10	10.25	8.75
Mounting Hole Pattern Per Pattern	.25	.20	.15	.15

*The above series of heat sinks are manufactured to specific customer requirements. Prices listed include material, saw cutoff, deburring, fluid passage holes tapped and clear anodize finish.

MODULAR FORCED AIR COOLING PACKAGES



IERC's design provides the best use of the output of most available fan types for economical thermal control in multiple semiconductor installations. Two types, each as much as 50% lighter in weight than other assemblies with comparable power dissipation. **F-600 Series** units are ava with one to four hexagonal banks with six modules each. Cools 24 semiconductors with one muffin fan. Available assembled kit form. **F-400 Series** units have one to four banks of four module to cool up to 16 semiconductors with one fan. Available assembled kit form. Bulletins 136, 137.

DELIVERED	CAPACITY				QUANTITY PRICES			
	F-400		F-600					
	BANKS	MODULES	BANKS	MODULES	1-9	10-49	50-99	100-249
KIT FORM	1	4	1	6	20.40	17.30	15.25	13.20
	2	8	2	12	38.40	32.70	28.80	24.90
	3	12	3	18	57.60	49.00	43.25	37.50
	4	16	4	24	76.80	65.20	57.50	49.80
ASSEMBLED	1	4	1	6	24.00	21.60	19.25	17.80
	2	8	2	12	43.20	38.80	34.40	31.80
	3	12	3	18	64.80	58.30	51.80	47.85
	4	16	4	24	86.40	77.80	69.20	63.90

Note: Order through IERC representatives or direct from factory.

INSULUBE® 448 FINISH FOR HEAT DISSIPATORS

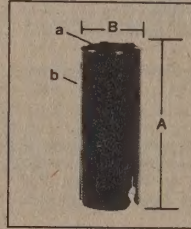
Insulube 448 is the only proven finish for positive electrical insulati electronic equipment that meets the most stringent environment quirements. Non-hygroscopic. High emissivity surface. Salt Spray r ant. Low thermal resistance. Unaffected by elevated temperature. dielectric strength. High insulation resistance. Send for Bulletin 12

Heat dissipating electron tube shields

Tubes fail primarily because of the heat they generate and the en ment in which they operate. If tubes are operated at a lower bulb perature, their life can be greatly extended.

The simple solution to high tube temperature is IERC's heat dissip tube shields shown below.

TRN THERMA-REL SERIES HEAT DISSIPATING SHIELDS



Gives you six times longer use of electronic equipment before fa costs only a fraction of that of a replacement tube. Directly replaces obsolete JAN shields. Flexible, black cadmium plated beryllium co liner adapts to variations in bulb contour and diameter. Positive attachment gives superior retention in shock and vibration environm Meets or exceeds all military requirements for heat dissipating shields and is qualified to applicable military specifications.

IERC PART NO.	MIL. SPEC. PART NO.	DIMENSIONS		TUBE SIZE	QUANTITY PRICES			
		A MAX.	B DIA.		1-24	25-99	100-499	5
TRN5-5015B	M24251/6-1	1-1/2"	7/8"	SHORT 7 PIN	.56	.51	.45	
TRN5-5020B	M24251/6-2	2"	7/8"	MED. 7 PIN	.58	.53	.47	
TRN5-5025B	M24251/6-3	2-1/2"	7/8"	LONG 7 PIN	.66	.60	.53	
TRN6-6015B	M24251/6-4	1-1/2"	1"	SHORT 9 PIN	.64	.58	.51	
TRN6-6020B	M24251/6-5	2"	1"	MED. 9 PIN	.66	.60	.53	
TRN6-6025B	M24251/6-6	2-1/2"	1"	LONG 9 PIN	.72	.65	.58	
TRN6-6027B	M24251/6-7	2-3/4"	1"	EX. LONG 9 PIN	.78	.71	.63	

Note: TRN6-6027B is designed for use with 6094 and similar size tubes.

DRAWING CODE	Component Part	Material	Finish
a	Liner	Beryllium Copper QQ-C-533	Black Cadmium QQ-P-
b	Shell	Aluminum QQ-A-318	Black Anodize MIL-A-8

IERC

INTERNATIONAL ELECTRONIC RESEARCH CORPORATI
a corporate division of DYNAMICS CORPORATION OF AMER

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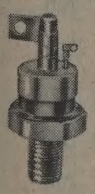
ATIONAL® SILICON CONTROLLED RECTIFIERS

National Electronics, Inc. manufactures silicon controlled rectifiers with characteristics aimed at special and difficult applications.

National® Regenerative Gate SCRs (invented by NATIONAL) have high di/dt, typically 600 Amp/μsec.

	Type Number	I_{rms} (Amperes)	V_{DRM} (Volts)	Special Characteristics
JEDEC TO-48 ¼" Stud. Flag Terminals	NL-C36 Series (2N1842-1850)	16	25 to 800	
	NL-511 Series	16	800 to 1200	
	NL-C37 Series	25	50 to 800	T_C = 105°C
	NL-C35 Series (2N681-692)	35	25 to 1000	
	NL-C38 Series	35	25 to 500	T_C = 150°
	NL-C40 Series	35	25 to 500	t_{off} = 12 μsec
	NL-571 Series	35	50 to 600	$I_{(surge)}$ = 600 A
JEDEC TO-94 ½" Stud. Flexible Leads	NL-C46 Series	55	100 to 900	
	NL-F46 Series	55	200 to 900	di/dt = 400 A/μsec
	NL-555 Series	55	100 to 1300	
	NL-C50 Series (2N1909-1916)	110	25 to 900	
	NL-C55 Series	110	25 to 600	T_{off} = 20 μsec
	NL-C60 Series (2N2023-2030)	110	25 to 500	T_C = 150°C
	NL-C150 Series	110	500 to 1300	
	NL-F150 Series	110	200 to 1000	di/dt = 600 A/μsec
	NL-C151 Series	110	500 to 1000	t_{off} = 50 μsec
	NL-C154 Series	110	100 to 600	t_{off} = 10 μsec
	NL-C155 Series	110	100 to 600	t_{off} = 20 μsec
	NL-C158 Series	110	100 to 1000	t_{off} = 40 μsec
 JEDEC TO-83 ½" Stud. Flag Terminals	NL-C45 Series	55	100 to 900	
	NL-F45 Series	55	200 to 900	di/dt = 400 A/μsec
	NL-556 Series	55	100 to 1300	
	NL-C52 Series (2N1792-1803)	110	25 to 900	
	NL-C56 Series	110	25 to 600	t_{off} = 20 μsec
	NL-C62 Series	110	25 to 500	T_C = 150°C
	NL-C152 Series	110	500 to 1300	
	NL-F152 Series	110	200 to 1000	di/dt = 600 A/μsec
	NL-C153 Series	110	500 to 1000	t_{off} = 50 μsec
	NL-C156 Series	110	100 to 600	t_{off} = 10 μsec
	NL-C157 Series	110	100 to 600	t_{off} = 20 μsec
	NL-C159 Series	110	100 to 1000	t_{off} = 40 μsec
DISC PACKAGE	NL-C350 Series	175	100 to 1300	
	NL-F350 Series	175	100 to 1300	di/dt = 600 A/μsec
	NL-C355 Series	175	200 to 600	t_{off} = 20 μsec
JEDEC TO-93 ¼" Stud. Flexible Leads	NL-C178 Series	200	100 to 1200	
	NL-C180 Series	235	100 to 1300	
	NL-C181 Series	235	100 to 1200	t_{off} = 80 μsec
	NL-C185 Series	235	100 to 600	t_{off} = 20 μsec
	NL-F180 Series	235	100 to 1000	di/dt = 600 A/μsec
Clamp Mounted	NL-C291 Series	470	100 to 1200	
	NL-F291 Series	470	100 to 1200	di/dt = 600 A/μsec
	NL-C29120 Series	470	500 to 1200	Heat sink included
	NL-F29120 Series	470	500 to 1200	Heat sink included

For Complete Data Request Bulletin SB-57

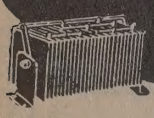
READOUT TUBES, DRIVERS, & BEZELS
ONAL'S complete line of numeric readout tubes, rs, and bezels are available for prompt shipment. for individual data sheets and prices.

IGNITRONS, RECTIFIER TUBES, & THYRATRONS
NATIONAL'S complete line of industrial control ignitrons, rectifier tubes, and thyratrons are available for prompt shipment. Write for individual data sheets and prices.

NATIONAL ELECTRONICS, Inc.

a varian subsidiary

DIRECTRON



Industrial Selenium Rectifiers, Transformers, Chokes and Power Supplies

FULL WAVE BRIDGE RECTIFIERS, SINGLE PHASE, RESISTIVE-INDUCTIVE LOADS

ALL PRICES SHOWN ARE USER NET PRICES

Max. Amps.	18v. in— 14v. out		36v: in— 28v. out		54v. in— 42v. out		130v. in— 100v. out		260v. in— 200v. out	
	No.	Price	No.	Price	No.	Price	No.	Price	No.	Pr
½	A 18	$ 1.05	A 36	$ 1.50	A 54	$ 2.50	A 130	$ 5.00	A 260	$1
1	B 18	1.20	B 36	2.20	B 54	3.20	B 130	8.00	B 260	1
2	C 18	2.10	C 36	3.00	C 54	4.50	C 130	10.00	C 260	2
3	D 18	2.70	D 36	4.00	D 54	6.00	D 130	14.00	D 260	2
4	E 18	3.60	E 36	7.50	E 54	10.00	E 130	24.00	E 260	4
6	F 18	4.50	F 36	9.00	F 54	12.00	F 130	32.00	F 260	6
10	G 18	6.60	G 36	12.00	G 54	18.00	G 130	39.00	G 260	7
12	H 18	8.20	H 36	16.00	H 54	22.00	H 130	44.00	H 260	8
15	J 18	10.50	J 36	20.00	J 54	27.00	J 130	54.00	J 260	10
20	K 18	12.50	K 36	25.00	K 54	36.00	K 130	77.00	K 260	15
24	L 18	15.00	L 36	30.00	L 54	42.00	L 130	82.00	L 260	16
30	M 18	19.10	M 36	37.00	M 54	55.00				
36	P 18	24.00	P 36	48.00						
50	R 18	30.00	R 36	60.00						

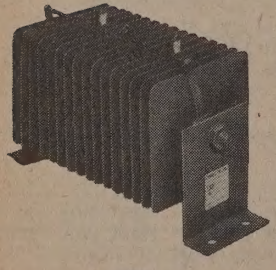
C36

220 v. Single Phase available . . . up to 1000 amps.

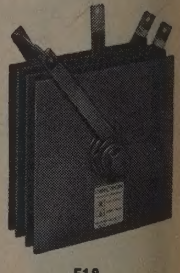
HALF-WAVE, CENTER-TAP, DOUBLER,

TRIPLER or 3-PHASE

Quotations on request



E130

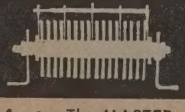


F18

24 HOUR SERVICE

on Custom Built Stacks

SEE OUR AD UNDER "TRANSFORMERS" IN SECTION 5600 FOR RECTIFIER TRANSFORMERS AND HIGH CURRENT CHOKES



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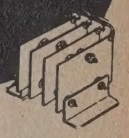
SILICON POWER RECTIFIERS

HY-A-SIL
High - Ampere - Silicon



FEATURES

- High operating temperature, 190°C (Up to 120°C ambient)
- High operating voltage (Up to 600 p.i.v.)
- High efficiency (99% compared to about 75% for selenium)
- Excellent regulation (4% compared to about 15% for selenium)

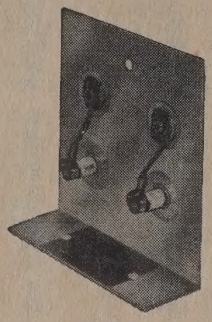
Stock No.	Type	AC Input Volts up to	DC Output Volts up to	Max. Amps Self Cooled	Max. Amps Fan Cooled	Size And Weight	User Net Price
SI-CT-A	Center-Tap	18-0-18	16	40	80	B	$ 15.00
SI-CT-B	Center-Tap	36-0-36	32	40	80	B	20.00
SL-CT-A	Center-Tap	18-0-18	16	50	100	B	17.50
SL-CT-B	Center-Tap	36-0-36	32	50	100	B	22.50
SL-CT-D	Center-Tap	72-0-72	64	50	100	B	35.00
SL-CT-F	Center-Tap	140-0-140	125	50	100	B	44.00
SK-CT-A	Center-Tap	18-0-18	16	100	200	C	30.00
SK-CT-B	Center-Tap	36-0-36	32	100	200	C	34.00
SK-CT-D	Center-Tap	72-0-72	64	100	200	C	37.00
SK-CT-F	Center-Tap	140-0-140	125	100	200	C	48.00
SM-CT-A	Center-Tap	18-0-18	16	200	400	D	45.00
SM-CT-B	Center-Tap	36-0-36	32	200	400	D	60.00
SM-CT-D	Center-Tap	72-0-72	64	200	400	D	62.00
SM-CT-F	Center-Tap	140-0-140	125	200	400	D	76.00
SO-CT-B	Center-Tap	36-0-36	32	400	800	E	100.00
SA-BR-D	1ϕ Bridge	140	125	1	*	—	9.00
SA-BR-F	1ϕ Bridge	280	250	1	*	—	10.50
SC-BR-D	1ϕ Bridge	140	125	2	*	—	10.50
SC-BR-F	1ϕ Bridge	280	250	2	*	—	12.00
SD-BR-A	1ϕ Bridge	36	32	6	12	F	18.00
SD-BR-D	1ϕ Bridge	140	125	6	12	F	30.00
SD-BR-F	1ϕ Bridge	280	250	6	12	F	39.00
SE-BR-A	1ϕ Bridge	36	32	10	20	G	21.00
SE-BR-D	1ϕ Bridge	140	125	10	20	G	36.00
SE-BR-F	1ϕ Bridge	280	250	10	20	G	44.00
SF-BR-A	1ϕ Bridge	36	32	20	40	H	24.00
SF-BR-D	1ϕ Bridge	140	125	20	40	H	40.00
SF-BR-F	1ϕ Bridge	280	250	20	40	H	48.00
SI-BR-A	1ϕ Bridge	36	32	40	80	J	30.00
SI-BR-B	1ϕ Bridge	72	64	40	80	J	36.00
SI-BR-D	1ϕ Bridge	140	125	40	80	J	63.00
SI-BR-F	1ϕ Bridge	280	250	40	80	J	95.00
SL-BR-A	1ϕ Bridge	36	32	50	100	J	33.00
SL-BR-B	1ϕ Bridge	72	64	50	100	J	39.00
SL-BR-D	1ϕ Bridge	140	125	50	100	J	70.00
SL-BR-F	1ϕ Bridge	280	250	50	100	J	110.00
SG-BR-A	1ϕ Bridge	36	32	70	140	J	40.00
SG-BR-B	1ϕ Bridge	72	64	70	140	J	50.00
SG-BR-D	1ϕ Bridge	140	125	70	140	J	80.00
SG-BR-F	1ϕ Bridge	280	250	70	140	J	130.00
SK-BR-A	1ϕ Bridge	36	32	100	200	K	60.00
SK-BR-B	1ϕ Bridge	72	64	100	200	K	68.00
SK-BR-D	1ϕ Bridge	140	125	100	200	K	90.00
SK-BR-F	1ϕ Bridge	280	250	100	200	K	150.00
SM-BR-A	1ϕ Bridge	36	32	200	400	L	100.00
SM-BR-B	1ϕ Bridge	72	64	200	400	L	120.00
SM-BR-D	1ϕ Bridge	140	125	200	400	L	180.00
SM-BR-F	1ϕ Bridge	280	250	200	400	L	260.00
SO-BR-B	1ϕ Bridge	72	64	400	800	M	270.00
SO-BR-F	1ϕ Bridge	280	250	400	800	M	480.00
SL-PH-A	3ϕ Bridge	36	48	75	150	N	60.00
SL-PH-B	3ϕ Bridge	72	96	75	150	N	85.00
SL-PH-C	3ϕ Bridge	105	144	75	150	N	120.00
SL-PH-D	3ϕ Bridge	140	188	75	150	N	180.00
SL-PH-E	3ϕ Bridge	220	290	75	150	M	220.00
SK-PH-E	3ϕ Bridge	220	290	100	200	M	240.00
SM-PH-E	3ϕ Bridge	220	290	200	400	M	300.00
SO-PH-E	3ϕ Bridge	220	290	400	800	M	375.00

All above ratings based on 30°C ambient. Fan-cooled ratings based on air velocity of 1000 linear ft/minute. For resistive or inductive loads, as rated. For capacitive or battery loads, derate amperage 20%. Doublers, triplers, 3 phase half wave and 3 phase center-tap also available. Custom-built stacks, 24 hour service.

DIMENSIONS WITH BRACKETS

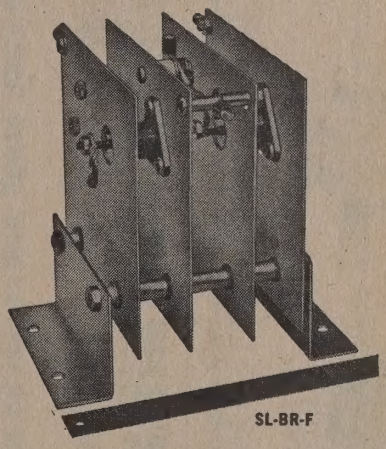
Size	Length	Height	Width	Weight
B	3″	6″	5″	12 oz.
C	3″	6″	6″	1 lb.
D	4″	8″	7″	2 lbs.
E	4″	9″	8″	6 lbs.
F	6″	5″	5″	1¼ lbs.
G	6″	6″	5″	1½ lbs.
H	6″	6″	6″	2 lbs.
J	6″	6″	5″	1½ lbs.
K	7″	8″	7″	4 lbs.
L	8″	9″	8″	6 lbs.
M	8″	11″	10″	6 lbs.
N	8″	6″	5″	4 lbs.

*Not suitable for fan-cooling

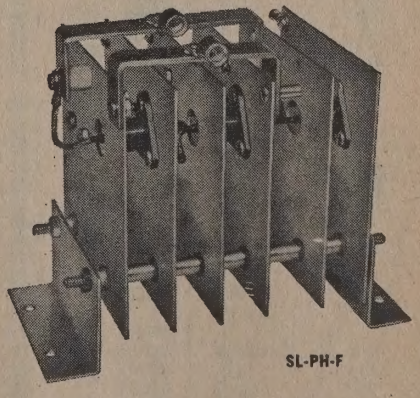


SC-BR-F

SA-BR-D



SL-BR-F



SL-PH-F

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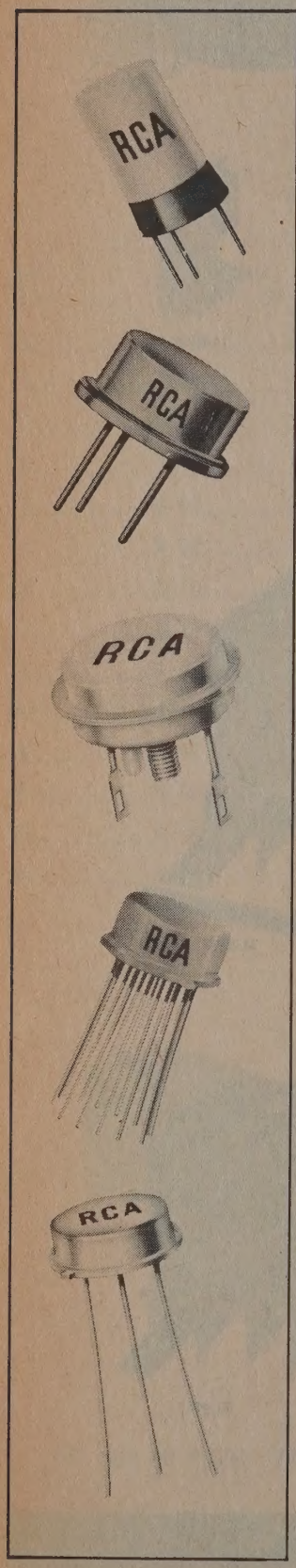
RCA SEMICONDUCTOR PRODUCTS

JULY 1, 1969



TRANSISTORS, THYRISTORS, GERMANIUM DIODES & TUNNEL DIODES

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
1N2326	$ .55	$ .40	$ .33
1N4785	1.08	.78	.65
2N109	.66	.48	.40
2N140	1.24	.90	.75
2N175	1.63	1.19	.99
2N176	1.31	.95	.79
2N215	1.73	1.26	1.05
2N217	.57	.41	.34
2N220	1.52	1.10	.92
2N270	.76	.55	.46
2N274	1.24	.90	.75
2N351	1.73	1.26	1.05
2N370	1.08	.78	.65
2N372	1.06	.77	.64
2N376	1.88	1.37	1.14
2N384	1.65	1.20	1.00
JAN2N384	3.30	2.40	2.00
2N388	.47	.34	.28
JAN2N388	.48	.35	.29
2N388A	.88	.64	.53
2N398	.83	.60	.50
JAN2N398A	.99	.72	.60
JAN2N398	.91	.66	.55
2N398A	.91	.66	.55
2N398B	1.16	.84	.70
2N404	.42	.30	.25
JAN2N404	.43	.32	.26
2N404A	.55	.40	.33
JAN2N404A	.62	.45	.37
2N405	.48	.35	.285
2N406	.41	.30	.245
2N407	.54	.39	.325
2N408	.48	.35	.285
2N409	.55	.40	.33
2N410	.48	.35	.29
2N411	.60	.44	.36
2N412	.53	.39	.32
2N414	.42	.30	.25
2N581	.50	.36	.30
2N582	.66	.48	.40
2N585	.99	.72	.60
2N586	1.73	1.26	1.05
2N591	.58	.42	.35
2N647	1.08	.78	.65
2N649	.86	.63	.52
2N697	.63	.46	.38
2N699	1.16	.84	.70
2N706	.55	.40	.33
2N706A	.73	.53	.44
2N709	1.32	.96	.80
2N718A	1.08	.78	.65
2N720A	1.32	.96	.80
2N834	1.98	1.44	1.20
2N917	1.27	.92	.77
2N918	1.41	1.02	.85
JAN2N918	2.15	1.56	1.30
JANTX2N918	5.80	4.20	3.50
2N1010	2.89	2.10	1.75
2N1023	2.72	1.98	1.65
2N1066	1.98	1.44	1.20
2N1177	1.01	.74	.61
2N1178	.99	.72	.60
2N1179	.99	.72	.60
2N1180	.80	.58	.48
2N1183	1.82	1.32	1.10
JAN2N1183	2.64	1.92	1.60
2N1183A	2.31	1.68	1.40
JAN2N1183A	3.30	2.40	2.00
2N1183B	2.89	2.10	1.75
JAN2N1183B	3.88	2.82	2.35
2N1184	2.48	1.80	1.50
JAN2N1184	3.71	2.70	2.25
2N1184A	2.81	2.04	1.70
JAN2N1184A	4.04	2.94	2.45
2N1184B	4.13	3.00	2.50
JAN2N1184B	5.36	3.90	3.25
2N1224	1.24	.90	.75
JAN2N1224	1.41	1.02	.85
2N1225	1.41	1.02	.85
JAN2N1225	1.57	1.14	.95
2N1226	1.49	1.08	.90
2N1285	1.72	1.25	1.04
2N1302	.42	.30	.25
JAN2N1302	.43	.32	.26
2N1303	.42	.30	.25
JAN2N1303	.43	.32	.26
2N1304	.50	.36	.30
JAN2N1304	.53	.39	.32
2N1305	.48	.35	.29
JAN2N1305	.52	.38	.31
2N1306	.62	.45	.37
JAN2N1306	.66	.48	.40
2N1307	.58	.42	.35
JAN2N1307	.63	.46	.38
2N1308	.91	.66	.55
JAN2N1308	.96	.70	.58
2N1309	.91	.66	.55
JAN2N1309	.96	.70	.58
2N1384	3.30	2.40	2.00
2N1392	1.82	1.32	1.10
2N1396	1.93	1.40	1.17
2N1397	2.15	1.56	1.30
2N1479	2.15	1.56	1.30
JAN2N1479	2.56	1.86	1.55
2N1480	2.31	1.68	1.40
JAN2N1480	2.72	1.98	1.65
2N1481	2.48	1.80	1.50
JAN2N1481	2.89	2.10	1.75
2N1482	3.30	2.40	2.00
JAN2N1482	3.71	2.70	2.25
2N1483	2.89	2.10	1.75
JAN2N1483	3.71	2.70	2.25
JANTX2N1483	7.85	5.70	4.75
2N1484	3.63	2.64	2.20
JAN2N1484	4.46	3.24	2.70
JANTX2N1484	8.60	6.25	5.20
2N1485	4.46	3.24	2.70
JAN2N1485	5.28	3.84	3.20
JANTX2N1485	9.40	6.85	5.70
2N1486	6.77	4.92	4.10
JAN2N1486	7.59	5.52	4.60
JANTX2N1486	10.30	8.55	7.10
2N1487	4.54	3.30	2.75
JAN2N1487	5.36	3.90	3.25
2N1488	4.96	3.60	3.00
JAN2N1488	5.78	4.20	3.50
2N1489	7.43	5.40	4.50
JAN2N1489	8.25	6.00	5.00
2N1490	8.25	6.00	5.00
JAN2N1490	9.10	6.60	5.50
2N1491	1.82	1.32	1.10
2N1492	4.29	3.12	2.60
2N1493	7.01	5.10	4.25
JAN2N1493	7.43	5.40	4.50
2N1524	.47	.34	.28
2N1525	.53	.39	.32
2N1526	.48	.35	.29
2N1527	.55	.40	.33
2N1605	.62	.45	.37
2N1605A	1.09	.80	.66
2N1613	.75	.54	.45
2N1631	.65	.47	.39
2N1632	.58	.42	.35
2N1637	.57	.41	.34
2N1638	.50	.36	
2N1639	.53	.39	
2N1683	1.90	1.38	
2N1700	1.90	1.38	
2N1701	2.31	1.68	
2N1702	4.54	3.30	
2N1711	.94	.69	
2N1893	1.08	.78	
2N1905	4.13	3.00	
2N1906	6.60	4.80	
2N2015	9.08	6.60	
JAN2N2015	9.90	7.20	
2N2016	9.90	7.20	
JAN2N2016	10.75	7.80	
2N2102	1.13	.82	
*S2N2102	14.50	12.00	
2N2147	1.57	1.14	
2N2148	1.08	.78	
2N2208	1.54	1.12	
2N2270	.91	.66	
2N2304	4.29	3.12	
2N2305	6.44	4.68	
2N2338	6.60	4.80	
2N2369	1.40	1.02	
2N2369A	1.65	1.20	
2N2405	1.57	1.14	
2N2475	1.62	1.18	
2N2476	1.16	.84	
2N2477	1.32	.96	
2N2594	1.62	1.18	
2N2613	.55	.40	
2N2614	.50	.36	
2N2631	3.47	2.52	
2N2708	2.31	1.68	
JAN2N2708	2.72	1.98	
2N2857	4.46	3.24	
JAN2N2857	4.95	3.60	
JANTX2N2857	10.20	8.45	
2N2869/ 2N301	1.52	1.11	
2N2870/ 2N301A	3.15	2.29	
2N2876	12.75	10.55	
2N2895	1.41	1.02	
2N2896	2.06	1.50	
2N2897	1.16	.84	
2N2953	.50	.36	
2N3011	.99	.72	
2N3053/ 40053	.75	.54	
2N3054	1.16	.84	
2N3055	1.82	1.32	
2N3118	4.95	3.60	
2N3119	5.36	3.90	
2N3229	17.10	14.15	1
2N3241A	.73	.53	
2N3242A	.83	.60	
2N3261	1.32	.96	
2N3262	7.43	5.40	
2N3263	79.75	66.00	5
2N3264	50.75	42.00	3
2N3265	76.85	63.50	5
2N3266	50.75	42.00	3
2N3375	10.80	8.95	
JAN2N3375	18.50	15.30	1
JANTX2N3375	21.60	17.85	1
2N3435	7.43	5.40	
2N3439	3.71	2.70	
JAN2N3439	4.70	3.42	
2N3440	1.82	1.32	
JAN2N3440	2.31	1.68	
2N3441	2.48	1.80	
JAN2N3441	3.05	2.22	
2N3442	4.54	3.30	

Prices shown do not include any state or local taxes. All prices are subject to change or withdrawal without notice.

Net

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RCA

SEMICONDUCTOR PRODUCTS

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
ype			
N3442	5.69	4.14	3.45
178	1.90	1.38	1.15
112	1.08	.78	.65
153	4.37	3.18	2.65
N3553	5.78	4.20	3.50
X2N3553	8.74	6.36	5.30
183	2.48	1.80	1.50
184	4.13	3.00	2.50
185	6.60	4.80	4.00
100	3.80	2.76	2.30
132	12.75	10.55	8.80
130	1.24	.90	.75
131	1.62	1.18	.98
132	1.07	.78	.65
133	15.80	13.10	10.90
171	4.13	3.00	2.50
172	4.13	3.00	2.50
173	7.43	5.40	4.50
139	13.80	11.40	9.50
166	2.97	2.16	1.80
178	4.95	3.60	3.00
179	6.60	4.80	4.00
132	1.40	1.02	.85
133	1.62	1.18	.98
112	14.20	11.75	9.80
136	1.32	.96	.80
137	1.16	.84	.70
163	3.80	2.76	2.30
164	1.90	1.38	1.15
168	1.34	.97	.81
169	1.40	1.02	.85
174	.73	.53	.44
140	2.89	2.10	1.75
159	1.90	1.38	1.15
114	1.24	.90	.75
146	2.31	1.68	1.40
147	2.97	2.16	1.80
148	4.13	3.00	2.50
190	.75	.54	.45
127	2.15	1.56	1.30
140	11.90	9.85	8.20
N4440	18.00	15.00	13.00
X2N4440	24.00	20.00	16.50
132	29.00	24.00	20.00
133	29.00	24.00	20.00
116	43.50	36.00	30.00
134	1.34	.98	.81
135	1.32	.96	.80
136	1.42	1.04	.86
137	1.41	1.02	.85
138	29.00	24.00	20.00
139	21.75	18.00	15.00
170	29.00	24.00	20.00
171	29.00	24.00	20.00
190	11.40	8.30	6.90
102	21.75	18.00	15.00
108	12.90	10.70	8.90
109	3.47	2.52	2.10
179	.81	.59	.49
180	.48	.35	.29
183	.32	.23	.19
184	.45	.33	.27
185	.52	.38	.31
186	.40	.29	.24
187	.45	.33	.27
188	.55	.40	.33
189	.65	.47	.39
102	4.53	3.30	2.75
139	8.25	6.00	5.00
140	11.55	8.00	7.00
162	1.62	1.18	.98
193	.91	.66	.55
194	.91	.66	.55

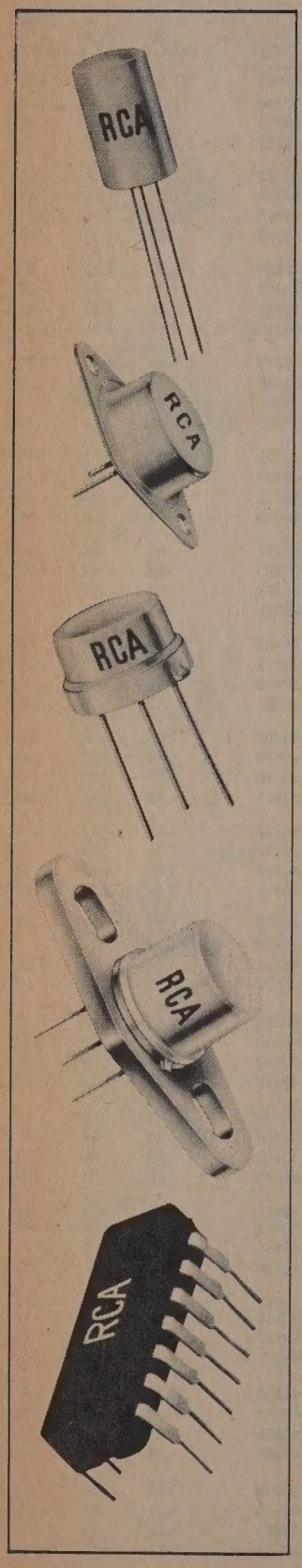
Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
2N5295	.91	.66	.55
2N5296	.91	.66	.55
2N5297	1.04	.76	.63
2N5298	1.04	.76	.63
2N5320	2.15	1.56	1.30
2N5321	1.57	1.14	.95
2N5322	2.15	1.56	1.30
2N5323	1.57	1.14	.95
2N5415	3.30	2.40	2.00
2N5416	4.95	3.60	3.00
2N5470	87.00	72.00	60.00
2N5490	1.07	.78	.65
2N5491	1.07	.78	.65
2N5492	1.19	.86	.72
2N5493	1.19	.86	.72
2N5494	1.19	.86	.72
2N5495	1.19	.86	.72
2N5496	1.29	.94	.78
2N5497	1.29	.94	.78
2N5575	36.25	30.00	25.00
2N5576	36.25	30.00	25.00
2N5577	40.60	33.60	28.00
2N5578	40.60	33.60	28.00
2N5579	43.50	36.00	30.00
2N5580	47.85	39.60	33.00
2N5671	43.50	36.00	30.00
2N5672	58.00	48.00	40.00
3N128	1.45	1.06	.88
3N138	3.30	2.40	2.00
3N139	2.89	2.10	1.75
3N140	1.62	1.18	.98
3N141	1.55	1.13	.94
3N142	1.08	.78	.65
3N143	1.39	1.01	.84
3N152	1.78	1.30	1.08
3N153	1.58	1.15	.96
3N154	1.62	1.18	.98
3N159	2.18	1.58	1.32
40004	1.65	1.20	1.00
40005	1.82	1.32	1.10
40006	3.30	2.40	2.00
40022	.83	.60	.50
40050	.99	.72	.60
40051	1.21	.88	.73
40080	1.08	.78	.65
40081	1.41	1.02	.85
40082	4.04	2.94	2.45
40084	.99	.72	.60
40231	.47	.34	.28
40232	.53	.39	.32
40233	.60	.44	.36
40234	.42	.30	.25
40235	.57	.41	.34
40236	.48	.35	.29
40237	.38	.28	.23
40238	.43	.32	.26
40239	.40	.29	.24
40240	.38	.28	.23
40242	.57	.41	.34
40243	.47	.34	.28
40244	.38	.28	.23
40245	.40	.29	.24
40246	.38	.28	.23
40250	1.16	.84	.70
40250V1	1.24	.90	.75
40251	1.90	1.38	1.15
40254	.78	.57	.47
40258	.86	.63	.52
*40259	12.40	10.25	8.55
40263	.50	.36	.30
40269	.57	.41	.34
40273	.55	.40	.33
*40279	109.85	90.90	75.75

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
40280	4.62	3.36	2.80
40281	10.60	8.75	7.30
40282	11.45	9.50	7.90
*40285	37.70	31.20	26.00
40287	21.75	18.00	15.00
40290	2.48	1.80	1.50
40291	10.40	7.55	6.30
40292	10.45	8.65	7.20
*40294	22.05	18.25	15.20
*40295	11.15	8.10	6.75
*40296	32.10	26.60	22.15
*40305	15.10	12.50	10.40
*40306	26.85	22.20	18.50
*40307	28.85	23.90	19.90
40309	.70	.51	.42
40309V1;V2	.78	.57	.47
40310	.99	.72	.60
40310V1	1.08	.78	.65
40311	.73	.53	.44
40311V1;V2	.81	.59	.49
40312	1.03	.75	.62
40313	2.23	1.62	1.35
40314	.78	.57	.47
40314V1;V2	.86	.63	.52
40315	.75	.54	.45
40315V1;V2	.83	.60	.50
40316	.99	.72	.60
40317	.78	.57	.47
40317V1;V2	.86	.63	.52
40318	2.10	1.52	1.27
40319	1.16	.84	.70
40319V1;V2	1.24	.90	.75
40320	.78	.57	.47
40320V1;V2	.86	.63	.52
40321	1.24	.90	.75
40321V1;V2	1.32	.96	.80
40322	2.15	1.56	1.30
40323	.70	.51	.42
40323V1;V2	.78	.57	.47
40324	.99	.72	.60
40325	1.90	1.38	1.15
40326	.78	.57	.47
40326V1;V2	.86	.63	.52
40327	1.24	.90	.75
40327V1;V2	1.32	.96	.80
40328	2.19	1.60	1.33
40329	.47	.34	.28
40340	29.00	24.00	20.00
40341	29.00	24.00	20.00
40344	.53	.39	.32
40346	1.14	.83	.69
40346V1;V2	1.23	.89	.74
40347	.66	.48	.40
40347V1;V2	.75	.54	.45
40348	1.06	.77	.64
40348V1;V2	1.14	.83	.69
40349	1.56	1.13	.94
40349V1;V2	1.64	1.19	.99
40354	1.18	.86	.71
40355	1.24	.90	.75
40359	.32	.23	.19
40360	.91	.66	.55
40360V1;V2	.99	.72	.60
40361	1.03	.75	.62
40361V1;V2	1.11	.81	.67
40362	1.24	.90	.75
40362V1;V2	1.32	.96	.80
40363	1.82	1.32	1.10
40364	4.79	3.48	2.90
*40366	7.84	5.70	4.75
*40366V1;V2	7.92	5.75	4.80
*40367	7.84	5.70	4.75
*40367V1;V2	7.92	5.75	4.80

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
*40368	11.60	9.60	8.00
*40369	13.05	10.80	9.00
40370	.58	.42	.35
40372	1.24	.90	.75
40373	2.56	1.86	1.55
40374	2.56	1.86	1.55
40375	5.03	3.66	3.05
40377	.42	.30	.25
40380	1.49	1.08	.90
40381	1.21	.88	.73
*40385	9.50	6.90	5.75
*40385V1;V2	9.55	6.95	5.80
40388	8.83	6.42	5.35
40389	.91	.66	.55
40390	2.15	1.56	1.30
40391	1.24	.90	.75
40392	.91	.66	.55
40394	1.24	.90	.75
40395	.38	.28	.23
40396	.83	.60	.50
40397	.66	.48	.40
40398	.60	.44	.36
40399	.55	.40	.33
40400	.50	.36	.30
40403	.66	.48	.40
40405	1.65	1.20	1.00
40406	1.19	.87	.72
40407	.81	.59	.49
40408	1.08	.78	.65
40409	1.14	.83	.69
40410	1.32	.96	.80
40411	4.29	3.12	2.60
40412	1.06	.77	.64
40412V1;V2	1.14	.83	.69
*40413	3.88	2.82	2.35
*40414	5.10	3.70	3.10
40421	1.28	.93	.77
40428	.31	.23	.185
40433	2.97	2.16	1.80
40437	.99	.72	.60
40439	1.98	1.44	1.20
40440	1.32	.96	.80
40442	.83	.60	.50
40446	4.29	3.12	2.60
40447	.57	.41	.34
40450	.80	.58	.48
40451	.90	.65	.54
40452	.80	.58	.48
40453	.73	.53	.44
40454	.66	.48	.40
40455	.62	.45	.37
40456	.57	.41	.34
40458	.78	.57	.47
40459	.85	.62	.51
40462	1.16	.84	.70
40467;A	1.24	.90	.75
40468;A	.75	.54	.45
40487	.30	.22	.18
40488	.22	.16	.13
40489	.28	.20	.165
40490	.38	.28	.23
40513	1.24	.90	.75
40514	1.26	.92	.76
40517	15.10	12.50	10.40

RCA

SEMICONDUCTOR PRODUCTS



Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
40518	20.30	16.80	14.00
40519	1.41	1.02	.85
40537	1.24	.90	.75
40538	1.36	.99	.82
40539	.66	.48	.40
40542	1.31	.95	.79
40543	1.37	1.00	.83
40544	.75	.54	.45
40559;A	.70	.51	.42
40561	4.54	3.30	2.75
40562	4.54	3.30	2.75
40563	4.54	3.30	2.75
40564	4.54	3.30	2.75
40565	4.54	3.30	2.75
40566	7.43	5.40	4.50
40567	6.52	4.74	3.95
40568	7.01	5.10	4.25
40569	7.43	5.40	4.50
40570	10.75	7.80	6.50
40571	8.60	6.24	5.20
40572	7.01	5.10	4.25
40573	8.15	5.94	4.95
40574	10.75	7.80	6.50
*40577	58.00	48.00	40.00
*40578	58.00	48.00	40.00
40581	4.87	3.54	2.95
40582	5.12	3.72	3.10
40594	2.23	1.62	1.35
40595	2.23	1.62	1.35
40600	1.24	.90	.75
40601	1.16	.84	.70
40602	.83	.60	.50
40603	1.04	.76	.63
40604	.98	.71	.59
*40605	45.00	37.25	31.05
40606	38.30	31.70	26.40
40608	2.48	1.80	1.50
40611	.71	.52	.43
40612	.71	.52	.43
40613	.73	.53	.44
40616	.73	.53	.44
40618	.74	.54	.45
40621	.86	.62	.52
40622	.88	.64	.53
40623	.86	.62	.52
40624	1.14	.83	.69
40625	.89	.65	.54
40626	.89	.65	.54
40627	1.20	.83	.73
40628	.94	.68	.57
40629	.74	.54	.45
40630	.86	.62	.52
40631	.97	.71	.59
40632	1.24	.90	.75
40633	1.27	.92	.77
40634	1.29	.94	.78
40635	.74	.54	.45
40636	2.31	1.68	1.40
40637	.83	.60	.50
40653	2.61	1.90	1.58
40665	14.00	11.65	9.70
40666	12.00	9.85	8.20
40673	2.06	1.50	1.25
40675	145.00	120.00	100.00

*NOTED — Group 1 products can only be shipped direct to the end user due to technical specifications of the unit.

SILICON RECTIFIER ASSEMBLIES

Type	RCA Equipment Manufacturers Price (Bulk) 1 - 29	30 & up
CR101	$ 5.75	$ 5.47
CR102	7.20	6.85
CR103	8.15	7.75
CR104	9.60	9.10
CR105	10.55	10.05
CR106	12.00	11.40
CR107	12.95	12.30
CR108	13.90	13.20
CR109	15.35	14.60
CR110	16.30	15.50
CR201	3.10	2.96
CR203	4.80	4.56
CR204	5.75	5.47
CR206	6.95	6.60
CR208	8.40	8.00
CR210	10.10	9.60
CR212	12.00	11.40
CR301	28.00	26.55
CR302	40.00	37.95
CR303	51.00	48.45
CR304	57.60	54.72
CR305	73.00	69.35
CR306	83.00	78.85
CR307	93.00	88.35
CR311	30.00	28.50
CR312	42.00	39.90
CR313	53.00	50.35
CR314	64.00	60.75
CR315	75.00	71.25
CR316	85.00	80.75
CR317	95.00	90.25
CR321	35.00	33.25
CR322	49.00	46.55
CR323	62.00	58.90
CR324	76.00	72.20
CR325	90.00	85.50
CR331	37.00	35.15
CR332	52.00	49.40
CR333	65.00	61.75
CR334	79.00	75.05
CR335	93.00	88.35
CR341	44.00	41.80
CR342	61.00	57.95
CR343	78.00	74.10
CR344	94.00	89.30
CR351	46.00	43.70
CR352	64.00	60.80
CR353	82.00	72.90
CR354	98.00	93.10
CR401	28.00	26.60
CR402	32.00	30.40
CR403	44.00	41.80
CR404	30.00	28.50
CR405	36.00	34.20
CR406	54.00	51.30
CR407	40.00	38.00
CR408	48.00	45.60
CR409	64.00	60.80
CR501	40.00	38.00
CR502	48.00	45.60
CR503	50.00	47.50
CR504	62.00	58.90
CR505	64.00	60.80
CR506	84.00	79.80

PHOTOCELLS

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
SQ2502	1.90	1.38	1.15
SQ2503	1.21	.88	.73

Type	RCA Equipment Manufacturers Price 1-99 SCH. D	100-999 SCH. B
SQ2508	1.24	.90
SQ2519	1.16	.84
SQ2520	1.32	.96
SQ2521	1.40	1.02
SQ2526	1.32	.96
SQ2527	1.32	.96
SQ2529	1.24	.90
SQ2530	1.32	.96
SQ2534	1.24	.90
SQ2535	1.57	1.14
SQ2536	1.24	.90
SQ2543	2.06	1.50
SQ2544	1.90	1.38
SQ2544V1	1.90	1.38
SQ2545	1.90	1.38
SQ2545V1	1.90	1.38
SQ2546	1.90	1.38
SQ2554	1.24	.90
SQ2555	1.24	.90
SQ2556	1.24	.90
SQ2557	1.40	1.02
SQ2558	1.57	1.14
4403	1.21	.88
4404	1.21	.88
4448	1.21	.88
4453	1.28	.93
7163	1.21	.88

SILICON RECTIFIERS

1N248C;RC	1.65	1.20
1N249C;RC	2.06	1.50
1N250C;RC	2.72	1.98
1N440B	.53	.38
1N441B	.60	.43
1N442B	.66	.51
1N443B	.79	.58
1N444B	.92	.67
1N445B	1.12	.82
1N536	.36	.27
1N537	.40	.29
1N538	.45	.32
1N539	.50	.36
1N540	.56	.41
1N547	.79	.57
1N1095	.61	.48
1N1183A;RA	2.15	1.56
1N1184A;RA	2.48	1.80
1N1186A;RA	3.55	2.58
1N1187A;RA	4.95	3.60
1N1188A;RA	6.19	4.50
1N1189A;RA	7.43	5.40
1N1190A;RA	8.65	6.30
1N1195A;RA	3.88	2.82
1N1196A;RA	4.95	3.60
1N1197A;RA	5.94	4.32
1N1198A;RA	7.01	5.10
1N1199A; RA	1.24	.90
1N1200A;RA	1.41	1.02
1N1202A;RA	2.48	1.80
1N1203A;RA	3.47	2.52
1N1204A;RA	4.46	3.24
1N1205A;RA	5.36	3.90
1N1206A;RA	6.19	4.50
1N1341B;RB	1.16	.84
1N1342B;RB	1.32	.96
1N1344B;RB	2.15	1.56
1N1345B;RB	3.05	2.22
1N1346B;RB	3.96	2.88
1N1347B;RB	4.79	3.48
1N1348B;RB	5.78	4.20
1N1612;R	1.08	.78
1N1613;R	1.24	.90
1N1614;R	1.90	1.38
1N1615;R	3.71	2.70

Net

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RCA

SEMICONDUCTOR PRODUCTS

e	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
6;R	5.36	3.90	3.25
3A	.42	.30	.25
4A	.52	.38	.31
8A	.33	.24	.20
9A	.37	.27	.22
0A	.40	.29	.24
1A	.42	.30	.25
2A	.48	.35	.29
3A	.58	.42	.35
4A	.70	.51	.42
3	.35	.26	.21
4	.38	.28	.23
5	.53	.39	.32
6	.74	.54	.45
3	.38	.28	.23
4	.42	.30	.25
5	.56	.41	.34
6	.78	.57	.47
3	.94	.69	.57
4	.32	.23	.19
5	.33	.24	.20
6	.35	.26	.21
1	.38	.28	.23
2	.42	.30	.25
3	.56	.41	.34
4	.81	.59	.49
5	.42	.30	.25
6	.45	.33	.27
7	.60	.44	.36
8	.85	.62	.51
;R	.99	.72	.60
;R	1.16	.84	.70
;R	1.57	1.14	.95
;R	2.15	1.56	1.30
;R	2.48	1.80	1.50
;R	3.14	2.28	1.90
;R	3.71	2.70	2.25
;R	6.60	4.80	4.00
	.99	.72	.60
R	1.19	.87	.72
;R	1.32	.96	.80
;R	1.78	1.30	1.08
;R	2.39	1.74	1.45
;R	2.89	2.10	1.75
;R	3.63	2.64	2.20
;R	4.21	3.06	2.55
	.35	.25	.21
	.29	.21	.175
	.33	.24	.20
	.30	.22	.18
	.99	.72	.60
	.94	.68	.57
	.84	.61	.51
0	3.80	2.76	2.30
1	5.55	4.00	3.35
2	3.71	2.70	2.25
4	3.71	2.70	2.25
5	2.48	1.80	1.50
6	5.80	4.20	3.50
7	5.35	3.90	3.25
8	6.44	4.68	3.90
8A	9.74	7.08	5.90
0	2.61	1.90	1.58
0A	4.79	3.48	2.90
1	1.47	1.07	.89
2	1.82	1.32	1.10
3	2.15	1.56	1.30
4	2.48	1.80	1.50
5	3.96	2.88	2.44
5A	6.44	4.68	3.90
6	8.91	6.48	5.40
6A	11.39	8.28	6.90
8	1.62	1.18	.98
8A	2.22	1.62	1.35
9	1.62	1.18	.98
0	2.56	1.86	1.55
0A	3.26	2.37	1.98
1	3.14	2.28	1.90
2	2.64	1.92	1.60
3	2.56	1.86	1.55

INTEGRATED CIRCUITS

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
CA3026	2.06	1.50	1.25
CA3028A	1.47	1.07	.89
CA3028B	2.06	1.50	1.25
CA3029	1.62	1.18	.98
CA3029A	3.14	2.28	1.90
CA3030	2.61	1.90	1.58
CA3030A	4.79	3.48	2.90
CA3031/702A	4.95	3.60	3.00
CA3032/702C	3.30	2.40	2.00
CA3033	4.79	3.48	2.90
CA3033A	8.09	5.88	4.90
CA3034V1	2.89	2.10	1.75
CA3035	2.48	1.80	1.50
CA3035V1	2.48	1.80	1.50
CA3036	1.47	1.07	.89
CA3037	3.14	2.28	1.90
CA3037A	4.79	3.48	2.90
CA3038	4.79	3.48	2.90
CA3038A	6.44	4.68	3.90
CA3039	1.61	1.17	.98
CA3040	4.87	3.54	2.95
CA3041	2.06	1.50	1.25
CA3042	2.06	1.50	1.25
CA3043	2.81	2.04	1.70
CA3044	2.31	1.68	1.40
CA3044V1	2.31	1.68	1.40
CA3045	2.47	1.80	1.50
CA3046	1.61	1.17	.98
CA3047	2.61	1.90	1.58
CA3047A	4.79	3.48	2.90
CA3048	4.04	2.94	2.45
CA3049	3.22	2.34	1.95
CA3050	3.71	2.70	2.25
CA3051	2.72	1.98	1.65
CA3053	.81	.59	.49
CA3054	2.06	1.50	1.25
CD2100	6.20	4.50	3.75
CD2101	6.50	4.75	3.95
CD2150	3.96	2.88	2.40
CD2151	3.96	2.88	2.40
CD2152	3.96	2.88	2.40
CD2153	5.20	3.80	3.15
CD2200	5.20	3.80	3.15
CD2200D	5.20	3.80	3.15
CD2201	5.45	3.95	3.30
CD2201D	5.45	3.95	3.30
CD2202	5.45	3.95	3.30
CD2202D	5.45	3.95	3.30
CD2203	6.95	5.05	4.20
CD2203D	6.95	5.05	4.20
CD2204	3.71	2.70	2.25
CD2204D	3.71	2.70	2.25
CD2205	5.20	3.80	3.15
CD2205D	5.20	3.80	3.15
CD2300/930	4.13	3.00	2.50
CD2300D/930	4.13	3.00	2.50
CD2300E/830	1.73	1.26	1.05
CD2301/961	4.13	3.00	2.50
CD2301D/961	4.13	3.00	2.50
CD2301E/861	1.73	1.26	1.05
CD2302/946	4.54	3.30	2.75
CD2302D/946	4.54	3.30	2.75
CD2302E/846	1.90	1.38	1.15
CD2303/949	4.54	3.30	2.75
CD2303D/949	4.54	3.30	2.75
CD2303E/849	1.90	1.38	1.15
CD2304/945	4.95	3.60	3.00
CD2304D/945	4.95	3.60	3.00
CD2304E/845	2.48	1.80	1.50
CD2305/948	4.95	3.60	3.00
CD2305D/948	4.95	3.60	3.00
CD2305E/848	2.48	1.80	1.50
CD2306/932	4.54	3.30	2.75
CD2306D/932	4.54	3.30	2.75
CD2306E/832	1.90	1.38	1.15
CD2307/944	4.54	3.30	2.75
CD2307D/944	4.54	3.30	2.75
CD2307E/844	1.90	1.38	1.15
CD2308/962	4.54	3.30	2.75
CD2308D/962	4.54	3.30	2.75

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
CD2308E/862	1.90	1.38	1.15
CD2309/963	4.54	3.30	2.75
CD2309D/963	4.54	3.30	2.75
CD2309E/863	1.90	1.38	1.15
CD2310/936	4.79	3.48	2.90
CD2310D/936	4.79	3.48	2.90
CD2310E/836	1.90	1.38	1.15
CD2311/937	4.79	3.48	2.90
CD2311D/937	4.79	3.48	2.90
CD2311E/837	1.90	1.38	1.15
CD2312	4.79	3.48	2.90
CD2312D	4.79	3.48	2.90
CD2312E	1.90	1.38	1.15
CD2313	4.79	3.48	2.90
CD2313D	4.79	3.48	2.90
CD2313E	1.90	1.38	1.15
CD2314/933	3.71	2.70	2.25
CD2314D/933	3.71	2.70	2.25
CD2314E/833	1.49	1.08	.90
CD2315	6.45	4.70	3.90
CD2315D	6.45	4.70	3.90
CD2315E	4.46	3.24	2.70
CD2316	6.45	4.70	3.90
CD2316D	6.45	4.70	3.90
CD2316E	4.46	3.24	2.70
CD2317	6.45	4.70	3.90
CD2317D	6.45	4.70	3.90
CD2317E	4.46	3.24	2.70
CD2318	6.45	4.70	3.90
CD2318D	6.45	4.70	3.90
CD2318E	4.46	3.24	2.70
CD4000	8.25	6.20	5.00
CD4000D	6.60	4.80	4.00
CD4001	9.50	6.90	5.75
CD4001D	7.85	5.70	4.75
CD4002	9.10	6.60	5.50
CD4002D	7.45	5.40	4.50
CD4003	13.05	10.80	9.00
CD4003D	11.60	9.60	8.00
CD4004	15.95	13.20	11.00
CD4004T	14.50	12.00	10.00
CD4005	15.95	13.20	11.00
CD4005D	14.50	12.00	10.00
CD4006	26.50	21.90	18.25
CD4006D	25.00	20.70	17.25
CD4007	6.60	4.80	4.00
CD4007D	4.95	3.60	3.00

SILICON CONTROLLED RECTIFIERS

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
2N681	2.34	1.70	1.42
2N682	2.82	2.05	1.71
2N683	3.57	2.60	2.16
2N684	4.19	3.05	2.54
2N685	4.81	3.50	2.92
2N686	5.36	3.90	3.25
2N687	5.77	4.20	3.50
2N688	6.74	4.90	4.08
2N689	8.05	5.85	4.87
2N690	8.67	6.30	5.25
2N1842A	2.20	1.60	1.33
2N1843A	2.61	1.90	1.58
2N1844A	3.30	2.40	2.00
2N1845A	3.84	2.80	2.33
2N1846A	4.46	3.75	2.71
2N1847A	5.10	3.70	3.09
2N1848A	5.51	4.00	3.34
2N1849A	6.54	4.75	3.96
2N1850A	7.56	5.50	4.58
2N3228	1.62	1.18	.98
2N3525	2.31	1.68	1.40
2N3528	1.58	1.14	.95
2N3529	1.96	1.43	1.19
2N3668	2.39	1.74	1.45
2N3669	2.81	2.04	1.70
2N2670	3.80	2.76	2.30
2N3870	3.88	2.82	2.35
2N3871	4.54	3.30	2.75
2N3872	6.11	4.44	3.70
2N3873	8.22	5.98	4.98
2N3896	4.37	3.18	2.65
2N3897	5.03	3.66	3.05
2N3898	6.60	4.80	4.00
2N3899	8.75	6.36	5.30

Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
2N4101	3.05	2.22	1.85
2N4102	2.64	1.92	1.60
2N4103	5.12	3.72	3.10
40216	42.20	34.90	29.10
40378	1.47	1.07	.89
40379	1.85	1.34	1.12
40504	1.78	1.30	1.08
40505	2.48	1.80	1.50
40506	3.22	2.34	1.95
40507	1.63	1.19	.99
40508	2.01	1.46	1.22
40553	2.75	2.00	1.67
40554	4.44	3.22	2.68
40555	4.76	3.47	2.89
40640	3.53	2.57	2.14
40641	3.53	2.57	2.14
40654	1.62	1.18	.98
40655	2.03	1.48	1.23
40656	1.70	1.24	1.23
40657	2.11	1.54	1.28
40658	1.86	1.36	1.13
40659	2.19	1.60	1.33

TRIACS & DIACS

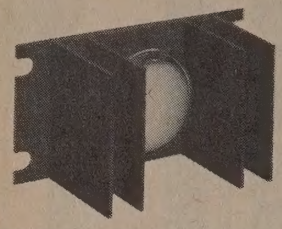
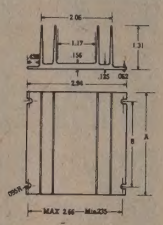
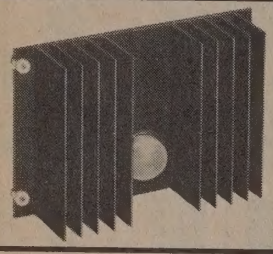
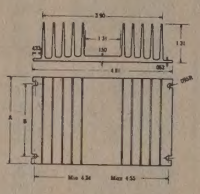
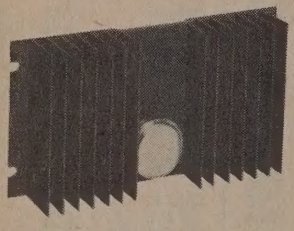
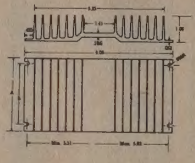
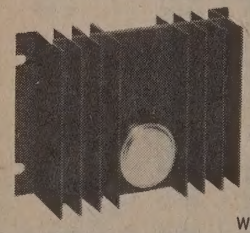
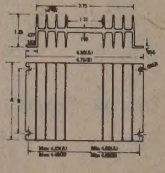
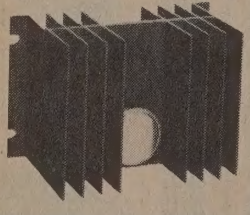
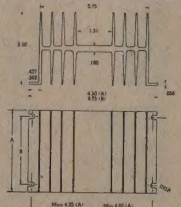
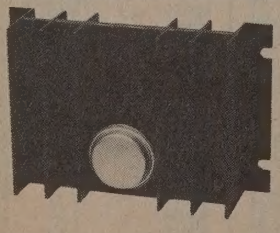
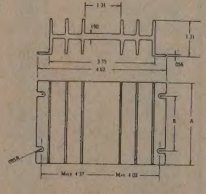
Type	RCA Equipment Manufacturers Price (Bulk) 1-99 SCH. D	100-999 SCH. B	1,000 & up SCH. C
†1N5411	.61	.44	.37
2N5441	8.17	5.94	4.95
2N5442	11.47	8.34	6.95
2N5443	13.63	11.28	9.40
2N5444	8.66	6.30	5.25
2N5445	10.51	8.70	7.25
2N5446	14.21	11.76	9.80
2N5567	3.38	2.46	2.05
2N5568	4.41	3.20	2.67
2N5569	3.88	2.82	2.35
2N5570	4.90	3.56	2.97
2N5571	3.47	2.52	2.10
2N5572	4.65	3.38	2.82
2N5573	3.96	2.88	2.40
2N5574	5.15	3.74	3.12
2N5754	1.40	1.02	.85
2N5755	1.47	1.07	.89
2N5756	1.85	1.34	1.12
40429	2.06	1.50	1.25
40430	2.39	1.74	1.45
40431	2.56	1.86	1.55
40432	2.97	2.16	1.80
40485	2.06	1.50	1.25
40486	2.39	1.74	1.45
40502	2.23	1.62	1.35
40503	2.56	1.86	1.55
40509	2.23	1.62	1.35
40510	2.56	1.86	1.55
40511	2.72	1.98	1.65
40512	3.14	2.28	1.90
40525	1.57	1.14	.95
40526	1.62	1.18	.98
40527	2.31	1.68	1.40
40528	1.57	1.14	.95
40529	1.62	1.18	.98
40530	2.31	1.68	1.40
40531	1.73	1.26	1.05
40532	1.78	1.30	1.08
40533	2.48	1.80	1.50
40534	1.73	1.26	1.05
40535	1.78	1.30	1.08
40536	2.48	1.80	1.50
40575	2.48	1.80	1.50
40576	3.29	2.38	1.98
40638	2.15	1.56	1.30
40639	2.48	1.80	1.50
40660	5.78	4.20	3.50
40661	8.22	5.98	4.98
40662	6.27	4.56	3.80
40663	8.71	6.34	5.28
40644	1.95	1.42	1.18
40667	2.05	1.49	1.24
40668	1.62	1.18	.98
40669	1.82	1.32	1.10
40671	11.14	8.10	6.75
40672	10.37	8.58	7.15
40684	1.57	1.14	.95
40685	1.63	1.19	.99
40686	2.01	1.46	1.22

†Diac.

GEORGE RISK INDUSTRIES

SEMICONDUCTOR COOLER HEAT SINK

NATURAL CONVECTION COOLERS

MODEL		MODEL NO.	SPECIFICATIONS LENGTH ±1/32" A	B	WEIGHT (Approx.)	SURFACE AREA	PRICES—EACH 1-49	50-99	100-249
10	 	100310	1½"	1"	2 oz.	23.3"	.61	.53	.45
		100610	3"	2"	4 oz.	46.6"	.77	.67	.57
		101110	5½"	4½"	7 oz.	85.5"	1.09	.95	.80
11	 	110310	1½"	1"	3 oz.	49"	.79	.68	.58
		110610	3"	2"	6 oz.	98"	1.08	.94	.79
		111110	5½"	4½"	10½ oz.	180"	1.50	1.30	1.10
12	 	120310	1½"	1"	4 oz.	57.3"	.87	.76	.64
		120610	3"	2"	8 oz.	114.7"	1.28	1.11	.94
		121110	5½"	4½"	14 oz.	214.4"	1.94	1.69	1.43
13A & 13B	  When Ordering, Specify Style "A or B"	130310	1½"	1"	3 oz.	40"	.78	.68	.57
		130610	3"	2"	6 oz.	80"	1.07	.92	.78
		131110	5½"	4½"	10½ oz.	148"	1.58	1.37	1.16
14A & 14B	  When Ordering, Specify Style "A or B"	140310	1½"	1"	4¼ oz.	70"	1.04	.91	.77
		140610	3"	2"	8½ oz.	141"	1.47	1.28	1.08
		141110	5½"	4½"	16 oz.	258"	2.19	1.90	1.60
15	 	150310	1½"	1"	2½ oz.	40"	.77	.67	.57
		150610	3"	2"	5 oz.	80"	1.05	.91	.77
		151110	5½"	4½"	9¼ oz.	148"	1.55	1.34	1.14

NOTES—Material: Aluminum Alloy 6063-T6 per QQ-A-200/9. Finish: Standard Black Anodize per mil-A-8625, Type II, Unless Otherwise Specified. All extrusion dimensions apply to standard commercial tolerances.

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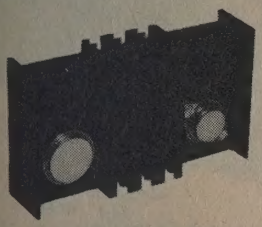
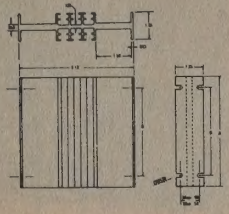
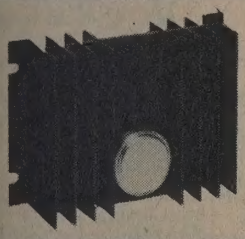
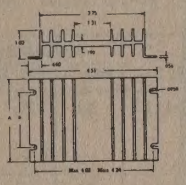
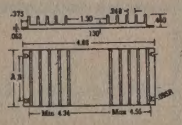
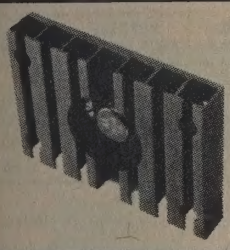
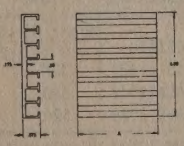
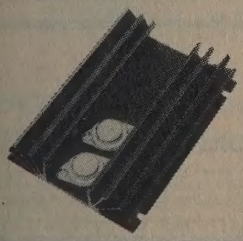
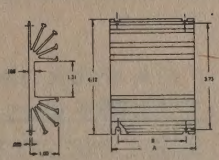
GEORGE RISK INDUSTRIES

SEMICONDUCTOR COOLERS

HEAT SINKS

URAL CONVECTION COOLERS

	MODEL NO.	SPECIFICATIONS LENGTH ±1/32" A	B	WEIGHT (Approx.)	SURFACE AREA	PRICES—EACH 1-49	50-99	100-249	250-499
 	160310	1½"	1"	4 oz.	46.95"	.84	.73	.62	.50
	160610	3"	2"	7½ oz.	91.33"	1.19	1.03	.87	.71
	161110	5½"	4½"	14 oz.	165.31"	1.79	1.55	1.31	1.07
 	170310	1½"	1"	2½ oz.	40"	.76	.66	.56	.46
	170610	3"	2"	5 oz.	80"	1.18	1.02	.87	.71
	171110	5½"	4½"	9¼ oz.	148"	1.52	1.32	1.12	.91
	190310	1½"	1"	1.250 oz.	29.36"	.66	.58	.49	.40
	190610	3"	2"	2 oz.	57.23"	.85	.73	.62	.51
	191110	5½"	5½"	5.750 oz.	103.65"	1.18	1.02	.86	.71
 	19A0312	1½"	1"	2¾ oz.	29.40"	.60	.52	.44	.36
	19A0612	3"	2"	4½ oz.	58.80"	.76	.66	.56	.46
	19A1112	5½"	4½"	8¼ oz.	107.80"	1.05	.91	.77	.63
 	330310	1½"	1"	2.2 oz.	34.64"	.71	.62	.52	.43
	330610	3"	2.5"	4.5 oz.	69.28"	.95	.82	.70	.57
	331110	5½"	5"	7.9 oz.	127.01"	1.37	1.19	1.01	.82

—Material: Aluminum Alloy 6063-T6 per QQ-A-200/9. Finish: Standard Black Anodize per mil-A-8625, Type II, Unless Otherwise Specified.
All extrusion dimensions apply to standard commercial tolerances.

IR MOST COMPLETE SOURCE OF SEMICONDUCTOR COOLERS

ransistor Coolers repre-
optimum combinations
design and fin spacing
g you maximum heat
er per ounce of dissi-
weight. Made of ex-
d aluminum with a high
sivity black anodized

SPECIAL REQUIREMENTS

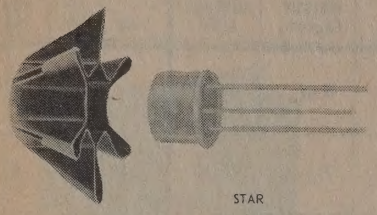
Should you have an unusual requirement that cannot be fully satisfied with a GRI stock cooler, our engineering staff will assist in special design work to meet your specifications. GRI can supply your requirements for a wide variety of heat dissipation units. All of the models listed in this catalog can be obtained in a number of variations. Should you require any deviation from catalog dimensions, please furnish a description and our sales department will supply you with a production drawing for your ordering. When ordering specials, do not refer to catalog numbers.

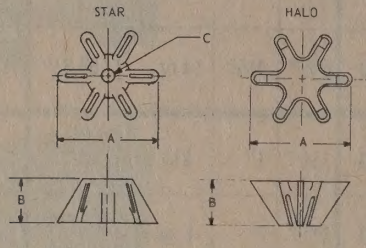
NOTE: Any GRI extrusion can be ordered in any length up to 6 feet.
To order — State model number, length and whether or not anodizing is desired.

GEORGE RISK INDUSTRIES

SEMICONDUCTOR COOLERS
HEAT SINKS

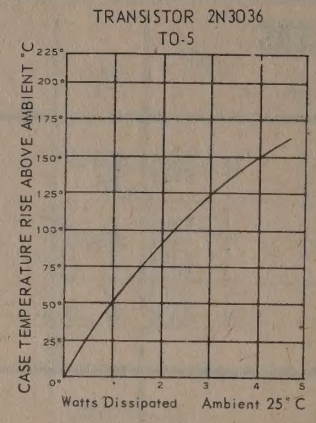
SMALL LIGHT WEIGHT DISSIPATORS





SERIES ST: A small light weight dissipator consisting of six cooling fins. The dissipator is easily assembled over the transistor case without tools and maintains a snug fit over the full tolerance range. It may be used in either printed circuit board or chassis mounting.

SERIES HT: Similar to the "star." Installed in an inverted position — for use in printed circuit board mounting only. Mounting allows components to be located close to the transistor for compact packaging. A special feature of this design is its very small capacitance effect on the electrical circuit.



PRICES
APPLY TO BOTH #'s
ST-111-2
and
HT-111-2
EACH

1-99	100 499	50 99
.091	.078	.06

NOTE:
1. Fit transistor cases .305" to Dia.
2. Hole "C" is for mounting s

GRI P/N	DIMENSIONS Max. A	Max. B	C	MATERIAL	FINISH	WT. LBS.	MOUN POSIT
ST-111-2	.95	.40	.125 to 1.35	Al Alloy 2024 QQ-A-250/4c Heat Treated	Black Anodize Mil-A-8625 Type II, Class 2	.0014	P. C. B or Chas
HT-111-2	.95	.40		Al Alloy 2024 QQ-A-250/4c Heat Treated	Black Anodize Mil-A-8625 Type II, Class 2	.0014	P. C. B Onl

HIGH POWER MULTI-FIN HEAT SINKS

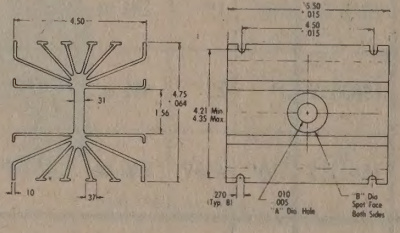
High Efficiency Cooling—for natural and forced convection applications. Multi-fin design concentrates surface area within minimum volume; reduces conduction travel between semiconductor and radiating fins.

Natural Convection—Series 45 Heat Sinks replace forced convection flat plate assemblies in many applications including those where high power rectifiers and semiconductors are operated near upper limit of maximum current rating.

Forced Convection—Series 45 Heat Sinks operate at lower flow velocities bec of larger surface area. This permits use of smaller, quieter fans with gr mechanical reliability.

Prototypes—Three-foot and six-foot lengths of raw extrusion are available prototypes. Special units are made from these extrusions to your specificat

MODEL 45

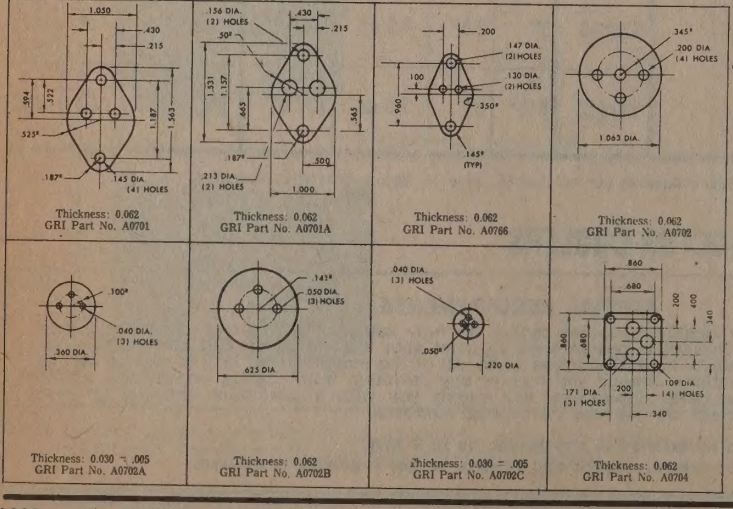


SPECIFICATIONS

MODEL NO.	"A" DIA.	"B" DIA.	WEIGHT (Approx.)	SURFACE AREA (Inches)	EACH 1-49	50-
451110	Blank, No Hole	Blank, No Spot Face	48 oz.	394.34	4.80	4.1
45111007	.330	1.0	48 oz.	394.34	4.92	4.2
45111008	.390	1.125	48 oz.	394.34	4.95	4.2
45111009	.520	1.125	48 oz.	394.34	4.95	4.2

MATERIAL: Aluminum Alloy 6063-T6 per QQ-A-200/9.
FINISH: Standard Black Anodize per Mil-A-8625, Type II, Unless Otherw Specified.
All extrusion dimensions apply to standard commercial tolerances.

GRI BERYLLIUM OXIDE WAFERS & WASHERS



GRI Part No.	Prices 1-49	50-
A0701	1.23	1.(
A0701A	1.23	1.(
A0766	1.10	.9
A0702	1.13	.9
A0702A	.82	.8
A0702B	.85	.8
A0702C	.66	.5
A0704	1.15	.9

WASHERS	Outside Diameter	Inside Diameter	Thickness	Prices 1-49	50
A07-105-66-58	0.105±.002	0.066±.002	0.058±.002	.69	
A07-155-101-25	0.155±.003	0.101±.005	0.025±.003	.70	
A07-175-109-95	0.175±.005	0.109±.003	0.095±.005	.71	
A07-250-130-62	0.250±.005	0.130±.005	0.062±.010	.72	
A07-260-190-30	0.260±.005	0.190±.005	0.030±.005	.70	
A07-375-120-30	0.375±.005	0.120±.005	0.030±.005	.71	
A07-375-120-62	0.375±.005	0.120±.005	0.062±.010	.72	
A07-470-235-40	0.470±.005	0.235±.005	0.040±.005	.73	
A07-800-260-62	0.800±.010	0.260±.005	0.062±.005	.90	
A07-800-320-62	0.800±.010	0.320±.005	0.062±.005	.90	
A07-900-260-62	0.900±.010	0.260±.005	0.062±.005	.90	
A07-900-260-125	0.900±.010	0.260±.005	0.125±.003	.95	
A07-900-320-62	0.900±.010	0.320±.005	0.062±.005	.90	

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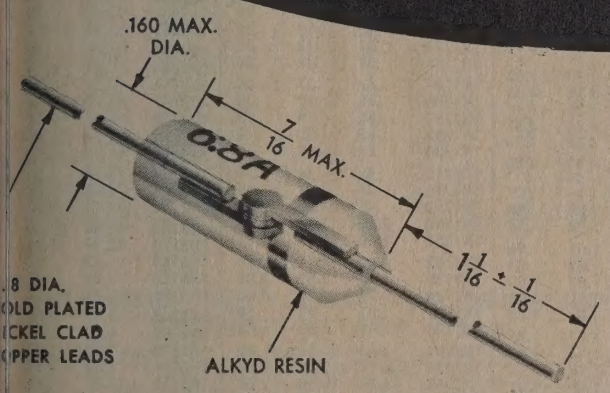
UNSURPASSED!

The Reliable SCHAUER® 1-Watt Zener is available at the Industry's lowest prices!



Schauer Type Note 1	Nominal V_{ZT} Volts	Typical Z_{ZT} Ohms at I_{ZT} = 20 ma T_a = 25°C	Temp. Coeff. % per °C
SZ2.4	2.4	14	−.054
SZ2.7	2.7	16	−.055
SZ3.0	3.0	17	−.055
SZ3.3	3.3	17	−.054
SZ3.6	3.6	17	−.050
SZ3.9	3.9	17	−.045
SZ4.3	4.3	17	−.037
SZ4.7	4.7	12	−.029
SZ5.1	5.1	10	−.019
SZ5.6	5.6	6.0	−.009
SZ6.2	6.2	2.0	+.018
SZ6.8	6.8	1.5	+.035
SZ7.5	7.5	1.5	+.044
SZ8.2	8.2	2.0	+.049
SZ9.1	9.1	4.0	+.053
SZ10.0	10.0	5.0	+.055
SZ11.0	11.0	6.0	+.057
SZ12.0	12.0	7.0	+.059
SZ13.0	13.0	7.0	+.061
SZ15.0	15.0	8.0	+.065
SZ16.0	16.0	8.0	+.066

PRICES—Mixed types receive total quantity price break.

1-99	100-499	500-999	1000-4999	5000 Up
		10% TOLERANCE		
.49	.38	.33	.29	.27
		OTHER TOLERANCES Note 1		
		5%		
.59	.47	.41	.37	.34
		2%		
.89	.81	.76	.72	.69
		1%		
1.07	.97	.91	.86	.82

Note 1: Type shown are 10% tolerances, add suffix "A" for 5% and suffix 20%, 2%, 1% for other tolerances. For intermediate voltages, insert voltage and tolerances, i.e.: SZ6.3 (1%).

No fragile nail heads.
Silicon junction aligned between two parallel, offset tantalum heat sinks . . . great lead tension strength.
All welded and brazed assembly.
High pressure molded package.
Banded and tapered cathode.

SCHAUER 1% tolerance zener diode kit CH51. A $54.57 value for only $24.50!

51-piece assortment of 1% tolerance, 1 watt reliable auer zener diodes covering the voltage range of 2.7 to 0. Three diodes of each voltage are contained in re- ble poly bags which are stored in a handy kit. Data et included.

y be used over and over in laboratory prototypes as l as in precision test equipment. Close tolerances mean d impedances and temperature coefficients and per- voltage range tests for optimum design.

SCHAUER silicon varistors

sists of two matched silicon junctions connected in allel and oppositely poled. The junctions are molded one small package with axial gold plated nickel leads. ge: 25 amps peak ½ cycle; dissipation: ¾ watt at 25°C.; TC of 2mv/°C. All have closely controlled forward conductance with log current characteristics.

Schauer Type	Uses	Forward Voltage Both Directions	PRICES 1-99	100-499	500-999	1000-4999	5000 Up
SV1	General purpose limiters, regulates above 100ua	.20 - .50 @ 10ua .78 - .90 @ 100ma	.41	.35	.29	.24	.20
SV1-LR	Log I extended down to 5ua osc. control, limiters	.35 - .50 @ 10ua .78 - .90 @ 100ma	.43	.37	.31	.26	.22
V64	Protection of 150-300mv meter movements. Max. surge, min. shunt error	.10 - .25 @ 0.1ua .78 - .90 @ 100ma	.45	.39	.33	.28	.24

SCHAUER stabistor forward reference diodes

One and two junction diodes with closely controlled forward conductance for low voltage regulation, non-linear bias, limiter and DC coupling applications. Surge: 20 amps peak ½ cycle; dissipation: ¾ watt at 25°C.

Schauer Type	Forward Voltage Drop 10ua	10ma	100ma	Minimum Rev. Voltage @ 10ua	PRICES 1-99	100-499	500-999	1000-4999	5000 Up
SS1	.2 - .5	.64- .72	.90 max.	3.0	.23	.18	.16	.14	.12
SS1-2	.70-1.0	1.30-1.40	1.75 max.	20.0	.50	.39	.35	.32	.29

niconductor Division

SCHAUER MANUFACTURING CORP.

SARKES TARZIAN

JEDEC Silicon Avalanche Rectifiers

All of the silicon rectifiers listed below are supplied with avalanche characteristics as standard. They are direct replacements, electrically and physically, for ordinary silicon rectifiers, yet they provide important benefits to you and your products, **at no** extra cost.

Overvoltage protection is built into the rectifier. Transient voltage induced failures are virtually eliminated because these units avalanche at voltages well below the destruction point. The overvoltage spike is dissipated through the junction at a point below the critical voltage stress across the edge of the junction.

Lower circuit costs are readily achieved. When avalanche rectifiers are used suppressor and balancing devices, such as resistors, capaci R-C networks, etc., are no longer needed. In addition, their elimina improves circuit reliability, due to a reduction in number of compon and interconnections.

Dependable performance is assured. Over 20,000,000 of these de already have been delivered and are in actual use in the field. They now routinely available from high volume production lines.

All Tarzian Silicon Rectifiers are supplied with avalanche protec at no extra cost. For additional types, not necessarily covered by J numbers, see the following pages.

Jedec No.	Net Each, Lots of 1-24	25-99	100 up
1N248	1.55	1.33	1.24
1N248A	1.75	1.50	1.39
1N248B	1.75	1.50	1.39
1N248C	1.75	1.50	1.39
1N249	1.55	1.33	1.24
1N249A	1.75	1.50	1.39
1N249B	1.75	1.50	1.39
1N249C	2.44	2.09	1.94
1N250	2.14	1.83	1.70
1N250A	2.44	2.09	1.94
1N250B	2.44	2.09	1.94
1N250C	2.44	2.09	1.94
1N253	1.19	.96	.89
1N254	1.20	1.03	.96
1N255	1.50	1.29	1.20
1N256	2.12	1.82	1.69
1N332	1.50	1.29	1.20
1N333	1.50	1.29	1.20
1N334	1.29	1.10	1.02
1N335	1.29	1.10	1.02
1N336	1.20	1.03	.96
1N337	1.20	1.03	.96
1N338	1.19	.96	.89
1N339	1.19	.96	.89
1N340	1.19	.96	.89
1N341	1.50	1.29	1.20
1N342	1.50	1.29	1.20
1N343	1.29	1.10	1.02
1N344	1.29	1.10	1.02
1N345	1.20	1.03	.96
1N346	1.20	1.03	.96
1N347	1.19	.96	.89
1N348	1.19	.96	.89
1N349	1.19	.96	.89
1N440	.35	.30	.28
1N440B	.35	.30	.28
1N441	.37	.32	.29
1N441B	.37	.32	.29
1N442	.42	.36	.33
1N442B	.42	.36	.33
1N443	.43	.37	.35
1N443B	.43	.37	.35
1N444	.45	.39	.36
1N444B	.45	.39	.36
1N445	.47	.40	.31
1N445B	.47	.40	.31
1N532	.42	.36	.33
1N533	.43	.37	.35
1N534	.45	.39	.36
1N535	.47	.40	.37
1N536	.35	.30	.28
1N537	.35	.30	.28
1N538	.37	.32	.29
1N539	.42	.36	.33
1N540	.43	.37	.35
1N547	.47	.40	.37
1N550	1.20	1.03	.96
1N551	1.25	1.07	1.00
1N552	1.55	1.33	1.24
1N553	1.95	1.67	1.56
1N554	2.35	2.10	1.88
1N555	2.70	2.32	2.16
1N560	.62	.55	.49
1N561	.95	.82	.76
1N562	3.20	2.76	2.58
1N599	.35	.30	.28
1N599A	.35	.30	.28
1N600	.35	.30	.28
1N600A	.35	.30	.28
1N601	.37	.32	.29
1N601A	.37	.32	.29
1N602	.37	.32	.29
1N602A	.37	.32	.29
1N603	.42	.36	.33
1N603A	.42	.36	.33
1N604	.43	.37	.35
1N604A	.43	.37	.35
1N605	.45	.39	.36
1N605A	.45	.39	.36
1N606	.47	.40	.37
1N606A	.47	.40	.37
1N607	1.19	.96	.89
1N607A	1.19	.96	.89
1N608	1.19	.96	.89
1N608A	1.19	.96	.89
1N609	1.20	1.03	.96
1N609A	1.20	1.03	.96
1N610	1.20	1.03	.96
1N610A	1.20	1.03	.96
1N611	1.29	1.10	1.02
1N611A	1.29	1.10	1.02
1N612	1.50	1.29	1.20
1N612A	1.50	1.29	1.20
1N613	1.67	1.43	1.33
1N613A	1.67	1.43	1.33
1N614	2.12	1.82	1.69
1N614A	2.12	1.82	1.69
1N1081	.60	.55	.51
1N1082	.65	.57	.53
1N1083	.70	.61	.57
1N1084	.75	.63	.59
1N1085A	3.34	2.86	2.66
1N1086A	4.00	3.43	3.20
1N1087A	4.67	4.00	3.75
1N1088A	5.35	4.67	4.27
1N1095	.45	.39	.36
1N1096	.47	.40	.37
1N1100	.35	.30	.28
1N1101	.37	.32	.29
1N1102	.42	.36	.33
1N1103	.43	.37	.35
1N1104	.45	.39	.36
1N1105	.47	.40	.37
1N1108	3.15	2.71	2.54
1N1109	4.00	3.43	3.20
1N1110	4.75	4.15	3.86
1N1111	5.65	4.86	4.53
1N1112	6.50	5.57	5.20
1N1113	7.35	6.30	5.87
1N1115	1.19	.96	.89
1N1116	1.20	1.03	.96
1N1117	1.29	1.10	1.02
1N1118	1.50	1.29	1.20
1N1119	1.67	1.43	1.33
1N1120	2.12	1.82	1.69
1N1124	1.20	1.03	.96
1N1124A	1.20	1.03	.96
1N1125	1.29	1.10	1.02
1N1125A	1.29	1.10	1.02
1N1126	1.50	1.29	1.20
1N1126A	1.50	1.29	1.20
1N1127	1.67	1.43	1.33
1N1127A	1.67	1.43	1.33
1N1128	2.12	1.82	1.69
1N1128A	2.12	1.82	1.69
1N1133	3.35	2.86	2.67
1N1134	3.35	2.86	2.67
1N1135	3.75	3.22	3.00
1N1136	3.75	3.22	3.00
1N1137	4.15	3.58	3.34
1N1138	4.15	3.58	3.34
1N1139	5.40	4.64	4.33
1N1140	5.40	4.64	4.33
1N1141	7.50	6.43	6.00
1N1142	7.50	6.43	6.00
1N1143	8.75	7.50	7.00
1N1143A	8.75	7.50	7.00
1N1144	10.00	8.58	8.00
1N1145	10.00	8.58	8.00
1N1146	10.85	9.30	8.66
1N1147	15.00	12.89	12.00
1N1148	17.10	14.65	13.65
1N1149	19.10	16.45	15.31
1N1150A	12.00	10.30	9.60
1N1169	.43	.37	.35
1N1169A	.43	.37	.35
1N1183	1.75	1.50	1.39
1N1183A	1.75	1.50	1.39
1N1184	1.75	1.50	1.39
1N1184A	1.75	1.50	1.39
1N1185	2.44	2.09	1.94
1N1186	2.44	2.09	1.94
1N1186A	2.44	2.09	1.94
1N1187	3.72	3.19	2.97
1N1187A	3.72	3.19	2.97
1N1188	4.14	3.55	3.30
1N1188A	4.14	3.55	3.30
1N1189	4.41	3.78	3.51
1N1189A	4.41	3.78	3.51
1N1190	4.89	4.19	3.90
1N1190A	4.89	4.19	3.90
1N1191	1.55	1.33	1.24
1N1191A	1.75	1.50	1.39
1N1192	1.55	1.33	1.24
1N1192A	1.75	1.50	1.39
1N1193	2.14	1.83	1.70
1N1193A	2.44	2.09	1.94
1N1194	2.14	1.83	1.70
1N1194A	2.44	2.09	1.94
1N1195	2.84	2.43	2.26
1N1195A	3.72	3.19	2.97
1N1196	3.16	2.70	2.52
1N1196A	4.14	3.55	3.30
1N1197	3.44	2.95	2.74
1N1197A	4.41	3.78	3.51
1N1198	3.80	3.28	3.06
1N1198A	4.89	4.19	3.90
1N1199	1.19	1.02	.94
1N1199A	1.19	1.02	.94
1N1200	1.19	1.02	.94
1N1200A	1.19	1.02	.94
1N1201	1.25	1.07	1.00
1N1201A	1.25	1.07	1.00
1N1202	1.25	1.07	1.00
1N1202A	1.25	1.07	1.00
1N1203	1.34	1.14	1.06
1N1203A	1.34	1.14	1.06
1N1204	1.67	1.43	1.33
1N1204A	1.67	1.43	1.33
1N1205	1.87	1.60	1.49
1N1205A	1.87	1.60	1.49
1N1206	2.34	2.00	1.86
1N1206A	2.34	2.00	1.86
1N1237	5.25	4.69	4.13
1N1238	5.25	4.69	4.13
1N1239	7.77	6.94	6.11
1N1262	6.44	5.75	5.06
1N1341	1.19	.96	.89
1N1341A	1.19	.96	.89
1N1342	1.19	.96	.89
1N1342A	1.19	.96	.89
1N1343	1.20	1.03	.96
1N1344	1.20	1.03	.96
1N1344A	1.20	1.03	.96
1N1345	1.29	1.10	1.02
1N1345A	1.29	1.10	1.02
1N1346	1.50	1.29	1.20
1N1346A	1.50	1.29	1.20
1N1347	1.67	1.43	1.33
1N1347A	1.67	1.43	1.33
1N1348	2.12	1.82	1.69
1N1348A	2.12	1.82	1.69
1N1487	.35	.30	.28
1N1488	.37	.32	.29
1N1489	.42	.36	.33
1N1490	.43	.37	.35
1N1491	.45	.39	.36
1N1492	.47	.40	.37
1N1537	1.19	.96	.89
1N1538	1.19	.96	.89
1N1539	1.20	1.03	.96
1N1540	1.20	1.03	.96
1N1541	1.29	1.10	1.02
1N1542	1.50	1.29	1.20
1N1543	1.67	1.43	1.33
1N1544	2.70	2.32	2.16
1N1581	1.19	1.02	.94
1N1582	1.19	1.02	.94
1N1583	1.25	1.07	1.00
1N1584	1.34	1.14	1.06
1N1585	1.67	1.43	1.33
1N1586	1.87	1.60	1.49
1N1587	2.34	2.00	1.86
1N1612	1.20	1.03	.96
1N1612A	1.20	1.03	.96
1N1613	1.20	1.03	.96
1N1613A	1.20	1.03	.96
1N1614	1.25	1.07	1.00
1N1614A	1.25	1.07	1.00
1N1615	1.95	1.67	1.56
1N1615A	1.95	1.67	1.56
1N1616	2.70	2.32	2.16
1N1616A	2.70	2.32	2.16
1N1692	.35	.30	.28
1N1693	.37	.32	.29
1N1694	.42	.36	.33
1N1695	.43	.37	.35
1N1696	.45	.39	.36
1N1697	.47	.40	.37
1N1701	.35	.30	.28
1N1702	.35	.30	.28
1N1703	.37	.32	.29
1N1704	.37	.32	.29
1N1705	.43	.37	.35
1N1706	.45	.39	.36
1N1707	.35	.30	.28
1N1708	.35	.30	.28
1N1709	.37	.32	.29
1N1710	.42	.36	.33
1N1711	.43	.37	.35
1N1712	.45	.39	.36
1N1730	2.10	1.79	1.67
1N1731	2.10	1.79	1.67
1N1732	2.90	2.50	2.33
1N1733	4.15	3.57	3.34
1N1734	5.00	4.29	4.00
1N1763	.43	.37	.35
1N1764	.45	.39	.36
1N2054	14.20	12.19	11.36
1N2055	14.20	12.19	11.36
1N2056	15.80	13.50	12.60
1N2057	15.80	13.50	12.60
1N2058	15.80	13.50	12.60
1N2059	17.10	15.00	14.00
1N2060	24.40	20.95	19.52
1N2061	24.40	20.95	19.52
1N2062	32.60	27.95	26.10
1N2063	42.40	36.20	33.80
1N2069	.33	.29	.27
1N2070	.35	.30	.28
1N2071	.37	.32	.29
1N2103	.35	.30	.28
1N2104	.35	.30	.28
1N2105	.37	.32	.29
1N2106	.42	.36	.33
1N2107	.43	.37	.35
1N2108	.45	.39	.36
1N2154	1.55	1.33	1.24
1N2155	1.55	1.33	1.24
1N2156	2.14	1.83	1.70
1N2157	2.84	2.43	2.26
1N2158	3.16	2.70	2.52
1N2159	3.44	2.95	2.74
1N2160	3.80	3.28	3.06
1N2373	1.25	1.07	1.00
1N2374	2.10	1.79	1.67
1N2375	2.10	1.79	1.67
1N2376	2.90	2.50	2.33
1N2377	3.35	2.86	2.66
1N2378	4.20	3.58	3.34
1N2379	5.00	4.30	4.00
1N2380	7.10	6.08	5.66
1N2381	11.40	9.65	9.00
1N2382	5.00	4.29	4.00
1N2383	7.10	6.08	5.66
1N2384	7.50	6.43	6.00
1N2385	9.15	7.86	6.00
1N2389	6.10	5.23	4.87
1N2482	.33	.29	.27
1N2483	.35	.30	.28
1N2484	.37	.32	.29
1N2485	.37	.32	.29
1N2486	.42	.36	.33
1N2487	.43	.37	.35
1N2488	.45	.39	.36
1N2489	.47	.40	.37
1N2490	7.07	6.31	5.56
1N2609	.35	.30	.28
1N2610	.35	.30	.28
1N2611	.37	.32	.29
1N2612	.42	.36	.33
1N2613	.43	.37	.35
1N2614	.45	.39	.36
1N2615	.47	.40	.37
1N2616	.62	.53	.49
1N2617	.95	.82	.76
1N2630	7.07	6.31	5.56
1N2631	5.25	4.69	4.13
1N2632	7.77	6.94	6.11
1N2633	5.25	4.69	4.13
1N2634	5.95	5.31	
1N2635	7.07	6.31	
1N2637	9.65	8.65	
1N2858	.35	.30	
1N2859	.35	.30	
1N2860	.37	.32	
1N2861	.42	.36	
1N2862	.43	.37	
1N2863	.45	.39	
1N2864	.47	.40	
1N3161	14.20	12.19	
1N3162	14.20	12.19	
1N3163	15.80	13.50	
1N3164	15.80	13.50	
1N3165	17.10	15.00	
1N3166	17.10	15.00	
1N3167	24.40	20.95	
1N3168	24.40	20.95	
1N3169	32.60	27.95	
1N3170	42.40	36.20	
1N3189	.37	.32	
1N3190	.43	.37	
1N3191	.47	.40	
1N3208	1.19	1.02	
1N3209	1.19	1.02	
1N3210	1.25	1.07	
1N3211	1.34	1.14	
1N3212	1.67	1.43	
1N3213	1.87	1.60	
1N3214	2.34	2.00	
1N3233	.33	.29	
1N3260	12.90	11.09	1
1N3261	12.90	11.09	1
1N3262	14.50	12.40	1
1N3263	14.50	12.40	1
1N3264	15.80	13.50	1
1N3265	15.80	13.50	1
1N3266	20.80	17.80	1
1N3267	20.80	17.80	1
1N3268	28.45	24.38	2
1N3269	34.60	29.60	2
1N3289	12.20	10.45	
1N3290	13.40	11.76	1
1N3291	18.80	16.07	1
1N3292	24.25	20.78	1
1N3293	28.50	24.40	2
1N3569	1.19	.96	
1N3570	1.20	1.03	
1N3571	1.29	1.10	
1N3572	1.50	1.29	
1N3573	1.67	1.43	
1N3574	2.12	1.82	
1N3615	1.19	1.02	
1N3616	1.19	1.02	
1N3617	1.25	1.07	
1N3618	1.25	1.07	
1N3619	1.34	1.14	
1N3620	1.67	1.43	
1N3621	1.87	1.60	
1N3622	2.34	2.00	
1N3639	.37	.32	
1N3640	.43	.37	
1N3641	.47	.40	
1N3642	.62	.53	
1N3735	14.20	12.19	1
1N3736	15.80	13.50	1
1N3737	17.10	15.00	1
1N3738	24.40	20.95	1
1N3739	32.60	27.95	2
1N3740	42.40	36.20	3
1N4001	.33	.29	
1N4002	.33	.29	
1N4003	.33	.29	
1N4004	.35	.30	
1N4005	.37	.32	
1N4006	.52	.44	
1N4007	.79	.67	
1N4044	14.20	12.19	1
1N4045	14.20	12.19	1
1N4046	15.80	13.50	1
1N4047	15.80	13.50	1
1N4048	17.10	15.00	1
1N4049	17.10	15.00	1
1N4050	24.40	20.95	1
1N4051	32.60	27.95	2
1N4052	42.40	36.20	3

Net

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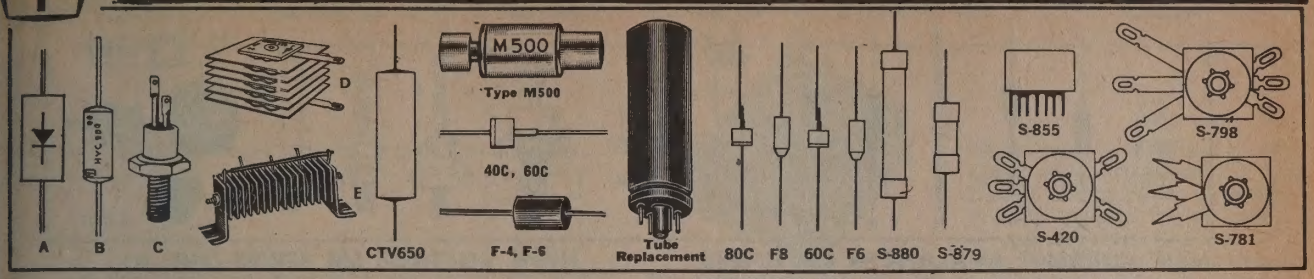
SARKES TARZIAN

Silicon & Selenium Rectifiers



HIGH VOLTAGE, AXIAL LEAD SILICON CARTRIDGE RECTIFIERS (FIG. A)

JEDEC No.	S-T No.	PIV	Max. RMS Volts*	Max. Avg. Rect. Current, Ma at 25°C	Max. Avg. Rect. Current, Ma at 100°C	Size, In. Lgth. x Dia.	Lead Lgth., In.	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100 Up
1N1730	S-5518	1000	700	200	100	.5 x .375	2½	$2.10	$1.79	$1.67
1N1731	S-5519	1500	1050	200	100	.5 x .375	2½	2.10	1.79	1.67
1N1732	S-5520	2000	1400	200	100	1 x .375	2½	2.90	2.50	2.33
1N1733	S-5521	3000	2100	150	75	1 x .375	2½	4.15	3.57	3.34
1N1734	S-5522	5000	3500	100	50	1 x .375	2½	5.00	4.29	4.00
1N2373	S-5523	600	420	250	100	.5 x .375	2½	1.25	1.07	1.00
1N2374	S-5524	1000	700	250	100	.5 x .375	2½	2.10	1.79	1.67
1N2375	S-5525	1500	1050	200	100	.5 x .375	2½	2.10	1.79	1.67
1N2376	S-5526	2000	1400	200	100	.9 x .375	2½	2.90	2.50	2.33
1N2377	S-5527	2400	1680	150	75	.9 x .375	2½	3.35	2.86	2.66
1N2378	S-5528	3000	2100	150	75	1 x .375	2½	4.20	3.58	3.34
1N2379	S-5529	4000	2800	100	50	1.25 x .375	2½	5.00	4.30	4.00
1N2380	S-5530	6000	4200	100	50	2.5 x .375	2½	7.10	6.08	5.66
1N2381	S-5531†	10000	7000	75	25	2.5 x .375	2½	11.40	9.65	9.00
1N2382	S-5532	4000	2800	150	75	1 x .375	2½	5.00	4.29	4.00
1N2383	S-5533†	6000	4200	100	50	1.5 x .375	2½	7.10	6.08	5.66
1N2384	S-5534†	8000	5600	70	35	1.5 x .375	2½	7.50	6.43	6.00
1N2385	S-5535†	10000	7000	70	35	2 x .375	2½	9.15	7.86	6.00

*Derate 50% for capacitive load in half-wave circuits. †Ferrule mounting.

HVC SERIES HIGH VOLTAGE AXIAL LEAD SILICON CARTRIDGE RECTIFIERS (FIG. B)

Epoxy-sealed phenolic tube construction with 2" lg. (min.) axial leads.

S-T No.	Max. PIV	Max. Avg. Rect. Cur. (55°C), mA	Max. Fwd. V Drop at Rtd. Cur.	Body Size, In. Dia. x Lgth.	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100 Up
HVC180	1800	250	4 VDC	.375 x 3/8	$ 3.35	$ 2.86	$ 2.66
HVC240	2400	250	5 VDC	.375 x 1 1/16	3.60	3.08	2.87
HVC300	3000	200	6 VDC	.375 x 3/4	3.85	3.28	3.07
HVC400	4000	200	8 VDC	.375 x 7/8	4.00	3.44	3.20
HVC500	5000	200	10 VDC	.375 x 1	4.15	3.67	3.34
HVC600	6000	150	12 VDC	.375 x 1 1/16	4.55	3.92	3.66
HVC650	6500	150	13 VDC	.375 x 1 3/16	5.00	4.29	4.00
HVC750	7500	150	15 VDC	.375 x 1 5/16	5.40	4.64	4.34
HVC840	8400	100	16 VDC	.375 x 1 3/8	5.85	5.00	4.66
HVC960	9600	100	18 VDC	.375 x 1 1/2	6.65	5.72	5.34
HVC1000	10000	100	20 VDC	.375 x 1 3/4	7.10	6.07	5.66
HVC1200	12000	75	22 VDC	.375 x 1 15/16	8.35	7.15	6.66
HVC1500	15000	75	25 VDC	.375 x 2 5/16	10.40	8.94	8.34
HVC1800	18000	75	30 VDC	.375 x 2 5/8	12.50	10.70	10.00
HVC2100	21000	50	35 VDC	.375 x 3	14.60	12.50	11.67
HVC2500	25000	50	40 VDC	.375 x 3 1/2	17.50	15.00	14.00
HVC3000	30000	50	50 VDC	.375 x 4 3/16	20.80	17.90	16.70

SILICON CONTROLLED RECTIFIERS (FIG. C)

Four-layer, three-junction devices for switching and power control. Size, 1¼" overall l. Series 3TCR, 3 amps DC; Series 5TCR, 5 amps DC.

S-T No.	Max. PIV	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100 Up	S-T No.	Max. PIV	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100 Up
3TCRA	25	$2.80	$2.39	$2.22	5TCRA	25	$4.00	$3.43	$3.20
3TCRB	50	2.90	2.46	2.30	5TCRB	50	4.70	4.05	3.77
3TCRC	100	3.00	2.55	2.39	5TCRC	100	4.85	4.15	3.86
3TCRD	150	3.05	2.62	2.44	5TCRD	150	4.95	4.23	3.94
3TCRE	200	3.25	2.80	2.60	5TCRE	200	5.10	4.38	4.08
3TCRF	250	4.05	3.50	3.25	5TCRF	250	5.95	5.10	4.24
3TCRG	300	4.20	3.58	3.33	5TCRG	300	6.05	5.16	4.81
3TCRH	400	4.65	3.98	3.70	5TCRH	400	6.50	5.57	5.18
3TCRI	500	6.95	5.97	5.55	5TCRI	500	8.80	7.55	7.03

GATE TURNOFF TYPE

Class X and Y prices available on request.

3GCRGZ	100	$ 7.35	$ 6.27	$ 5.86	3GCRFZ	250	$17.90	$15.36	$14.35
3GCRDZ	150	10.10	8.63	8.07	3GCRGZ	300	24.60	21.10	19.69
3GCREZ	200	13.75	11.79	11.00	3GCRHZ	400	31.50	27.00	25.20

SELENIUM RECTIFIERS

"CONDENSED-STACK" SELENIUM RECTIFIERS (FIG. D)

Approximate rectifier drop, 5 V. Max. plate temperature, 85°C operating. Resistance, shown, 16 series.

Sarkes Model	Max. Volts Input Rms	Max. Volts PIV	Max. Current Peak mA	Max. Current Rms mA	Max. Current mA DC	Min. Series Resist.*	Plate Size, Inches W. x H. x D.	Max. Hole Ctr.	Net Each
50-75	130	380	750	187	75	22	1 1/16 sq. x 25/64	.149" dia.	$0.48
100-150	130	380	1500	375	150	22	1 sq. x 13/16	#8	.72
200-250	130	380	2500	625	250	15	1¼ sq. x 1¼	#8	1.08
300-500	130	380	5000	1250	500	5	1.6 sq. x 1 5/16	#2	1.32

*Ohms

REPLACEMENT KITS See Standard Replacement Types, below, for full specifications.
Sarkes Tarzian Type M500 Kit—Two Type M rectifiers in volt. doubler circuit dual mounting clip, base and hardware. Net Each.....$2.12
Sarkes Tarzian Model F-4 Kit—Two F-4 rectifiers in volt. doubler circuit kit. Net Ea. .93
Sarkes Tarzian Model F-6 Kit—Two F-6 rectifiers in volt. doubler circuit kit. Net Ea. .93
Sarkes Tarzian Model 40C Kit—Two 40C rectifiers in volt. doubler circuit kit. Net Ea. $1.11
Sarkes Tarzian Model 60C Kit—Two 60C rectifiers in volt. doubler circuit kit. Net Ea. $1.20

COLOR TV "DIRECT REPLACEMENT" RECTIFIERS SILICONS

CTV650—Focus Rectifier. Net Ea..... $5.00
80C—Voltage Boost Rectifier. Net Ea..... .81
F8—Voltage Boost Rectifier. Net Ea..... .69
60C—B+ Rectifier. Net Ea..... .63
F6—B+ Rectifier. Net Ea..... .51

SELENIUMS

S-880—Focus Rectifier. Net Ea..... $2.95
S-879—Voltage Boost Rectifier. Net Ea..... 1.20
S-855—Convergence Rectifier. Replaces: Emerson 817149; General Electric M128J753; Hoffman SR-37; Motorola 48D66653A; Muntz; Packard Bell; RCA 1470990; Philco 34-8058; Setchell Carlson; Sylvania 13-17569; Warwick (Sears) 86-55-3; Wells Gardner 41-001; Westinghouse. Net Ea. ..... .84
S-420—Convergence Rectifier. Replaces: Zenith 212-25. Net Ea..... .84
S-798—Convergence Rectifier. Replaces: Zenith 212-63. Net Ea..... .96
S-781—Convergence Rectifier. Replaces: Admiral 93C-21 and 93C1-21. Net Ea..... .84

VACUUM TUBE REPLACEMENT SERIES

These silicon rectifier tube replacements are the preferred way to reduce tube replacement costs. Although more expensive than rectifier tubes, they will outlast many times their cost in rectifier tubes.

S-T No.	JEDEC No.	Max. PIV	Max. VRms	Replaces Tube Type	Net Each
S-5011A	1N1150A	1600	1100	80, 82, 83, 83V, 5Z3	$5.95
S-5017	1N1237	1600	1100	0Z4, 5X4, 5Y4, 6AX5, 6X5	5.25
S-5018	1N1238	1600	1100	5AU4, 5AW4, 5AZ4, 5T4, 5U4, 5Y3	5.25
S-5019†	1N1239	2800	1950	5R4	7.77
S-5033‡	1N1262	4500	3200§	6AU4, 6AX4, 6BL4, 6W4, 12AX4, 25W4	6.44
S-5130‡	.....	10400	7400§	866, 866A, 3B28	9.65
S-5207†	1N2490	1600	1100	6X4	7.07
S-5251	1N2389	1600	1100	5AU4, 5AW4, 5AZ4, 5T4, 5U4, 5Y3	5.25
S-5343‡	.....	7000	5000§	816, 836, 3B28*	8.33
S-5344	.....	10000	7000§	872A	29.74
S-5347†	.....	1600	1100	12BW4, 6BW4	7.03
S-5367	.....	19000	13300§	8020	29.74
S-5373	.....	10000	7000§	8008	39.34
S-5449	.....	15000	10500§	575A	54.64
S-5451	.....	7200	5040§	872A*	3.50
S-5991	.....	1600	1100	5AU4, 5AW4, 5AZ4, 5T4, 5U4, 5Y3	3.50

*At reduced voltage. †Hermetically sealed. ‡Half-wave circuit; all others full wave. §Derate input voltage 50% for capacitive load.

STANDARD SILICON REPLACEMENT TYPES

Approximate voltage drop for all types listed below is 2 volts. Minimum series resistance required is 5 ohms for F-4, F-6, 40H and 60H; 10 ohms for M150 and 7.5 ohms for M500.

S-T Number	JEDEC Number	PIV	Max.‡ Rmc Volts	Max. Current, Amps DC at 100°C	Max. Current, Amps Recur. Peak	Max. Current, Amps 4MS Surge	Size, Inches Lgth. x Dia.	Min. Lead Lgth., In.	Net Each†
F-4	1N2483	400	280	1.0 Amp.	7.5	75	.250 x .200	1¼	$0.51
F-6	1N2484	600	420	1.0 Amp.	7.5	75	.250 x .200	1¼	.51
40C*	1N2487	400	280	1.0 Amp.	7.5	75	.687 x .375	1	.60
60C*	1N2489	600	420	1.0 Amp.	7.5	75	.687 x .375	1	.63
M500	1N1084	400	280	1.0 Amp.	5	30	1 x 13/32	¼ O.D.	.96

*Hermetically sealed. †Available bulk packed or in handy 10-pak, same price. ‡Derate 50% for ½-wave cap. load #At85°C.

LOW CURRENT SILICON AVALANCHE BRIDGE RECTIFIERS

Compact single phase bridge rectifiers. Easy to mount. 2.0-6.0 A., 200-1000 PIV. Single phase units to 400 A. and 3-phase units to 500 A. available upon request.

S-6211 SERIES 2 AMPS

S-T No.	Max. PIV	Max. RMS Volts	Approx. D.C. Output Volts	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100 Up
S-6211	200	140	120	$2.12	$1.82	$1.69
S-6211-1	400	280	240	2.34	2.00	1.86
S-6211-2	600	420	360	2.56	2.19	2.04
S-6211-3	800	560	480	3.21	2.75	2.55
S-6211-4	1000	700	600	4.94	4.23	3.94

S-5959 2.5 AMPS

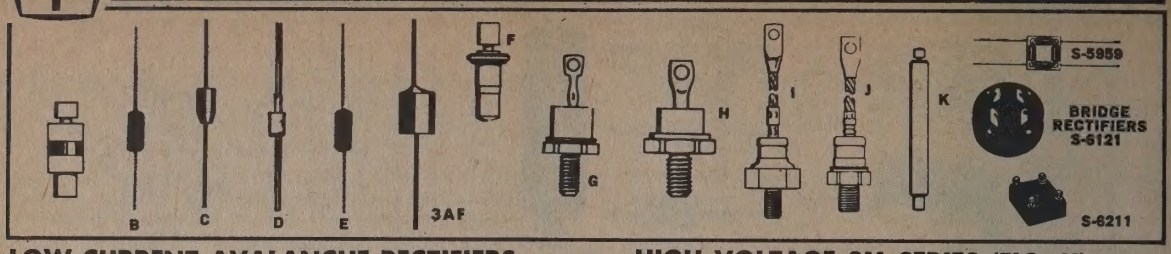
S-5959	200	140	120	$1.94	$1.66	$1.54
S-5959-1	400	280	240	2.22	1.90	1.77
S-5959-2	600	420	360	2.44	2.09	1.94
S-5959-3	800	560	480	3.06	2.62	2.43
S-5959-4	1000	700	600	4.71	4.03	3.75

S-6121 6.0 AMPS

S-6121	100	70	60	$4.01	$3.43	$3.19
S-6121-1	200	140	120	4.21	3.60	3.35
S-6121-2	300	210	180	4.36	3.73	3.47
S-6121-3	400	280	240	4.41	3.78	3.51
S-6121-4	500	350	300	5.01	4.29	3.99
S-6121-5	600	420	360	5.61	4.81	4.47

SARKES TARZIAN

Silicon Avalanche Rectifiers



LOW CURRENT AVALANCHE RECTIFIERS

M SERIES 1.0 AMP (FIG. A)

S-T No.	JEDEC No.	Max. PIV	Max. RMS Volts	Max. Cur., Amps at 100° C* DC Load	4MS Surge	Net Each, Lots of 1-24	25-99	100 Up
10M	1N1081	100	70	1.0	60 Amps	$0.60	$0.55	$0.51
20M	1N1082	200	140	1.0	60 Amps	.65	.57	.53
30M	1N1083	300	210	1.0	60 Amps	.70	.61	.57
40M	1N1084	400	280	1.0	60 Amps	.75	.63	.59
M-500	1N1084	400	280	1.0	60 Amps	.75	.63	.59
50M	.....	500	350	1.0	60 Amps	.80	.69	.64
60M	.....	600	420	1.0	60 Amps	.85	.70	.66

E SERIES 1.0 AMP (FIG. B, .125" DIA.)

E1	1N4001	100	70	1.0	70	$0.33	$0.29	$0.27
E1	1N4002	100	70	1.0	70	.33	.29	.27
E2	1N4003	200	140	1.0	70	.33	.29	.27
E4	1N4004	400	280	1.0	70	.35	.30	.28
E6	1N4005	600	420	1.0	70	.37	.32	.29
E8	1N4006	800	560	1.0	70	.52	.44	.41
E10	1N4008	1000	700	1.0	70	.79	.67	.63

F SERIES 1.0 AMP (FIG. C, .195" DIA.)

F2	1N2482	200	140	1.0	60	$0.33	$0.29	$0.27
	1N2066	200	140	1.0	60	.33	.29	.27
F4	1N2483	400	280	1.0	60	.35	.30	.28
	1N2070	400	280	1.0	60	.35	.30	.28
F6	1N2484	600	420	1.0	60	.37	.32	.29
	1N2071	600	420	1.0	60	.37	.32	.29
F8	.....	800	560	1.0	60	.52	.44	.41
F10	.....	1000	700	1.0	60	.79	.67	.63

G SERIES 1.0 AMP (FIG. E, .125" DIA. GLASS)

G1	.....	100	70	1.0	50	$0.35	$0.30	$0.28
G2	.....	200	140	1.0	50	.37	.32	.29
G4	.....	400	280	1.0	50	.43	.37	.35
G6	.....	600	420	1.0	50	.47	.40	.37
G8	.....	800	560	1.0	50	.62	.53	.49
G10	.....	1000	700	1.0	50	.95	.82	.76

C SERIES 1.0 AMP (FIG. D)

10C	1N2610	100	70	1.0	60	$0.35	$0.30	$0.28
20C	1N2611	200	140	1.0	60	.37	.32	.29
30C	1N2612	300	210	1.0	60	.42	.36	.33
40C	1N2613	400	280	1.0	60	.43	.37	.35
50C	1N2614	500	350	1.0	60	.45	.39	.36
60C	1N2615	600	420	1.0	60	.47	.40	.37
80C	1N2616	800	560	1.0	60	.62	.53	.49
100C	1N2617	100	700	1.0	60	.95	.82	.76

MEDIUM CURRENT AVALANCHE RECTIFIERS

LA SERIES 2 AMPS (FIG. F)

S-T No.	JEDEC No.	Max. PIV	Max. RMS Volts	DC Load, Amps	4MS Surge	Net Each, Lots of 1-24	25-99	100 Up
10LA	1N1085A	100	70	2.0	100	$3.34	$2.86	$2.66
20LA	1N1086A	200	140	2.0	100	4.00	3.43	3.20
30LA	1N1087A	300	210	2.0	100	4.67	4.00	3.73
40LA	1N1088A	400	280	2.0	100	5.35	4.67	4.27
50LA	.....	500	350	2.0	100	5.87	5.03	4.70
60LA	.....	600	420	2.0	100	6.45	5.52	5.15

3AF SERIES 3 AMPS

3AF2	.....	200	140	3.0	150	$ .52	$ .44	$ .40
3AF4	.....	400	280	3.0	150	.74	.63	.58
3AF6	.....	600	420	3.0	150	1.09	.93	.85
3AF8	.....	800	560	3.0	150	1.37	1.17	1.07

H3 SERIES 6 AMPS (FIG. G)

Add suffix N for negative or P for positive base. Add R to JEDEC type for negative base.

10H3	1N1342	100	70	6	150	$1.19	$0.96	$0.89
20H3	1N1344	200	140	6	150	1.20	1.03	.96
30H3	1N1345	300	210	6	150	1.29	1.10	1.02
40H3	1N1346	400	280	6	150	1.50	1.29	1.20
50H3	1N1347	500	350	6	150	1.67	1.43	1.33
60H3	1N1348	600	420	6	150	2.12	1.82	1.69
80H3	.....	800	560	6	150	2.54	2.17	2.02

ST2 SERIES 12 AMP (FIG. G)

Add suffix N for negative base or P for positive base.

ST210	1N1200	100	70	12	260	$1.19	$1.02	$0.94
ST220	1N1202	200	140	12	260	1.25	1.07	1.00
ST230	1N1203	300	210	12	260	1.34	1.14	1.06
ST240	1N1204	400	280	12	260	1.67	1.43	1.33
ST250	1N1205	500	350	12	260	1.87	1.60	1.49
ST260	1N1206	600	420	12	260	2.34	2.00	1.86
ST280	.....	800	560	12	260	2.82	2.42	2.25
ST2100	.....	8000	700	12	.....	3.38	2.80	2.70

HIGH VOLTAGE SM SERIES (FIG. K)

S-T No.	JEDEC No.	Max. PIV	Max. RMS Volts	DC Load Amps	Recur. Peak, Amps	Net Each, Lots of 1-24	25-99	100 Up
80SM	1N1108	800	560	.45	4.5	$3.15	$2.71	$2.54
120SM	1N1109	1200	840	.425	4.25	4.00	3.43	3.20
160SM	1N1110	1600	1120	.4	4.0	4.75	4.15	3.86
200SM	1N1111	2000	1400	.375	3.75	5.65	4.86	4.53
240SM	1N1112	2400	1680	.35	3.5	6.50	5.57	5.20
280SM	1N1113	2800	1960	.325	3.25	7.35	6.30	5.87

HIGH CURRENT, HERMETICALLY SEALED AVALANCHE RECTIFIERS

Stud base, rectifiers. Add suffix N for neg. base (anode), P for pos. base (cathode).

ST3A SERIES 25 AMP (FIG. H)

ST3A10	1N1191	100	70	25	400	$1.55	$1.33	$1.24
	1N1192					1.25	1.07	1.00
ST3A20	1N1193	200	140	25	400	2.14	1.83	1.70
	1N1194					2.14	1.83	1.70
ST3A30	1N1195	300	210	25	400	2.84	2.43	2.26
ST3A40	1N1196	400	280	25	400	3.16	2.70	2.52
ST3A50	1N1197	500	350	25	400	3.44	2.95	2.74
ST3A60	1N1198	600	420	25	400	3.80	3.28	3.06
ST3A80	.....	800	560	25	.....	4.60	3.94	3.66
ST3A100	.....	1000	700	25	.....	5.53	4.73	4.38

ST4 SERIES 35 AMP (FIG. H)

ST410	1N1183					$1.75	$1.50	$1.39
	1N1184	100	70	35	500	1.70	1.46	1.36
ST420	1N1185					2.44	2.09	1.94
	1N1186	200	140	35	500	2.44	2.09	1.94
ST430	1N1187	300	210	35	500	3.72	3.19	2.97
ST440	1N1188	400	280	35	500	4.14	3.55	3.36
ST450	1N1189	500	350	35	500	4.41	3.78	3.51
ST460	1N1190	600	420	35	500	4.89	4.19	3.90
ST480	.....	800	560	35	.....	5.89	5.03	4.69
ST4100	.....	1000	700	35	.....	7.05	6.03	5.61

ST5A SERIES 50 AMP (FIG. I)

ST5A10	.....	100	70	50	1000	$3.25	$2.78	$2.60
ST5A20	.....	200	140	50	1000	3.78	3.23	3.00
ST5A30	.....	300	210	50	1000	4.53	3.88	3.60
ST5A40	.....	400	280	50	1000	5.28	4.52	4.20
ST5A50	.....	500	350	50	1000	6.27	5.38	5.00
ST5A60	.....	600	420	50	1000	7.80	6.68	6.20
ST5A80	.....	800	560	50	.....	9.35	8.00	7.45
ST5A100	.....	1000	700	50	.....	11.22	9.15	8.95

ST11 SERIES 70 AMPS (FIG. H)

ST1110	.....	100	70	70	1120	$3.59	$3.08	$2.86
ST1120	.....	200	140	70	1120	4.16	3.56	3.31
ST1130	.....	300	210	70	1120	4.88	4.26	3.96
ST1140	.....	400	280	70	1120	5.81	4.98	4.63
ST1150	.....	500	350	70	1120	6.91	5.92	5.51
ST1160	.....	600	420	70	1120	8.60	7.37	6.85

ST6 SERIES 100 AMP (FIG. I)

ST610	.....	100	70	100	1600	$11.20	$ 9.60	$ 8.96
ST620	.....	200	140	100	1600	12.20	10.45	9.79
ST630	.....	300	210	100	1600	13.40	11.76	10.95
ST640	.....	400	280	100	1600	18.80	16.07	15.00
ST650	.....	500	350	100	1600	24.25	20.78	19.40
ST660	.....	600	420	100	1600	28.50	24.40	22.80
ST680	.....	800	560	100	.....	12.85	10.95	10.25
ST6100	.....	1000	700	100	.....	14.20	12.15	11.30

ST7 SERIES 160 AMP (FIG. J)

ST710	1N3261	100	70	160	3000	$12.90	$11.09	$10.32
ST720	1N3263	200	140	160	3000	14.50	12.40	11.56
ST730	1N3265	300	210	160	3000	15.80	13.50	12.60
ST740	1N3267	400	280	160	3000	20.20	17.80	16.60
ST750	1N3268	500	350	160	3000	28.45	24.38	22.75
ST760	1N3269	600	420	160	3000	34.60	29.60	27.65
ST780	.....	800	560	160	.....	41.25	35.52	33.18
ST7100	.....	1000	700	160	.....	49.82	42.62	39.82

ST9 SERIES 250 AMP (FIG. J)

ST910	1N3162	100	70	250	5000	$14.20	$12.19	$11.36
ST920	1N3164	200	140	250	5000	15.80	13.50	12.60
ST930	1N3166	300	210	250	5000	17.10	15.00	14.00
ST940	1N3168	400	280	250	5000	24.40	20.95	19.52
ST950	1N3169	500	350	250	5000	32.60	27.95	26.10
ST960	1N3170	600	420	250	5000	42.40	36.20	33.80
ST980	.....	800	560	250	.....	50.80	43.50	40.46
ST9100	.....	1000	700	250	.....	60.96	52.20	48.55

ST20 SERIES 350 AMP (FIG. J)

ST2010	.....	100	70	350	7000	$21.30	$18.29	$17.04
ST2020	.....	200	140	350	7000	23.70	20.25	18.90
ST2030	.....	300	210	350	7000	25.65	22.50	21.00
ST2040	.....	400	280	350	7000	36.60	31.43	29.28
ST2050	.....	500	350	350	7000	48.90	41.93	39.15
ST2060	.....	600	420	350	7000	63.60	54.30	50.70
ST2080	.....	800	560	350	.....	76.22	65.36	60.70
ST20100	.....	1000	700	350	.....	81.46	78.43	72.84

Tarzian Silicon Rectifiers with avalanche characteristics are available from 0.5 to 350 amps.

For information on the benefits and advantages of avalanche characteristics, see the previous page. A brochure describing these in detail is available directly from Sarkes-Tarzian, Inc., Semiconductor Division.

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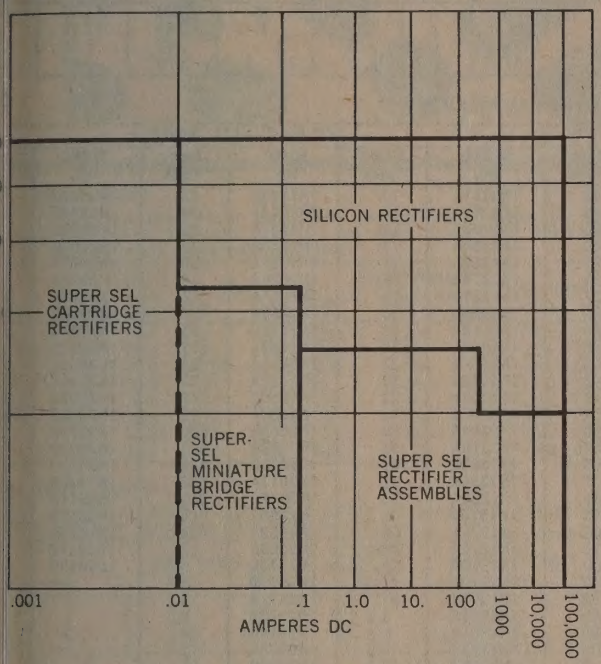
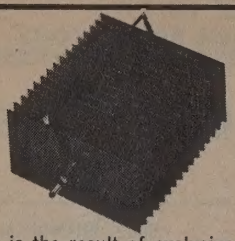
SARKES TARZIAN

Super-Sel Rectifiers

e and current conditions where "Super-Sel" is preferable to selicon.





Tarzian Super-Sel rectifiers have efficiency, aging, voltage regulation and thermal characteristics comparable to silicon types, yet they are smaller, cheaper and have far longer life than conventional selenium rectifiers. This is the result of exclusive doping techniques and the elimination of artificial barrier layers. Conductivity exceeds that of ordinary selenium at all current densities and improves further as the current density increases.

The inherent self-protection of selenium prevents damage from high voltage transients and overloads, both of which are disastrous to silicon types. Time required for the mass of the plate to reach critical temperature is measured in minutes whereas the same time, with silicon, is measured in microseconds. Pulse loads on these rectifiers can be 10 times the steady rating for a duty cycle of 3 sec. "on" every 4 minutes. Conversely, the overload capacity of silicon rectifiers is severely limited.

Super-Sel units can be used to advantage over both silicon and selenium types at **all** voltages to 10 ma load currents. They are superior in applications up to 120 ma dc to 200 volts, up to 500 amperes to 35 vdc and to 100,000 amperes at up to 10 volts. They also extend the ambient temperature range of selenium rectifiers to 90°C.

Super-Sel rectifiers are about ⅓ the size of conventional selenium assemblies of the same voltage and current rating while (affording higher) (extending the) maximum operating (temperature.) (temperature to 90°C.) Service life at 85°C. is approximately 100,000 hours — about 10 times as long as conventional selenium. Since output is not affected by aging, output voltage remains stable throughout the life of the unit.

An informative 18-page brochure with product and engineering data in Super-Sel rectifiers is available by writing Sarkes Tarzian.

No.	DC Output†		Max AC Input Volts	Dimensions			Net Each
	Volts	Amps		Stack Length	Plate Height	Plate Width	
S-10*	6-10	0.6	13	2	.7	.7	$ 1.33
S-11*	6-10	1.2	13	2	.9	.9	1.43
S-12*	6-10	2.2	13	2¼	1.3	1.3	1.70
S-13*	6-10	3.0	13	2⅝	1.6	1.6	1.83
S-14*	6-10	5.0	13	2⅝	2.0	2.0	3.75
S-15*	6-10	6.5	13	2⅝	1.6	3.2	4.13
S-16*	6-10	10.0	13	2⅝	2.0	4.0	5.00
S-17*	6-10	14.0	13	3⅞	3.2	4.0	5.75
S-18*	6-10	18.0	13	3⅞	4.0	4.0	6.00
S-19*	6-10	36.0	13	3⅞	4.0	8.0	10.28
S-20*	6-10	54.0	13	3⅞	4.0	12.0	15.44
S-21	6-20	0.6	26	2⅜	.7	.7	1.74
S-22	6-20	1.2	26	2⅜	.9	.9	1.85
S-23	6-20	2.2	26	2⅞	1.3	1.3	2.40
S-24	6-20	3.0	26	2 15/16	1.6	1.6	2.65
S-25	6-20	5.0	26	2 15/16	2.0	2.0	5.00
S-26	6-20	6.5	26	2 15/16	1.6	3.2	5.75
S-27	6-20	10.0	26	2 15/16	2.0	4.0	7.50
S-28	6-20	14.0	26	4 13/16	3.2	4.0	9.00
S-29	6-20	18.0	26	4 13/16	4.0	4.0	9.50
S-30	6-20	36.0	26	4 13/16	4.0	8.0	16.93
S-31	6-20	54.0	26	4 13/16	4.0	12.0	22.88
S-32	20-40	0.6	52	3 3/16	.7	.7	2.54
S-33	20-40	1.2	52	3 3/16	.9	.9	2.70
S-34	20-40	2.2	52	4⅛	1.3	1.3	3.80
S-35	20-40	3.0	52	4¼	1.6	1.6	4.30
S-36	20-40	5.0	52	4¼	2.0	2.0	7.50
S-37	20-40	6.5	52	4¼	1.6	3.2	9.00
S-38	20-40	10.0	52	4¼	2.0	4.0	12.50
S-39	20-40	14.0	52	6 13/16	3.2	4.0	15.50
S-40	20-40	18.0	52	6 13/16	4.0	4.0	16.50
S-41	20-40	36.0	52	6 13/16	4.0	8.0	30.23
S-42	20-40	54.0	52	6 13/16	4.0	12.0	42.00

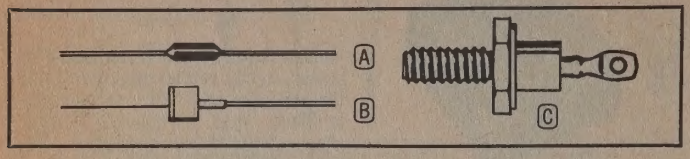
S-T No.	DC Output†		Max AC Input Volts	Dimensions			Net Each
	Volts	Amps		Stack Length	Plate Height	Plate Width	
SSD-43	40-60	0.6	78	4	.7	.7	3.34
SSD-44	40-60	1.2	78	4	.9	.9	3.55
SSD-45	40-60	2.2	78	5⅜	1.3	1.3	5.20
SSD-46	40-60	3.0	78	5½	1.6	1.6	5.95
SSD-47	40-60	5.0	78	5½	2.0	2.0	10.00
SSD-48	40-60	6.5	78	5½	3.2	1.6	12.31
SSD-49	40-60	10.0	78	5½	4.0	2.0	17.50
SSD-50	40-60	14.0	78	8 13/16	4.0	3.2	22.00
SSD-51	40-60	18.0	78	8 13/16	4.0	4.0	23.50
SSD-52	40-60	36.0	78	8 13/16	8.0	4.0	43.53
SSD-53	40-60	54.0	78	8 13/16	12.0	4.0	65.44
SSD-54	60-80	0.6	104	4¾	.7	.7	4.14
SSD-55	60-80	1.2	104	4¾	.9	.9	4.40
SSD-56	60-80	2.2	104	6⅝	1.3	1.3	6.60
SSD-57	60-80	3.0	104	6¾	1.6	1.6	7.60
SSD-58	60-80	5.0	104	6¾	2.0	2.0	12.50
SSD-59	60-80	6.5	104	6¾	3.2	1.6	15.50
SSD-60	60-80	10.0	104	6¾	4.0	2.0	22.50
SSD-61	60-80	14.0	104	10¾	4.0	3.2	28.50
SSD-62	60-80	18.0	104	10¾	4.0	4.0	30.50
SSD-63	60-80	36.0	104	10¾	8.0	4.0	56.83
SSD-64	60-80	54.0	104	10¾	12.0	4.0	85.44
SSD-65	80-100	0.6	130	5 5/16	.7	.7	4.94
SSD-66	80-100	1.2	130	5 5/16	.9	.9	5.25
SSD-67	80-100	2.2	130	7⅞	1.3	1.3	8.00
SSD-68	80-100	3.0	130	8	1.6	1.6	9.25
SSD-69	80-100	5.0	130	8	2.0	2.0	15.00
SSD-70	80-100	6.5	130	8	3.2	1.6	18.75
SSD-71	80-100	10.0	130	8	4.0	2.0	27.50
SSD-72	80-100	14.0	130	12¾	4.0	3.2	35.00
SSD-73	80-100	18.0	130	12¾	4.0	4.0	37.50
SSD-74	80-100	36.0	130	12¾	8.0	4.0	70.13
SSD-75	80-100	54.0	130	12¾	12.0	4.0	105.44

er-tap circuit; all others bridge circuit. † At 35°C ambient.

SARKES TARZIAN

Silicon Regulators, Suppressors

SILICON ZENER VOLTAGE REGULATORS



One series covers many JEDEC types. Meet or exceed all JEDEC re ments. Tolerance ±5%; available in ±10% and ±20%. To orde voltage and tolerance letter to S-T No. (i.e.: .25T5.6A).

S-T Series	Fig.	Tol. ±5%	Watts	Net Each, Lots of 1-24	25-99	1
.25T	A	A	.25	$2.25	$1.93	$
.4T	A	A, B	.4	2.50	2.15	
1TA	B	A, B	1	1.67	1.43	
10T	C	A, B	10	3.76	3.22	

JEDEC NUMBERS AND VOLTAGES AVAILABLE

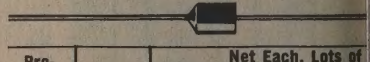
.25T (250 Mw)		.4T (400 Mw)		1TA Series (1 Watt)				10T Series (10 Watt)					
JEDEC No.	Zener Volts	JEDEC No.	Zener Volts	JEDEC No.	Zener Volts	JEDEC No.	Zener Volts	JEDEC No.	Zener Volts	JEDEC No.	Zener Volts	JEDEC No.	
1N708A	5.6	1N769A	23.5	1N3016B	6.8	1N1774A	13	1N1351A	10	1N1823A	27	1N2993B	
1N709A	6.2	1N752A	5.6	1N3017B	7.5	1N1775A	15	1N1352A	11	1N1824A	30	1N2994B	
1N710A	6.8	1N753A	6.2	1N3018B	8.2	1N1776A	16	1N1353A	12	1N1825A	33	1N2995B	
1N711A	7.5	1N754A	6.8	1N3019B	9.1	1N1778A	20	1N1354A	13	1N1826A	36	1N2996B	
1N712A	8.2	1N755A	7.5	1N3020B	10	1N1779A	22	1N1355A	15	1N1827A	39	1N2997B	
1N713A	9.1	1N756A	8.2	1N3021B	11	1N1780A	24	1N1356A	16	1N1828A	43	1N2998B	
1N714A	10	1N757A	9.1	1N3022B	12	1N1781A	27	1N1357A	18	1N1829A	47	1N2999B	
1N715A	11	1N758A	10	1N3023B	13	1N1782A	30	1N1358A	20	1N1830A	51	1N3000B	
1N716A	12	1N759A	12	1N3024B	15	1N1783A	33	1N1359A	22	1N1831A	56	1N3001B	
1N717A	13	1N957B	6.8	1N3025B	16	1N1784A	36	1N1360A	24	1N1832A	62	1N3002B	
1N718A	15	1N958B	7.5	1N3026B	18	1N1785A	39	1N1361A	27	1N1833A	68	1N3003B	
1N719A	16	1N959B	8.2	1N3027B	20	1N1786A	43	1N1362A	30	1N1834A	75	1N3004B	
1N720A	18	1N960B	9.1	1N3028B	22	1N1787A	47	1N1363A	33	1N1835A	82	1N3005B	1
1N721A	20	1N961B	10	1N3029B	24	1N1788A	51	1N1364A	36	1N1836A	91	1N3006B	1
1N722A	22	1N962B	11	1N3030B	27	1N1789A	56	1N1365A	39	1N2008A	100	1N3007B	1
1N723A	24	1N963B	12	1N3031B	30	1N1790A	62	1N1366A	43	1N2009A	110	1N3008B	1
1N724A	27	1N964B	13	1N3032B	33	1N1791A	68	1N1367A	47	1N2010A	120	1N3009B	1
1N725A	30	1N965B	15	1N3033B	36	1N1792A	75	1N1368A	51	1N2011A	130	1N3010B	1
1N726A	33	1N966B	16	1N3034B	39	1N1793A	82	1N1369A	56	1N2012A	150	1N3011B	1
1N727A	36	1N967B	18	1N3035B	43	1N1794A	91	1N1370A	62	1N2498A	10	1N3012B	1
1N728A	39	1N968B	20	1N3036B	47	1N1795A	100	1N1371A	68	1N2499A	11	1N3013B	1
1N729A	43	1N969B	22	1N3037B	51	1N1796A	110	1N1372A	75	1N2500A	12	1N3014B	1
1N730A	47	1N970B	24	1N3038B	56	1N1797A	120	1N1373A	82	1N2970B	6.8	1N3015B	2
1N731A	51	1N971B	27	1N3039B	62	1N1798A	130	1N1374A	91	1N2971B	7.5		
1N732A	56	1N972B	30	1N3040B	68	1N1799A	150	1N1375A	91	1N2972B	8.2		
1N733A	62	1N973B	33	1N3041B	75	1N1800A	160	1N1803A	5.6	1N2973B	9.1		
1N734A	68	1N974B	36	1N3042B	82	1N1801A	180	1N1804A	6.2	1N2974B	10		
1N735A	75	1N975B	39	1N3043B	91	1N1802A	200	1N1805A	6.8	1N2975B	11		
1N736A	82	1N976B	43	1N3044B	100			1N1806A	7.5	1N2976B	12		
1N737A	91	1N977B	47	1N3045B	110			1N1807A	8.2	1N2977B	13		
1N738A	100	1N978B	51	1N3046B	120			1N1808A	9.1	1N2978B	14		
1N739A	110	1N979B	56	1N3047B	130			1N1809A	110	1N2979B	15		
1N740A	120	1N980B	62	1N3048B	150			1N1810A	120	1N2980B	16		
1N741A	130	1N981B	68	1N3049B	160			1N1811A	130	1N2981B	17		
1N742A	150	1N982B	75	1N3050B	180			1N1812A	150	1N2982B	18		
1N743A	160	1N983B	82	1N3051B	200			1N1813A	160	1N2983B	19		
1N744A	180	1N984B	91	1N1765A	5.6			1N1814A	180	1N2984B	20		
1N745A	200	1N985B	100	1N1766A	6.2			1N1815A	200	1N2985B	22		
1N762A	5.8	1N986B	110	1N1767A	6.8			1N1816A	13	1N2986B	24		
1N763A	7.1	1N987B	120	1N1768A	7.5			1N1817A	15	1N2987B	25		
1N764A	8.8	1N988B	130	1N1769A	8.2			1N1818A	16	1N2988B	27		
1N765A	10.5	1N989B	150	1N1770A	9.1			1N1819A	18	1N2989B	30		
1N766A	12.8	1N990B	160	1N1771A	10			1N1820A	20	1N2990B	33		
1N767A	15.8	1N991B	180	1N1772A	11			1N1821A	22	1N2991B	36		
1N768A	19	1N992B	200	1N1773A	12			1N1822A	24	1N2992B	39		

VR SERIES ECONOMY ZENER REGULATORS

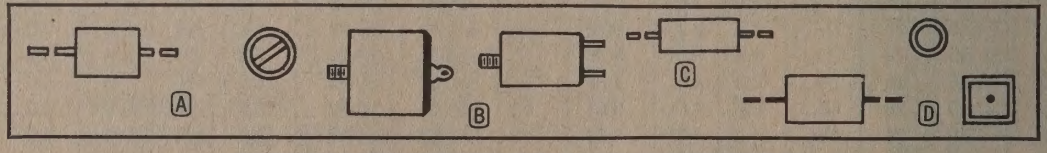
One watt zener regulators in rugged plastic case, recommended for use in all ¼, 0.4, ½ and 1 watt applications. Add suffix A for ±5% tolerance, B for ±20% (±10% standard).

S-T No.	Zener Volts*	S-T No.	Zener Volts*	S-T No.	Zener Volts*	S-T No.	Zener Volts*	S-T No.	Zener Volts*
VR6	6	VR14	14	VR33	33	VR80	80	VR130	130
VR7	7	VR18	18	VR39	39	VR90	90	VR150	150
VR8.5	8.5	VR20	20	VR47	47	VR105	105	VR160	160
VR10	10	VR24	24	VR56	56	VR110	110	VR180	180
VR12	12	VR28	28	VR67	67	VR120	120	VR200	200

*Avalanche volts.



Pre-Fix	Tol.	Net Each, Lots of 1-24	25-99	10
VR	±5	$.67	$.57	$
6-100 Volts	±10	.62	.53	
	±20	.58	.50	
101-200 Volts	±5	.87	.73	
	±10	.82	.70	
	±20	.78	.67	



KLIPVOLT TRANSIENT VOLTAGE SUPPRESSORS

Can handle transient peak voltages at least double steady rating. Non-polarized, AC or DC; polarized, DC only. H voltage and 3-ph. models available. Figs. C and D are s types.

POLARIZED TYPE

A—Max. DC Blocking Volts, B—Max. Discharge Current (Amps), C—Min. DC Volts, D—Figure.

A	B	C	S-T No.	D	Net Each, Lots of 1-9	10-99	100 Up	S-T No.	D	Net Each, Lots of 1-9	10-99	100 Up
22	.250	15	S-235	A	$0.45	$0.33	$0.29	S-235C	C	$1.01	$0.73	$0.65
22	.850	15	S-236	B	.56	.40	.36	S-236C	D	1.87	1.35	1.20
44	.250	23	S-237	A	.49	.36	.31	S-237C	C	1.05	.76	.67
44	.850	23	S-238	B	.62	.45	.40	S-238C	D	1.94	1.40	1.24
66	.250	45	S-239	A	.56	.40	.36	S-239C	C	1.12	.81	.72
66	.850	45	S-240	B	.75	.54	.48	S-240C	D	2.06	1.48	1.32
88	.250	67	S-241	A	.60	.43	.38	S-241C	C	1.16	.82	.74
88	.850	67	S-242	B	.81	.58	.52	S-242C	D	2.12	1.53	1.36
110	.250	89	S-243	A	.64	.46	.41	S-243C	C	1.40	.89	.77
110	.850	89	S-244	B	.88	.63	.56	S-244C	D	2.19	1.57	1.40
132	.250	111	S-245	A	.67	.49	.43	S-245C	C	1.24	.90	.79
132	.850	111	S-246	B	.94	.68	.60	S-246C	D	2.25	1.62	1.44
154	.250	133	S-247	A	.71	.51	.46	S-247C	C	1.27	.92	.80
154	.850	133	S-248	B	1.00	.72	.64	S-248C	D	2.21	1.66	1.48

NON-POLARIZED TYPE

A—Max. rms Volts, B—Max. Discharge Current (Amps), C— rms Volts, D—Figure.

S-T No.	A	B	C	D	Net Each, Lots 1-9	10-99	1
S-249	52	.200	27	A	$0.52	$0.38	$0
S-249C	52	.200	27	C	1.09	.78	
S-250	52	.700	27	B	.69	.50	
S-250C	52	.700	27	D	2.12	1.53	1
S-251	78	.200	53	A	.60	.43	
S-251C	78	.200	53	C	1.16	.82	
S-252	78	.700	53	B	.81	.58	
S-252C	78	.700	53	D	2.12	1.53	1
S-253	104	.200	79	A	.67	.49	
S-253C	104	.200	79	C	1.24	.89	

Net

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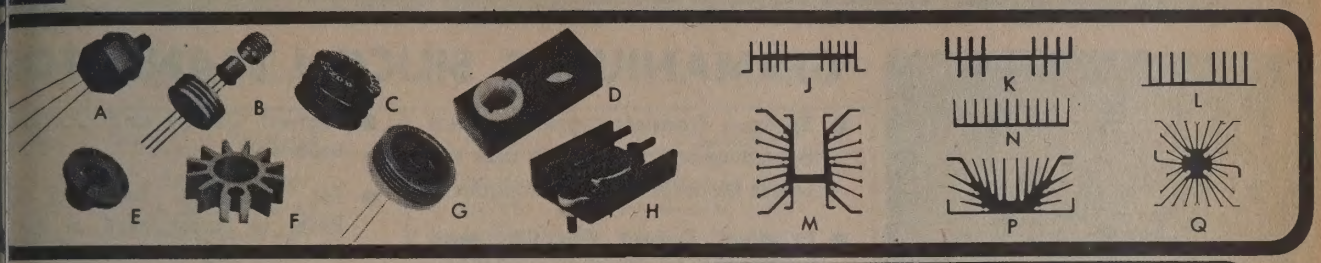
Thermalloy Company

SEMICONDUCTOR ACCESSORIES



L HEAT SINKS

erformance heat sinks. Finish denoted by manufacturer's number (A) Hard per Mil-F-14072, 400 volts insulation (B) Black Anodize per Mil-A-8625 (C) Gold Chromate finish per Mil-C-5541.

s e	Fig.	Fits Case Type	Size, Inches L	W	H	Typ. RT Natural Convection °C/W	Quantity Pricing 1-11	12-99	100
A	A	TO-5	.5	.5	.88	10	1.05	0.85	0.65
/PR11	B	TO-5	.81	.81	.34	26	1.55	1.25	1.05
B	C	TO-5	.750	.750	.375	39	1.20	0.95	0.75
B	D	TO-5	1.25	.5	.5	30	1.80	1.40	1.10
C	E	TO-5	.75	.75	.40	46	0.23	0.18	0.16
C-5	F	TO-5	.75	.75	.25	55	0.22	0.12	0.10
	H	TO-66	1.31	.87	.61	11	0.40	0.35	0.30
	H	TO-3	1.53	1.25	.516	7	0.45	0.39	0.34

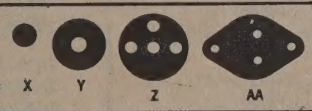
ER HEAT SINKS

ded as well as multi-tinned offer a variety in convection cooling Heat Have Anodized finish per Mil-A-8625 Type II.

s e	Fig.	Size, Inches L	W	H	Typ. RT Natural Convection °C/W	Quantity Pricing 1-49	50-99	100
B	J	3	4.75	1.25	1.6	1.35	1.10	1.00
B	K	3	3.91	1.12	2.3	1.10	0.90	0.85
B	L	3	6.75	2	1.2	2.00	1.65	1.50
						1-11	12-40	50
B	M	5	4	4	.68	4.50	3.85	3.40
B	P	6	5	2.25	.435	6.65	5.65	4.90
B	Q	6	7	7	.31	18.90	16.00	13.80
						1-49	50-99	100
B	N	3	8.3	2.0	.95	3.65	3.10	2.90

LIUM OXIDE HEAT SINKS

rity beryllium oxide heat sinks t heat better than aluminum yet e better than porcelain and have pacitance.



r's pe	Fig.	For Case	Rated Volts	Sizes, Inches L	W	H	Quantity Pricing 1-11	12-99	100
18	X	TO-18	700	.22	.22	.03	0.70	0.56	0.39
05	X	TO-5	700	.36	.36	.03	0.75	0.60	0.42
03	AA	TO-3	800	1.56	1.05	.06	1.56	1.25	0.98
66	AA	TO-66	800	1.25	.70	.06	1.19	0.95	0.70
36	Z	TO-36	800	1.06	1.06	.06	1.40	1.12	0.85
235-40	Y	10-32 Stud	700	.47	.47	.04	0.74	0.59	0.42
260-62	Y	5/16" Stud	800	.80	.80	.06	0.96	0.77	0.58
320-62	Y	1/4" Stud	800	.80	.80	.06	0.96	0.77	0.58

MAFILM INSULATING WASHERS

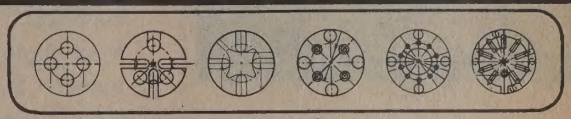
proved replacement for mica washers. Homogeneous film will not chip, e, peel or break. Has dielectric strength of 7000 volts/mil with a useful ature range of −250°C to +400°C.

r's pe	Fig.	For Case	Size, Inches L	W	H	Quantity Pricing 100-499	500-5999	1000
8-1	X	TO-18	.25	.25	.002	6.00/C	5.00/C	4.00/C
-1	X	TO-5	.39	.39	.002	5.00/C	4.00/C	3.00/C
3-3	AA	TO-3	1.65	1.06	.002	3.50/C	2.00/C	1.50/C
6-1	AA	TO-66	1.31	.76	.002	3.50/C	2.00/C	1.50/C
6-1	Z	TO-36	1.06	1.06	.002	3.50/C	2.00/C	1.50/C
2-10	Y	10-32 Stud	.562	.562	.002	3.50/C	2.00/C	1.50/C
2-25	Y	1/4" Stud	.812	.812	.002	3.50/C	2.00/C	1.50/C
2-50	Y	1/2" Stud	1.38	1.38	.002	3.50/C	2.00/C	1.50/C

-ANODIZED INSULATING WASHERS

4 Aluminum, hardcoated per Mil-A-8625 type III. Thermal resistance is °C/watt per square inch of area.

s e	Fig.	For Case	Sizes, Inches L	W	H	Quantity Pricing 100-249	250-499	500
6A	AA	TO-66	1.32	.71	.02	.20 ea.	.14 ea.	.09 ea.
3A	AA	TO-3	1.80	1.06	.02	.22 ea.	.16 ea.	.11 ea.
DA	Y	#10 Stud	.56	.56	.02	.18 ea.	.12 ea.	.07 ea.
5A	Y	1/4" Stud	.81	.81	.02	.19 ea.	.13 ea.	.08 ea.
5A	Z	TO-36	1.09	1.09	.02	.21 ea.	.14 ea.	.08 ea.
7A	Not Shown	Plastic Power	.75	.50	.02	.20 ea.	.13 ea.	.07 ea.



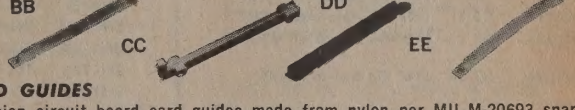
SEMICONDUCTOR MOUNTING PADS

Low cost Thermalloy color-coded mounting pads provide an economical way to protect transistors and integrated circuits from shock and vibration. Achieve uniform spacing above printed circuit boards. Available in Nylon; DAP denotes Diallyl Phthalate.

Mfg. Type	For Case	No. of Leads	Size, Inches O.D.	Max. Thick.	Quantity Pricing 100-499	500-999	1000
7717-16N	TO-18	4	.200	.020	5.00/C	4.00/C	3.00/C
7717-18N	TO-18	3 or 4	.200	.060	5.00/C	4.00/C	3.00/C
7717-46N	TO-18	4	.200	.060	5.00/C	4.00/C	3.00/C
7717-81N	TO-18	6	.290	.125	6.00/C	5.00/C	4.00/C
7717-123N	TO-18	4	.340	.120	5.00/C	4.00/C	3.00/C
7717-3N	TO-5	3 or 4	.344	.075	5.00/C	4.00/C	3.00/C
7717-4N	TO-5	4	.375	.075	5.00/C	4.00/C	3.00/C
7717-5N	TO-5	3 or 4	.350	.125	5.00/C	4.00/C	3.00/C
7717-15N	TO-5	3 or 4	.350	.020	5.00/C	4.00/C	3.00/C
7717-22N	TO-5	3 or 4	.350	.125	5.00/C	4.00/C	3.00/C
7717-79N	TO-5	3	.355	.038	5.00/C	4.00/C	3.00/C
7717-8N	I/C	8 Lead TO-5	.375	.075	6.00/C	5.00/C	4.00/C
7717-10N	I/C	10 Lead TO-5	.375	.075	6.00/C	5.00/C	4.00/C
7717-12N	I/C	12 Lead TO-5	.375	.075	6.00/C	5.00/C	4.00/C

SEMICONDUCTOR LEAD CONVERSION PADS

Mfr's No. 7717-	Converts Lead Spacing From	To	No. of Leads	Size, Inches O.D.	Max. Thick.	Quantity Pricing 100-499	500-999	1000
7717-7	TO-18	TO-5	3 or 4	.250	.125	5.00/C	4.00/C	3.00/C
7717-26	TO-18	TO-5	3	.343	.120	5.00/C	4.00/C	3.00/C
7717-43	TO-18	TO-5	3 or 4	.275	.050	5.00/C	4.00/C	3.00/C
7717-44	TO-18	TO-5	3 or 4	.305	.125	5.00/C	4.00/C	3.00/C
7717-93	TO-18	.150 Circle	3 or 4	.195	.065	5.00/C	4.00/C	3.00/C
7717-106	Dual TO-5	.050 Grid	6	.450	.160	12.00/C	10.00/C	9.00/C
7717-2	.100 Circle	.200 Circle	2	.305	.125	5.00/C	4.00/C	3.00/C
7717-19	.200 Circle	.400 Circle	8	.500	.275	12.00/C	10.00/C	9.00/C
7717-20	.200 Circle	.400 Circle	12	.500	.275	12.00/C	10.00/C	9.00/C
7717-21	.200 Circle	.400 Circle	10	.500	.275	12.00/C	10.00/C	9.00/C
7717-119	.200 Circle	.400 Circle	10	.500	.275	12.00/C	10.00/C	9.00/C
7717-120	.200 Circle	.400 Circle	8	.500	.275	12.00/C	10.00/C	9.00/C



CARD GUIDES

Precision circuit board card guides made from nylon per MIL-M-20693 snap into place with snap rivets or rods to provide easy spacing and flexibility in assembling Therma-Pak modules. Available in a variety of stock sizes or manufactured to specification.

Mfr's Type	Fig.	Fits System Number	Inches L	W	H	Quantity Pricing 1-9	10-24	25-99
5005-01	DD	5005-102 5005-121	2.651	.375	.262	0.17	0.17	0.17
5005-02	DD	5005-106 5005-125	4.151	.375	.262	0.082	0.08	0.07
5005-03	DD	5005-110 5005-129	5.651	.375	.262	0.10	0.10	0.10
5005-04	DD	5005-114 5005-133	6.651	.375	.262	0.16	0.16	0.14
5005-08 car ejector	Not Shown					0.30	0.28	0.26
5005-09 card puller	Not Shown					0.30	0.28	0.25
						1-11	12-99	100
8701	CC		6.250	.670	.360	0.29	0.23	0.18
8702	CC		6.250	.670	.580	0.29	0.23	0.18
8825-2	BB		2.00	.230	.210	0.25	0.20	0.15
8825-2	BB		3.50	.230	.210	0.25	0.20	0.15
8825-5	BB		5.00	.230	.210	0.25	0.20	0.15
8828-3	EE		3.50	.230	.210	0.40	0.30	0.25

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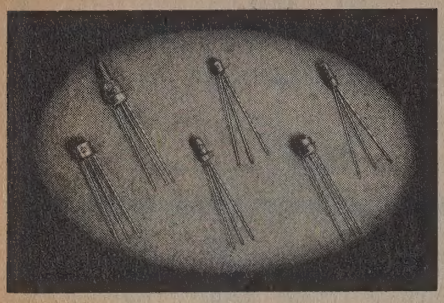
SPRAGUE SEMICONDUCTORS



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Type Number	Case	Description
2N128	TO-24	PNP Ge Switch SBT
JAN-2N128	TO-24	to MIL-S-19500/9A
2N231	TO-24	PNP Ge Switch SBT
2N240	TO-24	PNP Ge Switch SBT
JAN-2N240	TO-24	to MIL-S-19500/25A
2N344	TO-24	PNP Ge Amplifier SBT
2N345	TO-24	PNP Ge Amplifier SBT
2N346	TO-24	PNP Ge Amplifier SBT
2N393	TO-24	PNP Ge Switch MAT*
JAN-2N393	TO-24	to MIL-S-19500/77B
2N495	TO-1	PNP Si Switch SPAT*
2N496	TO-1	PNP Si Switch SPAT
2N499	TO-1	PNP Ge Amplifier MADT*
JAN-2N499	TO-1	to MIL-S-19500/72B
2N499A	TO-1	PNP Ge Amplifier MADT
JAN-2N499A	TO-1	to MIL-S-19500/72B
2N501	TO-1	PNP Ge Switch MADT
2N501A	TO-1	PNP Ge Switch MADT
JAN-2N501A	TO-1	to MIL-S-19500/62A
2N502	TO-9	PNP Ge Amplifier MADT
2N502A	TO-9	PNP Ge Amplifier MADT
JAN-2N502A	TO-9	to MIL-S-19500/112A
2N502B	TO-9	PNP Ge Amplifier MADT
JAN-2N502B	TO-9	to MIL-S-19500/112A
2N503	TO-9	PNP Ge Amplifier MADT
2N504	TO-1	PNP Ge Amplifier MADT
2N588	TO-1	PNP Ge Amplifier MADT
2N588A	TO-1	PNP Ge Amplifier MADT
2N779A	TO-18	PNP Ge Switch MADT
2N794	TO-18	PNP Ge Switch ECDC®
2N795	TO-18	PNP Ge Switch ECDC
2N796	TO-18	PNP Ge Switch ECDC
2N846A	TO-18	PNP Ge Switch ECDC
2N858	TO-18	PNP Si Switch SPAT
2N859	TO-18	PNP Si Switch SPAT
2N860	TO-18	PNP Si Switch SPAT
2N861	TO-18	PNP Si Switch SPAT
2N862	TO-18	PNP Si Switch SPAT
2N863	TO-18	PNP Si Switch SPAT
2N864	TO-18	PNP Si Switch SPAT
2N865	TO-18	PNP Si Switch SPAT

Type Number	Case	Description
2N1118	TO-5	PNP Si Ampl. SPAT
JAN-2N1118	TO-5	to MIL-S-19500/138B
2N1118A	TO-5	PNP Si Ampl. SPAT
2N1119	TO-5	PNP Si Switch SPAT
JAN-2N1119	TO-5	to MIL-S-19500/139B
2N1122	TO-24	PNP Ge Switch MAT
2N1122A	TO-24	PNP Ge Switch MAT
2N1300	TO-5	PNP Ge Switch ECDC
2N1301	TO-5	PNP Ge Switch ECDC
2N1411	TO-24	PNP Ge Switch MAT
JAN-2N1411	TO-24	to MIL-S-19500/133
2N1427	TO-24	PNP Ge Switch MAT
2N1429	TO-5	PNP Si Switch SPAT
2N1499A	TO-9	PNP GE Switch ECDC
JAN-2N1499A	TO-9	to MIL-S-19500/170
2N1499B	TO-9	PNP GE Switch ECDC
2N1500	TO-9	PNP Ge Switch MADT
JAN-2N1500	TO-9	to MIL-S-19500/125
2N1676	TO-5	PNP Si Chopper SPAT
2N1677	TO-5	PNP Si Chopper SPAT
2N1726	TO-9	PNP Ge MADT Communication
2N1727	TO-9	PNP Ge MADT Communication
2N1728	TO-9	PNP Ge MADT Communication
2N1742	TO-9	PNP Ge MADT Communication
2N1743	TO-9	PNP Ge MADT Communication
2N1744	TO-9	PNP Ge MADT Communication
2N1745	TO-9	PNP Ge MADT Amplifier
2N1868	TO-9	PNP Ge MADT Communication
2N2048	TO-9	PNP Ge ECDC Switch
2N2162	TO-5	PNP Si Chopper SPAT
2N2163	TO-5	PNP Si Chopper SPAT
2N2164	TO-5	PNP Si Chopper SPAT
2N2165	TO-5	PNP Si Chopper SPAT
2N2166	TO-5	PNP Si Chopper SPAT
2N2167	TO-5	PNP Si Chopper SPAT
2N2168	TO-9	PNP Ge Switch MADT
2N2169	TO-9	PNP Ge Switch MADT
2N2170	TO-9	PNP Ge Switch MADT

Type Number	Case	Description
2N2185	TO-18	PNP Si Chopper SPAT
2N2186	TO-18	PNP Si Matched Pair SP
2N2187	TO-18	PNP Si Matched Pair SP
2N2199	TO-9	PNP Ge Amplifier MADT
2N2200	TO-9	PNP Ge Amplifier MADT
2N2218	TO-5	NPN Si Switch SEPT
2N2218A	TO-5	NPN Si Switch SEPT
2N2219	TO-5	NPN Si Switch SEPT
2N2219A	TO-5	NPN Si Switch SEPT
2N2221	TO-18	NPN Si Switch SEPT
JAN-2N2221	TO-18	to MIL-S-19500/225D
2N2221A	TO-18	NPN Si Switch SEPT
JAN-2N2221A	TO-18	to MIL-S-19500/255D
2N2222	TO-18	NPN Si Switch SEPT
JAN-2N2222	TO-18	to MIL-S-19500/225D
2N2222A	TO-18	NPN Si Switch SEPT
JAN-2N2222A	TO-18	to MIL-S-19500/255D
2N2274	TO-18	PNP Si Chopper SPAT
2N2275	TO-18	PNP Si Matched Pair SPAT
2N2276	TO-18	PNP Si Chopper SPAT
2N2277	TO-18	PNP Si Matched Pair SPAT
2N2278	TO-18	PNP Si Chopper SPAT
2N2279	TO-18	PNP Si Matched Pair SPAT
2N2280	TO-18	PNP Si Chopper SPAT
2N2281	TO-18	PNP Si Matched Pair SPAT
2N2360	TO-12	PNP Ge Amplifier MADT
2N2361	TO-12	PNP Ge Amplifier MADT
2N2362	TO-12	PNP Ge Amplifier MADT
2N2377	TO-18	PNP Si Amplifier SPAT
JAN-2N2377	TO-18	to MIL-S-19500/288
2N2378	TO-18	PNP Si Switch SPAT
JAN-2N2378	TO-18	to MIL-S-19500/289
2N2398	TO-12	PNP Ge Amplifier MADT
2N2399	TO-12	PNP Ge Amplifier MADT
2N2451	TO-24	PNP Ge Switch MAT
2N2487	TO-18	PNP Ge Switch MADT
2N2488	TO-18	PNP Ge Switch MADT
2N2489	TO-18	PNP Ge Switch MADT

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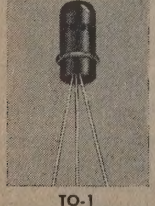

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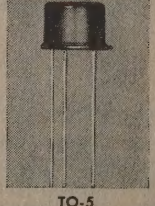

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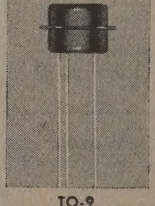

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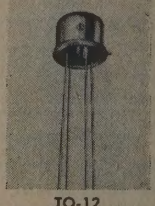

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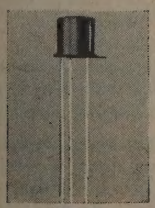
SPRAGUE SEMICONDUCTORS

ANSISTORS, continued

Type Number	Case	Description
N2904	TO-5	PNP Si Switch SEPT
N2904	TO-5	to MIL-S-19500/290
N2904A	TO-5	PNP Si Switch SEPT
N2905	TO-5	PNP Si Switch SEPT
N2905	TO-5	to MIL-S-19500/290
N2905A	TO-5	PNP Si Switch SEPT
N2906	TO-18	PNP Si Switch SEPT
N2906A	TO-18	PNP Si Switch SEPT
N2907	TO-18	PNP Si Switch SEPT
N2907A	TO-18	PNP Si Switch SEPT
N2944	TO-46	PNP SEPT Switch, Amp., Chopper
N2945	TO-46	PNP SEPT Switch, Amp., Chopper
N2946	TO-46	PNP SEPT Switch, Amp., Chopper
N2951	TO-5	NPN Si Amplifier SEPT
N2952	TO-18	NPN Si Amplifier SEPT
N2958	TO-5	NPN Si Switch SEPT
N2959	TO-5	NPN Si Switch SEPT
N2968	TO-5	PNP Si Symmetrical SPAT
N2970	TO-5	PNP Si Symmetrical SPAT
N2971	TO-18	PNP Si Symmetrical SPAT
N3058	TO-46	PNP Si Amplifier SEPT
N3059	TO-46	PNP Si Amplifier SEPT
N3060	TO-46	PNP Si Amplifier SEPT
N3061	TO-46	PNP Si Amplifier SEPT
N3133	TO-5	PNP Si Switch SEPT
N3134	TO-5	PNP Si Switch SEPT
N3135	TO-18	PNP Si Switch SEPT
N3136	TO-18	PNP Si Switch SEPT
N3217	TO-46	PNP Si Switch, Amplifier, Chopper SEPT
N3218	TO-46	PNP Si Switch, Amplifier, Chopper SEPT
N3219	TO-46	PNP Si Switch, Amplifier, Chopper SEPT
N3317	TO-18	PNP Si Chopper SPAT
N3318	TO-18	PNP Si Chopper SPAT
2N3319	TO-18	PNP Si Chopper SPAT
2N3320	TO-18	PNP Ge Switch MADT
2N3321	TO-18	PNP Ge Switch MADT
2N3322	TO-18	PNP Ge Switch MADT
2N3677	TO-46	PNP Silicon Planar
2N3840	TO-46	PNP Si Switch, Amp., Chopper
2N3977	TO-46	PNP Si Switch, Amp., Chopper
2N3978	TO-46	PNP Si Switch, Amp., Chopper
2N3979	TO-46	PNP Si Switch, Amp., Chopper
2N4007	TO-46	PNP Silicon Planar
2N4008	TO-46	PNP Silicon Planar
2N4383	TO-5	NPN Si SEPT Low-Level Amplifier
2N4384	TO-18	NPN Si SEPT Low-Level Amplifier
2N4385	TO-5	NPN Si SEPT Low-Level Amplifier
2N4386	TO-18	NPN Si SEPT Low-Level Amplifier
2N4412	TO-5	PNP Si SEPT Low-Level Amplifier
2N4412A	TO-5	PNP Si SEPT Low-Level Amplifier
2N4413	TO-18	PNP Si SEPT Low-Level Amplifier
2N4413A	TO-18	PNP Si SEPT Low-Level Amplifier
2N4414	TO-5	PNP Si SEPT Low-Level Amplifier
2N4414A	TO-5	PNP Si SEPT Low-Level Amplifier
2N4415	TO-18	PNP Si SEPT Low-Level Amplifier
2N4415A	TO-18	PNP Si SEPT Low-Level Amplifier
3N90	TO-18	PNP Si Dual Emitter Chopper DUET
3N91	TO-18	PNP Si Dual Emitter Chopper DUET
3N92	TO-18	PNP Si Dual Emitter Chopper DUET
3N93	TO-18	PNP Si Dual Emitter Chopper DUET
3N94	TO-18	PNP Si Dual Emitter Chopper DUET
3N95	TO-18	PNP Si Dual Emitter Chopper DUET
3N114	TO-72	PNP Si Dual Emitter Chopper DUET
3N115	TO-72	PNP Si Dual Emitter Chopper DUET
3N116	TO-72	PNP Si Dual Emitter Chopper DUET
3N117	TO-72	PNP Si Dual Emitter Chopper DUET
3N118	TO-72	PNP Si Dual Emitter Chopper DUET
3N119	TO-72	PNP Si Dual Emitter Chopper DUET
3N123	TO-72	PNP Si Dual Emitter Chopper DUET
TN-53	TO-5	NPN Si Switch, Amp. SEPT
TN-54	TO-18	NPN Si Switch, Amp. SEPT
TN-55	TO-5	NPN Si SEPT Low-level Amplifier
TN-56	TO-18	NPN Si SEPT Low-level Amplifier
TN-57	TO-5	NPN Si SEPT Low-level Amplifier
TN-58	TO-18	NPN Si SEPT Low-level Amplifier
TN-59	TO-5	NPN Si Switch, Amp. SEPT
TN-60	TO-18	NPN Si Switch, Amp. SEPT
TN-61	TO-5	NPN Si Switch, Amp. SEPT
TN-62	TO-18	NPN Si Switch, Amp. SEPT
TN-63	TO-5	NPN Si Switch, Amp. SEPT
TN-64	TO-18	NPN Si Switch, Amp. SEPT
TN-79	TO-5	NPN Si SEPT Chopper
TN-80	TO-18	NPN Si SEPT Chopper
TN-81	TO-5	NPN Si SEPT Switch
TN-237	TO-5	NPN Si SEPT Core Driver
TN-238	TO-18	NPN Si SEPT Core Driver
TQ-53	TO-5	PNP Si SEPT
TQ-53A	TO-5	PNP Si SEPT
TQ-54	TO-18	PNP Si SEPT
TQ-54A	TO-18	PNP Si SEPT
TQ-55	TO-5	PNP Si SEPT Low-level Amplifier
TQ-55A	TO-5	PNP Si SEPT Low-level Amplifier
TQ-56	TO-18	PNP Si SEPT Low-level Amplifier
TQ56A	TO-18	PNP Si SEPT Low-level Amplifier
TQ-57	TO-5	PNP Si SEPT Low-level Amplifier
TQ-57A	TO-5	PNP Si SEPT Low-level Amplifier
TQ-58	TO-18	PNP Si SEPT Low-level Amplifier
TQ-58A	TO-18	PNP Si SEPT Low-level Amplifier
TQ-59	TO-5	PNP Si Switch, Amp. SEPT
TQ-59A	TO-5	PNP Si SEPT
TQ-60	TO-18	PNP Si Switch, Amp. SEPT
TQ-60A	TO-18	PNP Si SEPT
TQ-61	TO-5	PNP Si Switch, Amp. SEPT
TQ-61A	TO-5	PNP Si SEPT
TQ-62	TO-18	PNP Si Switch, Amp. SEPT
TQ-62A	TO-18	PNP Si SEPT
TQ-63	TO-5	PNP Si Switch, Amp. SEPT
TQ63A	TO-5	PNP Si SEPT
TQ-64	TO-18	PNP Si Switch, Amp. SEPT



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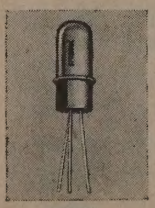

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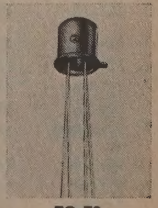

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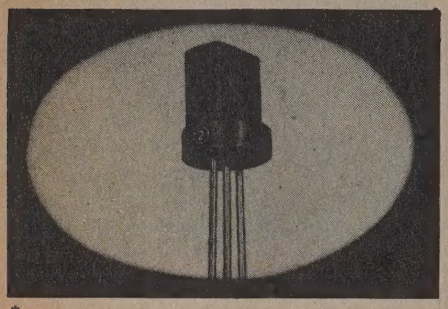

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Type No.	Case	Description
2N2711	TO-98	NPN G/P Small-signal Audio Amplifier
2N2712	TO-98	NPN G/P Small-signal Audio Amplifier
2N2713	TO-98	NPN G/P Large-signal Amplifier/Switch
2N2714	TO-98	NPN G/P Large-signal Amplifier/Switch
2N2923	TO-98	NPN G/P Small-signal Audio Amplifier
2N2924	TO-98	NPN G/P Small-signal Audio Amplifier
2N2925	TO-98	NPN G/P Small-signal Audio Amplifier
2N2926	TO-98	NPN G/P Small-signal Audio Amplifier
2N3390	TO-98	NPN Low-noise High-gain Amplifier
2N3391	TO-98	NPN Low-noise High-gain Amplifier
2N3391A	TO-98	NPN Low-noise High-gain Amplifier
2N3392	TO-98	NPN G/P Small-signal Audio Amplifier
2N3393	TO-98	NPN G/P Small-signal Audio Amplifier
2N3394	TO-98	NPN G/P Small-signal Audio Amplifier
243395	TO-98	NPN G/P Small-signal Audio Amplifier
2N3396	TO-98	NPN G/P Small-signal Audio Amplifier
2N3397	TO-98	NPN G/P Small-signal Audio Amplifier
2N3398	TO-98	NPN G/P Small-signal Audio Amplifier
2N3402	TO-98HS	NPN G/P Large-signal Amplifier/Switch
2N3403	TO-98HS	NPN G/P Large-signal Amplifier/Switch
2N3404	TO-98HS	NPN G/P Large-signal Amplifier/Switch
2N3405	TO-98HS	NPN G/P Large-signal Amplifier/Switch
2N3414	TO-98	NPN G/P Large-signal Amplifier/Switch
2N3415	TO-98	NPN G/P Large-signal Amplifier/Switch
2N3416	TO-98	NPN G/P Large-signal Amplifier/Switch
2N3417	TO-98	NPN G/P Large-signal Amplifier/Switch
2N3721	TO-98	NPN G/P Small-signal Audio Amplifier
2N3843	TO-98	NPN High-frequency Amplifier/Oscillator
2N3843A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3844	TO-98	NPN High-frequency Amplifier/Oscillator
2N3844A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3845	TO-98	NPN High-frequency Amplifier/Oscillator
2N3845A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3854	TO-98	NPN High-frequency Amplifier/Oscillator
2N3854A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3855	TO-98	NPN High-frequency Amplifier/Oscillator
2N3855A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3856	TO-98	NPN High-frequency Amplifier/Oscillator
2N3856A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3858	TO-98	NPN High-frequency Amplifier/Oscillator
2N3858A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3859	TO-98	NPN High-frequency Amplifier/Oscillator
2N3859A	TO-98	NPN High-frequency Amplifier/Oscillator
2N3860	TO-98	NPN High-frequency Amplifier/Oscillator
2N3877	TO-98	NPN High-voltage Indicator Driver
2N3877A	TO-98	NPN High-voltage Indicator Driver
2N3900	TO-98	NPN Low-noise High-gain Amplifier
2N3900A	TO-98	NPN Low-noise High-gain Amplifier
2N3975	TO-98	NPN G/P Large-signal Amplifier/Switch
2N3976	TO-98	NPN G/P Large-signal Amplifier/Switch
2N4256	TO-98	NPN Low-level Medium speed Switch
2N4424	TO-98	NPN G/P Large-signal Amplifier/Switch
2N4425	TO-98HS	NPN G/P Large-signal Amplifier/Switch
2N4951	TO-98	NPN Premium Large-signal Amplifier/Switch
2N4952	TO-98	NPN Premium Large-signal Amplifier/Switch
2N4953	TO-98	NPN Premium Large-signal Amplifier/Switch
2N4954	TO-98	NPN Premium Large-signal Amplifier/Switch

Type No.	Case	Description
2N5172	TO-98	NPN G/P Small-signal Audio Amplifier
2N5232	TO-98	NPN Low-noise, High-gain Amplifier
2N5232A	TO-98	NPN Low-noise, High-gain Amplifier
2N5305	TO-98	NPN Darlington Amplifier
2N5306	TO-98	NPN Darlington Amplifier
2N5307	TO-98	NPN Darlington Amplifier
2N5308	TO-98	NPN Darlington Amplifier
2N5368	BR	NPN Premium Large-signal Amplifier/Sw
2N5369	BR	NPN Premium Large-signal Amplifier/Sw
2N5370	BR	NPN Premium Large-signal Amplifier/Sw
2N5371	BR	NPN Premium Large-signal Amplifier/Sw
2N5372	BR	PNP Premium Large-signal Amplifier/Sw
2N5373	BR	PNP Premium Large-signal Amplifier/Sw
2N5374	BR	PNP Premium Large-signal Amplifier/Sw
2N5375	BR	PNP Premium Large-signal Amplifier/Sw
2N5376	BR	NPN Low-noise High-gain Amplifier
2N5377	BR	NPN Low-noise High-gain Amplifier
2N5378	BR	PNP Low-noise High-gain Amplifier
2N5379	BR	PNP Low-noise High-gain Amplifier
2N5380	BR	NPN Premium Large-signal Amplifier/Sw
2N5381	BR	NPN Premium Large-signal Amplifier/Sw
2N5382	BR	PNP Premium Large-signal Amplifier/Sw
2N5383	BR	PNP Premium Large-signal Amplifier/Sw
D29A4	TO-98	PNP G/P Large-signal Amplifier/Swtch
D29A5	TO-98	PNP G/P Large-signal Amplifier/Swtch
TD-100	BP	NPN/NPN Dual Differential Amplifier
TD-101	BP	NPN/NPN Dual Differential Amplifier
TD-102	BP	NPN/NPN Dual Transistors
TD-200	BQ	NPN/NPN Dual Differential Amplifier
TD-201	BQ	NPN/NPN Dual Differential Amplifier
TD-202	BQ	NPN/NPN Dual Transistor
TD400	BP	PNP/PNP Dual Differential Amplifier
TD-401	BP	PNP/PNP Dual Differential Amplifier
TD-402	BP	PNP/PNP Dual Transistor
TD-500	BQ	PNP/PNP Dual Differential Amplifier
TD-501	BQ	PNP/PNP Dual Differential Amplifier
TD-502	BQ	PNP/PNP Dual Transistor
TD-600	BP	NPN/PNP Complementary Pair
TD-601	BP	NPN/PNP Complementary Pair
TD-602	BP	NPN/PNP Dual Transistor
TD-700	BQ	NPN/PNP Complementary Pair
TD-701	BQ	NPN/PNP Complementary Pair
TD-702	BQ	NPN/PNP Dual Transistor
TD-2219	BP	NPN/NPN Dual Transistor
TD-2905	BP	PNP/PNP Dual Transistor
TP-3638	BR	PNP G/P Large-signal Amplifier/Switch
TP-3638A	BR	PNP G/P Large-signal Amplifier/Switch
TP-4274	BR	NPN High-speed Switch
TP-4275	BR	NPN High-speed Switch
TZ-81	TO-98	NPN Low-noise High-gain Amplifier
TZ-82	TO-98	NPN Low-noise High-gain Amplifier
TZ-551	TO-98	PNP Premium Large-signal Amplifier/Swi
TZ-552	TO-98	PNP Premium Large-signal Amplifier/Swi
TZ-553	TO-98	PNP Premium Large-Signal Amplifier/Swi
TZ-554	TO-98	PNP Premium Large-signal Amplifier/Swi
TZ-581	TO-98	PNP Low-noise High-gain Amplifier
TZ-582	TO-98	PNP Low-noise High-gain Amplifier

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SPRAGUE SEMICONDUCTORS

PIRGO POWER TRANSISTORS

NOW AVAILABLE FROM SPRAGUE INDUSTRIAL DISTRIBUTORS

(Pirgo Electronics, Inc. is an affiliate of the Sprague Electric Co.)

Complete Information, Refer to Applicable Pirgo nical Data Sheet.

Call Your Sprague Industrial Distributor For Current Quantity Prices

No.	Case	Description
479	TO-5	NPN 1 ½ Amp Single-diffused
480	TO-5	NPN 1 ½ Amp Single-diffused
481	TO-5	NPN 1 ½ Amp Single-diffused
482	TO-5	NPN 1 ½ Amp Single-diffused
483	TO-8	NPN 3 Amp Single-diffused
484	TO-8	NPN 3 Amp Single-diffused
485	TO-8	NPN 3 Amp Single-diffused
486	TO-8	NPN 3 Amp Single-diffused
487	TO-3	NPN 6 Amp Single-diffused
488	TO-3	NPN 6 Amp Single-diffused
489	TO-3	NPN 6 Amp Single-diffused
490	TO-3	NPN 6 Amp Single-diffused
657	TO-5	NPN 5 Amp Silicon Planar
658	TO-5	NPN 5 Amp Silicon Planar
811	TO-61	NPN 10 Amp Silicon Planar
812	TO-61	NPN 10 Amp Silicon Planar
813	TO-61	NPN 10 Amp Silicon Planar
814	TO-61	NPN 10 Amp Silicon Planar
877	TO-111	NPN 5 Amp Silicon Planar
878	TO-111	NPN 5 Amp Silicon Planar
879	TO-111	NPN 5 Amp Silicon Planar
880	TO-111	NPN 5 Amp Silicon Planar
597	TO-63	NPN 20 Amp Silicon Planar

Type No.	Case	Description
2N3598	TO-63	NPN 20 Amp Silicon Planar
2N3599	TO-63	NPN 20 Amp Silicon Planar
2N3744	TO-111	NPN 5 Amp Silicon Planar
2N3745	TO-111	NPN 5 Amp Silicon Planar
2N3746	TO-111	NPN 5 Amp Silicon Planar
2N3747	TO-111	NPN 5 Amp Silicon Planar
2N3748	TO-111	NPN 5 Amp Silicon Planar
2N3749	TO-111	NPN 5 Amp Silicon Planar
2N3750	TO-111	NPN 5 Amp Silicon Planar
2N3751	TO-111	NPN 5 Amp Silicon Planar
2N3752	TO-111	NPN 5 Amp Silicon Planar
2N3996	TO-111 (isolated)	NPN 5 Amp Silicon Planar
2N3997	TO-111 (isolated)	NPN 5 Amp Silicon Planar
2N3998	TO-111	NPN 5 Amp Silicon Planar
2N3999	TO-111	NPN 5 Amp Silicon Planar
2N4070	TO-3	NPN 10 Amp Silicon Planar
2N4150	TO-5	NPN 10 Amp Silicon Planar
2N4862	TO-46	NPN 2 Amp Silicon Planar
2N4863	TO-5	NPN 2 Amp Silicon Planar
2N4864	TO-66	NPN 2 Amp Silicon Planar

PIRGO TRIACS

triacs are bi-directional triode thyristors which may witched from an Off-state to an On-state condition either polarity of applied voltage with positive or itive triggering voltages to the gate. They are intended to control AC loads in applications such as motor speed controls, heating controls, lighting controls, and static switching relays.

e .	V_{DROM} (volts)	I_t (amps)	Package
6	200	6	½" Press Fit
0	200	10	½" Press Fit
5	200	15	½" Press Fit
5	200	25	½" Press Fit
6	400	6	½" Press Fit
0	400	10	½" Press Fit
5	400	15	½" Press Fit
5	400	25	½" Press Fit

Type No.	V_{DROM} (volts)	I_t (amps)	Package
PT40429	200	6	TO-66
PT40485	200	6	TO-5
PT40526	200	2.5	TO-5
PT40529	200	2.5	TO-5
PTSC41B	200	6	½" Press Fit
PTSC46B	200	10	½" Press Fit
PTSC51B	200	15	½" Press Fit

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for all your requirements!

You can depend on him for...

- *Instant off-the-shelf delivery*
- *In-depth inventories*
- *Wide varieties*
- *Prompt service*
- *Technical assistance*

- *Availability of the latest products*
- *Speedy purchasing — one order does the jo*

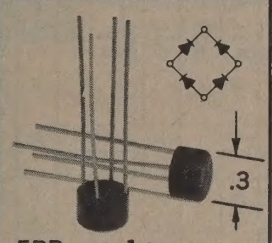
If you don't find it here, give us a call.

SILICON RECTIFIERS

ASK US ABOUT OUR MANY TYPES OF CUSTOM RECTIFIERS AND RECTIFIER ASSEMBLIES.

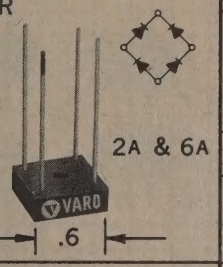
FULL WAVE BRIDGE RECTIFIERS*

V	Io	1-99
111	1A	.95
0V		
18	1A	1.00
148	2A	1.00
148	6A	1.93
0V		
27	1A	1.20
28	1A	1.10
247	2A	1.20
248	2A	1.10
247	6A	2.25
248	6A	2.15
4436	10A	4.15
200	25A	5.35
0V		
47	1A	1.30
48	1A	1.20
447	2A	1.30
448	2A	1.20
447	6A	2.59
448	6A	2.49
4437	10A	5.45
400	25A	7.00
0V		
67	1A	1.59
68	1A	1.49
647	2A	1.60
648	2A	1.50
647	6A	2.98
648	6A	2.88
4438	10A	7.45
600	25A	9.85



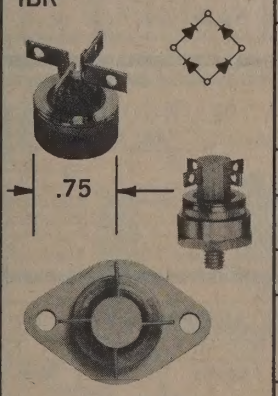
EBR 1A

EBR

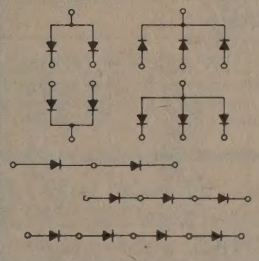


2A & 6A

IBR



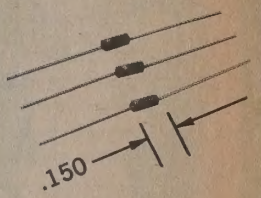
10A & 25A ALSO AVAILABLE IN THESE CIRCUITS



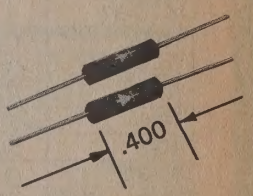
HIGH VOLTAGE RECTIFIERS*

1000V	Io	1-99
VA 10	50mA	1.36
VB 10	100mA	1.41
1500V		
VA 15	50mA	1.44
VB 15	100mA	1.51
2000V		
VA 20	50mA	1.55
VB 20	100mA	1.59
VC 20	2A	5.20
2500V		
VA 25	50mA	1.66
VB 25	100mA	1.72
3000V		
VA 30	25mA	1.93
VB 30	50mA	1.88
VC 30	2A	5.52
3500V		
VA 35	25mA	2.70
4000V		
VB 40	50mA	2.05
VC 40	2A	5.85
5000V		
VB 50	50mA	2.40
VC 50	1.5A	6.18
VF 5-5	5mA	1.60
VF 10-5	10A	1.77
VF 25-5	25mA	1.95
6000V		
VB 60	50mA	2.62
VC 60	1.5A	6.50

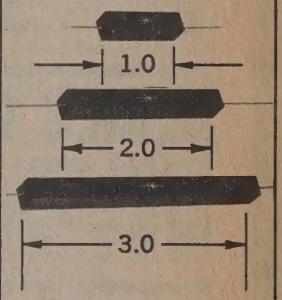
7000V	Io	1-99
VC 70	1.5A	6.82
VF 5-7	5mA	1.71
VF 10-7	10mA	1.89
VF 25-7	25mA	2.08
8000V		
VC 80	1A	7.15
10,000V		
VF 5-10	5mA	1.96
VF 10-10	10mA	2.16
VF 25-10	25mA	2.38
12,000V		
VF 5-12	5mA	2.22
VF 10-12	10mA	2.44
VF 25-12	25mA	2.68
15,000V		
VF 5-15	5mA	2.30
VF 10-15	10mA	2.54
VF 25-15	25mA	2.80
20,000V		
VF 5-20	5mA	2.97
VF 10-20	10mA	3.27
VF 25-20	25mA	3.60
25,000V		
VF 5-25	5mA	3.72
VF 10-25	10mA	4.09
VF 25-25	25mA	4.51
30,000V		
VF 5-30	5mA	4.46
VF 10-30	10mA	4.91
VF 25-30	25mA	5.39
40,000V		
VF 5-40	5mA	5.95
VF 10-40	10mA	6.54
VF 25-40	25mA	7.20



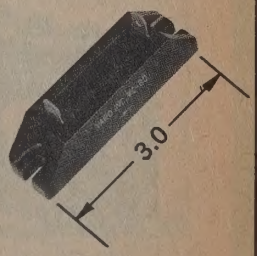
VA SERIES



VB SERIES



VF SERIES



VC SERIES

*lable with fast recovery characteristic

VARO

SEMICONDUCTOR DIVISION

Wakefield Heat Sinks

DELTA DIVISION

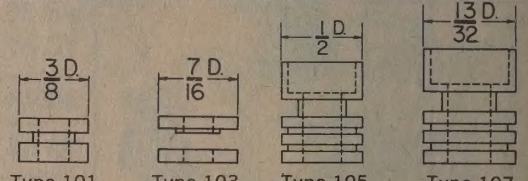
The table below is an INDEX or ready reference to locate the types of Heat Sinks available for specific semiconductors. For complete technical data, including convection curves, refer to Distributor Products Catalog No. 102.

Heat Sink Device	201, 202, 2023	204, 205, 207, 209	211, 213, 215	222	224	254 Series	256 Series	256 DM	260-5 Series	260-18 Series	292	296 Series	300 Series	401, 403, 413, 421, 423, 431	441	451	501, 502, 503	504, 505	601, 603	611, 621, 623, 641	630 Series	680 Series	690	695	MN 2131 Series	WN 1244-5	WN 1245-6	WN 1541 -6 & -9
TO-3														X			X			X	X	X	X				
TO-5		X			X	X			X			X															
TO-8			X																X			X	X				
TO-18	X			X						X																	
TO-36														X			X			X		X	X				
TO-66														X			X			X	X	X	X				
TO-92								X			X																
Tex. Inst. Version of TO-92							X																				
TO-59	(10-32 x 7/16 hex)												X	X			X	X	X	X		X	X	X				
TO-62	(10-32 x 9/16 hex)												X	X			X	X	X	X		X	X	X				
TO-61	(1/4 - 28 x 11/16 hex)												X	X			X	X		X		X	X					
TO-63	(5/16 - 24 x 7/8 hex)													X			X	X		X		X	X					
DO-8	(3/8 - 24 x 1-1/16 hex)													X	X	X	X	X	X	X		X	X			X	X	X
DO-30	(1/2 - 20 x 1-1/16 hex)													X	X	X	X	X		X		X	X		X	X	X	X
DO-9	(3/4 - 16 x 1-1/4 hex)													X	X	X	X			X		X			X		X	X
	(3/4 - 16 x 1-5/8 hex)															X									X			X
TO-82	(2N1015 types)													X			X			X		X	X					
DO-21 & DO-24	Press-fit Diodes & SCRs												X	X	X	X	X	X	X	X								

SERIES 100 Teflon Insulating Washers and Fasteners

For electric isolation of heat sinks from their mountings. Nylon fasteners also available.

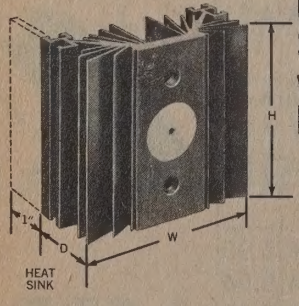
Type 101 for Series 500 Coolers	.5kv hypot, $.09/pr
Type 103 for Series 300, 400, 500	1.5kv hypot, .05 ea.
Type 105 for Types 441/451, Series WN	5.0kv hypot, .20 ea.
Type 107 for Series 300, 400, 500	5.0kv hypot, .20 ea.

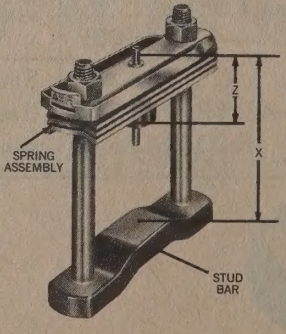


Type 101 Type 103 Type 105 Type 107

MODEL 130 / NEW

Compression Mounted SCR Clamp and various Type PP Heat Sinks





For each compression-mounted SCR or diode, a force indicating clamp and two sinks are used. Black painted sinks are center drilled 1/8" dia. and also have 7/16" dia. holes 1 3/8" above and below center to accept epoxy coated stud bar, rated 5kv. 1 7/8" dia. machined face is flat and has no finish.

SPRING ASSEMBLY:

Type	Leaves	Z"	Max. Force	Approx. Net Price each for 500+ lots
130-2	2	.50	800 lbs.	$1.06
130-3	3	.61	1200	1.25
130-4	4	.72	1600	1.44
130-5	5	.83	2000	1.62

STUD BAR:

Type	X" min.	X" max.	Approx. Net Price each for 500+ lots
130-A	1.74	2.12	$1.44
130-B	2.05	2.43	1.44
130-C	2.36	2.74	1.44
130-D	2.67	3.05	1.60
130-E	2.98	3.36	1.60
130-F	3.29	3.67	1.60
130-G	3.60	3.98	1.60

HEAT SINKS: (Approx. $1.67 to $5.00/, 500 lots)

Type No.	H	W	D	T	*w/pair
3849-4.5-BA	4.5	5.0	1.1	.31	103
3529-4.5-BA	4.5	5.0	1.1	.31	103
3560-4.5-BA	4.5	5.0	2.0	.38	145
3561-4.5-BA	4.5	5.0	2.0	.38	145
3559-4.5-BA	4.5	7.0	3.1	.38	235
3559-7.5-BA	7.5	7.0	3.1	.38	300

*Watts per pair for natural convection temperature rise of 75 C. For complete specifications, request Bulletin 130.

Net

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Wakefield Heat Sinks

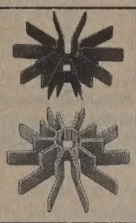
Highest Power Dissipation per Unit Cost

Approximate NET PRICES per thousand lots are provided. Where a price range is given, this is for small, simple heat sinks up to the larger, more complex units.

SERIES 200 — Snap-on Cooler for entire JEDEC Transistor Case Tolerance Range

Price: Aluminum $ 60 — $100/M
BeCu $110 — $200/M

Available in Aluminum (except Nos. 222, 224) and in Beryllium Copper. Horizontal or vertical orientation for natural or forced convection. NATURAL CONVECTION POWER DISSIPATION, given below, for 50°C case rise above ambient:

Model No.	Model No.	Model No.	Model No.
*201—.7 †205— .8 *202—.6 ‡211—1.0 †204—.6	*203— .9 †207—1.1 ‡213—1.2	†209—1.8 ‡215—1.9	*222— .9 †224—1.2
			

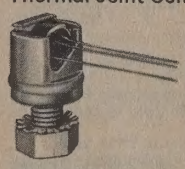
*For TO-18, etc. with .161/.240 diams.
†For TO-5, etc. with .275/.370 diams.
‡For TO-8, etc. with .440/.554 diams.

Installation Tools for Series 200 Heat Sinks: $1.50 each. Model 160 is for all sizes except Nos. 211, 213, and 215 which use Model 161 tool.

SERIES 254 — Thermal Retainers for TO-5 Case Style Transistors.

Price: $95 — $170/M

Preferred mounting of TO-5 units with silicon die attached to the header: heat sink at bottom face of header with No. 254 (4 types) mounted on cooler or chassis, using Type 120 Thermal Joint Compound. Material: Zamak 3 body.



Type 254-SI electrically isolated and stud-mounted

Type 254-S stud-mounted

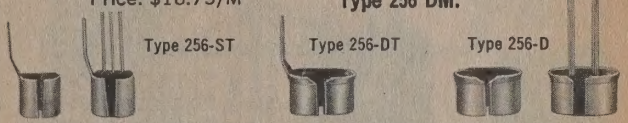
Type 254-T tapped hole

Type 254-LS Locking Spring

Type 254-P plain

SERIES 256 — Brass Clips for Plastic Transistors (TI Version of TO-92). For TO-92 use Type 256 DM.

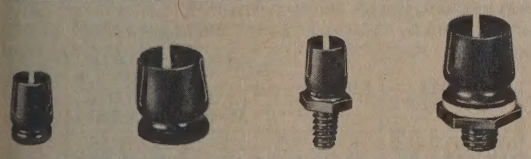
Price: $16.75/M



Type 256-ST Type 256-DT Type 256-D

Single (S) and Double (D) units available for use as an electrostatic shield and/or a thermal retainer. Available with or without shield Tab (T). Skirted end for easy insertion of transistor. Material: ½ hard brass for solderability. (Except Type 256-DM is Be Cu).

SERIES 260 — ECONOMICAL CUP CLIPS: TO-5 and TO-18.



Price:
$80/M for "P" to $250/M for "E" to $450/M for "B" units.

Non-Insulated Cup Clips: Plain base for soldering or bonding, tapped base, or stud which is soldered to cup clip. Two types of Insulated Cup Clips: (1) Epoxy Insulated (E) for economy, and (2) Beryllium Oxide Insulated (B) mainly for applications requiring low stray capacity.

Material: Beryllium Copper cups and brass bases.

MODEL NOS.

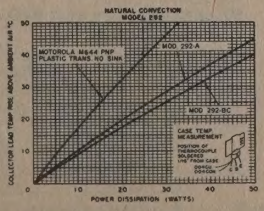
CUP CLIPS	Plain	Tapped base for 2-56 screw	Tapped base for 4-40 screw	Stud 4-40	Stud 6-32	Stud 10-32
TO-5 Units						
Non-Insulated	*260P5	—	2604T5	—	2606SH5	26010SH5
Epoxy Insulated (E)	—	—	2604T5E	—	2606SH5E	26010SH5E
	—	—	2604TH5E	—	—	—
Be O Insulated (B)	†260P5B		**2604TH5B		2606SH5B	26010SH5B
TO-18 Units		2602T18				
Non-Insulated	*260P18	2602TH18	—	2604SH18	2606SH18	—
Epoxy Insulated	—	2602TH18E	—	2604SH18E	2606SH18E	—
		**2602TL18E				
Be O Insulated	†260P18B	2602TH18B	—	2604SH18B	2606SH18B	—

*For solder joints or with pan head screws: #4 for TO-5 style, #2 for TO-18.
**Thicker base for wider screw length tolerance.
†For mounting with thermally conductive adhesive such as Delta Bond 152ETD.

Installation Tool available.

TYPE 292 — Heat Sink for most TO-92 Plastic Transistors

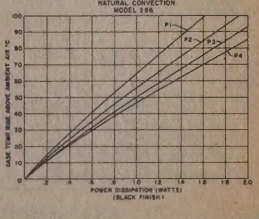
Price: $15.40/M (Al)



Snap-on units save space on pc board mountings. Fin is .54" high x .60" wide. Material: Aluminum (no finish) or Beryllium Copper with Black Ebonal "C" finish.

TYPE 296 — Heat Sink for TO-5s

Price: $21.40 — $28.00/M (Al)



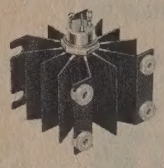
Snap-on heat sinks take minimum pc board space. Available in 1.25" fin width with 4 "A" heights: ¼", ½", ¾", 1". Material: Aluminum (no finish) or Beryllium Copper with Black Ebonal "C" finish.

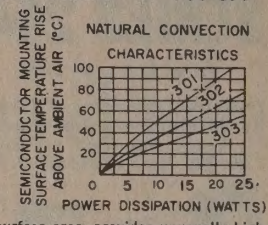
Wakefield Heat Sinks

For Semiconductor Ready Reference, refer to the first of these four pages. Net Prices given below are based on lots of 500 or more and are approximate.

SERIES 300 — Optimum Cooling with Radial Fin Coolers

Price: $.80 — $1.30 each





The radial fin design, combined with large surface area, provides unusually high natural convection cooling per unit volume. Stud-mounted (up to 11/16" hex case), press-fitted rectifiers and transistors (see first page) are accommodated. A semiconductor can be mounted on each end. Thermal conductivity is improved by using Type 120 Thermal Joint Compound (see last page).
Series 300 units are compact: only 2" square and available in three heights . . . ¾" (Model NC-301), 1½" (Model 302), or 3" (Model 303). Coolers can be mounted from the bottom or either of two sides. Insulators available. Ideal for compact stacking arrangements.

Material: Aluminum alloy 6063-T-5 per QQ-A-200, black anodize finish.

SERIES 400 — Natural Convection Heat Sinks... minimum space

Price: $.80 — $3.70 each

Fig. A

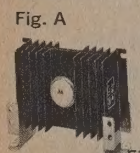
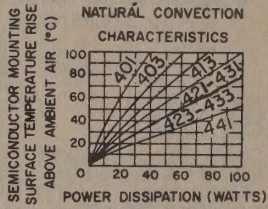


Fig. B



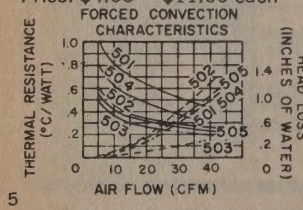
This series of heat sinks is for natural convection or forced convection with moderate air flow. Models 401, 403, 413 and 421 have vertical mounting adapters available as seen in Fig. A. Series 100 insulators available.

Material: Aluminum alloy 6063-T5 per QQ-A-200, black anodize finish.

MODEL	FIG.	H	INCHES W	INCHES D
401	A	1.50	4.81	1.25
403	A	3.00	4.81	1.25
413	A	3.00	4.81	1.87
421	A	3.00	4.81	2.63
423	A	5.50	4.81	2.63
431	B	3.00	4.75	3.00
433	B	5.50	4.75	3.00
441	B	5.50	4.75	4.50

SERIES 500 — Forced Convection Coolers permit maximum heat transfer in minimum space

Price: $4.00 — $11.00 each



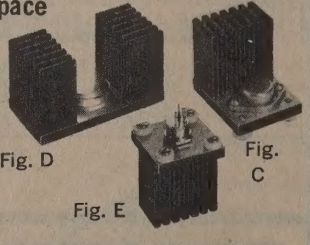


Fig. D

Fig. C

Fig. E

Copper fins and base, with optimized fin spacing, achieves the equivalent cooling performance of much larger aluminum coolers, permitting greater latitude in packaging.

Material: Base copper per QQ-C-504 and Fin Copper per QQ-C-576, black ebonal finish.

MODEL	FIG.	INCHES H	INCHES W	INCHES D	DEVICE MTNG. AREA
501	C	1.75	1.75	2.25	1.25 x 1.75
502	D	1.75	3.50	1.75	1.50 x 1.75
503	D	1.75	3.50	3.50	1.50 x 3.00
504	E	1.75	1.75	1.75	1.75 x 1.75
505	E	1.75	1.75	2.00	2.00 x 1.75

SERIES 600 — Heat Sinks for mounting on circuit boards and on chassis exteriors

Price: $.55 — $1.20 each

Fig. F

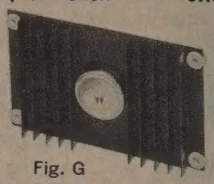
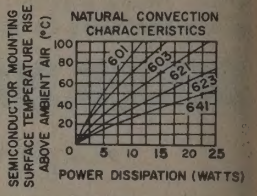


Fig. G

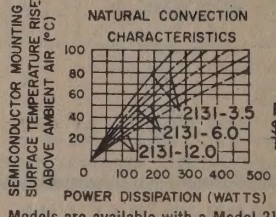


These low profile coolers are ideal for compact designs. Height (D) is given below. Used in natural and forced convection applications.

Material: Aluminum alloy 6063-T5 per QQ-A-200, black anodize finish.

MODEL	FIG.	INCHES H	INCHES W	INCHES D	DEVICE MTNG. WIDTH
601	F	1.25	2.02	.56	.81
603	F	2.00	2.02	.56	.81
621	G	1.50	4.81	.46	1.31
623	G	3.00	4.81	.46	1.31
641	F	3.00	4.12	1.00	1.31

SERIES MN — King Size Heat Sinks for 240/650 amp rectifiers as large as 3.5" x 3.5" square plate



Price:
$7.50 — $20.00 ea.
Type 109: 95¢ ea.

Fig. H

Models are available with a Model 2159 Heat Sink Insert for increased heat sink dissipation as shown in dotted lines in chart. Mounting of this type cooler: (1) Use four integral mounting lugs on each end with fasteners, or (2) use Type 109 Mounting Brackets with 5000v standoff insulation strength.

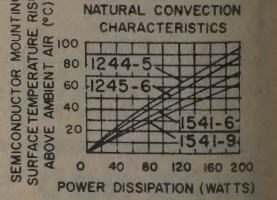
Material: Aluminum alloy 6063-T5 per QQ-A-200, black anodize finish.

MODEL	FIG.	INCHES H	INCHES W	INCHES D	MIN. DEVICE MTNG. WIDTH
MN-2131-3.5	H	3.5	9.25	6.75	3.45
MN-2131-6	H	6.0	9.25	6.75	3.45
MN-2131-12	H	12.0	9.25	6.75	3.45
MN-2159-3.5	H	3.5	3.37	3.43	
MN-2159-6	H	6.0	3.37	3.43	
MN-2159-12	H	12.0	3.37	3.43	

SERIES WN — King Size Coolers for 70/350 amp rectifiers

Price:
$3.75 —
$12.00 each

Fig. I



These Heat Sinks come in three sizes to accommodate 1 1/16", 1¼", and 1¾" hex size high power rectifiers and SCRs. Units are foot-mounted and insulators are available.

Material: Aluminum allow 6063-T5 per QQ-A-200, black anodize finish.

MODEL	FIG.	INCHES H	INCHES W	INCHES D	MIN. DEVICE MTNG. WIDTH
WN-1244-5	I	4.00	4.00	5.00	1.10
WN-1245-6	I	5.00	5.00	6.00	1.28
WN-1541-6	I	6.25	6.25	6.00	1.76
WN-1541-9	I	6.25	6.25	9.00	1.76

EXTRUSIONS are available in 3 ft. lengths. See Distributor Products Catalog for other configurations.

Net

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Wakefield Thermal Products

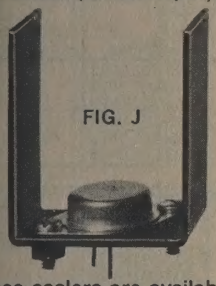
DELTA DIVISION

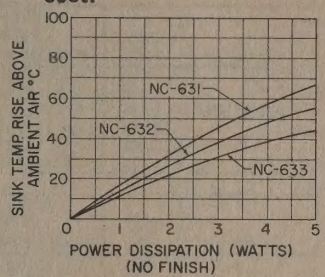
For types of semiconductors accommodated, see first page.

SERIES 630

Heat Sinks provide maximum cooling per unit cost.

Price: $37.80 — $75/M





These coolers are available with the mounting pattern provided for (1) TO-3 with socket or (2) TO-66 transistor.

Material: Type 1100-H14 aluminum with no finish or black anodize.

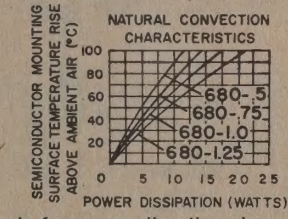
MODEL	FIG.	INCHES		
		H	W	D
631	J	1.00	1.50	1.00
632	J	2.00	1.50	1.00
633	J	3.00	1.50	1.00

SERIES 680

Circuit board heat sink for optimum cooling per unit volume occupied.

Price: $.73 — $.93 each in lots over 500.

Figure K



Units permit free circulation of air from any direction. Impacted from a high thermal conductivity aluminum alloy.

Material: 1100 aluminum per Mil-A-12545, black anodize finish.

MODEL	FIG.	INCHES		
		H	W	D
680— .5	K	.50	1.81	1.81
680— .75	K	.75	1.81	1.81
680—1.00	K	1.00	1.81	1.81
680—1.25	K	1.25	1.81	1.81

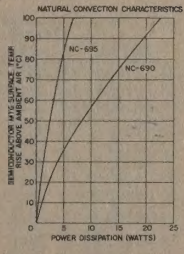
SERIES 690 and 695

High power dissipation per unit cost.

Prices: $250/M for 690 and $100/M for 695

MODEL 690

MODEL 695



The 690 and 695 units resulted from value analysis studies. In the 10 — 20w range, a flat blank slotted in the direction of heat flow and folded into a well-ventilated form . . . gives the most power dissipation per unit cost. This is accomplished with automatic tooling. No. 690 is 1.81″ square and 1.25″ high. No. 695 is 1.330 wide at top and is 31/64″ high.

Material: Type 1100-H14 aluminum, no finish or black anodize.

SERIES 170

Insulating Wafers and Washers.

Price: $105/M

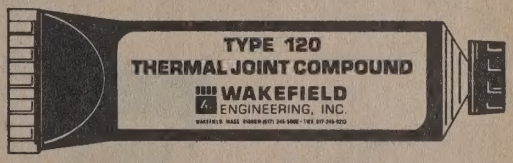
1. Model 170, 171, and 172 Wafers are for TO-3 and TO-66 transistors. The transistor side only has an epoxy coating (DELTA COATE 151H) to provide good thermal conductivity and electrical isolation. HYPOT: 200v d-c for No. 170, 400v d-c for No. 171 and 172.

2. Series 179 are beryllium oxide wafers with thermal conductivity comparable to aluminum but with excellent electrical insulating characteristics.

Thermal data is available on all types in Distributor Products Catalog No. 102.

TYPE 120

Thermal Joint Compound



This compound reduces the high thermal impedance of the air gap otherwise present between the mating surfaces of the semiconductor case and the heat sink. Also recommended for use with Series 170 Wafers. Type 120 thermal conductivity is approximately four times that of silicone grease. Will not harden, dry out, or melt after 1,000 hours at 200°C.

Available sizes: 2 oz., 5 oz. tube, 8 oz., 5 lbs., 20 lbs.

DELTA BOND 152

Thermally Conductive Adhesive

This adhesive is ideal for general cementing, for thermally bonding semiconductors and components to chassis or heat sinks while electrically isolating one from the other, for fabricating heat sinks or thermal links, and for all permanent bonding of assemblies which require thermally conductive interfaces. It produces a rigid high strength bond to porous and non-porous surfaces such as metals, glass, ceramics, and most plastics.

Types and formulations available:

Type 152-T: 2-tube kit with 5 oz. each.

Type 152-1-RTA: 30 gm. (1 oz.) premeasured bi-pax kit.

Type 152-2-RTA: 200 gms resin with 14 gms. of Type RTA.

Type 153-2-RTA Delta Cast: 200 gms. resin with 14 gms RTA.

For complete specifications on epoxy systems from Wakefield, request Epoxy Tech Bulletin.

RF SWITCHES

AMPHENOL
THE BUNKER-RAMO CORPORATION

Series 303 High Isolation Microwave Switches

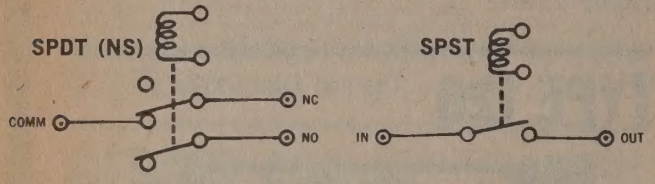
Compact coaxial switches, with superior isolation characteristics over entire operating range, particularly suitable where crosstalk interference must be minimized. Other units are also available, please request additional information and specifications.

CHARACTERISTICS

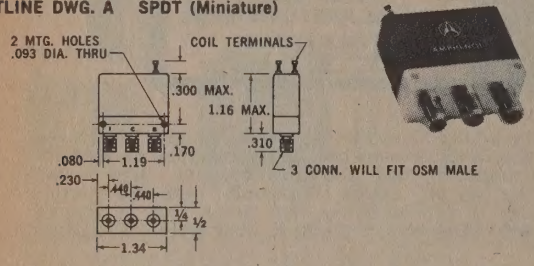
ELECTRICAL: Frequency range: 0 to 12.4 GHz. **Characteristic impedance:** 50 ohms. **Crosstalk (isolation):** 60 db min. @ 12.4 GHz. **SWR:** 1.5:1 max. @ 12.4 GHz. **Insertion loss:** 0.5 db maximum. **Contact resistance:** 60.0 milliohms. **RF power rating:** 100 watts @ 1 GHz (power off during switching). **High RF voltage rating:** 1000 v peak @ 60 GHz. **Switching time:** operate: 15 ms max.; release: 10 ms max.

MECHANICAL: Minimum life: 1,000,000 cycles.

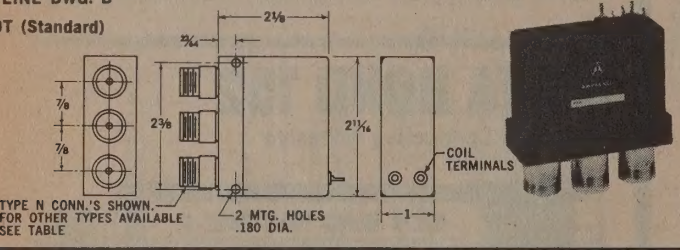
ENVIRONMENTAL: Temperature range: —55°C to 55°C. **Moisture resistance:** 10 day cycle. **Shock:** operating: 10 g's; non-operating: 100 g's. **Vibration:** operating: Test Cond. B, 10 to 55 cps; non-operating: 20 g's, 10 to 2000 cps. **Altitude and cold:** 0 to 70,000 ft.



OUTLINE DWG. A SPDT (Miniature)



OUTLINE DWG. B
SPDT (Standard)



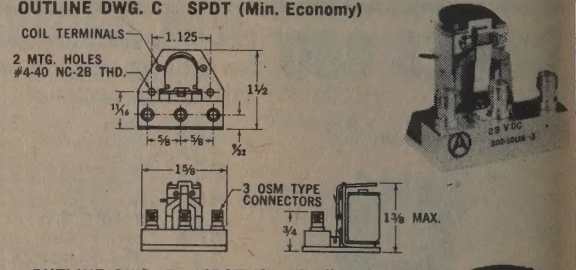
FUNCTIONS AND PART NUMBERS

Connector	Coil Volts	SPDT (with cover) Outline Dwg. A Non-Latching	SPDT (with cover) Outline Dwg. A Latching	SPDT (Economy Ver Outline Dwg
OSM△/BRM.	6 DC	303-10179-1	303-10179-21	303-10116
	12 DC	303-10179-2	303-10179-22	303-10116
	26 DC	303-10179-3	303-10179-23	303-10116
	48 DC	303-10179-4	303-10179-24	
	120 DC	303-10179-5	303-10179-25	
	115 AC	303-10179-6	303-10179-26	303-10116

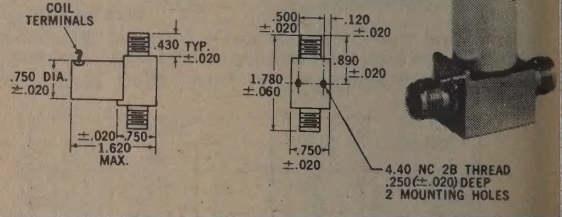
Connector	Coil Volts	SPDT (with cover) Outline Dwg. B Non-Latching	SPDT (with cover) Outline Dwg. B Latching	SPST (Shutter) Outline Dwg.
TNC	6 DC	303-10168-1	303-10168-21	
	12 DC	303-10168-2	303-10168-22	
	26 DC	303-10168-3	303-10168-23	303-10969
	48 DC	303-10168-4	303-10168-24	
	120 DC	303-10168-5	303-10168-25	
	115 AC	303-10168-6	303-10168-26	
N	6 DC	303-10167-1	303-10167-21	
	12 DC	303-10167-2	303-10167-22	
	26 DC	303-10167-3	303-10167-23	
	48 DC	303-10167-4	303-10167-24	
	120 DC	303-10167-5	303-10167-25	
	115 AC	303-10167-6	303-10167-26	

△ Registered trademark of Omni-Spectra, Inc.

OUTLINE DWG. C SPDT (Min. Economy)



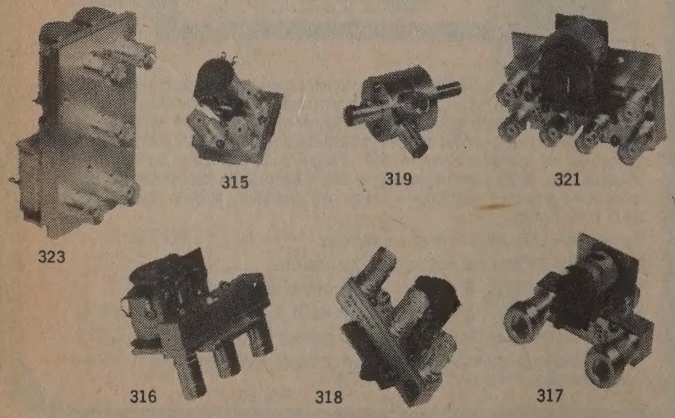
OUTLINE DWG. D SPST (Standard)



Coaxial Relays

Precision coax units. Maximum time to operate and release is 20 milliseconds. Gold-plated, fine silver contacts assure reliable low-level operation. Minimum life expectancy is 1,000,000 cycles, when switch is operated at speeds of less than 10 Hz. Switches are impedance matched to 50-ohm cable, though loss is negligible with 75-ohm cable. Operation is break-be make. All materials are corrosion resistant.

Units meet applicable portions of military connector spe follows: BNC — Mil-C-3608 and N — Mil-C-71.



Part No.	Termination	Function	Connectors	Frequency (MHz)	Power (W)	Coil Volts
315-010002-3	Open	SPDT	BNC 1000	100	26 DC	280
316-010082-3	Short	SPDT	BNC 2750	100	26 DC	280
316-010082-6	Short	SPDT	BNC 2750	100	120 DC	7000
316-010102-8	Short	SPDT	BNC 2750	100	115 AC	550
317-010202-3	Short	SPDT	BNC 2750	100	26 DC	280
317-010215-8	Short	SPDT	BNC 2750	100	115 AC	550
317-010242-3	Short	SPDT	N 4000	100	26 DC	280
317-010255-8	Short	SPDT	N 4000	100	115 AC	550
318-010407-3	Open	SPDT	BNC 2750	100	26 DC	280
318-010381-0	Short	SPDT	BNC 2750	100	lever manual	—
318-010382-3	Short	SPDT	BNC 2750	100	26 DC	280
318-011165-3	Res.	SPDT	BNC 2750	100	26 DC	280
318-011576-8	Res.	SPDT	BNC 2750	100	115 AC	550
319-011141-0	Open	SPDT	BNC 1000	100	rotary manual	—
320-010931-3	Open	SPDT	N 1200	1000	26 DC	200
321-011062-0	Open	DPDT	BNC 1000	100	lever manual	—
321-011064-3	Open	DPDT	BNC 1000	100	26 DC	200
322-011431-0	Open	1P4T	BNC 2750	100	rotary manual	—
323-011651-3	Open	1P4T	BNC 900	100	26 DC	280
322-011442-0	Open	1P6T	BNC 2750	100	rotary manual	—
325-011635-3	Short	1P6T	BNC 900	100	26 DC	280
325-011641-3	Open	1P6T	BNC 900	100	26 DC	280

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RF SWITCHES

AMPHENOL
THE BUNKER-RAMO CORPORATION

Series 360 DYNAFORM FUNCTIONS AND PART NUMBERS

n.	Term.	Schematic	Coil Volts	SPDT Outline Dwg. A	SPDT Outline Dwg. B	DPDT Outline Dwg. C	DPDT Outline Dwg. D	Transfer Outline Dwg. E
	SH	1	26 DC 110 DC 115 AC	360-11891-12 360-11891-34 360-11891-45	360-11891-13 360-11891-35 360-11891-46	360-11896-12 360-11896-34 360-11896-45	360-11896-13 360-11896-35 360-11896-46	
	NS	2	26 DC 110 DC 115 AC	360-11891-14 360-11891-36 360-11891-47	360-11891-15 360-11891-37 360-11891-48	360-11896-14 360-11896-36 360-11896-47	360-11896-15 360-11896-37 360-11896-48	
	50 Ω RT	3	26 DC 110 DC 115 AC	360-11891-16 360-11891-38 360-11891-49	360-11891-17 360-11891-39 360-11891-50	360-11896-16 360-11896-38 360-11896-49	360-11896-17 360-11896-39 360-11896-50	
	75 Ω RT	3	26 DC 110 DC 115 AC	360-11891-18 360-11891-40 360-11891-51	360-11891-19 360-11891-41 360-11891-52	360-11896-18 360-11896-40 360-11896-51	360-11896-19 360-11896-41 360-11896-52	
	95 Ω RT	3	26 DC 110 DC 115 AC	360-11891-20 360-11891-42 360-11891-53	360-11891-21 360-11891-43 360-11891-54	360-11896-20 360-11896-42 360-11896-53	360-11896-21 360-11896-43 360-11896-54	
	TRANS	4	26 DC 110 DC 115 AC					360-11891-22 360-11891-44 360-11891-55
	SH	1	26 DC 110 DC 115 AC	360-11892-12 360-11892-34 360-11892-45	360-11892-13 360-11892-35 360-11892-46	360-11897-12 360-11897-34 360-11897-45	360-11897-13 360-11897-35 360-11897-46	
	NS	2	26 DC 110 DC 115 AC	360-11892-14 360-11892-36 360-11892-47	360-11892-15 360-11892-37 360-11892-48	360-11897-14 360-11897-36 360-11897-47	360-11897-15 360-11897-37 360-11897-48	
	50 Ω RT	3	26 DC 110 DC 115 AC	360-11892-16 360-11892-38 360-11892-49	360-11892-17 360-11892-39 360-11892-50	360-11897-16 360-11897-38 360-11897-49	360-11897-17 360-11897-39 360-11897-50	
	75 Ω RT	3	26 DC 110 DC 115 AC	360-11892-18 360-11892-40 360-11892-51	360-11892-19 360-11892-41 360-11892-52	360-11897-18 360-11897-40 360-11897-51	360-11897-19 360-11897-41 360-11897-52	
	95 Ω RT	3	26 DC 110 DC 115 AC	360-11892-20 360-11892-42 360-11892-53	360-11892-21 360-11892-43 360-11892-54	360-11897-20 360-11897-42 360-11897-53	360-11897-21 360-11897-43 360-11897-54	
	TRANS	4	26 DC 110 DC 115 AC					360-11892-22 360-11892-44 360-11892-55
	SH	1	26 DC 110 DC 115 AC	360-11890-12 360-11890-34 360-11890-45	360-11890-13 360-11890-35 360-11890-46	360-11895-12 360-11895-34 360-11895-45	360-11895-13 360-11895-35 360-11895-46	
	NS	2	26 DC 110 DC 115 AC	360-11890-14 360-11890-36 360-11890-47	360-11890-15 360-11890-37 360-11890-48	360-11895-14 360-11895-36 360-11895-47	360-11895-15 360-11895-37 360-11895-48	
	50 Ω RT	3	26 DC 110 DC 115 AC	360-11890-16 360-11890-38 360-11890-49	360-11890-17 360-11890-39 360-11890-50	360-11895-16 360-11895-38 360-11895-49	360-11895-17 360-11895-39 360-11895-50	
	75 Ω RT	3	26 DC 110 DC 115 AC	360-11890-18 360-11890-40 360-11890-51	360-11890-19 360-11890-41 360-11890-52	360-11895-18 360-11895-40 360-11895-51	360-11895-19 360-11895-41 360-11895-52	
	95 Ω RT	3	26 DC 110 DC 115 AC	360-11890-20 360-11890-42 360-11890-53	360-11890-21 360-11890-43 360-11890-54	360-11895-20 360-11895-42 360-11895-53	360-11895-21 360-11895-43 360-11895-54	
	TRANS	4	26 DC 110 DC 115 AC					360-11890-22 360-11890-44 360-11890-55

IL
ARACTERISTICS
0°C

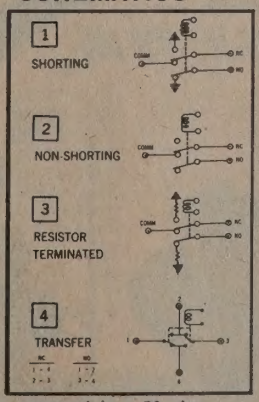
Nominal Voltage	Operating Range	Resistance, ohms ±10%
26 DC	20 - 32	260 ohms
110 DC	85 - 130	5100 ohms
115 AC (50 - 400 Hz)	90- 130	1500 ohms thru diodes

ECTRICAL CHARACTERISTICS

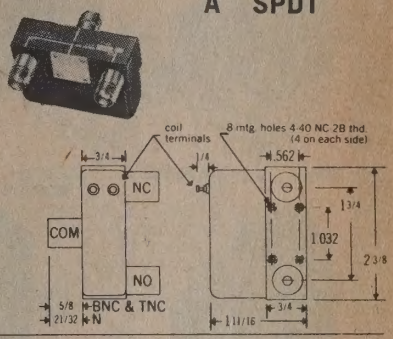
n.	Term.	Typical VSWR (Frequency Gc) .03	0.2	0.4	1.0	2.0	4.0	6.0	8.0	Typical Crosstalk - db (Frequency Gc) .03	0.2	0.4	1.0	2.0	4.0	6.0	8.0
	SH	1.03	1.06	1.08	1.10	1.20	1.25	1.30	1.35	70	66	60	53	42	35	25	15
	NS	1.03	1.06	1.08	1.10	1.21	1.27	1.31	1.35	68	64	58	51	40	33	22	15
	50 Ω RT	1.03	1.06	1.08	1.14	1.25	1.50	—	—	40	35	31	24	17	14	—	—
	75 Ω RT	1.03	1.06	1.08	1.14	1.25	1.50	—	—	40	35	31	24	17	14	—	—
	95 Ω RT	1.03	1.06	1.08	1.14	1.25	1.50	—	—	40	35	31	24	17	14	—	—
	TRANS	1.05	1.08	1.10	1.20	1.50	—	—	—	45	38	32	24	17	—	—	—
	SH	1.03	1.06	1.08	1.10	1.20	1.25	1.30	1.35	70	66	60	53	42	35	25	15
	NS	1.03	1.06	1.08	1.10	1.21	1.27	1.31	1.35	68	64	58	51	40	33	22	15
	50 Ω RT	1.03	1.06	1.08	1.14	1.25	1.50	—	—	40	35	31	24	17	14	—	—
	75 Ω RT	1.03	1.06	1.08	1.14	1.25	1.50	—	—	40	35	31	24	17	14	—	—
	95 Ω RT	1.03	1.06	1.08	1.14	1.25	1.50	—	—	40	35	31	24	17	14	—	—
	TRANS	1.05	1.08	1.10	1.20	1.50	—	—	—	45	38	32	24	17	—	—	—
	SH	1.03	1.04	1.07	1.10	1.15	1.18	1.20	1.25	70	66	60	53	42	35	25	15
	NS	1.03	1.04	1.07	1.10	1.17	1.20	1.22	1.25	68	64	58	51	40	33	22	15
	50 Ω RT	1.03	1.05	1.08	1.12	1.18	1.50	—	—	41	35	31	24	17	14	—	—
	75 Ω RT	1.03	1.05	1.08	1.12	1.18	1.50	—	—	39	32	30	23	16	14	—	—
	95 Ω RT	1.03	1.05	1.08	1.12	1.18	1.50	—	—	37	31	29	22	15	14	—	—
	TRANS	1.05	1.10	1.15	1.20	1.50	—	—	—	45	38	32	24	17	—	—	—

: High frequency electrical characteristics are typical values (not maximum) as measured in a 50 ohm uit and may be used for most design analyses. For more exacting applications, maximum values in the ency range may be obtained upon request. SWR measured to common with a matched 50 ohm termina- **For additional specifications request Amphenol RF Switches Catalog SS-1.**

SCHEMATICS



A SPDT



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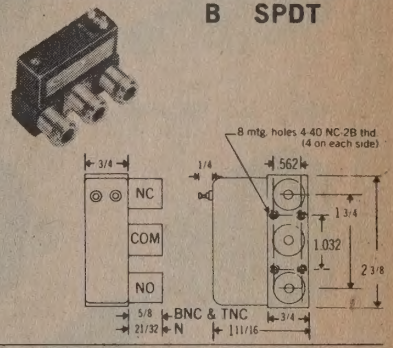

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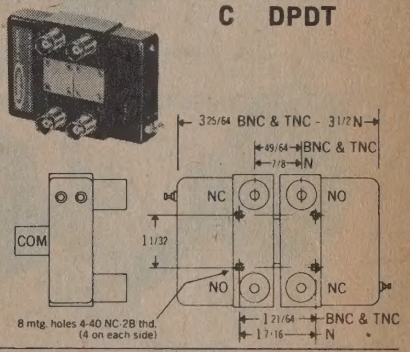

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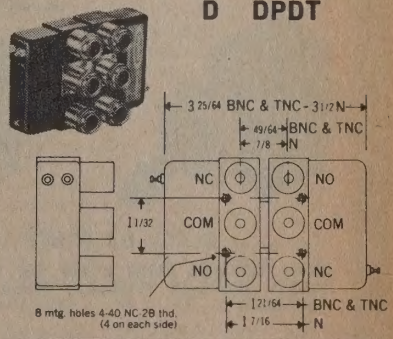

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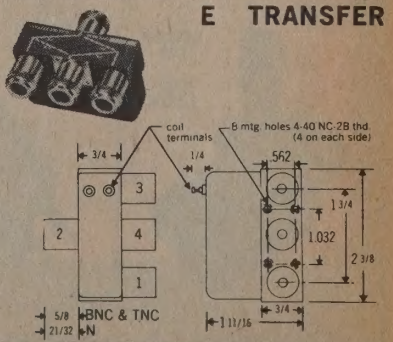
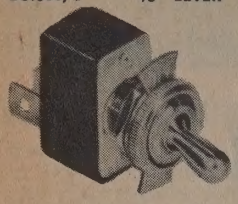
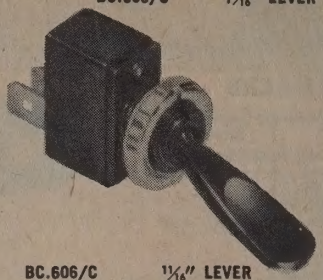


ARCOLECTRIC SWITCH CO.

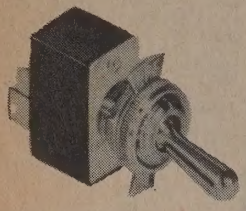
BC.600/C 3/8" LEVER



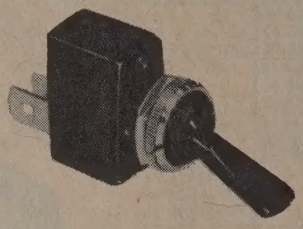
BC.605/C 1 1/16" LEVER



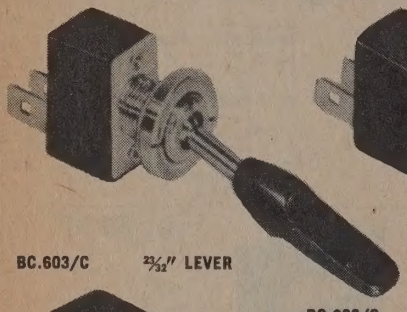
BC.601/C 7/16" LEVER



BC.606/C 1 1/16" LEVER



BC.602/C 1 5/8" LEVER



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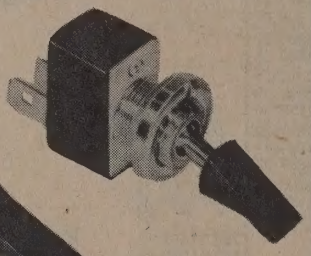
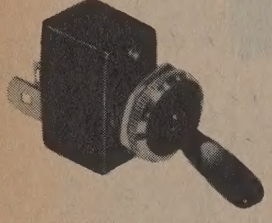
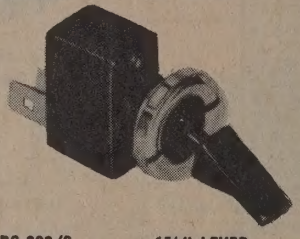


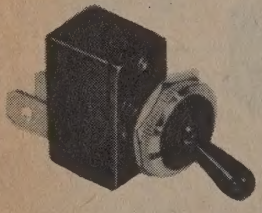
BC.603/C 23/32" LEVER



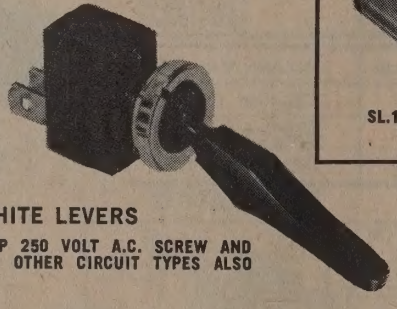
BC.608/C 1 3/16" LEVER



BC.604/C 15/32" LEVER



BC.609/C 1 5/8" LEVER



BLACK OR WHITE LEVERS

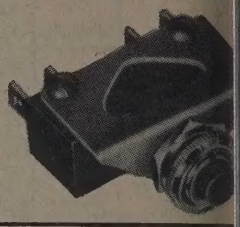
ABOVE SWITCHES RATED 2 AMP 250 VOLT A.C. SCREW AND SOLDER TERMINALS AVAILABLE. OTHER CIRCUIT TYPES ALSO AVAILABLE.

MOMENTARY PUSH BUTTON SWITCHES

T.906 N.O.
T.908 N.C.
1 amp 250 volt A.C.
Red/Black/White/Green
Overall length 1 3/32".
Mtg. hole 9/32" dia.

T.936/D1 N.O.
T.938/D1 N.C.
1 amp 250 volt A.C.
Red/Black/White/Green
Overall length 1 7/8".
Mtg. Hole 1/2" dia.

C.290/P.I.
2-CIR N.O./N.C.
15A 250 V A.C.
Red/Black/White/Gr
Overall length 1 1/2
Mtg. hole 1/2" dia.

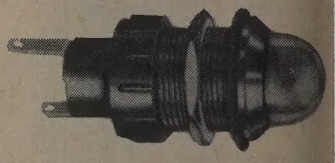


LAMP HOLDERS

SL.60 MIDGET SCREW BASE
RED/GREEN/AMBER/CLEAR/BLUE

Threaded nylon bush and and hexagon nut fixing. Bulbs can readily be replaced from front of panel by unscrewing coloured lens.
Overall length 1 3/64". Mtg. hole 3/8" dia.

SL.91 MIN BAY BASE
RED/GREEN/AMBER/CLEAR/BLUE



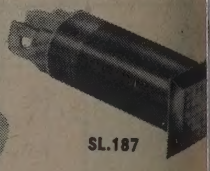
Bulbs for SL.91 can be replaced fr
front or rear of panel.
Overall length 2 1/4". Mtg. hole 3/4" di

NEON INDICATOR LIGHTS

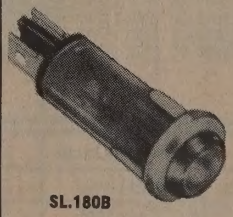
Complete with built-in neon and resistor for 125V A.C/D.C operation. Standard stock colors red and amber.

SL.190

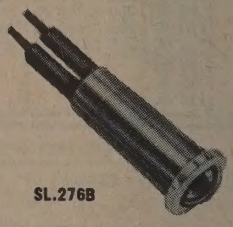
SL.265



SL.187



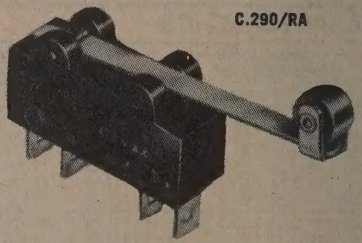
SL.180B



SL.276B

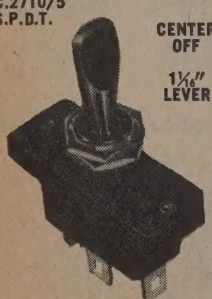
SL.185B

C.290/RA



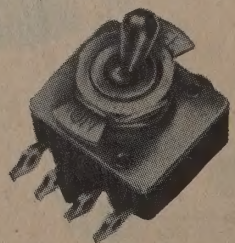
Depending on terminal used this switch provides N/O N/O spring-return 2-circuit switching 1" Mtg. centers. 15A 250 V A.C.

C.2710/5
S.P.D.T.
CENTER OFF
1 1/16" LEVER



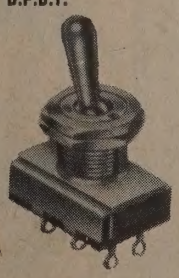
13A 250V A.C.

T.620
D.P.S.T.



3A 250V A.C.

T.957
D.P.D.T.



1A 250V A.C.

Arcoelectric specialize in the manufacture of switches and signal lamps for the electronic, automotive, electrical and appliance industry.

FOR COMPLETE INFORMATION AND SPECIFICATIONS OF OUR PRODUCTS PLEASE REQUEST CATALOG No. 137

ARCOLECTRIC SWITCH CO.

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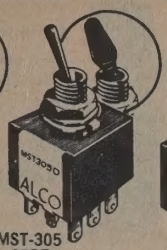
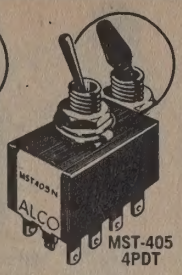
ALCOSWITCH

DIV. OF ALCO ELECTRONIC PRODUCTS, INC.

MST-105
SPDT

MST-205
DPDT


MST-305
3PDT


MST-405
4PDT

The original Alcoswitch Series of high quality ultra-miniature toggle switches combines high current capacity and long life in a ½" case. Slim, bat handle or optional plastic caps(*) are provided. Terminals and contacts are solid silver. Case material is black phenolic resin; 1/4-40 threaded bushing. Rated 5 amps at 115 VAC. SPDT and DPDT types have life cycle of over 80,000 on-off operations. High voltage barriers between terminals and contacts. Rated 5 amps @ 115 VAC.

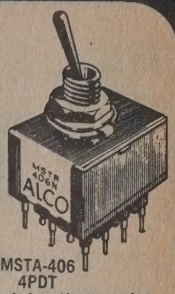
Model	Contacts	Description	One-24	25-99	100-499	500-999
MST-115D*	SPDT	On-None-On	1.70	1.16	1.02	.85
MST-105D	SPDT	On-None-On	1.65	1.12	.99	.83
MST-105E	SPDT	On-Off-On	1.95	1.33	1.17	.975
MST-105F	SPDT	None-On-(On)	1.95	1.33	1.17	.975
MST-105G	SPDT	(On)-Off-(On)	1.95	1.33	1.17	.975
MST-105H	SPDT	On-Off-(On)	1.95	1.33	1.17	.975
MST-215N*	DPDT	On-None-On	2.20	1.47	1.32	1.10
MST-205N	DPDT	On-None-On	2.15	1.43	1.29	1.08
MST-205P	DPDT	On-Off-On	2.55	1.72	1.53	1.28
MST-205R	DPDT	None-On-(On)	2.55	1.72	1.53	1.28
MST-205S	DPDT	(On)-Off-(On)	2.55	1.72	1.53	1.28
MST-205T	DPDT	On-Off-(On)	2.55	1.72	1.53	1.28
MST-205PA	DP3T	On-On-On	2.85	1.90	1.71	1.42
MST-205SA	DP3T	(On)-On-(On)	3.15	2.14	1.89	1.58
MST-205TA	DP3T	On-On-(On)	3.15	2.14	1.89	1.58
MST-315D*	3PDT	On-None-On	3.90	2.61	2.34	1.95
MST-305D	3PDT	On-None-On	3.85	2.57	2.31	1.925
MST-305E	3PDT	On-Off-On	4.15	2.82	2.49	2.075
MST-305F	3PDT	None-On(On)	4.15	2.82	2.49	2.075
MST-305H	3PDT	On-Off-(On)	4.15	2.82	2.49	2.075
MST-415N*	4PDT	On-None-On	4.90	3.33	2.94	2.45
MST-405N	4PDT	On-None-On	4.85	3.29	2.91	2.43
MST-405P	4PDT	On-Off-On	5.35	3.64	3.21	2.68

Hardware supplied mounted. (On) Indicates momentary positions.

MSTA-106
SPDT

MSTA-206
DPDT

MSTA-306
3PDT


MSTA-406
4PDT

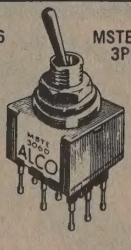
This new Alcoswitch "MSTA" Series fills a need for those who want the best product possible at an optimum price. Similar in appearance and specs to the Alco "E" Series but without the waterproof feature. Has the important features wanted in a good miniature: turret terminals, extra-wide contacts, heavier current capabilities, low-loss, high heat and high impact case construction. "No Tear" shoulder on bushing. 6A 125V/3A 280 VAC.

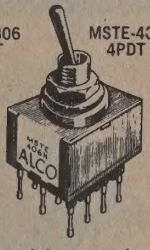
Model	Contacts	Description	One-24	25-99	100-499	500-999
MSTA-106D	SPDT	On-None-On	1.80	1.23	1.08	.90
MSTA-106E	SPDT	On-Off-On	2.25	1.53	1.35	1.125
MSTA-106F	SPDT	(On)-On-None	†	†	†	†
MSTA-106G	SPDT	(On)-Off-(On)	†	†	†	†
MSTA-106H	SPDT	(On)-Off-On	†	†	†	†
MSTA-206N	DPDT	On-None-On	2.35	1.60	1.41	1.18
MSTA-206P	DPDT	On-Off-On	2.85	1.90	1.71	1.42
MSTA-206R	DPDT	(On)-On-None	†	†	†	†
MSTA-206S	DPDT	(On)-Off-(On)	†	†	†	†
MSTA-206T	DPDT	(On)-Off-On	†	†	†	†
MSTA-206PA	DP3T	On-On-On	3.15	2.14	1.89	1.58
MSTA-206TA	DP3T	(On)-On-On	†	†	†	†
MSTA-206SA	DP3T	(On)-On-(On)	†	†	†	†
MSTA-306D	3PDT	On-None-On	4.05	2.75	2.43	2.03
MSTA-306E	3PDT	On-Off-On	4.45	3.03	2.67	2.23
MSTA-306F	3PDT	(On)-On-None	†	†	†	†
MSTA-306H	3PDT	(On)-Off-On	†	†	†	†
MSTA-406N	4PDT	On-None-On	5.10	3.47	3.06	2.55
MSTA-406P	4PDT	On-Off-On	5.65	3.84	3.39	2.83
MSTA-406PA	4P3T	On-On-On	6.15	4.18	3.69	3.08
C-10*°	Plastic cap for MST, A, E		—	.028	.025	.022
C-17*°	Flat top cap for MST, A, E		—	.028	.025	.022

* Packages of 25; ° Specify red, white, black, blue, gray, green, yellow, pink. (On) Indicates momentary positions. † Prices upon request.

MSTE-106
SPDT

MSTE-206
DPDT


MSTE-306
3PDT


MSTE-406
4PDT

E SERIES

The new "E" Series has the most-wanted features in miniature switches. Waterproof 'O' rings are located inside the toggle and on the shoulder. A mechanical shoulder on the bottom of the bushing prevents "tear-offs" when a single mounting nut is employed. High voltage barriers between terminals inside as well as outside. Case has a new, superior plastic material capable of withstanding a higher impact; guards against accidental damage. Low-loss case has extremely high resistance between terminals and case ground, and its high temperature coefficient is ideally suited for prolonged soldering and printed circuits. Turret type terminals are used for simplified wiring or for P.C. Extra-wide, solid silver contacts are bonded, not riveted, on copper-silver plated terminals. Long-life cycle over 100,000 On-Off operations at operating conditions (SPDT). Rated 6 amps @ 125 VAC.

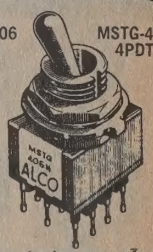
Model	Contacts	Description	One-24	25-99	100-499	500-999
MSTE-106D	SPDT	On-None-On	1.95	1.33	1.17	.975
MSTE-106E	SPDT	On-Off-On	2.55	1.72	1.53	1.28
MSTE-206N	DPDT	On-None-On	2.55	1.72	1.53	1.28
MSTE-206P	DPDT	On-Off-On	3.15	2.14	1.89	1.58
MSTE-206PA	DP3T	On-On-On	3.45	2.35	2.07	1.73
MSTE-306D	3PDT	On-None-On	4.25	2.89	2.55	2.13
MSTE-306E	3PDT	On-Off-On	4.75	3.23	2.85	2.38
MSTE-406N	4PDT	On-None-On	5.35	3.64	3.21	2.68
MSTE-406P	4PDT	On-Off-On	5.95	4.05	3.57	2.98

Hardware supplied mounted. Color-coded caps: see "A" Series story above

MSTG-106
SPDT

MSTG-206
DPDT

MSTG-306
3PDT


MSTG-406
4PDT

Mustang

The Mustang Series is for designers who prefer the feel of a larger toggle switch but have space limitations behind today's compact panel. The familiar ultra-miniature Alcoswitch ½" case is utilized, however the Mustang mounting requirements are the same as the larger switches with 15/32" bushings. This new Alcoswitch concept is a behind-the-panel space-saver in all Mustang models and it is especially true in the 3 Pole and 4 Pole Series where non-miniature switches are bulky in size. The Mustang switches have the most-wanted features as itemized in the "E" Series story (at left) with the exception of the waterproof 'O' rings. The case construction is of low-loss, high impact and high temperature materials with turret terminals and silver contacts. 6 amps @ 125 VAC.

Model	Contacts	Description	One-24	25-99	100-499	500-999
MSTG-106D	SPDT	On-None-On	2.15	1.43	1.29	1.08
MSTG-106E	SPDT	On-Off-On	2.75	1.87	1.65	1.38
MSTG-206N	DPDT	On-None-On	2.75	1.87	1.65	1.38
MSTG-206P	DPDT	On-Off-On	3.35	2.28	2.01	1.68
MSTG-206PA	DP3T	On-On-On	3.65	2.48	2.19	1.83
MSTG-306D	3PDT	On-None-On	4.45	3.03	2.67	2.23
MSTG-306E	3PDT	On-Off-On	4.95	3.37	2.97	2.48
MSTG-406N	4PDT	On-None-On	5.55	3.77	3.33	2.78
MSTG-406P	4PDT	On-Off-On	6.15	4.18	3.69	3.08
C-15*	Plastic cap for Mustang Series		.06	.04	.036	.033
N-1B*	15/32" "Perfect Fit" Nut		.08	.056	.05	.044

*Packaged in multiples of 25; when ordering caps specify, red, white, black, blue or gray.

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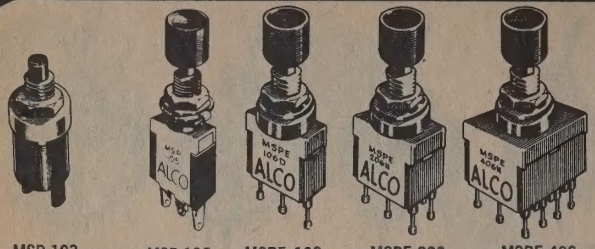


MSP-103 MSP-105 MSPE-106 MSPE-206 MSPE-406

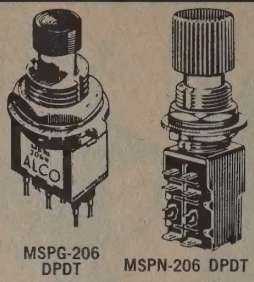
MSP Miniature Pushbutton Switches are of snap-action type capable of handling 5 amps @ 115 VAC. Solid silver contacts and terminals. Bushing size, ¼-40 with keyway. Black phenolic case. Life cycle well over 20,000 on-off operations.

MSPE Waterproof Pushbutton Switches rated 6 amps resistive and 2 amps inductive @ 125 VAC. Double "O" waterseals, low-loss "E" Series case with turret terminals. All are versatile "double-throw" models.

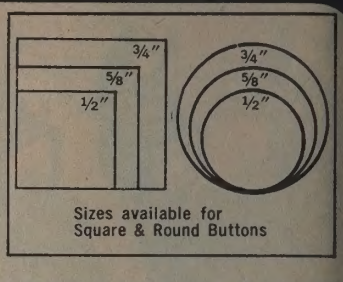
MSP-103 Economy Pushbutton Switches rated 3 amps @ 125 VAC. ow-pressure. Silverplated brass contacts and terminals. Plastic button plunger travels .098" overall. Depth needed behind panel less than ¾". One-piece ¼-40 mounting bushing.

Model	Contacts	Application	One-24	25-99	100-499	500-999
MSP-105D*	SPDT	Push on-off	2.15	1.46	1.29	1.08
MSP-105F*	SPDT	Momentary	2.15	1.46	1.29	1.08
MSP-205N*	DPDT	Push on-off	2.95	2.01	1.77	1.48
MSP-205R*	DPDT	Momentary	2.95	2.01	1.77	1.48
MSPE-106D*	SPDT	Push on-off	2.55	1.72	1.53	1.28
MSPE-106F*	SPDT	Momentary	2.55	1.72	1.53	1.28
MSPE-206N*	DPDT	Push on-off	3.45	2.35	2.07	1.73
MSPE-206R*	DPDT	Momentary	3.45	2.35	2.07	1.73
MSPE-406N*	4PDT	Push on-off	5.95	4.05	3.57	2.98
MSPE-406R*	4PDT	Momentary	5.95	4.05	3.57	2.98
C-12	Extra plastic button*		.05	.036	.032	.03
C-13	Large Button**		.09	.06	.054	.05
C-14	Chrome button (thin)		.06	.04	.036	.033
C-14L	Chrome button		.09	.06	.054	.05
MSP-103B†	SPST	Normally closed	.65	.44	.39	.33
MSP-103C°	SPST	Normally open	.65	.44	.39	.33

*Supplied with one red, green, or black plastic button; specify color.
**Specify red, green or black. † With black button. °With red button.



MSPG-206 DPDT MSPN-206 DPDT



Sizes available for Square & Round Buttons

MSPG Mustang Push Button Switches rated 6 amps @ 125 VAC (specs same as in Mustang story). Has 15/32 bushings.

Model	Contacts	Application	One-24	25-99	100-499	500-999
MSPG-206N*	DPDT	Push on-off	3.15	2.14	1.89	1.58
MSPG-206R*	DPDT	Momentary	3.15	2.14	1.89	1.58

*Supplied with one red or black plastic button; specify color.

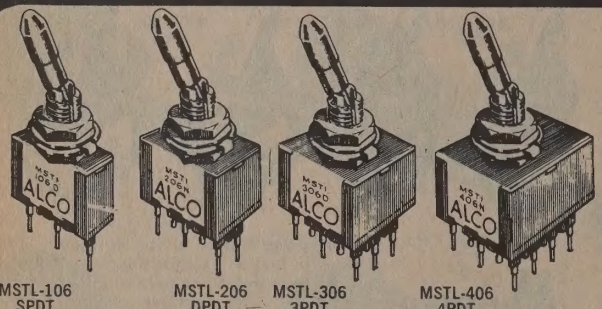
MSPN Illuminated Push Button Switches are snap-action types capable of handling a high current rating for its small size. DPDT action in a miniature case with separate connections to its replaceable T-1¾ grooved base lamps. Side terminals for simplified wiring or P.C. use. Metal construction, phenolic case, solid silver contacts. 6 amps @ 125 VAC. Mounts in 15/32" dia. hole. Wide choice of plastic buttons. **TRANSPARENT** colors: Red, Amber, Blue, Green, Clear. **TRANSLUCENT:** Red, Yellow, Green, White. Uses grooved base lamps.

Model	Contacts	Application	One-24	25-99	100-499	500-999
MSPN-206N	DPDT	Push on-off	4.80	3.26	2.88	2.40
MSPN-206R	DPDT	Momentary	4.80	3.26	2.88	2.40

Note: supplied less colored button and lamps, see listing below.

RS*	½" Round Button	.10	.068	.06	.05
RM*	⅝" Round Button	.12	.082	.072	.06
RL*	¾" Round Button	.15	.102	.09	.075
SS*	½" Square Button	.10	.068	.06	.05
SM*	⅝" Square Button	.12	.082	.072	.06
SL*	¾" Square Button	.15	.102	.09	.075
CGR-½	½" Chrome Guard, Round	.30	.204	.18	.15
CGS-½	½" Chrome Guard, Square	.30	.204	.18	.15
379	6.3V @ 0.2A Lamps	.85	.57	.51	.43
386	14.0V @ 0.08A Lamps	.90	.60	.54	.45
388	28.0V @ 0.04A Lamps	.95	.63	.57	.47

*Specify Transparent or Translucent Type and Color.



MSTL-106 SPDT MSTL-206 DPDT MSTL-306 3PDT MSTL-406 4PDT

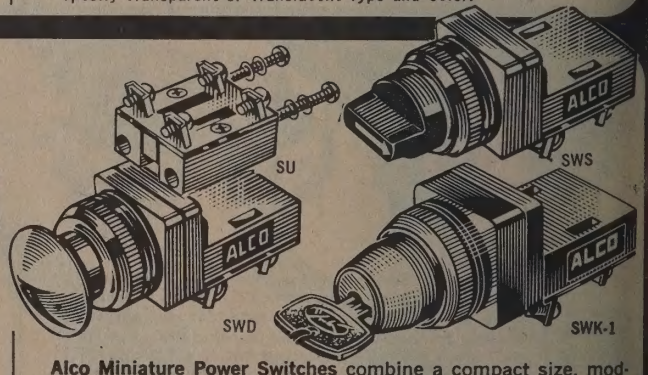
Lever-Lock Alcoswitch is the world's first "pull-to-unlock" toggle switch for use in hazardous applications. The toggle locks in position to safeguard against accidents. Optional interchangeable color-coded toggle tips available. Rated 6 amps @ 125 VAC.

Model	Contacts	Description	One-24	25-99	100-499	500-999
MSTL-106D	SPDT	On-None-On	3.15	2.14	1.89	1.58
MSTL-106E	SPDT	On-Off-On	3.85	2.57	2.31	1.925
MSTL-206N	DPDT	On-None-On	3.85	2.57	2.31	1.925
MSTL-206P	DPDT	On-Off-On	4.45	3.03	2.67	2.23
MSTL-206PA	DP3T	On-On-On	4.75	3.23	2.85	2.38
MSTL-306D	3PDT	On-None-On	5.65	3.84	3.39	2.83
MSTL-406N	4PDT	On-None-On	6.95	4.73	4.17	3.48
C-16*	Color-Coded Caps		.18	.12	.11	.10

* Lever-lock switches are stocked with natural aluminum caps only. Extra caps available in anodized Red, Blue, and Black (specify color).

MSS-22 Miniature Slide Switch with unusual two-circuit N.O.-N.C. (useable as SPDT) anti-tease design. Rated 2 amps @ 120 VAC. Compact ½" case has corrosion-proof metal case and phenolic slide block. Gold on nickel on silver-plated brass contacts. Life cycle, 250,000 operations. Case size, .500" x .305" x .257"; mounts .687" centers.

Model	Description	One-24	25-99	100-499	500-999
MSS-22	SPDT, 2 circuit	1.75	1.17	.88	.73
MSS-44	DPDT	3.15	2.11	1.58	1.31



Alco Miniature Power Switches combine a compact size, modern appearance and functional flexibility to meet today's control needs and mount in a 1" hole. Rated to carry 6 amps @ 230 VAC. These switches may be used to control circuits independently or with optional relays. All models supplied with a single (N.O.-N.C.) contact block but have provisions for an additional (Model SU) block thereby convertible to DPDT units.

3-Way Selector Power Switch is the same basic model as above but instead has a bar knob with pointer. Electrical and physical specifications are the same. Available in black only.

Key-Lock Push Button type is an accident-proof power switch that has its own key lock to prevent unwanted operations of machines and controls. The switch functions only when the key disengages the lock. Same specs as the series described above.

Model	Description	Action	One-24	25-99	100-499	500-999
SW-251*	Standard Button	Mom. ON	2.95	1.97	1.77	1.48
SW-251D*	Mushroom Button	Mom. ON	3.35	2.23	2.01	1.68
SW-251L*	Long Button	Mom. ON	3.10	2.07	1.86	1.56
SW-251S	Selector	ON-OFF-ON	3.35	2.23	2.01	1.68
SWK-1	Key/Lock Switch	ON-OFF-ON	7.95	5.30	4.77	3.98
SU-251	N.O.-N.C. Block		1.85	1.23	1.11	.93

* Push button models are equipped with spare (snap-on) colored buttons offering a choice of use in red, black, or green.

C-251-00†	ON-OFF Buttons (pr.)	.35	.23	.21	.18
C-251-SS†	STOP-START BUTTONS (pr.)	.35	.23	.21	.18

† Standard snap-on buttons with legend for SW-251 switches

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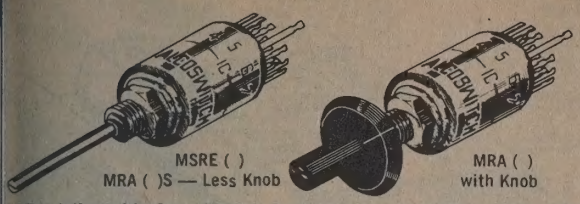


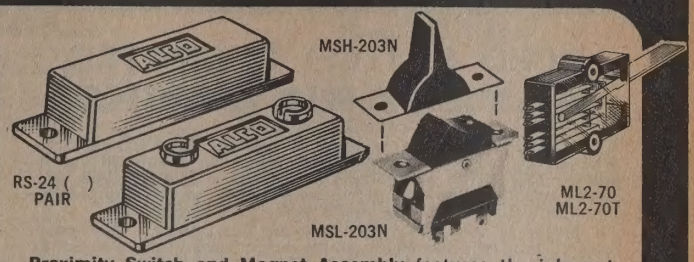
MRA Adjustable-Stop Rotary Switches are miniature types rated 500 mA @ 125 VAC. Features: adjustable-stop; non-shorting; 36° spacing; up to 4 poles on single deck; solid silver terminals and contacts. Types with suffix **S**, ⅛", dia. shaft less knob. Bushing, ¼-40.

MRA 12-Position Rotary Switches are slightly larger than standard MRA Series has ⅛" shaft and 30° spacing. Other specs similar to MRA Series. Knobs not included. Type MRA-1-12S can be converted to an adjustable-stop switch when used with KCVS-500 knob (see Alco knob listings).

MSRE Waterproof Rotary Switches are non-adjustable. Similar to MRA Series but feature internal and external 'O' rings. One-piece metal case construction, and terminals are epoxy sealed. ⅛" shaft. Ideal for printed circuits. Supplied less knob. Rated 500 mA @ 125 VAC. Can be converted to an adjustable-stop switch when used with KCVS-500 knob (see knob listings).

MODEL	Pole	Positions	Knob Supplied	One-24	25-99	100-499	500 999
MRA-1-10	1	2-10	Yes	4.35	2.96	2.61	2.18
MRA-2-5	2	2-5	Yes	4.35	2.96	2.61	2.18
MRA-3-3	3	2-3	Yes	4.35	2.96	2.61	2.18
MSRA-4-2*	4	2	Yes	4.35	2.96	2.61	2.18
MRA-1-10S	1	2-10	No	4.25	2.89	2.55	2.13
MRA-1-10SC**	1	10	No	4.25	2.89	2.55	2.13
MRA-2-5S	2	2-5	No	4.25	2.89	2.55	2.13
MRA-3-3S	3	2-3	No	4.25	2.89	2.55	2.13
MSRA-4-2S*	4	2	No	4.25	2.89	2.55	2.13
MRA-1-12S	1	12	No	4.75	3.23	2.85	2.38
MRA-1-12SC**	1	12	No	4.75	3.23	2.85	2.38
MSRE-1-10*	1	10	No	4.85	3.29	2.91	2.43
MSRE-2-5*	2	5	No	4.85	3.29	2.91	2.43
MSRE-3-3*	3	3	No	4.85	3.29	2.91	2.43
MSRE-4-2*	4	2	No	4.85	3.29	2.91	2.43

* **Switches are non-adjustable.** **Continuous rotation.



Proximity Switch and Magnet Assembly features the inherent simplicity of a basic dry reed switch to provide long life and reliability. Alnico-5 magnet is the force used to actuate the reed switch within distance of 1" centers. Reed switch provided is replaceable. Rated 0.5 amps break, 1.0 amps carry. Life cycle over 5-million operations.

Model	Description	One-24	25-99	100-499	500-999
RS-24-NO	N.O. (Apart) Pair	2.85	1.90	1.71	1.42
RS-24-NC	N.C. (Apart) Pair	3.15	2.14	1.89	1.58

DPDT Snap Action miniature leaf switch capable of controlling two independent circuits for alternate or reversal operation. Solid silver contacts assure long operational life. Rated 3 amps @ 115/250 VAC. Lever length ⅝", half-million life cycle. Operating force: less than 100 grams.

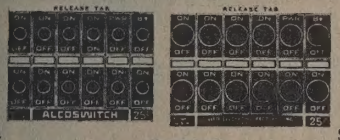
Model	Contacts	Description	One-24	25-99	100-499	500-999
ML2-70T	DPDT	Positive-On-On	1.95	1.33	1.17	.975
ML2-70	DPDT	On-Momentary On	1.95	1.33	1.17	.975

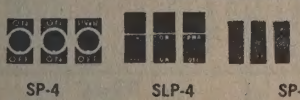
Lever Switches and Rocker Models

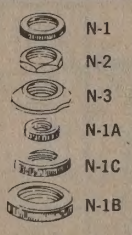
Model	Description	One-24	25-99	100-499	500-999
MSH-203N	Lever-Switch DPDT	1.25	.85	.75	.63
MSL-203N	Rocker Switch DPDT	1.15	.78	.69	.58

ALCO Foot Switch is compact and rugged for use where high speed and minimum operator fatigue are essential. SPDT momentary-contact switch has spring return and non-skid base. Size: 3¼" x 3¼" x 1".

Model	Supplied	One-24	25-99	100-499
SKF	Less Cable	4.65	3.16	2.79
SKF-6	With 6-ft. Cable	5.85	3.98	3.51







SP1, SP2 Aluminum Foil, pressure-sensitive "ON-OFF" plates for ALCOSWITCH and other miniature switches which have a ¼" bushing; and for standard switches requiring 15/32" hole. Each card has 12 plates.

SP3, SP4 Stamped Aluminum Plates for use with miniature and standard toggle switches. Black anodized, raised letters. Each card has 5 plates: 3 ON-OFF, 1 ON-ON, 1 PWR-OFF.

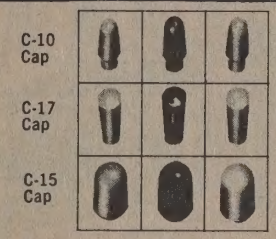
SLP4 Stamped Aluminum Plates for ¼" dia. switch bushings and ⅜" pilot lights. Each card has 5 plates: 3 ON-OFF, 1 ON-ON, 1 PWR-OFF. ⅜" hole accepts our BND series pilots.

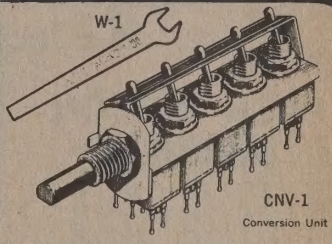
Model	Hole Size	No. Plates	One-24	25-99	100-499
SP-1	¼" Dia.	12	.25	.18	.17
SP-2	15/32" Dia.	12	.25	.18	.17
SP-3	¼" Dia.	5*	.75	.54	.51
SP-4	15/32" Dia.	5*	.75	.54	.51
SLP-4	¼" Dia. and ⅜" pilot	5*	.90	.65	.61

*3 ON-OFF, 1 ON-ON, 1 PWR-OFF.

Decorative Mounting Nuts — 4 styles are available for use with ALCOSWITCH and other miniature switches. Packaged in multiples of 25. **STANDARD** double chamfered knurled nuts for ¼-40 threaded bushings only. **"PERFECT FIT"** round bevel top with lip for automatic stop ¼-40, ⅜, and 15/32" bushings. Decorative is conical shape; ¼-40.

Model	Description	One-24	25-99	100-499	500-999
N-1	¼-40 Standard Knurl Nut	.04	.028	.025	.022
N-1A	¼-40 "Perfect Fit" Knurl Nut	.06	.04	.036	.033
N-1B	15/32" "Perfect Fit" Knurl Nut	.08	.056	.05	.044
N-1C	⅜" "Perfect Fit" Knurl Nut	.08	.056	.05	.044
N-2	¼-40 Standard Hex Nut	.03	.022	.02	.018
N-3	¼-40 Decorative Mounting Nut	.06	.04	.036	.033





Color-Coded Caps for miniature and standard toggle switches. The MST-115D, 215N, 315N, 415N switches are stocked with white caps only. Colored caps may be purchased separately for use on all ALCO bat handle switches for color identification. When ordering — specify color. Packaged in multiples of 25 (minimum).

Model	Description	One-24	25-99	100-499	500-999
C-10*	Plastic caps for "MST", "A" & "E" Series	.04	.028	.025	.022
C-15°	Plastic caps for Mustang Series	.06	.04	.036	.033
C-17*	Flat top caps for "MST", "A" & "E" Series	.04	.028	.025	.022

*Specify: Red, White, Black, Blue, Gray, Green, Yellow or Pink.
°Specify: Red, White, Black, Blue, or Green

Conversion Unit For Rotary Switch Operation. Gangs miniature toggle switches (with ¼" bushings) for controlling multiple circuits simultaneously. Operating as a 2- or 3-position rotary switch, this unit is capable of ganging from 1 to as many as 5 toggle switch combinations that total up to 10 poles. Allows you to have enclosed contacts, and heavier current capabilities. Use with various types of switches to act as a 3-position rotary switch when used with CENTER-OFF or ON-ON-ON type toggle switches, or becomes a 2-position rotary when used with 1- or 2-pole toggle switches.

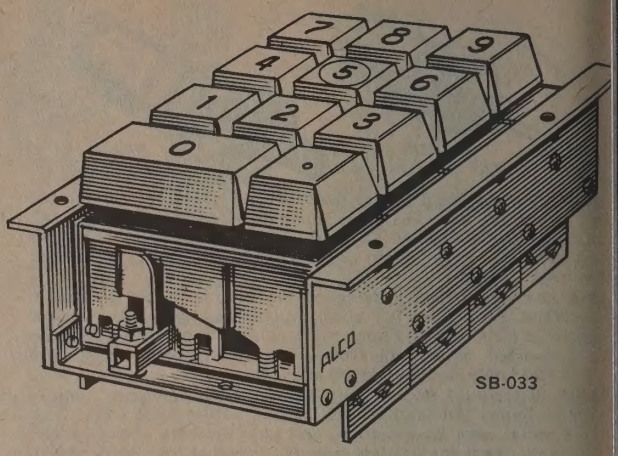
Model	Description	One-24	25-99	100-499	500-999
CNV-1	Conversion Unit	.95	.63	.57	.48

A Spanner Wrench designed expressly to expedite the proper installation of ALCOSWITCH. A long, tapered arm extends at a slight angle allowing the user to tighten the lower mounting nut.
Model No. W-1 ..... **Net 25¢ ea.**

ALCO® ELECTRONIC PRODUCTS, INC.

DESIGN YOUR OWN KEYBOARD ASSEMBLIES

REED SWITCH OPERATED
KEYBOARD BANKS



Now designers can be assured of highest reliability in data processing equipment. Short strokes provide a smooth operation of the switch plunger resulting in one of the finest keyboard actions obtainable. It is also suitable for test equipment, communication gear, and many other applications.

All details of this new switch line are designed for light pressure (5 ounces), operator's convenience, and positive input of data with long life under heavy office type of usage. Highly efficient "single-pole open circuit" reed switches are used throughout assuring reliability and extremely long life expectancy. Square light grey buttons (19/32") have an industry standard 0-9 marking and format.

All switch positions contain a "positive lockout" between sections and rows. This feature prevents more than one position from operating at the same time. An extra "decimal" button is also provided to enhance design use.

This particular model shown is our standard SB-033 and is, therefore, available from stock without any design changes. This basic keyboard system is designed for flexibility and can be customized to meet the special needs of quantity users. Up to 12 switches may be installed in the basic module in any combination including momentary, locking maintained, or lockout design.

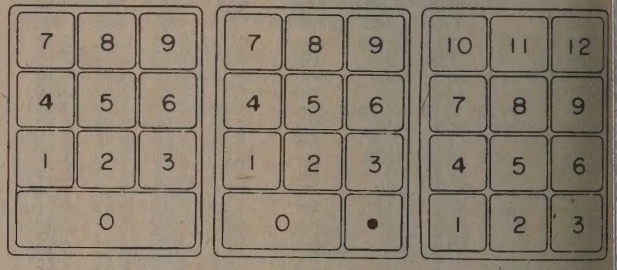
SPECIFICATIONS

Dimensions:	2.81" W. x 3.62" L. x 2.25" D.
Depth Requirements:	1-5/8"
Switch Contact:	Normally Open
Rating:	100 ma @ 48V
Operating Force:	5 Ounces
Mechanical Life:	1,000,000 Cycles
Reed Switch Life:	1,000,000 Cycles
Full Stroke Travel:	7/32"
Travel to Contact:	5/32"
Button Color:	*Light Grey
Symbols:	3/16" high, Black

Model	Description	One-24	25-99	100-499
SB-032	Interlock 0-9 ("0" Triple Bar)	28.50	22.80	19.95
SB-033	Interlock 0-9 and Period	28.50	22.80	19.95
SB-034	Interlock 1-12 Numerals	29.95	23.96	20.97
SB-035	Momentary 1-12 Numerals	28.50	22.80	19.95

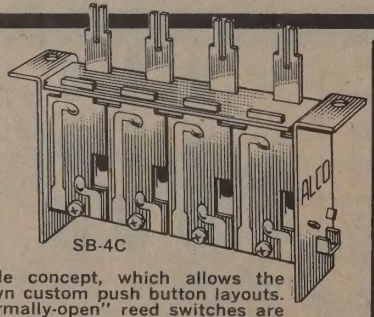
*Colored blank buttons available separately, see below.

BUTTON ARRANGEMENT



SB-032 SB-033 SB-034 & 035

PUSH BUTTON MODULES



This modular idea is a simple concept, which allows the design engineer to create his own custom push button layouts. Highly efficient single pole "normally-open" reed switches are used throughout thus assuring reliability and an extremely long life expectancy.

Light pressure (5 ounces) and short strokes result in optimum operators' convenience and positive input of data.

The basic module allows use of one to three switches in either momentary or alternate "push-ON-push-OFF" action. Stacking allows any number of these switch sections to be used in a group by themselves or with our matching keyboard assemblies SB-032, SB-033, SB-034, SB-035.

Standard size switch buttons are available separately in various colors, either single or extended buttons which span 2 or 3 switches. Note: that by use of longer buttons it is also possible to form 2 or 3 pole switch functions.

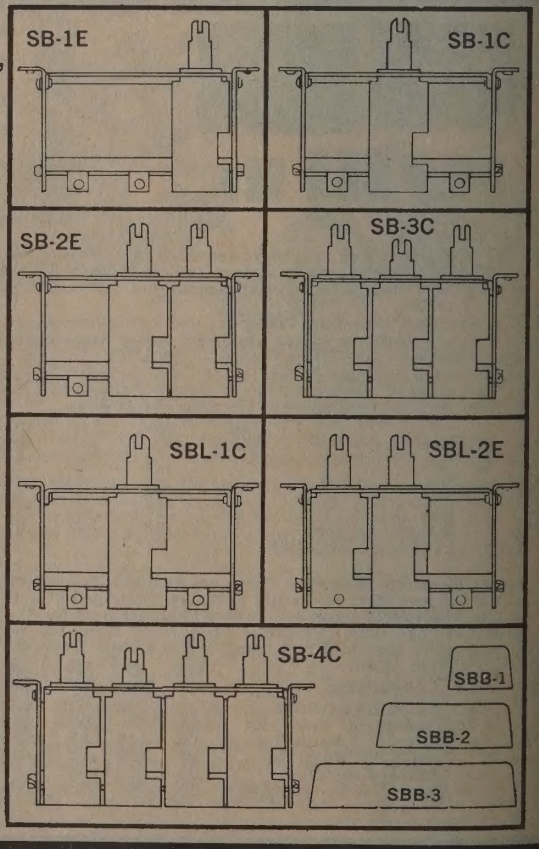
SPECIFICATIONS

Switch Contact:	Normally Open	**Full Travel:**	7/32"
Rating:	100 ma @ 48V	**Travel to Contact:**	5/32"
Life Expectancy:	1,000,000 cycles	**Depth Requirements:**	1-5/8"

Model	Description	One-24	25-99	100-499
SB-1E	Mod-Segment, 1 pole, end, mom.	2.90	2.32	2.03
SB-1C	Mod-Segment, 1 pole, center, mom.	2.90	2.32	2.03
SB-2E	Mod-Segment, 2 pole, end, mom.	4.80	3.84	3.36
SB-3C	Mod-Seg. 3 pole, ctr. & ends, mom.	6.70	5.36	4.69
SB-4C	Mod-Segment, 4 pole, momentary	8.60	6.88	6.02
SBL-1C	Mod-Segment, 1 pole, locking	3.90	3.12	2.73
SBL-2E	Mod-Segment, 2 pole, lock & mom.	5.80	4.64	4.06
	Above switches are supplied less buttons; order below.			
SBB-1*	Button only	.15	.12	.105
SBB-2*	Button only	.25	.20	.175
SBB-3*	Button only	.35	.28	.245
SB-BKT	Mounting Brackets (pr.)	1.95	1.56	1.37

*Specify Color: Light Grey, Dark Grey, White, Blue, Red, Black.

SPDT AND NORMALLY CLOSED VERSIONS AVAILABLE UPON REQUEST.



ALCO® ELECTRONIC PRODUCTS, INC.

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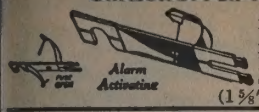
Buss® Fuses and Fusetron® Fuses

GRASSHOPPER FUSES

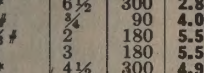


Alarm activating and signal indicating. Length: $1^{43}/_{64}$", except 35D ($1^{5}/_{8}$"), 35E ($1^{63}/_{64}$").

Buss No.	Amps	Blowing Time Amp	Blowing Time Sec.	Net Price For Ten	Net Price For 100
35A*	1½ #	2	90	$2.80	$24.00
35B*	1½**	2	90	2.80	24.00
35B*	2**	3	180	2.80	24.00
35C*	2 #	3	180	2.80	24.00
35D*	1½**	2	90	5.50	46.00
35E*	3**	4	300	3.00	25.00
35F*	½ #	¾	9	2.80	24.00
35G*	3**	4½	300	2.80	24.00
35H*	5**	6½	300	2.80	24.00
35J†	½ #	¾	90	4.00	33.00
35K†	1½ #	2	180	5.50	46.00
35L†	2 #	3	180	5.50	46.00
35M†	3**	4½	300	4.90	41.00
35N†	5**	6½	300	4.90	41.00
35P†	¾ #	1½	90	3.50	30.00
35R*	18/100 #	.270	90	3.50	30.00
35S†	¼ #	.375	90	4.00	33.00
35T*	65/100 #	1.1	180	4.00	33.00

Volts: *90 or less. †160 or less. Mounting Screw: #No. 10. **No. 6.

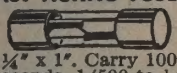
AGS GLASS TUBE FUSES



Test specification; carry, 110%, open at 135% within 1 hour except 35 and 40 amp units which open at 300% in 2 to 4 seconds when tested in standard 30-amp test circuit. **Note:** These units in sizes larger than 30 amps are not recommended for use in fuse clips or fuseholders as clips will not carry the high currents.

Buss No.	Amperes	Volts	Net Price For Five	Net Price For 100
AGS	1/8	250	$1.80	$30.00
AGS	⅛	250	1.30	22.00
AGS	¼, ½	250	.65	11.00
AGS	1, 2, 2½, 3	250	.60	10.00
AGS	5, 10, 15, 20, 25, 30	32	.50	8.50
AGS	35, 40, 50	32	.60	10.00

FAST ACTING FUSES



Glass tube, ¼" x 1". Carry 100%, open at 200% in 5 seconds. 1/500 to ½ amp sizes have bridge construction; all others straight-through element. U/L Approved.

AGX	1/500	250	$6.00	$100.00
AGX	1/200	250	2.50	42.00
AGX	1/100	250	2.25	38.00
AGX	1/32	250	2.00	33.00
AGX	1/16	250	1.25	21.00
AGX	1/10, ⅛, 3/16, 2/10	250	.85	15.00
AGX	¼, ⅜, 4/10, ½, ¾	250	.55	9.50
AGX	1, 1½, 2, 3, 4, 5	125*	.40	7.00
AGX	8, 10, 15, 20	32†	.30	5.00
AGX	25, 30	32	.30	5.00

FAST ACTING FUSES

Glass tube, ¼" x 1¼". Carry 110%, open at 135% in 1 hour or less. 1/500 to 2 amp sizes will open at 200% in 5 seconds or less. 1/500 to 1/32 amp have bridge construction; all others straight-through element. U/L Approved.

AGC	1/500	250	$6.00	$100.00
AGC	1/200	250	2.50	42.00
AGC	1/100	250	2.25	38.00
AGC	1/32	250	2.00	33.00
AGC	1/16, ⅛, 15/100, 175/1000, 3/16, 1/10, 2/10	250	.85	15.00
AGC	¼, 3/10, ⅜, 45/100, ½, 6/10, ¾	250	.55	9.50
AGC	1, 1¼, 1½, 1-6/10, 2	250	.40	7.00
AGC	2½, 3	250	.40	7.00
AGC	4	32‡	.40	7.00
MTH	4, 5, 6	250	.48	8.00
AGC	5, 6, 7½, 8, 10, 15	32‡	.30	5.00
AGC	20	32‡	.25	4.00
AGC	25, 30	32‡	.30	5.00

*1 A, 250. †5 A, 125. ‡Not U/L listed.

MIDGET TYPE FUSES

Up to 15 amp size U/L Approved.

Buss No.	Amperes	Volts	Net Price For Ten	Net Price For 100
BAF	1, 3, 5, 6, 10	250	$1.20	$9.90
BAF	15, 20, 25, 30	125	1.20	9.90

CERAMIC TUBE FUSES

High interrupting capacity for use on circuit delivering as high as 25,000 amps at 125 V, or 10,000 amps at 250 V. ¼" x 1¼". Carry 110%, open at 135% in 1 hour. Up to 15 amp size U/L Approved.

Buss No.	Amperes	Volts	Net Price For Five	Net Price For 100
ABC	¼	250	$0.80	$13.00
ABC	1, 2, 3	250	.75	13.00
ABC	5, 6, 8, 10	250	.70	12.00
ABC	12, 15, 20	250	.75	13.00
ABC	25, 30	125	.95	16.00

FUSETRON GLASS TUBE FUSES

Dual-element slow-blowing type, ¼" x 1¼". Fuse link operates only on very high overloads or short-circuits; thermal cutout functions on low overloads (cannot operate quickly on any load, thus providing long time-lag). Carry 110%, open at 135% in 1 hour. MDL 1/100 to 2-8/10 amp and MDX 3 to 7 amp sizes U/L Approved. MDL type has longer time-lag than MDX type.

MDL	1/100, 1/32	250	$1.70	$28.00
MDL	1/16, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, 7/10, ¾, 8/10, 1		1.25	21.00
MDX	1¼, 1½, 1-6/10, 2	250	1.30	22.00
MDL	1-2/10, 1¼, 1½, 1-6/10, 2	125	1.15	19.00
MDL	2½, 2-8/10	125	.90	15.00
MDX	3, 3-2/10, 4, 5	125	.85	15.00
MDX	6¼, 7	125	1.00	17.00
MDL	3, 3-2/10, 4, 5, 6¼, 8, 10, 15, 20, 25, 30	32	.90	15.00

GLASS TUBE FUSES

Glass tube, ¼" x ⅝". Carry 110%, open at 135% in 1 hour.

AGA	1, 1½, 2, 2½	32	$0.40	$7.00
AGA	3	32	.40	7.00
AGA	5, 6, 7½, 10, 15, 20	32	.30	5.00
AGA	25, 30	32	.30	5.00

FUSETRON FIBER TUBE FUSES

Dual-element slow-blowing type, $^{13}/_{32}$" x 1½" overall. Fuse link operates only on very high overloads or short circuits; thermal cutout functions on low overloads (cannot operate quickly on any overload, thus providing longer time lag). Carry 110%, open at 135% in 1 hour. 125 and 250 volt sizes U/L Approved.

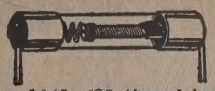
Buss No.	Amperes	Volts	Net Price For Ten	Net Price For 100
FNM	1/10, 15/100, 2/10, 3/10, 4/10, ½, 6/10, 8/10, 1, 1⅛, 1¼, 1-4/10, 1-6/10, 1-8/10, 2, 2¼, 2½, 2-8/10, 3-2/10, 3½, 4, 4½, 5, 5-6/10, 6¼, 7, 8, 9, 10	250	$3.50	$29.00
FNM	12, 15	125	3.50	29.00
FNM	20, 25, 30	32	3.50	29.00

SFE STANDARD FUSES

Different amperages are different lengths, making it impossible to over-fuse. Glass tube, ¼" dia. Carry 110%, open at 135% in 1 hour. Made to SAE specifications and U/L Approved. 32 volts or less.

Buss No.	Amperes	Lgth. In.	Net Price For Five	Net Price For 100
SFE	4	5/8	$0.30	$5.00
SFE	6	¾	.30	5.00
SFE	7½, 9	1⅛	.30	5.00
SFE	14	1 1/16	.25	4.00
SFE	20	1¼	.25	4.00
SFE	30	1 1/16	.30	5.00

FUSETRON PIG-TAIL FUSES



Body ¼" x 1¼", #20 tinned leads, 1¼", 1/100 to 2-8/10 same as MDL type; 3 to 7 amps same as MDX type. U/L Approved.

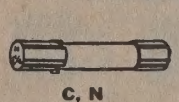
Buss No.	Amperes	Volts	Net Price For Five	Net Price For 100
MDV	1/100, 1/32	250	$2.10	$35.00
MDV	1/16, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, ¾, 8/10, 1	250	1.50	25.00
MDV	1¼, 1½, 1-6/10, 2	125	1.40	24.00
MDV	2½, 2-8/10, 3, 3-2/10, 4, 5, 6¼, 7	125	1.25	21.00

PIG-TAIL FUSES

Glass tube ¼" x 1¼" with 1¼" leads of #20 tinned wire. Carry 110%, open 135% in 1 hour. 250 v. U/L Approved.

Buss No.	Amperes	Net Price For Five	Net Price For 100
GJV	1/8	$1.50	$25.00
GJV	⅛	1.15	19.00
GJV	¼, 3/10, ⅜, ½, ¾	.85	15.00
GJV	1, 1½, 2, 3	.70	12.00
GJV	4, 5, 6	.70	12.00

TYPE C AND N FUSES, HOLDERS



C, N

HC, HN

Matched glass fuses and fuseholders for specific size ranges. **Type N** fuses are dual-element time-delay or slow-blowing type. 0 to 1¼ amp sizes, ¼" x 1¼"; 1-3/10 to 7 amp sizes, ¼" x 1 1/16". **Type C** fuses are single-element quick-blowing type. 0 to 3½ amp sizes, ¼" x 1 1/16"; 3-6/10 to 10 amp sizes, ¼" x 1¼". Holders rated at 250 volts.

TYPE N FUSES

Amperes	Holder No. HN-	Volts	Net Price For Five	Net Price For 100
1/100, 1/32, 1/16, 1/10, 15/100, 2/10, ¼, 3/10	0 to 3/10	250	$1.70 1.25	$28.00 21.00
4/10	3/10 to ½	250	1.25	21.00
½	3/10 to ½	250	1.25	21.00
6/10	½ to ¾	250	1.25	21.00
7/10, ¾	½ to ¾	250	1.25	21.00
8/10, 1	¾ to 1¼	250	1.25	21.00
1¼	¾ to 1¼	250	1.15	19.00
1-6/10	1-3/10 to 1¾	125	1.15	19.00
2	1¾ to 2½	125	1.15	19.00
2½	1¾ to 2½	125	1.15	19.00
2-8/10	2½ to 3½	125	1.15	19.00
3-2/10	2½ to 3½	125	1.15	19.00
3½	2½ to 3½	125	1.15	19.00
4	3½ to 5	125	1.15	19.00
5	3½ to 5	125	1.15	19.00
6¼	5 to 7	125	1.15	19.00
7	5 to 7	125	1.15	19.00

TYPE C FUSES

Amperes	Holder No. HC-	Volts	Net Price For Five	Net Price For 100
1/32	0 to 3/10	250	$1.90	$32.00
1/16	0 to 3/10	250	1.25	21.00
⅛, 3/16	0 to 3/10	250	.90	15.00
¼	0 to 3/10	250	.70	12.00
3/10	0 to 3/10	250	.70	12.00
⅜	3/10 to ½	250	.70	12.00
½	3/10 to ½	250	.70	12.00
¾	½ to ¾	250	.70	12.00
1	¾ to 1¼	250	.45	7.50
1¼	¾ to 1¼	250	.45	7.50
1½	1¼ to 1¾	250	.45	7.50
1¾	1¼ to 1¾	250	.45	7.50
2	1¾ to 2½	250	.45	7.50
2½	1¾ to 2½	250	.45	7.50
3	2½ to 3½	250	.45	7.50
3½	2½ to 3½	250	.50	8.50
4	3-6/10 to 5	250	.50	8.50
5	3-6/10 to 5	250	.50	8.50
6	5 to 7	250	.50	8.50
7	5 to 7	250	.50	8.50
8	7 to 10	250	.80	13.00
10	7 to 10	250	.80	13.00

Type HC and Type HN Fuseholders—
All sizes (specify). Net for 10... $ 1.70
Net for 100..... 14.00

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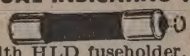
Buss® and Fusetron® Fuses, Holders

SERIES HLD PANEL-MOUNTING VISUAL INDICATING FUSEHOLDER

For ¼" x 1¼" GBA fuse. Transparent knob permits bright red dot to be seen readily if fuse is open. Knob grips fuse tightly; when removed, pulls fuse from holder. Knob also interchangeable with that of HKP fuseholder for easy conversion. Supplied with washer and nut. Locking keys available without charge: 1/16" lg. for panels up to 1/8" thick; 1/8" lg. for thicker panels. Specify lenght desired.

Buss No.	Description	Net Price For Ten	100
HLD	Complete holder	$4.50	$38.00
HLD	Knob only No. 5487	2.30	19.00

VISUAL INDICATING FUSE



For use with HLD fuseholder. Bright red dot on indicating pin extends from end of fuse when fuse is open even after power is off. Rated 125 V or less, carries 110%, opens at 135% in 1 hour or less. Only ¼" x 1¼".

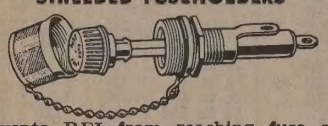
Buss No.	Amperes	Net Price For Five	100
GBA	¾	$2.50	$42.00
GBA	1, 1½, 2, 3, 4, 5	2.00	33.00

PANEL MOUNTED FUSEHOLDERS BAYONET KNOB TYPE

Side terminal held with solder and mechanically. Knob grips fuse tightly; pulls it from holder when knob is removed. Terminals designed to withstand severe service. Molded black phenolic body with flat spot for lock against rotation when used in punched hole; permits use of locking key in drilled holes. May be used in panels up to 1/16" thick. Locking keys available; specify 1/16" or 3/16" lenght. U/L Approved.

Buss No.	For Fuse Size, In.	Amps	Volts	Net Price For Ten	100
HJM	¼ x 1	5	125	$4.10	$35.00
HKP	¼ x 1¼	15	250	4.10	35.00

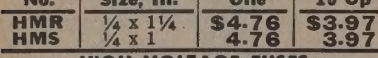
SHIELDED FUSEHOLDERS



Prevents RFI from reaching fuse and nearby circuits. Metal cap covers bayonet type knob. To shield and ground holder, a threaded metal collar fits over holder body; metal cap threads on collar. Collar grounds on metal panel when mounting nut is tight. Carrying capacity 30 amps, 250 volts or less. Meets MIL-1-6181D and MIL-F-19207B specifications.

Buss No.	For Fuse Size, In.	Net Price Each One	10 Up
HMR	¼ x 1¼	$4.76	$3.97
HMS	¼ x 1	4.76	3.97

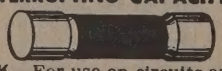
HIGH VOLTAGE FUSES



Designed for protection of circuits up to 20 kW on DC and 30 kVA on AC.

Buss No.	Amperes	V	Net Price For Ten	100
HVA	3/8, ½, ¾, 1, 1½, 2	1000	$ 2.70	$23.00
HVB	½, ¾, 1, 1½, 2	2500	3.70	31.00
HVJ	1/16, 1/8, ¼, 3/8, ½, ¾, 1, 1½, 2	5000	6.80	56.00
HVL	1/16, 1/8, ¼, 3/8, ½, ¾, 1, 1½, 2	10K	13.30	111.00

HIGH INTERRUPTING CAPACITY FUSES



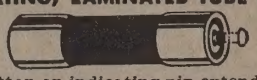
Type KTK—For use on circuits as high as 100,000 amps at 600 volts or less, AC only. Glass fiber melamine tubes and sand filler surrounding a silver fuse element. **Amperes:** 1/10, 1/8, 2/10, ¼, 3/10, ½, ¾, 1, 1½, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30. Lot of 10, Net **$11.00** Lot 100, Net **$90.00**

INDICATING FUSETRON FUSES

Similar to FNM types. Indicating pin extends from fuse when fuse blows. Use in signal fuse block or HPC-C fuseholder (larger than 10 amps units cannot be used in HPC-C). U/L Approved in 0-15 amp sizes.

Buss No.	Amperes	Net Price For Ten	100
FNA	1/10, 15/100, 2/10, 3/10, 4/10, ½, 6/10, 8/10, 1, 1⅛, 1¼, 1-4/10, 1-6/10, 1-8/10, 2, 2¼, 2½, 2-8/10, 3, 3-2/10, 3½, 4, 4½, 5, 5-6/10, 6, 6¼, 7, 8, 10	$6.30	$53.00
	12, 15, 20, 25, 30	7.10	59.00

INDICATING, LAMINATED TUBE FUSES



Red button on indicating pin extends from end of fuse when fuse is blown. Units are built in accordance with Navy Specifications. These units may be used in Buss HPC-C fuseholders. Voltage, (1-15 amps), 250, others, 125 V.

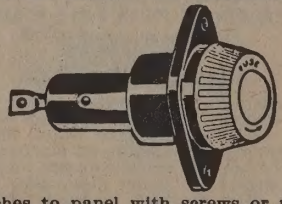
Buss No.	Amperes	Net Price For Ten	100
MIN	1, 2, 3, 5, 10, 15, 20, 25, 30	$4.00	$33.00

SIGNAL OR VISUAL INDICATING FUSES

MIC fuses have silver-plated indicating pin. Pin may be used as visual indicator or may be used to actuate a signal. **MIJ** fuses are similar to MIC types except they have been specially designed for complex circuitry as in computers. Voltage, 250 except 20 amps and over which are 32 V.

Buss No.	Amperes	Net Price For Ten	100
MIC	1, 2, 3, 5, 10, 15, 20, 25, 30	$4.50	$38.00
MIJ	1, 2, 3, 5, 10, 15, 20, 25, 30	5.00	42.00

SCREW-IN KNOB TYPE FUSEHOLDERS

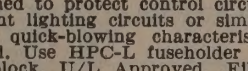


Attaches to panel with screws or rivets; mounts with flange on front side of panel of any thickness; with flange on rear side, panel up to 1/8" thick. Molded black phenolic body with soldered and mechanically held side terminal. Type HPC U/L Approved for 30 amps 600 volts. Type HPC-L U/L Approved for 5 A, 600 V.

Buss No.	For Fuses	Fuse Size, In.	Net Price For Ten	100
HPC	AGU, ABU, BAF, BAN, FNM, MDR, KLM	13/32 x 1½	$6.40	$53.00
HPC-L	BBS	13/32 x 1⅜	6.40	53.00
HPC-C	MIN, MIC, FNA	*	7.90	66.00

*Same as HPC but with transparent knob.

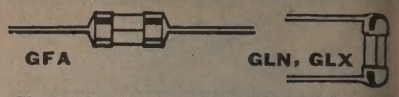
"QUICK-BLOWING" 600 V FUSES



Designed to protect control circuits, fluorescent lighting circuits or similar uses where quick-blowing characteristics are desired. Use HPC-L fuseholder or 3845 fuse block. U/L Approved. Fiber tube 13/32" x 1⅜".

Buss No.	Amperes	Net Price For Ten	100
BBS	4/10, ¾, 8/10	$2.20	$19.00
	1, 2, 3, 4, 5	2.10	17.00

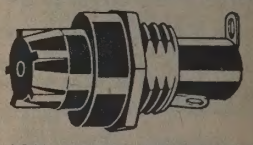
TRON® SUBMINIATURE PIGTAIL FUSES



Glass-tube construction with 1½" leads of #24 tinned copper for 1/100–5 amp ratings, #18 tinned copper for 7–15 amp ratings. Hermetically sealed. Color coded to indicate amp ratings. For circuits with fault current of 50 amps or less (1/100–5 amps for 125 V or less, 7–15 amps for 32 V or less). GLN, GLX body size, .140" x .3"; GFA body size, .145" x .3".

Buss No.	Amperes	Net Price For Ten	100
GLN	1/100	$12.40	$103.00
GLN	1/32, 1/20, 1/16, 1/10, 1/8, 3/10, 4/10, 7, 8, 15	10.50	88.00
GLX	15/100, 2/10, 1/4, 1/2, 6/10, 3/4, 1, 1½, 2, 3, 4, 5	13.50	113.00
GFA	1/100, 1/32, 1/20, 1/16, 1/10, 1/8, 15/100, 2/10, 1/4, 3/10, 4/10, 1/2, 6/10	4.50	38.00
GFA	3/4, 1, 1½, 2, 3, 4, 5, 7, 8, 15	4.00	33.00

SPACE SAVER PANEL MOUNTED FUSEHOLDERS



Length 1⅝"; extends 29/32" behind front of panel. Takes ¼" x 1¼" fuses. Easily converts to take 13/32" x 1½" fuses by changing screw type knob. Flat part of molded phenolic body locks fuseholder against rotation when used on punched hole. Requires 5/8" mounting hole.

Buss No.	For Fuse Size Dia. x L.	Net Each
HLF	¼" x 1¼"	$0.41
HMB*	¼" x 1¼"	.41
HMM*	¼" x 1¼"	.41

*Requires 1/2" mounting hole; HMM has screwdriver slot knob.

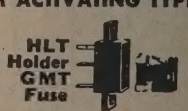
SUBMINIATURE PRONG TYPE UNIT

Rated 125 V or less, faulty current not over 300 amps; open at 200% within 10 sec. or less. Use AF knob for waterproof. Size, .27" dia., ¼" lg. (body).

Buss No.	Amperes	Net Price for Ten	100
GMW	1/200, 1/100, 1/16, 1/8	$7.50	$63.00
GMW	1/10, 2/10, ¼, 3/10, 4/10, ½, 6/10, ¾, 1, 1½, 2, 3, 4, 5	5.60	47.00
HWA*	Holder, fits all GMW	7.20	60.00
HWA†	Holder, fits all GMW	6.40	53.00
AF	Knob only, fits HWA	.90	7.50

*With AF knob. †Without AF knob.

SIGNAL-INDICATING ALARM ACTIVATING TYPE UNIT



Takes only ¼" x 1 15/16" space. Color indicator. Rated 300 V or less; 100% for 10 min.; open at 150% within 5 min.

Buss No.	Amperes and Color of Indicator	Net Price for Ten	100
GMT	18/100*, ¼†, 1/2‡, 65/100§, ¾#, 1•, 1⅛^, 2■, 3♦, 5‡, 7½‡, 10**	$4.30	$36.00
HLT	Holder, fits all GMT	4.50	38.00

Color of Indicator: *Yellow; †violet; ‡red; §black; #brown; •gray; ^white; **orange; ♦blue; ‡green; ‡black-white; **red-white.

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Net

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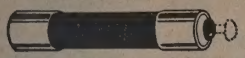
Buss® and Fusetron® Fuses, Holders

INDICATING FUSES



Fiber tube with silver plated indicating pin which extends when fuse is blown. May be used to actuate a signal when used in HKA fuseholder or Signal Fuse Block. Dual tube construction in sizes larger than 5 amps (cannot be used in HKA fuseholder). Voltage, 125 volts, except 8 amp and over which are 32 volts. Size, ¼" x 1¼".

Buss No.	Amperes	Net Price For Five	Net Price For 100
GLD	¾	$2.35	$39.00
	1, 1½, 2, 3, 4, 5	1.90	32.00
	6, 8, 10, 12, 15, 20	2.50	42.00

LAMP-INDICATING BAYONET TYPE

Transparent bayonet knob with indicating light. Molded phenolic body brown for HKR type, black for HKL and HKL-X types. Side terminals held mechanically as well as soldered (also end terminals on HKL and HKL-X). HKR end terminals held mechanically and have ⅛" outward movement when fuse is inserted. Locking slugs available on request without extra charge, ⅛" size. Models HKL and HKL-X are for Neon Lamps, have voltage rating of 90 to 250 and are rated 220,000 Lamp resistor ohms. Model HKL-X has parallel flat-sided knob for positive finger grip. Model HKR is for use with incandescent lamps, rated 22 to 33 volts, and 330 Lamp resistor ohms. Max. amps, 20.

Buss No.	Fuse Size, Inches	Knob Color	Net Price For Ten	Net Price For 100
HKL	¼ x 1¼	Clear	$17.00	$142.00
HKL-X	¼ x 1¼	Clear	17.00	142.00
HKR	¼ x 1¼	Amber	28.00	233.00

LAMP-INDICATING, SIGNAL-ACTIVATING TYPE

When used with GLD fuses in ratings of ¾ to 5 amps, provides simultaneous lamp and external signal indication when the fuse blows. Extension pin of fuse, on blowing, completes a circuit through the knob to indicating lamp of holder and an external signal (to a distant lamp or an audible alarm or relay). Current provided for signaling is 28 volts, .040 ampere. Transparent amber knob. Holder body is molded brown phenolic. Designed for use on circuits where load is 125 volts. Fits panels up to ⅛" thick. Flat area on threaded section to prevent rotation, or permit use of a ⅛" locking slug in a drilled hole (slug available, free).

Buss No. HKA—Net Each.....$ 3.73
Lot of 10, Net..... 31.10

IN-THE-LINE FUSEHOLDERS

Bayonet knob with metal holding ears. Center drilled contacts ready to be staked to ends of wire. Designed to take No. 18–22 wire (suffix -A) or 14–16 wire (suffix -B). Max. amps, 15.

Buss No.	Fuse Size, Inches	Max. Volts	Net Price For Ten	Net Price For 100
HHJ	¼ x 1¼	250	$2.30	$19.00
HHI	¼ x 1 or 1⅛	250	2.30	19.00
HHH	¼ x ⅞	250	2.30	19.00
HIG	¼ x ¾	250	2.30	19.00
HIF	¼ x ⅝	250	2.30	19.00

FUSEHOLDER ASSEMBLY WITH FUSE

Includes fuse and one of the standard holders listed above with 19" loop of #14 wire staked and soldered to terminals. Spring nut supplied for panel mounting.

Buss No.	Comp. Holder and Fuse Nos.	Net Price For Ten	Net Price For 100
HRJ	HHJ w/SFE 20	$4.10	$35.00
HRI	HHI w/SFE 14	4.10	35.00
HRH	HHH w/SFE 9	4.10	35.00
HRG	HIG w/SFE 6	4.10	35.00
HRF	HIF w/SFE 4	4.10	35.00

STANDARD FUSE BLOCKS

Molded black phenolic base; Albaloy-plated spring clips for strong grip, high corrosion resistance.

SOLDER TERMINAL TYPE ON SMALL BASE

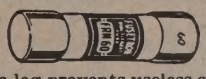
Buss No. for Fuse ¼" x 1¼"	Buss No. for Fuse ¼" x 1"	No. Poles	Base Size*	Net Each
3823-1	3828-1	1	½"	$0.19
3823-2	3828-2	2	1⅛"	.38
3823-3	3828-3	3	1¾"	.57
3823-4	3828-4	4	2⅜"	.76
3823-5	3828-5	5	3"	.95
3823-6	3828-6	6	3⅝"	1.14
3823-7	3828-7	7	4¼"	1.33
3823-8	3828-8	8	4⅞"	1.52
3823-9	3828-9	9	5½"	1.71
3823-10	3828-10	10	6⅛"	1.90
3823-11	3828-11	11	6¾"	2.09
3823-12	3828-12	12	7⅜"	2.28

SCREW TERMINAL TYPE ON FULL BASE

3833-1	.....	1	1⅛"	$0.38
3833-2	.....	2	1 11/16"	.76
3833-3	.....	3	2 9/16"	1.14
3833-4	.....	4	3⅛"	1.52
3833-5	.....	5	4 11/16"	1.90
3833-6	.....	6	5 11/16"	2.28
3833-7	.....	7	6 7/16"	2.66
3833-8	.....	8	7⅛"	3.04
3833-9	.....	9	8 1/16"	3.42
3833-10	.....	10	8 15/16"	3.80
3833-11	.....	11	9 13/16"	4.18
3833-12	.....	12	10¾"	4.56

*x 1⅝", 3823 Series; x 1⅜", 3828 Series; x 2⅜", 3833 Series.

FUSETRON DUAL-ELEMENT FUSES

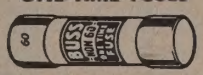


Long time-lag prevents useless shut-downs caused by ordinary fuses opening on starting currents or other harmless overloads, yet protects against short-circuits. On normal installations will guard motors against burnout from overloads or single phasing. U/L Listed for motor running and circuit protection up to 250 volts.

Buss No.	Amperes	Net Price For Ten	Net Price For 100
FRN	1/10, 15/100, 2/10, 3/10, 4/10, ½, 6/10, 8/10, 1, 1⅛, 1¼, 1-4/10, 1-6/10, 1-8/10, 2, 2¼, 2½, 2-8/10, 3-2/10, 3½, 4, 4½, 5, 5-6/10, 6¼, 7, 8, 9, 10, 12, 15, 17½, 20, 25, 30	$4.10	$34.00
FRN	35, 40, 45, 50, 60	8.10	67.00

FRN	70, 80, 90, 100	$18.30	$152.00

ONE-TIME FUSES



Get same care in engineering and manufacture as other BUSS products. Each can be depended upon to operate as intended under all service conditions. Carry U/L label. For voltages up to 250.

Buss No.	Amperes	Net Price For Ten	Net Price For 100
NON	1, 3, 6, 10, 15, 20, 25, 30	$1.20	$ 9.90
NON	35, 40, 45, 50, 60	2.30	19.00

NON	70, 80, 90, 100	$9.90	$82.00

TRON RECTIFIER FUSES

For Protection of Semiconductor Rectifiers and Similar Applications

Especially designed for protection of semiconductor rectifiers, thyristors and other solid state devices. High interrupting capacity and very fast clearing to restrict let-through current and energy to very low values. Give safe short-circuit protection for systems with fault current to 200 kA at 600 volts or less. Carry 100%, open at 1000 secs between 150% and 180% of rating; open within 1 sec at 250% of rating.

KAA SERIES

Size, 1½" lg. x 13/32" dia. Also available up to 1000 amps; prices on request.

Buss No.	Amperes	Max. Volts	Net Each
KAA	½, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 25, 30	130	$0.82

KAW SERIES

Size, 1½" lg. x 13/32" dia.

KAW	1, 2, 3, 4, 5, 7, 8, 10, 12, 15, 20, 25, 30	130	$0.82

KAB SERIES

Size, 9/16" dia. x 2" lg., values to 30 amps; 1 7/32" dia. x 3⅛" lg., 70 amps to 200 amps. Also available up to 800 amps; prices on request.

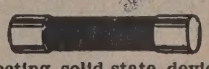
KAB	½, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 17½, 20, 25, 30	250	$0.93
KAB	70, 80, 90, 100, 150, 200	250	5.70

KAC SERIES

Size, 2⅞" lg. x 9/16" dia. Also available up to 800 amps; prices on request.

KAC	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 17½, 20, 25, 30	600	$1.25

GBB TRON RECTIFIER FUSES



For protecting solid state devices. Extra fast on overloads or fault currents, yet hold max. peak voltage, during interruption to well below PIV of diode being protected. Ceramic tube ¼" x 1¼". All ratings carry 100%, and open within 1 sec. at 250%; units to 10 amps also open in 0.01 sec. at 400%. **Voltage:** Rated 130 V or less for 1, 1¼, 2, 3, 4, 5, 6, 7, 8, 9 or 10 amps. Rated 65 V or less for 12, 15, 20, 25 or 30 amps. Specify which amperage when ordering.

All Values Above—Net for Five.$ 3.40
Net for 100..... 57.00

AUTO PROTECTOR

STOPS AUTO AND TRUCK THEFT

Time-delay device installs in minutes on any car, 6 or 12 volt systems. Allows thief to start engine; fuse opens within blocks and cannot be restarted. Individually bubble packed.

Buss No. AP-1—Net Ea., Lots 1–19 $3.50
Net Each, 20 or more..... 3.00
Buss No. AP-5—Spare fuse refills for above. Net Each.....$0.75

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Buss® Military Fuses and Holders

BUSS FUSES LISTED UNDER MIL-F-15160D

Suffix **S** on Military type designation (e.g., F01A250V1/500A-**S**) indicates silver plating; if silver plating is not required, omit (e.g., F01A250V1/500A).

Military Type Designation	Nearest BUSS Equiv.	Price Each
F01A250V1/500A-S	AGX1/500	$1.09*
F01A250V1/200A-S	AGX1/200	.45*
F01A250V1/100A-S	AGX1/100	.41*
F01A250V1/32A-S	AGX1/32	.35*
F01A250V1/16A-S	AGX1/16	.23*
F01A250V1/8A-S	AGX1/8	.16*
F01A250V1/4A-S	AGX1/4	.11*
F01A250V3/8A-S	AGX3/8	.11*
F01A250V1/2A-S	AGX1/2	.11*
F01A125V3/4A-S	AGX3/4	.11*
F01A125V1A-S	AGX1	.08*
F01A125V1½A-S	AGX1½	.08*
F01A125V2A-S	AGX2	.08*
F02A250V1/100A-S	AGC1/100	.41*
F02A250V1/32A-S	AGC1/32	.35*
F02A250V1/16A-S	AGC1/16	.16*
F02A250V1/8A-S	AGC1/8	.16*
F02A250V1/4A-S	AGC1/4	.11*
F02A250V3/8A-S	AGC3/8	.11*
F02A250V1/2A-S	AGC1/2	.11*
F02A250V3/4A-S	AGC3/4	.11*
F02A250V1A-S	AGC1	.08*
F02A250V1½A-S	AGC1½	.08*
F02A250V2A-S	AGC2	.08*
F02A250V3A-S	AGC3	.08*
F02A250V4A-S	MTH4	.084*
F02A250V5A-S	MTH5	.084*
F02A250V6A-S	MTH6	.084*
F02A32V10A-S	AGC10	.06*
F02A32V15A-S	AGC15	.06*
F02A32V20A-S	AGC20	.04*
F02B250V1/100A-S	MDL1/100	.31*
F02B250V1/32A-S	MDL1/32	.31*
F02B250V1/16A-S	MDL1/16	.22*
F02B250V1/8A-S	MDL1/8	.22*
F02B250V1/4A-S	MDL1/4	.22*
F02B250V3/8A-S	MDL3/8	.22*
F02B250V1/2A-S	MDL1/2	.22*
F02B250V3/4A-S	MDL3/4	.22*
F02B250V1A-S	MDL1	.22*
F02B125V1½A-S	MDL1½	.20*
F02B125V2A-S	MDL2	.20*
F02B125V3A-S	MDX3	.16*
F02B32V5A-S	MDL5	.16*
F02B32V8A-S	MDL8	.16*
F02B32V10A-S	MDL10	.16*
F02B32V15A-S	MDL15	.16*
F02B32V20A-S	MDL20	.16*
F03A250V1A-S	ABC1	.14*
F03A250V3A-S	ABC3	.14*
F03A250V5A-S	ABC5	.13*
F03A250V8A-S	ABC8	.13*
F03A250V10A-S	ABC10	.13*
F03A250V12A-S	ABC12	.14*
F03A250V15A-S	ABC15	.14*
F03A250V20A-S	ABC20	.14*
F03A125V30A-S	ABC30	.17*
F03B250V1/100A-S	MDA1/100	.41*
F03B250V1/32A-S	MDA1/32	.41*
F03B250V1/16A-S	MDA1/16	.34*
F03B250V1/8A-S	MDA1/8	.34*
F03B250V15/100A-S	MDA15/100	.34*
F03B250V3/16A-S	MDA3/16	.34*
F03B250V1/4A-S	MDA1/4	.34*
F03B250V3/8A-S	MDA3/8	.34*
F03B250V1/2A-S	MDA1/2	$0.34*
F03B250V3/4A-S	MDA3/4	.34*
F03B250V1A-S	MDA1	.34*
F03B125V3A-S	MDA3	.23*
F03B32V5A-S	MDA5	.23*
F03B32V8A-S	MDA8	.23*
F03B32V10A-S	MDA10	.23*
F03B32V12A-S	MDA12	.23*
F03B32V15A-S	MDA15	.23*
F03B32V20A-S	MDA20	.23*
F03B32V30A-S	MDA30	.23*
F05A32V10A-S	AGS10	.09*
F05A32V15A-S	AGS15	.09*
F05A32V20A-S	AGS20	.09*
F05A32V25A-S	AGS25	.09*
F05A32V30A-S	AGS30	.09*
F05B32V10A-S	MDM10	.22*
F05B32V15A-S	MDM15	.22*
F05B32V20A-S	MDM20	.22*
F05B32V25A-S	MDM25	.22*
F05B32V30A-S	MDM30	.22*
F06A250V1A-S	ABS1	.23*
F06A250V2A-S	ABS2	.23*
F06A250V3A-S	ABS3	.23*
F06A250V5A-S	ABS5	.20*
F06A250V10A-S	ABS10	.20*
F06A250V15A-S	ABS15	.20*
F07A250V1A-S	AGU1	.13*
F07A250V2A-S	AGU2	.13*
F07A250V3A-S	AGU3	.13*
F07A32V5A-S	AGU5	.13*
F07A32V10A-S	AGU10	.13*
F07A32V15A-S	AGU15	.13*
F07A32V20A-S	AGU20	.13*
F07A32V30A-S	AGU30	.13*
F07B125V1A-S	MDR1	.38*
F07B125V2A-S	MDR2	.38*
F07B125V3A-S	MDR3	.29*
F07B32V5A-S	MDR5	.29*
F07B32V10A-S	MDR10	.29*
F07B32V15A-S	MDR15	.29*
F07B32V20A-S	MDR20	.29*
F07B32V30A-S	MDR30	.33*
F09A250V1A-S	BAN1	.14
F09A250V2A-S	BAN2	.14
F09A250V3A-S	BAN3	.14
F09A250V3½A-S	BAN3½	.14
F09A250V5A-S	BAN5	.14
F09A250V6A-S	BAN6	.14
F09A250V6¼A-S	BAN6¼	.14
F09A250V7A-S	BAN7	.14
F09A250V8A-S	BAN8	.14
F09A250V10A-S	BAN10	.14
F09A250V15A-S	BAN15	.14
F09A250V20A-S	BAN20	.14
F09A250V25A-S	BAN25	.14
F09A250V30A-S	BAN30	.14
F09B250V1/10A-S	FNM1/10	.32
F09B250V15/100A-S	FNM15/100	.32
F09B250V2/10A-S	FNM2/10	.32
F09B250V3/10A-S	FNM3/10	.32
F09B250V4/10A-S	FNM4/10	.32
F09B250V1/2A-S	FNM1/2	.32
F09B250V6/10A-S	FNM6/10	.32
F09B250V8/10A-S	FNM8/10	.32
F09B250V1A-S	FNM1	$0.32
F09B250V1¼A-S	FNM1¼	.32
F09B250V1-6/10A-S	FNM1-6/10	.32
F09B250V2A-S	FNM2	.32
F09B250V2½A-S	FNM2½	.32
F09B250V3-2/10A-S	FNM3-2/10	.32
F09B250V4A-S	FNM4	.32
F09B250V5A-S	FNM5	.32
F09B250V6¼A-S	FNM6¼	.32
F09B250V8A-S	FNM8	.32
F09B250V10A-S	FNM10	.32
F09B125V15A-S	FNM15	.32
F09B32V20A-S	FNM20	.32
F09B32V25A-S	FNM25	.32
F09B32V30A-S	FNM30	.32
F15A250V1A-S	NFA1	.14
F15A250V3A-S	NFA3	.14
F15A250V6A-S	NFA6	.14
F15A250V10A-S	NFA10	.14
F15A250V15A-S	NFA15	.14
F15A250V20A-S	NFA20	.14
F15A250V25A-S	NFA25	.14
F15A250V30A-S	NFA30	.14
F15B250V1A-S	FRN1	.37
F15B250V1-6/10A-S	FRN1-6/10	.37
F15B250V2A-S	FRN2	.37
F15B250V2½A-S	FRN2½	.37
F15B250V3-2/10A-S	FRN3-2/10	.37
F15B250V4A-S	FRN4	.37
F15B250V5A-S	FRN5	.37
F15B250V6¼A-S	FRN6¼	.37
F15B250V8A-S	FRN8	.37
F15B250V10A-S	FRN10	.37
F15B250V12A-S	FRN12	.37
F15B250V15A-S	FRN15	.37
F15B250V20A-S	FRN20	.37
F15B250V25A-S	FRN25	.37
F15B250V30A-S	FRN30	.37
F60C500V1/8A-S	KLM1/8	.90
F60C500V1/4A-S	KLM1/4	.90
F60C500V3/8A-S	KLM3/8	.90
F60C500V1/2A-S	KLM1/2	.90
F60C500V3/4A-S	KLM3/4	.90
F60C500V1A-S	KLM1	.90
F60C500V3A-S	KLM3	.90
F60C500V6A-S	KLM6	.90
F60C500V8A-S	KLM8	.90
F60C500V10A-S	KLM10	.90
F60C500V15A-S	KLM15	.90
F60C500V20A-S	KLM20	.90
F60C500V25A-S	KLM25	.90
F60C500V30A-S	KLM30	.90

*Add **$9.00** Stamping Charge and a minimum **$6.00** per thousand Silver Plating Charge per item.

FUSE CLIPS LISTED MIL-F-21346 DATED 24 APRIL 1958

FC21AN	5682-01	$0.05
FC21BN	5674-01	.084
FC21CN	5960-07	.13
FC22AN	5678-02	.084
FC22CN	5664	.20

INSTRUMENT TYPE FUSES LISTED UNDER MIL-F-23419A, DATED 19 DEC. 1966

Part No.	Type Designation	Nearest BUSS Equivalent	Price Each
M23419/1-001	FM01 1/200A	GMU 1/200A	$0.78
M23419/1-002	FM01 1/100A	GMU 1/100A	.78
M23419/1-003	FM01 1/64A	GMU 1/64A	.78
M23419/1-004	FM01 1/32A	GMU 1/32A	.78
M23419/1-005	FM01 1/16A	GMU 1/16A	.78
M23419/1-006	FM01 1/10A	GMU 1/10A	.61
M23419/1-007	FM01 1/8A	GMU 1/8A	.61
M23419/1-008	FM01 2/10A	GMU 2/10A	.61
M23419/1-009	FM01 1/4A	GMU 1/4A	.61
M23419/1-010	FM01 3/10A	GMU 3/10A	.61
M23419/1-011	FM01 4/10A	GMU 4/10A	.61
M23419/1-012	FM01 1/2A	GMU 1/2A	.61
M23419/1-013	FM01 6/10A	GMU 6/10A	.61
M23419/1-014	FM01 3/4A	GMU 3/4A	.61
M23419/1-015	FM01 1A	GMU 1A	.61
M23419/1-016	FM01 1½A	GMU 1½A	.61
M23419/1-017	FM01 2A	GMU 2A	.61
M23419/1-018	FM01 3A	GMU 3A	.61
M23419/1-019	FM01 4A	GMU 4A	.61
M23419/1-020	FM01 5A	GMU 5A	.61

OTHER BUSS MIL FUSES & BLOCKS

Fuses to MIL-F-15160D also available in styles:

F10A	F16A	F20B	F27A	F36B	F39B	F52A	F65C
F11A	F16B	F21A	F28A	F37A	F40A	F61C	F66C
F14A	F19A	F21B	F29A	F37B	F40B	F62C	
F14B	F19B	F22A	F30A	F38A	F50A	F63C	
F15B	F20A	F22B	F36A	F39A	F50B	F64C	

Fuse Blocks to MIL-F-21346, Aircraft Limiters to MIL-F-5372C and Aircraft Blocks to MIL-F-5372C are also available.

BUSS FUSEHOLDERS LISTED UNDER MIL-F-19207B, DATED 31 AUG. 1966

Extractor post, blown fuse indicating and non-indicating types.

BUSS and Military Type Designation	Electrical Rating	Price Each, Lots of 1-99	100-499	500-999
FHL10U	30A, 90–250V	$3.85	$3.36†	.....
FHL11U	30A, 90–250V	3.30	2.75†	.....
FHL12U	30A, 90–500V	3.75	3.25†	.....
FHL17GI	20A, 90–250V	1.89	1.63	$1.35
FHL18GI-1	20A, 12–22V	2.89	2.48	2.08
FHL18GI-2	20A, 23–33V	2.89	2.48	2.08
FHL18GI-3	20A, 34–45V	2.89	2.48	2.08
FHL18GI-4	20A, 46–60V	2.89	2.48	2.08
FHL18GI-5	20A, 61–80V	2.89	2.48	2.08
FHL18GI-6	20A, 81–90V	2.89	2.48	2.08
FHL18GI-7	20A, 2.5–4V	2.89	2.48	2.08
FHL18GI-8	20A, 5–7V	2.89	2.48	2.08
FHL18GI-9	20A, 8–12V	2.89	2.48	2.08
FHN19G	15A, 250V	.86	.74	.62
FHL22W	20A, 250V	1.23	1.06	.89
FHN23W	30A, 250V	1.46	1.25	1.05
FHN26GI	30A, 250V	.665	.572	.478
FHL29G-1	30A, 12–22V	5.08	4.42†	.....
FHL29G-2	30A, 23–33V	5.08	4.42†	.....
FHL29G-3	30A, 34–45V	5.08	4.42†	.....
FHL29G-4	30A, 46–60V	5.08	4.42†	.....
FHL29G-5	30A, 61–80V	5.08	4.42†	.....
FHL29G-6	30A, 81–90V	5.08	4.42†	.....
FHL30G-1	30A, 12–22V	5.55	4.63†	.....
FHL30G-2	30A, 23–33V	5.55	4.63†	.....
FHL30G-3	30A, 34–45V	5.55	4.63†	.....
FHL30G-4	30A, 46–60V	5.55	4.63†	.....
FHL30G-5	30A, 61–80V	5.55	4.63†	.....
FHL30G-6	30A, 81–90V	5.55	4.63†	.....
FHN31GI	5A, 250V	.665	.572	.478
FHN42W	5A, 125V	.717	.606	.51

†Lots 100 Up.

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Net

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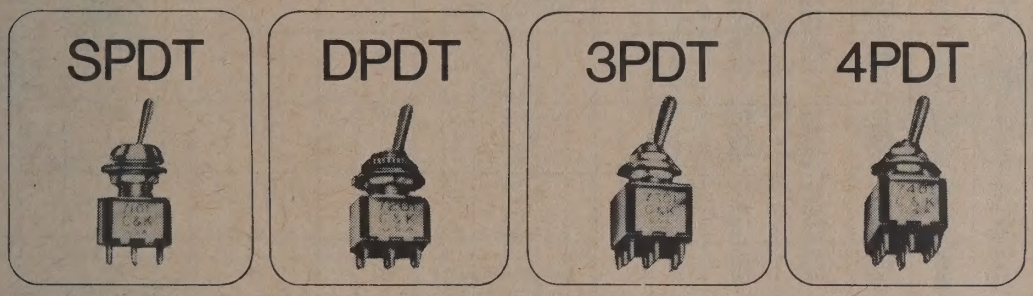
C&K SUBMINIATURE SWITCHES

Designed to meet the highest standards of quality and reliability. C & K's subminiature toggle and momentary pushbutton switches successfully combine maximum performance with minimum weight and small size. They are available in one, two, three, and four poles.

All of the switches feature rugged construction, simple mounting, excellent appearance, and long, trouble-free operation!

These subminiature toggle and pushbutton switches adapt to virtually any manual switching requirement in a very wide range of O.E.M. applications where space is at a premium!

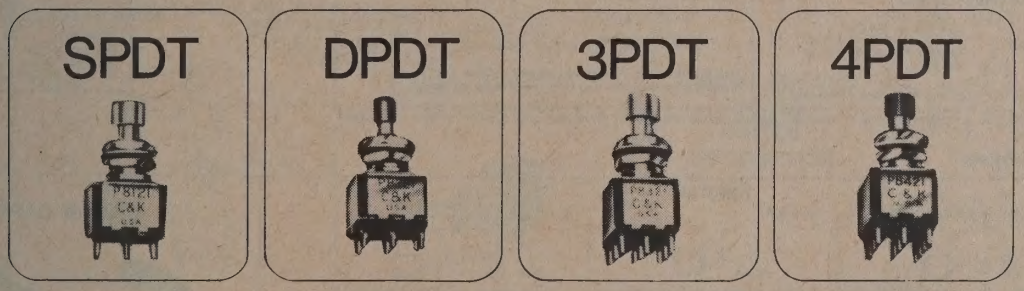
STANDARD CONFIGURATIONS — **TOGGLE SWITCHES**



General Specifications

Contact Rating: 5 Amperes resistive load @ 115 VAC — 28 VDC.
Insulation Resistance: 1000 megohms minimum.
Dielectric Strength: 1000 volts rms at sea level.
Electric Life: 100,000 make-and-break cycles minimum on all models ending in 01 only; all other models 40,000 cycles. 115 VAC — 28 VDC resistive load.
Initial Contact Resistance: 10 milliohms maximum at 2-4 VDC, 1 amp.
Contacts and Terminals: Working contacts Coin Silver
Operating Lever: Bright chrome plated brass toggle
Mounting Bushing: Nickel plated brass Housing: Stainless steel
Case Material: General purpose phenolic.
Standard Hardware Supplied.
2 Hex mounting nuts
1 Internal tooth lockwasher
1 Keyed positioning ring

STANDARD CONFIGURATIONS — **PUSHBUTTON SWITCHES**



General Specifications

Contact Rating: 1 Ampere resistive load @ 115 VAC — 28 VDC. Designed for use in dry (very low energy) circuits.
Insulation Resistance: 1000 megohms minimum.
Dielectric Strength: 1000 volts rms at sea level.
Electric Life: 60,000 cycles minimum at full load.
Mechanical Life: 1,000,000 make or break cycles minimum.
Contacts: Gold
Terminals: Copper Alloy with gold plating. Epoxy sealed terminals standard.
Pushbutton: Nylon plunger and cap.
Mounting Bushing: Nickel plated brass, high torque to withstand 12 in-lb with no distortion or loosening of parts.
Housing: Stainless Steel
Case Material: General purpose phenolic.
Standard Hardware Supplied:
2 Hex mounting nuts
1 Internal tooth lockwasher

C&K MPONENTS, INC.

quality electro-mechanical products

ORDERING GUIDE—TOGGLE & PUSHBUTTON SWITCHES WITH OPTIONS

TOGGLE SWITCHES

POLES & THROW	(1) MODEL NO.	KEYWAY	TOGGLE LEVER POSITIONS AND CIRCUITS		INDUSTRIAL NET PRICE SCHEDULE: LESS THAN 25 (each)	INDUSTRIAL NET PRICE SCHEDULE: 25 to 99 (each)	BASIC OPTIONS FOR STANDARD CONFIGURATIONS (To Specify: Add Suffix Indicated to Model No.) (SEE PAGE 2) (2) TOGGLES: SHORT	(2) TOGGLES: LONG	(3) BUSHINGS: SHORT	(3) BUSHINGS: HIGH TORQUE	(4) TERMINALS: PRINTED CIRCUIT	(4) TERMINALS: WIRE WRAP	(5) CONTACTS & TERMS MAT'L & PLATING: BRASS W/GOLD	(5) CONTACTS & TERMS MAT'L & PLATING: SILVER W/GOLD	(6) TERM SEAL: EPOXY
SPDT	7101	ON	NONE	ON	$1.65	$1.10	M	L	D	H	C	W	B	G	E
	7103	ON	OFF	ON	1.95	1.30									
	7105	(ON)	OFF	(ON)	1.95	1.30									
	7107	ON	OFF	(ON)	1.95	1.30									
	7109	NONE	ON	(ON)	1.95	1.30									
DPDT	7201	ON	NONE	ON	2.15	1.43									
	7203	ON	OFF	ON	2.55	1.70									
	7205	(ON)	OFF	(ON)	2.55	1.70									
	7207	ON	OFF	(ON)	2.55	1.70									
	7209	NONE	ON	(ON)	2.55	1.70									
	*7211	ON	ON	ON	2.85	1.90						W			
	*7213	ON	ON	(ON)	3.15	2.10									
	*7215	(ON)	ON	(ON)	3.45	2.30									
	Contacts Closed	2-3	2-3	1-2											
		5-6	4-5	4-5											
3PDT	7301	ON	NONE	ON	3.85	2.57						N/A			
	7303	ON	OFF	ON	4.80	3.20									
	7305	(ON)	OFF	(ON)	4.80	3.20									
	7307	ON	OFF	(ON)	4.80	3.20									
	7309	NONE	ON	(ON)	4.80	3.20									
4 PDT	7401	ON	NONE	ON	4.85	3.29									
	7403	ON	OFF	ON	6.05	4.10									
	7405	(ON)	OFF	(ON)	6.05	4.10									
	7407	ON	OFF	(ON)	6.05	4.10									
	7409	NONE	ON	(ON)	6.05	4.10									
	*7411	ON	ON	ON	6.90	4.30									
	*7413	ON	ON	(ON)	6.90	4.30									
	*7415	(ON)	ON	(ON)	6.90	4.30	M	L	D	H	C	N/A	B	G	E
	Contacts Closed	2-3	2-3	1-2											
		5-6	4-5	4-5											
		8-9	8-9	7-8											
		11-12	10-11	10-11											
	Add price indicated for options ▶						N/C	N/C	N/C	N/C	10¢ Per Pole	10¢ Per Pole	N/C	25¢ Per Pole	10¢ Per Pole

() Parenthesis Indicates Momentary Position *See Series 7200-7400 Outline Drawings (Page 2) for Terminal Designations N/A — Not Applicable

SPECIAL CONFIGURATIONS

RIGHT ANGLE MOUNTING	FLATTED TOGGLE ASS'Y	15/32 BUSH W/LARGE TOGGLE
A	P	T
NOTE: Bushing & Terminal Basic Options Do Not Apply. To Specify Add Suffix Indicated To Model No. ↓ A	NOTE: Bushing & Toggle Basic Options Do Not Apply. To Specify: Add Suffix Indicated To Model No.	
N/A		
N/A	P	T
35¢	50¢	75¢

N/C — No Charge

PUSHBUTTON SWITCHES

POLES & THROW	MODEL NO.	INDUSTRIAL NET PRICE SCHEDULE: LESS THAN 25 (each)	INDUSTRIAL NET PRICE SCHEDULE: 25 to 99 (each)	TERMS*: PRINTED CIRCUIT
SPDT	P8121	2.55	1.70	C
DPDT	P8221	3.45	2.30	↑
3 PDT	P8321	4.80	3.20	↑
4 PDT	P8421	6.05	4.10	C

*Optional—use suffix to specify—add 10¢ per pole

PRESS FIT CAPS FOR PUSHBUTTON SWITCHES

.200 Dia. or 3/8 Dia. Colors: Black, White, Red, Orange, Yellow, Green, or Blue

Unless Otherwise Specified—.200 Dia. White Cap is Supplied.

HOW TO ORDER: The following example illustrates how to specify complete part number

MODEL NO. (SEE TABLE ABOVE)
OPTIONS (SEE TABLE ABOVE)

① ②③④⑤⑥

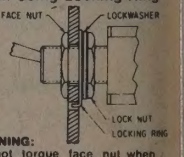
7101 L D C G E

- 7101 — SPDT ON-NONE-ON
- L — LONG TOGGLE
- D — SHORT BUSHING
- C — PRINTED CIRCUIT TERMINALS
- G — GOLD PLATED COIN SILVER CONTACTS & TERMS
- E — EPOXY TERMINAL SEAL

Specify option suffix in sequence indicated in Table.
If option is not desired — omit suffix (blank space not req'd).

TOGGLE AND PUSHBUTTON

Normal Panel Assembly When Using Locking Ring



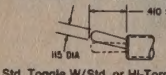
WARNING: Do not torque face nut when lock nut is not in place. (Except for high- torque bushing. See P5)

All prices F.O.B. Watertown, Mass. TERMS: net 30 days. Prices are subject to change without notice. Production quantity prices available on request.

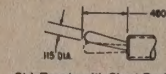
BASIC OPTIONS

TOGGLES

STANDARD: NO SUFFIX LETTER

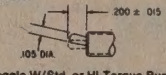


Std. Toggle W/Std. or HI-Torque Bushing

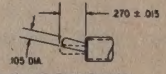


Std. Toggle with Short Bushing

M SHORT

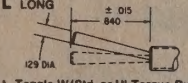


M Toggle W/Std. or HI-Torque Bushing

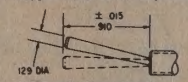


M Toggle with Short Bushing

L LONG



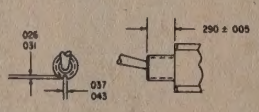
L Toggle W/Std. or HI-Torque Bushing



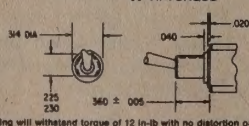
L Toggle with Short Bushing

BUSHINGS

D SHORT

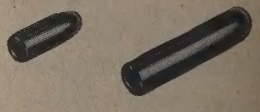


H HI-TORQUE



Bushing will withstand torque of 12 in-lb with no distortion or loosening of parts

COLOR CAPS



STANDARD LONG

Color-Caps (Vinyl Plastisol) available for standard and long toggles at no extra cost. Please specify: BROWN, BLACK, RED, ORANGE, YELLOW, GREEN, BLUE, VIOLET, GRAY, or WHITE.

C&K COMPONENTS, INC.

quality electro-mechanical products

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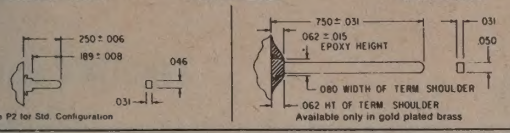
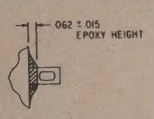
BASIC OPTIONS (Continued)

C PRINTED CIRCUIT **TERMINALS** **W** WIREWRAP



E TERMINAL SEAL

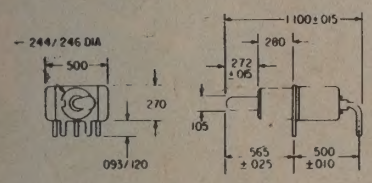


See P2 for Std. Configuration

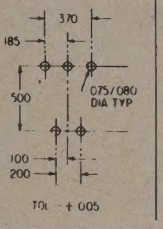
CONTACTS AND TERMINALS: MATERIALS, PLATING

B Contact (Terminal) Mat'l-½ Hd. Brass Comp. 22/QQ-B-626. Gold Plating 100 Millionths Over Copper Flash
G Std. Coin Silver Contact (Terminal) Mat'l. Gold Plating 100 Millionths Over Copper Flash

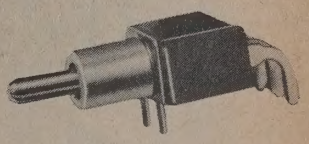
A RIGHT ANGLE MOUNTING SPDT



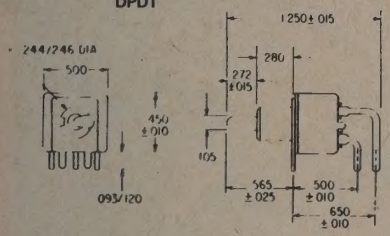
PRINTED CIRCUIT PANEL LAYOUT



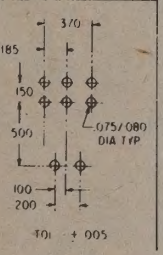
NOTES:
1. Contacts & Terms are Brass W/100 millionths Gold Pl.
2. Terminal Support is Brass W/Electrotin Plate.
3. Bright Chrome Plated Toggle is Standard.
4. Contacts make on Side Opposite Toggle Thrown.
5. Available In All SPDT Models. (See P4).



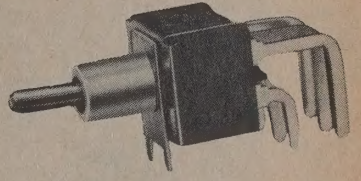
A RIGHT ANGLE MOUNTING DPDT



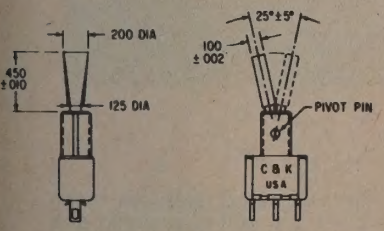
PRINTED CIRCUIT PANEL LAYOUT



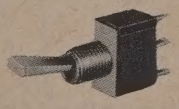
NOTES:
1. Notes 1 Thru 4 Above Apply.
2. Available In All DPDT Models. (See P4).



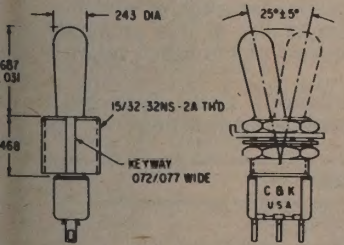
P FLATTED TOGGLE ASSEMBLY



NOTES:
1. See P2 For Other Dimensions.
2. Bright Chrome Plated Toggle Is Standard.
3. Mounting & Hardware — Same As Standard (See P5).
4. Available In All Models. (See P4).

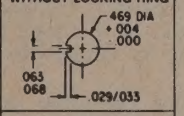


T 15/32 BUSHING W/LARGE TOGGLE

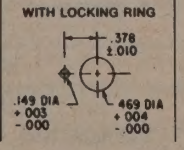


PANEL LAYOUTS

WITHOUT LOCKING RING



WITH LOCKING RING

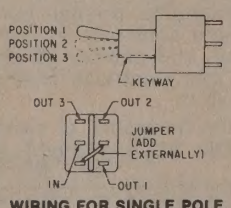


NOTES:
1. See P2 For Other Dimensions.
2. Bright Chrome Plated Toggle Is Standard.
3. Available In All Models (See P4).

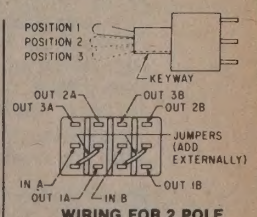
MISCELLANEOUS TOGGLE SWITCH INFORMATION

PANEL SEALS

Flexible Rubber Seal Boots are available from APM-Hexseal Corporation, 41 Honeck St., Englewood, New Jersey, and Multi-Flex Seals, Inc. 1811 First Avenue, New York, New York. These boots come in various styles and meet a number of MIL Specs for front panel switch seals.



WIRING FOR SINGLE POLE 3 POSITION SWITCH
(models 7211, 7213 & 7215)



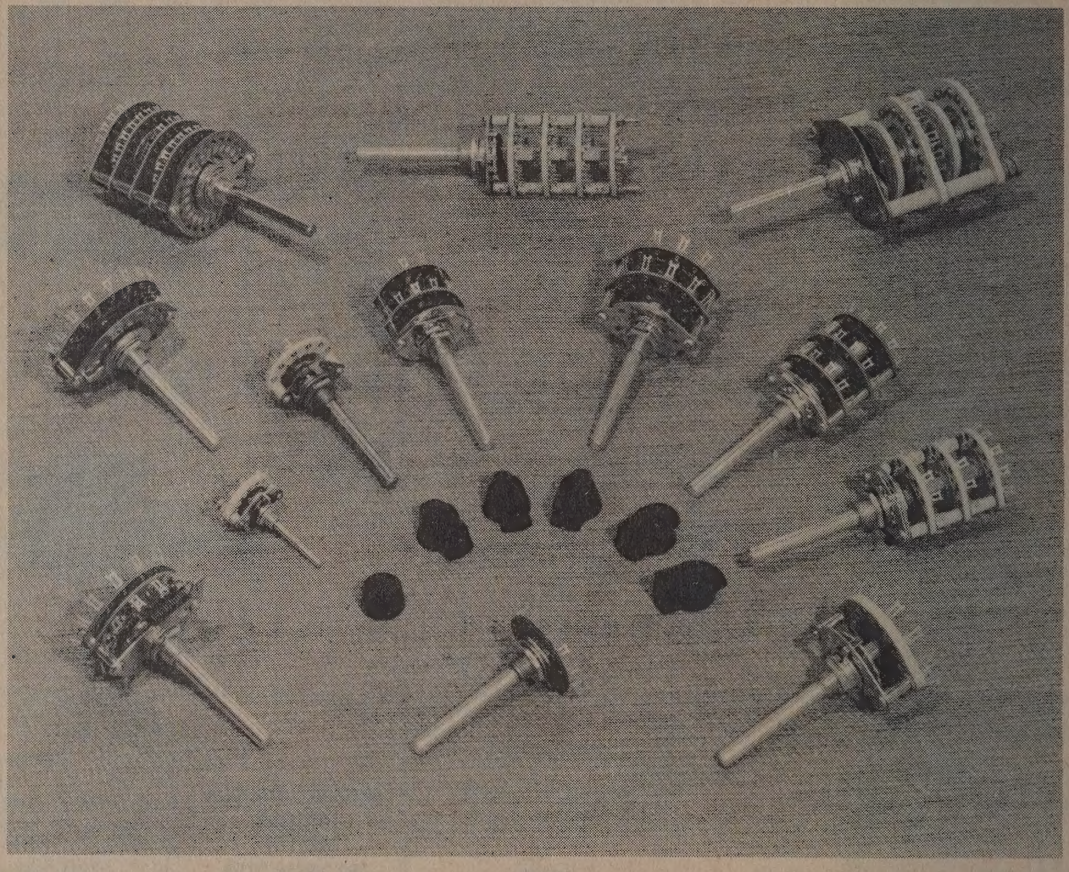
WIRING FOR 2 POLE 3 POSITION SWITCH
(models 7411, 7413, & 7415)

C&K COMPONENTS, INC.

quality electro-mechanical products

DISTRIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.



CENTRALAB ROTARY SWITCHES

Consistent with all products within Centralab's overall product line, Centralab rotary switches range from highly miniaturized units to heavy-duty types. Centralab rotary switches are well-engineered and manufactured, precision components that may be depended upon to serve reliably. The detailed specifications given in this catalog will help you accurately specify these switches for your applications.

The switches available through your Centralab Distributor are available with machine-assembled "staked" or bolted construction, ceramic or phenolic insulation. Comprehensive coverage of switching arrangements and number of sections per switch add to the total adaptability of this product line. Count on your Centralab Distributor as your source for immediate delivery of the exact switch for your application.

In addition to the thousands of switches available in your Centralab Distributor's stock, parts and kits are available for convenient, quick repair work and prototype assembly applications.

NEW PRODUCTS	PAGE	SERIES
	1262	PSA SERIES — SUB-MINIATURE DIALLYL PHTHALATE

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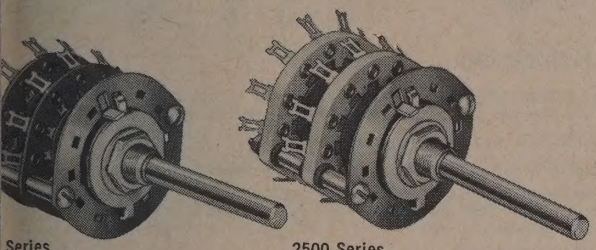
TRIBUTOR PRODUCTS

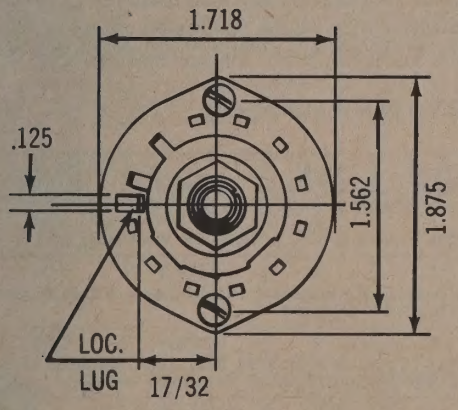
CENTRALAB
Electronics Division
GLOBE-UNION INC.

0 & 2500 Series SWITCHES

1400 Series Phenolic and 2500 Series Ce- rotary switches provide a complete line of y switches used primarily for band change general tap switch application where minia- ation is not a necessity. Three types of index nblies combined with an extensive choice enolic or ceramic sections, provide excep- l application versatility.



Series 2500 Series



CIFICATIONS

STRUCTION: Bolted
NTING: Single hole, bushing mounted
HING: ¾" – 32NEF-2A thread, ⅜" long, steel*
TING LUG: Left on 17/32" radius.
T: ¼" diameter, full round, 2¼" long from mounting surface, steel*
X ANGLE: Positive 30°, adjustable stops, or continuous rotation.
ION SPACING: ½" spacing between front plate and first section. ½" spacing een sections on two section switches; 1" spacing between sections on all 4 section switches.
LATION: 1400 Series: High quality laminated phenolic, type PBE, per MIL-P- B. Voltage breakdown between critical parts 1000 VAC-RMS.
Series: Centralab steatite, grade L-422 or better per MIL-I-10A, Dow-Corning silicone treated to prevent accumulation of surface moisture. Voltage break- between critical parts 1500 VAC-RMS. Extremely low frequency loss.
IONS: Phenolic – 1/16" thick; Ceramic – 5/32" thick
S AND ROTOR CONTACTS: Brass, silver-plated
DWARE: All other metal parts, except index ball, steel*
RENT AND VOLTAGE RATING: Make and break resistive load: 5.5 amp. @ 6 2.75 amp. @ 15 VDC; 2.25 amp. @ 28 VDC; 350 MA @ 115 VAC. Based on 00 cycle life test.
ACT RESISTANCE: Average initial resistance – 3 milliohms
TIONAL LIFE: 10,000 cycles minimum
KAGED: Singly. Includes mounting nut, lockwasher, and 1¼" black pointer , Cat. No. P-120. Sulphur-free cartons and Nox-Tarnish protective wrap e long shelf life.
tably plated to resist corrosion.

1400 SERIES ROTARY PHENOLIC SWITCHES
2500 SERIES ROTARY CERAMIC SWITCHES

Total No. Poles	No. Positions	Poles per Section	No. Sections	CERAMIC Catalog No. Shorting	CERAMIC Catalog No. Non-Shorting	PHENOLIC Catalog No. Shorting	PHENOLIC Catalog No. Non-Shorting
1	2-6	1	1	2500	2501	1400	1401
1	2-11	1	1	2502	2503	1402	1403
2	2-5	2	1	2504	2505	1404	1405
2	2-6	1	2	2510	2511	1410	1411
2	2-11	1	2	2512	2513	1412	1413
3	2-3	3	1	2506	2507	1406	1407
3	2-6	1	3	2520	2521	1420	1421
3	2-11	1	3	2522	2523	1422	1423
4	2	4	1	.....	.....	1408	1409
4	2-5	2	2	2514	2515	1414	1415
4	2-6	1	4	.....	.....	1426	1427
4	2-11	1	4	.....	.....	1428	1429
6	2-3	3	2	2516	2517	1416	1417
6	2-5	2	3	2524	2525	1424	1425
8	2	4	2	.....	.....	1418	1419
8	2-5	2	4	.....	.....	1430	1431

SEPARATE INDEX ASSEMBLIES

One piece construction with .187" rotor shaft, for use with 1400 Series phenolic or 2500 Series ceramic sections – AD through ZD. 30° positive index with adjustable stop. Packaged singly, including index, mounting nut and lockwasher, 1¼" black pointer knob Cat. No. P-120 and sufficient spacers, washers, tie-bolts, etc. to assemble complete switch. Assembly instructions furnished.

Suggested No. Sections	Catalog No.	Rear Shaft
1 to 3	P-270	2"
3 to 5	P-271	4"
5 to 10	P-272	8"

SEPARATE PHENOLIC SECTIONS

For use with P-270, P-271 and P-272 index assemblies. Sections 1⅞" x 1⅝" with 1⅝" strut centers and 1/16" thick. Rotor slot .187". Clips and contacts, brass silver-plated. Breakdown voltage between critical parts 1000 VAC-RMS.

No. Poles	No. Positions	Shorting	Non-Shorting
1	2-6	AD	HD
1	2-11	BD	JD
2	2-5	CD	KD
3	2-3	DD	LD
4	2	ED	MD
4	2-3	EED	BBD
1	2-5	FD	AAD
(Unused contacts one side of common connected and shorted out.)			
1	2-11	GD	CCD
(All unused contacts connected and shorted out.)			
1	2-10	PID	.....
(Nine active contacts, all open in full CW position, and progressively picked up and shorted to common contact with CCW rotation.)			
Combine for resistance decade		ND PD	....
Capacitance decade		QD	.....

SEPARATE CERAMIC SECTIONS

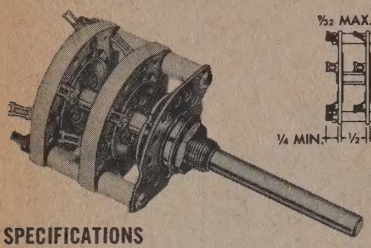
For use with P-270, P-271 and P-272 index assemblies. Sections 1⅞" x 1⅝" with 1⅝" strut centers and 5/32" thick. Rotor slot .187". Clips and contacts, brass silver-plated. Breakdown voltage between critical parts 1500 VAC-RMS.

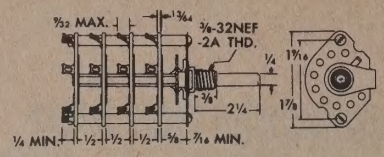
No. Poles	No. Positions	Shorting	Non-Shorting
1	2-6	TD	XD
1	2-11	UD	YD
2	2-5	RD	RRD
3	2-3	SD	SSD
4	2	VD	ZD
1	2-11	GGD	FFD
(All unused contacts connected and shorted out.)			
1	2-10	PISD	.....
(Nine active contacts, all open in full CW position, and progressively picked up and shorted to common contact with CCW rotation.)			
Combine for resistance decade		NSD PSD	....
Capacitance decade		QSD	.....

60 and 90 Degree SWITCHES

Centralab 60 and 90 degree indexing switches are particularly adaptable to industrial instrumentation. Rugged construction throughout and thicker than standard steatite sections provide a voltage breakdown of 2000 VAC-RMS. A two-piece steel and fabric-reinforced phenolic plastic shaft provides high voltage breakdown to ground.

Has wide application in radio ham equipment.





SPECIFICATIONS

CONSTRUCTION: Bolted

MOUNTING: Single hole, bushing mounted

BUSHING: 1/8"—32NEF-2A thd. steel*, 3/8" long

LOCATING LUG: None

SHAFT: 1/4" diameter, full round, steel*, 2 1/4" long from mounting surface

INDEX ANGLE: Positive, adjustable stop. 60° switches have 2 to 6 active positions. 90° switches have 2 to 4 active positions.

SECTION SPACING: 5/8" spacing between front plate and first section. 1/2" spacing between sections.

INSULATION: Centralab steatite, Grade L-422 or better per MIL-I-10A, Dow-Corning 200 silicone treated to prevent accumulation of surface moisture. Voltage breakdown between critical parts 2000 VAC-RMS. Extremely low frequency loss.

SECTIONS: Ceramic—1 3/4" thick

CLIPS AND ROTOR CONTACTS: Brass, silver-plated

HARDWARE: All other metal parts except index ball, steel*. All switches and separate indexed have phenolic shaft through section rotors which provides high voltage breakdown to ground.

CURRENT AND VOLTAGE RATING: Make and break resistive load: 350 MA @ 115 VAC; 175 MA @ 230 VAC; 5 MA @ 1500 VAC; 2.25 amp. @ 28 VDC, based on 10,000 cycles life test.

CONTACT RESISTANCE: Average initial resistance—3 milliohms

ROTATIONAL LIFE: 10,000 cycles minimum

PACKAGED: Singly. Includes mounting nut and lockwasher and (1) Cat. No. P-120 pointer knob and (1) Cat. No. P-404 dial plate for 60° switches, or (1) Cat. No. P-163 dial plate for 90° switches. Sulphur-free cartons and Nox-Tarnish protective wrap assure long shelf life.

*Suitably plated to resist corrosion.

60° TYPE SWITCHES

Total No. Poles	No. Positions	Poles per Section	No. Sections	Catalog No.
1	2 to 6	1	1	2550
2	2 to 6	1	2	2551
3	2 to 6	1	3	2552
4	2 to 6	1	4	2553
5	2 to 6	1	5	2554

60° Separate Section

1 pole	2-6 position	Non-Shorting	Cat. No. ZZD
(Use with P-273, P-274 and P-275 index assemblies.)			

60° Separate Index Assemblies

Switch Type—60° indexing. Two piece shaft construction, phenolic rear, metal front. Use with ZZD sections. Individuallly cartoned, including instruction sheet, index, pointer knob and sufficient hardware to assemble one complete switch.

Catalog No.	Rear Shaft	Suggested No. Sections
P-273	2"	1 to 2
P-274	4 1/4"	3 to 4
P-275	7"	5 to 8

90° TYPE SWITCHES

Total No. Poles	No. Positions	Poles per Section	No. Sections	Catalog No.
1	2 to 4	1	1	2542
2	2 to 4	1	2	2543
3	2 to 4	1	3	2544
4	2 to 4	1	4	2545
5	2 to 4	1	5	2546

90° Separate Sections

1 pole	2-4 position	Non-Shorting	Cat. No. XXD
(Use with P-278, P-279 and P-280 index assemblies.)			

90° Separate Index Assemblies

Switch Type—90° indexing. Two piece shaft construction, phenolic rear, metal front. Use with XXD section. Switches using this index will pass 2000 volts AC breakdown to ground test. Individually cartoned including instruction sheet, index, pointer knob and sufficient hardware to assemble one complete switch.

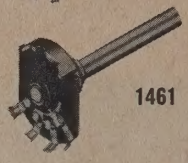
Catalog No.	Rear Shaft	Suggested No. Sections
P-278	2"	1 to 2
P-279	4 1/4"	3 to 4
P-280	7"	5 to 8

General Purpose SWITCHES

These general purpose switches are widely used in phono-radio co tions; PA. channel selectors; wave bands; meter reversers; meter tors; intercom talk-listen; momentary line or remote speaker re dual speaker and stereo speaker applications.

1484

1484



1461

1461

1462

1462

1472

1472

1465

1465

SPECIFICATIONS

CONSTRUCTION: Die-cast, one piece frame except 1463, 1464 and 1465 have stamped steel frames with phenolic section eyeleted in place.

MOUNTING: Single hole, bushing mounted

BUSHING: 3/8"—32NEF-2A thd., zinc die-cast 3/8" long

SHAFTS: 1/4" diameter, full round, steel*, 2 1/4" long from mounting surf cept: 1465—2 3/4" long FMS; 1484—5/8" long FMS; 1486—1 1/8" long FM split knurl end.

INDEX ANGLE: 30°

INSULATION: Electrical grade laminated phenolic. Voltage breakdown b critical parts 1000 VAC-RMS.

SECTIONS: Phenolic—1/16" thick

CLIPS AND ROTOR CONTACTS: Brass, silver-plated

CURRENT AND VOLTAGE RATING: Make and break resistive load; 230 MA VAC-RMS; 1.5 amps @ 28 VDC.

CONTACT RESISTANCE: Average initial resistance—3.5 milliohms

PACKAGED: Singly: includes mounting nut and lockwasher. Nos. 1484 an also include (1) Cat. No. P-401 black and chrome push on knob and inst sheet. Sulphur-free cartons and Nox-Tarnish protective wrap insure long life.

*Suitably plated to resist corrosion.

No. of Poles	No. of Positions	Indexing	Cat. No. Shorting	Cat. N Non-Shor
1	2	Positive	1460	.....
(Can be used as SPST or SPDT. For phono-radio, tone or sensitivity cont				
1	3	Positive	1461	.....
(Useful as miniature band change, step-type tone or sensitivity control P.A. channel selector.)				
2	2	Positive	1462	.....
(Can be used as SPST, SPDT, DPST, DPDT. For meter reversing, P.A., cha or switching both lines on phono-radio controls.)				
1	2	Spring Return	.....	1463
(Useful for meter reversing or inexpensive momentary talk switch on in com systems.)				
2	2	Spring Return	.....	1464
(Use as meter switch and momentary line or remote speaker return intercoms.)				
1	4	Positive	1465	.....
(Equipped with AC—DPST line switch. Used as replacement for "on-off, step tone control switch in many AM and FM receivers.)				
2	3	Positive	.....	1472
(Change switch for AM, FM, phono to amplifier in custom installations.)				
2	3	Positive	1473	.....
(Same as 1472)				
1	3	Positive	1483	.....
(Remote speaker switch for use with dual or auxiliary rear seat auto sp ers or monitor-remote speaker set ups. Permits operation of either spea separately or both simultaneously.)				
1	3	Positive	1484	.....
(Same as Cat. No. 1483 except with 1/4" bushing and 3/8, split knurl sh Includes P-401 knob and instructions.)				
2	3	Positive	1486	.....
(Stereo remote speaker switch enables switching "main pair" of ste speakers to "remote pair" of stereo speakers or for the operation of a speakers simultaneously. Includes P-401 knob and instructions.) See sw hardware—page 23.				

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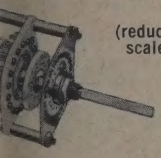
RIBUTOR PRODUCTS

CENTRALAB
Electronics Division
GLOBE-UNION INC.

000 Series SWITCHES

Centralab JV-9000 Series Heavy-Duty Rotary Power Switch was ed to meet today's requirements for high accuracy and long life. eries meets all engineering requirements for use in transmitters, rial controls, laboratory test equipment and many other special ations for commercial products.



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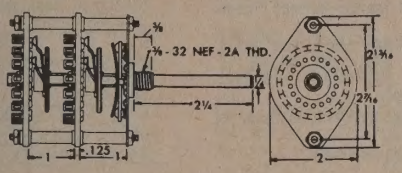


IFICATIONS

TRUCTION: Bolted
TING: Single hole, bushing mounted
NG: ⅜″ — 32NEF-2A thread, brass*, ⅜″ long
ING LUG: Adjustment of tie rod lengths will provide either one or two g lugs
: ¼″ diameter, double flat, steel*, 2¼″ long from mounting surface
ANGLE: Positive 20°, two adjustable stops. Removal of stops provides uous rotation
ON SPACING: 1″ spacing between front plate and first section and between tions
ATION: Centralab steatite, grade L-422 or better per MIL-I-10A, Dow-Corning licone treated to prevent accumulation of surface moisture. Voltage break- between critical parts 3000 VAC-RMS (static) except JV-18 and JVN-18 ns which are 2550 VAC-RMS (static). Extremely low frequency loss.
ONS: Ceramic — ⅛″ thick
CTOR RINGS AND CONTACT BUTTONS: Contacting surface is coin silver alloy
VARE: Contact springs silver-plated spring brass; terminals — brass silver- tie-rods; tie-rod nuts, flat washers and adjustable stop nuts — brass, -plated; front plate, shaft ball holder, adjustable stops, mounting nut and sher — steel cadmium-plated; index spring — steel; index ball and front — stainless steel; tie-rod lockwashers — phosphor bronze*; rotor retaining beryllium copper; spacer washers — nylon.
NT AND VOLTAGE RATING: Make and break resistive load; 9 amp. @ 110 MS; 15 MA (0.015 amp.) @ 2500 VAC-RMS; 30 amp. @ 5 VDC; 20 amp. VDC; 11 amp. @ 28 VDC except JV-18 and JVN-18 sections which are rated @ 110 VAC-RMS.
CT RESISTANCE: Average initial resistance — 7 milliohms
IONAL LIFE: 25,000 cycles minimum
GED: Singly, in extra heavy duty carton and Nox-Tarnish protective wrap. es 2″ double set-screw pointer knob, Cat. No. P-168, dial plate, adjustable n and nut and instruction sheet.
bly plated to resist corrosion.

JV POWER SWITCHES

Total Poles	No. Positions	Poles per Section	No. Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-17	1	1	JV-9000	JV-9001
2	2-8	2	1	JV-9032	JV-9033
2	2-17	1	2	JV-9004	JV-9005
3	2-5	3	1	JV-9002	JV-9003
3	2-17	1	3	JV-9008	JV-9009
4	2-8	2	2	JV-9034	JV-9035
4	2-17	1	4	JV-9012	JV-9013
5	2-17	1	5	JV-9016	JV-9017
6	2-5	3	2	JV-9006	JV-9007
6	2-8	2	3	JV-9036	JV-9037
6	2-17	1	6	JV-9020	JV-9021
8	2-8	2	4	JV-9038	JV-9039
9	2-5	3	3	JV-9010	JV-9011
12	2-5	3	4	JV-9014	JV-9015
15	2-5	3	5	JV-9018	JV-9019

SEPARATE SECTIONS

For use with JV-7 index assembly. Sections 2 1⅜₁₆″ high, 2″ wide, 2 7/16″ strut centers, ⅛″ thick.

Poles	Positions	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-17	JV-8	JVN-8
2	2-8	JV-10	JVN-10
3	2-5	JV-9	JVN-9

SEPARATE MULTIPLE FINGER SECTION

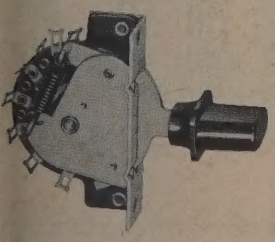
Poles	Positions	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-18	JV-18	JVN-18

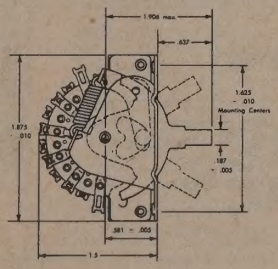
(Rotor has 17 silver-plated phosphor bronze fingers, making contact with 17 contacts on stator leaving one contact open.) By cutting off unwanted fingers, this section can be adapted for many special circuits. For example, can be adapted to one off, nine progressively shorting positions, pick up and hold each progressive position.

SEPARATE INDEX ASSEMBLY

Indexing	Shaft Length	Sections No.	Catalog No.
20°	7″	2-6	JV-7

Contains: (1) JV-7W index with 7″ rotor shaft, (2) P-5637 7¾″ tie-rods, (6) P-5363 tie-rod nuts, (6) P-4665 tie-rod lockwashers, (12) P-9410 ⅞″ spacers, (1) P-168 2″ black pointer knob, (24) P-7963 spacer washers, (1) P-21675 adjustable stop pin, (1) P-4088-1 stop pin nut, mounting nut and lockwasher; instruction sheet.





r Action SWITCHES

units mounted singly or in groups on spe- ates, are adaptable to intercoms, public s systems, test instruments, broadcast, a interchange, speaker selection, record nsation, channel selection, galvanometers any industrial applications.

ICATIONS

UCTION: Staked
ING: Bracket mounted. Two 6-32 thd. mount- es on 1⅝″ centers. Two 6-32 screws fur-

INDEX ANGLE: 30°
INSULATION: High grade laminated phenolic, type PBE, per MIL-P-3115B. Voltage breakdown between critical parts 1000 VAC-RMS.
CLIPS AND ROTOR CONTACTS: Brass, silverplated.
HARDWARE: All metal parts, except index spring—steel*.
CURRENT AND VOLTAGE RATING: Make and break resistive load: 1.5 amp. @ 28 VDC; 230 MA @ 115 VAC-RMS. Based on 10,000 cycle life test.
CONTACT RESISTANCE: Average initial resistance 3.5 milliohms.
ROTATIONAL LIFE: 25,000 cycles minimum.
PACKAGES: Singly, in sulphur-free carton and Nox-Tarnish protective wrap to insure long shelf life. Includes black push-on knob Cat. P-193 and two mounting screws.
*Suitably plated to resist corrosion.

WALL OUTLET TYPE PLATES

For installations where conduit and outlet boxes are used, permits mounting 1 or 2 units in outlet boxes—chrome satin finish.

No. of Switches	Catalog No.	Length	Width
1	P-222	2¾″	4½″
2	P-221	2¾″	4½″

1452 SERIES—LEVER ACTION SWITCHES

No. Poles	No. Positions	Type Indexing	Cat. No. Shorting	Cat. No. Non-Shorting
2	3	Positive	1452	1454
2	3	Spring Return	1453	1455
2	3	Positive & Sp. Ret.	1466	1467
4	2	Spring Return	1456	1457
4	2	Positive	1459	1458
1	3	Positive	.....	1475*

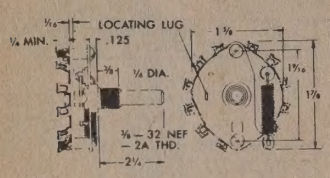
*(Primarily a replacement part for the ganged switches found in tube testers and other testing equipment.)

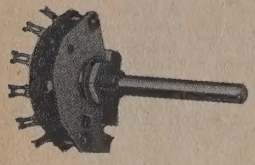
2	3	Positive	2815	.....

(Special model railroad reversing switch.)

1450, 1451, 1488, and 1489 Rotary Action SWITCHES

These 1⅞" diameter switches feature various combinations of positive and spring return indexes which are ideally suited for long hard use in test equipment or in P.A. and intercom equipment.





SPECIFICATIONS

CONSTRUCTION: Bolted, except Cat. No. 1450—staked

MOUNTING: Single hole, bushing mounted

LOCATING LUG: 1488, 1489—one lug on 17/32" radius

SHAFTS: ¼" diameter full round, steel*, 2¼" long from mounting surface.

INDEX ANGLE: 1450, 1451, 1488, 1489—30°

INSULATION: High quality laminated phenolic, type, PBE per MIL-P-3115B. Voltage breakdown between critical parts 1000 VAC-RMS.

SECTIONS: Phenolic—1/16" thick

CLIPS AND ROTOR CONTACTS: Brass, silver-plated

HARDWARE: All other metal parts, except index springs, are steel*

CURRENT AND VOLTAGE RATING: Make and break resistive load: 5.5 amp. @ 6 VDC; 2.75 amp. @ 15 VDC; 1.75 amp. @ 28 VDC; 350 MA @ 115 VAC. Based on 10,000 cycle life test.

CONTACT RESISTANCE: Average initial resistance 3 milliohms

ROTATIONAL LIFE: 10,000 cycles minimum

PACKAGED: Singly: including mounting nut and washer. Nos. 1451, 1488, 1489 include (1) paddle knob. No. 1450 includes (1) P-120 knob. Sulphur-free cartons and Nox-Tarnish tive wrap insure long shelf life.

*Suitably plated to resist corrosion.

ROTARY ACTION SWITCHES

Total No. Poles	No. Positions	No. Sections	Indexing	Cat. No. She
4	2	1	Positive	1
(Can be used as SPST and up to 4 pole, 2 p tion.)				
4	2	1	Spring Return	1
(Designed especially for "Press to talk" in com systems.)				
6	3	2	Spring Return	1
(Spring return both sides to center. Will repl any switch from 2 pole-2 position to 6 po position.)				
6	3	2	Positive & Spring Return	1
(Spring return index one side to center, posit index opposite side to center.)				

SWITCH HARDWARE

FOR 1400 AND 2500 SERIES ROTARY SWITCHES

Catalog No.	Description
P-124	½" Metal Spacer
P-125	⅜" Metal Spacer
P-126	½" Metal Spacer
P-127	¾" Metal Spacer
P-128	1" Metal Spacer
P-136	1" Screw
P-137	1½" Screw
P-138	2" Screw
P-139	2½" Screw
P-149	4¼" Screw
P-143	5" Screw
P-145	7" Screw
P-146	9" Screw
P-147	Nut
	(5-40 Thd.)
P-148	Lockwasher
P-177	Phenolic Spacer Washer
P-181	⅛" Steatite Spacer
P-187	¼" Steatite Spacer
P-188	⅜" Steatite Spacer
P-189	½" Steatite Spacer
P-190	⅝" Steatite Spacer
P-192	1" Steatite Spacer

FOR PA-1000 AND PA-2000 SERIES MINIATURE ROTARY SWITCHES

P-319	Miniature Stop Plate
P-325	1/16" Min. Steatite Spacer
P-326	3/16" Min. Steatite Spacer
P-328	¼" Min. Steatite Spacer
P-329	5/32" Min. Steatite Spacer
P-330	7/16" Min. Steatite Spacer
P-332	⅜" Min. Steatite Spacer
P-334	7/16" Min. Steatite Spacer
P-336	½" Min. Steatite Spacer
P-340	⅝" Min. Steatite Spacer
P-342	11/16" Min. Steatite Spacer
P-344	¾" Min. Steatite Spacer
P-348	⅞" Min. Steatite Spacer
P-350	15/16" Min. Steatite Spacer
P-352	1" Min. Steatite Spacer

PA-1000 — PA-2000 (Cont'd.)

Catalog No.	Description
P-362	1" Miniature Screw
P-370	2" Miniature Screw
P-374	2½" Miniature Screw
P-382	4" Miniature Screw
P-384	5" Miniature Screw
P-388	7" Miniature Screw
P-390	Miniature Nut
	(4-40 Thd.)
P-392	Miniature Lockwasher
P-394	Miniature Phenolic Spacer Washer

FOR PS-100 SERIES SUBMINIATURE ROTARY SWITCHES

Catalog No.	Description
P-515	1⅛" Sub-Min. Screw
P-516	Sub-Miniature Nut (2-56 Thd.)
P-527	Sub-Miniature Lockwasher
P-519	Sub-Miniature Spacer Washer
P-520	⅛" Sub-Miniature Steatite Spacer
P-521	3/32" Sub-Miniature Steatite Spacer
P-522	1/16" Sub-Miniature Steatite Spacer
P-523	3/16" Sub-Miniature Steatite Spacer
P-524	5/32" Sub-Miniature Steatite Spacer

FOR PA-6000 SERIES MINIATURE MILITARY SWITCHES

Catalog No.	Description
P-395	Miniature MIL Screw
P-396	Miniature MIL Nut (4-40 Thd.)
P-397	Miniature MIL Lockwasher
P-398	Miniature MIL Glass Epoxy Spacer Washer

KNOBS

Description	Cat. No.
11/16" Round Pointer Knob, Black, set screw, ⅛" Dia. Hole	P-106
1¼" Black Pointer Knob (set screw)	P-120
2" Black Pointer Knob Brass insert, 2 set screws (power)	P-168

KNOBS (Cont'd.)

Description	Cat.
Lever Switch—Black	P-
Lever Switch—Red	P-
1½" Paddle—Walnut (PA and intercom)	P-
13/16" Round, Split Knurl (Push on), Black with Chrome Center	P-
¾" RoundKnob, set screw, ¼" Dia. Hole (Brass insert)	P-

INTERSECTION SHIELDS

MINIATURE—.035" thick, steel. Use with PA-100 PA-2000 Series Switches to reduce coupling effe
Miniature Shield .....Cat. No. P

STANDARD—.035" thick. Use with 1400 or Series Switches between sections to reduce pling effects.
Standard Shield .....Cat. No. P-

DIAL PLATES

Etched aluminum, black background. 1⅞" (

1-2-3	30°	P-178	1-2-3-4	90°	P-
1 to 5	30°	P-115	10-20-40-80	90°	P-
1 to 6	30°	P-116			
1 to 10	30°	P-117	1 to 5	60°	P-
1 to 11	30°	P-118	10-15-20-40-80	60°	P-
1 to 12	30°	P-112			
1 to 23	15°	P-173			

2¾" diameter, etched aluminum, 20° mark for power switches.

1 to 5	20°	P-230	1 to 17	20°	P-
			1 to 8	20°	P-232

MOUNTING BRACKETS

For 1400 and 2500 series. .065" cadmium-pla steel. Use to mount between sections for ri ity, or at rear of long switch assemblies more accurate indexing. Footed, with slot mounting holes (1" centers) to chassis.

All 1⅝" wide.

Bracket 1¼" from Base to Shaft Center Cat. No. P-

Bracket 2¼" from Base to Shaft Center Cat. No. P-

Bracket 3¼" from Base to Shaft Center Cat. No. P-

Bracket-Dial Plate—dual speaker
Etched aluminum—(1483-1484 switches) Cat. No. P-

Bracket-Dial Plate—4 channel dual lines
Etched aluminum (PA-2050 switch) Cat. No. P-

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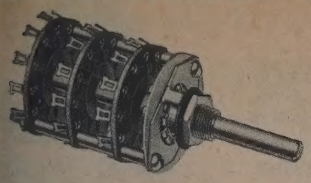
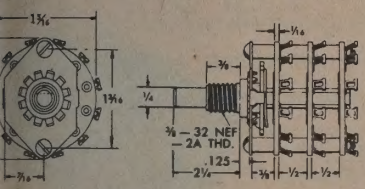
1000 Series Miniature Phenolic SWITCHES



nplete line of laminated phenolic insuated switches, filling the requirements for a ture switch which will meet rigorous com- al or military applications. Clip and con- arrangements assure low inter-circuit ca- nce and low contact resistance. The index blies and hardware are identical to those PA-2000 Series, allowing interchangeabil- he availability of separate sections and assemblies provides maximum flexibility.



Total Poles	No. Positions	Poles per Section	No. Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	1	1	PA-1000	PA-1001
2	2-5	2	1	PA-1002	PA-1003
2	2-11	1	2	PA-1004	PA-1005
3	2-3	3	1	PA-1006	PA-1007
3	2-11	1	3	PA-1008	PA-1009
4	2	4	1	PA-1010	PA-1011
4	2-5	2	2	PA-1012	PA-1013
4	2-11	1	4	PA-1014	PA-1015
5	2-11	1	5	PA-1016	PA-1017
6	2-3	3	2	PA-1018	PA-1019
6	2-5	2	3	PA-1020	PA-1021
6	2-11	1	6	PA-1022	PA-1023
8	2	4	2	PA-1024	PA-1025
8	2-5	2	4	PA-1026	PA-1027
10	2-5	2	5	PA-1030	PA-1031
12	2	4	3	PA-1028	PA-1029
12	2-5	2	6	PA-1032	PA-1033

SPECIAL CIRCUITS

1	2-10	1	1	PA-1034	.....

(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation.)

1	2-10	1	1	PA-1040	.....

(Nine active contacts, all open in full CCW position, and progressively picked up and shorted to common contact with CW rotation.)

60° INDEXING SWITCHES
(1½" SPACING BETWEEN SECTIONS)

Total Poles	No. Positions	Poles per Section	No. Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-6	1	1	.....	PA-1035
2	2-6	1	2	.....	PA-1037

SEPARATE MINIATURE PHENOLIC SECTIONS

Use with Index Assemblies No. PA-300, PA-301, PA-302 (except as noted) for assembly of special switches to meet your requirements.

Poles	Positions	Indexing	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	30°	PA-30	PA-31
2	2-5	30°	PA-32	PA-33
3	2-3	30°	PA-34	PA-35
4	2	30°	PA-36	PA-37
1	2-5	30°	PA-38	PA-39

(All unused contacts one side of common connected and shorted out.)

2	2-11	30°	PA-40	PA-41

(All unused contacts connected and shorted out.)

1	2-10	30°	PA-43	.....

(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation.)

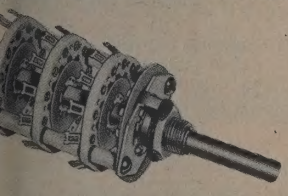
1	2-10	30°	PA-49	.....

(Nine active contacts, all open in full CCW position, and progressively picked up and shorted to common contact with CW rotation.)

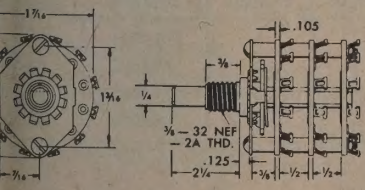
1	2-6	60°	.....	PA-45

(Use with 60° index assemblies PA-304 or PA-305.)

2000 Series SWITCHES



mplete line of ceramic insulated rotary hes, with greater switching combinations eetion than any previously available unit. PA-2000 series offers maximum voltage over, high-Q-low-loss steatite body, min- intercircuit capacity, and insulated front- clips. The index assemblies and hardware dentical to those of the PA-1000 Series, ng interchangeability. The availability of ate sections and index assemblies pro- maximum flexibility.



PA-2000 SERIES MINIATURE CERAMIC SWITCHES

Total Poles	No. Positions	Poles per Section	No. Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-12	1	1	PA-2000	PA-2001
2	2-6	2	1	PA-2002	PA-2003
2	2-12	1	2	PA-2004	PA-2005
3	2-5	3	1	PA-2006	PA-2007
3	2-12	1	3	PA-2008	PA-2009
4	2-6	2	2	PA-2010	PA-2011
4	2-12	1	4	PA-2012	PA-2013
5	2-3	5	1	PA-2014	PA-2015
5	2-12	1	5	PA-2016	PA-2017
6	2	6	1	PA-2018	PA-2019
6	2-5	3	2	PA-2020	PA-2021
6	2-6	2	3	PA-2022	PA-2023
6	2-12	1	6	PA-2024	PA-2025
8	2-6	2	4	PA-2026	PA-2027
9	2-5	3	3	PA-2028	PA-2029
10	2-3	5	2	PA-2030	PA-2031
10	2-6	2	5	PA-2032	PA-3033
12	2	6	2	PA-2034	PA-2035
12	2-6	2	6	PA-2036	PA-2037
15	2-3	5	3	PA-2038	PA-2039
18	2	6	3	PA-2040	PA-2041

SPECIAL CIRCUITS

1	2-10	1	1	PA-2052	.....

(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation.)

1	2-10	1	1	PA-2042	.....

(Nine active contacts, all open in full CCW position and progressively picked up and shorted to common contact with CW rotation.)

2	2-12	1	2	PA-2048#	PA-2049#

(Silver alloy clips and contacts.)

2	4	1	2	PA-2050	.....

(For Switching dual lines.)

60° INDEXING SWITCHES
(1½" SPACING BETWEEN SECTIONS)

Total Poles	No. Positions	Poles per Section	No. Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-6	1	1	.....	PA-2043
2	2-6	1	2	.....	PA-2045

SEPARATE CERAMIC SECTIONS

Use with Index Assemblies No. PA-300, PA-301, PA-302, (except as noted) for assembly of special switches to meet your requirements.

No. Poles	No. Positions	Indexing	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-12	30°	PA-0	PA-1
2	2-6	30°	PA-2	PA-3
3	2-5	30°	PA-4	PA-5
5	2-3	30°	PA-6	PA-7
6	2	30°	PA-8	PA-9
1	2-5	30°	PA-10	PA-19

(Unused contacts one side of common connected and shorted out.)

2	2-11	30°	PA-11	PA-18

(All unused contacts connected and shorted out.)

1	2-10	30°	PA-13	.....

(Nine active contacts, all shorted to common contact in full CCW position, and progressively opened and dropped with CW rotation.)

1	2-10	30°	PA-12	.....

(Nine active contacts, all open in full CCW position and progressively picked up and shorted to common contact with CW rotation.)

1	2-6	60°	PA-20	PA-17

(Use with 60° Index Assemblies PA-304 and PA-305.)

COIN SILVER ALLOY CLIPS AND CONTACTS

1	2-12	30°	PA-16#	PA-21#
2	2-6	30°	PA-14#	PA-23#
4	2	30°	PA-15#	PA-24#

CIFICATIONS FOR PA-1000 AND PA-2000 SERIES

ICATIONS

UCTION: Bolted
NG: Single hole, bushing mounted
G: ⅜" — 32NEF-2A thread, ⅜" long, steel, plated to resist rust and corrosion.
NG LUG: On 7/16" radius
¼" diameter, full round suitably plated to rust and corrosion, steel, 2¼" long from g surface
ANGLE: Positive 30°, adjustable stop or con- rotation, except PA-1035 and PA-1037 in PA-1000, and excepting PA-2043 and PA-2045 s PA-2000 — 60° indexing.
N SPACING: ⅜" spacing between front plate t section. ½" spacing between sections
TION: (PA-1000) High quality laminated phe- ype PBE, per MIL-P-3115B. Voltage breakdown critical parts 1500 VAC-RMS. (PA-2000) Centralab steatite, grade L-422 or better per MIL-I-10A, Dow-Corning 200 silicone treated to prevent accumulation of surface moisture. Voltage breakdown between critical parts 1500 VAC-RMS. Extremely low frequency loss.

SECTIONS: (PA-1000) Phenolic—1/16" thick. (PA-2000) Ceramic (steatite)—100" thick.

CLIPS AND ROTOR CONTACTS: (PA-1000) Brass, silver-plated. (PA-2000) Brass, silver-plated except # which have silver alloy clips and contacts. Silver alloy clips and contacts carry approximately twice the switching current over that for silver plated brass. Silver alloy service-life is from four to eight times that of silver plated brass.

HARDWARE: All other metal parts, except index spring and ball, steel*. For switches to meet military specifications, see "Military Switches".

CURRENT AND VOLTAGE RATING: Make and break resistive load: 5.5 amp. @ 6 VDC; 2.75 amp. @ 15 VDC; 1.5 amp. @ 28 VDC; 230 MA (0.230 amp.) @ 115 VAC; based on 10,000 cycles life test.

CONTACT RESISTANCE: Average initial resistance — 3.5 milliohms

ROTATIONAL LIFE: 25,000 cycles minimum

PACKAGED: Singly. Includes mounting nut, lockwasher, and 1¼" black pointer knob, Cat. No. P-120. Sulphur-free cartons and Nox-Tarnish protective wrap insure long shelf life.

*Suitably plated to resist corrosion.

SEPARATE INDEX ASSEMBLIES (includes hardware)

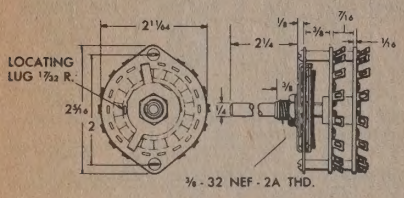
Indexing	Rear Shaft Length	Suggested No. Sections	Catalog No.
30°	2"	1 to 3	PA-300
30°	4"	4 to 6	PA-301
30°	6"	7 to 9	PA-302
60°	2"	1 to 3	PA-304
60°	4"	4 to 6	PA-305

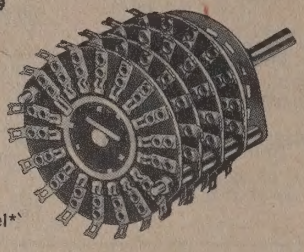
DISTRIBUTOR PRODU

CENTRALAB
Electronics Division
GLOBE-UNION INC.

PA-3000 Series SWITCHES

The PA-3000 Series provides accurate crisp indexing in both single and multiple-section versions through the use of a new hill-and-dale index. Two removable adjustable stops provide a choice of 2 to 17 active positions or removal of the stops for continuous rotation.





SPECIFICATIONS

CONSTRUCTION: Bolted

MOUNTING: Single hole, bushing mounted

BUSHING: 3/8"—32NEF-2A thd., 3/8" long, steel*

LOCATING LUG: On 17/32" radius

SHAFT: 1/4" diameter, full round, 2 1/4" long from mounting surface, steel*

INDEX ANGLE: Positive 20°, adjustable stops or continuous rotation by removing both stops

SECTION SPACING: 3/8" spacing between front plate and first section; 7/16" spacing between sections

INSULATION: High quality laminated phenolic, type PBE per MIL-P-3115B. Voltage breakdown between critical parts 1000 VAC-RMS.

SECTIONS: Phenolic, 1/16" thick

CLIPS AND CONTACTS: Brass, silver-plated. Double eyelet construction clips.

HARDWARE: Index spring and front plate—stainless steel; index ball, black oxide steel; rotor wings—steel nickel-plate; all other parts, steel*

CURRENT AND VOLTAGE RATING: Make and break resistive load: 0.350 amp. @ 115 VAC; 2.25 amp. @ 28 VDC. Based on 10,000 cycle life test.

CONTACT RESISTANCE: Average initial resistance—5 milliohms.

ROTATIONAL LIFE: 25,000 cycles minimum

PACKAGING: Singly. Includes mounting nut and lockwasher. Sulphur-free cartons and Nox-Tarnish protective wrap insure long shelf life.

*Suitably plated to resist corrosion.

Total No. Poles	No. of Positions	Poles per Section	No. of Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-17	1	1	PA-3000	PA-3001
2	2-17	1	2	PA-3002	PA-3003
3	2-17	1	3	PA-3004	PA-3005
4	2-17	1	4	PA-3006	PA-3007

SEPARATE INDEX ASSEMBLY

One piece construction with wing drive rotor shaft for use with PA-393 Phenolic Section. 20° positive index with two adj. stops. Packaged singly including mtg. nut and L.W. and ceramic spacers, washers, tie-bolts and instruction sheet to assemble complete switch.

Catalog No.	Shaft Length	Number of Sections	Indexing
PA-330	4"	1-8	20°

Contains: (1) PA-330 index with 4" rotor shaft, (2) P-149 4 1/4" tie-rods, (3) P-148 tie-rod lockwasher, (3) P-147 tie-rod nut, (3) P-177 spacer washer, (14) P-7611 7/16" spacer, (2) P-7609 5/16" spacer.

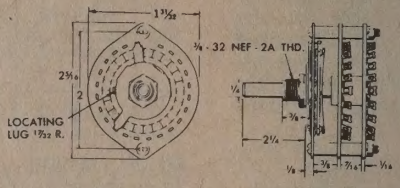
SEPARATE PHENOLIC SECTION

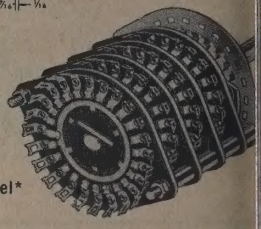
No. Poles	No. Positions	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-17	.....	PA-393

Note: Above section will also replace sections on PA-3003, PA-3005 and PA-3007 Switches.

PA-4000 Series SWITCHES

The PA-4000 Series of phenolic switches is designed to provide accurate, crisp indexing through the use of all new "hill-and-dale" index. All multiple section switches have new "wing type" rotor drive which minimizes rotation lag. Two removable adjustable stops simplify the choice of 2 to 23 active positions. Removal of both stops provide continuous rotation.





SPECIFICATIONS

CONSTRUCTION: Bolted

MOUNTING: Single hole, bushing mounted

BUSHING: 3/8"—32NEF-2A thd., 3/8" long, steel*

LOCATING LUG: On 17/32" radius

SHAFT: 1/4" diameter, full round, 2 1/4" long from mounting surface, steel*

INDEX ANGLE: Positive 15°; adjustable stops or continuous rotation by rem both stops.

SECTION SPACING: 3/8" spacing between front plate and first section; 7/16" ing between sections.

INSULATION: High quality laminated phenolic, type PBE per MIL P-3115B age breakdown between critical parts 1000 VAC-RMS.

SECTIONS: Phenolic, 1/16" thick

CLIPS AND CONTACTS: Brass, silver-plated

HARDWARE: Index spring, and front plate stainless steel; index ball, black steel; rotor wings, steel nickel-plate; all other parts, steel*

CURRENT AND VOLTAGE RATING: Make and break resistive load: 5.5 amp. VDC; 2.75 amp. @ 15 VDC; 1.5 amp. @ 28 VDC; 230 MA (0.230 amp.) @ VAC; based on 10,000 cycles life test.

CONTACT RESISTANCE: Average initial resistance—5 milliohms.

ROTATIONAL LIFE: 25,000 cycles minimum

PACKAGING: Singly. Includes mounting nut and lock-washer. Sulphur-free ca and Nox-Tarnish protective wrap insure long shelf life.

*Suitably plated to resist corrosion.

Total No Poles	No. of Positions	Poles per Section	No. of Sections	Catalog No. Shorting	Catalog N Non-Short
1	2-23	1	1	PA-4000	PA-4001
2	2-23	1	2	PA-4002	PA-4003
3	2-23	1	3	PA-4004	PA-4005
4	2-23	1	4	PA-4006	PA-4007

SEPARATE INDEX ASSEMBLY

One piece construction with wing drive rotor shaft for use with PA- Phenolic Section. 15° positive index with two adj. stops. Packaged si including mtg. nut and L.W. and ceramic spacers, washers, tie-bolts instruction sheet to assemble complete switch.

Catalog No.	Rear Shaft	No. of Sections
PA-440	4"	1 to 8

SEPARATE PHENOLIC SECTION

No. Poles	No. Positions	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-23	.....	PA-493

Note: Above section will also replace sections on PA-4003, PA-4005 an PA-4007 Switches.

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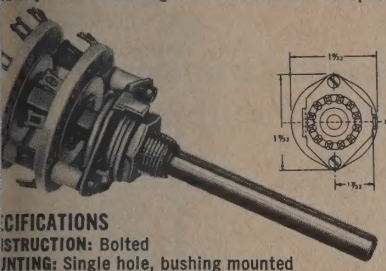
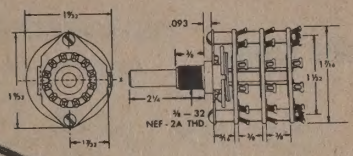
-6000 Series MILITARY SWITCHES

PA-6000 series is a complete line of miniature ceramic insulated switches ch meet the physical, environmental and test specifications of MIL-S-3786, e SR03.

E: Items requiring certified test data and government source inspection are cial; prices and information supplied upon request.

1 1⁹⁄₃₂" in diameter. The availability of separate sections with phenolic, alex or ceramic insulation and a separate index assembly, provides maximum ibility for assembling custom switches for special requirements.





CIFICATIONS

ISTRUCTION: Bolted

JNTING: Single hole, bushing mounted

HING: ⅜"—32NEF-2A thread, steel cadmium-chromate finish, ⅜" long

ATING LUG: On ⁷⁄₃₂" radius

FT: ¼" diameter, full round, steel, cadmium-chromate finish, 2¼" long from nting surface

EX ANGLE: Positive 30°, adjustable stop, or continuous rotation, except * ch has fixed (2 pos.) stop

TION SPACING: ⅜₁₆" spacing between front plate and first section, ⅜" spacing veen sections

ULATION: Centralab steatite, grade L-422 or better per MIL-I-10A, Dow- ning 200 silicone treated to prevent accumulation of surface moisture. Volt- breakdown between critical parts, 1000 VAC-RMS. Extremely low frequency .

TION: Ceramic (steatite)—.125" thick across strut holes; Phenolic—0.062" k; Mycalex—0.125" thick

PS AND ROTOR CONTACTS: Coin silver alloy clips and contacts. Treated for erability.

DWARE: Index ball, stainless steel; all other metal parts steel cadmium- ed chromate finish.

RENT AND VOLTAGE RATING: Make and break resistive load. 450 milliamperes 5 amperes) at 115 VAC; 8 amp. & 6 VDC; 2.6 amp. @ 28 VDC; 5.5 amp. @ VDC; 1.1 amp. @ 50 VDC. Based on 10,000 cycle life test.

TACT RESISTANCE: Average initial resistance, 2.0 milliohms

ATIONAL LIFE: 25,000 cycles minimum

KAGED: Singly, includes mounting nut, lockwasher and 1¼" black pointer Cat. No. P-120. Sulphur-free cartons and Nox-Tarnish protective wrap in- s long shelf life.

6000 SERIES MINIATURE CERAMIC SWITCHES

otal oles	No. Positions	Poles per Section	No. Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	1	1	PA-6000	PA-6001
2	2-5	2	1	PA-6002	PA-6003
2	2-11	1	2	PA-6004	PA-6005
3	2-3	3	1	PA-6006	PA-6007
4	2	4	1	PA-6010*	PA-6011*
4	2-5	2	2	PA-6012	PA-6013
6	2-3	3	2	PA-6018	PA-6019
8	2	4	2	PA-6024*	PA-6025*

s fixed (2 pos.) stop

ARATE INDEX ASSEMBLY

with PA-60, PA-70, or 0 series separate sec- s to assemble special s of 1 to 4 sections. 30° xing.

Catalog No.	Rear Shaft	Suggested No. of Sections
PA-600	2"	1 to 4

tains (1) PA-600 index with adjustable stops, mtg. nut and lockwasher mbled; (1) P-120 pointer knob; (2) P-325 ⅛" ceramic spacers; (2) P-328 ¼" mic spacers; (6) P-330 ⁵⁄₁₆" ceramic spacers; (2) P-395 2½" tie rods; (3) 6 nuts; (3) P-397 lockwashers; (20) P-398 glass epoxy spacer washers.)

ARATE PHENOLIC SECTIONS

use with PA-600 index assembly. Sections 1³²⁄₃₂" diameter, 1¹³⁄₃₂" strut centers, 2" thick across strut holes. Silver alloy clips and contacts. Terminals treated solderability. Breakdown voltage 1000 volts AC-RMS between critical parts.

oles	Positions	Indexing	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	30°	PA-60	PA-61
2	2-5	30°	PA-62	PA-63
3	2-3	30°	PA-64	PA-65
4	2	30°	PA-66	PA-67

ARATE MYCALEX SECTIONS

use with PA-600 index assembly. Sections 1³²⁄₃₂" diameter, 1¹³⁄₃₂" strut centers, 5" thick across strut holes. Silver alloy clips and contacts. Terminals treated solderability. Breakdown voltage between critical parts 1000 volts AC-RMS.

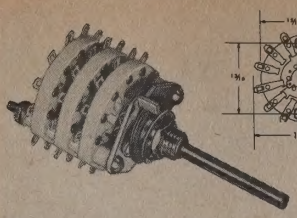
oles	Positions	Indexing	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	30°	PA-70	PA-71
2	2-5	30°	PA-72	PA-73
3	2-3	30°	PA-74	PA-75
4	2	30°	PA-76	PA-77

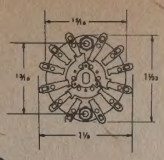
ARATE CERAMIC SECTIONS

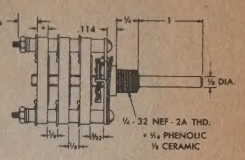
use with PA-600 index assembly. Sections 1³²⁄₃₂" diameter, 1¹³⁄₃₂" strut centers, 5" thick across strut holes. Silver alloy clips and contacts. Terminals treated solderability. Breakdown voltage 1000 volts AC-RMS between critical parts.

oles	Positions	Indexing	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	30°	PA-80	PA-81
2	2-5	30°	PA-82	PA-83
3	2-3	30°	PA-84	PA-85
4	2	30°	PA-86	PA-87

PS Series SUB-MINIATURE ROTARY SWITCHES







Centralab series PS switches are deluxe ceramic insulated ultra-small rotary switches. These switches weigh less than 1 ounce each, and have the same electrical ratings as switches much heavier and larger in diameter. Ideally suited for use in band switching, ultra-small electronic equipment, transistor circuits, aircraft instruments, and guided missiles.

SPECIFICATIONS

CONSTRUCTION: Bolted

MOUNTING: Single hole, bushing mounted

BUSHING: ¼"—32NEF-2A thread, ¼" long, brass cadmium-plated

LOCATING LUG: On ⅜" radius

SHAFT: ⅛" diameter, steel†, 1¼" long from mounting surface

INDEX ANGLE: Positive 30°. Fixed stop.

INDEX STOP STRENGTH: 10-inch pounds

SECTION SPACING: ⅝₂" ceramic spacing between front plate and first section. ⅛" ceramic spacing between sections.

INSULATION: Ceramic—Centralab steatite, Grade L-422 or better per MIL-I-10A, Dow-Corning 200 silicone treated to prevent accumulation of surface moisture. Voltage breakdown between critical parts 750 VAC-RMS.

INSULATION: Phenolic—High quality laminated phenolic, type PBE, per MIL-P-3115B Voltage breakdown between critical parts 750 VAC-RMS.

SECTIONS: Ceramic—⅛" thick; Phenolic—³⁄₁₆" thick

CLIPS AND ROTOR CONTACTS: Brass, silver-plated

HARDWARE: Front plate, index plate and shaft—steel†; index spring—beryllium copper; index ball—stainless steel; strut screws, nuts—brass, nickel-plated; lock washers—phosphor bronze. For switches to meet military specifications, see "Military Switches."

CURRENT AND VOLTAGE RATING: Make and break, resistive load; .550 amperes at 28 volts VDC; 170 milliamperes at 115 VAC (Based on 10,000 cycles).

CONTACT RESISTANCE: Average initial resistance 5 milliohms

ROTATIONAL LIFE: (Index) 25,000 cycles minimum

PACKAGED: Singly, in sulphur-free cartons and Nox-Tarnish protective wrap insuring long shelf life. Includes mounting nut, lockwasher, and one ¹¹⁄₁₆" dia. black pointer knob, Cat. No. P-106

†Suitably plated to resist corrosion.

SUB-MINIATURE CERAMIC ROTARY SWITCHES

Total Poles	No. of Positions	Poles per Section	No. of Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	11	1	1	PS-100	PS-101
2	11	1	2	PS-102	PS-103
2	5	2	1	PS-104	PS-105
3	11	1	3	PS-106	PS-107
3	3	3	1	PS-108	PS-109
4	5	2	2	PS-110	PS-111
4	2	4	1	PS-112	PS-113
6	5	2	3	PS-114	PS-115
6	3	3	2	PS-116	PS-117
8	2	4	2	PS-118	PS-119
9	3	3	3	PS-120	PS-121
12	2	4	3	PS-122	PS-123

SEPARATE SUB-MINIATURE INDEX ASSEMBLIES

All index assemblies listed below are designed for a maximum 3 sections and contain the following: (1) index and shaft assembly, (1) P-106 pointer knob, (6) ⅜₂" spacers, (2) ⅛" spacers, (2) ⅛" spacers, (2) ⅜₁₆" spacers, (2) 1⅛" tie bolts, nuts, lockwashers, washers and (16) plastic spacer washers.

No. Positions	Catalog No.	No. Positions	Catalog No.
2	P-501	7	P-506
3	P-502	8	P-507
4	P-503	9	P-508
5	P-504	10	P-509
6	P-505	11	P-510
		continuous rotation	P-511

SEPARATE SUB-MINIATURE SECTIONS

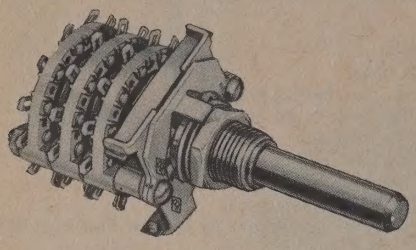
Use with index assemblies P-501 thru P-511 for fixed stop indexing and switching not supplied in the completed PS series switches.

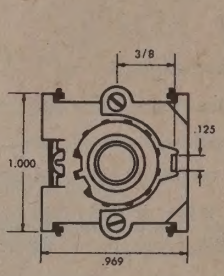
No. Poles	No. Positions	CERAMIC		PHENOLIC	
		Catalog No. Shorting	Catalog No. Non-Shorting	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-11	PS-20	PS-21	PS-40	PS-41
2	2-5	PS-22	PS-23	PS-42	PS-43
3	2-3	PS-24	PS-25	PS-44	PS-45
4	2	PS-26	PS-27	PS-46	PS-47

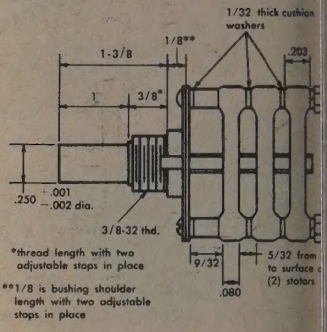
DISTRIBUTOR PRODU

CENTRALAB
Electronics Division
GLOBE-UNION INC.

New PSA Sub-Miniature Rotary Switches with Adjustable Stops







These deluxe, sub-miniature switches feature an all-new index mechanism with adjustable stops for extra switching arrangement versatility.

Construction is rugged 2-ball starwheel lateral thrust for exceptionally good torque control and feel. Plus extra application versatility for: band switching, ultra-small electronic equipment, transistor circuits, aircraft instruments, industrial and broadcasting equipment.

Each switch weighs less than one ounce, yet has the same electrical rating as switches much heavier and larger in diameter. Furnished with blue colored diallyl phthalate sections. Separate diallyl phthalate, phenolic and ceramic sections also available.

SPECIFICATIONS

MOUNTING: Bushing mounted

BUSHING: 3/8″—32 NEF Thread by 3/8″ long

LOCATING LUG: On 3/8″ radius

SHAFT: 1/4″ diam., full round, 1 3/16″ L.F.M.S.

INDEX ANGLE: Positive 30°, w/adjustable stops

INDEX STOP STRENGTH: 10 inch-pounds

SECTION SPACING: 3/32″ between front plate and clip surface of first section and 5/32″ spacing between sections (surface-to-surface).

INSULATION: Diallyl Phthalate—(Stator and Rotor). Average surface resistivity: 900,000 megohms. High quality molded thermosetting plastic type SDG per MIL-M-14F. Voltage breakdown between critical parts 750 VAC-RMS.*

SECTION: Diallyl Phthalate .203″ ±.005″ thick across strut holes and .080″ thick across clip surface-to-surface.

CLIPS AND ROTOR CONTACTS: Brass, silver-plated

HARDWARE: Front plate, index plate, bushing, mtg. hdwe., strut nuts and shaft-steel, plated to resist corrosion; index springs, strut screws and lockwashers—stainless steel.

CURRENT AND VOLTAGE RATING: Make and break, resistive load; 0.550 amperes at 28 volts VDC; 170 milliamperes at 115 VAC. (Based on 10,000 cycles load life test.)

CURRENT CARRYING CAPACITY: 7 amperes

CONTACT RESISTANCE: Average initial resistance 5 milliohms

ROTATIONAL LIFE: (Index) 25,000 cycles minimum

PACKAGED: Singly, in sulphur-free cartons and Nox-Tarnish protective wrap insuring long shelf life. Includes mounting nut and lock washer.

*See Catalog 33-I for INSULATION data for Ceramic and Phenolic Sections.

PSA SERIES SUB-MINIATURE ROTARY SWITCHES

Total Poles	No. of Positions	Poles per Section	No. of Sections	Catalog No. Shorting	Catalog No. Non-Shorting
1	2-12	1	1	PSA-200	PSA-201
2	2-6	2	1	PSA-202	PSA-203
2	2-12	1	2	PSA-204	PSA-205
3	2-5	3	1	PSA-206	PSA-207
3	2-12	1	3	PSA-208	PSA-209
4	2-6	2	2	PSA-210	PSA-211
5	2-3	5	1	PSA-214	PSA-215
6	2-5	3	2	PSA-220	PSA-221
6	2-6	2	3	PSA-222	PSA-223
9	2-5	3	3	PSA-228	PSA-229
10	2-3	5	3	PSA-230	PSA-231
15	2-3	5	3	PSA-238	PSA-239

FOR PROTOTYPES OR FIELD REPAIR

Separate index assemblies and sections are available for "on the s assembly of special switching or for repair requirements. Switches 1-5 sections in Diallyl Phthalate, ceramic or phenolic can be assem with parts listed below. Same specifications as factory assembled u

INDEX ASSEMBLIES

For use with sections shown below. Index assemblies furnished with adjustable stops and appropriate hardware.

Catalog No.	No. Sections	No. Pos.	Index
PSA-512	1-2	2-12	30
PSA-513	3-5	2-12	30

Contains: (1) PSA-512 adjustable stop index, (2) 1/16″, 3/32″, 3/16″ cera spacers, (12) 1/64″ plastic spacer washers, (4) 1/32″ glass cushion wash (2) 1 1/8″ tie bolts, nuts, lockwashers, and assembly instructions.

Contains: (1) PSA-513 adjustable stop index, (2) 1/16″, 3/16″ ceramic spac (8) 3/32″ ceramic spacers, (24) 1/64″ plastic spacer washers, (10) 1/32″ g cushion washers, (2) 1 5/8″ tie bolts, nuts, lockwashers and assem instructions.

SECTIONS: For use with index assemblies shown above.

				SEPARATE DIALLYL PHTHALATE SECTIONS		SEPARATE CERAMIC & PHENOLIC SECTIONS	
				Ceramic—1/8″ Thick		Phenolic—1/16″ Thick	
				Catalog No.		Catalog No.	
No. Poles	No. Pos.	Catalog No. Shorting	Catalog No. Non-Shorting	Shorting	Non-Shorting	Shorting	Non Shor ing
1	2-11			PS-20	PS-21	PS-40	PS-4
1	2-12	PS-50	PS-51				
2	2-5			PS-22	PS-23	PS-42	PS-4
2	2-6	PS-52	PS-53				
3	2-3			PS-24	PS-25	PS-44	PS-4
3	2-5	PS-54	PS-55				
4	2			PS-26	PS-27	PS-46	PS-4
5	2-3	PS-56	PS-57				

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TARY SWITCH KITS

e Centralab Switch kits afford a convenient, readily available source ock sections, indexes and hardware for assembling 1 7/16" or 1 7/8" eter phenolic or ceramic switches. All five SWK-810-860 kits are ed in rugged heavy gauge steel, shelf size cabinets, 23¼" wide, 9½" and 12" deep. All five SWK-400-480 kits are 10" x 11½" x 10".

-400 KIT

00 SERIES SUB-MINIATURE CERAMIC SWITCH PARTS

Ceramic Sections—30° Indexing

ty.	Cat. No. Shorting	Qty.	Cat. No. Non-Shorting	Poles per Section	No. Positions
3	PS-20	5	PS-21	1	2-11
3	PS-22	5	PS-23	2	2-5
3	PS-24	4	PS-25	3	2-3
3	PS-26	4	PS-27	4	2

Index Assemblies—30° Indexing

ty.	Catalog No.	No. Positions	Qty.	Catalog No.	No. Positions
2	P-501	2	1	P-506	7
2	P-502	3	1	P-507	8
1	P-503	4	1	P-508	9
2	P-504	5	1	P-509	10
1	P-505	6	2	P-510	11
			2	P-511	Continuous Rotation

switch cross reference included. Includes all necessary hardware to build itches up to 3 sections per switch.

-410

00 SERIES MINIATURE PHENOLIC SWITCH KIT

ains 48—1 7/16" diameter phenolic sections, 13 complete index mblies, plus hardware for constructing 13 phenolic standard or al switches.

Sections—30° Indexing

ty.	Cat. No. Shorting	Qty.	Cat. No. Non-Shorting	Poles per Section	No. Positions
4	PA-30	8	PA-31	1	2-11
4	PA-32	8	PA-33	2	2-5
2	PA-34	4	PA-35	3	2-3
2	PA-36	4	PA-37	4	2
2	PA-38	2	PA-39	1	2-5
2	PA-40	2	PA-41	1	2-11
2	PA-49	....	.....	1	2-10

Sections—60° Indexing

...	.....	2	PA-45	1	2-6

13 Index Assemblies and 5 Dial Plates

One switch cross-reference included.
Kit packed in 4 drawer metal cabinet 10" x 11½" x 10".

-420

00 SERIES MINIATURE CERAMIC SWITCH KIT

ains 52—1½" diameter ceramic switch sections, 13 complete index mblies, plus hardware for assembling 13 regular or special ceramic hes.

Sections—30° Indexing

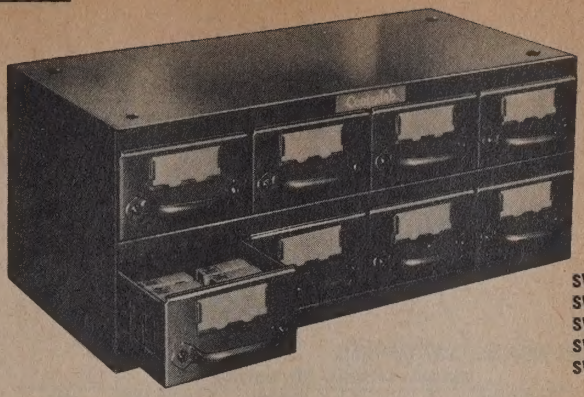
ty.	Cat. No. Shorting	Qty.	Cat. No. Non-Shorting	Poles per Section	No. Positions
4	PA-0	8	PA-1	1	2-12
4	PA-2	6	PA-3	2	2-6
2	PA-4	4	PA-5	3	2-5
2	PA-6	4	PA-7	5	2-3
2	PA-8	4	PA-9	6	2
2	PA-10	2	PA-19	1	2-5
2	PA-11	2	PA-18	1	2-11
2	PA-12	....	.....	1	2-10

Sections—60° Indexing

...	.....	2	PA-17	1	2-6

13 Index Assemblies and 5 Dial Plates

One switch cross-reference included.
Kit packed in 4 drawer metal cabinet 10" x 11½" x 10".



SWK-810
SWK-814
SWK-820
SWK-825
SWK-860

SWK-460 KIT

CONTAINS PA-6000 SERIES STYLE SR03 MINIATURE MILITARY PHENOLIC SWITCH PARTS BUILT TO MEET MIL-S-3786A

Phenolic Sections—30° Indexing

Qty.	Cat. No. Shorting	Qty.	Cat. No. Non-Shorting	Poles per Section	No. Positions
6	PA-60	8	PA-61	1	2-11
5	PA-62	8	PA-63	2	2-5
4	PA-64	6	PA-65	3	2-3
4	PA-66	4	PA-67	4	2

Index Assembly 30° Indexing			Dial Plates		
Qty.	Catalog No.	Shaft	Qty.	Catalog No.	Positions
15	PA-600	2"	1	P-115	1-5
			1	P-116	1-6
			1	P-117	1-10
			1	P-118	1-11
			1	P-178	1-2-3

Includes all necessary hardware to build 15 MIL switches up to 4 sections per switch.

SWK-480 KIT

CONTAINS PA-6000 SERIES STYLE SR03 MINIATURE MILITARY CERAMIC AND MYCALEX SWITCH PARTS BUILT TO MEET MIL-S-3786A

Ceramic Sections—30° Indexing

Qty.	Cat. No. Shorting	Qty.	Cat. No. Non-Shorting	Poles per	No. Positions
2	PA-80	4	PA-81	1	2-11
2	PA-82	4	PA-83	2	2-5
2	PA-84	4	PA-85	3	2-3
2	PA-86	4	PA-87	4	2

Mycalex Sections—30° Indexing

2	PA-70	2	PA-71	1	2-11
2	PA-72	2	PA-73	2	2-5
2	PA-74	2	PA-75	3	2-3
2	PA-76	2	PA-77	4	2

Index Assembly 30° Indexing			Dial Plates		
Qty.	Catalog No.	Shaft	Qty.	Catalog No.	Positions
15	PA-600	2"	1	P-115	1-5
			1	P-116	1-6
			1	P-117	1-10
			1	P-118	1-11
			1	P-178	1-2-3

Includes all necessary hardware to build 15 MIL switches up to 4 sections per switch.

SWK-810

PA-1000 SERIES MINIATURE PHENOLIC SWITCH PARTS

Phenolic Sections—30° Indexing

Qty.	Cat. No. Shorting	Qty.	Cat. No. Non-Shorting	Poles per Section	No. Positions
10	PA-30	16	PA-31	1	2-11
8	PA-32	14	PA-33	2	2-5
6	PA-34	10	PA-35	3	2-3
4	PA-36	8	PA-37	4	2
4	PA-38	6	PA-39	1	2-5
4	PA-40	4	PA-41	1	2-11
2	PA-43	....	.....	1	2-10
2	PA-49	....	.....	1	2-10

Phenolic Sections—60° Indexing

....	.....	8	PA-45	1	2-6

32 Index Assemblies and 35 Dial Plates

Plus sufficient spacers, screws, washers, nuts, knobs and shields for 32 regular or special switches. One switch cross-reference included.

DISTRIBUTOR PRODU

CENTRALAB
Electronics Division
GLOBE-UNION INC.

SWK-814
1400 SERIES PHENOLIC SWITCH PARTS

Phenolic Sections—30° Indexing

Qty.	Cat. No. Shorting	Qty.	Cat No. Non-Shorting	Poles per Section	No. Positions
4	AD	8	HD	1	2-6
6	BD	12	JD	1	2-11
8	CD	16	KD	2	2-5
4	DD	8	LD	3	2-3
2	ED	6	MD	4	2
2	EED	4	BBD	4	2-3
2	FD	4	AAD	1	2-5
2	GD	4	CCD	1	2-10
2	PID	....	.....	1	2-10
2	ND	} Combine for resistance decade switch			
2	PD				
2	QD	— for capacitance decade switch			

30 Index Assemblies and 30 Dial Plates

Plus sufficient spacers, screws, washers, nuts, knobs, shields and brackets for 30 regular or special switches. One switch cross-reference included.

SWK-820
PA-2000 SERIES MINIATURE CERAMIC SWITCH PARTS

Ceramic Sections—30° Indexing

Qty.	Shorting Cat. No.	Qty.	Cat. No. Non-Shorting	Poles per Section	No. Positions
8	PA-0	16	PA-1	1	2-12
6	PA-2	12	PA-3	2	2-6
6	PA-4	10	PA-5	3	2-5
4	PA-6	8	PA-7	5	2-3
4	PA-8	6	PA-9	6	2
2	PA-10	2	PA-19	1	2-5
2	PA-11	2	PA-18	1	2-11
2	PA-12	....	.....	1	2-10
2	PA-13	....	.....	1	2-10

Ceramic Sections—60° Indexing

2	PA-20	8	PA-17	1	2-6

32 Index Assemblies and 35 Dial Plates

Plus sufficient spacers, screws, washers, nuts, knobs and shields for 32 regular or special switches. One switch cross-reference included.

SWK-825
2500 SERIES CERAMIC SWITCH PARTS

Ceramic Sections—30° Indexing

Qty.	Cat. No. Shorting	Qty.	Cat No. Non-Shorting	Poles per Section	No. Positions
4	TD	8	XD	1	2-6
6	UD	12	YD	1	2-11
8	RD	14	RRD	2	2-5
6	SD	10	SSD	3	2-3
2	VD	6	ZD	4	2
2	GGD	4	FFD	1	2-10
2	PISD	....	.....	1	2-10
2	NSD	} Combine for resistance decade switch			
2	PSD				
2	QSD	— for capacitance decade switch			

Sections—60° Indexing

....	.....	10	ZZD	1	2-6

29 Index Assemblies and 30 Dial Plates

Plus sufficient spacers, screws, washers, nuts, knobs, shields and brackets for 29 regular or special switches. One switch cross-reference included.

SWK-860 KIT
CONTAINS PA-6000 SERIES STYLE SR03 MINIATURE MILITARY SWITCH PARTS BUILT TO MEET MIL-S-3786A

Ceramic Sections—30° Indexing

Qty.	Cat. No. Shorting	Qty.	Cat No. Non-Shorting	Poles per Section	No. Positions
4	PA-80	5	PA-81	1	2-11
4	PA-82	5	PA-83	2	2-5
4	PA-84	4	PA-85	3	2-3
3	PA-86	3	PA-87	4	2

Phenolic Sections—30° Indexing

3	PA-60	4	PA-61	1	2-11
3	PA-62	4	PA-63	2	2-5
3	PA-64	3	PA-65	3	2-3
2	PA-66	2	PA-67	4	2

Mycalex Sections—30° Indexing

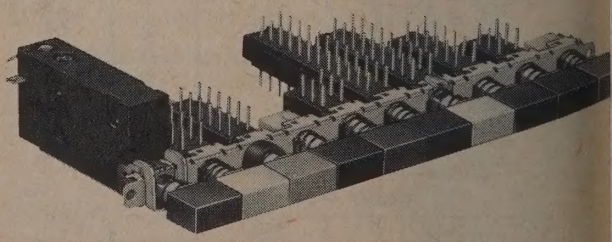
3	PA-70	3	PA-71	1	2-11
3	PA-72	3	PA-73	2	2-5
2	PA-74	2	PA-75	3	2-3
2	PA-76	2	PA-77	4	2

35 Index Assemblies and 25 Dial Plates

Includes all necessary hardware to build 35 MIL switches with up to 4 sections per switch.

PBK-1 — PUSHBUTTON SWITCH KIT

Now you can easily fill small quantity a sample requirements for Pushbutton switcl from Centralab's new PBK-1 Pushbut switch kit. The PBK-1 makes 1.5 million ferent switching combinations. There enough modules, knobs, and hardware s plied to assemble 66 different switching ur of various combinations. Assembly instructio and parts reorder form furnished with each



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PK-20-S ROTARY SWITCH KIT

This convenient kit will enable you to construct exact duplicates of Centralab's Series 20 miniature ceramic or phenolic switches plus a variety of special switches. An eyeletting pliers and a contact nibbling pliers are provided to assure you of a custom-made unit with the same precision as a factory built switch. Complete instructions and diagrams on the assembly of the switch and the use of the contact nibbling pliers.

RTS LIST FOR PK-20-S ROTARY SWITCH KIT

Cat. No.	Description
P8884-11	Clip 60° Short bent
P888-11	Clip 60° Long bent
P18407-11	Clip Reverse Short bent
P18408-11	Clip Reverse Long bent
P17894-11	Clip Insulated Long bent
P17896-11	Clip Insulated Short bent
P32312-11	Plug-in Clip Short bent
P32313-11	Plug-in Clip Long bent
P9251-11	Clip Dummy 60° bent
P30807	Insulator Block glass epoxy
P2708-11	Rivet for insulating to ceramic
Y37987-11	Eyelet for insulating to phenolic
P25611-11	Eyelet for phenolic stator
P16076-11	Eyelet for ceramic stator
P9093	Stator .062 thick phenolic
P31161	Stator .062 thick epoxy glass
P9097	Stator .100 thick ceramic
P9098	Stator .100 thick ceramic
P20483	Stator .031 thick 10 side
P20484	Stator .031 thick 12 side
P9101	Rotor phenolic .036 thick (use 2)
P9107	Rotor ceramic .115 thick
P29716	Rotor ceramic (must use with glass stator)
P10377-11	Contact for phenolic stator
P10225-11	Contact for phenolic stator
P10404-11	Contact for phenolic stator
P10823-11	Contact for phenolic stator
P9979-11	Contact for phenolic stator
P10205-11	Contact for phenolic stator
P10320-11	Contact for phenolic stator
P31990-11	Contact for phenolic stator
P31991-11	Contact for phenolic stator
P10648-11	Contact for ceramic stator
P10375-11	Contact for ceramic stator
P10207-11	Contact for ceramic stator
P10080-11	Contact for ceramic stator
P10218-11	Contact for ceramic stator
P10378-11	Contact for ceramic stator
P10405	Contact for ceramic stator
P18147	Spacers 3/16" long
P18149	Spacers 3/8" long
P18145	Spacers 1/4" long
P31063	Spacers 3/16" long
P18148	Spacers 11/32" long
P9416	Screw 3" long
P10667	Screw 6" long
P9408	Nut for struts
P30201	Lockwasher for struts
P9226	Cushion spacer washer
P10815	Adjustable stop
P9113	Rotor retainer
P10816	Intersection shield
P45121	3 amp 125 volt AC line switch assembly
P37462	Shaft extension to activate line switch
AK-16	Coupler for connecting shafts
P11039-00	C Ring
PS028-008	Index assemblies
PS028-202	60° Index front plate assembly
	Contact leg twisting tool
	Eyeletting pliers
	Nibbling pliers with acorn nut
	Punches (Spliting, non-shorting, shorting)
42-927	Series 20 specification sheets
42-212R	Switch visualizer

21-S SWITCH KIT (Centralab Series 600)

supplement kit offers three types of section insulation: ceramic, olic and Mycalex, plus the sturdy hill and dale index mechanism for truction of PA-600 miniature switches.

PK-21-S SWITCH KIT

CRL Part Number	Description
PS601—003	Index assembly
P23880	Phenolic stator .062 thick
P32516	Ceramic stator .125 thick
P28553	Mycalex stator .125 thick
P30105—51	Intersection shields
PS601—010	60° front plate assembly
P32515	Ceramic rotor
P32162—11	Contact for P32516 stator
P42740—11	Contact for P32516 stator

PK-22-S SWITCH KIT (Centralab Series 30 & 40)

Additional versatility is offered with the use of this supplement kit. It contains all necessary parts for building switch and control combinations and dual concentric switches with multiple switch sections front and rear.

PK-22-S SWITCH KIT

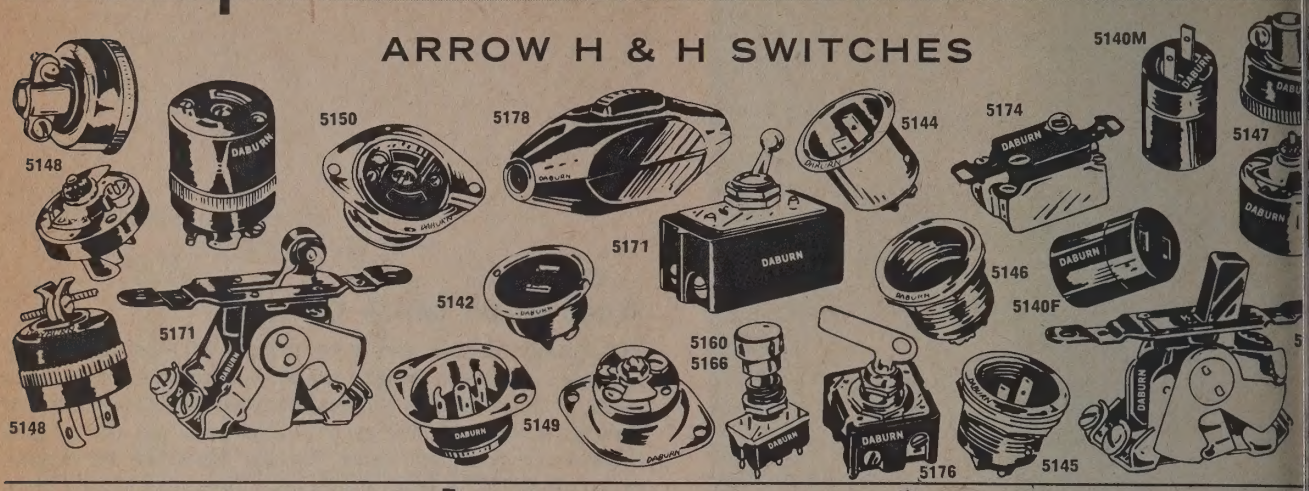
CRL Part Number	Description
P9115—51	Potentiometer mtg. plate
P9375—00	Spring clip
PS028—200	Sleeve shaft index
PS028—201	Inner shaft index
P37463—51	Plain round inner shaft

DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

ARROW H & H SWITCHES



DOUBLE ACTION COMPACT PUSH-PUSH SHALLOW

QUICK MAKE AND BREAK

15/32" sleeve diameter, 3 amp., UL approved. Molded phenolic base. Complete with hex and knurled nut; nickel plated. All accept snap button; supplied less insulating button (#5132). (Order separately, red or black.) 1 amp., 250V 3 amp. 125V AC-DC. Solder lug terminals with double wiping blades.

Daburn No.	Descrip.	Sleeve	Width	Lgth.	Hgt.
5160	SPST	9/16"	41/64"	1-1/32"	13/16"
5161	SPDT	9/16"	41/64"	1-1/32"	13/16"
5162	DPST	9/16"	41/64"	1-1/32"	13/16"
5163	DPDT	9/16"	41/64"	1-1/32"	13/16"

Std. Pkg. 25

MOMENTARY ACTION COMPACT PUSH SWITCH

QUICK MAKE AND BREAK

15/32" Sleeve Diameter — 3 Amp.

UL approved. Molded base. Complete with hex and knurled nut; nickel plated. All accept snap button; supplied less insulating button (#5132). (Order separately, red or black.) Solder lug terminals with double wiping blades.

Daburn No.	Descrip.	Sleeve	Width	Lgth.	Hgt.
*5166	SPST	9/16"	41/64"	1-1/32"	13/16"
5167	SPDT	9/16"	41/64"	1-1/32"	13/16"
*5168	DPST	9/16"	41/64"	1-1/32"	13/16"
5169	DPDT	9/16"	41/64"	1-1/32"	13/16"

*SPST and DPST — normally off.

Std. Pkg. 25

HEAVY DUTY SWITCHES

TOGGLE TYPE 30 AMP

UL approved. 30 Amp, 250 Volts, AC-DC, 2HP, 115V-230V AC; 1 HP, 460V AC. Used on machine tools, pumps, food machines, sanders, grinders, etc.

DABURN No.	Description	Std. Pkg.
5171	DPST	5
5172	DPST	5

METAL PUSH BUTTON TYPE

NORMALLY OPEN — 20 AMP

UL approved. 20 Amp.-250V, 2 HP 230V AC, 2 HP 250V DC. Used on floor sander, foot switch etc.

DABURN No.	Description	Std. Pkg.
5174	DPST	5

ROTO-LOCK SWITCH

20 AMP.

UL approved. 20 Amp., 120V, 240V AC.
1½ HP — 120V AC
2 HP — 120V AC

Key removable in off position only.

DABURN No.	Description	Sleeve	Std. Pkg
5176	DPST	9/16"	5
5176K0	Key only for above		5

FEED-THRU CORD SWITCH

10 AMP.

UL approved, sliding lever, black case. 10 Amp.-125V, 5 Amp.-250V. Cord hole—5/16".

DABURN No.	Description	Std. Pkg.
5178	SP	6

FEED-THRU CORD SWITCH

15 AMP.

UL approved for appliance use only. 10 Amp-250V, 15 Amp.-125V.

DABURN No.	Description	Std. Pkg.
5179	DP (3rd Wire Gd.)	5

CORD CONNECTORS

10 AMP.

Complete brown bakelite cord connector. 10 Amp.-250 Volts, end opening for wire size up to 3/8" O.D.

DABURN No.	Description	Std. Pkg.
5140	Complete	10
5140F	Female Part Only	10
5140M	Male Part Only	10

DABURN H & H RECEPTACLES

10 AMP.

SHORT FEMALE FLUSH RECEPTACLE

UL approved. 10 Amp.-250 Volts AC.

DABURN No.	Description	Std. Pkg.
5143	Lock Nut Mounting	5
5142	2 Screw Mounting	5

Complete warehouse inventories on all AH&H numbers.

RECESSED MALE RECEPTAC

10 AMP.

DABURN No.	Description	Std.
5144	2 Screw Mounting	
5145	Lock Nut Mounting	

RECESSED FEMALE RECEPTA

10 AMP.

DABURN No.	Description	Std.
5146	Lock Nut Mounting	

COMPACT RECEPTACLES — TURN TO LOCK

3 WIRE GROUNDING TYPE

FEMALE CONNECTOR — 15 AMP.-125 VO

Brass metal casings, corrosion resistant finish. bakelite.

DABURN No.	Description	Std.
5147	Female Connector	

MALE CONNECTOR

15 AMP.-125 VOLT

DABURN No.	Description	Std.
5148	Male Connector	5

MALE RECEPTACLES

MALE RECEPTACLES
15 AMP.-125 VOLT

DABURN No.	Description	Std.
5149	Male Receptacle	5

FEMALE RECEPTACLE

15 AMP.-125 VOLT

DABURN No.	Description	Std.
5150	Female Receptacle	5

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DABURN ELECTRONICS & CABLE CORP.

CUTLER-HAMMER • CONTINENTAL-WIRT • MAGNETIC PROXIMITY SWITCHES

TLER HAMMER POSITIVE ACTION SWITCHES

CIRCUIT IDENT. NO.	CIRCUIT
1	On-Off-On
2	On-None-Off
3	On-None-On
4	On-Off-None
5	On-On-None
6	On-None-Off (Mom.)
7	On-Off-On (Mom.)
8	Off-None-On (Mom.)
9	On (Mom.) Off-On (Mom.)
10	On-None-On (Mom.)
11	On-Off (Mom.)-None
12	On (Mom.)-On-None
13	None-Off-On (Mom.)

ST-40 SERIES
Single Pole with Screws

T-40 Series equipped with sealed lever.
Rating Per Pole: 10 Amp.-115V AC, 20 Amp.-28V DC. Std. Pkg. 10

URN o.	CH No.	JAN-S-23 No.	MIL-S-6745 No.	Type	Circuit Code No.
0	8801K13	ST40A	AN3021-2	SPST	2
1	8813K12	ST40B	AN3021-9	SPST	6
2	8811K12	ST40C	AN3021-8	SPST	10
3	8810K12	ST40D	AN3021-3	SPDT	3
4	8800K13	ST40E	AN3021-1	SPDT	1
5	8804K12	ST40F	—	SPDT	10
6	8812K13	ST40G	AN3021-7	SPDT	9
7	8809K13	ST40H	AN3021-5	SPDT	7

ST-42 SERIES
Single Pole with Solder Lugs

Rating Per Pole: 10 Amp.-115V AC, 20 Amp.-28V DC. Std. Pkg. 10

0	8803K6	ST42A	—	SPST	2
1	8819K5	ST42B	—	SPST	6
2	8817K5	ST42C	—	SPST	10
3	8816K5	ST42D	—	SPDT	3
4	8802K6	ST42E	—	SPDT	1
5	8805K5	ST42F	—	SPDT	10
6	8818K5	ST42G	—	SPDT	9
7	8815K6	ST42H	—	SPDT	7

ST-45 SERIES
Per JAN-S-23 and MIL-S-6745
Single Pole

Rating Per Pole: 15 Amp.-115V AC, 20 Amp.-28V DC. Std. Pkg. 10

0	8201K6	ST45A	AN3022-2	SPST	2
1	8213K6	ST45B	AN3022-9	SPST	6
2	8211K7	ST45C	AN3022-8	SPST	10
3	8210K7	ST45D	AN3022-3	SPDT	3
4	8200K7	ST45E	AN3022-1	SPDT	1
5	8215K4	ST45F	AN3022-11	SPDT	10
6	8212K6	ST45G	AN3022-7	SPDT	9
7	8209K6	ST45H	AN3022-5	SPDT	7

ST-50 SERIES PER JAN-S-23
2 Pole with Screw Terminals

Rating Per Pole: 10 Amp.-115V AC, 20 Amp. 28V DC.

80	8822K8	ST50K	AN3027-2	*DPST	2
81	8828K5	ST50L	—	DPST	6
82	8826K5	ST50M	—	DPST	10
83	8824K8	ST50N	AN3027-3	*DPDT	3
84	8820K10	ST50P	AN3027-1	*DPDT	1
85	8830K5	ST50R	—	DPDT	10
86	8834K4	ST50S	AN3027-7	*DPDT	9
87	8832K4	ST50T	AN3027-8	*DPDT	7

pped with sealed lever per MIL-S-6745. Std. Pkg. 10

ST-52 SERIES PER JAN-S-23
2 Pole with Solder Lugs

Rating Per Pole: 10 Amp., 115V AC, 20 Amp., 28V DC. Std. Pkg. 10

90	8823K5	ST52K	—	DPST	2
91	8829K5	ST52L	—	DPST	6
91A	8827K5	ST52M	—	DPST	10
92	8825K5	ST52N	—	DPDT	3
93	8821K5	ST52P	—	DPDT	1
94	8831K5	ST52R	—	DPDT	10
95	8835K3	ST52S	—	DPDT	9
96	8833K3	ST52T	—	DPDT	7

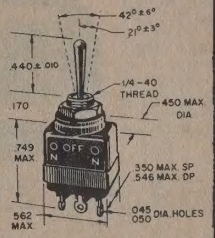
MILITARY SWITCHES

"As Small As A Dime" Built To MIL-S-8834 Specs

Designed for aircraft, missile, electronic application it is extremely compact, highly reliable, power or dry circuit switch, usable as a pre-set switch in aircraft recognition systems, walkie-talkies, instrument and communication systems. Toggle lever seal and panel bushing seal for adverse environmental conditions. Gold plated contacts.

RATINGS: 3 amps., 28V DC; 1 amp., 50V DC 2 amps., 115V AC

WEIGHT: Single pole 5.0 grams, Double pole 6.5 grams



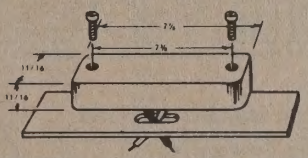
SINGLE POLE

DABURN No.	C-H	Type	Circuit
4480K1	8866K1	SPDT	on-off-on
4480K2	8866K2	SPDT	Mom. on-off-Mom. on
4480K3	8866K3	SPDT	on-off-Mom. on
4480K4	8866K4	SPDT	on-none-on
4480K5	8866K5	SPST	on-off-none
4480K6	8866K6	SPST	None-off-Mom. on
4480K7	8866K7	SPST	on-none-off
4480K8	8866K8	SPDT	None-on-Mom. off

DOUBLE POLE

4481K1	8867K1	DPDT	on-off-on
4481K2	8867K2	DPDT	Mom. on-off-Mom. on
4481K3	8867K3	DPDT	on-off-Mom. on
4481K4	8867K4	DPDT	on-none-on
4481K5	8867K5	DPST	on-off-none
4481K6	8867K6	DPST	none-off-Mom. on
4481K7	8867K7	DPST	on-none-off
4481K8	8867K8	DPDT	none-on-Mom. off

Std. Pkg. 10



MAGNETIC PROXIMITY SWITCH

For Counting Position Limiting Sequence Control Mounts in Any Position

Precision, fast acting, suitable to sequential control functions on machine tools, packaging, material handling and similar industrial devices.

Strong, encapsulated, assures freedom from contamination by cutting oils, dust, powder, chips, etc. Operates up to hundreds of millions of cycles — temperature range −30°C to +105°C. Speed (Max) 200 cycles/sec repeatability within .005".

Switch actuates when brought into proximity with ferrous metals or other magnetic materials. No mechanical linkage necessary for operation. Operating sensitivity in nom. 1/8" make, 1/2" break. Switch elements sealed in glass, unit is potted in epoxy resin. Case is impervious to oil, water, gas, all common solvents.

Typical actuators include indexing tables, cams, wheels, push rods, die sets, line objects such as food and beverage cans, components, parts, vehicles, rotating and swinging objects, etc.

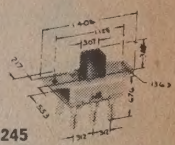
Std. Pkg. 10

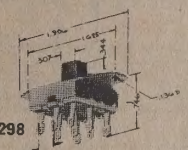
1 1/16" H x 1 1/16" D x 2 7/16" W

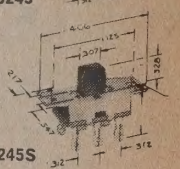
DABURN No.	Type
4499-128	SPST Norm. Open
4499-138	SPDT
4499-139	SPST Norm. Open (Hi-Load)

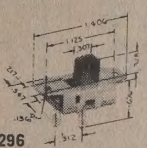
Electrical	Resistive Load		Inductive Load	
(Max. Contact Rating)	−128, −138	−139	−128, −138	−139
Amps	.5	.2	.1	1
Volt AC or DC	125	125	125	125
Watts	15	50	5	15

CONTINENTAL-WIRT SLIDE SWITCHES









New "Swidget" Miniature Slide Switch

Mounting area is 1/2 of standard DPDT slide. Suitable for compact applications. UL approved.

DABURN No.	Type	Rating 125V AC-DC	Std. Pkg.
5248M	DPDT	5 Amp.	25

UL APROVED SLIDE SWITCH
STANDARD DETENT

General purpose switch for hi-fi equipment, instruments, etc. Black phenolic buttons, steel cadmium plated housing.

DABURN No.	Type	Rating at 125V Circuit DC Amp.	AC Amp.
5245	SPST	.75	.75
5246	SPDT	.75	.75
5247	DPST	.5	.5
5248	DPDT	.5	.5
5290	SPST	6.0	1.0
5291	SPDT	6.0	1.0
5292	DPST	6.0	1.0
5293	DPDT	6.0	1.0

Std. Pkg. 25

3 AND 4 POSITION SLIDE SWITCH
WITH DETENT

5294	SP 3 Pos.	.5	.5
5295	DP 3 Pos.	.5	.5
5295A	DP 3 Pos.	6.0	1.0
5295F	DP 4 Pos.	.5	.5

Std. Pkg. 25

3 AND 4 POLE SLIDE SWITCH
WITH DETENT
ALL POLES IN SAME PLANE

5298	3 PDT	.5	.5
5299*	4PDT	.5	.5

*5299 — width of switch 1.005", short terminals. Distance from mounting surface to terminal tip .595".

Std. Pkg. 25

SLIDE SWITCH — SPRING RETURN

5245S	SPST	.5	.5
5246S	SPDT	.5	.5

Std. Pkg. 25

SLIDE SWITCH SHIELD
Suitable for Electrastatic Shielding

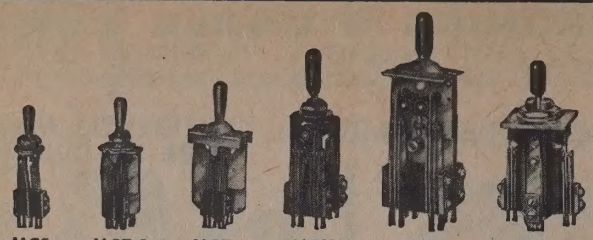
Terminal protection. Shield is steel cadmium plated with fibre insulation.

5239	Std. Pkg. 25

* Not UL Approved.

Complete warehouse inventories on all Cutler-Hammer numbers.

A complete line of LEVER SWITCHES by GENERAL CONTROL COMPANY



MCS MCT-1 MCT-4 MCM MCL MFM

RATINGS

Type	Amps.*	High	Wide	Long**
MCS	1 or 3	7/8"	7/8"	2-1/16"
MCT-1	1 or 3	1 1/4"	3/4"	2-5/16"
MCT-4	1 or 3	1 1/2"	3/4"	2-17/32"
MCM	5	1 1/4"	1 1/4"	2-25/32"
MCL	10	1 3/4"	1 3/8"	3-15/16"
MFM	5	1 3/4"	1 3/4"	3"

*125 volts, 60 cycles, non-inductive.
**From back panel to end of terminals.

Write for data Sheet CLRM

LEVER OPERATION

Symbol: Lock (Stays put)	Symbol: Non-lock Spring return	Three-Position			Two-Position	Half Throw	Two-Position	Full Throw
Designation	MCS	S1	*S2	S3	*S4	*S5		
	MCT1 MCT4	T1	*T2	T3	*T4	*T5		
	MCM	M1	*M2	M3	*M4	*M5	M6	*M7
	MCL	L1	*L2	L3	*L4	*L5		

*Lock and non-lock positions may be reversed. To reverse designate as RS2, RM4, RL5, etc.

SPECIAL MCM LEVER

(A) waterproof lever
$4.45 EACH, LIST

MFM

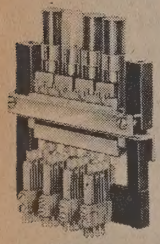
Description	Lock	Non-Lock	Four
SYMBOL			
OPERATION			
Operation No.	M8	M9	M10	M11

CONTACTS

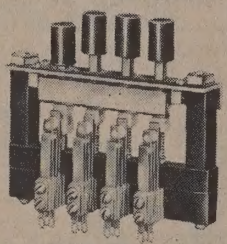
To obtain list price:— add contact prices to frame price.

Frame Types and Prices	Contact Forms / Circuit	A	B	C	D	E	F	G	H	O
										No Contacts
MS $ 1.80	MCS 1 amp.	0.55	0.55	0.65	*	—	0.65	—	0.65	—
	MCS 3 amp.	.65	.65	.80	*	—	.80	—	.80	—
MCT-4 $ 2.15	MCT-4 1 amp.	.55	.55	.65	.85	.95	.65	—	.65	—
	MCT-4 3 amp.	.65	.65	.80	1.00	1.12	.80	—	.80	—
MCT-1 $ 2.70	MCT-1 1 amp.	.55	.55	.65	.85	.95	.65	—	.65	—
	MCT-1 3 amp.	.65	.65	.80	1.00	1.12	.80	—	.80	—
MCM $ 4.00	MCM 5 amp.	.85	.85	1.00	1.25	1.60	1.00	1.00	1.00	—
MFM $18.50	MFM 5 amp.	.85	.85	1.00	1.25	1.60	1.00	1.00	1.00	—
MCL $ 5.40	MCL 10 amp.	1.25	1.25	1.45	1.75	2.70	1.45	1.45	1.45	—

PUSH-BUTTON SWITCHES by GENERAL CONTROL COMPANY



LIGHTED



STANDARD

SPS-LPS FRAME PRICES 5/8" or 3/4" Button Centers

BUTTONS		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B12	SPS	$12.00	$14.15	$16.50	$19.40	$22.35	$25.25	$28.15	$31.10	$34.25	$37.45	$40.65	$43.85	$47.00	$ 50.20	$ 5
	LPS	21.30	26.50	31.80	38.00	44.20	50.45	56.65	62.85	70.45	77.20	85.55	90.75	97.50	104.30	11
B13	SPS	10.95	13.10	15.25	18.15	21.05	24.00	26.90	29.80	32.75	35.90	39.10	42.30	45.50	48.70	5
	LPS	20.25	25.45	30.50	36.75	42.95	49.15	55.40	61.60	69.20	75.95	84.25	89.50	96.25	103.00	10
B14	SPS	10.35	11.65	13.20	15.30	17.40	19.50	21.55	23.65	26.00	28.40	30.75	33.10	35.50	37.85	4
	LPS	19.65	24.05	28.50	33.90	39.25	44.65	50.05	55.45	62.50	68.40	74.35	80.30	86.25	92.20	9
B15	SPS	9.30	10.60	11.95	14.00	16.10	18.20	20.30	22.40	24.50	26.85	29.20	31.60	33.95	36.30	3
	LPS	18.60	23.00	27.25	32.60	38.00	43.40	48.80	54.20	60.95	66.90	72.80	78.75	84.70	90.65	9
B16	SPS	8.20	9.25	10.30	12.30	14.35	16.40	18.45	20.45	22.50	24.75	27.05	29.40	31.70	34.00	3
	LPS	17.50	21.60	25.60	30.90	36.25	41.60	46.90	52.25	58.95	64.80	70.70	76.55	82.45	88.35	9
B17	SPS	9.25	10.30	11.55	13.60	15.60	17.65	19.70	21.75	24.05	26.30	28.60	30.90	33.20	35.53	3
	LPS	18.55	22.65	26.85	32.20	37.50	42.85	48.20	53.50	60.50	66.35	72.20	78.10	84.00	89.90	9
B18	SPS	11.60	14.35	17.10	20.85	24.60	28.35	32.05	35.80	34.55	43.50	47.50	51.55	55.55	59.55	6
	LPS	20.90	26.75	32.40	39.45	46.50	53.50	60.55	67.60	76.00	83.55	91.15	98.75	106.30	113.90	12
B19	SPS	12.65	15.40	18.40	22.10	25.85	29.60	33.35	37.10	41.10	45.05	49.05	53.10	57.10	61.10	6
	LPS	21.95	27.80	33.65	40.70	47.75	54.80	61.80	68.85	77.55	85.10	92.70	100.25	107.85	115.45	12

Note: Additional frame operations available. Contact General Control.

OPERATIONS

B12 POSITIVE LOCK-IN LOCK-OUT
Only one button can be depressed at a time. The Momentary Release button must be actuated to release any previously depressed button before any other button can be actuated.

B13 ACCUMULATIVE LOCK
Buttons pushed in remain locked in position until released by pushing reset button.

B14 NO-TWO-INTERLOCK
Only one button can be pushed in at one time, and releases any other button.

B15 LOCK-RELEASE
Any button pushed in releases any previously pushed in button.

B16 NON-LOCK
Has no locking action; returns to normal position on release of finger pressure.

B17 NON-LOCK, NO-TWO-OPERATIVE
The same as B16 except that no two buttons can be operated simultaneously.

B18 PUSH-LOCK, PUSH-RELEASE
Any button depressed remains locked in until that button is depressed again.

B19 PUSH-LOCK, PUSH-RELEASE, (WITH LOCK-OUT)
This is the same as B18 except that only one button can be depressed at a time.

CONTACTS

CONTACT FORMS	A	B	C	D	H
1 amp silver	$0.55	$0.55	$0.65	$0.90	$0.65
3 amps paladium alloy	.65	.65	.80	1.05	.8
Direction of Throw				*	

Ratings at 125 volts A. C. n.i. * In place of a "D" contact can offer a "C" contact adjusted to provide make before b operation.

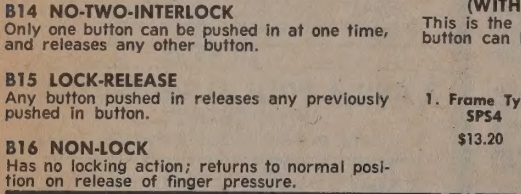
WRITE FOR DATA SHEET SLRM

ORDERING INFORMATION

1. Frame Type	2. Operation	3. Contacts	4. Contact Location	5. Rating	6. Button Cent
SPS4	B14	A-C-2A-2C	TOP Mounted	3 amps.	5/8"
$13.20	—	.65+.80+1.30+1.60			= $17.55

"Footrol" FOOT SWITCHES

PRICES USER NET

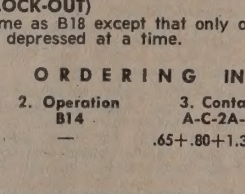


MA - $8.00 MI - $14.00 MC - $14.00

WRITE FOR BULLETIN FSRM

LIMIT SWITCHES

"Du.op - DUS"



Positive Direct Contact Action. Industry Size and Mounting. 20 amp. contacts. **$1.80**

KE-D

KE-D light action — extensive ov travel limit switch —73° before after contact operation. Converts rotary switch 1 open 1 close cont per 360°.

Standard Model $18.00

Write for Bulletin KDRM

GENERAL CONTROL COMPANY

***ALL PRICES SUBJECT TO 1967 DISCOUNT SCHEDULE**

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HE WORLD'S FINEST SELECTION OF MAGNETIC EED SWITCHES BY HAMLIN INC

MAGNETIC REED SWITCHES • ASSOCIATED SWITCH PRODUCTS

Switch Part No.	Size	Form	Max. D.C. Contact Rating	Maximum Amps	Maximum D.C. Volts	Max. Initial Contact Resistance	Min. D.C. Breakdown Voltage	Stock Ampere Turn Pull-In Range	Actuating Magnet	Quantity Price Break 1-24	25-99	100-999	Special Features
MMRR-2-185	1	A	.3W	.010	28	.200	250	30 ±7.5	H-31	1.84	1.31	1.05	The Grain of Wheat
MINI-2-115	2	A	3W	.110	28	.200	200	20 ±7.5	H-31	2.10	1.85	1.70	The MINI-REED
MTRR-2-185	3	A	10W	.250	100	.150	300	30 ±7.5	H-33	1.32	.95	.75	Moderate Current & Voltage
MTRF-2-216	3	A	3W	.010	28	.150	250	37.5 ±10	H-33	3.15	2.75	2.55	For RF Frequencies
MRH-DT-175	4	C	3W	.250	28	.150	250	27.5 ±7.5	H-33	5.25	4.50	4.25	Instrument Grade
MRG-DT-175	4	C	3W	.250	28	.150	250	27.5 ±7.5	H-33	4.20	3.00	2.40	Moderate Current & Voltage
MRL-DT-186	4	C	3W	.250	28	.500	250	30 ±10	H-33	3.15	2.20	2.00	Low Cost—Commercial
MSRH-2-185	5	A	10W	.500	28	.100	300	30 ±7.5	H-33	1.58	1.28	1.00	Instrument Grade
MSRR-2-185	5	A	10W	.500	200	.100	300	30 ±7.5	H-33	1.15	.83	.66	Moderate Current & Voltage
MSRR-2CD-155	5	A	3W	.500	200	.200	300	25 ±7.5	H-33	1.32	1.12	1.06	Close Differential
MSRR-2WD-205	5	A	10W	.500	200	.100	300	35 ±7.5	H-33	1.32	1.12	1.06	Wide Differential
MSRL-2-186	5	A	10W	.500	100	.250	300	30 ±10	H-33	1.05	.70	.55	Low Cost—Commercial
MRH-2-185	6	A	10W	.500	28	.100	300	30 ±7.5	H-33	1.58	1.28	1.00	Instrument Grade
MRR-2-185	6	A	10W	.500	200	.100	300	30 ±7.5	H-33	1.15	.83	.66	Moderate Current & Voltage
MRL-2-186	6	A	10W	.500	100	.250	300	30 ±10	H-33	1.05	.70	.55	Low Cost—Commercial
MRH-15-185	6	A	10W	.500	50	.150	300	30 ±7.5	H-33	2.10	1.80	1.70	High Insulation Resistance
MRMF-2-206	6	A	3W	.010	28	.100	250	35 ±10	H-33	3.15	2.75	2.55	Thermal EMF & RF Frequencies
MRR-5-235	6	A	10W	.500	500	.100	1,000	40 ±7.5	H-33	2.10	1.85	1.70	1,000 Volt Breakdown
MRO-2-206	6	A	1W	.001	1,000	.100	2,000	35 ±10	H-33	6.30	4.50	3.60	2,000 Volt Breakdown
MRC-3-387	6	A	28W	1.0	100	.050	1,000	65 ±15	H-33	4.20	3.00	2.90	Mercury Wetted Contacts
SRR-2-425	7	A	15W	1.0	400	.060	500	70 ±7.5	H-32	.89	.64	.51	Moderate Current & Voltage
SRT-2-455	7	A	100W	3.0	250	.500	300	75 ±7.5	H-32	2.63	2.25	2.12	Inductive Loads
DRG-DT-445	8	C	3W	.5	100	.075	350	72.5 ±7.5	H-32	2.10	1.70	1.33	Moderate Current & Voltage
DRG-DTH-445	8	C	10W	.5	250	.075	1,000	72.5 ±7.5	H-32	2.63	1.88	1.50	High Breakdown Form C
DRT-DTH-445	8	C	20W	1.5	500	.150	1,000	72.5 ±7.5	H-34	4.20	3.65	3.40	Inductive Loads
DRG-2-425	9	A	15W	1.0	250	.075	500	70 ±7.5	H-34	.79	.56	.45	Low Cost—Commercial
DRR-1-425	9	A	15W	1.0	400	.060	500	70 ±7.5	H-34	.89	.64	.51	Moderate Current & Voltage
DRS-2-425	9	A	25W	1.0	250	.050	500	70 ±7.5	H-34	1.32	1.10	1.06	Dry Circuit or Hi Inrush
DRR-5-425	9	A	25W	1.0	1,000	.060	1,500	70 ±7.5	H-34	1.58	1.35	1.10	1,500 Volt Breakdown
DRT-5-425	9	A	50W	3.0	1,000	.100	1,500	70 ±7.5	H-34	2.10	1.50	1.20	Inductive Loads
DRS-5-425	9	A	50W	3.0	500	.035	1,200	70 ±7.5	H-34	2.10	1.50	1.20	High Inrush Loads
HRC-1-535	9	A	50W	3.0	400	.050	1,000	80 ±7.5	H-34	2.10	1.50	1.20	Mercury Wetted Contacts
DRVT-5-658	9	A	50W	3.0	3,500	.080	5,000	120 ±20	H-34	3.15	2.50	2.25	5,000 Volt Breakdown
DRVT-10-658	9	A	50W	3.0	7,500	.080	10,000	120 ±20	H-34	4.20	3.00	2.40	10,000 Volt Breakdown
DRVT-15-979	9	A	50W	3.0	12,500	.100	15,000	200 Max.	H-34	8.40	7.25	6.80	15,000 Volt Breakdown
DRVT-20-979	9	A	50W	3.0	17,500	.100	20,000	200 Max.	H-34	12.60	11.00	10.20	20,000 Volt Breakdown
DRVT-25-979	9	A	50W	3.0	20,000	.100	25,000	200 Max.	H-34	16.80	14.50	13.60	25,000 Volt Breakdown

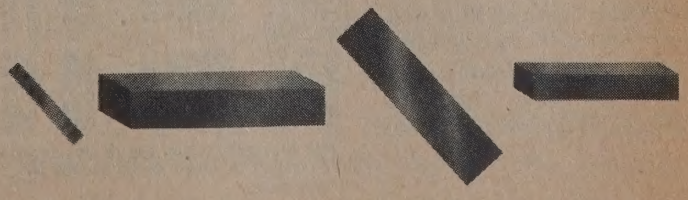
TYPICAL DIMENSIONS

Size No. (see above)	1	2	3	4	5	6	7	8	9
Overall Length—Nominal	2.000	2.000	2.125	2.125	2.250	2.250	3.375	3.375	3.250
Glass Length—Maximum	.375	.500	.560	.610	.800	.800	1.610	1.562	2.100
Glass Diameter—Maximum	.090	.070	.092	.130	.090	.130	.195	.218	.218

AGNETS BY HAMLIN INC

ALNICO V BAR MAGNETS

31 - 604	1/16 x 1/16 x 1/2"	.30
32 - 605	3/16 x 3/16 x 1"	.35
33 - 606	1/8 x 1/8 x 3/4"	.30
34 - 607	1/4 x 1/4 x 1"	.40



J-B-T

TOGGLE SWITCHES – HEAVY DUTY

J-B-T INSTRUMENTS, INC.

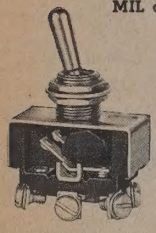
31st Year

WHY IT PAYS TO SPECIFY J-B-T TOGGLE SWITCHES

• **J-B-T** concentrates on trouble - free switches. Among the four groups of toggle switches J-B-T produces more than 170 models made to Government Specifications. Market studies indicate that while these switches are a must in military applications, almost half are produced for non-military use where the principal requirement is dependability. J-B-T apparently is specified because:

1. **Materials are good.** For instance, in MIL and AN heavy dut models, J-B-T uses generous proportions of selected silve alloys in integral construction for contact surface areas — t add overload protection, dissipate heat, and keep contact re sistance under .005 ohms.
2. **The design is good.** All MS models have silicone rubber bush ing seal for sand, dust and specified toggle seal tests. Medium duty types MS25098 and MS25100 also feature case-to-termina sealing and a new design which provides fast break and wide gap to surpass the 125 VDC endurance tests of MIL-S-3950C
3. **The value is good.** The many features required to meet Gov ernment standards, and J-B-T's rigid in-plant testing pay off ir long, useful life. Nevertheless, because J-B-T makes **only** quality switches, quantity production permits a surprisingly smal price differential over run-of-the-mill brands.
4. **Deliveries are comparatively good.** See your distributor. Pro duction is scheduled to back up his stocks with factory inven tory of finished switches and work in process to meet predict able demand.

Cut-away view showing heavy duty MIL construction



Group I

HEAVY DUTY SINGLE- AND DOUBLE-POLE — MIL, AN, AND JAN TYPI

Series MS35058 and MS35059 to MIL-S-3950C; Series ST40A-H, ST42A-H, ST50K-T, ST52K-T to JAN-S-23, MIL-S-21195A (Ships), or DDAX Drawings

• **MIL-S-3950C SERIES** — Single-pole MS35058 with suffix —21 and above, and double-pole MS35059 types with suffix —21 and above are recommended when maximum reliability is required. Temperature, endurance, and altitude requirements exceed earlier MS types (suffix —1 to —19), AN3021 and AN3027 switches to MIL-S-6745, and ST styles to JAN-S-23 and MIL-S-21195A (Ships). All MS switches contain a silicone rubber bushing seal to meet sand and dust and toggleseal tests.

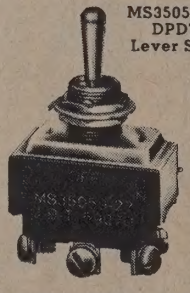
NOMINAL RATINGS: 20 Amp. at 125 VAC, 10 Amp. at 250 VAC. For MIL Requirements on Electrical Ratings ask for Condensed Catalog TS-966A.

SIZE: Single-hole; bushing 15/32"-32NS-2A by 15/32" high; toggle lever, 11/16" long. Bodies including terminals: **SP:** 1⅛" x ⅝" x 1-1/16" deep; **DP:** 1-21/64" x ¾" x 1-1/32" or 1-13/64" deep.

TERMINALS: Series MS35058 and Series MS35059 MIL-S-3950C switches have solderable 6-32 electro-tinned screw terminals; ST42's and ST52's use solder lug.

MS35058-21 SPDT Lever Seal

MS35059-27 DPDT Lever Seal



SINGLE AND DOUBLE POLE HEAVY DUTY WITH LEVER SEAL					
MIL-S-3950C	Model No.	2-24*	25-49	50-99	100-249
SPST — 2 term.					
On-X-Off	MS35058-22	$1.46	$1.28	$1.10	$ .92
On-Off-X	MS35058-24	1.84	1.61	1.38	1.15
On-Off*-X	MS35058-25	1.74	1.52	1.30	1.08
X-Off-On*	MS35058-28	1.74	1.52	1.30	1.08
On-X-Off*	MS35058-29	1.67	1.46	1.25	1.04
Off-X-On*	MS35058-30	1.67	1.46	1.25	1.04
SPDT — 3 term.					
On-Off-On	MS35058-21	1.74	1.52	1.30	1.08
On-X-On	MS35058-23	1.74	1.52	1.30	1.08
On-X-On*	MS35058-26	1.87	1.64	1.40	1.17
On*-Off-On*	MS35058-27	1.87	1.64	1.40	1.17
On-Off-On*	MS35058-31	1.87	1.64	1.40	1.17
DPST — 4 term.					
On-X-Off	MS35059-22	2.06	1.88	1.50	1.21
On-Off-X	MS35059-24	2.06	1.88	1.50	1.21
On-Off*-X	MS35059-25	2.83	2.56	2.02	1.65
X-Off-On*	MS35059-28	2.55	2.33	1.85	1.50
On-X-Off*	MS35059-29	2.65	2.42	1.93	1.56
Off-X-On*	MS35059-30	2.39	2.18	1.74	1.40
DPDT — 6 term.					
On-Off-On	MS35059-21	2.39	2.18	1.74	1.40
On-X-On	MS35059-23	2.39	2.18	1.74	1.40
On-X-On*	MS35059-26	2.73	2.49	1.98	1.59
On*-Off-On*	MS35059-27	2.83	2.56	2.02	1.65
On-Off-On*	MS35059-31	2.73	2.49	1.98	1.59

TYPE TERMINALS

SINGLE AND DOUBLE POLE HEAVY DUTY§						
	JAN-S-23	Model No.	2-24*	25-49	50-99	100
SCREW TYPE	**SPST — 2 term.**					
	On-X-Off	ST40A	$1.25	$1.13	$ .98	$
	On-X-Off*	ST40B	1.52	1.33	1.14	
	Off-X-On*	ST40C	1.52	1.33	1.14	
	SPDT — 3 term.					
	On-X-On	ST40D	1.53	1.35	1.17	
	On-Off-On	ST40E	1.53	1.35	1.17	
	On-X-On*	ST40F	1.78	1.56	1.33	1
	On*-Off-On*	ST40G	1.68	1.47	1.26	1
	On-Off-On*	ST40H	1.78	1.56	1.33	1
SOLDER TYPE	**SPST — 2 term.**					
	On-X-Off	ST42A	1.11	.98	.85	
	On-X-Off*	ST42B	1.29	1.13	.97	
	Off-X-On*	ST42C	1.19	1.05	.91	
	SPDT — 3 term.					
	On-X-On	ST42D	1.28	1.10	.96	
	On-Off-On	ST42E	1.28	1.10	.96	
	On-X-On*	ST42F	1.40	1.24	1.07	
	On*-Off-On*	ST42G	1.40	1.24	1.07	
	On-Off-On*	ST42H	1.40	1.24	1.07	
SCREW TYPE	**DPST — 4 term.**					
	On-X-Off	ST50K	1.89	1.41	1.20	
	On-X-Off*	ST50L	2.31	1.72	1.43	1.
	Off-X-On*	ST50M	2.31	1.72	1.43	1.
	DPDT — 6 term.					
	On-X-On	ST50N	2.21	1.66	1.38	1.
	On-Off-On	ST50P	2.21	1.66	1.38	1.
	On-X-On*	ST50R	2.50	1.89	1.58	1.
	On*-Off-On*	ST50S	2.60	1.99	1.67	1.
	On-Off-On*	ST50T	2.50	1.89	1.58	1.
SOLDER TYPE	**DPST — 4 term.**					
	On-X-Off	ST52K	1.73	1.29	1.08	.8
	On-X-Off*	ST52L	2.02	1.52	1.27	1.0
	Off-X-On*	ST52M	2.02	1.52	1.27	1.0
	DPDT — 6 term.					
	On-X-On	ST52N	1.92	1.45	1.21	.9
	On-Off-On	ST52P	1.92	1.45	1.21	.9
	On-X-On*	ST52R	2.24	1.67	1.40	1.1
	On*-Off-On*	ST52S	2.34	1.75	1.47	1.1
	On-Off-On*	ST52T	2.24	1.67	1.40	1.1

§For UL Identification and ratings on Models ST40A through ST52T, see Table on second following page.
* On orders for single switches, add 50c.
* Momentary

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

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TOGGLE SWITCHES — MEDIUM DUTY & CROSS-REFERENCE

J-B-T

31st Year

J-B-T INSTRUMENTS, INC.

Group II

SINGLE & DOUBLE POLE — GOVERNMENT QUALITY

Series MS25098 and MS25100 to MIL-S-3950C; Series ST12-27 to JAN-S-23, MIL-S-21195A (Ships), or DDAX Drawings

Cut-away view showing self-wiping double-grip contacts

MS25100-23 DPDT Rear Connected; Lever Seal

ST27N, DPDT and Rear Connected 1/4" Bushing

MEDIUM DUTY refers to current-carrying capacity rather than to life characteristics of these Group II switches which are widely used for both military and non-military applications. Some models are rated at 6 amp. at 125 VAC-DC, 3 amp. at 250 VAC-DC. Other models are rated 3 amp. at 125 VAC-DC, 1 amp. at 250 VAC-DC, as listed on next page. Self-wiping, heavily silver plated double-grip contacts provide exceptional durability. All MS25098 and MS25100 have case-to-terminal seals and silicone rubber bushing seal to meet sand and dust and toggle seal requirements.

DESIGN IMPROVEMENTS AND NOMINAL RATINGS. Significant internal improvements over earlier designs of MS25098 and MS25100 give faster break, wider gap, and increased insulation values, resulting in a longer useful life. Typical uses are: instruments, data processing, and communications circuits.

Although MIL and J-B-T general-purpose switches are substantially similar in materials and construction, differences in test procedures and test conditions cause nominal ratings for military types to differ considerably from the ratings for UL or other non-military models. (Typical ratings are shown on next page.) For instance, under MIL Specifications, switches are tested at pressures corresponding to altitudes of 65,000 ft., while non-military switches are tested to NEMA and UL procedures at sea level pressures.

SIZE AND TERMINALS — Whether MS series to latest MIL-S-3950C or ST series to Specification JAN-S-23 and MIL-S-21195A (Ships), all have solder terminals. Medium-duty types use 11/16" long, toggle lever, bushing 15/32"-32NS-2A by 15/32" (or 1/4"). Bodies including terminals are: 1 1/4" long, 11/16" wide, 29/32" deep, except ST16A, -16B, -16C, -17A, and -27K are 1 3/4" long by 21/32" deep, while ST16D, -17D, -26N are 1 3/4" long by 29/32" deep.

SINGLE AND DOUBLE POLE MEDIUM DUTY WITH LEVER SEAL					
MIL-S-3950C	Model No.	2-24*	25-49	50-99	100-249
SPST — 2 term.					
On-X-Off	MS25098-22	$1.61	$1.29	$1.20	$1.11
On-X-Off*	MS25098-29	2.17	1.73	1.62	1.49
Off-X-On*	MS25098-30	2.17	1.73	1.62	1.49
SPDT — 3 term.					
On-X-On	MS25098-23	1.84	1.47	1.37	1.26
DPST — 4 term.					
On-X-Off	MS25100-22	2.32	1.85	1.73	1.59
On-X-Off*	MS25100-29	2.88	2.30	2.15	1.98
Off-X-On*	MS25100-30	2.88	2.30	2.15	1.98
DPDT — 6 term.					
On-X-On	MS25100-23	2.51	2.01	1.88	1.73

SINGLE AND DOUBLE POLE MEDIUM DUTY§					
JAN-S-23	Model No.	2-24*	25-49	50-99	100-249
SPST — 2 term.					
On-X-Off	ST12A	$1.20	$ .88	$ .80	$ .75
On-X-Off*	ST12B	1.45	1.06	.97	.91
Off-X-On*	ST12C	1.55	1.14	1.04	.97
On-X-Off	ST13A †	1.24	.91	.83	.78
On-X-Off	ST16A ‡	1.53	1.12	1.02	.96
On-X-Off*	ST16B ‡	1.59	1.17	1.06	1.00
Off-X-On*	ST16C ‡	1.59	1.17	1.06	1.00
On-X-Off	ST17A †‡	1.28	.94	.86	.80
SPDT — 3 term.					
On-X-On	ST12D	1.39	1.02	.93	.87
On-X-On	ST13D †	1.43	1.05	.96	.90
On-X-On	ST16D ‡	1.43	1.05	.96	.90
On-X-On	ST17D †‡	1.57	1.15	1.05	.98
DPST — 4 term.					
On-X-Off	ST22K	1.65	1.21	1.10	1.03
On-X-Off*	ST22L	1.90	1.39	1.27	1.19
Off-X-On*	ST22M	1.90	1.39	1.27	1.19
On-X-Off	ST23K †	1.69	1.24	1.13	1.06
On-X-Off	ST26K ‡	1.79	1.31	1.20	1.12
On-X-Off*	ST26L ‡	1.94	1.42	1.30	1.22
Off-X-On*	ST26M ‡	2.04	1.49	1.36	1.28
On-X-Off	ST27K †‡	1.83	1.34	1.22	1.15
DPDT — 6 term.					
On-X-On	ST22N	1.80	1.32	1.20	1.13
On-X-On	ST23N †	1.84	1.34	1.23	1.15
On-X-On	ST26N ‡	1.80	1.32	1.20	1.13
On-X-On	ST27N †‡	1.94	1.42	1.30	1.22

* On orders for single switches, add 50c; X No position.
* Momentary position. †Bushing 1/4" high.
‡ Side connected terminals only, except ST16D, -17D, -26N have both side and rear connected terminals.
§ For UL identification and ratings on Models ST12A through ST27N, see table on following page.

CROSS REFERENCE: AN, MS, AND ST MODEL NUMBERS WITH SIMILAR CIRCUITRY

SCREW TERMINAL				SOLDER LUG	
MIL-S-3950C See Notes A & B	JAN-S-23 & MIL-S-21195A	MIL-S-6745 See Note A	MIL-S-3950 See Notes A & B	JAN-S-23 & MIL-S-21195A (Ships)	MIL-S-3950 See Note A
SPST				**SPST**	
MS35058-22	ST40A	AN3021-2	#	ST42A	MS35058-9
MS35058-29	ST40B	AN3021-9	#	ST42B	MS35058-10
MS35058-30	ST40C	AN3021-8	#	ST42C	MS35058-11
MS35058-24	#	AN3021-10	MS35058-1	#	MS35058-12
MS35058-28	#	AN3021-11	MS35058-2	#	MS35058-13
MS35058-25	#	AN3021-12	MS35058-3	#	MS35058-14
SPDT				**SPDT**	
MS35058-23	ST40D	AN3021-3	MS35058-4	ST42D	MS35058-15
MS35058-21	ST40E	AN3021-1	MS35058-5	ST42E	MS35058-16
MS35058-26	ST40F	#	MS35058-6	ST42F	MS35058-17
MS35058-27	ST40G	AN3021-7	MS35058-7	ST42G	MS35058-18
MS35058-31	ST40H	AN3021-5	MS35058-8	ST42H	MS35058-19
#	#	AN3021-6**	#	#	#

SCREW TERMINAL				SOLDER LUG	
MIL-S-3950C See Notes A & B	JAN-S-23 & MIL-S-21195A	MIL-S-6745 See Note A	MIL-S-3950 See Notes A & B	JAN-S-23 & MIL-S-21195A (Ships)	MIL-S-3950 See Note A
DPST				**DPST**	
MS35059-22	ST50K	AN3027-2	#	ST52K	MS35059-9
MS35059-29§	ST50L	AN3027-4§	#	ST52L	MS35059-10§
MS35059-30§	ST50M	AN3027-5§	#	ST52M	MS35059-11§
MS35059-24	#	AN3027-9	MS35059-1	#	MS35059-12
MS35059-28	#	AN3027-11	MS35059-2	#	MS35059-13
MS35059-25§	#	AN3027-10§	MS35059-3§	#	MS35059-14§
DPDT				**DPDT**	
MS35059-23	ST50N	AN3027-3	MS35059-4	ST52N	MS35059-15
MS35059-21	ST50P	AN3027-1	MS35059-5	ST52P	MS35059-16
MS35059-26§	ST50R	AN3027-6§	MS35059-6§	ST52R	MS35059-17§
MS35059-27	ST50S§	AN3027-7§	MS35059-7§	ST52S§	MS35059-18§
MS35059-31§	ST50T§	AN3027-8§	MS35059-8§	ST52T§	MS35059-19§

Not included in this specification. ** AN3021-6 same as AN3021-5 with jumper. § Same dimensions as MS35059-27.

E A: MS and AN types use internal sand and dust toggle seal and other high performance features involving extra cost over ST types. MS to MIL-S-3950C have a silicone rubber bushing seal to meet sand and dust, and toggle seal tests. MIL-S-3950 models are superseded by S-3950C models.

E B: For heavy duty switches in the MS25068, MS35058, and MS35059 Series, MIL-S-3950C calls for SCREW TERMINALS ONLY. These terminals SOLDERABLE FINISH and may be soldered after removal of screw.

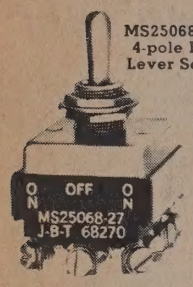
Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

TOGGLE SWITCHES—4-POLE, SP, DP & UL TABLES

J-B-T INSTRUMENTS, INC. 31st Year

Group III

OUTSTANDING 4-POLE SWITCHES TO MS25068 REQUIREMENTS



MS25068-27
4-pole DT
Lever Seal

• There is no mistaking the light brown color and silver printing of these distinctive J-B-T 4-pole heavy-duty switches. The superior molded body, chosen after extensive tests, features high arc resistance and low shrinkage. As a result the switches exceed the rigorous electrical endurance requirements of MS25068.

Equally important, J-B-T uses generous proportions of selected silver alloys in integral construction for contact surface areas—to add overload protection, dissipate heat, and keep contact resistance under .005 ohms. The 8 models listed here have silicone rubber bushing seals and solderable 6-32 screw terminals, the same as other heavy-duty J-B-T MS switches. Dimensions same as MS35059 except bodies including terminals: 1 11/32" long, 1 9/16" wide, 1 9/32" deep.

4-POLE HEAVY DUTY WITH LEVER SEAL					
MIL-S-3950C	Model No.	2-24*	25-49	50-99	100-2
4PST — 8 term.					
On-Off-X	MS25068-24	$4.50	$3.54	$2.98	$2.4
On-Off*-X	MS25068-25	5.30	4.18	3.51	2.9
X-Off-On*	MS25068-28	5.30	4.18	3.51	2.9
4PDT — 12 term.					
On-Off-On	MS25068-21	5.22	4.11	3.46	2.8
On-X-On	MS25068-23	5.30	4.18	3.51	2.9
On-X-On*	MS25068-26	5.63	4.44	3.73	3.1
On*-Off-On*	MS25068-27	5.63	4.44	3.73	3.1
On-Off-On*	MS25068-31	5.63	4.44	3.73	3.1

* On orders for single switches, add $1.00
X No position * Momentary position

Other MS25068 Numbers: Models with suffix -1 throug -13 as set forth in MIL-S-3950 are superseded by MI S-3950 Revision C Types. The latter are interchang able electrically and mechanically but meet add tional performance standards above the former type Specifically, **MS25068-1** has become MS25068-21; **-3** no -23; **-5** now -31; **-7** now -27; **-10** now -26; **-11** now -2 **-12** now -28; **13** now -25.

UL IDENTIFICATION AND RATINGS: SINGLE AND DOUBLE-POLE; HEAVY DUTY AND MEDIUM DU

Underwriters' Laboratories, Inc. lists under "Switches, Special Use" (File E26557) models marked with the J-B-T part number shown below. In some instances, there are minor construction differences from ST switches, but the ratings and external dimensions are the same. marked types are not regularly stocked but only are manufactu in substantial production runs.

Heavy Duty — Single Pole JBT/UL Part No.**	ST Circuit Equivalent	Rating*	Heavy Duty — Double Pole JBT/UL Part No.**	ST Circuit Equivalent	Rating*	Medium Duty — Single Pole JBT/UL Part No.**	ST Circuit Equivalent	Rating*	Medium Duty — Double Pole JBT/UL Part No.**	ST Circuit Equivalent	Rating*
401	ST40A	A	501	ST50K	A	121	ST12A	B	221	ST22K	B
402	ST40B	A	502	ST50L	A	122	ST12B	B	222	ST22L	B
403	ST40C	A	503	ST50M	A	123	ST12C	B	223	ST22M	B
404	ST40D	A	504	ST50N	A	124	ST12D	C	224	ST22N	B
405	ST40E	A	505	ST50P	A	131	ST13A	B	231	ST23K	B
406	ST40F	A	506	ST50R	A	134	ST13D	C	234	ST23N	B
407	ST40G	A	507	ST50S	A	161	ST16A	B	261	ST26K	B
408	ST40H	A	508	ST50T	A	162	ST16B	B	262	ST26L	B
421	ST42A	A	521	ST52K	A	163	ST16C	B	263	ST26M	B
422	ST42B	A	522	ST52L	A	164	ST16D	C	264	ST26N	B
423	ST42C	A	523	ST52M	A	171	ST17A	B	271	ST27K	B
424	ST42D	A	524	ST52N	A	174	ST17D	C	274	ST27N	B
425	ST42E	A	525	ST52P	A						
426	ST42F	A	526	ST52R	A						
427	ST42G	A	527	ST52S	A						
428	ST42H	A	528	ST52T	A						

**NOTE: Above model numbers are basic ones for any given type and circuit. Variations, such as length of lever, have a suffix letter "J" and added suffix numbers.

*Ratings

Rating A

10 amps, 250 VAC
20 amps, 125 VAC
¾ H.P., 250 VAC
½ H.P., 125 VAC

Rating B

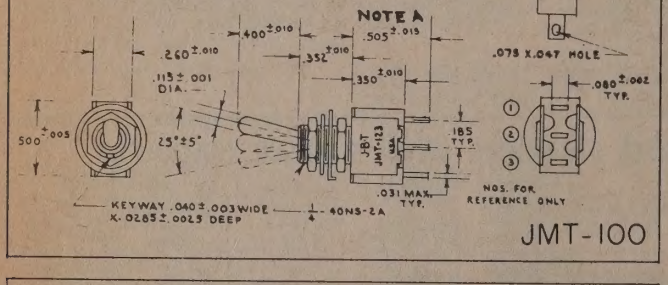
3 amps, 250 VAC-D
6 amps, 125 VAC-D

Rating C

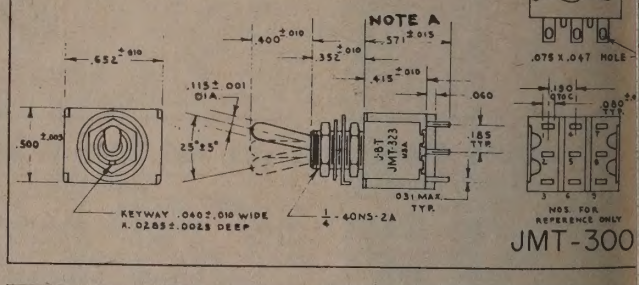
1 amp, 250 VAC-DC
3 amps, 125 VAC-D

DRAWINGS FOR SUB-MINIATURE TOGGLE SWITCHES ON NEXT PAGE

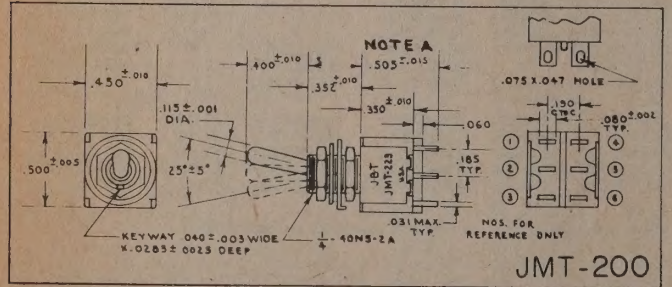
NOTE A: Dimensions shown apply to standard terminals with hole. MPC switches have solid terminals, slightly larger, as shown on second following page



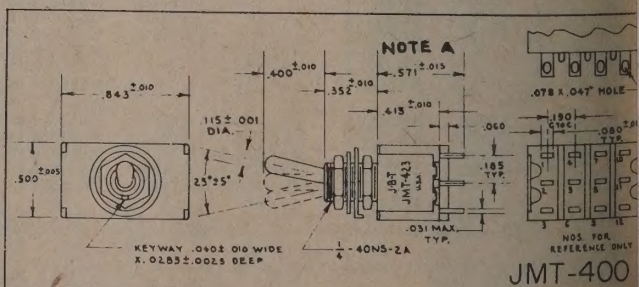
JMT-100



JMT-300



JMT-200



JMT-400

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

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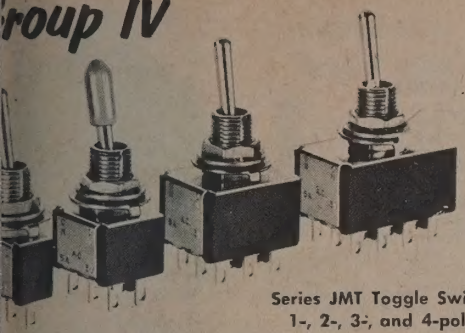
SUB-MINIATURE TOGGLE SWITCHES

1st Year

J-B-T INSTRUMENTS, INC.

roup IV



Series JMT Toggle Switches
1-, 2-, 3-, and 4-pole DT.

IES JMT, SUB-MINIATURE TOGGLE SWITCHES. BROAD LINE MANUFACTURED IN CONNECTICUT BY J-B-T.

NUFACTURED IN J-B-T's new plant, the subminiature types illustrated on this e make up the firm's fourth and newest group of toggle switches. Series JMT bines drastic reduction in size and weight with the trouble-free construction t into standard-size J-B-T switches. Widely used in manually controlled, low- ent, solid-state devices and miniaturized circuitry of computers, instruments, ce, geophysical, and test apparatus, these tiny switches also have application ircraft, communications, nd electronic equipment, and portable products.

Made with a distinctive GREEN BODY, single-pole types are ¼" thin, double- e types less than ½" square, 3-pole and 4-pole types correspondingly small. All single-hole mounting with ¼" threaded bushing which will not turn or work e in the J-B-T surface plate. Stringent in-plant controls assure terminals that are ly staked and will withstand repeated soldering. Terminal holes on JMT Series ept up to three #22 wires. Dimensions are shown on the other side of this page.

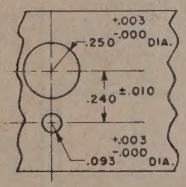
SPECIFICATIONS

inal Rating: 5 Amp. resistive load, 125 VAC and 24 VDC. **Initial Contact Resis- ce:** 5 Milliohms max. 3 VDC, 100 Milliamps. **Insulation Resistance:** 10,000 Meg- ns, min. **Dielectric Strength:** 1,000 volts rms at sea level. **Life Under Load:** 100,000 e-and-break cycles minimum for all suffix-23 models; 60,000 for others. **Weight, uding Hardware:** SP, 0.19 oz.; DP, 0.23 oz.; 3-pole, 0.28 oz.; 4-pole, 0.32 oz.

TERIALS: Switching contacts and rockers are coin silver; center terminal silver- ed. Bat handle is bright chrome-plated brass. Switch bodies are molded of stic selected for high strength and arc resistance. Bushing, locking ring, and hex s are brass nickel-plated. Clamp and lockwasher are made of (cadmium plated) el, with chromate treatment, or of stainless steel.

HARDWARE AND MOUNTING

unting hardware supplied consists of one locking ring **RI-12,** two hex nuts, **W-NU-11,** one internal tooth lockwasher, **WA-16,** knurled nut, **W-NU-12** and tapered panel dress nut, **NU-14** are also available.

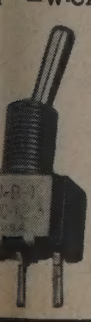


ECTION OF MOVEMENT — All JMT switches make continuity erminal OPPOSITE throw of lever.

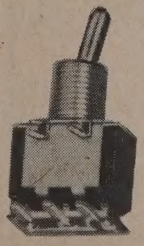
UNTING INFORMATION — When mounting switch with ring ring, use drill procedure illustrated. For push button es, see next page.

LOR CAPS — Switches are normally supplied with bat handles. For color cod- , tight-grip insulator caps are available for easy attachment before or after tches are mounted. Price, $10.00 per thousand in bulk; 2c per switch if attached. cify color and part number:

ite —**W-CAP-10A** Black —**W-CAP-10D** Yellow —**W-CAP-10G** Gray — **W-CAP-10J**
e —**W-CAP-10B** Brown —**W-CAP-10E** Green —**W-CAP-10H**
—**W-CAP-10C** Orange —**W-CAP-10F** Violet —**W-CAP-10I**



SERIES MPC, PC1 and PC2 Sub-miniature toggle switches are made with terminals for insertion in printed circuit boards; MPC for direct insertion, and PC1 and PC2 for right angle insertion. Terminals are gold plated for ease of solderability. MPC Series includes the same models as the standard JMT Series as well as such modifications as FH (Flat Handle), LL (Lever lock), 15-Series (Large Bushing) and other variations. (Illustrations slightly larger than actual size.)



Prices Net, F.O.B. Factory;
Domestic Packed, Effective April 1, 1969, Subject to change.

TYPICAL MODELS

Circuitry† A	Circuitry† B	Keyway C	Model No.	Quantity Net Prices 2-9‡	10-29	30-99
JMT SERIES						
†SPDT — SERIES JMT-100						
On-Off-On			JMT-121	$1.95	$1.43	$1.30
On-None-On			JMT-123	1.65	1.21	1.10
On-None-On*			JMT-126	1.95	1.43	1.30
On*-Off-On*			JMT-127	2.10	1.54	1.40
On-Off-On*			JMT-131	2.10	1.54	1.40
None-On-On*			JMT-134	1.95	1.43	1.30
†DPDT — SERIES JMT-200						
On-Off-On			JMT-221	2.55	1.87	1.70
On-None-On			JMT-223	2.15	1.58	1.43
On-None-On*			JMT-226	2.55	1.87	1.70
On*-Off-On*			JMT-227	2.70	1.98	1.80
On-Off-On*			JMT-231	2.70	1.98	1.80
On-On-On			JMT-232	2.85	2.09	1.90
On-On-On*			JMT-233	3.15	2.31	2.10
None-On-On*			JMT-234	2.55	1.87	1.70
On*-On-On*			JMT-235	3.10	2.26	2.05
†3-POLE DT — SERIES JMT-300						
On-Off-On			JMT-321	4.25	3.12	2.84
On-None-On			JMT-323	3.85	2.82	2.57
On*-Off-On*			JMT-327	4.40	3.23	2.93
On-Off-On*			JMT-331	4.40	3.23	2.93
None-On-On*			JMT-334	4.50	3.30	3.00
†4-POLE DT — SERIES JMT-400						
On-Off-On			JMT-421	5.45	4.00	3.64
On-None-On			JMT-423	4.85	3.56	3.24
On*-Off-On*			JMT-427	5.60	4.10	3.74
On-Off-On*			JMT-431	5.60	4.10	3.74
On-On-On			JMT-432	6.00	4.40	4.00
On-On-On*			JMT-433	6.25	4.57	4.15
None-On-On*			JMT-434	5.90	4.32	3.93
On*-On-On*			JMT-435	6.40	4.70	4.28
MPC SERIES§						
†SPDT — SERIES MPC-100						
On-Off-On			MPC-121	2.05	1.53	1.38
On-None-On			MPC-123	1.75	1.31	1.18
On-None-On*			MPC-126	2.05	1.53	1.38
On*-Off-On*			MPC-127	2.20	1.64	1.48
†DPDT — SERIES MPC-200						
On-Off-On			MPC-221	2.65	1.97	1.78
On-None-On			MPC-223	2.25	1.68	1.51
On-None-On*			MPC-226	2.65	1.97	1.78
On*-Off-On*			MPC-227	2.80	2.08	1.88
PC1, PC2 SERIES						
†SPDT — SERIES PC1, PC2						
On-None-On			PC1-123	3.40	2.96	2.40
On-None-On			PC2-123	3.40	2.96	2.40
LFH Series — (Replaces FH Series)§						
†SPDT — SERIES LFH-100						
On-Off-On			FH-121	2.95	2.23	2.00
On-None-On			FH-123	2.65	2.01	1.80
On*-Off-On*			FH-127	3.10	2.34	2.10
†DPDT — SERIES LFH-200						
On-Off-On			FH-221	3.55	2.67	2.20
On-None-On			FH-223	3.15	2.38	2.13
On*-Off-On*			FH-227	3.70	2.87	2.50
LL SERIES§						
†SPDT — SERIES LL-100						
On-Off-On			LL-121	3.70	3.30	2.59
On-None-Off			LL-122	3.10	2.80	2.12
On-None-On			LL-123	3.10	2.80	2.12
†DPDT — SERIES LL-200						
On-Off-On			LL-221	4.35	3.90	3.04
On-None-Off			LL-222	3.70	3.35	2.59
On-None-On			LL-223	3.70	3.35	2.59
15 SERIES§						
†SPDT — SERIES 15-100						
On-Off-On			15-121	2.30	1.68	1.53
On-None-On			15-123	2.00	1.46	1.32
On-None-On*			15-126	2.30	1.68	1.53
On*-Off-On*			15-127	2.45	1.79	1.63
†DPDT — SERIES 15-200						
On-Off-On			15-221	2.90	2.12	1.93
On-None-On			15-223	2.50	1.83	1.66
On-None-On*			15-226	2.90	2.12	1.93
On*-Off-On*			15-227	3.05	2.23	2.03
PB SERIES						
SPDT — SERIES PB-100						
Maintained Action Switch PB-123 Push to Make Contact, and Push Again to Reverse Action.				1.95	1.47	1.30
Momentary Action Switch PB-126 Normally Open, or Normally Closed. (Determined by how wired.) See Drawing for Circuitry.				1.95	1.47	1.30

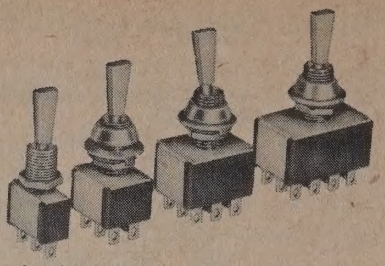
† These DT switches may also be used as ST by wiring only to applicable terminals. Example: JMT-123 can be connected as an "on and off" switch by using center terminal and terminal on one end only.
‡ On orders for single switches, add 50¢.
* Momentary position.
§ Also available 3- and 4-pole.

ADDITIONAL SUB-MINIATURE TOGGLE SWITCHES

J-B-T INSTRUMENTS, INC.

31st Ye

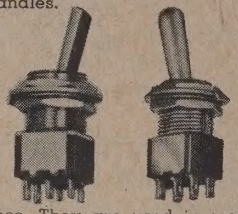
LFH SERIES with Flat Handles



SERIES LFH — provides a human engineering factor, with flat handles (paddle levers) that are easy to grasp, give good sensing of the direction of throw, and orderly panel appearance. Flatted on two sides, each lever is permanently aligned by a patented construction in its operating plane perpendicular to the flat. Standard finish is satin chrome, with bright nickel and other finishes available on special order.

The LFH Series, with .437" bushing and 22° throw is now cataloged and stocked. The earlier models, known as the FH Series, with flat handles, .352" bushing and 25° throw, are now available on special order. Both LFH and FH Series can be made in configurations corresponding to those in the JMT Series; some models are available with MPC terminals for printed circuits; some with UL listing. Also the 15 Series switches are available with flat handles.

15 SERIES with 15/32" Bushings to Match Standard Size J-B-T Toggle Switches

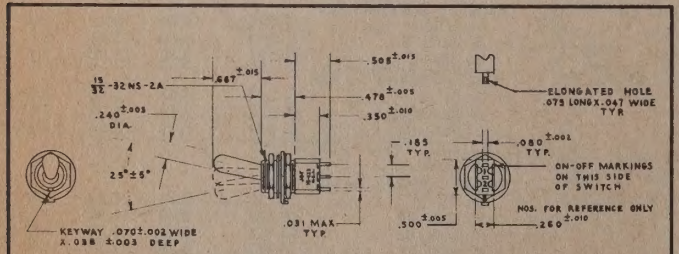


SERIES 15 — Sub-miniature toggle switches combine the behind-the-panel space saving feature of the standard JMT Series with the front-of-panel appearance of standard size switches. They are used in many applications where circuitry requires switches of different capacities, but good panel design calls for uniformity. Electrical and mechanical characteristics of Series 15 switches are the same as for JMT switches given in Catalog 449, except for the larger (15/32") bushing and slightly greater weight. Mounting and hardware are the same as for standard size J-B-T toggle switches. Circuit identification caps are available in red, white, and black.

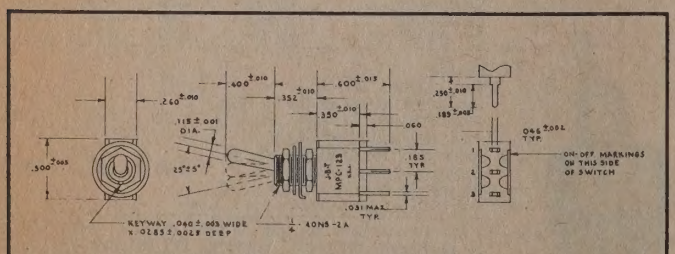
PB SERIES Push Button Switches

SPECIFICATIONS

Nominal Rating: 5 Amp. resistive load, 125 VAC and 24 VDC. **Initial Contact Resistance:** 5 Milliohms max., measured at 3 VDC, 100 Milliamps. **Insulation Resistance:** 10,000 Megohms, min. **Dielectric Strength:** 1,000 Volts rms at sea level. **Life Under Load:** 100,000 cycles make-and-break, min. **Force Required To Operate:** Less than 5 lbs. Rapid break generates audible click. **Weight, Including Hardware:** Single-pole 0.4 oz.; Double-pole 0.44 oz. **Materials And Construction:** Switching contacts and rocker are coin silver; center terminal silver plated, standard. Available with gold plated current carrying parts where required for dry circuit applications. Bushing and plunger are nickel plated brass; bushing has shoulder for greater strength. Clamp is stainless steel. Body is high-strength plastic, J-B-T green and black. Standard knob (W-KN-10) is anodized natural aluminum. Anodized colors, green, blue, red, black and gold are also available at slight extra cost. Buttons of other shapes, colors, materials or with imprints are also available on substantial production runs at extra cost. **Mounting Hardware** consists of 2 hex nuts, W-NU-11 nickel plated brass, and an internal tooth lockwasher, W-WA-16. A knurled face nickel plated nut (W-NU-12) is also available. Mounting in panel is in 1/4" D-shaped hole. (See drawing below.)

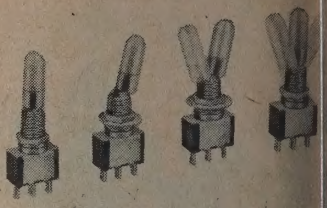


(For double pole, see SK-187; 3-pole, SK-188; 4-pole, SK-189) **15-100**



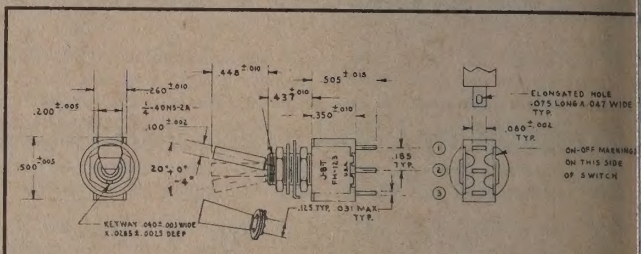
(For double pole, see SK-167; 3-pole, SK-168; 4-pole, SK-169) **MPC-100**

LL SERIES with Locking Levers

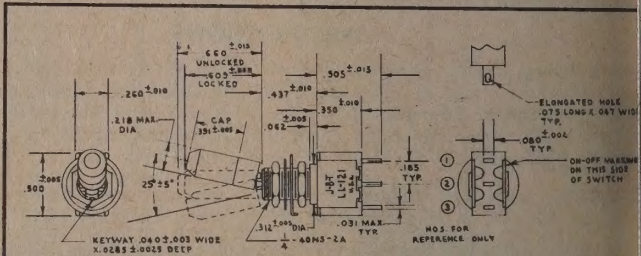


SERIES LL — Made with spring-loaded locking mechanism to prevent accidental shifting of the lever — a definite advantage on planes, ships, trains, or other vehicles where sudden motion might cause switching errors. Also, for test equipment other instrumentation or computer circuits where cumulated data might be lost through unintentional switching. A human engineering factor, the operator must **think** about the switch operation before he can complete it.

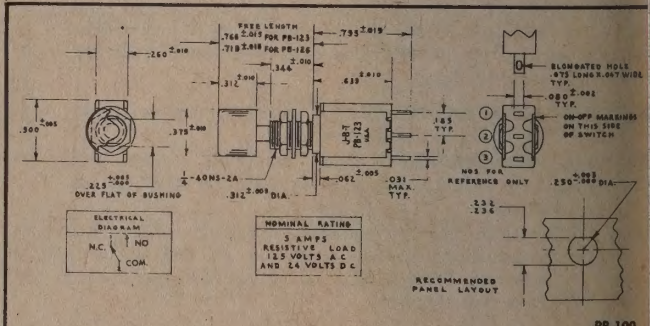
LL Series switches are normally stocked with natural aluminum co but for circuit identification caps can be supplied with anodized colo red (danger), black, blue, gold or green.



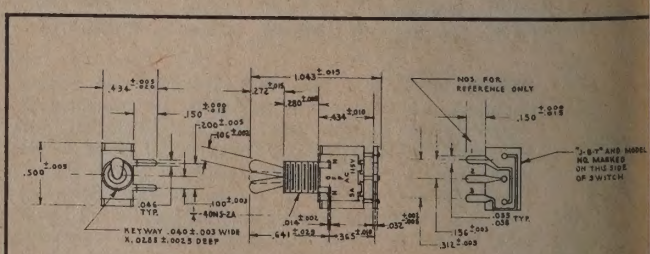
(For double pole, see SK-193; 3-pole, SK-194; 4-pole, SK-195) **LFH-100**



(For double pole, see SK-181; 3-pole, SK-184; 4-pole, SK-185) **LL-100**



PB-100



PC1

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

Net

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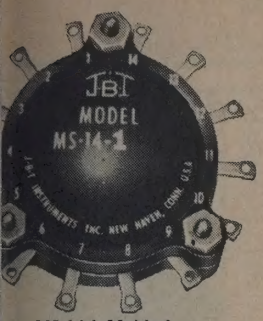
ROTARY SWITCHES — LAMINATED AND MOLDED

: Year

J-B-T INSTRUMENTS, INC.

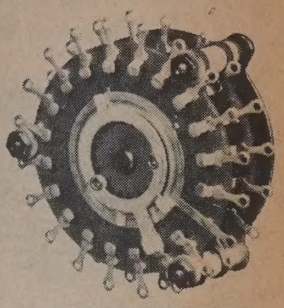


MS-14-1 Molded

- **INSTRUMENT AND TESTER TYPE**
- **14- AND 20-POSITION**
- **SINGLE AND MULTI-DECK**
- **MILITARY OR COMMERCIAL**

USES - J-B-T Rotary Selector Switches are extensively used in quality test equipment, portable instruments, inspection setups, and other military aerospace and commercial applications where trouble-free, dependable performance is of major importance.

FEATURES — **Extra Contacts** — 14- and 20-position designs provide extra switching capability. **Dependability** — Sturdy rotors and decks with rigid 3-post deck suspension; current-carrying parts heavily silverplated to meet 100 hour salt spray test; sharp detent mechanism to assure positive indexing; insulation resistance above 50,000 megohms. **Low Contact Loss** — Double-grip collector arms, and large area contacts, silver to silver; average contact resistance, .007 ohms or less. **Ample Dielectric** -- Conservatively rated at 1 amp., 125 VAC, inductive load; maximum momentary capacity (not make-and-break), 5 amp. AC or DC; maximum voltage between contacts, 1500 VAC, R.M.S.; between decks and ground, 2000 VAC, R.M.S



SS-20-2 Laminated

ed -- Molded models have all moving contacts enclosed to minimize dirt and ion.

14-Position: 13 circuits and "off" per deck in 2" circle **(SS-14)** or 2-3/32" circle) with 25° 43' angular indexing. Supplied individually boxed with **1-1/4" Bar (KN-14),** not on bulk orders unless specified. For details, **SS-14,** 1 to 6 decks, int SK-42 Rev. B. **MS-14** 1 to 6 decks, Print SK-111 Rev. D, 7 decks and over, K-112 Rev. C.

20-Position: 19 circuits and "off" per deck in 2-23/32" circle **(SS-20)** or 2⅝" **(MS-20)** with 18° angular indexing. Supplied individually boxed with 2" **Bar (KN-16),** not on bulk orders unless specified. For details, **SS-20** 1 to 6 decks, int SK-116 Rev. A. **MS-20,** 1 to 6 decks, Print SK-113 Rev. D, 7 decks and over, K-114 Rev. C.

y or Commercial Variations: Special switches too numerous to list now are made. Typical are: laminated models with 14 or 20 live positions, no off, ated by suffix F as in SS-14-2F or SS-20-1F*. Inquiries are invited.

ONDED RUGGEDIZED TYPES As indicated in the table, all molded rotary ches may be ordered with bonded construction as **MS-14B** or **MS-20B** types cured laminations for ruggedization, shockproofing and further enclosure. additional dependability factor adds only approx. 1/64" and 35c catalog price deck.

MS-20-1-6DT
Double-throw Switching
of 6 circuits per deck

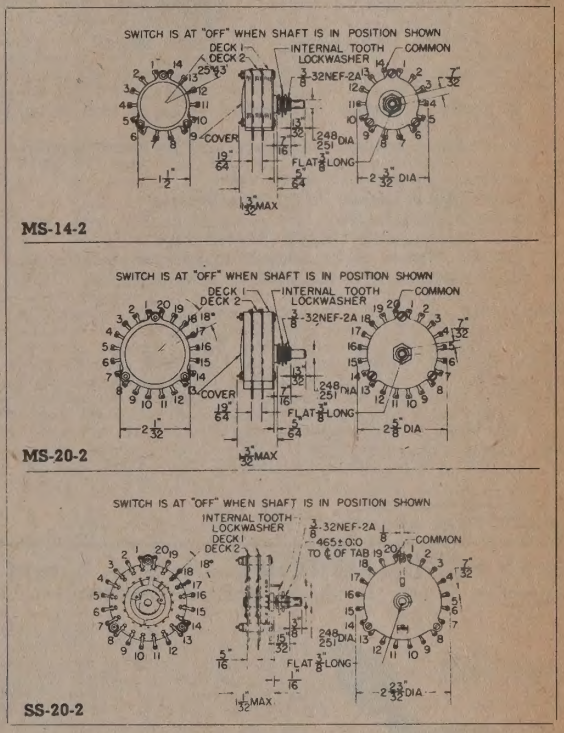
6-POLE DOUBLE-THROW PER DECK —

1 or 2 DECKS (DT Series). Widely used for simultaneous double-throw switching of 6 circuits per deck (18° throw). Fully enclosed -- illustration shows protective cover cut-away. Circuit arrangement printed on switch front. If DTS Shorting Type, 1500 VAC R.M.S. between contacts and ground, 1000 VAC R.M.S. between contacts. See **MS-20-1-6DT, MS-20-1-6DTS,** and **MS-20-2-6DT** in table.

ETCHED DIAL PLATES

For switches below, also 20M Series. Dull black finish, raised bright numerals, 2¾" dia.

EP-13 off thru 13	**$.25**
EP-14 1 thru 14	**.25**
EP-19 off thru 19	**.25**
EP-20 1 thru 20	**.25**



POSITION ROTARY SWITCHES — 25° 43' INDEXING SERIES SS-14, MS-14, MS-14B, MAS-14, and MAS-14B

r. es) Decks er or ck Gangs	Short'g or Non-Sh.	LAMINATED (SS) Standard Model	Max(d) Depth Behind Panel	Boxed Inc. Knob	MOLDED (MS) Standard Model	Max. Depth Behind Panel	Boxed Inc. Knob	Bonded Model	Max. Depth Behind Panel	Boxed Inc. Knob	Adjustable Stop Model	Max. Depth Behind Panel	Boxed Inc. Knob	Bonded Adjustable Stop Model	Max. Depth Behind Panel	Boxed Inc. Knob
1 1	N-S	SS-14-1	27/32"	$2.45	MS-14-1	27/32"	$2.60	MS-14B-1	7/8"	$3.00	MAS-14-1	31/32"	$3.30	MAS-14B-1*	1"	$3.65
2 1	N-S	SS-14-1A*	27/32"	2.60	—	—	—	—	—	—	—	—	—	—	—	—
1 1	S	SS-14-1S*	27/32"	2.50	MS-14-1S*	27/32"	2.65	MS-14B-1S*	7/8"	3.05	MAS-14-1S	31/32"	3.40	MAS-14B-1S*	1"	3.75
1 1	C-S(c)	SS-14-1CS*	27/32"	3.00	—	—	—	—	—	—	—	—	—	—	—	—
1 2	N-S	SS-14-2	1 3/32"	3.10	MS-14-2	1 3/32"	3.30	MS-14B-2	1 1/8"	4.05	MAS-14-2	1 1/32"	4.05	MAS-14B-2	1 1/4"	4.80
2 2	N-S	SS-14-2A*	1 3/32"	3.40	—	—	—	—	—	—	—	—	—	—	—	—
1 2	S	SS-14-2S*	1 3/32"	3.20	MS-14-2S*	1 3/32"	3.40	MS-14B-2S*	1 1/8"	4.15	MAS-14-2S*	1 1/32"	4.20	MAS-14B-2S*	1 1/4"	4.95
1 3	N-S	SS-14-3	1 7/16"	3.70	MS-14-3	1 13/32"	4.00	MS-14B-3	1 13/32"	5.10	MAS-14-3	1 17/32"	4.90	MAS-14B-3*	1 13/32"	6.00
1 4	N-S	SS-14-4	1 23/32"	4.65	MS-14-4	1 23/32"	5.20	MS-14B-4	1 25/32"	6.65	MAS-14-4	1 27/32"	6.05	MAS-14B-4	1 15/16"	7.50
1 6	N-S	SS-14-6	2 13/32"	6.70	MS-14-6	2 13/32"	7.50	MS-14B-6	2 1/2"	9.70	MAS-14-6	2 17/32"	8.50	MAS-14B-6*	2 13/32"	10.70

20-POSITION ROTARY SWITCHES — 18° INDEXING SERIES SS-20, MS-20, and MS-20B

1 1	N-S	SS-20-1	23/32"	4.25	MS-20-1	27/32"	$3.30	MS-20B-1	7/8"	$3.65
2 1	N-S	SS-20-1A*	23/32"	4.40	—	—	—	—	—	—
6 1	N-S	—	—	—	MS-20-1-6DT	27/32"	4.15	MS-20B-1-6DT*	7/8"	4.50
6 1	S	—	—	—	MS-20-1-6DTS	27/32"	4.25	MS-20B-1-6DTS*	7/8"	4.60
1 1	S	SS-20-1S*	23/32"	4.30	MS-20-1S	27/32"	3.35	MS-20B-1S*	7/8"	3.70
1 2	N-S	SS-20-2	1 1/32"	5.05	MS-20-2	1 3/32"	4.15	MS-20B-2	1 1/8"	4.75
6 2	N-S	—	—	—	MS-20-2-6DT	1 3/32"	5.85	MS-20B-2-6DT*	1 1/8"	6.60
1 2	S	SS-20-2S*	1 1/32"	5.15	MS-20-2S	1 3/32"	4.25	MS-20B-2S*	1 1/8"	5.00
1 3	N-S	SS-20-3	1 11/32"	6.20	MS-20-3	1 13/32"	5.30	MS-20B-3*	1 15/32"	6.40
1 4	N-S	SS-20-4	1 23/32"	7.50	MS-20-4	1 23/32"	6.60	MS-20B-4	1 25/32"	8.10
1 6	N-S	SS-20-6	2 13/32"	9.95	MS-20-6	2 13/32"	9.10	MS-20B-6	2 1/2"	11.35

NOTES TO TABLES

* Standard Items, but not regularly stocked; check with your electronic parts distributor.

(a) 5 positions include 4 "live" and 1 "off."

(b) 6 positions include 5 "live" and 1 "off."

(c) Complete shorting—all contacts shorted except one in use.

(d) Dimensions given are for continuous rotation switches. On Standard SS-14 Models only, adjustable stops are also furnished, and when used, increase depth behind panel 3/32" and decrease effective bushing length 3/32".

Non-Shorting — Break before make **Shorting** — Make before break

*"F" type decks (14 full live or 20 full live positions, no "off") available on SS-14 and SS-20 Series only. Add 35c per deck to catalog price.

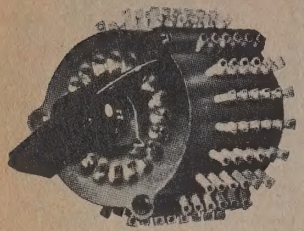
Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective April 1, 1968, subject to change.

MULTI-POLE AND LEVER TYPE SWITCHES

J-B-T INSTRUMENTS, INC. 31st Year

IMPROVED MULTI-POLE MOLDED ROTARY SWITCHES, SERIES 20M.

• Superior Molded Material • All Models Bonded & Ruggedized • Panel Seal Available



Front View Showing Panel Locator which is Normally at 3 o'clock Position.

Rear View with Back Cover Cut Away to Show 4-Pole Construction with 4 Live Switching Contacts.

Although the new 20M- Series is ¼" longer behind the panel than the 20-position molded switches described on the preceding page, the two styles are otherwise interchangeable in dimensions. Providing 19 live positions and off, the 20M- offers these additional features:

1. **Increased Versatility of Circuitry** — up to and including four poles per deck;
2. **Upgraded Insulation Resistance and Dielectric Qualities** — by use of melamine stators and rotors (or other MIL-M-14 molded materials when specially ordered);
3. **Built-in Panel Locator or Non-Turn Device;**
4. **Extended Switch Life** — new contact design with rotor brushes of phosphor bronze heavily silver-plated;
5. **All 20M- Models are Bonded and Ruggedized Construction;**
6. **Radial Alignment of Multi-Pole Contact Surfaces** — by means of newly-designed double-ball detent with diaphragm-type springs.

VARIATIONS OF 20M- — Please request SK-142, Revision of March, 1967, or later for full dimensions and circuit diagrams. Besides the condensed listing in the accompanying table, various combinations of **shorting and non-shorting contacts for each deck** may be made. **Fixed stops** are built-in but may be altered for single-pole switches when specially ordered. **Over six decks** can be supplied for a reasonable number of poles; extra decks add 5/16" per deck and 5/16" per switch for rear support SU-3. **Ring-contact** (suffix R) may be specially ordered.

PANEL SEAL PS20M- SERIES — Sealed shaft and bushing meet the requirements of MIL-S-3786C for sealing. For details ask for SK-143, Revision of March, 1967, or later. The seal (prefix PS) adds $1.75 per switch to catalog price.

SPECIFICATIONS AND TEST DATA — Available on request.

No. of Decks	Depth Behind Panel	Poles per Deck	Model Number	Circuitry Per Pole	Rotation Positions*	Boxed Incl. Knob
1	1-3/16"	1	20M-1201N	19 live, 1 off	Continuous	$4.0
		1	20M-1191NF	19 live, no off	1 thru 19	4.3
		1	20M-1161N	15 live, 1 off	20 thru 15	4.0
		2	20M-2101N	9 live, 1 off	20 thru 9	4.4
		3	20M-3051N	4 live, 1 off	20 thru 4	4.8
		4	20M-4051N	4 live, 1 off	20 thru 4	5.1
2	1-1/2"	1	20M-1202N	19 live, 1 off	Continuous	5.3
		2	20M-2102N	9 live, 1 off	20 thru 9	6.1
		3	20M-3052N	4 live, 1 off	20 thru 4	6.9
		4	20M-4052N	4 live, 1 off	20 thru 4	7.6
3	1-13/16"	1	20M-1203N	19 live, 1 off	Continuous	6.6
		2	20M-2103N	9 live, 1 off	20 thru 9	7.5
		3	20M-3053N	4 live, 1 off	20 thru 4	9.0
		4	20M-4053N	4 live, 1 off	20 thru 4	10.1
4	2-3/16"	1	20M-1204N	19 live, 1 off	Continuous	8.2
		2	20M-2104N	9 live, 1 off	20 thru 9	9.8
		3	20M-3054N	4 live, 1 off	20 thru 4	11.3
		4	20M-4054N	4 live, 1 off	20 thru 4	12.8
		4	20M-4044N	3 live, 1 off	20 thru 3	12.8
6	2-13/16"	1	20M-1206N	19 live, 1 off	Continuous	11.4
		1	20M-1166N	15 live, 1 off	20 thru 15	11.4
		2	20M-2106N	9 live, 1 off	20 thru 9	14.0

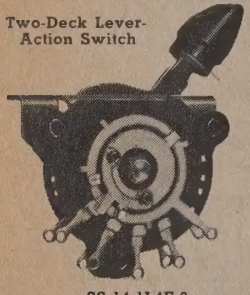
* See MS-20 drawing on following page for location of positions

Notes: (1) For standard switches, knob pointer (active position) is 180° opposite flat on shaft, and off is at position 20.
(2) **NON**-shorting (N) type — (break-before-make) — is shown. For shorting type (S), add $.05 per pole per deck to catalog price. Example: 3 pole, 3 deck 20M-3053S is $8.95.
(3) All models have 18° angular indexing.
(4) Maximum **LIVE** positions per single pole, 19; per 2-pole, 9; per 3- and 4-pole, 4.
(5) Switches (such as 15 or 18 position) with all live or less than maximum live positions can be provided by fixed stops.
(6) Maximum of 9 decks for 1 pole per deck
6 decks for 2 poles per deck
4 decks for 4 poles per deck.
(7) †Suffix-F denotes all rotation positions shown are **live** with no off.

LEVER ACTION SWITCHES — 6, 5, 4, 3, and 2-Position — LAMINATED, MOLDED, & SUB-MINIATURE

LAMINATED 3- AND 4-POSITION, POSITIVE INDEXING. These lever switches are derived from the J-B-T SS-14 instrument-type rotaries. Specified for tube checkers, inspection equipment, communications systems, control consoles, and other uses where quality is important. 4-position types are interchangeable with 3-position except in length of throw (1" slot for 3-position, 1⅜" for 4-position) — mounting holes for boxed switches come with mounting hardware and KN-17 knob as illustrated; bulk shipments, without knobs. **SINGLE DECK-** spacing between centers: recommended, ¾"; minimum, 9/16". **TWO DECK-** spacing: recommended, 15/16"; minimum, 13/16". ⅜" between decks matches TV twinlead wires. **SPRING RETURN TYPE-** single deck, 3-position switches may be ordered with spring return. Lever returns to position 11*, giving momentary action at positions 9* and 10*. For dimensions on all SS-14-IL series switches, ask for drawing SK-138.

Two-Deck Lever-Action Switch



SS-14-1L4F-2

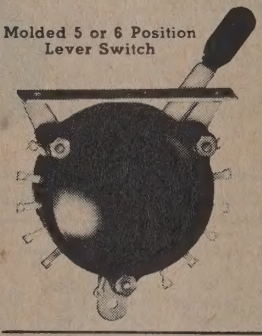
Positions Per Circuit	Circ. (Poles) Per Deck	Decks or Gangs	Short. Non-Short	Stand.* Contact Pos.	Model	Boxed Incl. Knob
3, no "off"	1	1	N-S	A	**SS-14-1L3**	$1.10
3, no "off"	2	1	N-S	B	**SS-14-1L3A**	1.25
3, no "off"	1	2	N-S	A	**SS-14-1L3-2**	1.80
3, & "off"	1	1	N-S	C	**SS-14-1L4**	1.20
4, no "off"	1	1	N-S	D	**SS-14-1L4F**	1.20
4, no "off"	1	2	N-S	D	**SS-14-1L4F-2**	2.10

* Numbers correspond to contact positions in MS-14-2 drawing on prior page. A—common at 12, contacts at 9, 10, 11; B—common at 9, 10, contacts at 6, 7, 8, 12, 13, 14; C—common and off at 12, contacts at 9, 10, 11; D—common at 12, contacts at 8, 9, 10, 11.

LEVER KNOBS

KN-17, black pointed with metal insert **$0.19**
KN-18, walnut, same as KN-19 **0.08**
KN-19, black, round, flat-type, push-on **0.08**
KN-20, black, threaded, for MS-20-IL **0.20**

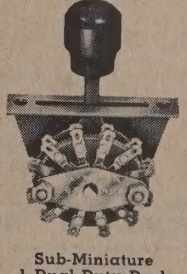
Molded 5 or 6 Position Lever Switch



MOLDED 5- and 6-POSITION, POSITIVE-INDEXING. 5 or 6 live positions two circuits per deck, in enclosed lustrous black molded construction adapted from the MS-20 series with electrical characteristics as shown on the next page. These models can simplify circuitry for sound systems, control, inspection, test, experimental, and hobby purposes. Individually-boxed switches come with KN-20 threaded black molded knob; bulk shipments, without knobs. For mounting data see SK-64, Rev. H on 5 position and SK-119, Rev. B on 6-position.

MS-20-1L5A-1, 5-position, 2-circuit (1 deck) **$3.45**

MS-20-1L6A-1, 6-position, 2-circuits (1 deck) **3.70**



Sub-Miniature 1 Dual Duty Deck

2 AND 3 POSITION, 1 TO 4 DECKS, 2 TO 8 POLES PER DECK.

SUB-MINIATURE LEVER SWITCHES — Derived from the high-performance sub-miniature switches described on another page, the VL-7000 and the VL-5000 positive indexing series and the VSRL-7000 and VSRL-5000 spring return types provide excellence in lever switches. MIL materials throughout; crisp 30° indexing. Max. depth behind panel 1.250"; panel slot .962" x .062"; other details to SK-139, Rev. A and Catalog SM-33. Typical switches are:

VL-71031N, single-pole, 3-position, one-deck, non-shorting **$4.80**
VSRL-71031N, same as above, with spring return to center position from either side **5.80**
VL-71032N, single-pole, 3-position, two-deck, non-shorting **7.05**

TYPE SR31 LEVER-ACTUATED SWITCHES TO MIL-S-3786C, MEDIUM AND HIGH SHOCK

Sub-miniature open construction, lever-actuated switches, similar to the one illustrated above, recently have been added to MIL-S-3786C as SR-31 types. This category covers shorting and non-shorting; 1 to 4 poles per section; 1 to 4 sections per switch; Medium Shock M, as in Model VL-71031N-SR31N30CMGC, will normally be supplied, but High Shock H is available. Typical models are priced on next page.

Prices shown are NET, F.O.B. New Haven, Conn. Domestic Packing, Effective April 1, 1968, subject to change.

© United Technical Publications

SUB-MINIATURE ROTARY AND LEVER SWITCHES

31st Year

J-B-T INSTRUMENTS, INC.

SUB-MINIATURE SWITCHES MADE TO MANY PERFORMANCE LEVELS OF MIL-S-3786C, TYPE SRO5; ALSO NON-MILITARY X AND V VERSIONS.

SERIES 7000, FULL 12 LIVE SWITCHING CONTACTS PER DECK; SERIES 5000, UP TO 8 POLES PER DUAL-DUTY DECK.

ECKS
es 7000
el Number
066N-SRO5N30C3MGC
tration shows mili-
variation with bent
inals. Terminals have
to accept two 0.032"
wires, and super-
solid "T" terminals
erly supplied.

recision built for Low-Current Usage where Size, Weight, Reliability are Important
nusual Versatility — More Contacts per Deck
ccelerated Snap-Action Detent
IL Materials Throughout for Military & Non-Military Applications

AUTION—MIL-S-3786C, a sophisticated specification, spells out more than one performance level for each of several categories such as Temperature-Life, Vibration, Shock, and Altitude. Each level is designated by its own symbol. J-B-T SRO5 models meet an exceptional number of levels.

ISES — For test equipment, airborne and transorized equipment, geophysical apparatus, and er miniaturized electrical and electronic devices.

O BASIC SERIES — Full 12 live switching contacts deck are available in **Series 7000** using a ented wafer design feature where rotor contacts on the front, and switching contacts are on the of the same deck. 1 to 4 poles per deck 1 to 6 ks, standard.

to 8 poles per dual-duty deck are available in **es 5000** which has up to 12 contacts including mon on the front, and up to 12 contacts including mon on the rear of the same deck. 1 to 4 poles on h side of dual-duty decks; 1 to 4 decks, standard.

EE ROTARY TYPES — Both Basic Series are made 3 types: **MILITARY STYLE SR05,** numbered for cific performance levels of MIL-S-3786B; **V TYPE,** similar construction to SR05, but not ordinarily jected to full military test procedures; and **TYPE,** using the same materials as V type tches, but intended as replacements for previous dels or as original components for non-military rices where requirements are similarly exacting.

VER SERIES (L Types) — Outstanding design known VL-7000 or VL-5000 Series, 1 to 4 decks. Illustrated a preceding page.

OBS — Supplied with individually boxed switches V and X types; not supplied on SR05 because parate military specification applies.

IFFERENCES BETWEEN SRO5 MILITARY, V, and X — Switches other than X types use extra rugged ndex mechanisms and rotor construction.

ITEM	NON-MILITARY X-7000 X-5000	NON-MILITARY V-7000 V-5000	MIL-S-3786B V-7000 SRO5 V-5000 SRO5
Terminals	Hole-type not bent	Hole-type not bent	Hole-type; normally not bent
Shaft Bushing	⅛" dia. ¼" -32NEF-2A, ¼" long	¼" dia. ⅜" -32NEF-2A, ⅜" long	¼" dia. only ⅜"-32NEF-2A, ⅜" long
Rear Bridge	Black Identification	Red Identification	Stainless steel, full number
Non-Turn Device	Normally supplied	Normally supplied	Supplied - Spec. requires

OR ADDITIONAL MODELS AND FULL SPECIFICATIONS, ASK FOR BULLETINS SM-33 AND LAYOUT SHEETS WITH CONTACT ARRANGEMENTS.

MOST FREQUENTLY ORDERED MODELS

DECKS	Circ. (Poles) per Deck	Pos. per Pole	Shorting, Non-Shorting	SHAFT DIA.	V-TYPE OR X-TYPE Model	V-TYPE OR X-TYPE Price	SR05-TYPE Model	SR05-TYPE Price
ONE DECK	1	12	N-S	¼"	V-71121N	$4.90	V-71121N-SR05*	$5.25
	1	12	S	¼"	V-71121S	4.90	V-71121S-SR05*	5.25
	1	12	N-S	⅛"	X-71121N	4.70	—	—
	1	12	S	⅛"	X-71121S	4.70	—	—
	2	6	N-S	¼"	V-72061N	5.00	V-72061N-SR05*	5.35
	4	3	N-S	¼"	V-74031N	5.20	V-74031N-SR05*	5.50
ONE DUAL DUTY DECK	2	11	N-S	¼"	V-52111N	5.25	V-52111N-SR05*	5.60
	2	11	S	¼"	V-52111S	5.25	V-52111S-SR05*	5.60
	4	5	N-S	¼"	V-54051N	5.35	V-54051N-SR05*	5.70
	4	5	S	¼"	V-54051S	5.35	V-54051S-SR05*	5.70
	8	2	N-S	¼"	V-58021N	5.55	V-58021N-SR05*	5.90
TWO DECKS	1	12	N-S	¼"	V-71122N	6.75	V-71122N-SR05*	7.20
	1	12	S	¼"	V-71122S	6.75	V-71122S-SR05*	7.20
	1	12	N-S	⅛"	X-71122N	6.45	—	—
	2	6	N-S	¼"	V-72062N	6.95	V-72062N-SR05*	7.40
	4	3	N-S	¼"	V-74032N	7.40	V-74032N-SR05*	7.90
TWO DUAL DUTY DECKS	2	11	N-S	¼"	V-52112N	8.10	V-52112N-SR05*	8.65
	2	11	N-S	⅛"	X-52112N	7.75	—	—
	4	5	N-S	¼"	V-54052N	8.30	V-54052N-SR05*	8.85
THREE DECKS	1	12	N-S	¼"	V-71123N	8.85	V-71123N-SR05*	9.45
	2	6	N-S	¼"	V-72063N	9.15	V-72063N-SR05*	9.70
	4	3	N-S	¼"	V-74033N	9.85	V-74033N-SR05*	10.45
FOUR DECKS	1	12	N-S	¼"	V-71124N	11.95	V-71124N-SR05*	12.70
	1	12	N-S	⅛"	X-71124N	11.40	—	—
SIX DECKS	1	12	N-S	¼"	V-71126N	16.05	V-71126N-SR05*	17.10
ONE	4	3	N-S	—	VL-74031N	$5.15	VL-74031N-SR31*	$6.15
DECK	2	3	N-S	—	VL-72031N	5.05	VL-72031N-SR31*	6.05
LEVER	8	2	N-8	—	VL-58021N	5.35	VL-58021N-SR31*	6.35

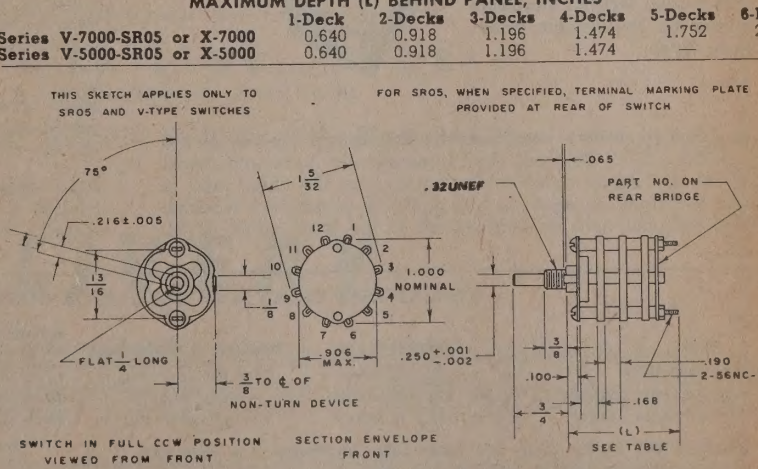
★Typical MIL-S-3786C complete number for rotary switch is V-71121N-SRO5N30C3MGC; for lever-actuated is VL-74031N-SR31N30CMGC. Unless otherwise ordered, switches will be furnished according to suffix N30C3MGC. Temperature-Life Characteristic C also qualifies for Characteristics A and B; Vibration Grade Symbol 3 also qualifies for Symbols 1 and 2; Shock Type M, medium impact, normally supplied. Shock Type H available at extra cost on some models when so ordered. Altitude C covers up to 70,000 ft., also meets Characteristic O (up to 10,000 ft.)

SPECIFICATIONS & TEST DATA ON SR05 MILITARY STYLE

NOTE: Most of the values shown here are given in the Specification and do not indicate the extent to which the test results of J-B-T switches were more favorable.
Current-carrying capacity: 5 amps at standard ambient conditions.
Current-breaking capacity: 750 MA at 30 VDC; 300 MA at 120 VDC; 1 AMP at 115 VAC Non-Inductive.
Initial Contact Resistance: .005 ohms max.
Contact Resistance: To MIL-STD-202C, Method 307, which requires Initial — 10 milliohms; After Moisture Resistance Test — 15 milliohms; After Life Test — 20 milliohms.
Materials: Terminals (double-wiping): gold-plated 90% silver alloy. **Rotor Contact:** J-B-T #1800 Silver Alloy. **Shaft & Frame:** Stainless steel, passivated.
Insulation: Wafer, glass epoxy laminate to MIL-P-18177C Type GEB, NEMA G-11; Rotor, ceramic to MIL-I-10A, Grade L-623.
Life Rotational; Temperature-Life Characteristic C, 25,000 rotational cycles at 10 cpm, Temperature —65°C to +125°C; 25,000 cycles at 70,000', room ambient temperature.
Vibration: Grade 3 of Table III MIL-S-3786B, 10 to 2000 cps. Tested in accordance with MIL-STD-202C, Method 204, Test Condition B.
SHOCK: Shock Type M, Medium Impact per Table IV, MIL-S-3786B. Tested in accordance with MIL-STD-202C, Method 205. Mating contacts did not open for more than 10 microseconds. Shock Type H, High Impact, Method 207, specifies not more than 5 milliseconds and does not automatically cover Type M Impact.

MAXIMUM DEPTH (L) BEHIND PANEL, INCHES

	1-Deck	2-Decks	3-Decks	4-Decks	5-Decks	6-Decks
Series V-7000-SR05 or X-7000	0.640	0.918	1.196	1.474	1.752	2.030
Series V-5000-SR05 or X-5000	0.640	0.918	1.196	1.474	—	—



STYLE SRO5N, V-7000 AND V-5000

For SRO5S with panel seal and bushing seal, request Print SK-179.

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective April 1, 1968, subject to change.

NEW SRO5S SEALED & V/M ENCLOSED SWITCHES

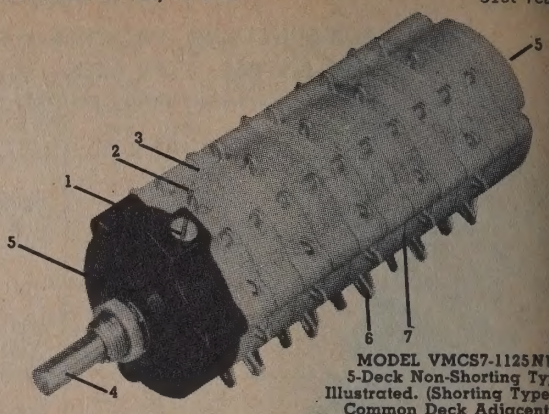
J-B-T INSTRUMENTS, INC. 31st Year

SRO5 SHAFT AND BUSHING SEAL NOW AVAILABLE ON 1" OPEN CONSTRUCTION ROTARY SWITCHES TO MIL-S-3786C

● The versatility of J-B-T 1" open construction sub-miniature rotary switches shown on the preceding page and further described in Catalog SM-33 is increased by the addition of shaft and bushing seals to meet the requirements of SRO5S Type to MIL-S-3786C.

Principal differences:	SRO5N	SRO5S	Typical prices Lots 1-24
Sealed Shaft-to-bushing	No	Yes	**V-72061N-SRO5S#,** 2-pole, 6-position, 1-deck, non-shorting **$7.35**
Sealed Panel Bushing	No	Yes	
Bushing Size	Round 3/8-32	Flatted (D-Shape)	**V-56031N-SRO5S#,** 6-pole, 3-position, 1-deck, non-shorting **$7.85**
Depth behind panel	See Table Preceding Page	.100" longer	**V-74033N-SRO5S#,** 4-pole, 3-position, 3-deck, non-
Non-Turn Device	Yes (unless otherwise ordered)	Provided by flatted bushing	shorting **$12.45**
Other Details	Print SK-135 (E)	Print SK-179	

Normally supplied with suffix N30C3MGC for medium shock. Shock type H available at extra cost.



MODEL VMCS7-1125NF2 5-Deck Non-Shorting Type Illustrated. (Shorting Type H Common Deck Adjacent to Front of Switch)

V/M SERIES 12-POSITION ROTARY SWITCHES REMARKABLE QUALITY WITH ADJUSTABLE TORQUE DETENT

This unusually fine family of fully enclosed rotary switches is being produced in J-B-T's new Connecticut plant. Used in precise laboratory test apparatus, test set-ups, telemetering, meter switching, calibration operations, and similar applications where circuit stability and long useful life are essential to accuracy and repeatability.

NOTES:

* Model Number shown is for VMCS7, with coin silver contacts and rotor blades. For nickel silver, model number would be VMNS7; for silver plated brass contacts and nickel silver rotor blades, VMSB7.

** Unlike other J-B-T rotary switches, VM series is normally shorting type; for non-shorting construction add 50c per deck per switch, Net. Made only on special order.

† Includes knob and mounting hardware. Quantity prices on request.

FEATURES:

(1) Adjustable detent action for variable torque (or factory set for 4 inc lbs. max.) (2) Unusually sturdy molded-in terminals, .032" thick; acco modate two #18 wires. (3) Distinctive color-coded glass alkyd or diall phthalate decks — **gray green** for coin silver alloy contacts and rotor blade **blue** for nickel silver; and **green** for silverplated brass. (4) Husky stainle steel shaft. (5) Permanent identification of positions 0 through 11, cast detent housing and molded in rear deck. (6) Integral connections betwe contacts and terminals — no mechanical joints. (7) Enclosed decks m be stacked for explosion-proof switch, per methods 3 and 4 of MIL-E-52

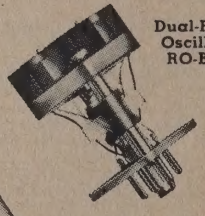
REPRESENTATIVE MODELS AND BASE PRICES VMCS7, VMNS7, AND VMSB7 ROTARY SWITCHES

Model Number* (Shorting Type)	Poles Per Deck	Positions Per Pole	No. of Decks	Shorting** Non-Sht'g	NET EACH—Quantity 1-9† VMCS7 Coin Silver	VMNS7 Nickel Silver	VMSB7 S.P. Brass	"L" Length Behind Panel
VMCS7-1121SF1	1	12	1	S	$16.00	$10.50	$ 9.25	1 5/8" max.
VMCS7-2061SF2	2	6	1	S	19.50	12.50	11.25	1 5/8" max.
VMCS7-1122SF1	1	12	2	S	24.10	15.00	13.75	2 3/16" max.
VMCS7-2062SF2	2	6	2	S	27.60	17.00	15.75	2 3/16" max.
VMCS7-1124SF1	1	12	4	S	40.30	24.00	22.75	3 11/16" max.
VMCS7-2064SF2	2	6	4	S	43.80	26.00	24.75	3 11/16" max.

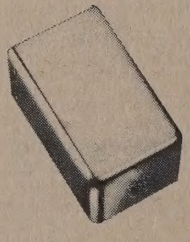
RESONANT REED RELAYS AND OSCILLATOR CONTROLS

Applications: selective-calling mobile communication equipment, remote data transmission, and simultaneous or sequential coding and decoding.

For further data, ask for Bulletins 162-R and D664A. Inquiries are invited on combination relay-oscillator types.



Dual-Reed Oscillator Control RO-B10B-188.0



Relay RR-DO2E-250.3 (Vibration-Isolated in All Planes)

Single-Reed Oscillator Control RO-D62E-250.3 (Vibration-Isolated in All Planes)

RO-B Oscillator Controls (sometimes known as tone generators encoders) are dual-reed units internally shock mounted and of seale construction. These units control the frequency of oscillation i vacuum tube or transistor oscillator circuits. The RO-B type oscillato control is recommended where accurate and stable AC signals ar required.

RR-D types are internally shock-mounted resonant reed relays which are square, sealed units with 7-pin miniature plug. They no are the most widely used J-B-T relays.

RO-D types are single-reed, internally shock mounted oscillato controls for applications where space saving is of importance. Dimen sionally they are identical to RR-D relays.

J-B-T frequency-sensitive electro-mechanical relays (decoders) are highly stable control devices. They intermittently make and break contacts when a signal of the same frequency as the tuned reed is received. Although the reed has a high Q, the bandwidth at which the relay responds will be proportional to the input signal level.

TYPICAL REED RELAY AND OSCILLATOR CONTROL SPECIFICATIONS

Model	Enclosure	Mounting & Connections	Frequency Range CPS	DC Coil Resistance (Standard)	Accuracy to	Change per °C —40° to + 100°C	Individually Boxed
RR-DO2E-Reed Relay	25/32" sq. x 3 1/32" lg sealed	7 Pin Miniature Plug In	67 to 1600	600 ohms	±0.1%	±0.0025%	19.00**
RO-B10B-Oscillator Control†	1 33/64" sq x 2 7/16" long sealed	Octal Plug In	67 to 600	2200 ohms/coil	±0.1%	±0.003 %	26.00**
RO-D62E-Oscillator Control	25/32" sq. x 3 1/32" lg sealed	7 Pin Miniature Plug In	67 to 1600	600 ohms	±0.1%	±0.0025%	18.00**

* Supplied with 2-piece clamp and 4-wire cable terminated in a 4-pin base.

** For frequencies 400 cps and up, add $1.00 to catalog price.

† Dual reed construction.

Prices Net, F.O.B. Factory; Individually Boxed, Domestic Packed, Effective November 1, 1969, subject to change.

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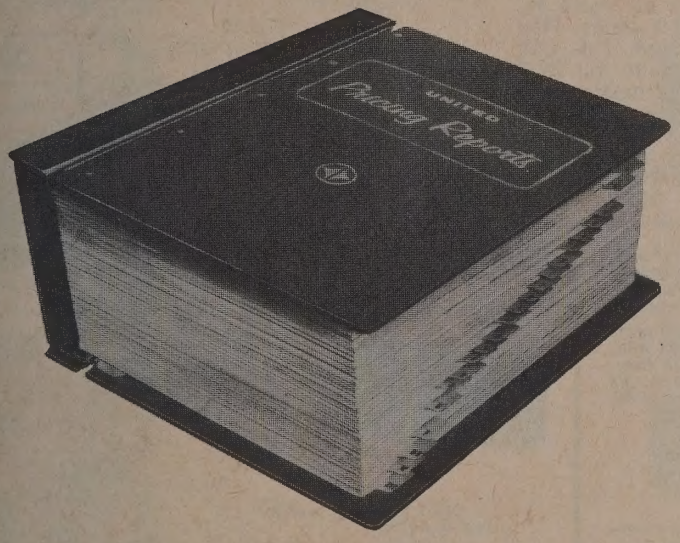

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DELIVERY

Delivery is often dependent on availability of raw materials. Check with your distributor for delivery information at the time you place your order.

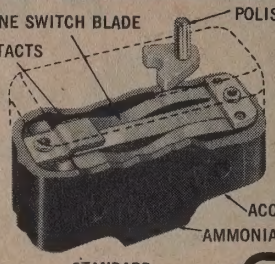
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

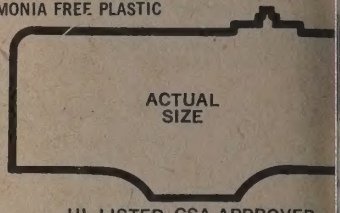
general purpose snap action switches

TYPE
TYPE

TYPE 10

MEETS THE REQUIREMENTS OF MIL-S-8805/1C



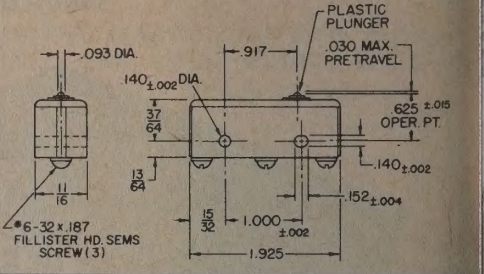


The highly sensitive LICON® Type 10 basic switch provides a combination of flexible features that cope with most switch applications. The Type 10 provides ultra-precision, dimensional stability, and small movement differential with extremely long life. It meets requirements of military specifications. The serpentine snap action switch mechanism assures positive electrical control with high vibration resistance. Dead center and switch teasing have been eliminated. The ammonia free phenolic case is precision molded and provides excellent protection against corrosion. Precise throughout—even the self-lubricating nylon button gives further assurance of performance and long life.

UL LISTED, CSA APPROVED

TYPE 08—FLAT-BASE U.L. APPROVED

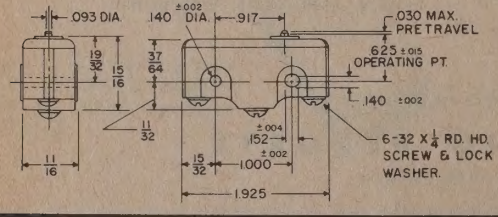
The Type 08 is offered in all styles except 08-2, 08-3, and 08-9 series. Fine silver contacts are standard. This unit is most effective carrying its full 22.5 Amp resistive load to the maximum of 100,000 cycles. Motor load is ⅓ h.p., 125 Volt A.C., or ½ h.p., 250 Volt A.C. The 08 uses all of the Type 10 actuators. For information contact Factory.



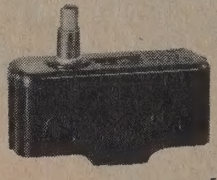
TYPE 10-122

Highly sensitive basic switch for applications where overtravel and actuators are not required. Used for in-line actuation.

Pretravel .....**.030 max.**
Overtravel .....**.005 min.**
Movement Diff. .....**.002 max.**
Operating Force .....**10 oz. ±3**
Release Force .....**3 oz. min.**

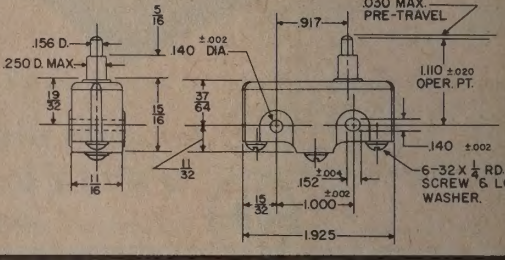


TYPE 10-222

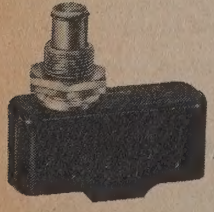


Designed for in-line actuation, sw
features high sensitivity with smal
ameter overtravel plunger and stan
through-hole mounting.

Pretravel .....**.030 r**
Overtravel **1/16**
Movement Diff. .....**.002 r**
Operating Force .....**10 oz.**
Release Force .....**3 oz.**

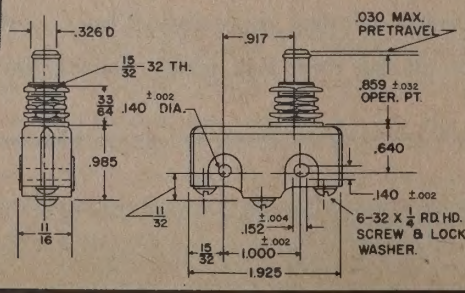


TYPE 10-322



One hole panel mounting permits mechanical or manual actuation with 7/32 minimum overtravel. Mounting nuts permit adjustment of operating point.

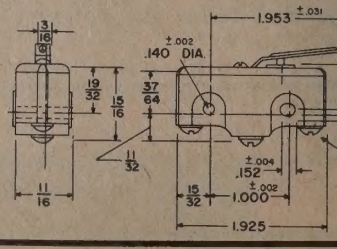
Pretravel .....**.030 max.**
Overtravel .....**7/32 min.**
Movement Diff. .....**.002 max.**
Operating Force .....**10 oz. ±3**
Release Force .....**3 oz. min.**



TYPE 10-422

Leaf spring actuator reduces opera
force and provides increased overtra
Used for cam and slide installati

Pretravel .....**5/32 m**
Overtravel .....
Movement Diff. .....**.050 m**
Operating Force .....**6 oz. m**
Release Force .....**5 oz. m**



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LICON®
DIVISION ILLINOIS TOOL WORKS INC.

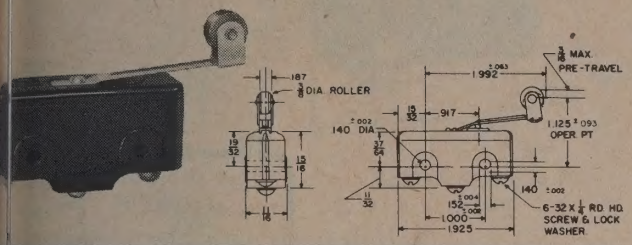
general purpose snap action switches

TYPE 08
TYPE 10

TYPE 10-522

Pretravel .....3/16 max.
Overtravel 1/16
Movement Diff. .....050 max.
Operating Force .....6 oz. max.
Release Force .....5 oz. min.

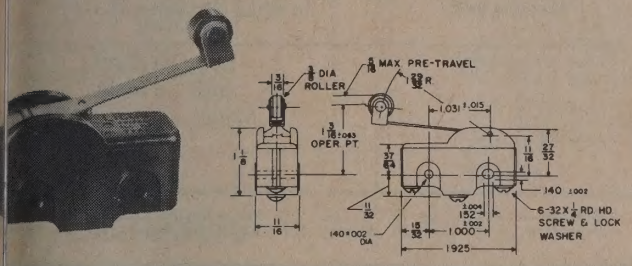
The smooth operating roller leaf actuator is designed for slow or fast moving cams. Positive electrical control is assured with reduced operating force.



TYPE 10-722

Pretravel .....5/16 max.
Overtravel .....3/32 min.
Movement Diff. .....045 max.
Operating Force .....3½ oz. max.
Release Force .....5 oz. min.

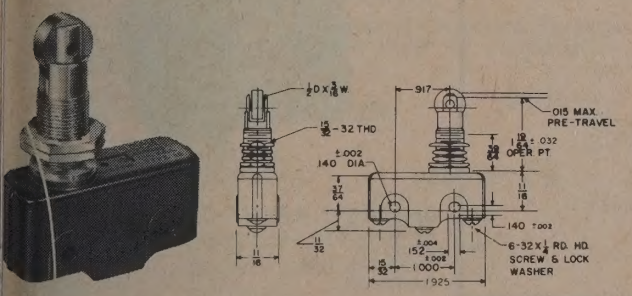
Roller lever actuators are designed for fast or slow moving cams and slides. Hinged-pivot provides long lasting, smooth operation with tolerance accuracy and reduced operating force. Available in various lever lengths and/or with pre-loaded actuator.



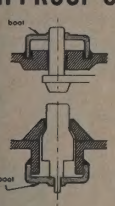
TYPE 10-922

Pretravel .....030 max.
Overtravel .....140 min.
Movement Diff. .....002 max.
Operating Force .....10 oz. ±3
Release Force .....3 oz. min.

In-line roller actuator for cam or slide applications. Threaded bushing permits one hole panel mounting and adjustment of operating point. Also available with cross-roller actuator.

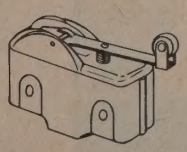


SPLASH-PROOF SEAL



aling against moisture, dirt, st and other harmful elements n be provided for most models thout altering the switch characteristics. A neoprene boot is cured to the actuating member. s permits positive sealing with- affecting the switch operan. (See illustrations)

REVERSE ACTION LEVER ACTUATOR

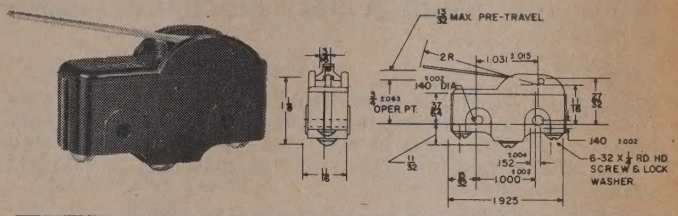


The reverse action provided by this type actuator is designed to provide minimum pretravel and maximum overtravel. Preloading minimizes switch abuse with impact actuation.

TYPE 10-622

Pretravel .....13/32 max.
Overtravel .....156 min.
Movement Diff. .....045 max.
Operating Force .....3½ oz. max.
Release Force .....5 oz. min.

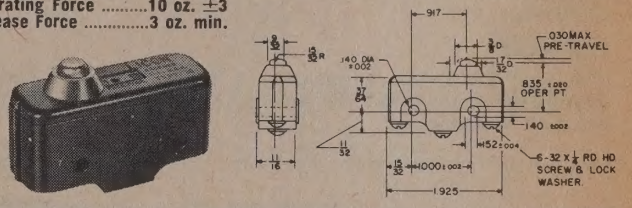
The rigid, hinge-type lever permits exacting repeatability with reduced operating force and additional overtravel. Available in various lever lengths and/or with preloaded actuator. Slightly lighter operating force results when return spring is removed on Type 10-600 and 700 Series.



TYPE 10-822

Pretravel .....030 max.
Overtravel .....062 min.
Movement Diff. .....002 max.
Operating Force .....10 oz. ±3
Release Force .....3 oz. min.

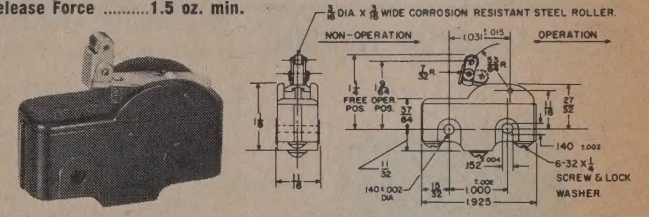
Rugged, compact switch for in-line or cam actuation features oversize button and .062 minimum overtravel. Molded collar guides and protects actuator plunger.



TYPE 10-72207

Pretravel .....156 max.
Overtravel .....056 min.
Movement Diff. .....030 max.
Operating Force .....8.5 oz. max.
Release Force .....1.5 oz. min.

One way actuator permits electrical control in one direction only. The hinged-pivot allows the actuating member to return without operating the switch.



ELECTRICAL RATINGS

TYPE 10
15A, 125/250 VAC, 480 VAC
15A Res 5A Ind 5A motor, 28 VDC
⅓ HP @ 125 VAC
½ HP @ 250 VAC .5 Amp 125 VDC

TYPE 08
22.5A, 125/250/480 VAC,
⅓ HP 125 VAC ½ HP 250 VAC,
.5A 125 VDC
Pilot Duty 350 VA 125/250 VAC

BASIC SWITCH ORDERING INFORMATION

Use the following code for convenience and accuracy in ordering Type 08 and 10 series switches.

Switch Type
08 or 10 — X X X X X X

I. Actuators
II. Terminal
III. Movement Differential
IV. Circuit
V. Lever Style
VI. Other Characteristics

I. 1) Pin Plunger 2) Compact Plunger 3) Panel Mount 4) Leaf Lever 5) Roller Leaf Lever 6) Rigid Lever 7) Roller Lever 8) Short Plunger 9) Roller Plunger

#2, 3, & 9 Not Available in 08 Series

II. 0) Special Switch, All Following Digits Are Serial 1) Solder 2) Integral Screw/Lockwasher 3) Integral Screw/Lockwasher & Cup Washer 5) ¼" Quick Disconnect #5 Not Available in 08 Series

III. 2) Standard M.D. Range 7) Wide M.D. Range
When the last 3 digits are zero, they may be omitted; i.e. 10-222

IV. 0) SPDT 1) Normally Closed 2) Normally Open

V. 0) Standard Switch 2) 1 3/64" Lever 4) 2½" Lever 7) One Way Roller Lever 8) Cross Roller Plunger
#2 & #4 Available in 600 & 700 Series Only
#7 Available in 700 Series Only
#8 Available in 10-900 Series Only

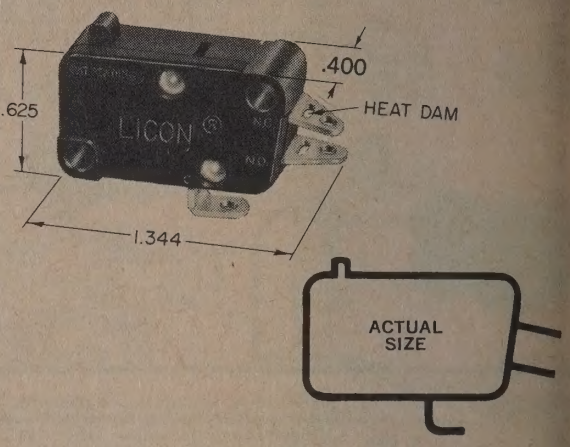
VI. 0) Standard Switch 1) Splashproof Sealed 2) Reverse Action Lever
#1 Not Available in 08 Series
#2 Available in 600 & 700 Series Only

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

high capacity miniature switch | TYPE 2

TYPE 23

The LICON® type 23 Series miniature snap-action switch offers excellent mechanical and electrical life for its class. A unique "heat dam" slot to eliminate the flow of solder and flux inside the switch is provided on models having solder terminals. The type 23 Series is also available with screw or quick connect terminals. Integral type roller and straight lever actuators are available.



LONG LIFE

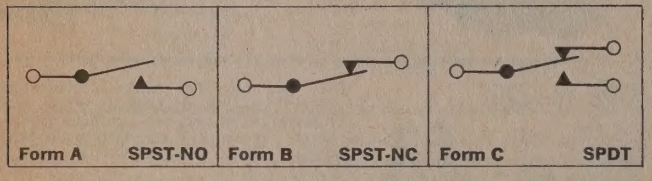
The type 23 Series has been tested to over 10 million cycles mechanical life, 5 million at pilot duty. Electrical ratings are based on 50,000 cycles at full rated load. At one-half rated load, the expected life of the type 23 increases to 200,000 cycles, nominal.

CHARACTERISTICS

Type 23 Series basic switches are designed for cam operation. A full complement of roller and straight roller actuators are available for other applications. Standard switch case is molded phenolic material. The type 23 is operational to 275°F, ambient.

CIRCUITRY

The type 23 Series is basically a SPDT (Form C) contact arrangement, but SPST-NO (Form A) and SPST-NC (Form B) are also available.



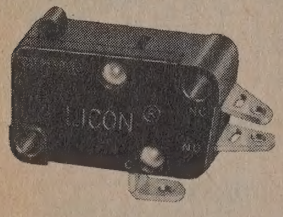
ELECTRICAL RATING

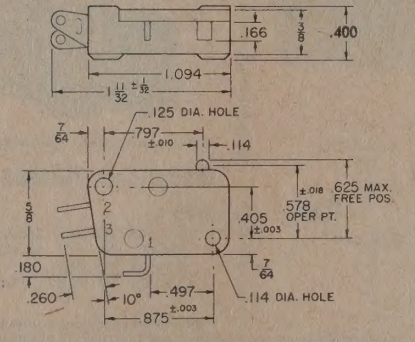
UL & CSA LISTE

125/250 VAC:	15 Amps, 60 Cycles, ⅓ H.P.* SEA LEVEL
28 VDC	Res: 10 Amps
	Ind: 6 Amps
	Motor: 6 Amps
125 VDC	½ Amp*
250 VDC	¼ Amp*

* Standard operating force (10 ±4 oz.), Series 100, 200 and switches only. Consult factory for rating on lower force switch

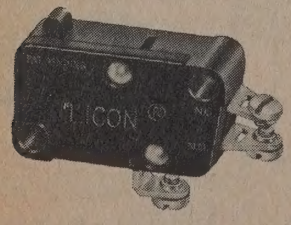
TYPE 23-114 SOLDER TERMINAL

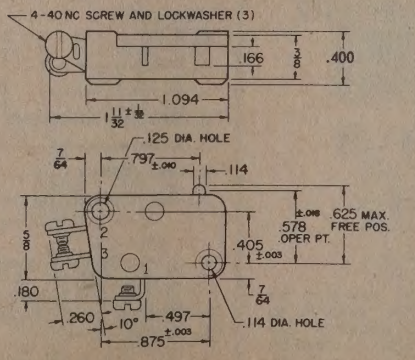




Operating Force .....10 ±4 oz.
Release Force .....4 oz. min.
Pretravel .....047 ref.
Movement Diff. .....009 max.
Overtravel .....031 min.

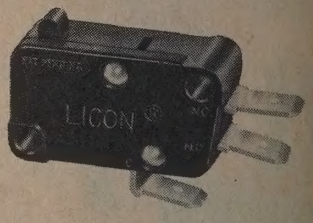
TYPE 23-124 SCREW TERMINAL



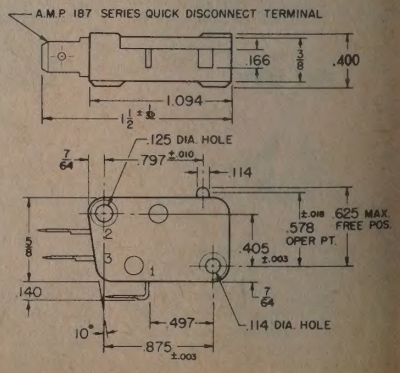


Operating Force .....10 ±4 oz.
Release Force .....4 oz. min.
Pretravel .....047 ref.
Movement Diff. .....009 max.
Overtravel .....031 min.

TYPE 23-154 PUSH-ON TERMINAL



Operating Force .....10 ±4 oz.
Release Force .....4 oz. min.
Pretravel .....047 ref.
Movement Diff. .....009 max.
Overtravel .....031 min.



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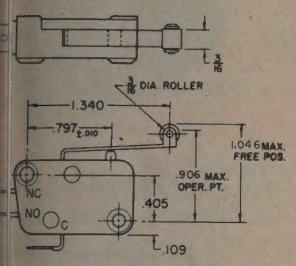
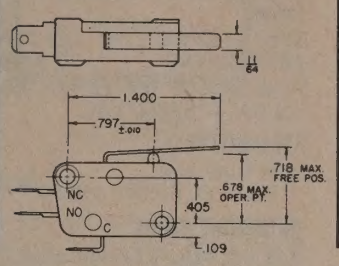
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

high capacity miniature switch | TYPE 23

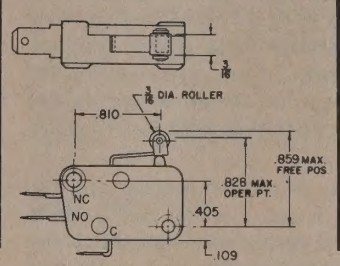
'EGRAL ACTUATORS



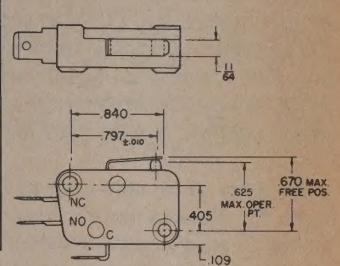
Operating Force 8 oz. Max.
23-554



Operating Force 8 oz. Max.
23-354



Operating Force Standard
23-454



Operating Force Standard
23-254

IC SWITCH ORDERING INFORMATION

the following code in ordering type 23 ches. The "23" preceding the dash indi- s switch type. The numbers following the indicate actuator style, terminal style,

TCH
E 23 — X X X X X X
Actuator
Terminal Style
Movement Differential
Circuit
Operating Force
Case Material

I. Actuator Style
1) Standard Plunger
2) .840" Lever
3) 1.40" Lever
4) .810" Roller Lever
5) 1.34" Roller Lever

II. Terminal Style
1) Solder
2) 4-40 N C Screw
3) 250 Series Amp Connector
4) Short Solder
5) 187 Series Amp Connector
6) 205 Series Amp Connector

III. Movement Differential
0) Special Switch, All Following Digits Serial.
4) Standard M.D.

When the last 3 digits are zero, they may be omitted; i.e., 23-114

IV. Circuit
0) SPDT
1) N.C.
2) N.O.

V. Operating Force (Applied at Button Only)*
0) 10 ±4 oz.
1) 8 oz. Max. Oper. Force
2) 5 oz. Max. Oper. Force
3) 2½ oz. Max. Oper. Force

VI. Case Material
0) Standard Phenolic 275°F max.

FOR OPERATING FORCE AT END OF LEVER CONSULT FACTORY

PE 73 ACTUATORS

n's type 73 actuator utilizes type 23 series miniature p-action switches offering long mechanical and electrical The type 23 series has been tested to over 10 million es mechanical life, 5 million at pilot duty. The electrical ng of 15 amps, 60 cycles, ⅓ H.P. at 125/250 VAC is ed on 50,000 cycles at full rated load.

LENS CAP ORDERING CODE

button styles are available in a variety of colors. Buttons not included, and type desired must be stated when ering actuators.

LENS CAP ORDERING CODE

QUARE 0 x .530)	ROUND (.950 DIA.)	DESCRIPTION
-701280	80-701284	Red
-701281	80-701285	Green
-701282	80-701286	Ivory
-701283	80-701287	Black

ORDERING INFORMATION FOR TYPE 73:

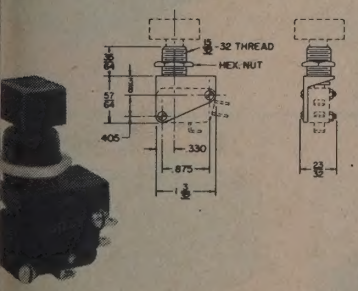
Type 73 actuator does not include basic switches.

73-2 9 X X / Basic Switch* (Series 100 Only)
I. Circuit
II. Mounting

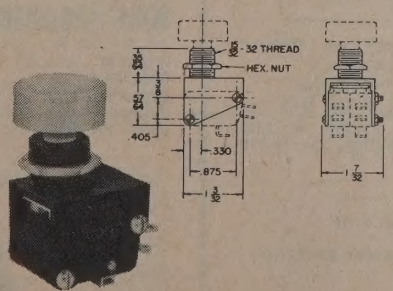
I. Circuit 1) Single Pole 2) Double Pole 3) Triple Pole
II. Mounting 0) 15/32-32 Bushing 1) ⅝-24 Bushing

*Slash number for switch: Specify basic switch by dropping series code and adding to actuator number.

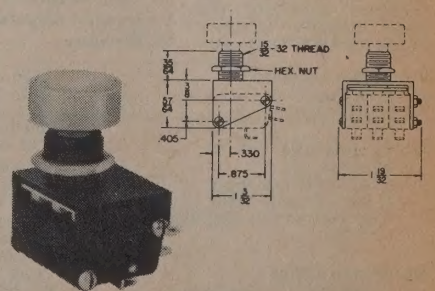
(Example:
73-2910 with one type 23-114 assembled = 73-2910/114)



1 POLE



2 POLE



3 POLE

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

miniature thin switch | TYPE

The Type 25 Series miniature snap-action thin switch offers considerable uniformity of operating forces because of its unique design. The LICON® Type 25 is a Form C switch using a coil spring as opposed to the stressed blade used by competition. The mechanism is quite similar to the exclusive LICON® Butterfly® double-break mechanism, yet the off-center plunger version allows for extremely light operating force to 27 grams.

Because of its similarity to the Butterfly® mechanism, the Type 25 offers extremely long life and 12 Amp rating. Good contact wiping action, low contact resistance, high shock and vibration resistance are additional features that make this Form C switch a desirable unit.

The thin switch is designed for commercial applications which require utmost reliability at low price. Typical applications include coin and vending machines, timers and counters.

ELECTRICAL RATING (U.L. Listed)

Dependent on location of actuating plunger and operat force.

SPDT—Form C	ON CENTER	OFF CENTER
125/250 VAC	12 Amps	6 Amps

*The 25-103 (on center—60 gm. max. oper. force) is ra at 6A, 125/250 VAC.

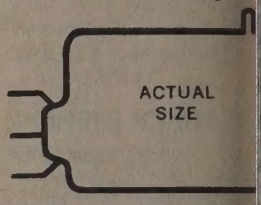
RELIABILITY

Pilot Duty Life:
Up to 20 million cycles

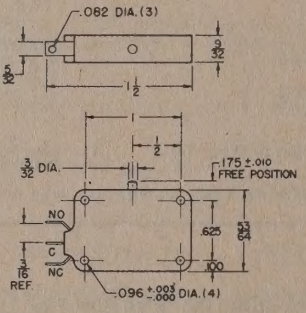
Mechanical Life:
On-Center 20 million cycles
Off-Center 50 million cycles

ORDERING GUIDE

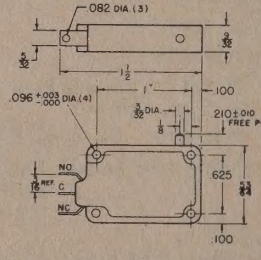
It is important to note that the Licon type 25 on-center and off-center versions are available in two case widths; 9/32" and 1/4". This does not mean the ratings are affected, but the problem of interchangeability is lessened.



ON CENTER—25-100



OFF CENTER—25-205



BASIC SWITCH ORDERING INFORMATION

Use the following code in ordering type 25 switches. The "25" preceding the dash indicates switch type. The numbers following the dash indicate actuator style, terminal style, etc.

Type 25-X X X X X X

I. Plunger Location
II. Terminal Style
III. Operation Force
IV. Case Width
V. Integral Actuator Style
VI. Circuitry

I. Plunger Location
1) On Center
2) Off Center

II. Terminal Style
0) Solder
1) Tab (78 Series Amp.)
2) Quick Connect (.110)
3) Special, All Following Digits Serial

III. Operating Force
(Applied at Button Only)
0) 3—6 ozs. } On Center Plunger Only
1) 6-10 ozs. } On Center Plunger Only
2) 12—16 ozs. } On Center Plunger Only
3) 60 Gm. max. } On Center Plunger Only
5) 20—27 Gm. } Off Center Plunger Only
6) 33—44 Gm. } Off Center Plunger Only
7) 45—60 Gm. } Off Center Plunger Only

When the last 3 digits are zero, they may be omitted; i.e., 25-205.

IV. Case Width
0) .281 In.
1) .250 In.

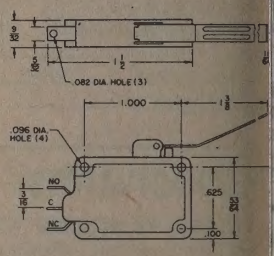
V. Integral Actuator Style
0) None
1) Wire (not available 25-1XXXXX)
2) Leaf
3) Roller

VI. Circuitry
0) SPDT
1) N.O.
2) N.C.

ACTUATORS

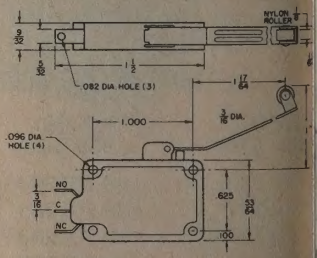
LEVER—25-205020

Pretravel .....500 max.
Overtravel .....350 min.
Operating Force ....2½ Gm. max.
Release Force .....1 Gm. min.
Movement Diff. .....375 min.



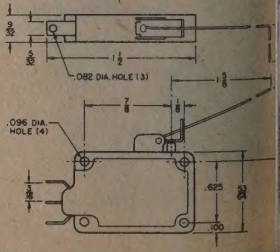
ROLLER LEVER—25-205030

Pretravel .....500 max.
Overtravel .....350 min.
Operating Force ....2½ Gm. max.
Release Force .....1 Gm. min.
Movement Diff. .....375 min.



WIRE—25-205010

Pretravel .....562 max.
Overtravel .....475 min.
Operating Force ....2½ Gm. max.
Release Force .....1 Gm. min.
Movement Diff. .....375 min.



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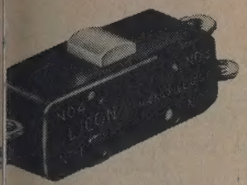
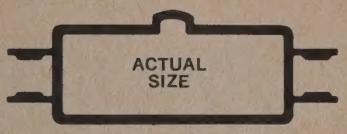
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

miniature BUTTERFLY® double-break switches

TYPE 11



E 11-104

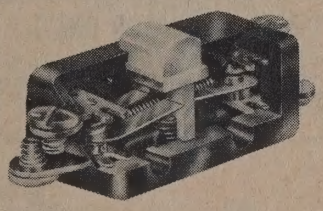


UL LISTED
CSA APPROVED

TS THE REQUIREMENTS OF MIL-S-8805/11

LICON® Type 11 switch is a general purpose switch for tary and industrial applications. It combines long life and electrical rating into one compact package that exceeds standard requirements of precision snap-action control. It specially adaptable for direct actuation by moving cams.

ammonia-free switch case provides protection against tact corrosion even at extremely high temperatures . . . itive actuator button alignment . . . and a sturdy base for inal stability. The two circuit switching mechanism, con- ing of beryllium copper switch blades and stainless steel rating spring, prevents dead-center for high overload ca- ity. The knife-edge pivot design eliminates "flickering" "teasing" and assures tter-free switch opera- even when the plunger ithin .010 of trip point vibration resistance of 's up to 500 cps and 's up to 2000 cps. The ON Type 11 series has n tested to over 20 mil- cycles of mechanical . Rated at 10 amps. /250 VAC, 28 VDC Ind.



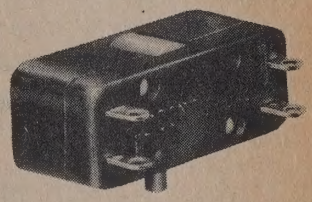
Variations in operating characteristics, terminal types and actuators give added flexibility. End terminals are available in screw or solder type; side terminals in solder only. Custom terminal designs can be provided for special applications. Variations in operating and reset forces are available from 70 grams to 40 ounces. Movement differentials are available from .010 to .030 with a maximum of .040 for special switch designs. Overtravel dimensions can be varied to meet specific requirements. Switches can be used with or without actuators.

SPDT, Two Circuit

- **U.L. Listed—10 Amps @ 125/250 V.A.C.**
  ½ HP @ 125 V.A.C.
  ¾ HP @ 250 V.A.C.

	Ratings	Sea Level
• 28 V.D.C. Form X or Y	Res.	15 Amps
	Ind.	10 Amps

Reset switches are excellent for use as a float level control, two-way limiting action, over pressure devices, or other similar installations. The switch maintains contact after the operating force has been removed and until the reset button is actuated. With the exception of the reset action, these switches are identical to the momentary basic switches shown. All standard Type 11 actuators may be used with reset switches.

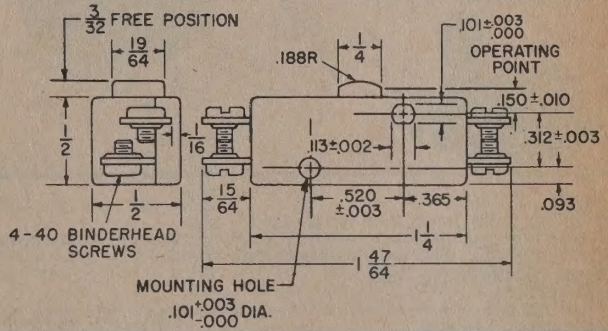


TYPE 11-314

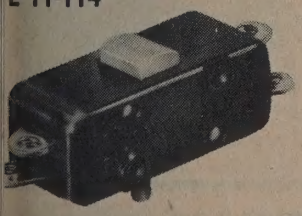
'E 11-204

This switch features offset designed screw terminals for easy wiring and simple switch installation. Available with solder end terminals as 11-104.

Pretravel .....**.050 max.**
Overtravel .....**.015 min.**
Movement Diff. .....**.020 ±.005**
Operating Force .....**8 ±3 oz.**
Release Force .....**4 oz. min.**

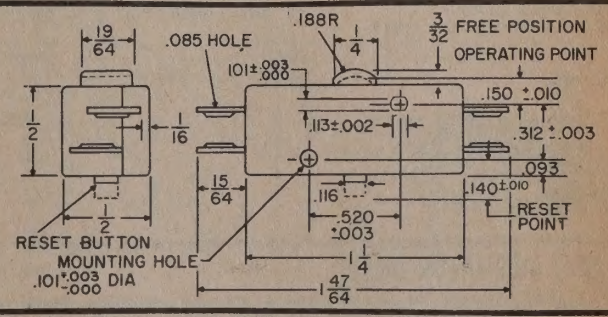


'E 11-114

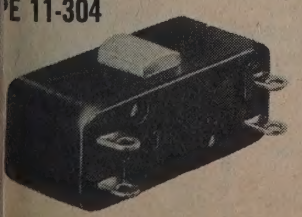


The reset model is available in momentary or maintained action. Available with screw end terminals as 11-214, side solder terminals as 11-314, or quick disconnect terminals as 11-514.

Pretravel .....**.050 max.**
Overtravel .....**.015 min.**
Movement Diff. .....**.020 ±.005**
Operating Force ....**3.5 oz. ±2 oz.**
Reset Force .....**4 oz. ±2 oz.**

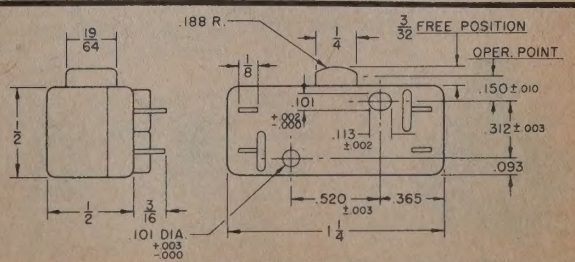


'E 11-304



Side solder terminals for installations where length must be at a minimum.

Pretravel .....**.050 max.**
Overtravel .....**.015 max.**
Movement Diff. .....**.020 ±.005**
Operating Force .....**8 ±3 oz.**
Release Force .....**4 oz. min.**

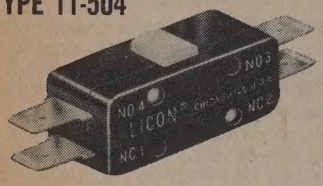


LICON®
DIVISION ILLINOIS TOOL WORKS INC.

miniature BUTTERFLY® double-break switches

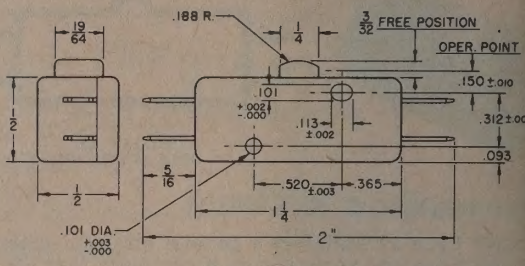
TYPE

TYPE 11-504



The ¼" quick disconnect terminal mates with Amp series 250 for simple wiring. Available in end terminal style only.

Pretravel .....050 max.
Overtravel .....015 min.
Movement Diff. .....020 ±.005
Operating Force .....8 ±3 oz.
Release Force .....4 oz. min.



BASIC SWITCH ORDERING INFORMATION

Use the following code in ordering Type 11 basic switch. Numbers preceding the dash indicate switch type. The numbers following indicate terminal type, actuator, circuit arrangement and operating force.

Switch Type 11— X X X X X X

I. Terminal
II. Actuator
III. Circuit
IV. Material
V. Operation Force
VI. Contact Material

For very standard switches, the last three digits may be omitted, i.e. 11-204.

I. 1) Solder end terminal
2) No. 4 screw end terminal
3) Solder side terminal
5) ¼" quick disconnect end terminal

II. 0) Standard momentary plunger
1) Reset switch
2) Return spring and return plunger
3) Special, all following digits are serial

III. 1) NC Form Y
2) NO Form X
3) SPDT Form C
4) SPDT Form Z

IV. 0) Standard phenolic case, nylon button (—65° to 190°F ambient)
1) Diallyl case and button, (—65° to 400°F ambient)

V. 0) Standard operating force
1) 5 oz. max. Oper. Force.

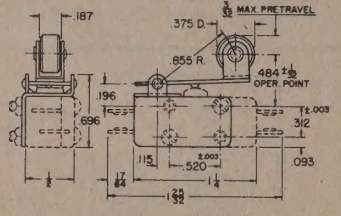
VI. 0) Standard silver contacts
1) Gold plated contacts

ACTUATORS for performance flexibility

71-1040 (ACTUATOR ONLY)

ROLLER LEVER actuator reduces operating force. The unusually well designed pivot point insures long repeatability. 71-1040 available without roller as 71-1030. Other lever and roller lever lengths available, consult factory.

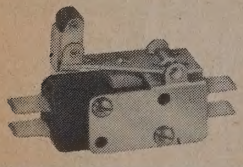
OPERATING CHARACTERISTICS:
Pretravel .093 max.
Overtravel .062 min.
Operating Force 3.5 oz. max.
Release Force 2 oz. min.
Movement Differential .031 ±.015

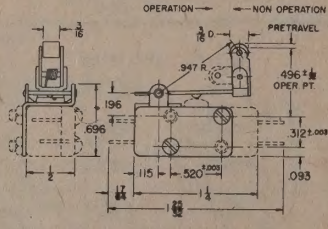


71-1330

One way roller lever actuator assures positive actuating in one direction. Well designed pivot point assures long repeatability.

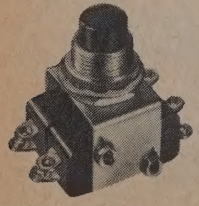
OPERATING CHARACTERISTICS:
Pretravel .093 max.
Overtravel .062 min.
Operating Force 3.5 oz. max.
Release Force 2 oz. min.
Movement Differential .031 ±.015

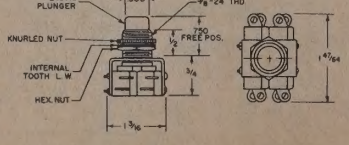




71-2077 (ACTUATOR ONLY)

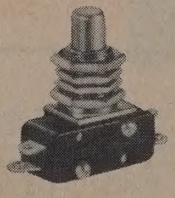
Push Button Actuator for straight line or manual operation. Panel or bracket mounting, adjustable operating point. Plastic plunger available in variety of colors. Standard: Red button, Knurled mounting nut.

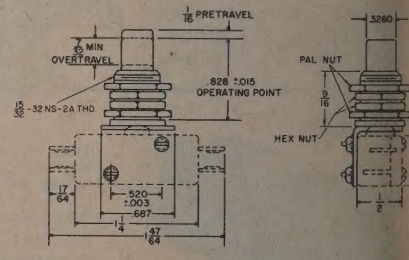




71-2010 (ACTUATOR ONLY)

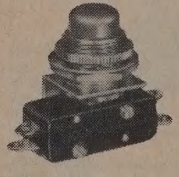
OVERTRAVEL PLUNGER actuator for panel actuation. Aluminum but only. SOLID PLASTIC PLUNGER actuator similar to 71-2010 series no overtravel feature, available as 71-2230. See ordering informat for color code.

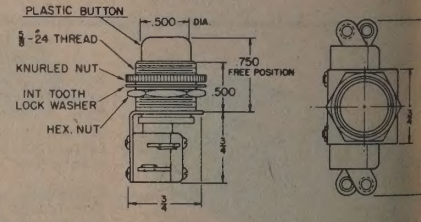




71-2657 (ACTUATOR ONLY)

Single pole solid one-half inch plunger pushbutton actuator for panel bracket mounting. Red button and knurled nut hardware standard less otherwise specified. See ordering information for other colors a hardware.





Unlimited actuator variations are possible to meet specific custom requirements.

ACTUATOR ORDERING INFORMATION:

Order as per part numbers listed above

ACTUATOR & BASIC SWITCH ASSEMBLED:

Specify basic switch by dropping the Type 11 Series code and addi to actuator part number. (EXAMPLE: 71-2010 with 11-104 switch 71-2010/104.)

COLOR CODE:

Specify color of button by altering last digit of actuator part number.

(EXAMPLE: 71-2230 with knurled nut and green button = 71-2238.)

HEXNUT MOUNTING	KNURLED NUT
0. White	5. White
1. Black	6. Black
2. Red	7. Red
3. Green	8. Green

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LICON®
DIVISION ILLINOIS TOOL WORKS INC.

heavy-duty BUTTERFLY® double-break switches

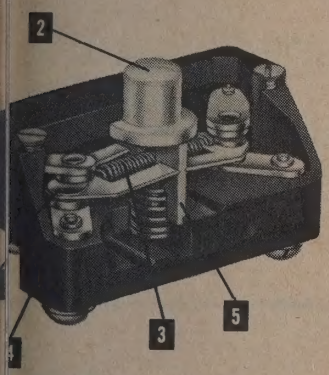
TYPE 14

PE 14

LICON® Type 14 basic switch features long electrical and hanical life. It is best adapted to industrial applications re dependability and precision is required. The case, made of nonia-free plastic, provides mounting variations with offset inal design for easy wiring. The actuator button is made of n, permitting direct cam applications without auxiliary actu-s.

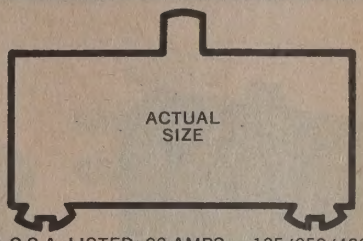
000,000 CYCLES —

LICON Type 14 series has been tested to over 20 million cycles of mechan- life. The Type 14 is specially designed for heavy duty use on high cur- applications. Now reliable switch performance is available in a compact rated at 20 amps, 250 VAC.



- **Positive wiping action of the large silver contacts eliminates contact welding.**
- **Case design forms a double bearing around the spring guide for positive switch alignment even for direct cam applications.**
- **Stainless steel springs are heat-treated to prevent hydrogen embrittlement.**
- **Mounting holes for single or multiple gang mounting. Optional flange for panel mounting.**
- **Offset terminal design permits easy wiring, and provides excellent insulation barrier.**

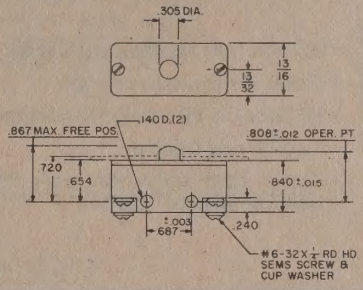
1 Large Silver Contacts
2 Nylon operating button
3 Stainless steel spring
4 Wide insulation barriers
5 Positive button alignment

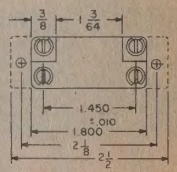


U.L. & C.S.A. LISTED: 20 AMPS — 125/250/480 VAC

OPTIONAL VARIATIONS

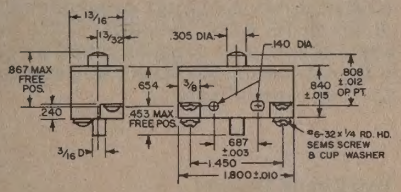
- **Movement differential available from .010" to over .040".**
- **100 gram to 2 lb. operation force available.**
- **Auxiliary mounting plate available for panel mounting.**
- **Terminals available with a No. 6 screw and cup washer, No. 6 screw and lockwasher or No. 8 screw with these same fastener choices. Custom terminal designs are also available.**





TYPE 14-124

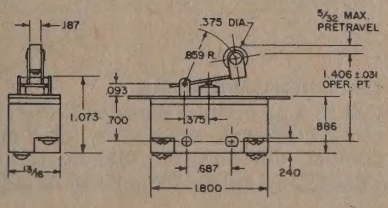
e 14-1241



avel .....074 max.
travel .....030 min.
. Diff. .....020 ±.005
. Force .....5 ±2½ oz.
t Force .....5 ±2½ oz.

Maintained contact switch with nylon reset button. Also available with auxiliary mounting plate.

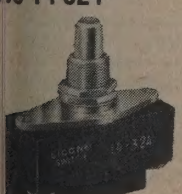
e 14-72403

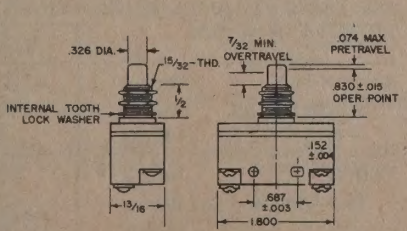


avel .....5/32 max.
travel .....060 min.
. Diff. .....046 ±.012
. Force .....5 ±2 oz.
ase Force .....2 oz. min.

With pivoted roller actuator. Available without roller as Type 14-62403.

e 14-324

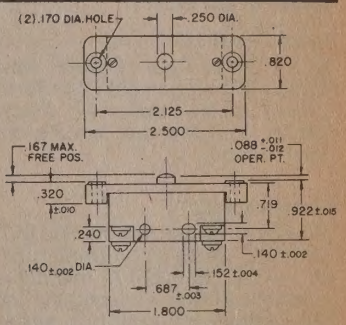




avel .....074 max.
travel .....7/32 min.
. Diff. .....020 ±.005
. Force .....12 oz. ±3
ase Force .....4 oz. min.

Rugged panel mount switch.

Type 14-128040



Reset Travel .....022 ±.007
Pretravel .....066 +.008 −.009
Move. Diff. .....040 +.006 −.005
Oper. Force .....12 oz. ±2
Release Force .....4 oz. min.
Full Travel .....112 +.008 −.009

Rugged top mounting plate for secure mounting. 2.125" between top mounting holes. Integral lever, lever roller, and long plunger actuators.

ORDERING INFORMATION

Use the following code for convenience and accuracy in ordering Type 14 basic switch. Numbers preceding the dash indicate switch type. The numbers following indicate terminal type, actuator, circuit arrangement and operating force.

Switch Type 14 — X X X X X X

I. Actuator
II. Terminal
III. Circuit & Movement Differential
IV. Action
V. Mounting
VI. Material

I. 1) Standard short pushbutton
3) ¼" overtravel panel mount pushbutton
6) Pivoted Lever
7) Pivoted Roller Lever

II. 0) Special switch, all following digits serial
2) #6 sems with cup washer
3) #8 sems with cup washer
4) ¼" quick disconnect

III. 1) N.C. Low M.D. 5) N.C. High M.D.
2) N.O. Low M.D. 6) N.O. High M.D.
4) SPDT Low M.D. 8) SPDT High M.D.

IV. 0) Standard momentary plunger
1) Reset switch

V. 0) No vertical mounting plate
3) Cover plate with vertical mounting holes
4) Heavy duty vertical mounting plate

VI. 0) Standard phenolic case, nylon button (−65° to 190°F ambient)

ELECTRICAL RATING

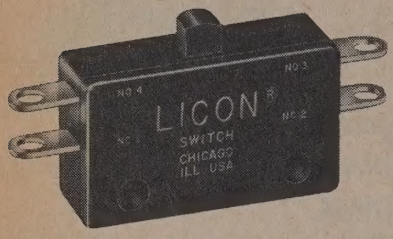
Volts	A.C. Steady	A.C. In-Rush	D.C. D.T.	D.C. S.T.
28	20	80	10	25
125	20	80	.5	2.0
250	20	80	.2	.5
480	20	50		
600	5	10		

U.L. LISTED
20 AMP 125/250/480 VAC
1 H.P. 125 VAC
2 H.P. 250 VAC

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

sub-miniature BUTTERFLY® double-break switches

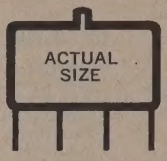
TYPE

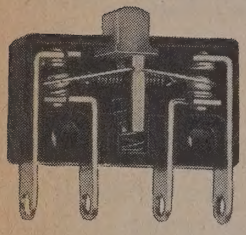


TYPE 16-104

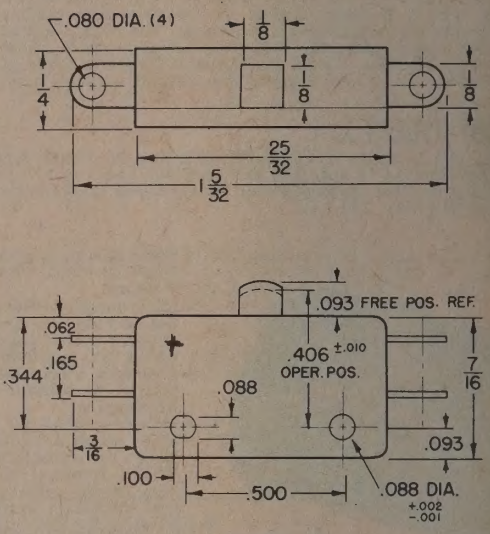
MEETS THE REQUIREMENTS OF MIL-S-8805/7

UL LISTED
CSA APPROVED





- 20,000,000 Mechanical Cycles LIFE
- Twice-for-the-size ratings
- Hi Shock & Vibration Resistance
- Two Circuit Control
- Direct cam operation with double bearing guided button



16-104

HIGH RELIABILITY

Mechanical Life

The LICON® Type 16 series has been tested to over 20 million cycles of mechanical life, even with extreme over-travel. The unique Licon "butterfly" mechanism uses dual non-stressed blades and low-rate simple coil springs that put life in the snap-action.

Electrical Life

Minimum switch life is 100,000 cycles at a full 10 Amps, or 750,000 cycles at conventional 5 Amps. Wiping action, inherent in the "butterfly" mechanism, results from the movable contacts sliding horizontally before lift off to shear most contact welds and penetrate surface film on the fixed contacts, assuring a reliable electrical connection.

Simultaneity

No "teasing" or "dead break" conditions can occur due to the Type 16's unique butterfly design. Simultaneity of transfer is insured by the precise location of notches in the spring guides and knife-sharp ends of the beryllium copper contact blades.

Low Contact Bounce

Four millisecond transfer time, including one millisecond of bounce (2-4 discernible bounces) is nominal for the Type 16. This short rebound time is the result of high overcenter force, low mass contacts, and short blade lengths.

Shock and Vibration

The Type 16's miniature "butterfly," with its low mass and short length pivoted members enables excellent shock and vibration resistance. Tests show no contact chatter at 25 G's, 10—2000 cps, even with actuator depressed to within .0025" of trip point. Meets MIL-S-901A high shock requirement.

Versatility

- The widest choice of terminal styles (solder, screw, taper tab and end, bottom or side locations) are offered in the Type 16 switch.
- Hi-temp case offered for applications with ambient temperatures to 400°F. For 500°F. switches—consult factory.
- Actuators are non-integral with a wide choice of standard pushbuttons, levers, and toggle actions.

BIG ELECTRICAL RATING

Double-break versions of the LICON Type 16 offer twice electrical rating of most conventional sub-miniatures, a big amps @ 28 V.D.C. resistive. Twice as many contact surfa twice as many air gaps, as conventional sub-miniatures, ad the heat dissipation factor and the current interrupting ab for "big switch" service.

Two Circuit Control

The Type 16 double-break design also permits control of isolated electrical circuits with a single swtich. A SPDT c figuration exists at each side of the butterfly, providing N.O., two N.C. contacts. Electrical rating may be reduced w the dual circuit option is exercised. Consult factory for ra and expected life data if mixed voltages are to be used.

Low Contact Resistance

Due to high contact pressures, the Licon Type 16 has low tact resistance—required of "dry" circuit applications. Spe contact materials and manufacturing techniques provide tremely low values for special applications.

ELECTRICAL RATING

U.L. Listed—10 Amps @ 125/250 VAC
28 VDC L/R = .026

		SEA LEVEL	60,000 F
Form X or Y Single Circuit	Res.	10 Amps	10 A
	Ind.	7.5 Amps	3.5 A
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 A
	Ind.	5 Amps	2 A
	Lamp	3 Amps	—

Minimum expected basic switch life is 100,000 cycles at rated load; 750,000 cycles at one-half rated load. (Sea Le

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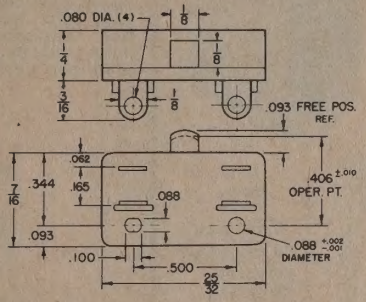
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

sub-miniature BUTTERFLY® double-break switches

TYPE 16

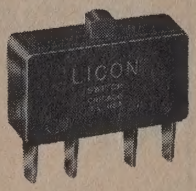
PE 16-304

Pretravel .....050 max.
Overtravel .....012 min.
Operating Force .....5 oz. +3 oz. −2 oz.
Release Force .....2 oz. min.
Movement Diff. .....020 ±.005

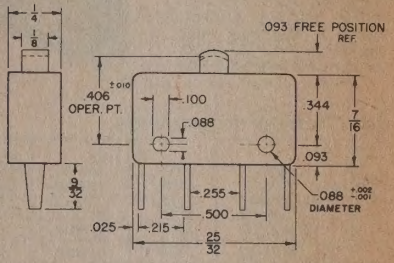


e solder terminals useful for applica-ns where mounting ice is restricted.

TYPE 16-504



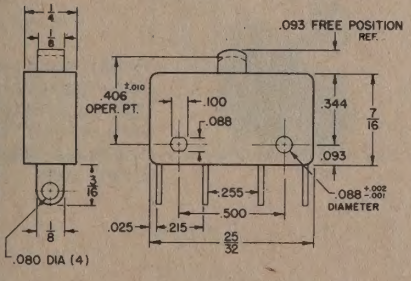
Pretravel .....050 max.
Overtravel .....012 min.
Operating Force .....5 oz. +3 oz. −2 oz.
Release Force .....2 oz. min.
Movement Diff. .....020 ±.005



Bottom taper tab quick disconnect terminals for simple, easy wiring and installation. Mates with AMP Series 78.

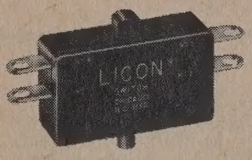
PE 16-404

MATES WITH AMP. SERIES 110
Pretravel .....050 max.
Overtravel .....012 min.
Operating Force .....5 oz. +3 oz. −2 oz.
Release Force .....2 oz. min.
Movement Diff. .....020 ±.005

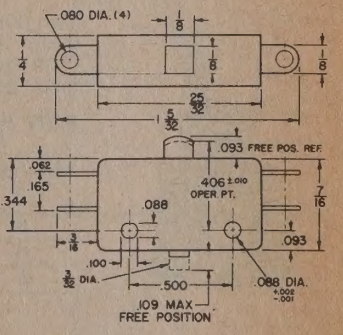


ttom solder termi-s are useful for ap-cations where termi-s must be opposite the button or where ng mounting is de-ed. Conforms to MIL-3805/7.

TYPE 16-114



Pretravel .....050 max.
Overtravel .....012 min.
Operating Force .....3 ±1 oz.
Reset Force .....3 ±1 oz.
Movement Diff. .....020 ±.005



Reset action adaptable to special applications, often allowing one switch to do the work of two. Available in side or end terminals.

DERING INFORMATION

e 16 — X X X X X X

- Terminal
- Actuator
- Circuit
- Material
- Contact Material
- Unassigned

TE: For standard switches, the last e digits may be omitted i.e., 16-104.

ernment t No.	LICON® Part No.
27217-1	16-488051
27217-2	16-388051
25476-1	16-188051

I. 1) Solder end terminal
2) Screw end terminal (#2 screw)
3) Solder side terminal
4) Solder bottom terminal
5) Taper tab bottom terminal

II. 0) Standard momentary plunger
1) Reset switch
3) Special all following digits are serial

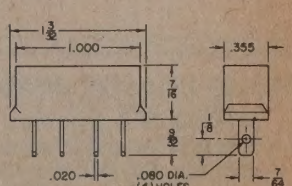
III. 1) N.C. Form Y
2) N.O. Form X
3) SPDT Form C
4) SPDT Form Z
(For other gaps, contact factory)

IV. 0) Standard phenolic case (—65° to 275°F ambient)
1) Phenolic case, nylon button, (—65° to 190°F ambient)
2) Diallyl case and button, (—65° to 400°F ambient)
3) 500°F or higher. Consult factory

V. 0) Fine silver
1) Gold plated contacts

T-16 CONNECTOR

Licon is pleased to offer this new 70-6033 Phenolic connector for convenient mounting of any 16-404 or 16-504 series.



70-6033 CONNECTOR

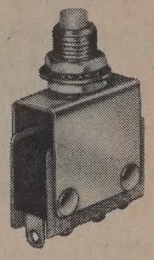
ITW LICON®
DIVISION ILLINOIS TOOL WORKS INC.

sub-miniature BUTTERFLY® double-break switches

TYPE

TYPE 16 ACTUATORS

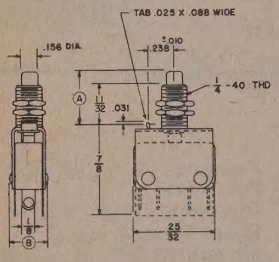
76-2220 (Actuator Only)



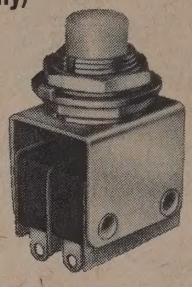
Single pole panel mounted push button for installation where space is restricted. A tab on the actuator bracket provides positive panel alignment. Supplied with standard white button unless color is specified. Also available with 5/32" overtravel as Type 76-2260.

PART NUMBER INFORMATION

No. of Poles	Act. No.	"A" Dim.	Over-travel	"B" Dim.
1	76-2220	.500	1/64 min.	3/8
1	76-2260	.666	5/32 min.	3/8
2	76-2190	.500	1/64 min.	5/8



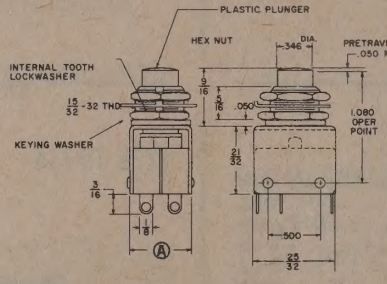
76-2230 (Actuator Only)



Multiple pole push button allows a variety of circuit possibilities. A nonturn washer assures positive panel location. Supplied with standard white button unless color is specified.

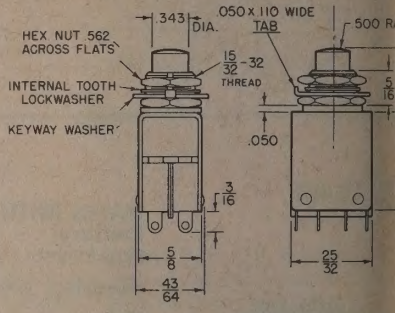
PART NUMBER INFORMATION

No. of Poles	Act No.	"A" Dim.	Oper. Force
1	76-2350	21/32	9 oz. max.
2	76-2230	21/32	18 oz. max.
3	76-2250	29/32	27 oz. max.
4	76-2240	1 11/64	36 oz. max.

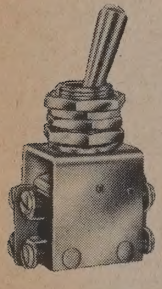


76-2100 (Actuator Only)

Maintained Contact actuator requires one push to actuate switches, a second push to release. Long life mechanism provides positive lock, high shock/vibration resistance. White button standard unless otherwise specified.



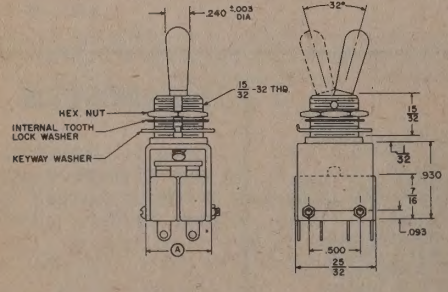
76-4210 (Actuator Only)



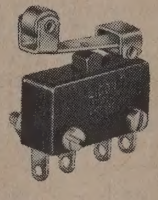
Two position toggle actuator for maximum circuitry in minimum space. High quality pivoted toggle mechanism assures long actuator life.

PART NUMBER INFORMATION

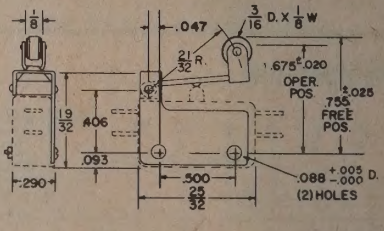
No. Poles	Maintained	"A" Dim.
2	76-4210	39/64
3	76-4220	59/64
4	76-4260	1 3/16
5	76-4270	1 29/64



76-1200 (Actuator Only)



Roller lever actuator for cam a slide operation. Pivot assures smoo operation with reduced forces. Ava able without roller as 76-1210. Va ous lever lengths can be supplied either style.



ACTUATOR ORDERING INFORMATION

ACTUATOR ONLY: Order as per part numbers listed above.

ACTUATOR AND BASIC SWITCH ASSEMBLED: All pushbutton and toggle actuators are assembled at factory with basic switch(es). Specify basic by dropping series code and adding to actuator number. (EXAMPLE: 76-2230 with 2 Type 16-403's assembled = 76-2230/403.)

COLOR CODE:

Specify color of button by altering last digit of actuator part number.

(EXAMPLE: 76-2230 with knurled nut and green button = 76-2238.)

HEX NUT MOUNTING	KNURL NUT
0. White	5. Whit
1. Black	6. Blac
2. Red	7. Red
3. Green	8. Gree

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LICON®
DIVISION ILLINOIS TOOL WORKS INC.

sub-miniature BUTTERFLY® double-break switches

TYPE 16

MODULAR NON-LITED PUSHBUTTON CODE

76–27 X X X X

I. Actuator & No. of Poles
II. Basic Switch
III. Bushing Adapter
IV. Button Color

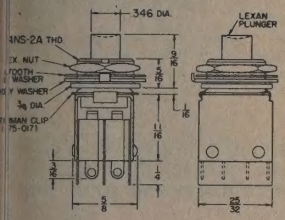
I. ACTUATOR/POLES
1) Alternate actuator, 1 pole
2) Alternate actuator, 2 pole
3) Alternate actuator, 3 pole*
4) Alternate actuator, 4 pole†
5) Momentary actuator, 1 pole
6) Momentary actuator, 2 pole
7) Momentary actuator, 3 pole*
8) Momentary actuator, 4 pole†

II. CIRCUITRY (Ea. pole)
1) Form C
2) Form Z, hi temp gold contacts
3) Form Z
4) Form Z, hi-temp

III. BUSHING (SNAP-ON)
1) 76-2530 $\frac{15}{32}$ bushing
2) 76-2550 $\frac{5}{8}$ bushing

IV. BUTTON COLOR

1) White	(80-700903)
2) Red	(80-700908)
3) Green	(80-700909)
4) Black	(80-700910)



use one T-16 and one T-26 basic switch for 3 pole configuration.
use two T-26 switches for 4 pole configuration.

76 LOW COST PUSHBUTTON

One piece Lexan housing holds stacked Type 16 switches.

76–24 X X

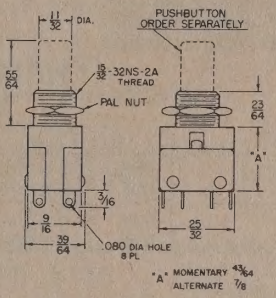
I. Action & No. of Poles
II. Lens

I. ACTION & NO. OF POLES
1) Alternate actuator, 1 pole
2) Alternate actuator, 2 pole
5) Momentary actuator, 1 pole
6) Momentary actuator, 2 pole

II. LENS

1) White	5) Yellow
2) Red	6) Amber
3) Green	7) Orange
4) Blue	

8) Plunger converter installed (Order buttons from 01-91 & 01-93 Series, see Type 01 Section)



For lighted version see Type 01-700 series.
For basic Type 16 switch order as 76-24XX/403, 404 etc. Basic switch is not included in actuator part number.

PE 76-27XX SNAP-ON SWITCH MODULES

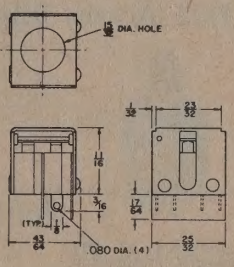
NOTE: These modules are used in 02-800, 04, and 44 sealed and unsealed lighted switches.

2752 MOMENTARY

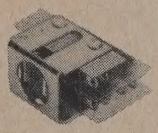
ains one Type 16 basic switch.

RACTERISTICS

avel	.055 max.
travel	.012 min.
ating Force	1 lb. max.
se Force	2 oz. min.



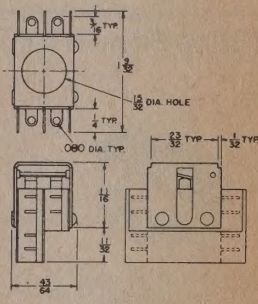
76-2722 ALTERNATE



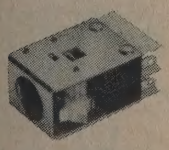
Contains two Type 16 basic switches.

CHARACTERISTICS

Pretravel	.187 max.
Overtravel	.005 min.
Operating Force	6 lb. max.
Release Force	4 oz. min.



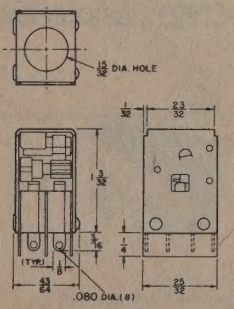
2772 MOMENTARY



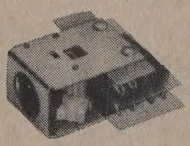
ains one Type 16 basic switch
one Type 26 basic switch.

RACTERISTICS

avel	.055 max.
travel	.012 min.
ating Force	24 oz. max.
se Force	4 oz. min.



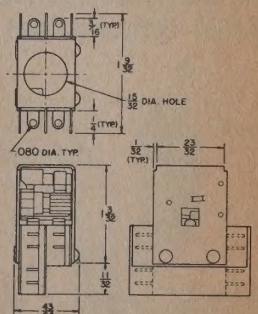
76-2732 ALTERNATE



Contains one Type 16 basic and one Type 26 basic switch.

CHARACTERISTICS

Pretravel	.187 max.
Overtravel	.005 min.
Operating Force	6 lb. max.
Release Force	4 oz. min.



AP-ON SWITCH MODULE ORDERING INFORMATION:

76–27 X X

ctuator/Poles
ircuitry (Ea. Pole)

I. ACTUATOR/POLES
1) Alternate actuator, 1 pole
2) Alternate actuator, 2 pole
3) Alternate actuator, 3 pole*
4) Alternate actuator, 4 pole†
5) Momentary actuator, 1 pole
6) Momentary actuator, 2 pole
7) Momentary actuator, 3 pole*
8) Momentary actuator, 4 pole†

II. CIRCUITRY (Ea. pole)
1) Form C
2) Form Z, hi-temp gold contacts
3) Form Z
4) Form Z, hi-temp

*Will use one T-16 and one T-26 basic switch for 3 pole configuration.
†Will use two T-26 switches for 4 pole configuration.

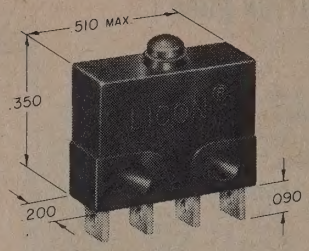
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

sub-sub-miniature BUTTERFLY® double-break switches

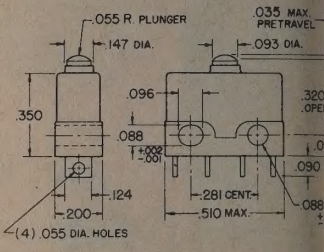
TYPE

The Type 18 series is a sub-subminiature single-pole double-break snap-action switch utilizing the exclusive LICON® butterfly® double-break mechanism. The LICON Type 18 series has been tested to over 10 million cycles of mechanical life, even at extreme overtravel.

No "teasing" or "dead-break" conditions can occur due to the unique butterfly design. Simultaneity of transfer is insured by the precise location of notches in the spring guide and knife-sharp ends of beryllium copper contact blades.



TYPE 18-40421



RELIABILITY

Mechanical Life:	10,000,000 cycles nominal
Pilot Duty Life:	10,000,000 cycles nominal
Full Rated Load:	100,000 cycles nominal
One-Half Rated Load:	750,000 cycles nominal

ELECTRICAL RATING (U.L. Listed)

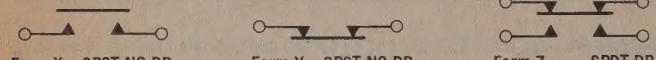
- 125/250 VAC 7 amps
- 28 VDC L/R = .026

	Sea Level	
SPDT-DB and Form "C" (Ext. Com.) (Form Z)	Res	4 amps
	Ind	3 amps
SPNO-DB or SPNC-DB (Form X) (Form Y)	Res	8 amps
	Ind	5 amps

MEETS THE REQUIREMENTS OF MIL-S-8805/76

CIRCUITRY

The standard type 18 switch is basically a single-pole, double throw, double-break (Form Z) switch, but SPNO-DB, SPNC-DB, and SPDT (Form C) contact arrangements are also available.



Form X SPST-NO-DB Form Y SPST-NC-DB Form Z SPDT-DB

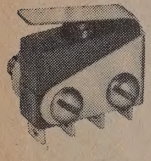
SPECIFICATIONS

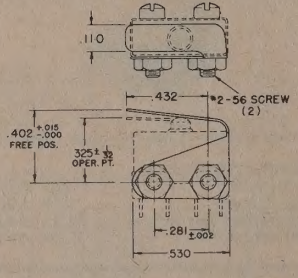
The LICON® type 18 switch is available in a variety of cont arrangements, case materials and contact materials. Dia hi-temp plastic case, gold plated contacts and solder lug minals are standard.

CHARACTERISTICS

Operating Force	5 +3 −2
Release Force	1½ oz. m
Pretravel	.035 m
Overtravel	.006 m
Movement Differential	.015 ±.0

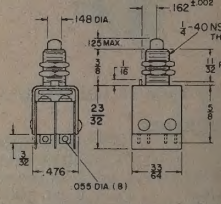
78-30000 (Actuator Only)





78-2020 (Actuator Only)

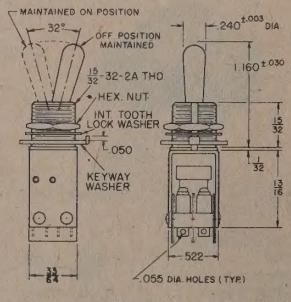
Sub-miniature, 2 pole momentary pushbutton. Available in one pole. Rugged switches built for relatively high loads in smallest space.



Available in 1 pole as 78-2010. Also available in different button colors — consult factory.

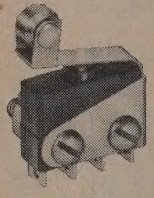
78-4007 (Actuator Only)

Subminiature toggle — two position for maximum circuitry in smallest space. High quality pivoted toggle mechanism assures long life.

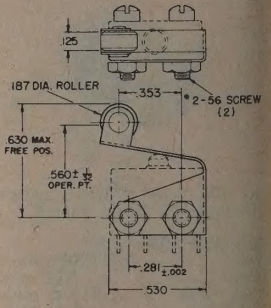


Available in four pole as 78-4000.

78-31000 (Actuator Only)



Roller lever actuator for cam and slide operations. Pivot assures smooth operation with lighter forces.



ACTUATOR ORDERING INFORMATION:

ACTUATOR ONLY:
Order as per part numbers above.

ACTUATOR & BASIC SWITCH ASSEMBLED:
Specify basic switch by dropping series code and adding to actuator part number. (EXAMPLE: 78-20000 with 18-40421 switch = 78-20000/40421.)

BASIC SWITCH ORDERING INFORMATION

Part No.	DESCRIPTION
18-40121	SPNC-DB (Form Y), Diallyl case-gold contacts (—65°F to 40
18-40221	SPNO-DB (Form X), Diallyl case-gold contacts (—65°F to 40
18-40421	SPDT-DB (Form Z), Diallyl case-gold contacts (—65°F to 40

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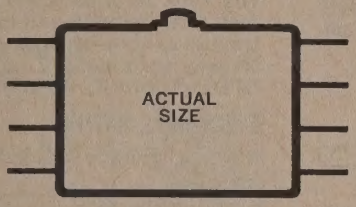
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

miniature BUTTERFLY® double-pole double-break switches

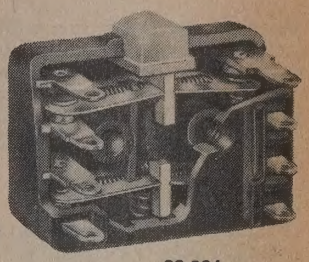
TYPE 22

r, positive electrical control of four independent circuits with "one snap"! The simultaneous break LICON® Type 22 ch surpasses normal requirements for life, precision and atability. It assures exacting double break switch perfor- ice for 3 phase motors . . . permits simplified controls for tiple circuit applications . . . and eliminates dual com- ents and complicated actuating mechanisms. Here are two vidual switching members encased in one compact unit ch function simultaneously (poles transfer within .004 ger travel) with one actuation.

Licon Type 22 switch ures DPDT high cur- t interruption, out- ding vibration resis- ce (over 25 G's @ 00 cps) and extremely g, dependable opera- has been tested to r 10 million cycles of hanical life). Four sep- e circuits permit a e variety of circuit binations for multiple, ultaneous control.



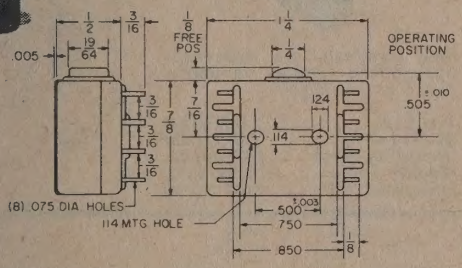
- Linkage assures simultaneous action of four circuits
- Self-lubricating nylon button for direct cam operation
- Double bearing guide assures smooth operation and positive button alignment
- Wiping action eliminates teasing and contact weld
- Positive location of fixed terminals
- Dust-proof, ammonia-free, plastic case
- Beryllium copper switch blades and stainless steel operating springs
- Fine silver contacts


22-304

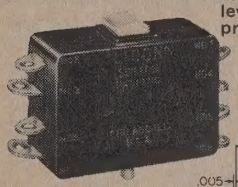
U.L. LISTED	30 V.D.C.	Ratings	Sea Level
10 Amps @ 125/250 V.A.C. ½ HP @ 125 V.A.C. ¾ HP @ 250 V.A.C.	Form XX or YY	Res. Ind.	15 Amps 10 Amps
	Form ZZ	Res. Ind.	10 Amps 7 Amps

E 22-204

Pretravel .....060 max.
Overtravel .....015 min.
Move. Diff. .....028 ±.007
Oper. Force .....17 ±5 oz.
Release Force .....4 oz. min.
Elect. Life .....750,000 ops

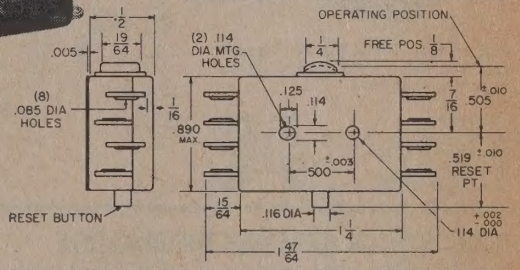


TYPE 22-114



Reset switch maintains actuated position until manually or mechanically returned. Excellent for level controls, limiting two way action, bellows pressure devices and other similar applications.

Pretravel .....060 max.
Overtravel .....015 min.
Movement Diff. .....028 ±.005
Operating Force .....9 ±4 oz.
Reset Force .....10 ±4 oz.



IC SWITCH ORDERING INFORMATION

22– X X X X X X

- Terminal
- Actuator
- Circuit
- Material
- Action
- Contacts

E: For standard switches, the last three s may be omitted i.e., 22-304.
Simultaneous switch offers cost-sav- if application permits.

I. 1) Solder end terminal
2) No. 4 screw end terminal
3) Solder side terminal
5) ¼" quick disconnect end terminal

II. 0) Standard momentary plunger
1) Reset switch
2) Return spring and return plunger
3) Special, all following digits are serial

III. 1) N.C. Form Y
2) N.O. Form X
4) DPDT Form Z

IV. 0) Standard phenolic case, nylon button (–65° to 190°F ambient)
1) Diallyl case and button, (–65° to 400°F ambient)

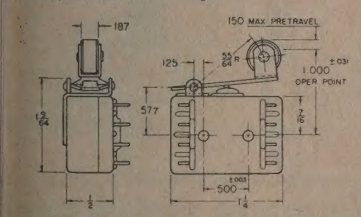
V. 0) Standard Simultaneous
1) Non Simultaneous

VI. 0) Standard silver contacts
1) Gold plated contacts

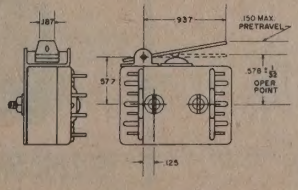
NOTE:
Available in a wide range of operating forces — consult factory.

TUATORS

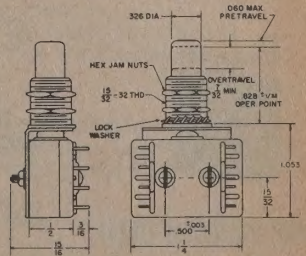
1160 (Actuator Only)



72-1150 (Actuator Only)



72-2080 (Actuator Only)



TUATOR ORDERING INFORMATION

IATOR ONLY:
r as per part numbers above.

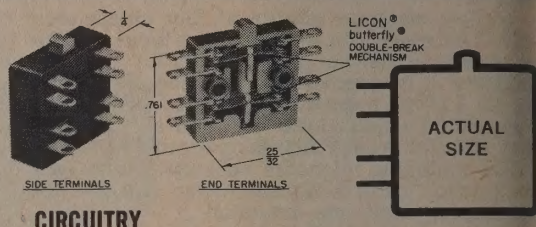
ACTUATOR & BASIC SWITCH ASSEMBLED:
Specify basic switch for actuator for dropping series code (Type 22-) and adding to actuator number. EXAMPLE: 72-1160 with Type 22-304 Switch = 72-1160/304.

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

sub-miniature BUTTERFLY® double pole switch

TYPE

The Type 26 Series is a subminiature double pole switch utilizing two LICON® "Butterfly" double-break mechanisms. Simultaneity of operation of both poles is insured by the special linkage between mechanisms. Simplified control of multiple circuit applications is achieved by eliminating the need for dual components and complicated actuating mechanisms, all in less space than two single pole subminiature switches.



LONG LIFE

The Type 26 Series has been tested to over 20 million cycles mechanical and pilot duty life. Electrical life is 100,000 cycles nominal at full rated load. At one-half rated load, the expected life increases to a nominal 750,000 cycles.

CHARACTERISTICS

Terminals	Solder (side or end)
Transfer time	4 milliseconds, including 1 millisecond bounce (2-4 discernible bounces, nominal)
Shock and Vibration	No contact chatter at 25 G's, 10 to 2000 cps
Simultaneity	Poles transfer within .004 plunger travel as standard

CIRCUITRY

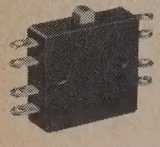
The Type 26 is basically DPDT-DB (Form ZZ) in tact arrangement and provides the option of troling up to 4 isolated circuits. It may be wired ternally to provide 2 commons to form a stan DPDT (Form CC) switch.

ELECTRICAL RATING

8 Amps @ 125/250 VAC U.L. Li
28 V.D.C. L/R = .026

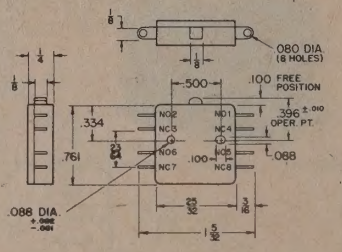
Form XX or YY	Res. Ind.	8 Am 7.5 Am
Form ZZ	Res. Ind.	8 Am 5 Am

TYPE 26-804 END SOLDER TERMINALS



End solder terminals are useful where width space requirements are at a premium.

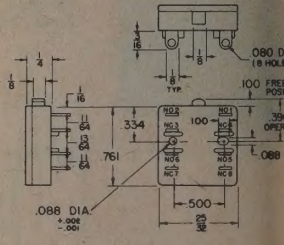
Pretravel .....**.050 max.**
Overtravel .....**.012 min.**
Operating Force .....**12 ±4 oz.**
Release Force .....**4 oz. min.**
Movement Diff. .....**.020 ±.010**



TYPE 26-904 SIDE SOLDER TERMINALS

Side terminals are useful for applications where mounting space is restricted.

Pretravel .....**.050 max.**
Overtravel .....**.012 min.**
Operating Force .....**12 ±4 oz.**
Release Force .....**4 oz. min.**
Movement Diff. .....**.020 ±.010**



BASIC SWITCH ORDERING INFORMATION

Use the following code in ordering the type 26 basic switch. The "26" preceding the dash indicates switch type. The numbers following dash indicate terminal type, etc.

Type 26 X X X X X X

I. Terminal Style
II. Action
III. Circuitry
IV. Case Material
V. Simultaneity
VI. Contact Material

For standard switches, digits IV, V, and VI may be omitted; i.e., 26-804.

I. Terminal Style
8) End solder terminals
9) Side solder terminals

II. Action
0) Standard momentary
3) Special, all following digits serial

III. Circuitry
1) DNPC-DB, Form YY
2) DPNO-DB, Form XX
4) DPDT-BB, Form ZZ

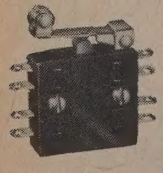
IV. Case Material
0) Standard phenolic (—65° to 275°F ambien
2) Hi-temp Diallyl (—65° to 400°F ambient)

V. Simultaneity
0) Standard simultaneous
1) Non-simultaneous

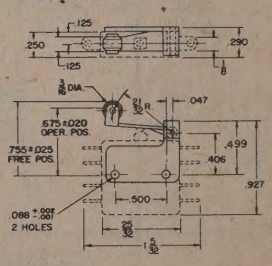
VI. Contact Material
0) Standard fine silver
1) Gold plated silver

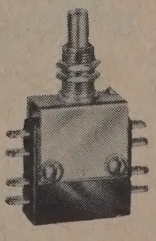
Non-Simultaneous switch offers cost-savin application pemits. Meets requirements MIL-S-8805/77.

AUXILIARY ACTUATORS FOR TYPE 26

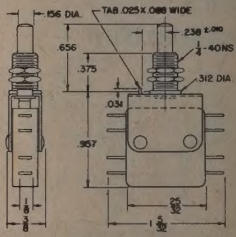


76-1200 (Actuator Only)





76-2260 (Actuator Only)



ACTUATOR ORDERING INFORMATION

All 76 Series Actuators, as described in the Type 16 switch section, fit the Type 26 switch. Pushbutton and toggle actuators will fit the 26-800 series only.

ACTUATOR ONLY:
Order as per 76 actuator part number.

ACTUATOR & BASIC SWITCH ASSEMBLED:
Specify basic switch for actuator by dropping series code and ad to actuator number. (EXAMPLE: 76-1200 with Type 26-804 switc 76-1200/804.)

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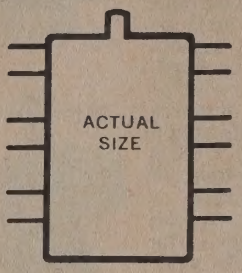
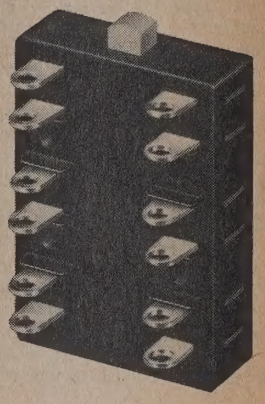
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

triple pole subminiature switch | TYPE 36

Type 36 Series is a subminiature triple pole switch utilizing e LICON® Butterfly® double-break mechanisms. Simul- ity of operation of all three poles is insured by a special age between mechanisms. Simplified control of multipole uit applications is achieved by eliminating the need for e components and complementing actuators, all in a e of 50 per cent less than three single pole subminiature ches. All Type 26 actuators are interchangeable with Type





MEETS
REQUIREMENTS OF
MIL-S-8805/78

ING

nps @ 125/250 VAC U.L. Listed
/DC LR = .026

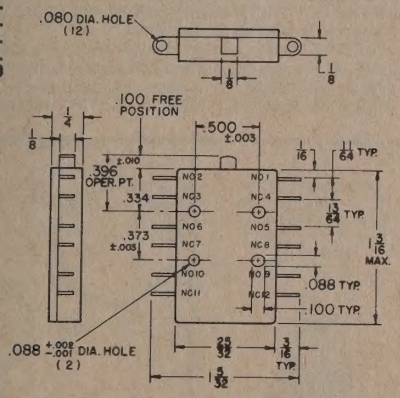
rm XXX or YYY	Res. Ind.	10 Amps 7.5 Amps
rm ZZZ	Res. Ind.	10 Amps 5 Amps

-Simultaneous switch offers cost-savings if application nits.

ndard simultaneity. Poles transfer within .004 of plunger el.

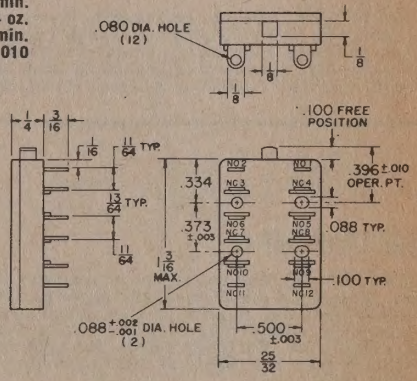
04

ATING CHARACTERISTICS:
avel .....050 max.
ravel .....012 min.
ting Force .....16 ±4 oz.
se Force .....4 oz. min.
ment Diff. .....020 ±.010



36-704

OPERATING CHARACTERISTICS:
Pretravel .....050 max.
Overtravel .....012 min.
Operating Force .....16 ±4 oz.
Release Force .....4 oz. min.
Movement Diff. .....020 ±.010



IC SWITCH ORDERING INFORMATION

the following code in ordering Type witches. The 36 preceding the dash cates switch type. The numbers fol- ng the dash indicate actuator style, inal style, etc.

X X X X X X
Terminal
Action
Circuitry
Case Material
Simultaneity
Contact Material

I. Terminal Style
6) Solder End Terminal
7) Solder Side Terminal

II. Action
0) Standard Momentary
1) Reset Switch
3) Special, All Following Digits Serial

III. Circuitry
1) 3PNC-DB, Form YYY
2) 3PNO-DB, Form XXX
4) 3PDT-DB, Form ZZZ

IV. Case Material
0) Standard Phenolic (—65° to 275°F Ambient)
2) High Temp. Diallyl Phthalate (—65° to 400°F Ambient)

V. Simultaneity
0) Standard Simultaneity
1) Non-Simultaneous

VI. Contact Material
0) Standard Fine Silver
1) Gold Plated Silver

UATOR ORDERING INFORMATION

76 series actuators, as described in Type 16 switch section, fit the Type witch. Pushbutton and toggle actu- s will fit the 36-600 series only.

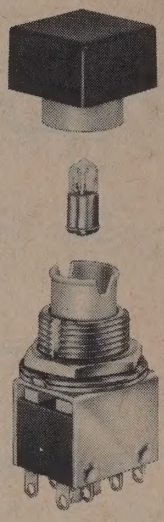
ACTUATOR ONLY:
Order as per 76 actuator part number.

ACTUATOR & BASIC SWITCH ASSEMBLED:
Specify basic switch for actuator by dropping series code and adding to actuator number. (EXAMPLE: 76-1200 with Type 36-604 = 76-1200/604.)

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

illuminated pushbutton switches | TYPE

MEETS REQUIREMENTS OF MIL-S-22885/27



LICON® Type 01 Series of lighted pushbutton switches cut control console costs by combining indicating and manual switching functions in a single compact package. The pushbutton serves as the color and/or legend coded panel indicator and actuates one or more subminiature snap-action switches. The single component LICON Type 01 replaces conventional systems of separate panel lights and pushbutton or toggle switches, thus reducing panel size requirements and installation time. The LICON Type 01 Series is designed for commercial and military electronics requiring highly reliable precision switching and where spaceweight requirements are critical. The LICON Type 01 Series is designed to meet the requirements of MIL-S-22885.

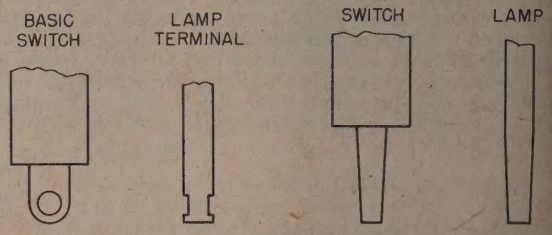
PRINCIPLE OF OPERATION

The LICON® Type 01 Series comprises a removable lens cap and a switch-lamp socket assembly. For greater reliability, the lamp socket remains stationary when the pushbutton is actuated. The basic switch is the LICON Type 16 subminiature double-break long life switch rated up to 10 amps.

THE BASIC SWITCH

LICON® Type 01 Series are available in one and two pole switch units, as standard. Multipole units are available on special order. The LICON® Type 16 double-break switch is installed as the basic switch to provide long life and high electrical switching load. Standard contact arrangements are Form C (SPDT) and Form Z (SPDT, double-break), per pole.

TERMINATIONS



SOLDER STYLE — TAPER TAB

ELECTRICAL RATING (Applies to Type 16 Basic Switch.)
U.L. Listed—10 Amps @ 125/250 VAC
28 VDC L/R = 0.26

		SEA LEVEL	60,000 Fe
Form X or Y Single Circuit	Res.	10 Amps	10 Am
	Ind.	7.5 Amps	3.5 Am
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 Am
	Ind.	5 Amps	2 Am
	Lamp	3 Amps	—

CHARACTERISTICS

BASIC SWITCH: (APPLIES TO TYPE 16 ONLY)
LIFE: 20 million mechanical cycles, 100,000 electrical cycles at rated load, or 750,000 cycles at ½ rated load.
TRANSFER TIME: 4 millisecond, including 1 millisecond of bounce discernible bounces), nominal.
VIBRATION: No contact chatter at 25 G's, 10 to 2000 cps.
SHOCK: Designed to meet MIL-S-901A high shock requirements.
CASE MATERIAL: Phenolic as standard (—65° to 275° F ambie Diallyl as hi-temp (—65° to 400° F ambient).

THE LENS CAP

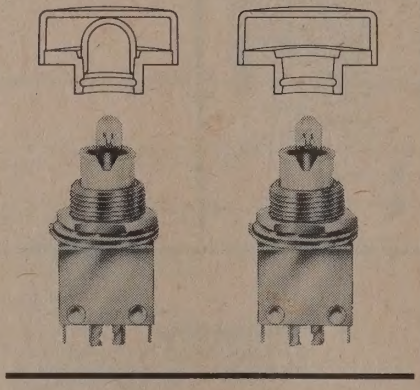
LENS CAP: The lens cap serves as indicator screen and pushbutton on all manually operated LICON® Type 01 switches. Positive lens cap positioning and orientation is insured by snap on, snap-off fastener and keying tab. The tough plastic lens caps may be engraved with any legend as outlined in: Engraving Information.

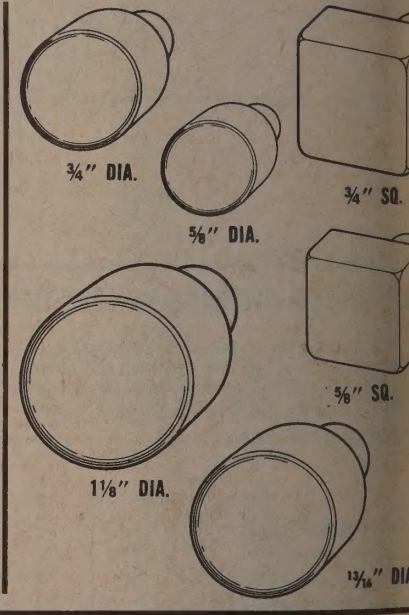
LAMP SOCKET: The lamp socket is located high in the plunger to enable lamp servicing without tools. Screw base, groove base or flange base T-1¾ lamp sockets are offered as standard.

DISPLAY: Wide seleciton of lens cap shapes, sizes, and colors are available. Standard lens cap styles are available in white, red, green, blue, and yellow. Special sizes and colors can be produced to order. The ⅝, ¾ and 13/16 dia. round lens cap are designed to meet MIL-S-22885 requirements. Choose from two methods of illuminated display.

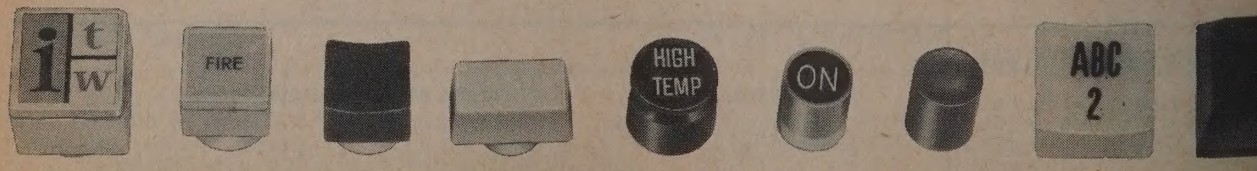
Solid Color: Opaque solid colored lens cap, where color is illuminated with brilliant hue. Solid color visible in unlit condition.

Projected Color: White frosted lens cap, where screen is illuminated with hue projected thru a permanently fixed color filter. Color not visible in unlit condition.





SPECIAL LENS — Part numbers shown below are for reference only. For specific part numbers (lens color, engraving, etc.) consult the factory.



5/16" Insertable	⅝" Insertable	⅝" Concave	Rectangular	⅝" Round	7/16" Hidden	7/16" Concave	⅝" Double Concave	¾" Contour
01-900884	01-900309	01-900301	01-900629	01-900327	01-900699	01-900310	01-900943	01-901252

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LICON®
DIVISION ILLINOIS TOOL WORKS INC.

illuminated pushbutton switches

TYPE 01

IENTARY CONTACT

pushbutton to actuate switches. Release push- n and switch resets immediately. Positive feel of hes being actuated is provided to meet specifica- set by Human Factors Engineers. Switching and iting functions may be kept separate on all models. s are serviced from front panel. Momentary contact is are used to turn on a piece of equipment for to-test functions or to set up stages for further ssing.

CHARACTERISTICS

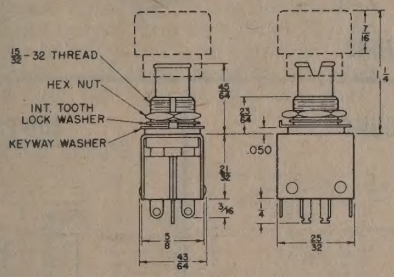
Pretravel .....093 max.
Overtravel .....012 min.
Operating Force .....18 oz. max.
Release Force .....3 oz. min.

(Above characteristics obtained with Licon Type 16-404 basic switch.)

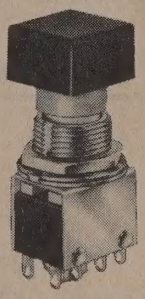
LAMP SOCKET TYPES

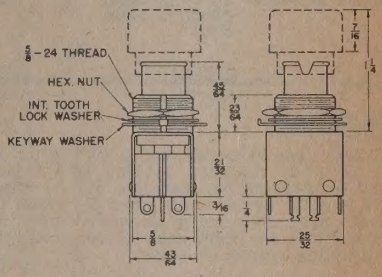
15/32 - 32 Bushing: Screw or groove base
5/8 - 24 Bushing: Screw, groove, flange or slide base

32 BUSHING



5/8 - 24 BUSHING





NTAINED CONTACT

pushbutton to actuate switches. Press again to se switches. Positive feel of switches being actu- is standard. Lamps are serviced from front of panel. ating and switching functions may be kept separate l models. Maintained contact (push-on, push-off; or nate action) models are used to manually initiate and ially terminate electical functions. Typically used for ment on-off operation.

CHARACTERISTICS

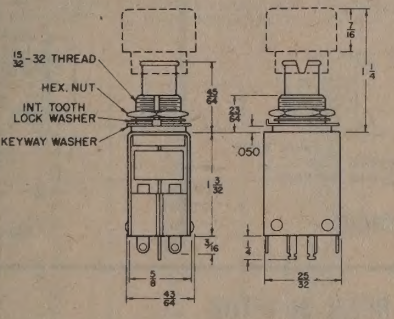
Pretravel .....187 max.
Overtravel .....005 min.
Operating Force .....6 lbs. max.

(Above characteristics obtained with Licon Type 16-404 basic switch.)

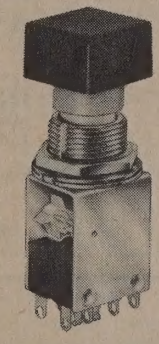
LAMP SOCKET TYPES

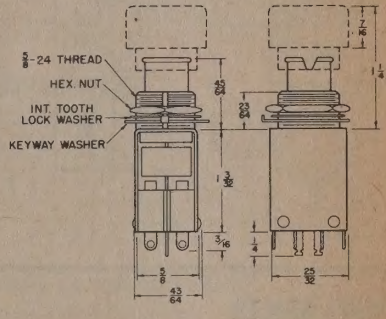
15/32 - 32 Bushing: Screw or groove base
5/8 - 24 Bushing: Screw, groove, flange or slide base

32 BUSHING



5/8 - 24 BUSHING





ENOID - HELD

asic switches are held in the normally open position actuation while the solenoid coil is energized. The hes reset when voltage to coil is dropped or when oid is manually overridden. Energize coil from sep- station or with unit's own pushbutton. The sole- cannot operate the switches accidentally. The h unit operates as a momentary contact type when oid is not energized. Standard coil voltages are 6 28 VDC. Lamps are serviced from front of panel.

CHARACTERISTICS

Pretravel .....093 max.
Overtravel 005
Operating Force .....18 oz. max.

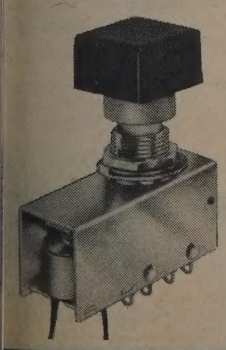
Solenoid Rating:

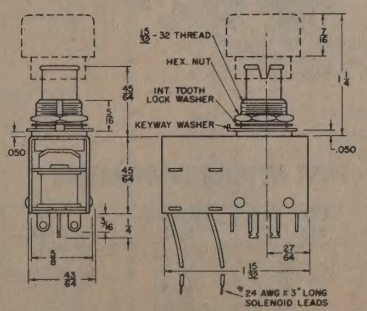
Rated Voltage	Rated Current	Drop out Voltage
6 VDC	.400 Amp	3 VDC Max.
28 VDC	.090 Amp	17 VDC Max.

LAMP SOCKET TYPES

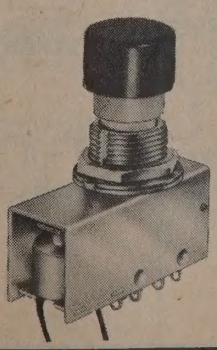
15/32 - 32 Bushing: Screw or groove base
5/8 - 24 Bushing: Screw, groove, flange or slide base

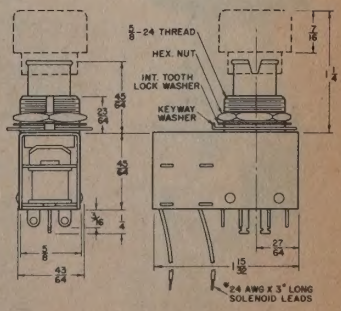
32 BUSHING





5/8 - 24 BUSHING





ITW LICON®
DIVISION ILLINOIS TOOL WORKS INC.

illuminated pushbutton switches

TYPE

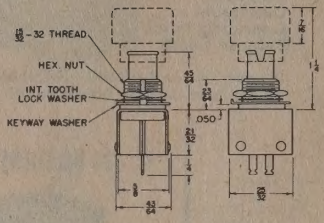
INDICATOR - ONLY

Indicator-Only units are designed to complement the LICON® Type 01 indicator-switch units to provide identical panel appearance. Operating button cannot be depressed. Lamps are seviced from front of panel.

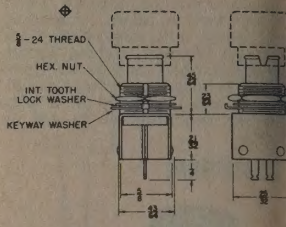
LAMP SOCKET TYPES

15/32 - 32 Bushing: Screw or groove base

5/8 - 24 Bushing: Screw, groove, flange or slide base



15/32 - 32 BUSHING



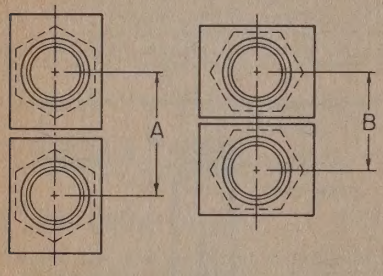
5/8 - 24 BUSHING

MOUNTING

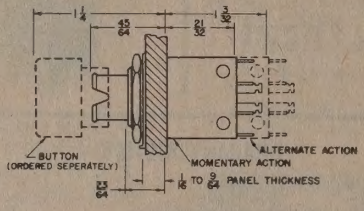
LICON® Type 01 Series mount with either 15/32 - 32 or 5/8 - 24 threaded bushing with keyway washer, lock washer and hex nut hardware. The type 01 Series is designed for either finished panel mounting or sub-panel mounting. Drawings at the right show correct mounting procedures and dimensions.

MINIMUM MOUNTING HOLE SPACING

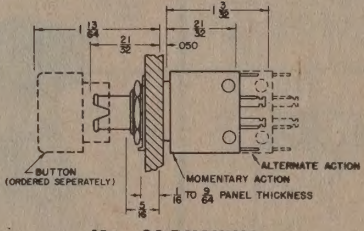
LENS CAP SIZE	15/32-32 BUSHING "A" Dim.	5/8-24 BUSHING "A" Dim.	15/32-32 BUSHING "B" Dim.	5/8-24 BUSHING "B" Dim.
5/8	13/16	15/16	45/64	29/32
3/4	13/16	15/16	25/32	29/32
13/16	53/64	15/16	27/32	29/32
1 1/8	1 9/64	1 9/64	1 5/32	1 5/32



PANEL MOUNT

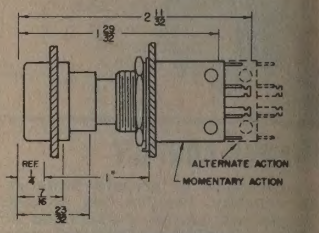


5/8 - 24 BUSHING

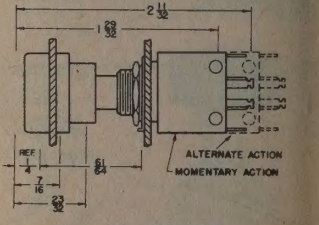


15/32 - 32 BUSHING

SUB-PANEL MOUNT



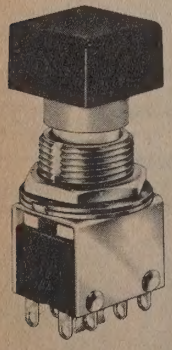
5/8 - 24 BUSHING

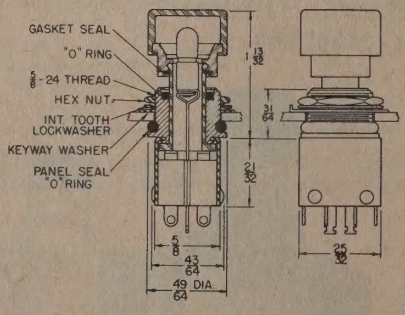


15/32 - 32 BUSHING

PANEL SEALED

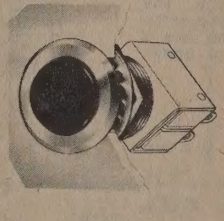
LICON® Type 01 Series is available in splash-proof panel seal models, made to special order. Splash-proof front-of-panel seal is provided by a seal in lens cap and an 'O" ring in bushing and at base of bushing behind panel. Available in 5/8-24 bushing, one and two pole momentary, maintained, or solenoid-held styles, and indicator-only styles. Lens caps available in 5/8" and 3/4" round or square and 13/16" and 1 1/8" round in standard colors of white, red, green, blue, and yellow, solid or projected color illumination.

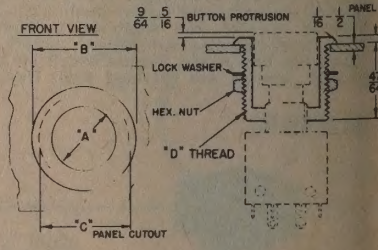




BEZEL ADAPTOR

The bezel adaptor accessory provides quality panel appearance w polished aluminum face. Lens cap protrusion is adjustable. For ro lens caps only.





PART NUMBER INFORMATION

LENS CAP SIZE "A"	BUSHING SIZE	PART NO.	"B" DIM.	"C" DIM.	"D" THD.
5/8	15/32-32	70-2110	1"	7/8"	13/16-20
5/8	5/8-24	70-2116	1"	7/8"	13/16-20
3/4	15/32-32	70-2111	1 1/8	1 1/16	1-20
3/4	5/8-24	70-2117	1 1/8	1 1/16	1-20
1 1/8	15/32-32	70-2115	1 1/2	1 7/16	1 3/8-18
1 1/8	5/8-24	70-2121	1 1/2	1 7/16	1 3/8-18

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LICON®
DIVISION ILLINOIS TOOL WORKS INC.

illuminated pushbutton switches | TYPE 01

1375 SERIES SLIDE BASE ONE-LITE PUSHBUTTON SWITCHES

The LICON® Type 01-375 Series is similar in appearance, characteristics, and circuitry to the regular 01 Series. The main difference, however, is that it will operate with the increasingly popular slide-base lamps. Slide base lamps are noted for their extremely long life, high light output, and high reliability. An average life of 5000 hours is common. The LICON® Type 01-375 is ⅝" bushing mounted and will accept the Type 01-9XX lens caps.

T-2 SLIDE BASE LAMPS

Lamp	Volts	Amps	Minimum Estimated Life Hours
6 PSB*	6.0	.140	5000
12 PSB*	12.0	.170	5000
24 PSB*	24.0	.073	5000
28 PSB*	28.0	.040	5000

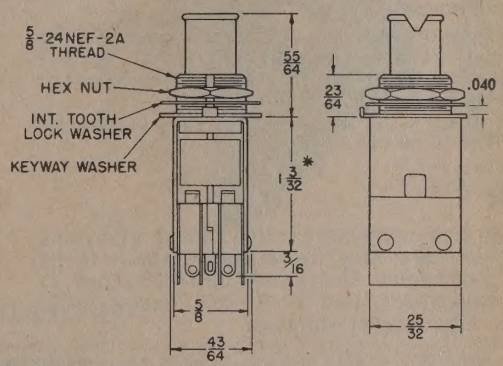
*Sylvania Lamp Product Number

OPERATING CHARACTERISTICS

MOMENTARY
Pretravel .....093 max.
Overtravel .....012 min.
Operating Force .....18 oz. max.
Release Force .....3 oz. min.

MAINTAINED
Pretravel .....187 max.
Overtravel .....005 min.
Operating Force .....6 lb. max.

01375-A



* MOMENTARY 21/32

LAMP INFORMATION

LICON® Type 01 Series uses one T-1¾ screw, groove, or flange incandescent lamp. Flange base lamps are available in ⅝ - 24 ...ing models only.

...ps are not included in the switch part number or price and are not ...plied with the unit unless specified. For your convenience, LICON ...ks lamps in limited quantities.

...ICAL LAMP CHARACTERISTICS

Base ...figuration	Industry Lamp No.	V (volts)	I (Amps)	Est. Life (Hours)
...rew Base	335	28	.04	1000
	CM 8-697*	14	.08	750
	1768	6	.20	500
...oove Base	CM 8-706*	6	.20	500
	336	14	.08	750
	334	28	.04	1000
...inge Base	328	6	.20	500
	380	6.3	.04	50,000
	381	6.3	.20	50,000
	330	14	.08	750
	327	28	.04	1000

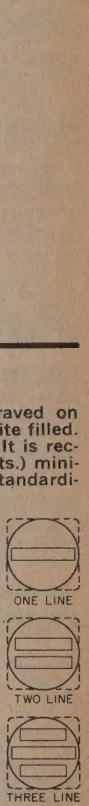
...cago Miniature Lamp Company NOTE: All values approximate.

ENGRAVING INFORMATION

LICON® Type 01 Series lens caps can be permanently engraved on exterior of screen, in New Gothic extra condensed, black or white filled. Engraving is available in .106 to .300 inches high characters. It is recommended that the type height be ⅛ inch (approximately 9 pts.) minimum. Abbreviations should be in accord with MIL-STD-12 for standardization. Contact factoy for layout suggestions and prices.

TYPICAL ENGRAVING CHARACTERISTICS

		One Line			Two Lines			Three Lines*		
	Character Hght	⅛	3/16	¼	⅛	3/16	¼	⅛	3/16	¼
MAX. CHAR. PER LINE	⅝ LENS CAP	6	4	3	5	—	—	—	—	—
	¾ LENS CAP	8	5	3	7	4	—	6	—	—
	1 3/16 LENS CAP	9	6	4	8	4	—	6	—	—
	1⅛ LENS CAP	12	8	6	12	7	5	11	6	—



For Hot Stamping Information, see Type 01-800 series.

*Number characters shown for top and bottom lines only. See "One line" for middle line.

...TCH ORDERING INFORMATION

Order a basic switch unit and lens cap separately to make a complete type 01 switch. Use the codes below for accuracy in ordering.
Examples: **Basic switch** with 15/32-32 bushing, screw base lamp socket, 2 pole momentary, SPDT (form Z) basic switches, no solenoid=01-145630; **Lens cap,** ¾ inch square for 15/32 bushing, red solid color=01-911412.

...IC SWITCH CODE

X X 5 X X X

...OUNTING
...AMP SOCKET STYLE
...ENS CAP
...CTUATOR TYPE & NO. OF POLES
...IRCUITRY
...OLENOID

...ounting
...) 15/32 - 32 Bushing
...) ⅝ - 24 Bushing

...amp Socket Style
...) T-1¾ Screw Base
...) T-1¾ Groove Base
...) T-1¾ Flange Base (available in ⅝ bushing only)
...) Slide Base Lamp
...OTE: Lamps not furnished unless specified.

...ens Cap
...) Ordered Separately—(See Type 01 lens code)

IV. Actuator Type & No. of Poles
0) Indicator Only - No Switches
1) Alternate Contact - 1 Pole
2) Alternate Contact - 2 Pole
5) Momentary Contact - 1 Pole
6) Momentary Contact - 2 Pole

V. Circuitry—Each Pole
1) SPDT (Form C)
2) SPDT Double Break High Temp. Gold Contacts (Form Z)
3) SPDT, Double Break (Form Z)
4) SPDT, Double Break, High Temp. (Form Z)

Solder terminals standard

NOTE: Some versions available with Taper Tab Terminals—Contact Factory for further information.

VI. Solenoid
Available in 1 and 2 Pole Momentary contact only.
0) No Solenoid
1) Solenoid Hold - 28 Volts
2) Solenoid Hold - 6 Volts

SEALED TYPES
Contact factory for ordering information for Panel seal and environment-free sealed units.

LENS CAP CODE

01 — 9 X XX XX

I. Lens Shape
II. Lens Size
III. Lens Color

I. Lens Shape
1) Square lens, for 15/32" bushing only
2) Square lens, for ⅝" bushing only
3) Round lens, for 15/32" bushing only
4) Round lens, for ⅝" bushing only

II. Lens Size
13) ⅝"
14) ¾"
15) 13/16" (Round only)
18) 1⅛" (Round only)

III. Lens Color

Solid Colored Lens	White Lens-projected color
11) White	21) White
12) Red	22) Red
13) Green	23) Green
14) Blue	24) Blue
15) Yellow	25) Yellow
16) Amber	26) Amber
17) Orange	27) Orange

(Other colors available, contact factory.)

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

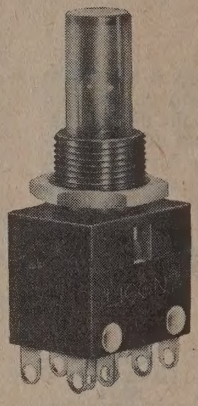
low-cost one-lite push-button switches

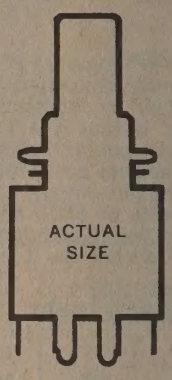
TYPE 01-

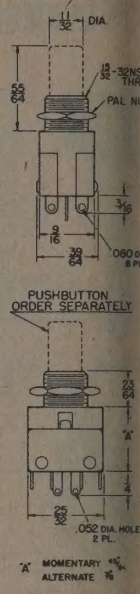
This low cost momentary one-lite switch combines the long life Type 16 double-break switch and the lamp base in one plastic housing. The 01-700 Series retains the stationary bulb feature of the standard 01's, but the housing is a one piece Lexan molding incorporating two Type 16 switches. Available with cylindrical translucent lens caps or regular 01 Series square and round caps. Regular 01 Series cap 01-9XX are listed in Type 01 section. Caps are ordered with a standard white converter, see coding below. Panel or sub-panel pal nut mounting.

The same front-of-panel bulb replacement feature, the same positive feel and the same high quality light diffusion make this lower cost unit a fine complement to LICON®'s complete line of one-lites.

*Note that 01-700 Series is available in unlighted version. Refer to Type 16 section.







CIRCUITRY

One and two pole momentary switch configuration plus compatible indicator only styles provide a wide range of control possibilities. Each switch SPDT-DB (Form Z) contact arrangement, rate 10 Amps. Popular T 1¾ screw base lamp socket standard.

OPERATING CHARACTERISTICS

MOMENTARY

Pretravel	.093 max.
Overtravel	.012 min.
Operating Force	1 lb. max.
Release Force	.2 oz. min.

MAINTAINED

Pretravel	.187 max.
Overtravel	.005 min.
Operating Force	.48 oz. max.

ELECTRICAL RATING (Applies to Type 16 Basic Switch.)

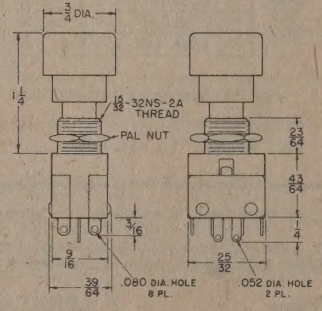
U.L. Listed—10 Amps @ 125/250 VAC
28 VDC L/R = .026

		SEA LEVEL	60,000 F
Form X or Y Single Circuit	Res.	10 Amps	10 Am
	Ind.	7.5 Amps	3.5 Am
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 Am
	Ind.	5 Amps	2 Am
	Lamp	3 Amps	—

Minimum expected basic switch life is 100,000 cycles at full rated load; 750,000 cycl one-half rated load.

MOMENTARY ACTION PUSHBUTTON

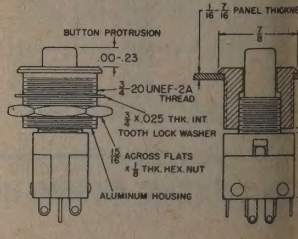
The Round and Square lens cap series of low cost one lite must be ordered with converter only. Converter is extended plunger with lens cap attachment. This switch is ideal for panel applications where space, low cost and appearance are factors. Front-of-panel bulb replacement. Uses standard 01-91 and 01-83 series lens caps as shown in Type 01 section.



BEZEL ADAPTOR

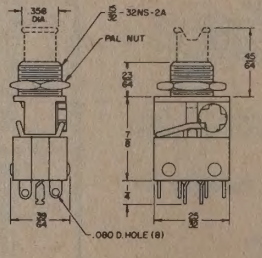
The bezel adaptor accessory provides quality panel appearance with polished aluminum face. Lens cap protrusion is adjustable. For cylindrical caps only. Front-of-panel bulb replacement.

Part No. 70-2150 (Bezel Only)



ALTERNATE ACTION PUSHBUTTON

The alternate action low cost one light mate with the 01-700 series, comes in tubular lens cap or with Plunger converter for square and round caps. Uses standard 01-91 and 01-93 series lens caps as shown in Type 01 section.



ORDERING INFORMATION

01-7 X X X X

I. Lamp Socket
II. Lens
III. Action and Number of Poles
IV. Switch Circuitry

I. LAMP SOCKET
4) Screw Base Socket

II. LENS
5) Ordered Separately (See Lens Code)
7) Colored Translucent
8) Plunger Converter Installed (Order Buttons from 01-91 & 01-93 Series in Type 01 section)

III. ACTION AND NUMBER OF POLES
0) Indicator Only
1) Alternate Actuator 1P
2) Alternate Actuator 2P
5) Momentary Actuator, 1P
6) Momentary Actuator, 2P

IV. SWITCH CIRCUITRY
0) Indicator Only
1) SPDT (Form C)
2) SPDT Double break, high temp. gold contacts (Form
3) SPDT Double break (Form

NOTE: For engaving/hot stan information see Type 01 sectio

LENS CODE (Translucent)

Momentary Basic Part No.	Alternate	Descript
80-010768	86-010580	White
80-010765	86-010577	Red
80-010764	86-010576	Green
80-010767	86-010579	Blue
80-010766	86-010578	Yellow

Individual Plunger Converter 80-010824 (Momentary)

Individual Plunger Converter 86-010574 (Alternate)

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LICON®
DIVISION ILLINOIS TOOL WORKS INC.

snap-in illuminated pushbutton switch | TYPE 01-800

single-lamp indicator/pushbutton switch is designed to de the ultimate in function and appearance. Combination l-barrier enhances panel appearance and eliminates mis- ed actuation. Choice of five screen colors and solid or pro- d color illumination. Engraved and black filled legends able.

/ MOUNTING

in mounting from front of panel with no tools saves time. Back-of- protrusion only 1.81 inches for momentary style; 2.25 inches for tained action style. The 01-800 series is designed for panels 1/16 to h thick, as standard.

E CHOICE OF CIRCUITRY

two, three and four pole, momentary or maintained (push "on," "off") switch configurations plus compatible indicator-only s provide wide range of control possibilities. Each switch SPDT- Form Z) contact arrangement, rated 10 amps. Separate lamp nals for a wide variety of indicating functions. Popular T-1¾ e base lamp socket standard.

RACTERISTICS

	Momentary	Maintained
ating Force	18 oz. max.	96 oz. max.
avel	.093 max.	.187 max.
ravel	.012 max.	.005 min.

MINATION

cted Color—White translucent screen where screen is illuminated hue projected thru a permanently fixed color filter. Color not visi- n unlit condition.

Color—Translucent solid colored screen where color is illuminated brilliant hue. Solid color visible in unlit condition.

C SWITCH: LICON Type 01-800 series are available in one and two switch units, as standard. Multi-pole units are available on special . The LICON Type 16 double-break switch is installed as the basic h to provide long life and high electrical switching load. Standard act arrangements are Form C (SPDT) and Form Z (SPDT, double-), per pole.

STAMPING

l cases where 1/8" characters are specified, LICON® will provide ds with hot stamping unless notified otherwise at the time of order ment. Available as standard type is 1/8" extra condensed News c characters. Contact factory for any exceptions such as larger let- symbols, concave or convex stamping, etc. Hot stamping colors able in black, red, and white.

CAL ENGRAVING CHARACTERISTICS

aracter eight	Horizontal Mounting		Vertical Mounting	
	Characters Per Line	No. Lines	Characters Per Line	No. Lines
1/8	12	4	8	5
3/16	8	3	5	4
1/4	6	2	3	3

ata typical maximum numbers.

CTRICAL RATING (Applies to Type 16 Basic Switch).

Listed—10 Amps @ 125/150 VAC
DC L/R = .026

		SEA LEVEL	60,000 Feet
m X or Y Single Circuit	Res.	10 Amps	10 Amps
	Ind.	7.5 Amps	3.5 Amps
	Lamp	4 Amps	—
m Z Two Circuit	Res.	10 Amps	10 Amps
	Ind.	5 Amps	2 Amps
	Lamp	3 Amps	—

mum expected basic switch life is 100,000 cycles at full rated load; 00 cycles at one-half rated load.

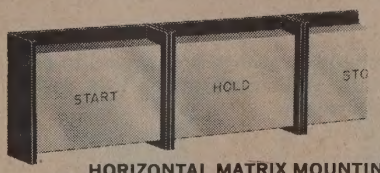
IP INFORMATION

LICON Type 01-800 series uses one T-1¾ flange base incandescent .

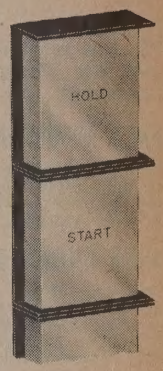
ps are not included in the switch part number or price and are not lied with the unit unless specified. For your convenience, LICON s lamps in limited quantities. Refer to lamp information in Type 01 on for details.

Y LAMP SERVICING

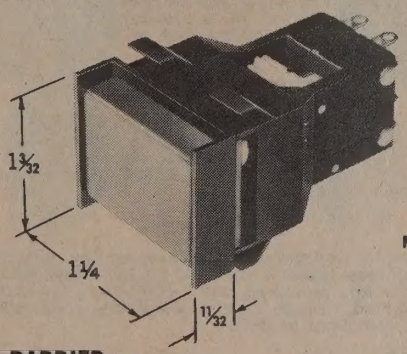
en pulls straight off without special tools, exposing T-1¾ size lamp. amp to one side with fingers and pull out. Snap new lamp in place fingers. Lamp assembly remains stationary when pushbutton is ated for longer lamp life.



HORIZONTAL MATRIX MOUNTING

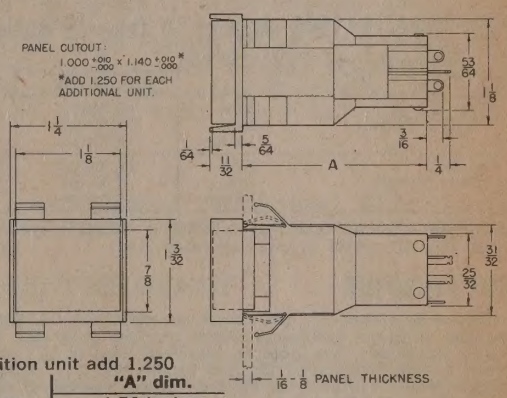


VERTICAL MATRIX MOUNTING



BEZEL-BARRIER

Bezel-barrier designed for horizontal or vertical mounting, singularly or in a matrix. Individual rectangular holes 1.000 x 1.140 inches for mounting single units. For matrix mounting, add 1.250 inches for each additional unit to be mounted. In both types of mounting, snap indicator/switch unit in place from front of panel.



*For each addition unit add 1.250

	"A" dim.
Momentary action	1.56 inches
Maintained action	2.00 inches

1.140* +.010 -.000 x 1.000 +.010 -.000

ORDERING INFORMATION

01 – 8 X X X X X

I. Lamp Socket
II. Illumination Display
III. Action & No. of Poles
IV. Switch Circuitry
V. Housing Color

I. LAMP SOCKET
4) Screw Base Socket
5) Groove Base Socket
6) Flange Base Socket

II. ILLUMINATION DISPLAY
5) No Lens Cap (order separately)

III. ACTION & NO. OF POLES
0) Indicator Only
1) Alternate Actuator, 1 Pole
2) Alternate Actuator, 2 Pole
5) Momentary Actuator, 1 Pole
6) Momentary Actuator, 2 Pole

IV. SWITCH CIRCUITRY
0) No. Switch, Indicator Only
1) SPDT—Form C
2) SPDT—Form Z, hi-temp gold contacts
3) SPDT—Form Z
4) SPDT—Form Z, hi-temp
5) SPDT—Form Z meets requirements of MS27217-1

V. HOUSING COLOR
0) Black
1) White

LENS CAP

Color	Solid Color	Projected Color
White	01-951911	01-951921
Red	01-951912	01-951922
Green	01-951913	01-951923
Blue	01-951914	01-951924
Yellow	01-951915	01-951925
Amber	01-951916	01-951926
Orange	01-951917	01-951927

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

snap-in illuminated pushbutton switch | TYPE

The two-lamp indicator/pushbutton switch is designed to provide the ultimate in function and appearance. This series mates with the LICON 01-800 series.

EASY MOUNTING

Snap-in mounting from front of panel with no tools saves time. Back-of-panel protrusion only 1.81 inches for momentary style; 2.25 inches for maintained action style. The 02-800 series is designed for panels 1/16 to 1/8 inch thick, as standard.

WIDE CHOICE OF CIRCUITRY

One, two, three, and four pole, momentary maintained (push "on," push "off") switch configurations plus compatible indicator-only styles provide wide range of control possibilities. Each switch SPDT-DB (Form Z) contact arrangement, rated 10 amps. All 02-800 switches are available in versatile snap-on switch modules.

BEZEL-BARRIER

Bezel-barrier designed for horizontal or vertical mounting, singularly or in a matrix. Individual rectangular holes 1.000 x 1.140 inches for mounting single units. For matrix mounting, add 1.250 inches for each additional unit to be mounted. In both types of mounting, snap indicator/switch unit in place from front of panel.

CHARACTERISTICS

	Momentary	Maintained
Operating Force	14 ±4 oz.	96 oz. max.
Pretravel	.093 max.	.187 max.
Overtravel	.012 min.	.005 min.

ELECTRICAL RATING (Applies to Type 16 Basic Switch)

U.L. Listed—10 Amps @ 125/250 VAC
28 VDC L/R = .026

		SEA LEVEL	60,000 Feet
Form X or Y Single Circuit	Res.	10 Amps	10 Amps
	Ind.	7.5 Amps	3.5 Amps
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 Amps
	Ind.	5 Amps	2 Amps
	Lamp	3 Amps	—

Minimum expected basic switch life is 100,000 cycles at full rated load; 750,000 cycles at one-half rated load.

HOT STAMPING

In all cases where 1/4" characters are specified, LICON® will provide legends with hot stamping unless notified otherwise at the time of order placement. Available as standard type is 1/8" extra condensed News Gothic characters. Contact factory for any exceptions such as larger letters, symbols, concave or convex stamping, etc. Hot stamping color available in black, red, and white.

TYPICAL ENGRAVING CHARACTERISTICS

Character Height	Horizontal Mounting		Vertical Mounting	
	Characters Per Line	No. Lines	Characters Per Line	No. Lines
1/8	12	4	8	5
3/16	8	3	5	4
1/4	6	2	3	3

All data typical maximum numbers.

HOUSING (only) ORDERING GUIDE

TYPE 02 MODULAR CODING
HOUSING CODE 02-7X

1. Screw Base Lamp Sockets, Operator
2. Groove Base Lamp Sockets, Operator
*3. Flange Base Lamp Sockets, Operator
4. Screw Base Lamp Sockets, Indicator
5. Groove Base Lamp Sockets, Indicator
*6. Flange Base Lamp Sockets, Indicator

LENS CAP (only) ORDERING GUIDE

02-6 X X X

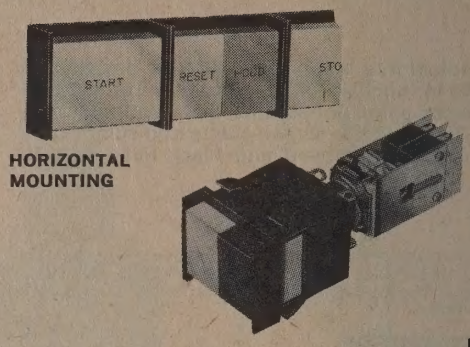
I. Light Display
II. Left/Top Color
III. Right/Bottom Color

I. LIGHT DISPLAY

1)	Full Screen	Solid Color
2)	Vertical Split	
3)	Horizontal Split	
4)	Full Screen	Projected Color
5)	Vertical Split	
6)	Horizontal Split	

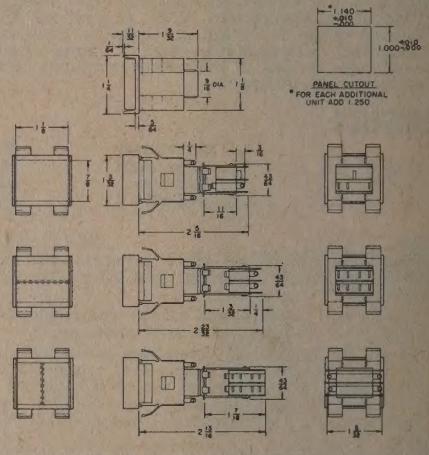
II. LENS CAP COLOR

III. 1) White
2) Red
3) Green
4) Blue
5) Yellow
6) Amber
7) Orange



HORIZONTAL MOUNTING

VERTICAL MATRIX MOUNT



SNAP-ON SWITCH MODULE (only) ORDERING GUIDE 76-27XX SERIES (See Type 16 Section)

76—27 X

I. Actuator/Poles
II. Circuitry (Ea. Pole)

I. ACTUATOR/POLES
1) Alternate Actuator, 1 Pole
2) Alternate Actuator, 2 Pole
3) Alternate Actuator, 3 Pole*
4) Alternate Actuator, 4 Pole†
5) Momentary Actuator, 1 Pole
6) Momentary Actuator, 2 Pole
7) Momentary Actuator, 3 Pole*
8) Momentary Actuator, 4 Pole†

II. CIRCUITRY (Ea. Pole)
1) Form C
2) Form Z, hi-temp gold contacts
3) Form Z
4) Form Z, hi-temp

*Will use one T-16 and one T-26 basic switches for 3 Pole configurati
†Will use T-26 switches for 4 Pole configuration.

TYPE 02 COMPLETE ASSEMBLY ORDERING GUIDE

02— X X X X X X

I. Lamp Socket
II. Light Display
III. Left/Top Color
IV. Right/Bottom Color
V. Switch Action & No. of Poles
VI. Switch Circuitry
VII. Solenoid

I. Lamp Socket
1) Screw Base
2) Groove
3) Flange Base

II. Light Display
1) Solid Color, Full Screen
2) Solid Color, Vert. Split
3) Solid Color, Horiz. Split
4) Projected Color, Full Screen
5) Projected Color, Vert. Split
6) Projected Color, Horiz. Split

III. Color
IV. 1) White
2) Red
3) Green
4) Blue
5) Yellow
6) Amber
7) Orange

V. Switch Action and No. of Poles
0) Indicator Only
1) One Pole Alternate
2) Two Pole Alternate
3) Three Pole Alternate
4) Four Pole Alternate
5) One Pole Momentary
6) Two Pole Momentary
7) Three Pole Momentary
8) Four Pole Momentary

VI. Switch Characteri
0) No. Switch, Indicator Only
1) SPDT—Form C
2) SPDT—Form Z, hi-temp gold contac
3) SPDT—Form Z
4) SPDT—Form Z, hi-t
9) SPDT—Form Z, mee requirements of MS27217-1

VII. Solenoid
0) No Solenoid
1) 28 Volt
2) 6 Volt

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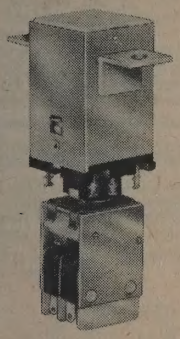
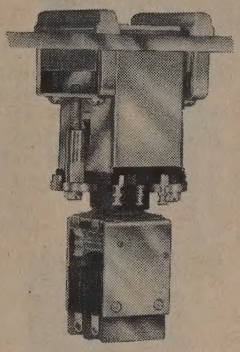
square four lite illuminated pushbutton switches

TYPE 04

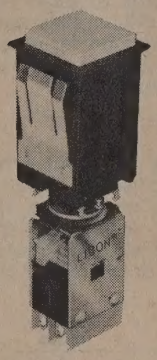
DESIGNED TO MEET REQUIREMENTS OF MIL-S-22885/72



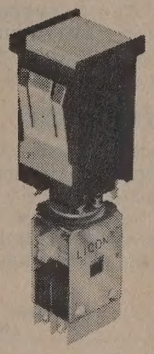
FLANGE MOUNT



BARRIER MOUNT



BEZEL



BEZEL BARRIER

EL MOUNTING VERSATILITY

IN® offers a complete line of square four lite switches. a mounting style for every need and the convenience ICON®'s front-of-panel bulb replacement and snap-on ch modules the problems of service, appearance and tility are appeased.

the mounting styles vary as the light modules and -on switch modules fit all four styles. Lamps, engraving or hot-stamping, electrical ratings, operating and physi- characteristics are identical.

different panel appearances in 3 mounting styles are ed in this series. Flush panel appearance with flange nting, the plastic barrier with screw mounting, and the ded bezel and bezel barriers with front-of-panel push-in nting. All units are designed for panel thickness up to thick and for panel cutouts .890" square except the tic barrier mounting which is .890" x 1.265" and push-in s which are .890" x 1.000." Terminal extenders, insert- legends and solenoid modules are offered with all four s.

CATING FUNCTION

miniature incandescent bulbs, housed in the indicator ule, project their light through color filters onto the 04's lay screen. Two bulbs, located in opposite quadrants, are nally used to project a single color on the screen, but a dif- nt color may be displayed in each quadrant of the screen sired. The color, color pattern or legend appearing on the lay screen gives the operator an instantaneous indication nditions in monitored circuits or equipment. It is recom- ded that the number of lamps for indication be limited o.

CHING FUNCTION

display screen, when pushed, actuates one or more sub- ature switches. Each switch controls a single circuit or a of isolated circuits. Actuation force passes directly ugh the center of the light module and does not move the ature bulbs.

ching and indicating functions may be kept separate. 04 s are also available without switches as indicators only.

NSE DISPLAY

olor display meets all Human Factors Engineering stan- s for intensity and evenness of color distribution, even un- conditions of high ambient light. No "hot spots" of color, larkened corners, no light leakage at the edges of the en. The ⅞" square shape of the display screen is ideal for cal or horizontal ganging of the 04 units and is large igh for optimum readability of engraved legends or bols.

SIMPLIFIES CONTROL DESIGN

The 04 Indicator/switch replaces conventional systems of separate panel lights and pushbutton or toggle switches. A single 04 unit can replace up to four separate panel lights and four toggle switches in as little as one fourth the panel surface area. This single component ends panel congestion, cuts installation and wiring time in half. Operator response time is considerably reduced where 04 switches are used since there is no need to relate a signal light to a separate switch.

COMPACTNESS

The extremely short length of the 04 Series results in substantial "behind-the-panel" space savings over conventional four bulb units.

SWITCH VERSATILITY AND CAPACITY

The Licon Type 16 switches used in the 04 series are rated 10 Amps @ 28 VDC and 125/250 VAC for single circuit control . . . twice the capacity of conventional subminiatures. The double break principle also allows control of two independent circuits. The double circuit rating of basic Type 16's is 5 Amps, 28 VDC, 10 Amps, 250 VAC. Switch circuitry choices include SPDT, SPNC, and SPNO in one through four poles. Special 04 indicator/switches may contain as many as five or six basic switches.

DISPLAY VERSATILITY

The 04's illuminated display may be projected through color filters to a translucent white screen, or translucent red, green, blue, or yellow screens. These colored screens do not require internal filters for display and are used in control systems where the indicating signal is either "color-on" (lit) or "color-off" (unlit).

Split screens, i.e. one color on half the surface, a different color on the other half, are available in both display methods. Screens split vertically or horizontally show no color bleed at the divider, or light leakage at the edges.

Legend or symbols may be engraved on all screen styles. A special capped screen for inserting or changing legends "on the job" is also available.

EASY BULB SERVICING

Licon's 04 Series features replacement of light bulbs from the front of the panel without special tools or skills. The light module containing display screen, color filters, and miniature bulbs is easily removable intact from the indicator housing by inserting a pointed object, or finger nail, under the small tabs. Lamp bulbs may then be changed without disturbing screen, filters, or wiring, and the complete light module slipped back in the housing.

A standard key slot assures proper repositioning of the module. Special key slot locations will allow the fool-proof matching of up to 455 combinations of light modules to individual housings.

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

TYPE 04
product featur

LAMP INFORMATION

The Licon® Type 04 Series lighted pushbutton switches use four T-1 ¾, flange base incandescent lamps in each light module. Lamps are not supplied with the unit, unless specified. Refer to lamp information in Type 01 section for details. The total lamp wattage should not exceed 2.5 watts. (2 bulbs at rated voltage or 4 bulbs at 2/3 rated voltage.)

ENGRAVING INFORMATION

Permanent, black or white filled engraving on solid screen styles is available in extra condensed News Gothic type. Engraving is available in .106" to .300" high characters. It is recommended that the type height be ⅛" (approx. 9 pts.) minimum. Abbreviations should be in accord with MIL-STD-12. The following table shows typical variations of engraving characteristics.

Height of Character	Max. Char./Line (Nominal)	Max. No. Lines
⅛	8	4
3/16	5	2
¼	3	2

Contact factory for prices and layout suggestions.

ELECTRICAL RATING (Applies to Type 16 Basic Switch)

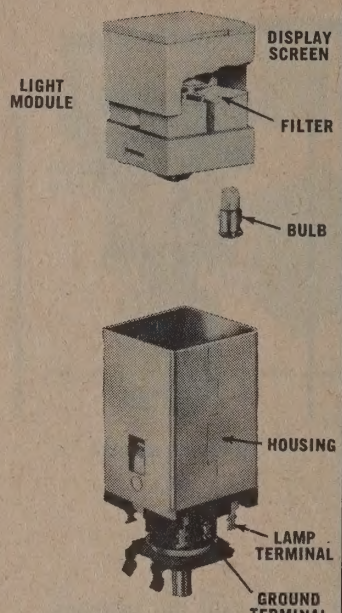
U.L. Listed—10 Amps @ 125/250 VAC
28 VDC L/R = .026

		SEA LEVEL	60,000 Feet
Form X or Y Single Circuit	Res.	10 Amps	10 Amps
	Ind.	7.5 Amps	3.5 Amps
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 Amps
	Ind.	5 Amps	2 Amps
	Lamp	3 Amps	—

Minimum expected basic switch life is 100,000 cycles at full rated load; 750,000 cycles at one-half rated load.

CHARACTERISTICS

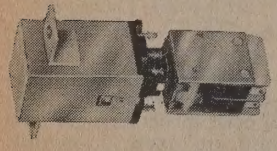
	Momentary	Maintained
Operating Force ..... 1 - 2 Poles	60 oz. max.	96 oz. max.
3 - 4 Poles	75 oz. max.	96 oz. max.
Pretravel	.125 ± .060	.125 ±.060
Overtravel	.012 min.	.005 min.
Movement Diff.	.020 ±.010	



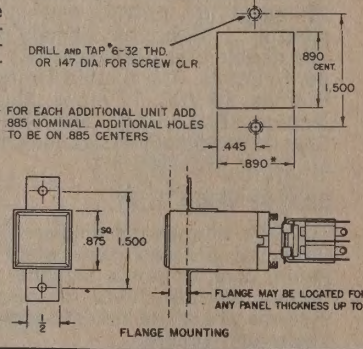
MODULAR CONSTRUCTION

FLANGE MOUNTING

Flange mounted Type 04 units may be bolted to panels up to 5/8" thick. Usually used in sub-panel mounting applications. Matrix type is mounted with standard flanges.

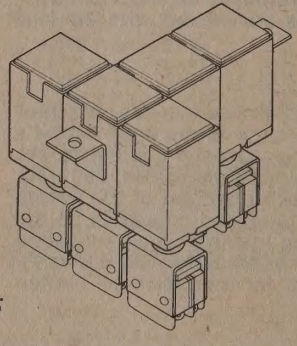


INDIVIDUAL MOUNTING



FLANGE MOUNTING

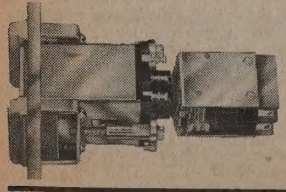
MATRIX MOUNTING



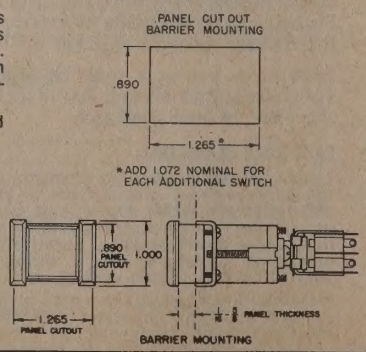
BARRIER MOUNTING

Licon's unique barrier design permits the removal of one or more switches without disturbing neighboring units. Acts as safety separators between ganged switches. Adds quality appearance.

Aluminum matrix barriers use standard barrier mounting clips and screws.

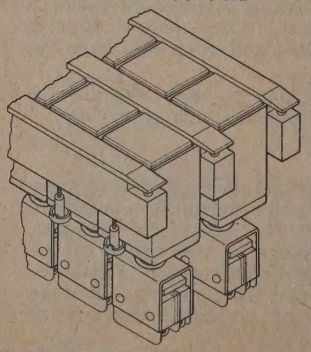


INDIVIDUAL MOUNTING



BARRIER MOUNTING

MATRIX MOUNTING



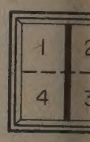
HOT STAMPING

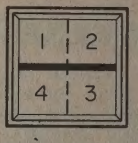
In all cases where ⅛" character specified, LICON® will provide le with hot stamping unless notified o wise at the time of order place Available as standard type is ¼" condensed News Gothic characters. tact factory for any exceptions su large letters, symbols, concave or vex stamping, etc. Hot stamping c available in black, red, and white.

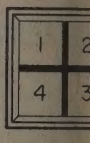
FOUR DISPLAY SCREEN STYL

Full, vertically split, horizontally and quad split screens are shown be Designated desired filter colors by rants in sequence shown.

Example: Vertically split, green at red at right—order GRRG.

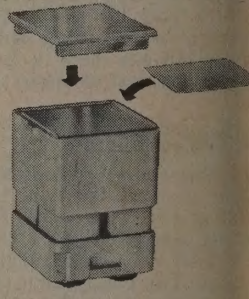






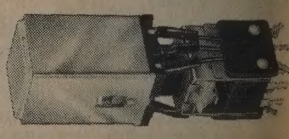
INSERTABLE LEGENDS

For applications requiring frequent end changes, or "on-the-job" revisi insertable legend modules are re mended. Print or letter legend on acetate, mylar, etc. Place legend screen surface. Snap on clear pla screen cover.



TERMINAL EXTENDERS

For closely ganged Type 04 switch terminal extenders simplify wiring placing bulb and switch terminals in same plane. Leads from bulb termi are completely insulated. Terminal tenders are available with all sw modules. Not available with solde held units.



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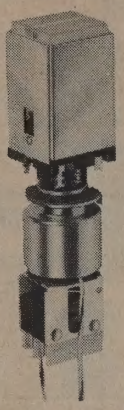
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

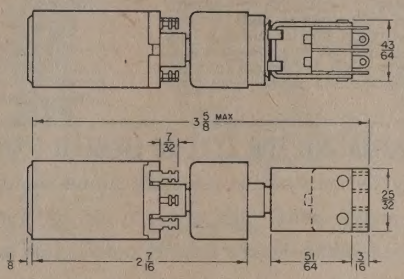
square four lite illuminated pushbutton switches

TYPE 04

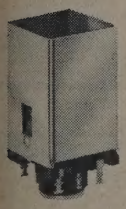
noid Held 04's

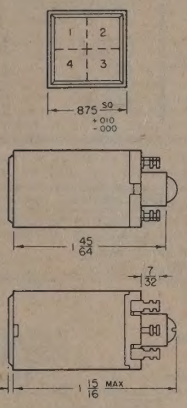
Operator actuates switches. Switches remain actuated while the solenoid coil is energized from a separate station. Switches reset when de-energized. Switch action is momentary when coil is not energized. Standard coil voltages are 6 VDC and 28 VDC. Coil cannot accidentally actuate switches.





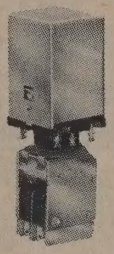
dicators

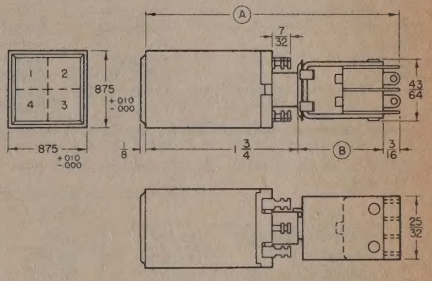




licators offer four bulb re-
y, full range of colors and
y screen styles. The dis-
creen cannot be depressed,
module is replaced with
stic plug. Indicator-only
are identical to Indicator/
units when viewed from
front.

04 Indicator/Switches





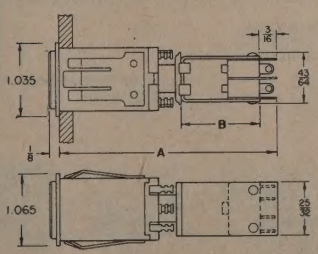
Both momentary and maintained contact switch actions are available. In momentary contact units, switches reset when the depressed display screen is released. Maintained contact units require one push to actuate switches, a second push to reset. Positive feel is standard on both switch actions, meeting standards set by Human Factors Engineers.

MOMENTARY CONTACT SWITCH
(A) 2.734 ± .030
(B) 51/64
MAINTAINED CONTACT SWITCH
(A) 2.906 ± .030
(B) 31/32

RUDED ZEL

Push-in mounted four lite illuminated pushbutton switch with a one piece extruded aluminum housing. This unit provides the maximum in front-of-panel appearance with flat bezel. Simple push-in mounting and front-of-panel bulb service make this a desirable unit. Available in Black or Clear anodized aluminum as standard.

Panel cutout 1.000" (across Latches) x .890"
Add 1.035" for each additional Switch.

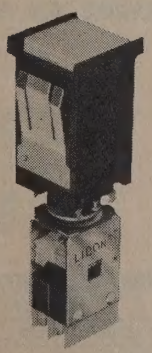


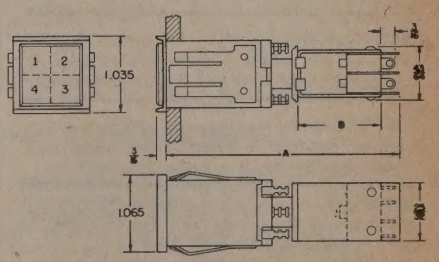
	"A" dim.	"B" dim.
Momentary action	2⅞ max.	1 1/16
Maintained action	3 3/16 max.	1 3/32

EXTRUDED BEZEL BARRIER

Mate to the flat bezel is extruded bezel barrier which gives fine panel appearance while providing protection against accidental actuation. Same push-in mounting, bulb replacement, and switch modules. Available in Black or Clear anodized aluminum as standard.

Panel cutout 1.000" (across Latches) x .890"
Add 1.035" for each additional Switch.





	"A" dim.	"B" dim.
Momentary action	2⅞ max.	1 1/16
Maintained action	3 3/16 max.	1 3/32

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

square four lite illuminated pushbutton switches

TYPE 04

SOME POINTS TO CONSIDER WHEN ORDERING A LIGHTED SWITCH

- INVISIBLE LEGENDS (i.e. Legend visible only when lamps are energized) are becoming popular for usage in airborne equipment. LICON® produces this special style of display with a button face that is black — the legend lights up against the black background in the color that is projected from filters located between the button face and the lamp.
- The panel should be of a matte, non reflecting finish to reduce glare and improve contrast.
- The ambient light plays an important part in console design. Lower ambient light improves contrast and increases monitoring interpretation.
- The individual Lighted Pushbutton switches should be specified to use the same lamp to reduce stocking problems for spare parts.
- The system should be designed to include a master lamp tester to determine burned out lamps before the system is activated.
- The panel should be designed with consistency in color coding, layout, hardware, lettering, etc.

ORDERING INFORMATION FOR TYPE 04 LIGHTED SWITCHES, INDICATORS OR COMPONENTS

Licon Type 04 lighted pushbutton switches can be ordered as completely assembled units, indicator only or components can be ordered separately. Please refer to order guide below, then follow step by step procedure outlined, to determine correct part number for ordering. On matrix mounted assemblies consult factory.

ORDERING GUIDE

Item	Consists of	Follow Steps
Complete Switch	Housing, Light Module, Switch Module, Solenoid Module*	1, 2A, 3A, 3B, 4, 5
Indicator	Housing, Light Module	1, 2A, 3A, 3B
Individual Components Only	—	1, 2B

*Note: If required, order individual barrier mount hardware separately. Barriers are not included in switch or indicator part number.

TO ORDER COMPLETE SWITCH...

Refer to charts below and select proper code numbers following the step by step procedure to determine correct part number.

STEP 1	STEP 2A	STEP 3A	STEP 4	STEP 5	STEP 3B
04-5 Prefix	Select Housing Code from Chart I	Select Light Module Code from Chart II	Select Switch Module Code from Chart III	Select Solenoid Module (if required)	Select Filter Colors By Quadrant

TO ORDER INDICATOR ONLY...

Refer to Charts I and II below for proper code numbers following step by step procedure to determine correct part number.

STEP 1	STEP 2A	STEP 3A	STEP 3B
04-5 Use Prefix Above	Select Housing Code from Chart I	Select Light Module Code from Chart II	Select Filter Colors By Quadrant

STEP 1 (P/N Prefix)—Select proper part prefix code.

Item	Code
Complete Switch	04-5
Indicator Only	04-5
Switch Housing Only	04-7
Indicator Housing Only	04-2
Light Module Only	04-6
Switch Module Only	76-27
Solenoid Module Only	04-9

STEP 2A (Housing)—For complete switch or indicator—Select proper code number from Chart I to be added to prefix chosen.

STEP 2B Code) — For individual components only—Refer to proper chart indicated below and select code number to be added to proper prefix.

Item	Chart No.
Switch Housing	I
Indicator Housing	I
Light Module	II
Switch Module	III
Solenoid Module	IV

STEP 3A (Light Module)—For complete switch or indicator—Select proper code number from Chart II to be added to prefix chosen.

STEP 3B—Select display screen color—Refer to drawings 1A and 1B and write down the first letter of the colors desired in quadrants one through four (ex. all red is RRRR)

STEP 4 (Switch Module) — For complete switch only — Select proper 2 digit code actuator/circuitry from Chart III to be added to prefix chosen.

STEP 5 (Solenoid Module) — For complete switch only (if required) — Select proper code from Chart IV to be added to prefix chosen.

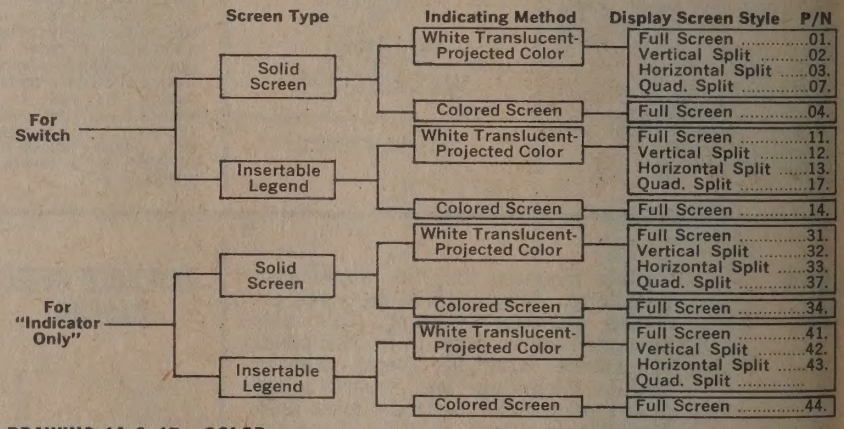
BARRIERS—If required the individual barriers are ordered separately and not included in switch and indicator part number.

Flush Barrier Code		Protruding Barrier Code	
70-3051	Black	70-3061	Black
70-3052	White	70-3062	White
70-3053	Grey	70-3063	Grey

CHART I—HOUSING MODULE

Description	Code	Description	Code	Description	Code
Special—All following digits serial	0	Flange Mount ⅜" Panel	3	Bezel—Clear	7
Flange Mount ⅛" Panel	1	Flange Mount ½" Panel	4	Bezel Barrier—Black	8
Flange Mount ¼" Panel	2	Barrier Mount	5	Bezel Barrier—Clear	9
		Bezel—Black	6		

CHART II—LIGHT MODULE



DRAWING 1A & 1B—COLOR

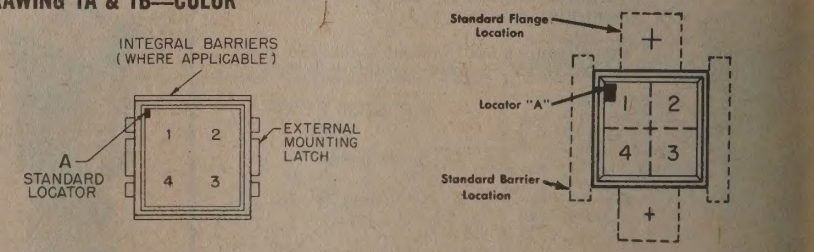


CHART III—SWITCH MODULE

ACTUATOR		CIRCUITRY (ea. pole)	
ACTUATOR/POLES	Code	Description	Code
Alternate, 1 Pole	1	Form C	1
Alternate, 2 Pole	2	Form Z, Hi-temp. gold contacts	2
Alternate, 3 Pole*	3	Form Z	3
Alternate, 4 Pole†	4	Form Z, Hi-temp.	4
Momentary, 1 Pole	5		
Momentary, 2 Pole	6		
Momentary, 3 Pole*	7		
Momentary, 4 Pole†	8		

CHART IV—SOLENOID MODULE

Description	Code
Special—All following digits serial	0
Solenoid Hold, 28 Volts	1
Solenoid Hold, 6 Volts	2

* Will use 1 T-16 and 1 T-26 basic switches for 3 pole configuration.
† Will use 2 T-26 switches for 4 pole configuration.

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LICON®
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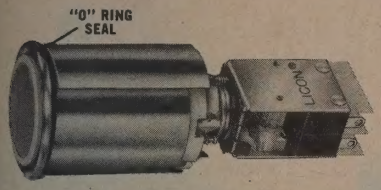
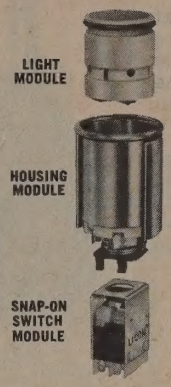
sealed illuminated pushbutton switches | TYPE 44





New round four lamp pushbutton switch designed to conserve panel space by combining one to four color indication with multipole switch control, all in one package. Available with panel seal feature providing a splashproof seal at panel. Unmatched display intensity, reliability and electrical capacity enable the type 44 series to meet and surpass the most rigid commercial and military job requirements.

CONTROL VERSATILITY

Indicating Function: Four miniature incandescent bulbs, housed in the light module, project their light through color filters or colored screen. Normally, two bulbs, located in opposite quadrants, are used to project a single color on the screen, but a different color may be displayed in each quadrant of the screen, if desired. The color, color pattern, or engraved legend appearing on the display screen gives the operator an instantaneous indication of conditions in monitored circuits or equipment.

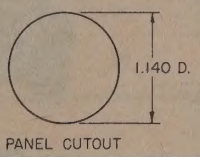
Switching Function: When pushed, the display screen actuates one or more subminiature switches. Each double-break switch controls a single circuit or a pair of isolated circuits. Actuation force passes directly through the center of the light module, thereby allowing the bulbs to remain stationary to effect longer bulb life. Type 44 illuminated pushbutton switches are available as standards in one and two pole momentary or maintained (push "on", push "off") contact arrangements, solenoid held styles, and also in compatible indicator-only styles to match indicator-switch styles.

Switching and indicating functions may be combined or kept separate. In addition, two isolated commons are provided on the light module to increase the variety of indicating functions desired. Solenoid hold down units can be energized either at the switch or remotely, but will not operate basic switches.

EASY MOUNTING

Clamp-on mounting from front of panel provides positive positioning of the type 44. Tighten two screws located in housing from front of panel and the unit is ready for wiring. Design for panels ⅛ thru ¼ inch thick, as standard.

For individual mounting, punch out holes 1.140 in. diameter. To save time and effort, prewire snap-on switch modules and install after housing is mounted in panel.

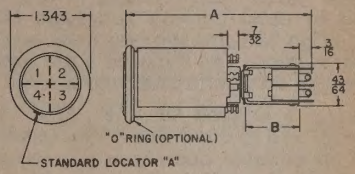


PANEL CUTOUT

EASY LAMP SERVICING

Pull light module straight out from panel without special tools and service lamps with fingers. Snap light module in place. Accepts four T 1¾ size flange base lamps.

DIMENSIONS



	"A" dim.	"B" dim.
Momentary action	3 max.	11/16
Maintained action	3 13/32 max.	1 3/32

CHARACTERISTICS

	Momentary	Maintained	Solenoid Hold Down
Operating Force	75 oz. max.	96 oz. max.	75 oz. max.
Pretravel	.125 ±.060	.125 ±.060	.125 ±.060
Overtravel	.010 min.	.005 min.	.005 min.
Movement Diff.	.020 ±.010		
Rated Voltage of Solenoid:			28VDC
Drop Out Voltage:			17VDC
Rated Current:			.050 amp

ILLUMINATION

Projected Color — White translucent screen where screen is illuminated with hue projected thru a permanently fixed color filter. Color not visible in unlit condition.

Solid Color — Translucent solid colored screen where color is illuminated with brilliant hue. Solid color visible in unlit condition.

Basic Switch: LICON type 44 illuminated switches are available in one and two pole switch units, as standard. Multipole units are available on special order. The basic switch used is the LICON type 16 double-break switch to provide long life and high electrical switching capability. Standard contact arrangements are Form C (SPDT) and Form Z (SPDT, double-break) per pole.

ELECTRICAL RATING

(Applies to Type 16 Basic Switch)

U.L. Listed — 10 Amps @ 125/250 VAC
28 VDC L/R = .026

		Sea Level	60,000 Feet
Form X or Y Single Circuit	Res.	10 Amps	10 Amps
	Ind.	7.5 Amps	3.5 Amps
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 Amps
	Ind.	5 Amps	2 Amps
	Lamp	3 Amps	—

Minimum expected basic switch life is 100,000 cycles at full rated load; 750,000 cycles at one-half rated load.

ORDERING INFORMATION FOR TYPE 44 LIGHTED SWITCHES

Licon Type 44 lighted pushbutton switches can be ordered as completely assembled units, indicator only, or components can be ordered separately. Please refer to order guide below, then follow the step by step procedure outlined to determine correct part number for ordering.

ORDERING GUIDE

Item	Consists of	Follow Steps
Complete Switch	Housing, Light Module, Switch Module, Solenoid Module*	1, 2A, 3A, 3B, 4, 5
Indicator Only	Housing, Light Module	1, 2A, 3A, 3B
Individual Components Only	—	1, 2A, 2B

TO ORDER COMPLETE SWITCH . . . Refer to charts below and select proper code numbers following the step by step procedure to determine correct part number.

	STEP 1	STEP 2A	STEP 3A	STEP 4	STEP 5	STEP 3B
Sealed	44-0					
Unsealed	44-5					
	Prefix	Select Housing Code Chart I	Select Light Module Code Chart II	Select Switch Module Code Chart III	Select Solenoid Module Code Chart IV	Select Filter Colors By Quadrant

EXAMPLES: TO ORDER INDICATOR ONLY...

Refer to proper charts and select code numbers following the step by step procedure to determine correct part number.

	STEP 1	STEP 2A	STEP 3A	STEP 3B
Sealed	44-0			
Unsealed	44-5			
	Prefix	Select Housing Code Chart I	Select Light Module Code Chart II	Select Filter Colors By Quadrant

STEP 1 (P/N Prefix) — Select proper part prefix code.

Item	CODE Sealed	Unsealed
Complete Switch	44-0	44-5
Indicator Only	44-0	44-5
Housing Module Only	44-7	44-2
Light Module Only	44-6	44-1
Switch Module Only	76-27	76-27
Solenoid Module Only	44-9	44-9

STEP 2A (Housing)—For complete switch or indicator select proper code number from Chart I to be added to prefix chosen.

STEP 2B—For individual components only—Refer to proper chart indicated below and select code number to be added to proper prefix.

Item	Chart
Housing	I
Light Module	II
Switch Module	III
Solenoid Module	IV

STEP 3A (Light Module)—For complete switch or indicator—Select proper two digit code number from Chart II to be added to switch or indicator prefix.

CHART I — HOUSING MODULE

Item	Code
Housing for Complete Switch	8
Housing for Indicator Only	9

CHART II — LIGHT MODULE

Function	Screen Type	Indicating Method	Display Screen Style	P/N
For Switch	Solid Screen	White Translucent-Projected Color	Full Screen	01.
			Vertical Split	02.
			Horizontal Split	03.
			Quad. Split	07.
		Colored Screen	Full Screen	04.
For Indicator-Only	Solid Screen	White Translucent-Projected Color	Full Screen	31.
			Vertical Split	32.
			Horizontal Split	33.
			Quad. Split	37.
		Colored Screen	Full Screen	34.

CHART III — SWITCH MODULE

ACTUATOR Description	Code	CIRCUITRY (ea. pole) Description	Code
Alternate, 1 Pole	1	Form C	1
Alternate, 2 Pole	2	Form Z, Hi-temp. gold contacts	2
Alternate, 3 Pole*	3	Form Z	3
Alternate, 4 Pole†	4	Form Z, Hi-temp.	4
Momentary, 1 Pole	5		
Momentary, 2 Pole	6		
Momentary, 3 Pole*	7		
Momentary, 4 Pole†	8		

*Will use 1 T-16 and 1 T-26 basic switches for 3 pole configuration.
†Will use 2 T-26 switches for 4 pole configuration.

CHART IV — SOLENOID MODULE

Description	Code
Special—All following digits serial	0
Solenoid Hold, 28 Volts	1
Solenoid Hold, 6 Volts	2

STEP 3B—Select display screen color—Refer to quadrant drawing above and select by using the first letter of the color desired in each quadrant one through four (ex. all red is RRRR).
STEP 4 (Switch Module) — For complete switch only—Select proper 2 digit code from Chart III to be added to switch prefix chosen.
STEP 5—For complete switch only (if required)—Select proper code from Chart IV to be added to switch prefix chosen.

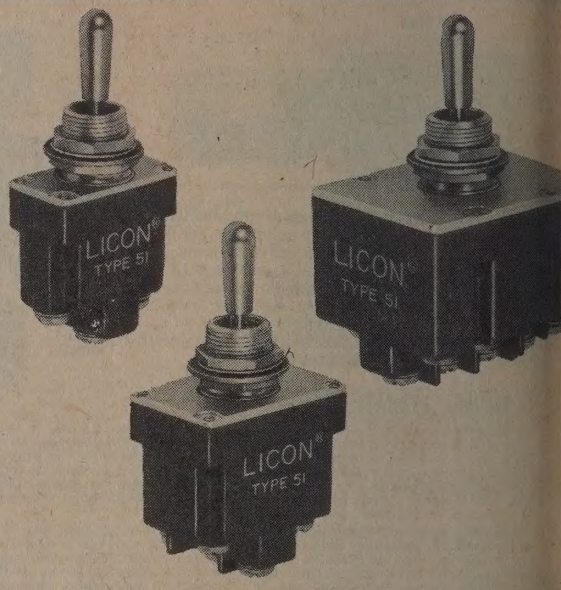
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

aircraft toggle switches | TYPE

The LICON Type 51 heavy duty toggle switch is designed to meet the sealed switch requirements of MIL-S-3950. The Type 51's are designed to meet military approvals MS24523, for the one pole version; MS24524, for the two pole version; and MS24525, for the four pole version. The Type 51's are designed and constructed for use in heavy duty industrial and aircraft applications.

For sealing, a molded silicone rubber seal is bonded around the toggle lever and to the inside of the bushing. A diallyl phthalate case assures dependable operation in a temperature range of —85° to +250° F. The Type 51 is designed with contacts that are larger than competitive units for higher load capacities and better heat dissipation.

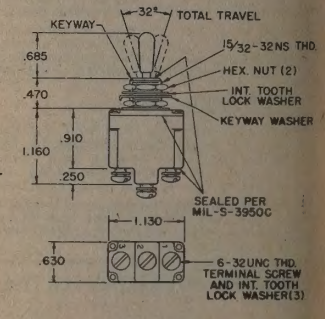
For special applications or test data, contact the factory.



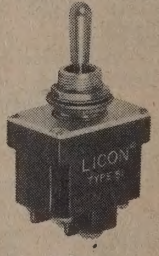
ELECTRICAL RATINGS

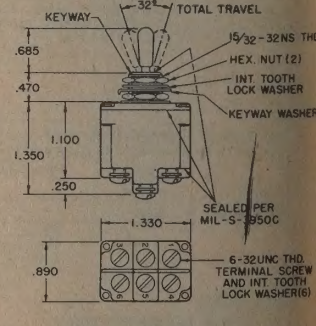
CURRENT CAPACITY (AMPS)

Number of Poles	28 Volts D.C.			115 Volts A.C. 60 & 400 Hz			230 VAC	250 VDC	115 VDC	Circuitry	Circuitry Reference Code Number
	Lamp Load	Res.	Ind.	Lamp Load	Res.	Ind.	Res.	Res.	Res.		
One	5	20	15	3	15	10	6	0.5	0.75	Maintained	-21, -22, -23, -24, -33,
	4	15	10	2	15	7	6	0.5	0.75	Momentary	25, 26, 27, 28, 29, 30, 31, 32
Two	7	20	15	4	15	15	6	0.5	0.75	Maintained	21, 22, 23, 24, 33
	5	18	10	2	11	8	6	0.5	0.75	Momentary	25, 26, 27, 28, 29, 30, 31, 32
Four	5	20	12	4	15	15	6	0.5	0.75	Maintained	21, 22, 23, 24, 33
	4	18	10	2	11	8	6	0.5	0.75	Momentary	25, 26, 27, 28, 29, 30, 31, 32

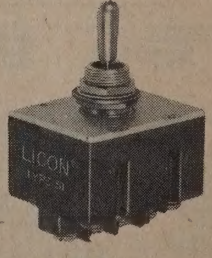


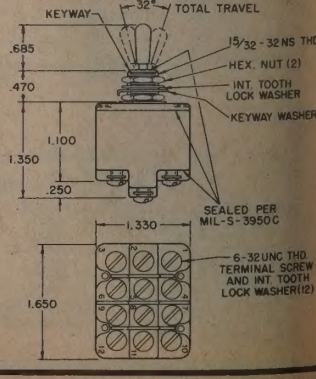
1 Pole
51-1121
(MS 24523-21)





2 Pole
51-1221
(MS 24524-21)





4 Pole
51-1421
(MS 24525-21)

ORDERING GUIDE

51 — X X X X

I. Actuator
1) Toggle

II. Pole Designation
1) 1 Pole
2) 2 Pole
4) 4 Pole
0) Special—All Following Digits are Serial

III. & IV. Circuitry

Circuitry No.	Actuator Position		
	Right	Center	Left (Keyway)
21	On	Off	On
22	On	None	Off
23	On	None	On
24	On	Off	None
25	On	MomOff	None
26	On	None	MomOn
27	MomOn	Off	MomOn
28	None	Off	MomOn
29	On	None	MomOff
30	Off	None	MomOn
31	On	Off	MomOn
32	MomOn	On	None
33	On	On	None

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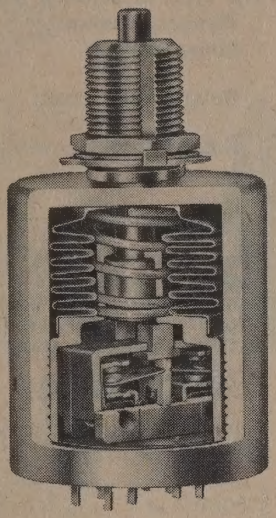
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

hermetically sealed switches | TYPE 62

LICON® Type 62 Series is a hermetically sealed environ-t-free snap-action switch with aximum leak rate of 1 x 10^{-8} sec. The Series is designed to orm limit switch functions e hydraulic fluids, moisture, and other contaminating ts are present.



rmetically sealed sub-assem- composed of a metal bellows ered to a glass terminal head- vacuated, and back filled with nert gas, is installed in a ed one-piece housing.

UNTING

models offer either bushing mounting or hex-nut cou-g. Two corrosion-resistant hex nuts, one keyway washer, one internal-tooth lockwasher are furnished with each ning mounting model. The hex-nut coupling has a wire ing provision.

TERMINATIONS

Wire leads are potted at base of switch unit for electrical insulation and strain relief. Wire leads with receptacle or plug connectors or with stripped and tinned ends are available. Consult factory for specific connector requirements.

BASIC SWITCH

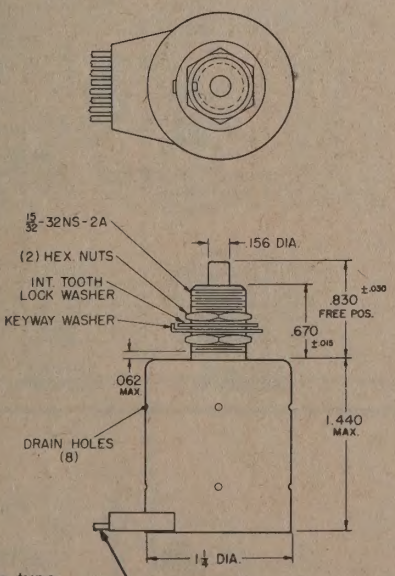
The Type 62 Series employ LICON Type 16 double-break basic switches. Typical switch ratings are shown in the table below.

ELECTRICAL RATING

(Applies to Type 16 Basic Switch employed in Type 62.)
28 VDC L/R = .026

		SEA LEVEL	60,000 Feet
Form X or Y Single Circuit	Res.	10 Amps	10 Amps
	Ind.	7.5 Amps	3.5 Amps
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 Amps
	Ind.	5 Amps	2 Amps
	Lamp	3 Amps	—

HING MOUNTING

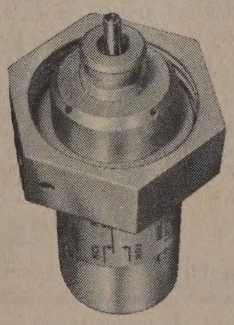


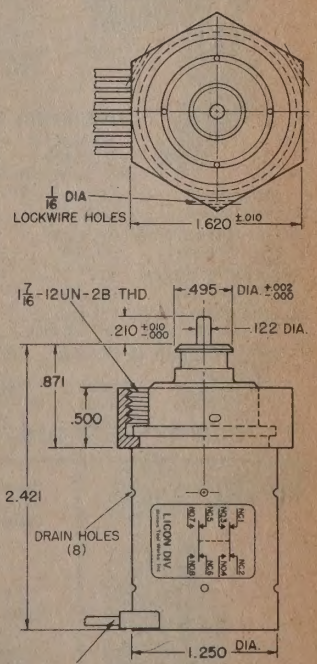
gned for rugged duty, the type 00025 hermetically sealed h is bushing mounted, for r actuation. Other circuitries able.

RATING CHARACTERISTICS
act arrangement ..... **DPDT**
ating force ..... **6-12 lbs.**
ment differential ..... **.022 max.**
travel ..... **.086 min.**

ult factory for your specific ector requirements.

COUPLING MOUNTING





The 62-20009 is designed to be connected into a hydraulic system. Special hex-nut coupling with wire lock provision. A variety of circuitries are available.

OPERATING CHARACTERISTICS
Contact arrangement ..... **DPDT**
Movement differential ..... **.015-.033**
Overtravel ..... **.125 min.**

Consult factory for your specific requirements.

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

environment-free sealed switches | TYPE

The LICON® Type 63 Series is a environment-free resilient sealed limit switch designed for rugged duty and to conform to the rigid specifications of military standard designs. A one piece housing with ring seals at the plunger and hermetic header at terminal base, provide the true environment-free sealing to comply with immersion requirements of MIL-E-5272, Procedure I.

The Type 63 Series may be used in ambient temperature ranges of —65° to +185° F. An ice scraper ring and wiper at plunger insure low temperature performance.

MEETS THE REQUIREMENTS OF MIL-S-8805

MOUNTING

The Type 63 Series is bushing mounted. Two corrosion resistant hex-nuts, one keyway washer, and one internal-tooth lockwasher, are furnished with each switch to provide positive, non-turn mounting. Roller plunger models with adjustable roller orientation have a positive locking nut in addition to the standard hardware.

TERMINATIONS

The Type 63 Series is available with side or bottom receptacle or plug connectors, wire leads with stripped and tinned ends, or wire leads with receptacle or plug connectors. Wire leads are potted at base of switch unit for insulation and strain relief and are marked with circuit designations.

ACTUATORS

The Type 63 Series is available in four actuator styles:

Plunger Actuator: —For inline actuation.

Roller Plunger: —For cam or slide actuation with l than 20° rise.

Rotary Roller Lever: —For cam or slide actuation w more than 30° rise.

Rotary Linkage Lever: —For applications where actua device attaches directly to actu rod of switch.

BASIC SWITCH

The Type 63 Series employ LICON basic double br switches. Models are available with Type 16 and Type subminiature Form C or Form Z contact arrangements Type II single pole and Type 22 double pole switches. Typ switch ratings are shown below.

ELECTRICAL RATING

(Applies to Type 16 Basic Switch employed in Type 63.)

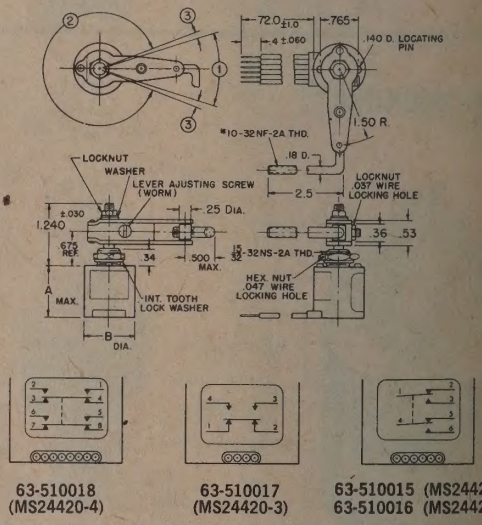
28 VDC L/R = .026		SEA LEVEL	60,000 Fe
Form X or Y Single Circuit	Res.	10 Amps	10 Am
	Ind.	7.5 Amps	3.5 Am
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 Am
	Ind.	5 Amps	2 Am
	Lamp	3 Amps	—

ROTARY LINKAGE

Featuring the LICON one piece machined aluminum housing for lighter weight and rugged use, the Type 63 rotary linkage lever models are designed to meet MS-24420 specifications. All models incorporate the exclusive LICON® Butterfly® basic switch design for longer life, higher current carrying capacity, and greater circuit versatility.

OPERATING CHARACTERISTICS

	63-510015 (MS24420-1) MIL-S-8805/49	63-510016 (MS24420-2) MIL-S-8805/49	63-510017 (MS24420-3) MIL-S-8805/49	63-510018 (MS24420-4) MIL-S-8805/49
Dimension B	1.000	1.500	1.500	1.500
Dimension A	1.030	1.660	1.410	1.800
1) Free Position Area:	35° ±15°	35° ±15°	35° ±15°	35° ±15°
Circuits Made:	1-3, 4-6	1-3, 4-6	3 and 4	1-2, 5-6
2) Degree Reference:	301°	301°	285°	285°
Circuits Made:	1-2, 4-5	1-2, 4-5	1 and 2	3-4, 7-8
3) Differential Travel:	12° Max.	12° Max.	20°	20°
Weight with leads:	.47 lbs. max.	.75 lbs. max.	.61 lbs. max.	1 lb. max.
Current Capacity @ 28v D.C. (Sea Level)				
Resistive	4 amps	10 amps	15 amps	15 amps
Inductive	3 amps	6 amps	10 amps	10 amps
Motor	4 amps	6 amps	5 amps	5 amps
Inrush	Exceeds military requirements.			



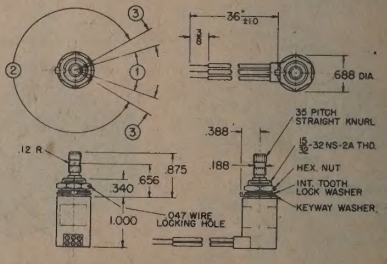
63-510018 (MS24420-4) | 63-510017 (MS24420-3) | 63-510015 (MS24420-1) 63-510016 (MS24420-2)

ROTARY

Subminiature size rotary switch ready for external roller lever or straight lever arrangement. Order as 63-500028.

OPERATING CHARACTERISTICS

Contact Arrangement	2 SPDT
1) Free position area:	35° ±15°
Circuits made:	1-3 and 4-6
2) Degrees Reference:	301°
Circuits made:	1-2 and 4-5
3) Differential Travel:	12° max.
Break distance:	.010 min.
Weight without leads	3.0 oz. max.
Operating torque:	3.0 in lb. max.
Current capacity @ 28v D.C. (Sea Level to 100,000 ft.)	
Resistive	4 amps
Inductive	3 amps
Motor	4 amps
Inrush	24 amps



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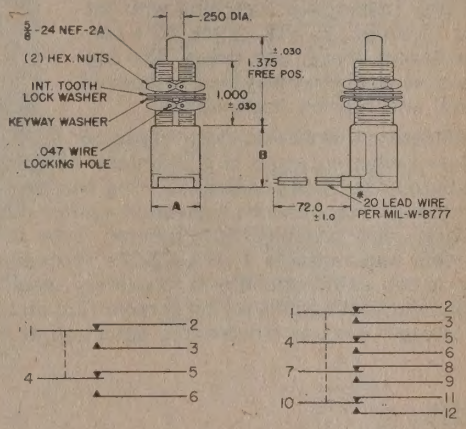
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

environment-free sealed switches | TYPE 63

MINIATURE PLUNGER

mall as .690 inches diameter, this Type 63 s subminiature plunger actuator sealed h has all the electrical capacity, rugged- , and quality of the normal sized units.



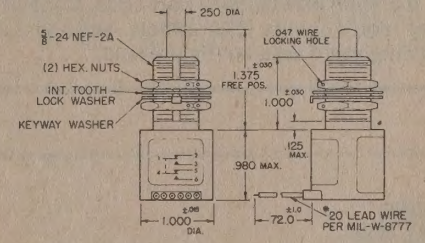
OPERATING CHARACTERISTICS

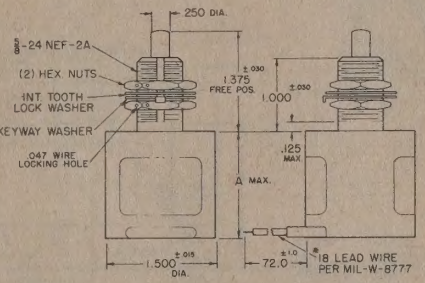
	63-200050 (MS2132-1) MIL-S-8805/39	63-200055 (MS21321-2) MIL-S-8805/39	63-200062*
act rangement	2 SPDT	4 SPDT	8 circuits
ating Force	9 ±3 lbs.	9 ±3 lbs.	9 ±3 lbs.
ase Force	4 lbs. min.	4 lbs. min.	4 lbs. min.
ravel	.040 max.	.040 max.	.050 max.
rential avel	.020 max.	.020 max.	.030 max.
travel	.250 min.	.250 min.	.240 min.
ent Capacity Level) 8v. DC Res.	7 amps	7 amps	7 amps
Ind.	4 amps.	4 amps.	2.5 amps
Motor	4 amps	4 amps	4 amps
ension A	.690 max.	1.031 max.	1.031 max.
nsion B	.980 max.	1.200 max.	1.125 max.

*Sub-miniature version of MS24331-4. Except less header.

INGER ACTUATOR

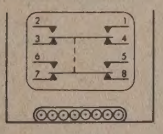
gned for rugged duty, the type 63 in-line ger models have an ice scraper ring and r at plunger for low temperature operation. gned to meet MS24331 specification. Wire s are per MIL-W-8777, marked per MIL-W- and stripped and tinned. Headers are used rminal bases.



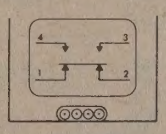


OPERATING CHARACTERISTICS

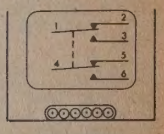
	63-210021 (MS24331-1) MIL-S-8805/40	63-210026 (MS24331-4) MIL-S-8805/40	63-210028 (MS24331-3) MIL-S-8805/40	63-210029 (MS24331-2) MIL-S-8805/40
ating force	9 ±3 lbs.	9 ±3 lbs.	9 ±3 lbs.	9 ±3 lbs.
over travel force	30 lbs. max.	30 lbs. max.	30 lbs. max.	30 lbs. max.
ase force	4 lbs. min.	5 lbs. min.	5 lbs. min.	5 lbs. min.
ravel	.070 max.	.070 max.	.070 max.	.070 max.
erential travel	.020 max.	.045 max.	.035 max.	.035 max.
travel	.250 min.	.250 min.	.250 min.	.250 min.
ght with leads	.46 lbs. max.	.84 lbs. max.	.62 lbs. max.	.77 lbs. max.
ent capacity Level) 8v. DC esistive	4 amp.	15 amp.	15 amp.	10 amp.
ductive	2 amp.	10 amp.	10 amp.	3 amp.
otor	4 amp.	5 amp.	5 amp.	6 amp.
Dimension A		1.700	1.310	1.500



63-210026
(MS24331-4)

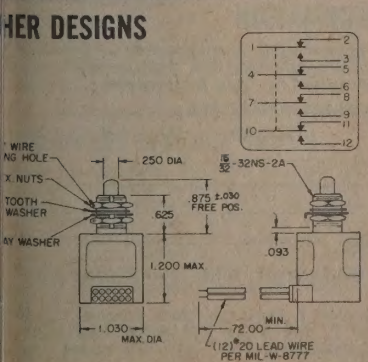


63-210028
(MS24331-3)

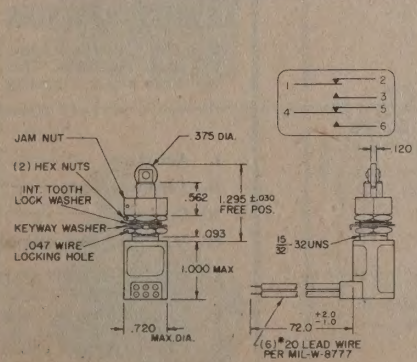


63-210029
(MS24331-2)

HER DESIGNS

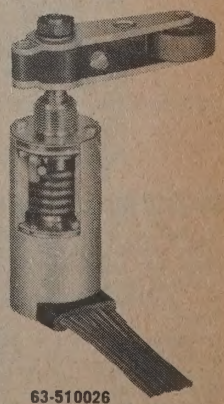


63-210098
MS27240-2



63-710037
MS27240-3

63-700004



63-510026
MS21320

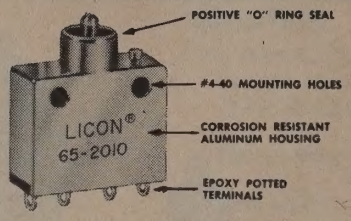
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

environment-free subminiature sealed switch

TYPE

TYPE 65

Licon's Type 65 Series offers dependable, environment-free snap-action switching with ratings up to 10 Amps, 30 VDC. Type 65's conserve your design space, and deliver the ruggedness and reliability to meet the demands of all industrial and military applications.



The Type 65 consists of a basic Licon® Type 16 subminiature switch enclosed in a seamless, corrosion resistant aluminum housing. A positive "O" ring plunger seal plus epoxy terminal potting provides protection against dust, moisture, oil spray, and corrosive atmospheres. Type 65's meet the immersion requirements of MIL-E-5272 Procedure I. The basic snap action switches conform to military specifications. "O" ring plunger sealing plus an ice scraper ring on the stainless steel plunger assures trouble-free actuation at high altitudes.

VERSATILITY

A wide choice of circuitry, actuators, and mounting methods adapt Type 65's for all types of demanding jobs. Solder, quick-disconnect, and screw terminals, plus potted leads, may be ordered from the Type 65 standard part code. Consult the factory for special requirements in terminals, actuators, or basic switches, including multi-pole configurations.

DURABILITY

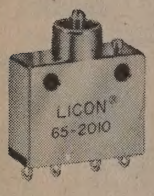
Housing and bushing are made of a s piece of aluminum. #4-40 mounting h pass through solid aluminum case shoul not through the basic switch. This de eliminates the danger of cracking the ph lic case of the enclosed switch through r installation or actuation.

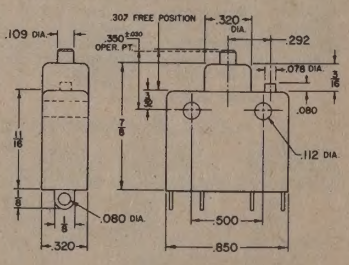
Rugged integral actuators, installed and adjusted at the tory, insure exacting repeatability.

ELECTRICAL RATING

(Applies to Type 16 Basic Switch employed in Type 65.)
28 VDC L/R = .026

		SEA LEVEL	60,000 F
Form X or Y Single Circuit	Res.	10 Amps	10 An
	Ind.	7.5 Amps	3.5 An
	Lamp	4 Amps	—
Form Z Two Circuit	Res.	10 Amps	10 An
	Ind.	5 Amps	2 An
	Lamp	3 Amps	—

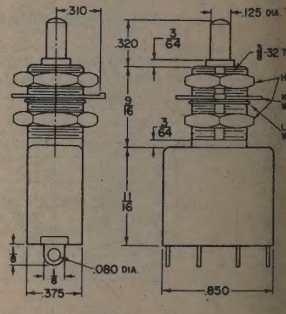




65-2010 PIN PLUNGER

Basic style for in-line motion where large overtravel is not required. Stainless steel plunger assures long life. Compact unit holds operating characteristics closely.

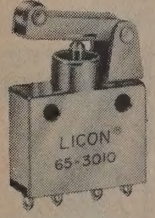
Pretravel .....050 max.
Overtravel .....012 min.
Operating Force .....1.5 ±.5 lb.
Release Force .....8 oz. min.
Movement Diff. .....020 ±.010

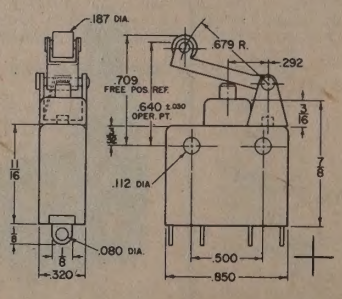


65-4012 OVERTRAVEL PLUNGER

One-piece bushing/housing. Use where large overtravel is required. Threaded bushing for one-hole mounting. Available with 2 holes for side mounting optional as 65-4010.

Pretravel .....070 max.
Overtravel .....187 min.
Operating Force .....2.25 lbs. max.
Release Force .....8 oz. min.
Full Overtravel Force .....5 lbs. max.
Movement Diff. .....020 ±.010





65-3010 ROLLER-LEVER

For fast or slow moving cams and slides. Permits exacting repeatability and additional overtravel. Phosphor bronze roller for long life. Available without roller as 65-101.

Pretravel .....120 max.
Overtravel .....0.25 min.
Operating Force .....16 oz. max.
Release Force .....5 oz. min.
Movement Diff. .....058 max.

SWITCH ORDERING INFORMATION

Use the following code for convenience and accuracy in ordering T 65 basic switches. The numbers following the dash indicate actu terminal style, circuitry and mounting hole dimensions.

COMPLETE PART CODE

Type 65— X X X

I. **Actuator**
II. **Terminal Style**
III. **Circuitry**
IV. **Mounting Hole Dimensions**

I. **Actuator**—1) Rigid Lever 2) Pin Plunger 3) Roller Lever 4) Overtravel Plu (⅜" bushing mounting)

II. **Terminal Style**—0) Solder terminal 1) Taper tab, quick disconnect 3) Spe all following digits serial 4) 1′ #18 MIL-W-5086 potted wire leads 5 #18 MIL-W-5086 potted wire leads 6) 6′ #18 MIL-W-5086 potted wire le

III. **Circuitry**—1) SPDT, two circuit 2) SPNC 3) SPNO 4) SPDT 5) DPDT

IV. **Mounting Hole Dimension**—0) ½" centers, .112 dia. (#4-40 screws) 1) ⅜ ters, .088 dia. (#2-56 screws), 2) No mounting holes (for 65-400 series or

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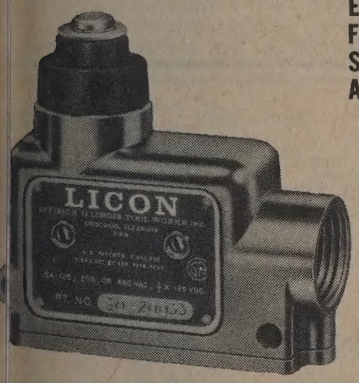
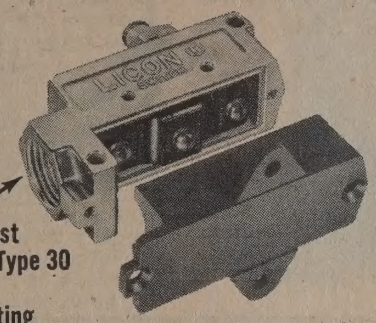
LICON®
DIVISION ILLINOIS TOOL WORKS INC.

metal enclosed industrial limit switches

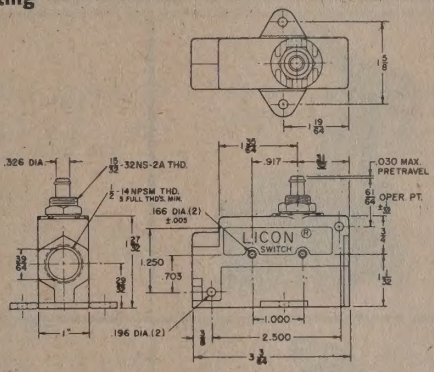
TYPE 30

LICON® Type 30 switches feature ...urate repeatability, long life and pre... electrical control for limit, safety ... interlock operations. Advanced de...ing provides durable switch protec..., multiple mounting and actuating ...bility that exceeds the average re...ements. The Type 30 is available ... Type 10, Type 11, and Type 22 ...ic Switches.





Split-Diecast Easy Wire Type 30 Flange or Side Mounting Available



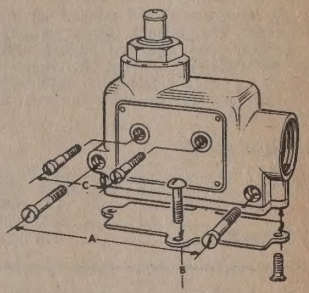
Switch is accessible for wiring or replacement by removing the bottom plate without disturbance to the actuator. Three* mounting methods are provided with each switch package. The single-pole, double-throw basic switch can be wired for normally-open or normally-closed operation.

Ref. Dim. A—Recommended side mounting, two No. 10 screws.

Ref. Dim. B—Flange mounting, two No. 8 screws (extra base plate provided with each package).

Ref. Dim. C—Alternate side mounting.* This method is for interchangeable mounting with other switches, but not recommended for best service. To mount, remove factory installed switch screws and replace with No. 6 through screws.

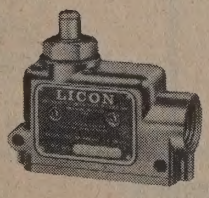
***Alternate mounting available with Type 10 basics only.**



...ISEALED SWITCHES FOR GENERAL PURPOSE APPLICATIONS

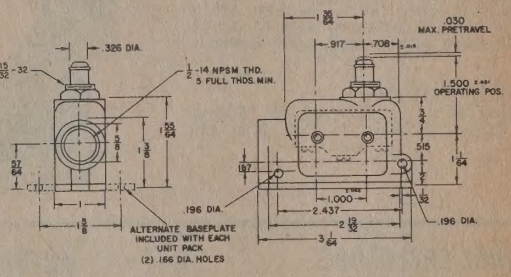
...100 OVERTRAVEL PLUNGER SWITCH

...eral purpose limit or push button switch for ...uit controls of heavy duty applications. The ...travel plunger provides added switch pro...ion and also permits greater flexibility of ...ication. Since these switches are not sealed, ... recommended they be used for applications ...re environment is not a troublesome factor.



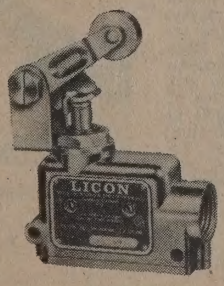
...s Basic Switch 10-322

...rating Force	10 oz. ±4 oz
...ease Force	3 oz. min.
...ravel	.030 max.
...rtravel	.219 min.
...ement Differential	.002 max.



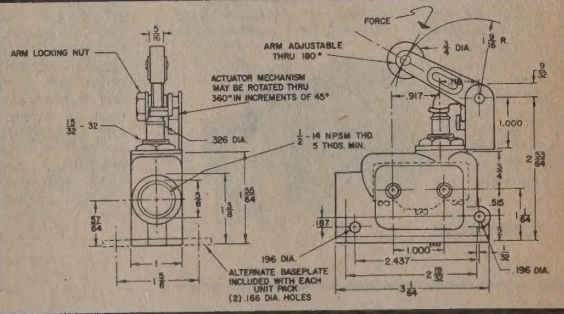
...300 ROLLER ARM SWITCH

...ntical to the dependable performance of the ...400 switch. These switches are not sealed, ...ever, and must be used in applications where ...ironment is not a factor. Excellent for both ...v and fast moving cams and slides. It is ...izontally adjusted, in the field, to accept ...ation from eight positions. It is vertically ... for desired actuating thru 225°.



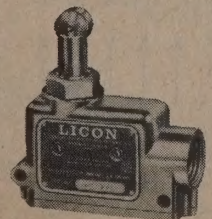
...s Basic Switch 10-322

...rating Force	10-18 oz.
...ease Force	6 oz. min.
...travel	.141 max.
...rtravel	.219 min.
...vement Differential	.006 max.



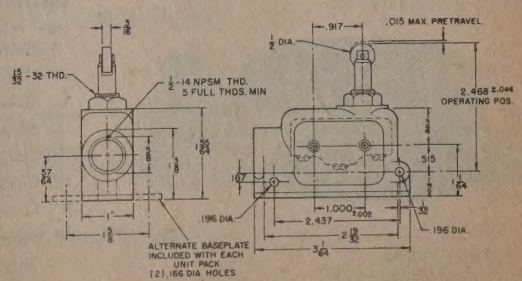
...-500 ROLLER PLUNGER SWITCH

...signed for horizontal actuation by cams and ...les. 360° horizontal actuator adjustment per...s direct and cross-roller switch actuation. ...gged construction, and outstanding features ...vide dependable service for heavy duty use. ... adjust actuator, loosen nut and rotate roller ...s to desired position. Tighten nut to secure ...uator in place. Available in sealed construc...n as 30-700.



...es Basic Switch 10-122

...erating Force	10 oz. ±4 oz.
...ease Force	4 oz. min.
...travel	.015 max.
...ertravel	.140 min.
...vement Differential	.002 max.



LICON®
DIVISION ILLINOIS TOOL WORKS INC.

metal enclosed industrial limit switches

TYPE

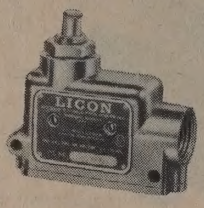
SEALED SWITCHES FOR TROUBLE-FREE ENVIRONMENT APPLICATIONS

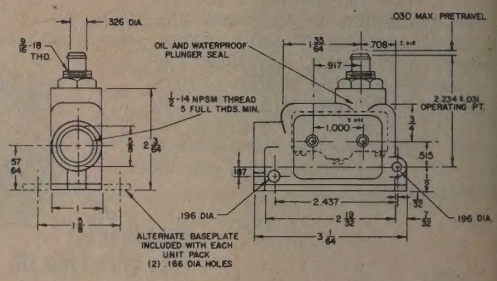
30-200 SEALED PLUNGER SWITCH

This sealed switch is excellent for applications using direct line motion actuation. In addition to standard mounting methods, the 30-200 switches can be panel mounted by the 5/16"-18 threaded actuator bushing. Overtravel plunger provides additional application flexibility.

Uses Basic Switch 10-122

Operating Force .....10 oz. ±4 oz.
Release Force .....3 oz. min.
Pretravel .....030 max.
Overtravel .....219 min.
Movement Differential .....002 max.



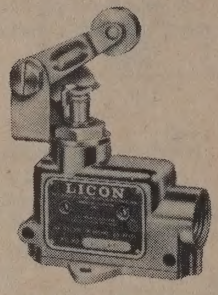


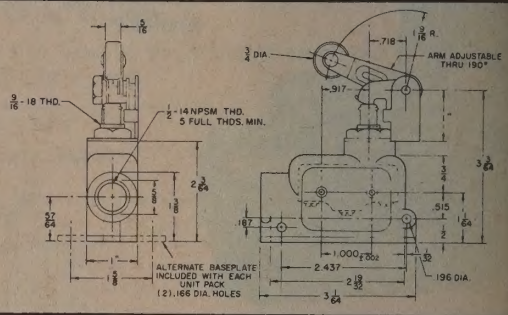
30-400 SEALED ROLLER ARM SWITCH

Sealed by the exclusive LICON method against normal industrial environment, these switches are ideal for both slow and fast moving cams and slides. The actuator is horizontally adjusted, in the field, to accept actuation from eight positions. It is vertically set for desired actuating positions thru 225°.

Uses Basic Switch 10-122.

Operating Force .....10-20 oz.
Release Force .....6 oz. min.
Pretravel .....172 max.
Overtravel .....219 min.
Movement Differential .....006 max.



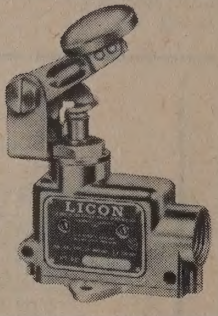


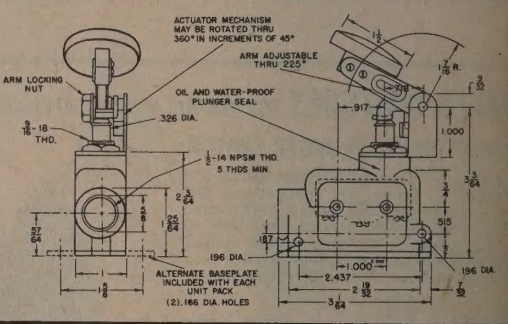
30-600 SEALED PALM BUTTON SWITCH

This switch is designed for efficiency and ease of manual operation. It is primarily used as a start, stop and safety switch. The large actuating button provides convenient electrical control and is adjustable both vertically and horizontally.

Uses Basic Switch 10-122

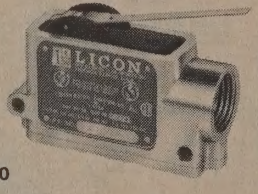
Operating Force .....10-20 oz.
Release Force .....6 oz. min.





TERMINAL ENCLOSURE

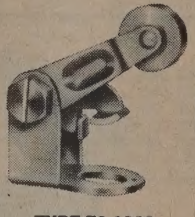
Die cast terminal enclosure to protect type 10 basic switches in hostile environments, provide a rigid mounting either by side mounting or alternate base mounting. The type 30-030 enclosure part number does not include the basic switch. Normally used with cam actuated type 10 basic switches. See "Type 10 — General Purpose Switch" catalog section for ordering information.



TYPE 30-030

ACTUATOR ACCESSORIES

Adjustable 73-1900 actuator permits on-the-job vertical positioning of roller arm through 225°. To adjust, loosen captive screw until internal spring releases lock mechanism. Move roller arm to proper position and tighten screw. Taper lock assures secure positioning of arm. Actuation force tends to tighten lock under operating conditions. Available as 73-1910 with palm button, and 73-1920 one-way roller actuator.

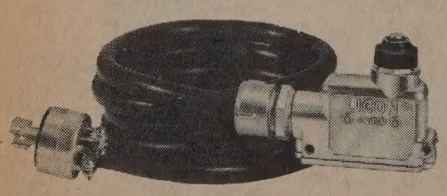


TYPE 73-1900

TYPE 73-1910

TYPE 73-1920

For easy installation—
Direct switch to outlet type 30.



P/W 30-730005
Available in other configurations—
consult factory.

ORDERING INFORMATION

Use this code to order special variations of the Type 30 switch.

Switch Type 30— X X X X X X

I. Actuator
II. Mounting
III. Switch Unit
IV. Circuit
V. Connector
VI. Housing

I. 1) Plunger 2) Sealed Plunger 3) Roller Lever 4) Seal Roller Lever 5) Roller Plunger 6) Palm Button Sealed Roller Plunger 8) Sealed One Way Roller A tuator 9) One Way Roller Actuator

II. 0) Packaged with cover in place, and base mounti plate included in box. 3) Special switch, all follo ing digits are serial.

III. 0) Type 10 Momentary 5) Type 11 Momentary 6) Type 22 Momentary

IV. 1) NC 2) NO 3) SPDT 4) SPDT—2 Circuit 8) DPDT—4 Circuit

V. 0) Standard ½-14" straight pipe tap 3) External boot seal

VI. 0) Standard 1) "Easy Wire" Housing (side mounting) 2) "Easy Wire" Housing (base mounting)

For standard switches, using Type 10, 11 or switch units, omit last three digits, e.g., 30-200. A such switches will be SPDT unless otherwise spec fied. DPDT is available only when Type 22 switch used as the basic switch.

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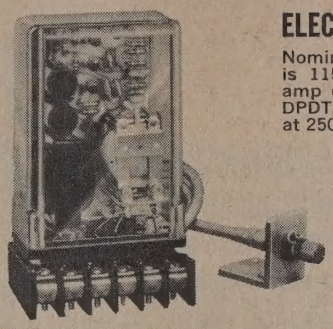
DIVISION ILLINOIS TOOL WORKS INC.

solid state proximity switch | TYPE 70-700

70-700 Series consists of two basic modules, a control dule and a remote potted sensor. The control module con- is a 10 amp relay, a transistor oscillator, switch, and power ply, housed in a plastic plug-in case which mates with a terminal heavy duty JIC style socket (supplied). A NEMA ss I metal enclosure is also available for housing both the trol module and heavy duty socket. During operation the nsistor oscillator sends a radio frequency signal (200Khz) he remote sensor, which consists of a potted coil in a ferrite e, and develops an RF field directly in front of the sensor. conducting material (ferrous or non-ferrous) brought into field at the face of the sensor changes the sensor impe- ce which reflects as a load change on the control module l triggers the output circuit (relay). This makes possible a hly precise remote control system sensitive to electrically ductive materials without any actual physical contact.



ELECTRICAL RATINGS

Nominal input power requirement is 115V, 60 cycles A.C. with 0.05 amp current draw. Output relay is DPDT, rated 10 amps per contact at 250 VAC.

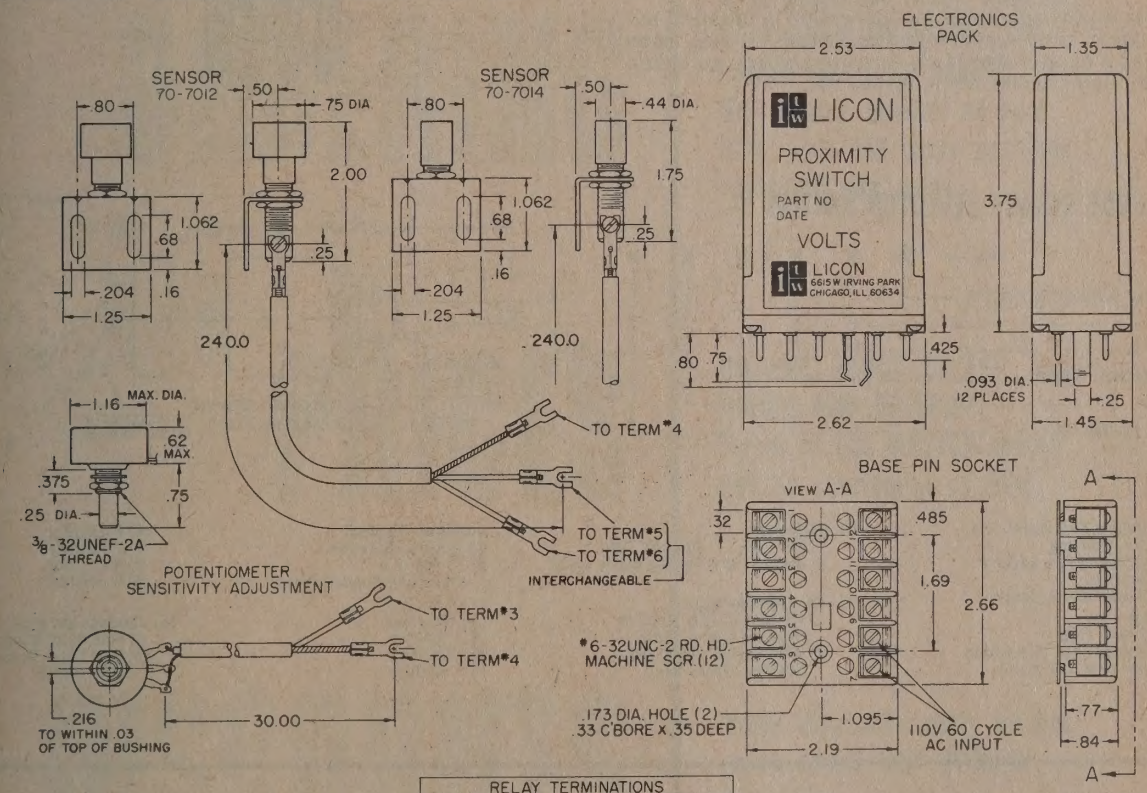
CIFICATIONS

uracy — The circuit will actuate, at a given sensor to conductor cing, within 0.0005".

nsing Range — For the .750" diameter sensor .110" min. — .261" x.; and for the .440" diameter sensor .048" min. — .148" max.

Speed — Up to 1000 operations per minute possible.

Ambient Temperature Ranges —30° to +250°F for the remote sensor, 0° to +150°F for the control module.



RELAY TERMINATIONS		
TERMINALS FOR SET A	CONTACT	TERMINALS FOR SET B
*12	NORMALLY OPEN	*10
*11	NORMALLY CLOSED	*9
*1	MOVING	*2

DERING GUIDE

MPLETE UNITS

ITEM	DESCRIPTION
70-7021	Complete Unit with .440" Sensor
70-7022	Complete Unit with .750" Sensor

MPONENTS

ITEM	DESCRIPTION
70-7010	Electronics Pack
70-7011	Base Pin Socket
70-7012	.750" Diameter Sensor
70-7014	.440" Diameter Sensor
70-7018	Potentiometer

SENSOR SET POINT RANGES*

ITEM		DESCRIPTION
70-7012	(.750 Dia.)	.110" Min. — .261" Max.
70-7014	(.440 Dia.)	.048" Min. — .148" Max.

*Set point ranges will depend upon the size and type of the metallic target. In general, larger targets of a given metallic type permit greater maximum sensing distances. Above data is based on a .235" dia. stainless steel target. Consult factory for specific data on other target sizes and types.

ENCLOSURE—NEMA Class I

ITEM
70-7025

LICON®
DIVISION ILLINOIS TOOL WORKS INC.

rotary selector switches | TYPE

LICON's Type 45 meets the latest standards for environment-free rotary switches. They are subminiature in size (½" diameter by 7/16" length) yet they offer a continuous 2 Amp, 30 VDC, 250 VAC rating, thus ideally suited for critical space/weight/function application limitations.

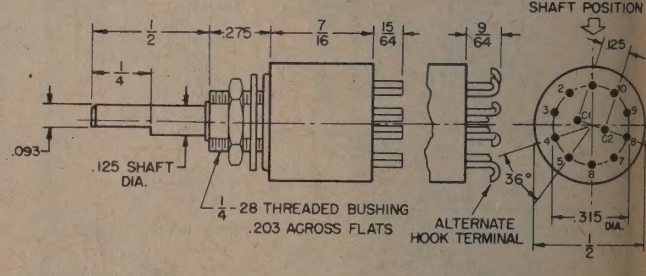
A double-ball spring balanced detent mechanism assures positive feel and positioning in the Type 45 Rotary. Standard models include single pole, ten position; and double pole, five position styles with 360 degree rotation or stops as required. Switch case and input shaft is made of stainless steel, and the Type 45's are explosion proof. A unique seal ring on the input shaft plus epoxy terminal potting enables the Type 45 to meet MIL-E-5272 Procedure I immersion requirements. In addition, 1/32" solid silver pin terminals allow Type 45 switches to be mounted directly on printed circuit boards.

The Type 45 is readily adaptable for application in missiles, aircraft, underwater communications equipment. It has been tested and has met rigid standards for temperature, humidity, corrosion, vibration, acceleration, and shock.

COMPLETE CODE ROTARY SELECTOR SWITCH

45 — X X X X X X

I. Switching Characteristics
II. Poles
III. Terminals
IV. Construction Type
V. Positions
VI. Contact Material



I. Switching Characteristics
1) Non-Shorting (Break before Make)
2) Shorting (Make before Break)

II. Poles
1) Single Pole
2) Double Pole (5 position per pole maximum)

III. Terminals
1) Pin Type 2) Hook Type
3) Special all following digits serial

IV. Construction Type
1) Without Sealed Shaft or Bushing (Panel Seal)
2) With Sealed Shaft and Bushing (Panel Seal)

V. Positions (Throws)
Continuous Rotation
0) 10 Position (Non-Continuous Rotation)
1) 10 Position
2) 2 Position
3) 3 Position
4) 4 Position
5) 5 Position
6) 6 Position
7) 7 Position
8) 8 Position
9) 9 Position

VI. Contact Material
0) Fine Solid Silver
1) Fine Solid Silver Gold Plated

Purchaser's exclusive remedy for any goods having defects in materials or workmanship and for any damages including consequential damages caused thereby will be a refund of the purchase price or replacement of such defective goods returned to the seller within thirty (30) days after receipt thereof by the purchaser. Either (i) purchaser's failure to allow seller a reasonable opportunity to inspect, test, or sample the goods prior to their return to seller, or (ii) purchaser's failure to give written notice of the defects to seller within ten (10) days after receipt of the goods, constitutes a waiver by purchaser of all claims in respect of goods furnished hereunder. There are no warranties express or implied which extend beyond the face hereof.

We assume no responsibility for applications of our products made without our specific knowledge and recommendation submitted in writing.

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INVENTORY

While most distributors maintain a large and varied stock, they do not represent that they stock all manufacturers' products shown in this MASTER catalog.

ORDERING

It is important, when ordering, to mention specifically the edition and page number, also the catalog number of each item. This will avoid possible confusion and delay.

PRICES

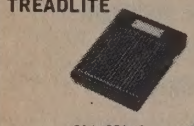
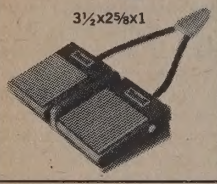
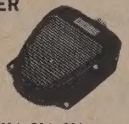
INQUIRE ABOUT LATEST PRICES AND DELIVERY. Prices in this MASTER should not be considered as final.

DISCOUNTS

Trade discounts apply in most cases where LIST PRICES are shown.

LINEMASTER

America's Footswitch Leader

TREADLITE  3½x2⅝x1 	T-51-S T-51-D T-52-S T-51-SC *T-51-SC3 **T-51-SC36 T-51-S TWIN	SINGLE STAGE MOMENTARY SINGLE STAGE MAINTAINED TWO STAGE MOMENTARY T-51-S COMPLETE WITH 6' CORD SET & SERIES PLUG TWO MOMENTARY SWITCHES ON ONE BASE	SPDT SPDT BOTH STAGES SPDT BOTH SPDT	7 AMP 125-250 VAC 1/6 H.P. 125 VAC	Lowest Cost Foot Switch Formed Steel Housing. Wt.—7 ozs. *Similar to T-51-SC Except Grounded 3 Conductor Cord and 3 Prong Series Plug. **With Grounded 3 Conductor Cord, No Plug.
COMPACT 2⅞x2¼x1⅛ 	491-S 491-D 492-S 494-S 491-SC *491-SC3 **491-SC36 491-S TWIN 3B-20A2-S	MOMENTARY MAINTAINED MOMENTARY MOMENTARY 491-S COMPLETE WITH 6' CORD SET & SERIES PLUG TWO MOMENTARY SWITCHES ON ONE BASE MOMENTARY FOOT OPERATED AIR VALVE	SPDT SPST SPDT DPDT BOTH SPDT	10A 125 VAC 10A 125 VAC 20A 125-250 VAC 10A 125 VAC 5A 250 VAC 3-WAY AIR VALVE	Completely Enclosed Interior Switch. Formed Steel Housing. Wt.—7 oz. *Similar to 491-SC Except Grounded 8 Ft. 3 Conductor Cord and 3 Prong Series Plug. **With 6 Ft. Grounded 3 Conductor Cord, No Plug. 20 CFM @ 100 PSI.
CLIPPER  4½x3½x1½ 	632-S 632-D 635-S 634-D 636-S 632-S TWIN 3C-20A2-S	MOMENTARY MAINTAINED MOMENTARY MAINTAINED TWO STAGE MOMENTARY TWO MOMENTARY SWITCHES ON ONE BASE MOMENTARY FOOT OPERATED AIR VALVE	SPDT SPDT DPDT DPDT BOTH STAGES SPDT BOTH SPDT	20A 125-250 VAC 20A 125-250 VAC 15A 125-250 VAC 10A 125 VAC 5A 250 VAC 15A 125-250 VAC 20A 125-250 VAC 3-WAY AIR VALVE	Cast Iron Housing. Also Available with Safety Guard or 7" Wide Treadle. Wt.—2¼ lbs. Twin Has Connecting Interwiring Tube So That Only One Cable Is Used. 20 CFM @ 100 PSI.
JUNIOR 5½x3¼x1¼	121-S 122-S	MOMENTARY MOMENTARY	SPDT SPDT	15A 125-250 VAC 20A 125-250 VAC	Cast Aluminum Housing. Low Tapered Treadle Permits Easy Operation. Wt.—1 lb.
CADET 3⅝x1⅛	HB-2 *HB-3	MOMENTARY	SPDT	7A 125 VAC 1/6 H.P. 125 VAC	Round Switch Operates From Any Position. Switch Comes Complete With Cord set. Wt.—11 ozs. *Similar To HB-2 Except Grounded 6 Ft. 3 Conductor Cord and 3 Prong, Series Plug.

MANY OTHER STANDARD MODELS ARE AVAILABLE—WRITE FOR CATALOG

"When awkward jobs hold you up—a LINEMASTER FOOT SWITCH is your third hand!"

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LINEMASTER SWITCH CORPORATION

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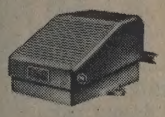
A Modern FOOTSWITCH for Every Use

PRECISION-BUILT • DEPENDABLE • RUGGED • ECONOMICAL • OVER 1000 APPLICATIONS

NAUTILUS 8x4x2¼	WP-541-S	MOMENTARY		SPDT	20A 125-250 VAC	Completely Waterproof. Can Be submerged.
	WP-541-D	MAINTAINED		SPDT	12A 125 VAC 6A 250 VAC	
SENIOR  7x4x3¼	MOMENTARY	MAINTAINED				Cast Iron Housing. Also Available With Complete Safety Guard. Wt.—5¼ lbs.
	4141-S	4141-D		DPST	20A 125-250 VAC&DC	
	4142-S	4142-D		DPDT	10A 125 VAC&DC 5A 250 VAC&DC	
	4143-S	4143-D		SPDT	15A 125 VAC&DC 10A 250 VAC&DC	
	4351-S	4351-D		TPST	15A 125-230 VAC 5A 575 VAC	
HERCULES 8⁷⁄₁₆x4⁵⁄₁₆x4½	531-SW*	571-DW*	SINGLE STAGE	SPDT	20 AMPS 125-480 VAC 1 H.P. 115-230 VAC	Cast Iron Housing. Wt.—7¼ lbs. Also Available With No Guard or Complete Hood. All Models Available in Explosion Proof Version. *Add Letter "N" For Model Without Guard; Add Letter "H", For Model With Full Side Shields.
	532-SW*	572-DW*	SINGLE STAGE	DPDT		
	533-SW*	573-DW*	SINGLE STAGE	TPDT		
	534-SW*	574-DW*	TWO STAGE	SPDT		
	535-SW*	575-DW*	THREE STAGE	SPDT		

POTENTIOMETER

8⁷⁄₁₆x4⁵⁄₁₆x4½

2 WATT	5 WATT	SPECIFY MAXIMUM RESISTANCE REQUIRED					
		2 WATT			5 WATT		
		Ohms		Megohms	Ohms		
500 thru 500-AH	505 thru 505-AH	50 thru 1500	2500 thru 75000	.1 thru 5.0	2 thru 40	50 thru 1000	1500 thru 25000

Standard Model
Wt. Approx. 7¼ lbs.
Details on request

LEKTRO-LOK 5x2½x1⅛	L-2-S	TWO MOMENTARY SWITCHES SIDE BY SIDE	BOTH SIDES SPDT	15A 125-250 VAC	Stamped Metal Housing. Wt.—10 oz.
	L-4-S		BOTH SIDES DPDT	10A 125 VAC 5A 250 VAC	
EXECUTIVE 4⅝x4x1⅛	B-2-S	TWO MOMENTARY SWITCHES SIDE BY SIDE	BOTH SIDES SPDT	15A 125-250 VAC	Stamped Metal Housing. Wt.—14 oz.
	B-4-S		BOTH SIDES DPDT	10A 125 VAC 5A 250 VAC	
DUPLEX 8½x3¼x2	475-S	MOMENTARY HEAVY SPRING	BOTH SIDES SPDT	15A 125-250 VAC	Cast Aluminum Housing. Wt.—1¾ lbs.
	476-S	MOMENTARY LIGHT SPRING			

Linemaster also manufactures many other types of foot controls with electronic impulse circuits, gear driven potentiometers, air valves, special cordsets, finishes, etc.

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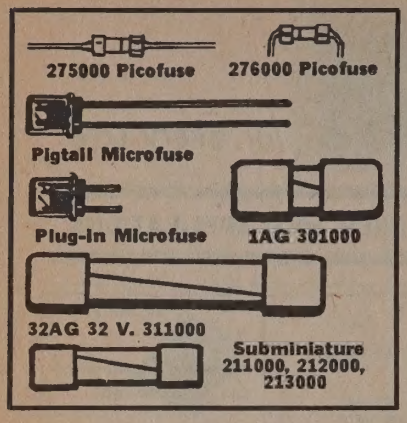
LINEMASTER SWITCH CORPORATION

Printed in U.S.A.

LITTELFUSE Quality Fuses



SUBMINIATURE FUSES

A must for servicing European electronic equipment. **Size:** 20 mm x 5 mm (.8″ x .2″).

FAST ACTING (250 V) TYPE F

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
212.100	1/10	$1.68	$28.00	$22.40
212.125	1/8	1.68	28.00	22.40
212.200	2/10	1.32	22.00	17.60
212.250	1/4	1.32	22.00	17.60
212.300	3/10	1.32	22.00	17.60
212.400	4/10	1.32	22.00	17.60
212.500	1/2	1.32	22.00	17.60
212.600	6/10	1.32	22.00	17.60
212.700	7/10	1.32	22.00	17.60
212.800	8/10	1.32	22.00	17.60
212001	1	1.05	17.50	14.00
2121.25	1–1/4	1.05	17.50	14.00
21201.6	1–6/10	1.05	17.50	14.00
212002	2	1.05	17.50	14.00
21202.5	2–1/2	1.05	17.50	14.00
212003	3	1.05	17.50	14.00
212004	4	1.05	17.50	14.00
212005	5	1.05	17.50	14.00
212006	6	1.05	17.50	14.00

MEDIUM ACTING (250 V) TYPE M

Net per 5 ..... $ 1.38
Net per 100: 100 . . . $23.00; 500 . . . 18.40

L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.
211.100	1/10	211.500	1/2	211002	2
211.200	2/10	211.600	6/10	211003	3
211.250	1/4	211.800	8/10	211005	5
211.300	3/10	211001	1		
211.400	4/10	21101.6	1–6/10		

SLO BLO FUSES (250 V) TYPE T

Net per 5 ..... $ 1.38
Net per 100: 100 . . . $23.00; 500 . . . 18.40

213.100	1/10	213.600	6/10	21302.5	2–1/2
213.125	1/8	213.700	7/10	213003	3
213.200	2/10	213.800	8/10	213004	4
213.250	1/4	213001	1	213005	5
213.300	3/10	2131.25	1–1/4	213006	6
213.400	4/10	21301.6	1–6/10		
213.500	1/2	213002	2		

SUBMINIATURE (125 V MAX.)

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
271.500	1/2	$1.32	$22.00	$17.60
27101.5	1–1/2	1.05	17.50	14.00

SUBMINIATURE PICOFUSES

For computer, micro-electronic and areospace circuits of 125 V or less where short-circuit currents as high as 300 amps occur. High accuracy in blowing time at 300% of rating and higher is ideal for sequential switching or in circuits requiring redundancy. Blow time 4 hours min. at 100% of rating; 5 secs. max. at 200%. Amperage printed on body; can be color-coded at additional cost. Ceramic body only 7/32″ lg. x 5/64″ dia.; tin-coated copper leads .025″ dia. Order **275** (prefix) for axial leads 1 9/16″ long for diode clip or in-circuit mounting; **276** for radial leads 1 3/8″ long for use in printed circuits or receptacles. *Avg., cold.

L.F. No.	Amp Rtg.	Res., Ohms*	Net per 5	Net per 100	
				100	500
275.125	1/8	2.0	$2.13	$35.50	$28.40
275.250	1/4	.71	2.13	35.50	28.40
275.375	3/8	.43	2.13	35.50	28.40
275.500	1/2	.26	2.13	35.50	28.40
275.750	3/4	.157	1.86	31.00	24.80
275001	1	.125	1.86	31.00	24.80
27501.5	1–1/2	.074	1.86	31.00	24.80
275002	2	.055	1.86	31.00	24.80
275003	3	.035	1.86	31.00	24.80
275004	4	.022	1.86	31.00	24.80
275005	5	.014	1.86	31.00	24.80

MICROFUSE SUBMINIATURE FUSES

For printed circuits and other minimum space uses. Ultra-fast blowing. Plug-in types use holder (listed on another page); pigtail types for soldering. Short circuit interrupting capacity 125 V, 10,000 amps DC. **Blow Specs:** 100%, 4-hour min.; 200%, 5-sec. max. **Size:** 1/4″ dia. x 1 1/32″ (fuse body). Plug-in, transparent cap type listed. Use prefix **272** for plug-in, metal cap; prefix **279** for pigtail, transparent cap; prefix **278** for pigtail, metal cap.

Plug-in L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
273.002	1/500	$5.13	$85.50	$68.40
273.005	1/200	5.13	85.50	68.40
273.010	1/100	5.13	85.50	68.40
273.015	1/64	5.13	85.50	68.40
273.031	1/32	5.13	85.50	68.40
273.050	1/20	4.29	71.50	57.20
273.062	1/16	4.29	71.50	57.20
273.100	1/10	4.29	71.50	57.20
273.125	1/8	4.29	71.50	57.20
273.200	2/10	4.29	71.50	57.20
273.250	1/4	4.29	71.50	57.20
273.300	3/10	4.29	71.50	57.20
273.400	4/10	4.29	71.50	57.20
273.500	1/2	4.29	71.50	57.20
273.600	6/10	4.29	71.50	57.20
273.700	7/10	4.29	71.50	57.20
273.750	3/4	4.29	71.50	57.20
273.800	8/10	4.29	71.50	57.20
273001	1	4.29	71.50	57.20
27301.5	1–1/2	4.29	71.50	57.20
273002	2	4.29	71.50	57.20
273003	3	4.29	71.50	57.20
273004	4	4.29	71.50	57.20
273005	5	4.29	71.50	57.20

HIGH RELIABILITY MICROFUSES

For zero defect programs. Hermetically sealed; gold-plated terminals for soldered or plug-in connections. Fuse rating identified on each fuse. Test data and traceability records are supplied and maintained. Proven performance in the Gemini "critical parts" manned space program. Voltage rating 125 V, blow time same as 273 series; time/current characteristics certified to 1% AQL per MIL-Std-105, Inspection Level II. Short circuit interrupting capacity at 125 V, 10,000 amps DC. **Size:** Fuse cap and body, .290″ lg., leads for 262 "plug-in" series .170″. Pigtail on 268 series 1.0″. Use prefix **268** for pigtail type (e.g., **268.002**).

Plug-In L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
262.002	1/500	$15.00	$250.00	$200.00
262.005	1/200	15.00	250.00	200.00
262.010	1/100	15.00	250.00	200.00
262.015	1/64	15.00	250.00	200.00
262.031	1/32	15.00	250.00	200.00
262.050	1/20	15.00	250.00	200.00
262.062	1/16	15.00	250.00	200.00
262.100	1/10	15.00	250.00	200.00
262.125	1/8	15.00	250.00	200.00
262.200	2/10	15.00	250.00	200.00
262.250	1/4	15.00	250.00	200.00
262.300	3/10	15.00	250.00	200.00

HIGH RELIABILITY PICOFUSES

For soldering into circuits or insertion into diode type clips and mtgs. Fuses rated at 125 V or less and will interrupt short circuit currents to 300 amps at 125 VDC Non-hygroscopic ceramic bodies. Withstands 5-lb. axial pull test. Blow time 4 hours min., 100% rating; 5 secs. max., 200% rating. Insulation resistance is 1 meg min. measured with 100 V supply. **Size:** Body 7/32″ lg., .078″ dia. Leads are .025″ dia., 1 9/16″ lg., gold-plated copper.

Net per 5 ..... $15.00
Net per 100: 100 . . $250.00; 500 . . $200.00

L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.
265.125	1/8	26501.5	1 1/2
265.250	1/4	265002	2
265.375	3/8	265003	3
265.500	1/2	265004	4
265.750	3/4	265005	5
265001.	1		

7AG FUSES (32 V OR LESS)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 20-sec. max. Lg. 7/8″, dia. 1/4″.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
303001	1	$0.39	$6.50	$5.20
30302.5	2–1/2	.39	6.50	5.20
303004	4	.39	6.50	5.20
303006	6	.28	4.70	3.76
303015	15	.28	4.70	3.76
303020	20	.28	4.70	3.76
303030	30	.28	4.70	3.76

1AG FUSES (32 V OR LESS)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 20-sec. max. Lg. 7/8″, dia. 1/4″.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
301001	1	$0.39	$6.50	$5.20
301002	2	.39	6.50	5.20
30102.5	2–1/2	.39	6.50	5.20
301003	3	.39	6.50	5.20
301005	5	.28	4.70	3.76
301006	6	.28	4.70	3.76
30107.5	7–1/2	.28	4.70	3.76
301010	10	.28	4.70	3.76
301015	15	.28	4.70	3.76
301020	20	.28	4.70	3.76
301025	25	.28	4.70	3.76
301030	30	.28	4.70	3.76

3AG FUSES (32 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 20-sec. max. Length 1 1/4″, dia. 1/4″.

311004	4	$0.39	$6.50	$5.20
311005	5	.28	4.70	3.76
311006	6	.28	4.70	3.76
31107.5	7–1/2	.28	4.70	3.76
311008	8	.28	4.70	3.76
311010	10	.28	4.70	3.76
311015	15	.28	4.70	3.76
311025	25	.28	4.70	3.76
311030	30	.28	4.70	3.76
311035	35	.39	6.50	5.20

3AG FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1 1/4″, dia. 1/4″. U/L Approved.

312.010	1/100	$2.25	$37.50	$30.00
312.031	1/32	1.98	33.00	26.40
312.062	1/16	.87	14.50	11.60
312.100	1/10	.87	14.50	11.60
312.125	1/8	.87	14.50	11.60
312.150	15/100	.87	14.50	11.60
312.175	.175	.87	14.50	11.60
312.187	3/16	.87	14.50	11.60
312.200	2/10	.87	14.50	11.60
312.250	1/4	.57	9.50	7.60
312.300	3/10	.57	9.50	7.60
312.375	3/8	.57	9.50	7.60
312.500	1/2	.57	9.50	7.60
312.600	6/10	.57	9.50	7.60
312.750	3/4	.57	9.50	7.60
312001	1	.39	6.50	5.20
3121.25	1–1/4	.39	6.50	5.20
31201.5	1–1/2	.39	6.50	5.20
31201.6	1–6/10	.39	6.50	5.20
312002	2	.39	6.50	5.20
31202.5	2–1/2	.39	6.50	5.20
312003	3	.39	6.50	5.20
312004	4	.48	8.00	6.40
312005	5	.48	8.00	6.40
312006	6	.48	8.00	6.40
312007	7	.48	8.00	6.40
312008	8	.69	11.50	9.20

3AG SLO BLO FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. Length 1 1/4″, dia. 1/4″. U/L Approved thru 5 amps.

313.010	1/100	$1.68	$28.00	$22.40
313.031	1/32	1.68	28.00	22.40
313.062	1/16	1.23	20.50	16.40
313.100	1/10	1.23	20.50	16.40
313.125	1/8	1.23	20.50	16.40
313.150	15/100	1.23	20.50	16.40
313.175	.175	1.23	20.50	16.40
313.187	3/16	1.23	20.50	16.40
313.200	2/10	1.23	20.50	16.40
313.250	1/4	1.23	20.50	16.40
313.300	3/10	1.23	20.50	16.40
313.375	3/8	1.23	20.50	16.40
313.400	4/10	1.23	20.50	16.40
313.500	1/2	1.23	20.50	16.40
313.600	6/10	1.23	20.50	16.40
313.700	7/10	1.23	20.50	16.40
313.750	3/4	1.23	20.50	16.40
313.800	8/10	1.23	20.50	16.40
313001	1	1.23	20.50	16.40
31301.2	1-2/10	1.14	19.00	15.20
3131.25	1–1/4	1.14	19.00	15.20
31301.5	1–1/2	1.14	19.00	15.20
31301.6	1-6/10	1.14	19.00	15.20
313002	2	1.14	19.00	15.20
31302.5	2–1/2	.90	15.00	12.00
31302.8	2-8/10	.90	15.00	12.00
313003	3	.90	15.00	12.00
31303.2	3-2/10	.90	15.00	12.00
313004	4	.90	15.00	12.00
313005	5	.90	15.00	12.00
3136.25	6–1/4	.90	15.00	12.00
313007	7	.90	15.00	12.00
313008	8	.90	15.00	12.00
313010	10	.90	15.00	12.00
313015	15	.90	15.00	12.00
313020	20	.90	15.00	12.00
313025	25	.90	15.00	12.00
313030	30	.90	15.00	12.00

Net

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LITTELFUSE Quality Fuses

3AG SLO BLO PIGTAIL FUSES (125 V)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 5-sec. min. Lg. 1¼", dia. ¼", 1½" pigtails. U/L App. thru 3.2 amps.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
315.010	1/100	$2.10	$35.00	$28.00
315.031	1/32	2.10	35.00	28.00
315.062	1/16	1.50	25.00	20.00
315.100	1/10	1.50	25.00	20.00
315.125	1/8	1.50	25.00	20.00
315.150	.15	1.50	25.00	20.00
315.175	.175	1.50	25.00	20.00
315.187	3/16	1.50	25.00	20.00
315.200	2/10	1.50	25.00	20.00
315.250	1/4	1.50	25.00	20.00
315.300	3/10	1.50	25.00	20.00
315.375	3/8	1.50	25.00	20.00
315.400	4/10	1.50	25.00	20.00
315.500	1/2	1.50	25.00	20.00
315.600	6/10	1.50	25.00	20.00
315.700	7/10	1.50	25.00	20.00
315.750	3/4	1.50	25.00	20.00
315.800	8/10	1.50	25.00	20.00
315001	1	1.50	25.00	20.00
31501.2	1-2/10	1.41	23.50	18.80
3151.25	1-1/4	1.41	23.50	18.80
31501.5	1-1/2	1.41	23.50	18.80
31501.6	1-6/10	1.41	23.50	18.80
315002	2	1.41	23.50	18.80
31502.5	2-1/2	1.23	20.50	16.40
31502.8	2-8/10	1.23	20.50	16.40
315003	3	1.23	20.50	16.40
31503.2	3-2/10	1.23	20.50	16.40
315004	4	1.23	20.50	16.40
315005	5	1.23	20.50	16.40

3AG PIGTAIL FUSES (250 V)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1¼", dia. ¼", 1½" pigtails.

318.010	1/100	$2.67	$44.50	$35.60
318.031	1/32	2.40	40.00	32.00
318.062	1/16	1.50	25.00	20.00
318.100	1/10	1.14	19.00	15.20
318.125	1/8	1.14	19.00	15.20
318.150	15/100	1.14	19.00	15.20
318.175	.175	1.14	19.00	15.20
318.187	3/16	1.14	19.00	15.20
318.200	2/10	1.14	19.00	15.20
318.250	1/4	.87	14.50	11.60
318.375	3/8	.87	14.50	11.60
318.500	1/2	.87	14.50	11.60
318.750	3/4	.87	14.50	11.60
318001	1	.69	11.50	9.20
3181.25	1-1/4	.69	11.50	9.20
31801.5	1-1/2	.69	11.50	9.20
31801.6	1-6/10	.69	11.50	9.20
318002	2	.69	11.50	9.20
31802.5	2-1/2	.69	11.50	9.20
318003	3	.69	11.50	9.20
318004	4	.72	12.00	9.60
318005	5	.72	12.00	9.60
318006	6	.72	12.00	9.60
318007	7	.72	12.00	9.60
318008	8	.87	14.50	11.60

3AG INDICATING FUSES (125 V)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max. Length 1¼", dia. ¼".

334.750	3/4	$2.34	$39.00	$31.20
334001	1	1.89	31.50	25.20
33401.5	1-1/2	1.89	31.50	25.20
334002	2	1.89	31.50	25.20
334003	3	1.89	31.50	25.20
334004	4	1.89	31.50	25.20
334005	5	1.89	31.50	25.20
334006	6*	2.52	42.00	33.60
334008	8*	2.52	42.00	33.60
334010	10*	2.52	42.00	33.60
334012	12*	2.52	42.00	33.60
334015	15*	2.52	42.00	33.60
334020	20*	2.52	42.00	33.60

*32 volt.

3AB TINY MIGHTY (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 30-sec. max. Length 1¼", dia. ¼". U/L Approved thru 15 amps.

314.125	1/8	$0.78	$13.00	$10.40
314.250	1/4	.78	13.00	10.40
314.375	3/8	.78	13.00	10.40
314.500	1/2	.78	13.00	10.40
314.750	3/4	.78	13.00	10.40
314001	1	.75	12.50	10.00
314002	2	.75	12.50	10.00
314003	3	.75	12.50	10.00
314004	4	.75	12.50	10.00
314005	5	.69	11.50	9.20
314006	6	.69	11.50	9.20
314007	7	.69	11.50	9.20
314008	8	.69	11.50	9.20
314010	10	.69	11.50	9.20
314012	12	.75	12.50	10.00
314015	15	.75	12.50	10.00
314020	20	.75	12.50	10.00
314025	25	.93	15.50	12.40
314030	30	.93	15.50	12.40

LIMITED CURRENT (250 V) TYPE C

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Prices for applicable **fuse holders** available upon request.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
332.031	1/32	$1.89	$31.50	$25.20
332.062	1/16	1.23	20.50	16.40
332.125	1/8	.90	15.00	12.00
332.187	3/16	.90	15.00	12.00
332.250	1/4	.72	12.00	9.60
332.300	3/10	.72	12.00	9.60
332.375	3/8	.72	12.00	9.60
332.400	4/10	.72	12.00	9.60
332.500	1/2	.72	12.00	9.60
332.700	7/10	.72	12.00	9.60
332.750	3/4	.72	12.00	9.60
332001	1	.45	7.50	6.00
3321.25	1-1/4	.45	7.50	6.00
33201.5	1-1/2	.45	7.50	6.00
3321.75	1-3/4	.45	7.50	6.00
332002	2	.45	7.50	6.00
33202.5	2-1/2	.45	7.50	6.00
332003	3	.45	7.50	6.00
33203.5	3-1/2	.51	8.50	6.80
332004	4	.51	8.50	6.80
332005	5	.51	8.50	6.80
332006	6	.51	8.50	6.80
332007	7*	.51	8.50	6.80
332008	8*	.78	13.00	10.40
332010	10*	.78	13.00	10.40

*125 volt.

LC SLO BLO (125 V) TYPE N

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. Prices for applicable **fuse holders** upon request.

333.010	1/100	$1.68	$28.00	$22.40
333.031	1/32	1.68	28.00	22.40
333.062	1/16	1.23	20.50	16.40
333.100	1/10	1.23	20.50	16.40
333.150	15/100	1.23	20.50	16.40
333.200	2/10	1.23	20.50	16.40
333.250	1/4	1.23	20.50	16.40
333.300	3/10	1.23	20.50	16.40
333.400	4/10	1.23	20.50	16.40
333.700	7/10	1.23	20.50	16.40
333.750	3/4	1.23	20.50	16.40
333.800	8/10	1.23	20.50	16.40
333001	1	1.23	20.50	16.40
3331.25	1-1/4	1.14	19.00	15.20
33301.6	1-6/10	1.14	19.00	15.20
3331.75	1-3/4	1.14	19.00	15.20
333002	2	1.14	19.00	15.20
33302.5	2-1/2	1.14	19.00	15.20
33302.8	2-8/10	1.14	19.00	15.20
333003	3	1.14	19.00	15.20
33303.2	3-2/10	1.14	19.00	15.20
33303.5	3-1/2	1.14	19.00	15.20
333004	4	1.14	19.00	15.20
333005	5	1.14	19.00	15.20
3336.25	6-1/4*	1.14	19.00	15.20
333007	7*	1.14	19.00	15.20

*32 volt.

SFE AUTO FUSES (32 V OR LESS)

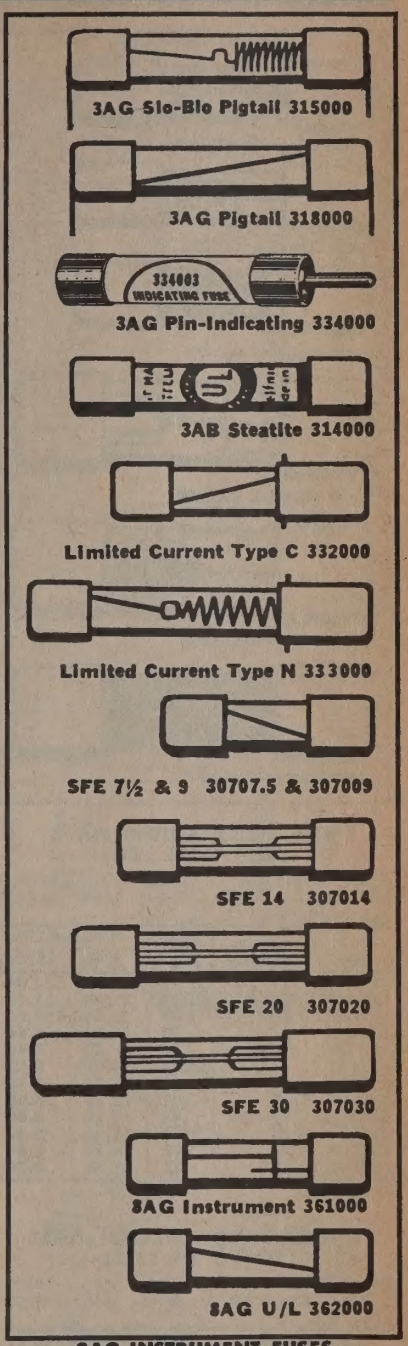
Blow Time: 110%,4-hour min.; 135%, 0-1 hour; 150%, 20 amps or less 0-15 sec., 30 amps or less 0-30 sec. Dia. ¼".

L.F. No.	Amp Rating	Lgth. In.	Net per 5	Net per 100	
				100	500
307004	4	5/8	$0.28	$4.70	$3.76
307006	6	3/4	.28	4.70	3.76
30707.5	7-1/2	7/8	.28	4.70	3.76
307009	9	7/8	.28	4.70	3.76
307014	14	1 1/16	.25	4.20	3.36
307020	20	1¼	.25	4.20	3.36
307030	30	1 7/16	.28	4.70	3.76

8AG FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1", dia. ¼". U/L Approved.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
362.125	1/8	$0.87	$14.50	$11.60
362.250	1/4	.57	9.50	7.60
362.375	3/8	.57	9.50	7.60
362.500	1/2	.57	9.50	7.60
362.750	3/4	.57	9.50	7.60
362001	1	.39	6.50	5.20
36201.5	1-1/2	.39	6.50	5.20
362002	2	.39	6.50	5.20
36202.5	2-1/2	.39	6.50	5.20
362003	3	.39	6.50	5.20
362005	5	.39	6.50	5.20
362006	6	.28	4.70	3.76
362008	8	.28	4.70	3.76
362010	10	.28	4.70	3.76
362012	12	.28	4.70	3.76
362015	15	.28	4.70	3.76
362020	20	.28	4.70	3.76
362025	25	.28	4.70	3.76
362030	30	.28	4.70	3.76



8AG INSTRUMENT FUSES

Blow Time: 100%, 4-hour min.; 200%, 5-sec. max. Length 1", dia. ¼".

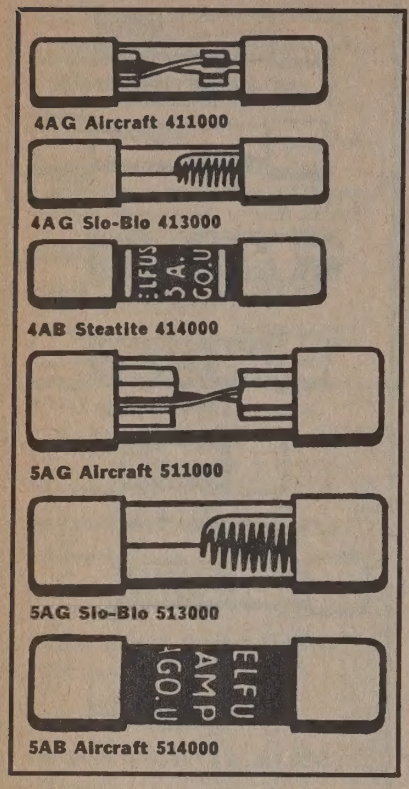
L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
361.002	1/500	$6.00	$100.00	$80.00
361.005	1/200	2.52	42.00	33.60
361.010	1/100	2.25	37.50	30.00
361.031	1/32	1.98	33.00	26.40
361.062	1/16	1.23	20.50	16.40
361.100	1/10	.87	14.50	11.60
361.125	1/8	.87	14.50	11.60
361.187	3/16	.87	14.50	11.60
361.200	2/10	.87	14.50	11.60
361.250	1/4	.57	9.50	7.60
361.375	3/8	.57	9.50	7.60
361.400	4/10	.57	9.50	7.60
361.500	1/2	.57	9.50	7.60
361.750	3/4	.57	9.50	7.60
361001	1	.39	6.50	5.20
36101.5	1-1/2	.39	6.50	5.20
361002	2	.39	6.50	5.20
361003	3	.39	6.50	5.20
361004	4	.39	6.50	5.20
361005	5	.39	6.50	5.20

9AG FUSES (32 V OR LESS)

Blow Time: 100%, 4-hour min.; 125%, 0-1 hour; 200%, 0-25 seconds. Lg. 1 1/16", dia. ¼".

306050	50	$0.57	$9.50	$7.60

LITTELFUSE Fuses, Fuse Puller



4AG QUICK-ACTING FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1¼", dia. 9/32".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
412.062	1/16	$1.80	$30.00	$24.00
412.125	1/8	1.32	22.00	17.60
412.150	15/100	1.32	22.00	17.60
412.250	1/4	.63	10.50	8.40
412.500	1/2	.63	10.50	8.40
412001	1	.60	10.00	8.00
41201.5	1–1/2	.60	10.00	8.00
412002	2	.60	10.00	8.00
41202.5	2–1/2	.60	10.00	8.00
412003	3	.60	10.00	8.00
412005	5	.51	8.50	6.80
412008	8*	.51	8.50	6.80

*125 volts.

4AG SLO BLO AIRCRAFT FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. Length 1¼", dia. 9/32".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
413.062	1/16	$1.60	$26.50	$21.20
413.100	1/10	1.60	26.50	21.20
413.125	1/8	1.60	26.50	21.20
413.150	15/100	1.60	26.50	21.20
413.200	2/10	1.60	26.50	21.20
413.250	1/4	1.60	26.50	21.20
413.300	3/10	1.60	26.50	21.20
413.400	4/10	1.60	26.50	21.20
413.500	1/2	1.60	26.50	21.20
413.600	6/10	1.60	26.50	21.20
413.750	3/4	1.60	26.50	21.20
413.800	8/10	1.60	26.50	21.20
413001	1	1.60	26.50	21.20
4131.25	1–1/4	1.60	26.50	21.20
41301.5	1–1/2	1.60	26.50	21.20
41301.6	1–6/10	1.60	26.50	21.20
413002	2	1.60	26.50	21.20
41302.5	2–1/2	1.23	20.50	16.40
413003	3	1.23	20.50	16.40
41303.2	3–2/10	1.23	20.50	16.40
413004	4	1.23	20.50	16.40
413005	5	1.23	20.50	16.40
4136.25	6–1/4	1.23	20.50	16.40
413008	8	1.23	20.50	16.40
413010	10	1.23	20.50	16.40
413015	15	1.23	20.50	16.40
413020	20	1.23	20.50	16.40
413025	25	1.23	20.50	16.40
413030	30	1.23	20.50	16.40

4AG AIRCRAFT FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1¼", dia. 9/32".

L.F. No.	Amp Rating	Net per 5	Net per 10	
			100	500
411010	10	$0.51	$ 8.50	$6.80
411015	15	.51	8.50	6.80
411020	20	.51	8.50	6.80
411025	25	.51	8.50	6.80
411030	30	.51	8.50	6.80
411035	35	.60	10.00	8.00
411040	40	.60	10.00	8.00

4AB FUSES (STEATITE)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 30-sec. max. Length 1¼", dia. 9/32".

414001	1	$1.23	$20.50	$16.40
414002	2	1.23	20.50	16.40
414003	3	1.23	20.50	16.40
414005	5	1.14	19.00	15.20
414006	6	1.14	19.00	15.20
414008	8	1.14	19.00	15.20
414010	10	1.14	19.00	15.20
414015	15	1.14	19.00	15.20
414020	20	1.14	19.00	15.20
414025	25	1.14	19.00	15.20
414030	30	1.14	19.00	15.20
414035	35	1.23	20.50	16.40
414040	40	1.23	20.50	16.40

5AG AIRCRAFT FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 20-sec. max. Length 1½", dia. 13/32".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
511010	10	$0.72	$12.00	$9.60
511015	15	.72	12.00	9.60
511020	20	.72	12.00	9.60
511025	25	.72	12.00	9.60
511030	30	.72	12.00	9.60
511035	35	.72	12.00	9.60
511040	40	.72	12.00	9.60
511050	50	.72	12.00	9.60
511060	60	.72	12.00	9.60

5AG QUICK-ACTING FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1½", dia. 13/32".

512001 -	1	$0.72	$12.00	$9.60
512002	2	.72	12.00	9.60
512003	3	.72	12.00	9.60
512004	4	.72	12.00	9.60
512005	5	.72	12.00	9.60
512008	8*	.72	12.00	9.60

*125 volts.

5AG SLO BLO FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. Length 1½", dia. 13/32".

513.500	1/2	$1.68	$33.00	$26.40
513001	1	1.68	33.00	26.40
513002	2	1.68	33.00	26.40
513003	3	1.59	26.50	21.20
513004	4	1.59	26.50	21.20
513005	5	1.59	26.50	21.20
513010	10	1.59	26.50	21.20
513015	15	1.59	26.50	21.20
513020	20	1.59	26.50	21.20
513025	25	1.77	29.50	23.60
513030	30	1.77	29.50	23.60

5AB AIRCRAFT FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 30-sec. max. Length 1½", dia. 13/32".

514001	1	$0.90	$15.00	$12.00
514002	2	.90	15.00	12.00
514003	3	.90	15.00	12.00
51403.5	3–1/2	.90	15.00	12.00
514005	5	.84	14.00	11.20
514006	6	.84	14.00	11.20
5146.25	6–1/4	.84	14.00	11.20
514007	7	.84	14.00	11.20
514008	8	.84	14.00	11.20
514010	10	.84	14.00	11.20
514015	15	.84	14.00	11.20
514020	20	.84	14.00	11.20
514025	25	.84	14.00	11.20
514030	30	.84	14.00	11.20

HIGH VOLTAGE FUSES

Designed for use in aircraft radio equipment, transmitting equipment, X-ray apparatus, high voltage rectifiers, etc., for circuits up to 20 kW DC or 30 kVA AC. Fuses are fiber enclosed with cadmium plated end caps. Two principles of arc suppression are employed: (1) Multi-break fuse wire which blows at each half inch of its length; (2) Ceramic baffles break the arc into several parts and quench it. **Blow Time:** 110%, 4-hour min.; 135%, 0–1 hour; 200% 0–2 minutes.

1000-VOLT (3" x 13/32")

L.F. No.	Amp Rating	Net Each	Net per 100	
			100	500
621.375	3/8	$0.34	$28.00	$22.40
621.500	1/2	.34	28.00	22.40
621.750	3/4	.34	28.00	22.40
621001	1	.34	28.00	22.40
62101.5	1–1/2	.34	28.00	22.40
621002	2	.34	28.00	22.40

2500-VOLT (4½" x 13/32")

L.F. No.	Amp Rating	Net Each	Net per 100	
			100	500
622.500	1/2	$0.47	$39.00	$31.20
622.750	3/4	.47	39.00	31.20
622001	1	.47	39.00	31.20
62201.5	1–1/2	.47	39.00	31.20
622002	2	.47	39.00	31.20

3000-VOLT (5½" x 13/32")

L.F. No.	Amp Rating	Net Each	Net per 100	
			100	500
623.500	1/2	$0.71	$59.50	$47.60
623.750	3/4	.71	59.50	47.60
623001	1	.71	59.50	47.60
62301.5	1–1/2	.71	59.50	47.60
623002	2	.71	59.50	47.60

1000-VOLT (3" x 13/16")

L.F. No.	Amp Rating	Net Each	Net per 100	
			100	500
701.062	1/16	$0.68	$57.00	$45.60
701.125	1/8	.68	57.00	45.60
701.250	1/4	.68	57.00	45.60
701.375	3/8	.68	57.00	45.60
701.500	1/2	.68	57.00	45.60
701.750	3/4	.68	57.00	45.60
701001	1	.68	57.00	45.60
70101.5	1–1/2	.68	57.00	45.60
701002	2	.68	57.00	45.60

5000-VOLT (5" x 13/16")

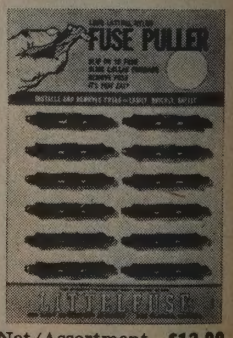
L.F. No.	Amp Rating	Net Each	Net per 100	
			100	500
702.062	1/16	$0.88	$73.00	$58.40
702.125	1/8	.88	73.00	58.40
702.250	1/4	.88	73.00	58.40
702.375	3/8	.88	73.00	58.40
702.500	1/2	.88	73.00	58.40
702.750	3/4	.88	73.00	58.40
702001	1	.88	73.00	58.40
70201.5	1–1/2	.88	73.00	58.40
702002	2	.88	73.00	58.40
70202.5	2–1/2	.88	73.00	58.40
702003	3	.88	73.00	58.40

10,000-VOLT (10" x 13/16")

L.F. No.	Amp Rating	Net Each	Net per 100	
			100	500
703.062	1/16	$1.11	$92.50	$74.00
703.125	1/8	1.11	92.50	74.00
703.250	1/4	1.11	92.50	74.00
703.175	3/8	1.11	92.50	74.00
703.500	1/2	1.11	92.50	74.00
703.750	3/4	1.11	92.50	74.00
703001	1	1.11	92.50	74.00
70301.5	1–1/2	1.11	92.50	74.00
703002	2	1.11	92.50	74.00
703003	3	1.11	92.50	74.00

FUSE PULLER ASSORTMENT

• Easy removal & Installation



Puller slips over glass body of fuse; metal slide collar holds fuse in locked position. Fuse may then be withdrawn or replaced with ease.

L.F. No. 094091—Net/Assortment. . **$12.00**

Net

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LITTELFUSE CIRCUIT BREAKERS, MOUNTINGS AND CLIPS

MOUNTINGS FOR RECTIFIERS

L.F. No.	Description	Net Each, Lots of 5	Net per 100	
			100	500
099062	Single pole, 3/16" base	$0.20	$17.00	$13.60
099063	Double pole, 3/16" base	.39	32.50	26.00
099065	Double pole, 1/16" base	.26	21.50	17.20
099065-3	1/16" Bakelite insulator	.02	2.00	1.60
099067	Single pole 1/16" base	.11	9.00	7.20
099067-3	1/16" Bakelite insulator	.01	1.00	.80

STANDARD FUSE CLIPS (PHOSPHOR BRONZE, NICKEL PLATED)

L.F. No.	Fuse Adaptation	Type	Net Each, Lots of 5	Net per 100	
				100	500
101001	SFE, 3AG, 8AG, 3AB	Ear	$0.03	$ 2.35	$ 1.88
101002	SFE, 3AG, 8AG, 3AB	Earless	.03	2.65	2.12
101003*	SFE, 3AG, 8AG, 3AB	Lug	.04	3.15	2.52
103001	4AG, 4AB	Ear	.05	3.90	3.12
104002	4AG, 4AB	Earless	.05	3.90	3.12
105001	5AG	Ear	.06	4.70	3.76
105002	5AG	Earless	.05	3.90	3.12
107001	9/16" dia.	Ear	.07	6.00	4.80
107002	9/16" dia.	Earless	.08	6.50	5.20
109001	13/16" dia.	Ear	.28	23.00	18.40
109002	13/16" dia.	Earless	.28	23.00	18.40

*Unplated, bright dip.

STANDARD FUSE CLIPS (BERYLLIUM COPPER, SILVER PLATED)

121001	SFE, 3AG, 8AG, 3AB	Ear	$0.06	$ 4.70	$ 3.76
121002	SFE, 3AG, 8AG, 3AB	Earless	.06	4.70	3.76
121004	SFE, 3AG, 8AG, 3AB	Lug	.16	13.00	10.40
123001	4AG, 4AB	Ear	.10	8.00	6.40
123002	4AG, 4AB	Earless	.10	8.00	6.40
125001	5AG, hi-volt	Ear	.14	11.50	9.20
125002	5AG, hi-volt	Earless	.14	11.50	9.20
127001	9/16" dia.	Ear	.35	29.00	23.20
127002	9/16" dia.	Earless	.35	29.00	23.20
129001	13/16" dia.	Ear	.81	67.50	54.00
129002	13/16" dia.	Earless	.81	67.50	54.00

3AG MOUNTINGS

L.F. No.	Description	Net Each, Lots of 5	Net per 100	
			100	500
351009	Hinged can cover, 2 pole	$1.63	$135.50	$108.40
351010	Spare, 1 pole	.19	16.00	12.80
352001	Through panel, 1 pole	.32	26.50	21.20
353001	Panel, 1 pole	.56	47.00	37.60

3AG MOUNTINGS WITH SCREW TERMINALS—TYPE T

L.F. No.	Description	Net Ea. Lots of 5	Net per 100	
			100	500
356001	1 pole	$0.38	$ 31.50	$ 25.20
356002	2 pole	.73	61.00	48.80
356003	3 pole	1.10	92.00	73.60
356004	4 pole	1.93	160.50	128.40
356005	5 pole	2.39	199.00	159.20
356006	6 pole	2.81	234.50	187.60
356007	7 pole	3.31	276.00	220.80
356008	8 pole	3.77	314.50	251.60
356009	9 pole	4.22	352.00	281.60
356010	10 pole	4.66	388.00	310.40
356011	11 pole	5.10	425.00	340.00
356012	12 pole	5.47	455.50	364.40

3AG MOUNTINGS WITH SOLDER TERMINALS—TYPE S

357001	1 pole	$0.19	$ 16.00	$ 12.80
357002	2 pole	.35	29.50	23.60
357003	3 pole	.55	45.50	36.40
357004	4 pole	.68	57.00	45.60
357005	5 pole	.85	70.50	56.40
357006	6 pole	.99	82.50	66.00
357007	7 pole	1.13	94.00	75.20
357008	8 pole	1.28	107.00	85.60
357009	9 pole	1.45	120.50	96.40
357010	10 pole	1.61	134.50	107.60
357011	11 pole	1.77	147.50	118.00
357012	12 pole	1.93	160.50	128.40

8AG MOUNTINGS

383001	1 pole*	$0.55	$45.50	$36.40
383002	1 pole†	.37	30.50	24.40

*Thru-panel. †Meter back.

8AG MOUNTINGS WITH SOLDER TERMINALS—TYPE S

L.F. No.	Description	Net Ea. Lots of 5	Net per 100	
			100	500
387001	1 pole	$0.19	$ 16.00	$ 12.80
387002	2 pole	.35	29.50	23.60
387003	3 pole	.55	45.50	36.40
387004	4 pole	.68	57.00	45.60
387005	5 pole	.85	70.50	56.40
387006	6 pole	.99	82.50	66.00
387007	7 pole	1.13	94.00	75.20
387008	8 pole	1.28	107.00	85.60
387009	9 pole	1.45	120.50	96.40
387010	10 pole	1.61	134.50	107.60
387011	11 pole	1.77	147.50	118.00
387012	12 pole	1.93	160.50	128.40

4AG FUSE MOUNTINGS WITH SCREW TERMINALS—TYPE T

L.F. No.	Description	Net Ea. Lots of 5	Net per 100	
			100	500
456001	1 pole	$0.50	$ 42.00	$ 33.60
456002	2 pole	.94	78.00	62.40
456003	3 pole	1.39	115.50	92.40
456004	4 pole	2.57	214.50	171.60
456005	5 pole	3.23	269.00	215.20
456006	6 pole	3.82	318.00	254.40
456007	7 pole	4.49	374.00	299.20
456008	8 pole	5.11	426.00	340.80
456009	9 pole	5.74	478.00	382.40
456010	10 pole	6.36	530.00	424.00
456011	11 pole	6.98	581.50	465.20
456012	12 pole	7.50	625.00	500.00

5AG MOUNTINGS WITH SCREW TERMINALS—TYPE T

556001	1 pole	$0.56	$ 47.00	$ 37.60
556002	2 pole	1.09	90.50	72.40
556003	3 pole	1.61	134.50	107.60
556004	4 pole	3.14	261.50	209.20
556005	5 pole	3.91	325.50	260.40
556006	6 pole	4.63	386.00	308.80
556007	7 pole	5.44	453.50	362.80
556008	8 pole	6.20	517.00	413.60
556009	9 pole	6.97	580.50	464.40
556010	10 pole	7.69	640.50	512.40
556011	11 pole	8.44	703.00	562.40
556012	12 pole	9.07	756.00	604.80

HIGH VOLTAGE FUSE HOLDERS

For 701000 Series Fuses.

L.F. No.	Size, In. L. x H.	Net Each	Net per 100	
			100	500
711001	2½ x 1⅝	$1.90	$158.00	$126.40
For 702000 Series Fuses.				
711002	6½ x 1⅝	$2.08	$173.50	$138.80
For 703000 Series Fuses.				
711003	12 x 3	$5.08	$423.50	$338.80
For 621000 Series Fuses.				
631001	4 x 1 9/64	$1.03	$ 86.00	$ 68.80
For 622000 Series Fuses.				
631002	5¼ x 1 9/64	$1.50	$125.00	$100.00
For 623000 Series Fuses.				
631003	6¼ x 1 9/64	$1.64	$136.50	$109.20

TV SNAP-ON FUSE HOLDERS

094025	10 holders*	$2.74	.....	.....
350130	Holders†	.19	$15.50	$12.40

*In plastic box of 10. †Bulk.

MANUAL RESET CIRCUIT BREAKERS

Exact replacement protector for TV circuits. Ideal for current overload protection for model railroads, toy transformers, hair dryers, small appliances, tools, wiring, etc. For 125 VAC operation. Size, 1¾" x 1 3/16" x ½".

L.F. No.*	Trip Rating Amps	Skin Pack Net Ea.*	Bulk Pkg. Box of 5
815.650	.650	$0.84	$3.90
815.800	.800	.84	3.90
815001	1	.84	3.90
8151.25	1.25	.84	3.90
81501.5	1.5	.84	3.90
8151.75†	1.75	.84	3.90
815002†	2	.84	3.90
8152.25†	2.25	.84	3.90
81502.5†	2.5	.84	3.90
8152.75†	2.75	.84	3.90
815003†	3	.84	3.90
8153.25†	3.25	.84	3.90
815004†	4	.84	3.90
81504.5†	4.5	.84	3.90
815005	5	.84	3.90
815006	6	.84	3.90
815007†	7	.84	3.90

*Add **C** when ordering (i.e., 815002**C**).

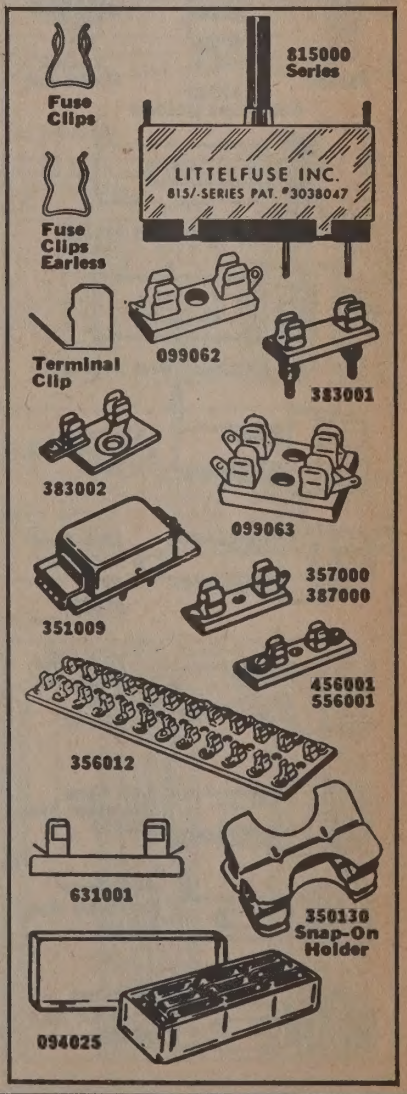
L.F. No. 094084 Bulk Assortment—Ten circuit breakers from the above listing as indicated by (†). Net Each **$7.80**

L.F. No. 094085 Card Assortment—Same, but card packaging. Net Each....**$8.40**

L.F. No. 094073 Card Assortment for Color TV—One each 8151.75, 8152.25, 8152.75, 815003, 815007; two 81504.5, three 8153.25. Net Each.....**$8.40**

L.F. No. 094074 Bulk Assortment for Color TV—Same, but bulk packaging. Net Each.....**$7.80**

L.F. No. 815(000) PA-Circuit Breaker Adapter Plate—Net Each **$0.18**; 100 Net: **$15.00** ($100 lots); **$12.00** ($500 lots).



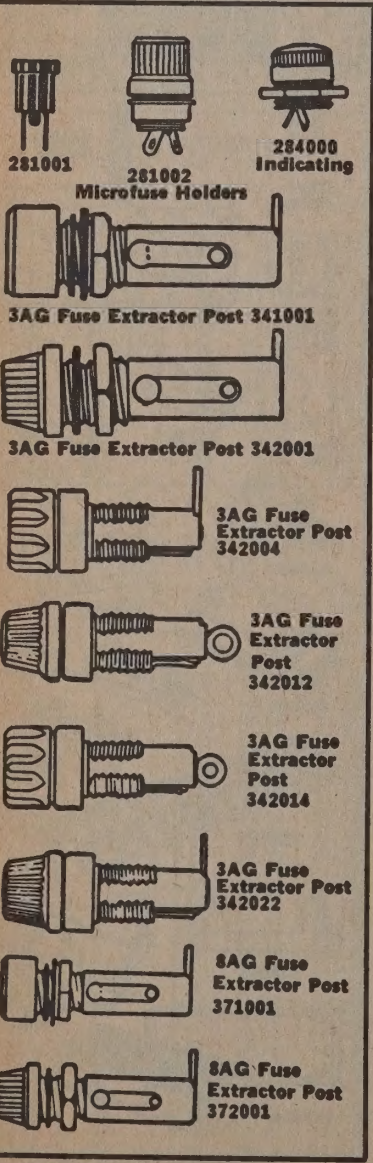
LITTELFUSE Fuses and Holders

FUSES AND ASSORTMENTS

ECON TIME-DELAY PLUG FUSES

Dual-element plug type fuses provide additional protection against blowing during motor starting cycle. U/L Approved. For 125-volt operation.

L.F. No.	Amp Rating	Net per Box of 4	Net per 100
TE3/10	3/10	$0.76	$17.00
TE4/10	4/10	.76	17.00
TE8/10	8/10	.76	17.00
TE1	1	.76	17.00
TE1-1/8	1-1/8	.76	17.00
TE1-1/4	1-1/4	.76	17.00
TE1-4/10	1-4/10	.76	17.00
TE1-6/10	1-6/10	.76	17.00
TE1-8/10	1-8/10	.76	17.00
TE2	2	.76	17.00
TE2-1/4	2-1/4	.76	17.00
TE2-1/2	2-1/2	.76	17.00
TE3-2/10	3-2/10	.76	17.00
TE3-1/2	3-1/2	.76	17.00
TE4	4	.76	17.00
TE4-1/2	4-1/2	.76	17.00
TE5	5	.76	17.00
TE5-6/10	5-6/10	.76	17.00
TE6-1/4	6-1/4	.76	17.00
TE7	7	.76	17.00
TE8	8	.76	17.00
TE9	9	.76	17.00
TE10	10	.76	17.00
TE12	12	.76	17.00
TE14	14	.76	17.00
TE15	15	.40	9.00
TE20	20	.40	9.00
TE25	25	.40	9.00
TE30	30	.40	9.00



CLEARSITE ONE-TIME PLUG HOUSE FUSES

Full visibility design for positive, clear indication of fuse condition. For 125 VAC or DC. U/L Approved. Use with standard Edison base fuse holders.

L.F. No.	Amp Rating	Net per Box of 5	Net per 100
CP10	10	$0.44	$7.80
CP15	15	.40	7.20
CP20	20	.40	7.20
CP25	25	.40	7.20
CP30	30	.40	7.20

UNIVERSAL AUTO FUSE ASSORTMENT

Emergency fuse kit with ten popular replacement fuses for any car.
Littelfuse No. 094092—Net per card of 20 ..... **$18.75**

FUSE CADDY

Standard fuse caddy for servicemen to carry in tube caddy. Fifteen compartments for 75 fuses; 3 spare compartments. See-thru plastic top for easy identification.
Littelfuse No. 094037—Net Ea. **$10.24**

LIMITED-CURRENT FUSE CADDY

Handy, all-inclusive limited-current fuse caddy complete with 75 fuses of 15 different types. 3 extra (spare) compartments.
Littelfuse No. 094041—Net Each. **$13.60**

FUSEMASTER DISPLAY

Fuse wall rack with 60 individual compartments for easy, instant self-service. Holds index card on back of rack. Ideal for servicemen, laboratories, etc.
Littelfuse No. 094047—Complete with 100 assorted fuses. Net Each..... **$16.57**
Littelfuse No. 094048—Empty rack. Net Each..... **$1.10**

FUSE HOLDERS, RETAINERS

MICROFUSE HOLDERS

For mounting of 273000 Series Microfuse. Type 281002 is front panel mounting; 281001 ideal for printed circuit board mtg.; 284000 Series front panel mtg. with indicator bulb.

L.F. No.	Voltage Range	Net Each	Net per 100	
			100	500
281001	.....	$0.29	$ 24.00	$ 19.20
281002	.....	.72	60.00	48.00
282001	.....	1.31	109.00	87.20
282002	.....	1.24	103.00	82.40
284004	2½-7	2.21	184.00	147.20
284005	7-16	2.21	184.00	147.20
284006	16-32	2.21	184.00	147.20
284003	100-125	1.55	129.00	103.20

MICROFUSE INDICATING HOLDERS—RF SHIELDED

284107	12-22 V	$7.82	$65.15	$52.12
284108	23-33 V	8.83	73.55	58.84
284109	34-45 V	8.83	73.55	58.84
284110	46-60 V	8.83	73.55	58.84
284111	61-80 V	8.83	73.55	58.84
284112	81-90 V	8.83	73.55	58.84
284113	90-125 V	6.07	50.55	40.44

3AG FUSE EXTRACTOR POSTS

L.F. No.	Type	Net Each	Net per 100	
			100	500
340255A	R/F shld'd (FHN26G2)	$4.77	$397.50	$318.00
340256A	R/F shld'd (FHN20G)	4.77	397.50	318.00
341001A	Screw	.57	47.50	38.00
342001A	Finger	.57	47.50	38.00
342004A	Miniature	.48	40.00	32.00
342005A	Miniature*	.57	47.50	38.00
342006	Watertight	2.36	196.50	157.20
342012A	Miniature	.41	34.50	27.60
342013A	Miniature*	.49	40.50	32.40
342014A	Miniature	.41	34.50	27.60
342015A	Miniature*	.49	40.50	32.40
342021A	FHN 26W	3.20	266.50	213.20
342022A	Miniature	.48	40.00	32.00
342023A	Miniature*	.57	47.50	38.00
342024A	FHN 26G2	1.32	110.00	88.00
342025A	FHN 20G	1.36	113.50	90.80

*Dust-proof.

8AG FUSE EXTRACTOR POSTS

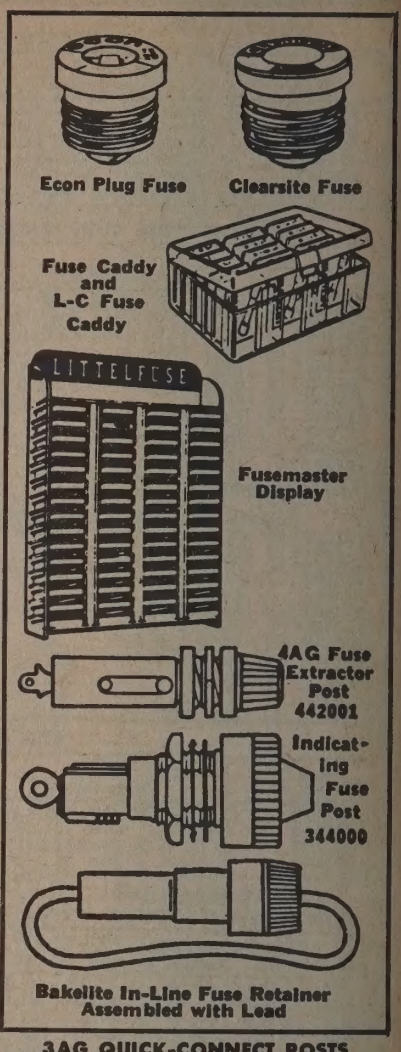
371001A	Screw	$0.57	$ 47.50	$ 38.00
372001A	Finger	.57	47.50	38.00
372003	FHN31G2	2.65	221.00	176.80

4AG FUSE EXTRACTOR POSTS

442001A	Finger	$1.82	$ 98.50	$ 78.80
442006	Watertight	2.36	196.50	157.20
442008A	Watertight	3.20	266.50	213.20

5AG FUSE EXTRACTOR POSTS

570001	Non-watertight	$1.18	$ 98.50	$ 78.00
571004	Watertight	1.29	107.50	86.00



3AG QUICK-CONNECT POSTS

L.F. No.	Description	Net Each	Net per 100	
			100	500
342028A	3/16" terminals	$0.49	$40.50	$32.40
342038A	3/16" terminals	.49	40.50	32.40
342048A	3/16" terminals	.49	40.50	32.40
342058A	3/16" terminals	.49	40.50	32.40

3AG INDICATING FUSE POSTS

L.F. No.	Voltage	Net Each	Net per 100	
			100	500
344006A	2½-7 V	$2.80	$233.00	$186.40
344012A	7-16 V	2.80	233.00	186.40
344024A	16-32 V	2.80	233.00	186.60
344125A	100-125 V	1.70	142.00	113.60
344250A	200-250 V	1.70	142.00	113.60

SERIES 346000 LIMITED CURRENT FUSE HOLDERS

For use with regular and Slo-Blo Type C and N limited current fuses. Specify amperage when ordering. **$14.00**
Net per 100..... **$14.00**
Net per 500..... **$56.00**

UNIVERSAL FUSE RETAINER

Comes with three different length springs for fuse sizes 7½ SFE thru 3AG. **41¢**
L.F. No. 150145—Net Each..... **41¢**
Net 100..**$34.50.** Lots 500, Net 100.**$27.60**

BAKELITE® IN-LINE FUSE RETAINERS ASSEMBLED WITH 19" LEAD

L.F. No.	Use with Fuses	Net Ea., Lots of 5	Net per 100	
			100	500
155004A	SFE 4, 1AG	$0.41	$34.50	$27.60
155006A	SFE 6	.41	34.50	27.60
155007.5A	SFE 7½	.41	34.50	27.60
155009A	SFE 9, 7AG	.41	34.50	27.60
155014A	SFE 14	.41	34.50	27.60
155020A	SFE 20, 3AG	.41	34.50	27.60

®Bakelite Corp.

Net

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LITTELFUSE

MILITARY FUSES AND FUSEHOLDERS

FUSES—TO MIL-15160 & MIL-F-23419; FUSEHOLDERS—TO MIL-F-19207

CARTRIDGE FUSES TO SPECIFICATION MIL-F-15160

Type Designation MIL-F-15160	Nearest Comm. Equiv.	Littelfuse No. Nickel Plated Caps	Littelfuse No. Silver Plated Caps	Net per 1000, Lots of 1-99	100-499	500-999
FO1A250V 1/200A		364.005	366.005	$504.00	$420.00	$336.00
FO1A250V 1/100A		364.010	366.010	450.00	375.00	300.00
FO1A250V 1/32A		364.031	366.031	396.00	330.00	264.00
FO1A250V 1/16A		364.062	366.062	246.00	205.00	164.00
FO1A250V 1/8A		364.125	366.125	174.00	145.00	116.00
FO1A250V 1/4A	361000 Series	364.250	366.250	114.00	95.00	76.00
FO1A250V 3/8A		364.375	366.375	114.00	95.00	76.00
FO1A250V 1/2A		364.500	366.500	114.00	95.00	76.00
FO1A125V 3/4A		364.750	366.750	114.00	95.00	76.00
FO1A125V 1A		364001	366001	78.00	65.00	52.00
FO1A125V 1-1/2A		36401.5	36601.5	78.00	65.00	52.00
FO1A125V 2A		364002	366002	78.00	65.00	52.00
FO2A250V 1/100A		392.010	397.010	450.00	375.00	300.00
FO2A250V 1/32A		392.031	397.031	396.00	330.00	264.00
FO2A250V 1/16A		392.062	397.062	174.00	145.00	116.00
FO2A250V 1/8A		392.125	397.125	174.00	145.00	116.00
FO2A250V 1/4A		392.250	397.250	114.00	95.00	76.00
FO2A250V 3/8A		392.375	397.375	114.00	95.00	76.00
FO2A250V 1/2A	312000 Series	392.500	397.500	114.00	95.00	76.00
FO2A250V 3/4A		392.750	397.750	114.00	95.00	76.00
FO2A250V 1A		392001	397001	78.00	65.00	52.00
FO2A250V 1-1/2A		39201.5	39701.5	78.00	65.00	52.00
FO2A250V 2A		392002	397002	78.00	65.00	52.00
FO2A250V 3A		392003	397003	78.00	65.00	52.00
FO2A250V 4A		392004	397004	96.00	80.00	64.00
FO2A250V 5A		392005	397005	96.00	80.00	64.00
FO2A250V 6A		392006	397006	96.00	80.00	64.00
FO2A32V 10A	311000 Series	392010	397010	56.40	47.00	37.60
FO2A32V 15A		392015	397015	56.40	47.00	37.60
FO2A32V 20A*		392020	397020	50.40	42.00	33.60
FO2B250V 1/100A		393.010	398.010	336.00	280.00	224.00
FO2B250V 1/32A		393.031	398.031	336.00	280.00	224.00
FO2B250V 1/16A		393.062	398.062	246.00	205.00	164.00
FO2B250V 1/8A	313000 Series	393.125	398.125	246.00	205.00	164.00
FO2B250V 1/4A		393.250	398.250	246.00	205.00	164.00
FO2B250V 3/8A		393.375	398.375	246.00	205.00	164.00
FO2B250V 1/2A		393.500	398.500	246.00	205.00	164.00
FO2B250V 3/4A		393.750	398.750	246.00	205.00	164.00
FO2B250V 1A		393001	398001	246.00	205.00	164.00
FO3A250V 1A		394001	399001	$150.00	$125.00	$100.00
FO3A250V 3A		394003	399003	150.00	125.00	100.00
FO3A250V 5A		394005	399005	138.00	115.00	92.00
FO3A250V 8A	314000 Series	394008	399008	138.00	115.00	92.00
FO3A250V 10A		394010	399010	138.00	115.00	92.00
FO3A250V 12A		394012	399012	150.00	125.00	100.00
FO3A250V 15A		394015	399015	150.00	125.00	100.00
FO3A125V 20A		394020	399020	150.00	125.00	100.00
FO3A125V 30A		394030	399030	186.00	155.00	124.00
FO3B250V 1/16A		390.062	395.062	372.00	310.00	248.00
FO3B250V 1/8A		390.125	395.125	372.00	310.00	248.00
FO3B250V 15/100A	323000 Slo-Blo Series Ceramic Body	390.150	395.150	372.00	310.00	248.00
FO3B250V 3/16A		390.187	395.187	372.00	310.00	248.00
FO3B250V 1/4A		390.250	395.250	372.00	310.00	248.00
FO3B250V 3/8A		390.375	395.375	372.00	310.00	248.00
FO3B250V 1/2A		390.500	395.500	372.00	310.00	248.00
FO3B250V 3/4A		390.750	395.750	372.00	310.00	248.00
FO3B250V 1A		390001	395001	372.00	310.00	248.00
FO6A250V 1A		494001	499001	246.00	205.00	164.00
FO6A250V 2A		494002	499002	246.00	205.00	164.00
FO6A250V 3A	414000 Series	494003	499003	246.00	205.00	164.00
FO6A250V 5A		494005	499005	228.00	190.00	152.00
FO6A250V 10A		494010	499010	228.00	190.00	152.00
FO6A250V 15A		494015	499015	228.00	190.00	152.00
FO7A250V 1A	512000 Series	590001	595001	144.00	120.00	96.00
FO7A250V 2A		590002	595002	144.00	120.00	96.00
FO7A250V 3A		590003	595003	144.00	120.00	96.00
F27A1000V 3/8A		628.375	626.375	336.00	280.00	224.00
F27A1000V 1/2A		628.500	626.500	336.00	280.00	224.00
F27A1000V 3/4A	621000 Series	628.750	626.750	336.00	280.00	224.00
F27A1000V 1A		628001	626001	336.00	280.00	224.00
F27A1000V 1½A		62801.5	62601.5	336.00	280.00	224.00
F27A1000V 2A		628002	626002	336.00	280.00	224.00
F28A2500V 1/2A		629.500	627.500	468.00	390.00	312.00
F28A2500V 3/4A	622000 Series	629.750	627.750	468.00	390.00	312.00
F28A2500V 1A		629001	627001	468.00	390.00	312.00
F28A2500V 1½A		62901.5	62701.5	468.00	390.00	312.00
F28A2500V 2A		629002	627002	468.00	390.00	312.00

*307000 Series. **NOTE:** Add **$9.00** stamping charge, each rating any quantity, and **$6.00** silver plating charge per 1000 pieces. Minimum silver plating charge **$6.00** per amperage. Suffix **S** to Type Designation (e.g., FO2A250V 3/4A**S**) indicates that silver plated fuse caps are required.

MICROFUSES TO MILITARY SPECIFICATION MIL-F-23419

Type Designation MIL-F-23419	V Rating	Nearest Comm. Equiv.	Littelfuse Catalog No.	Net per 1000, Lots of 1-99	100-499	500-999
FM02 1/500A	125 V		274.002	$1500.00	$1250.00	$1000.00
FM02 1/200A	125 V		274.005	1500.00	1250.00	1000.00
FM02 1/100A	125 V		274.010	1500.00	1250.00	1000.00
FM02 1/64A	125 V		274.015	1500.00	1250.00	1000.00
FM02 1/32A	125 V		274.031	1500.00	1250.00	1000.00
FM02 1/16A	125 V	273000 Series	274.062	1290.00	1080.00	860.00
FM02 1/10A	125 V		274.100	1290.00	1080.00	860.00
FM02 1/8A	125 V		274.125	1290.00	1080.00	860.00
FM02 2/10A	125 V		274.200	1290.00	1080.00	860.00
FM02 1/4A	125 V		274.250	1290.00	1080.00	860.00
FM02 3/10A	125 V		274.300	1290.00	1080.00	860.00
FM02 4/10A	125 V		274.400	$1290.00	$1080.00	$860.00
FM02 1/2A	125 V		274.500	1290.00	1080.00	860.00
FM02 6/10A	125 V		274.600	1290.00	1080.00	860.00
FM02 3/4A	125 V		274.750	1290.00	1080.00	860.00
FM02 1A	125 V		274001	1290.00	1080.00	860.00
FM02 1½A	125 V	273000 Series	27401.5	1290.00	1080.00	860.00
FM02 2A	125 V		274002	1290.00	1080.00	860.00
FM02 3A	125 V		274003	1290.00	1080.00	860.00
FM02 4A	125 V		274004	1290.00	1080.00	860.00
FM02 5A	125 V		274005	1290.00	1080.00	860.00

PICOFUSES TO MILITARY SPECIFICATION MIL-F-23419

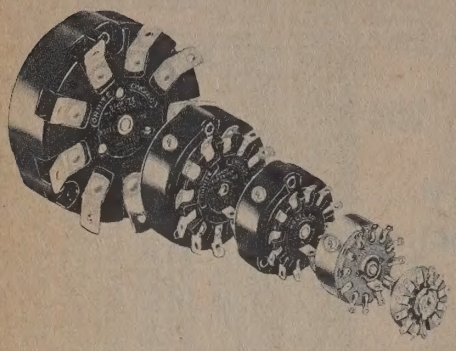
FM04 1/8A	125 V		277.125	$618.00	$515.00	$412.00
FM04 1/4A	125 V		277.250	618.00	515.00	412.00
FM04 3/8A	125 V	275000 Series	277.375	618.00	515.00	412.00
FM04 1/2A	125 V		277.500	618.00	515.00	412.00
FM04 3/4A	125 V		277.750	540.00	450.00	360.00
FM04 1A	125 V		277001	540.00	450.00	360.00
FM04 1½A	125 V		27701.5	$540.00	$450.00	$360.00
FM04 2A	125 V		277002	540.00	450.00	360.00
FM04 3A	125 V	275000 Series	277003	540.00	450.00	360.00
FM04 4A	125 V		277004	540.00	450.00	360.00
FM04 5A	125 V		277005	540.00	450.00	360.00

FUSEHOLDERS TO MILITARY SPECIFICATION MIL-F-19207

Type Designation MIL-F-19207	Description	Littelfuse Catalog No.	Nearest Comm. Equiv.	Net per 1000, Lots of 1-99	100-499	500-999
FHL 17G2	90–250V Indicating	349250	344125	$2214.00	$1845.00	$1476.00
FHL 18G2-1	12– 22V Indicating	349012	344024	3324.00	2770.00	2216.00
FHL 18G2-2	23– 33V Indicating	349023	344024	3324.00	2770.00	2216.00
FHL 18G2-3	34– 45V Indicating	349034	.....	3324.00	2770.00	2216.00
FHL 18G2-4	46– 60V Indicating	349046	.....	3324.00	2770.00	2216.00
FHL 18G2-5	61– 80V Indicating	349061	.....	3324.00	2770.00	2216.00
FHL 18G2-6	81– 90V Indicating	349081	.....	3324.00	2770.00	2216.00
FHL 18G2-7	2.5–4 V Indicating	349002	.....	3324.00	2770.00	2216.00
FHL 18G2-8	5–7 V Indicating	349005	.....	3324.00	2770.00	2216.00
FHL 18G2-9	8–12 V Indicating	349008	.....	3324.00	2770.00	2216.00
FHL 44G-1	Microfuse-Ind. 12– 22 V	284007	284006	3210.00	2675.00	2140.00
FHL 44G-2	Microfuse-Ind. 23– 33 V	284008	284006	3642.00	3035.00	2428.00
FHL 44G-3	Microfuse-Ind. 34– 45 V	284009	.....	3642.00	3035.00	2428.00
FHL 44G-4	Microfuse-Ind. 46– 60 V	284010	.....	3660.00	3050.00	2440.00
FHL 44G-5	Microfuse-Ind. 61– 80 V	284011	.....	3660.00	3050.00	2440.00
FHL 44G-6	Microfuse-Ind. 81– 90 V	284012	.....	3660.00	3050.00	2440.00
FHL 45G	Microfuse-Ind. 90–125 V	284013	284003	2502.00	2085.00	1668.00
FHN 20G	3AG Miniature	342025	342004	1362.00	1135.00	908.00
FHN 26G2	3AG Miniature	342024	342012	1320.00	1100.00	880.00
FHN 31G2	8AG Extractor	372003	372001	2652.00	2210.00	1768.00
FHN 19W	4AG Waterproof	442008	442006	3198.00	2665.00	2132.00
FHN 26W	3AG Waterproof	342021	342006	3198.00	2665.00	2132.00

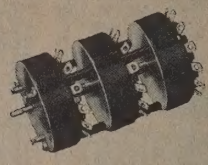
Suffix **W** to Type Designation indicates watertight; suffix **G**, drip-proof.

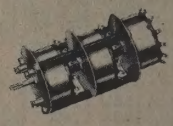
OHMITE power tap switches, high current, non-shorting type



Introducing

MODEL 711
Smallest Switch for Its Rating





Ohmite single pole, rotary, multi-position switches have proven their durability over many years in demanding applications. Such applications are found in switchboards, arc welders, spot welders, battery chargers, motor controls, tapped transformers, X-ray equipment, diathermy equipment, radio transmitters, electrical machine tools and many other products. Six sizes, including the new, miniature Model 711, provide a choice of ratings from 7 amperes at 125 volts to 100 amperes at 300 volts AC. A choice of the number of taps is provided up to the maximums indicated. All switches are enclosed except for the Models 711 and 111. All switches feature the slow-break, quick-make action deemed so desirable for switching of AC current.

The five sizes offering ratings from 15 amperes to 100 amperes (Models 111, 212, 312, 412 and 608) feature all ceramic, arc-proof bodies and solid silver alloy, fixed and movable contacts. The large, thick,, silver-alloy fixed contact disks are permanently welded to copper studs. These, in turn, are riveted and soldered to sturdy terminal lugs, assuring a permanent mechanical and electrical joint. The rotor (moving) contact, also of solid silver-alloy, is riveted and soldered to the contact arm. Face of the rotor contact is slightly rounded assuring a perfect seating of the contacts with a slight rubbing, self-cleaning motion on every operation.

The new Model 711 tap switch was designed to achieve high c capability with small size. It is actually smaller than many low c instrument switches. It interrupts 7 amperes at 125 VAC and can ca amperes AC or DC. The Model 711 features a melamine phenolic bod solid silver alloy fixed and movable contacts. Dual-purpose terminals connection by soldering or by means of 3/16" quick-connectors. This s is stocked as a single, unenclosed unit, but is available made-to-or enclosed tandem assemblies up to 10 units or as a single enclosed

The following Ohmite Tap Switches are listed by the Underw Laboratories, Inc., Reexamination Service for use where the acceptabil combination (with other apparatus) has been determined by them: M 111, 212, 312 and 412. Variations from the basic switch design, iden by suffixes A, B, C, or X are also Underwriters' approved. Whe switches are not factory installed, screw terminals are specified b Underwriters' Laboratories for Model 312 and soldering lugs for Model Further information on terminal fittings is available on request. Wh Underwriters' approved unit is required, specify this on the order.

MODEL 711 TAP SWITCH

Alternating Current Rating **7 Amps. 125 Volts** — Diameter 1⅛" — Shaft Diameter ¼" — Standard Mounting: For ⅛" panel maximum, by means of ⅜"-32 threaded bushing and hex. nut. See mounting illustration "A." Weight, single unit: .047 lb. approximately. Dual-purpose terminals accept 3/16" quick-connectors as well as soldering. Non-turn lug can be positioned at "12, 3, 6, and 9 o'clock."

Depth Behind Panel		Single Unit
		13/16"
No. of Taps	Total Rotation	Catalog No.[1]
3	60°	711-3
4	90°	711-4
5	120°	**711-5**
6	150°	711-6
7	180°	711-7
8	210°	711-8
9	240°	711-9
10	270°	711-10
11	300°	711-11
Recommended Knobs— See p. 20 for description		Catalog No. 5103

MODEL 111 TAP SWITCH

Alternating Current Rating **15 Amps. 125 Volts** — Diameter 1¾" — Shaft Dia ¼" — Standard Mounting: For ¼" panel maximum, by means of ⅜"-32 th bushing and hex. nut. See mounting illustration "A." For Tandem Mountin illustration "B." Weight, single unit: .16 lb. approximately.

Depth Behind Panel		Single Unit	2 in Tandem
		1⅛"	2¾"
No. of Taps	Total Rotation	Catalog No.[1]	Catalog No.[1]
3	60°	**111-3**	**111-3 -T2**
4	90°	**111-4**	**111-4 -T2**
5	120°	**111-5**	**111-5 -T2**
6	150°	**111-6**	111-6 -T2
7	180°	**111-7**	111-7 -T2
8	210°	**111-8**	**111-8 -T2**
9	240°	**111-9**	111-9 -T2
10	270°	**111-10**	111-10-T2
11	300°	**111-11**	**111-11-T2**
Recommended Knobs— See p. 20 for description		Catalog No. 5150 or 5116	Catalog No. 5109 or 5110

MODEL 212 TAP SWITCH

Alternating Current Rating **20 Amps. 150 Volts** — Diameter 2¼" — Shaft Diameter ¼" — Standard Mounting: For ¼" panel maximum, by means of ⅜"-32 threaded bushing and hex. nut — See mounting illustration "C." Tandem Mounting for ¼" panel maximum, three No. 10-32 flat-head machine screws ⅜" long — See mounting illustration "D." Weight, single unit: .4 lb. approximately.

Depth Behind Panel		Single Unit	2 in Tandem	3 in Tandem
		1¾"	4 3/16"	6 3/16"
No. of Taps	Total Rotation	Catalog No.[1]	Catalog No.[1]	Catalog No.[1]
3	60°	**212-3**	**212- 3-T2**	212- 3-T3
4	90°	**212-4**	212- 4-T2	212- 4-T3
5	120°	**212-5**	212- 5-T2	212- 5-T3
6	150°	**212-6**	**212- 6-T2**	212- 6-T3
7	180°	**212-7**	212- 7-T2	212- 7-T3
8	210°	**212-8**	212- 8-T2	212- 8-T3
9	240°	212-9	212- 9-T2	212- 9-T3
10	270°	**212-10**	212-10-T2	212-10-T3
11	300°	**212-11**	212-11-T2	212-11-T3
12	330°	**212-12**	**212-12-T2**	212-12-T3
Recommended Knobs-See p. 20 for description		Catalog No. 5150 or 5116	Catalog No. 5111 or 5112	Catalog No. 5111 or 5112

MODEL 312 TAP SWITCH

Alternating Current Rating **30 Amps. 300 Volts** — 150V A.C. between ta Diameter 3 3/16" — Shaft Diameter ¼" — Standard Mounting: For ¼" panel mum, three No. 10-32 flat-head machine screws ⅜" long — See mtg. illus. Weight, single unit: .75 lb. approx.

Depth Behind Panel		Single Unit	2 in Tandem	3 in Tandem
		2¼"	4⅝"	7"
No. of Taps	Total Rotation	Catalog No.[1]	Catalog No.[1]	Catalog No.[1]
3	60°	**312-3**	312- 3-T2	312- 3-T3
4	90°	**312-4**	312- 4-T2	312- 4-T3
5	120°	312-5	312- 5-T2	312- 5-T3
6	150°	**312-6**	312- 6-T2	312- 6-T3
7	180°	**312-7**	312- 7-T2	312- 7-T3
8	210°	**312-8**	312- 8-T2	**312- 8-T3**
9	240°	312-9	312- 9-T2	312- 9-T3
10	270°	**312-10**	312-10-T2	312-10-T3
11	300°	**312-11**	312-11-T2	**312-11-T3**
12	330°	**312-12**	312-12-T2	312-12-T3
Recommended Knobs-See p. 20 for description		Catalog No. 5109 or 5110	Catalog No. 5111 or 5112	Catalog No. 5111 or 5112

[1] **ITEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.**

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HMITE power tap switches, high current, non-shorting type

L 412 TAP SWITCH

ating Current Rating **50 Amps. 300 Volts** — 150V. A.C. between taps — ter 4⅜" — Shaft Diameter ¼" — Standard Mounting: For ¼" panel maxi- three No. 10-32 flat-head machine screws ⅜" long — See mtg. illus. "E." , single unit: 1.4 lbs. approx.

Depth Behind Panel		Single Unit	2 in Tandem	3 in Tandem
		2 7/16"	5 1/32"	7 5/8"
No. of Taps	Total Rotation	Catalog No.[1]	Catalog No.[1]	Catalog No.[1]
3	60°	412-3	412- 3-T2	412- 3-T3
4	90°	412-4	412- 4-T2	412- 4-T3
5	120°	412-5	412- 5-T2	412- 5-T3
6	150°	**412-6**	412- 6-T2	412- 6-T3
7	180°	412-7	412- 7-T2	**412- 7-T3**
8	210°	**412-8**	412- 8-T2	412- 8-T3
9	240°	412-9	412- 9-T2	412- 9-T3
10	270°	**412-10**	**412-10-T2**	**412-10-T3**
11	300°	412-11	412-11-T2	412-11-T3
12	330°	**412-12**	**412-12-T2**	412-12-T3
Recommended Knobs see p 20		Catalog No. 5111 or 5112	Catalog No. 5111 or 5112	Catalog No. 5111 or 5112

out Knob.

L 608 TAP SWITCH

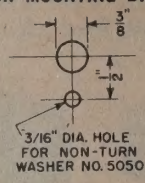
ating Current Rating **100 Amps. 300 Volts** — Diameter 6" — Shaft Diameter - Standard Mounting: For 1" panel maximum, three flat-head machine screws) x 1¼" — See mounting illustration "F." Weight, single unit: 5 lbs. approx.

Depth Behind Panel		Single Unit	2 in Tandem	3 in Tandem
		3 3/16"	6 13/16"	10 5/16"
No. of Taps	Total Rotation	Catalog No.[1]	Catalog No.[1]	Catalog No.[1]
3	80°	608-3	608- 3-T2	608- 3-T3
4	120°	608-4	608- 4-T2	608- 4-T3
5	160°	**608-5**	608- 5-T2	**608- 5-T3**
6	200°	**608-6**	**608- 6-T2**	608- 6-T3
7	240°	**608-7**	608- 7-T2	**608- 7-T3**
8	280°	**608-8**	**608- 8-T2**	**608- 8-T3**
Recommended Knobs see p 20		Catalog No. 5104 or 5105	Catalog No. 5104 or 5115 or 5105	Catalog No. 5115

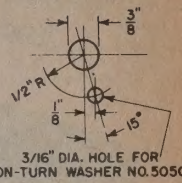
* Without Knob.

TAP SWITCH MOUNTING DIMENSIONS

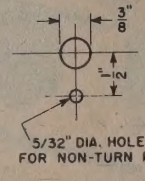
A — MODEL 711 & 111 (SINGLE UNIT)



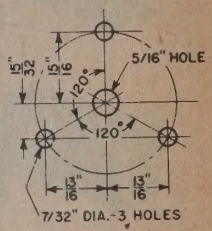
B — MODEL 111 (TANDEM)



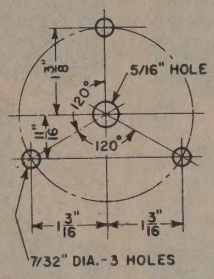
C — MODEL 212 (SINGLE UNIT)



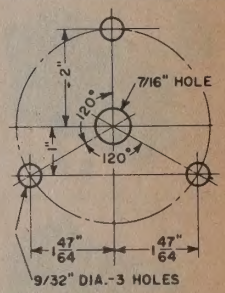
D — MODEL 212 (TANDEM) MODEL 312 (ALL UNITS)



E — MODEL 412 (ALL UNITS)



F — MODEL 608 (ALL UNITS)



S APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS

CERAMIC OPEN TYPE TAP SWITCHES

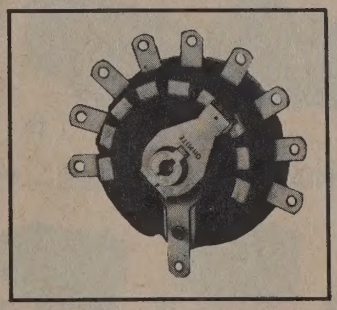
ned to transfer currents of several amperes in circuits requiring high ge insulation. Ceramic body construction is the same as employed in ls J and K rheostats (see page 19). Monel metal taps; silver-graphite .

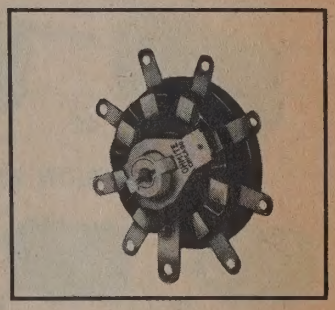
HORTING TYPE SWITCH: Moving contact bridges closely spaced taps leting a new circuit before breaking the previous one. Switch arm is ndexed and can be left in any position.

ON-SHORTING SWITCH: Positively indexed, moving contact completely nnects from one tap before contacting succeeding tap.

witches up to 8 taps are approximately 3¼" diameter including lugs; 12 tap switches are approximately 4¼" diameter. Switches can be ed assembled 2 or 3 in tandem. Single hole mounting by means of iameter bushing and hexagon nut accommodates panels up to ¼" (maximum). The "non-turn" lug requires a 3/16" panel hole ½" below center of the shaft. Shaft diameter is ¼". Recommended knob, No. 5150, see page 20.

laximum current capacity is 7 amperes but only 3 amperes at 120 . should be interrupted. Current ratings are less for all direct current its above 20 volts, for inductive circuits and high voltages.

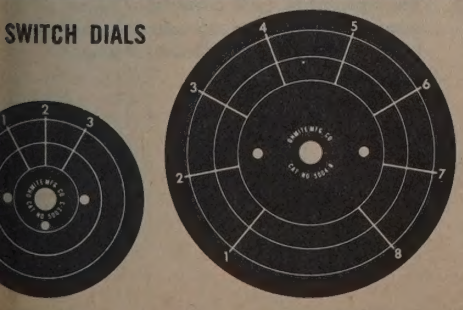




SHORTING TYPE†		NON-SHORTING TYPE†	
No. of Contacts	Catalog No.	No. of Contacts	Catalog No.
4	T-504-S	3	T-503
5	T-505-S	4	T-504
6	T-506-S	5	T-505
7	T-507-S	6	T-506
8	T-508-S	7	T-507
9	T-1009-S	8	T-508
10	T-10010-S	9	T-1009
11	T-10011-S	10	T-10010
12	T-10012-S	11	T-10011
		12	T-10012

† Avg. Wt. T-500 Series .28 lb.; T-100 Series .68 lb.

SWITCH DIALS



Dials for Ohmite tap switches are made of aluminum, etched and enameled black. Dial markings are bright aluminum. The number of dial calibrations or position markings agree with the actual number of positions on the switch. Note, in the table, that dials for switches Models 212 and 312 are available in two diameters to suit the recommended knob.

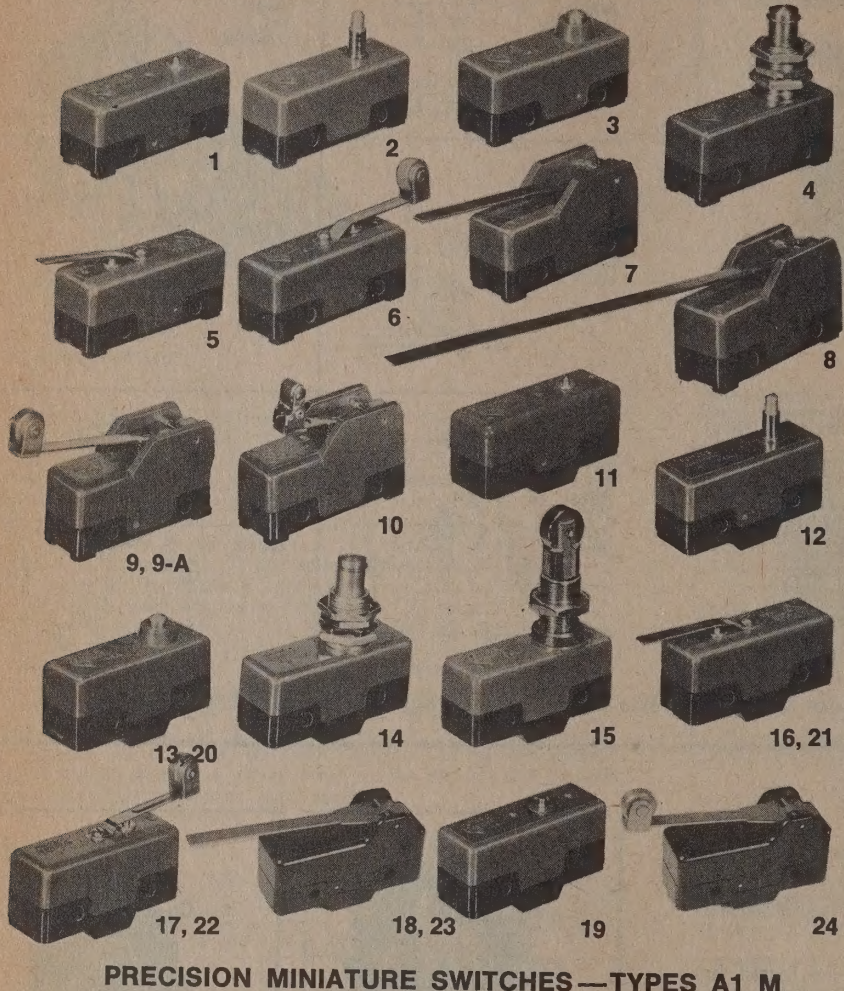
Catalog No.	For Model	For Knob	Dial Dia.
5002-*	111 212 (Single) 312 (Single)	5109 5116 5150	2¾"
5003-*	212 (Tandem) 312 (Tandem) 412	5111 5152A	3¾"
5004-*	608	5104 5115	5½"

* Specify no. of positions as a suffix.

POTTER & BRUMFIELD PRECISION SWITCHES

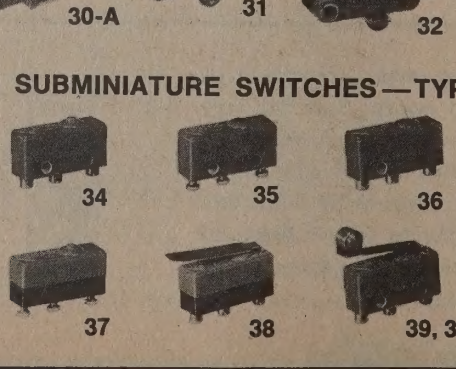
PRECISION GENERAL PURPOSE SWITCHES—TYPES A1 G

Illustration Fig. Nos.—See back page for Drawing Fig. Nos.



PRECISION MINIATURE SWITCHES—TYPES A1 M

PRECISION SUBMINIATURE SWITCHES—TYPES A1 S



SPECIFICATIONS

PRECISION GENERAL PURPOSE SWITCHES—TYPES A1 G

Meet Underwriters' Laboratories and Canad Standards Association Requirements

For Types A1 G1—Contact arrangement: SPI Ratings: 15 amps, 125, 250, or 480 volts AC; amp 125 volts DC; ¼ amp 250 volts DC; ⅛ 125 volts AC; ¼ HP 250 volts AC.

For Types A1 G2—Contact arrangement: SPI Ratings: 20 amps, 125, 250, or 480 volts AC; 1 125 volts AC; 2 HP 250 volts AC; 10 amps 125 v when controlling tungsten filament lamp loads AC circuits.

PRECISION MINIATURE SWITCHES TYPES A1 M

For Types A1 M1—Contact arrangements: SPD Ratings: 30 volts DC; inductive: 10 amps at level, 6 amps at 50,000 feet; resistive: 10 am motor load: 6 amps.

Meet Underwriters' Laboratories requirements 15 amps, 125, or 250 volts AC; ⅓ HP 125/250 vo AC; ½ amp 125 volts DC; ¼ amp 250 volts DC.

For Types A1 M2 (low operating force)—Cont arrangements: SPDT. Rating: 30 volts DC; ind tive: 5 amps at sea level, 5 amps at 50,000 fe resistive: 5 amps; motor load: 5 amps.

Meet Underwriters' Laboratories requirements 10 amps, 125 or 250 volts AC; ½ amp 125 volts D ¼ amp 250 volts DC; ⅓ HP 125 volts AC.

For Type A1 M4 (low differential)—Contact arrang ment: SPDT. Ratings: 30 volts DC; inductive: amp at sea level, 1 amp at 50,000 feet; resistiv 2 amps; motor load: 1 amp.

Meet Underwriters' Laboratories requirements 10 amps, 125 or 250 volts AC.

For Type A1 M5 (gold contacts)—Contact arrang ment: SPDT. Rating: 28 volts DC; inductive: amp; resistive: 1 amp; inrush: 2 amps.

PRECISION SUBMINIATURE SWITCHES TYPES A1 S

For Types A1 S1—Contact arrangement: SPD Rating:

Meet Underwriters' Laboratories requirements f 5 amps, 125 or 250 volts AC. The 30 volt DC ratin is as follows: inductive: 3 amps at sea level an 2.5 amps at 50,000 feet; resistive: 5 amps at se level and 50,000 feet; maximum inrush: 24 amp

For Types A1 S5 (gold contacts)—Contact arrang ment: SPDT. Rating: 28 volts DC; inductive: amp; resistive: 1 amp; inrush: 2 amps.

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POTTER & BRUMFIELD PRECISION SWITCHES

PRECISION GENERAL PURPOSE SWITCHES—TYPES A1 G1

POTTER & BRUMFIELD TYPE	MICRO SWITCH EQUIVALENT	PRE-TRAVEL IN. MAX.	OVER-TRAVEL IN. MIN.	MOVEMENT DIFFERENTIAL INCHES	OPER. FORCE OZS.	RELEASE FORCE OZS. MIN.	Fig. No. Pages 2 & 4	SUGG. RESALE PRICE
1 G1 111-1	BZ-2R	.016	.005	.0004-.002	9-13	4	1	$1.67
1 G1 112-1	BZ-2RS	.016	.062	.0004-.002	9-13	4	2	2.15
1 G1 113-1	BZ-2RD	.016	.062	.0004-.002	9-13	4	3	2.20
1 G1 114-1	BZ-2RQ1	.015	.219	.0004-.002	9-13	4	4	3.75
1 G1 115-1	BZ-2RL	.156	.062	.050	5 Max.	0.5	5	1.90
1 G1 116-1	BZ-2RL2	.141	.062	.050	5 Max.	0.5	6	2.50
1 G1 117-1	BZ-2RW80	.359	.219	.007 -.050	2 1/2 Max.	0.5	7	2.15
1 G1 117-1-3	BZ-2RW863	.907	.578	.018 -.140	1 Max.	—	8	2.40
1 G1 177-1	BZ-2RW84	.203	.219	.007 -.050	1 Max.	.125	7	2.15
1 G1 119-1	BZ-2RW822	.109	.094	.003 -.020	6 Max.	1.5	9	2.75
1 G1 117-1-2	BZ-2RW825	.141	.109	.015	8 Max.	1.5	10	3.25
1 G1 118-1	BZ-2RW82	.249	.156	.004 -.040	3 1/2 Max.	.75	9-A	2.75
1 G1 111-8	BZ-2R-A2	.016	.005	.0004-.002	9-13	4	11	1.80
1 G1 112-8	BZ-2RS-A2	.016	.062	.0004-.002	9-13	4	12	2.30
1 G1 113-8	BZ-2RD-A2	.016	.062	.0004-.002	9-13	4	13	2.25
1 G1 114-8	BZ-2RQ1-A2	.015	.219	.0004-.002	9-13	4	14	3.85
1 G1 114-8-1	BZ-2RQ18-A2	.015	.140	.0004-.002	9-13	4	15	6.65
1 G1 115-8	BZ-2RL-A2	.156	.062	.050	5 Max.	0.5	16	2.10
1 G1 116-8	BZ-2RL2-A2	.141	.062	.050	5 Max.	0.5	17	2.65
1 G1 117-8	BZ-2RW80-A2	.359	.219	.007 -.050	2 1/2 Max.	0.5	18	2.20
1 G1 119-8	BZ-2RW822-A2	.109	.094	.003 -.020	6 Max.	1.5	9	2.80

PRECISION GENERAL PURPOSE SWITCHES—TYPES A1 G2

1 G2 111-8	BA-2R-A2	.050	.010	.002 -.0075	14-22	10	19	$1.80
1 G2 113-8	BA-2RB-A2	.050	.093	.002 -.0075	14-22	10	20	2.25
1 G2 114-1	BA-2RQ1	.050	.219	.002 -.0075	14-22	10	4	4.10
1 G2 114-8	BA-2RQ1-A2	.050	.219	.002 -.0075	14-22	10	14	3.85
1 G2 115-1	BA-2RL	.344	.062	.065	9 Max.	1	5	2.25
1 G2 115-8	BA-2RL-A2	.344	.062	.065	9 Max.	1	21	2.10
1 G2 116-8	BA-2RL2-A2	.344	.062	.065	9 Max.	1	22	2.65
1 G2 117-8	BA-2RV-A2	.625	.078	.109	2 1/2 Max.	0.5	23	2.30
1 G2 118-1	BA-2RV2	.469	.062	.085	2 1/2 Max.	0.5	24	3.10
1 G2 118-8	BA-2RV2-A2	.469	.062	.085	2 1/2 Max.	0.5	24	2.90

PRECISION MINIATURE SWITCHES—TYPES A1 M

1 M1 111-B	V3-1	.047	.031	.006 -.016	6-14	4	25	$1.10
1 M1 111-1	V3-19	.047	.031	.006 -.016	6-14	4	25	1.04
1 M1 211-1	V3-7	.047	.031	.006 -.016	6-14	4	26	.96
1 M1 111-2	V3-15	.047	.031	.006 -.016	6-14	4	27	1.04
1 M1 121-B	V3-29	.047	.031	.006 -.016	6-14	4	28	1.15
1 M1 311-1	V3-32	.047	.031	.006 -.016	6-14	4	29	.96
1 M1 181-1	V3-419	.047	.031	.006 -.016	6-14	4	30	2.04
1 M1 117-6	V3L-1-D8	.060	.031	.016	14 Max.	3	25-A	1.05
1 M1 117-6-1	V3L-2-D8	.125	.062	.050	8 Max.	1	28-A	1.05
1 M1 117-6-2	V3L-5-D8	.125	.062	.050	8 Max.	1	27-A	1.05
1 M1 117-6-3	V3L-6-D8	.260	.100	.090	4 Max.	0.5	26-A	1.05
1 M1 118-6	V3L-4-D8	.125	.062	.050	8 Max.	1	29-A	1.25
1 M1 119-6	V3L-3-D8	.060	.031	.016	14 Max.	3	30-A	1.25
1 M1 311-B	V3-23	.047	.031	.006 -.016	6-14	4	31	1.00
1 M4 191-B	V3-26	.047	.031	.002 -.006	7-12	5	28	1.35
1 M1 131-B	V3-601	.047	.010-.024	.006 -.016	6-14	4	32	1.50
1 M2 171-B	V3-101	.047	.031	.006 -.016	8 Max.	2	28	1.10
1 M2 271-B	V3-121	.047	.031	.006 -.016	8 Max.	2	33	1.00
1 M2 371-B	V3-123	.047	.031	.006 -.016	8 Max.	2	31	1.00
1 M2 171-1	V3-119	.047	.031	.006 -.016	8 Max.	2	25	1.04
1 M5 151-B	V3-75	.047	.031	.006 -.016	6-14	4	28	3.75

PRECISION SUBMINIATURE SWITCHES—TYPES A1 S

1 S1 111-1	1SM1	.030	.005	.004	3-5	1	34	$1.20
1 S1 111-3	1SM1-T	.030	.005	.004	3-5	1	35	1.20
1 S1 131-1	11SM1	.020	.003	.004	3-5	1	36	1.20
1 S5 151-1	1SM23	.030	.005	.004	3-5	1	34	1.45
1 S5 161-1	11SM23	.020	.003	.004	3-5	1	36	1.70
1 S1 131-3	11SM1-T	.020	.003	.004	3-5	1	37	1.20
1 S1 115-1-11	111SM1	.219	.030	.030	7 Max.	2	38	1.65
1 S1 116-1-11	111SM2	.219	.030	.025	7 Max.	2	39	2.00
1 S1 116-3-11	111SM2-T	.219	.030	.025	7 Max.	2	39-A	2.00
1 S1 121-1	1SM3	.030	.005	.004	3-5	1	34	1.20
1 S1 141-1	11SM3	.020	.003	.004	3-5	1	36	1.20

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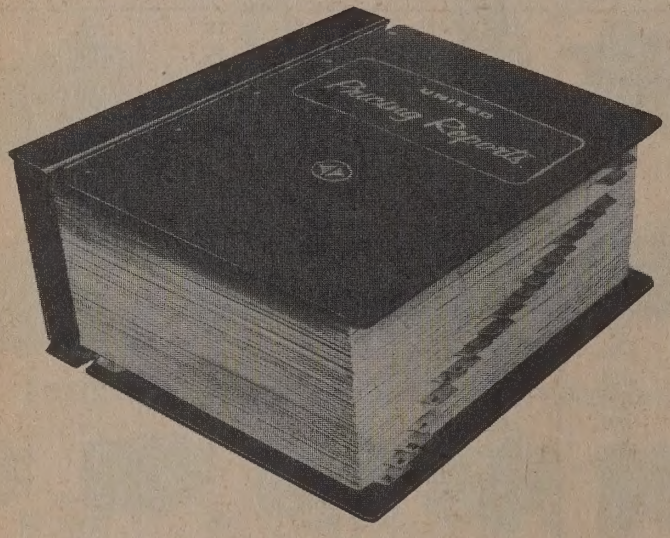

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SPECIFY GRI FOR REED AND MERCURY-WETTED PUSH BUTTON SWITCHES

FEATURES

- ***Hermetically sealed contacts***
- ***Low contact resistance***
- ***Life expectancy in the millions***
- ***Momentary action***
- ***Low bounce characteristics***
- ***Terminals weldable and solderable***
- ***Ideal for dry circuits or higher current applications***

DEVELOPING THE STANDARD LINE

The complete line of GRI switches is the result of several year's work with a number of specialized applications. Requirements have demanded a great amount of development effort and the design of highly specialized production methods.

DESIGN VERSATILITY

GRI Push Button Switches are unique because their reed type contacts are actuated by a permanent magnet anchored to the actuating plunger. This leads to a number of outstanding performance characteristics which can open new doors in system design.

1. Contacts are sealed in inert gas and are isolated from all sources of environment.

2. GRI Switches lend themselves readily to circuit versatility. By using permanent magnets in coordination with many unique contact arrangements, many entire circuit functions are now performed.

3. On all multiple-pole switches, each pole is completely isolated.

4. GRI Switches can be mounted as close together as button centerline will allow.

OPERATION

GRI Push Button Switches utilize magnetic lines of force as the only linkage between the mechanical actuation and the switch contacts. A permanent magnet attached to the plunger provides the force that closes the reed switch contacts, facilitating low push button pressure with high contact pressure.

The Reed Switch consists of two identical ferromagnetic reeds, sealed in a glass tube. When magnetic flux, from the permanent magnet, is sufficient, the reeds flex and make contact. When the magnetic influence is removed the reeds return to their normal positions, opening the circuit.

Mercury-Wetted Reed Switches operate on the same magnetic principles. However, the reed contacts are coated with a film of mercury. A pool of mercury at the base of the glass envelope wets the contact surfaces by capillary action. These units may be operated in vertical or horizontal position according to types.

Mercury coated contacts handle greater electrical loads, eliminate contact bounce, and are superior to dry switches for dry circuits and applications where stable contact resistance is critical. These switches normally have contact resistance within 10% of the initial value during life.

Enclosures resist all sources of environment. Each contact is isolated in a glass envelope unaffected by dust, oxidation or corrosion for a life span of millions of operations. Individual or multi-pole switches are assembled with their permanent magnet in an anodized aluminum or plastic case.

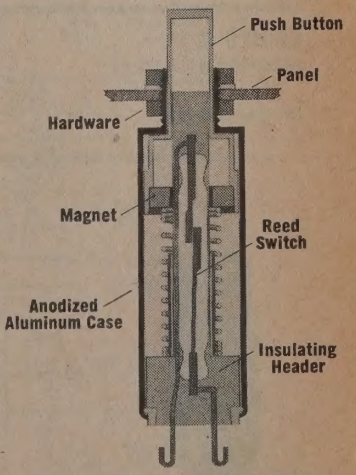
Precautions in selection and application of these switches should be exercised.

Selection — The ampere and voltage ratings given in the selection tables are singular maximum ratings, neither of which is to be exceeded, but never used in combination with each other at the maximum shown. The Volt Amps, and Watts listed in the selection tables are the allowable maximums, reached in any combination of Amps, and Volts, but neither to exceed the maximums listed.

Application — Due to the response of these switches to magnetic forces, heavy magnetic ferric materials around the area of the switches will affect their operation. Extremely high outside magnetic fields near the switches will require shielding. Inductive loads are not recommended.

GENERAL SPECIFICATIONS

ELECTRICAL	DRY REED	MERCURY WETTED REED CONTACTS
Operating Temperature Range	−55° to +150°C	−35°C to +150°C
Dielectric Strength	500 VAC	500 VAC
Insulation Resistance	100 Megohms	100 Megohms
Contact Bounce	500 Microseconds maximum	None
Contact Resistance	200 Milliohms maximum	50 Milliohms
Life Expectancy	20 million operations at full load; 50 million operations at half load (Resistive Load at recommended VDC)	
Each Pole Isolated		
MECHANICAL		
Mounting Position	Any Plane; Except Series MV and MH	30° out of plane
Switch Contact Atmosphere	Inert Gas	
Internal Terminal Construction	Welded	
External Switch Terminals	"A" Nickel Alloy, weldable or solderable	



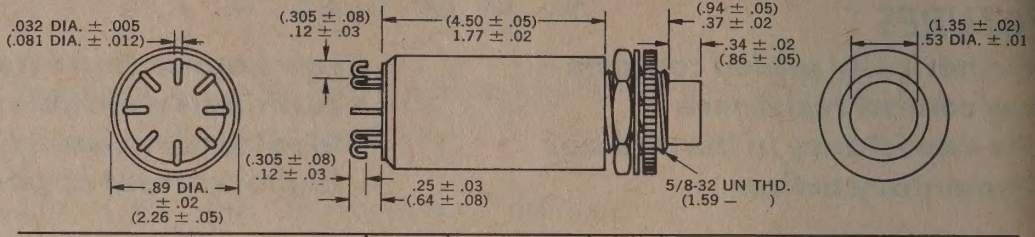
(TYPICAL SWITCH CONSTRUCTION)

GEORGE RISK INDUSTRIES

PUSHBUTTON SWITCHES
(DRY REED TYPE)

SERIES T
Momentary Action

(Metric in C.M.)

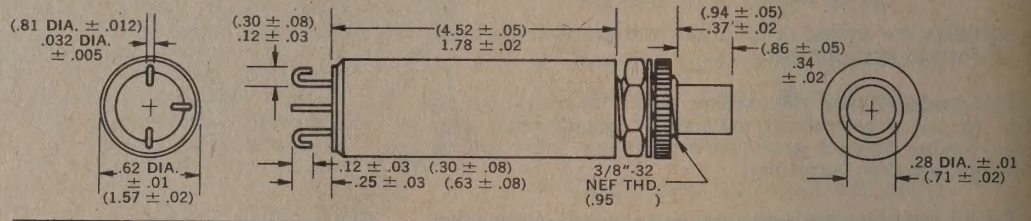


Maximum Ratings					Poles and Throws	Circuit		Catalog Number		Pre-Travel	Differential Travel	Over-Travel
	A.C.		D.C.					Pushbutton Operating Pressure				
Amps.	Volts	Volt Amps. Resistive	Volts	Watts Resistive		Contacts	Form	8 Oz.	17 Grams(1)			
3	250	100	250	100	DPST	NO	A	TI-HA2	TI-FA2	.100 Min.	.062 Max.	.125 Max.
3	250	100	250	100	DPST	NC	B	TI-HB2	TI-FB2			
3	250	100	250	100	3PST	NO	A	TI-HA3	TI-FA3			
3	250	100	250	100	3PST	NC	B	TI-HB3	TI-FB3			
3	250	100	250	100	4PST	NO	A	TI-HA4	TI-FA4			
3	250	100	250	100	4PST	NC	B	TI-HB4	TI-FB4			
1	250	15	250	15	DPST	NO	A	TE-HA2	TE-FA2			
1	250	15	250	15	DPST	NC	B	TE-HB2	TE-FB2			
1	250	15	250	15	3PST	NO	A	TE-HA3	TE-FA3			
1	250	15	250	15	3PST	NC	B	TE-HB3	TE-FB3			
1	250	15	250	15	4PST	NO	A	TE-HA4	TE-FA4			
1	250	15	250	15	4PST	NC	B	TE-HB4	TE-FB4			
.250	200	10	200	10	DPDT	NO-NC	C	TB-HC2	TB-FC2			
.250	200	10	200	10	3PDT	NO-NC	C	TB-HC3	TB-FC3			
.250	200	10	200	10	4PDT	NO-NC	C	TB-HC4	TB-FC4			

(1)Not advisable for use in shock and vibration applications.

SERIES W
Momentary Action

(Metric in C.M.)

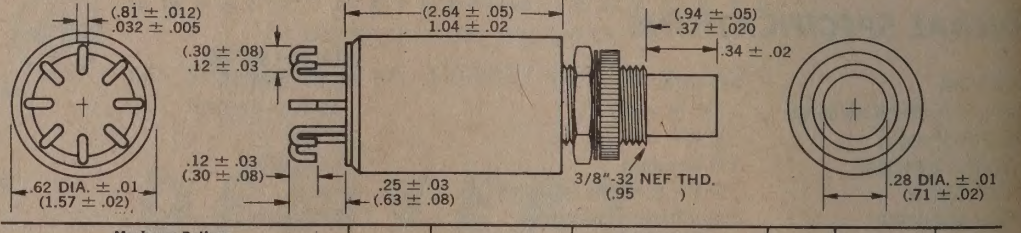


Maximum Ratings					Poles and Throws	Circuit		Catalog Number		Pre-Travel	Differential Travel	Over-Travel
	A.C.		D.C.					Pushbutton Operating Pressure				
Amps.	Volts	Volt Amps. Resistive	Volts	Watts Resistive		Contacts	Form	8 Oz.	17 Grams(1)			
3	250	100	250	100	SPST	NO	A	WI-HA	WI-FA	.100 Min.	.062 Max.	.125 Max.
3	250	100	250	100	SPST	NC	B	WI-HB	WI-FB			
1	250	15	250	15	SPST	NO	A	WE-HA	WE-FA			
1	250	15	250	15	SPST	NC	B	WE-HB	WE-FB			
.250	200	10	200	10	SPDT	NO-NC	C	WB-HC	WB-FC			

(1)Not advisable for use in shock and vibration applications.

SERIES G
Momentary Action

(Metric in C.M.)



Maximum Ratings					Poles and Throws	Circuit		Catalog Number		Pre-Travel	Differential Travel	Over-Travel
	A.C.		D.C.					Pushbutton Operating Pressure				
Amps.	Volts	Volt Amps. Resistive	Volts	Watts Resistive		Contacts	Form	8 Oz.	17 Grams(1)			
.5	125	12	125	10	SPST	NO	A	GC-HA	GC-FA	.100 Min.	.062 Max.	.125 Max.
.5	125	12	125	10	SPST	NC	B	GC-HB	GC-FB			
.5	125	12	125	10	DPST	NO	A	GC-HA2	GC-FA2			
.5	125	12	125	10	DPST	NC	B	GC-HB2	GC-FB2			
.5	125	12	125	10	3PST	NO	A	GC-HA3	GC-FA3			
.5	125	12	125	10	3PST	NC	B	GC-HB3	GC-FB3			
.5	125	12	125	10	4PST	NO	A	GC-HA4	GC-FA4			
.5	125	12	125	10	4PST	NC	B	GC-HB4	GC-FB4			
.250	125	4	28	3	SPDT	NO-NC	C	GB-HC	GB-FC			
.250	125	4	28	3	DPDT	NO-NC	C	GB-HC	GB-FC			

(1)Not advisable for use in shock and vibration applications.

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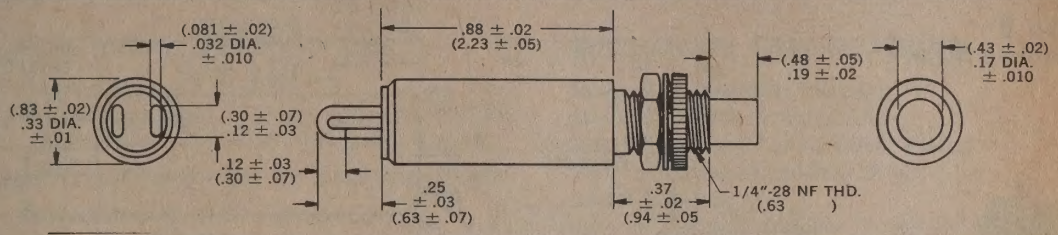
GEORGE RISK INDUSTRIES, INC.

PUSHBUTTON SWITCHES
(DRY REED TYPE)

SERIES D
Momentary Action

(Metric in C.M.)

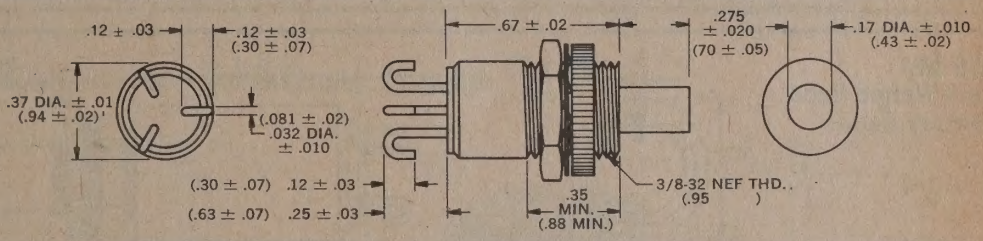


Maximum Ratings					Poles and Throws	Circuit		Catalog Number		Pre-Travel	Differential Travel	Over-Travel
Amps.	A.C. Volts	A.C. Volt Amps. Resistive	D.C. Volts	D.C. Watts Resistive		Contacts	Form	Pushbutton Operating Pressure 8 Oz.	Pushbutton Operating Pressure 17 Grams(1)			
.5	125	12	125	10	SPST	NO	A	DC-HA	DC-FA	.100 Min.	.062 Max.	.125 Max.
.5	125	12	125	10	SPST	NO	B	DC-HB	DC-FB			
.250	125	4	28	3	SPDT	NO-NC	C	DB-HC	DB-FC			

(1)Not advisable for use in shock and vibration applications.

SERIES R
Momentary Action

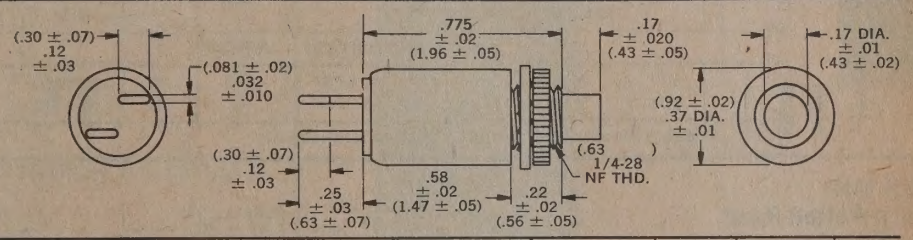
(Metric in C.M.)



Maximum Ratings					Poles and Throws	Circuit		Catalog Number	Pre-Travel	Differential Travel	Over-Travel
Amps.	A.C. Volts	A.C. Volt Amps. Resistive	D.C. Volts	D.C. Watts Resistive		Contacts	Form				
.250	150	12	150	4	SPST	NO	A	RB-HA	.062 Min.	.031 Max.	.062 Max.
.250	150	12	150	4	SPST	NC	B	RB-HB			
.250	125	4	28	3	SPDT	NO-NC	C	RB-HC			

SERIES K
Momentary Action

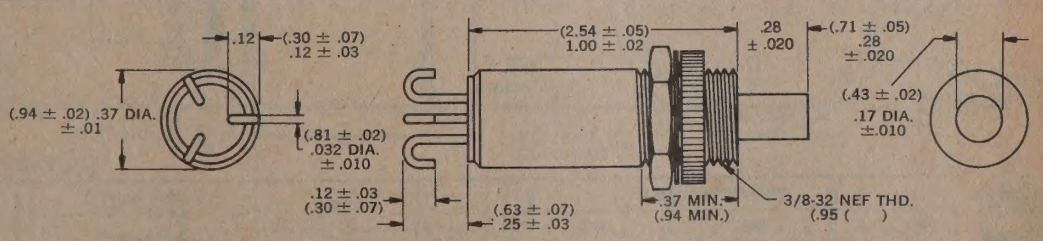
(Metric in C.M.)



Maximum Ratings					Poles and Throws	Circuit		Catalog Number	Pre-Travel	Differential Travel	Over-Travel
Amps.	A.C. Volts	A.C. Volt Amps. Resistive	D.C. Volts	D.C. Watts Resistive		Contacts	Form				
.250	125	4	125	3	SPST	NO	A	KB-HA	.062 Min.	.031 Max.	.062 Max.
.250	125	4	125	3	SPST	NC	B	KB-HB			
.250	125	4	125	3	SPDT	NO-NC	C	KB-HC			

SERIES J
Momentary Action

(Metric in C.M.)

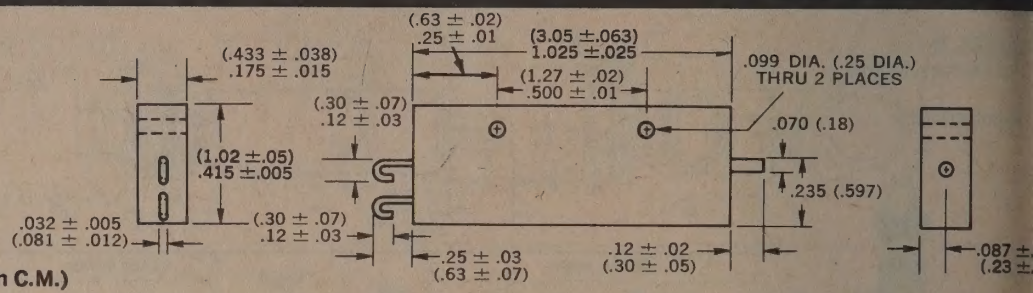


Maximum Ratings					Poles and Throws	Circuit		Catalog Number	Pre-Travel	Differential Travel	Over-Travel
Amps.	A.C. Volts	A.C. Volt Amps. Resistive	D.C. Volts	D.C. Watts Resistive		Contacts	Form				
.5	125	12	125	10	SPST	NO	A	JC-HA	.062 Min.	.031 Max.	.062 Max.
.5	125	12	125	10	SPST	NC	B	JC-HB			
.250	125	4	28	3	SPDT	NO-NC	C	JB-HC			

GEORGE RISK INDUSTRIES, INC.

PUSHBUTTON SWITCHES (DRY REED TYPE)

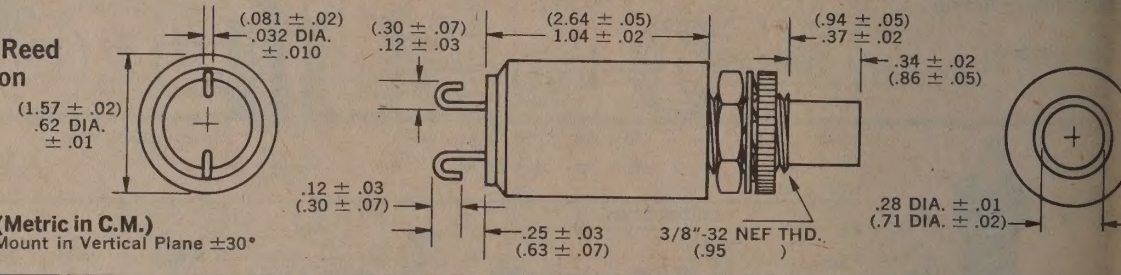
SERIES B
Momentary Action



(Metric in C.M.)

Maximum Ratings					Poles and Throws	Circuit		Catalog Number	Pre-Travel	Differential Travel	Over-Travel
Amps.	A.C. Volts	A.C. Volt Amps. Resistive	D.C. Volts	D.C. Watts Resistive		Contacts	Form				
.5	125	12	125	10	SPST	NO	A	BC-HA	.062	.031	.062
.5	125	12	125	10	SPST	NC	B	BC-HB	Min.	Max.	Max

SERIES MV
Mercury Wetted Reed
Momentary Action

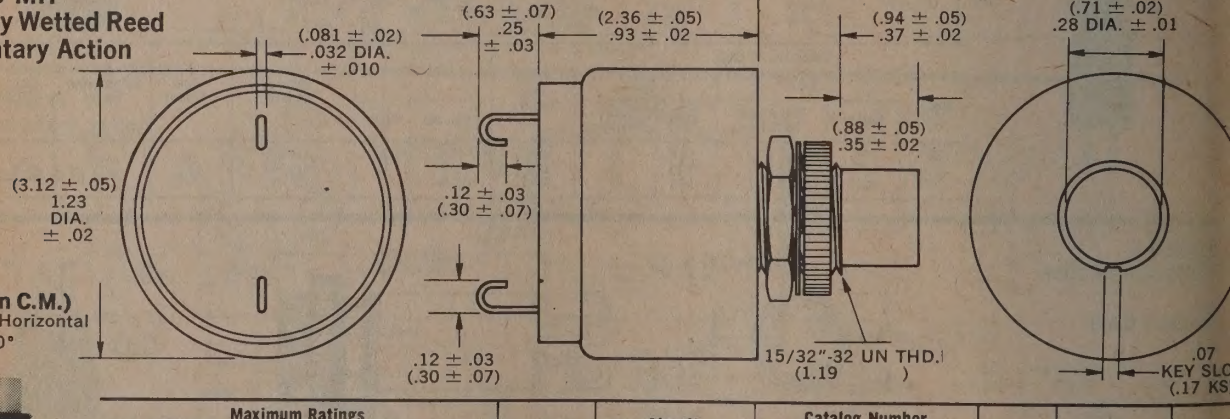


(Metric in C.M.)
Mount in Vertical Plane ±30°

Maximum Ratings					Poles and Throws	Circuit		Catalog Number		Pre-Travel	Differential Travel	Over-Travel
Amps.	A.C. Volts	A.C. Volt Amps. Resistive	D.C. Volts	D.C. Watts Resistive		Contacts	Form	Pushbutton Operating Pressure 8 Oz.	Pushbutton Operating Pressure 17 Grams(1)			
MOUNTING POSITION — VERTICAL												
1	125	30	100	28	SPST	NO	A	MVI-HA	MVI-FA	.100	.062	.125
1	125	30	100	28	SPST	NC	B	MVI-HB	MVI-FB	Min.	Approx.	Max.

(1)Not advisable for use in shock and vibration applications.

SERIES MH
Mercury Wetted Reed
Momentary Action



(Metric in C.M.)
Mount in Horizontal Plane ±30°

Maximum Ratings					Poles and Throws	Circuit		Catalog Number		Pre-Travel	Differential Travel	Over-Travel
Amps.	A.C. Volts	A.C. Volt Amps. Resistive	D.C. Volts	D.C. Watts Resistive		Contacts	Form	Pushbutton Operating Pressure 8 Oz.	Pushbutton Operating Pressure 17 Grams(1)			
MOUNTING POSITION — HORIZONTAL												
1	125	30	100	28	SPST	NO	A	MHI-HA	MHI-FA	.125 Min.	.125 Approx.	None

(1)Not advisable for use in shock and vibration applications.

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GEORGE RISK INDUSTRIES, INC.

PUSHBUTTON SWITCHES & INDICATORS

REED TYPE KEYBOARD

FEATURES

- Magnetic dry reed type
- Hermetically sealed contacts
- P.C. board mount
- Dry circuits through 5 amps
- High reliability through millions of operations

ELECTRICAL SPECIFICATIONS

Contact Rating:
— Non-illuminated .5 amps, 125 volts, 10 watts; illuminated .250 amps, 125 volts, 3 watts

Dielectric Strength: 500 VAC, terminals to case

Contact Bounce: 500 microseconds max.

Contact Resistance: 200 milliohms max.

Insulation Resistance: 100 Megohms

Life Expectancy: 20 million operations at full load
50 million operations at half load
(Resistive load at 28 VDC)

Each Pole Isolated

MECHANICAL SPECIFICATIONS

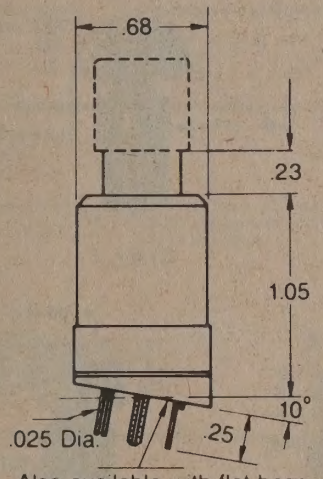
Internal Atmosphere: Inert gas
Mounting Position: Any plane
Internal Terminal Construction: Welded
Terminal to Case Insulation: Noryl
Switch Case: Noryl
External Switch Terminals: "A" Nickel Alloy, weldable or solderable
Mounting Stud: 2-56 stainless steel (base of switch)
Identification: Switches printed with model number, contact rating, schematic diagram, switch form

Pre-Travel	.062 min.
Differential Travel	.062 max.
Total Travel	.187 ±.010

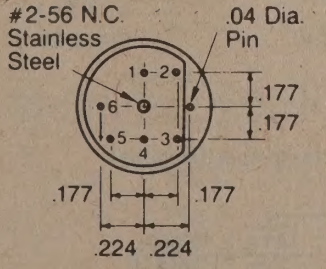
SERIES KB and KBS

ILLUMINATED AND NON-ILLUMINATED • HERMETICALLY SEALED

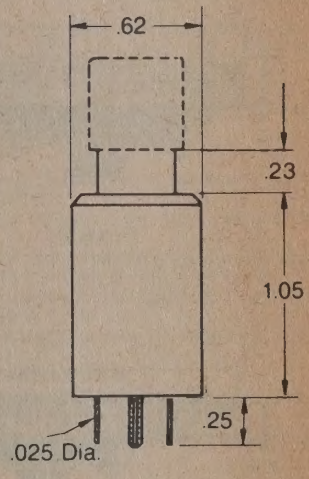
SERIES KB

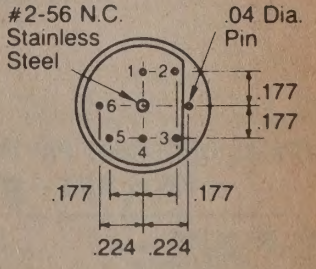


Also available with flat base.

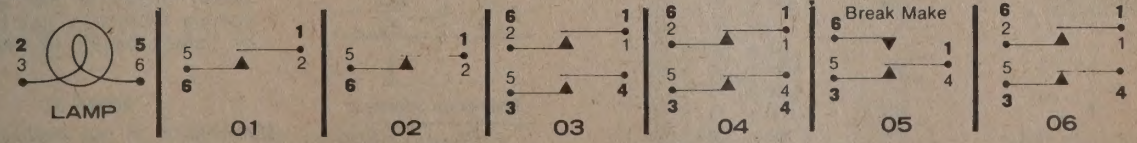


SERIES KBS





STANDARD SWITCH FORMS



GEORGE RISK INDUSTRIES

PUSHBUTTON SWITCHES & INDICATORS

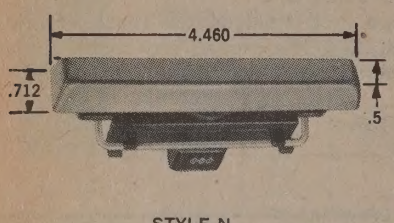
REED TYPE KEYBOARD

STANDARD KEY TOP SPECIFICATIONS

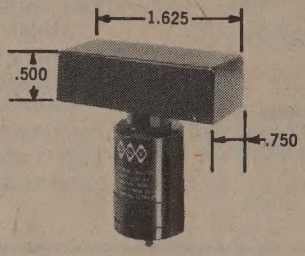
Colors: Light Gray, Dark Gray, Red, White, Blue, Black & Brown
Materials: Illuminated = lexan; non-illuminated = ABS
} Other colors and materials available on special order.

SERIES KB and KBS

ILLUMINATED AND NON-ILLUMINATED • HERMETICALLY SEALED



STYLE N



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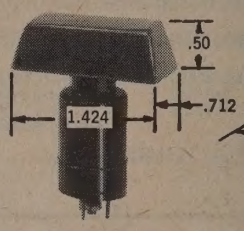
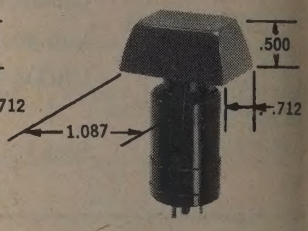
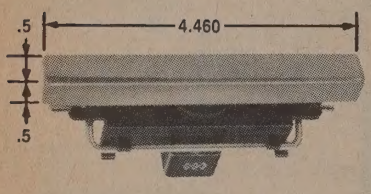


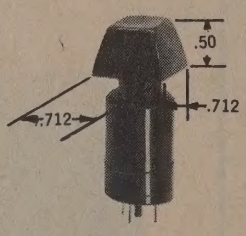
STYLE JJ



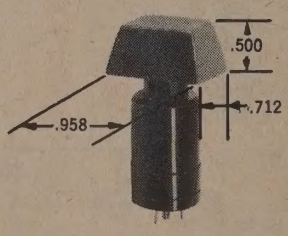
STYLE IJ



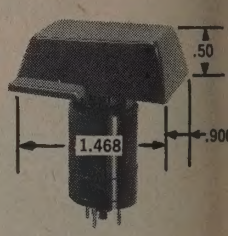
STYLE M



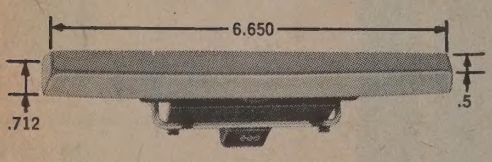
STYLE J



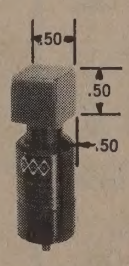
STYLE II



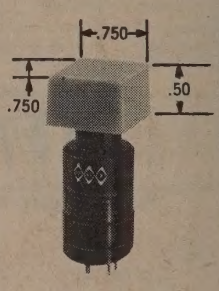
STYLE BM



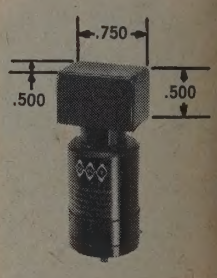
STYLE NNN



STYLE K



STYLE GM



STYLE L

TYPICAL ORDERING PATTERN (with switch form, key top and lamp specifications)

KB or KBS — XX—XXX—XX.X

KB or KBS	
01	SPST-NO
02	SPST-NC
03	DPST-NO
04	DPST-NC
05	SPDT-BM
06	DPST-NO-NC

KEYTOPS KB	
II	1.960 x .71 x .50
IJ	1.08 x .71 x .50
J	.71 x .71 x .50
JJ	1.460 x .71 x .50
GM	.750 x .750 x .50
HM	1.625 x .75 x .50
K	.50 x .50 x .50
L	.75 x .50 x .50
M	4.50 x .50 x .50
N	4.50 x .71 x .50
NNN	6.650 x .71 x .50
BM	1.460 x 1.087 x .50

Lamp	Voltage
1.35	10.0
2.5	14.0
2.7	18.0
3.0	24.0
6.0	28.0
6.3	—

Operating Pressure	
—01	2.5 oz.

When ordering KB series specify whether "flat base" or "slant base" is desired.

NOTE 1:
Illumination is not evenly dispers over entire key top due to length. full illumination is required on B HM, and JJ, auxiliary external lam would be required.

* To order non-illuminated switches, indicators and key tops, use applicable areas of the above ordering pattern. For example: KB-01-GM-01. (Non-illuminated Series) KB; .75″ x .75″ x .50″ key top.

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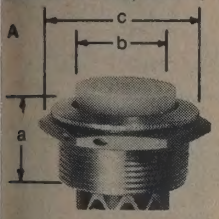
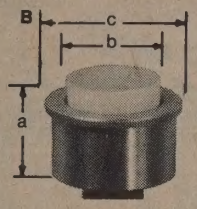
GEORGE RISK INDUSTRIES

MOUNTING COLLARS

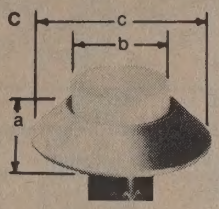
C LORS: White, Black, Red, Green, Blue **NOTE:** Dimensions shown are ± .015



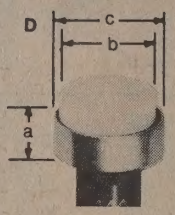
a	b	c
.75	.937	1.40



a	b	c
.75	.937	1.40

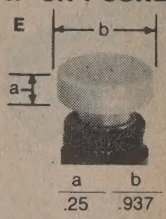


a	b	c
.40	.937	1.72



a	b	c
.37	.937	1.06

SNAP-ON PUSHBUTTON



a	b
.25	.937

Mounting Collars include –E snap-on pushbutton.

RDERING INFORMATION

NTE: For each switch series, the model number listed is supplied with white button unless otherwise specified. For other standard colors, add the following suffix:

– 10 for Black
– 11 for Red
– 12 for Green
– 13 for Blue

Other colors available on request. Buttons are interchangeable in the field with no special tools. Actuating plunger of basic switch is not interchangeable.

Mounting Collars include –E snap-on pushbutton. –EP/N is white; for standard colors, add the following suffix:

– 10 for Black
– 11 for Red
– 12 for Green
– 13 for Blue

Unless otherwise specified, mounting collars are not fastened to the switches at factory.

Specify "O" ring seal for Series J and R by adding "OR" to model number.

MOUNTING COLLARS

For Series G, W, MV, J, R = –A, –B, –C, –D
For Series T = –AT, –BT, –CT, –DT

SNAP-ON PUSHBUTTON

For Series G, W, MV = –E
For Series R, J = –EJR
For Series T = –ET

ORDERING EXAMPLES

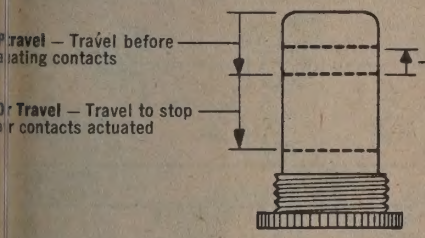
GC-HA4-C13 = Series G, .5 amp, 8 oz. operating force, 4PST-NO with –C style mounting collar, blue, –E snap-on pushbutton.

GB-HC10 = Series G, .250 amp, 8 oz. operating force, SPDT-Break-Make, black actuating plunger.

RB-HB = Series R, .250 amp, 15 oz. operating force, SPST-NC with white actuating plunger.

RB-HA110R = Series R, .250 amp, 15 oz. operating force, SPST-NO with red actuating plunger and "O" ring seal.

CHNICAL INFORMATION



CONTACT BOUNCE – Contact vibration measured in Microseconds or Milliseconds until positive contact closure.

PRE-TRAVEL – Distance the plunger travels from free position to operating position.

OVER-TRAVEL – Movement of actuator from operating position to final position at end of actuating stroke after switch is fully depressed.

RELEASE POSITION – Position of actuator when all contacts snap from the operated position to the free position.

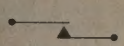
DIFFERENTIAL TRAVEL – Distance actuator travels in returning from operating position to release position.

TOTAL TRAVEL – Sum of pre-travel and over-travel.

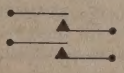
OPERATING PRESSURE – The force required to depress the switch button.

PICAL CIRCUIT DIAGRAMS

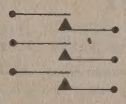
ORM A



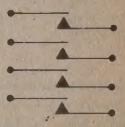
SPST-NO
ntact pair which is open when the ch is in normal position.



DPST-NO
Two contact pairs which are open when the switch is in normal position.

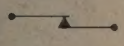


3PST-NO
Three contact pairs which are open when the switch is in normal position.

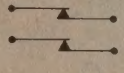


4PST-NO
Four contact pairs which are open when the switch is in normal position.

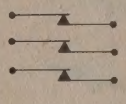
ORM B



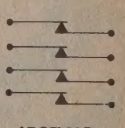
SPST-NC
ontact pair which is closed when switch is in normal position.



DPST-NC
Two contact pairs which are closed when the switch is in normal position.

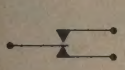


3PST-NC
Three contact pairs which are closed when the switch is in normal position.

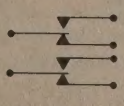


4PST-NC
Four contact pairs which are closed when the switch is in normal position.

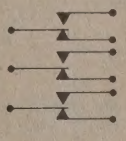
ORM C



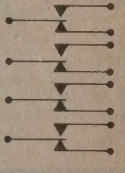
SPDT-Break-Make
ontact form in which one contact ns its connection to another con- and then closes its connection to ird contact.



DPDT-Break-Make
Two contact forms in which both contacts open their connections to another contact and then close their connection to a third contact.



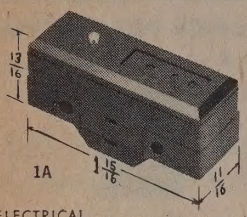
3PDT-Break-Make
Three contact forms in which three contacts open their connections to another contact and then close their connection to a third contact.



4PDT-Break-Make
Four contact forms in which four contacts open their connections to another contact and then close their connection to a third contact.

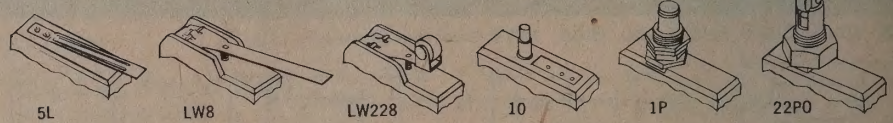
Robertshaw — PRECISION SNAP SWITCHES WITH PATENTED ROLLING SPRING

MODEL B — Long Life



ELECTRICAL
15 amps, 120-240-480 volts A.C.
½ amp, 120 VDC
¼ amp, 240 VDC
Listed by U.L. and C.S.A.

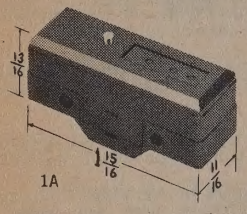
MECHANICAL LIFE
20 Million cycles.



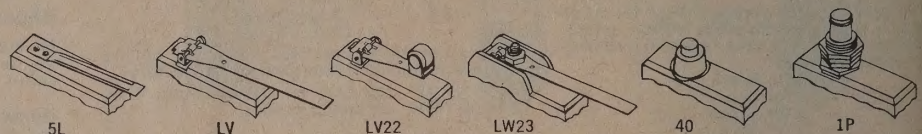
MODEL No.	OPERATING FORCE	RELEASE FORCE	PRETRAVEL	OVERTRAVEL	MOVEMENT DIFFERENTIAL	TERMINA
BRD2-1A-1S	9-13 oz.	4 oz. Min.	.020 in. Max.	.005 in. Min.	.003 in. Max.	Screw
BRD2-5L-1S	5 oz. Max.	½ oz. Min.	.156 in. Max.	1/32 in. Min.	.050 in. Max.	Screw
BRD2-LW8-1S	2½ oz. Max.	½ oz. Min.	9/32-13/32 in.	.187 in. Min.	.016-.078 in.	Screw
BRD2-LW228-1S	6 oz. Max.	1½ oz. Min.	.045-.140 in.	.080 in. Min.	.006-.031 in.	Screw
BRD2-1O-1S	9-13 oz.	4 oz. Min.	.010-.025 in.	1/16 in. Min.	.003 in. Max.	Screw
BRD2-1P-1S	9-13 oz.	4 oz. Min.	.010-.025 in.	7/32 in. Min.	.003 in. Max.	Screw
BRD2-22PO-1S	9-13 oz.	4 oz. Min.	.010-.025 in.	.140 in. Min.	.003 in. Max.	Screw

TOTAL OF 18 ACTUATORS AVAILABLE.
To order solder terminal, drop "1S" from Model number.

MODEL F — Horsepower Rated



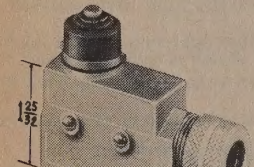
ELECTRICAL
21 amps, 120-240-480 VAC
1 Hp. 120 VAC
2 Hp. 240 VAC
Listed by U.L. and C.S.A.



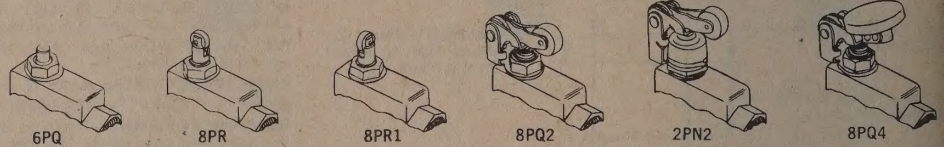
MODEL No.	OPERATING FORCE	RELEASE FORCE	PRETRAVEL	OVERTRAVEL	MOVEMENT DIFFERENTIAL	TERMINA
FAD2-1A-1S	10-18 oz.	6 oz. Min.	.050 in. Max.	.005 in. Min.	.0075 in. Max.	Screw
FAD2-5L-1S	9 oz. Max.	1 oz. Min.	11/32 in. Max.	1/32 in. Min.	.065 in. Max.	Screw
FAD2-LV-1S	2½ oz. Max.	½ oz. Min.	5/8 in. Max.	.078 in. Min.	.109 in. Max.	Screw
FAD2-LV22-1S	6 oz. Max.	1 oz. Min.	¼ in. Max.	1/32 in. Min.	3/64 in. Max.	Screw
FAD2-LW23-1S	2½ oz. Max.	½ oz. Min.	.375 in. Max.	.093 in. Min.	.007-.050 in.	Screw
FAD2-40-1S	10-18 oz.	6 oz. Min.	.050 in. Max.	3/32 in. Min.	.0075 in. Max.	Screw
FAD2-1P-1S	10-18 oz.	6 oz. Min.	.050 in. Max.	.219 in. Min.	.0075 in. Max.	Screw

TOTAL OF 13 ACTUATORS AVAILABLE.
To order solder terminal, drop "1S" from Model number.

MODEL BH — Split Housing



ELECTRICAL
15 amps, 120-240-480 VAC
The combination of metal enclosure and switch is U.L. and C.S.A. listed.

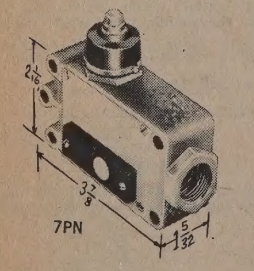


MODEL No.	OPERATING FORCE	RELEASE FORCE	PRETRAVEL	OVERTRAVEL	MOVEMENT DIFFERENTIA
SBHT-7PN	9-24 ozs.	4 ozs. Min.	.078 in. Max.	.219 in. Min.	.003 in. Ma
SBH-6PQ	9-13 ozs.	4 ozs. Min.	.020 in. Max.	.219 in. Min.	.003 in. Ma
SBH-8PR	9-13 ozs.	4 ozs. Min.	.020 in. Max.	.140 in. Min.	.003 in. Ma
SBH-8PR1	9-13 ozs.	4 ozs. Min.	.020 in. Max.	.140 in. Min.	.003 in. Ma
SBH-8PQ2	10-18 ozs.	6 ozs. Min.	3/16 in. Max.	.219 in. Max.	.006 in. Ma
SBH-2PN2	10-20 ozs.	6 ozs. Min.	.188 in. Max.	.219 in. Min.	.006 in. Ma
SBH-8PQ4	10-18 ozs.	6 ozs. Min.	3/16 in. Max.	.219 in. Max.	.006 in. Ma

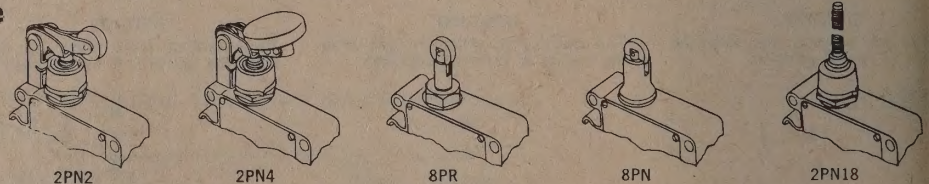
10 ACTUATORS AVAILABLE

"T" designates externally threaded housing. These are available with 7PN, 2PN2, 2PN28, and 2PN4 actuators. Split-housing available with internally threaded housing. One-piece externally threaded housing models are available with same 10 actuat

MODEL FH — Mounts Either Side



ELECTRICAL
21 amps at 120-240-480 VAC
1 Hp — 120 VAC
2 Hp — 240 VAC



MODEL No.	OPERATING FORCE	RELEASE FORCE	PRETRAVEL	OVERTRAVEL	MOVEMENT DIFFERENTIA
• L-FHD2-7PN	2½ lbs. Max.	8 oz. Min.	.094 in. Max.	.219 in. Min.	.010 in. Ma
FHD2-2PN2	2 lbs. Max.	8 oz. Min.	.219 in. Max.	.218 in. Min.	.020 in. Ma
FHD2-2PN4	2 lbs. Max.	8 oz. Min.			
FHD2-8PR	2½ lbs. Max.	8 oz. Min.	.094 in. Max.	.156 in. Min.	.010 in. Ma
FHD2-8PN	8 lbs. Max.	2 lbs. Min.	.125 in. Max.	.175 in. Max.	.0075 in. Ma
# FHD2-2PN18	Above characteristics do not apply to this model switch.				

6 ACTUATORS AVAILABLE.

•Switch with one Acrolite. Silicone boot for 0 F to 200 F range is available.
#Switch operates by moving flexible actuator 15 or more in any direction, except a direct pull.

WRITE FOR CATALOG D — Robertshaw Controls Company, Acro Division

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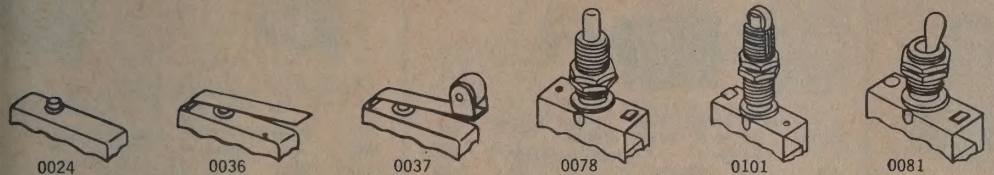
21 MODELS

- SUBMINIATURE
- MINIATURE
- GENERAL PURPOSE
- METAL CLAD

Robertshaw

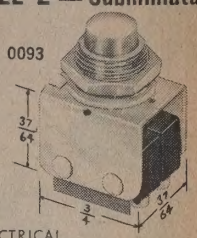
MODEL Z — Subminiature



EL No.	OPERATING FORCE	RELEASE FORCE	PRETRAVEL	OVERTRAVEL	MOVEMENT DIFFERENTIAL
)-0024	85-140 gms.	1 oz. Min.	.008-.020 in.	.010 in. Min.	.001-.004 in.
)-0036	2 oz. Max.	½ oz. Min.	3/32 in. Max.	.045 in. Min.	.015 in. Max.
)-0037	2 oz. Max.	½ oz. Min.	3/32 in. Max.	.045 in. Min.	.015 in. Max.
)-0078	10 oz. Max.	2 oz. Min.	.050 in. Max.	.125 in. Min.	.030 in. Max.
)-0101	10 oz. Max.	2 oz. Min.	.050 in. Max.	.125 in. Min.	.030 in. Max.
)-0081		(Hand operated and these characteristics do not apply)			
)-0093	20 oz. Max.	5 oz. Min.	.010 in. Max.	.010 in. Min.	.010 in. Max.

13 ACTUATORS AVAILABLE.

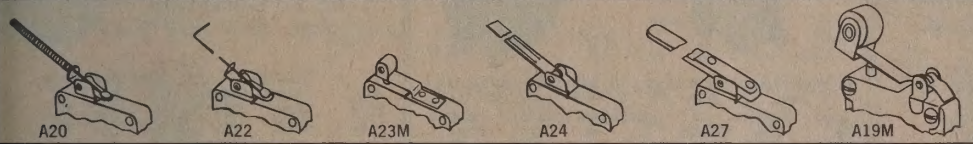
Available with these terminals: Turret, Double Turret, Post, Baton, and Tab.



ELECTRICAL
5 amp, 120-240 VAC
3 amp sea level and 2.5 amp 50,000 ft., 30 VDC inductive
4 amp sea level and 4 amp 50,000 ft., 30 VDC resistive
U.L. listing, 5 amp., 120-240 VAC

MECHANICAL LIFE
One million cycles with .010 gap and .005 overtravel

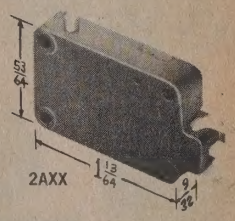
MODEL CM — Low Force



MODEL No.	OPERATING FORCE	RELEASE FORCE	PRETRAVEL	OVERTRAVEL	MOVEMENT DIFFERENTIAL
MD1-2AXX	20-27 gms.	12 gms. Min.	.040 in. Max.	.050 in. Max.	.030 in. Max.
MD1-18AXX-A20	8 gms. Max.		.400 in. Max.		
MD1-2AXX-A22	2.5 gms. Max.	Above characteristics are not applicable to this switch			.500 in. Max.
MD1-1AXX-A23M	5-8 oz.	2 oz. Min.	.040 in. Max.	.050 in. Max.	.030 in. Max.
MD1-2AXX-A24	2.5 gms. Max.	Above characteristics are not applicable to this switch			.500 in. Max.
MD1-18AXX-A27	6 gms. Max.	Above characteristics are not applicable to this switch			.233 in. Max.
MD1-2AXX-A19M	20-27 gms.	12 gms. Min.	.040 in. Max.		.030 in. Max.

8 ACTUATORS AVAILABLE

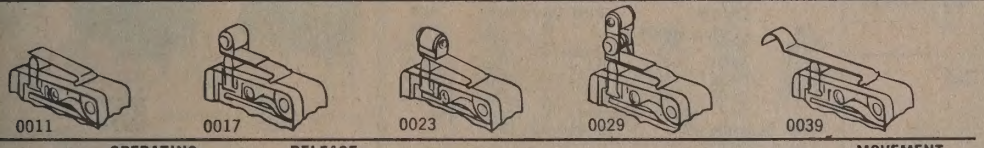
*Actuator bracket and switch are shipped separately.



ELECTRICAL
3 amp, 125-250 VAC
3 amp, 28 VDC
U.L. listing, 3 amp, 125-250 VAC

MECHANICAL LIFE
50 Million cycles.

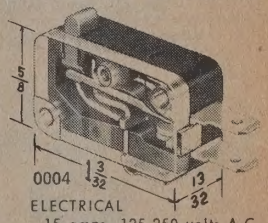
MODEL V — Economical



DEL No.	OPERATING FORCE	RELEASE FORCE	PRETRAVEL	OVERTRAVEL	MOVEMENT DIFFERENTIAL
D-0004	14 oz. Max.	4 oz. Min.	.047 in. Max.	.031 in. Min.	.014 in. Max.
D-0011	14 oz. Max.	2 oz. Min.	.062 in. Max.	.031 in. Min.	.016 in. Max.
D-0017	14 oz. Max.	2 oz. Min.	.062 in. Max.	.031 in. Min.	.016 in. Max.
D-0023	14 oz. Max.	2 oz. Min.	.062 in. Max.	.031 in. Min.	.016 in. Max.
D-0029	14 oz. Max.	2 oz. Min.	.062 in. Max.	.015 in. Min.	.016 in. Max.
D-0039	8 oz. Max.	1 oz. Min.	.125 in. Max.	.062 in. Min.	.050 in. Max.

10 ACTUATORS AVAILABLE.

Available with these terminals: Quick Connect, Solder and Screw.
Actuators are also available with 8 oz. operating force on pin plunger.



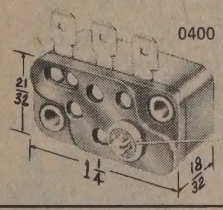
ELECTRICAL
15 amps, 125-250 volts A.C.
10 amps, 30 VDC
Listed by U.L. and C.S.A.

MECHANICAL LIFE
20 Million cycles.

MODEL H — Rotary

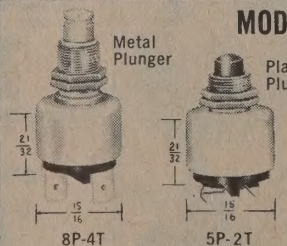
ECTRICAL
5 amp. — 120-240 VAC
U.L. and C.S.A. listed.
Hi-pot tested 1250 VAC terminal to exposed rivet head.

ECHANICAL LIFE
Minimum operating life of one million cycles. Static load of 15 inch ounces will not change switch characteristics when applied at full travel or start positions and in a direction opposite to normal movement.
Axial movement of shaft will not exceed .010 inch.



DEL No.	ROTATION	OPERATING FORCE	OPERATING LIMITS DOWN STROKE	AFTER TRAVEL	MOVEMENT DIFFERENTIAL	TERMINAL
)-0200	CW	3 gms. in. Max.	15-21°	5° Min.	8° Min.	Solder
)-0300	CW	3 gms. in. Max.	15-21°	5° Min.	8° Min.	Tab .187
)-0400	CW	3 gms. in. Max.	15-21°	5° Min.	8° Min.	Tab .205
)-0500	CCW	4 gms. in. Max.	15-21°	5° Min.	8° Min.	Solder
)-0600	CCW	4 gms. in. Max.	15-21°	5° Min.	8° Min.	Tab .187
)-0700	CCW	4 gms. in. Max.	15-21°	5° Min.	8° Min.	Tab .205

MODEL D — Panel Mounted



U.L. ELECTRICAL RATING
12 amps — 125 VAC
6 amps — 230 VAC

MECHANICAL LIFE
250,000 cycles

MODEL No.	CIRCUIT	PRETRAVEL	OPERATING FORCE
3DO5-5P	N.O.	.100 in. Max.	10-15 oz.
3DO5-5P-4T	N.O.	.100 in. Max.	10-15 oz.
3DC5-5P	N.C.	.070 in. Max.	10-15 oz.
3DC5-5P-4T	N.C.	.070 in. Max.	10-15 oz.
3DO5-8P	N.O.	.100 in. Max.	10-15 oz.
3DO5-8P-4T	N.O.	.100 in. Max.	10-15 oz.
3DC5-8P	N.C.	.070 in. Max.	10-15 oz.
3DC5-8P-4T	N.C.	.070 in. Max.	10-15 oz.

4T Tab.

NATIONWIDE SALES ASSISTANCE THROUGH LOCAL DISTRIBUTOR OR FACTORY ENGINEER

SPEMCO® H & H SWITCHES

BALL LEVER TOGGLE SWITCHES

Underwriters' approved, 1 amp. 250 V 3 amp. 125 volts. AC/DC. Laminated bakelite base. Nickel plated finish, except 1120 and 1121.

3 Amp.

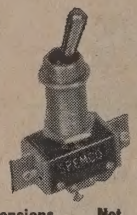
No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
*1120	SPST	15/32"	13/16"	1/2"	35/64"	.72 ea.
1122	SPDT	15/32"	19/16"	1/2"	35/64"	.93 ea.
1124	DPST	15/32"	19/16"	21/32"	35/64"	1.32 ea.
1126	DPDT	15/32"	19/16"	21/32"	29/32"	1.50 ea.
*1121	SPST	1"	13/16"	1/2"	35/64"	.99 ea.
1123	SPDT	1"	19/16"	1/2"	35/64"	1.17 ea.
1125	DPST	1"	19/16"	21/32"	35/64"	1.56 ea.
1127	DPDT	1"	19/16"	21/32"	29/32"	1.77 ea.

Sleeve Diameter—15/32"
*3 amp. 250 V AC/DC.

BAT LEVER TOGGLE SWITCHES

3 Amp.

Underwriters' approved, 1 amp. 250 V 3 amp. 125 volts. AC/DC. Laminated bakelite base. Nickel plated finish, except 1135 and 1121B.



No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
*1135	SPST	15/32"	13/16"	1/2"	35/64"	.72 ea.
1136	SPDT	15/32"	19/16"	1/2"	35/64"	.93 ea.
1137	DPST	15/32"	19/16"	21/32"	35/64"	1.32 ea.
1138	DPDT	15/32"	19/16"	21/32"	29/32"	1.50 ea.
*1121-B	SPST	1"	13/16"	1/2"	35/64"	.99 ea.
1123-B	SPDT	1"	19/16"	1/2"	35/64"	1.17 ea.
1125-B	DPST	1"	19/16"	21/32"	35/64"	1.56 ea.
1127-B	DPDT	1"	19/16"	21/32"	29/32"	1.77 ea.

Sleeve Diameter—15/32"
*3 amp. 250 V AC/DC.

"COMPACT" SWITCH

3 Amp.

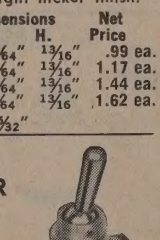
Ideal for aircraft, missile, and electronic applications. Underwriter's approved 1 amp. 250 v., 3 amp. 125 v., AC-DC. Bakelite base. Bright nickel finish.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1205	SPST	15/32"	1 1/64"	41/64"	13/16"	.99 ea.
1206	SPDT	15/32"	1 1/64"	41/64"	13/16"	1.17 ea.
1207	DPST	15/32"	1 1/64"	41/64"	13/16"	1.44 ea.
1208	DPDT	15/32"	1 1/64"	41/64"	13/16"	1.62 ea.

Sleeve Diameter—15/32"

MOLDED BAKELITE SWITCH, BAT LEVER

U.L. approved for 6 amp. 125 volts, 3 amp. 250 volts. *Except for 1143 which is rated at 1 amp. 250 volts, 6 amp. 125 volts. All back connected, slotted sleeve. Positive action.



6 Amp.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1142	SPST	15/32"	1 1/4"	1 1/16"	15/16"	.99 ea.
*1143	SPDT	15/32"	1 1/4"	1 1/16"	15/16"	1.14 ea.
1144	DPST	15/32"	1 1/4"	1 1/16"	15/16"	1.44 ea.
1145	DPDT	15/32"	1 1/4"	1 1/16"	15/16"	1.62 ea.

Sleeve Diameter—15/32"
*1 amp. 250 volts, 6 amp. 125 volts

BALL or BAT* LEVER TOGGLE SWITCH

6 Amp.

Underwriters' approved 3A 250V, 6A 125V, molded bakelite base. Nickel plated finished. WITH 6" WIRE LEADS

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1154	SPST	3/8"	7/8"	1/2"	3/4"	1.02 ea.
*1154B	SPST	3/8"	7/8"	1/2"	3/4"	1.02 ea.

Sleeve Diameter—15/32"

UTILITY SWITCHES—Toggle Type For AC Uses

1185
1186

15 Amp.

1188
1194

Underwriters' approved, 10 amp. 250 volts AC, 15 amp. 125 volts AC, 3/4 H.P. 115V-230V AC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
*1185	SPST	15/32"	1 1/8"	5/8"	15/16"	.87 ea.
1186	SPDT	15/32"	1 1/8"	5/8"	15/16"	1.02 ea.
1188	DPST	15/32"	1 5/16"	3/4"	1 1/16"	1.38 ea.
1194	DPDT	15/32"	1 5/16"	3/4"	1 1/16"	1.71 ea.

Sleeve Diameter—15/32"

MOMENTARY BAT LEVER TOGGLE SWITCHES

3 Amp.

Underwriters' approved, 3 amp. 125 volts, laminated bakelite base. Nickel plated finished.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
*1166	SPST	15/32"	13/16"	1/2"	35/64"	1.32 ea.
1167	SPDT	15/32"	19/16"	1/2"	35/64"	1.35 ea.
*1155	DPST	15/32"	19/16"	21/32"	35/64"	1.74 ea.
1150	DPDT	15/32"	19/16"	21/32"	29/32"	1.95 ea.

Sleeve Diameter—15/32"
*1166 Normally Off *1155 Normally Off
*3 Amp 250V

15 Amp.

Underwriters' approved, 10 amp. 250 volts AC, 15 amp. 125 volts AC, 3/4 H.P. 115V-230V AC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
*1196	SPST	15/32"	1 1/8"	5/8"	15/16"	1.26 ea.
*1197	DPST	15/32"	1 5/16"	3/4"	1 1/16"	1.98 ea.

*Normally Off Sleeve Diameter—15/32"

NEUTRAL CENTER MOMENTARY BOTH ENDS

15 Amp.

Underwriters' approved, 10 amp. 250 volts AC, 15 amp. 125 volts AC, 3/4 H.P. 115V-230V AC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1193	DPDT	15/32"	1 5/16"	3/4"	1 1/16"	2.28 ea.
1195	SPDT	15/32"	1 1/8"	5/8"	15/16"	1.41 ea.

Sleeve Diameter—15/32"

NEUTRAL CENTER 15 Amp.

Underwriters' approved, 10 amp. 250 volts A
15 amp. 125 volts AC, 3/4 H.P. 115V-230V A

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Pr
1187	SPDT	15/32"	1 1/8"	5/8"	15/16"	1.0
1189	DPDT	15/32"	1 5/16"	1/4"	1 1/16"	1.7

Sleeve Diameter—15/32"

BAT LEVER TOGGLE SWITCH 6 Amp. Neutral Center

Underwriters' approved, 6 amp. 125 volts, either AC or DC. A 3 position switch, on-off-on. Black bakelite case.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Pr
1175	SPDT	15/32"	1 13/16"	1 1/16"	1 1/16"	1.8
1176	DPDT	15/32"	1 13/16"	1 1/16"	1 1/16"	2.2

Sleeve Diameter—15/32"

BAT AND PADDLE LEVER TOGGLE SWITCH 5 Amp.

1232 1232-P 1232-
1233 1233-P

This series is unique and used where oth switches cannot be reliably used or have counterpart. Smallest two and three positi wiping blade toggle switches at their ratin on the market. Bat lever is nickel-plated bras paddle lever is black Nylon standard.

Mechanical life expectancy, 100,000 cycles m Electrical life expectancy, 50,000 cycles m at full load. Terminals: combination solder l and quick-connect push-on type terminals. Quic connect accepts .110" AMP type connector equal. When wires are soldered, up to two # wires or three #20 wires. Weight: double po 22.5 grams. Bat lever is 3/4" long; paddle lev is 15/16" long, both with a 28 degree throw. amp. 225 volts, 2 amp. 250 volts AC. 4 amp 125 volts, 1 amp. 250 volts DC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	P
1232	DPDT (on-off-on)	5/16"	1 13/64"	49/64"	1/2"	$
1232-P	DPDT (on-off-on)	5/16"	1 13/64"	49/64"	1/2"	
1233	SPDT (on-off-on)	5/16"	1 13/64"	49/64"	1/2"	
1233-P	SPDT (on-off-on)	5/16"	1 13/64"	49/64"	1/2"	
1232-DF	Dress face nut (optional) .178" thick					

Sleeve Diameter—15/32"

SPECIALTIES MANUFACTURING CO.

Net

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SPEMCO® H & H SWITCHES

PUSH BUTTON DOUBLE ACTION 6 Amp. SWITCH

Underwriters' approved, 6 amp. 125 volts. Press lever to make contact, press lever to break contact. Nickel plated finish or snap-on plastic button, in red or black.

	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
)-	5 Nickel Plated	9/16"	1 1/8"	1/2"	9/16"	1.14 ea.
5-A	Red	9/16"	1 1/8"	1/2"	9/16"	1.47 ea.
5-B	Black	9/16"	1 1/8"	1/2"	9/16"	1.47 ea.

Sleeve Diameter—15/32"

"COMPACT" DOUBLE ACTION (PUSH-PUSH) SWITCH QUICK MAKE AND BREAK ACTION

3 Amp.

Rated at 1 Amp. 250 Volts and 3 Amps. 125 Volts, A.C. and D.C.

Solder lug terminals with double wiping blade mechanism.

	Description	Sleeve	L.	W.	H.	Net Price Each
	SPST	9/16"	1 1/32"	41/64"	13/16"	1.26
1-B	SPST	9/16"	1 1/32"	41/64"	13/16"	1.50
1-R	SPST	9/16"	1 1/32"	41/64"	13/16"	1.50
	SPDT	9/16"	1 1/32"	41/64"	13/16"	1.44
1-B	SPDT	9/16"	1 1/32"	41/64"	13/16"	1.71
1-R	SPDT	9/16"	1 1/32"	41/64"	13/16"	1.71
	DPST	9/16"	1 1/32"	41/64"	13/16"	1.83
-B	DPST	9/16"	1 1/32"	41/64"	13/16"	2.01
-R	DPST	9/16"	1 1/32"	41/64"	13/16"	2.01
	DPDT	9/16"	1 1/32"	41/64"	13/16"	1.95
1-B	DPDT	9/16"	1 1/32"	41/64"	13/16"	2.16
1-R	DPDT	9/16"	1 1/32"	41/64"	13/16"	2.16

(B means black button, R, means Red button and just number, nickel.)

Sleeve Diameter — 15/32"

"COMPACT" MOMENTARY ACTION PUSH SWITCH QUICK MAKE AND BREAK ACTION

3 Amp.

Rated at 1 Amp. 250 Volts A.C. Amps. 125 Volts A.C.-D.C.

Solder lug terminals with double wiping bade mechanism

	Description	Sleeve	L.	W.	H.	Net Price Each
19	SPST	9/16"	1 1/32"	41/64"	13/16"	1.56
19-B	SPST	9/16"	1 1/32"	41/64"	13/16"	1.77
19-R	SPST	9/16"	1 1/32"	41/64"	13/16"	1.77
20	SPDT	9/16"	1 1/32"	41/64"	13/16"	1.83
20-B	SPDT	9/16"	1 1/32"	41/64"	13/16"	2.07
20-R	SPDT	9/16"	1 1/32"	41/64"	13/16"	2.07
21	DPST	9/16"	1 1/32"	41/64"	13/16"	2.10
21-B	DPST	9/16"	1 1/32"	41/64"	13/16"	2.34
21-R	DPST	9/16"	1 1/32"	41/64"	13/16"	2.34
22	DPDT	9/16"	1 1/32"	41/64"	13/16"	2.28
22-B	DPDT	9/16"	1 1/32"	41/64"	13/16"	2.46
22-R	DPDT	9/16"	1 1/32"	41/64"	13/16"	2.46

Sleeve Diameter—15/32"

(B means black button, R, means Red button and just number, nickel.)

*ST & DPST—Normally Off.

MIDGET MOMENTARY PUSH BUTTON SWITCHES

3 Amp.

Underwriters' approved, 3 amp. 120 volts, AC. Molded bakelite base, nickel plated finish.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1141	SP Norm. Closed	9/16"	1 1/32"	9/16"	29/64"	.63 ea.
1141-A	SP Norm. Open	9/16"	1 1/32"	9/16"	29/64"	.63 ea.

Sleeve Diameter—15/32"

3 Amp.

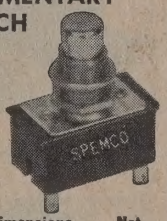
Underwriters' approved, 3 Amp. 120v, AC, Nickel plated finish, Molded bakelite base, Single Pole, slow make and slow break with bakelite snap-On button in red or black. Also white button on request.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1157-A	Open—Red	9/16"	1 1/32"	9/16"	29/64"	1.05 ea.
1157-B	Open—Black	9/16"	1 1/32"	9/16"	29/64"	1.05 ea.
1157-C	Closed—Red	9/16"	1 1/32"	9/16"	29/64"	1.05 ea.
1157-D	Closed—Black	9/16"	1 1/32"	9/16"	29/64"	1.05 ea.

Sleeve Diameter—15/32"

INTERMEDIATE MOMENTARY PUSH SWITCH

6 Amp.



U.L. approved for 6 amp. 125 volts, 3 amp. 250 volts. *Except for 1147 which is rated at 1 amp. 250 volts, 6 amp. 125 volts. All back connected, slotted sleeve.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
**1146	SPST	1/2"	1 1/4"	1 1/16"	15/16"	1.86 ea.
*1147	SPDT	1/2"	1 1/4"	1 1/16"	15/16"	2.04 ea.
**1148	DPST	1/2"	1 1/4"	1 1/16"	15/16"	2.31 ea.
1149	DPDT	1/2"	1 1/4"	1 1/16"	15/16"	2.49 ea.

*1 amp. 250 volts, 6 amp 125 volts

**1146 & 1148 Normally off. Sleeve Diameter—15/32"

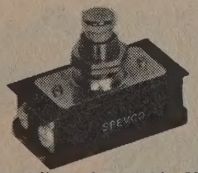
MOMENTARY PUSH BUTTON SWITCH

16 Amp.

Underwriters' approved, 16 amp. 125 V., 8 amp. 250 V., 1 H.P. 125-250 V. AC-DC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1160	DPST Normally Off	15/32"	1 3/4"	13/16"	25/32"	2.13 ea.
1160-A	DPST Normally On	15/32"	1 3/4"	13/16"	25/32"	2.13 ea.

Sleeve Diameter—15/32"



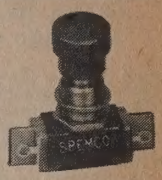
20 Amp.

Underwriters Approved: 20 Amp. 125 V., 10 Amp. 250 V., AC-DC. 1½ H.P. 125-250 V., AC-DC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1230	DPST (Normally Open)	7/16"	1 15/16"	1"	7/8"	3.36 ea.
1231	DPST (Normally Closed)	7/16"	1 15/16"	1"	7/8"	3.36 ea.

Sleeve Diameter—15/32"

1 Amp.



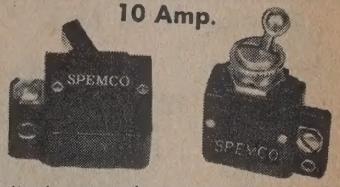
Two circuit, slow make and slow break, momentary switch. One circuit normally on, the other off, with snap-on plastic button, in red or black. (Pushing the button reverses the contact.) 1 Amp. 125 Volts AC. White button on request. Underwriters' Approved.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1158-A	Red	7/16"	1 19/32"	15/32"	17/32"	1.26 ea.
1158-B	Black	7/16"	1 19/32"	15/32"	17/32"	1.26 ea.

Sleeve Diameter—15/32"

POWER SWITCHES

10 Amp.

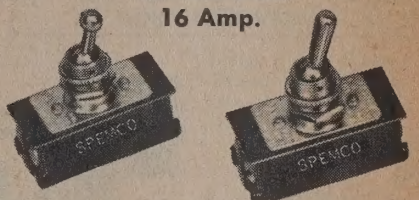


Underwriters' approved, 10 amp. 125 volts. 5 amp. 250 A.C., ¾ H.P. 250V. A.C. ½ H.P. 250V A.C

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
*1133	SPST	1 1/32"	1 5/16"	1 7/32"	1 5/16"	1.26 ea.
1133-B	Bakelite lever	1 5/16"	1 7/32"	1 5/16"		.84 ea.

*15/32" sleeve diameter

16 Amp.



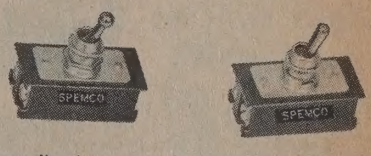
Underwriters' approved, 16 amp. 125V., 8 amp. 250V. A.C.-D.C.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1159	DPST	15/32"	1 3/4"	1 3/16"	25/32"	1.47 ea.
1159-B	DPST	15/32"	1 3/4"	1 3/16"	25/32"	1.47 ea.
1159-C	SPDT	15/32"	1 3/4"	1 3/16"	25/32"	1.47 ea.

1159—Ball Lever 1159-B—Bat Lever

Sleeve Diameter—15/32"

20 Amp.



Underwriters' approved 20 amp, 125 V., 10 amp. 250 V. 1½ H.P. 125-250 V. AC-DC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1134	DPST	15/32"	2"	1"	7/8"	2.49 ea.
1134-B	DPST	15/32"	2"	1"	7/8"	2.49 ea.

1134—Ball Lever 1134-B Bat Lever

Sleeve Diameter—15/32"

20 Amp.

Fully enclosed tumbler switch, 20 amp. 250V., 1½ H.P. 125V., 2 H.P. 250V.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1170-S	DPST	11/32"	2 1/4"	1 1/8"	15/32"	3.42 ea.

Sleeve Diameter—1/2"

20 Amp.

Fully enclosed tumbler switch, 20 amp. 250V., 1½ H.P. 125V., 2 H.P. 250V.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1170	DPST	17/32"	2 1/4"	1 1/8"	15/32"	3.42 ea.

Sleeve Diameter—15/32"

SPECIALTIES MANUFACTURING CO.

SPEMCO® H & H SWITCHES

EXTRA HEAVY DUTY SWITCH NEUTRAL CENTER 10 Amp.

Used in heavy current circuits, such as transmitters, power amplifiers, motors, etc. Contacts have fast 'break' which reduces the tendency to arc. Rated at 10 amp. 125 volts, 5 amp, 250 volts, ¾" HP 250 volts.

Positive off in center.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
*1161-A	DPDT	11/32"	2"	1 5/16"	1"	4.95 ea.
1161	DPDT	11/32"	2"	1 5/16"	1"	4.95 ea.

Straight thru, no off-center* Sleeve Diameter—¾"

20 Amp. & 30 Amp.

3 3/32" mounting centers
1161-B & 1161-D
10 Amp. 250 Volts
20 Amp. 125 Volts
1161-C
20 Amp. 250 Volts
30 Amp. 125 Volts
Both AC-DC

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1161-B	DPDT		2½"	1 19/32"	1 21/32"	7.80 ea.
1161-C	DPDT		2 7/8"	1 13/16"	2"	10.65 ea.
*1161-D	DPDT		2½"	1 19/32"	1 21/32"	7.80 ea.

*20 Amp. Straight thru-no off center.

10 Amp.

Rated 10 amp. 125 volts, ½ HP, 115-230 volts AC. 5 amp. 250 volts.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1177	3 PDT	13/32"	2 5/16"	2"	1⅛"	7.50 ea.
1178	4 PDT	13/32"	2 5/16"	2"	1⅛"	9.45 ea.

Sleeve Diameter—¾"

THREE & FOUR POLE AC UTILITY SWITCHES

15 Amp. AC

15 amp. 125V., 10 amp. 250V. AC., except Nos. 1200, 1201, 1228 and 1237 which are 10 amp. 250V. AC.

No.	Description	Sleeve	Base Dimensions L.	W.	H.	Net Price
1198	3PST On-None-Off	15/32"	1 7/16"	1 5/16"	1 1/16"	2.97 ea.
1199	3PDT On-Off-On	15/32"	1 7/16"	1 5/16"	1 1/16"	3.60 ea.
1227	3PDT On-None-On	15/32"	1 7/16"	1 5/16"	1 1/16"	3.60 ea.
1235	3PDT on-off-Mom. on	15/32"	1 7/16"	1 5/16"	1 1/16"	3.90 ea.
1236	3PDT Mom. on-off-Mom. on	15/32"	1 7/16"	1 5/16"	1 1/16"	3.90 ea.
*1200	4PST On-None-Off	15/32"	1 7/16"	1 5/16"	1 1/16"	4.08 ea.
*1201	4PDT On-Off-On	15/32"	1 7/16"	1 5/16"	1 1/16"	4.89 ea.
*1228	4PDT On-None-On	15/32"	1 7/16"	1 5/16"	1 1/16"	4.95 ea.
1237	4PDT Mom. on-Off-Mom. on	15/32"	1 7/16"	1 5/16"	1 1/16"	7.80 ea.

Sleeve Diameter—15/32"

*10 amp. 250 V. A.C. *½ H.P. 115-230 V. A.C.

TOOL HANDLE SWITCH 4 Amp.

Direct Pull Trigger with Latch.
Plug-in Terminal
2 amp., 250 volts.
4 amp., 125 volts.

SPST Momentary Contact

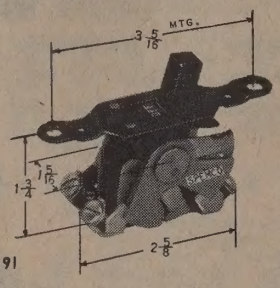
BASE DIMENSIONS

NO.	L.	W.	H.	Net Price
1169	1 3/64"	21/32"	1 3/64"	1.26 ea.

HEAVY DUTY SWITCHES Toggle Type

Underwriters' approved, 30 amp. 250 volts, AC DC. 2 H.P., 115V-230V AC; 1 H.P., 460V AC For use on Food Machines, Grinders, Sanders Machine Tools, Gasoline Pumps, etc.

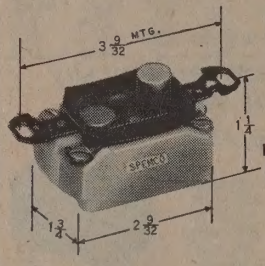
Square Bakelite Lever 30 Amp.



1191

No.	Description	Net Price
1191	DPST Square Lever	2.85 ea.
1190	DPST Roller Type Lever	2.85 ea.

METAL PUSH BUTTON TYPE NORMALLY OPEN 20 Amp.



No. 1192

Description Net Price
DPST 3.50 ea.

Underwriters' approved, 20 amp. 250 volts, 2 H.P. 230V AC, 2 H.P. 250V DC.
For use on Floor Sander, as a foot switch, etc.

PUSH-BUTTON SWITCH Normally Open 20 Amp.

Enclosed Bakelite—Screw Terminals. Side wired only. Natural color Nylon push button. 20 amp. 120-240 volts AC, 2 H.P., 240 volts AC. U.L. approved.

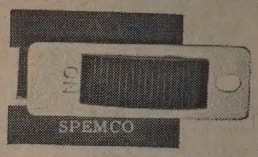
No.	Description	Base Dimensions L.	W.	H.	Net Price
1240	DPST	2¼"	1¼"	1"	3.50 ea.

PORTABLE TOOL HANDLE SWITCHES 16 Amp.

Tool handle switch, fully enclosed, normally OFF with locking latches. Rated and approved by the Underwriters' for 8 amp. 250 volts, 16 amp. 125 volts, 1 H.P. 250 volts, 1¾" long, 1⅜" wide, ⅞" high.

No.	Description	Net Price
1168	DPST	2.16 ea.

INDICATING SLIDE LEVER SWIT



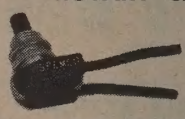
6 Amp.

Rated at
3 Amp.—250 v
6 Amp.—125 v

SINGLE POLE Screw Terminal

NO.	L.	W.	H.	Net P
1174	7/8"	½"	17/32"	1.56

ROTARY CANOPY SWITCH With Fixed Plastic Handle



3 Amp.

Underwriters' approved, 3 amp. 125 volts. 1 a 250 volts.

No	Stem	Wire Lead	Net P
1179	7/16"	6"	.63

ROTARY SWITCHES

3 Amp.

Underwriters' approved, 1 amp. 250 V., 3 amp. V. AC-DC (Except #1128). Nickel plated fin Laminated bakelite base.

No.	Description	Shaft	Sleeve	Base Dimensions L.	W.	H.	P
*1128	SPST	1⅛"	⅜"	1 3/16"	¾"	9/16"	1.08
1129	SPDT	1⅛"	⅜"	1 7/16"	¾"	9/16"	1.35
1130	DPST	1⅛"	⅜"	1½"	¾"	11/16"	1.71
1131	DPDT	1⅛"	⅜"	1½"	¾"	1⅛"	2.04

*1128 rated 3 amp. 250 V. AC-DC.
Sleeve Diameter—11/32"

3 Amp. ROTO-LOCK SWITCH

Underwriters' Approved, 3 amp. 250 volts. Except #1128-K & 1131-K

No.	Description	Sleeve	Base Dimensions L.	W.	H.	N Pri
1128-K	SPST (With Key) (above key removable in off position only)	15/32"	1 3/16"	¾"	9/16"	1.89
1128-KA	Key only for above					.24
1128-KE	SPST (With Key) (above key removable in either position)	15/32"	1 3/16"	¾"	9/16"	1.89
*1129-K	SPDT (With Key) (above key removable in either position)	15/32"	1 9/16"	½"	¾"	1.92
*1131-K	DPDT (With Key) (above key removable in either position)	15/32"	1 9/16"	¾"	¾"	2.55

1128-KEA Key- fits 1128-KE, 1129-K, and 1131-K .24

*1129-K & 1131-K—U.L. approved, 1 amp. 250

3 amp. 125V., AC-DC. Sleeve Diameter—15/32"

ROTO-LOCK SWITCH

20 Amp.

Underwriters' approved.
20 amp. 120 volts, 240 volts AC.

1½ H.P.—120 volts
2 H.P.—240 volts

(with key)
(above key removable in off position only)

No.	Description	Sleeve	Net Pr
1130-K	(With Key) DPST	9/16"	2.85
1130-KA	Key Only for above		.30

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Net

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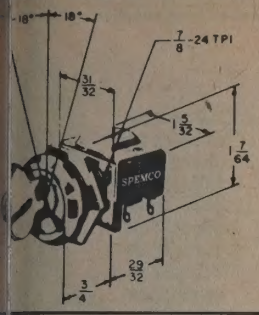
SPEMCO® H & H SWITCHES

BLER LOCK SWITCH



Security type tumbler lock switch, with single hole mounting sleeve. Quick make and break wiping action, and therefore can be considered for both medium power (up to maximum rating) or low energy circuits.

All 6 amp. 125V. AC-DC, 3 amp. 250 V. AC-DC—except 1261 and 1265, which are rated at 6 amp. 125 V. AC-DC, 1 amp 250 V. AC-DC.

Circuit	Key Removable Both Positions	Net Price
SPST	1260	9.90 ea.
SPDT	1261	10.30 ea.
DPST	1262	10.50 ea.
DPDT	1263	10.80 ea.
	Key Removable Off Position Only	
SPST	1264	9.90 ea.
SPDT	1265	10.30 ea.
DPST	1266	10.50 ea.
DPDT	1267	10.80 ea.

ARDWARE

" diameter sleeve.

Description	Price
Hi-Lo Plate	.045 ea.
On and Off Plate	.045 ea.
Hex Nut	.03 ea.
Knurled Nut	.03 ea.
Lockwasher	2.73C
Locking Ring	4.50C

PHENOLIC SNAP-ON BUTTON

No.	Color	Net Price
1212-B	Black	.30 ea.
1212-R	Red	.30 ea.
1212-W	White	.30 ea.

OCKING RACKET

ll bat handle or momentary s. Any Amp.

Net Price

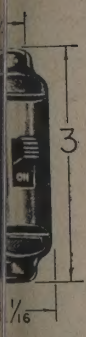
its over 5/32" sleeve iameter. 1.98 ea.
Key Only .30 ea.
eve diameter 15/32"

FEED-THROUGH CORD SWITCH

Underwriters approved, black bakelite case, sliding lever, 10 Amp. 125 V., 5 Amp. 250 V.

No.	Description	Net Price
1163	SP	1.86 ea.

FEED THROUGH CORD SWITCH 15 Amp.



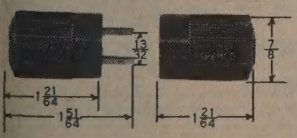
13/32 (.406) Inch Cord Hole

For Appliance Use Only:

Rated at 10 Amp.—250 volts
15 Amp.—125 volts

DP (with 3rd wire ground) — Net Price 5.85 ea.

CORD CONNECTORS 10 Amp.



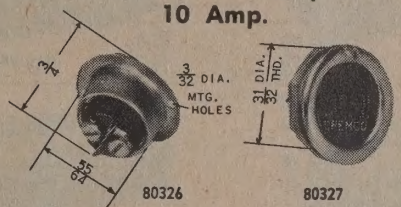
Bakelite Cord Connector Complete, 7/8" x 2 1/2" long. 10 amps. 250 volts. End open- or wire size up to 3/8" O.D.

Description	Net Price
Complete	2.10 ea.
Female Part	1.11 ea.
Male Part	1.11 ea.

RECEPTACLES

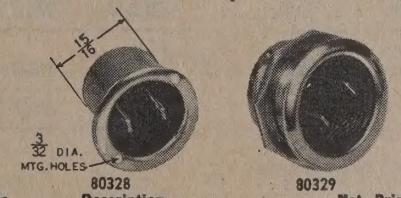
Underwriters' approved, 10 amp. 250 volts AC.

Short Female Flush Receptacle 10 Amp.



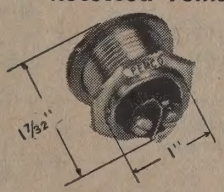
No.	Description	Net Price
80326	2 Screw Mounting	1.29 ea.
80327	Lock Nut Mounting	2.04 ea.

Recessed Male Receptacle 10 Amp.



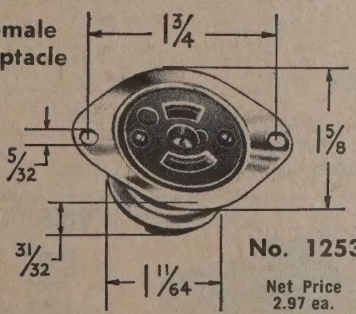
No.	Description	Net Price
80328	2 Screw Mounting	1.44 ea.
80329	Lock Nut Mounting	2.04 ea.

Recessed Female Receptacle 10 Amp.



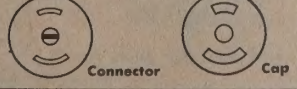
No. 80331
Description Lock Nut Mounting
Net Price 2.04 ea.

Female Receptacle

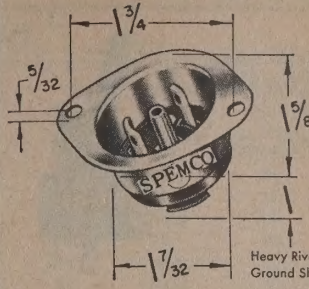


No. 1253
Net Price 2.97 ea.

Configuration

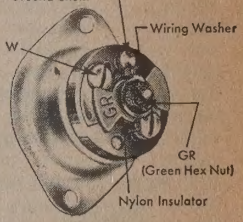


Male Receptacle

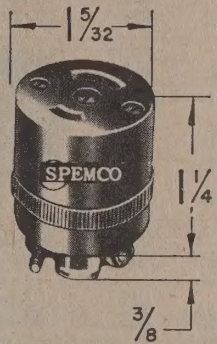


No. 1252

Net Price 2.55 ea.



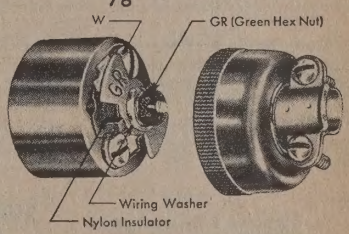
TURN TO LOCK COMPACT RECEPTACLES 3-WIRE GROUNDING TYPE 15 Amp. 125 Volt



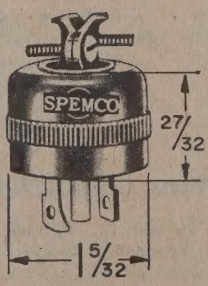
Brass metal casings, finished to resist corosion. Black bakelite is standard.

Female Connector No. 1250

Net Price 2.76 ea.

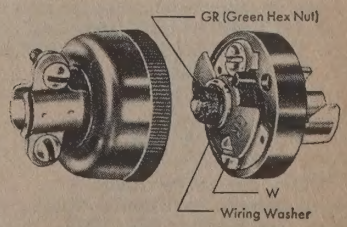


Male Connector



No. 1251

Net Price 2.10 ea.



SPECIALTIES MANUFACTURING CO.

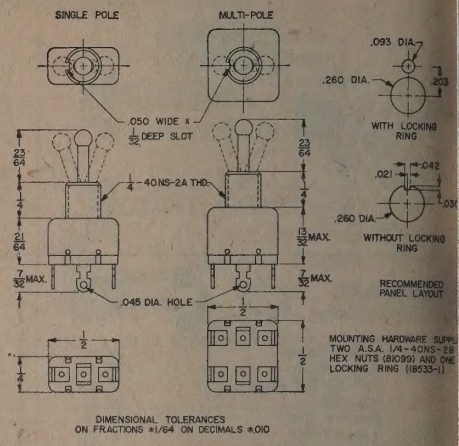
SPEMCO® H & H SUBMINIATURE SWITCHES

Spemco Subminiature Switches are 1/10 the volume of the standard switch.

Photos are actual size of switches.

SUBMINIATURE TOGGLE SWITCHES

Meeting requirements of MIL-S-3950 as applicable to SCL-6305



OPERATING CHARACTERISTICS

CONTACT RATINGS: Low level to 5 amp. resistive at 29 votls DC or 115 volts AC.
INITIAL CONTACT RESISTANCE: 0.01 ohms maximum.
DIELECTRIC STRENGTH: 1000 volts RMS at sea level.
VIBRATION: 5-28 CPS at 0.5 inches double amplitude, 28-2000 CPS at 20 G.
SHOCK: 50G for 11 milliseconds.
ELECTRICAL LIFE (minimum): 20,000 make-and-break cycles.
SEAL: Low temperature rubber boot for panel is available.
WEIGHT: From 3.0 to 5.0 grams maximum.
TERMINALS: Solder lugs.

SPEMCO®

Number	(MS Part No.)	Circuit	Action	Net Price Each
TC-3		SPDT	On-Off-On	$3.00
TC-3-M	(MS-75028-21)	SPDT	On-Off-On	3.20
TE-3		SPDT	On*-Off-On	3.20
TE-3-M	(MS-75028-31)	SPDT	On*-Off-On	3.40
TG-3		SPDT	On*-Off-On*	3.20
TG-3-M	(MS-75028-27)	SPDT	On*-Off-On*	3.40
TM-3		SPDT	On*-None-On	3.20
TM-3-M	(MS-75028-26	SPDT	On*-None-On	3.40
TS-1		SPST	Off-None-On	2.80
TS-1-M	(MS-75028-22)	SPST	Off-None-On	3.00
TS-2		DPST	Off-None-On	3.40
TS-2-M	(MS-75029-22)	DPST	Off-None-On	3.60
TS-3		SPDT	On-None-On	3.00
TS-3-M	(MS-75028-23)	SPDT	On-None-On	3.20
TC-6		DPDT	On-Off-On	3.90
TC-6-M	(MS-75029-21)	DPDT	On-Off-On	4.10
TE-6		DPDT	On*-Off-On	5.00
TE-6-M	(MS-75029-31)	DPDT	On*-Off-On	5.20
TG-6		DPDT	On*-Off-On*	5.00
TG-6-M	(MS-75029-27)	DPDT	On*-Off-On*	5.20
TM-6		DPDT	On*-None-On	5.00
TM-6-M	(MS-75029-26)	DPDT	On*-None-On	5.20
TS-6		DPDT	On-None-On	3.90
TS-6-M	(MS-75029-23)	DPDT	On-None-On	4.10
11-B	Black Rubber Boot			1.00

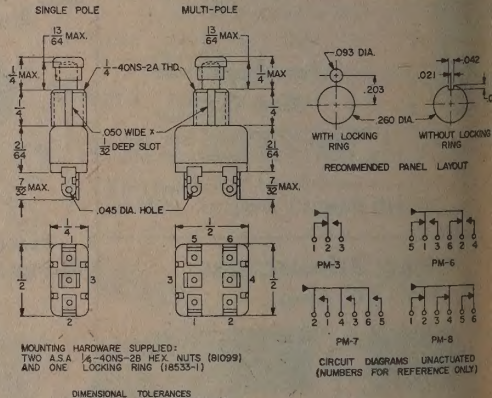
Basic catalog numbers supplied with ball lever.
Military type (suffix "M") supplied with bat lever — suffix "M" switches meet requirements of MIL-S-3950-B.
*Momentary action.

Spemco Subminiature Switches are 1/10 the volume of the standard switch.

Photo is actual size of switch.

SUBMINIATURE PUSH BUTTON SWITCHES, MOMENTARY

Featuring gold plated coin silver contacts and gold plated brass terminals. Ideal for aircraft, missile, electronic and other applications demanding small size and dependability.



OPERATING CHARACTERISTICS

CONTACT RATINGS: 2 amp 29 volt. DC resistive; 1 amp 115 volts AC. Minimum rating for dry circuit application 10 micro amps at 50 MV.
ELECTRICAL LIFE EXPECTANCY: At full load min. 20,000 make-and-break cycles pulsed at rate of 100 cycles per minute.
INITIAL CONTACT RESISTANCE: 0.05 ohms maximum.
VIBRATION: Tested per Mil-Std. —202, Method 204, Condition A.
DIELECTRIC STRENGTH: 1000 volts RMS at sea level for one minute.
TEMPERATURE RANGE: −87°F (−65°C to +200°F (+94°C).
PRETRAVEL: .015" maximum.
MOVEMENT DIFFERENTIAL: .002" maximum.
OVERTRAVEL: .010" maximum.
OPERATE FORCE: 6.6 oz. maximum.
When colored buttons are required, specify the color and add 10c each to the list price. Colors: Black, Red, Yellow, Green, Brown.

SPEMCO®

Number	Circuit	Action	Net Price Each
PM-3	SPDT	Leaf Contact — NO/NC	$2.86
PM-6	DPDT	Leaf Contact — NO/NC	3.51
PM-7	3PST	Leaf Contact — 3P/NO	3.31
PM-8	3PST	Leaf Contact — 3P/NC	4.65
10-B	Black Rubber Boot		1.00

Switches supplied with standard .215" white (natural) button.

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SPEMCO® H & H SWITCHES

MILITARY TYPE TOGGLE SWITCHES

Manufactured of materials and in accordance with specification Mil-S-3950

MS-25098 and MS-35058—Single Pole

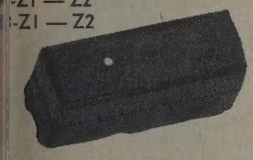
MS Part No.	Up Position	Center Position	Down Position Keyway Side	List Price
MS-25098-22	On	None	Off	$257.25C
MS-25098-23	On	None	On	277.50C
MS-25100-22	On	None	Off	315.75C
MS-25100-23	On	None	On	336.75C
MS-35058-21	On	Off	On	232.50C
MS-35058-22	On	None	Off	192.75C
MS-35058-23	On	None	On	232.50C
MS-35058-24	On	Off	None	192.75C
MS-35058-25	On	Mom. Off	None	213.00C
MS-35058-26	On	None	Mom. On	252.75C
MS-35058-27	Mom. On	Off	Mom. On	252.75C
MS-35058-28	None	Off	Mom. On	213.00C
MS-35058-29	On	None	Mom. Off	213.00C

MS-25100 and MS-35059—Double Pole

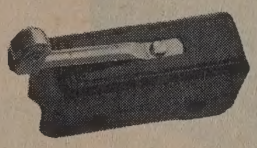
MS Part No.	Up Position	Center Position	Down Position Keyway Side	List Price
MS-35058-30	Off	None	Mom. On	$213.00C
MS-35058-31	On	Off	Mom. On	252.75C
MS-35059-21	On	Off	On	311.25C
MS-35059-22	On	None	Off	258.00C
MS-35059-23	On	None	On	311.25C
MS-35059-24	On	Off	None	258.00C
MS-35059-25	On	Mom. Off	None	311.25C
MS-35059-26	On	None	Mom. On	336.75C
MS-35059-27	Mom. Off	Off	Mom. On	336.75C
MS-35059-28	None	Off	Mom. On	311.25C
MS-35059-29	On	None	Mom. Off	311.25C
MS-35059-30	Off	None	Mom. On	311.25C
MS-35059-31	On	Off	Mom. On	336.75C

SPEMCO® H & H PRECISION SWITCHES — SPDT

-ZI — Z2
-ZI — Z2

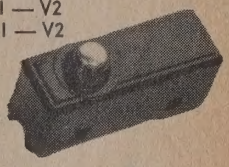


GP3-QI — Q2
HD3-QI — Q2

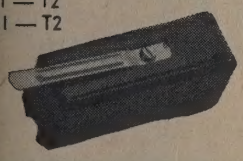


GP3-XI — X2
HD3-XI — X2

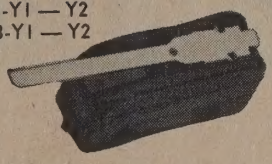
GP3-VI — V2
HD3-VI — V2



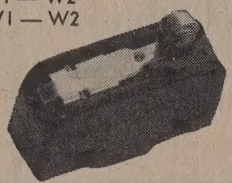
-TI — T2
-TI — T2



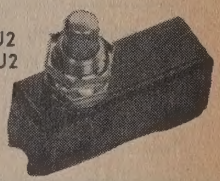
GP3-YI — Y2
HD3-YI — Y2



GP3-WI — W2
HD3-WI — W2



GP3-UI — U2
HD3-UI — U2



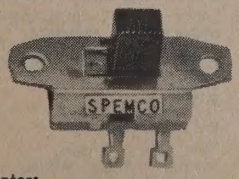
indicates **General Purpose** Switches. HD indicates **Heavy Duty** ches. All UL and CSA approved. **GENERAL PURPOSE SWITCHES:** amp. 480 V. AC; ½ amp. 125 V. DC; ¼ amp. 250 V. DC. **HEAVY DUTY SWITCHES:** 20 amp. 480 V. AC; 10 amp 125 V. AC "L" load, ½ amp. 125 V. DC; ¼ amp. 250 V. DC; 1 H.P. 120 V. AC; 2 H.P. 240 V. AC.

SPEMCO NUMBER Solder Lug	SPEMCO NUMBER Screw Term.	•1 ACTUATOR	OPERATING FORCE	PRETRAVEL	OVERTRAVEL	LIST PRICE Solder Lug	LIST PRICE Screw Term.
GP3-ZI	GP3-Z2	Pin Type	9 to 13 oz.	.015" max.	.005" min.	$175.00 C.	$190.00 C.
GP3-TI	GP3-T2	Flexible Leaf	5 oz. max.	5/32" max.	Not over 1/16"	200.00 C.	220.00 C.
GP3-QI	GP3-Q2	Std. Roller Leaf	5 oz. max.	5/32" max.	Not over 1/16"	260.00 C.	275.00 C.
GP3-YI	GP3-Y2	Rigid Hinge Lever	2½ oz.	3/8" max.	.219" min.	225.00 C.	230.00 C.
GP3-XI	GP3-X2	Std. Roller Lever	3½ oz. max.	9/32" max.	.156" min.	285.00 C.	290.00 C.
GP3-WI	GP3-W2	Short Roller Lever	6 oz. max.	9/64" max.	3/32" min.	285.00 C.	290.00 C.
GP3-VI	GP3-V2	Short Overtravel Button	9 to 13 oz.	1/64" max.	1/16" min.	230.00 C.	235.00 C.
GP3-UI	GP3-U2	Panel Mounted Plunger	9 to 13 oz.	1/64" max.	7/32" min.	385.00 C.	395.00 C.
HD3-ZI	HD3-Z2	Pin Type	14 to 22 oz.	.050" max.	.010" min.	190.00 C.	190.00 C.
HD3-TI	HD3-T2	Flexible Leaf	9 oz. max.	11/32" max.	Not over 1/16"	220.00 C.	220.00 C.
HD3-QI	HD3-Q2	Std. Roller Leaf	9 oz. max.	11/32" max.	Not over 1/16"	275.00 C.	275.00 C.
HD3-YI	HD3-Y2	Rigid Hinge Lever	2½ oz. max.	5/8" max.	.078" min.	240.00 C.	240.00 C.
HD3-XI	HD3-X2	Std. Roller Lever	2½ oz. max.	15/32" max.	1/16" min.	300.00 C.	300.00 C.
HD3-WI	HD3-W2	Short Roller Lever	6 oz. max.	1/4" max.	1/32" min.	300.00 C.	300.00 C.
HD3-VI	HD3-V2	Short Overtravel Button	14 to 22 oz.	.050" max.	.093" min.	235.00 C.	235.00 C.
HD3-UI	HD3-U2	Panel Mounted Plunger	14 to 22 oz.	.050" max.	.219" min.	395.00 C.	395.00 C.

Switches are mounted by two .140 inch diameter holes on one inch centers. D count: 1-9, none; 10-19, 10%; 20-49, 20%; 50 & over, 30%.

All aforementioned switches, connectors and receptacles are manufactured by H&H for Specialties Manufacturing Company.

Housings are made of steel and are cadmium plated 1 13/32" long, 35/64" wide and 1 1/8" mounting centers.



SLIDE SWITCHES

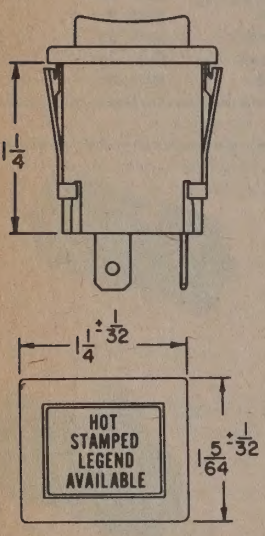
No.	Description	Net Price
1180	SPST 3A-AC .5A-DC 125V	.156 ea.
1181	SPDT .75A AC-DC 125V	.168 ea.
1182	DPST .5A AC-DC 125V	.216 ea.
1183	DPDT 3A-AC .5A-DC 125V	.258 ea.

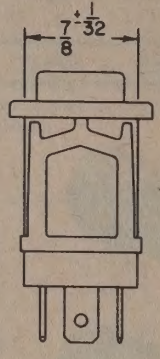
SPECIALTIES MANUFACTURING CO.

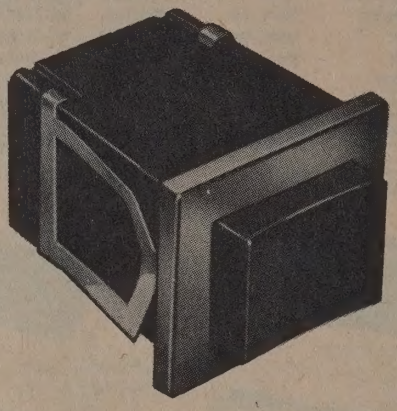
LIGHTED PUSH-BUTTON SWITCHES

molex®

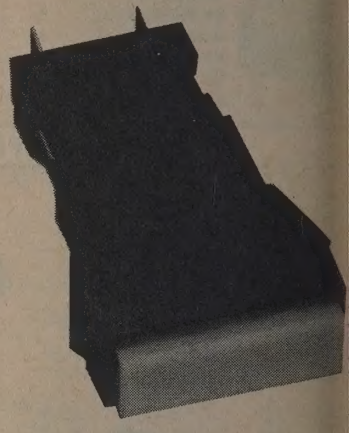
Both the Molex 1175 and 1820 are lighted push button switches that are sturd well-designed and offer a wide choice of features. They are available in alterna action; momentary normally open or momentary normally closed models. The swit snaps mount into place and are offered with spade terminals. Many variations a possible. The button comes in blue, red, amber, yellow, white and green.







1175 SWITCH



1820 SWITCH

Catalog Number	Volts AC	Amps	Lamp	Switch Action	Button Color	Legend	Legend Color	1-24 Each	25-49 Each	50-ov Each
117510	6	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	None	N/A	$3.85	$3.55	$3.25
117520	14	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	None	N/A	3.85	3.55	3.25
117540	125*	8.5	Neon	PP, MNO, MNC	W, R, B, G, A, Y	None	N/A	3.45	3.20	2.95
117560	6	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	OFF, ON START, STOP	W, B	4.50	4.20	3.85
117570	14	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	OFF, ON START, STOP	W, B	4.50	4.20	3.85
117590	125*	8.5	Neon	PP, MNO, MNC	W, R, B, G, A, Y	OFF, ON START, STOP	W, B	4.15	3.85	3.50
182010	6	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	None	N/A	6.80	6.35	5.70
182020	14	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	None	N/A	6.60	6.15	5.50
182040	125*	9	Neon	PP, MNO, MNC	W, R, B, G, A, Y	None	N/A	5.95	5.55	4.95
182060	6	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	OFF, ON START, STOP	W, B	8.20	7.70	6.65
182070	14	2	Incandescent	PP, MNO, MNC	W, R, B, G, A, Y	OFF, ON START, STOP	W, B	7.90	7.45	6.45
182090	125*	9	Neon	PP, MNO, MNC	W, R, B, G, A, Y	OFF, ON START, STOP	W, B	7.25	6.80	5.85

*Component U.L. Recognized.

Mechanical Life of switches is 25,000 cycles. Many test out at considerably more. Bezels (1175 series only) are all high quality chrome-plated. Housings, 1175, are precision molded of durable phenolic; 1820 housings are of long lasting highest quality nylon — buttons are mar-resistant nylon. Both switches are designed for panel mounting. Minimum panel thickness .031". Mounting clips supplied with 1175-1820 have integrally molded mounting ears. Terminals are standard ¼ male tab for 1175; 3/16 male tab for 1820. Use WALDOM female Q-D terminal SS-1090 and SS-1187 respectively. Tabs also have solder hole for soldering wire lead if desirable.

NOTES:

1. Pricing includes permanently installed lamp, 6-volt application, Bulb No. 2114; 14-volt application, Bulb No. 2182; 125-volt application, NE 2H, 35K resistor.
2. a. Push-On; Push-Off — add suffix PP to catalog number.
   b. Momentary-Normally Open — add suffix MNO to catalog number.
   c. Momentary-Normally Closed — add suffix MNC to catalog number.
3. Buttons available in White, Red, Blue Green, Amber and Yellow. Add first initial of color to suffix after designating switch action and button color.
4. Four standard legends are available. They are OFF, ON, START, STOP. Add actual word to catalog number after designating switch action and button color.
5. Color of hot stamping on button is standardized as follows:

HOT STAMPING COLOR

White
Black

BUTTON COLOR

Red, Blue, Green,
Amber, Yellow, White

Recommended Panel Cutout Dimension:

1175 Switch 1.115" x .915"
1820 Switch 1.215" x .500"

ORDERING EXAMPLES:

(a) To obtain a 6-volt unit, momentary tion normally open, with red button a no legend—specify Catalog No. 1175 MNO-R for 1175 series or 182010 MNO-R for 1820 series switch.

(b) To obtain a 125-volt unit, push-on, pu off, with yellow button, hot stamp START — Specify Catalog No. 1175 PP-Y START for 1175 series or 1820 PP-Y START for 1820 series switch.

Dimensions of 1820 Swith:

Bezel Dimensions — 1 3/32" x 3/4"
Button Size — 13/16" x 7/16"
Depth of Housing — 2 1/4"

These products are manufactured by Molex Products Company, and are available from Electronic/Electrical Distributors through Wald Electronics, Inc.

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INVENTORY

While most distributors maintain a large and varied stock, they do not represent that they stock all manufacturers' products shown in this MASTER catalog.

ORDERING

It is important, when ordering, to mention specifically the edition and page number, also the catalog number of each item. This will avoid possible confusion and delay.

PRICES

INQUIRE ABOUT LATEST PRICES AND DELIVERY. Prices in this MASTER should not be considered as final.

DISCOUNTS

Trade discounts apply in most cases where LIST PRICES are shown.

American Beauty SOLDERING IRON AND SOLDERING ACCESSORI

Specify voltage, wattage and other options on each order. If your plug needs differ from standard — plug cap on 2-wire cords, NEMA-type plugs on 3-wire cords — specify plug manufacturer's name and catalog number.

LITTLE DANDY

The economy-priced miniature iron that stands up to production line conditions. Steel cored heating element with non-ceramic insulator. Molded handle, aerated finger grip (impervious to oil, perspiration). Balanced, non-roll design. Plug type tips.

Cat. No.	Wattage Std.	Spec.	Tip Dia.	Shpg. Wt.	Net
3108	20	25/30	1/8"	½ lb.	$4.70
3110	25	30/35	3/16"	½ lb.	4.70
3112	40	50/60	¼"	½ lb.	6.25

NOTES: Three wattage options each model (3108: 20, 25, 30. 3110: 25, 30, 35. 3112: 40, 50, 60.) For 3-wire cord with NEMA plug, add "S3" to catalog number and $0.70 to price.

BANTAMS

Small irons of traditional American Beauty quality in various inputs and tip diameters.

Cat. No.	Wattage	Tip Dia.	Shpg. Wt.	Net
3114	60	¼"	1 lb.	$8.00
3118	30	1/8"	¾ lb.	6.35
3118-X	50	1/8"	¾ lb.	7.15
3118-XP	50	1/8"	¾ lb.	7.15
3118-SC	30	1/8"	¾ lb.	6.35
3118-SCP	30	1/8"	¾ lb.	6.35
3120	30	3/16"	¾ lb.	6.35
3120-X	50	3/16"	¾ lb.	7.15
3120-XP	50	3/16"	¾ lb.	7.15
3120-SC	30	3/16"	¾ lb.	6.35
3120-SCP	30	3/16"	¾ lb.	6.35

NOTES: In above catalog numbers, "X" means "extra heat for continuous duty only; "SC" means "short casing"; "P" means "pencil type handle". For 3-wire cord with NEMA plug, add "S3" to catalog number and $1.40 to price.

B-SERIES IRONS

Best miniature at any price. Advanced design. Precise balance, floating element for fast heat recovery. Boxed with 3 assorted tips.

Cat. No.	Wattage	Tip Point Diameter	Shpg. Wt.	Net
B-2000L	22.5	*	½ lb.	$10.25
B-2000P	22.5	1/8"	½ lb.	10.25
B-2000PM	22.5	1/16"	½ lb.	$10.25
B-2000C	22.5	1/16"	½ lb.	10.25
B-2000B	22.5	1/8"	½ lb.	10.25
B-2500-L	30	*	½ lb.	10.25
B-2500-C	30	3/16" Csl.	½ lb.	10.25
B-2500-D	30	3/16" Cone	½ lb.	10.25
B-2500-B	30	1/32" Cone	½ lb.	10.25
B-2500-PM	30	3/32" Csl.	½ lb.	10.25

NOTES: *1 each 1/8" chisel, 1/16" chisel, 1/8" cone. For 3-wire cord with NEMA plug, add "S3" to catalog number and $0.70 to price.

STANDARD IRONS

Production lines around the world use hundreds of thousands of these proven American Beauties.

Cat. No.	Wattage Std.	Spec.	Tip Dia.	Shpg. Wt.	Net
3125	60	75	¼"	1 lb.	$ 8.00
3128	60	75	¼"	1 lb.	7.20
3138	100	130/150	3/8"	2 lbs.	10.35
3138-X	175	—	3/8"	2 lbs.	11.55
3138-Y	100	130/150	¼"	2 lbs.	10.35
3138-XY	175	—	¼"	2 lbs.	11.55
3158	200	—	5/8"	3 lbs.	12.75
3158-X	250	300	5/8"	3 lbs.	13.95
3178	300	—	7/8"	4 lbs.	16.75
3178-X	300	400	7/8"	4 lbs.	17.90
3198	550	675	1 1/8"	5¾ lbs.	20.75

NOTES: "X" in catalog number means "extra hot, for continuous duty only." For 3-wire cord with NEMA plug, add "S3" to catalog number and $1.40 to price.

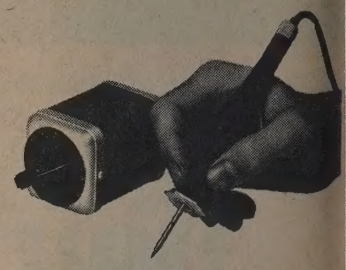
ANGLE TYPE IRONS

Same quality as American Beauty Standard Irons but angled for soldering hard-to-reach connections.

Cat. No.	Wattage Std.	Spec.	Tip Dia.	Shpg. Wt.	Net
3118-A	30	40	1/8"	¾ lb.	$7.20
3118-XA	50	40	1/8"	¾ lb.	8.00
3120-A	30	40	3/16"	¾ lb.	7.20
3120-XA	50	40	3/16"	¾ lb.	8.00
3125-A	60	75	¼"	1 lb.	8.70
3128-A	60	75	¼"	1 lb.	8.00
3138-A	100	130/150	3/8"	1¼ lb.	11.20

NOTES: "X" in catalog number means "extra hot, for continuous duty only." For 3-wire cord with NEMA plug, add "S3" to catalog number and $1.40 to price.

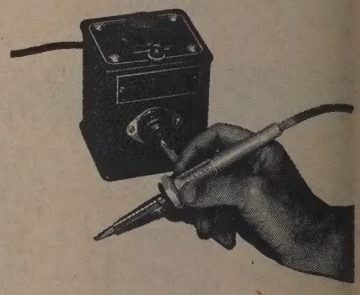
TRANSFORMER TYPE IRONS



Use these American Beauties whe isolation from line voltage is necessa Heating elements in tips for quick heat changes. T-6 has variable he dial. T-12 and T-30, non-variable.

Cat. No.	Wattage Std.	Spec.	Tip Dia.	Shpg. Wt.	N
T-6	Variable		9/64"	1½ lbs.	$22
T-12E/W T-1216	17	20	1/16"	1½ lbs.	15
T-12E/W T-1218	17	20	1/8"	1½ lbs.	15
T-12E/W T-1225	17	20	¼"	1½ lbs.	15
T-12E/W T-1232	12	—	3/32"	1½ lbs.	15
T-30E/W T-3016	30	25	1/16"	2 lbs.	17
T-30E/W T-3018	30	25	1/8"	2 lbs.	17
T-30E/W T-3025	30	25	¼"	2 lbs.	17
T-30E/W T-3032	12	—	3/32"	2 lbs.	17

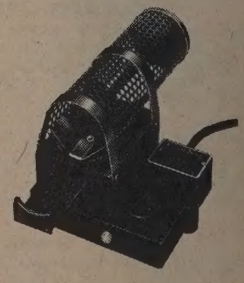
V-3000 SYSTEM



New type system dependably dials a maintains any tip temperature fro 350° to 750°. High reserve for fast r covery. Iron is 40-watt, uses any 3/ plug type tip.

Cat. No.	Wattage	Shpg. Wt.	Net
V-3000	Variable	5 lbs.	$42.0

TEMPERATURE REGULATING STANDS



Maintain soldering iron at preset tem perature during idle and intermitten use. Minimizes warmup, prevents over

Net

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American Beauty

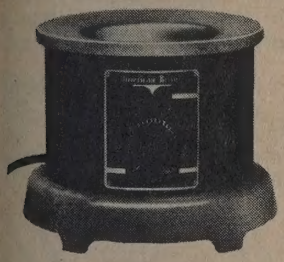
SOLDERING IRONS
AND SOLDERING ACCESSORIES

ting, saves current. Pilot light. Ad-table to length of iron.

Use	Shpg. Wt.	Net
For 100W-600W irons	3¼ lbs.	$10.35
For 30W-85W irons	3¼ lbs.	10.35

TES: For perforated guard (as wn) add "SG" to catalog number 1 $1.40 to price. Standard cord HPD; if you want either 2-wire 3-wire SJO cord specify on order.

GENERAL PURPOSE SOLDER POTS

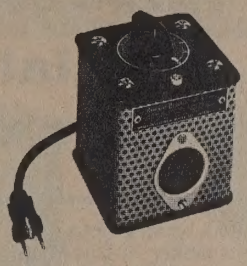


ucibles of cast iron, chemically stable keep solder pure. Center tapped for ss skimmer or extra fixturing. Wide ped for extra fixture mounting. allow; 1½" deep. Heat solder to 400° 15 minutes — 750° in 25 minutes. justable, direct reading thermostat.

Solder Capacity	Shpg. Wt.	Net
1 lb.	6½ lbs.	$30.40
(Same as NO. 300, with dross skimmer)	6½ lbs.	33.40
2½ lbs.	9 lbs.	31.90
(Same as NO. 600, with dross skimmer)	9 lbs.	34.90

OTES: Standard cords are 2-wire O; for 3-wire cord, add "S3" to cata-g number and $1.40 to price.

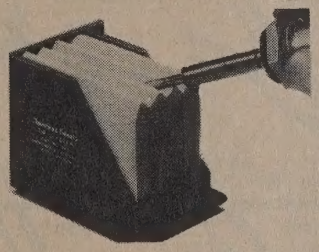
INFINITELY VARIABLE POWER CONTROL UNIT



Dials and accurately controls soldering iron tip heat. (Also reliably controls small motor speeds.) Wattage: zero to 125W; infinitely variable, stepless. Fused. Pilot lighted.

Cat. No.	Shpg. Wt.	Net
477	3¾ lbs.	$17.00

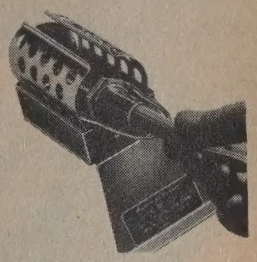
ONE-PASS TIP CLEANERS



Cleans all sides of tip in one motion. Eliminates tip damage, linting, stray solder pellets. Rubberized base, bored for mounting.

Cat. No.	Descrip.	Shpg. Wt.	Net
480	Complete set	½ lb.	$2.25
480-S	Sponges only (ea.)	3 oz.	.16

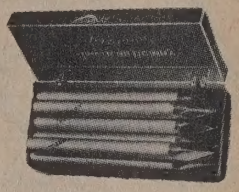
SAFETY SOLDERING IRON STAND



Gravity controlled. Opens, closes automatically. Operator doesn't look up from work. Accommodates all miniature irons.

Cat. No.	Descrip.	Shpg. Wt.	Net
575	Soldering Stand	1 lb.	$3.00

PARAGON QUALITY SOLDERING TIPS



Iron clad tips. Outlast unclad tips many times. Pretinned; point retins self as it works. Clad shank does away with pitting, scaling. Overall chromecoat and minute tapering make tip drip-proof, freeze-free.

ORDERING: Use American Beauty Catalog No. TC-2. Or order tips by carefully specifying shank diameter, overall length, and style of point (diamond, chisel, screwdriver, cone).

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

RESISTANCE-TYPE SOLDERING & THERMAL WIRE STRIPPING EQUIPMENT

Complete, single source for newest equipment from simplest to most sophisticated

RESISTANCE-TYPE SOLDERING

Power units, control consoles, handpieces, accessories . . . Basic building blocks for your automated soldering systems

THERMAL WIRE STRIPPING

Combinations of power and control units, handpieces and accessories for fast, nick free stripping of thermoplastics and other heat strippable insulations

NEW CATALOGS AND PRICING NOW READY

Ask for "American Electrical Heater Company publication Nos. 25PSW & 37WCP"

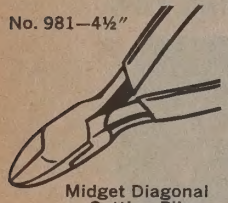
AMERICAN ELECTRICAL HEATER COMPANY

All plier patterns with No. 9 as first digit have polished heads and cushion grip handles. For chrome plated heads and cushion grip handles, substitute No. 7 as first digit. (Nos. 96—5", 6", 7½", and 8½" are not available in this finish.)

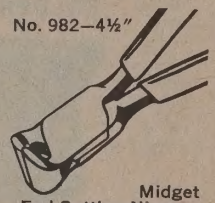
Boker In-Dus-Tronic hand tools have a nose for every special electronics application

And if you have a nose for quality, you want Boker In-Dus-Tronic hand tools... top quality, precision tools that are designed specifically for the unique requirements of the electronics industry. Boker In-Dus-Tronic hand tools are drop-forged from special alloy steel. Precision ground to give perfect jaw alignment. Electronically heat-treated and hand honed for sharp, long-lasting cutting edges. 100% inspected to maintain Boker's high standards for hardness, strength and cutting ability. Cushion-grip handles for comfort and efficient operation. And, best of all, no matter how tight the area, Boker has a nose shaped to do the job from any angle.

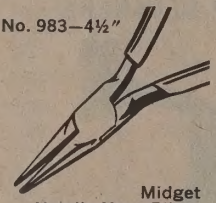
There's a wide range of fine quality tools in the Boker line... 487 pliers, nippers, snips, punches, adjustable wrenches, knives, industrial scissors and shears.



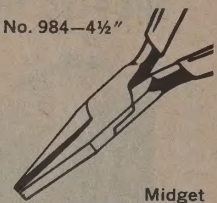
No. 981—4½"
Midget Diagonal Cutting Pliers



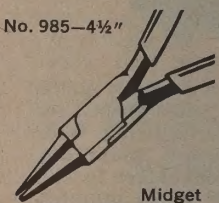
No. 982—4½"
Midget End Cutting Nippers



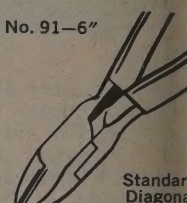
No. 983—4½"
Midget Needle Nose Pliers



No. 984—4½"
Midget Flat Nose Pliers



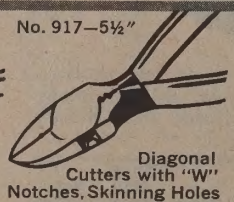
No. 985—4½"
Midget Round Nose Pliers



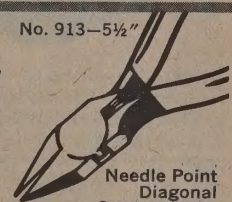
No. 91—6"
Standard Diagonal Cutting Pliers

No. 991—7"
Heavy Duty Diagonal Cutting Pliers

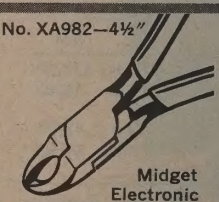
No. RA91—5½"
Thin, Narrow Pointed, Diagonal Cutting Pliers



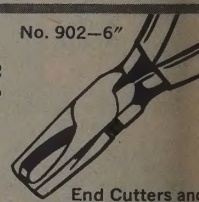
No. 917—5½"
Diagonal Cutters with "W" Notches, Skinning Holes and Insulation Crusher



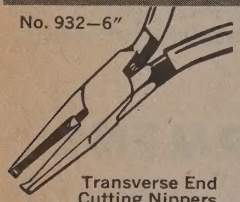
No. 913—5½"
Needle Point Diagonal Cutting Pliers



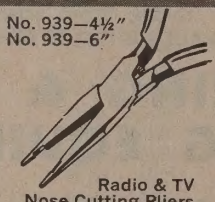
No. XA982—4½"
Midget Electronic End Cutting Nippers



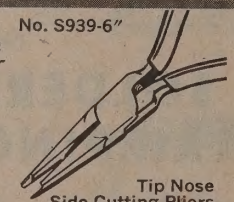
No. 902—6"
End Cutters and Lead In Stripper



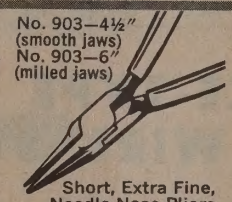
No. 932—6"
Transverse End Cutting Nippers



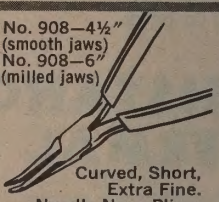
No. 939—4½"
No. 939—6"
Radio & TV Nose Cutting Pliers



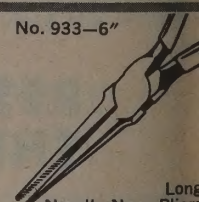
No. S939-6"
Tip Nose Side Cutting Pliers



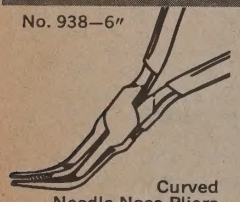
No. 903—4½" (smooth jaws)
No. 903—6" (milled jaws)
Short, Extra Fine, Needle Nose Pliers



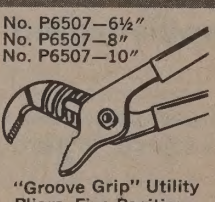
No. 908—4½" (smooth jaws)
No. 908—6" (milled jaws)
Curved, Short, Extra Fine. Needle Nose Pliers



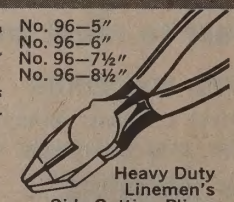
No. 933—6"
Long Needle Nose Pliers



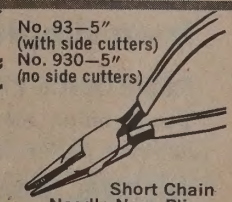
No. 938—6"
Curved Needle Nose Pliers



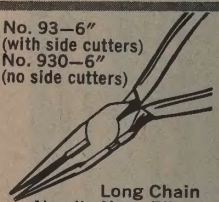
No. P6507—6½"
No. P6507—8"
No. P6507—10"
"Groove Grip" Utility Pliers. Five Positions



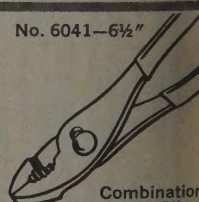
No. 96—5"
No. 96—6"
No. 96—7½"
No. 96—8½"
Heavy Duty Linemen's Side Cutting Pliers



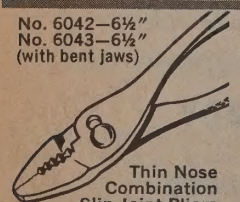
No. 93—5" (with side cutters)
No. 930—5" (no side cutters)
Short Chain Needle Nose Pliers



No. 93—6" (with side cutters)
No. 930—6" (no side cutters)
Long Chain Needle Nose Pliers

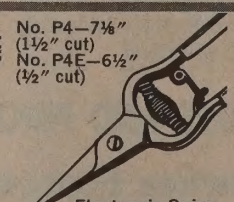


No. 6041—6½"
Combination Slip Joint Pliers

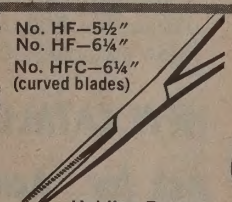


No. 6042—6½"
No. 6043—6½" (with bent jaws)
Thin Nose Combination Slip Joint Pliers

No. 709—5"
IDT
Electricians Scissors

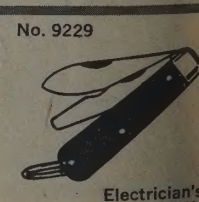


No. P4—7⅛" (1½" cut)
No. P4E—6½" (½" cut)
Electronic Snips



No. HF—5½"
No. HF—6¼"
No. HFC—6¼" (curved blades)
Holding Forceps

6W—4" 6W—15"
6W—6" 6W—18"
6W—8"
6W—10"
6W—12"
Adjustable Wrenches —Thin Pattern



No. 9229
Electrician's Pocket Knife

BOKER MANUFACTURING CO.
A Subsidiary of THE NEW BRITAIN MACHINE CO.

BOKER IN-DUSTRONIC TOOLS

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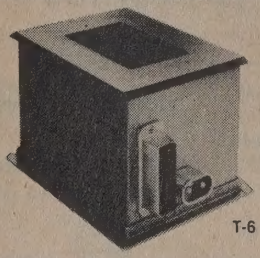
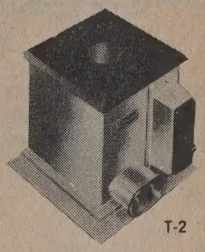
CAIG LABORATORIES INC.

SOLDER BATHS and SOLDERING IRONS

T-50

R-4A


T-6


T-2

RECTANGULAR AND ROUND SOLDER BATHS

Catalog No.	Watts	Volts	Approx. Temperature (°C)	Approx. Temperature (°F)	Internal Dimensions Approx. (Inches) Length	Width	Depth	Contents Approx. (CC)	Heat Control	Weight Approx. (Lbs.)	Price
50	65	110	300	572	1.10	0.78	0.55	7	Full Heat	1.00	$ 9.75
100	130	110	340	644	2.37	1.18	1.18	25	Full Heat	1.50	10.50
2*	240	110	600	1112	—	0.97 dia.	1.84	17	Full & Half	3.00	28.00
4*	400	110	410	770	2.00	2.00	3.28	220	Full & Half	8.50	40.00
6*	1000	110	560	1040	4.69	3.13	2.39	570	Full & Half	11.25	61.00
9**	2800	230	650	1202	6.50	5.33	3.94	2080	3 Step Sw.	31.00	175.00
1212	2000	230	372	700	12.00	12.00	2.00	90 lbs.	Automatic	55.00	175.00
1218‡	2800	230	372	700	18.00	12.00	2.00	135 lbs.	Automatic	70.00	210.00
1418‡	3000	230	372	700	18.00	14.00	2.00	175 lbs.	Automatic	60.00	290.00
1.5A	200	110	288	550	—	1.50 dia.	1.50	1 lb.	Automatic	5.00	33.00
4A†	300	110	288	550	—	3.00 dia.	1.50	4 lbs.	Automatic	6.00	34.00
10A†	500	110	288	550	—	3.50 dia.	2.50	10 lbs.	Automatic	11.00	47.00
20A†	1100	110	372	700	—	5.00 dia.	4.00	20 lbs.	Automatic	33.00	91.00
40A	1500	230	372	700	—	6.00 dia.	6.00	40 lbs.	Automatic	40.00	103.00
80X	3000	230	538	1000	—	8.00 dia.	5.50	80 lbs.	Full Heat	45.00	150.00
80AXP	3000	230	538	1000	—	8.00 dia.	5.50	80 lbs.	Automatic	60.00	280.00
4X	800	110	538	1000	—	3.00 dia.	1.50	4 lbs.	Full Heat	6.00	42.00
4AX†	900	110	538	1000	—	3.00 dia.	1.50	4 lbs.	Automatic	9.00	73.00

NOTES: (*) Can be Switched to Half Wattage Rating. (**) With 3-Step Switch. (†) Non-Indicating Thermostat Bimetal Control. (‡) For Partlow Indicating Control add $150.00 to Base Price. Otherwise non-indicating thermostat supplied, control knob.

MODEL 30 CONTROL TRANSFORMER

FOR ALL 6 VOLT SOLDERING IRONS

The **R30,** transformer model has a primary voltage regulator for 110, 125, 150, 220 and 240 volts. The secondary voltage is also variable within the range of 5 to 6.5 volts, thus making it possible to select a temperature range between 240 to 480°C. When not in use, a solder iron may rest on a special nozzle provided on the transformer. This protects against overheating. The **R30,** permits universal use of all the various 6 volt irons with their different capacities, up to 30 watts.

MODEL R30, rated 30 VA, 5.1#. Price....**$28.00**

PYROMETERS INDICATING

Model IPL-500, low temperature, indicating pyrometer, range 0° to +650°F, scale 3½", graduations: 5°F, Dimensions 7" H. x 6" W. x 6" L., 15 feet #20 ga. I/C thermocouple & lead wire. Weight 4 lb. Price.....**$38.00**
Extra thermocouple. Price.....**$14.50**

Model IPH-500, high temperature, indicating pyrometer, range 0° to +2000°F, scale 3½", graduations: 20°F, Dimensions 7" H. x 6" W. x 6" L., #14 ga. C/A thermocouple ¼" dia. x 12" long, protected ceramic beads, 3 feet lead wire. Weight 4 lb. Price.....**$40.50**
Extra thermocouple. Price.....**$14.50**

MINIATURE SOLDERING IRONS

MODEL 040

A sub-miniature soldering needle for minute soldering operations (excellent for use under the microscope).

Capacity: 5 watts at 6 volts

Heat-Up Time: 20 seconds approx.

Weight: Without cord 4.5 grams • With cord 16 grams

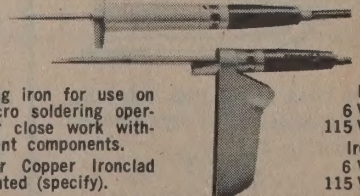
Flexible Cord Length: 4 feet. For 6 volt output transformers, battery hook-ups or similar operation.

Tip: Copper-Ironclad Pointed or Slanted (specify).

Tip Temperature: 315°C

Price $5.00

MODEL 170



A miniature soldering iron for use on printed circuits, micro soldering operations. Excellent for close work without damaging adjacent components.

Tip: Copper-Plain or Copper Ironclad Pointed or Slanted (specify).

PRICE:
Plain Tips
6 Volts = $5.75
115 Volts = $7.00
Ironclad Tips
6 Volts = $6.65
115 Volts = $7.85

Capacity	Heat-Up Time	Tip Temp.	Weight w/o Cord
8 watts/6 volts or 115 volts	90 sec.	290°C	18 grams
15 watts/6 volts or 115 volts	60 sec.	420°C	20 grams
25 watts/6 volts or 115 volts	60 sec.	430°C	26 grams

All irons have flexible cord approx. 5 feet, pistol grip and table rest spacer (keeps hot tip from touching work surface).

TOOLS BY

CHANNEL LOCK®

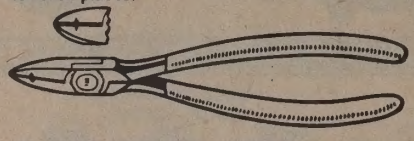
Specially Designed ELECTRONICS PLIERS

Four matched, long-reach pliers with precision matched jaws, hand honed cutting edges. Drop forged of special analysis steel, properly heat treated. Polished finish. Smooth, dipped plastic, blue grips.

No.	Size	Net
718G	8″	$2.66
728G	7½″	2.94
738G	8″	2.66
748G	8″	2.66

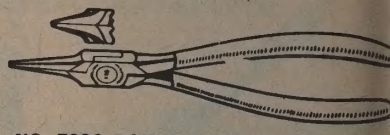
NO. 718G FLAT NOSE PLIERS

Precision-matched jaws give firm grip in hard-to-reach places.



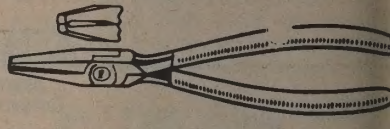
NO. 728G DIAGONAL CUTTER

Patented wire-stripping notch that **really works!**



NO. 738G ROUND NOSE PLIERS

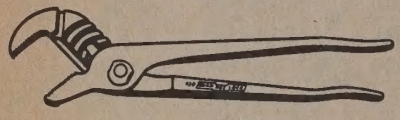
You can pick up a hair with these precisio machined points.



NO. 748G END CUTTER

Fine enough to cut a human hair, sturdy enoug to cut 12 gauge copper wire.

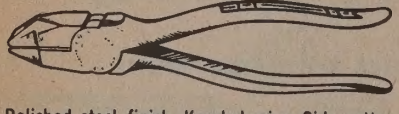
TONGUE AND GROOVE PLIERS



The **original, genuine** tongue and groove plier. Patented, non-slip undercut channels. Patented reinforcing rib for extra strength. Dipped plastic grips optional at slight extra cost.

No.	Size	Adjust	Capacity	Net
420	9½″	5	1½″	$2.53
424	4½″	4	½″	2.00
426	6½″	5	⅞″	1.94
430	10″	7	2″	2.66
440	12″	7	2¼″	2.80
460G	16″	8	4¼″	4.00

LINEMEN'S PLIER—Bevel Nose



Polished steel finish. Knurled grips. Side cutter. Dipped plastic grips optional at slight extra cost.

No.	Size	Net
3046	6″	$2.94
3047	7″	3.26
3048½	8½″	3.66

LINEMEN'S PLIER—Rounded Nose

Polished steel finish. Knurled grips. Side cutter. Dipped plastic grips optional at slight extra cost.

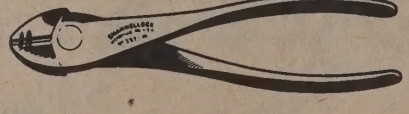
No.	Size	Net
346	6″	$2.93
347	7″	3.26
348½	8½″	3.66

WIREMASTER PLIER

Finest wire-cutting plier ever made. Joint rivet closer to cutting edge provides 40% more cutting power than standard design pliers. Special enclosed-joint construction holds cutter edges in perfect alignment for life of plier. Dipped plastic grips optional at slight extra cost.

No.	Size	Net
349	9″	$4.66

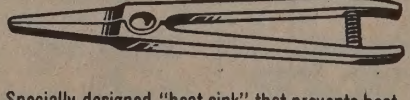
ELECTRICIAN'S WIRING PLIER



Triple-use wiring plier: Cuts, strips insulation, loops wire. Patented wire stripping notches strip insulation from 14 and 12 gauge copper wire quickly, cleanly. Dipped plastic grips optional at slight extra cost.

No.	Size	Net
337-W	7″	$2.93

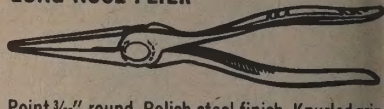
HEATSORB CLAMP



Specially designed "heat sink" that prevents heat damage to electronic components during soldering. Also a handy, self-gripping "third hand" that holds and retrieves small parts in close work.

No.	Size	Net
46	5″	$1.00

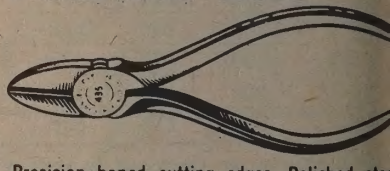
LONG NOSE PLIER



Point 3/32″ round. Polish steel finish. Knurled grip Dipped plastic grips optional at slight extra cos

No.	Size	Side Cutter	Net
317½	7½″	With	$3.00
3017½	7½″	Without	2.40
326	6″	With	2.66
3026	6″	Without	2.20

DIAGONAL CUTTER—Box Joint



Precision honed cutting edges. Polished ste finish. Knurled grips. Dipped plastic grips optiona at slight extra cost.

No.	Size	Net
435	5″	$2.40
436	6″	2.66
437	7″	3.06

SLIP JOINT PLIERS

Thin Nose. Polished steel. Wire cutting shear

No.	Size	Net
516	6″	$1.67

With Side Cutter. Polished steel. Precision too with fine cutting edge.

No.	Size	Net
537	7″	$2.80

Heavy Duty With Cutter. Finest quality. Polished steel.

No.	Size	Net
546	6″	$1.80
548	8″	2.20
5410	10″	2.47

Net

© United Technical Publicat

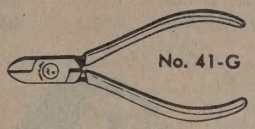
TOOLS BY

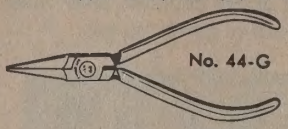
CHANNEL LOCK®

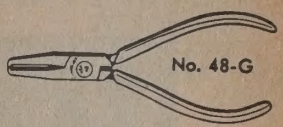
Little Champ PRECISION PLIERS

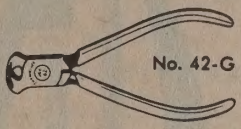
Finest quality, small precision pliers specially designed for electronic work. Drop forged from high grade steel, polished to jeweller's finish. Dipped blue plastic grip handles.

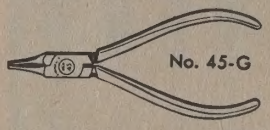
No.	Style	Length	Net
1G	Diagonal Cutter	4¼"	$2.66
1GS	Diagonal Cutter, Coiled Spring	4¼"	2.86
2G	End Cutting Nipper	4"	2.66
3G	Needle Nose, No Side Cutter, Plain Nose	4¾"	2.26
3GS	Needle Nose, No Cutter, Plain Nose, Coiled Spring	4¾"	2.46
4G	Plain Nose	4¾"	2.26
5G	Round Nose	4½"	2.40
7G	Needle Nose, Side Cutter Nose Serrations	4¾"	2.66
7GS	Needle Nose, Side Cutter, Nose Serrations, Coiled Spring	4¾"	2.86
8G	Transverse End Cutter	4¾"	2.66
9G	Curved Needle Nose	4½"	2.66

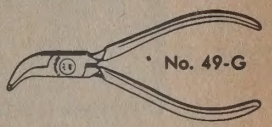


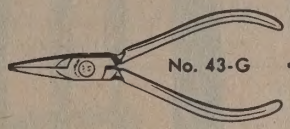


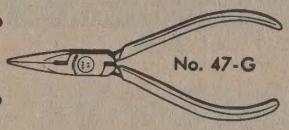












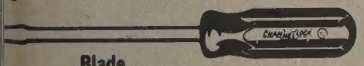
CREWDRIVERS AND NUTDRIVERS

lades forged from tough chrome vanadium steel. ips ground lengthwise for greater end strength nd snug fit in screw slot. Opaque blue plastic JL) handles are shockproof, breakproof and naped for non-slip grip.

DUND SHANK

No.	Blade Size, In.	Net	No.	Blade Size, In.	Net
181RD	⅛ x 1	$ .53	31610RD	3/16 x 10	$1.06
164RD	3/16 x 4	.80	144RD	¼ x 4	1.00
166RD	3/16 x 6	.86	146RD	¼ x 6	1.06
168RD	3/16 x 8	.93	5166RD	5/16 x 6	1.20

QUARE SHANK

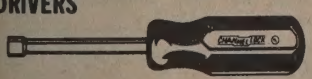


No.	Blade Size, In.	Net	No.	Blade Size, In.	Net
141SQ	¼ x 1	$ .67			
164SQ	3/16 x 4	.86	5166SQ	5/16 x 6	$1.26
144SQ	¼ x 4	1.00	5168SQ	5/16 x 8	1.40
146SQ	¼ x 6	1.13	388SQ	⅜ x 8	1.58
148SQ	¼ x 8	1.20	3812SQ	⅜ x 12	2.46

PHILLIPS SCREWDRIVERS

No.	Blade Size, In.	Net
102-SP	¼ x 1 5/16	$ .93
101-P	3/16 x 3	.91
102-P	¼ x 4	1.06
103-P	5/16 x 6	1.41
104-P	⅜ x 8	1.73

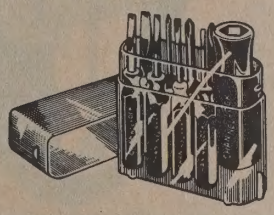
NUTDRIVERS



Hex	Lgth.	Net	Hex	Lgth.	Net
/16	3	$1.00	11/32	3	$1.00
/32	3	1.00	⅜	3	1.00
¼	3	1.00	7/16	3⅛	1.20
/32	3	1.00	½	3⅛	1.20
/16	3	1.00			

SCREWDRIVER KIT

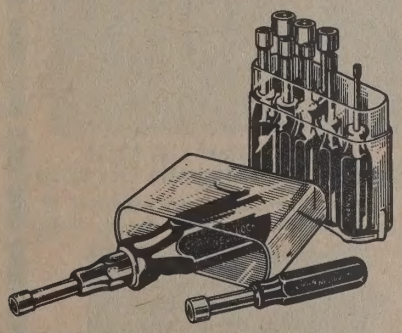
Pocket-size, handy bench sets, color coded. Special E-Z Grip handle included.



SD-5 Set Includes—
5 Screwdrivers: 3/32", 1/8", 5/32", 3/16", ¼"
3 Phillips Head: No. 0, No. 1 and No. 2
Net $4.20

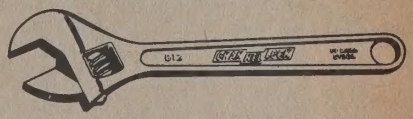
NUTDRIVER KIT

Pocket-size, handy bench sets, color coded. Special E-Z Grip handle included.



ND-1 Set Includes—
10 Nutdrivers: 3/32", 1/8", 5/32", 3/16", 7/32", ¼", 9/32", 5/16", 11/32", 3/8"
Net $5.72

ADJUSTABLE WRENCHES



Drop forged of special analysis steel. Chrome plated. Dipped plastic grips optional at slight extra cost.

No.	Size Capacity		Net	No.	Size Capacity		Net
804	4"	½"	$2.26	810	10"	1⅛"	$3.30
806	6"	¾"	2.30	812	12"	1 5/16"	4.78
808	8"	15/16"	2.62	815	15"	1 11/16"	7.14

ELECTRICIAN'S KNIFE

2½" precision-honed blade. 3" self-locking screwdriver. Unbreakable phenolic plastic handle.

No.	Closed Length	Net
11	3¾"	$2.66

SKINNING KNIFE

3" precision-honed blade. Self-locking. Unbreakable phenolic plastic handle.

No.	Closed Length	Net
10	4"	$3.00

TOOL HOLSTERS

Highest quality top grain leather. Stress points reinforced with rivets. Convenient knife or wrench snap.

No.	Size	No. Pkts.	Net
1	9¼" x 8½"	5	$4.40
2	9¼" x 10½"	5	4.86

SUPERIOR PLASTIC GRIPS

For maximum hand comfort, durable molded plastic grips. Blue color for good visibility, reduces plier loss. Easy to install. Order by desired grip size.

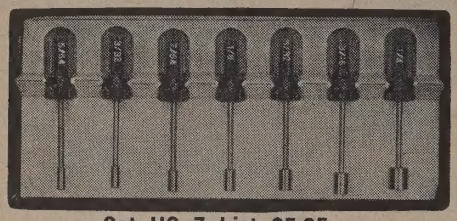
Plier Size	Grip Size	Net
6"	Small	$ .43
7"	Medium	.47
8", 9½", 10"	Large	.50

DESCO*

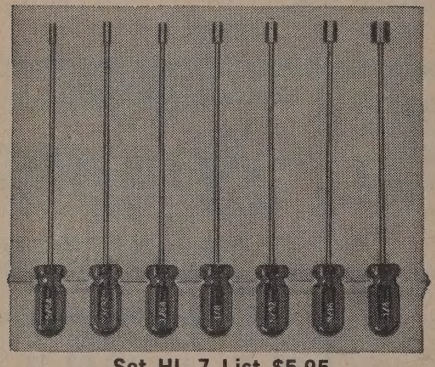
PROPERLY PROPORTIONED MINIATURE TOOLS

For precision instrument and model work use Desco "7" Miniature Nut Drivers. Available with Tenite handles, or for use with jewelers' screw driver handles. Also made with 5½" long shanks for those hard-to-get-to places.

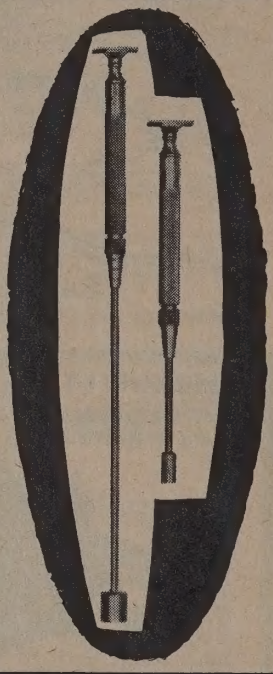
DESCO "7" Sizes across flats
5/64 3/32 7/64 1/8 5/32 3/16 1/4

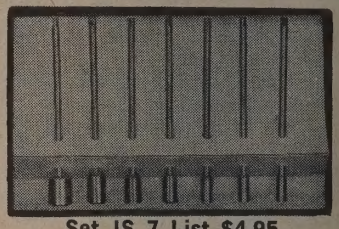


Set HS 7 List $5.95

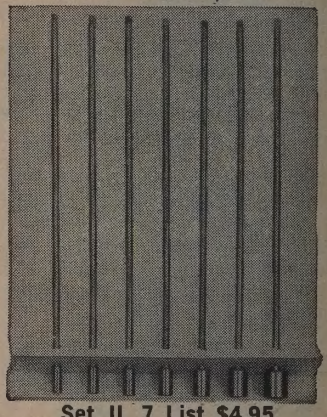


Set HL 7 List $5.95





Set JS 7 List $4.95

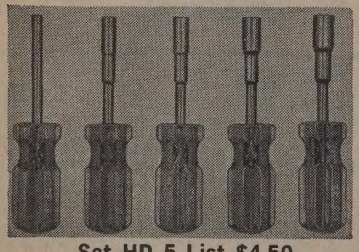


Set JL 7 List $4.95

NON-MAGNETIC NUT DRIVERS available in HL7 and HS 7 series only. Specify "No-Mag" with the code number — same prices.

INTRODUCING THE DESCO "5" Series of Miniature Tools

Set JD 5 List $3.50

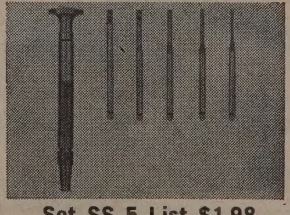


Set HD 5 List $4.50

Deeper and more rugged than the "7" Series. Made only in 5/64, 3/32, 7/64, 1/8 and 5/32.

Set EW 5 Steel List $2.50
Set EWN 5 Non-Magnetic List $2.50

A practical miniature end wrench to fit the smallest nuts made 5/64 3/32 7/64 1/8 5/32.



Set SS 5 List $1.98

Contains four screw driver blades and a fine scriber.

Set PA 5 List $2.50

Set PAH 5 List $3.50

Includes the two smallest Phillips drivers and the three smallest Allen wrenches.

* T. M.

All of the DESCO "5" and "7" Series are complete as shown.

DESCO MFG. CO.

Trade Discount Applies To List Prices Only

© United Technical Publicatio

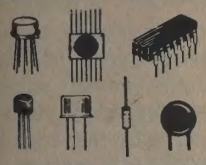
ENTERPRISE DEVELOPMENT CORPORATION

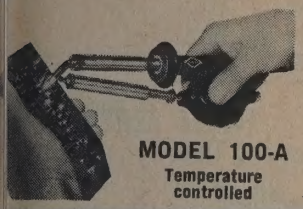
The Original Desoldering Iron

It solders too . . . easier, faster, better!

- Removes soldered components in seconds without damage
- For servicing, updating and reworking PC boards
- Only desoldering iron approved for military use

Removes these components easily





MODEL 100-A
Temperature controlled

MODEL 100-A DESOLDERING IRON (LEFT)

120 VAC 75 W

	List	1-11	30-96	108-up
Model 100-A (with 2-wire cord)	$27.50	$20.65	$18.60	$16.75
Model 100-A-3 (with 3-wire cord)	28.85	21.65	19.50	17.55
Model 100-A-3TL (with 3-wire cord twist lock cap)		Prices on Request		

MODEL 300 DESOLDERING IRON (RIGHT)

120 VAC 40 W

	List	1-11	30-96	108-up
Model 300 (with 2-wire cord)	$14.60	$10.95	$ 9.85	$ 8.85
Model 300 (with 3-wire cord)	15.95	11.95	10.75	9.70

MODEL 300
For miniature components

9-Piece Desoldering Kit

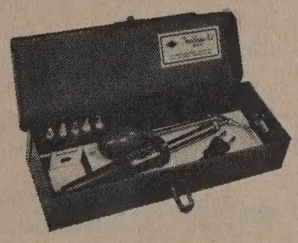
Kit Model 300K with Model 300 iron illustrated.

Military models available. Prices on request.

Kit Model 300MDK
Stock No. FSN 3439-907-5806.

Kit Model 100A-MD
Stock No. FSN 3439-917-5632.

ew Kit Model 100-AK with Model 00-A iron also available.

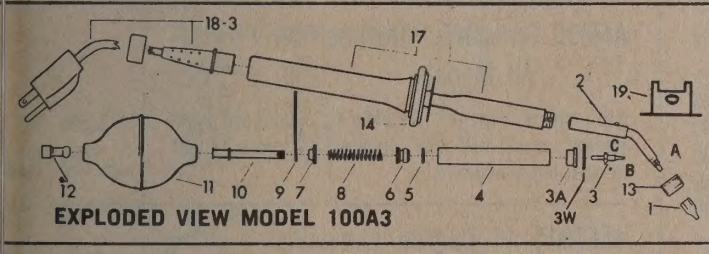


Includes everything needed to handle virtually any desoldering or re-soldering job. Includes the model iron desired, assorted tips, tip cleaning tool, and metal stand for the iron. All come in a handy, lifetime steel storage box with hasp. Kit model number indicates the model iron included. Special kits available for military use.

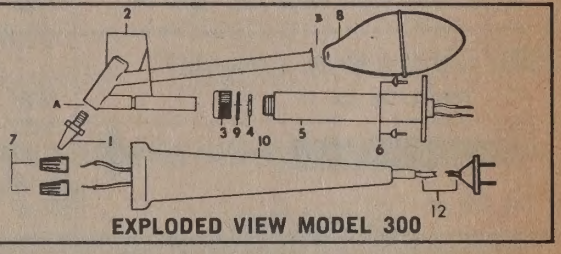
KIT PRICES

	List	1-11	12-49	50-up
Model 300K (w/2 wire cord)	$26.55	$19.90	$17.90	$16.10
Model 300K-3 (w/wire cord)	27.85	20.90	18.80	16.90
Model 100-AK (w/2 wire cord)	36.50	27.40	24.65	22.20
Model AK-3 (w/3 wire cord)	37.85	28.40	25.55	23.00

Box, Stand and Cleaning Tool Available Separately — Write for Prices



EXPLODED VIEW MODEL 100A3



EXPLODED VIEW MODEL 300

PARTS SCHEDULE

PART NOS. FOR MODEL 100-A

No.	Part No.	Description	List	Industrial Cost
	100T.096	Desoldering Tip Formerly 1B	$3.00/3PK	$2.25/3PK
	100T.018*	Desoldering Tip Formerly 1A	3.00/3PK	2.25/3PK
	100T.067	Desoldering Tip	3.00/3PK	2.25/3PK
	100T.059	Desoldering Tip Formerly 1C	3.00/3PK	2.25/3PK
	100T.046	Desoldering Tip	3.00/3PK	2.50/3PK
	100T.035	Desoldering Tip Formerly 1D	3.00/3PK	2.50/3PK
	100TP	6 Assorted Tips for Model 100-A	6.00	4.50
	2A	Tip Body (750°F Standard) (600°F Special)	3.35	2.50
	3S	Front Connecting Tube	.60	.45
A	3B	Front Air Seal	.60	.45
W	3W	Protective Washer	.15	.10
	4A	Solder Collection Tube	1.45	1.10
	5A	"O" Ring (2 Required)	.40/2	.30/2
	6A	Rear Air Seal	1.50	1.15
	7A	Kurled Sleeve	.55	.40
	8	Tension Spring	.35	.25
	9A	Supporting Bracket	.68	.50
	10A	Rear Connecting Tube	1.15	.85
	11	Vacuum Bulb	1.35	1.00
	12	Valve	.60	.45
	13	Female Tip Fastening Nut	.90	.65
	14	Rubber Shock Absorber	.90	.65
	17	75W Iron (Less Cord)	11.00	8.25
	17-2	75W Iron (w/2-wire Cord)	12.50	9.40
	17-3	75W Iron (w/3-wire Cord)	13.95	10.45
	18-2	2-wire Cord only	2.00	1.50
	18-3	3-wire Cord only	3.35	2.50
	18-3TL	3-wire Twist Lock Cord Only	4.65	3.50
	300-KS	Iron Stand	.35	.25

REPLACEABLE TIPS FOR ENDECO MODEL 100-A

No.	Part No.	Description	Formerly	Tip I.D.	Tip O.D.
1	100T.078*	Desoldering Tip	1A	.078	.156
1	100T.067	Desoldering Tip		.067	.135
1	100T.059	Desoldering Tip	1C	.059	.125
1	100T.046	Desoldering Tip		.046	.095
1	100T.035	Desoldering Tip	1D	.035	.078
1	100T.096	Desoldering Tip	1B	.096	.187

* Standard as Supplied on Iron.

ice Subject to Change Without Notice

PART NOS. FOR MODEL 300

Fig. No.	Part No.	Description	List	Industrial Cost
1	300T.090	Replaceable Desoldering Tip	$3.00/3PK	$2.25/3PK
1	300T.078	Replaceable Desoldering Tip	3.00/3PK	2.25/3PK
1	300T.063*	Replaceable Desoldering Tip	3.00/3PK	2.25/3PK
1	300CT.063	Industrial Desoldering Tip	4.50/3PK	3.30/3PK
1	300T.059	Replaceable Desoldering Tip	3.00/3PK	2.25/3PK
1	300T.046	Replaceable Desoldering Tip	3.00/3PK	2.25/3PK
1	300T.038	Replaceable Desoldering Tip	3.00/3PP	2.25/3PK
1	300TP	6 Assorted Tips for Model 300	6.00	4.50
2	300-BE	Sub-Assembly	5.70	4.30
2	300-BECO	Sub-Assembly Complete with Tip Fastening Nut & Bulb	8.50	6.35
3	30-13	Sub-Assembly Fastening Nut	.50	.35
4	300-5	Sub-Assembly Retaining Pin	.14	.10
5	300-17E	(New) Ceramic Filled Heating Element 40W	4.35	3.25
6	300-17SC	Screws (3 Required)	.30/3	.23/3
7	300-17TC	Terminal Connectors (2 Required)	.40/2	.30/2
8	300-11.75	Vacuum Bulb ¾ oz. Light Duty	.90	.65
8	300-11.100	Vacuum Bulb 1 oz. Heavy Duty (Standard)	1.10	.80
9	300-6	Sub-Assembly Retaaining Ring	.10	.08
10	300-17HA	Handle	.60	.45
12	300-18-2	2-wire Cordset	1.50	1.15
12	300-18-3	3-wire Cordset	2.70	2.00
	300-17CO-3	40W Iron w/2-wire Cord	8.25	6.20
	300-17CO-3	40W Iron w/3-wire Cord	9.50	7.30

REPLACEABLE TIPS FOR ENDECO MODEL 300

Fig No.	Part No.	Description	Tip I.D.	Tip O.D.
1	300T.090	Desoldering/Resoldering Tip	.090	.170
1	300T.078	Desoldering/Resoldering Tip	.078	.155
1	300T.063	Desoldering/Resoldering Tip	.063	.135*
1	300CT.063	Industrial Desoldering Tip	.063	.135
1	300T.059	Desoldering/Resoldering Tip	.059	.125
1	300T.046	Desoldering/Resoldering Tip	.046	.095
1	300T.038	Desoldering/Resoldering Tip	.038	.078

* Standard as Supplied on Iron.

E ENGINEERING D DEDICATED to S SUIT Y YOUR N NEEDS T.M.

EDSYN INC.

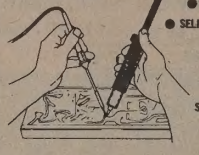
FOR A COMPLETE SOLDER HANDLING SYSTEM USE BOTH

SOLDERING! DESOLDERING!

CHOOSE THE BEST OF TWO CONTINENTS

ERSA® SOLDERING TOOLS
- EXPERT GERMAN CRAFTSMANSHIP
- FAST SOLDERING CYCLES
- EASY TO HANDLE

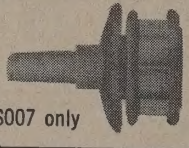
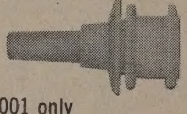
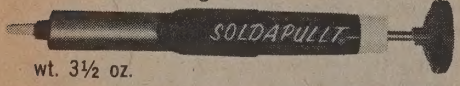
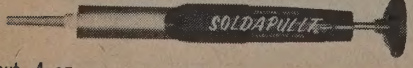
SOLDAPULLT® DESOLDERING TOOLS
- SWIFT, VACUUM ACTION
- LIGHT WEIGHT, PORTABLE
- SELF-CLEANING AS IT RELOADS

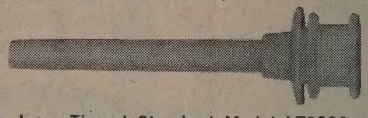
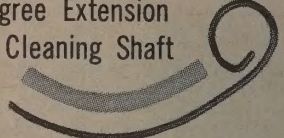
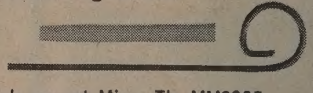
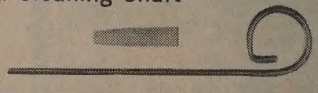
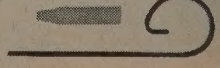


FOR A COMPLETE SOLDER HANDLING SYSTEM, USE BOTH

Europe's Choicest Soldering Tool

SOLDAPULLT® DESOLDERING TOOL. A portable hand tool designed for fast removal of molten solder from components. The molten solder is drawn into the receiving chamber with a high-impulse vacuum stroke by simple thumb release of a spring-loaded piston. This tool, when used in conjunction with the equally fast-acting ERSA SOLDERING IRON, will ensure a perfect soldering job.

	UNIT	PRICE
DS007 Deluxe Model Soldapullt® desoldering tool		
wt. 5 oz.	1-25	$9.95
	26-50	$9.20
	51-100	$8.45
	101-500	$7.70
	501-up	$7.20
DRT008 Deluxe Replacement Tips		Each
 fits on Deluxe Model DS007 only	1-25	$2.00
	26-50	$1.75
	51-100	$1.50
	101-up	$1.25
SS001 Standard Model Soldapullt® desoldering tool		
wt. 3½ oz.	1-25	$5.95
	26-50	$5.50
	51-100	$5.00
	101-500	$4.50
	501-up	$4.00
SRT002 Standard Replacement Tips		Each
 fits Standard Model SS001 only	1-25	$1.50
	26-50	$1.25
	51-100	$1.00
	101-up	$ .75
MNS005 Micro Tipped Standard Model Soldapullt® desoldering tool		
 wt. 3½ oz.	1-25	$6.95
	26-50	$6.50
	51-100	$6.00
	101-500	$5.50
	501-up	$5.00
MRT006 Micro Replacement Tips		Each
fits Micro tipped Standard Model MMS005 only	1-25	$1.50
	26-50	$1.25
	51-100	$1.00
	101-up	$ .75
LTS003 Long Tipped Standard Model Soldapullt®		
 wt. 4 oz.	1-25	$6.95
	26-50	$6.50
	51-100	$6.00
	101-500	$5.50
	500-up	$5.00

	UNIT	PRI
LRT004 Long Tipped Replacement Tips		Ea
 fits Long Tipped Standard Model LTS003 only	1-25	$2.
	26-50	$1.
	51-100	$1.
	101-up	$1.
SSE009 Sample Soldapullt® desoldering tool for Evaluation Check ONE only ☐ Standard ☐ Deluxe		REQUEST FOR CHARGE SAMP MUST BE ON YO COMPANY STATIO ERY
AM010 Complete Overhaul on All Models		
Your old Soldapullt® Desoldering Tools are completely overhauled and updated to most recent design improvements.		$3.00 Each PLUS 15% HANDLING CHAR
45ET011 45 Degree Extension Tip and Cleaning Shaft		Ea
 fits all models except Micro Tip MMS005	1-25	$2.
	26-50	$2.
	51-100	$2.
	101-up	$2.
LET012 Long Extension Tip and Cleaning Shaft		Ea
 fits all models except Micro Tip MMS005	1-25	$2.
	26-50	$2.
	51-100	$1.
	101-up	$1.
MET013 Micro Extension Tip and Cleaning Shaft		Ea
 fits all models except Micro Tip MMS005	1-25	$2.
	26-50	$1.
	51-100	$1.
	101-up	$1.
MIN014 Mini Tip Extension and Cleaning Shaft		Ea
 fits all models except Micro Tip MMS005	1-25	$2.
	26-50	$1.
	51-100	$1.
	101-up	$1.

Net

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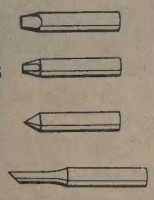
EDSYN INC.

80KD/115V ERSA SPRINT

INSTANT SOLDER GUN

UNIT	PRICE
1-25	$9.50
26-50	$9.00
51-up	$8.50

TIPS FOR ERSA SPRINT



CHISEL FORM TIP
PART NO. 852KD

CONICAL WITH CHISEL FLATS
PART NO. 852LD

CONICAL TIP
PART NO. 852BD

EXTRA LONG ANGLE FACE
PART NO. 852VD

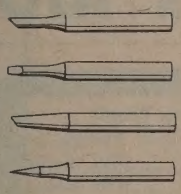
UNIT	PRICE
1-25	$1.75
26-50	$1.50
51-up	$1.25

16KD/115V ERSA TIP 16

STANDARD TYPE SOLDERING IRON

UNIT	PRICE
1-25	$6.50
26-50	$6.00
51-up	$5.50

TIPS FOR ERSA TIP 16



ANGLE FACE TIP
PART NO. 172/15LD

CHISEL FORM TIP
PART NO. 272/15KD

REINFORCED ANGLE FACE
PART NO. 172/15SD

PENCIL FORM TIP
PART NO. 172/15BD

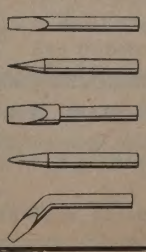
UNIT	PRICE
1-25	$1.75
26-50	$1.50
51-up	$2.20

30KD/30W 115V ERSA 30
30KD/40W 115V

STANDARD TYPE SOLDERING IRON

UNIT	PRICE
1-25	$5.75
26-50	$5.25
51-up	$4.75

TIPS FOR ERSA 30



STRAIGHT CHISEL TIP
PART NO. 32KD

PENCIL FORM TIP
PART NO. 32BD

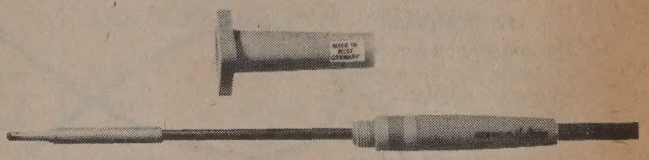
REINFORCED CHISEL TIP
PART NO. 32SD

BEVELLED BOTH SIDES
PART NO. 32LD

90° BENT CHISEL TIP
PART NO. 32JD

UNIT	PRICE
1-25	$1.75
26-50	$1.50
51-up	$1.25

170KD/8W 115V ERSA MULTITIP
170KD/15W 115V
170KD/25W 115V

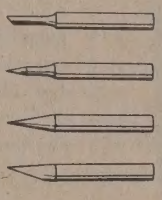


COMBINATION STANDARD TYPE AND PISTOL GRIP SOLDERING IRON

8 Watt 15 Watt 25 Watt

UNIT	PRICE
1-25	$6.50
26-50	$6.00
51-up	$5.50

TIPS FOR ERSA MULTITIP



ANGLE FACE TIP
PART NO. 172/8LD

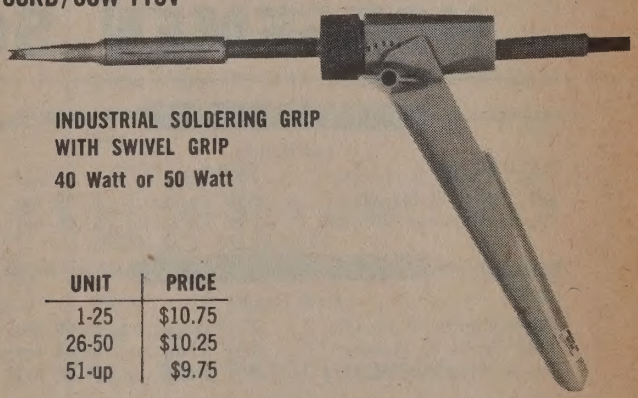
CHISEL FORM TIP
PART NO. 172/8KD

PENCIL FORM TIP
ART NO. 172/8BD

REINFORCED ANGLE FACE
PART NO. 172/8SD

UNIT	PRICE
1-25	$1.75
26-50	$1.50
51-up	$1.25

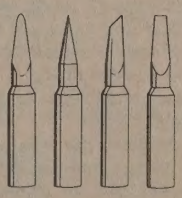
550KD/40W 115V ERSA VARIUS
50KD/50W 115V



INDUSTRIAL SOLDERING GRIP
WITH SWIVEL GRIP
40 Watt or 50 Watt

UNIT	PRICE
1-25	$10.75
26-50	$10.25
51-up	$9.75

TIPS FOR ERSA VARIUS



CHISEL FORM TIP
PART NO. 552KD

ANGLE FACE TIP
PART NO. 552LD

POINTED TIP
PART NO. 552BD

BEVELLED BOTH SIDES
PART NO. 552VD

UNIT	PRICE
1-25	$3.00
26-50	$2.75
51-up	$2.50

SSIE001
SAMPLE ERSA MULTITIP FOR EVALUATION

Check ONE only ☐ 8 ☐ 15W ☐ 25W

CONSULT ERSA BROCHURE FOR OPERATING INSTRUCTIONS AND SPECIFICATIONS

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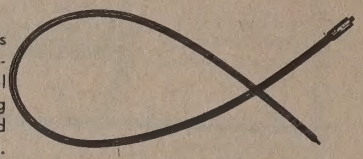
Norseman ELECTRONIC TOOLS

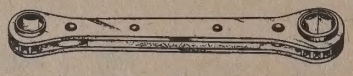
TIPPY STICKS



Flexible alignment tools of tenite II with a non-magnetic stainless steel tip. Permits snaking around obstructions and still turn screws and slugs.

ST-186	6" long	$ .50 net
ST-1810	10" long	.55 net
ST-1814	14" long	.60 net

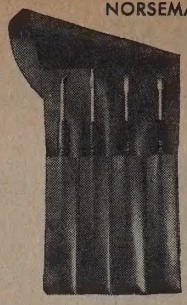
REVERSIBLE RATCHE



A rugged ratcheting bc wrench. No buttons, nc levers — just turn it over to reverse the ratchet.

1/4" x 5/16"	$2.60 net	5/8" x 11/16"	$4.25 net
3/8" x 7/16"	2.90 net	5/8" x 3/4"	4.25 net
1/2" x 9/16"	3.90 net	3/4" x 7/8"	4.80 net

NORSEMAN SOLDERING AID KIT



MTSA-4 miniature soldering aid kit with 4 tools M2T, M3T, M4T, M5T in vinyl kit complete ..... $4.50 net

Vinyl plastic kit, packed with 4 Norseman Soldering Aids (TN-22, TN-33, TN-44, TN-55) as illustrated.
TNSA-4 complete kit ..... $4.50 net

Kit with 4 Norseman Soldering Aids with unbreakable aluminum handles (AL-22, AL-33, AL-44 & AL-55).
ALSA-4 complete kit ..... $5.10 net

TRI-TAPS

The original 3-in-1 tool with 6/32", 8/32" and 10/32" taps to clean or cut three of the most common threads used in electronic work.
T-3 ..... $2.50 net T-4 tap only for HT-24.... $1.65 net
HT-24 with replaceable tap..... $3.00 net

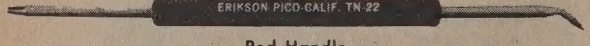
TOOL POUCHES

#14 Telephone lineman's pouch of chrome-tanned cowhide. One large separated pocket with three smaller ones in front. Riveted and stitched with linen thread. 6" x 9¼" $5.50 net

#17 Electrician's Pouch. Bark-tanned top grain cowhide, riveted and stitched with linen thread. 7 pockets, loop for hammer, T-chain for roll of tape H17 10" x 9" $5.50 net

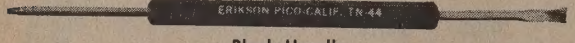
12 OTHER POUCHES AVAILABLE

NORSEMEN SOLDERING AIDS



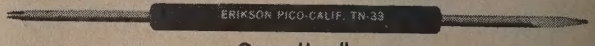
Red Handle

TN-22 Tenite II Handle	7⅝" Long	$ .90 net
M2T Tenite II Handle	5¼" Long	$ .90 net
AL-22 Aluminum Handle	7⅝" Long	$1.05 net



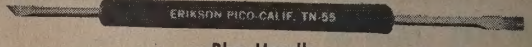
Black Handle

TN-44 Tenite II Handle	7½" Long	$1.05 net
M4T Tenite II Handle	5¼" Long	$1.05 net
AL-44 Aluminum Handle	7½" Long	$1.20 net



Green Handle

TN-33 Tenite II Handle	7⅝" Long	$ .90 net
M3T Tenite II Handle	5¼" Long	$ .90 net
AL-33 Aluminum Handle	7⅝" Long	$1.05 net



Blue Handle

TN-55 Tenite II Handle	6¾" Long	$1.05 net
M5T Tenite II Handle	5¼" Long	$1.05 net
AL-55 Aluminum Handle	6¾" Long	$1.20 net

PLASTIC HANDLES— (TN-22, TN-33, TN-44, TN-55) (M2T, M3T, M4T, M5T) are of Tenite II, hex and will not roll off the work bench. Shock-proof, practically unbreakable and will stand rough use on industrial production lines.

METAL HANDLES—(AL-22, AL-33, AL-44, AL-55) are aluminum alloy 4" x ⅜" hex and won't roll off the work bench. Being metal, are NOT SHOCK-PROOF and hence not recommended for ordinary radio-TV service work, especially on a 'live' unit. However, these handles are practically unbreakable and were designed to take rough use on industrial assembly lines and can be used as PRY BARS in lining up components.

METAL ENDS—(separated from each other) non-magnetic stainless steel, to which solder won't adhere. Are firmly seated in handles and are twist-proof.

FORKED END—straddles the wire and with a slight twist, grips it for easy unwinding and removal, or guides it into another lug for soldering. Since plastic handles act as insulation, there is no danger of shock when working on sets in operation. ⅛" forks are made especially for use on printed circuits and transistors.

SPADE END—is a reamer to clean lug holes of solder.

CURVED END—can be used as a scriber for marking chassis. As a circuit tracer when looking for loose connections. As a dial cord stringer. Hook can be bent to a 90 degree angle if desired.

KNIFE & SCRAPER—for cutting and repairing printed circuits.

WIRE BRUSH — has approx. 200 bristles of stainless wire .0035 in dia. to which solder will not adhere. For use in cleaning connections before soldering, brushing out splattered solder and in repairing printed circuits.

STAINLESS STEEL WIRE BRUSHES
on steel shaft approximately 2" long overall. Can be used in a regular pin vise. **.35 net**
Packed 25 or 50 per box

ERIKSON SPECIALIZED TOOL COMPANY

Net

© United Technical Publication

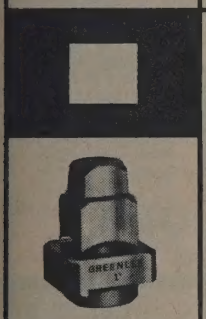
GREENLEE TOOL CO
DIVISION OF GREENLEE BROS & CO
A Unit of Ex-Cell-O Corporation XLO

CHASSIS PUNCHES

ROUND, SQUARE, "KEY," AND "D" TYPES

NO. 730 ROUND PUNCH

Swiftly cuts clean, accurate holes in radio chassis for sockets, switches, controls and other equipment. Operates simply with an ordinary wrench for drive power . . . just insert in a small drilled hole and turn drive screw. No reaming or filing . . . hole is smooth, perfect. 29 sizes from ½" to 3⅛" diameter. New Ball-Bearing Drive available for even easier, speedier operation.



NO. 731 SQUARE PUNCH

Cuts square or oblong openings as desired. Available in five sizes for making ½", ⅝", ¾", ⅞", and 1" square holes. Drive screw fits into ½" hole, which can be drilled or made with ½" No. 730 GREENLEE Round Punch. Operates with an ordinary wrench for drive power. Individually packed.

NO. 731-R KHP RELAY PUNCH

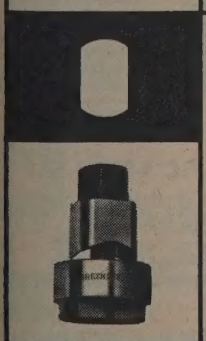
Makes clean, accurate, *finished* holes in up to 16-gauge metal for Potter & Brumfield KHP miniature relay sockets. Makes 1.015" x .859" hole.

NO. 732 "KEY" PUNCH

Quickly, easily cuts holes for keyed radio sockets. Operates on same principle as other GREENLEE Radio Chassis Punches . . . an ordinary wrench supplies the drive power. In five sizes to make openings of 15/32", 15/16", 1 11/64", 1 17/64", 1 21/64". Drive screw fits into ½" hole. Individually packed.

NO. 733 "D" PUNCH

Simplifies and speeds the work of making "D"-shaped openings for high-frequency, miniature tube sockets and other equipment using this type opening. Available in ½" and ⅝" sizes. Operates on same principle as other GREENLEE Radio Chassis Punches with an ordinary wrench supplying the drive power. Drive screw fits into ⅜" drilled hole. Individually packed.



NO. 734 DOUBLE "D" PUNCH

Quickly makes standard electrical receptacle openings. Cuts standard hole 1⅛" dia. across parallel sides, 1⅜" dia. across rounded ends. Simply insert into a ½" hole and turn with an ordinary wrench. Does the work in less than five minutes . . . eliminates all tedious hand filing . . . gives a smooth, perfect opening.

No. 730 ROUND PUNCH

Size	Net User Price	Size	Net User Price
½"	$2.85	1¾"	$6.30
9/16"	2.85	1⅞"	7.80
⅝"	2.85	2"	8.35
11/16"	2.85	2⅛"	9.00
¾"	2.85	2¼"	9.30
13/16"	2.85	2½"	15.10
⅞"	2.85	2¾"	21.00
15/16"	3.20	2 23/32"	13.75
1"	3.20	3"	29.00
1 1/16"	3.35	3⅛"	30.50
1⅛"	3.35	Following sizes also available with larger drive screw for cutting thicker metals (No. 730X)	
1 5/32"	3.35		
1 3/16"	3.35		
1 7/32"	5.75		
1¼"	3.35	1⅛"	6.80
1 5/16"	4.15	1 3/16"	6.80
1⅜"	4.15	1¼"	6.80
1½"	4.55	1⅜"	7.85
1⅝"	5.50	1½"	8.90

No. 731 SQUARE PUNCH

Size	Net User Price	Size	Net User Price
½"	$6.90	⅞"	$8.80
⅝"	6.80	1"	9.10
¾"	7.50		

No. 731-R KHP RELAY PUNCH

Size	Net User Price
1.018" x .861"	$15.00

No. 731-R KU & KUP RELAY PUNCH

Size	Net User Price
1¼" x 1⅜"	$20.50

No. 732 "KEY" PUNCH

Size	Net User Price	Size	Net User Price
15/32"	$6.40	1 17/64"	$8.50
15/16"	6.70	1 21/64"	9.40
1 11/64"	7.20		

No. 733 "D" PUNCH

Size	Net User Price	Size	Net User Price
½"	$5.20	⅝"	$5.50

No. 734 DOUBLE "D" PUNCH

Size	Net User Price
1⅛" x 1⅜"	$29.80

GC ELECTRONICS

SERVICE AIDS

GC 7-PIN MINIATURE TEST SOCKET ADAPTER

Cat. No. 9247 Net 1.65

GC 9-PIN MINIATURE TEST SOCKET ADAPTER

Cat. No. 9249 Net 1.65

GC 8-PIN OCTAL TEST SOCKET ADAPTER

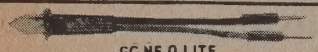
Cat. No. 9248 **Net 1.57**

GC DUAL TUBE PIN STRAIGHTENER

A handy, miniature pin straightener for 7-pin and 9-pin miniature tubes. Metal inserts on either end of the tool body, each of hardened metal for accuracy and long life.
Cat. No. 9092 **Net 3.20**

GC HEX-KEY AND SPLINE WRENCH KIT

For both hex and spline type sc
12 wrenches in leatherette
Cat. No. 5028 GC 560 Walsco
Net

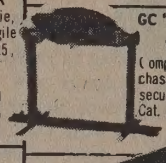


GC NE-O-LITE

Electrical circuit tester...easy to use with a Neon Glow Lamp which varies in light intensity according to voltages. Traces all types of trouble, such as grounded lines, open circuits, short circuits, etc.
Cat. No. 5100 **Net .50**

GC MINIATURE TUBE PIN STRAIGHTENER

Precision-constructed steel die, for straightening pins on fragile miniature tubes of the 1S5, 6AK5, 9002 variety.
For 7-pin Min. Tubes (red base)
Cat. No. 5191 **Net 1.00**
For 9-pin Jumbo Tubes (blue base)
Cat. No. 8105 **Net 1.00**

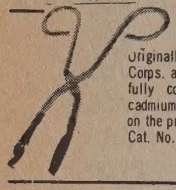


GC "QUICK-RIG" RADIO-PHONO CHASSIS REPAIR CRADLE

Complete 360 degree rotation to lock chassis at best working angle. Clamps security, makeshift setups, all metal.
Cat. No. 5212 **Net 7.95**

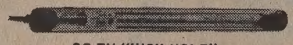
GC POCKET HEX KEY WRENCH S

7 popular size wrenches. .050 to 3/16" fitted in a case-like pocket knife blades.
Cat. No. 9124 GC 564 Walsco **Net**



GC TUBE & PARTS EXTRACTOR

Originally designed by the U.S. Signal Corps. as standard equipment. Skillfully constructed of spring steel, cadmium plated. Has rubber cushion on the prongs.
Cat. No. 5092 **Net .98**



GC TV "HIGH-VOLT" SAFETY PROBE & TESTER

Handy tester for quickly checking TV high voltage circuits. Tester will glow when high voltage is okay.
Cat. No. 8836 **Net 2.13**

GC NO-JOLT TOOL GRIPS

Modernizes old tools with new safety grip handles. Grease and oil resistant.
Cat. No 5647 GC Small (1 pair) Net .23
Cat. No. 521 Walsco
Cat. No. 5648 GC Med. (1 pair) Net .27
Cat. No. 522 Walsco
Cat. No. 5649 GC Large(1 pair) Net .33
Cat. No. 523 Walsco

GC TWEEZERS

Self-closing tweezer opens w squeezed; blunt points.
Cat. No 7946 GC **Net**
570 Walsco

6½" heavy duty type, with slide lo feature; blunt points.
Cat. No 7947 GC **Net 1**
571 Walsco

4½" tweezer, narrow pointed ends delicate work.
Cat. No. 7948 GC **Net**
572 Walsco

GC SPEEDEX FUSE PULLERS

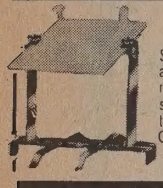
Inexpensive...non-slip, fuse puller. Safe and handy for cartridge fuses.
Cat. No. 5525 Midget size for fuses 1/4" to 1-2" diameter **Net .60**
Cat. No. 5526 Pocket size for fuses 1-2" to 1-1/2" dia. Voltages to 200 amps at 250 volts and 100 amps at 600 volts. **Net 1.30**

GC AMO MINIATURE TUBE PULLER

AMO makes it possible to easily remove or insert miniature tubes such as 6AG5, 50B5, etc. It works on the suction and vacuum principle.
Cat. No. 5093 For 7-pin tubes **Net 2.50**
Cat. No. 8106 For 9-pin tubes **Net 2.50**

GC HANDY PICK-UP TOOL

One of the handiest tools you can have in your home, shop, office or farm. Tool is 15 inches long.
Cat. No. 5089 GC **Net 1.15**
2563 Walsco



GC PHONO TURNTABLE STAND

Stand raises the turntable about 15" above the bench for repairs. Easily adjusted to all sizes and types of phono turntables. Sturdily made of steel.,
Cat. No. 5205 **Net 5.45**

GC DUPLEX TUBE PIN STRAIGHTENER

The handiest tubepin straightener for both miniature and jumbo miniature tubes of the 7- and 9-pin types.
Cat. No. 8655 **Net 2.00**

GC 4-IN-1 TUBE GADGET

Four tools in one. Pure rubber, will not break.
Cat. No. 9130 **Net 1.65**

GC TWEEZER KIT

For the shop or laboratory to pick up and examine small parts, start screws and nuts, etc.
Cat. No 7950 GC **Net 2.84**
575 Walsco

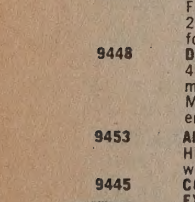
COLOR TV SERVICE MIRROR

High quality polished glass mirror metal frame, nickel plated. 10" x 12 Complete with adjustable, collapsib stand for easy storage.
Cat. No. 8390 **Net 6.5**

COLOR TV SERVICE AIDS

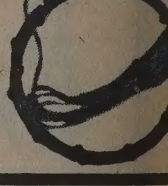
RCA COLOR TV HARNESSES & SOCKETS FOR SERVICE & REPLACEMENT

Part No.	Description	Net
9436	**ADAPTER SOCKET**..... Converts 23" & 25" CRT Base to 21" type for use with current test equipment. RCA No. 937848; Admiral No. BP196.	3.50
9437	**UNIVERSAL KINESCOPE SOCKET EXTENSION CABLE**—fits all 21", 23" and 25" round and rectangular CRT. 48" leads. RCA No. 13B111 and 937846; Admiral No. BP191.	7.50
9438	**KINESCOPE EXTENSION SOCKET**..... 48" leads—converts a 23" or 25" CRT base to 21" type for use with current test equipment. RCA No 13B111 and 937847; Admiral No. BP190.	8.95
9439	**KINESCOPE SOCKET EXTENSION CABLE**..... For all 21AXP or equivalent round picture tubes. Extends kinescope socket cable for chassis removal when servicing, or use with color test tube jig. Admiral No. BP192.	4.95
9441	**REPLACEMENT SOCKET & LEADS**..... For 21" color tubes—24" leads.	2.25
9443	**REPLACEMENT SOCKET & LEADS**..... For 23" and 25" color tubes—24" leads.	2.25
9447	**DEFLECTION YOKE EXTENSION CABLE**..... For 21" color tubes—48" leads. Use with all 21AXP22 or equivalent tubes. Extends yoke cable for servicing chassis without removing picture tube.	4.85
9448	**DEFLECTION YOKE EXTENSION CABLE**..... 48" leads extend yoke cable when chassis is removed for servicing. For 23" or 25" picture tubes. Male octal plug one end, push-on connectors on other end for connecting to deflection yoke, or test jig.	1.95
9453	**ANODE EXTENSION**..... High voltage extension cable with 48" leads for use when TV chassis is removed from set for servicing.	1.95
9445	**CONVERGENCE MAGNET DEFLECTION YOKE EXTENSION.** For RCA, Admiral, Motorola, Zenith. Extension leads for chassis removal without removing picture tube. For RCA CTC7 to CTC15 chassis. Deflection yoke extension for RCA 600 & 700 series.	4.95



GC DEGAUSSING COIL *PROFESSIONAL MODEL*

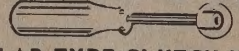
Eliminates stray magnetic fields in color TV sets as required prior to purity adjustment. Durable, molded hi-impact case. Supplied with 9' cord, momentary push-button switch which permits de-energizing of coil without pulling plug. Safe, easy to use; will last a lifetime.
Cat. No. 9317 Net 19.95



7" DEGAUSSING COIL *IN-THE-HOME MODEL*

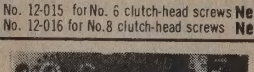
For the home or serviceman. Molded of hi-impact plastic with momentary push-button switch, this coil will easily fit into tube caddy or will hang on the back of TV set. Low cost...easy resale to TV set owner.
Cat. No. 2592 **Net 5.95**

GC SERVICE AIDS



SLAB TYPE CLUTCH-HEAD SCREWDRIVERS

The only tools for servicing the Admiral Tilt-Out Tuner TV sets. Two sizes are available. A must for working on Color TV sets.
Cat. No. 12-015 for No. 6 clutch-head screws **Net 1.95**
Cat. No. 12-016 for No.8 clutch-head screws **Net 1.95**

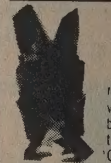


GC TUBE PIN STRAIGHTENER

Plastic 6" ruler tube pin straightener for Compactrons, large 7-pin, 9 and 10 pin, and 7-pin tubes. Drilled holes for bench mounting.
Cat. No. 9135 **Net .59**

GC TV 3-WAY ANTENNA KLIP

Buy them by the bag and have cli ready to sell and ready to install TV sets.
Cat. No. 9015-X bag of 10 **Net 1.**



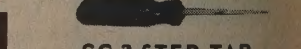
"QUICK SNAP" ANTENNA CLIP

New side clip allows fast connect with antenna lines; ideal for the servi bench. Accepts A-N-P, Pin, and f terminal type lines.
Cat. No. 9030 bag of 2 clips **Net**

WALSCO SPECIAL TOOLS

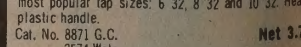
PROTECTO TUBE

Insulate the handles of your pliers, wire cutters, screwdriver shanks neatly and effectively with Walsco Protecto Tube.
Cat. No. 18K **Net 1.20**



GC 3-STEP TAP

Three-in-1 tool for tapping or rethreading holes, most popular tap sizes: 6 32, 8 32 and 10 32. Hea plastic handle.
Cat. No. 8871 G.C. **Net 3.**
2574 Walso



REACH-ALL PEN OILER

Precision instrument oiler. Features extending and retracting tube. Disposes a drop or fraction of a drop of high quality oil.
Cat. No. 984 **Net .99**

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

Net

© United Technical Publicatio

ALIGNMENT TOOLS & Service Aids

EAMER AND SCRAPER TIP

TIP DETAIL

t-proof, chrome plated steel to shed solder. Printed cir- type solder aid tool with straight tip. Reamer and per tips for scraping joints or reaming out lug holes. ends are insulated from one another.

	Std. Pkg.	Net
Reamer and Scraper	12	.90

BRUSH AND FORKED TIP

me plated steel to shed solder. Printed circuit type er aid tool with brush on one end, forked tip on the other. ed tip is for twisting or holding wires. Both ends are lated from one another.

	Std. Pkg.	Net
Brush and Forked Tip	12	.95

BRUSH AND SCRAPER TIP

ted Circuit type solder aid with brush on one end for ing away excess solder chips, and scraper tip for scrap- joints. Both ends are insulated from one another.

	Std. Pkg.	Net
Brush and Scraper Tip	12	.95

STRAIGHT PROBE AND FORKED TIP

vents solder from sticking. A must for the serviceman's ch or tool kit. Made from heat-treated tool steel, nickel ed to eliminate solder from sticking. Forked tip on one straight probe on the other.

o.	Walsco		Std. Pkg.	Net
5	2570	Forked and Straight Tip	12	.90

ANGLE PROBE AND FORKED TIP

kel plated tool steel prevents solder from sticking to tool. ked tip on one end for twisting or holding wires, angled be on the other end.

lo.	Walsco		Std. Pkg.	Net
6	2571	Forked and Angled Tip	12	.90

SPEEDEX AUTOMATIC WIRE STRIPPER

Equipped with "Trig-O-Matic" Stay-Open feature; keeps wires from being crushed.

No.	For Sizes Listed Below
744	12 to 20 Wire
744-A	14 to 30 Wire
744-B	10 to 18 Wire
744-C	8 to 10 Wire
744-D	16, 18, 20, 22 Wires
744-E	14, 16, 18 Wires
744-F	10, 12, 14 Wires
744-G	For No. 18 POSJ or Parallel Wire
744-H	For 300 ohm TV and FM twin transmission line
744-I	10, 12, 14, 16, 18, 20, 22 Wire
744-M	10 to 20 Wire
744-N	Straight Cutter Blades

Cat. No. 744 ..... **Net $5.93**

SPEEDEX STANDARD WIRE STRIPPER

Popular inexpensive Speedex model for 90% of all stripping jobs. Blades are inter-changeable, hardened and precision ground to razor sharp edges

No.	For Sizes Listed Below
733	12 to 20 Wire
733-A	14 to 30 Wire
733-B	10 to 18 Wire
733-C	8 to 10 Wire
733-D	16, 18, 20, 22 Wires
733-E	14, 16, 18 Wires
733-F	10, 12, 14 Wires
733-G	For No. 18 POSJ or Parallel Wire
733-H	For 300 ohm TV and FM twin transmission line
733-I	10, 12, 14, 16, 18, 20, 22 Wire
733-M	10 to 20 Wire
733-N	Straight Cutter Blades

Cat. No. 733 ..... **Net $4.77**

SPEEDEX SPEED-O-MATIC WIRE STRIPPER

Fully automatic delayed return action to prevent crushing fine wires. The Speed-O-Matic combines the features of all Speedex Wire Strippers.

No.	For Sizes Listed Below
766	12 to 20 Wire
766-A	14 to 30 Wire
766-B	10 to 18 Wire
766-C	8 to 10 Wire
766-D	16, 18, 20, 22 Wire
766-E	14, 16, 18 Wire
766-F	10, 12, 14 Wire
766-G	For No. 18 POSJ or Parallel Wire
766-H	For 300 ohm TV and FM twin transmission line
766-I	10, 12, 14, 16, 18, 20, 22 Wire
766-M	10 to 20 Wire
766-N	Straight Cutter Blades

Cat. No. 766 ..... **Net $5.93**

G-C TV CHASSIS SUPPORT

Prop chassis to easy working position on your bench or in the home. Simply slip on the flange of chassis, tighten thumb screws and tilt chassis to position desired.

Cat. No. 9176 Pair ..... **Net $1.80**

CONTACT BURNISHING TOOL KIT

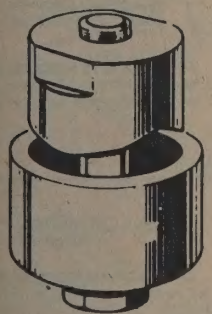
"A Must For Contact Maintenance"

A complete kit for the servicing of relays, switches, etc., where critical contact points must be kept clean for ideal operating conditions. Contains one two-ounce bottle No. 210-2 Contact Cleaner and Burnishing Tool.

GC No.	Walsco		Std. Pkg.	Net
9339	19-K	Complete Kit	12	.97
9338	529	Burnishing Tool	24	.39

CHASSIS PUNCHES

ROUND PUNCHES



SQUARE PUNCHES

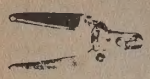
METER HOLE PUNCHES (Round) For Standard Meters

DESCRIPTION	PART NO.	GREENLEE PART NO.	PUNCH SIZE	PILOT BOLT SIZE	PILOT HOLE DRILL SIZE	NET EACH
ROUND PUNCHES	3050-R	730 1/2	1/2"	1/4"	5/16"	$2.85
	3052-R	730 9/16	9/16"	1/4"	5/16"	2.85
	3062-R	730 5/8	5/8"	1/4"	3/8"	2.85
	3069-R	730 11/16	11/16"	3/8"	7/16"	2.85
	3075-R	730 3/4	3/4"	3/8"	7/16"	2.85
	3081-R	730 13/16	13/16"	3/8"	7/16"	2.85
	3087-R	730 7/8	7/8"	3/8"	7/16"	2.85
	3094-R	730 15/16	15/16"	3/8"	7/16"	3.20
	3100-R	730 1"	1"	3/8"	7/16"	3.20
	3106-R	730 1-1/16	1-1/16"	3/8"	7/16"	3.35
	3112-R	730 1-1/8	1-1/8"	3/8"	7/16"	3.35
	3116-R	730 1-5/32	1-5/32"	3/8"	7/16"	3.35
	3119-R	730 1-3/16	1-3/16"	3/8"	7/16"	3.35
	3125-R	730 1-1/4	1-1/4"	3/8"	7/16"	3.35
	3131-R	730 1-5/16	1-5/16"	3/8"	7/16"	7.02
	3137-R	730 1-3/8	1-3/8"	1/2"	9/16"	4.15
	3150-R	730 1-1/2	1-1/2"	1/2"	9/16"	4.55
	3162-R	730 1-5/8	1-5/8"	3/4"	7/8"	5.50
	3175-R	730 1-3/4	1-3/4"	3/4"	7/8"	6.30
	3187-R	730 1-7/8	1-7/8"	3/4"	7/8"	13.18
	3200-R	730 2"	2"	3/4"	7/8"	8.35
	3212-R	730 2-1/8	2-1/8"	3/4"	7/8"	15.21
	3225-R	730 2-1/4	2-1/4"	3/4"	7/8"	9.30
	3250-R	730 2-1/2	2-1/2"	3/4"	7/8"	15.10
	3275-R	730 2-3/4	2-3/4"	3/4"	7/8"	19.00
	3300-R	730 3"	3"	3/4"	7/8"	49.01
SQUARE PUNCHES	3050-S	731 1/2	1/2"	1/4"	3/8"	6.90
	3062-S	731 5/8	5/8"	3/8"	1/2"	6.80
	3075-S	731 3/4	3/4"	3/8"	1/2"	7.50
	3087-S	731 7/8	7/8"	3/8"	1/2"	8.30
	3100-S	731 1"	1"	3/8"	1/2"	9.10
METER HOLE PUNCHES (Round) For Standard Meters	3278	730 M	2-25/32"	3/4"	7/8"	13.75

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

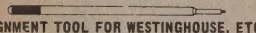
GC ALIGNMENT TOOLS & Service Aids

GC ELECTRONICS



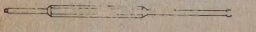
(D) WALSCO STRIP-ER-CLIP. A brand new precision tool with an exclusive safeguard that prevents accidental nicking or cutting while wires are being stripped. Strips and clips all wires ranging from 12 to 26 gauge.
Cat. No. 595X Walsco ..... **Net $1.49**
760 G.C.

HEAT SINK
Protects Transistors and Diodes when Soldering. . . firm grip. Aluminum will not stick to solder.
Cat. No. 9077 GC ..... **Net $ .39**
2577 Walsco



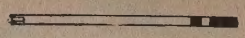
ALIGNMENT TOOL FOR WESTINGHOUSE, ETC.
Especially designed to fit Westinghouse and other sets. Very thin tip for small can openings.
Cat. No. 2541 ..... 5-3/4" long ..... **Net $ .57**

1/4" HEX I.D. NEUTRALIZING WRENCH.
Made of tough, flexible, Lo-loss plastic. If corners wear round, just trim back, 7-1/2" long. 3/8" round O.D.
Cat. No. 2503 ..... **Net $ .37**



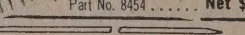
CAPACITOR AND TUNER ADJUSTING TOOL
For trimmer capacitors, sealed capacitors, and miniature L. C. Tuners. White Delrin with .050" hex head one end and screwdriver tip on the other end. Overall length 5-1/8".
Cat. No. 8605 ..... **Net $ .63**

MASTER DELUXE TOOL KIT
A super-deluxe kit in a leatherette roll type case. Contains 25 tools and includes all TV alignment tools except extra long ones (over 9").
Cat. No. 8283 ..... **Net $15.83**

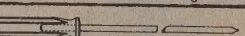


G-C ALIGNMENT SCREWDRIVER
Low inductance metal tip screwdriver made of Butyrate material.
5000 GC 1/4" Dia. x 6" Tool. . **Net $ .46**
2525 Walsco

COLOR TV ALIGNMENT TOOL KIT
Kit contains 5 different Hex alignment tools for all standard adjustments in Color TV. Tools packed in pocket saver and includes extender to make each tool a long reach aligner when needed.
Part No. 8454 ..... **Net $2.49**

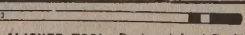


NEW "SLIM FIBREGLASS STICKS." New precision made Walsco Slim-Sticks are made of durable fibreglass. Completely non-metallic.
Cat. No. 2531-X Walsco 1/8" Dia. x 12 **Net $ .58**
8728 G.C. 1/8" Dia. x 12
2532-X Walsco 1/8" Dia. x 16 **Net .78**
8729 G.C. 1/8" Dia. x 16
2534-X Walsco 5/32" Dia. x 12 **Net .48**
9293 G.C. 5/32" Dia. x 12
2535-X 5/32" Dia. x 16" Long **Net .72**



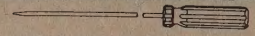
WALSCO "GLAS-STICKS." Precision made machined fiberglas reinforced polyester alignment screwdriver.
Cat. No 2537 Walsco 5/32" Dia., 7" blade **Net $ .85**
9291 G.C.
2538 Walsco 5/32" Dia. 14" blade **Net 1.15**

G-C ZENITH-ADMIRAL NYLON HEX WRENCH
New nylon hex wrench alignment tool for Zenith, Admiral and other sets.
Cat. No. 8606 .. 5" wrench, 11" long **Net $ .48**
Cat. No. 8606-L .. 11" wrench, 11" long **Net .63**

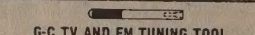


(N) I.F. ALIGNER TOOL. Designed for I.F. Alignment of Zenith, RCA and other similar types. Made of molded plastic 5-1/2" long.
Cat. No. 2521 ..... **Net $ .58**

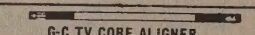
GC MAGNAVOX TUNING TOOL
Head for Magnavox chassis Nos. 201 and 202 and other sets. Hex wrench on both ends, one end undercut so it will reach bottom slugs in iron coils.
Cat. No. 8284 ..... **Net $ .48**



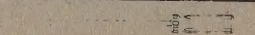
G-C TV CHANNEL TUNING TOOL
Completely insulated, non-metallic tool with long 1 8" narrow blade. Made of bone fibre.
Cat. No. 8195 7-1 4" long. 1 8" shaft dia. **Net $ .78**



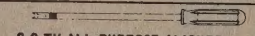
G-C TV AND FM TUNING TOOL
Special short tool with fine recessed screwdriver top for Television and FM adjustments. Made of Butyrate.
Cat. No. 8196 ..... **Net $ .46**
2-1 2" long. 7 32" shaft dia.



G-C TV CORE ALIGNER
For Motorola and other sets using Stackpole or other stud type cores that are not slotted. Milled steel insert on one end, thin screwdriver blade on other end.
Cat. No. 8271 16" long. 7 32" shaft dia. **Net $ .66**



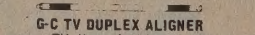
G-C TV I.F. OSCILLATOR ALIGNER
Specially made for I.F. and oscillator adjustments. Will fit all makes of sets–R.C.A., G.E., Philco, Admiral and others.
Cat. No. 8272 GC 6-1/2" long, 1/4" tip dia. **Net $1.20**
2518 Walsco



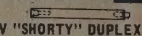
G-C TV ALL-PURPOSE ALIGNER
Specially made for TV I.F. adjustments. Very thin spring steel tip is recessed so the tool will guide itself over the screws.
Cat. No. 8273 GC 8" long, 7/32" shaft dia. **Net $ .99**
2516 Walsco

G-C TV LONG REACH ALIGNER
Specially made for Admiral, Zenith, R.C.A. and other sets for adjustments of nested iron cores that are hard to reach.
Cat. No. 8274 . . 9" long. 1 8" shaft dia. **Net $ .99**

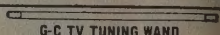
G-C TV ZENITH UNIVERSAL ALIGNER
Specially designed for Zenith and other sets. Made of bone fibre and plastic handle.
Cat. No. 8275 5" long. 1 8" shaft dia. . 1 4" **Net $ .57**



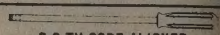
G-C TV DUPLEX ALIGNER
An all-purpose TV aligner for trimmers and I.F. transformers. Made of Butyrate material with extra thin spring steel tips.
Cat. No. 8276 6" long. 7 32" shaft dia. **Net $ .57**



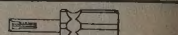
G-C TV "SHORTY" DUPLEX ALIGNER
Specially made for trimmer and I.F. transfo
where space does not permit the use of a longe
Cat. No. 8277 2-1 2" long. 7 32" shaft dia. **Net**



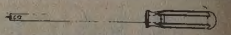
G-C TV TUNING WAND
Brass insert on end reduces inductance and iron
on other end increases the inductance.
Cat. No. 8278 6" long. 7 32" shaft dia. **Net**



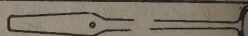
G-C TV CORE ALIGNER
Tool has a recessed steel milled slot to fit ov
Stackpole and other type stud cores that ar
slotted.
Cat. No. 8279 ..... **Net**
7-1 2" long. 7 32" shaft dia.



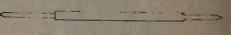
G-C "SHORTY" TV ALIGNMENT SCREW DRI
Only 2" long overall to adjust hard-to-get-at pl
under TV tubes, etc.
Cat. No. 8289 2" long. 7 32" shaft dia. **Net**



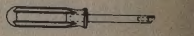
G-C UNIVERSAL SCREW DRIVER ALIGNER
Made of unbreakable flexible clear plastic shaft
an amber plastic handle.
Cat. No. 8290 7" long. 7 32" shaft dia. **Net**



G-C NEW ALL PLASTIC INSPECTION MIRRO
Use to inspect coils, resistors, sockets, etc. w
the chassis is hot. No danger of shorting.
Cat. No. 5090-P . . . 7-7 8" Plastic Mirror **Net**

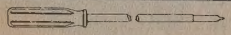


G-C K-TRAN TOOL
Specially designed for K-tran and I.F. transform
Butyrate material, screwdriver on both ends.
Cat. No. 5097 ..... **Net**
6" long. 5 32" Delrin tip 1 8" metal Tip



G-C SHORTY ALIGNMENT TOOL
A convenient tool for hard-to-get-at places.
3 16" shaft. 2" length. Over
3 16" shaft. 2" length. Overall length of tool
Cat. No 9298 ..... **Net**

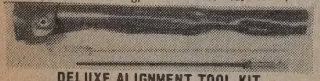
GC ALIGNMENT TOOLS ● GC ALIGNMENT TOOLS ● GC ALIGNMENT TOOLS



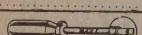
G-C NEW NYLON TV LONG REACH ALIGNER
Long-reach TV aligner with insulated metal shaft and nylon tip. 12-1/4" long overall, .195 Shaft Dia.
Cat. No. 8607 GC . . . TV Tool ..... **Net $1.60**
2523 Walsco

G-C CONTACT BURNISHING TOOL KIT
A complete kit for the servicing of relays, switches, etc. where critical contact points must be kept clean.
Cat. No. 9339 ..... **Net $ .97**

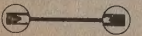
G-C TV 2-IN-1 LONG-REACH DUPLEX ALIGNER
Made of clear, unbreakable plastic material. Ends colored red and blue for size identification. Tips are made of spring steel recessed for easy location of stud.
Cat. No. 8721 9" long, 7/32" Shaft Dia. **Net $ .78**
8722 7" long, 7/32" Shaft Dia. **Net $ .67**
Walsco 2519 7" long, 7/32" Shaft Dia. **Net $ .67**



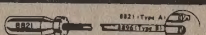
DELUXE ALIGNMENT TOOL KIT
Case is made of durable leatherette for long service. Steel tips are extra thin and of the best grade hardened spring steel. Kit contains one each of 16 tools.
Cat. No. 8280 ..... **Net $10.30**



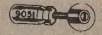
NEW G-C K-TRAN TELEVISION ALIGNER
Specially made for K-Tran I.F. Transformer tuner slugs. Precision made of bone fibre.
Cat. No. 8727 6-1/4" long, 5/32" Tip Dia. **Net $ .65**



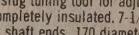
TV LONG REACH ALIGNMENT SCREWDRIVER
Made of bone fibre, extra thin 1/8" diameter screw drivers for adjustment of TV receivers. Screw driver tip on both ends–can be re-ground.
Cat. No. 8728A ..... 1/8" x 7" long .... **Net $ .47**
8728 ..... 1/8" x 12" long .... **Net $ .58**
8729 ..... 1/8" x 16" long .... **Net $ .78**



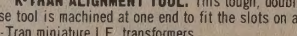
G-C LONG ARM TV TOOL PLASTIC SHAFT
Extra-long-reach alignment tool for Zenith sets and others where adjustments are hard to get at. Tool is 18" long overall. 18" long, 7/32" Shaft Diameter.
Cat. No. 8821 TV Tool (Type A) ..... **Net $1.00**
8896 ..... TV Tool (Type B) .... **Net $1.00**
8897 ..... TV Tool (Type C) .... **Net $1.00**



ZENITH-RCA ALIGNING TOOL WITH HANDLE
For better grip and easier adjustments. Length is 2-1/2" with a 1-1/2" shaft length. 7/32" diameter blade with recessed slot in blade end.
Cat. No. 9051 GC ..... **Net $ .58**
2527 Walso

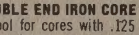


G-C STANDARD COIL SLUG TUNER ADJUSTING TOOL
A new special slug tuning tool for adjusting Standard Tuners, etc. Completely insulated, 7-1/2" long, 1/4" shaft diameter shaft ends .170 diameter.
Cat. No. 9087 ..... **Net $ .75**



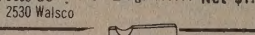
K-TRAN ALIGNMENT TOOL. This tough, double-use tool is machined at one end to fit the slots on all K-Tran miniature I.F. transformers.
Cat. No. 2515 ..... **Net $ .60**

G-C ADJUSTABLE SHORTY
Recessed tip TV alignment tool. Adjustable from 1-1/4" to 2" in length, for hard-to-get-at places.
Cat. No. 9090 ..... **Net $ .65**

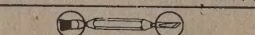


G-C DOUBLE END IRON CORE TOOL
All nylon hex tool for cores with .125 hex opening. One end of tool undercut so it can reach the bottom slug in coils without turning the top slug.
Cat. No. 9091 GC ..... 5" long .... **Net $ .48**
Walsco 2542
9091-L GC ..... 11" long .... **Net $ .70**

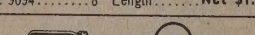
G-C PRINT KOTE SOLDER AID PROBE
Handy, fine point probe specially designed to aid in probing and soldering printed circuits.
Cat. No. 9093 GC . . . . 8" Length ..... **Net $1.03**
2530 Walsco



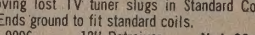
STUBBY STUD DRIVER. The only screwdriver only 2" long overall. Fits No. 6 studs.
Cat. No. 2517 ..... **Net $ .60**



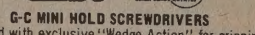
G-C PRINT KOTE BRUSH AND SCRAPER
Fine Stainless Steel brush and hardened steel scraper are required to scrape and clean the Silicone Resin from printed circuits.
Cat. No. 9094 ..... 8" Length ..... **Net $1.03**



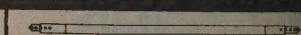
G-C SLUG RETRIEVER TOOL
A precision made tool with hardened steel tips made for removing lost TV tuner slugs in Standard Coil tuners. Ends ground to fit standard coils.
Cat. No. 9096 ..... 12" Retreiver ..... **Net $2.70**
9097 ..... 15" Retreiver ..... **Net $3.25**



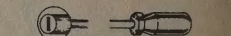
G-C MINI HOLD SCREWDRIVERS
Designed with exclusive "Wedge Action" for gripping of tiny screws. (Nos. 0, 1, 2, 3 and No. 8 set screws and smaller) Special short length (2-7/8" when in use).
Cat. No. 9346 GC 3-1/4" long, 2-7/8" in use **Net $2.14**
2568 Walsco
9347 GC 7" long, 6-3/4" in use **Net $2.40**
2569 Walsco



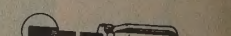
G-C RCA TV ALIGNMENT TOOL
Double end nylon tool with a recessed metal tip on one end and a plastic slot on the other end.
Cat. No. 9150 ..... 6" Length ..... **Net $ .93**



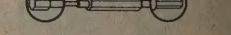
(F) "SLUG SAVER" TUNER TOOL. New paten
tool for aligning "Standard Coil" front ends. Preve
"loosing" slugs, thru ingenious "step" design.
Cat. No. 2528 ..... 7-1/2" long ..... **Net $**



G-C TV AND AUTO RADIO WRENCH
Special female slotted wrench to remove screws a
stud screws from auto radios and backs of TV se
etc.
Cat. No. 9211 ..... **Net $1**



G-C FIBREGLASS SCREWDRIVER
Gives full protection on hot chassis when adjusti
high potentials. For close-up hard-to-reach place
Cat. No. 9291 ..... 7" ..... **Net $**



G-C NYLON HEX TOOLS
For adjusting iron cores inside mounted chassis, a
tuner adjustment of iron and brass slugs with h
heads. Has .100" hex and 5/32" handle.
Cat. No. 9295 GC. . . . . 11" x .100" Hex. **Net $**
2544 Walsco
9296 GC. . . . . 11" x .075" Hex. **Net $**
2545 Walsco
9297 GC. . . . . 11" x .075" Hex. **Net $**
2547 Walsco

WRITE FOR CATALOG #FR-69 FOR COMPLETE LISTINGS

Net

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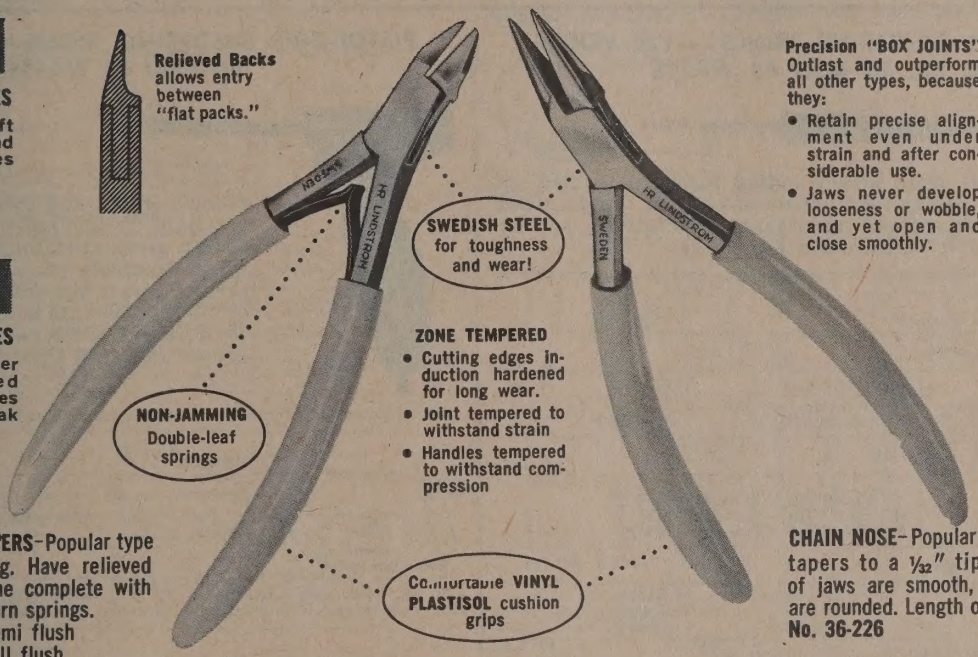
Lindstrom® Swedish PLIERS AND NIPPERS

MINIATURE TOOLS for use on the compact electronic circuits, assemblies and components in today's space age technology. The heads easily reach into confined spaces to perform intricate work, while their light weight, perfect balance, and comfortable grip provide fatigue-free use during continuous operations.

FULL-FLUSH EDGES
For cutting soft wires straight and flush . . . leaves no wire peak

SEMI-FLUSH EDGES
For cutting copper and insulated wires . . . leaves a very small peak

Relieved Backs allows entry between "flat packs."

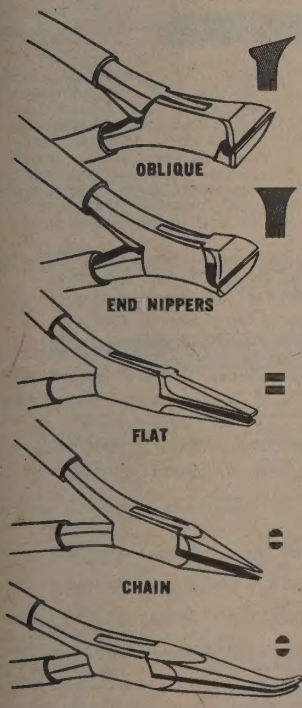


Precision "BOX" JOINTS" Outlast and outperform all other types, because they:
- Retain precise alignment even under strain and after considerable use.
- Jaws never develop looseness or wobble, and yet open and close smoothly.

DIAGONAL CUTTERS–Popular type for side cutting. Have relieved backs, and come complete with double-leaf return springs.
No. 36-237S—semi flush
No. 36-238S—full flush

CHAIN NOSE–Popular snipe nose tapers to a 1/32" tip — Insides of jaws are smooth, and edges are rounded. Length of jaws 3/4". **No. 36-226**

All Supreme Tools are Approximately 4 1/2" Long.



Supreme NIPPERS

All Nippers have vinyl plastisol handles and double-leaf return springs.

OBLIQUE — Head is angled 15°, with tip coming to a point. **No. 36-234S** semi-flush edges. **No. 36-235S** full flush edges

OBLIQUE WITH SHORT HEAD — Similar to above except back edge is ground off so head can be fitted into inaccessable areas. **No. 36-242S** full flush edges

END NIPPERS — Jaws are set straight across with both ends coming to a point. **No. 36-231S** semi-flush edges. **No. 36-232S** full flush edges

END WITH NARROW HEAD — Head is only 1/8" wide at cutting edge. **No. 36-246S** flush edges

Supreme PLIERS

All pliers have vinyl Plastisol handles. Double-leaf return springs available

FLAT — 1/8" wide at tip. Insides of jaws are smooth and edges are rounded. Length of jaws 3/4". **No. 36-221**

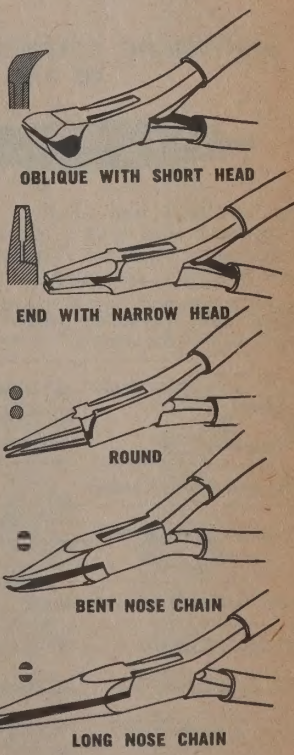
ROUND — Jaws are smooth and taper to a 1/32" tip. Insides of jaws are smooth and edges are rounded. Length of jaws 3/4". **No. 36-224**

CHAIN — Popular snipe nose tapers to a 1/32" diameter at the tip. Length of jaws 3/4". **No. 36-226**

BENT NOSE CHAIN — Tips are angled at 45° for picking up and manipulating precision wires. Length of jaws 3/4". **No. 36-227**

LONG NOSE BENT CHAIN — Tips are angled at 60° for picking up and manipulating precision wires. Length of jaws 1 1/4". **No. 36-229**

LONG NOSE CHAIN — Extra length jaws for getting into tight places. Snipe nose tapers to 1/32". Length of jaws 1 1/4". **No.36-228**



Catalog showing full Lindstrom line on request.

HAMMEL, RIGLANDER & COMPANY, INCORPORATED

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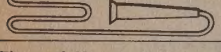
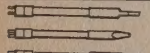
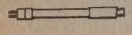
SOLDERING IRONS

6 to 240 VOLTS 12 to 140 WATTS

A complete line of high quality soldering irons specifically designed for production-line soldering in the electronic, instrument, and communications industries — including irons for soldering miniature and subminiature components. Also ideally suited for intermittent operations such as repair, maintenance, laboratory work, and electronic kit construction. Irons up to 1250 watts are available.

PENLINE-120 SOLDERING IRONS — 120 VOLTS; 25, 30, 40 AND 45 WATTS

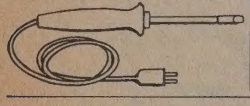
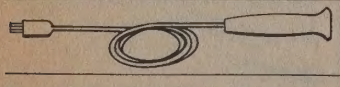
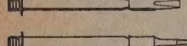
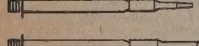
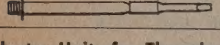
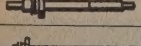
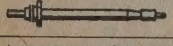
Lowest cost GE iron; ideally suited for light to medium production in electronics, communications, and allied industries, for repair and maintenance operations, and by the "do-it-yourself" electronics kit builder.

Description		Cat. No.
Handle and 6-foot Cordset		
	Two-conductor	6D400*
	Three-conductor, with NEMA standard plug	6D400G2
Tip and Heater Units — Ironclad		
	3/16" Chisel Tip 30 watts	6D410*
	9/32" Chisel Tip 30 watts	6D411*
	3/8" Chisel Tip 45 watts	6D412*
Heater for Threaded Tips		
	25 watts	6D415
	30 watts	6D414
	40 watts	6D413*

Use interchangeable threaded tips listed on next page.

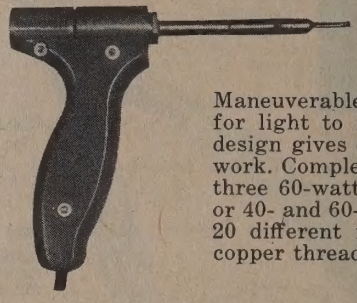
LIGHTWEIGHT SOLDERING IRONS — 120 VOLTS; 40 AND 60 WATTS

Ideal for light and medium production-line soldering and maintenance and repair operations in electronics and communications industries. Tip and heater units can be changed in seconds.

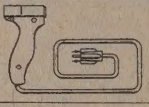
Complete Iron — Includes handle and 6-foot cordset, and tip and heater unit — 60 watts		
	1/4" Ironclad Chisel Tip	6A273*
	3/16" Ironclad Pyramid Tip	6A283*
	3/16" Ironclad Chisel Tip	6A283G23
Handle and 6-foot Cordset		
	Two-conductor	6A273G62
	Three-conductor with NEMA standard plug	6A273G63
Tip and Heater Units — 60 watts		
	1/4" Ironclad Chisel Tip	6A300
	3/16" Ironclad Pyramid Tip	6A301
	3/16" Ironclad Chisel Tip	6A301G4
Heater Units for Threaded Tips		
	40 watts	6A304
	60 watts	6A301G7

Use interchangeable threaded tips listed on next page.
* UL Listed.

PISTOL-GRIP SOLDERING IRONS — 120 VOLTS; 40 AND 60 WATTS

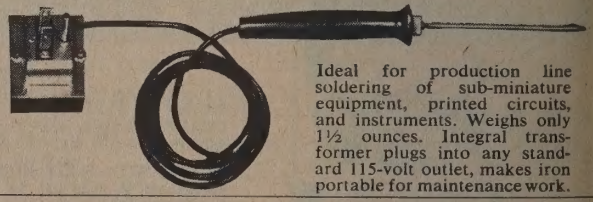


Maneuverable and comfortable, excell for light to medium production. Unic design gives operator a clear view of t work. Complete versatility with choice three 60-watt tip and heater assembli or 40- and 60-watt heater assemblies w 20 different interchangeable ironclad copper threaded tips.

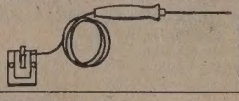
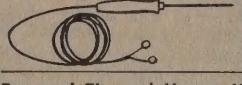
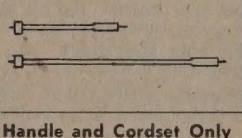
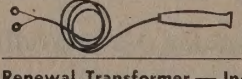
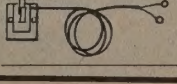
Description		Cat. No.
	Handle and cordset, three-wire with NEMA plug	6A303

Can be used with Lightweight tip and heater units, or with Lightwei heater units and interchangeable threaded tips listed on next page.

MINIATURE SOLDERING IRONS — 6 VOLTS, 12 WAT



Ideal for production line soldering of sub-miniature equipment, printed circuits, and instruments. Weighs only 1½ ounces. Integral transformer plugs into any standard 115-volt outlet, makes iron portable for maintenance work.

Complete Iron — Includes tip and heater unit, 6-foot cordset, and tra former with grounded plug.		
	1/8" Chisel Tip 3" Shank	6A428G3
	1/8" Chisel Tip 6" Shank	6A428G4
	1/8" Pyramid Tip 3" Shank	6A428G7
	1/8" Pyramid Tip 6" Shank	6A428G8
Complete Iron Less Transformer — Includes tip and heater unit, a 6-foot cordset with terminals		
	1/8" Chisel Tip 3" Shank	6A428G5
	1/8" Chisel Tip 6" Shank	6A428G6
Renewal Tip and Heater Units		
	1/8" Chisel Tip 3" Shank	6A429G3
	1/8" Chisel Tip 6" Shank	6A429G4
	1/8" Pyramid Tip 3" Shank	6A429G5
	1/8" Pyramid Tip 6" Shank	6A429G6
Handle and Cordset Only		
	6-foot Cordset with Terminals	6A428G62
Renewal Transformer — Includes — 6-foot integral cordset		
	6-volt Secondary 115-volt Primary	6A430

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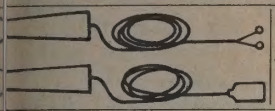
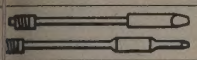
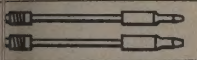
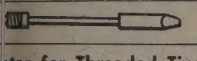
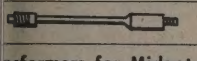
MIDGET SOLDERING IRONS — 6 VOLTS; 18 to 45 WATTS (with transformers)

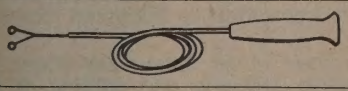
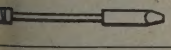
versatile iron for light production in electronics, and mmunication industries — handles like a pencil, weighs 1¾ oz. Tip renewal is easy and fast — complete tip and ter unit can be changed in a few seconds. Heat output be varied from 18 to 45 watts with standard GE nsformers.

Description		Cat. No.
dle and 6-foot cordset		
	For single- and 4-tap transformers	6A203
	For transformer with 3-heat switch	6A203G2
and Heater Units — All ironclad tips		
	¼" Chisel Tip 25 watts	6A211
	⅛" Cone Tip 25 watts	6A213
	3/16" Pyramid Tip 25 watts	6A215
	3/16" Chisel Tip 25 watts	6A217
	3/8" Chisel Tip 45 watts	6A211G31
ter for Threaded Tips		
	25 watts	6A221
nsformers for Midget Iron — 115-volt Primary‡		
	Single Tap 6.3-volt secondary	6A362G2
	Four Tap 5.4/5.7/6.0/6.3-volt secondary	6A364G2
	With Three-heat Switch 4.9/6.3/6.9-volt secondary For use only with Handle and Cordset 6A203G2.	6A434

ingle- and four-tap transformers are available with 240-volt primary in uantities of 36 or more, specify catalog number desired and note on rder, "except with 240-volt primary." Use interchangeable threaded tips.

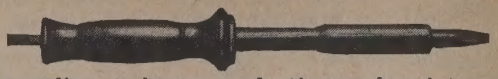
MIGHTY MIDGET SOLDERING IRON — 12 VOLTS; 100 WATTS

lightweight iron with high heat capacity for heavy ldering where larger irons, up to 200 watts, prove un-eldy for rapid repetitive soldering, such as production ldering of tuner chassis, tinware, can seams, etc.

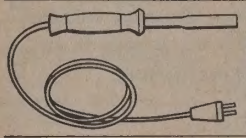
ndle and Cordset — Two-conductor		
		6A210G61
and Heater Unit — Ironclad		
	½" Chisel Tip 60 watts	6A211G54
	½" Chisel Tip 80 watts	6A211G50
	½" Chisel Tip 100 watts	6A211G33
nsformer for Mighty Midget — 115-volt primary		
	Four Tap — for 55/70/85/100 watts (115-volt primary, 12-volt secondary)	6A364G7

JL Listed.

6A160 SERIES SOLDERING IRONS — 120 VOLTS§, 75 TO 140 WATTS



Ideal for medium to heavy production, and maintenance and repair operations. Available with any of 12 different tips, calorized or ironclad.

Description		Cat. No.
Complete Iron Less Tip — Includes 6-foot two-conductor cordset		
	75 Watts	6A161*
	100 Watts	6A162*
	110 Watts	6A162G6*
	125 Watts	6A162G3*
	140 Watts	6A162G12

Tips — Fit all irons listed above

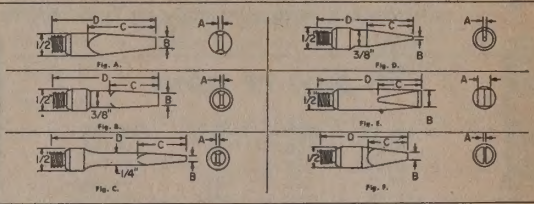
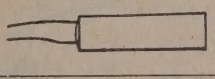


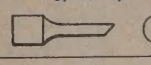
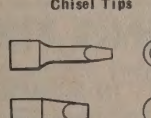
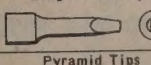
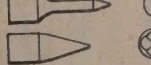
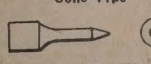
Fig.		A	B	C	D	
A. ½"-Dia. Chisel	Calorized	1/32	3/16	1½	2⅜	6D1P1
	Ironclad	1/16	7/32	1½	2⅜	6D1P2
	Calorized	1/16	7/32	2¾	4	6D1P3
	Ironclad	3/32	¼	2¾	4	6D1P4
	Calorized	3/32	¼	1¼	2⅛	6D1P11
B. ⅜"-Dia. Chisel	Ironclad	1/16	3/16	1⅛	2⅜	6D1P8
	Calorized	1/32	2/32	1⅛	2⅜	6D1P6
	Ironclad	1/16	5/16	1⅛	2⅜	6D1P7
C. ¼"-Dia. Chisel	Ironclad	1/16	⅛	1	3⅛	6D1P5
D. Cone	Ironclad	1/16	1/16	13/16	2⅜	6D1P12
E. Pointed Chisel	Ironclad	¼	13/32	1	1⅞	6D1P9
	Ironclad	¼	13/32	1	2⅜	6D1P10
F. Slim Chisel	Ironclad	1/16	5/32	⅞	2	6D1P19

Renewal Heater — 120 Volts§

	75 Watts	6A31
	100 Watts	6A32
	110 Watts	7C342
	125 Watts	8A88
	140 Watts	7C616

§ Also available for 240-volt operation.

INTERCHANGEABLE THREADED TIPS For Penline-120, Pistol-grip, Lightweight, and Midget Irons

Description (Copper Tip, Surface Plating)		Cat. No.
Spade Tips	1/16" Dia—Nickel	6D4P1
	3/32" Dia—Ironclad	6D4P2
	⅛" Dia—Nickel	6D4P3
	5/32" Dia—Ironclad	6D4P4
Chisel Tips	1/16" Dia—Nickel	6D4P5
	1/16" Dia—Ironclad	6D4P21
	3/32" Dia—Ironclad	6D4P6
	⅛" Dia—Nickel	6D4P7
	⅛" Dia—Ironclad	6D4P22
	5/32" Dia—Ironclad	6D4P8
	3/16" Dia—Nickel	6D4P9
	7/32" Dia—Ironclad	6D4P10
	5/32" Dia—Nickel	6D4P11
	3/16" Dia—Ironclad	6D4P12
Long Chisel Tips	3/16" Dia—Nickel	6D4P13
	7/32" Dia—Ironclad	6D4P14
Pyramid Tips	⅛" Dia—Nickel	6D4P15
	5/32" Dia—Ironclad	6D4P16
	11/32" Dia—Nickel	6D4P17
	3/8" Dia—Ironclad	6D4P18
Cone Tips	⅛" Dia—Nickel	6D4P19
	5/32" Dia—Ironclad	6D4P20

Soldering Irons and Tips from Hexacon

VOLTAGE RANGE: 6 to 240 • OPERATE IDENTICALLY ON A.C. OR D.C., ANY CYCLE
STANDARD VOLTAGES 110/120, 121/130, 220/240 • SPECIFY VOLTAGE ON ORDER

Equipped with flexible 5 and 6-ft. approved Neoprene rubber heater cord, which is water-proof, kink-free and resistant to oil, abrasion and heat. Nickel chromium replaceable heating elements, insulated with finest mica, protected by rugged outer housing. Replaceable tips.

HEXACON MINIRONS

WITH ALL THE EXTRA FEATURES

- Rugged quality construction that will withstand production line conditions
- Slim-line case promotes maximum visibility
- Long life and non-freezing Durotherm tips

SLIM LINE CASE — SLIM LINE HANDLE

No. 21A tip diameter 1/8"
No. 22A tip diameter 3/16"
No. 23A tip diameter 1/4"

DEPENDABLE PERFORMANCE • UP TO 60 WATTS

PLUG-TIP IRONS

Cat. No.	Watts	Tip Dia.	Ship. Wt.
P70	100	3/8"	1 1/8 lbs.
P100	110	3/8"	1 3/8 lbs.
P111	125	3/8"	1 3/8 lbs.
P115	150	3/8"	1 1/2 lbs.
P150	150	3/8"	1 1/2 lbs.
P153	175	3/8"	1 1/2 lbs.
P155	190	3/8"	1 1/2 lbs.
P151	175	1/2"	1 5/8 lbs.
P152	200	1/2"	1 5/8 lbs.
P200	200	5/8"	2 3/8 lbs.
P250	250	5/8"	2 3/8 lbs.
P300	300	7/8"	3 lbs.
P550	550	1 1/8"	4 3/8 lbs.

BANTAM HATCHET IRONS

PERFECT BALANCE FOR INACCESSIBLE PLACES

Cat. No.	Watts	Tip Dia.	Ship. Wt.
25H	25	1/8"	1/2 lb.
25H35	35	1/8"	1/2 lb.
*25H50	50	1/8"	1/2 lb.
26H	30	3/16"	1/2 lb.
26H35	35	3/16"	1/2 lb.
30H	60	1/4"	7/8 lb.
30H40	40	1/4"	7/8 lb.
30H50	50	1/4"	7/8 lb.

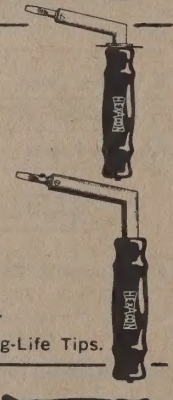
Cat. No.	Watts	Tip Dia.	Ship. Wt.
*26H50	50	3/16"	1/2 lb.
24H	50	1/4"	1/2 lb.
24H40	40	1/4"	1/2 lb.
*24H60	60	1/4"	1/2 lb.

Weighs only 3 oz.

Cat. No.	Watts	Tip Dia.	Ship. Wt.
30H70	70	1/4"	7/8 lb.
30H75	75	1/4"	7/8 lb.

Weighs only 5 oz.

*Standard Equipment DUROTHERM Non-Sticking Long-Life Tips.



SUPER-POWERED IRONS

HIGHER SPEED SMALLER TIPS

Cat. No.	Watts	Tip Dia.	Ship. Wt.
P114	100	1/4"	1 3/8 lbs.
P154	150	1/4"	1 1/2 lbs.
P238	200	3/8"	2 1/4 lbs.
P212	200	1/2"	2 1/4 lbs.
P338	300	3/8"	2 3/4 lbs.

HEXACON HORNET Model, H10

World's Smallest Industrial Soldering Iron for Micro-Electronic Soldering. Plastic handle, cooled thru ventilated design and stainless steel mirror, reflects heat away from hand.

Cat. No. H10K Kit (H10 Iron, 2 Tips and Sponge*)
Cat. No. H11K Kit (H11 Iron, 2 Tips and Sponge*)
Cat. No. H14K Kit (H14 Iron, 2 Tips and Sponge*)
*Tip Cleaning Sponge in Container

Cat. No. H10 Iron less tip, 12 Watts
Cat. No. H11 Iron less tip, 17 Watts
Cat. No. H14 Iron less tip, 20 Watts
Iron with 3-wire cord and Nema plug available
Cat. No. 91 Package of 12 tip cleaning sponges in container

DUROTHERM and XTRADUR Tips. Sizes 1/32" to 3/16"

SUPER-PENCIL IRONS

FASTEST AND MOST DURABLE PENCIL IRON.

All the advantages of a Soldering Pencil, but a full-fledged industrial soldering iron with nickel-chromium mica-wound element. Tiny tips outperform irons with larger tips and higher wattages.

Cat. No.	Watts	Tip Dia.	Ship. Wt.
25S	25	1/8"	1/2 lb.
25S20	20	1/8"	1/2 lb.
25S30	30	1/8"	1/2 lb.
25S35	35	1/8"	1/2 lb.
*25S50	50	1/8"	1/2 lb.
26S	30	3/16"	1/2 lb.
26S35	35	3/16"	1/2 lb.

Cat. No.	Watts	Tip Dia.	Ship. Wt.
26S40	40	3/16"	1/2 lb.
*26S50	50	3/16"	1/2 lb.
*24S	50	1/4"	1/2 lb.
*24S35	35	1/4"	1/2 lb.
*24S40	40	1/4"	1/2 lb.
*24S60	60	1/4"	1/2 lb.

Weighs only 2 oz.

*Standard Equipment DUROTHERM Non Sticking Long-Life Tips.

PINPOINT SOLDERING IRONS

FOR PINPOINT ACCURACY ON PRECISION SOLDERING

Cat. No.	Watts	Tip Dia.	Ship. Wt.
P25	25	1/8"	1/2 lb.
P2530	30	1/8"	1/2 lb.
P2535	35	1/8"	1/2 lb.
*P2550	50	1/8"	1/2 lb.
P26	30	3/16"	1/2 lb.
P2635	35	3/16"	1/2 lb.
P2640	40	3/16"	1/2 lb.
*P2850	50	3/16"	1/2 lb.
*P24	50	1/4"	1/2 lb.

Cat. No.	Watts	Tip Dia.	Ship. Wt.
*P2440	40	1/4"	1/2 lb.
*P2460	60	1/4"	1/2 lb.
P30	60	1/4"	7/8 lb.
P3040	40	1/4"	7/8 lb.
P3050	50	1/4"	7/8 lb.
P3070	70	1/4"	7/8 lb.
P3075	75	1/4"	7/8 lb.

Weighs Only 3 oz.

*Standard Equipment DUROTHERM Non-Sticking Long-Life Tips.

HATCHET TYPE IRONS

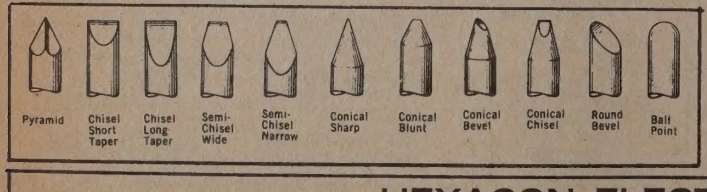
	Perfect Balance			Less Fatigue		
Cat. No.	Watts	Tip Dia.	Ship. Wt.	Cat. No.	Watts	Tip Dia.	Ship. Wt.
70H	100	3/8"	1 3/8 lbs.	151H	175	1/2"	1 5/8 lbs.
100H	110	3/8"	1 1/2 lbs.	200H	200	5/8"	2 1/4 lbs.
150H	150	3/8"	1 5/8 lbs.	300H	300	7/8"	3 lbs.
153H	175	3/8"	1 5/8 lbs.				

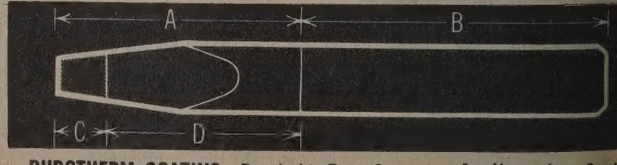
LONG-LIFE SOLDERING TIPS OUTLAST COPPER TIPS UP TO 20 TO 1

DUROTHERM NON-FREEZING TIPS: Iron coated and immunized. Absolutely prevents tips from sticking. Minimum loss of he delivery. **YOUR SPECIAL TIPS QUOTED ON REQUEST FIT ALL MAKES**

Note: Also available; XTRADUR Iron-coated Pretinned Tips. Multi-coated for extra long wear which immunizes shank of from solder, thus preventing adhering of solder, except on working surface of tip — prevents creeping and spilling of sold

LONGEST WEARING AND BEST PERFORMING TIP EVER PRODUCED





DUROTHERM COATING Bonded to Base Copper **A** — Heavy Iron Coat
B - Scale-Resistant **C** - Pretinned Section **D** - Multi-coated and immuni

HEXACON ELECTRIC COMPANY

© United Technical Publicati

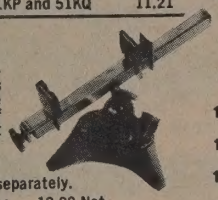
YOUR SINGLE SOURCE FOR THE MOST COMPLETE LINE OF PRECISION ELECTRONIC ASSEMBLY TOOLS

LEAD BENDING GAUGE

Fast, accurate lead forming with perfect reliability . . . no nicks! Up to 1200 component leads per hour may be formed with the simple precise Hunter Gauge offered in 4 standard sizes. All models have 40 lead forming positions. Light-weight, high-impact, Cycolac plastic.

Stock No.	Description	Price
51KL	¼ watt size, .375 to 1.50"	4.50
51KM	½ watt size, .050 to 1.50"	4.50
51KN	Set of 1 ea. 51KL and 51KM	9.00
51KP	1 watt size, .75 to 2.50"	5.63
51KQ	2 watt size, .875 to 2.50"	5.63
51KR	Set of 1 ea. 51KP and 51KQ	11.21

QUICK ADJUST VISE



Fully positionable, quick action vise, to meet the needs of the electronics/aerospace industry. Combination of vise, positioner, and cast iron base.

62E4 — Price 34.13 Net

Each unit is also available separately.

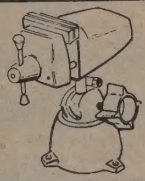
62E1— Positioner only. Price — 12.00 Net

62E2-1- Vise only. Price 14.40 Net

62E3— Combination of positioner (62E1) and vise (62E2) only. Price 26.40 Net

62K3— Cast iron base. Price 7.73 Net

PANA-VISE



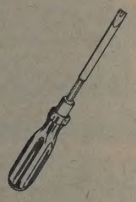
Solves holding problems for small complicated assemblies. **62** — Complete with base and vertical head. Unit 8" high, 6" long, 5" wide. Pivots work 360 degrees in any tangent to half a sphere, achieves any compound angle. Price 17.30 Net

CIRCUIT TESTERS

Traces any circuit **54** — dead or alive — to 600 volts A.C. or D.C. Signal light clearly visible in the tip at point of contact. Sturdy — pocket size — with plated brass parts; shock proof case. Price 4.98 Net

MAGIC TIP SCREWHOLDER

Holds screws tight when inserting or removing. Center pin grips screw tightly at slightest pressure.



Stock No.	Overall Length	Slot Fits Screw	Net Price
10E3	2½"	#00 to #2	1.92
10E4	4"	#00 to #2	2.27
10E7	7"	#00 to #2	2.33
10M3	3½"	#3 to #6	1.80
10M5	5¼"	#3 to #6	2.22
10M8	8¼"	#3 to #6	2.45
10M12	11¼"	#3 to #6	2.67
10A	4"	#6 to #10	1.92
10B	6¼"	#7 to #10	2.33
10C	7½"	#7 to #10	2.37
10D	11¼"	#7 to #10	2.66

NUT DRIVERS

These nut drivers have hollow shafts. Color coded Tenite II plastic handles identify size.

Stock No.	Hex-agon Size	Overall Length	Color	Net Price
19W	5/32"	6¼"	Maroon	.98
20	3/16"	6¾"	Black	.98
20A	7/32"	6¾"	Brown	.98
20B	¼"	6¾"	Red	.98
20C	9/32"	6¾"	Orange	.98
20D	5/16"	6¾"	Amber	.98
20E	11/32"	6¾"	Green	.98
20F	3/8"	6¾"	Blue	.98
20G	7/16"	7"	Brown	1.13
20H	½"	7"	Red	1.13
20H1	5/16"	7¼"	Orange	1.28
20I	¼"	3"	Red	.87
20J	5/16"	3"	Amber	.87
20K	3/8"	3"	Blue	.87

HUNTER KNIVES

E20 — Utility knife. Blade is replaceable. Made of light weight aluminum. Knife is 5/16" in diameter and 5" long. Price .57 Net

HEX DRIVERS

Screwdriver type wrenches for speedy drive socket screws. Tempered shafts. Plastic handles.

Stock No.	Size	Overall	Net Price
4Y	.028	4"	.69
4Z	.035	4"	.69
5	.050	4⅝"	.57
5A	1/16"	5⅛"	.60
5B	3/64"	6"	.63
5C	5/32"	6⅜"	.66
5C1	7/64"	6¾"	.69
5D	1/8"	6¾"	.69
5D1	9/64"	7"	.69
5E	5/32"	7⅝"	.69
5F	3/16"	8"	.75
5G	7/32"	8⅜"	.84

"SMITTY" WRENCHES

Convenient, easy to use, gives the right key size when you want it.

1P4 — 6" handle, 5" blades. 3/32, 1/8, 5/32, 3/16, 7/32, 1/4. Price 2.43 Net

1P5 — 4" handle, 2" blades. 3/32, 1/8, 5/32, 3/16, 7/32. Price 1.20 Net

1P6 — 3" handles, 2" blades. .050, 1/16, 3/64, 3/32, 1/8, 5/32. Price 1.16 Net

1P7 — 3" handle, 2" blades. .050, 1/16, 3/64, 3/32, 7/64, 1/8, 9/64. Price 1.20 Net

1P8 — 4" handle, 3" blades. 3/32, 7/64, 1/8, 3/64, 5/32, 3/16, 7/32, 1/4. Price 1.73 Net

THERMAL WIRE STRIPPER

Plier is 8" long, ½" wide at tip, 2½" wide at handle, 7/8" thick with 36" cord. Plier stripper weighs only 8 oz., total unit weighs only 3 lbs. Ideal for research and development work.

80 — Standard control box, plier-type wire stripper. Price 81.00 Net

80C — Same as above but with heavy duty (3-wire) cord and grounds. Price 85.28 Net

80A — Replacement filaments for plier-type stripper. Price 3.00 Net

"PLIKE" 4 IN 1 TOOL

Holds, Crimps, Cuts and Strips solid wire in gauges #12 thru #22 and stranded wire #14 thru #24.

55 — Plike, w/plastic grips and spring. Price 2.24 Net.

HUNTER SUB-MINIATURE TOOLS

K24M — Master set of sub-miniature tools consisting of jewelers handle, red plastic handle, wrench blades 3/64, 3/32, 1/8, 5/32, screwdriver blades .055, .070, .080, .100, Phillips blades #0, #1, awl, spline blades .033-4, .048-4, .048-6, .060-6, .069-4, nut driver blades 3/64, 5/32, 7/64, 1/8, 5/32 and hex key blades .028, .035, .050, 1/8, 5/64. Price 12.38 Net

HUNTER EREMADIUM CUTTERS

These specially tempered eremadium cutting edges are designed for cutting newer wires containing nickel, iron, etc., up to 22 gauge wire. The most popular are the cutters with full flush or semi-flush cutting edges, lasting 3 to 5 times longer.

A95E — Full flush cut plier 4" long, designed to cut 22 gauge wire or less. Price 5.42 Net

A95EL — Same as A95 only with leaf spring. Price 5.72 Net

A97E — Semi-flush cut plier 4" long, designed to cut 22 gauge wire or less. Price 4.55 Net

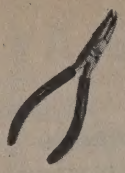
A97EL — Same as A97E only with leaf spring. Price 4.85 Net

A86E — Tape Jaw Dyke 4¾" long for No. 20-22 gauge wire. Semi-flush cut. Price 5.67 Net

A86EL — Same as an A86E only with leaf spring. Price 5.97 Net

EREMADIUM
CHROME VANADIUM STEEL

HUNTER TIP-O-DYKE



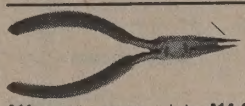
Special precise full flush cutting instruments that will cut flat, soft nickel ribbon wire and increase reliability. Cuts at tip with perfect angle.

A90E — 4⅜" overall, 22 gauge AS copper wire. Price 11.16 Net.

A90EL — Same as an A90E only with leaf spring. Price 11.43 Net.

EREMADIUM
CHROME VANADIUM STEEL

HUNTER PLIERS



A11— 4¾" narrow chain nose. Smooth jaws, radius edges will not mar wire. Price 3.74 Net

A11L— Same as A11 only with leaf spring. Price 4.04 Net

A14-4½ - A14-6– Extra long needle nose, 4½". Optional: 6". Radius edges. Price 4.20, 6" Price 4.70.

A14L-4½ - A14L-6– Same as an A14-4½ only with leaf spring. Price 4.62, - 6" 5.00

HUNTER NIPPER

CHROME PLATED STEEL

F213 — Straight Blade nipper, 4½" long. Designed to be held in palm of hand and keep fingers free for use. Price 2.63 Net

F213A — Same as an F213 only heavy duty. Price 2.97 Net

F214 — Same as an F213 only with curved blades. Price 2.85 Net

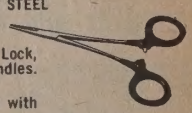
HUNTER SCISSORS

NICKEL PLATED STEEL

F299 — Straight blade electronic shear. 5" long. Price 2.33 Net

HUNTER SCISSOR CLAMPS

STAINLESS STEEL

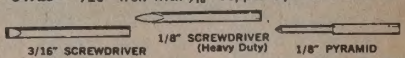


F35 — Straight end scissor clamp. 5" long. Precision box joint, fine serrated jaws. Lock, opens easily. Cushion-grip handles. Price 4.80 Net

F36 — Same as an F35, only with curved end. Price 4.80 Net

HUNTER SOLDERING IRON & TIPS

S4725 — 720° iron with 3/16" copper tip. Price 3.32 Net



S13C— Screwdriver type 3/16" copper tip. Price .36 Net

S14C— Pyramid type 1/8" copper tip. Price .36

S25C— Screwdriver type heavy duty 1/8" copper tip. Price .36 Net

HUNTER HEAT SINKS

Absorbs and dissipates heat instantly during soldering — protects delicate components.

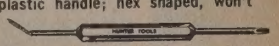
51G — Small model for delicate work. 1¼-ins. long. Coated plastic handle. Tweezer nose. Price .56 Net

51F — Medium Duty Unit. Plastic coated handles. Fed. Stock No. 3439-856-9497. Price .69 Net

51E — Heavy Duty. Has copper jaw. Plastic covered handle. Fed. Stock No. 3439-856-9496. Price .72 Net

HUNTER SOLDERING AIDS

Blades of non-magnetic steel to which solder won't adhere. Turquoise plastic handle; hex shaped, won't roll off table.



REGULAR MODELS

51 — Fork & Hook. Overall length 7"; hex handle size 3/8" x 3"; blade size 5/32" x 2". Price .90

51A— Fork & Brush. Overall length 7"; hex handle size 3/8" x 3"; blade size 5/32" x 2". Price .90

51B— Knife & Brush. Overall length 7"; hex handle size 3/8" x 3"; blade size 5/32" x 2". Price .90

51C — Fork & Reamer. Overall length 7"; hex handle size 3/8" x 3"; blade size 5/32" x 2". Price .90

MICRO MODELS

51C1— Fork & Hook. Overall length 6"; hex handle size ¼" x 3"; blade size ⅛ x 1½". Price .90

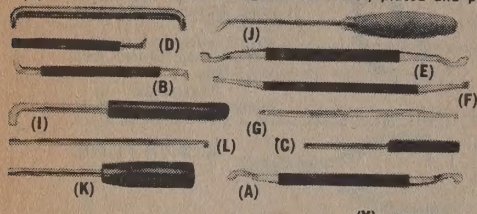
51C2— Fork & Reamer. Overall length 6"; hex handle size ¼" x 3"; blade size ⅛ x 1½". Price .90

JIC RELAY & ELECTRONIC TOOLS

FOR PRODUCTIO
SERVICE
& MAINTENANC

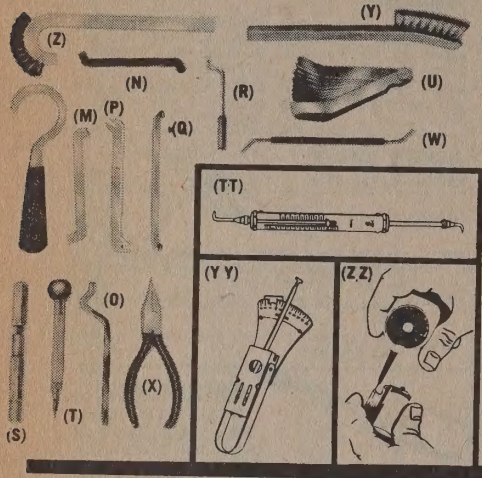
RELAY SPRING ADJUSTING TOOLS

All tools made of high carbon steel, plated and polished, heat treated and tempered to exact requirements. Insulated handles for work on live equipment.



(A) SA-2 Offset type, 6½" long, saw slot both ends .032" $2.98
(B) SA-6A Cross & lengthwise slots, 5½" long. Slot .030" $2.95
(C) SA-7 One end saw slot straight 4½" long. Slot .015" $1.75
(D) SA-8 Heavy duty. Round head, 4½" long. Cross slot .045" $2.98
(E) SA-16 Offset type 6½" long, saw slot both ends .018" $3.28
(F) SA-17 Offset slim type. Saw slot both ends .023" 8" long $3.84

(G) SA-20 Opposite-faced thin headed slots. 7" long Slots .022" .....
(H) SA-24 Crosswise slots. 5½" long, Slots .040 & .028" .....
(I) SA-25 Angled. 6½" long. Saw slot .032" .....
(J) SA-143 Bent, 8" long, Saw slot .025" .....
(K) SA-163 Straight driver type, 5½" long, cross slot .038" .....
(L) SA-175 Closely set saw slot, 5¼" long, slot .031" .....



RELAY & INSTRUMENT TOOLS

(M) AB-21 Adjuster, Armature, 4" long, slot width each end .110" $1.88
(N) AB-20 Adjuster, Armature, 3 slots .114" $1.98
(O) SB-22 Adjuster, Armature stop, 5" long, slots .032" $1.98
(P) S-187 Adjuster, double dog, 4" long, slot both ends. 3/32" $2.14
(Q) S-201 Adjuster, aid spring, 4¼" long, slot both ends .034" $3.18
(R) J-34 Adjuster, pole piece, 3" long $1.68
(S) FW-24 Hex wrench, double end, with screw driver, 4¾" long, 7/32" and ¼" hexagon $3.10

(T) J-23 Screwdriver, guide pin 4½" long .....
(U) T-255 Angled thickness gauge, 9 blades .009" to .026" .....
(V) BC-23 Bank cleaner, abrasive surface 1½" dia. 6" long .....
(W) S-457 Wire & spring aid, bent 30° opposite ends, 5½" long .....
(X) PL-8 Spring duck bill plier, 5½" long.....
(Y) WB-65 Nickel silver wire brush, 9" long .....
(Z) HB-75 Curved hair brush. Radius 1¾", Length 8" .....

SPRING TENSION GAUGES (YY)

Precision-made to accurately determine the setting, testing and adjusting of relay spring tension and oth delicate electronic tensioned movable components.

G-10 0-10 grams $7.48
G-30 0-30 grams $7.48
G-50 0-50 grams $7.48
GP-50 0-50 grams (preset) $7
G-150 0-150 grams $7
G-700 0-700 grams $8

PUSH—PULL TENSION GAUGES (TT)

GPP-1 0-1000 grams $29.80
GPP-2 0-110 grams ..... $14.

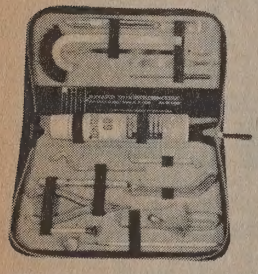
DYNAMOMETERS (ZZ)

Dial gauges to determine force required to actuate delicate mechanisms.
- Spring tension indicator
- Verification of contact blades.
- Stylus pressure gauge

GD-5 5-50 grams ..... $13.
GD-15 15-150 grams ..... $13.
GD-100 100-1000 grams ..... $31.

TOOL KITS

MASTER 15-PIECE RELAY TOOL KIT



Precision-made and professionally-designed group of new tools for adjusting and maintaining relays, contactors, switches, controls, and other components for the telecommunication and electronic industries.

Packed in Deluxe zippered leather case for protection of tools.

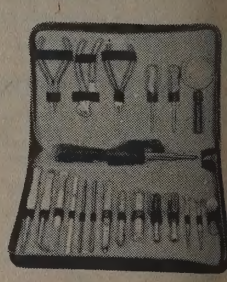
Kit contains: 2 spring adjusters, tension & thickness gauges, Duck Bill plier, Screw Driver, Tweezer, Mirror, 4-way Tool, Brush, Armature & Stop Benders, Contact Spray. Contact Burnisher. **KIT K-55 $37.60**

Kit KR-6 Compact Relay Kit, leather case (not illustrated) $22.00

MASTER 20-PIECE ELECTRONIC TOOL SET

Designed for assembly, service and repair. High quality tools were specially produced for serving, adjusting, trouble-shooting, of complex equipment and assembly work. Kit comes in durable leather zippered case for easy portability. Set contains Chain Nose, Groove Grip and Diagonal cutting pliers. Standard and Phillips screwdrivers, Magnifier, Solderingiron, Straight and Bent Nose tweezers, Solder aid, Alignment tool, 2 Needle files, Pin vise, Solder Core, 3/16" and 1/4" Nut drivers, 2 jewelers screwdrivers, Pen Burnisher with 12 blades. **KIT K-600 ..... Price $32.90**

Kit KE-7 Compact Electronic Set, vinyl case (not illustrated) $12.90



RELAY & CONTACT BURNISHERS

DIAMOND BURNISHERS

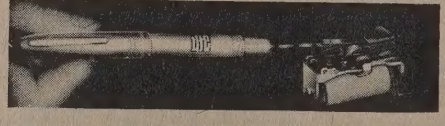
Exclusive Features:
- Strong abrasive power
- Long lasting

Consists of abrasive Diamond particles - Developed for any type contacts: Silver, Platinum, Gold, Palladium, Tungsten, Molybdenum - Length 5⅝" - Diamond coated face 1" x ¼" - Nylon Shaft - Three types to meet every application: Type 200 (coarse) for Industrial Relays - Type 300 (medium) for Intermediate and Telephone relays - Type 400 (fine) for Sensitive Relays.

K-234 Set of 3 ..... $14.85
Individual spatulas and Kits packaged in rigid plastic boxes.

D-200 Shaft green .. $4.95
D-300 Shaft red $4.95
D-400 Shaft blue $4.95

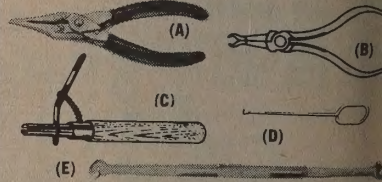
POCKET-TYPE BURNISHERS



Handy, lightweight tool with replaceable blades, adjustable for length and rigidity. For any type contacts, of any precious metal. Contact burnisher leaves no grit or dust on contact. Hard-tempered steel blades for minimum contact wear. Rust proof, with chrome plated barrel and pocket clip, aluminum chuck. Clear plastic cap for use with "live" contacts. Overall length, 5½". dia. ⅜".

P-4 Pen—With 12 RB4 Blades. Net Each.....$3.90
P-6 Pen—With 12 RB6 Blades. Net Each..... 3.90
RB4 (¼" w. 1¼" l.) or **RB6** (3/16" w. x 1¾" l.)
Replacement Blades — .007" thick. Net, Pkg. 25 $3.75

SPECIALIZED TOOLS



(A) PLS-7 Parallel Duck bill plier, 6" long $7.98
(B) S-42 Plier, lamp cap extractor, 5" long $4.96
(C) S-339 Switchboard lamp extractor $2.45
(D) M-120 Hook spring pull, 6"..... $1.48
M-125 Hook spring push, 6"..... $1.48
(E) Open end wrenches, 8" long, DW-4 ¼" DW-16 3/16", DW-32 7/32" ..... $3.48 ea

CONTACT OUR CUSTOM-MADE TOOL DEPARTMENT FOR SPECIAL REQUIREMENTS

Write for New, Free Catalog... OVER 500 JIC PRECISION TOOLS

JONARD INDUSTRIES CORP. PRECISION TOOLS DIV.

Net

© United Technical Publication

The original "wedge-type" screwdriver

QUICK-WEDGE®

SCREW-HOLDING SCREWDRIVERS

HOLDS - STARTS - DRIVES - SETS the Screw — Unconditionally Guaranteed

17 Different Sizes Handle Every Screwdriving Job!

Last digit(s) of model number indicates blade length. "E" after number indicates electrical sizes with color-matched, shockproof, Vinyl covered tubing. Not available on No. 1732.

© 1969 Kedman Company
Quick-Wedge Reg. U.S. Pat. Off.

• One screwdriver drives many sizes of screws • Shockproof, unbreakable Tenite II handle • Hollow-ground bit fits any slotted screw • Use instead of conventional screwdriver • Tough, durable spring steel blades. Positively will not mar screw slot • Fast positive action — easy to use • No pressure wedge to wear out • Foolproof construction.

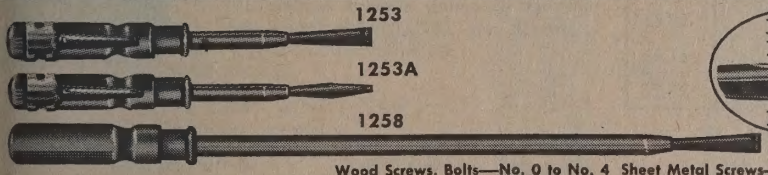
Prices subject to change without notice. Net Prices effective November 1, 1966.

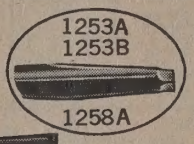
ULTRA-MINIATURE

0-80 and other extremely tiny screws

No.	Blade Diam.	Wt. Lbs. Per Box*	Per Box*	Each Price
1253B	1/8"	9 oz.	$15.00	$1.50
1253B-E	1/8"	9 oz.	16.50	1.65

MIDGET

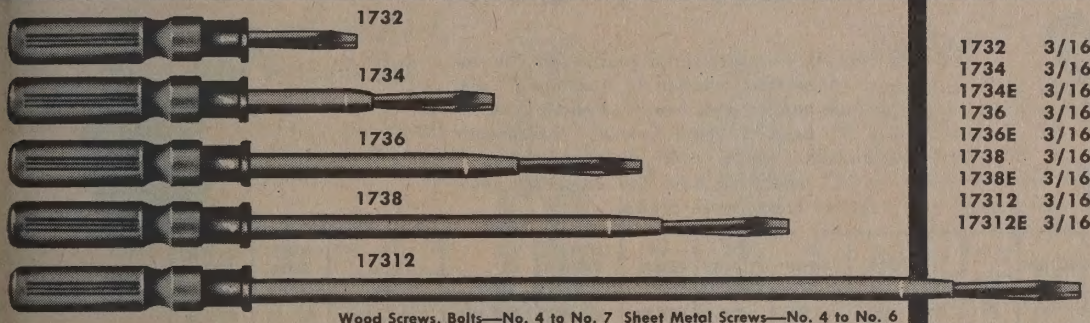




Wood Screws, Bolts—No. 0 to No. 4 Sheet Metal Screws—No. 2 to No. 4

1253	1/8"	9 oz.	12.50	1.25
1253E	1/8"	9 oz.	14.00	1.40
1253A	1/8"	9 oz.	14.00	1.40
1253AE	1/8"	9 oz.	15.50	1.55
1258	1/8"	15 oz.	15.00	1.50
1258E	1/8"	15 oz.	16.50	1.65
1258A	1/8"	15 oz.	16.50	1.65
1258AE	1/8"	15 oz.	18.00	1.80

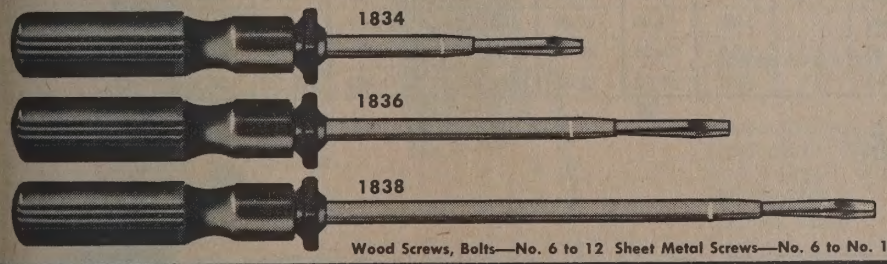
SMALL



Wood Screws, Bolts—No. 4 to No. 7 Sheet Metal Screws—No. 4 to No. 6

1732	3/16"	¾	13.00	1.30
1734	3/16"	1	13.50	1.35
1734E	3/16"	1	15.00	1.50
1736	3/16"	1¼	14.00	1.40
1736E	3/16"	1¼	15.50	1.55
1738	3/16"	1½	14.50	1.45
1738E	3/16"	1½	16.00	1.60
17312	3/16"	2	16.00	1.60
17312E	3/16"	2	17.50	1.75

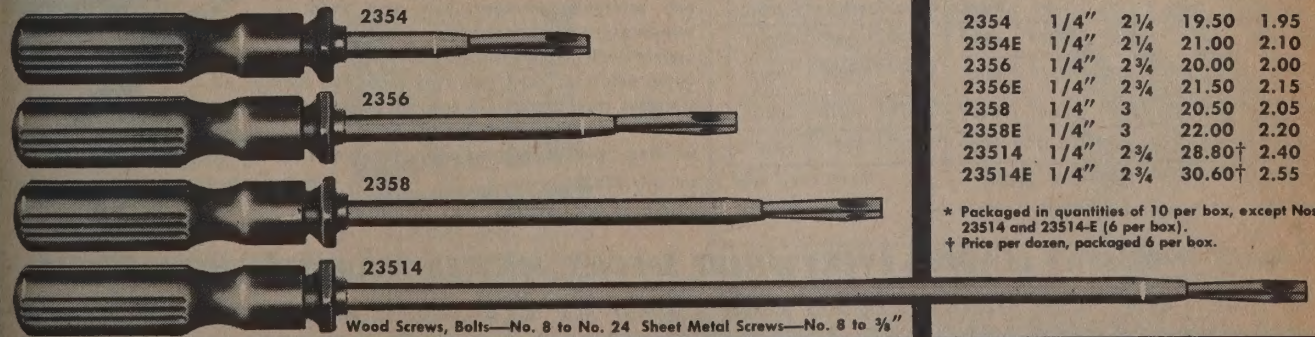
MEDIUM



Wood Screws, Bolts—No. 6 to 12 Sheet Metal Screws—No. 6 to No. 12

1834	3/16"	1¾	18.50	1.85
1834E	3/16"	1¾	20.00	2.00
1836	3/16"	2	19.00	1.90
1836E	3/16"	2	20.50	2.05
1838	3/16"	2¼	19.50	1.95
1838E	3/16"	2¼	21.00	2.10

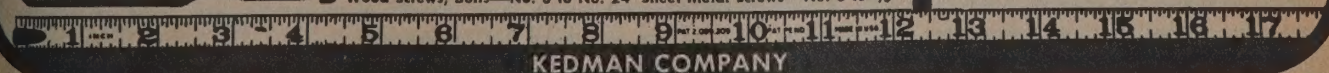
HEAVY DUTY



Wood Screws, Bolts—No. 8 to No. 24 Sheet Metal Screws—No. 8 to 3/8"

2354	1/4"	2¼	19.50	1.95
2354E	1/4"	2¼	21.00	2.10
2356	1/4"	2¾	20.00	2.00
2356E	1/4"	2¾	21.50	2.15
2358	1/4"	3	20.50	2.05
2358E	1/4"	3	22.00	2.20
23514	1/4"	2¾	28.80†	2.40
23514E	1/4"	2¾	30.60†	2.55

* Packaged in quantities of 10 per box, except Nos. 23514 and 23514-E (6 per box).
† Price per dozen, packaged 6 per box.



KEDMAN COMPANY

Fast Heat With The World's Most Complete Line

MASTER FLAMELESS HEAT TOOLS!

Flameless Heat Guns

- shrink tubing
- de-solder
- set pre-coated rivets
- soften, mold, weld, form plastics
- dry paint, plastic finishes, condensation, or parts after washing
- speed plastics and epoxy curing
- handle hundreds of other jobs.

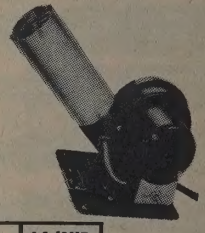
Model	Voltage	Amp.	Temp. F°	Standard*	U.L. Model*	L.A. Model*
HG 201	120	5	200/300	$44.30	$54.30	$45.65
HG 202	230	3	200/300	51.95		57.35
HG 301	120	12	300/500	44.30	54.30	45.65
HG 302	230	5	300/500	51.95		57.35
HG 501	120	14	500/750	49.90	59.90	50.75
HG 502	230	8	500/750	55.25		60.65
HG 751	120	20	750/1000	59.95		61.65
HG 752	230	9	750/1000	67.85		73.25

*Specify Standard, U.L. approved, L.A. approved models.
Chrome Models available. Add $10 to above prices for model selected.

Adjustable air intake for controlling the air blast temperature: double jacketed heater housing, rugged, die-cast aluminum, motor housing; 3-wire cord; fast, quiet, efficient turbo type fan. Attachments available. Choose gleaming chrome models or standard red, or U.L. or L.A. models.

Flameless Continuous Duty Heat Blowers

Mounts permanently for production line use or move from location to location. 2" dia. nozzle concentrates heat on desired area. 6" x 6" base, 8" high over-all. Attachments available. Model AHD features handle, 6" x 13" adjustable base and adjustable shutter for temperature control.



Model	Voltage A.C.	Cycle	Amp.	Temp. F°	Air Volume C.F.M.	Air Velocity F.P.M.	AH Model Prices	LA/AH Model Prices	Model	Temp. F°	AHD Model Prices	LA/AHD Model Prices
AH 301	120	60	10	300	14.82	1425	$56.65	$62.05	AHD 301	300 to 400	$69.15	$74.55
AH 302	230	60	5	300	16.2	1550	68.35	73.75	AHD 302	300 to 400	80.85	86.25
AH 501	120	60	14	500	13.75	1375	59.95	65.35	AHD 501	500 to 600	72.45	77.85
AH 502	230	60	6	500	14	1400	71.65	77.05	AHD 502	500 to 600	84.15	89.55
AH 751	120	60	18	750	13.5	1350	78.35	83.75	AHD 751	700 to 800	90.85	96.25
AH 752	230	60	11	750	13.5	1350	90.25	95.65	AHD 752	700 to 800	102.75	108.15

Master Flameless Heat Torch

CHART OF APPROXIMATE TEMFPERATURES OBTAINED 1/4" FROM NOZZLE IN F° @ 120 VOLTS — POUNDS OF PRESSURE							
Rating	8 lbs.	7 lbs.	6 lbs.	5 lbs.	4 lbs.	3 lbs.	2 lbs.
250 Watts	250°	300°	330°	360°	390°	420°	500°
350 Watts	350°	400°	450°	500°	550°	600°	700°
450 Watts	450°	500°	550°	600°	650°	700°	850°
550 Watts	550°	600°	650°	700°	750°	875°	1050°

Weighs a mere 1 lb. Handles easily. Pinpoints heat in small areas at any selected pressure. Lets you hold temperature plus or minus 1°. Works off conventional air compressors, small motor driven compressors or inert gas. Has a molded handle, all stainless steel barrel. Comes with 10' contaminate-proof hose. Welds PVC's, polypropylenes, polyethylenes. Extra welding tips and carrying case available as optional equipment.

Model FHT-1 with shield and switch **$89.50.**

Model FHT-2 with switch only **$85.50.**

Model FHT-3 with shield only **$79.00.**

Model FHT-4 with no switch or shield **$75.00.**

Specify heat torch Model No., voltage and 120 o 230 voltage when ordering. Add $2.00 to price fo 230 V Models.

WHY INDUSTRY LEADERS EVERYWHERE SPECIFY MASTER FLAMELESS HEAT TOOLS

The reason is simple. Master Appliance Corporation pioneered flameless heat tool development. So it's natural that they know more about designing and building quality heat tools than any other manufacturer. In short, people who want the best insist on Master capacity, performance and trouble-free dependability. Isn't it time you found out for yourself!

AVAILABLE AT LEADING DISTRIBUTORS

Net

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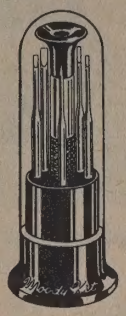
Moody® PRECISION HAND TOOLS

Screw Driver & Awl Set

Contains four interchangeable screw driver blades and an awl. Complete with swivel top, knurled chuck type handle.

Sizes .055", .070", .080", .100", awl

Cat. No. SC-5 **List $1.75**

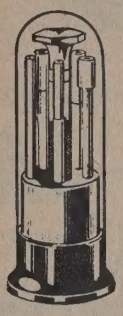


Socket Wrench Set

Five interchangeable box or socket wrenches that fit the same magnetic handle. Thread sizes #00, #0, #1.

Sizes (all hex) 5/64", 3/32", 7/64", 1/8", 5/32"

Cat. No. BW-5 **List $3.95**

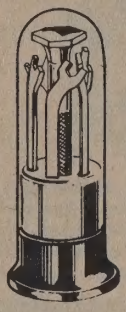


Offset Open End Wrench Set

Contains five offset open end wrenches, interchangeable in the chuck handle.

Sizes 5/64", 3/32", 7/64", 1/8", 5/32"

Cat. No. OE-5 **List $2.50**



Tap Drill Set

Contains five tap drills. Handle has a solid-locking chuck-nose and swivel-top. A companion piece to the Moody TS-5 Tap Set.

Drill Sizes 3/64", #53, #50, #47, #43

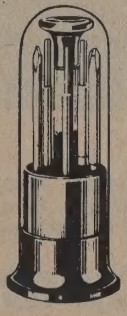
Cat. No. 70 **List $3.50**

Cross Recessed Driver & Allen Type Wrench Set

Contains five interchangeable tools with chuck-type, swivel top handle. A torque hole in the handle enables fastenings to be set up tight.

Cross recessed drivers #0, #1
Allen type wrenches #4, #6, #8

Cat. No. PA-5 **List $2.50**



Tap Set

Contains five interchangeable taps and handle for cutting inside threads. Torque hole in handle enables you to maintain a steady firm leverage.

Tap Sizes 0-80, 1-72, 2-56 3-48, 4-40

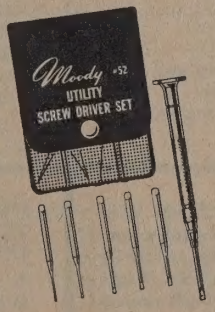
Cat. No. TS-5 **List $6.95**

Utility Screw Driver Set

Consists of a precision screw driver and six interchangeable blades. The screw driver handle is knurled for positive gripping.

Sizes .025", .040", .055", .070", .080", .100"

Cat. No. 52 List $2.50

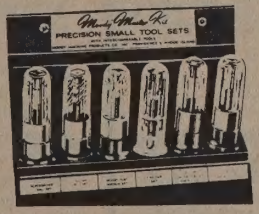


Machinist Scriber

Approximately 8½" overall with a right angle point and a straight point, both properly tapered and swaged into a knurled aluminum finger grip handle.

Cat. No. MS-2 **List $ .75**

Moody Master Kit



A popular compact kit of six tool sets, stored in a leatherette case. Contains Screw Driver & Awl Set, Cross Recessed Driver & Allen Type Wrench Set, Socket Wrench Set, Offset Open End Wrench Set, Tap Drill Set, Tap Set.

Cat. No. MMK-6 **List $22.95**

Send for Free Catalog on the complete line of Moody Tools

MOODY MACHINE PRODUCTS CO., INC.

Moody® MACHINE PRODUCTS CO., INC.

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ERSIN

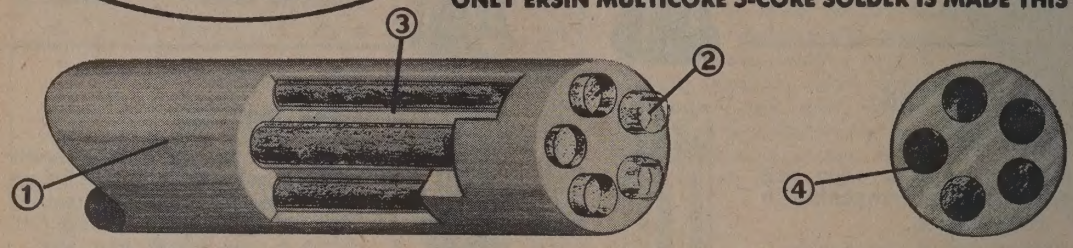
Multicore

5-core wire rosin solder

Available in 1-lb. and 7-lb. reels

This is no ordinary solder!

ONLY ERSIN MULTICORE 5-CORE SOLDER IS MADE THIS WAY



These illustrations show the construction of ERSIN Multicore 5-Core Solder. Multicore solder is made only from pure virgin metals (1) with 5 cores of exclusive extra-active, non-corrosive ERSIN Flux (2). Multicore's special manufacturing process locates the 5 cores of ERSIN Flux close to each other and at the perimeter, so that there is only an ultra-thin wall of solder between the cores of flux and the work (3). This unique core configuration (4) also keeps the flux near the heat source, to melt faster—wet the metal more effectively. This enables ERSIN Multicore solder to produce the consistently reliable joints for which it is known.

Conforms to Federal Specification QQ-S-571

EXCLUSIVE PACKAGING IN POLYSTYRENE AND SKIN-WRAP FOR UTMOST PROTECTION IN SHIPPING AND STORAGE

STANDARD TIN/LEAD ALLOYS AND GAUGES

Available from stock: 63/37; 60/40; 50/50; 40/60; Savbit; Special Alloys—H.M.P. (High Melting Point, 565° F.); L.M.P. (Low Melting Point, 354° F.). Other alloys upon request.

Gauges: 14 s.w.g. (.080") through 24 s.w.g. (.022"). NOTE: Soldering iron tips should always be 108° F. above melting point of alloy.

NEEDLE FINE GAUGES

For microminiaturization, integrated circuits and other similar requirements. Off-the-shelf delivery in alloys 63/37 and 60/40, in even gauges from 28 s.w.g. (.014") through 34 s.w.g. (.009").

COPPER LOADED SAVBIT ALLOY

Copper-loaded SAVBIT stops the wear and erosion of copper soldering iron tips...increases tip life by 1,000%.

Characteristics and specifications: Savbit Alloy is available in Ersin Multicore 5-core solder containing non-corrosive extra-fast Ersin Flux in 14, 16, 18, 20, 22 and 24 gauge. Melting point: Virtually the same as standard tin/lead alloys. Excellent conductivity, tensile and shear strength.

HIGH PURITY EXTRUDED BAR SOLDER

The same superior quality solder as in Multicore 5-Core Wire Rosin solder. Highest purity is achieved by advanced quality control, possible only with the Extrusion process. Extreme uniformity and smooth texture, without the cross-graining of cast bars. Virgin metals. Conforms to Federal Specification QQ-S-571d with respect to alloy composition in Sn60 (60/40), Sn63 (63/37), and Sn50 (50/50). Skin wrapped for distributors; bulk-packed for manufacturers. Also, low antimony "EXTRUSOL" Commercial Bar Solder—bulk packed.

ERSIN LIQUID FLUXES

Made to the high quality standards of Ersin Multicore. Three formulas. No. 5380 meets Military Specification MIL-F-14256C, Type A (Activated). No. 0360 meets Military Specification MIL-F-14256C, Type W (Non-activated). Other commercial liquid fluxes available such as: No. 4370 highly activated commercial flux. Foam, water soluble, protective coatings and cleaners upon request.

NEW SOLDERABILITY TEST MACHINE

A precision instrument to determine the solderability of component termination wires that operates on a principle entirely different from, and superior to, the immersion method—electronic digital timing. Accurate, positive, totally reliable, yet economical because no technician is needed to operate it, and tests are run with great rapidity. Developed in association with I.E.C. Built in England by Multicore Solders, Ltd. Complies with I.E.C. Publication 68-2 Test T. Descriptive literature available on request.

FREE evaluation test samples, "Modern Solders" technical booklet, and fully detailed information on any of these products will be sent promptly. Address request, on company letterhead, to: Multicore Sales Corp.

MULTICORE SALES CORP. Div. British Industries Co.

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ORYX

PRECISION SOLDERING EQUIPMENT

WHY PRODUCTION MANAGERS CHOOSE ORYX SOLDERING IRONS

1. MINIATURE SIZE

ORYX soldering irons are small and easy to handle as pencils. Their miniature ize helps to speed any precision soldering operation. Damage to adjacent omponents is eliminated. If you can see it, you can solder it with ORYX!

2. FEATHER WEIGHT

A standard, utility-type 100 watt soldering iron weighs about 2 lbs. The o-called pencil-type irons typically weigh between 2 and 6 ounces. ORYX oldering irons, by contrast, weigh as little as ¼ ounce. This true feather veight virtually eliminates hand fatigue. Workers can turn out many more joints er hour with fewer rejects.

3. HIGH EFFICIENCY

All ORYX soldering irons utilize a unique element-in-the-tip design principle. y generating the heat within the tip, far fewer watts are needed to achieve esults comparable to much larger irons. This principle also provides quicker eat recovery because the heat path between element and joint is so very short. he need for large insulating handles is eliminated.

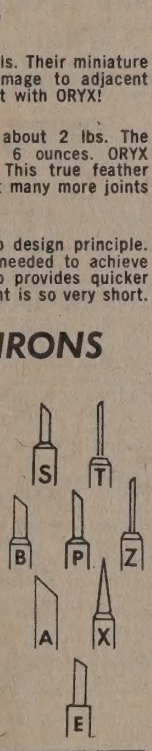
LOW-VOLTAGE SOLDERING IRONS

MODEL 5-S—(As shown in photograph). Eyepiece model less han 5" long, for precise finger control. Weighs 7 grams. lominal temperature 575°F. Furnished with 1/16" S tip. Also akes T tip. 4.5-volts, 4.5-watts (Use 54204-T tapped trans- ormer for 4.5 volts) .....Net **$5.95**

MODEL 6A—The most popular Oryx soldering iron. Designed or printed circuit soldering. Weighs only ¼ oz. Nominal emperature 690°F. Furnished with 3/32" removable B tip. lso takes other tips listed below. 6-volts, 6-watts. Net **$5.95**

MODEL 9-6—Similar to model 6A, but greater heat ca- pacity. Weighs ¼ ounce. Nominal temperature 750°F. Furnished with 3/32" A tip. Also takes B tip. 6-volts, 3.3 watts **$5.95**

MODEL 11-6—Special model for high-temperature solders. Temperature 835°F. Weighs ¼ oz. Furnished with 3/32" solid nickel E tip. Nickel tip provides long life at high temperatures. 6-volts, 10-watts .....Net **$7.45**



REPLACEMENT TIPS for low-voltage soldering irons.

Type	Material	Plating	Diameter	For Model	Net Ea.
A	Copper alloy	Nickel	3/32"	9-6	$ .54
B	Copper alloy	Nickel	3/32"	6A, 9-6	.54
E	Solid Nickel	—	3/32"	11-6	1.80
P	Copper alloy	Nickel	1/16"	6A	.60
S	Copper alloy	Nickel	1/16" (short)	5-S	.60
T	Gold and copper	Nickel	1/25"	5-S, 6A	2.85
V-PL	Copper alloy	Iron	3/32"	6A, 9-6	1.50
X	Copper alloy	Nickel	1/25" (pointed)	6A	.90
X-PL	Copper alloy	Iron	1/25" (pointed)	6A, 9-6	1.65
Z	Copper alloy	Nickel	1/25"	6A	.85
Z-PL	Copper alloy	Iron	1/25"	6A	1.50

TRANSFORMER

for low-voltage soldering irons.

TAPPED TRANSFORMER—Output 4½ to 6-volts in ½ v. steps. For exact temperature control on all ORYX 6-volt tools. Operates on 115 V. AC—ready to plug in. Model 54204-T .....Net **$7.80** ea.

TELVAC

LABORATORY TOOLS / APPARATUS

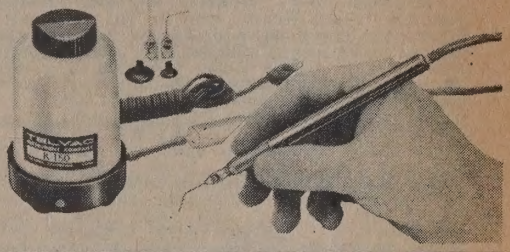
VACUUM TWEEZER SYSTEM

This new parts-handling system positively and precisely lifts parts varying in size from microscopic to those weighing several ounces. Parts are handled without damage or contamination. Defects caused by pinching, scratching, or marring are eliminated. Critical surfaces are protected. Vacuum is turned on and off with forefinger. For 115 V. A.C. Complete system, ready to plug in.

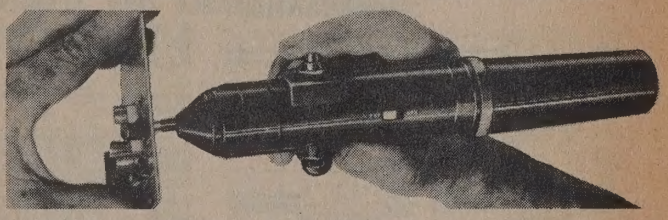
Complete System K-150

Net ea.

$36.50



"IN-CIRCUIT" TRANSISTOR TESTER



A new test instrument for the circuit designer or test technician. Makes rapid "go-no go" evaluations of semiconductors while they are still in the circuit. Checks cut-off and conduction on PNP and NPN transistors and diodes without the need for costly unsoldering. To use, the operator sets the selector switch to NPN or PNP. He then presses the tester's sharp spring-loaded pins (arranged in TO-5 configuration) against the transistor's printed circuit connections. Open and shorted transistors are readily identified by noting the condition of the tester's pilot light. Diodes and unmounted transistors are similarly tested using a set of extending leads and clips. An optional 7-position diode adapter may be used to test diodes in the circuit. Furnished complete with extending leads and alkaline battery, ready to operate.

MODEL SC-4 TESTER .....Net **$74.50** ea.

MODEL 1330 DIODE ADAPTER .....Net **19.50** ea.

INSTRUMENT REPAIR KIT

A 35-piece kit of fine precision tools for the instrument shop or laboratory. Includes miniature soldering iron, taper-jaw diagonal cutter, needle-nose plier, precision screwdriver kit, tiny stub-nose scrissors, eye loupe, needle-file set, 11-piece knife set, hex wrench set, spline-key set, soldering aid set, and a precision Dumont-type tweezer.

MODEL K-50.....Net **$57.50**

NEEDLE FILES

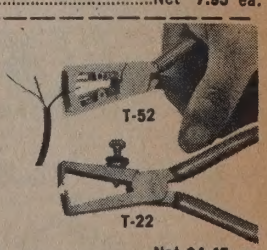
Precision Swiss needle files with vinyl cushion finger grips. Set of 8 precision Telvac files in plastic case. No. 3 cut.

Cat. No. 2000 (4" styles) .....Net **$5.95** ea.

Cat. No. 2100 (6¼" styles) .....Net **7.95** ea.

WIRE STRIPPERS

Unique wire-stripping pliers for wires #8 through #24. Just squeeze and pull! T-52 has 11 narrow cutting blades that close in around the wire to automatically provide the correct stripper opening and cutting tension. No operator adjustments required when changing from one wire size to another! T-22 is set to required wire size by operator. Tool steel heads have razor-sharp edges. Both models have red vinyl cushion handle grips.



T-52 .....Net **$7.95** ea. **T-22** .....Net **$4.45** ea.

ORYX-TELVAC tools available from distributors everywhere. Ask for complete catalog.

TELVAC INSTRUMENT CO. NATIONAL SALES AGENT FOR ORYX-TELVAC TOOLS

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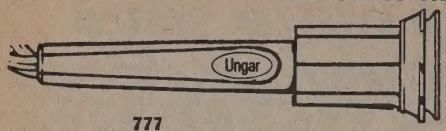
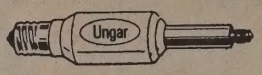
Ungar® "Standard Line" Soldering Tools

ALL PARTS THREAD TOGETHER WITH FINGERTIP EASE



777



4037, 1237, 537

PL111, 111 | PL113, 113 | PL114 | PL116, 116

MODEL 777 "CLEAN ROOM" HANDLE, KIT

Features "Clean Room" grip for the electronic industry, plus handle is in pastel shade for less eye fatigue of the operator. Full contact spring socket; stainless steel heat deflector; new octagonal guard washer; plated socket terminals; new ceramic and glass insulator; thermo-stabilized phenolic body; polyvinyl insulated cord. Tips cannot wobble. For 120 VAC-DC.

Ungar Model 777 Handle—Net Each, 1–9.....**$1.87**
Net Each, 10–49.....**$1.53** 50 Up..... **1.40**

Ungar Model 776 Handle—Same, but red with cork grip.
Net Each, 1–9....**$1.65** 10–49....**$1.36** 50 Up... **1.24**

Ungar Model 7070 Technicians Soldering Kit—Complete soldering kit, with Model 777 handle; No. 1237 heating unit; three copper tips (111, 113, and 116); spool of rosin core solder.
Net Each, 1–5....**$5.20** 6–11....**$4.27** 12 Up....**$3.90**

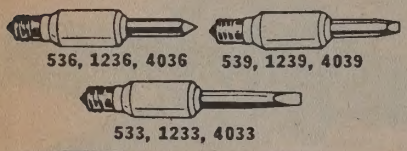
Ungar Model 426 Soldering Iron—Economy one-piece iron for hobby, kit building, light electrical repairs. Copper alloy tip delivers 750° F. Net Each, 1–5.....**$1.79**
Net Each, 6–11.....**$1.69** 12 Up..... **1.57**

THREAD-ON HEATING UNITS AND TIPS

Provides 100% increase in recovery rate; greater heat transfer. Stops tip seizure from oxidation or solder; passivated plating prevents barrel oxidation and surface flaking. Tips copper alloy, iron clad silver-plated or unplated.

Ungar No.	Description	Net Each, Lots of 1-9	10-49	50 Up
4037	800°–850° F, 47½-watt unit	$3.17	$2.60	$2.38
1237	700°–750° F, 37½-watt unit	2.13	1.75	1.60
537	600°–650° F, 23½-watt unit	1.77	1.47	1.33
PL111	Iron clad pencil, ¾" long	.80	.66	.60
PL113	Iron clad chisel, ¾" long	.80	.66	.60
PL114	Iron clad stepped micro-spade	.80	.66	.60
PL116	Iron clad pyramid, 5/16" long	.80	.66	.60
111	Unplated pencil	.40	.33	.30
113	Unplated chisel	.40	.33	.30
116	Copper alloy pyramid 5/16" lg.	.40	.33	.30

INTERCHANGEABLE TIPS, ELEMENTS AND TIPLET THREAD-IN TIPS

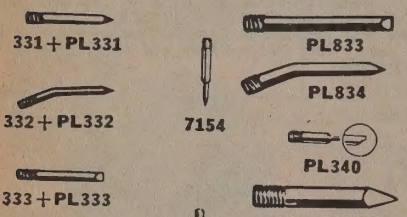


536, 1236, 4036 | 539, 1239, 4039

533, 1233, 4033

535, 1235, 4035 (Takes All #300 Series Tips)

4045 (Takes All #800 Series Tips, Including De-Soldering Types)



Note: "Standard Line" components are interchangeable with each other; but, may NOT be used with "Imperial® Line" items.

Heating Units Temperature Range: 850°-1000° F for **Super Hi-Heat** Series #4000 rated 47½ watts; 750°–800° F for **Hi-Heat** Series #1200 rated 37½ watts; and 650°–750° F for **Standard** Series #500, rated 23½ watts.

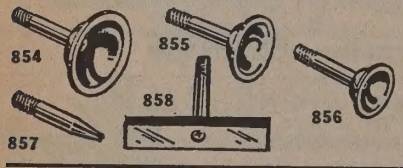
INTEGRATED HEATING UNITS WITH TIPS

Ungar No.	Description	Net Each, Lots of 1-9	10-49	50 Up
533	23½-watt copper, long taper chisel tip	$1.52	$1.25	$1.14
536	23½-watt copper, pyramid tip	1.52	1.25	1.14
539	23½-watt copper, short taper chisel tip	1.52	1.25	1.14
1233	37½-watt copper, long taper chisel tip	1.92	1.58	1.44
1236	37½-watt silver-plated, solid Armco iron pyramid tip	1.92	1.58	1.44
1239	37½-watt silver-plated, solid Armco iron chisel tip	1.92	1.58	1.44
4033	47½-watt iron clad, silver-plated, long chisel tip	3.17	2.60	2.38
4036	47½-watt iron clad, silver-plated, pyramid tip	3.17	2.60	2.38
4039	47½-watt iron clad, silver-plated, taper chisel tip	3.17	2.60	2.38

HEATING UNITS AND TIPLET THREAD-IN SOLDERING TIPS

535	1/8" tap unit for 300 and 7100 Series Tiplets	$1.52	$1.25	$1.14
1235	1/8" tap unit for 300 and 7100 Series Tiplets	1.92	1.58	1.44
4035	1/8" tap unit for 300 and 7100 Series Tiplets	3.17	2.60	2.38
7012	Precision point, unplated copper, 1/8" dia.	.60	.49	.45
7062	Precision point, iron clad, 1/8" dia.	1.13	.93	.85
PL331	Iron clad, silver-plated 1" pencil, 1/8" dia.	.60	.49	.45
331	Plain copper version of PL331 Tiplets	.25	.21	.19
PL332	Iron clad, silver-plated 1" offset pencil, 1/8" dia.	.60	.49	.45
332	Plain copper version of PL332 Tiplets	.25	.21	.19
7154	Iron clad, silver-plated stepped pencil	.60	.49	.45
PL333	Iron clad, silver-plated 1" long chisel, 1/8" dia.	.60	.49	.45
333	Plain copper version of PL333 Tiplets	.25	.21	.19
7155	Iron clad, silver-plated stepped chisel	.60	.49	.45
PL338	Iron clad, silver-plated 1¾" tapered needle, 1/16" dia.	.60	.49	.45
PL340	Iron clad, silver-plated ¾" micro-needle, 3/64" dia.	.60	.49	.45
4045	47½-watt 3/16" tap unit for Series 800 Tiplets	3.17	2.60	2.38
PL823	Iron clad, silver-plated 1" pyramid, 3/16" dia.	.70	.58	.53
823	Plain copper version of PL823 Tiplets	.30	.25	.23
PL824	Iron clad, silver-plated 1" chisel, 3/16" dia.	.70	.58	.53
824	Plain copper version of PL824 Tiplets	.30	.25	.23
PL833	Iron clad, silver-plated 1¾" chisel, 3/16" dia.	1.00	.82	.75
PL834	Iron clad, silver-plated 1¾" offset chisel, 3/16" dia.	1.00	.82	.75

DE-SOLDERING TIPS & KIT



Removes components 70% faster than ordinary soldering iron tips. Melts solder on all terminals simultaneously. Avoids lug breakage, shorting and PC board rupturing. Use with 4045 heating unit.

Ungar No.	Tip Type	Size, In. O.D. x L.	Net Each, Lots of 1-9	10-49	50 Up
857	Slotted	1" x 3/16"	$0.83	$0.68	$0.62
856	5/8" Cup	5/8"	.83	.68	.62
855	¼" Cup	¼"	.83	.68	.62
854	1" Cup	1"	.83	.68	.62
858	Bar	1½" x 3/8"	.83	.68	.62

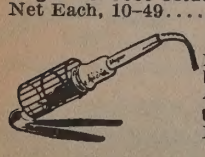
Ungar No. 270 De-Soldering Kit—With five most popular tips (Nos. 854, 855, 856, 857 and 858), No. 776 handle and No. 4045 heating unit in metal case. Net Each, 1–5.....**$8.00**
Net Each, 6–11.....**$7.40** 12 Up..... **6.87**

UNGAR SOLDER-OFF BULB

Desoldering bulb with TFE tip facilitates accurate printed circuit soldering and cleaning. May be used with "Imperial" and "Standard Line" soldering irons. (Not illustrated.)

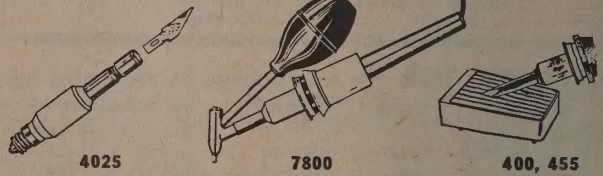
Ungar No. 7805 Solder-Off Bulb—Net Each, 1–9.....**$1.28**
Net Each, 10–49.....**$1.09** 50 Up..... **1.00**

SOLDERING IRON HOLDER



Protects operator from burns; prevents iron breakage. Use with Ungar 776 or 777 handle. Attaches easily to bench; angle adjustable.

Ungar No. 8000 Holder—Net Ea., 1-9.**$1.95**
Net Each, 10-49..**$1.75** 50 Up.. **1.59**



4025 | 7800 | 400, 455

MODEL 4025 HOT KNIFE

Cuts and seals synthetic fabrics, vinyl film, styrofoam and other plastics. Easily cuts coatings on PC boards. Blade temp., 500° F. Replaceable, tempered steel blade.

Ungar Model 4025 Hot Knife—Net Each, 1–9.....**$3.65**
Net Each, 10–49.....**$3.29** 50 Up..... **2.92**

HOT-VAC DESOLDERING, CLEANING TOOL

For printed circuit desoldering and cleaning; also for heat shrinkable tubing. Tip uses coating to prevent solder clogging the orifice. For use with Model 777 handle.

Ungar Model 7800 Hot-Vac Tool—Net Ea., 1–5.....**$12.09**
Net Each, 6–11.....**$9.93** 12 Up..... **9.05**

Ungar Model 7806 (.057") or **7813** (.069")—Replacement tips for above; hole dia. shown in parenthesis.
Net Ea., 1–9.....**78c** 10–49.....**64c** 50 Up.....**58c**

Ungar Model 7812 (.033")—Same as above. Net Each....**$1.08**
Net Each, 10–49.....**$0.89** 50 Up..... **.81**

KLEEN-TIP SPONGE

Specially processed sponge provides the surest way to clean soldering tips. Removes oxidation, prevents contamination and insures soldering reliability. Phenolic tray. Fastens to bench.

Ungar No. 400—Net Each, 1–9.....**$1.13**
Net Each, 10–49.....**93c** 50 Up.....**85c**

Ungar No. 455 Refill Sponge—Individually packaged.
Net Each, 1–9.....**45c** 10–49.....**37c** 50 Up.....**34c**

ALL SOLDERING IRONS AND HEATING UNITS U/L LISTED.

Net

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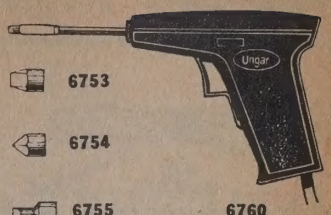
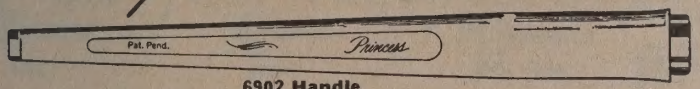
NEW UNGAR "STANDARD" LINE SOLID STATE SOLDER GUN

Designed for damage-free soldering of sensitive semiconductor devices by servicemen, lab technicians and electronics hobbyists. For replacement purposes, soldering tips are independent of the heat cartridge. Tip is electrically isolated from the heating element with a grounded 3-wire cord set. Heat cartridge locks into the gun barrel by means of a knurled nut; loosening the nut allows rotation of the entire cartridge to orient the threaded-on tips to any desired position. All basic parts are separately replaceable. Unit has a power indicator lamp. A HI-LO dual-heat selector switch allows a choice of 500°F or 900°F tip temperature range. Complete unit comes with heat cartridge, three interchangeable tellurium copper soldering tips, and 3 wire cord with NEMA plug. Weight, 5 oz. less line cord. *Has .250" diameter.

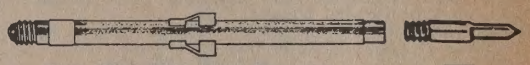
Ungar No.	Description	Net Each, Lots of 1-3	4-11	12 Up	Ungar No.	Description	Net Each, Lots of 1-3	4-11	12 Up
6760	Complete gun	$9.95	$8.95	$7.95	6755*	Long chisel tip, .535" l.	$0.40	$0.36	$0.33
6763	Handle, cord set	4.55	4.09	3.60	6753*	Short chisel tip, .410" l.	.40	.36	.33
6751	Heat cartridge	4.20	3.78	3.36	6754*	Pyramid tip, .410" l.	.40	.36	.33



Ungar® / Princess® SOLDERING TOOLS, ACCESSORIES



6902 Handle



6910, 6915, 6918 Heat Capsules Nib

Miniature soldering iron designed to meet requirements for precision micro-electronic circuitry and high density assembly. Offer thermo-efficiency and work capacity never before achieved in small feather-weight irons. Slim design, turquoise handle assures deft soldering. Choice of easy-to-assemble units thread together for versatility in tip shapes and temperature capabilities. Low initial investment, economical maintenance and inexpensive parts replacement.

PRINCESS HANDLES

Slim, cool design is molded of heat-resistant nylon pastel turquoise color. Midget thread-in socket accepts any Princess heat capsule. Choice of 2-conductor and 3-conductor (NEMA) vinyl-covered cords. For 120 VAC/DC operation. Weight: .05 oz., less cord; 3.0 oz., with cord.

Ungar No.	Cord Type	Net Each, Lots of 1-9	10-49	50 Up
6902	2-conductor with plug	$3.07	$2.75	$2.49
6903	3-conductor with NEMA plug	4.08	3.66	3.32

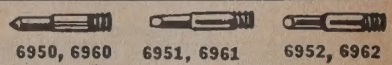
HEAT CAPSULES

Threaded to accept the special thread-in Princess soldering nibs and mating to the Princess handles with finger-tip ease. Also accept "Standard Line" ⅛" tiplets if desired (will not accept Imperial tips). Choice of three wattages and temperature ranges to suit most production requirements. For 120 VAC/DC operation. Size, 2¾" long; extends 1½" from handle. Wt., 0.2 oz.

Ungar No.	Watts	Temperature Range	Net Each, Lots of 1-9	10-49	50 Up
6910	10	550° F to 650° F	$3.75	$3.37	$3.05
6915	15	700° F to 800° F	3.75	3.37	3.05
6918	18	900° F to 1000° F	3.75	3.37	3.05

PRINCESS SOLDERING NIBS

Choice of 24 Kt. gold-plated iron clad or cadmium copper tips in four standard shapes. Finger-tip ⅛" thread-in use on any Princess heat capsule listed above. Ungar's ⅛" Standard Line tiplets may also be used (see listing on another page). Wt., .03 oz.

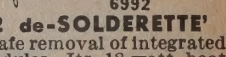


6950, 6960 6951, 6961 6952, 6962

Ungar No.	Shape	Material	Lgth., In.	Tip Stepped to:	Net Each, Lots of 1-9	10-49	50 Up
6950	Pencil	Cadmium copper	.61	.080" x .015"	$0.38	$0.34	$0.31
6951	Screwdriver	Cadmium copper	.68	.080" x .055"	.38	.34	.31
6952	Spade, 45°	Cadmium copper	.61	.080" dia.	.38	.34	.31
6953	Precis. point	Cadmium copper	.61	.095" x .005"	.69	.62	.56
6960	Pencil	Gold-pl. iron clad	.62	.090" x .015"	.64	.57	.52
6961	Screwdriver	Gold-pl. iron clad	.62	.090" x .060"	.64	.57	.52
6962	Spade, 45°	Gold-pl. iron clad	.62	.090" dia.	.64	.57	.52
6963	Precis. point	Gold-pl. iron clad	.61	.095" x .010"	1.25	1.12	1.01

6990

6953, 6963



6992

PRINCESS SOLDERING IRON HOLDER

Plastic base for convenient holding of Princess iron. Comes with specially-processed slit sponge for tip cleaning. Weight, 3 oz.

Ungar Model 6990 Holder—Net Each, 1-9.....**$3.25**
Net Each, 10-49.....**$2.91** 50 Up..... **2.64**

Ungar No. 6991 Sponge Refill—Replacement cleaning sponge for above holder. Net Each, 1-9.....**49c**
Net Each, 10-49.....**44c** 50 Up.....**40c**

NEW PRINCESS MODEL 6992 de-SOLDERETTE'

Featherweight de-soldering tool for fast, safe removal of integrated circuits, chips and micro-miniature modules. Its 18-watt heat capsule delivers 600° F tip temperature. Also features Ungarized white coating inside and outside of collector body and stainless-steel lined replaceable tip with .033" aperture. No sticking or clogging. Includes arm and bulb, check valve, two-wire handle.
Ungar No. 6992 Princess de-Solderette'—Net Ea., 1-9..**$14.67**
Net Each, 10-49.....**$13.16** 50 Up..... **11.93**

PACKAGED, PRE-ASSEMBLED PRINCESS COMBINATIONS

MODEL 6975 SOLDERING IRON

All-in-one package provides a complete Princess soldering iron with three interchangeable copper nibs. Includes one 6902 handle with 2-conductor cord and plug, one 6910 Heat Capsule rated 10 watts, one 6950 pencil nib, one 6951 screwdriver nib and one 6952 spade nib.
Ungar No. 6975 Princess Assembly—Net Each, 1-9.....**$7.52**
Net Each, 10-49.....**$6.75** 50 Up..... **6.12**

MODEL 6900 SOLDERING STATION

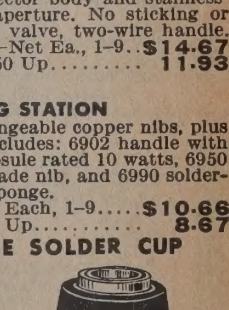
Fully assembled iron with three interchangeable copper nibs, plus Princess holder with cleaning sponge. Includes: 6902 handle with 2-conductor cord and plug, 6910 heat capsule rated 10 watts, 6950 pencil nib, 6951 screwdriver nib, 6952 spade nib, and 6990 soldering iron holder complete with cleaning sponge.
Ungar No. 6900 Soldering Station—Net Each, 1-9.....**$10.66**
Net Each, 10-49.....**$9.56** 50 Up..... **8.67**

NEW PRINCESS IC DE-SOLDER KIT

Ideally suited for PC boards ½" or less, using low-density circuitry, unplated eyelets or mounting holes. Includes 3-wire grounded Princess handle, 15-watt heat capsule and three (No. 6942, 6945, 6947) de-solder tips. (Not Illustrated.)
Ungar No. 6939 De-Solder Kit—Net Each, 1-3.....**$12.70**
Net Each, 4-11.....**$11.40** 12 Up..... **10.33**

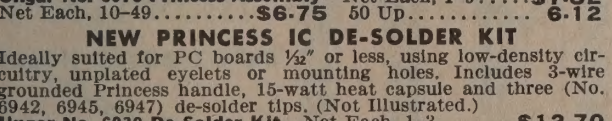
NEW PRINCESS MINIATURE SOLDER CUP

For tinning micro-miniature leads and components or de-soldering requirements. Adjustable, thermostatically controlled temperatures (400-750° F); corrosion proof, bronze melt cup; rugged diecast construction. Uses standard Ungar No. 4037 heating unit. Cup depth, ⅜"; dia., 1.0"; capacity, 1 oz. Power required, 120 VAC/VDC. Weight, 1¼ lbs.



Ungar No. 7000 Miniature Soldering Cup—With 3-wire cord and grounded NEMA plug. Net Each, 1-3...**$21.23**
Net Ea., 4-11.**$19.04** 12 Up.**17.27**

DE-SOLDER TIPS

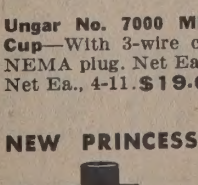


6940 6941 6942 6944 6945 6947

Iron-clad, nickel-plated and pre-tinned tips may be used with Ungar "Standard" line heating units No. 535, 1235 and 4035 or Princess heat capsules (for lower or higher tip temperatures).

Ungar No.	Tip Temp., at 15 W	Description	Net Each, Lots of 1-9	10-49	50 Up
6940	650° F	Flat pack (Hook)	$2.05	$1.84	$1.67
6941	700° F	Flat pack (Bar)	1.95	1.75	1.59
6942	550° F	IC in-line	1.95	1.75	1.59
6943	640° F	TO pkg. (cup) .6" dia.	1.95	1.75	1.59
6944	670° F	TO pkg. (cup) .5" dia.	1.95	1.75	1.59
6945	680° F	TO pkg. (cup) ⅜" dia.	1.95	1.75	1.59
6946	700° F	TO pkg. (cup) .28" dia.	1.95	1.75	1.59
6947	680° F	Slotted (lead and tab) straightener	1.64	1.47	1.33

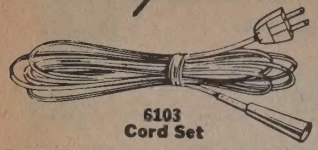
NEW PRINCESS DUAL IN-LINE IC EXTRACTOR



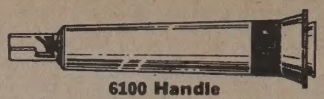
Permits safe extraction of up to 16-pin IC's; spring-loaded positive lock frees hands for de-soldering; protects boards, circuits and operator's hands. Designed for use with No. 6942 dual in-line de-solder tip or No. 7000 solder/de-solder cup.

Ungar No. 6982 Extractor—Net Each, 1-9..**$1.77** 10-49..**$1.56** 50 Up..**$1.41**

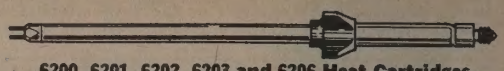
Ungar® / Imperial® Soldering Tools



6103
Cord Set



6100 Handle



6200, 6201, 6202, 6203 and 6206 Heat Cartridges

Interchangeable cord sets, tips and heat cartridges ideal for critical micro-miniature components. Reliable, low wattage, high temperature performance. Perma-Cool handle has double cushion of air combined to 5 heat-transition surfaces for continuous cooling. Components individually packaged on cards; assemble to suit your needs. **Not interchangeable with "Standard Line".**

PERMA-COOL COLORED HANDLES

Available in three, cool, pastel colors (plus black) proven to reduce operator fatigue. Virtually indestructable. handles are made of high strength plastic resin. Diecast heat sink built-in. Pencil type design for easy handling. U/L Listed. Size, 0.8" O.D. at grip; 4.7" lg. Weight, 1 oz.

Ungar No. 6100-1 (Turquoise), **6100-2** (Beige), **6100-3** (Ivory) or **6100-5** (Black)—Handle only. Net Each, 1–9.....**$1.52**
Net Each, 10–99.....**$1.28** 100 Up..... **1.20**

IMPERIAL COMPLETE SOLDERING IRONS

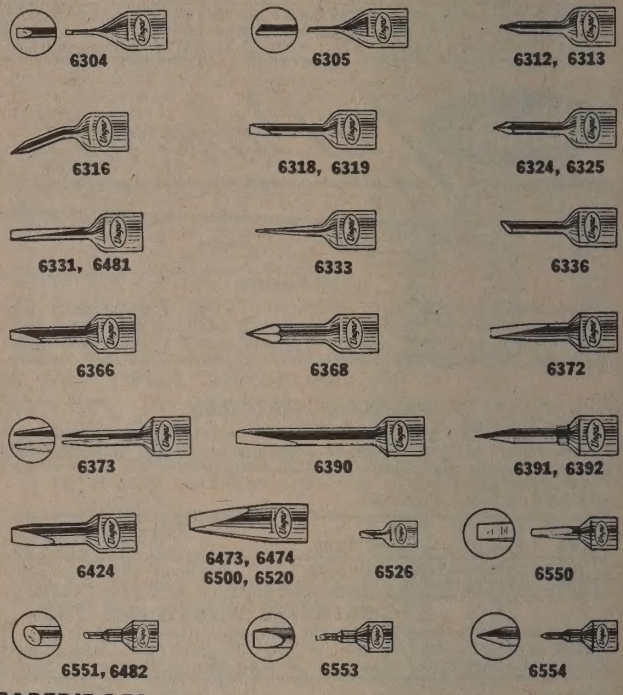
Ungar No. 6010—Includes one 6100 handle, one 6102 cord set, one 6200 heat cartridge and three assorted Mini-Tips.
Net Each, 1–5.....**$8.45**
Net Each, 6–11.....**$7.60** 12 Up..... **6.75**

Ungar No. 6601—Heavy-duty iron includes handle, cord set, 6207 (100 W) heat cartridge and 6520 tip. Net Each, 1–5.**$11.70**
Net Each, 6–11.....**$9.35** 12 Up..... **8.75**

INTERCHANGEABLE CORD SETS

Instantly adapts your iron to any 2 or 3 wire outlet. Molded female connector plugs onto the Perma-Cool handle without tools. Vinyl-covered cord, 18 gauge, 65 strands extra-flexible copper; terminals and connectors molded polyvinyl chloride. Center conductor (3-wire type) is insulated with green polyvinyl. Weight: 2½ oz., 2-wire; 4 oz., 3-wire. **Specify Color:** Add suffix **-1** for turquoise; **-2**, beige; **-3**, ivory; **-5**, black (i.e., 6102-**1**).

Ungar No.	Description	Net Each, Lots of 1-9	10-99	100Up
6102	Standard 2-wire cord set with plug	$2.22	$1.86	$1.71
6103	3-wire cord set with NEMA plug	3.28	2.74	2.57



INTERCHANGEABLE LONG-LIFE HEAT CARTRIDGES

Stainless steel, sealed cartridge with element at tip and threaded end for quick tip changes; keeps heat at tip where it belongs. Six ratings available: **6200:** 40 watts for 750-950° F; accepts all tip Nos. 6304 through 6482. Size, 7½" l. x .363" dia. (2½" l. from flange). Wt., 1.1 oz. **6201:** Same, but 30 watts for 650–850° F. **6202:** Same, but 25 watts for 600–800° F. **6203:** 60 watts for heat range, 850° to 1150° F. Accepts all iron clad gold-plated tips plus No. 6526 beryllium oxide tip, 750°–800° F; 7⅛" long; wt., 1.2 oz. **6206:** Miniature 15-watt for 614–743° F; use with tip Nos. 6550–6554 only; 6⅞" lg. x .312" dia. (2" lg. from flange) wt., 0.89 oz. **6207:** 100-watt cartridge; use only with tip No. 6520; replacement for unit in 6601 complete iron. U/L Listed.

Ungar Number	Rated Watts	Net Each, Lots of 1-9	10-99	100 Up	Ungar Number	Rated Watts	Net Each, Lots of 1-9	10-99	100 Up
6200	40	$4.12	$3.46	$3.17	6203	60	$4.73	$3.97	$3.63
6201	30	4.12	3.46	3.17	6206	15	4.12	3.46	3.17
6202	25	4.12	3.46	3.17	6207	100	6.31	5.30	4.97

THREAD-ON SOLDERING TIPS

Completely interchangeable with the Imperial line (NOT interchangeable with Ungar "Standard Line"). Thread onto heat cartridge (either 25, 30, 40 or 60 watt models) with fingertip ease. Available in beryllium oxide (repels solder), copper alloy or long life, 24 kt. gold-plated iron clad types.

MINI-TIP® FOR 6200, 6201, 6202 OR 6203 HEAT CARTRIDGES

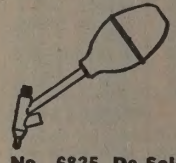
Ungar No.	Shape	Material	Size, In. O.D. x L.	Temp. (°F)*With Cartridge Rated 25 W	30 W	40 W	Net Each, Lots of 1-9	10-99	100 Up
6304	Micro-chisel	Iron clad	1/64 x ½	750	800	890	$ 1.06	$ 0.89	$ 0.82
6305	Micro-spade	Iron clad	1/64 x ½	750	800	890	1.06	.89	.82
6312	Pencil	Copper	1/16 x ¾	750	800	910	.48	.40	.37
6313	Pencil	Iron clad	1/16 x ¾	690	750	860	1.06	.89	.82
6316	Offset pencil	Iron clad	1/16 x ¾	690	750	860	1.06	.89	.82
6318	Long taper chisel	Copper	1/16 x ¾	750	800	890	.48	.40	.37
6319	Long taper chisel	Iron clad	1/16 x ¾	690	750	860	1.06	.89	.82
6324	Long taper pyramid	Copper	1/16 x ¾	750	800	890	.48	.40	.37
6325	Long taper pyramid	Iron clad	1/16 x ¾	690	750	860	1.06	.89	.82
6331	Screwdriver	Iron clad	1/16 x ¾	690	750	860	1.06	.89	.82
6333	Needle	Iron clad	1/16 x ¾	690	750	860	1.06	.89	.82
6336	Spade	Iron clad	1/16 x ¾	690	750	860	1.06	.89	.82
6366	Long taper chisel	Iron clad	5/16 x ¾	680	730	850	1.25	1.05	.96
6368	Long taper pyramid	Copper	5/16 x ¾	.....	.....	.....	.57	.48	.44
6372	Screwdriver	Iron clad	5/16 x ¾	680	730	850	1.25	1.05	.96
6373	Slotted tip	Copper	5/16 x ¾	.....	.....	.....	1.06	.89	.82
6390	Screwdriver	Iron clad	5/16 x 1½	600	650	750	1.29	1.08	.99
6391	Precision point	Copper#	.....	.....	.....	.....	.76	.64	.59
6392	Precision point	Iron clad	.....	.....	.....	.....	1.48	1.24	1.13
6424	Long taper chisel	Iron clad	¼ x ¾	680	730	850	1.29	1.08	.99
6473	Long taper chisel	Copper	3/8 x ¾	.....	.....	.....	.57	.48	.44
6474	Long taper chisel	Iron clad	3/8 x ¾	670	730	840	1.48	1.24	1.13
6481	Tapered screwdriver	Iron clad	¾ x 3/16	690	750	860	1.06	.89	.82
6482	Micro-spade	Iron clad	1/64 x ½	700	770	860	1.06	.89	.82
6526†	Chisel	Beryllium	.....	475	550	575	13.49	11.33	10.62
6520‡	Long taper chisel	Copper#	.....	.....	.....	.....	1.29	1.08	.99
6500‡	Long taper chisel	Iron clad	.....	.....	.....	.....	2.52	2.12	1.94

MICRO-TIP® FOR 6206 15-WATT HEAT CARTRIDGE ONLY

6550	Tapered screwdriver	Iron clad	.040x.40	614–743 at 15 W	$1.24	$1.04	$0.95
6551	Stepped spade	Iron clad	.050x.40	614–743 at 15 W	1.24	1.04	.95
6553	Stepped chisel	Iron clad	.050x.40	614–743 at 15 W	1.24	1.04	.95
6554	Stepped pencil	Iron clad	.050x.40	614–743 at 15 W	1.24	1.04	.95

*Slight variation in line voltage will give ±25° F deviation. †Micro-Tip with adapter and tip protector. ‡For 100-watt 6207 cartridge or 6601 iron only. #Unplated.

DE-SOLDERING ATTACHMENT



Ungar No. 6825 De-Soldering Tool—For printed circuit use. Tip coated to prevent clogging. Fits 25- to 60-watt cartridges.
Net Each, 1–5.....**$9.50**
6–11..**$7.98** 12 Up.. **7.48**

Ungar No. 7806 (.057") or **7813** (.069") **Replacement Tips**—
Net Each, 1–9.....**78c**
10–49....**64c** 50 Up...**58c**

Ungar No. 7812 (.033")—Same as above. Net Ea., 1–9..**$1.08**
10–49..**$0.89** 50 Up.. **.81**

SAFETY-GUARD HOLDER

Ungar No. 6800—Designed especially for Imperial irons. Protects against hot tip burns or handle damage. Attaches to top or underside of bench. Black with gold cage guard.
Net Each, 1–9.....**$1.95**
10–49..**$1.75** 50 Up.. **1.59**

ANTI-SEIZE

Special lubricant lengthens tip and heating unit life. For use with Princess, Imperial and "Standard Line" tools. Reduces thread seizure. Improves heat transfer.

Ungar No. 8001—½ oz. tube.
Net Ea., 1-9.....**65c**
10–49....**53c** 50 Up....**48c**

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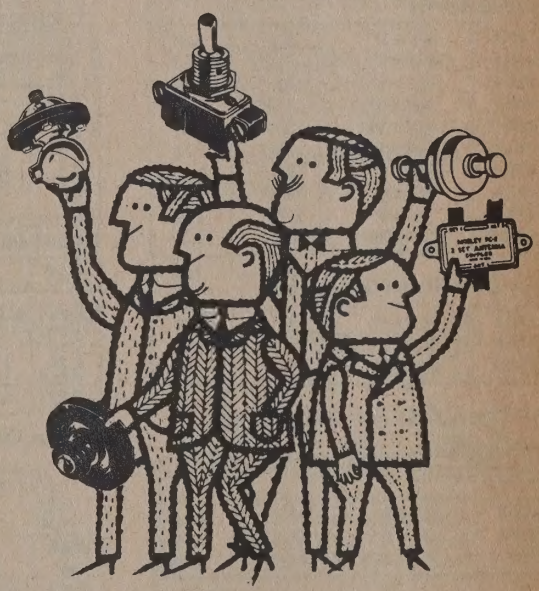

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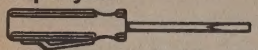
ROUND BLADE SCREW DRIVERS

Pocket Clip Styles

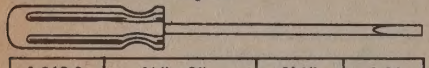


Stock No.	Blade Diameter and Length	Overall Length	Price
A 010	3/32" x 1 3/16"	3 1/16"	$ .34
A 230-2	1/4" x 2"	3 3/4"	.36
A 130-2	1/8" x 2"	3 7/16"	.44
A 130-3	1/8" x 3"	4 7/16"	.44
A 116-2	3/32" x 2"	4 1/16"	.52
A 116-3	3/32" x 3"	5 1/16"	.52
A 116-4	3/32" x 4"	6 1/16"	.52
A 131-2	1/8" x 2"	4 1/16"	.52
A 131-3	1/8" x 3"	5 1/16"	.52

Electrical and Cabinet Styles

A 216-2	1/8" x 2"	4 3/4"	.75
A 216-3	1/8" x 3"	5 3/4"	.82
A 216-4	1/8" x 4"	6 3/4"	.85
A 216-6	1/8" x 6"	8 3/4"	.87
A 216-8	1/8" x 8"	10 3/4"	.94
A 216-10	1/8" x 10"	12 3/4"	1.04

General Service Styles



A 316-3	3/16" x 3"	6 1/16"	1.04
A 316-4	3/16" x 4"	7 1/16"	1.11
A 316-6	3/16" x 6"	9 1/16"	1.24
A 316-8	3/16" x 8"	11 1/16"	1.31
A 316-10	3/16" x 10"	13 1/16"	1.42
A 416-3	1/4" x 3"	6 5/16"	1.33
A 416-4	1/4" x 4"	7 5/16"	1.35
A 416-6	1/4" x 6"	9 5/16"	1.42
A 416-8	1/4" x 8"	11 5/16"	1.50
A 416-10	1/4" x 10"	13 5/16"	1.64

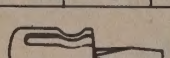
Heavy Duty Styles (Keystone)

A 516-4	5/16" x 4"	8"	1.72
A 516-6	5/16" x 6"	10"	1.80
A 516-8	5/16" x 8"	12"	1.92

Extra Heavy Duty Styles (Keystone)

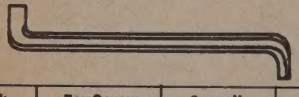
A 616-6	3/8" x 6"	10 1/4"	2.14
A 616-8	3/8" x 8"	12 1/4"	2.29
A 616-10	3/8" x 10"	14 1/2"	2.59

Stubby Styles



A 132	1/4" x 1 1/4"	3"	1.02
A 135	5/16" x 1 3/4"	3 3/16"	1.33

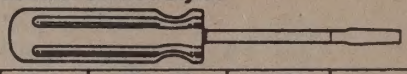
OFFSET SCREW DRIVERS—REGULAR TYPE



Stock No.	For Screw No.	Overall Length	Price
VO 1	2 to 6	3"	$ .59
VO 2	6 to 10	4"	.94
VO 3	8 to 12	5"	1.07
VO 4	12 to 16	6"	1.35

SQUARE BLADE SCREW DRIVERS

General Service Styles



Stock No.	Blade Size and Length	Overall Length	Price
C 33	3/16" x 3"	6 1/16"	$1.31
C 34	3/16" x 4"	7 1/16"	1.35
C 36	3/16" x 6"	9 1/16"	1.40
C 38	3/16" x 8"	11 1/16"	1.50

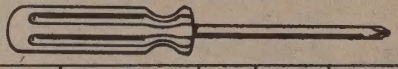
Medium Duty Styles

C 43	1/4" x 3"	6 5/16"	1.52
C 44	1/4" x 4"	7 5/16"	1.62
C 46	1/4" x 6"	9 5/16"	1.69
C 48	1/4" x 8"	11 5/16"	1.86
C 410	1/4" x 10"	13 5/16"	2.14
C 54	5/16" x 4"	8 1/16"	2.14
C 56	5/16" x 6"	10 1/16"	2.23
C 58	5/16" x 8"	12 1/16"	2.25
C 510	5/16" x 10"	14 1/16"	2.46

Heavy Duty Styles

C 66	3/8" x 6"	10 1/16"	2.46
C 68	3/8" x 8"	12 1/16"	2.63
C 610	3/8" x 10"	14 1/16"	3.00
C 612	3/8" x 12"	16 1/16"	3.15

PHILLIPS SCREW DRIVERS



Stock No.	Handle Diameter and Length	Point No.	Overall Length	Price
P 01	5/16" x 2 3/16"	0	5 1/16"	$ .90
P 1	7/8" x 3 1/16"	1	6 1/16"	1.21
P 2	1" x 3 5/16"	2	7 1/16"	1.52
P 3	1 1/16" x 4"	3	10"	2.08
P 4	1 3/16" x 4 1/16"	4	12 1/16"	2.46
P 5	1 1/16" x 2 1/16"	2	3 7/16"	1.33
P 6	1 1/16" x 1 3/4"	1	3"	1.21

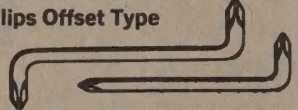
Pocket Clip Type

P 12	1/2" x 2 1/16"	0	5"	.90

Extra Long Blade

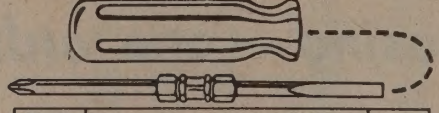
P 18	7/8" x 3 1/16"	1	11 1/16"	1.35
P 28	1" x 3 5/16"	2	11 3/16"	1.57
P 212	1" x 3 5/16"	2	15 3/16"	1.77
P 202	1 3/16" x 4 1/16"	2	24 1/16"	2.92

Phillips Offset Type



Stock No.	Style	Point Size On End	Price
P 111	Single End	#1 on Both Ends	$ .65
P 120	Double End	#1 and #2	.82
P 222	Single End	#2 on Both Ends	.72
P 230	Double End	#2 and #3	1.35
P 340	Double End	#3 and #4	1.57

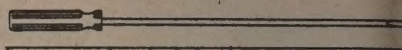
REVERSIBLE SCREW DRIVERS



Stock No.	Type and Size of Blade	Price
DU 2	No. 1 Phillips x 3/16" Regular	$1.75
DUH 4	No. 2 Phillips x 1/4" Regular	2.11
DU 5	No. 2 Phillips x 1/4" Reg. (Stubby)	2.11
DU 11	No. 1 Phillips x 3/16" Reg. plus 1/4" Hex.	2.04
DUP 12	No. 1 Phillips x No. 2 Phillips	2.33
DU 34	3/16" Regular x 1/4" Regular	2.04
DU 45	1/4" Clutch Head x 5/16" Clutch Head	1.80
DU 68	3/16" Clutch Head x 1/4" Clutch Head	2.31

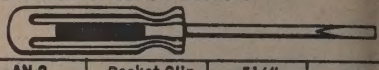
SPECIALTY SCREW DRIVERS

Radio & Television Aligners



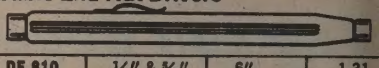
Stock No.	Size or Type	Overall Length	Price
AT 55	—	7 1/16"	$ .90
AT 510	—	12 1/16"	1.05

Neon Tester Screw Drivers



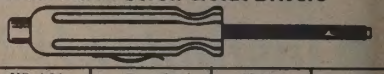
AN 2	Pocket Clip	5 1/16"	1.31
AN 44	—	7 5/16"	2.14

Double End Nut Drivers



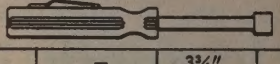
DE 810	1/4" & 5/16"	6"	1.31
DE 1210	5/16" & 3/8"	6"	1.57

Combination Screw & Nut Drivers



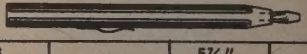
ND 141	Regular	5 1/16"	1.31

Midget 1/4" Nut Drivers



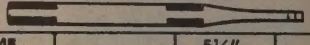
PK 8	—	3 1/4"	.77

Slimline Drivers



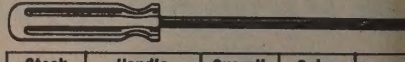
A 86	—	5 3/16"	.96
A 99	—	8"	1.16

Non-Magnetic Metal Tip Aligner



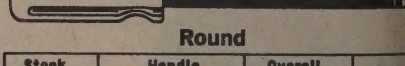
AT 45	—	5 1/16"	.73

Insulated Screw Drivers



Stock No.	Handle Size	Overall Length	Color Key	Price
VR 241	3/16" x 3"	7"	Grey	$1.12
VR 261	3/16" x 3"	9"	Grey	1.27
VR 281	3/16" x 3"	11"	Grey	1.33
VR 341	1/4" x 3 1/16"	7 1/16"	Black	1.42
VR 361	1/4" x 3 1/16"	9 1/16"	Black	1.47
VR 381	1/4" x 3 1/16"	11 1/16"	Black	1.55
VR 441	1" x 3 5/16"	7 5/16"	Red	1.69
VR-461	1" x 3 5/16"	9 5/16"	Red	1.76
VR 481	1" x 3 5/16"	11 5/16"	Red	1.92
VR 561	1 1/16" x 4"	10"	Yellow	2.27
VR 581	1 1/16" x 4"	12"	Yellow	2.40
VR 591	1 1/16" x 4"	14"	Yellow	2.59

Beryllium Copper (Non-Magnetic)



Round

Stock No.	Handle Size	Overall Length	Price
VB 26	3/16" x 2 1/16"	8 1/16"	$1.62
VB 210	5/16" x 2 1/16"	12 1/16"	1.79
VB 38	1/8" x 3 1/16"	11 1/16"	2.86
VB 46	1" x 3 5/16"	9 5/16"	3.55
VB 48	1" x 3 5/16"	11 5/16"	3.91

Square

VB 550	1 1/16" x 4 1/16"	9 1/16"	5.15
VB 660	1 3/16" x 4 1/16"	10 1/16"	7.80

Phillips

PB 14	1/16" x 3 1/16"	6 1/16"	2.66
PB 26	1" x 3 5/16"	7 5/16"	3.75

Net

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NUT DRIVERS SCREW LAUNCHERS SPECIALTY TOOLS

OLLOW SHAFT NUT DRIVERS

- Extra Hard Tempered Sockets
- Beautiful Polished Nickel-Chrome Finish
- Large Colored-For-Size Handles

ctra Small Hex Size

tock No.	Handle Dia. and Length	Hex Size	Overall Length	Handle Color	Price
4	7/16" x 3 1/2"	1/8"	6 1/2"	Amber	$1.26
5	7/16" x 3 1/2"	5/32"	6 1/4"	Amber	1.26

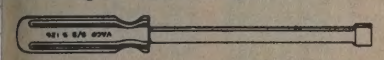
" Shaft Length

6	1" x 3 5/16"	3/16"	6 5/16"	Black	1.26
7	1" x 3 5/16"	5/32"	6 5/16"	Amber	1.26
8	1" x 3 5/16"	1/4"	6 5/16"	Red	1.26
9	1" x 3 5/16"	5/32"	6 5/16"	Amber	1.26
10	1" x 3 5/16"	5/16"	6 5/16"	Amber	1.26
11	1" x 3 5/16"	11/32"	6 5/16"	Green	1.26
12	1" x 3 5/16"	3/8"	6 5/16"	Blue	1.26
14	1 1/16" x 4"	7/16"	7"	Brown	1.56
16	1 1/16" x 4"	1/2"	7"	Orange	1.56

xtra Large Hex Size 4" Shaft Length

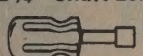
18	1 1/16" x 4"	7/16"	8"	Amber	1.98
20	1 1/16" x 4"	5/8"	8"	Amber	2.25

xtra Long 6" Shaft Length



66	1" x 3 5/16"	3/16"	9 5/16"	Black	1.59
86	1" x 3 5/16"	1/4"	9 5/16"	Red	1.59
106	1" x 3 5/16"	5/16"	9 5/16"	Amber	1.59
116	1" x 3 5/16"	11/32"	9 5/16"	Green	1.59
126	1" x 3 5/16"	3/8"	9 5/16"	Blue	1.59
146	1 1/16" x 4"	7/16"	10"	Brown	1.88
166	1 1/16" x 4"	1/2"	10"	Orange	1.88

tubby Style 1 1/4" Shaft Length



SS 8	1 1/4" x 2 1/16"	1/4"	3 1/2"	Amber	1.11
SS 10	1 1/4" x 2 1/16"	5/16"	3 1/2"	Amber	1.11
SS 12	1 1/4" x 2 1/16"	3/8"	3 1/2"	Amber	1.11

SP-500 Plastic Boxed Set

An elegant two tone gift or storage box with hinged cover contains these five popular sizes: 3/16", 1/4", 5/16", 11/32", 3/8". Size of box is 5" wide x 7" long x 1 1/8" deep.

Price $6.86

K-7 Stand Up—Hang Up Kit

An ideal kit for the workbench or to roll up and store in the tool box. Contains the following drivers: S6, S8, S10, S11, S12, S14, S16.

Price $11.05

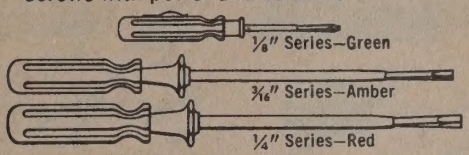
S-700 All Metal Stand

Seven of the most popular nut driver sizes are fitted into this metal stand especially designed for the workbench or for hanging on the wall. Contains one each of: S6, S8, S10, S11, S12, S14, S16.

Price $10.37

SCREW LAUNCHERS

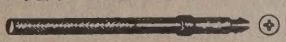
hold . . . start . . . drive screws with power and comfort



Unique design, double blade bit grips screws securely while working in tight quarters or awkward places. Easy to operate.

Stock No.	Blade Size	Handle Size	Overall Length	Price
K-21*	Mini Tip	5/16" x 2 3/4"	5 3/4"	$1.65
K-23*	1/8" x 3"	5/16" x 2 3/4"	5 3/4"	1.45
K-28	1/8" x 8"	5/16" x 2 3/4"	10 3/4"	1.75
K-34	3/16" x 4"	7/16" x 3 1/2"	7 1/2"	2.10
K-36	3/16" x 6"	7/16" x 3 1/2"	9 1/2"	2.15
K-38	3/16" x 8"	7/16" x 3 1/2"	11 1/2"	2.20
K-44	1/4" x 4"	1" x 3 5/16"	7 5/8"	2.20
K-46	1/4" x 6"	1" x 3 5/16"	9 5/8"	2.30
K-48	1/4" x 8"	1" x 3 5/16"	11 5/8"	2.35

Phillips Screw Launchers

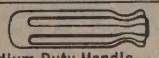
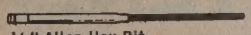
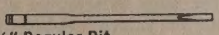
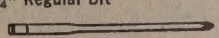
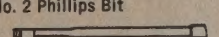
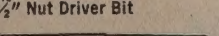
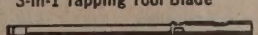


Stock No.	Length	Price
K-13	3"	$1.98
K-14*	5"	2.46
K-15	5"	2.30
K-16	7"	2.41
K-19	9"	2.51

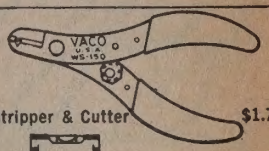
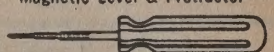
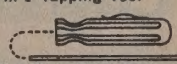
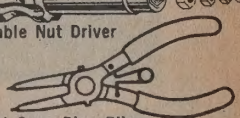
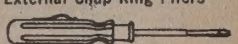
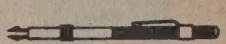
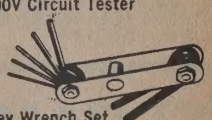
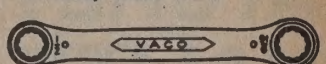
*Pocket Clip Style

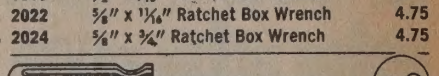
SNAP DRIVERS & COMPONENTS

Interchangeable blades snap into Vaco handle . . . holds like one piece tool. Build your own kit of specialty blades.

Stock No.	Description	Price
		
ZH-1	Medium Duty Handle	$1.31
ZH-2	Heavy Duty Handle	1.79
		
ZA-1	1/16" Allen Hex Bit	.85
ZA-2	5/64" Allen Hex Bit	.87
ZA-3	3/32" Allen Hex Bit	.90
ZA-35	7/64" Allen Hex Bit	.94
ZA-4	1/8" Allen Hex Bit	.94
ZA-45	9/64" Allen Hex Bit	.96
ZA-5	5/32" Allen Hex Bit	.96
ZA-6	3/16" Allen Hex Bit	1.02
		
ZB-24	1/4" Regular Bit	.65
ZB-34	5/16" Regular Bit	.82
ZB-45	1/4" Regular Bit	.82
		
ZP-01	No. 0 Phillips Bit	.77
ZP-14	No. 1 Phillips Bit	.82
ZP-24	No. 2 Phillips Bit	.87
		
ZS-6	3/16" Nut Driver Bit	.94
ZS-8	1/4" Nut Driver Bit	.94
ZS-10	5/16" Nut Driver Bit	.94
ZS-11	11/32" Nut Driver Bit	.94
ZS-12	3/8" Nut Driver Bit	.94
ZS-14	7/16" Nut Driver Bit	1.21
ZS-16	1/2" Nut Driver Bit	1.21
		
ZT-310	3-in-1 Tapping Tool Blade	2.78
		
ZX-56	5" Extension Piece	1.31

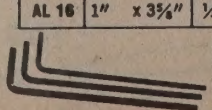
SPECIALTY TOOLS

Stock No.	Description	Price
		
WS-150	Wire Stripper & Cutter	$1.71
ML-7	Magnetic Level & Protractor	3.75
		
TT-31	3-in-1 Tapping Tool	2.94
		
DU-1*	Mini Reversible Driver	1.34
SA-711	Adjustable Nut Driver	4.15
		
210	Internal Snap Ring Pliers	3.10
220	External Snap Ring Pliers	3.10
		
K-21*	Mini Screw Launcher	1.65
K-23*	1/8" x 3" Screw Launcher	1.45
		
K-14*	5" Phillips Screw Launcher	2.46
TK-500	100-500V Circuit Tester	1.10
		
HK-17	Hex Key Wrench Set	1.57
		
810	1/4" x 5/16" Ratchet Box Wrench	3.10
1214	3/8" x 7/16" Ratchet Box Wrench	3.50
1618	1/2" x 9/16" Ratchet Box Wrench	4.60
2022	5/8" x 11/16" Ratchet Box Wrench	4.75
2024	5/8" x 3/4" Ratchet Box Wrench	4.75



Allen Hex Drivers

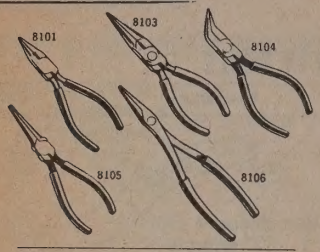
Stock No.	Handle Size	Hex Size	Cap Screw	Set Screw	Price
AL 2	3/4" x 3"	.050"	0 & 1	3 & 4	$1.09
AL 4	3/4" x 3"	1/16"	2	5 & 6	1.09
AL 5	3/4" x 3"	5/64"	3 & 4	8	1.09
AL 6	7/16" x 3 1/2"	3/32"	5 & 6	10	1.09
AL 7	7/16" x 3 1/2"	7/64"	7	—	1.26
AL 8	7/16" x 3 1/2"	1/8"	8	1/4	1.26
AL 9	7/16" x 3 1/2"	9/64"	9	—	1.26
AL 10	7/16" x 3 1/2"	5/32"	10	5/16	1.26
AL 12	7/16" x 3 1/2"	3/16"	1/4	3/8	1.26
AL 14	1" x 3 5/16"	7/32"	5/16	7/16	1.39
AL 16	1" x 3 5/16"	1/4"		1/2	1.39



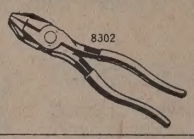
HEX KEY WRENCHES, in above sizes, are available in short, long, extra long, and 12" lengths.

PLIERS • WRENCHES

- Precision Ground and Polished Heads
- Milled Sure Grip Jaws, Hand Honed Cutters
- Cushion Grip Handles
- Unconditionally Guaranteed

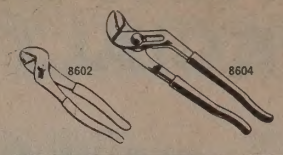


Stock No.	Description	Price
8101	Short Ndle. Nose w/Cut. 5"	$4.25
8102	Long Ndle. Nose w/Cut. 6"	4.55
8103	Long Ndle. Nose w/Cut. 7"	5.25
8104	Curved Nose 6"	4.60
8105	Long Nose 6"	4.30
8106	Long Needle Nose 7½"	4.60

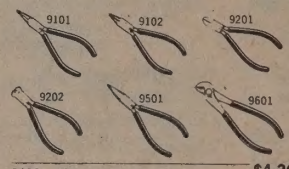


8301	Lineman's Side Cut. 6½"	$4.40
8302	Lineman's Side Cut. 7½"	5.10
8303	Lineman's Side Cut. 8¾"	6.10

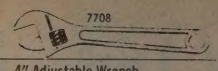
8400	Slip Joint Plier	Disc.
8401	Slip Joint 6½"	$2.10
8402	Slip Joint 8"	2.60
8403	6" Slip Joint w/Cutter	3.05



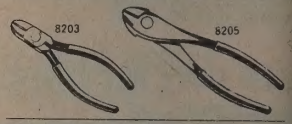
8602	Vacgruv Plier Wrench 6"	$3.50
8604	Vacgruv Plier Wrench 10"	4.50



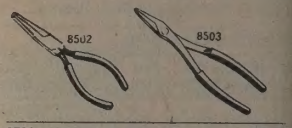
9101	Midget Long Nose 4½"	$4.30
9102	Midget Round Nose 4½"	4.30
9201	Midget Diagonal 4½"	4.30
9202	Midget End Cutter 4½"	4.30
9501	Midget Flat Nose 4½"	4.30
9601	Midget Vacgruv 5"	4.30



7704	4" Adjustable Wrench	$3.60
7706	6" Adjustable Wrench	3.60
7708	8" Adjustable Wrench	4.00
7710	10" Adjustable Wrench	5.25
7712	12" Adjustable Wrench	7.35



8201	Diagonal Cutter 4½"	$4.00
8202	Diagonal Cutter 5"	4.10
8203	Diagonal Cutter 6"	4.50
8204	Diagonal Cutter 7½"	5.15
8205	H. D. Diagonal Cutter 7¼"	4.70



8501	Flat Nose w/ Cutter 6"	$4.75
8502	Flat Nose 6"	
8503	Flat Nose 7½"	4.50

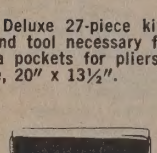
VACOMBO® KITS

KIT NO. TV-27 Deluxe 27-piece kit contains practically every hand tool necessary for TV and radio work, plus extra pockets for pliers and other personal tools. Size, 20" x 13½". Price...$31.91

KIT NO. ZB-50 A fine, all-purpose snap driver kit of interchangeable regular and Phillips blades that fit same handle. Includes durable leatherette bag. Size, 6½" x 7". Price.. $5.04

KIT NO. ZBX-51 Same as Vaco No. ZB-50 except includes 5" blade extension. Price.. $6.29

KIT NO. ZA-70 This use snap driver kit consists 6 Allen type hexag blades plus handle bag. Services screw nu bers 4, 5, 6, 8, 10, ¼ 5/16", and 3/8". Size, 6½ x 7". Price...$6.



KIT NO. RT-14 Handy 14-piece snap driver kit for radio and TV service men. Contains nut drivers, Phillips and regular drivers, heavy duty handle, and 5" blade extension which doubles the usefulness of each blade. Size, 10½" x 8". Price...$14.47

KIT NO. ZS-60 A most versatile and complete hexagon nut driver kit for radio, TV or any other work requiring speedy nut setting. All sockets are super hard. Size, 6½" x 7". Price.. $6.47

KIT NO. ZSX-61 Same as Vaco Kit No. ZS-60 except includes 5" blade extension. Price.. $7.61

KIT NO. ZC-80 Specia designed snap driver includes socket head (R ertson), Phillips, and r ular blades; particula suited for Canadian u Size, 6½" x 7". Price...$6.

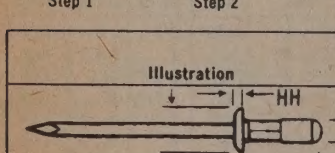
KIT NO. ZF-40 Here i special snap driver kit signed to take care of popular sizes of flu spline or Bristol type cess head screws used electronic and electri equipment, air conditi ing, refrigeration, and fice machines. Size, 6½ x 7". Price...$5

RATCHET DRIVERS QUALITY FASTENERS

VACO POW'RIVETS . . . the blind rivet for foolproof fastening every time

Step 1 Step 2 Step 3

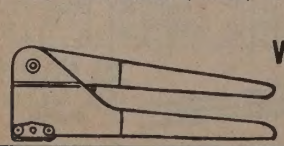
THERE IS A DIFFERENCE! Only Vaco Pow'-Rivets adapt to hole size variance, and pull up snug regardless of material thickness. That's why 4 sizes do the job of 11 ordinary rivets. Three step illustration at left shows unique "bubble action" sequence which assures positive, goof-proof fastening every time.



Stock No.	Dia. "D"	Length "L"	Grip Range	Head Dia. "HD"	Head Ht. "HH"	Hole Size	Drill
425	1/8	.400	To .250	.215	.044	.136	#29
528	5/32	.470	To .280	.255	.057	.166	#19
631	3/16	.530	To .312	.349	.070	.199	#8
650	3/16	.720	To .500	.349	.070	.199	#8
400	Assortment Pak						

Available in 50¢ Paks, Dollar $ Paks, "C" (100) Paks, and "MB" (1000) Paks.

VACO POW'RIVETER

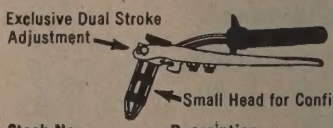


Stock No.	Description	List Price
495	Popular Rivet Tool for 1/8", 5/32", 3/16" Rivets	$5.95

RATCHET DRIVERS

Stock No.	Handle Dia. and Length	Overall Length	Blade Dia.	Pric
111001	1⅛" x 4¼"	10"	¼"	$3.2
111002	1¾" x 4½"	10½"	5/16"	3.4
111004	1⅛" x 4¼"	Handle Only	For use with Snap Blades	3.7

VACO PROFESSIONAL POW'RIVETER



Stock No.	Description	List Price
175002	Unique 2 in 1 Action for Professional Applications	$26.00

Trade Discount Applies To List Prices Only

© United Technical Publicatio

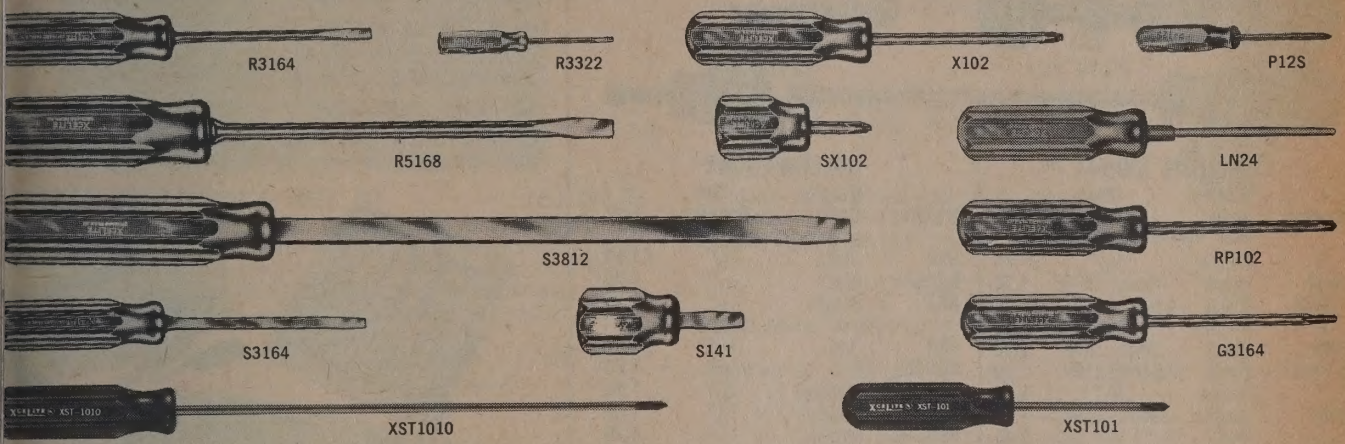
XCELITE® QUALITY PROFESSIONAL TOOLS

SCREWDRIVERS

AISI 6150 chrome vanadium steel blades. Shockproof, breakproof, plastic (UL) handles.

ms with **asterisk(*)** have non-magnetic non-sparking, rust-d corrosion-resistant beryllium-copper blades.

Philips items with **double asterisk(**)** have specially treated tips finished in black oxide for extremely close, precision fit.



ROUND BLADE

Number	Blade	Overall	List
Regular			
82	1/8" x 2"	4 5/8"	$ .65
84	1/8" x 4"	6 5/8"	.75
184*	1/8" x 4"	6 5/8"	1.50
86	1/8" x 6"	8 5/8"	.85
186*	1/8" x 6"	8 5/8"	1.55
88	1/8" x 8"	10 5/8"	1.00
810	1/8" x 10"	12 5/8"	1.15
1810*	1/8" x 10"	12 5/8"	1.80
323	5/32" x 3"	5 5/8"	.90
324	5/32" x 4"	6 5/8"	.90
325	5/32" x 5"	7 5/8"	.95
328	5/32" x 8"	10 5/8"	1.20
163	3/16" x 3"	6 5/8"	1.10
164	3/16" x 4"	7 5/8"	1.20
3164*	3/16" x 4"	7 5/8"	2.25
166	3/16" x 6"	9 5/8"	1.35
168	3/16" x 8"	11 5/8"	1.50
3168*	3/16" x 8"	11 5/8"	3.00
1610	3/16" x 10"	13 5/8"	1.70
42	1/4" x 2"	6 1/8"	1.35
44	1/4" x 4"	8 1/8"	1.55
R144*	1/4" x 4"	8 1/8"	2.75
46	1/4" x 6"	10 1/8"	1.70
R146*	1/4" x 6"	10 1/8"	3.30
48	1/4" x 8"	12 1/8"	1.80
R148*	1/4" x 8"	12 1/8"	3.60
1410	1/4" x 10"	14 1/8"	1.90
5164	5/16" x 4"	8 1/8"	1.75
5166	5/16" x 6"	10 1/8"	1.90
5168	5/16" x 8"	12 1/8"	2.05
388	3/8" x 8"	12 1/2"	2.75
Pocket Clip Style			
3322	3/32" x 2"	4 1/4"	$ .60
3323	3/32" x 3"	5 1/4"	.65
3324	3/32" x 4"	6 1/4"	.70
181	1/8" x 2"	4 1/4"	.60
R181*	1/8" x 2"	4 1/4"	.80
183	1/8" x 3"	5 1/4"	.65
184 1/2	1/8" x 4"	6 1/4"	.70

Beryllium-copper blade.

SQUARE BLADE

Number	Blade	Overall	List
Regular			
S3163	3/16" x 3"	6 5/8"	$1.20
S3164	3/16" x 4"	7 5/8"	1.30
S3166	3/16" x 6"	9 5/8"	1.50
S3168	3/16" x 8"	11 5/8"	1.70
S31610	3/16" x 10"	13 5/8"	2.00
S142	1/4" x 2"	6 1/8"	1.40
S144	1/4" x 4"	8 1/8"	1.60
S146	1/4" x 6"	10 1/8"	1.75
S148	1/4" x 8"	12 1/8"	1.90
S1424	1/4" x 24"	28 1/8"	4.25
S5162	5/16" x 2"	6 1/4"	1.50
S5164	5/16" x 4"	8 1/4"	1.75
S5166	5/16" x 6"	10 1/4"	2.00
S5168	5/16" x 8"	12 1/4"	2.20
S51610	5/16" x 10"	14 1/4"	2.50
S51612	5/16" x 12"	16 1/4"	3.00
S388	3/8" x 8"	12 1/2"	3.00
S3812	3/8" x 12"	17 7/8"	4.00
S3818	3/8" x 18"	23 7/8"	4.50
S7166	7/16" x 6"	11 7/8"	3.50
S71612	7/16" x 12"	17 7/8"	4.25
S71618	7/16" x 18"	23 7/8"	5.00
Stubby			
S3161	3/16" x 1"	2 3/4"	$ .95
S141	1/4" x 1"	3 1/4"	1.05
S5161	5/16" x 1"	3 1/4"	1.05

PHILLIPS

Number	Point	Blade	Overall	List
Extra Long				
X1010	1	3/16" x 10"	13 5/8"	$1.95
XST1010**	1	3/16" x 10"	13 5/8"	2.15
X1020	2	1/4" x 10"	14 1/8"	2.20
XST1020**	2	1/4" x 10"	14 1/8"	2.40
X2020	2	1/4" x 20"	24 1/8"	3.50
Regular				
X100	0	1/8" x 2"	4 1/2"	$ .85
BRX100*	0	1/8" x 2"	4 5/8"	1.13
XST100**	0	1/8" x 2"	4 5/8"	.95
X101	1	3/16" x 3"	6 5/8"	1.30
BRX101*	1	3/16" x 3"	6 5/8"	2.80
XST101**	1	3/16" x 3"	6 5/8"	1.45
X108	1	3/16" x 6"	9 5/8"	1.50
X102	2	1/4" x 4"	8 1/8"	1.60
BRX102*	2	1/4" x 4"	8 1/8"	3.00
XST102**	2	1/4" x 4"	8 1/8"	1.80
X103	3	5/16" x 6"	10 1/4"	2.25
BRX103*	3	5/16" x 6"	10 1/4"	6.12
X104	4	3/8" x 8"	12 1/2"	2.75
BRX104*	4	3/8" x 8"	12 1/2"	8.25
Stubby				
SX101	1	3/16" x 1 1/16"	2 13/16"	$1.20
SX102	2	1/4" x 1 5/16"	3 5/16"	1.35
Pocket Clip Style				
P12S	0	1/8" x 2"	4 1/4"	$ .75

* Beryllium-copper blade. ** Black oxide tip.

ALLEN TYPE

Number	Hex	Blade	Overall	List
LN20	.050"	4"	6 5/8"	$1.25
BRLN20*	.050"	4"	6 5/8"	1.75
LN21	1/16"	4"	6 5/8"	1.25
BRLN21*	1/16"	4"	6 5/8"	1.75
LN22	5/64"	4"	6 5/8"	1.25
BRLN22*	5/64"	4"	6 5/8"	1.75
LN23	3/32"	4"	7 1/8"	1.25
BRLN23*	3/32"	4"	7 1/8"	1.75
LN764	7/64"	4"	7 1/8"	1.25
BRLN764*	7/64"	4"	7 1/8"	2.00
LN24	1/8"	4"	7 1/8"	1.35
BRLN24*	1/8"	4"	7 1/8"	2.00
LN964	9/64"	4"	7 1/8"	1.35
BRLN964*	9/64"	4"	7 1/8"	2.25
LN25	5/32"	6"	9 1/8"	1.35
BRLN25*	5/32"	4"	7 1/8"	2.25
LN26	3/16"	6"	10 1/8"	1.35
BRLN26*	3/16"	4"	8 1/8"	2.50
LN27	7/32"	6"	10 1/8"	1.50
LN28	1/4"	6"	10 1/8"	1.50

BRLN990* — Complete set of BRLN Allens in roll-up case. **List $19.50**

* Beryllium-copper blade.

FREARSON (Reed & Prince)

Number	Point	Blade	Overall	List
RP101	1	3/16" x 3"	6 5/8"	$1.30
RP102	2	1/4" x 4"	8 1/8"	1.60
RP103	3	5/16" x 6"	10 1/4"	2.25
RP104	4	3/8" x 8"	12 1/2"	2.75

CLUTCH HEAD (Type G)

Number	Tip	Blade	Overall	List
G3324	3/32"	1/8" x 4"	6 1/4"	$1.40
G183	1/8"	3/16" x 3"	6 5/8"	1.40
G5324	5/32"	3/16" x 4"	7 5/8"	1.65
G3164	3/16"	1/4" x 4"	8 1/8"	1.65
G146	1/4"	5/32" x 6"	10 1/8"	2.05
G5166	5/16"	3/8" x 6"	10 1/2"	2.50

SCRULOX®

Number	Tip	Blade	Overall	List
SL-00	#00	3 1/2"	7 1/4"	$1.50
SL-0	#0	3 1/2"	7 1/4"	1.50
SL-1	#1	3 1/2"	7 1/4"	1.50
SL-2	#2	3 1/2"	7 1/4"	1.50
SL-3	#3	3 1/2"	7 1/4"	1.50

SCREWDRIVER ASSORTMENTS

Selected popular sizes in compact plastic cases.

No. SDR11 — **List $6.85**
Contains R182, R5324, R3166, R144, R5166 round blade screwdrivers.

No. SDX-22 — **List $7.85**
Contains X100, X101, X102, X103, SX102 Phillips screwdrivers.

No. SRX33 — **List $8.95**
Contains R184, R3166, R144, R5166 round blade and X101, X102 Phillips screwdrivers.

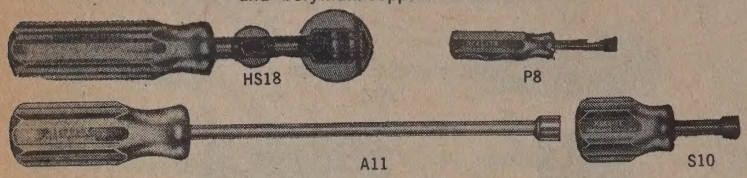
No. SDS44 — **List $9.45**
Contains S141, S3164, S144, S5166, S388 square blade screwdrivers.

XCELITE® QUALITY PROFESSIONAL TOOLS

NUTDRIVERS (Color-Coded Handles)

Polished-plated, steel shafts. Shockproof, breakproof, plastic (UL) handles. Precision, cold drawn, case hardened sockets.

Hollow shaft items with **asterisk(*)** have non-magnetic, non-sparking brass shafts and beryllium-copper sockets.



REGULAR SHAFT

Number	Handle Color	Hex Opening	List
	(6⅛" Overall Length)		
5	Amber	5/32"	$1.45
4MM	Black	4mm/.1575"	1.50
4.5MM	Black	4.5mm/.1773"	1.50
6	Black	3/16"	1.45
5MM	Black	5mm/.1968"	1.50
5.5MM	Black	5.5mm/.2167"	1.50
7	Brown	7/32"	1.45
6MM	Black	6mm/.2362"	1.50
8	Red	1/4"	1.45
7MM	Black	7mm/.2756"	1.50
9	Orange	9/32"	1.45
10	Amber	5/16"	1.45
8MM	Black	8mm/.3150"	1.50
11	Green	11/32"	1.45
9MM	Black	9mm/.3543"	1.50
12	Blue	3/8"	1.45
	(6⅝" Overall Length)		
10MM	Black	10mm/.3937"	1.85
11MM	Black	11mm/.4331"	1.85
	(6½" Overall Length)		
14	Brown	7/16"	$1.75
16	Red	1/2"	1.75

STUBBY

	(3⅛" Overall Length)		
S6	Black	3/16"	$1.25
S8	Red	1/4"	1.25
S10	Amber	5/16"	1.25
S11	Green	11/32"	1.25
S12	Blue	3/8"	1.25

POCKET CLIP STYLE

	(3½" Overall Length)		
P3	Amber	5/32"	$ .90
3MM	Black	3mm/.1181"	1.50
P4	Red	1/8"	.90
3.5MM	Black	3.5mm/.1379"	1.50
P5	Amber	5/32"	.90
P6	Black	3/16"	.90
P7	Brown	7/32"	.90
P8	Red	1/4"	.90
P9	Orange	9/32"	.90
P10	Amber	5/16"	.90
P11	Green	11/32"	.90
P12	Blue	3/8"	.90

***BRHS6-16** — Complete set of BRHS nutdrivers in "see thru" case. **List $34.75**

HOLLOW SHAFT

Number	Handle Color	Hex Opening	List
	(6¼" Overall Length)		
HS6	Black	3/16"	$1.65
BRHS6*	Black	3/16"	4.00
HS7	Brown	7/32"	1.65
	(7¼" Overall Length)		
HS8	Red	1/4"	$1.65
BRHS8*	Red	1/4"	4.00
HS9	Orange	9/32"	1.65
HS10	Amber	5/16"	1.65
BRHS10*	Amber	5/16"	4.25
HS11	Green	11/32"	1.65
BRHS11*	Green	11/32"	4.38
HS12	Blue	3/8"	1.65
BRHS12*	Blue	3/8"	4.75
HS13	Amber	13/32"	1.90
HS14	Brown	7/16"	1.90
BRHS14*	Brown	7/16"	5.63
12MM	Black	12mm/.4724"	2.15
HS15	Amber	15/32"	1.90
HS16	Red	1/2"	1.90
BRHS16*	Red	1/2"	6.25
13MM	Black	13mm/.5118"	2.15
HS17	Amber	17/32"	2.00
14MM	Black	14mm/.5512"	2.15
HS18	Orange	9/16"	2.00
15MM	Black	15mm/.5905"	2.40
HS19	Amber	19/32"	2.25
	(7⅝" Overall Length) (Metric 7¼" Overall Length)		
HS20	Amber	5/8"	$2.25
16MM	Black	16mm/.6299"	2.40
17MM	Black	17mm/.6693"	2.40
HS22	Amber	11/16"	3.25
HS24	Amber	3/4"	3.25

EXTRA LONG — HOLLOW SHAFT

	(9" Overall Length)		
A6	Black	3/16"	$1.95
A7	Brown	7/32"	1.95
A8	Red	1/4"	1.95
A9	Orange	9/32"	1.95
A10	Amber	5/16"	1.95
A11	Green	11/32"	1.95
A12	Blue	3/8"	1.95

3-17MM — Complete 18-pc. set of Metric nutdrivers in carton. **List $32.45**

4-13MM — 10-pc. set of Metric nutdrivers in carton (4MM thru 8MM, 10MM, 11MM, 13MM). **List $16.45**

* Beryllium-copper socket.

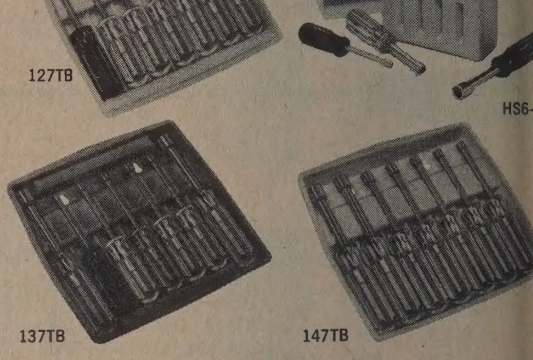
NUTDRIVER SETS (Color-Coded Handles)

No. HS6-18 CARRYING CASE **List $19.**
Contains hollow shaft Nos. HS6, HS7, HS8, HS9, HS10, HS1 HS12, HS14, HS16 and HS18.

No. 127TB "TRAY BIEN" **List $11.**
Contains solid shaft Nos. 6, 7, 8, 9, 10, 11, and 12.

No. 137TB "TRAY BIEN" **List $12.**
Contains solid shaft Nos. 6, 8, 10, 11 and 12 and holl shaft Nos. HS16 and HS18.

No. 147TB "TRAY BIEN" **List $14.**
Contains hollow shaft Nos. HS8, HS9, HS10, HS11, HS1 HS14 and HS16.



NUTDRIVER ASSORTMENTS

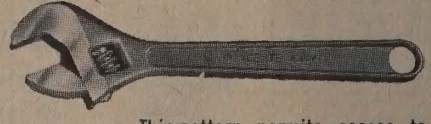
Selected popular sizes in compact plastic cases.

No. 157 **List $11.**
Contains 6, 8, 10, 11, 12, 14, 16 regu shaft nutdrivers.

No. 167 **List $12.**
Contains 8, 10, 11, 12 regular shaft a HS14, HS16, HS18 hollow shaft nutdrive

No. 177 **List $12.**
Contains HS6, HS8, HS10, HS11, HS12, HS HS16 hollow shaft nutdrivers.

ADJUSTABLE WRENCHE

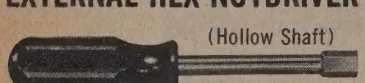


Thin-pattern permits access to close-quart work. Chrome-plated forged alloy ste Polished heads.

Plain Handle Number	List	Size	Cushion Grip Number	Li
44C	$4.10	4"	44CG	$4.
46C	4.16	6"	46CG	4.
48C	4.74	8"	48CG	5.
40-10C	6.02	10"	40-10CG	6.
40-12C	8.70	12"	40-12CG	9.

EXTERNAL HEX NUTDRIVER

(Hollow Shaft)



For control shaft nuts on Arvin and Philco portable stereo sets. 6½" overall length. 7/16" external hex.

Number	Handle Color	List
PN-716	Black	$1.75

TERMINAL WRENCHES

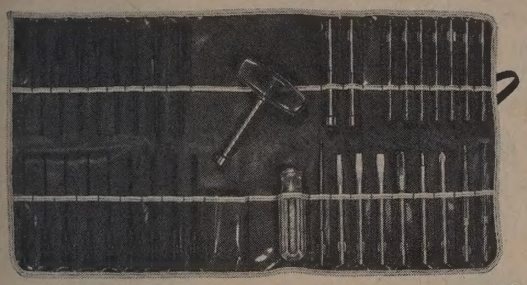
For spanner nuts on external antenna and earphone jacks of transistor radios and CB walkie-talkies. 3⅝" overall length.

Number	Handle Color	Spanner Nut O.D.	List
TW32	Green	1/4"	$.90
TW140	Red	5/16"	.95

All Prices are List and Subject to Discount © United Technical Publicatio

XCELITE® QUALITY PROFESSIONAL TOOLS

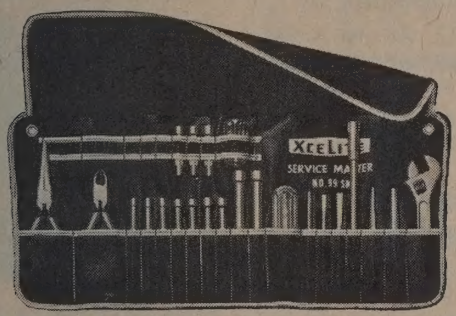
SERIES "99" SERVICE KITS, BLADES, AND HANDLES



o. 99MP MULTI-PURPOSE TOOL KIT **List $47.25**

9-piece kit contains 99-1 (Regular) and 99-4 (Tee) handles, ten regular utdrivers (99-5 thru 99-16), nine Allen Hex type screwdrivers (99-20, ıru 99-26), nine Bristol Multiple Spline screwdrivers (99-61 thru 99-69), ıree slotted screwdrivers (99-811, 99-250, 99-312), two Phillips screw-rivers (99-821, 99-822), two reamers (99-38, 99-39), awl/scriber (99-70), xtension blade (99-X5).

9MPK, Canvas case only..... **List $5.45**



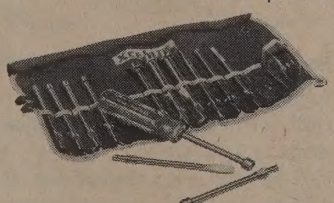
lo. 99SM SERVICE MASTER **List $44.75**

3-piece kit contains 99-1 (Regular) and 99-3 (Stubby) handles, nine egular and three stubby nutdrivers (99-6 thru 99-16), two slotted crewdrivers (99-811, 99-812), one Phillips screwdriver (99-821), two eamers (99-38, 99-39), extension blade (99-X10), 6" long nose cushion rip plier (52CG), 5" diagonal cushion grip plier (55CG), 6" adjustable rrench (46C).

9SMK, Canvas case only..... **List $4.75**

ROLL KITS

lo. 99PR ROLL KIT **List $15.70**



ontains nine regular nutdrivers 99-6 thru 99-16), 99-811 and 9-250 (slotted) and 99-821 and hillips) screwdriver blades, 9-1 handle (Regular).

9K, Kit only ..... **List $1.75**

lo. 99JR ROLL KIT **List $13.80**

ontains seven regular nutdrivers (99-6 thru 99-12) four screwdriver lades 99-811 and 99-812 (Slotted), and 99-821 and 99-822 (Phillips), 9-2 handle (Junior).

9KJR, Kit only ..... **List $1.75**

No. 99LN ROLL KIT **List $7.45**

Contains six Allen type screwdriver blades (99-21, 22, 23, 24, 25, 26) and 99-1 handle (Regular).

No. 99-30 CLEAR PLASTIC POUCH **List $5.40**

Heat sealed plastic snap case with size numbers on pockets for con-venient selecting and storing. Contains six Allen type screwdriver blades (99-21, 22, 23, 24, 25 and 26).

PLASTIC VIEW KITS

No. 99SL **List $6.25**

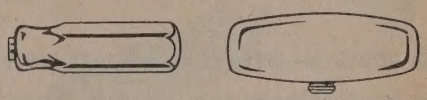
Contains five Scrulox® screwdriver blades for square recess screws (SL 00, 0, 1, 2, 3), 99-1 handle (Regular).

No. 99PV4 **List $4.45**

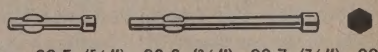
Contains three slotted screwdriver blades (99-811, 99-250, 99-312), 99-1 handle (Regular).

No. 99PV6 **List $6.25**

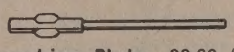
Contains three slotted screwdriver blades (99-811, 99-250, 99-312), two Phillips screwdriver blades (99-821, 99-822), 99-1 handle (Regular).



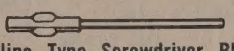
	List
Handles: 99-1 Regular (1 1/16" x 4 1/8") — for all blades, single-end and reversible	1.20
99-2 Junior (1" x 3 1/8") — for single-end blades only	1.10
99-3 Stubby (1 1/16" x 2") — for single-end blades only	1.05
99-4 Tee (1" x 3 3/8") — for single-end blades only	1.60



Nutdriver Blades: 99-5 (5/32"), 99-6 (3/16"), 99-7 (7/32"), 99-8 (1/4"), 99-9 (9/32"), 99-10 (5/16"), 99-11 (11/32"), 99-12 (3/8")	1.05
99-14 (7/16"), 99-16 (1/2")	1.30
Stubby Nutdriver Blades: 99-S8, 99-S10, 99-S12	.85

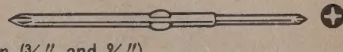


Allen Hex Type Screwdriver Blades: 99-20 (.050"), 99-21 (1/16"), 99-22 (5/64"), 9-23 (3/32"), 99-764 (7/64"), 99-24 (1/8"), 99-964 (9/64"), 99-25 (5/32"), 99-26 (3/16")	.95



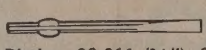
Bristol Multiple-Spline Type Screwdriver Blades: 99-61 (.048", flute), 99-62 (.060", 6-flute), 99-63 (.069", 4-flute), 99-64 (.072", 6-flute), 99-65 (.076", 4-flute), 99-66 (.096", 6-flute), 99-67 (.111", 6-flute), 99-68 (.145", 6-flute), 99-69 (.183", 6-flute)	.95

Frearson and Clutch Head Reversible Screwdriver Blades:

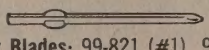


99-83 Frearson (3/16" and 5/32")	1.75

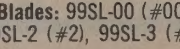
99-84 Clutch Head (3/16" G and 5/32" G)	1.75



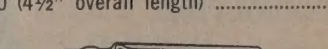
Slotted Screwdriver Blades: 99-811 (3/16"), 99-250 (1/4"), 99-312 (5/16")	1.05



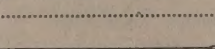
Phillips Screwdriver Blades: 99-821 (#1), 99-822 (#2)	1.05



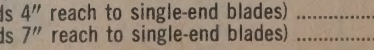
Scrulox Screwdriver Blades: 99SL-00 (#00), 99SL-0 (#0), 99SL-1 (#1), 99SL-2 (#2), 99SL-3 (#3)	1.05



Awl/Scriber: 99-70 (4 1/2" overall length)	1.00



Reamers: 99-38 (1/8" - 3/8")	2.63
99-39 (1/4" - 1/2")	3.38



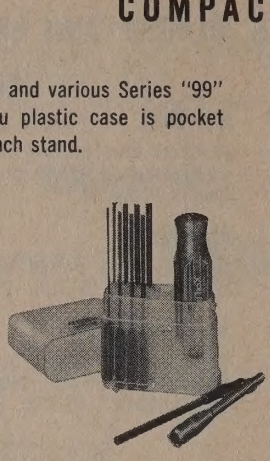
Extension Blades:	
99-X5 (adds 4" reach to single-end blades)	1.55
99-X10 (adds 7" reach to single-end blades)	1.60

XCELITE® QUALITY PROFESSIONAL TOOLS

COMPACT SETS

Series "99" Sets

Each set contains a Series "99" regular handle and various Series "99" interchangeable blades and extension. See-thru plastic case is pocket size, has flat base that permits its use as a bench stand.



No. 99PS-40 ALLEN HEX TYPE SCREWDRIVER SET

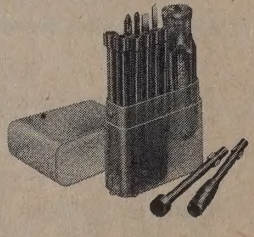
Includes nine Allen Hex type screwdriver blades (99-20 thru 99-26), 99-X5 extension blade, 99-1 handle, and see-thru case. **List $11.88**

No. 99PS-42BR BERYLLIUM-COPPER ALLEN HEX TYPE SCREWDRIVER SET

Includes nine berryllium-copper Allen Hex type screwdriver blades (same sizes as 99-20 thru 99-26), handle with brass spring chuck, and see-thru case. **List $17.25**

No. 99PS-41MM METRIC ALLEN HEX TYPE SCREWDRIVER SET

Includes seven metric Allen Hex type blades (mm sizes 1.27, 1.5, 2, 2.5, 3, 4, 5), 99-X5 extension blade, 99-1 handle, and see-thru case. **List $11.25**

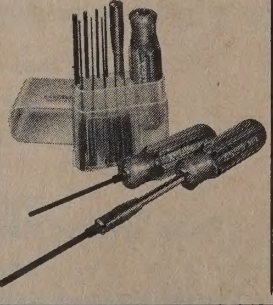


No. 99-PS50 NUTDRIVER/SCREWDRIVER SET

Includes seven regular nutdriver blades (99-6 thru 99-12), two slot tip screwdriver blades (99-811 and 99-812), two Phillips screwdriver blades (99-821 and 99-822), 99-X5 extension blade, 99-1 handle, and see-thru case. **List $14.88**

No. 99PS-51MM METRIC NUTDRIVER SET

Includes ten metric nutdriver blades (mm sizes 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11), 99-X5 extension blade, 99-1 handle, and see-thru case. **List $14.38**



No. 99PS-60 BRISTOL MULTIPLE-SPLINE TYPE SCREWDRIVER SET

Includes nine Bristol Multiple-Spline type screwdriver blades (99-61 thru 99-69), 99-X5 extension blade, 99-1 handle, and see-thru case. **List 11.88**

Convertible Nutdriver and Screwdriver Sets

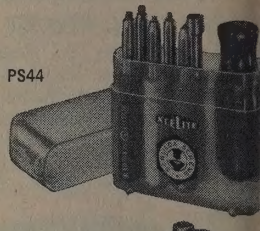
Black plastic torque amplifier handle (1" x 3⅛") slips over handle of pocket size (3½") nutdrivers and screwdrivers . . . provides large grip, extends reach and increases driving power to that of standard size tools. See-thru plastic case fits pocket, stands upright on bench

No. PS7 NUTDRIVER/SCREWDRIVER SET

Contains two nutdrivers (¼" and 5/16"), two slot tip screwdrivers (3/16" and 3/32"), two Phillips screwdrivers (#0 and #1), hollow handle, and case. **List $6.8**

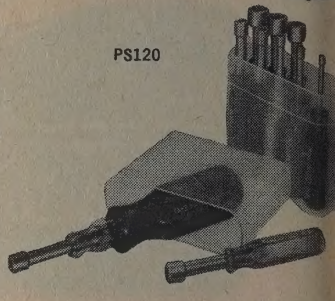
No. PS44 SCRULOX SCREWDRIVER SET

Includes five Scrulox screwdrivers (#1 thru #14), one nutdriver (¼"), hollow handle, and case. **List $6.88**



No. PS88 SCREWDRIVER SET

Contains five slot tip screwdrivers (3/32", ⅛", 5/32", 3/16", ¼"), three Phillips screwdrivers (#0, #1, #2), hollow handle, and case. **List $7.00**

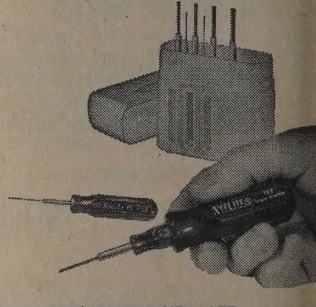


No. PS120 NUTDRIVER SET

Contains ten color coded nutdrivers (3/32" thru ⅜"), hollow handle, and case. **List $9.75**

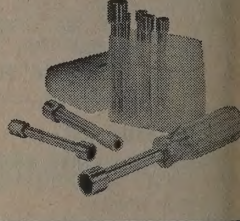
No. PS89 ALLEN HEX TYPE SCREWDRIVER SET

Contains eight Allen hex type screwdrivers (hex sizes .028", .035", .050", 1/16", 5/64", 3/32", 7/64", ⅛"), hollow handle, and case. **List $7.25**



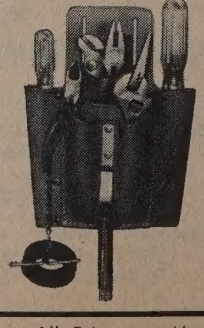
No. HSC-1 INTERCHANEABLE HOLLOW SHAFT NUTDRIVER SET

Contains special thru-drilled handle and eight interchangeable hollow nutdriver shafts in 3/16", ¼", 5/16", 11/32", ⅜", 7/16", ½", 9/16" hex sizes. Screwdriver blade may be run down through center of handle and hollow nutdriver shaft to make combination locknut/slotted screw adjustments. **List $14.75**



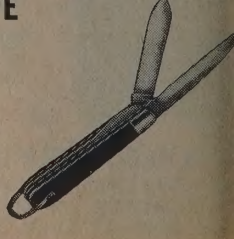
No. 150 TOOL HOLSTER

Has tape holder, knife clip, and 5 tool pockets. Durably made of pliable saddle leather with natural cowhide finish. Features comfortable hip-contoured back, hot-waxed stitching, and brass rivets.. **List $6.90**



No. K22 ELECTRICIAN'S KNIFE

Two blades. One is combination insulation-scraper and screwdriver. Has positive lock when open .....**List $3.70**



All Prices are List and Subject to Discount © United Technical Publication

XCELITE® QUALITY PROFESSIONAL TOOLS

COMBINATION-REVERSIBLE BLADE SCREWDRIVERS AND KITS

AISI 6150 chrome vanadium steel blades. Shockproof, breakproof, plastic (UL) handles. Patented spring holds blades securely. 7/16" hex opening doubles as a nutdriver.

MPLETE UNITS

gular Type	List
R1—No. 25 handle & RB1 blade	$2.50
R2—No. 25 handle & RB2 blade	2.50
R3—No. 25 handle & RB3 blade	2.50
bby Type	
S1—No. 26 handle & SB1 blade	$2.50
S2—No. 26 handle & SB2 blade	2.50

NDLES ONLY

—Regular	$1.10
—Stubby	1.10

ADES ONLY

gular Type	
B1—No. 1 Phillips & 3/16" Slotted	$1.45
B2—No. 2 Phillips & 1/4" Slotted	1.45
B3—No. 3 Phillips & 5/16" Slotted	1.45
B12—No. 1 & No. 2 Phillips	1.70
B1—3/16"G & 3/32"G Clutch	1.75
B2—5/16"G & 1/4"G Clutch	1.75

Stubby Type	List
SB1—No. 1 Phillips & 3/16" Slotted	$1.40
SB2—No. 2 Phillips & 1/4" Slotted	1.40
GS1—3/16"G & 3/32"G Clutch	1.50

POCKET ROLL KITS

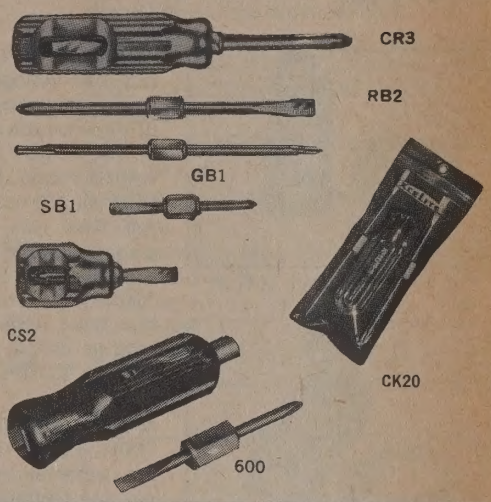
CK2 — Contains RB1, RB2 blades and No. 25 handle $5.00
CK3 — Same as CK2, plus RB3 blade 6.50
CK5 — Same as CK2, plus RB3, GB1, and GB2 blades 9.88

PLASTIC VIEW KITS

SK20 — Contains SB1, SB2 blades and No. 26 handle $4.25
CK20 — Contains RB1, RB2 blades and No. 25 Handle 5.00
CK23 — Same as CK20, plus RB3 blade 6.50

COMBINATION SCREW AND NUTDRIVER TOOL

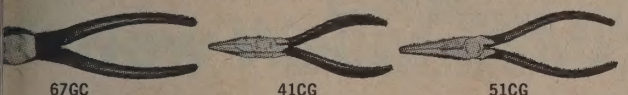
600—Handy 4-way tool with pocket clip. 1/4" and 7/16" hex openings. Reversible SB1 blade ..... List $2.75



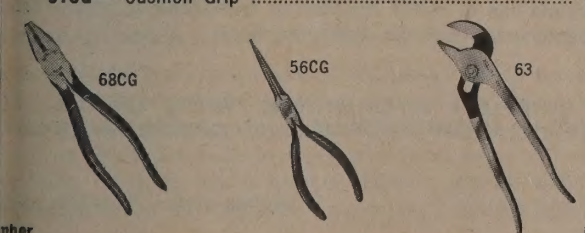
PLIERS

cision-machined forged alloy steel. Perfectly aligned jaws. Hand- ied, mated cutting edges. Polished heads.

nber	List
G — CHAIN NOSE ELECTRICIAN'S PLIERS (8")—Cushion Grip	$5.24
— COMBINATION SLIP JOINT PLIER (5")—Chrome-Plated	2.50
— COMBINATION SLIP JOINT PLIER (6")—Chrome-Plated	2.56
76S — Satin Finish	1.60
— COMBINATION SLIP JOINT PLIER (8")—Chrome-Plated	3.04
— DIAGONAL PLIER (Midget 4")	4.48
54CG — Cushion Grip	4.74
— DIAGONAL PLIER (5")	4.60
55CG — Cushion Grip	4.86
G — DIAGONAL PLIER (6")—Cushion Grip	5.24



nber	List
— DIAGONAL PLIER (7")	$4.86
67CG — Cushion Grip	5.24
G — LONG NOSE PLIER (Midget 4")—Without Side Cutters—Cushion Grip	4.36
— LONG NOSE PLIER (6")—Without Side Cutters	3.96
52CG — Cushion Grip	4.22
— LONG NOSE PLIER (6")—With Side Cutters	5.08
51CG — Cushion Grip	5.34

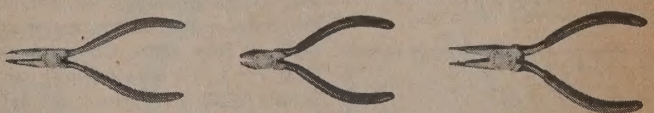


nber	List
G — NEEDLE NOSE PLIER (6")—Cushion Grip	$5.00
G — RADIO AND TV PLIER (6")—Cushion Grip	6.40
G — SIDE CUTTING PLIER (6")—Cushion Grip	5.24
G — SIDE CUTTING PLIER (8")—Cushion Grip	6.28
G — TRANSVERSE CUTTING PLIER (6")—Cushion Grip	5.88
G — UTILITY PLIER (6")—Forged Rib-Lock—Cushion Grip	4.32
— UTILITY PLIER (10")—Forged Rib-Lock	5.32
63CG — Cushion Grip	5.88

MINIATURE ELECTRONIC PLIERS

Small, lightweight. For handling fine wires. All cushion grip handles. Coil spring openers. Polished heads and shoulders.

Number	List
70CG — FLAT NOSE PLIERS (4½")	$5.00
71CG — ROUND NOSE PLIERS (4½")	5.72
72CG — CHAIN NOSE PLIERS (4")	5.38



Number	List
73CG — SPECIAL TIP CUTTING PLIERS (4½")	$7.32
74CG — DIAGONAL FLUSH CUTTING PLIERS (4")	6.92
69CG — RADIO AND TV PLIER (5")	7.68

ELECTRONIC SNIPS

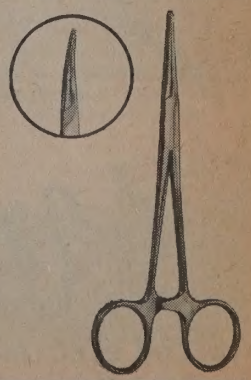
6½" size. Shearing action of pointed blades (1½" cut) prevents peaks on fine wire and filaments. Useful also for removing insulation and cutting light sheet metal. Coil spring opens blades . . . latch holds them closed. Cushion grip (No. 86CG) ..... List 4.60

REGULAR AND JR. SEIZER®

Outreach, outhold needle nose pliers. Clamp tightly. Hold wires for soldering and serve as heat sinks. Retrieve small parts. Two-position snap-lock. Stainless steel, box-joint construction. Precision machined and tempered.

Regular 6" Seizers have serrated jaws. Jr. Seizers are 5" long, have smooth jaws that won't mar delicate materials.

Number	List
42H—6" Straight Nose	$6.20
43H—6" Curved Nose	6.40
32H—5" Straight Nose	6.20
33H—5" Curved Nose	6.40

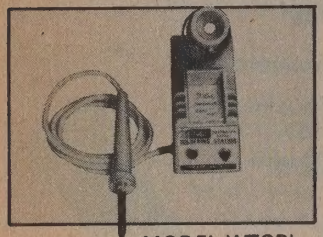


Weller industrial soldering tools

for greater efficiency . . . lower operating costs and maximum safet

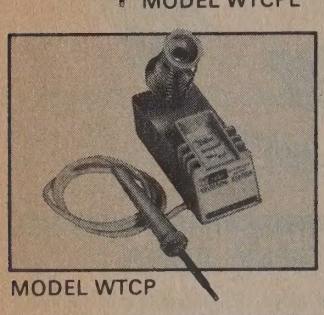
CONTROLLED OUTPUT SOLDERING TOOLS . . .

Automatically controls output and temperature independent of line voltage.



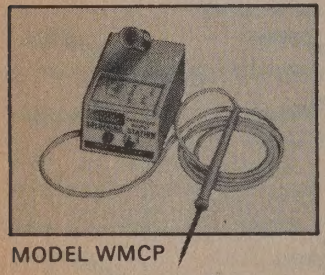
MODEL WTCPL

MODEL WTCPL. Controlled output low voltage soldering with power unit isolated for protection of sensitive devices. Temperatures of 500°F., 600°F. and 700°F. are predetermined by tip selection. Cord set will not burn. Stand will not heat sink. Built-in on/off switch and pilot light. 60W, 120V, 3 wire cord. Comes with 3/16", 700°F. screwdriver tip. New cool blue color. Also available without built-in on/off switch and pilot light as MODEL WTCP.



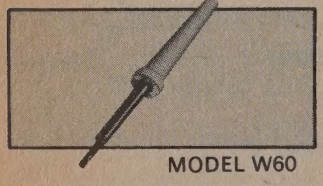
MODEL WTCP

MODEL WMCP. Weller's new "MINI-TOOL" for micro-soldering, automatically controls output and temperature with power unit isolated and shielded for protection of sensitive devices. Has fixed temperature, interchangeable tips, low voltage operation, built-in on/off switch and pilot light. Available in 3 temperature ranges; WMCP . . . 650°F., WMCP-1 . . . 550°F., WMCP-2 . . . 750°F. control 20W, 120V, 50/60 Hz. 3 wire cord. Comes with 1/8" chisel tip. New cool blue color.



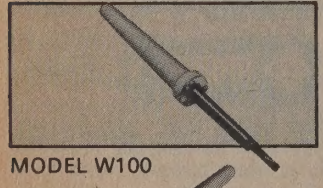
MODEL WMCP

MODEL W60. Low cost, portable, line voltage operation. Automatic control of output and temperature 60W, 2 wire cord. Comes with 700°F., 1/4" screwdriver tip. Model W60-3, 3 wire cord set. New cool blue color. For complete station order PH60 stand.



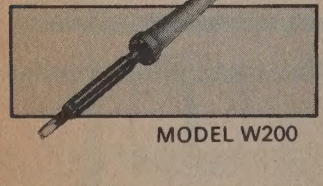
MODEL W60

MODEL W100. Low cost, portable, line voltage operation. Automatic control of output and temperature. 100W, 2 wire cord. Comes with 700°F., 3/8" screwdriver tip. Model W100-3, 3 wire cord set. New cool blue color. For complete station order PH100 stand.



MODEL W100

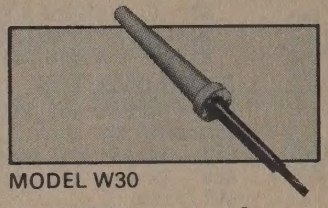
MODEL W200. Low cost, portable, line voltage operation. Automatic control of output and temperature. 200W, 2 wire cord. Comes with 700°F., 1/2" chisel tip. Model W200-3, 3 wire cord set. New cool blue color.



MODEL W200

UNCONTROLLED SOLDERING TOOLS . . .

For lowest cost soldering operations not requiring high ficiency tool.



MODEL W30

MODEL W30. Uncontrolled li voltage soldering tool. All sta less steel construction, 30 120V, 2 wire cord, with 1/ screwdriver tip. New cool bl color. Model W30-3, 3 wire co set.

MODEL W50

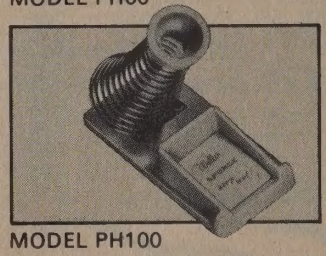
MODEL W50. Uncontrolled li voltage soldering tool. All sta less steel construction. 50 120V, 2 wire cord, with 3/ screwdriver tip. New cool bl color. Model W30-3, 3 wire co set.

SOLDERING TOOLS STANDS . . .

Have heavy cast iron bases and built-in sponge holde Design precludes any possible heat sinking of Weller co trolled tools. New cool blue color.

MODEL PH60

MODEL PH60. Accommoda Weller Models W30, W60, a any soldering tool with a ba diameter up to 15/32".



MODEL PH100

MODEL PH100. Accommoda Weller Models W50, W100 a any soldering tool with a ba diameter up to 19/32".

TIPS AND ACCESSORIES

All Weller Industrial Solder Tips have unique heavy iron pl ing with anti-oxidation coat thereby eliminating freezing No other tip offers these featu

A complete line of Weller Accessories is available to greatly exte the effectiveness of Weller Soldering Tools.

FOR COMPLETE INFORMATION, WRITE OR CALL F WELLER'S LATEST INDUSTRIAL SOLDERING TOOLS CAT LOG.

All Weller products are available in Ca

Weller®

PRODUCTION SOLDERING TOOLS FOR ELECTRONIC MANUFACTUR

INDUSTRIAL PRODUCTS DIVISIO

WELLER ELECTRIC CORPORATION

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Weller® Dual Heat Soldering Guns

he original and most widely used guns with features that are still unmatched

3 Dual Heat Models

Model 8200—100/140 watts
Model D-440—145/210 watts
Model D-550—240/325 watts

Trigger controlled dual heat. Two trigger positions permit instant switching to high or low heat. Low heat prevents damage to heat sensitive components. High heat is there when needed.

Instant heat. Tip reaches full heat a few seconds after trigger is pulled. Heat goes off instantly when trigger is released.

High efficiency tip slips easily into difficult places.

Spotlight illuminates work, eliminates shadows.

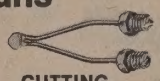
Maximum operating comfort. Compact design and perfect balance make precision soldering easy, eliminate operator fatigue.

Guaranteed one year against defects in material and workmanship. UL and CSA approved.

Accessory and replacement tips for Weller Dual Heat Guns

SOLDERING
For gun models 8200 and D-440—Tip 7135N.
For gun model D-550—Tip 7250N.

SMOOTHING
For gun models D-440 and 8200—Tip 6120.
For gun model D-550—Tip 6140.



CUTTING
For gun models D-440 and 8200—Tip 6110.
For gun model D-550—Tip 6130.

Model GT-7A comes with 700°F. 3/16" chisel point POWERHEAD
Model GT-6B comes with 600°F. 1/8" conical point POWERHEAD

New Weller TEMPMATIC®

emperature Controlled Soldering Tool

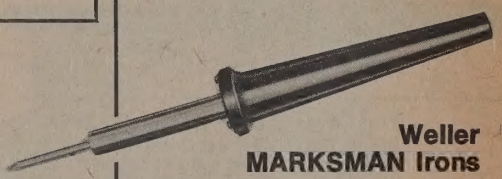
mbines all the advantages of a lightweight pencil type iron, a fast heating solder- g gun, and tip temperature control.

r light and heavy duty soldering. Ideal for heat-sensitive work such as printed rcuit boards, yet it handles heavy soldering jobs with speed.

eighs only 7 ounces and has comfortable grip to prevent operator fatigue.

eaches full heat in 8 seconds. Trigger turns heat on and off.

atures Weller's exclusive new POWERHEAD which contains Weller's temperature ntrol system. (It's the same system that has been so successful in Weller tempera- re controlled soldering irons.) The POWERHEAD gives maximum component pro- ction in the most delicate work situations and eliminates frequent tip changes d filing. Its point has a special premium plating which vastly extends life. An ector button on the tool makes switching POWERHEADS easy.



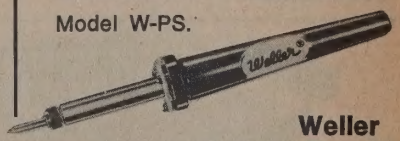
Weller MARKSMAN Irons

Ruggedly constructed general purpose irons featuring stainless steel barrels, replaceable tips and long reach. Model for model they outperform bigger irons that weigh and cost more. Five models from a small pencil iron to an extra heavy duty iron.

MODEL NO.	WATTAGE/ 120V	WEIGHT
SP-23*	25	1¾ oz.
SP-40	40	2 oz.
SP-80	80	4 oz.
SP-120	120	10 oz.
SP-175	175	16 oz.

*Also available in kit with solder, extra tips, and soldering aid—Model SP23K.

Model W-PS.



Weller Industrial Rated Pencil Iron

Ideal for soldering miniaturized circuit components, this low cost 115 volt iron provides a tip temperature of 860°F with a 25 watt input. High efficiency. Rapid recovery. Lightweight. Interchangeable 1/16", 3/32", 1/8" and 3/16" screwdriver tips available, premium plated for long life.

Weller WELLER ELECTRIC CORP.
WORLD LEADER IN SOLDERING TOOLS

SINCE 1864 WALL BRAND

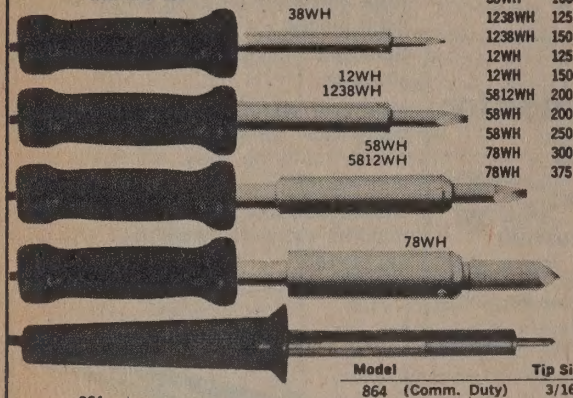
SOLDERING PENCILS, IRONS, GUNS, TIPS, HOLDERS AND ACCESSORIES

HOT AIR GUNS & TIPS

Engineered for Highest Industrial Performance

WallBrand pencils and irons are engineered for highest efficiency with handles designed to be cooler, lightweight and perfectly balanced. WH models have triple-life resistance wire wound on pure mica for continuous heavy duty soldering requirements; constant tip temperature with extra fast recovery. 120 volts AC-DC. Other voltages available on request. Wall's own plating facilities produce long-life tips to meet the demanding applications of micro-circuitry, high density packaging, precision work on solid state devices, printed circuits and continuous precision soldering for production line use.

Model	Watt Input	Tip Size	Length W/O Tip	Volts
38WH	80	3/16"	10½"	120
38WH	100	3/16"	10½"	120
1238WH	125	3/16"	10½"	120
1238WH	150	3/16"	10½"	120
12WH	125	½"	10½"	120
12WH	150	½"	10½"	120
5812WH	200	½"	12¼"	120
58WH	200	5/8"	12¼"	120
58WH	250	5/8"	12¼"	120
78WH	300	7/8"	12¾"	120
78WH	375	7/8"	12¾"	120

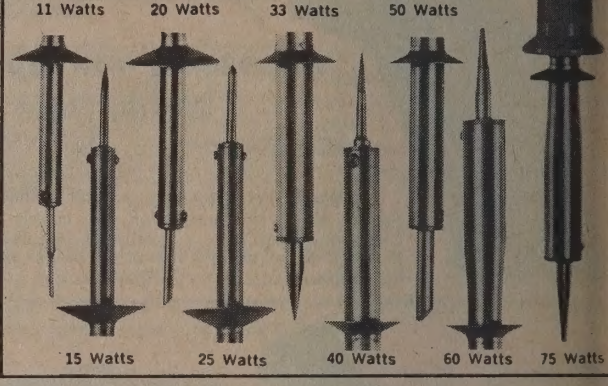


Model		Tip Size	Watts	Volts
864	(Comm. Duty)	3/16"	30	120
		3/16"	40	120

864

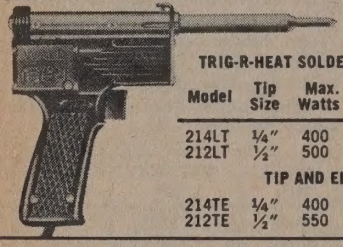
XLS pencil iron — Versatile Molded Handle fits 9 elements

New pencil iron featuring element interchangeability and highest performance. Handle fits nine heating elements from 11 to 75 watts. Quickly and easily changed by operator. XLS molded handle is cool, lightweight and made of high impact, soft blue colored polycarbonate. Available with either 2 or 3 wire cord. Wall's full line of regular and long-life iron plated tips are available for the 9 easy-to-change heating elements.



Trig-R-Heat Soldering Gun—Feather light, 14 oz., no heavy transformer. Reaches hard-to-get-at spots; tip will not deform. Heats and recovers instantly. Rugged, precision-built. Easily changed tip and element assemblies.

214LT



TRIG-R-HEAT SOLDERING GUN SPECIFICATIONS

Model	Tip Size	Max. Watts	Min. Watts	Voltage AC or DC	Weight W/O Cord
214LT	¼"	400	150	120	14 oz.
212LT	½"	500	300	120	24 oz.
TIP AND ELEMENT ASSEMBLY					
214TE	¼"	400	150	120	
212TE	½"	550	300	120	

THE I D L Patent Pending

NEWEST — Instant Heat Pencil Iron Thermal time delay relay controlled

Heats in seconds. No transformer. Weighs only 3 oz. without cord. When handle button is depressed 180W element heats initially until soldering temperature is reached. Thermal time delay relay then cuts in 40W element automatically. Pencil cannot overheat. Interchangeable plug-in ⅛" tips — no special tools needed for easy changing. Cool, comfortable unbreakable molded plastic handle. I D L pencil is excellent for light to medium diversified jobs.

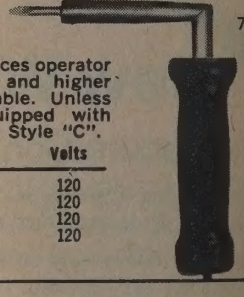
I D L IRON

14DS Desoldering Tool—Keeps solder in a molten state in reservoir, operated with one hand, fits existing Wall 14HD Iron. Replaceable tip, .080 opening. Other sizes by special request.

14DS

Hatchet Irons—New high reserve models that enable user to make more solder connections faster. Reduces operator fatigue, with better quality control and higher production. ¼" and ⅜" tips available. Unless otherwise specified, irons are equipped with 2-wire HPN cords and Wallbrand Tip Style "C".

738



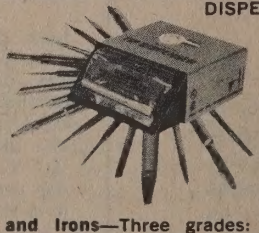
Model	Tip Size	Watts	Volts
714-60	¼ in.	60	120
714-75	¼ in.	75	120
738-80	⅜ in.	80	120
738-100	⅜ in.	100	120

SPH

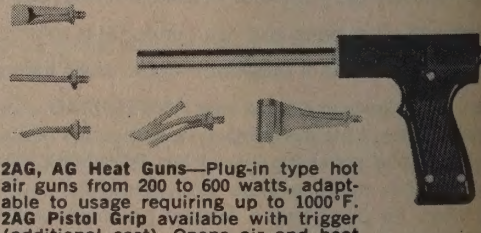
SPH Soldering Pencil Holder for units up to ⅝" diameter shaft — **SIH Soldering Iron Holder** for units up to 1" diameter shaft. Can be mounted on top, in front or below bench. Adjusts to any angle. Bench models include tip cleaning sponge.

Soldering Tip Dispenser Pac—Iron-plated or copper tips, ⅛" through ⅜", are available in handy tip dispenser pac. Keeps tips individually sealed in color-coded, continuous belting, plastic envelope. Ideally suited for production line station or stock distribution.

DISPENSER PAC



Soldering Tips for Pencils and Irons—Three grades: **Anniversary:** Industrial, highest quality. Copper core, special iron coating. Anti-seize life for rigorous production line demand. **WallKlad**—Industrial, copper core, iron coating chrome plated. Production line and critical laboratory use. **WallBrand**—Commercial, copper, nickel plated. All commercial applications. Tip sizes from ⅛" through ⅞". Special tips to specifications designed on request.



2AG, AG Heat Guns—Plug-in type hot air guns from 200 to 600 watts, adaptable to usage requiring up to 1000°F. **2AG Pistol Grip** available with trigger (additional cost). Opens air and heat at the same time. **AG Handle Grip.** One heating element fits both guns. All five tip styles interchangeable. Special tips on request. Three-wire cord assembly. Hundreds of uses — shape, form, weld and seal thermoplastics. Gun includes neoprene air hose, hose fittings, pressure regulator and gauge.

WALL BRAND

WALL MANUFACTURING COMPANY

Industrial Soldering Pencils are built to exceed federal specification W-S-570a as amended. WallBrand soldering products are UL and CSA listed.

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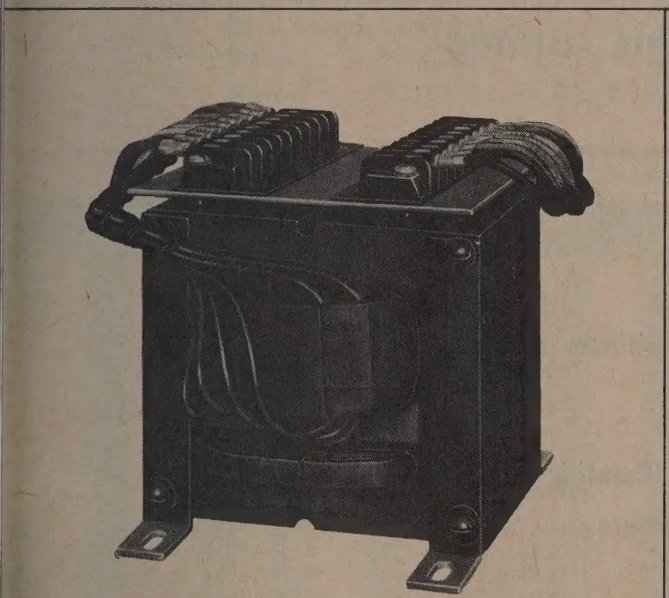

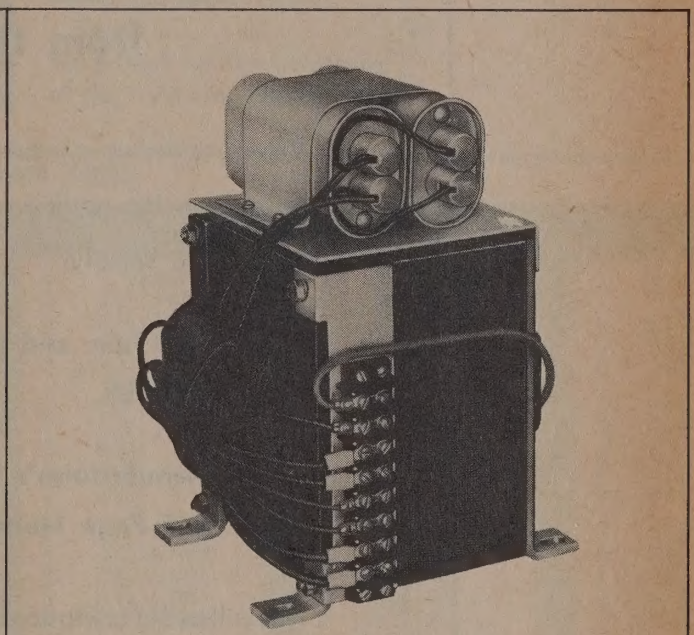

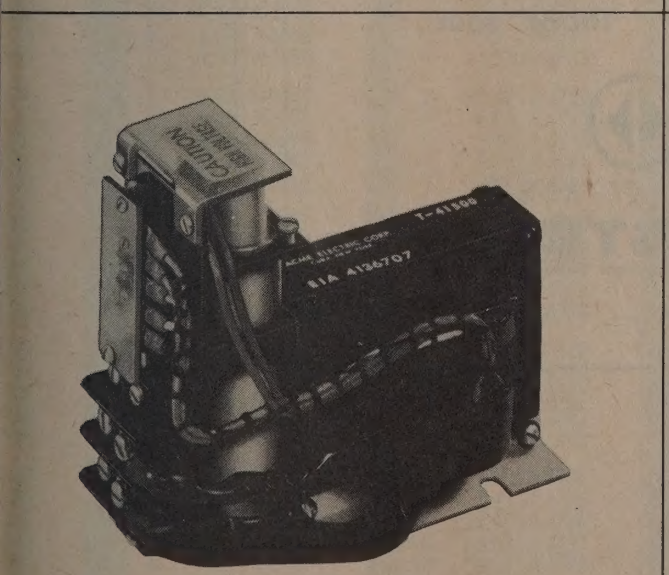

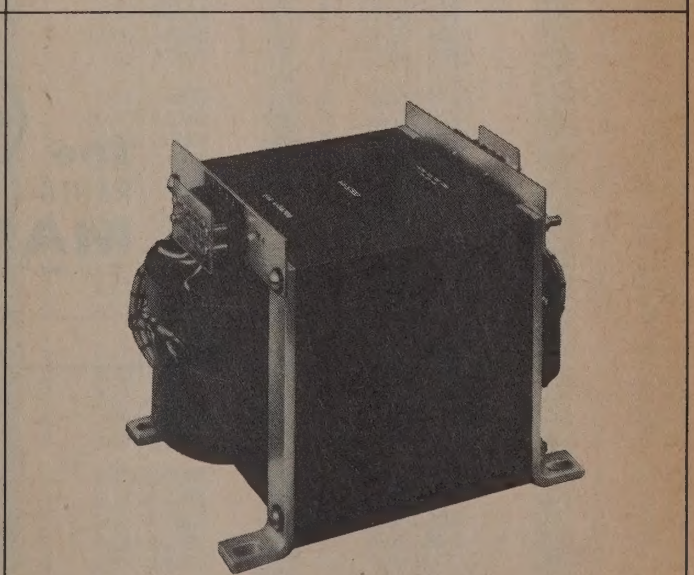

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355	24	1	19.43	PC-8405	23	5	11.32	PCT-62	16	1	8.84	PMT-40	19	4	4.88	PMT-114	21	1	6.86
356	23	5	18.46	PC-8406	24	3	8.71	PCT-70	16	2	8.53	PMT-41	19	4	7.51	PMT-115	21	1	5.74
357	27	4	6.55	PC-8407	24	3	8.75	PCT-71	16	2	8.73	PMT-50	20	1	6.22	PMT-116	21	1	6.86
358	27	4	5.31	PC-8408	24	4	9.88	PCT-76	16	2	9.40	PMT-51	20	1	6.38	PMT-117	21	1	5.09
359	23	2	10.97	PC-8409	24	4	11.73	PCT-77	16	2	8.33	PMT-52	20	1	5.25	PMT-118	21	2	7.51
360	25	5	20.59	PC-8410	24	5	13.99	PCT-116	16	2	7.83	PMT-53	20	1	4.87	PMT-119	21	2	7.51
361	34	6	4.29	PC-8411	25	2	17.37	PCT-117	16	2	6.62	PMT-54	20	1	5.25	PMT-120	21	2	6.22
362	34	6	4.46	PC-8412	25	5	17.28	PCT-118	16	2	6.88	PMT-55	20	1	7.51	PMT-121	21	2	6.22
363	34	6	4.85	PC-8413	25	5	21.35	PCT-128	16	2	6.66	PMT-56	20	1	4.87	PMT-122	21	2	6.86
364	34	6	5.62	PC-8414	25	5	20.79	PM-8401	23	3	9.01	PMT-57	20	1	6.22	PMT-123	21	2	5.40
365	24	1	18.19	PC-8417	23	2	8.93	PM-8402	23	3	8.81	PMT-58	20	1	6.38	PMT-124	21	2	5.74
366	25	2	22.24	PC-8418	23	3	7.23	PM-8403	23	4	9.69	PMT-59	20	1	6.22	PMT-125	21	2	6.05
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371	24	3	22.92	PC-8431	23	4	7.86	PM-8407	24	3	8.99	PMT-63	20	1	4.74	PMT-129	21	3	7.51
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607	27	4	9.07	PCR-105	26	1	22.57	PMT-21	19	4	5.14	PMT-95	21	1	7.20	PMTF-63	20	1	5.09
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-8301	37	5	13.38	PCT-21	16	1	9.16	PMT-30	19	4	5.42	PMT-104	21	1	6.22	PMTF-72	20	1	5.74
-8302	37	5	15.71	PCT-23	16	1	9.99	PMT-31	19	4	5.14	PMT-105	21	1	6.55	PMTF-73	20	1	6.22
-8303	37	5	24.38	PCT-25	16	1	9.95	PMT-32	19	4	5.14	PMT-106	21	1	6.38	PMTF-74	20	1	7.25
-8304	37	5	22.51	PCT-30	16	1	9.62	PMT-33	19	4	5.42	PMT-107	21	1	6.22	PMTF-75	20	1	8.14
-8305	37	5	26.99	PCT-31	16	1	9.71	PMT-34	19	4	5.42	PMT-108	21	1	5.90	PMTF-76	20	2	5.74
-8306	37	5	23.59	PCT-39	16	1	9.40	PMT-35	19	4	5.42	PMT-109	21	1	5.57	PMTF-77	20	2	5.57
-8401	23	3	8.57	PCT-43	16	1	9.60	PMT-36	19	4	5.42	PMT-110	21	1	5.40	PMTF-78	20	2	7.84
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TS-136	21	3	11.21	PT-29	22	1	6.14	PT-94	22	4	5.74	PTH-50	22	2	10.79	PTM-11	22	1	12.60
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TS-138	21	3	10.66	PT-31	22	1	8.16	PT-96	22	4	5.74	PTH-52	22	2	10.79	PTM-13	22	1	12.60
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TS-142	21	3	10.66	PT-35	22	1	9.81	PT-100	22	4	6.38	PTH-56	22	3	10.79	PTM-17	22	1	12.60
TS-143	21	3	10.06	PT-36	22	1	9.81	PT-101	22	4	6.38	PTH-57	22	3	10.79	PTM-18	22	1	13.41
TS-144	21	3	10.71	PT-37	22	1	9.81	PT-102	22	4	6.38	PTH-58	22	3	10.79	PTM-19	22	1	13.41
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RP-2500	33	1	18.32
RS-1055	29	2	9.16
RS-1085	29	2	9.97
RS-1540	29	1	8.66
RS-1555	29	2	10.82
RS-1585	29	2	14.08
RS-8105	29	2	12.60
RS-8150	29	3	16.63
RS-8200	29	4	15.26
RS-8250	29	4	20.96
RS-8300	29	4	28.62
RS-12105	29	3	13.26
RS-12150	29	3	14.36
RS-12200	29	4	23.51
RT-201	31	1	8.51
RT-202	31	1	10.42
RT-204	31	1	15.76
RT-206	31	1	20.66
RT-208	31	1	26.90
RT-408	31	1	64.21
RT-2012	31	1	41.68
RT-4012	31	1	97.31
SD-50	36	2	11.62
SD-100	36	2	16.11
SD-150	36	2	22.74
SD-250	36	2	26.88
SD-500	36	2	33.60
SD-1000	36	2	55.59
SPCT-10	16	2	1.37
SR-300	15	13	40.21
SR-500	15	13	44.56
TA-1	17	1	3.46
TA-2	17	1	3.26
TA-3	17	1	2.70
TA-4	17	1	4.22
TA-5	17	1	5.99
TA-6	17	1	6.40
TA-7	17	1	3.46
TA-8	17	1	6.49
TA-9	17	1	6.49
TA-10	17	1	6.60
TA-11	17	1	5.25
TA-12	17	1	3.26
TA-13	17	1	7.51
TA-14	17	1	18.50
TA-15	15	15	2.66
TA-16	15	15	3.05
TA-17	15	15	11.17
TA-18	18	1	4.57
TA-19	18	1	5.42
TA-20	18	1	5.83
TA-21	18	1	5.09
TA-22	18	1	5.09
TA-23	18	1	5.03
TA-24	18	1	4.83
TA-25	18	1	5.31
TA-26	18	1	5.31
TA-27	18	1	5.55
TA-28	18	1	5.31
TA-29	18	1	4.83
TA-30	18	1	5.09
TA-31	18	1	5.31
TA-32	18	1	5.55
TA-33	18	1	5.37
TA-34	18	1	5.12
TA-35	18	1	4.38
TA-36	18	1	4.83
TA-37	18	1	4.83
TA-38	18	1	4.48
TA-39	18	2	4.59
TA-40	18	2	5.31
TA-41	18	2	4.38
TA-42	18	2	4.96
TA-43	18	2	5.55
TA-44	18	2	5.31
TA-45	18	2	5.12
TA-46	18	2	5.31
TA-47	18	2	5.31
TA-48	17	2	3.70
TA-49	17	2	5.85
TA-50	17	2	3.90
TA-51	17	2	3.29
TA-52	18	2	5.22
TA-53	18	1	4.85
TA-54	18	1	4.29
TA-55	18	2	6.36
TA-56	17	1	4.75
TA-57	17	1	4.63
TA-58	17	1	3.61
TA-59	17	1	3.72
TA-60	17	1	7.40
TA-61	17	1	3.81
TA-62	17	1	2.92
TA-63	18	2	5.77
TAPC-5	18	4	6.59
TAPC-19	18	3	5.40
TAPC-26	18	3	5.40
TAPC-27	18	3	
TAPC-28	18	3	
TAPC-30	18	3	
TAPC-31	18	3	
TAPC-32	18	3	
TAPC-34	18	3	
TAPC-35	18	3	
TAPC-36	18	3	
TAPC-38	18	3	
TAPC-47	18	5	
TAPC-52	18	5	
TAPC-63	18	5	
TC-1	30	3	
TC-2	30	3	
TP-1	34	1	
TP-2	34	1	
TP-3	34	1	
TP-4	34	1	
TP-5	34	1	
UM-114	18	6	
UME-11	16	3	
UME-12	16	3	
UME-13	16	3	
UME-14	16	3	
UME-15	16	3	
UME-16	16	3	
UME-17	16	3	
UME-18	16	3	
UME-19	16	3	
UME-20	16	3	
UME-21	16	3	
UME-22	16	3	
UME-23	16	3	
UME-24	16	3	
UME-25	16	3	
UME-26	16	3	
UME-27	16	4	
UME-28	16	4	
UME-29	16	4	
UME-30	16	4	
UME-31	16	4	
UME-32	16	4	
UME-33	16	4	
UME-34	16	4	
UME-35	16	4	
UME-36	16	4	
UME-37	16	4	
UME-38	16	4	
UME-39	16	4	
WF-20	14	5	
WF-21	14	5	
WF-22	14	5	
WF-28	14	5	
WF-30	14	5	
WF-35	14	5	
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H-63	41	4	53.65	4RMS-2165	41	7	14.62	FMS-3	41	2	53.65	PHR-55	39	5	27.75	TAMS-8	39	3	27.75
H-65	41	4	53.65	4RMS-2200	41	7	18.50	FMS-5	41	2	53.65	PHR-70	39	5	35.15	TAMS-9	39	3	27.75
H-610	41	4	53.65	4RMS-2300	41	7	22.20	FMS-8	41	2	53.65	PHR-105	39	5	53.65	TAMS-10	39	3	27.75
H-620	41	4	53.65	4RMS-3120	41	7	11.62	FMS-23	38	3	24.05	PHR-120	39	5	53.65	TAMS-11	39	3	27.75
MS-65	41	3	35.15	AMS-1	38	1	24.40	FMS-53	38	3	24.05	PHR-150	39	5	42.55	TAMS-12	39	3	27.75
MS-122	41	3	35.15	AMS-3	38	1	21.28	FMS-62	38	3	24.05	PHR-200	39	5	53.65	TM-1A	40	2	9.99
MS-2415	41	3	27.75	AMS-6	38	1	17.58	FMS-65	38	3	21.28	PMS-70	38	2	53.65	TM-2A	40	2	9.99
MS-160	41	9	27.75	AMS-7	38	1	35.15	FMS-210	38	3	24.05	PMS-70A	38	2	53.65	TM-5A	40	2	9.99
HC-165	41	6	79.55	AMS-8	38	1	27.75	FMS-210H	38	3	27.75	PMS-150	38	2	39.78	TM-8A	40	2	9.99
HC-200A	41	6	72.15	AMS-9	38	1	46.25	FMS-510	38	3	24.05	PMS-175	38	2	35.15	TM-80A	40	2	9.99
HR-300	41	6	109.15	BIH-1	38	5	35.15	FMS-510H	38	3	28.68	PMS-250	38	2	53.65	TM-100A	40	2	9.99
MS-40	41	5	49.95	BIH-7	38	5	35.15	HRP-400	40	1	59.20	PMS-350	38	2	53.65	TM-200A	40	2	9.99
MS-55	41	5	42.55	BIH-8	38	5	29.60	HRP-600	40	1	59.20	PMS-550	38	2	35.15	TM-500A	40	2	9.99
MS-70	41	5	42.55	BIH-10	38	5	29.97	HRP-800	40	1	59.20	PMS-800	38	2	53.65	TM-800A	40	2	9.79
MS-85	41	5	42.55	BOH-2	38	4	26.83	HRP-1600	40	1	59.20	RH-1055	40	4	15.73				
MS-105	41	5	42.55	BOH-4	38	4	35.15	HRP-2000	40	1	58.28	RH-1085	40	4	17.58				
MS-120	41	5	42.55	BOH-9	38	4	35.61	HRP-2500	40	1	58.28	RH-1585	40	4	18.50				
MS-150	41	5	72.15	CIH-1	39	1	35.15	PE-50	40	3	13.34	RH-8105	40	4	20.35				
MS-165	41	5	72.15	CIH-2	39	1	15.26	PE-75	40	3	9.99	RH-8150	40	4	20.35				
MS-200A	41	5	72.15	COH-1	39	2	18.50	PE-500	40	3	10.71	RH-8200	40	4	20.35				
MS-300	41	5	92.50	COH-2	39	2	35.15	PE-700	40	3	12.03	RH-12105	40	4	20.35				
H-2120	41	8	9.81	FH-25	41	1	38.85	PHC-55	39	4	19.45	RH-12150	40	4	20.35				
H-2165	41	8	12.95	FH-58	41	1	38.85	PHC-70	39	4	37.00	RH-12200	40	4	25.90				
H-2200	41	8	12.95	FH-65	41	1	46.25	PHC-105	39	4	36.08	TAMS-1	39	3	27.75				
MS-240	41	7	14.80	FH-210	41	1	16.51	PHC-120	39	4	36.08	TAMS-2	39	3	27.75				
MS-255	41	7	24.05	FH-215H	41	1	38.85	PHC-150	39	4	53.65	TAMS-3	39	3	27.75				
MS-270	41	7	46.25	FH-510H	41	1	38.85	PHC-165	39	6	53.65	TAMS-4	39	3	27.75				
MS-285	41	7	14.80	FH-520HB	41	1	57.35	PHC-200	39	4	53.65	TAMS-5	39	3	27.75				
MS-2120	41	7	14.62	FH-610	41	1	53.65	PHC-200A	39	6	53.65	TAMS-6	39	3	27.75				
MS-2150	41	7	20.35	FMS-2	41	2	53.65	PHC-250	39	4	53.65	TAMS-7	39	3	27.75				

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OUTPUT TRANSFORMER CHART

A simplified selection of the proper transformer for use as a replacement in radio receivers or in the co
struction of audio amplifiers. **To use this chart**, check the first column for the tube being used, then re
across for the applicable operating characteristics and correct Stancor transformer. In most cases, t
Stancor part numbers are indicated in order to give a choice of Mounting styles.

Tube	Use	Class	Watts	Load Res. in Ohms	Stancor Universal Part No.	Type
1A5-GT	S.	A	.10	25K	A-3327	
1AC5	S.	A	.05	25K	A-3327	
1AG4	S.	A	.035	12K	A-3879	A-3822
1B8-GT	S.	A	.21	14K	A-3881	A-3848
1C5-GT	S.	A	.24	8K	A-3329	A-3848
1D8-GT	S.	A	.20	12K	A-3879	A-3822
1E7-G (GT)	S.	A	.29	16K	A-3881	A-3848
	P.P.	A	.575	24K	A-3857	
1F4	S.	A	.31	16K	A-3881	A-3848
1F5-G	S.	A	.31	16K	A-3881	A-3848
1G5-G	S.	A	.55	9K	A-3879	A-3822
1G6-GT	P.P.	B	.675	12K	A-3831	A-3856
1J5-G	S.	A	.45	13.5K	A-3881	A-3848
1J6-G (GT) (GX)	P.P.	B	2.1	10K	A-3831	A-3856
1LA4	S.	A	.1	25K	A-3327	
1LB4	S.	A	.2	12K	A-3879	A-3822
1N6-G (GT)	S.	A	.1	25K	A-3327	
1Q5-GT	S.	A	.27	8K	A-3329	A-3848
1S4	S.	A	.27	8K	A-3329	A-3848
1T5-GT	S.	A	.17	14K	A-3881	A-3848
1V5	S.	A	.05	25K	A-3327	
1W4	S.	A	.2	12K	A-3879	A-3822
2A3	S.	A	3.5	2.5K	A-3876	A-3825
	P.P.	AB1	15	3K	A-3301	A-3830
2A5	S. •	A	4.8	7K	A-3878	A-3850
	P.P.	AB2	18.5	10K	A-3311	A-3830
2E24	S.	A	3.9	6K	A-3878	A-3848
2E26	S.	A	4.0	5.5K	A-3877	A-3849
2E30	S.	A	4.5	4.5K	A-3877	A-3849
3A4	S.	A	.7	8K	A-8114	A-3822
3B5-GT	S.	A	.2	5K	A-3878	A-3856
3B7/1291	P.P.	AB2	1.5	16K	A-2312	A-3880
3C5-GT	S.	A	.2	8K	A-3329	A-3848
	S.	A	.26	10K	A-3879	A-3848
3D6	S.	A	.6	14K	A-3881	A-3848
3E5	S.	A	.25	8K	A-3329	A-3848
3LE4	S.	A	.325	6K	A-3878	A-3848
3LF4	S.	A	.4	8K	A-3329	A-3848
3Q4	S.	A	.27	10K	A-3879	A-3822
3Q5-GT	S.	A	.4	8K	A-3329	A-3822
3S4	S.	A	.18	5K	A-3877	A-3856
	S.	A	.27	8K	A-3329	A-3848
3V4	S.	A	.27	10K	A-3879	A-3822
3W4	S.	A	0.25	11K	A-3879	A-3822
4A6-G	P.P.	B	1.0	8K		A-3856
5AQ5	S.	A	2.0	5.5K	A-3877	A-3849
	S.	A	4.5	5K	A-3877	A-3849
5CM6	S.	A	4.5	5K	A-3877	A-3856
	P.P.	AB1	10.	10K	A-3335	A-3823
5CZ5	S.	A	5.4	5K	A-3877	A-3849
	P.P.	AB1	21.5	7.5K		A-3830
5V6 (GT)	S.	A	5.5	5K	A-3877	A-3823
	P.P.	AB1	10.	10K	A-3311	A-3880
6A3	S.	A	3.2	2.5K	A-3876	A-3825
	P.P.	AB1	15	3K	A-3301	A-3830
6A4/LA	S.	A	1.4	8K	A-8114	A-3822
6A5-G	S.	A	3.75	2.5K	A-3876	A-3825
	P.P.	A	15	3K	A-3301	A-3830
6A6	P.P.	B	10	8K	A-3329	A-3822
6AB8	S.	A	1.4	11K	A-3879	
6AC5-GT	P.P.	B	8	10K	A-3335	A-3823
6AC6-GT	S.	A	3.6	3.5K	A-2203	A-3825
6AD7-G	S.	A	3.2	7K	A-2313	A-3822
6AE7-GT	P.P.		9.5	10K	A-2312	A-3880
6AG6-G	S.	A	3.8	8.4K	A-3329	A-3822
6AG7	S.	A	3	10K	A-3879	A-3822
6AH5-G	S.	A	10.8	4.2K	A-3337	A-3849
6AJ5	P.P.	AB1	1.0	28K	A-3857	
6AK6	S.	A	1.1	10K	A-3879	A-3822
6AK7	S.	A	3	10K	A-3879	A-3822
6AL6-G	S.	A	6.5	2.5K	A-3876	A-3825
6AL11	S.	A1	4	5K	A-3877	A-3856
6AM5	S.	A	1.4	16K	A-3881	A-3848
	P.P.	AB1	4.8	20K	A-3857	A-3856
6AN5	S.	A	1.3	2.5K	A-3332	A-3825
6AQ5A/W	S.	A	4.5	5K	A-3877	A-3849
6AQ5A/W	P.P.	AB1	10	10K	A-3335	A-3852
6AR5	S.	A	3.4	7.6K	A-8114	A-3822
6AS5	S.	A	2.2	4.5K	A-3877	A-3849
6B4-G	S.	A	3.2	2.5K	A-3876	A-3825
	P.P.	AB	15	3K	A-3401	A-3830
6B5	S.	A	4	7K	A-2313	A-3823
6BF5	S.	A	1.9	2.5K	A-3332	A-3825
6BF6	S.	A	0.3	10K	A-3879	A-3822
6BJ5	S.	A	4.0	7K	A-3878	A-3849
6BK5	S.	A	3.5	6.5K	A-3878	A-3849
6BM5	S.	A	3.5	7K	A-3878	A-3849
6BM8	S.	A	3.5	5.6K	A-3877	A-3822
6BQ5	S.	A	5.7	4.5K	A-8092	A-3849
	P.P.	AB1	11.0	8K	A-3335	A-3852
6BS5	S.	A	4.5	5K	A-3877	A-3849
6BU6	S.	A	0.3	10K	A-3879	A-3822
6BW6	S.	A	4.5	5K	A-3877	A-3823
	S.	A	5.5	8.5K	A-3879	A-3849
6CA5	S.	A1	1.5	4.5K	A-3877	A-3856
6CA7	S.	A	11.0	2K		A-3849
6CL6	S.	A	2.8	7.5K	A-3329	A-3822
6CM6	S.	A	4.5	5K	A-3877	A-3823
	P.P.	AB1	10.	10K	A-3335	A-3852
6CS5	S.	A	3.8	4K	A-3877	A-3856
6CU5	S.	A	2.3	2.5K	A-3332	A-3825
6CZ5	S.	A	5.4	5K	A-8092	A-3823
	P.P.	AB1	21.5	7.5K		A-3830
6D5G	S.	A	1.4	7.2K	A-3878	A-3856
6DB5	S.	A	3.8	4K	A-3877	A-3856
6DG6-GT	S.	A	3.8	4K	A-3877	A-3856
6DS5	S.	A	3.6	8K	A-8114	A-3822
6DZ8	S.	A	2.0	2.5K	A-3822	A-3825
6E6	P.P.	A	1.6	14K	A-3496	A-3856
6EH5	S.	A	1.4	3K	A-3328	A-3825
	P.P.	A	3.8	6K		A-3822
6F6(GT)	S.	A	4.8	7K	A-3878	A-3822
	P.P.	AB	18.5	10K	A-3311	A-3870
6FE5	S.	A1	4	1K	A-8070	
	P.P.	A1	8	1.6K		
6G6-G	S.	A	1.1	10K	A-3879	A-3822
6GC5	S.	A1	2	2K	A-3876	A-3856
	S.	A1	4	4K	A-2203	A-3856
6GK6	S.	A1	5.7	5.2K	A-3877	A-3823
	P.P.	AB1	17	8K		A-3852
6HG5	S.	A1	4.5	6K	A-8092	A-3823
6K6-GT	S.	A	4.5	9K	A-3879	A-3822
	P.P.	A	10.5	12K	A-2312	A-3880
6J10	S.	A1	4.2	5K	A-8092	A-3823
6L6(G)(GA)	S.	A	6.5	2.5K	A-3876	A-3825
	S.	A	10.8	4.2K	A-2203	A-3849
	P.P.	A	17.5	5K	A-3872	A-3830
	P.P.	AB1	26.5	6.6K	A-3801	A-3830
	P.P.	AB1	18	3.8K	A-3802	A-3830
	P.P.	AB2	31	6K	A-3307	
	P.P.	AB2	47	3.8K	A-3802	
6M5	S.	A	3.9	7K	A-3878	A-3824
	P.P.	AB1	9.4	7K	A-3801	A-3880
6N6-G	S.	A	4	7K	A-3878	A-3824
6N7	P.P.	B	10	8K		A-3880
6R8	S.	A	0.3	10K	A-3879	A-3856
6SR7	S.	A	0.3	10K	A-3879	A-3856
6U6-GT	S.	A	5.5	3K		A-3849
6V5-GT	S.	A	4.5	5K	A-3877	A-3824
	P.P.	AB1	10	10K	A-3311	A-3880
6V6(GT)	S.	A	5.5	5K	A-3877	A-3823
	P.P.	AB1	10	10K	A-3311	A-3880
6V7-G	S.	A	0.35	20K	A-3327	
6W6-GT	S.	A	3.8	5K	A-3877	A-3849
6Y6-G(GT)	S.	A	6.0	2.6K	A-3876	A-3825
6Y7-G	P.P.	B	8.0	14K	A-2312	A-3823
6Z7-G	P.P.	B	4.2	12K	A-3831	A-3823
7A5	S.	A	1.5	2.5K	A-3332	A-3849
7B5	S.	A	4.5	9K	A-3879	A-3822
	P.P.	AB2	19	10K	A-2312	A-3880
7C5	S.	A	5.5	8.5K	A-3879	A-3822
	P.P.	A	8	10K	A-3335	A-3823
8BQ5	S.	A	5.7	4.5K	A-8092	A-3849
	P.P.	AB1	11.0	8K	A-3335	A-3852
9DZ8	S.	A	2.0	2.5K	A-3332	A-3825
10AL11	S.	A1	4	5K	A-3877	A-3856
11C5	S.	A	1.5	2.5K	A-3332	A-3825
12A5	S.	A	3.4	3.3K	A-2203	A-3825
12A6(GT)	S.	A	3.4	7.5K	A-8114	A-3822
12A7	S.	A	.55	13.5K	A-3881	A-3848
12AB5	S.	A	4.5	5K	A-3877	A-3823
	P.P.	AB1	10.0	10K	A-3335	A-3849
12AL8	S.	A	0.02	.8K	TA-9	
12AL11	S.	A1	4	5K	A-3877	A-3856
12AQ5	S.	A	4.5	5K	A-3877	A-3823
	P.P.	AB1	10.0	10K	A-3335	A-3852
12BF6	S.	A	0.3	10K	A-3879	A-3856
12BK5	S.	A	3.5	6.5K	A-3878	A-3849
12BU8	S.	A	0.3	10K	A-3879	A-3856
12C5	S.	A	2.3	2.5K	A-3332	A-3825
12CA5	S.	A	1.5	4.5K	A-3877	A-3856
12CM6	S.	A1	2.0	5.5K	A-3877	A-3849
	S.	A1	5.5	8.5K		A-3849
12CS5	S.	A	3.8	4K	A-3877	A-3856
12CU5	S.	A	2.3	2.5K	A-3332	A-3825
12DB5	S.	A	3.8	4K	A-3877	A-3856
12DL8	S.	A	0.04	.8K	TA-9	
12DM5	S.	A	1.9	2.5K	A-3332	A-3825
12DU7	S.	A	0.025	2.7K	TA-29	
12DV8	S.	A	0.005	1.25K	TA-26	
12DZ8	S.	A	2.0	2.5K	A-3332	A-3825
12ED5	S.	A	1.5	4.5K	A-3328	A-3825
12EH5	S.	A	1.4	3K	A-3328	A-3825
	P.P.	AB1	3.8	6K		A-3822
12EM6	S.	A	0.01	3.5K	TA-45	
12FX5	S.	A1	1.3	3K	A-3336	A-3856
12J8	S.	A	0.02	2.7K	TA-29	
12K5	S.	A	0.04	.8K	TA-25	
12L6-GT	S.	A	3.8	4K	A-3877	A-3856
12L8-GT	S.	A	1.0	10K	A-3879	A-3848
12V6-GT	S.	A	4.5	5K	A-3877	A-3823
	P.P.	AB1	10.0	10K	A-8093	A-3880
12W6-GT	S.	A	3.8	4K	A-3877	A-3856
13J10	S.	A1	4.2	5K	A-8092	A-3823
14A5	S.	A	2.8	7.5K	A-8114	A-3822
14C5	S.	A	5.5	8.5K	A-2313	A-3849
	P.P.	AB	14	8K		A-3880
17C5	S.	A	2.3	2.5K	A-3332	A-3825
17CA5	S.	A	1.5	4.5K	A-3877	A-3856
17CU5	S.	A	2.3	2.5K	A-3332	A-3825
17L6-GT	S.	A	3.8	4K	A-3877	A-3856
19	P.P.	B	2.1	10K	A-3335	A-3880
19AQ5	S.	A	4.5	5K	A-3877	A-3849
25A6(GT)	S.	A	2.2	5K	A-3877	A-3849
25A7-GT	S.	A	.77	4.5K	A-3877	A-3825
25AC5-GT	P.P.	B	6	4.8K	A-3872	A-3823
	S.	A	2	2K	A-3332	A-3825
25B5	S.	A	3.3	4K	A-2203	A-3825
25B6-G	S.	A	7.1	2.5K	A-3876	A-3849
25BK5	S.	A	3.5	6.5K	A-3878	A-3849
25C5	S.	A1	2	2.5K	A-3332	A-3856
25C6-G	S.	A	6.0	2.6K	A-3876	A-3849
25CA5	S.	A	1.5	4.5K	A-3328	A-3825
25EH5	S.	A	1.4	3K	A-3328	A-3825
	P.P.	AB1	3.8	6K		A-3822
25F5	S.	A	1.2	2.5K	A-3332	A-3825
	P.P.	A	2.9	4.5K	A-3872	A-3825
25L6(GT)	S.	A	2.1	2K	A-3876	A-3825
	S	A	4.3	3K		A-3825
	S.	A	3.8	4K	A-2203	A-3825
25N6-G	S.	A	3.8	4K	A-2203	A-3825
25W6	S.	A	3.8	4K	A-3877	A-3825
26A7-GT	S.	A	.18	1.5K	A-3332	A-3825
26E6-G	S.	A	6.0	2.6K		A-3825
28D7	S.	A	.1	4K	A-3328	A-3825
32ET5	S.	A	1.2	2.8K	A-3328	A-3825
32L7-GT	S.	A	1	2.6K	A-3332	A-3825
34GD5A	S.	A	1.4	2.5K	A-3332	A-3825
35A5	S.	A	1.5	2.5K	A-3332	A-3825
	S.	A	3	5K	A-3877	A-3825
35B5	S.	A	1.5	2.5K	A-3332	A-3825
35C5	S.	A	1.5	2.5K	A-3332	A-3825
35DZ8	S.	A	2.0	2.5K	A-3332	A-3825
35EH5	S.	A1	1.2	3K	A-3336	A-3825
35L6-GT	S.	A	1.5	2.5K	A-3332	A-3825
	S.	A	3	5K	A-3877	A-3825
42	S.	A	4.8	7K	A-3878	A-3825
	P.P.	A	18.5	10K	A-3311	A-3825
50A5	S'	A	2.1	2K	A-3876	A-3825
	S.	A	3.8	4K	A-2203	A-3825
50B5	S.	A	1.9	2.5K	A-3332	A-3825
50BK5	S.	A	3.5	6.5K	A-3878	A-3825
50C5	S.	A	1.9	2.5K	A-3332	A-3825
50C6-G	S.	A	3.6	2K	A-3876	A-3825
50CA5	S.	A	1.1	3.5K	A-3328	A-3825
50EH5	S.	A	1.4	3K	A-3328	A-3825
	P.P.	A	3.8	6K		A-3825
50FE5	S.	A1	4	1K	A-8070	
	P.P.	A1	8	1.6K		
50FK5	S.	A1	1.2	3K	A-3336	A-3825
50L6-GT	S.	A	2.1	2K	A-3876	A-3825
	S.	A	3.8	4K	A-2203	A-3825
60FX5	S.	A1	1.3	3K	A-3336	A-3825
70A7-GT	S.	A	1.5	2.5K	A-3332	A-3825
70L7-GT	S.	A	1.8	2K	A-3332	A-3825
117L7/M7-GT	S.	A	.85	4K	A-2203	A-3825
117N7-GT	S.	A	1.2	3K	A-3332	A-3825
117P7-GT	S.	A	.85	4K	A-2203	A-3825
1631	P.P.	AB1	26.5	6.6K	A-3801	
1632	S.	A	2.1	2K	A-3332	A-3825
1644	P.P.	A	1.0	10K	A-3831	A-3825
5640	S.	A	1.25	3K	A-3332	A-3825
5670	P.P.	AB1	1.0	27K	A-3857	
5672	S.	A	.065	20K	A-3327	
5686	S.	A	2.7	9K	A-3879	A-3825
5812	S.	A	4.3	1.7K	A-3876	A-3825
5824	S.	A	4.3	1.7K	A-3876	A-3825
5871	S.	A	5.5	8.5K	A-3879	A-3825
5902	S.	A	1	3K	A-3328	A-3825
6005	S.	A	2.0	5.5K	A-4431	A-3825
6095	P.P.	AB1	10.0	10K	A-3335	A-3825
6216	S.	A	3.8	4.5K	A-3877	A-3825
6287	S.	A	4.5	6K	A-4431	A-3825
6360	P.P.	AB1	9.3	8K	A-3335	A-3825
6516	S.	A	1.4	16K	A-3881	A-3825
6526	S.	A	0.375	10K	A-3879	A-3825
6669	S.	A	4.5	5K	A-3877	A-3825
	P.P.	AB1	10.0	10K	A-8093	A-3825
6677	S.	A	2.8	7.5K	A-8114	A-3825
6945	S.	A	0.8	3K	A-3328	A-3825
6973	P.P.	AB1	15	5.5K	A-3307	A-3825
	P.P.	AB1	20	7.5K	A-3885	A-3825
7061	S.	A	3.0	5K	A-3877	A-3825

High Fidelity Applications

Tube	Use	Class	Watts	Load Res. in Ohms	Stancor Part No.
807/W	P.P.	A	8.0	10K	A-8054
	P.P.	A	25.0	7.6K	A-8072
	P.P.	AB1	15.0	3K	A-8052
	P.P.	AB2	55.0	3.2K	A-8052
1614	P.P.	A	10.0	10K	BO-12
	P.P.	AB1	26.5	6.6K	A-8056
5881	P.P.	A	8.0	10K	BO-12
	P.P.	A	25.0	7.6K	A-8072
	P.P.	AB1	26.5	6.6K	A-8056
6146	P.P.	A	18.0	10K	BO-13
6550	P.P.	A	55.0	3.5K	A-8052
	P.P.	AB1	60.0	4.3K	BO-15
	P.P.	AB1	100.0	5K	BO-14
7027	P.P.	AB1	31.5	4.5K	A-8053
	P.P.	AB1	34.0	6.6K	A-8056
	P.P.	AB1	50.0	6K	A-8056
	P.P.	AB	24.0	8K	A-8072
7189	P.P.	AB1	24.0	8K	A-8072
	P.P.	AB1	16.5	11K	BO-13
7212	P.P.	TR1	22.0	8K	A-8072
	P.P.	AB1	37.0	6.6K	A-8056
7408	S.	A1	4.5	5K	A-8092
7868	S.	A1	11	3K	A-3830
	P.P.	AB1	30	6.6K	A-8056
EL-34	P.P.	AB1	37.0	6.6K	A-8056
(6CA7)	P.P.	AB1	60.0	4.3K	BO-15
EL-37	P.P.	AB1	69.0	3.25K	BO-15
EL-84	S.	A	5.7	5.2K	A-8053
(6BQ5)	P.P.	AB1	17.0	8K	A-8072
KT-66	P.P.	A	10.0	10K	A-8054
	P.P.	AB1	20.0	10K	BO-13
	P.P.	AB1	25.0	7.6K	A-8072
KT-88	P.P.	AB1	60.0	4.3K	BO-15
	P.P.	AB1	100.0	5K	BO-14

K is symbol for 1,000: 25K=25,000 2.5K=2,500 .25K=250

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OUTPUT TRANSFORMERS

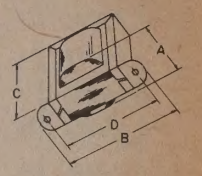
ESSEX Stancor/RBM | STANCOR

OUTPUT: SINGLE PLATE TO VOICE COIL AND/OR LINE

Section	Catalog No.	Style	Impedance in Ohms Primary	Impedance in Ohms Secondary	Max Pri DCMA	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.	Styles
1	A-8070	A	1000	4.0	90	4	Leads	Leads	1½	2⅜	1⅜	2	—	0.4	
	A-3332	A	2000	3.2	50	3	Leads	Leads	1¼	2⅛	1¼	1¾	—	0.4	
	A-3330	A	2000 a	3.5	60	5	Leads	Leads	1½	2⅜	1⅜	2	—	0.4	
	A-3876	A	2000	4.0	60	5	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.4	
	A-3336	A	2500 b	3.5	50	5	Leads	Leads	1⅝	2⅜	1⅜	2	—	0.4	
	A-3328	A	4000	3.5	10	3	Leads	Leads	1⅛	2⅛	1¼	1¾	—	0.4	
	A-2203	A	4000	8.0	40	5	Leads	Leads	1½	2⅞	1⅝	2⅜	—	0.7	
	A-3877	A	5000	4.0	40	5	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.4	
	A-3309	A	5000	3-4	35	3	Leads	Leads	1⅜	2⅛	1¼	1¾	—	0.4	
	A-8092	A	5000	3-4	50	8	Leads	Leads	1½	2⅞	1⅝	2⅜	—	0.5	
	A-3337	S	5000	6-8	40	10	Leads	Leads	1¾	2⅞	2⅜	2⅜	—	1.0	
	A-3310	C	5000	500/15/8/4	55	20	Leads	Leads	2½	2¾	3⅛	2	1¾	2.5	
	COC-1	SC	5000	600/150/16/8/4	55	5	Leads	Leads	2½	3	3⅛	1¾	2 11/16	2.25	
	COS-1	SC	5000	600/150/16/8/4	55	5	Lugs	Lugs	2½	3	3⅛	1¾	2 11/16	2.25	
	A-4431	A2	6000	3-4	35	5	Leads	Leads	1½	—	1⅝	1¾	1 1/16	0.8	
2	A-3878	A	7000	4.0	30	5	Leads	Leads	1¼	2⅜	1⅜	2	—	0.4	
	A-2313	A	7000	8.0	40	10	Leads	Leads	2	3¼	2	2 13/16	—	1.0	
	A-3841	S	7000/6000/5000 4000/2500	500	60	10	Lugs	Lugs	2	3⅛	2¾	2 13/16	—	1.5	
	A-4770	S	7000/6000/5000 4000/2500	500	60	20	Leads	Lugs	2⅛	3⅝	3⅛	3⅛	—	2.4	
	A-8114	A	7600	3.2	32	5	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.4	
	A-3329	A	8000	3.5	10	3	Leads	Leads	1⅛	2⅛	1¼	1¾	—	0.4	
	COC-2	SC	8000	600/150/16/8/4	55	5	Leads	Leads	2½	3	3⅛	1¾	2 11/16	2.25	
	COS-2	SC	8000	600/150/16/8/4	55	5	Lugs	Lugs	2½	3	3⅛	1¾	2 11/16	2.25	
	A-3879	A	10000	4.0	30	5	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.4	
	A-3881	A	15000	4.0	10	5	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.4	
	A-3250	A	20000/10000 5000	500/333/200 125/50	15	5	Lugs	Lugs	1⅞	3¼	2	2 13/16	—	1.0	
	A-3315	C	20000/10000 5000	500/333/200 125/50	35	20	Lugs	Lugs	2½	2¾	3⅛	2	1¾	2.7	
	A-3327	A	25000	4.0	5	5	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.4	

OUTPUT: PUSH-PULL PLATES TO VOICE COIL AND/OR LINE

Section	Catalog No.	Style	Impedance in Ohms Primary	Impedance in Ohms Secondary	Max Pri DCMA	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.	Styles
3	A-8098	C	2000 C.T.	32/16/8	140	15	Leads	Leads	2½	3¼	3⅛	2	2¼	3.3	
	A-3802	C	3800/3300 C.T.	500/250/8/4	125	75	Leads	Leads	3¾	4	4 11/16	3	2 13/16	7.9	
	A-8094	A	4000 C.T.	32/16/8	80	7.5	Leads	Leads	2¼	3¾	2⅜	3⅛	—	1.5	
	A-3851	C	4400 C.T. c	500/250/15/8/4	70	30	Leads	Leads	2 13/16	3¼	3½	2¼	2	3.6	
	A-3872	SC	5000 C.T.	15/8/4	75	18	Leads	Leads	2¼	2¾	2 11/16	1½	2⅜	1.7	
	A-3800	C	5000 C.T.	500/250/15/8/4	80	30	Leads	Leads	2 13/16	3¼	3½	2¼	2	3.7	
	A-3307	C	6000 C.T.	500/15/8/4	100	30	Leads	Leads	2 13/16	3¼	3½	2¼	2	3.5	
	PCO-200	SC	6000 C.T. c	600/150/16/8/4	250	30	Leads	Leads	4 9/16	5¼	5 5/16	2½	4¾	9.0	
	PSO-200	SC	6000 C.T. c	600/150/16/8/4	250	30	Lugs	Lugs	4 9/16	5¼	5 5/16	2½	4¾	9.0	
	A-3801	C	6600 C.T.	500/250/15/8/4	150	35	Leads	Leads	3⅛	3½	3⅞	2½	2 3/16	4.8	
	A-3885	C	9000 C.T.	500/250/15/8/4	150	35	Leads	Leads	3⅛	3⅜	3⅞	2½	2 3/16	4.8	
	A-4432	S2	10000 C.T.	4.0	50	10	Leads	Leads	1⅝	—	2⅜	1⅞	1 1/16	1.0	
	A-3304	C	10000/7000 C.T.	500/15/8/4	60	25	Leads	Leads	2½	2¾	3⅛	2	1¾	2.7	
	A-3311	C	10000 C.T.	500/15/8/4	70	25	Leads	Leads	2 13/16	3¼	3½	2¼	2	3.5	
	A-3831	A	10000 C.T.	8/4/2	40	5	Leads	Leads	1¾	2⅞	1⅝	2⅜	—	0.7	
4	A-8093	A	10000 C.T.	3-4	40	10	Leads	Leads	1½	2⅞	1⅝	2⅜	—	0.7	
	A-3335	S	10000 C.T.	6-8/3.2-4	40	10	Leads	Leads	2	2⅞	2⅜	2⅜	—	1.0	
	PCO-150	SC	10000 C.T. c	600/150/16/8/4	200	15	Leads	Leads	3¼	4	4¼	2¼	3½	5.0	
	PSO-150	SC	10000 C.T. c	600/150/16/8/4	200	15	Lugs	Lugs	3¼	4	4¼	2¼	3½	5.0	
	A-3839	SC	10000 C.T.	2000 and 15/8/4	30	10	Leads	Leads	2¼	2¾	2 11/16	1½	2⅜	1.3	
	PCO-150A	SC	12000 C.T.	600/150/16/8/4	200	15	Leads	Leads	3¼	4	4¼	2¼	3½	5.0	
	A-2312	A	14000 C.T.	4.0	40	10	Leads	Leads	1⅞	2⅞	1⅝	2⅜	—	1.0	
	A-3496	A	14000 C.T.	4.0	25	5	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.4	
	A-3303	C	14000 C.T.	500/15/8/4	55	20	Leads	Leads	2½	2⅝	3⅛	2	1 11/16	2.7	
	A-3842	S	14000/12000 10000/8000 C.T.	500	55	10	Lugs	Lugs	2	3⅛	2¾	2 13/16	—	1.7	
	A-3250	A	20000 C.T.	500/333/200 125/50	15	5	Lugs	Lugs	1⅞	3¼	2	2 13/16	—	1.0	
	A-3315	C	20000 C.T.	500/333/200 125/50	35	20	Lugs	Lugs	2½	2¾	3⅛	2	1 11/16	2.7	
	A-3857	A	25000 C.T.	4.0	10	5	Leads	Leads	1½	2⅜	1⅜	2	—	0.4	



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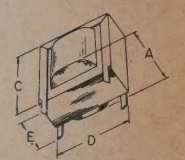

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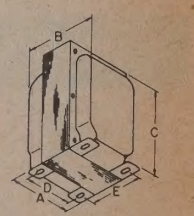

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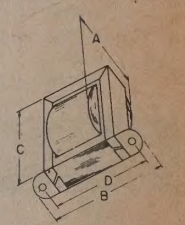

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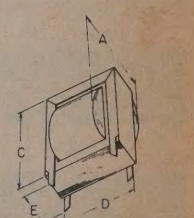

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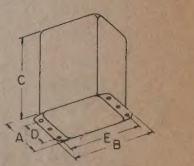

SC

a Has 4.5% primary Tap. b Has 3% and 6% primary Taps. c Has Tertiary Winding to provide 10% inverse feedback.

ESSEX Stancor/RBM | STANCOR

OUTPUT TRANSFORMERS

UNIVERSAL OUTPUT

Section	Catalog No.	Style	Impedance in Ohms Primary	Impedance in Ohms Secondary	Max Pri DCMA	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.	Styles
1	A-3856	A	S. or P.P. Plates 4000 to 14000	.05 to 122	35	4	Leads	Lugs	1½	2⅜	1⅜	2	—	0.4	A
	A-3822	A	S. Plate 7000 to 10000	.7 to 4	35	4	Leads	Lugs	1⅜	2⅜	1⅜	2	—	0.4	
	A-3848	A	S. Plate 7000 to 16000	.4 to 4	10	5	Leads	Lugs	1⅜	2⅜	1⅜	2	—	0.4	
	• A-3326	A	S. or P.P. Plates 1500 to 7000	.48 to 28.7	50	6	Leads	Lugs	1⅝	2⅜	1⅜	3	—	0.4	
	A-3823	A	S. or P.P. Plates 4000 to 14000	.05 to 122	40	8	Leads	Lugs	1⅝	2⅞	1⅝	2⅜	—	0.7	
	A-3850	S	S. or P.P. Plates 4000 to 14000	.05 to 122	40	8	Leads	Lugs	1⅝	2⅜	2	2	—	0.7	
	A-3825	A	S. Plate 1500 to 4500	.3 to 4	75	8	Leads	Lugs	1¾	3¼	2	2 13/16	—	0.9	
	A-3824	A	S. or P.P. Plates 6000 to 10000	.6 to 4	75	8	Leads	Lugs	2	3¼	2	2 13/16	—	1.4	
	A-3849	A	S. Plate 1500 to 10000	.02 to 21	55	10	Lugs	Lugs	1½	2⅞	1⅝	2⅜	—	0.7	
	A-3880	A	P.P. Plates 4000 to 14000	.05 to 122	40	15	Lugs	Lugs	2⅛	3¾	2⅜	3⅛	—	1.7	B
	A-2855	L	P.P. Plates 4000 to 14000	.05 to 122	50	15	Lugs	Lugs	2⅜		2	1½	1 3/16	1.0	
	A-3890	SC	P.P. Plates 4000 to 14000	.05 to 122	50	15	Leads	Leads	2¼	2¾	2 11/16	1½	2⅜	1.5	
	A-3852	S	P.P. Plates 4000 to 14000	.05 to 122	40	18	Leads	Lugs	2	2⅞	2⅜	2⅜	—	1.3	
	A-3870	A	P.P. Plates 4000 to 14000	.05 to 122	50	18	Lugs	Lugs	2	3¼	2	2 13/16	—	1.3	
	A-3830	S	P.P. Plates 3000 to 10000	.04 to 122	60	20	Leads	Lugs	2⅛	3⅛	2¾	2 13/16	—	1.8	

OUTPUT: HIGH FIDELITY: FREQ. RESPONSE ±1 DB 20 to 20,000 CYCLES

Section															
2	A-8050	C	1500 C.T.	16/8	200	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	C
	A-8060	C	1500 C.T.	500	200	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8051	C	2500 C.T.	16/8	150	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8061	C	2500 C.T.	500	150	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8052	C	3000 C.T.	16/8	175	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8062	C	3000 C.T.	500	175	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8053	C	5000 C.T.	16/8	150	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8063	C	5000 C.T.	500	150	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8056	C	6600 C.T.	16/8	125	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8066	C	6600 C.T.	500	125	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8072	C	7600 C.T. a	16/8/4	100	25	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8054	C	9000 C.T.	16/8	100	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	
	A-8064	C	9000 C.T.	500	100	50	Leads	Leads	3 7/16	4¼	4¼	2¾	3 1/16	6.5	

OUTPUT: HIGH FIDELITY: FREQ. RESPONSE ±1½ DB 30 TO 20,000 CYCLES

Section															
3	BO-1	B	15,000 b	600/150	10	.032	Lugs	Lugs	2⅜	2½	3 1/16	1 11/16	1 13/16	2.25	L
	BO-2	B	20,000 C.T.	600/150	10	1.0	Lugs	Lugs	2 11/16	2⅞	3½	1⅞	2	3.0	
	BO-5	B	10,000 C.T.	600/150/16/8/4	45	5.0	Lugs	Lugs	3	3¼	3⅞	2⅛	2⅜	4.0	
	BO-6	B	7500 C.T.	20/8	80	20	Lugs	Lugs	3 5/16	3 11/16	4 5/16	2⅜	2⅝	5.75	
	BO-9	B	5000/3000 C.T.	600/150/16/8/4	75	15	Lugs	Lugs	3 5/16	3 11/16	4 5/16	2⅜	2⅝	6.0	

TONE CONTROL CHOKE: WRITE FOR BULLETIN 456R

4	C-2332-1		1.6 hy	For use in Pre-amplifiers for Separate Tone Control				h = 2½, w = 2, d = 2⅛	1.3

LINE TO VOICE COIL Quotes on modifications of our STANDARDS in minimum quantities of 500

Section	STANCOR Part No.	Style	Impedance in Ohms Primary	Impedance in Ohms Sec.	Power Steps in Watts	Termination Pri	Termination Sec	Height Overall	Base Area	Mtg. Ctrs.	WT. Lbs.	Styles
5	A-8104	S	3000/2000/1500/1000/500	4/8/16	10	Lugs	Lugs	2⅜	2⅞ x 1¾	2⅜	1.5	S
	A-3882	C	500/333/250	4/8/15	25	Lugs	Lugs	3⅛	2¾ x 2½	2 x 1 11/16	2.4	
	A-3818	S	1500/1000/500	4/8/15	25	Lugs	Lugs	3⅛	3⅝ x 2⅛	3⅛	2.2	
	A-3883	S	500	4/6/8/15	25	Lugs	Lugs	2⅜	2⅞ x 1¾	2⅜	1.1	
	A-8101	A	500	3.2/6-8	5	Lugs	Leads	1⅜	2 7/16 x 1⅜	2	0.4	
	A-7947	A	2000/1500/1000/500	3.2/6-8	8	Lugs	Lugs	1⅝	2⅞ x 1⅝	2⅜	0.7	
	A-7949	S	2000/1500/1000/500	3.2/6-8	12	Lugs	Lugs	2⅜	2⅞ x 1¾	2⅜	1.1	
	A-3837	S	500	.06 to 48	15	Lugs	Lugs	2⅜	2⅞ x 2	2⅜	1.4	SC

a. Has Screen grid taps on primary. b. Has Tertiary Winding to provide 15% inverse feedback. c. Has cathode feedback Winding.
• New part number.

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OUTPUT TRANSFORMERS

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hese units are also available with separate "quick connect" lead assemblies or easy installation. Quotations submitted on request.

NOTE

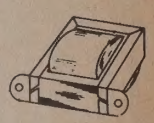
25 VOLT LINE TO VOICE COIL

Quotes on modifications of our STANDARDS in minimum quantities of 500

ection	STANCOR Part No.	Style	Impedance in Ohms Primary	Impedance in Ohms Sec.	Power Steps in Watts	Termination Pri	Termination Sec	Height Overall	Base Area	Mtg. Ctrs.	WT. Lbs.	Styles
1	A-8096	S	78/156/312/625/1250	4/8/16	8/4/2/1/0.5	Lugs	Lugs	2	1⅝ x 2⅞	2	0.65	
	A-8097	S	39/78/156/312/625/1250	4/8/16	16/8/4/2/1/0.5	Lugs	Lugs	2¾	2¼ x 3⅛	2 13/16	1.6	
	A-8095	A	125/250/500/1000/2000	4/8	5/2.5/1.25/.62/.31	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	A-8099	A	312/625/1250	4/8	2/1/0.5	Lugs	Lugs	1¼	2⅛ x 1⅜	1¾	0.3	
	A-8087	A	312/625/1250	8	2/1/0.5	Leads	Leads	1⅜	2⅜ x 1⅜	2	0.4	
	• A-4790	A	500/1000/2000	8	1.25/.62/.31	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	• A-4791	A	125/250/500	8	5/2.5/1.25	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	• A-4793	S	78/156/312/625/1250	8	8/4/2/1/0.5	Lugs	Lugs	2	1⅝ x 2⅞	2	0.65	
	• A-4795	S	39/78/156/312/625/1250	8	16/8/4/2/1/0.5	Lugs	Lugs	2¾	2¼ x 3⅛	2 13/16	1.6	
	A-8088	A	156/312/625/1250/2500/5000	8	4/2/1/.5/.25/.12	Leads	Leads	1⅝	2⅞ x 1⅝	2⅜	0.7	A
	• A-4797	A	156/312/625/1250/2500	8	4/2/1/.5/.25	Lugs	Lugs	1⅝	2⅞ x 1⅝	2⅜	0.7	
	• A-4798	A	62.5/125/250	8	10/5/2.5	Lugs	Lugs	1⅝	2¾ x 1⅜	2⅜	0.5	
	• A-4792	A	125/250/500/1000/2000	4	5/2.5/1.25/.62/.31	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	• A-4794	S	78/156/312/625/1250	4	8/4/2/1/0.5	Lugs	Lugs	2	1⅝ x 2⅞	2	0.65	
	• A-4796	S	39/78/156/312/625/1250	4	16/8/4/2/1/0.5	Lugs	Lugs	2¾	2¼ x 3⅛	2 13/16	1.6	

LINE TO LINE

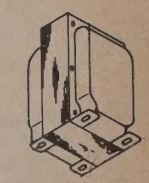
2	A-4350	A	50/125/200/333/500	50/125/200/333/500	10	Lugs	Lugs	2	1⅞ x 3¼	2 13/16	1.0	
	A-4407	C	50/125/200/333/500	50/125/200/333/500	20	Lugs	Lugs	3⅛	2½ x 2¾	2x1¾	2.4	S
	A-3838	NV	500	84/100/125/166/250	30	Lugs	Lugs	3⅛	2½ x 2 11/16	2 x 2	2.3	



70.7 VOLT LINE TO VOICE COIL

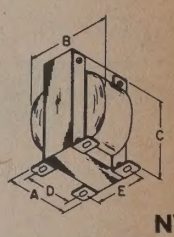
Quotes on modifications of our STANDARDS in minimum quantities of 500

3	A-8102	S	625/1250/2500/5000/10,000	4/8/16	8/4/2/1/0.5	Lugs	Lugs	2	1⅝ x 2⅜	2	0.7	
	A-8103	S	312/625/1250/2500/5000/10,000	4/8/16	16/8/4/2/1/0.5	Lugs	Lugs	2¾	2¼ x 3⅛	2 13/16	1.5	
	A-8105	A	1000/2000/4000/8000/16,000	4/8	5/2.5/1.25/.62/.31	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	A-8109	A	2500/5000/10,000	4 8	2/1/0.5	Lugs	Lugs	1¼	2⅛ x 1⅜	1¾	0.3	
	A-8080	A	1000/1250/1667/2500/5000	8/16	5/4/3/2/1	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	A-8082	S	333/357/384/417/455	8/16	15/14/13/12/11	Lugs	Lugs	2⅜	2⅞ x 1¾	2⅜	1.2	
	A-8081	S	500/555/625/715/833	8/16	10/9/8/7/6	Lugs	Lugs	2	2⅞ x 1⅝	2	0.7	
	A-8083	A	2500/5000/10,000	8	2/1/0.5	Leads	Leads	1⅜	2⅞ x 1⅜	2	0.4	
	• A-4781	A	1000/1250/1667/2500/5000	8	5/4/3/2/1	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	• A-4782	S	333/357/384/417/455	8	15/14/13/12/11	Lugs	Lugs	2⅜	2⅞ x 1¾	2⅜	1.2	
	A-8084	A	1250/2500/5000/10,000/20,000/40,000	8	4/2/1/.5/.25/.12	Leads	Leads	1⅝	2⅞ x 1⅝	2⅜	0.7	
	• A-4783	A	1250/2500/5000/10,000/20,000	8	4/2/1/.5/.25	Lugs	Lugs	1⅝	2⅞ x 1⅝	2⅜	0.7	
	• A-4784	S	500/625/833	8	10/8/6	Lugs	Lugs	2	2⅞ x 1⅝	2	0.7	
	• A-4785	S	625/1250/2500/5000/10,000	8	8/4/2/1/0.5	Lugs	Lugs	2	1⅝ x 2⅜	2	0.7	
	• A-4787	A	4000/8000/16,000	8	1.25/.62/.31	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	• A-4789	A	1000/2000/4000	8	5/2.5/1.25	Lugs	Lugs	1⅜	2⅞ x 1½	2	0 4	
	• A-4799	A	500/1000/2000	8	10/5/2.5	Lugs	Lugs	1⅝	2¾ x 1⅜	2⅜	0.5	
	• A-4786	S	625/1250/2500/5000/10,000	4	8/4/2/1/0.5	Lugs	Lugs	2	1⅝ x 2⅜	2	0.7	
	• A-4788	A	1000/2000/4000/8000/16,000	4	5/2.5/1.25/.62/.31	Lugs	Lugs	1⅜	2⅞ x 1½	2	0.4	
	• A-8076	S	250/500/1000/2000	4/8/16	20/10/5/2.5	Lugs	Lugs	2⅜	2⅞ x 1⅞	2⅜	1.0	
	• A-8077	S	208/416/833/1666/3333	4/8/16	24/12/6/3/1.5	Lugs	Lugs	2¾	3⅛ x 2	2 13/16	1.5	
	• A-8078	S	167/250/500/1000	4/8/16	30/20/10/5	Lugs	Lugs	2⅜	2⅞ x 1¾	2⅜	1.0	
	• A-8079	S	100/125/200/333	4/8/16	50/40/25/15	Lugs	Lugs	2⅜	2⅞ x 2	2⅜	1.4	



140 VOLT LINE TO VOICE COIL

4	A-8108	A	4000/8000/16,000/32,000	4/8	5/2.5/1.25/.62	Lugs	Lugs	1⅜	1½ x 2⅜	2	0.4	
	A-8106	S	2500/5000/10,000/20,000	4/8/16	8/4/2/1	Lugs	Lugs	2	1⅝ x 2⅜	2	0.7	
	A-8107	S	1250/2500/5000/10,000/20,000	4/8/16	16/8/4/2/1	Lugs	Lugs	2¾	2 x 3⅛	2 13/16	1.8	



NV

• New Part Number.

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OUTPUT TRANSFORMERS
TECHNICAL DATA

The Constant Voltage Line Sound Distribution Systems have become the most widely accepted systems in use today. They offer the Sound Engineer an easy means of establishing the volume level of each speaker in a system without the use of potentiometers or similar devices. The proven simplicity and versatility of these systems minimize the problem of speaker impedance mismatching thereby insuring high quality sound reproduction and minimum power losses. The use of higher power driving the constant voltage lines also helps to lower power losses over longer distances.

Most of the newer P.A. amplifiers have a designated 25 volt, 70.7 volt or 140 volt outlet on the output transformer, but almost any older amplifier has an impedance tap which may be used for the desired voltage output.

To insure a steady maintenance of the desired line voltage, it is recommended that the amplifier should be *capable* of producing 1½ times the total power of the various speakers connected. Hence, if the sum of the speakers equals 25 watts, the driving amplifier should be *capable* of producing 37½ watts. The power and impedance figures shown here with the formulas are based on the total power actually supplied to the speakers and *not* on the maximum *capability* of the amplifier.

The following table lists various amplifier power outputs with the corresponding impedance tap on the output transformer which will supply these three basic line voltages:

POWER OUTPUT	IMPEDANCE FOR 140 VOLT LINE	IMPEDANCE FOR 70.7 VOLT LINE	IMPEDANCE FOR 25 VOLT LINE
WATTS	OHMS	OHMS	OHMS
5	4,000	1,000	125
10	2,000	500	62.5
15	3,333	333	41.7
20	1,000	250	31.2
25	800	200	25
30	666	166	21
40	500	125	15.6
50	400	100	12.5
60	333	83	10.5
80	250	62.5	7.8
100	200	50	6.3

For power ratings not shown in this table, use the following formula:

$$Z = \frac{E^2}{W}$$

Z = Ohms
E = Volts
W = Watts Output

Impedance Tap for:

$$\text{140 volt line} = \frac{20{,}000}{W}$$

$$\text{70.7 volt line} = \frac{5{,}000}{W}$$

$$\text{25 volt line} = \frac{625}{W}$$

To establish the volume level of the various speakers in the system, it is necessary to know the power output of the amplifier and the power desired at each speaker. To choose the correct line transformers, match the power to be delivered to each speaker with the power tap on the line transformer. Then connect the primaries of the line transformers in parallel to the proper voltage tap on the output transformer of the amplifier. When the sum of the power ratings shown on each line transformer is equal to the power rating of the amplifier, and the speakers are connected to the appropriate secondary taps, the system is correctly matched.

To determine the proper tap on the primary of the line transformer for a given wattage input to the speaker, use the formula:

$$Z = \frac{E^2}{W}$$

EXAMPLE: In a 70.7 volt system, assume that the speaker requires 5 watts. What is the impedance of the tap required to produce this wattage?

$$Z = \frac{E^2}{W} = \frac{70.7 \times 70.7}{5} = \frac{5{,}000}{5} = 1{,}000 \text{ Ohms}$$

To determine the wattage input to the speaker when the tap is already connected, use the formula:

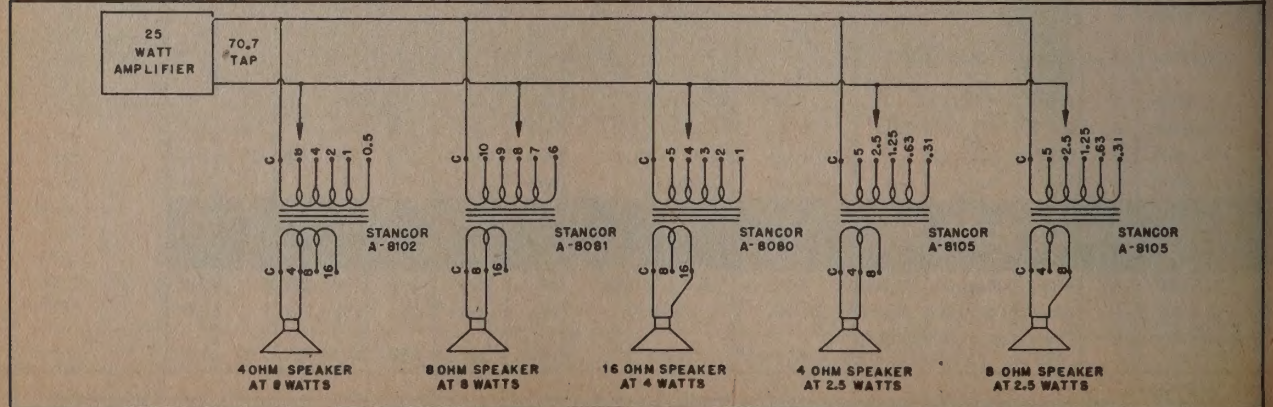
$$W = \frac{E^2}{Z}$$

EXAMPLE: In a 70.7 volt system, assume a speaker connected to the 500 Ohm tap of the primary of the line transformer. What wattage is produced by the use of this tap?

$$W = \frac{E^2}{Z} = \frac{70.7 \times 70.7}{500} = \frac{5{,}000}{500} = 10 \text{ Watts}$$

REMEMBER: Each speaker must have its own line-matching transformer and all of the line-matching transformers are connected in parallel to the proper voltage tap on the output transformer of the amplifier.

A TYPICAL 70.7 VOLT LINE DISTRIBUTION SYSTEM SHOWING THE PROPER STANCOR UNIT



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AUDIO TRANSFORMERS

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FOR INTERCOMS AND TRANSCEIVERS

ction	Catalog No.	Style	Application	Impedance in Ohms Primary	Impedance in Ohms Secondary	Audio Watts	Termination Pri	Termination Sec	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	WT. Lbs.	Styles
1	A-4744	VE	Intercom Input	4	25,000	—	Leads	Leads	1½	2⅜	1⅜	2	—	0.5	A
	A-4748	A	Intercom Input	45 or 50	50,000	—	Leads	Leads	1⅜	2⅛	1¼	1¾	—	0.4	
	A-8090	A	Line to Voice Coil	45 or 50	6-8/3-4	3	Lugs	Lugs	1¼	2⅜	1⅜	2	—	0.5	
	A-8091	A	Line to Voice Coil	45 or 50	6-8/3-4	8	Lugs	Lugs	1½	2⅞	1⅝	2⅜	—	0.7	
	A-3817	S	Transceiver Modulation and Output	5000/6750 @ 50Madc	4	10	Leads	Leads	2	2⅜	2	2	—	0.7	
	A-3833	A	Transceiver Input Mic. or Plate to Grid	5000/200	60,000	5	Leads	Leads	1⅝	2⅞	1⅝	2⅜	—	0.7	
	A-3836	A	Transceiver Output	10,000	2000/50	5	Leads	Leads	1 1/16	2⅞	1⅝	2⅜	—	0.7	
	A-4749	TD	Telephone patch Circuit	10,000	500	—	Leads	Leads	1½	2¼	1 5/16	—	1 5/16	1.0	
MICROPHONE, PICKUP OR LINE TO GRID															
2	A-4705	A	S.B. Mic. to S. Grid	200/70	80,000	1:20	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.5	B
	A-4706	A	S.B. Mic. to S. Grid	100	60,000	1:24.5	Leads	Leads	1½	2⅜	1⅜	2	—	0.5	
	A-4708	S	D.B. Mic. to S. Grid	200 C.T.	57,000	1:17	Lugs	Lugs	1½	2⅜	2	2	—	0.7	
	A-4742	S	S.B. Mic. to P.P. Grids	100	400,000 C.T.	1:64	Leads	Leads	1⅞	2⅞	2⅜	2⅜	—	1.2	
	A-4747	VE	S.B. Mic. or Line to S. Grid	70	1,300,000	1:137	Leads	Leads	1¼	1 3/16	1 7/16	1½	—	0.5	C1
MICROPHONE, PICKUP OR LINE TO GRID															
3	A-4351	SC	Mic. or Line to S. Grid	500/333/200/125/50	89,000	1:13.3	Leads	Leads	2¼	2 11/16	2 11/16	1½	2⅜	1.4	S
	A-4352	A	Mic or Line to P.P. Grids	500/333/200/125/50	89,000 C.T.	1:13.3	Lugs	Lugs	1⅞	3¼	2	2 13/16	—	1.0	
	A-4709	SC	Dyn. mic or Pickup to S. Grid	30/15/8/4	106,000	1:60	Leads	Leads	2¼	2 11/16	2 11/16	1½	2⅜	1.7	
	A-4778	C1	Line to S. Grid	600/500 C.T.	240,000	1:20	Leads	Leads	1 13/16	2⅞	2¼	2⅜	—	1.0	
	A-4779	A	Line to S. or P.P. Grids	600/500 C.T.	60,000 C.T.	1:10	Leads	Leads	1⅜	2⅜	1⅜	2	—	0.5	
	A-4780	VE	Line to P.P. Grids	600/500 C.T.	240,000 C.T.	1:20	Leads	Leads	1 1/16	3¼	2	2 13/16	—	1.0	
	CIC-1	TD	Line to P.P. Grids	600/150	100,000 C.T.	1:13	Leads	Leads	1½	2¼	2⅛	—	1 5/16	0.75	SC
	CIS-1	TD	Line to P.P. Grids	600/150	100,000 C.T.	1:13	Lugs	Lugs	1½	2¼	2⅛	—	1 5/16	0.75	
	CIS-2	TD	S.B. or D.B. Mic. to P.P. Grids	125/50	125,000	1:32	Lugs	Lugs	1½	2¼	2⅛	—	1 5/16	0.75	
INPUT: HIGH FIDELITY-SHIELDED-FREQ. RESPONSE ±1 DB 30 TO 15,000 CYCLES															
4	BI-1	B	Line to S. or P.P. Grids	600/150 C.T.	50,000 C.T.	+15 dbm	Lugs	Lugs	2⅛	2¼	2 11/16	1⅜	1 1/16	1.5	TD
	BI-2 a	B	Line to S. or P.P. Grids	600/150 C.T.	50,000 C.T.	+15 dbm	Lugs	Lugs	2⅛	2¼	2 11/16	1⅜	1 1/16	1.5	
	BI-3	B	Line Bridging to P.P. Grids	8000/6000 C.T.	50,000 C.T.	+15 dbm	Lugs	Lugs	2⅛	2¼	2 11/16	1⅜	1 1/16	1.5	
	BI-4	B	Line to Line	600/150 C.T.	600/150 C.T.	+15 dbm	Lugs	Lugs	2⅛	2¼	2 11/16	1⅜	1 1/16	1.5	
	BI-5	B	Line to Line	600/150 C.T.	600/150 C.T.	+30 dbm	Lugs	Lugs	3	3¼	3⅞	2⅛	2⅜	3.25	
	BI-6	B	P.P. Plates to S. or P.P. Grids	20,000 C.T.	50,000 C.T.	+15 dbm	Lugs	Lugs	2⅛	2¼	2 11/16	1⅜	1 1/16	1.5	
	BI-7	B	Mic., Pickup or Line to Grid	600/250/150/50	50,000 C.T.	+15 dbm	Lugs	Lugs	2⅛	2¼	2 11/16	1⅜	1 1/16	1.5	
INPUT: WF SERIES-SHIELDED-FREQ. RESPONSE ±2 DB 30 TO 20,000 CYCLES															
5	WF-20	WF	Mic., pickup or Line to Grid	500-600/333/250/200/125-.50/50	50,000 C.T.	+7 db	Lugs	Lugs	1½	1½	2	1 5/32	1 5/32	0.6	VE
	WF-21 a	WF	Mic., pickup or Line to Grid	500/200/50	50,000 C.T.	+7 db	Lugs	Lugs	1½	1½	2	1 5/32	1 5/32	0.6	
	WF-22	WF	Mic., pickup or Line to Grid	500-600/333/250/200/125-150/50	80,000 C.T.	+7 db	Lugs	Lugs	1½	1½	2	1 5/32	1 5/32	0.6	
	WF-28	WF	S. or P.P. Plates to S. or P.P. Grids	15,000 C.T.	80,000 C.T.	+7 db	Lugs	Lugs	1½	1½	2	1 5/32	1 5/32	0.6	WF
	WF-30	WF	Mixer, Mic., pickup, or Line to Line	500-600/333/250/200/125-150/50	500-600/333/250/200/125-150/50	+7 db	Lugs	Lugs	1½	1½	2	1 5/32	1 5/32	0.6	
	WF-35	WF	S. Plate to Line	15,000	500-600/333/250/200/125-150/50	+7 db	Lugs	Lugs	1½	1½	2	1 5/32	1 5/32	0.6	
	WF-36	WF	P.P. Plates to Line	30,000 C.T.	500-600/333/250/200/125-150/50	+7 db	Lugs	Lugs	1½	1½	2	1 5/32	1 5/32	0.6	

Has Multiple Internal Magnetic Shields

ESSEX Stancor/RBM | STANCOR

AUDIO TRANSFORMERS

INTERSTAGE: SINGLE PLATE (7,000 TO 20,000 OHM) TO SINGLE GRID

Section	Catalog No.	Style	Ratio	Max. Pri DCMA	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
1	A-53	A	1:3	10	Leads	Leads	1 3/8	2 3/8	1 3/8	2	—	0.5

INTERSTAGE: SINGLE PLATE (7,000 TO 15,000 OHM) TO PUSH-PULL GRIDS

Section	Catalog No.	Style	Ratio	Max. Pri DCMA	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
2	A-52C	A	1:2	10	Leads	Leads	1 1/2	2 3/8	1 3/8	2	—	0.4
	A-62C	A	1:2	10	Leads	Leads	1 5/8	2 7/8	1 5/8	2 3/8	—	0.7
	A-4745†	SC	1:2	10	Leads	Leads	2 1/4	2 11/16	2 11/16	1 1/2	2 3/8	1.7
	A-53C	A	1:3	10	Leads	Leads	1 3/8	2 3/8	1 3/8	2	—	0.5
	A-63C	A	1:3	10	Leads	Leads	1 1/2	2 7/8	1 5/8	2 3/8	—	0.7
	A-73C	A	1:3	10	Leads	Leads	1 3/4	3 1/4	2	2 13/16	—	1.0
	A-4719	SC	1:3	10	Leads	Leads	2 1/4	2 11/16	2 11/16	1 1/2	2 3/8	1.7
	A-64C	S	1:4	10	Leads	Leads	1 5/8	2 3/8	2	2	—	0.7

INTERSTAGE: PUSH-PULL PLATES (7,000 TO 15,000 OHMS) TO PUSH-PULL GRIDS

Section	Catalog No.	Style	Ratio	Max. Pri DCMA	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
3	A-4711	A	1:1	10	Leads	Leads	1 5/8	2 7/8	1 5/8	2 3/8	—	0.7
	A-4208	C	1:1.4	15	Leads	Leads	2 1/2	2 3/4	3 1/8	2	1 3/4	2.5

INTERSTAGE: MULTI-PURPOSE (7,000 TO 15,000 OHM PLATES)

Section	Catalog No.	Style	Ratio	Max. Pri DCMA	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
4	A-4774	S	1:3	10	Leads	Leads	1 3/4	2 7/8	2 3/8	2 3/8	—	1.2
	A-4773	SC	1:3	10	Leads	Leads	2 1/4	2 11/16	2 11/16	1 1/2	2 3/8	1.7
			Proper Connections will provide Ratios of 1:1, 1:3, or 1:6 May be Used for Single or Push-Pull Plates to Single or Push-Pull Grids									

DRIVER: SINGLE PLATE TO PUSH-PULL GRIDS

Section	Catalog No.	Style	Pri. Impedance in Ohms	Max Pri DCMA	Ratio Pri: ½ Sec	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
5	A-4713	A	10,000	30	2:1	5	Leads	Leads	1 5/8	2 7/8	1 5/8	2 3/8	—	0.7
	A-4752	A	10,000	40	2/1.5/1:1	10	Leads	Leads	1 3/4	3 1/4	2	2 13/16	—	1.2
	A-4292	A	10,000	20	2.5:1	5	Leads	Leads	1 1/2	2 7/8	1 5/8	2 3/8	—	0.7
	A-4723	A	10,000	30	3:1	5	Leads	Leads	1 5/8	2 7/8	1 5/8	2 3/8	—	0.7
	A-4702	C	1500 to 5000	80	5:1	20	Leads	Leads	2 1/2	2 3/4	3 1/8	2	1 3/4	2.5

DRIVER: PUSH-PULL PLATES TO PUSH-PULL GRIDS

Section	Catalog No.	Style	Pri. Impedance in Ohms	Max Pri DCMA	Ratio Pri: ½ Sec	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
6	A-4208	C	10,000 to 30,000 C.T.	15	2.8:1	15	Leads	Leads	2 1/2	2 3/4	3 1/8	2	1 3/4	2.5
	A-4212	C	1500 to 5000 C.T.	50	3.2:1	20	Leads	Leads	2 1/2	2 3/4	3 1/8	2	1 3/4	2.5

DRIVER: "POLY-PEDANCE"-MULTIPLE TAPS OFFER A WIDE RANGE OF RATIO SELECTION

Section	Catalog No.	Style	Pri. Impedance in Ohms	Max Pri DCMA	Ratio Pri: ½ Sec	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
7	A-4761	C	5000 to 15,000 C.T.	100	{2.4/2.2/2.1/1.8/ 1.6/1.4/1.25:1}	15	Leads	Leads Lugs	2 1/2	3 1/8	3 1/8	2	2 1/8	3.4
	A-4762	C	5000 to 15,000 C.T.	100	{5/4.5/4/3.4/3.2/ 3.1/2.6:1}	15	Leads	Leads Lugs	2 1/2	2 3/4	3 1/8	2	1 3/4	2.7
	A-4765	C	500	—	{1.33/1.2/1/.8/.7/ .5/.45/.4/.36/ .32:1}	15	Leads	Leads Lugs	2 1/2	2 3/4	3 1/8	2	1 3/4	3.2

DRIVER: BROADCAST FREQ. RESPONSE ±1 DB 30 TO 15,000 CYCLES

Section	Catalog No.	Style	Pri. Impedance in Ohms	Max Pri DCMA	Ratio Pri: ½ Sec	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
8	BD-1	B	3000 C.T.	100	3.5:1	10	Terms	Terms	3 1/4	3 5/8	4 5/16	2 3/8	2 5/8	6.5

MODULATION

Section	Catalog No.	Style	Impedance in Ohms Primary	Impedance in Ohms Secondary	Max. Sec DCMA	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
9	A-3812	A	10,000 C.T.	4000	50	5	Leads	Leads	1 5/8	2 7/8	1 5/8	2 3/8	—	0.7
	A-3871	SC	4500	8500	50	10	Leads	Leads	2 1/4	2 11/16	2 11/16	1 1/2	2 3/8	1.4
	A-3845	C	10,000 C.T.	8000/6500/5000/3000	100	25	Leads	Leads	2 1/2	2 7/8	3 1/8	2	1 7/8	2.8
	A-3808	C	3800/3300 C.T.	{10,000/7500/5000/ 4000}	170	60	Lugs	Lugs	3 3/4	4	4 11/16	3	2 13/16	7.7
	A-3829	C	9000/6900 C.T.	6250/5000/4000/3300	300	175	Lugs	Lugs	3 3/4	5	4 11/16	3	3 13/16	11.4

MODULATION: "POLYPEDANCE"—MULTIPLE TAPS OFFER A WIDE RANGE OF IMPEDANCE MATCH

Section	Catalog No.	Style	Impedance in Ohms Primary	Impedance in Ohms Secondary	Max. Sec DCMA	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
10	A-3891	C	2000 to 20,000	2000 to 20,000	100	15	Lugs	Lugs	2 1/2	2 3/4	3 1/8	2	1 3/4	2.5
	A-3892	C	2000 to 20,000	2000 to 20,000	150	30	Lugs	Lugs	3 1/8	3 1/2	3 7/8	2 1/2	2 3/4	4.3
	A-3893	C	2000 to 20,000	2000 to 20,000	180	60	Lugs	Lugs	3 1/8	4	3 7/8	2 1/2	2 11/16	6.2
	A-3894	C	2000 to 20,000	2000 to 20,000	225	125	Lugs	Lugs	3 3/4	4 1/2	4 11/16	3	3 3/4	9.4
	A-3898	FS	2000 to 20,000	2000 to 20,000	260	300	Terms	Terms	5 3/4	7 5/8	8 1/8	4 5/8	4 3/4	3.8
	A-3899	FS	2000 to 20,000	2000 to 20,000	500	600	Terms	Terms	7 1/4	10 1/4	9 1/8	6	5 5/8	7.0

MODULATION: BROADCAST FREQ. RESPONSE ±1 DB 30 TO 15,000 CYCLES

Section	Catalog No.	Style	Pri. Impedance in Ohms	Sec	Max Pri DCMA	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
11	BM-1	SC	7500 C.T.	5000	0	125	Terms	Terms	6 1/8	6 1/2	7 1/16	4 1/4	6	25

MODULATION REACTOR:

Section	Catalog No.	Style	Inductance in Henries	DCMA	Insul. Test RMS Volts	Termination		Dimensions A	B	C	D	E	WT. Lbs.
12	BR-1	SC	65	250	7500	Terms		7 1/16	7 7/8	8 1/16	5	7	41

SPLATTER CHOKES: FOR HIGH LEVEL "CLIPPER" FILTERS

Section	Catalog No.	Style	Inductance in Henries	DCMA	Insul. Test RMS Volts	Termination		Dimensions A	B	C	D	E	WT. Lbs.
13	C-2317	NH	.048 to 0.9	300	5000	Lugs		3	3	2 5/8	2 1/2	2	2.3
	SR-300	SC	.02 to 1.5	300	7500	Terms		4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	10
	SR-500	SC	.02 to 1.5	500	10000	Terms		5 5/16	5 7/8	6 1/16	3 1/2	5 3/8	14.5

BAND PASS FILTER: 200 TO 3,000 CYCLES

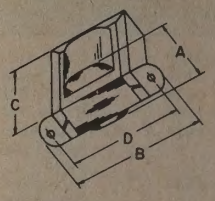
Section	Catalog No.	Style	Pri. Impedance in Ohms	Sec	Insul. Test RMS Volts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
14	C-2340	SC	10,000	500 or 100,000	10 V. output	Lugs	Lugs	2 1/4	2 11/16	2 11/16	1 1/2	2 3/8	0.6

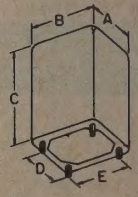
FOR TRANSISTOR MOBILE MODULATOR (WRITE FOR BULLETIN 545 FOR CIRCUIT)

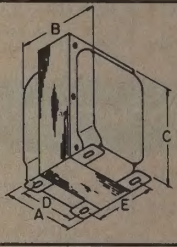
Section	Catalog No.	Style	Application	Impedance in Ohms Pri	Impedance in Ohms Sec	Max Pri DCMA	Audio Watts	Termination Pri	Termination Sec	Dimensions A	B	C	D	E	WT. Lbs.
15	TA-15	A	Input	50 to 100	10	50	.005	Leads	Leads	1	1 5/8	1 13/16	1 3/8	—	0.15
	TA-16	A	Driver	20	36 C.T.	400	1.0	Leads	Leads	1 1/8	2 1/8	1 1/4	1 3/4	—	0.20
	TA-17	C	Modulation	8 C.T.	{7500/5000 @ 120 Ma}	—	35.0	Leads	Leads	2 1/2	3	3 1/8	2	2	3.0

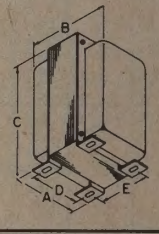
† Has Static Shield.

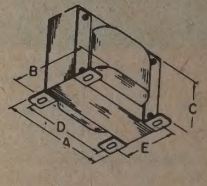
Styles

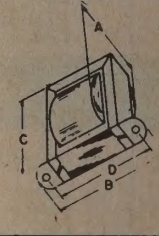


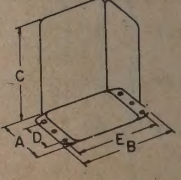












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MINIATURE AUDIO TRANSFORMERS

ESSEX Stancor/RBM — STANCOR

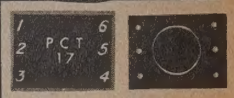
POLYCHROMATRANS With Multiples of 0.1" Grid Spacing for Printed Circuits.

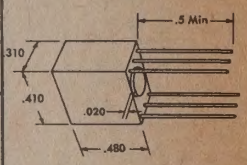
COLOR CODING by application to assure immediate and positive transformer identification.

RECTANGULAR SHAPE allows the utmost utilization of space and stacking in limited area.

PROTECTIVE STAND-OFF prevents solder flow-back and maximum lead exit protection.

SPACED LEADS of fatigue resistant gold plated nickel-iron alloy are .020" in diameter, 5/16" long and have multiples of 0.1" grid spacing for printed circuit application.

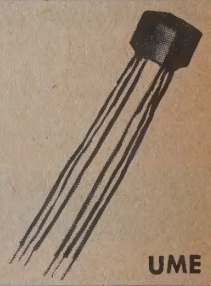




PCT

Section	Catalog No.	Power Level in M.W.	Application	Color Application Guide	Matching Impedance Primary	Matching Impedance Secondary	Max. MA. D.C. Unbal. in Pri.	D.C. Resistance Primary	D.C. Resistance Secondary	Overall Turns Ratio	RMS Test Volts
1	PCT-14	15	Input	Brown	200,000 CT	1,000 CT	0	6300	130	14.1:1	500
	PCT-15	35	Input	Brown	50,000 CT	1,000 CT	0	4600	90	7.1:1	500
	PCT-16	.5	Input	Brown	250,000	250,000	0	3500	4500	1:1	500
	PCT-17	15	Input	Brown	200,000	1,000	0	6300	130	14.1:1	500
	PCT-21	55	Interstage	Red	25,000	1,000	.5	2000	140	5:1	500
	PCT-23	55	Interstage	Red	25,000 CT	1,000 CT	.5	2000	140	5:1	500
	PCT-25	75	Interstage	Red	10,000 CT	1,500 CT	1	1250	360	2.57:1	500
	PCT-30	75	Driver	Orange	10,000 CT	1,200 CT	1	1000	250	2.88:1	500
	PCT-31	75	Driver	Orange	10,000 CT	2,000 CT	1	1000	400	2.24:1	500
	PCT-39	75	Driver	Orange	10,000 CT	500 CT	1	1000	85	4.47:1	500
	PCT-43	75	Output	Yellow	1,000	50	3	175	9.5	4.4:1	500
	PCT-54	75	Output	Yellow	600 CT	12	4.5	92	4	7.06:1	500
	PCT-60	75	Output	Yellow	500 CT	600	3	80	118	1.1:1	500
	PCT-61	75	Output	Yellow	900 CT	600	4	125	115	1.22:1	500
	PCT-62	75	Output	Yellow	1,500 CT	600	3	200	110	1.58:1	500
2	PCT-70	75	Output	Yellow	320 CT	3.2	6	52	.9	10:1	500
	PCT-71	75	Output	Yellow	600 CT	3.2	4.5	95	.07	13.6:1	500
	PCT-76	75	Output Isolation	Green	10,000 CT	10,000 CT	1	1100	1400	1:1	500
	PCT-77	75	Output Isolation	Green	600 CT	600 CT	3	85	110	1:1	500
	PCT-116	—	Choke	Blue	6 HYS.	—	2	1800	—	—	500
	PCT-117	—	Choke	Blue	1.25 HYS.	—	2	200	—	—	500
	PCT-118	—	Choke	Blue	3.5 HYS.	—	2	1200	—	—	500
	PCT-128	—	Choke	Blue	.3 HY.	—	4	50	—	—	500

*SPCT-10 Magnetic Alloy Shield-fits all PCT Transformers.

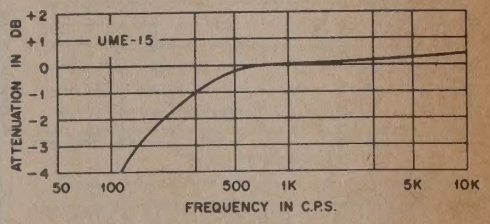


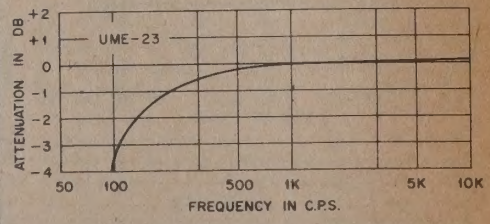
UME

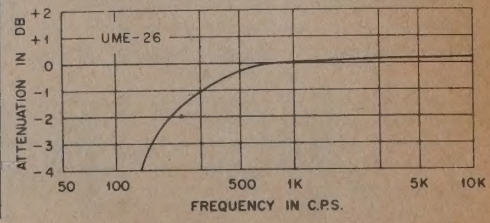
ULTRA MINIATURE ENCAPSULATED TRANSFORMERS Size .312" x .400" x .426". Insulation Test—100 Volts

Section	Catalog No.	Application	Pri. Res.	Pri. Imp. in Ohms	D.C. MA in Pri.	Sec. Imp. in Ohms	Sec. Res.	Mw. Level
3	UME-11	interstage	1500	30,000	.5	1200	185	50
	UME-12	output	120	600	3	60	13	100
	UME-13	output	250	1200	3	60	17	100
	UME-14	output	70	600	3	3.2	.7	100
	UME-15	output	170	1200	2	3.2	.75	100
	UME-16	output	1200	10,000	1	3.2	.7	100
	UME-17	input	7500	200,000	0	1000	260	25
	UME-18	reactor	1000	3 hy @ 2 MADC	2	—	—	—
	UME-19	output or driver	1100	12,500 CT	1	600 CT	45	100
	UME-20	driver	1000	12,500	1	1500 CT	100	100
	UME-21	driver	1100	12,500	1	2500 CT	160	100
	UME-22	single or PP output	25	200 CT	10	16	3	500
	UME-23	single or PP output	35	400 CT	7	16	2.5	500
	UME-24	single or PP output	75	800 CT	5	16	2	500
	UME-25	single or PP output	85	1070 CT	4	16	2	500
	UME-26	single or PP output	120	1330 CT	3.5	16	2	500
4	UME-27	single or PP output	225	2000 CT	3	16	2.5	500
	UME-28	single or PP output	750	10,000 CT	1	16	2.5	500
	UME-29	output	35	300 CT	7	600	110	500
	UME-30	output	60	500 CT	5.5	600	110	500
	UME-31	output	105	900 CT	4	600	110	500
	UME-32	output	200	1500 CT	3	600	120	500
	UME-33	interstage	1500	30,000 CT	.5	1200 CT	175	100
	UME-34	input	6500	200,000 CT	0	1000 CT	250	25
	UME-35	interstage	1000	12,000 CT	1	1800 CT	115	100
	UME-36	reactor	2600	6 hy @ 2 MADC	2	—	—	—
	UME-37	reactor	190	1 hy @ 2 MADC	2	—	—	—
	UME-38	reactor	1800	12 hy @ 0 DC	0	—	—	—
	UME-39	reactor	2700	20 hy @ 0 DC	0	—	—	—

Typical Response Curves







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TRANSISTOR TRANSFORMERS

FOR AUDIO APPLICATIONS: ALL UNITS TERMINATE WITH LEADS

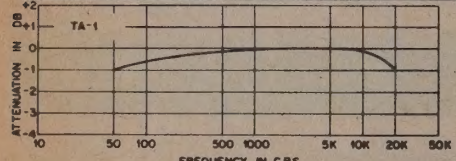
Section	Catalog No.	Style	Application	Impedance in Ohms Pri.	Impedance in Ohms Sec.	Max. Pri. DCMA	Audio Watts	D.C. Res. in Ohms Pri	D.C. Res. in Ohms Sec	Dimensions A	B	C	D	E	WT. Lbs.	Styles
1	TA-1	A	Input	600 C.T.	10	20	.05	42	0.8	1	1 5/8	13/16	1 3/8	—	.07	A
	TA-2	A	Interstage	100 C.T.	10 C.T.	100	.25	4.3	0.8	1 1/2	2 1/8	1 1/4	1 3/4	—	.25	
	TA-3	A	Interstage	100	1000 C.T.	100	.25	5.8	45	1 1/2	2 3/8	1 3/8	2	—	.35	
	TA-4	A	Interstage	500 C.T.	5000 C.T.	12	.03	37	250	1 5/8	2 3/8	1 3/8	2	—	.35	
	TA-5	A	Driver	1000	200 C.T.	10	.05	400	115	5/8	1 5/16	11/16	1 1/16	—	.05	
	TA-6	A	Driver	2000	200 C.T.	5	.05	720	115	5/8	1 5/16	11/16	1 1/16	—	.05	
	TA-7	A	Driver	100	100 C.T.	100	.5	12	12	1 5/8	2 7/8	1 5/8	2 3/8	—	.60	A2
	TA-8	A	Output	9800	15	2	.05	640	2	5/8	1 5/16	11/16	1 1/16	—	.05	
	TA-9	A	Output	1000	16/8/4	10	.2	180	3.5	7/8	1 5/8	13/16	1 3/8	—	.07	
	TA-10	A	Output	2000 C.T.	16/8/4	—	.2	250	4	7/8	1 5/8	13/16	1 3/8	—	.08	
	TA-11	A	Output	48 C.T.	16/8	275	5	5	1.5	1 7/8	3 1/4	2	2 13/16	—	1.0	
	TA-12	A	Output	20 C.T.	8	500	10	.55	.35	1 5/8	2 3/8	1 3/8	2	—	.45	S
	TA-13	SC	Driver	200 C.T.	400 C.T.	10	.6	4	7	2 1/4	2 11/16	2 15/16	1 1/2	2 3/8	1.5	
	TA-14	SC	Output	24 C.T.	16/4	200	10	2	1.2	3 11/16	4 7/16	4 5/16	2 3/4	3 7/8	6.6	
	TA-56	S†	Output	48 C.T.	16/8/3.2	550	10	3.6	1.4	1 3/4	2 7/8	2 3/8	2 3/8	—	.90	
	TA-57	S	Output	100 C.T.	16/8/3.2	500	10	6.6	1.5	1 7/8	2 7/8	2 3/8	2 3/8	—	.95	
	TA-58	A	Driver	100	200 C.T.	200	.5	6.5	15.5	1 1/4	2 1/8	1 1/4	1 3/4	—	.20	S2
	TA-59	A	Driver	500 C.T.	200 C.T.	50	.5	36.5	15.5	1 3/8	2 1/8	1 1/4	1 3/4	—	.20	
	TA-60	TS	Output	125 C.T.	8	50	1.5	7.5	0.9	1 5/16	1 5/16	1 11/16	—	1 9/32	.30	
	TA-61	S	Driver	*	*	—	—	1.8	1.8	1 1/2	2 3/8	2	2	—	.60	
	TA-62	A	Output	25	4	400	4	1.5	0.4	1 5/8	2 7/8	1 5/8	2 3/8	—	.60	

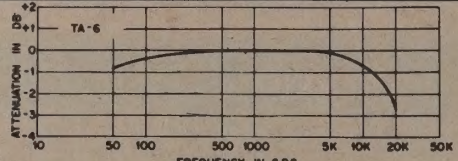
FOR TRANSISTORIZED AUTO RADIOS

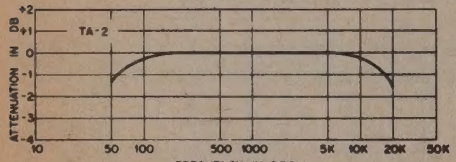
2	TA-48	S2	Interstage	1000	40	10	2	136	2.8	1 1/4	—	1 3/4	1 3/16	7/16	.35	S2
	TA-49	S	Output	30 C.T.	4	50	10	2.2	0.3	1 1/2	2 7/8	2 3/8	2 3/8	—	.80	
	TA-50	A2	Output	9	4	920	10	1.5	1.0	1 5/8	—	2	2	3/4	1.0	
	TA-51	S2	Interstage	1000	10	10	2	170	1.0	1 1/4	—	1 3/4	1 3/16	7/16	.35	

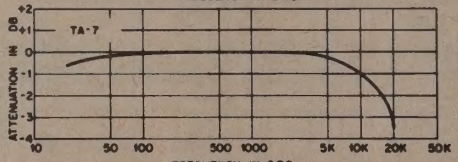
*Trifilar Wound-Ratio 1:1:1. †Has Lugs on Secondary.

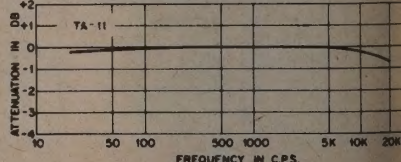
TYPICAL FREQUENCY RESPONSE CURVES

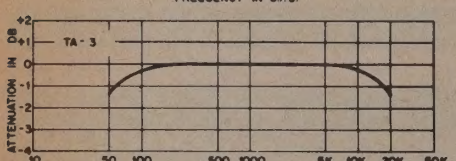


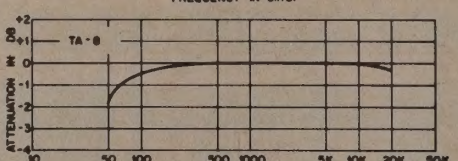


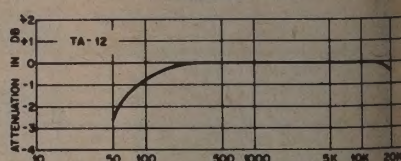


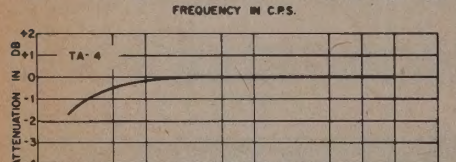


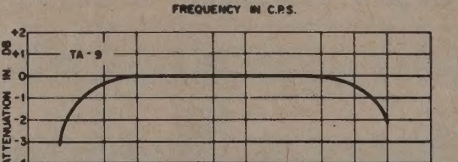


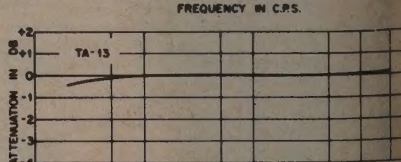


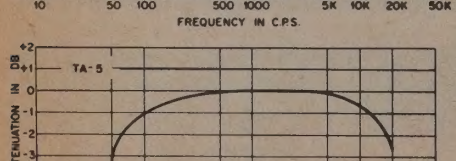


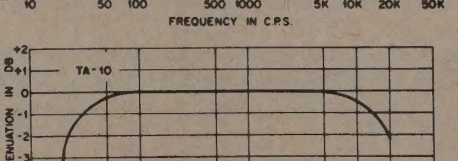


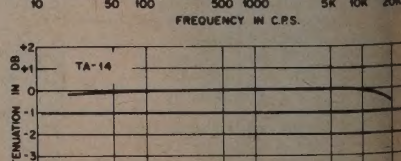












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TRANSISTOR TRANSFORMERS

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MINIATURE AUDIOS

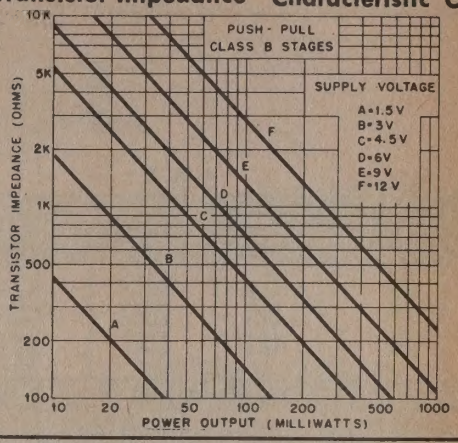
.150 WATT GROUP—Dimensions: HxWxD, 21/32" x 13/16" x 5/8". Mounting tabs 3/16" wide, 25/32" centers • Weight .65 oz. Mounting Type A1.

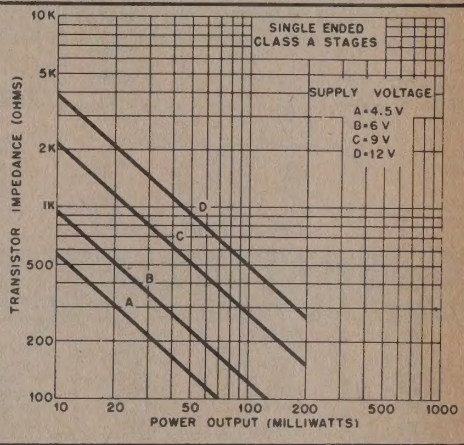
Section	Catalog No.	Application	Turns Ratio Pri. to Sec.	Impedance in Ohms Pri.	Impedance in Ohms Sec.	D.C. Res. in Ohms Pri.	D.C. Res. in Ohms Sec.
1	TA-18	Input	1.00:45.5	30 CT	50,000	14.7	4060
	TA-19	Interstage	3.08:1	100 CT	10 CT	19	1.27
	TA-20	Output	5.22:1	350 CT	4, 12	38	1.45
	TA-21	Output	5.53:1	500 CT	4, 8, 16	75.3	3.55
	TA-22	Interstage	3.16:1	500 CT	50	59.7	7.9
	TA-23	Output	5.65:1	600 CT	4, 8, 16	73.2	3.2
	TA-24	Interstage	10.0:1	500 CT	50,000	76.8	5135
	TA-25	Output	6.75:1	825 CT	4, 8, 16	74	2.7
	TA-26	Output	9.80:1	1,250	4, 12	132.5	1.4
	TA-27	Interstage	1:4.08	1,200	20,000 CT	142	1860
	TA-28	Interstage	1.65:1	1,500	500 CT	104	46.5
	TA-29	Output	11.8:1	2,500	4, 16	370	2.3
	TA-30	Interstate	1.00:1.22	5,000 CT	7,500 CT	650	790
	TA-31	Interstage	1.00:1.41	5,000 CT	10,000 CT	635	825
	TA-53	Interstage	1:3	5,000 CT	45,000	310	1400
	TA-32	Interstage	1.00:4	5,000 CT	80,000 CT	500	5200
	TA-33	Output	24.6:1	10,000 CT	4, 8, 16	1174	2.6
	TA-34	Interstage	6.97:1	10,000	200 CT	1200	33.4
	TA-35	Interstage	2.24:1	10,000	2,000 CT	1200	257
	TA-36	Interstage	1.83:1	10,000	3,000 CT	1200	385
	TA-54	Interstage	5:1	20,000	800 CT	1350	95
	TA-37	Output	5.55:1	400 CT	11	71.5	1.5
	TA-38	Interstage	1.72:1	500 CT	150 CT	62	21.2

.300 WATT GROUP—Dimensions: HxWxD, 13/16" x 1 5/8" x 3/4". Mounting Centers: 1 3/8" • Weight 1.2 oz. Mounting Type A.

Section	Catalog No.	Application	Turns Ratio Pri. to Sec.	Impedance in Ohms Pri.	Impedance in Ohms Sec.	D.C. Res. in Ohms Pri.	D.C. Res. in Ohms Sec.
2	TA-39	Output	2.5:1	100 CT	4, 8, 16	10.9	1.45
	TA-40	Output	3.27:1	160	4, 8, 16	18.7	1.4
	TA-41	Output	5.00:1	400 CT	4, 8, 16	34	1.5
	TA-42	Output	5.60:1	500 CT	4, 8, 16	47	.85
	TA-52	Interstage	1:1	500 CT	500 CT	40	55
	TA-43	Output	6.63:1	700 CT	4, 8, 16	77	1.15
	TA-44	Output	12.5:1	2,500	4, 8, 16	172	1.15
	TA-45	Output	13.7:1	3,000	4, 8, 16	192	1.2
	TA-46	Interstage	8.17:1	100,000	1,500 CT	3250	143
	TA-55	Input	50:1	500,000	200 CT	7000	8.5
	TA-47	Input	1.00:14.1	1,000 CT	200,000 CT	123	1815
	TA-63	Driver	3.17:1	20,000 CT	2,000 CT	2140	325

Transistor Impedance Characteristic Curves

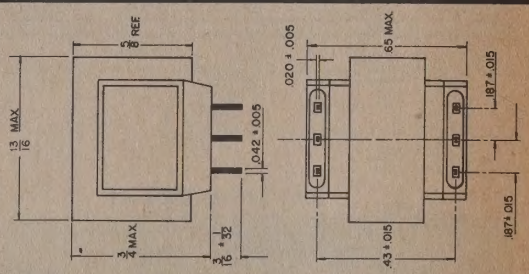




MINIATURE AUDIOS FOR PRINTED CIRCUITS

.150 WATT GROUP (Fig. A)

Section	Catalog No.	Application	Turns Ratio Pri. to Sec.	Impedance in Ohms Pri.	Impedance in Ohms Sec.	D.C. Res. in Ohms Pri.	D.C. Res. in Ohms Sec.
3	TAPC-19	Interstage	3.08:1	100 CT	10 CT	19	1.27
	TAPC-26	Output	9.80:1	1,250	4, 12	132.5	1.4
	TAPC-27	Interstage	1:4.08	1,200	20,000 CT	142	1860
	TAPC-28	Interstage	1.65:1	1,500	500 CT	104	46.5
	TAPC-30	Interstage	1.00:1.22	5,000 CT	7,500 CT	650	790
	TAPC-31	Interstage	1.00:1.41	5,000 CT	10,000 CT	635	825
	TAPC-32	Interstage	1.00:4	5,000 CT	80,000 CT	500	5200
	TAPC-34	Interstage	6.97:1	10,000	200 CT	1200	25
	TAPC-35	Interstage	2.24:1	10,000	2,000 CT	1200	257
	TAPC-36	Interstage	1.83:1	10,000	3,000 CT	1200	385
	TAPC-38	Interstage	1.72:1	500 CT	150 CT	62	21.2



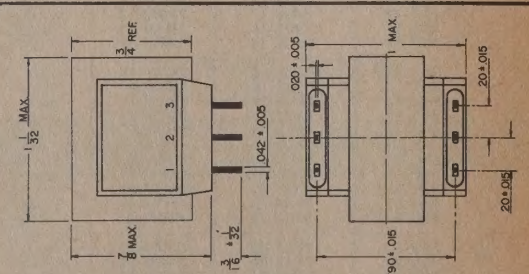
(FIG. A)

.050 WATT GROUP (FIG. B)

Section	Catalog No.	Application	Imp. in Ohms Pri.	Imp. in Ohms Sec.	Max Pri DCMA	Audio Watts	D.C. Res. in Ohms Pri.	D.C. Res. in Ohms Sec.	WT Lbs.
4	TAPC-5	Driver	2000	200	5	.05	720	115	.05

.300 WATT GROUP (FIG. B)

Section	Catalog No.	Application	Turns Ratio Pri. to Sec.	Impedance in Ohms Pri.	Impedance in Ohms Sec.	D.C. Res. in Ohms Pri.	D.C. Res. in Ohms Sec.
5	TAPC-47	Input	1:14.1	1,000 CT	200,000 CT	123	1815
	TAPC-52	Interstage	1:1	500 CT	500 CT	40	55
	TAPC-63	Driver	3.17:1	20,000 CT	2,000 CT	2140	325



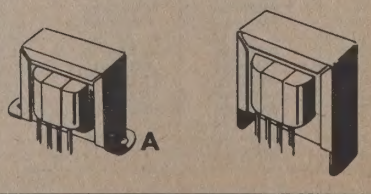
(FIG. B)

ULTRA MINIATURE

Here are the smallest iron core audio transformers ever built. They weigh less than 1/10 ounce and are no larger than the transistors they power.

These transformers are designed primarily for transistor audio applications but they can be used wherever low power is involved. Useful range, below 1 mw level. They are constructed of extremely fine wire, wound on molded nylon bobbins, with special nickel alloy steel laminations.

Section	Catalog No.	Application	Pri. Imp.	Sec. Imp.	Pri. DC Res.	Sec. DC Res.	Weight
6	UM-114	Output or matching	500	50/60	70	9.0	0.10



Dimensions: UM-110, 1/4" x 3/8" x 3/8"; UM-113, 114, 3/8" x 3/8" x 3/8". Dimensions ±.015"

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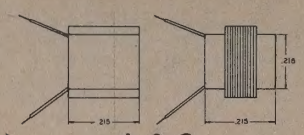
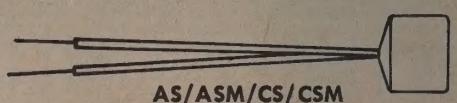
PICO-MINIATURE TRANSISTOR TRANSFORMERS



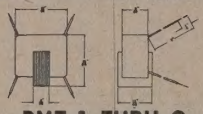
A & C



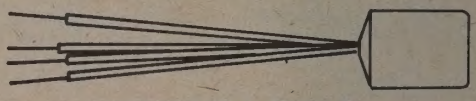
AS/ASM/CS/CSM

Section	Catalog Numbers Open	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms) Pri.	Sec.	D.C. Res. (Ohms) Pri.	Sec.	Power Level (MW)
1	A-1	AS-1	ASM-1	Driver	1:3.2	60 CT	600 CT	12	105	5
	A-2	AS-2	ASM-2	Output	4.0:1	1,000	50	255	16	5
	A-3	AS-3	ASM-3	Interstage	1:1.04	6,000 CT	6,000 CT	1,200	1,000	5
	A-4	AS-4	ASM-4	Driver	2.85:1	10,000	1,000	1,500	425	5
	A-5	AS-5	ASM-5	Interstage	1:1.02	10,000	10,000	1,620	2,040	5
	A-6	AS-6	ASM-6	Input or Output	14.1:1	90,000*	500*	3,500	205	1

Section	Catalog Numbers		Application	Inductance	D.C. Resistance (Ohms)	Power Level (MW)
2	C-1	CS-1 CSM-1	Reactor	0.22 HYS @ 4.0 MADC	515 OHMS	5
				2.10 HYS @ 0.0 MADC	515 OHMS	10
	C-2	CS-2 CSM-2	Reactor	0.60 HYS @ 2.0 MADC	1350 OHMS	5
				5.60 HYS @ 0.0 MADC	1350 OHMS	10
	C-3	CS-3 CSM-3	Reactor	3.0 HYS @ 1.0 MADC	3400 OHMS	5
				8.3 HYS @ 0.0 MADC	3400 OHMS	10
	C-4	CS-4 CSM-4	Reactor	20.0 HYS @ 0.0 MADC	3400 OHMS	10

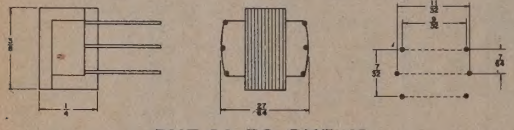


PMT-1 THRU 9



PMTS/PMTM-1 THRU 9

Section	Catalog Numbers Open	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms) Pri.	Sec.	D.C. Res. (Ohms) Pri.	Sec.	Power Level (MW)
3	PMT-1	PMTS-1	PMTM-1	Output	3.77:1	1,000	50	260	40	10
	PMT-2	PMTS-2	PMTM-2	Driver	1.51:1	1,500	600	260	117	10
	PMT-3	PMTS-3	PMTM-3	Interstage	2.22:1	10,000	2,000	1,240	280	10
	PMT-4	PMTS-4	PMTM-4	Interstage	4.48:1	20,000	1,000	2,500	330	10
	PMT-5	PMTS-5	PMTM-5	Reactor		0.5 HYS. @ 1 MADC		155		
	PMT-6	PMTS-6	PMTM-6	Reactor		10.0 HYS. @ 0 MADC		1,950		
	PMT-7	PMTS-7	PMTM-7	Interstage	1:1	10,000 CT 12,000 CT	10,000 CT 12,000 CT	1300	1600	100
	PMT-8	PMTS-8	PMTM-8	Interstage	1:1:1	2,000 CT 2,500 CT	8,000 split 10,000 split	300	1600	100
	PMT-9	PMTS-9	PMTM-9	Interstage or Output		40,000 CT 50,000 CT	400 split 500 split	3500	100	50



PMT-10 TO PMT-41

PMTS-10 TO PMTS-41
PMTM-10 TO PMTM-41

Section	Catalog Numbers Open	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms) Pri.	Sec.	D.C. Res. (Ohms) Pri.	Sec.	Power Level (MW)
4	PMT-10	PMTS-10	PMTM-10	Interstage	4.47:1	20,000	1,000	1,700	275	50
	PMT-11	PMTS-11	PMTM-11	Interstage	5.01:1	20,000	800	1,600	170	50
	PMT-12	PMTS-12	PMTM-12	Interstage	2.56:1	10,000 CT	1,500 CT	1,150	110	100
	PMT-13	PMTS-13	PMTM-13	Output	2.83:1	500	50	115	12	250
	PMT-14	PMTS-14	PMTM-14	Output	2.82:1	400	50	70	10	250
	PMT-15	PMTS-15	PMTM-15	Input	14.1:1	200,000	1,000	6,500	245	25
	PMT-16	PMTS-16	PMTM-16	Output	4.00:1	1,000	50	240	16	100
	PMT-17	PMTS-17	PMTM-17	Input	14.0:1	200,000 CT	1,000 CT	6,500	245	25
	PMT-18	PMTS-18	PMTM-18	Output	1.54:1	1,500 CT	600	210	120	250
	PMT-19	PMTS-19	PMTM-19	Reactor		3 HYS @ 2ma		1,100		
	PMT-20	PMTS-20	PMTM-20	Reactor		1 HY @ 2ma		200		
	PMT-21	PMTS-21	PMTM-21	Reactor		6 HYS @ 2ma		2,600		
	PMT-22	PMTS-22	PMTM-22	Output	13.5:1	600	3.2	90	0.8	250
	PMT-23	PMTS-23	PMTM-23	Output	18.0:1	1,200	3.2	190	0.8	100
	PMT-24	PMTS-24	PMTM-24	Output	53.2:1	10,000	3.2	1,500	0.8	100
	PMT-25	PMTS-25	PMTM-25	Driver	4.44:1	10,000 CT	500 CT	1,160	45	100
	PMT-26	PMTS-26	PMTM-26	Driver	3.03:1	10,000	1,200 CT	1,160	100	100
	PMT-27	PMTS-27	PMTM-27	Driver	2.22:1	10,000	2,000 CT	1,380	170	100
	PMT-28	PMTS-28	PMTM-28	Output	1.23:1	900 CT	600	105	110	250
	PMT-29	PMTS-29	PMTM-29	Output	1:1.10	500 CT	600	60	105	250
	PMT-30	PMTS-30	PMTM-30	Output	1:1.42	300 CT	600	40	110	250
	PMT-31	PMTS-31	PMTM-31	Output	3.30:1	150 CT	12	25	3	250
	PMT-32	PMTS-32	PMTM-32	Output	4.85:1	300 CT	12	40	2	250
	PMT-33	PMTS-33	PMTM-33	Output	6.98:1	600 CT	12	85	2	250
	PMT-34	PMTS-34	PMTM-34	Output	8.14:1	800 CT	12	100	2	250
	PMT-35	PMTS-35	PMTM-35	Output	9.07:1	1,000 CT	12	150	2	250
	PMT-36	PMTS-36	PMTM-36	Output	10.0:1	1,500 CT	12	230	2	250
	PMT-37	PMTS-37	PMTM-37	Output	25.0:1	7,500 CT	12	750	2	250
	PMT-38	PMTS-38	PMTM-38	Interstage	5.00:1	20,000 CT	800 CT	1,500	160	50
	PMT-39	PMTS-39	PMTM-39	Reactor		12 HYS @ 0ma		2,000		
	PMT-40	PMTS-40	PMTM-40	Reactor		20 HYS @ 0ma		2,800		
	PMT-41	PMTS-41	PMTM-41	Interstage	1:3.00	10,000	90,000	980	5,600	50

ALL UNITS HAVE 2" LEAD LENGTHS AND COLOR CODED

*90,000 ohms with 1000 ohms secondary load. *500 ohms with 100,000 ohms primary load.

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PICO-MINIATURE TRANSISTOR TRANSFORMERS

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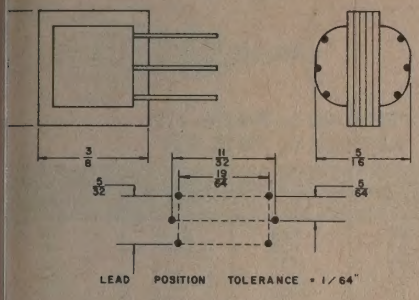
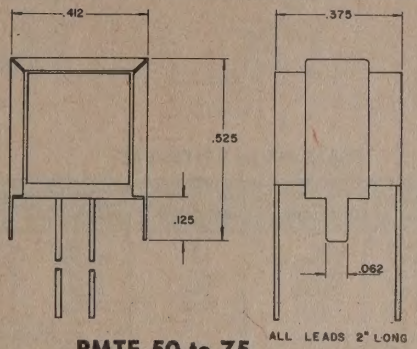
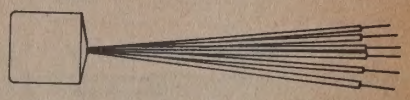


PMT-50 to 75

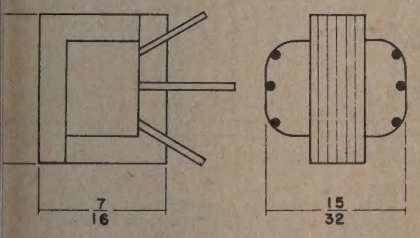


PMTF-50 to 75

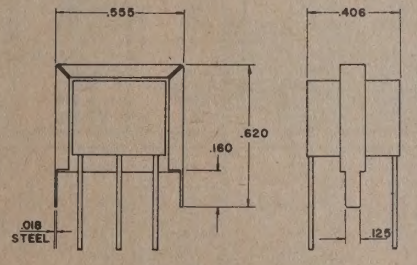


PMTS-50 to PMTS-75
PMTM-50 to PMTM-75

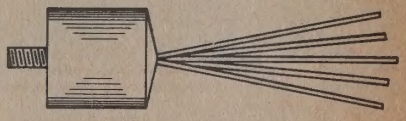
Section	Catalog Numbers Open	Channel Frame	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms) Pri.	Sec.	D.C. Resistance (Ohms) Pri.	Sec.	Power Level (MW)
1	PMT-50	PMTF-50	PMTS-50	PMTM-50	Interstage	4.48:1	20,000	1,000	1150	175	150
	PMT-51	PMTF-51	PMTS-51	PMTM-51	Interstage	4.50:1	20,000	1,000 CT	930	95	150
	PMT-52	PMTF-52	PMTS-52	PMTM-52	Output	3.46:1	600	50	110	9	300
	PMT-53	PMTF-53	PMTS-53	PMTM-53	Output	3.26:1	600 CT	50	66	7.7	300
	PMT-54	PMTF-54	PMTS-54	PMTM-54	Output	2.71:1	400	50	70	9.3	350
	PMT-55	PMTF-55	PMTS-55	PMTM-55	Input	14.0:1	200,000	1,000	2600	135	35
	PMT-56	PMTF-56	PMTS-56	PMTM-56	Output	4.30:1	1,000	50/60	160	9	250
	PMT-57	PMTF-57	PMTS-57	PMTM-57	Output	7.06:1	10,000	200	890	27	200
	PMT-58	PMTF-58	PMTS-58	PMTM-58	Microphone	1.31:1	40	50,000	3.35	1440	75
	PMT-59	PMTF-59	PMTS-59	PMTM-59	Output	3.64:1	20,000	1,000 CT	939	119	150
	PMT-60	PMTF-60	PMTS-60	PMTM-60	Output	7.75:1	20,000	300	910	36	200
	PMT-61	PMTF-61	PMTS-61	PMTM-61	Output	10.8:1	20,000	150	910	16.1	200
	PMT-62	PMTF-62	PMTS-62	PMTM-62	Output	4.97:1	30,000	1,000	1450	137	150
	PMT-63	PMTF-63	PMTS-63	PMTM-63	Reactor		12 HY @ 0.0MADC		830		
	PMT-64	PMTF-64	PMTS-64	PMTM-64	Reactor		5 HY @ 0.8MADC		1100		
	PMT-65	PMTF-65	PMTS-65	PMTM-65	Reactor		1.5 HY @ 0.1MADC		175		
	PMT-66	PMTF-66	PMTS-66	PMTM-66	Reactor		.0015 HY @ 0.0MADC		3.00		
	PMT-67	PMTF-67	PMTS-67	PMTM-67	Interstage	4.50:1	20,000	1,000 CT	930	95	150
	PMT-68	PMTF-68	PMTS-68	PMTM-68	Input	9.71:1	100,000	1,000	1900	140	70
	PMT-69	PMTF-69	PMTS-69	PMTM-69	Output	5.60:1	400 CT	12	70	2	350
	PMT-70	PMTF-70	PMTS-70	PMTM-70	Interstage	2.83:1	10,000 CT	1,200 CT	900	122	200
	PMT-71	PMTF-71	PMTS-71	PMTM-71	Output	1.55:1	1,500 CT	600	400	65	250
	PMT-72	PMTF-72	PMTS-72	PMTM-72	Output	1.26:1	1,000 CT	600	160	65	250
	PMT-73	PMTF-73	PMTS-73	PMTM-73	Driver	4.00:1	10,000 CT	600 CT	900	50	200
	PMT-74	PMTF-74	PMTS-74	PMTM-74	Interstage	1.00:1	600 CT	600 CT	48	60	300
	PMT-75	PMTF-75	PMTS-75	PMTM-75	Isolation	1.00:1	15,000 CT	15,000 CT	925	1200	200



PMT-76 to PMT-92



PMTF-76 to PMTF-92



PMTS-76 to PMTS-92
PMTM-76 to PMTM-92

Section	Catalog Numbers Open	Channel Frame	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms) Pri.	Sec.	D.C. Resistance (Ohms) Pri.	Sec.	Power Level (MW)
2	PMT-76	PMTF-76	PMTS-76	PMTM-76	Interstage	1:1	500	500	45	45	30
	PMT-77	PMTF-77	PMTS-77	PMTM-77	Output	3.4:1	600	50	57.5	5.4	30
	PMT-78	PMTF-78	PMTS-78	PMTM-78	Output	121:1	50,000	3.4	2270	0.9	30
	PMT-79	PMTF-79	PMTS-79	PMTM-79	Interstage	9:1	100,000	1,200 CT	2850	94	30
	PMT-80	PMTF-80	PMTS-80	PMTM-80	Interstage	4.6:1	25,000	1,200	1580	97	30
	PMT-81	PMTF-81	PMTS-81	PMTM-81	Input	1:1.4	600 CT	1,200 CT	55	109	30
	PMT-82	PMTF-82	PMTS-82	PMTM-82	Interstage	6.4:1	25,000	600	1620	36	30
	PMT-83	PMTF-83	PMTS-83	PMTM-83	Output	35:1	4,000 CT	3.2	488	0.5	30
	PMT-84	PMTF-84	PMTS-84	PMTM-84	Reactor	30 HYS @ 1 MADC			4000		30
	PMT-85	PMTF-85	PMTS-85	PMTM-85	Reactor	6 HYS @ 0.0 MADC			1400		30
	PMT-86	PMTF-86	PMTS-86	PMTM-86	Interstage	4.48:1	20,000	1,000	1200	63	30
	PMT-87	PMTF-87	PMTS-87	PMTM-87	Interstage	2.91:1	10,000 CT	1,000 CT	448	126	30
	PMT-88	PMTF-88	PMTS-88	PMTM-88	Input	1.35	50	62,500	7	1670	30
	PMT-89	PMTF-89	PMTS-89	PMTM-89	Interstage	6.31:1	20,000	1,000 CT	1250	54	30
	PMT-90	PMTF-90	PMTS-90	PMTM-90	Output	30.4:1	4,000 CT	3	410	0.85	30
	PMT-91	PMTF-91	PMTS-91	PMTM-91	Input	1:16	1,000	250,000	73	4300	30
	PMT-92	PMTF-92	PMTS-92	PMTM-92	Output	4.05:1	15,000	850	735	66	30

ALL UNITS HAVE 2" LEAD LENGTHS AND COLOR CODED

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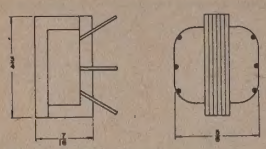
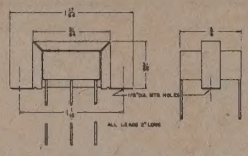
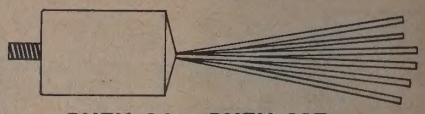


PMT-94 to PMT-117

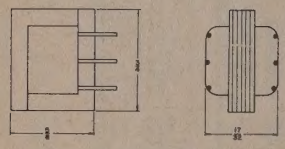


PMTF-94 to PMTF-117

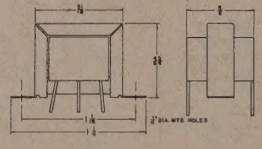


PMTM-94 to PMTM-117
PMTS-94 to PMTS-117

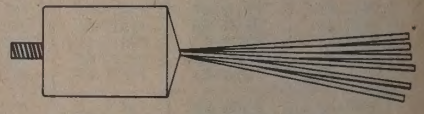
Section	Catalog Numbers: Open	Channel Frame	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms): Pri.	Sec.	D.C. Resistance (Ohms): Pri.	Sec.	Power Level (MW)
1	PMT-94	PMTF-94	PMTS-94	PMTM-94	Input	1:35	200	250,000	13.4	3580	50
	PMT-95	PMTF-95	PMTS-95	PMTM-95	Interstage	1:3	10,000	90,000	820	3500	50
	PMT-96	PMTF-96	PMTS-96	PMTM-96	Output	7:1	25,000	500	1750	30	100
	PMT-97	PMTF-97	PMTS-97	PMTM-97	Output	24:1	30,000	50	2600	4.75	100
	PMT-98	PMTF-98	PMTS-98	PMTM-98	Output	40:1	100,000	60	4800	3.5	100
	PMT-99	PMTF-99	PMTS-99	PMTM-99	Reactor		50 HYS @ 1 MADC		4500		
	PMT-100	PMTF-100	PMTS-100	PMTM-100	Input	15.8:1	250,000	1,000	2580	33	50
	PMT-101	PMTF-101	PMTS-101	PMTM-101	Input	28:1	78,000	100	1700	20	100
	PMT-102	PMTF-102	PMTS-102	PMTM-102	Input	27:1	100,000	120	5300	28	50
	PMT-103	PMTF-103	PMTS-103	PMTM-103	Input	18.85:1	250,000	700	1900	20	50
	PMT-104	PMTF-104	PMTS-104	PMTM-104	Interstage	4.35:1	20,000	1,000	1100	95	100
	PMT-105	PMTF-105	PMTS-105	PMTM-105	Interstage	2.92:1	20,000	2,000	1530	185	100
	PMT-106	PMTF-106	PMTS-106	PMTM-106	Output	19.2:1	50,000	120	2380	28	100
	PMT-107	PMTF-107	PMTS-107	PMTM-107	Output	18.7:1	20,000	50	1530	10	75
	PMT-108	PMTF-108	PMTS-108	PMTM-108	Output	8.84:1	2,500 CT	50	406	7	150
	PMT-109	PMTF-109	PMTS-109	PMTM-109	Output	4.44:1	1,250	50	160	6	150
	PMT-110	PMTF-110	PMTS-110	PMTM-110	Output	2.72:1	400	50	30	9	75
	PMT-111	PMTF-111	PMTS-111	PMTM-111	Output	3.64:1	30,000	4,000	1470	147	100
	PMT-112	PMTF-112	PMTS-112	PMTM-112	Output	7.87:1	10,000	125	1250	20	150
	PMT-113	PMTF-113	PMTS-113	PMTM-113	Output	1:3	10,000	90,000	685	2820	50
	PMT-114	PMTF-114	PMTS-114	PMTM-114	Interstage	2:1	20,000	4,000	1980	490	100
	PMT-115	PMTF-115	PMTS-115	PMTM-115	Output	22.8:1	4,000	6.4	472	0.8	150
	PMT-116	PMTF-116	PMTS-116	PMTM-116	Input	9.8:1	100,000	1,000	970	29	50
	PMT-117	PMTF-117	PMTS-117	PMTM-117	Reactor		6 HYS @ 0.0 MADC		1530		



PMT-118 to PMT-127

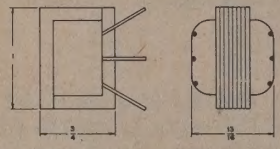


PMTF-118 to PMTF-127

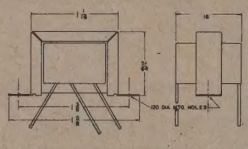


PMTM-118 to PMTM-127
PMTS-118 to PMTS-127

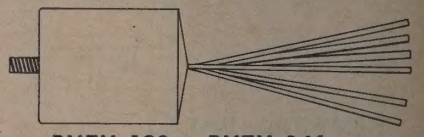
Section	Catalog Numbers: Open	Channel Frame	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms): Pri.	Sec.	D.C. Resistance (Ohms): Pri.	Sec.	Power Level (MW)
2	PMT-118	PMTF-118	PMTS-118	PMTM-118	Input	1:35	200	250,000	21.5	2650	150
	PMT-119	PMTF-119	PMTS-119	PMTM-119	Interstage	1:3	10,000	90,000	222	2800	150
	PMT-120	PMTF-120	PMTS-120	PMTM-120	Output	7:1	25,000	500	1750	29	150
	PMT-121	PMTF-121	PMTS-121	PMTM-121	Output	24:1	30,000	50	1900	3.9	150
	PMT-122	PMTF-122	PMTS-122	PMTM-122	Output	40:1	100,000	60	4000	4.38	150
	PMT-123	PMTF-123	PMTS-123	PMTM-123	Reactor		50 HYS @ 1 MADC		3200		150
	PMT-124	PMTF-124	PMTS-124	PMTM-124	Output	6.05:1	2,500	50	372	7.6	150
	PMT-125	PMTF-125	PMTS-125	PMTM-125	Output	1:1.56	1,250	2,500	107	269	150
	PMT-126	PMTF-126	PMTS-126	PMTM-126	Interstage	1:10	2,500	250,000	329	7200	150
	PMT-127	PMTF-127	PMTS-127	PMTM-127	Interstage	1:5	10,000	250,000	1000	7200	150



PMT-128 to PMT-146



PMTF-128 to PMTF-146



PMTM-128 to PMTM-146
PMTS-128 to PMTS-146

Section	Catalog Numbers: Open	Channel Frame	Steel Case	MU-Metal Case	Application	Turns Ratio Pri. to Sec.	Impedance (Ohms): Pri.	Sec.	D.C. Resistance (Ohms): Pri.	Sec.	Power Level (MW)
3	PMT-128	PMTF-128	PMTS-128	PMTM-128	Mike Input	1:9	50/250/600	50,000 CT	24.5	2480	200
	PMT-129	PMTF-129	PMTS-129	PMTM-129	Mike Input	1:8	4/8	50,000 CT	0.35	2600	200
	PMT-130	PMTF-130	PMTS-130	PMTM-130	Output	7:1	400 CT	4/8	37	1.0	200
	PMT-131	PMTF-131	PMTS-131	PMTM-131	Interstage	1:2	15,000	60,000	1250	3450	200
	PMT-132	PMTF-132	PMTS-132	PMTM-132	Interstage	1:2.5	15,000	90,000	1250	5900	200
	PMT-133	PMTF-133	PMTS-133	PMTM-133	Output	5:1	15,000	50/250/600	1250	32	200
	PMT-134	PMTF-134	PMTS-134	PMTM-134	Output	5:1	160	4/8	13.7	0.72	200
	PMT-135	PMTF-135	PMTS-135	PMTM-135	Mike To Line	9:1	50,000	50/250/600	2480	24.5	200
	PMT-136	PMTF-136	PMTS-136	PMTM-136	Mike To Line	1:1.5	50/250	50/250/600	17.5	33.5	200
	PMT-137	PMTF-137	PMTS-137	PMTM-137	Input	1:50	200	500,000	17.5	4800	200
	PMT-138	PMTF-138	PMTS-138	PMTM-138	Interstage	1:10	10,000	1 MEG	377	5400	200
	PMT-139	PMTF-139	PMTS-139	PMTM-139	Reactor		50 HYS @ 3 MADC		5000		200
	PMT-140	PMTF-140	PMTS-140	PMTM-140	Reactor		10 HYS @ 10 MADC		.720		200
	PMT-141	PMTF-141	PMTS-141	PMTM-141	Reactor		1.6 HYS @ 3 MADC		.165		200
	PMT-142	PMTF-142	PMTS-142	PMTM-142	Input	1:10	8,000	800,000	377	5400	200
	PMT-143	PMTF-143	PMTS-143	PMTM-143	Output	7.9:1	10,000	225	1000	42	200
	PMT-144	PMTF-144	PMTS-144	PMTM-144	Input	1:35	82	100,000	14	4500	200
	PMT-145	PMTF-145	PMTS-145	PMTM-145	Input	1:11	600	75,000 CT	48	1300	200
	PMT-146	PMTF-146	PMTS-146	PMTM-146	Microphone	1.25:4	1,000	500,000	242	3500	200

ALL UNITS HAVE 2" LEAD LENGTHS AND COLOR CODED.

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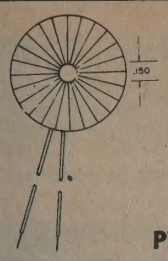

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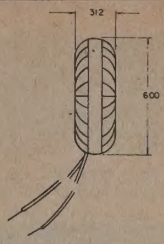

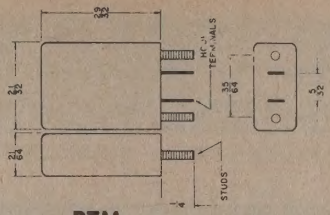

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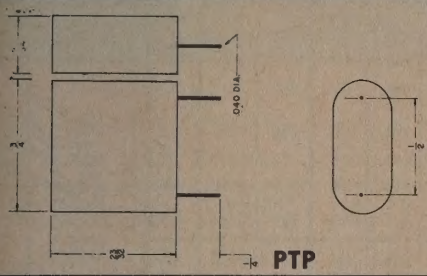

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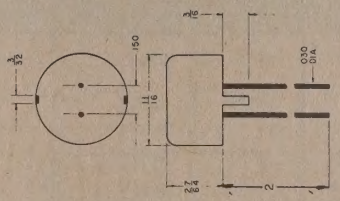

PTH

FOR FREQUENCIES UP TO 15 KC

Section	Open	Crystal Case Metal	Plastic Case	Hermitic Seal	Inductance	DCR (Ohms)	Dist. Cap (mmfd)
1	PT-1	PTM-1	PTP-1	PTH-1	5.0MH	2.3	30
	PT-2	PTM-2	PTP-2	PTH-2	6.0	3.1	31
	PT-3	PTM-3	PTP-3	PTH-3	7.2	3.5	32
	PT-4	PTM-4	PTP-4	PTH-4	8.6	4.2	33
	PT-5	PTM-5	PTP-5	PTH-5	10.0	4.9	33
	PT-6	PTM-6	PTP-6	PTH-6	12.0	5.4	34
	PT-7	PTM-7	PTP-7	PTH-7	15.0	7.3	34
	PT-8	PTM-8	PTP-8	PTH-8	17.5	8.5	35
	PT-9	PTM-9	PTP-9	PTH-9	20.0	11.2	36
	PT-10	PTM-10	PTP-10	PTH-10	24.0	13.1	37
	PT-11	PTM-11	PTP-11	PTH-11	30.0	14.3	37
	PT-12	PTM-12	PTP-12	PTH-12	36.0	18.0	38
	PT-13	PTM-13	PTP-13	PTH-13	43.0	22.0	39
	PT-14	PTM-14	PTP-14	PTH-14	50.0	25.0	40
	PT-15	PTM-15	PTP-15	PTH-15	60.0	33.0	40
	PT-16	PTM-16	PTP-16	PTH-16	72.0	35.0	41
	PT-17	PTM-17	PTP-17	PTH-17	86.0	39.0	42
	PT-18	PTM-18	PTP-18	PTH-18	100.0	49.0	42
	PT-19	PTM-19	PTP-19	PTH-19	120.0	59.0	43
	PT-20	PTM-20	PTP-20	PTH-20	150.0	78.0	44
	PT-21	PTM-21	PTP-21	PTH-21	175.0	85.0	44
	PT-22	PTM-22	PTP-22	PTH-22	200.0	115.0	45
	PT-23	PTM-23	PTP-23	PTH-23	240.0	130.0	46
	PT-24	PTM-24	PTP-24	PTH-24	300.0	150.0	46
	PT-25	PTM-25	PTP-25	PTH-25	360.0	190.0	47
	PT-26	PTM-26	PTP-26	PTH-26	430.0	210.0	48
	PT-27	PTM-27	PTP-27	PTH-27	500.0	290.0	48
	PT-28	PTM 28	PTP-28	PTH-28	600.0	320.0	49
	PT-29	PTM-29	PTP-29	PTH-29	720.0	350.0	50
	PT-30	PTM-30	PTP-30	PTH-30	860.0	380.0	50
	PT-31	PTM-31	PTP-31	PTH-31	1.0HY	520.0	51
	PT-32	PTM-32	PTP-32	PTH-32	1.2	580.0	52
	PT-33	PTM-33	PTP-33	PTH-33	1.5	780.0	53
	PT-34	PTM-34	PTP-34	PTH-34	1.7	880.0	53
	PT-35	PTM-35	PTP-35	PTH-35	2.0	1050.0	54
	PT-36	PTM-36	PTP-36	PTH-36	2.4	1230.0	54
	PT-37	PTM-37	PTP-37	PTH-37	3.0	1700.0	56

FOR FREQUENCIES UP TO 100 KC

Section	Open	Crystal Case Metal	Plastic Case	Hermitic Seal	Inductance	DCR (Ohms)	Dist. Cap (mmfd)
2	PT-38	PTM-38	PTP-38	PTH-38	1.0MH	1.2	22
	PT-39	PTM-39	PTP-39	PTH-39	1.2	1.3	23
	PT-40	PTM-40	PTP-40	PTH-40	1.5	1.8	24
	PT-41	PTM-41	PTP-41	PTH-41	1.7	2.0	25
	PT-42	PTM-42	PTP-42	PTH-42	2.0	2.1	25
	PT-43	PTM-43	PTP-43	PTH-43	2.4	2.9	26
	PT-44	PTM-44	PTP-44	PTH-44	3.0	3.2	26
	PT-45	PTM-45	PTP-45	PTH-45	3.6	4.6	27
	PT-46	PTM-46	PTP-46	PTH-46	4.3	4.8	28
	PT-47	PTM-47	PTP-47	PTH-47	5.0	5.3	28
	PT-48	PTM-48	PTP-48	PTH-48	6.0	7.2	29
	PT-49	PTM-49	PTP-49	PTH-49	7.2	8.1	30
	PT-50	PTM-50	PTP-50	PTH-50	8.6	8.7	30
	PT-51	PTM-51	PTP-51	PTH-51	10.0	12.0	31
	PT-52	PTM-52	PTP-52	PTH-52	12.0	12.5	31

FOR FREQUENCIES UP TO 100 KC

Section	Open	Crystal Case Metal	Plastic Case	Hermitic Seal	Inductance	DCR (Ohms)	Dist. Cap (mmfd)
3	PT-53	PTM-53	PTP-53	PTH-53	15.0MH	14.0	32
	PT-54	PTM-54	PTP-54	PTH-54	17.5	19.5	33
	PT-55	PTM-55	PTP-55	PTH-55	20.0	22.0	33
	PT-56	PTM-56	PTP-56	PTH-56	24.0	24.0	34
	PT-57	PTM-57	PTP-57	PTH-57	30.0	32.0	35
	PT-58	PTM-58	PTP-58	PTH-58	36.0	34.0	36
	PT-59	PTM-59	PTP-59	PTH-59	43.0	47.0	36
	PT-60	PTM-60	PTP-60	PTH-60	50.0	51.0	37
	PT-61	PTM-61	PTP-61	PTH-61	60.0	73.0	37
	PT-62	PTM-62	PTP-62	PTH-62	72.0	79.0	38
	PT-63	PTM-63	PTP-63	PTH-63	86.0	86.0	38
	PT-64	PTM-64	PTP-64	PTH-64	100.0	115.0	39
	PT-65	PTM-65	PTP-65	PTH-65	120.0	130.0	40
	PT-66	PTM-66	PTP-66	PTH-66	150.0	180.0	40
	PT-67	PTM-67	PTP-67	PTH-67	175.0	190.0	41
	PT-68	PTM-68	PTP-68	PTH-68	200.0	210.0	42
	PT-69	PTM-69	PTP-69	PTH-69	240.0	300.0	42
	PT-70	PTM-70	PTP-70	PTH-70	300.0	330.0	43
	PT-71	PTM-71	PTP-71	PTH-71	360.0	350.0	44
	PT-72	PTM-72	PTP-72	PTH-72	430.0	470.0	45
	PT-73	PTM-73	PTP-73	PTH-73	500.0	510.0	45

FOR FREQUENCIES UP TO 5 MC

Section	Open	Crystal Case Metal	Plastic Case	Hermitic Seal	Inductance	DCR (Ohms)	Dist. Cap (mmfd)
4	PT-74	PTM-74	PTP-74	PTH-74	.05MH	.8	10
	PT-75	PTM-75	PTP-75	PTH-75	.06	.9	10
	PT-76	PTM-76	PTP-76	PTH-76	.072	1.0	11
	PT-77	PTM-77	PTP-77	PTH-77	.086	1.05	11
	PT-78	PTM-78	PTP-78	PTH-78	.10	1.10	12
	PT-79	PTM-79	PTP-79	PTH-79	.12	1.125	13
	PT-80	PTM-80	PTP-80	PTH-80	.15	1.7	14
	PT-81	PTM-81	PTP-81	PTH-81	.175	2.0	14
	PT-82	PTM-82	PTP-82	PTH-82	.20	2.2	15
	PT-83	PTM-83	PTP-83	PTH-83	.24	2.4	15
	PT-84	PTM-84	PTP-84	PTH-84	.30	2.7	16
	PT-85	PTM-85	PTP-85	PTH-85	.36	2.9	16
	PT-86	PTM-86	PTP-86	PTH-86	.43	3.2	17
	PT-87	PTM-87	PTP-87	PTH-87	.50	3.9	17
	PT-88	PTM-88	PTP-88	PTH-88	.60	5.0	18
	PT-89	PTM-89	PTP-89	PTH-89	.72	5.4	18
	PT-90	PTM-90	PTP-90	PTH-90	.86	7.1	19
	PT-91	PTM-91	PTP-91	PTH-91	1.00	8.9	20
	PT-92	PTM-92	PTP-92	PTH-92	1.20	9.7	20
	PT-93	PTM-93	PTP-93	PTH-93	1.50	11.0	21
	PT-94	PTM-94	PTP-94	PTH-94	1.75	11.7	21
	PT-95	PTM-95	PTP-95	PTH-95	2.00	12.8	22
	PT-96	PTM-96	PTP-96	PTH-96	2.40	14.0	23
	PT-97	PTM-97	PTP-97	PTH-97	3.00	18.7	23
	PT-98	PTM-98	PTP-98	PTH-98	3.60	20.6	24
	PT-99	PTM-99	PTP-99	PTH-99	4.30	22.4	25
	PT-100	PTM-100	PTP-100	PTH-100	5.00	24.2	25
	PT-101	PTM-101	PTP-101	PTH-101	6.00	33.6	26
	PT-102	PTM-102	PTP-102	PTH-102	7.20	37.6	27
	PT-103	PTM-103	PTP-103	PTH-103	8.60	50.5	28
	PT-104	PTM-104	PTP-104	PTH-104	10.00	54.5	29

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POWER TRANSFORMERS

Stancor's broad line of commercial grade power transformers offers a choice of standard mounting styles. Listings are in ascending order of plate-supply voltage for ease of selection.

All units are designed and built to meet the exacting requirements of EIA for electrical tolerances, dielectric strength, temperature rise and construction. All are insulated with class A materials; (105°C max. operating temperature).

Transformers designed for full-wave C.T. rectification with capacitor input filter may be used with choke input filter allowing an increase in D.C. current of 30%.

Transformers designed for full-wave C.T. rectification with choke input filter may be used with capacitor input filter requiring a decrease in D.C. current of 25%.

CONSULT FACTORY for detailed information concerning electrical rating and/or mechanical characteristics.

FOR CAPACITOR INPUT SYSTEMS — PRIMARIES 117 VOLTS 60 CYCLES

Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
1	P-8379	M†	115[a]	290			2.7 6.3	.45 8.0	Leads	Leads	2 13/16	3 7/16	4	2 7/16	3	5.7	A
	P-8158	M†	117[a]	200			6.3 6.3 6.3	4.25 4.0 2.0	Leads	Leads	3 7/16	4 3/16	3 5/8	2 3/4	3 7/16	6.2	
	P-8336	M†	117[a]	280			6.3 6.3 6.3	9.5 1.2 .6	Leads	Leads	3 3/4	4 9/16	4 1/4	3 1/4	4 1/16	8.0	
	P-8386	C4†	117[a]	300			6.3	10.0	Leads	Leads	3 3/4	4	3 1/8	2 1/8	2 1/2	6.9	
2	P-6146	C	120-0-120	250	5.0	3.0			Leads	Leads	3 1/8	3 1/4	3 7/8	2 1/2	1 15/16	4.2	A
	PS-8415	S	125[b]	15			6.3	.6	Leads	Leads	1 3/8	2 3/8	1 15/16	2	—	.7	
	PS-8416	S	125-0-125	25			6.3	1.0	Leads	Leads	1 3/4	2 13/16	2 5/16	2 3/8	—	1.0	
	PA-8421	A	125[b]	50			6.3	2.0	Leads	Leads	2 1/8	3 1/16	2 1/4	3 1/8	—	1.5	
	P-8181	VE	150[b]	25			6.3 C.T.	.5	Leads	Leads	1 13/16	2 3/8	1 15/16	2	—	.8	
	P-8372	M	150[b]	250			6.3 6.3	8.0 1.2	Leads	Leads	3 3/4	4 1/2	4 1/8	3	3 3/4	8.7	
	P-9000C	C†	155[a]	450			6.3 6.3	2.0 13.5	Leads	Leads	3 1/2	4 7/8	4 3/16	3 1/16	3 13/16	12.0	
	P-8359	C	190-160-0-160-190	70			6.3 C.T. 6.3	3.0 .6	Leads	Leads	2 1/2	2 5/8	3 1/8	2	1 7/8	2.8	
	P-8383	C	200-0-200	110			6.3 6.3 C.T.	2.0 4.0	Leads	Leads	2 1/2	3 1/4	3 1/8	2	2 1/4	3.0	C
	PC-8417	C	220-0-220	50			6.3 25.2	.6 .5	Leads	Leads	2 1/2	2 5/8	3 1/8	2	1 9/16	2.2	
3	PCC-40	SC	225-0-225	40	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2 7/8	3 1/2	3 1/2	2	3 1/8	3.2	C1
	PSC-40	SC	225-0-225	40	5.0	2.0	6.3 C.T.	2.0	Lugs	Lugs	2 7/8	3 1/2	3 3/4	2	3 1/8	3.2	
	P-8155	M	225-0-225	90	5.0	2.0	6.3	5.15	Leads	Leads	2 13/16	3 3/8	3 3/4	2 1/4	2 13/16	4.5	
	PC-8418	C	230-0-230	50			6.3	2.5	Leads	Leads	2 1/2	2 5/8	3 1/8	2	1 9/16	2.2	
	PM-8418	M	230-0-230	50			6.3	2.5	Leads	Leads	2 1/2	3	2 5/8	2	2 1/2	2.2	
	PC-8401	C	235-0-235	40	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2 1/2	2 5/8	3 1/8	2	1 9/16	2.2	
	PM-8401	M	235-0-235	40	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2 1/2	3	2 5/8	2	2 1/2	2.2	
	P-8374	M†	235-0-235	260	5.0	6.0	6.3 6.3 6.3	5.0 5.0 1.2	Leads	Leads	3 7/16	4 3/16	4 7/8	3	3 11/16	10.0	
	P-8382	M6	235[b] 35	20 1	5.0	2.0	6.3	2.85	Leads	Leads	2 3/16	2 5/8	3 1/8	2 13/16	—	2.5	
	PC-8402	C	240-0-240	55	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2 1/2	2 3/4	3 1/8	2	1 3/4	2.4	
	PM-8402	M	240-0-240	55	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2 1/2	3	2 3/4	2	2 1/2	2.4	
4	P-6348	M	240-0-240	60			6.3 C.T.	2.75	Leads	Leads	2 3/16	2 5/8	2 3/4	1 15/16	—	2.3	C3
	PC-8419	C	240-0-240	70			6.3	3.0	Leads	Leads	2 1/2	2 7/8	3 1/8	2	1 13/16	2.6	
	PM-8419	M	240-0-240	70			6.3	3.0	Leads	Leads	2 1/2	3	2 7/8	2	2 1/2	2.6	
	• PC-8431	C	245-0-245	40			6.3 C.T.	2.0	Leads	Leads	2 3/16	2 5/16	2 5/8	1 3/4	1 3/8	1.6	
	P-8173	C1	250-0-250	10			6.3 6.3	.6 1.2	Leads	Leads	2 7/8	2 1/8	2 1/4	2 3/8	—	1.0	
	P-8174	C1	250-0-250	20			6.3 6.3	.6 1.2	Leads	Leads	2 1/4	3 5/16	2 5/8	2 13/16	—	1.5	
	• PC-8432	C	250-0-250	55			6.3 C.T.	2.0	Leads	Leads	2 3/16	2 9/16	2 5/8	1 3/4	1 5/8	1.9	
	PC-8403	C	250-0-250	70	5.0	2.0	6.3 C.T.	2.5	Leads	Leads	2 1/2	3 1/8	3 1/8	2	2 1/16	3.2	
	PM-8403	M	250-0-250	70	5.0	2.0	6.3 C.T.	2.5	Leads	Leads	2 1/2	3	3 1/8	2	2 1/2	3.2	
	• PC-8433	C	255-0-255	70			6.3 C.T.	2.5	Leads	Leads	2 1/2	2 5/8	3 1/8	2	1 11/16	2.3	
	PC-8404	C	260-0-260	90	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	2 13/16	3 1/2	3 1/2	2 1/4	2 1/4	4.0	
	PM-8404	M	260-0-260	90	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	2 13/16	3 3/8	3 1/2	2 1/4	2 13/16	4.0	
	PC-8420	C	260-0-260	90			6.3	4.0	Leads	Leads	2 13/16	3 1/4	3 1/2	2 1/4	2	3.5	
	PM-8420	M	260-0-260	90			6.3	4.0	Leads	Leads	2 13/16	3 3/8	3 1/2	2 1/4	2 13/16	3.5	
	P-8354	M5†	260-0-260	325	5.0 C.T.	6.0	6.3	11.0	Leads‡	Leads‡	3 3/4	4 1/2	5 1/4	3 5/16	4 1/16	11.0	C4
	P-8353	C3	265-0-265	300	5.0	6.0	12.6 C.T.	6.0	Leads	Leads‡	3 3/4	4 3/4	5 7/16	3	4	12.5	
	• PC-8434	C	270-0-270	90			6.3 C.T.	2.5	Leads	Leads	2 1/2	2 5/8	3 1/8	2	1 11/16	2.3	
5	PCC-55	SC	270-0-270	55	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2 7/8	3 1/2	3 1/2	2	3 1/8	3.5	M
	PSC-55	SC	270-0-270	55	5.0	2.0	6.3 C.T.	2.0	Lugs	Lugs	2 7/8	3 1/2	3 3/4	2	3 1/8	3.5	
	PC-8405	C	270-0-270	120	5.0	3.0	6.3 C.T.	3.5	Leads	Leads	3 1/8	3 1/2	3 7/8	2 1/2	2 5/16	4.9	
	PM-8405	M	270-0-270	120	5.0	3.0	6.3 C.T.	3.5	Leads	Leads	3 1/8	3 3/4	3 7/16	2 1/2	3 1/8	4.9	
	P-8172	M	270-0-270	200	5.0	3.0	6.3	8.5	Leads	Leads	3 1/8	3 3/4	4 7/16	2 11/16	3 5/16	7.0	
	P-8356	C†	270-0-270	260	5.0	3.0	6.3	8.8	Leads	Leads	3 1/8	3 3/8	3 7/8	2 1/2	2 1/4	6.5	
	P-8376	M†	270-0-270	320	5.0	4.0	6.3	10.0	Leads	Leads	3 7/16	4 1/4	4 1/8	3	3 11/16	8.5	
	P-8377	M†	270-0-270	280	5.0	3.0	6.3	10.0	Leads	Leads	3 1/8	3 15/16	3 5/8	2 11/16	3 5/16	6.7	
	P-8334	M†	275-0-275	305	5.0	5.0	6.3 6.3	8.5 1.2	Leads	Leads	3 3/4	4 9/16	5 1/8	3 1/4	4 1/16	13.0	
	P-8167	M†	280-0-280	400	5.0	6.0	6.3 6.3	4.5 8.5	Leads	Leads	3 3/4	4 9/16	5 1/2	3 1/4	4 1/16	13.0	
	P-8332	M†	280-0-280	260	5.0	5.0	6.3 6.3 6.3	7.1 1.2 .9	Leads	Leads	3 3/4	4 9/16	4 15/16	3 1/4	4 1/16	11.0	

a. For use in Voltage Doubler Circuits. b. For use in Half-Wave Circuits. † With Copper shorting band to reduce external Magnetic Field.
‡ Plate wdg and rectifier filament wdg Connected to Tube Socket. • New Part Number.

ALL SECONDARY A.C. VOLTAGES ±3% **ALL PCC AND PSC NUMBERS MAY BE OPERATED AT 50 CYCLES**

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POWER TRANSFORMERS

ESSEX Stancor/RBM | STANCOR

FOR CAPACITOR INPUT SYSTEMS — PRIMARIES 117 VOLTS 60 CYCLES

Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
1	P-8373	M	280-0-280	280	5.0	3.0	6.3 24.0	10.0 2.6	Leads	Leads	3⅛	3¾	4¼	2 11⁄16	3⅝	8.0	
	P-8378	C†	280-0-280 250-0-250	300	5.0/3.0	4.5	6.3 24.0	10.0 1.2	Leads	Leads	3⅛	4⅝	3⅞	2½	3¼	7.9	
	P-8375	M3†	283-0-283	210	5.0 C.T.	3.0	6.3 6.3 6.3	7.5 1.5 1.2	Leads	Leads‡	3¾	4 9⁄16	4⅝	3	3¾	8.3	
	P-8355	C4†	285-0-285	250	5.0	3.0	6.3	9.5	Leads	Leads	3¾	3½	3 3⁄16	2½	2 3⁄16	6.5	
	P-8365	M†	285-0-285	325	5.0	6.0	12.6 C.T.	6.0	Leads	Leads	3¾	4 9⁄16	4⅝	3	3¾	10.2	
	P-8352	C	290-0-290	240	5.0	3.0	12.6 C.T.	5.25	Leads	Leads	3¾	3 15⁄16	4 13⁄16	3	3⅝	8.5	
	P-8367	M5†	290-0-290	270	5.0	6.0	6.3 6.3	8.5 1.2	Leads	Leads‡	3¾	4½	5⅛	3	3¾	12.5	
	P-8381	M†	290-0-290	290	5.0	3.0	6.3 6.3	5.0 5.0	Leads	Leads	3⅛	3 13⁄16	5	2 11⁄16	3⅝	6.9	M3
	P-8333	M3†	295-0-295	225	5.0 C.T.	3.0	6.3 6.3	11.4 .9	Leads	Leads‡	3¾	4 9⁄16	4⅞	3¼	4 1⁄16	10.0	
2	PCC-60	SC	300-0-300	60	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	3¼	4	3⅞	2¼	3½	4.5	
	PSC-60	SC	300-0-300	60	5.0	2.0	6.3 C.T.	3.0	Lugs	Lugs	3¼	4	4¼	2¼	3½	4.5	
	P-6358	C	300-0-300	65			6.3 C.T.	2.7	Leads	Leads	2½	2½	3⅛	2	1¾	3.0	
	P-8175	C	300-0-300	70	5.0	3.0	6.3 C.T.	3.0	Leads	Leads	2⅞	3⅛	3½	2¼	2¼	4.0	
	PM-8423	M	300-0-300	90	5.0	2.0	6.3 C.T.	3.5	Leads	Leads	2 13⁄16	3⅜	3	2¼	2 13⁄16	4.0	
	P-8177	C	300-0-300	120	5.0	3.0	6.3 C.T.	3.0	Leads	Leads	3 1⁄16	3⅝	3⅞	2¾	2 9⁄16	5.8	
	P-8164	M†	300-0-300	225	5.0	3.0	6.3	9.0	Leads	Leads	3 7⁄16	4 3⁄16	4⅛	2¾	3 7⁄16	7.5	
	P-8335	M†	300-0-300	325	5.0	6.0	6.3 6.3	8.8 1.5	Leads	Leads	3¾	4 9⁄16	5⅛	3¼	4 1⁄16	13.0	
	P-8331	M†	310-0-310	240	5.0	3.0	6.3 6.3	6.4 3.0	Leads	Leads	3¾	4 9⁄16	4½	3¼	4 1⁄16	9.0	M5
	P-8370	M5†	310-0-310	320	5.0 C.T.	6.0	6.3 6.3 6.3	11.0 1.2 1.2	Leads	Leads‡	3¾	4⅝	5⅜	3	3¾	14.0	
	P-8337	M3†	315-0-315	225	5.0	3.0	6.3	8.25	Leads	Leads‡	3¾	4½	4½	3¼	4 1⁄16	8.5	
3	P-8338	M†	315-0-315	310	5.0	6.0	6.7 6.4	10.0 1.6	Leads	Leads	3⅞	4¾	5⅜	3	3¾	12.5	
	P-8371	M3†	320-0-320 200-0-200	200 80	5.0 C.T.	3.0	6.3 6.3 6.3	4.0 4.0 3.0	Leads	Leads‡	3¾	4⅝	5⅜	3	3¾	11.3	
	P-6010	M	325-0-325	40	5.0 C.T.	2.0	6.3 C.T.	2.0	Leads	Leads	2½	3	2¾	2	2½	2.4	
	PC-8406	C	325-0-325	40	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2½	2¾	3⅛	2	1 11⁄16	2.4	
	PM-8406	M	325-0-325	40	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2½	3	2¾	2	2½	2.4	
	PC-8407	C	325-0-325	55	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2½	3⅛	3⅛	2	2 1⁄16	3.2	
	PM-8407	M	325-0-325	55	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2½	3	3⅛	2	2½	3.2	
	• PC-8437	C	325-0-325	55			6.3 C.T.	2.0	Leads	Leads	2⅜	2 9⁄16	2⅝	1¾	1⅝	1.9	
	PC-8422	C	325-0-325	150	5.0	3.0	6.3 C.T.	5.0	Leads	Leads	3⅛	3⅞	3⅞	2½	2 9⁄16	5.8	
	PM-8422	M	325-0-325	150	5.0	3.0	6.3 C.T.	5.0	Leads	Leads	3⅛	3¾	3⅝	2½	3⅛	5.8	
	P-8339	C	325-0-325	255	5.0	3.0	12.6 C.T.	5.25	Leads	Leads	3¾	4	4⅞	3	3¾	8.5	
	P-8369	M3†	325-0-325	240	5.0 C.T.	3.0	6.3 6.3 6.3	10.0 .9 1.2	Leads	Leads‡	3¾	4⅝	5⅜	3	3¾	11.5	
4	• PC-8436	C	330-0-330	40			6.3 C.T.	2.0	Leads	Leads	2 3⁄16	2 9⁄16	2⅝	1¾	1⅝	1.9	
	PCC-85	SC	330-0-330	85	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	3 1⁄16	4⅞	4 5⁄16	2¾	3⅞	6.0	
	PSC-85	SC	330-0-330	85	5.0	2.0	6.3 C.T.	3.0	Lugs	Lugs	3 1⁄16	4⅞	4 5⁄16	2¾	3⅞	6.0	
	PCC-70	SC	335-0-335	70	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	3¼	4	3⅞	2¼	3½	4.5	
	PSC-70	SC	335-0-335	70	5.0	2.0	6.3 C.T.	3.0	Lugs	Lugs	3¼	4	4¼	2¼	3½	4.5	
	P-5059	C	337-0-337	200	5.0 C.T.	3.0	6.3 C.T.	5.0	Leads▲	Leads	3¾	4 5⁄16	4 11⁄16	3	3 9⁄16	9.6	
	PC-8408	C	340-0-340	70	5.0	2.0	6.3 C.T.	2.5	Leads	Leads	2 13⁄16	3⅜	3½	2¼	2⅛	3.8	
	PM-8408	M	340-0-340	70	5.0	2.0	6.3 C.T.	2.5	Leads	Leads	2 13⁄16	3⅜	3½	2¼	2 13⁄16	3.8	
	P-8166	M†	340-0-340	330	5.0	6.0	6.3 6.3 6.3	2.5 5.0 5.0	Leads	Leads	3¾	4 9⁄16	5⅜	3¼	4 1⁄16	13.0	
	• PC-8438	C	345-0-345	70			6.3 C.T.	2.5	Leads	Leads	2½	2¾	3⅛	2	1¾	2.5	
	PCC-105	SC	345-0-345	105	5.0	2.0	6.3 C.T.	3.5	Leads	Leads	3 1⁄16	4 7⁄16	4 5⁄16	2¾	3⅞	6.5	
	PSC-105	SC	345-0-345	105	5.0	2.0	6.3 C.T.	3.5	Lugs	Lugs	3 1⁄16	4 7⁄16	4 11⁄16	2¾	3⅞	6.5	
	P-6011	M	350-0-350	70	5.0 C.T.	3.0	6.3 C.T.	2.5	Leads	Leads	2½	3	3⅜	2	2½	3.5	
	• PC-8439	C	350-0-350	90			6.3 C.T.	3.0	Leads	Leads	2½	3⅛	3⅛	2	2 9⁄16	3.1	
	P-6012	M	350-0-350	90	5.0 C.T.	3.0	6.3 C.T.	3.5	Leads	Leads	2 13⁄16	3⅜	3½	2¼	2 13⁄16	4.2	
	PC-8409	C	350-0-350	90	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	2 13⁄16	3⅜	3½	2¼	2⅜	4.5	
	PM-8409	M	350-0-350	90	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	2 13⁄16	3⅜	3½	2¼	2 13⁄16	4.5	SC
5	P-8176	C	350-0-350	110	5.0	2.0	6.3 C.T. 6.3 C.T.	3.0 3.0	Leads	Leads	3¼	3⅞	3 13⁄16	2¾	3	5.5	
	P-6013	M	350-0-350	120	5.0 C.T.	3.0	6.3 C.T.	4.7	Leads	Leads	3⅛	3¾	3⅜	2½	3⅛	5.2	
	P-8345	M†	350-0-350	215	5.0	3.0	6.3 6.3	9.0 1.2	Leads	Leads	3¾	4 9⁄16	5	3¼	4 1⁄16	11.5	
	P-8350	M†	350-0-350	270	5.0 5.0	6.0 2.0	6.3 6.6	1.5 7.8	Leads	Leads	3¾	4 9⁄16	5½	3¼	4 1⁄16	13.0	
	P-8340	M†	355-0-355	270	5.0	6.0	6.3 6.3 6.3	9.5 1.65 2.4	Leads	Leads	3¾	4 9⁄16	5⅜	3¼	4 1⁄16	12.0	
	PC-8410	C	360-0-360	120	5.0	3.0	6.3 C.T.	3.5	Leads	Leads	3⅛	3¾	3⅞	2½	2 7⁄16	5.5	
	PM-8410	M	360-0-360	120	5.0	3.0	6.3 C.T.	3.5	Leads	Leads	3⅛	3¾	3½	2½	3⅛	5.5	VE

† With Copper shorting band to reduce external Magnetic Field. ‡ Plate wdg and rectifier filament wdg Connected to Tube Socket.
▲ Primary for 117-107 volts. • New Part Number.

ALL SECONDARY A.C. VOLTAGES ±3% **ALL PCC AND PSC NUMBERS MAY BE OPERATED AT 50 CYCLES**

ESSEX Stancor/RBM | STANCOR

POWER TRANSFORMERS

FOR CAPACITOR INPUT SYSTEMS — PRIMARIES 117 VOLTS 60 CYCLES

Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
1	P-8341	C†	360-0-360 220-0-220	175 110	5.0 5.0	3.0 2.0	12.6 C.T.	5.45	Leads	Leads	3¾	4⅞	4¾	3	3½	11.0	C
	P8349	M†	360-0-360	260	5.0	6.0	5.0 6.3	2.0 8.85	Leads	Leads	3¾	4⅝	5½	3¼	4⅛	13.0	
	P-8351	M	360-0-360	240	5.0	6.0	6.5	9.3	Leads	Leads	3¾	4⅝	4 13/16	3¼	4⅛	10.5	
	P-8343	C	360-0-360 220-0-220	220 110	5.0 5.0	3.0 2.0	12.8 C.T.	5.8	Leads	Leads	3¾	5¼	4¾	3	3⅞	11.5	
	P-8344	C†	365-0-365 200-0-200	170 84	5.0 5.0	3.0 2.0	12.6	4.25	Leads	Leads	3¾	4½	4¾	3	3⅛	9.0	
	P-8342	M†	365-0-365	260	5.0	6.0	6.3 6.3	8.85 1.2	Leads	Leads	3¾	4⅝	5⅜	3¼	4⅛	13.0	
2	P-8348	M†	365-0-365	270	5.0	6.0	6.7	4.5	Leads	Leads	3¾	4⅝	4⅞	3¼	4⅛	10.0	C
	PCC-150	SC	370-0-370	150	5.0	3.0	6.3 C.T. 6.3 C.T.	4.0 1.0	Leads	Leads	4⅝	5¼	5 5/16	2½	4¾	11.5	
	PSC-150	SC	370-0-370	150	5.0	3.0	6.3 C.T. 6.3 C.T.	4.0 1.0	Lugs	Lugs	4⅝	5¼	5 5/16	2½	4¾	11.5	
	P-6315	M	370-0-370	275	5.0 C.T.	3.0	6.3 C.T.	7.0	Leads	Leads	3¾	4½	4¼	3	3¾	9.3	
	P-8366	M†	370-0-370	220	5.0	6.0	6.3 6.3 6.3	6.0 4.0 1.2	Leads	Leads	3¾	4⅝	5¼	3	3¾	11.0	
	PC-8441	C	375-0-375	150			6.3 C.T.	4.5	Leads	Leads	3⅛	3⅝	3⅞	2½	2⅜	4.9	M
	PCC-120	SC	375-0-375	120	5.0	3.0	6.3 C.T.	4.0	Leads	Leads	4⅝	5¼	5 5/16	2½	4¾	9.5	
	PSC-120	SC	375-0-375	120	5.0	3.0	6.3 C.T.	4.0	Lugs	Lugs	4⅝	5¼	5 5/16	2½	4¾	9.5	
	P-6014	M	375-0-375	150	5.0 C.T.	3.0	6.3 C.T.	5.0	Leads	Leads	3⅛	3¾	3¾	2½	3⅛	6.0	
	PC-8411	C	375-0-375	150	5.0	3.0	6.3 C.T.	4.5	Leads	Leads	3 7/16	4	4¼	2¾	2 13/16	5.8	
	PM-8411	M	375-0-375	150	5.0	3.0	6.3 C.T.	4.5	Leads	Leads	3 7/16	4⅛	3 7/16	2¾	3 7/16	5.8	
3	P-8171	M3†‡	375-0-375	225	5.0 C.T.	3.0	6.3 6.3	2.0 9.0	Leads	Leads	3¾	4½	4⅞	3	3¾	10.5	M
	P-8169	M†	380-0-380	220	5.0	3.0	6.3 6.3 6.3	1.2 5.0 7.0	Leads	Leads	3¾	4⅝	4¾	3	3¾	10.5	
	P-8170	C†	380-0-380	220	5.0	3.0	6.3 6.3 6.3	1.2 5.0 7.0	Leads	Leads	3¾	4¾	4¾	3	3 9/16	10.5	
	PCC-200	SC	385-0-385	200	5.0	3.0	6.3 C.T. 6.3 C.T.	4.5 1.0	Leads	Leads	4⅝	5¼	5 5/16	2½	4¾	12.0	M3
	PSC-200	SC	385-0-385	200	5.0	3.0	6.3 C.T. 6.3 C.T.	4.5 1.0	Lugs	Lugs	4⅝	5¼	5 5/16	2½	4¾	12.0	
4	P-8347	M†	385-0-385	230	5.0	3.0	5.0 6.45 6.3	2.0 7.4 1.6	Leads	Leads	3¾	4⅝	5 5/16	3¼	4⅛	13.0	
	•PC-8442	C	400-0-400	200			6.3 C.T.	5.0	Leads	Leads	3⅛	3⅞	3⅞	2½	2⅜	5.7	
	P-6007	M	400-0-400	110	5.0 C.T.	3.0	2.5 C.T. 2.5 C.T.	15.0 3.5	Leads	Leads	3⅛	3¾	3½	2½	3⅛	5.4	
	P4004	C▲	400-0-400 80v. Bias	175	5.0 C.T.	3.0	2.5 6.3 C.T. 6.3 C.T.	1.75 2.5 2.5	Leads	Leads	3¾	3⅞	4 11/16	3	2 13/16	8.3	
5	P-8346	C	400-0-400 330-0-330	180 180	5.0 5.0	3.0 3.0			Leads	Leads	3¾	4¾	4¾	3	3½	11.0	SC
	PC-8412	C	400-0-400	200	5.0	3.0	6.3 C.T.	5.0	Leads	Leads	3¾	4	4 11/16	3	2 13/16	8.2	
	PM-8412	M	400-0-400	200	5.0	3.0	6.3 C.T.	5.0	Leads	Leads	3¾	4½	3⅞	3	3¾	8.2	
	PC-8413	C	400-0-400	250	5.0	4.0	6.3 C.T.	5.0	Leads	Leads	3¾	4½	4 11/16	3	3 5/16	10.0	
	PCC-250	SC	400-80-0-80-400	250	5.0	6.0	5.0 6.3 C.T.	2.0 7.0	Leads	Leads	5 5/16	5⅞	6 1/16	3½	5⅜	15.0	
	PSC-250	SC	400-80-0-80-400	250	5.0	6.0	5.0 6.3 C.T.	2.0 7.0	Lugs	Lugs	5 5/16	5⅞	6 1/16	3½	5⅜	15.0	
	P-8360	C	437-0-437	185	5.0	3.0	6.3 6.3	3.0 4.0	Leads	Leads	3¾	4½	4 11/16	3	3⅜	9.5	
	P-6143	C	440-0-440	130	5.0	3.0	6.3 C.T.	3.5	Leads	Leads	3 7/16	4⅛	4¼	2¾	2 13/16	7.0	
	PC-8414	C	600-0-600	200	5.0	3.0	6.3 6.3	3.0 3.0	Leads	Leads	3¾	4¼	4 11/16	3	3 1/16	8.3	

SELECTING THE CORRECT POWER TRANSFORMER

STEP 1. Check rectifier tube and all other tube filament voltage and current requirements.
STEP 2. Add together total current drawn by:
A. Plates and screen grids
B. Resistor networks
Select a power transformer which will supply maximum required D.C. voltage at total current before filter.
STEP 3. Check type of rectifier, circuit, filter and load to obtain required secondary A.C. voltage from transformer.

EXAMPLE: Power transformer for typical 10 watt audio amplifier.

Quantity of Tubes	Type Number of Tubes	Filament Voltage	Filament Current
1	5Y3-GT	5.0 V	2.0 A
1	12AX7	6.3 V	0.3 A
2	12AU7	6.3 V	0.3 A (each)
2	6AQ5	6.3 V	0.45 A (each)

Total filament and heater requirements are: { 5.0 V @ 2.0 A / 6.3 V @ 1.8 A

Maximum D.C. voltage after filter: 285 volts.
At input capacitor of filter it will be approximately 325 volts D.C.

Current ratings for various amplifier stages (approximate):

12AX7	RC Coupled	2 ma. (total both sections)
12AU7	RC Coupled	10 ma. (total both sections)
6AQ5	(thru output transformer)	74 ma.*
		86 ma.

Tube characteristic data for the 5Y3-GT rectifier tube with capacitor input filter indicates an A.C. voltage requirement of approximately 335 volts R.M.S. per plate.

Selection based on total requirements: PC-8410 or PM-8410 depending on physical mounting style used.

* Includes screen grid current for each tube in the output stage.

† With Copper shorting band to reduce external Magnetic Field. ‡ Plate wdg and rectifier filament wdg Connected to Tube Socket.
▲ Primary for 117-107 Volts. • New Part Number

ALL SECONDARY A.C. VOLTAGES ±3% **ALL PCC AND PSC NUMBERS MAY BE OPERATED AT 50 CYCLES**

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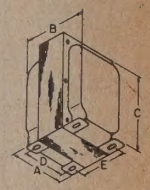
POWER TRANSFORMERS

ESSEX Stancor/RBM — STANCOR

FOR REACTOR INPUT SYSTEMS — PRIMARIES 117 VOLTS 50/60 CYCLES

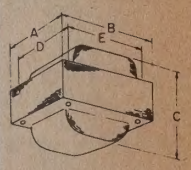
Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
1	PCR-55	SC	350-0-350	55	5.0	2.0	6.3 C.T.	2.0	Leads	Leads	2 7/8	3 1/2	3 1/2	2	3 1/8	3 1/4	C
	PSR-55	SC	350-0-350	55	5.0	2.0	6.3 C.T.	2.0	Lugs	Lugs	2 7/8	3 1/2	3 3/4	2	3 1/8	3 1/4	
	PCR-70	SC	425-0-425	70	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	3 1/4	4	3 7/8	2 1/4	3 1/2	4 1/2	
	PSR-70	SC	425-0-425	70	5.0	2.0	6.3 C.T.	3.0	Lugs	Lugs	3 1/4	4	4 1/4	2 1/4	3 1/2	4 1/2	
	PCR-85	SC	440-0-440	85	5.0	2.0	6.3 C.T.	3.0	Leads	Leads	3 11/16	4 7/16	4 5/16	2 3/4	3 7/8	6	
	PSR-85	SC	440-0-440	85	5.0	2.0	6.3 C.T.	3.0	Lugs	Lugs	3 11/16	4 7/16	4 5/16	2 3/4	3 7/8	6	
	PCR-105	SC	450-0-450	105	5.0	2.0	6.3 C.T.	3.5	Leads	Leads	3 11/16	4 7/16	4 5/16	2 3/4	3 7/8	6 1/2	
	PSR-105	SC	450-0-450	105	5.0	2.0	6.3 C.T.	3.5	Lugs	Lugs	3 11/16	4 7/16	4 11/16	2 3/4	3 7/8	6 1/2	
	PCR-120	SC	500-0-500	120	5.0	3.0	6.3 C.T.	4.0	Leads	Leads	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	9 1/2	
	PSR-120	SC	500-0-500	120	3.0	3.0	6.3 C.T.	4.0	Lugs	Lugs	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	9 1/2	
	PCR-150	SC	510-0-510	150	5.0	3.0	6.3 C.T. 6.3 C.T.	1.0 4.0	Leads	Leads	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	11 1/2	
	PSR-150	SC	510-0-510	150	5.0	3.0	6.3 C.T. 6.3 C.T.	1.0 4.0	Lugs	Lugs	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	11 1/2	
	PCR-200	SC	520-0-520	200	5.0	3.0	6.3 C.T. 6.3 C.T.	1.0 4.5	Leads	Leads	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	12 1/4	
	PSR-200	SC	520-0-520	200	5.0	3.0	6.3 C.T. 6.3 C.T.	1.0 4.5	Lugs	Lugs	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	12 1/4	
	PCR-300	SC	550-370-75-0 -75-370-550	300	5.0	6.0	6.3 C.T. 6.3 C.T.	1.0 5.0	Leads	Leads	5 7/8	5 7/8	6 1/16	3 1/2	5 3/8	17 1/2	
	PSR-300	SC	550-370-75-0 -75-370-550	300	5.0	6.0	6.3 C.T. 6.3 C.T.	1.0 5.0	Lugs	Lugs	5 5/16	5 7/8	6 1/16	3 1/2	5 3/8	17 1/2	



C

FOR REGULATED POWER SUPPLIES — PRIMARIES 117 VOLTS 50/60 CYCLES

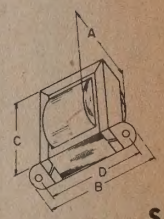
Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
2	PSC-165	SC	440-0-440	165	5.0	3.0	6.3 6.4 6.3 6.3	0.6 3.0 3.0 7.5	Lugs	Lugs	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	12	
	PSC-205	SC	450-0-450	200	5.0	2.0	6.3 6.3 6.3	0.6 4.0 4.0	Lugs	Lugs	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	12	



M

FOR BIAS SUPPLIES — PRIMARIES 117 VOLTS 50/60 CYCLES

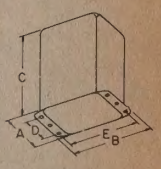
Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
3	1BC-150	SC	180-160-140-120-0-120-140-160-180	150	5.0	3.0			Leads	Leads	3 1/4	4	4 1/4	2 1/4	3 1/2	5	
	1BS-150	SC	180-160-140-120-0-120-140-160-180	150	5.0	3.0			Lugs	Lugs	3 1/4	4	4 1/4	2 1/4	3 1/2	5	
	2BC-150	SC	180-160-140-120-0-120-140-160-180	150	5.0	3.0	(Pri.-230v.)		Leads	Leads	3 1/4	4	4 1/4	2 1/4	3 1/2	5	
	2BS-150	SC	180-160-140-120-0-120-140-160-180	150	5.0	3.0	(Pri.-230v.)		Lugs	Lugs	3 1/4	4	4 1/4	2 1/4	3 1/2	5	
	P-6317	C	200-170-130-90-0-90-130-170-200	200	5.0	3.0			Leads	Leads/Lugs	3 1/8	3 7/8	3 7/8	2 1/2	2 3/16	4.9	
	P-6318	C	450-400-350-250-0-250-350-400-450	200	5.0	3.0			Leads	Leads/Lugs	3 7/16	4 1/4	4 5/16	2 3/4	2 13/16	7.0	



S

FOR CATHODE RAY TUBES — PRIMARIES 117 VOLTS 60 CYCLES

Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
4	P-8150	SC	1550[b]	1.5	2.5	1.75			Leads	Leads	2 1/2	3	3 1/16	1 3/4	2 11/16	1.8	
	P-8179	M	1600[b]	3.0			6.3/5/2.5 6.3/5/2.5	1.0 3.0	Lugs	Lugs	2 1/2	3	3 1/2	2	2 1/2	3.5	
	P-8178	C	1800[b]	2.0	2.5	1.8	2.5 6.3	2.2 0.6	Leads	Leads	3 1/8	3 3/4	3 7/8	2 1/2	2 1/2	5	
	P-8151	C	2400[b]	5.0	2.5	2.0	2.5	2.0	Leads	Leads	3 7/16	3 7/8	4 1/4	2 3/4	2 11/16	6.4	



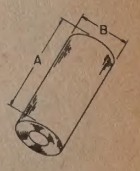
SC

FOR SOLAR CF-160 CONDENSER TESTER — PRIMARY 117 VOLTS 60 CYCLES

Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
5	P-6459	R	550[b] 55	30 60			6.3 6.3	0.9 0.6	Leads	Leads	2 3/16	2 3/8	2 1/4	1 3/4	2 3/16	1.4	

FOR 100 WS ELECTRONIC PHOTOFLASH — PRIMARY 105/115/125 VOLTS 60 CYCLES

Section	Catalog No.	Style	Plate Windings AC Volts	Plate Windings DCMA	Rectifier Fil. Volts	Rectifier Fil. Amps	Other Windings Volts	Other Windings Amps	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	Wt. lbs.	Styles
6	P-6425	S	380[b] Charges 1050 mfd. to 450 volts D.C.	20					Leads	Leads	2	2 7/8	2 5/16	2 3/8	—	1.4	
	P-6426	W	Trigger Coil for use with P-6425 Ratio 1 to 35						Leads	Leads	3/4	9/16	—	—	—	.2	
			Write for Bulletin #470R for Circuit Details														



W

[b] For use in Half-Wave Circuits.
ALL SECONDARY A.C. VOLTAGES ±3%

ESSEX Stancor/RBM | STANCOR

FILAMENT TRANSFORMERS

WITH SINGLE SECONDARY: ALL PRIMARIES 50/60 CYCLES

Section	Catalog No.	Style	Secondary Volts	Secondary Amps.	Insulation Test RMS Volts	Primary Volts	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	WT Lbs.
1	P-4026	A	2.5	1.5	2500	117	Leads	Leads	1 5/16	2 7/8	1 5/8	2 3/8	—	0.7
	P-4082	SC	2.5 CT	2.5	2500	117/107	Leads	Leads	2 1/4	2 11/16	2 11/16	1 1/2	2 3/8	1.5
	P-6133†	S	2.5 CT	5.0	7500	117	Leads	Leads	2 1/4	3 1/8	2 3/4	2 13/16	—	1.5
	F-25	SC	2.5 CT	5.25	3500	115/230	Lugs	Lugs	2 1/2	3	3 1/16	1 3/4	2 11/16	2.0
	P-4083†	C	2.5 CT	6.0	2500	117/107	Leads	Leads	2 1/2	2 1/2	3 1/8	2	1 1/2	2.2
	P-3024†	C	2.5 CT	10.0	2500	117/107	Leads	Leads	2 1/2	2 3/4	3 1/8	2	1 3/4	2.5
	P-6454	S	2.5 CT	10.0	7500	117/107	Leads	Leads	2 1/2	3 5/8	3 1/8	3 1/8	—	2.5
	P-3060	NV	2.5 CT	10.0	10000	117	Lugs	Lugs	2 13/16	2 3/8	3 7/16	2 1/4	1 7/8	2.5
	F-210	SC	2.5 CT	10.0	5000	115/230	Terms	Terms	2 7/8	3 1/2	3 3/4	2	3 1/8	3.0
	F-210H	SC	2.5 CT	10.0	9000	115/230	Terms	Terms	3 1/4	4	4 1/4	2 1/4	3 1/2	4.0
	F-215H	SC	2.5 CT	15.0	9000	115/230	Terms	Terms	3 11/16	4 7/16	4 5/16	2 3/4	3 7/8	6.0
	P-3026†	C	5.0 CT	3.0	2500	117/107	Leads	Leads	2 1/2	2 5/8	3 1/8	2	1 5/8	2.4
	P-4088†	NV	5.0 CT	3.0	2500	117	Lugs	Lugs	2 1/2	1 5/8	3 1/8	2	1 5/8	1.8
	P6487	A	5.0 CT	3.0	2500	117	Leads	Leads	2 1/8	3 1/4	2	2 13/16	—	1.4
	F-54†	SC	5.0 CT	4.0	2500	115/230	Lugs	Lugs	2 1/2	3	3 5/16	1 3/4	2 11/16	2.2
	P-6455	S	5.0 CT	6.0	2000	117/107	Leads	Leads	2 1/8	3 1/8	2 3/4	2 13/16	—	2.0
	P-3062†	NV	5.0 CT	6.0	2500	117	Lugs	Lugs	2 1/2	2 1/4	3 1/8	2	2	2.3
	P-5000†	C	5.0 CT	6.0	2500	117/107	Leads	Leads	2 1/2	3	3 1/8	2	2	3.1
	P-6135	NV	5.0 CT	10.0	2500	117	Leads	Leads	2 1/2	2 3/4	3 1/8	2	2 3/8	3.0
	F-58	SC	5.0 CT	10.0	2500	115/230	Terms	Terms	2 7/8	3 1/2	3 3/4	2	3 1/8	3.5
2	F-510H†	SC	5.0 CT	10.0	10000	115/230	Terms	Terms	3 11/16	4 7/16	4 11/16	2 3/4	3 7/8	6.5
	P-4086†	FA	5.0 CT	14.0	10000	117/107	Terms	Terms	4 1/4	7	5 1/8	2 3/4	6	12.3
	P-6433†	NV	5.0 CT	15.0	2500	117	Leads	Leads Lugs	2 1/2	2 3/4	3 1/8	2	2 1/4	3.0
	F-516	SC	5.0 CT	20.0	2500	115/230	Terms	Terms	3 11/16	4 7/16	4 11/16	2 3/4	3 7/8	6.5
	F-520HB	SC	5.0 CT	20.0	10000	115/230	Terms	Terms	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	13.0
	P-6432†	NV	5.0 CT	21.0	2500	117	Leads	Leads Lugs	3 1/8	2 7/8	3 13/16	2 1/2	2 1/4	4.5
	P-6302†	FA	5.0 CT	22.0	10000	117/107	Terms	Terms	4 1/4	5 1/2	5 1/8	2 3/4	6	13.5
	P-6492	C	5.0 CT	30.0	2500	117	Leads	Leads	3 3/4	4	4 11/16	3	2 13/16	7.5
	P-6468†	C	5.0 CT	30.0	2500	117/107	Lugs	Lugs	3 7/16	3 7/8	4 1/4	2 3/4	2 11/16	6.3
	F-530	SC	5.0 CT	30.0	2500	115/230	Terms	Terms	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	10.5
	P-6305†	FA	5.0 CT	30.0	10000	117/107	Terms	Terms	4 1/4	7	5	3 3/8	7 3/4	18.3
	P-6137†	NV	5.25 CT	13.0	2500	117	Leads	Leads	3 1/8	2 7/8	3 13/16	2 1/2	2 1/2	5.2
	P-8385	A	6.3 CT	0.3	1500	117	Leads	Leads	1 3/8	2 1/8	1 1/4	1 3/4	—	0.3
	P-6465	A	6.3 CT	.6	1500	117	Leads	Leads	1 1/2	2 3/8	1 3/8	2	—	0.4
	P-8389	A	6.3	1.0	1500	117	Leads	Leads	1 1/2	2 7/8	1 5/8	2 3/8	—	0.6
	P-6134	A	6.3 CT	1.2	3000	117	Leads	Leads	1 7/8	2 7/8	1 5/8	2 3/8	—	0.8
	P-8190	A	6.3	1.2	5000	117	Leads	Leads	1 7/8	3 1/4	2	2 13/16	—	1.0
	P-8191	A	6.3	1.2	5000	6.3	Leads	Leads	2	3 1/4	2	2 13/16	—	1.0
	F-615†	SC	6.3 CT	1.5	2500	115/230	Lugs	Lugs	2 1/4	2 11/16	2 11/16	1 1/2	2 3/8	1.0
	F-63†	SC	6.3 CT	3.0	2500	115/230	Lugs	Lugs	2 1/2	3	3 1/16	1 3/4	2 11/16	2.0
3	P-5014†	NV	6.3 CT	3.0	2500	117	Lugs	Lugs	2 1/2	2	3 1/8	2	1 3/4	2.0
	P-6466	A	6.3 CT	3.0	2500	117	Leads	Leads	2 1/8	3 1/4	2	2 13/16	—	1.4
	P-6462	S	6.3	3.0	7000	117/107	Leads	Leads	2 3/8	3 5/8	3 1/8	3 1/8	—	2.0
	P-4019†	C	6.3 CT	4.0	2500	117/107	Leads	Leads	2 1/2	2 3/4	3 1/8	2	1 3/4	2.7
	F-65	SC	6.3 CT	5.5	2500	115/230	Lugs	Lugs	2 7/8	3 1/2	3 3/4	2	3 1/8	3.0
	P-3064†	NV	6.3 CT	6.0	2500	117	Lugs	Lugs	2 1/2	2 3/8	3 1/8	2	2	2.4
	P-4089	C	6.3 CT	6.0	2500	117/107	Leads	Leads	2 13/16	3 1/4	3 1/2	2 1/4	2	3.5
	P-6456	A	6.3 CT	6.0	2000	117/107	Leads	Leads	2 3/8	3 3/4	2 3/8	3 1/8	—	2.0
	P-6464	C	6.3 CT	10.0	2000	117	Leads	Leads	2 13/16	3 1/4	3 1/2	2 1/4	2	3.5
	P-6308†	NV	6.3 CT	10.0	2500	117/107	Leads	Leads	2 13/16	2 5/8	3 7/16	2 1/4	2 1/8	3.4
	F-610	SC	6.3 CT	10.0	2500	115/230	Terms	Terms	3 1/4	4	4 1/4	2 1/4	3 1/2	5.0
	P-6309	NV	6.3 CT	20.0	2500	117/107	Leads	Leads	3 3/4	3 3/8	4 5/16	3	2 3/8	6.7
	P-5015†	NV	7.5 CT	4.0	2500	117	Lugs	Lugs	2 1/2	2 1/4	3 1/8	2	2 1/8	2.7
	P-4091†	C	7.5 CT	5.0	2500	117/107	Leads	Leads	2 13/16	3 1/8	3 1/2	2 1/4	1 7/8	3.4
	P-6138†	NV	7.5 CT	8.0	2500	117	Leads	Leads	3 1/8	2 3/4	3 13/16	2 1/2	2 3/8	4.7
	F-712	SC	7.5 CT	12.0	2500	115/230	Terms	Terms	3 11/16	4 7/16	4 11/16	2 3/4	3 7/8	6.5
	P-6457	C	7.5 CT	21.0	2000	117/107	Leads	Leads	3 3/4	4	4 5/8	3	2 3/4	8.0
	F-725	SC	7.5 CT	25.0	2500	115/230	Terms	Terms	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	12.0
	F-751	SC	7.75 CT	51.0	2500	115/230	Terms	Terms	6 1/8	6 1/2	7 1/16	4 1/4	6	29.0
	P-8380	A	10.0 CT	3.0	1500	117	Leads	Leads	2 1/4	3 3/4	2 3/8	3 1/8	—	1.6
	F-104	SC	10.0 CT	4.0	2500	115/230	Lugs	Lugs	2 7/8	3 1/2	3 3/4	2	3 1/8	3.2
4	P-5016†	NV	10.0 CT	4.0	2500	117	Lugs	Lugs	2 13/16	2 1/2	3 7/16	2 1/4	2	3.3
	P-6458	NV	10.0 CT	5.0	2000	117/107	Leads	Leads	2 1/2	2 1/2	3 1/16	2 1/8	1 15/16	3.0
	P-4096†	C	10.0 CT	5.0	2500	117/107	Leads	Leads	3 1/8	3 1/4	3 7/8	2 1/2	1 15/16	4.0
	F-106	SC	10.0 CT	6.5	2500	115/230	Terms	Terms	3 1/4	4	4 1/4	2 1/4	3 1/2	5.0
	P-6139†	NV	10.0 CT	8.0	2500	117	Leads	Leads	3 1/8	3	3 13/16	2 1/2	2 3/8	4.9
	P-4097†	C	10.0 CT	8.0	2500	117/107	Leads	Leads	3 1/8	3 3/4	3 7/8	2 1/2	2 1/2	5.2
	P-6461	C	10.0 CT	10.0	2000	117	Leads	Leads	3 1/4	3 11/16	3 7/8	2 3/4	2 11/16	5.0
	F-1010	SC	10.0 CT	10.0	2500	115/230	Terms	Terms	3 11/16	4 7/16	4 11/16	2 3/4	3 7/8	6.5
	P-5002†	FA	10.0 CT	12.0	7500	117/107	Terms	Terms	4 1/4	5 1/2	5 1/8	2 3/4	6	14.7
	P-3020†	C	11.0 CT	10.0	2500	117/107	Leads	Leads	3 3/4	3 5/8	4 11/16	3	2 7/16	7.7
	P-8384	A	12.6 CT	1.0	1500	117	Leads	Leads	1 3/4	3 1/4	2	2 13/16	—	0.9
	P-8130	A	12.6 CT	2.0	1500	117	Leads	Leads	2 1/8	3 1/4	2	2 13/16	—	1.4
	P-8358	A	12.6 CT	3.0	1500	117	Leads	Leads	2 1/4	3 3/4	2 3/8	3 1/8	—	1.6
	P-6469	A	25.2	1.0	1500	117	Leads	Leads	2 1/8	3 1/4	2	2 13/16	—	1.4
	P-8180	A	25.2 CT	1.0	1500	117	Leads	Leads	2 1/8	3 1/4	2	2 13/16	—	1.4
	P-8357	A	25.2 CT	2.0	1500	117	Leads	Leads	2 1/4	4	2 5/8	3 5/16	—	2.2
	P-8388	A	25.2 CT	2.8	1500	117	Leads	Leads	2 1/4	4	2 5/8	3 5/16	—	2.2
	P-8608	A	26.5 CT	.6	2500	117	Leads	Leads	2 1/8	3 1/4	2	2 13/16	—	1.3
	P-8609	A	26.8 CT	1.0	1500	117	Leads	Leads	2 1/8	3 1/4	2	2 13/16	—	1.3
	P-8606	A	26 V CT Nominal	.040	2500	117*	Leads	Leads	1 3/8	2 1/8	1 1/4	1 3/4	—	.25
			* Primary tapped to provide secondary voltages of 24.5 CT or 27.5 CT or 29 CT.											
	P-8607	A	26 V CT Nominal	.25	2500	117*	Leads	Leads	1 3/4	2 7/8	1 5/8	2 3/8	—	.70
			* Primary tapped to provide secondary voltages of 24.5 CT or 27.5 CT or 29 CT.											
	P-8605	A	48 V CT Nominal	1.0	2500	117*	Leads	Leads	2 3/8	4	2 5/8	3 5/16	—	2.3
			* Primary tapped to provide secondary voltages of 45 CT or 51 CT or 54 CT.											

Styles: A, C, FA, NV, S, SC

† Has Electrostatic shield.

Insulation Test Voltage: Twice Allowable RMS Working Voltage plus 1000 Volts.

ALL SECONDARY VOLTAGES ±3%

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FILAMENT TRANSFORMERS

ESSEX Stancor/RBM — STANCOR

WITH MULTIPLE SECONDARIES: ALL PRIMARIES 50/60 CYCLES

Section	Catalog No.	Style	Secondary Volts	Secondary Amps.	Insulation Test RMS Volts	Primary Volts	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	WT Lbs.
1	P-6144†	C	2.5 CT 5.0 CT 6.3 CT	3.5 3.0 3.0	2500	117	Leads	Leads	2 13/16	3 1/4	3 1/2	2 1/4	2	3.7
	P-6338	NH	2.5 5.0 5.0 CT 6.3 CT	3.0 3.0 2.0 3.0	2500	117	Leads	Leads	3 3/8	2 3/4	2 7/8	2 13/16	2 1/8	3.4
2	P-5009†	C	5.0 CT 6.3 CT	3.0 6.0	2500	117/107	Leads	Leads	3 1/8	3 3/8	3 7/8	2 1/2	2 1/16	4.5
	P-5008†	C	5.0 CT 6.3 CT	4.0 3.6	2500	117/107	Leads	Leads	2 13/16	3 1/4	3 1/2	2 1/4	2	3.8
	P-4022†	C	5.0 CT 6.3 CT	6.0 6.0	2500	117/107	Leads	Leads	3 1/8	3 1/2	3 7/8	2 1/2	2 1/16	4.8
3	P-6333	NH	5.0 5.0 6.3 CT 7.5/6.3 CT	3.0 3.0 4.0 3.0	2500	117	Lugs	Lugs	3 3/8	3 1/4	2 7/8	2 13/16	2 3/4	4.7
	P-6463	NV	6.0 CT or 6.5 CT or 7.0 CT	13	2000	117	Lugs	Lugs	2 13/16	2 7/8	3 7/16	2 1/4	2 11/16	4.5
4	P-6428†	C	6.3 6.3 6.3 6.3 CT	1.75 1.75 1.75 1.75	2500	117	Leads	Leads	2 1/2	3 1/8	3 1/8	2	2	3.0
	P-6430†	C	6.3 CT 6.3 CT	3.0 3.0	2500	117	Leads	Leads	2 1/2	2 7/8	3 1/8	2	1 7/8	2.8
5	P-6429†	C	6.3 6.3 6.3 6.3 CT	3.5 3.5 3.5 3.5	2500	117	Leads	Leads	3 1/8	3 1/2	3 7/8	2 1/2	2 3/16	4.8
	P-6431†	C	6.3 CT 6.3 CT	6.0 6.0	2500	117	Leads	Leads	3 1/8	3 1/2	3 7/8	2 1/2	2 3/16	4.8
6	•P-6434‡	C	12.6 12.6 CT	2.5 2.5	1500	117	Leads	Leads	2 13/16	3 1/4	3 1/2	2 1/4	2	3.5

MULTI-TAPPED FOR TUBE CHECKERS: PRIMARY 50/60 CYCLES

Section	Catalog No.	Style	Secondary Rating (RMS)		Primary Volts	Termination Pri.	Termination Sec.	Dimensions A	B	C	D	E	WT Lbs.
7	P-1834-3	A	117/110/85 70 50 35 30/25/20/12 7.5/7/6.3/5 4/3.3/2.5/2 1.5/1.4/1.1	@ .20A @ .30A @ .50A @ .60A @ .80A @ 3.0A	105/115/125	Leads	Leads/ Lugs	2 7/8	4	2 5/8	3 9/16	—	2.4

AUTO RADIO VIBRATOR TRANSFORMERS Exact Duplicate for 6 Volt D. C. Primary

Section	Part No.	Style	Original Part No.	Trade Name	D.C. Volts at Filter Input	D.C. MA.	Recommended Buffer Cap. (mfd.)	Height Overall	Base Area	Shpg. Wt. in Lbs.
8	P-6471	TA	25B472533 D71014	Motorola (408, 508, etc.) Colonial-Detrola No. 8072	235	70	0.006	3	2 3/8 x 2 3/16	2.0
	P-6476	TA	D70267 C70267	Colonial-Detrola No. 7070 Col.-Mot.-Det. No. 8030	220	53.5	0.008	2 5/8	2 27/32 x 2 3/32	2.0
	P-6477	M2	25C500189	Motorola	150	50	0.03	2	1 7/8 x 2 1/4	1.0
	P-6478	R	25C501644	Motorola	225	70	0.02	2 1/4	2 3/16 x 2 5/8	1.5
	P-6480	R	65-0347	Philco	225	70	0.0033	2 3/16	2 1/4 x 2 5/8	1.5
	P-6481	M4	32-8313-1	Philco	250	60	0.0068	2 1/4	2 3/16 x 2 5/8	1.5
	P-6490	R	C291787-1	Bendix (Ford Model 5B8F)	265	52	0.006	2 1/8	2 3/16 x 2 5/8	1.5
	P-6499	TA	1220163[1]	United Motors (Delco)	250	60	0.006	3 7/32	2 5/8 x 2 1/2	2.3
Exact Duplicate For 12 Volt D.C. Primary										
9	P-6482	TA	6084	United Motors (Delco)	250	60	.004	3 1/4	2 11/16 x 2 11/16	2.5
	P-6489	R	6067	United Motors (Delco)	250	60	.004	2 3/16	2 3/16 x 2 5/8	2.0
	P-6493	S1	*25C535794	Motorola	275	75	(See Footnote)	2 3/4	2 3/8 x 2	1.7
	P-6494	R	32-8592-1	Philco	245	70	0.0047	2 3/16	2 5/8 x 2 1/8	1.5
	P-6495	S1	*25K535795	Motorola	275	75	(See Footnote)	2 3/4	2 3/8 x 2 1/8	1.7
	P-6497	S2	7265604[2]	United Motors (Delco)	250	55	.007[3]	2 5/16	2 1/4 x 2	1.8

*2 buffer capacitors used 0.5 mfd. and 0.04 mfd. as in original circuit.

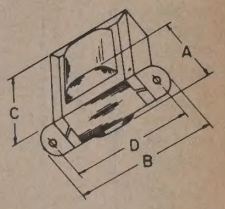
[1]17261386 and 7262956 replaced by P-6499
[2]7269118 replaced by P-6497
[3]+15K–1W. Res.

UNIVERSAL VIBRATOR TRANSFORMERS With 6 Volts D.C. Primary

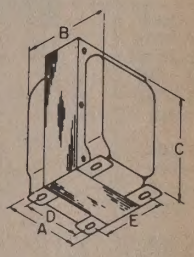
Section	Part No.	Style	Secondary A.C. Volts	D.C. Volts At Filter Input	D.C. M.A.	Recommended Buffer Cap.	Height Overall	Base Area	Mtg. Ctrs.	Shpg. Wt. In Lbs.
10	P-6491	S	188-0-188	200	40	0.003 mfd.	2 1/4	3 1/8 x 2 1/8	2 13/16	1.5
	P-4062	NV	300-0-300	260	65	0.006 mfd.	3 1/8	2 1/2 x 2 5/8	2 x 2	2.3
	P-4063	NV	320-0-320	285	75	0.006 mfd.	3 1/8	2 1/2 x 2 3/4	2 x 2 1/4	2.8
	P-6131	NV	370-0-370	330	100	0.007 mfd.	3 1/2	2 7/8 x 2 7/8	2 1/4 x 2 1/4	3.5

New Part Number. Insulation Test Voltage: Twice Allowable RMS Working Voltage plus 1000 Volts.
tas Electrostatic Shield. ‡Windings May Be Connected in Series or Parallel if Properly Phased.
ALL SECONDARY VOLTAGES ±3%

Styles



A



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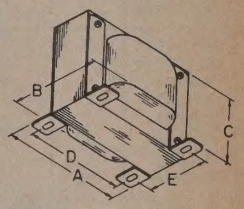

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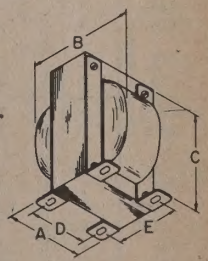


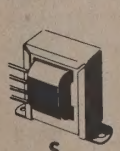
NV

M2

M4

NV

R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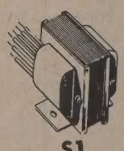
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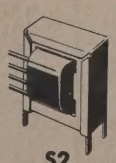
S2

TA

ESSEX Stancor/RBM | STANCOR

FILTER CHOKES

SMOOTHING CHOKES: INDUCTANCE TOLERANCE-MINUS 15% PLUS 50% AT 10 VOLTS 60 CYCLES

Section	Catalog No.	Style	Inductance Henries	DCMA	DC. Res. ohms	Insul. Test RMS Volts	Termination	Dimensions A	B	C	D	E	WT Lbs	Styles
1	C-2345	A	350	5	5600	2500	Leads	1¾	3¼	2	2 13/16	—	1.0	A
	C-2344	A	1.5	10	85	2500	Leads	1⅛	2⅛	1¼	1¾	—	0.4	
	C-2707	A	2.0	15	70	1500	Leads	1⅛	2⅛	1¼	1¾	—	0.4	
	C-1515	A	20.0	15	900	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
	C-2346	A	35	15	1800	1500	Leads	1⅜	2⅜	1⅜	2	—	0.5	
	C-2318	A	12.0	30	400	2000	Leads	1⅜	2⅜	1⅜	2	—	0.5	
	RC-1540	SC	15.0	40	475	2500	Leads	2¼	2 11/16	2 11/16	1½	2⅜	1.5	
	RS-1540	SC	15.0	40	475	2500	Lugs	2¼	2 11/16	2 11/16	1½	2⅜	1.5	
	C-1080	A	3.5	50	200	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
	C-1706	A	4.5	50	300	1500	Leads	1¼	2⅜	1⅜	2	—	0.5	
	C-1723	A	4.5	50	325	1500	Leads	1⅜	2⅜	1⅜	2	—	0.5	
	C-1325	A	5.0	50	250	1500	Leads	1¼	2⅞	1⅝	2⅜	—	0.7	
	C-1277	A	7.0	50	300	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
	C-1227	A	7.0	50	350	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
	C-1707	A	7.0	50	550	1500	Leads	1¼	2⅜	1⅜	2	—	0.5	
	C-1333	A	8.0	50	450	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
	C-1279	A	8.5	50	400	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
	C-1215	A	9.0	50	500	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
2	C-1003	A	16.0	50	580	1500	Leads	1⅝	3¼	2	2 13/16	—	1.0	C
	RC-1055	SC	10.0	55	230	2500	Leads	2¼	2 11/16	2 11/16	1½	2⅜	1.7	
	RS-1055	SC	10.0	55	230	2500	Lugs	2¼	2 11/16	2 11/16	1½	2⅜	1.7	
	RC-1555	SC	15.0	55	380	2500	Leads	2¼	2 11/16	2 11/16	1½	2⅜	2.0	
	RS-1555	SC	15.0	55	380	2500	Lugs	2¼	2 11/16	2 11/16	1½	2⅜	2.0	
	C-1708	A	13.0	65	500	1500	Leads	1¾	3¼	2	2 13/16	—	1.0	
	C-1355	L	8.0	75	290	1500	Lugs	2⅜	—	2	1½	1 3/16	1.0	
	C-1002	A	15.0	75	400	1500	Leads	1⅞	3¾	2⅜	3⅛	—	1.7	
	C-1420	C	16.0	80	360	1500	Leads	2½	2¾	3⅛	2	1¾	2.5	
	C-1709	A	8.0	85	250	1500	Leads	1⅞	3¼	2	2 13/16	—	1.4	
	RC-1085	SC	10.0	85	175	2500	Leads	2½	3	3 1/16	1¾	2 11/16	2.5	L
	RS-1085	SC	10.0	85	175	2500	Lugs	2½	3	3 5/16	1¾	2 11/16	2.5	
	RC-1585	SC	15.0	85	285	2500	Leads	2½	3	3 1/16	1¾	2 11/16	2.7	
	RS-1585	SC	15.0	85	285	2500	Lugs	2½	3	3 5/16	1¾	2 11/16	2.7	
	C-2305	SC	5.0	100	300	1500	Leads	2¼	2 11/16	2 11/16	1½	2⅜	1.5	
	RC-8105	SC	8.0	105	100	2500	Leads	2⅞	3½	3½	2	3⅛	3.7	
	RS-8105	SC	8.0	105	100	2500	Lugs	2⅞	3½	3¾	2	3⅛	3.7	
	RC-12105	SC	12.0	105	170	2500	Leads	2⅞	3½	3½	2	3⅛	4.0	
3	RS-12105	SC	12.0	105	170	2500	Lugs	2⅞	3½	3¾	2	3⅛	4.0	
	C-1001	A	10.5	110	225	3000	Leads	2⅛	4	2⅝	3 9/16	—	2.3	
	C-2704	A	9.0	125	250	1500	Leads	1⅞	3¾	2⅜	3⅛	—	1.8	
	C-2303	A	2.5	130	100	2000	Leads	1⅝	3¼	2	2 13/16	—	1.0	
	C-1421	C	7.0	140	165	3000	Leads	2½	2¾	3⅛	2	1¾	2.5	
	C-2304	A	2.3	150	60	1500	Leads	1¾	3¼	2	2 13/16	—	1.0	
	C-2309	A	3.0	150	90	2000	Leads	1⅞	3¾	2⅜	3⅛	—	1.7	
	C-2335	SC	7.0	150	170	1500	Leads	2½	3	3 1/16	1¾	2 11/16	2.3	
	C-1710	A	7.0	150	200	1500	Leads	2	4	2⅝	3 9/16	—	2.2	
	RC-8150	SC	8.0	150	100	2500	Leads	3¼	4	3⅞	2¼	3½	5.2	
	RS-8150	SC	8.0	150	100	2500	Lugs	3¼	4	4¼	2¼	3½	5.2	
	RC-12150	SC	12.0	150	150	2500	Leads	3¼	4	3⅞	2¼	3½	5.5	
	RS-12150	SC	12.0	150	150	2500	Lugs	3¼	4	4¼	2¼	3½	5.5	
	C-1410	C	4.0	175	100	3000	Leads	2½	2¾	3⅛	2	1¾	2.4	
	C-2327	A	1.5	200	85	1500	Leads	1½	2⅞	1⅝	2⅜	—	0.7	
	C-2325	A	2.0	200	60	1500	Leads	1⅞	3¾	2⅜	3⅛	—	1.8	
	C-1411	C	4.5	200	80	3000	Leads	2 13/16	4¼	3½	2¼	2	3.5	NV
	C-1646	C	5.0	200	90	5000	Leads	3⅛	3½	3⅞	2½	2 5/16	4.5	
4	RC-8200	SC	8.0	200	85	2500	Leads	3 11/16	4 7/16	4 5/16	2¾	3⅜	7.0	
	RS-8200	SC	8.0	200	85	2500	Lugs	3 11/16	4 7/16	4 11/16	2¾	3⅜	7.0	
	C-1721	NV	8.5	200	120	3000	Leads	2 13/16	2⅝	3 7/16	2¼	2½	4.4	
	C-2705	C	10.0	200	150	2500	Leads	2 13/16	3 9/16	3½	2¼	2 5/16	4.5	
	RC-12200	SC	12.0	200	140	2500	Leads	3 11/16	4 7/16	4 5/16	2¾	3⅞	7.0	
	RS-12200	SC	12.0	200	140	2500	Lugs	3 11/16	4 7/16	4 11/16	2¾	3⅞	7.0	
	• C-2717	A	4.0	250	100	2500	Leads	2⅛	4	2⅝	3 9/16	—	2.4	
	C-1703	NV	4.0	250	60	3000	Lugs	2 13/16	2⅝	3 7/16	2¼	2½	4.2	
	C-1412	C	4.0	250	60	3000	Leads	2 13/16	3⅝	3½	2¼	2⅜	4.3	
	RC-8250	SC	8.0	250	90	2500	Leads	4 5/16	5¼	5 5/16	2½	4¾	10.5	
	RS-8250	SC	8.0	250	90	2500	Lugs	4 5/16	5¼	5 5/16	2½	4¾	10.5	
	C-2343	A	0.75	300	32	1500	Leads	1⅜	2⅞	1⅝	2⅜	—	0.7	
	C-2326	A	1.0	300	43	1500	Leads	2	3¾	2⅜	3⅛	—	1.7	
	C-2334	A	2.8	300	60	1500	Leads	2⅛	4	2⅝	3 9/16	—	2.5	
	R-63	SC	6.0	300	35	7500	Terms	5 5/16	5⅞	6 1/16	3½	5⅜	16.5	
	RC-8300	SC	8.0	300	60	3500	Leads	4 5/16	5¼	5 5/16	2½	4¾	12.5	SC
	RS-8300	SC	8.0	300	60	3500	Lugs	4 5/16	5¼	5 5/16	2½	4¾	12.5	
	C-1722	NV	8.0	300	80	3000	Leads	3¾	3	4 5/16	3	2½	7.3	
	C-2308	C	8.0	300	80	3000	Leads	3¾	4	4 11/16	3	2 13/16	7.8	

• New Part Number.

Insulation Test Voltage: Twice Allowable RMS Working Voltage plus 1000 Volts.

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ILTER CHOKES

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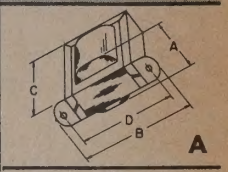
SMOOTHING CHOKES: INDUCTANCE TOLERANCE-MINUS 15% PLUS 50% AT 10 VOLTS 60 CYCLES

ction	Catalog No.	Style	Inductance Henries	DCMA	DC. Res. ohms	Insul. Test RMS Volts	Termination	Dimensions A	B	C	D	E	WT Lbs	Style
	C-1413	C	8.0	300	80	3000	Lugs	3¾	4	4 11/16	3	2 13/16	7.8	
	R-103	SC	10.0	300	40	2500	Terms	6⅛	6½	7 1/16	4¼	6	22.0	
	C-2706	C	2.6	310	50	1500	Leads	2½	3⅜	3⅛	2	2⅜	4.0	
	C-2347	A	1.0	350	40	1500	Leads	1¾	3¼	2	2 13/16	—	1.0	
	C-2328	A	0.8	375	25	1500	Leads	1⅞	3¾	2⅜	3⅛	—	1.5	
1	C-2709	A	2.0	400	40	2500	Leads	2⅛	4	2⅝	3 5/16	—	2.3	
	C-1414	C	7.5	400	60	5000	Lugs	3¾	5	4 11/16	3	3 13/16	11.8	
	R-65	FS1	6.0	500	35	9000	Terms	7½	3¼	7	4¾	5¼	35.0	
	C-1415	FS	6.0	500	75	7500	Terms	5⅝	5+	7⅛	4⅝	3⅝	23.7	
	R-105	FS1	10.0	500	40	9000	Terms	7½	4	7	4¾	6	35.0	
	C-2708	A	0.32	600	10	1500	Leads	1⅝	3¼	2	2 13/16	—	1.3	



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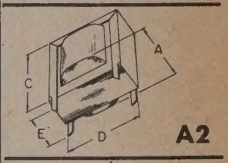
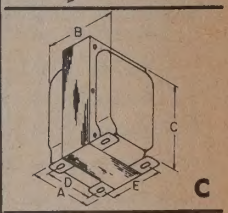


A2

SWINGING CHOKES: INDUCTANCE MEASURED AT 50 VOLTS 60 CYCLES

	C-1718	C	13.5 / 3.5	15 / 150	130	2000	Leads	2½	2⅝	3⅛	2	1⅝	2.3
	C-1400	C	12.0 / 2.0	17.5 / 175	100	3000	Leads	2½	2¾	3⅛	2	1¾	2.4
	C-1401	C	12.0 / 2.0	20 / 200	80	3000	Leads	2 13/16	3¼	3½	2¼	2	3.5
	C-1645	C	12.0 / 2.0	20 / 200	90	5000	Leads	3⅛	3½	3⅞	2½	2 3/16	4.5
	C-1702	NV	12.0 / 2.0	25 / 250	60	3000	Lugs	2 13/16	2¾	3 3/16	2¼	2½	4.3
2	C-1402	C	12.0 / 2.0	25 / 250	60	3000	Leads	2 13/16	3⅝	3½	2¼	2⅜	4.3
	C-1720	NV	20.0 / 4.0	30 / 300	80	3000	Leads	3¾	3⅛	4 5/16	3	2½	7.2
	C-2307	C	20.0 / 4.0	30 / 300	80	3000	Leads	3¾	4	4 11/16	3	2 13/16	7.9
	C-1403	C	20.0 / 4.0	30 / 300	80	5000	Lugs	3¾	4	4 11/16	3	2 13/16	7.7
	C-1404	C	17.0 / 3.0	40 / 400	60	5000	Lugs	3¾	5	4 11/16	3	3 13/16	11.7
	C-1405	FS	16.0 / 4.0	50 / 500	75	7500	Terms	5⅝	5¼	7⅛	4⅝	3⅝	24.3



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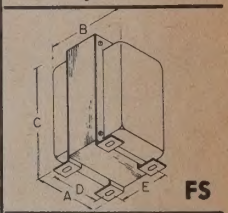

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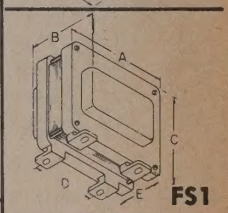
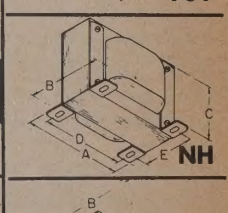


FS1

HIGH CURRENT CHOKES: INDUCTANCE MEASURED AT 1 VOLT 60 CYCLES

ection	Catalog No.	Style	Inductance Millihenries	DC Amps	DC. Res. ohms	Insul. Test RMS Volts	Termination	Dimensions A	B	C	D	E	WT Lbs
	TC-1	A2	3.0	1.0	.25	1000	Leads	1⅛	—	1 3/16	1 3/16	7/16	0.6
	TC-2	A2	11.0	1.0	.75	1000	Leads	1⅛	—	1 3/16	1 3/16	7/16	0.6
	C-2690	NV	300 or 75	1.0 / 2.0	3.0 / .75	1500	Leads	2 13/16	3	3 7/16	2¼	2⅝	5.0
	C-2685	NH	35	2.0	.75	1500	Leads	2⅝	2⅛	2 5/16	2 3/16	2	1.9
3	C-2691	NV	80 or 20	2.5 / 5.0	.60 / .15	1500	Leads	3⅛	3½	3 13/16	2½	3	7.0
	C-2686	NH	25	4.0	.425	1500	Leads	3⅜	2⅝	2⅞	2 13/16	2⅛	3.4
	C-2687	NH	10	8.0	.15	1500	Leads	3¾	3	3 3/16	3⅛	2½	5.3
	C-2688	NH	10	12.5	.11	1500	Leads	4⅛	2⅞	3½	3 7/16	2⅜	5.9
	C-2689	NH	5	22.5	.03	1500	Leads	4½	4⅜	3 13/16	3¾	3½	11.9
	C-2692	NV	24 / 6	20 / 40	.12 / .029	1500	Self Leads	4 7/16	5¼	5¼	3½	4¼	21.2



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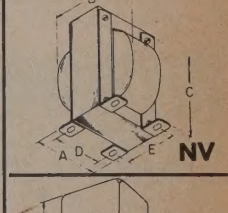

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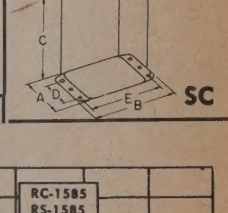
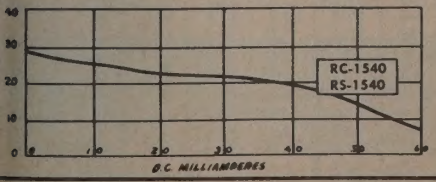
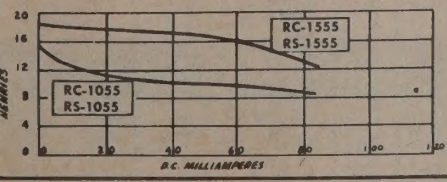
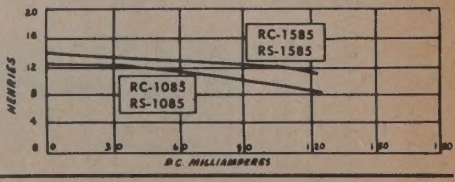


SC

TYPICAL INDUCTANCE CHARACTERISTIC CURVES







ulation Test Voltage: Twice Allowable RMS Working Voltage plus 1000 Volts. *Available until stock is depleted.

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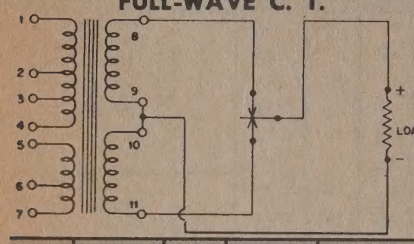
RECTIFIER & INVERTER TRANSFORMERS

NOTE The RT series has been extended to include voltages up to 40 Volts in the lower amperage range and are now available from Stancor. For more information please contact Stancor.

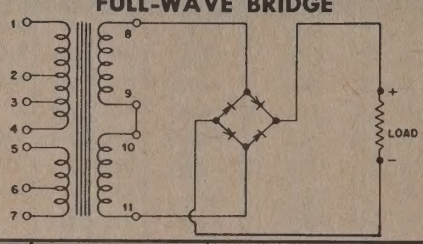
SILICON OR SELENIUM RECTIFIER TRANSFORMERS:

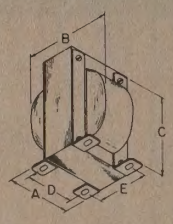
Primary—117 Volts 50/60 Cycles.
Solder Lug Termination

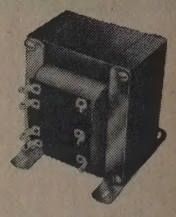
FULL-WAVE C. T.



FULL-WAVE BRIDGE







Section	Catalog No.	Style	Rectifier Circuit	Range of Applied A.C. Volts Under Load (Approx.)	Output Resistive or Inductive Load Max. D.C. Volts	Output Resistive or Inductive Load Max. D.C. Amps.	Output Capacitive Load* Max. D.C. Volts	Output Capacitive Load* Max. D.C. Amps.	Dimensions A	B	C	D	E	WT. Lbs.
1	RT-201	NV	C. T.	11.7 to 29.4	11.2	2.0	13.8[1]	2.0	2½	2⅜	3⅛	2	2⅛	2.5
			Bridge	11.1 to 28.5	23.0	1.25	30.0[2]	1.25						
	RT-202	NV	C. T.	12.0 to 29.8	11.1	4.0	14.7[3]	4.0	2 13/16	2¾	3 7/16	2¼	2⅜	3.8
			Bridge	12.0 to 29.8	24.3	2.0	33.0[1]	2.0						
	RT-204	NV	C. T.	11.7 to 29.2	12.0	8.0	14.5[4]	8.0	3⅛	3½	3 13/16	2½	2⅞	6.1
			Bridge	11.6 to 29.2	24.0	4.0	32.4[3]	4.0						
	RT-206	NV	C. T.	12.0 to 29.7	11.5	12.0	14.4[5]	12.0	3 7/16	4	4 3/16	2¾	3¼	9.1
			Bridge	12.0 to 29.7	24.0	6.0	32.0[6]	6.0						
	RT-208	NV	C. T.	12.1 to 29.2	11.4	15.0	14.8[7]	15.0	3¾	5	4 5/16	2 15/16	3¾	12.6
			Bridge	12.1 to 29.2	23.7	8.0	32.5[4]	8.0						
	RT-2012	NV	C. T.	12.2 to 29.0	11.4	22.5	14.3[8]	22.5	4⅜	5⅞	5 5/16	3½	4¼	20.5
			Bridge	12.2 to 29.0	23.5	12.0	33.0[5]	12.0						
	RT-408	NV	Bridge	25.0 to 53.5	44.0	8.0	63.0[4]	8.0	4⅜	6¾	5 5/16	3½	5¼	26.5
	RT-4012	NV	Bridge	25.0 to 53.0	43.5	12.0	60.0[5]	12.0	5⅜	6	7⅛	4⅝	5½	34

*MFD Filter Capacitor 1-1000, 2-5000, 3-2000, 4-4000, 5-6000, 6-3000, 7-7500, 8-12000.

Each transformer has the winding arrangement and terminal numbering shown in the schematic diagrams above. The primary winding is connected to terminals 1, 2, 3 & 4. A separate winding is connected to terminals 5, 6 & 7 that may be used in series with the primary to raise or lower the secondary voltage output. A variety of combinations is possible using the taps on both windings, plus the "Aiding" or "Bucking" action of the extra winding.

Designed for 117 V. 50/60 cycle operation; may also be satisfactorily operated at 400 cycles.

The secondary winding of each transformer consists of two identical windings connected to terminals 8 & 9 and to 10 & 11 respectively. Use the tables showing the various output voltages for specific terminal connections as your guide. Many combinations are possible other than those listed in the tables.

All ratings shown are for normal convection air cooled applications. Select only rectifiers capable of handling the output voltages and currents described

RT-202		Full-Wave C. T.				Full-Wave Bridge			
Stancor Power Supply		Use with Sarkes-Tarzian Selenium Rectifier Part Nos. D-11				D-17			
		Output 4.0 A. D.C.				Output 2.0 A. D.C.			
		Resistive Load		Capacitive Load*		Resistive Load		Capacitive Load**	
Input 117 vac Term. No.	Connect Term. No.	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC
1-2	—	29.7	11.1	29.3	14.7	29.7	24.3	24.3	33.0
1-7	2-6	26.2	9.8	26.0	12.6	26.2	21.5	26.0	29.0
1-6	2-5	24.4	8.8	24.0	11.3	24.3	19.5	23.9	26.0
1-7	2-5	21.9	7.8	21.7	9.9	21.8	17.6	21.5	23.1
1-3	—	20.9	7.4	20.7	9.3	20.9	16.6	20.6	21.7
1-7	3-6	19.2	6.6	18.9	8.2	19.1	15.1	18.9	19.6
1-6	3-5	18.0	6.1	17.8	7.5	18.0	14.2	17.8	18.2
1-7	3-5	16.6	5.5	16.4	6.6	16.6	12.8	16.4	16.3
1-4	—	14.4	4.4	14.2	5.3	14.4	19.8	14.2	13.7
1-7	4-6	13.5	4.1	13.4	4.9	13.5	10.1	13.4	12.6
1-6	4-5	12.9	3.9	12.7	4.4	12.9	9.5	12.7	11.7
1-7	4-5	12.2	3.7	12.0	4.0	12.2	8.9	12.0	10.8

*2000 MFD. **1000 MFD.

RT-201		Full-Wave C. T.				Full-Wave Bridge			
Stancor Power Supply		Use with Sarkes-Tarzian Selenium Rectifier Part Nos. D-10				D-52			
		Output 2.0 A. D.C.				Output 1.25 A. D.C.			
		Resistive Load		Capacitive Load		Resistive Load		Capacitive Load	
Input 117 vac Term. No.	Connect Term. No.	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC
1-2	—	29.4	11.2	28.8	13.8	28.5	23.0	27.9	30.0
1-7	2-6	26.0	9.8	25.7	11.7	25.4	20.0	25.1	26.4
1-6	2-5	23.0	8.4	22.7	9.9	22.3	17.3	21.8	22.2
1-7	2-5	20.9	7.4	20.8	8.6	20.2	15.4	19.8	19.7
1-3	—	19.4	6.7	19.1	7.6	18.6	13.9	18.2	17.6
1-7	3-6	17.8	6.1	17.6	6.7	17.2	12.8	16.8	15.7
1-6	3-5	16.3	5.3	16.1	6.0	15.7	11.2	15.2	13.8
1-7	3-5	14.9	4.7	14.8	5.3	14.3	10.3	14.1	12.4
1-4	—	14.2	4.4	14.2	5.0	13.7	9.7	13.5	11.6
1-7	4-6	13.4	4.0	13.3	4.4	12.7	8.8	12.5	10.4
1-6	4-5	12.4	3.6	12.4	3.9	11.7	7.9	11.7	9.5
1-7	4-5	11.7	3.3	11.7	3.5	11.1	7.4	11.1	8.7

*1000 MFD **500 MFD.

RT-204		Full-Wave C. T.				Full-Wave Bridge			
Stancor Power Supply		Use with Sarkes-Tarzian Selenium Rectifier Part Nos. D-13				D-18			
		Output 8.0 A. D.C.				Output 4.0 A. D.C.			
		Resistive Load		Capacitive Load*		Resistive Load		Capacitive Load**	
Input 117 vac Term. No.	Connect Term. No.	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC
1-2	—	29.2	12.0	28.8	14.5	29.2	24.0	29.0	32.4
1-7	2-6	25.7	10.5	25.7	12.6	25.7	21.1	25.4	29.2
1-6	2-5	22.8	9.2	22.8	10.9	22.8	18.7	22.7	25.7
1-7	2-5	20.6	8.3	20.6	9.6	20.7	16.6	20.6	22.8
1-3	—	19.3	7.7	19.3	8.7	19.4	15.4	19.0	21.0
1-7	3-6	17.6	7.0	17.6	7.8	17.8	14.0	17.6	19.0
1-6	3-5	16.2	6.3	16.2	6.9	16.3	12.7	16.1	17.2
1-7	3-5	15.0	5.8	15.0	6.3	15.1	11.6	14.9	15.6
1-4	—	14.2	5.4	14.2	5.8	14.4	11.0	14.2	14.8
1-7	4-6	13.3	5.0	13.3	5.3	13.4	10.2	15.3	13.5
1-6	4-5	12.5	4.6	12.5	4.9	12.6	9.4	12.5	12.4
1-7	4-5	11.7	4.3	11.7	4.5	11.8	8.8	11.6	11.4

*4000 MFD. **2000 MFD.

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RECTIFIER & INVERTER TRANSFORMERS

ESSEX Stancor/RBM — STANCOR

e RT series has been extended to include voltages up to 40 Volts in the lower amperage range and are now available from Stancor. For more information please contact Stancor.

NOTE

RT-206		Full-Wave C. T.				Full-Wave Bridge			
Stancor Power Supply		Use with Sarkes-Tarzian Selenium Rectifier Part Nos. D-14				D-19			
		Output 12.0 A. D.C.				Output 6.0 A. D.C.			
		Resistive Load		Capacitive Load*		Resistive Load		Capacitive Load*	
Input 117 vac Term. No.	Connect Term. No.	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC
1-2	—	29.8	11.5	29.6	14.4	29.6	24.0	29.2	32.0
1-7	2-6	26.0	9.9	25.8	12.0	25.8	20.6	25.4	27.3
1-6	2-5	23.8	8.8	23.6	10.7	23.8	18.6	23.6	24.6
1-7	2-5	21.2	7.6	21.0	9.0	21.2	16.4	21.0	21.4
1-3	—	19.7	7.0	19.7	8.4	19.7	15.2	19.4	19.2
1-7	3-6	17.9	6.2	17.8	7.2	17.9	13.5	17.8	17.3
1-6	3-5	16.7	5.7	16.6	6.6	16.8	12.5	16.6	15.8
1-7	3-5	15.4	5.1	15.4	5.9	15.4	11.4	15.2	14.0
1-4	—	14.6	4.7	14.5	5.2	14.6	10.6	14.5	13.4
1-7	4-6	13.5	4.2	13.4	4.7	13.5	9.8	13.4	12.0
1-6	4-5	12.9	3.9	12.8	4.3	12.9	9.2	12.8	11.0
1-7	4-5	12.0	8.4	12.0	3.9	12.0	8.4	12.0	10.0

*6000 MFD. **3000 MFD.

RT-2012		Full-Wave C. T.				Full-Wave Bridge			
Stancor Power Supply		Use with Sarkes-Tarzian Selenium Rectifier Part Nos. D-16				D-21			
		Output 22.5 A. D.C.				Output 12.0 A. D.C.			
		Resistive Load		Capacitive Load*		Resistive Load		Capacitive Load**	
Input 117 vac Term. No.	Connect Term. No.	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC
1-2	—	29.1	11.4	28.8	14.3	29.0	23.5	28.7	33.0
1-7	2-6	25.2	9.7	25.1	12.0	25.3	20.4	25.1	28.0
1-6	2-5	23.6	8.9	23.6	10.9	23.5	18.8	23.5	25.7
1-7	2-5	21.1	7.7	21.0	9.4	21.0	16.3	20.9	22.3
1-3	—	19.3	7.2	19.3	8.3	19.2	14.8	19.2	20.2
1-7	3-6	17.7	6.3	17.7	7.2	17.5	13.4	17.5	17.7
1-6	3-5	16.9	6.0	16.9	6.7	16.8	12.5	16.8	16.7
1-7	3-5	15.6	5.4	15.7	5.9	15.5	11.5	15.5	15.1
1-4	—	14.6	4.9	14.6	5.4	14.5	10.7	14.5	13.7
1-7	4-6	13.5	4.4	13.5	4.7	13.5	9.7	13.4	12.6
1-6	4-5	13.0	4.3	13.0	4.5	13.0	9.3	13.0	11.9
1-7	4-5	12.2	3.9	12.1	4.0	12.2	8.6	12.0	10.8

*11,250 MFD. **6000 MFD.

RT-208		Full-Wave C. T.				Full-Wave Bridge			
Stancor Power Supply		Use with Sarkes-Tarzian Selenium Rectifier Part Nos. D-15				D-20			
		Output 15.0 A. D.C.				Output 8.0 A. D.C.			
		Resistive Load		Capacitive Load*		Resistive Load		Capacitive Load**	
Input 117 vac Term. No.	Connect Term. No.	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC
1-2	—	29.2	11.4	29.2	14.8	29.2	23.7	29.0	32.5
1-7	2-6	25.4	9.9	25.4	12.5	25.3	21.0	25.2	27.0
1-6	2-5	24.1	9.3	24.0	11.6	24.0	19.4	23.9	25.5
1-7	2-5	21.5	8.2	21.5	10.0	21.3	17.0	21.3	22.0
1-3	—	19.3	7.1	19.3	8.7	19.1	14.9	19.1	21.2
1-7	3-6	17.6	6.4	17.5	7.7	17.4	13.4	17.4	17.0
1-6	3-5	16.8	6.0	16.8	7.2	16.8	12.9	16.7	16.1
1-7	3-5	15.6	5.5	15.5	6.5	15.4	11.7	15.4	14.5
1-4	—	14.4	5.0	14.4	5.7	14.2	10.7	14.2	13.1
1-7	4-6	13.4	4.5	13.4	5.1	13.3	9.8	13.3	11.9
1-6	4-5	13.0	4.3	12.9	4.8	12.9	9.5	12.8	11.4
1-7	4-5	12.2	3.9	12.1	4.4	12.1	8.7	12.1	10.4

*7500 MFD. **4000 MFD.

RT-408 FULL-WAVE BRIDGE / RT-4012 FULL-WAVE BRIDGE									
Stancor Power Supply		Use with Sarkes-Tarzian Selenium Rectifier Part Nos. D-27				D-28			
		Output 8.0 A. D.C.				Output 12.0 A. D.C.			
		Resistive Load		Capacitive Load*		Resistive Load		Capacitive Load**	
Input 117 vac Term. No.	Connect Term. No.	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC	Secondary Volts AC	Output Volts DC
1-2	—	53.5	44.0	53.0	63.0	53.0	43.5	53.0	60.0
1-7	2-6	50.0	40.5	50.0	59.0	49.5	40.0	49.0	55.0
1-6	2-5	45.3	37.0	45.0	52.0	43.5	34.0	43.0	48.0
1-7	2-5	42.5	34.5	42.0	48.0	41.5	32.0	41.0	45.5
1-3	—	37.5	30.5	37.5	40.0	37.5	29.0	37.0	40.0
1-7	3-6	35.5	27.5	35.5	39.0	35.5	27.0	35.0	37.5
1-6	3-5	32.5	25.0	33.0	35.5	32.8	24.0	32.7	34.0
1-7	3-5	31.5	24.0	31.5	31.5	31.0	23.0	30.8	31.0
1-4	—	29.0	21.5	29.0	29.5	29.0	21.2	29.0	29.0
1-7	4-6	27.5	20.5	27.5	28.0	27.8	20.0	28.0	28.0
1-6	4-5	26.0	19.5	26.0	26.0	26.0	19.0	26.0	25.0
1-7	4-5	25.0	18.0	25.0	25.0	25.0	18.0	25.0	24.0

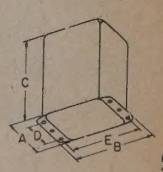
*4000 MFD. **6000 MFD.

TRANSISTOR INVERTER TRANSFORMERS:

Write for Bulletin CT-43 for Circuit Diagram. Lead Wire Termination.

Section	Catalog No.	Style	Input	Output Volts	MADC	Dimensions A	B	C	D	E	WT. Lbs.
1	DCT-1	TD	12 Volts D.C.	275 D.C.	125	1⅞	2⅞	2¼	—	2⅛	0.9
	DCT-2	SC	12 Volts D.C.	250 D.C. or 500 D.C.	275 / 165	2¼	2 11/16	2 11/16	1½	2⅜	1.5

Styles



SC

TRANSISTOR INVERTER TRANSFORMER:

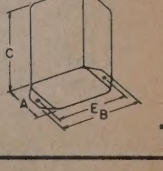
With 12 Volts D.C. and 117 Volts 60 Cycle Primary. Write for Bulletin 596 for Circuit Diagram.

Section	Catalog No.	Style	D.C. Output Volts	D.C. Output DCMA	Filament Winding	Dimensions A	B	C	D	E	WT. Lbs.
2	P-8195	C	280	150 CCS 250 ICAS	12.6 V. @ 3 Amps. (with 117 V. Pri.)	3⅛	3 15/16	3⅜	2½	2⅝	6.0

SPECIAL VIBRATOR TRANSFORMERS:

With D.C. and 117 Volts 60 Cycle Primary. Lead Wire Termination.

Section	Catalog No.	Style	D.C. Pri.	Plate Winding A.C. Volts	Plate Winding DCMA	Buffer Cap.	Filament Winding Volts	Filament Winding Amps.	Dimensions A	B	C	D	E	WT. Lbs.
3	P-6166	C	6 V.	350-0-350	135	.01 mfd	6.3	2.25	3¾	3¾	4 11/16	3	2 5/16	6.9
	P-6496	C	12 V.	350-0-350	100	.005 mfd	12.6 C.T.	2.0	3¾	4	4 11/16	3	2 13/16	7.9



TD

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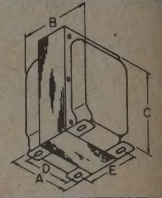
RECTIFIER & TRANSISTOR POWER TRANSFORMERS

SILICON RECTIFIER POWER TRANSFORMERS: Primaries—117 Volts 50/60 Cycle-Lead Wire Termination.

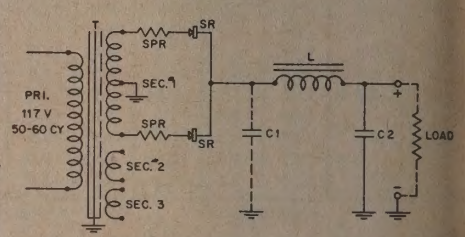
Section	Catalog No.	Style	Secondary #1 Volts	Secondary #1 DCMA†	Secondary #2 Volts	Secondary #2 Amps.	Secondary #3 Volts	Secondary #3 Amps.	Dimensions A	B	C	D	E	WT. Lbs.	Style
1	RP-400	C	400 C.T.	400	6.3	3.0	6.3	3.0	3 7/16	4 1/4	4 1/4	2 3/4	3 1/16	7.1	
	RP-600	C	300 C.T.	600	6.3	2.5	6.3	2.5	3 7/16	4 1/4	4 1/4	2 3/4	3 1/16	7.1	
	RP-800	C	200 C.T.	800	6.3	2.0	6.3	2.0	3 7/16	4 1/8	4 1/4	2 3/4	2 15/16	6.9	
	RP-1600	C	100 C.T.	1600	6.3	1.5	6.3	1.5	3 7/16	3 7/8	4 1/4	2 3/4	2 11/16	6.0	
	RP-2000	C	80 C.T.	2000	6.3	1.5	6.3	1.5	3 7/16	4	4 1/4	2 3/4	2 13/16	6.5	
	RP-2500	C	60 C.T.	2500	6.3	1.5	6.3	1.5	3 7/16	3 7/8	4 1/4	2 3/4	2 11/16	6.0	



C

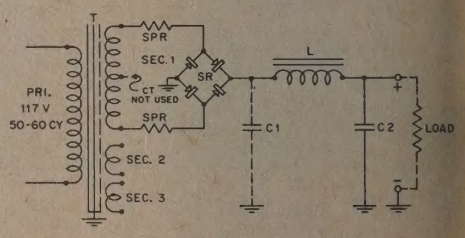
†Refer to operating. Conditions as shown below.

Section	T Stancor No.	SR★	L Stancor No.	C1 (in MFD)	C2 (in MFD)	SPR*	D.C. Output Volts	D.C. Output MA.	Rectifier Load
	RP-400	Four #F-4	C-2709	10	10	Yes	192	400	Capacitive
	RP-400	Four #F-4	C-2690	—	200	No	173	540	Inductive
	RP-600	Four #F-6	C-2690	80	80	Yes	190	600	Capacitive
	RP-600	Four #F-6	C-2690	—	125	No	126	1090	Inductive
	RP-800	Two #40-L	C-2690	40	150	Yes	105	800	Capacitive
	RP-800	Two #40-L	C-2690	—	350	No	86	1340	Inductive
	RP-1600	Two #40-L	C-2690	200	200	Yes	53	1600	Capacitive
	RP-1600	Two #40-L	C-2691	—	300	No	41	2600	Inductive
	RP-2000	Two #40-L	C-2690	500	500	Yes	47	2000	Capacitive
	RP-2000	Two #40-L	C-2686	—	1000	No	33	2950	Inductive
	RP-2500	Two #40-LF	C-2691	500	500	Yes	31	2500	Capacitive
	RP-2500	Two #40-LF	C-2686	—	1000	No	23	3950	Inductive



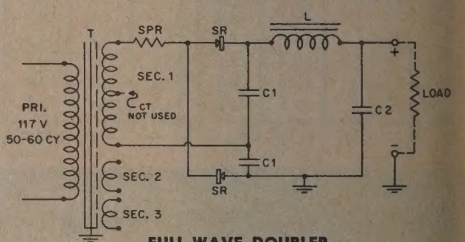
FULL-WAVE C.T.

Section	T Stancor No.	SR★	L Stancor No.	C1 (in MFD)	C2 (in MFD)	SPR*	D.C. Output Volts	D.C. Output MA.	Rectifier Load
	RP-400	Four #F-4	C-1710	8	10	Yes	502	150	Capacitive
	RP-400	Four #F-4	C-1722	—	20	No	330	302	Inductive
	RP-600	Four #F-6	C-2334	8	20	Yes	322	305	Capacitive
	RP-600	Four #F-6	C-2690	—	125	No	285	425	Inductive
	RP-800	Four #F-6	C-2709	30	40	Yes	247	377	Capacitive
	RP-800	Four #F-6	C-2708	—	250	No	172	625	Inductive
	RP-1600	Four #F-4	C-2690	40	80	Yes	100	880	Capacitive
	RP-1600	Four #F-4	C-2690	—	300	No	88	1160	Inductive
	RP-2000	Four #F-4	C-2690	100	100	Yes	93	810	Capacitive
	RP-2000	Four #40-L	C-2690	—	250	No	71	1450	Inductive
	RP-2500	Four #40-L	C-2690	200	200	Yes	70	1060	Capacitive
	RP-2500	Four #40-L	C-2690	—	500	No	50	1950	Inductive



FULL-WAVE BRIDGE

Section	T Stancor No.	SR★	L Stancor No.	C1 (in MFD)	C2 (in MFD)	SPR*	D.C. Output Volts	D.C. Output MA.	Rectifier Load
	RP-400	Four #F-6	C-1420	8	0.5	Yes	1040	75	Capacitive
	RP-600	Four #F-6	—	60	—	Yes	802	142	Capacitive
	RP-800	Two #F-6	—	80	—	Yes	536	188	Capacitive
	RP-1600	Two #F-6	C-2326	80	16	Yes	240	325	Capacitive
	RP-2000	Two #F-6	—	150	—	Yes	212	390	Capacitive
	RP-2500	Two #40-L	—	500	—	Yes	150	553	Capacitive



FULL-WAVE DOUBLER

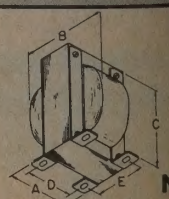
Note: Filtering shown permits maximum output ripple voltage of 3% or less.

★Quantity Shown is Total Number used in a given circuit. Rectifiers should be equivalent to Sarkes Tarzian numbers shown.

*Surge protection resistors are recommended when capacitor input filters are used. Allow 3.3 ohms per 70 volts R.M.S. applied voltage. Transformer secondary winding D.C. resistance may be used as part or all of the amount required.

FOR TRANSISTOR POWER SUPPLIES: Primary 117 Volts 60 Cycles—Lead Wire Termination.

Section	Catalog No.	Style	Secondary #1 Volts	Secondary #1 Amperes	Secondary #2 Volts	Secondary #2 Amperes	Dimensions A	B	C	D	E	WT. Lbs.	Style
5	P-8197	C	50 C.T.	1.0 Amp. RMS	—	—	2 1/2	2 11/16	3 1/8	2	1 3/4	2.3	
	P-8198	C	54 C.T.	.5 Amp. RMS	6.3	.5 Amps. RMS	2 3/16	2 5/16	2 5/8	1 3/4	1 5/8	1.7	
	P-8193▲	NV	17/18	6 Amps. RMS	—	—	3 1/8	3 1/8	3 13/16	2 1/2	2 5/8	6.0	
	P-8194▲	NV	36	3 Amps. RMS	36	3 Amps. RMS	3 3/4	3 3/4	4 5/16	3	3	10	
	P-8196	C	80 C.T.	1.2 Amps. DC	—	—	2 13/16	3 5/8	3 1/2	2 1/4	2 3/8	4.5	



NV

▲Write for Bulletin #587 for Rectifier Circuits showing D.C. Voltages and allowable D.C. Current.

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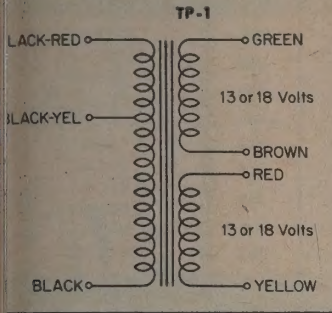
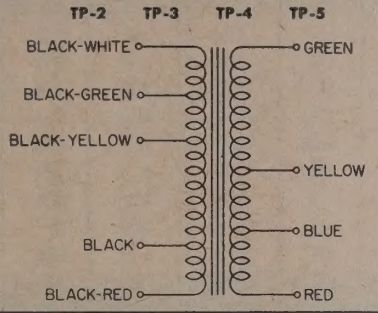
RECTIFIER & CONTROL TRANSFORMERS

ESSEX Stancor/RBM — STANCOR

RECTIFIER TRANSFORMERS: Primary 117 Volts 60 Cycles—Lead Wire Termination

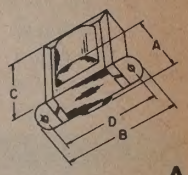
Multiple Primary and Secondary Taps offer a wide selection of output Voltages. All D.C. current ratings are based on capacitor input Filtering. Max. D.C. Ma For TP-1 is for each Secondary.





Typical Secondary AC Voltages

6.5	21 C.T.
7.5	22
8	24
9	26.5 C.T.
9.5	27
10	28
13.5 C.T.	29 C.T.
14.5 C.T.	31.5
16 C.T.	32 C.T.
18 C.T.	35.5 C.T.
19 C.T.	37 C.T.
20	42 C.T.

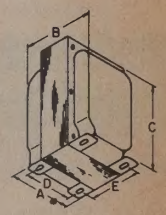


A

Section	Catalog No.	Style	MAX. D.C. MA. Full-Wave CT	Bridge	Half-Wave	Dimensions A	B	C	D	E	Wt. Lbs.
1	TP-1	C	1500	900	450	2½	3	3⅛	2	2	2.7
	TP-2	A	150	100	50	1⅞	2⅞	1⅝	2⅜	—	0.7
	TP-3	A	400	300	150	2⅛	3¾	2⅜	3⅛	—	1.5
	TP-4	C	1500	1000	500	2½	3⅛	3⅛	2	2⅛	3.2
	• TP-5	A	1100	750	375	2⅜	4	2⅝	3⅜₁₆	—	2.3

MINIATURIZED CONTROL TRANSFORMERS:

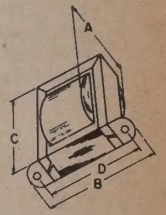
Section	Catalog No.	Style	Secondary Amperes RMS	Bridge	Half-Wave	Dimensions A	B	C	D	E	Wt. Lbs.
Primary 117 Volts 60 Cycles			Secondary 12 Volts—Lead Wire Termination								
2	P-8390	A	.150	.100 DC	.050 DC	1¼	2⅛	1¼	1¾	—	.25
	P-8391	A	.350	.225 DC	.110 DC	1⅜	2⅜	1⅜	2	—	.35
	P-8392	A	.700	.450 DC	.225 DC	1½	2⅞	1⅝	2⅜	—	.60
	P-8393	A	1.200	.750 DC	.375 DC	1⅝	3¼	2	2¹³⁄₁₆	—	.85



C

MINIATURIZED CONTROL TRANSFORMERS

Section	Catalog No.	Style	*Secondary Amperes RMS	Full-Wave CT	Bridge	Dimensions A	B	C	D	E	Wt. Lbs.
Primary 117 Volts 60 Cycles			Secondary 24 Volts C.T.—Lead Wire Termination								
3	P-8394	A	.085	.135 DC	.065 DC	1¼	2⅛	1¼	1¾	—	.25
	P-8395	A	.200	.275 DC	.135 DC	1⅜	2⅜	1⅜	2	—	.35
	P-8396	A	.400	.550 DC	.270 DC	1½	2⅞	1⅝	2⅜	—	.60
	P-8397	A	.700	.925 DC	.450 DC	1⅝	3¼	2	2¹³⁄₁₆	—	.85
Primary 117 Volts 60 Cycles			Secondary 28 Volts C.T.—Lead Wire Termination								
4	• P-8600	A	.085	.110 DC	.065 DC	1¼	2⅛	1¼	1¾	—	.25
	• P-8601	A	.175	.225 DC	.125 DC	1⅜	2⅜	1⅜	2	—	.35
	• P-8602	A	.300	.350 DC	.200 DC	1½	2⅞	1⅝	2⅜	—	.60
	• P-8603	A	.800	1.000 DC	.500 DC	1⅝	3¼	2	2¹³⁄₁₆	—	1.0
Primary 117 Volts 60 Cycles			Secondary 36 Volts C.T.—Lead Wire Termination								
5	• P-8610	A	.065	.075 DC	.045 DC	1¼	2⅛	1¼	1¾	—	.25
	• P-8611	A	.135	.175 DC	.100 DC	1⅜	2⅜	1⅜	2	—	.35
	• P-8612	A	.300	.350 DC	.200 DC	1½	2⅞	1⅝	2⅜	—	.60
	• P-8613	A	.550	.650 DC	.350 DC	1⅝	3¼	2	2¹³⁄₁₆	—	1.0

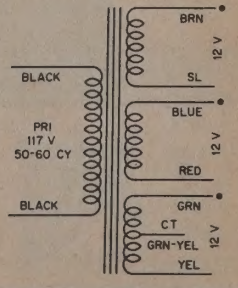


S

VERSATILE LOW CURRENT CONTROL TRANSFORMERS: Primary 117 Volts 50/60 Cycles Lead Wire Termination

Three isolated 12 Volt Secondaries (one with a center tap) provide many combinations of output voltages and current by series or parallel combinations.

Section	Catalog No.	Style	Amperes Each Sec.	Dimensions A	B	C	D	E	Wt. Lbs.
6	P-8361	S	.10	1½	2	1¾	1¾	—	.36
	P-8362	S	.15	1¾	2⅜	2	2	—	.60
	P-8363	S	.25	1¾	2⅞	2⅜	2⅜	—	.85
	P-8364	S	.50	2⅛	2⅞	2⅜	2⅜	—	1.25



• New Part Number

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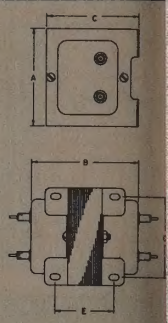
CONTROL TRANSFORMERS

NORMAL REACTANCE TYPE: Primary 115 Volts 50/60 Cycles—Lead Wire Termination.

Section	Catalog Number	Secondary			Dimensions in Inches					Approx. Weight Lbs.
		Volts	Amps.	V-A Cap.	A	B	C	D	E	
1	NCF-1650	16	3.15	50	3	3¼	2¾	2⅜	1¾	3½
	NCF-2425	24	1.05	25	2⅜	2½	2½	2⅛	1½	2¼
	NCF-2450	24	2.1	50	3	3¼	2¾	2⅜	1¾	3½
	NCF-2475	24	3.15	75	3½	3⅝	3⁹⁄₁₆	3	2¼	4½
	NCF-24100	24	4.15	100	3¹⁵⁄₁₆	3¹⁵⁄₁₆	3½	3⅜	2¹⁵⁄₁₆	5¼
	NCF-24150	24	6.25	150	4½	4⅛	4	3¾	3	8½
	NCF-3250	32	1.55	50	3	3¼	2¾	2⅜	1¾	3½
	NCF-3275	32	2.35	75	3½	3⅝	3⁹⁄₁₆	3	2¼	4½
	NCF-32150	32	4.7	150	4½	4⅛	4	3¾	3	8½
	NCF-1550	550	(NL)	50	2⅞	2⅞	3½	2¼	2⅛	3½

Styles



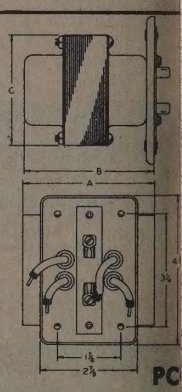
NCF & PCF

POWER CIRCUIT TRANSFORMERS: Primary 50/60 Cycles. Lead Wire Termination.

Section	Catalog Number	Primary Volts	Secondary			Dimensions in Inches					Weight Lbs.
			Volts	Amps.	V-A Cap.	A	B	C	D	E	
2	PCF-2025	230	115	.25	25	3	3	2¹³⁄₁₆	2⅜	1½	2
	PCF-2050	230	115	.45	50	3	3½	2¹³⁄₁₆	2⅜	2	2¾
	PCF-24075	230/460	115	.65	75	3½	3⅝	3⁹⁄₁₆	3	2¼	4¼
	PCF-24250	230/560	115	2.2	250	5¼	4¹⁵⁄₁₆	4¹⁵⁄₁₆	4¼	3	12

POWER CIRCUIT TRANSFORMERS: Conduit Box Mounting

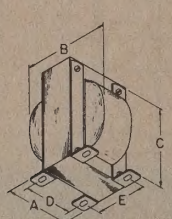
Section	Catalog Number	Primary		Secondary			Dimensions in Inches			Weight Lbs.
		Volts	Cycles	Volts	Amps.	V-A Cap.	A	B	C	
3	PCC-24250	230/460	50-60	115	2.2	250	5¼	4⅞	4¹⁵⁄₁₆	11½



PC

CONTROL TRANSFORMERS: Primary—115/230 Volts 50/60 Cycles—Solder Lug Termination.

Typical Applications: Automatic Assembly equipment. Relays, Solenoids, Small Motors, Speed Changers, Recording Device, Pumps, Electronic Tubes, Heating Elements, Elevators, Door Openers, Automatic Musical Instruments, Low Voltage Lighting Signal Lamps, Spark Plug Testers, Control Valves for Fluids and Gases, Fans and Blowers, Mechanical and Electrical Signs and similar applications.



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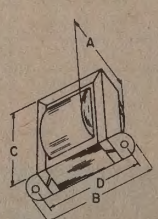

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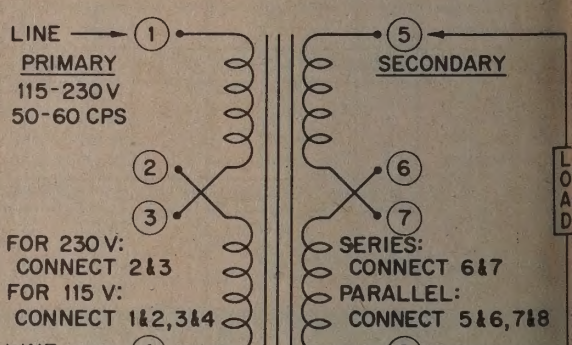

Section	Catalog No.	Style	VA Cap.	Secondary		Dimensions					Wt. Lbs.
				Parallel	Series	A	B	C	D	E	
4	P-6375	S	12	6V @ 2A	12V @ 1A	1⅜	2⅞	2⅜	2⅜	—	1.0
	P-6376	S	24	6V @ 4A	12V @ 2A	1⅞	3⅛	2¾	2¹³⁄₁₆	—	1.5
	P-6377	S	48	12V @ 4A	24V @ 2A	2¼	3⅝	3⅛	3⅛	—	2.5
	P-6378	NV	96	12V @ 8A	24V @ 4A	2¹³⁄₁₆	2⅞	3⅞	2¼	2¼	4.2
	P-6379	NV	192	12V @ 16A	24V @ 8A	3⅞	3⅜	4¾	2¾	3	8.0

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SOLATION/AUTO TRANSFORMERS

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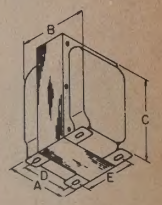
NOTE A new step down series has been included which will have 3 prong plug and receptacle. For more information contact Stancor.

STEP-DOWN AUTO-TRANSFORMERS: Primary—230 Volts 50/60 Cycles—Line Cord and Plug. Secondary—115 Volts—Standard Female Receptacle.

Section	Catalog No.	Style	Watts	Dimensions A	B	C	D	E	WT. Lbs.	Styles
1	P-6287	C	40	2 5/8	2 1/2	3 1/2	2	1 1/2	2.2	
	P-5062	C	80	2 13/16	3 3/8	3 1/2	2 1/4	2 1/8	3.8	
	P-5063	C	100	3 1/8	3 5/8	3 7/8	2 1/2	2 1/16	4.5	
	P-5064	C	150	3 7/16	3 5/8	4 1/4	2 3/4	2 7/16	5.2	
	P-5065	C	300	3 3/4	4 1/4	4 11/16	3	3 1/16	8.8	
	P-6141	C	500	3 3/4	5 1/4	4 11/16	3	4 1/16	13.7	
	P-6124	FS	1000	5 5/8	6 3/4	7 1/8	4 5/8	4	24.7	
2	SD-50	SC	50	2 7/8	3 1/2	3 1/2	2	3 1/8	2.8	
	SD-100	SC	100	3 11/16	4 7/16	4 5/16	2 3/4	3 7/8	4.3	
	SD-150	SC	150	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	7.0	
	SD-250	SC	250	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	8.8	
	SD-500	SC	500	5 5/16	5 7/8	6 1/16	3 1/2	5 3/8	14.5	
	SD-1000	SC	1000	6 1/8	6 1/2	7 1/16	4 1/4	6	22.5	



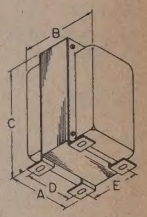
C

LINE ADJUSTING AUTO-TRANSFORMERS: Primary—50/60 Cycle. Line Cord and Selector Switch. Secondary—Female Receptacle with Voltmeter.

Section	Catalog No.	Style	Watts	Input Voltage	Output Voltage	Dimensions A	B	C	D	E	WT. Lbs.
3	PV-6441	C	150	65/75/90/100/115/130/145	115	3 3/4	5 3/8	5 1/2	3	4 5/16	6.4
	PV-6442	C	350	65/75/90/100/115/130/145	115	3 3/4	6 1/8	5 1/2	3	5 1/16	10.5
	PV-6443	C	500	65/75/90/100/115/130/145	115	3 3/4	6 7/8	5 1/2	3	5 13/16	15
	PV-6444	C	750	65/75/90/100/115/130/145	115	4 5/8	8 1/8	6 5/16	3 1/2	6 5/8	19

LINE ADJUSTING ISOLATION TRANSFORMERS: Primary—50/60 Cycles. Line Cord and Selector Switch. Secondary Standard Female Receptacle.

Section	Catalog No.	Style	Watts	Input Voltage	Output Voltage	A	B	C	D	E	WT. Lbs.
4	IS-50	SC	50	105/115/125	††125/115/105	3 11/16	4 7/16	4 11/16	2 3/4	3 7/8	5
	IS-100	SC	100	105/115/125	††125/115/105	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	8.5
	IS-150	SC	150	105/115/125	††125/115/105	5 5/16	5 7/8	6 1/16	3 1/2	5 3/8	12.5
	IS-250	SC	250	105/115/125	††125/115/105	5 5/16	5 7/8	6 1/16	3 1/2	5 3/8	18.3



FS

STRAIGHT ISOLATION: ELECTROSTATIC SHIELDS GRNDED. TO CORE: Primary—50/60 Cycles. Line Cord. Secondary—Female Receptacle except P-6411 and P-6412 lead termination.

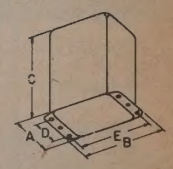
Section	Catalog No.	Style	Watts	Input Voltage	Output Voltage	A	B	C	D	E	WT. Lbs.
5	P-6411	A	15	115	115	1 7/8	3 1/4	2	2 13/16	—	1.0
	P-6412	A	35	115	115	2	2	3	—	—	1.7
	P-6410	C	50	115	115	2 13/16	3 1/8	3 1/2	2 1/4	1 7/8	3.7
	P-6160†	C	100	105/115/125	115	3 3/4	3 3/4	4 11/16	3	2 5/16	7.0
	P-6371	SC	175	117	117	4 5/16	5 1/4	5 5/16	2 1/2	4 3/4	9.0
	P-6161†	C	250	105/115/125	115	3 3/4	5 1/2	4 11/16	3	4 5/16	14.2
	P-6298†	FS	500	105/115/125	115	5 5/8	7 1/8	7 5/8	4 5/8	4 1/4	28
	P-6125▲	FS	1000	105/115/125	115	5 5/8	7 3/4	7 1/8	4 5/8	5	35
	P-6123▲	FS	1500	105/115/125	115	5 5/8	9	7 1/8	4 5/8	6 1/4	50

STEP-DOWN ISOLATION: ELECTROSTATIC SHIELDS GRNDED. TO CORE Primary—50/60 Cycles. Line Cord. Secondary—Female Receptacle.

Section	Catalog No.	Style	Watts	Input Voltage	Output Voltage	A	B	C	D	E	WT. Lbs.
6	P-6383†	C	100	210/230/250	115	3 3/4	3 3/4	4 11/16	3	2 5/16	7.3
	P-6385†	C	250	210/230/250	115	3 3/4	5 1/2	4 11/16	3	4 5/16	14.2
	P-6387†	FS	500	210/230/250	115	5 5/8	7 1/8	7 3/4	4 5/8	4 1/4	29.5
	P-6389▲	FS	1000	210/230/250	115	5 5/8	7 7/8	7 1/8	4 5/8	5	34
	P-6390▲	FS	1500	210/230/250	115	5 5/8	9 3/8	7 1/8	4 5/8	6 1/2	50

ISOLATION TESTING TRANSFORMERS: ELECTROSTATIC SHIELD GROUNDED TO CORE: Primary—50/60 Cycles. Line Cord. Secondary—Three Female Receptacles.

Section	Catalog No.	Style	Watts	Input Voltage	Output Voltage	A	B	C	D	E	WT. Lbs.
7	P-6415	C	350	117	105/115/125	4 5/8	5 11/16	5 3/8	3 1/2	4 11/16	17



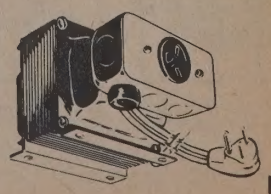
SC

AUTO-TRANSFORMERS FOR TESTING: Primary 50/60 Cycles—Line Cord and Selector Switch. Secondary—Female Receptacle.

Section	Catalog No.	Style	Watts	Input Voltage	Output Voltage	A	B	C	D	E	WT. Lbs.
8	P-6299	C	150	115	{90/100/110/120 / 130/140/150}	3 1/8	3 7/8	3 7/8	2 1/2	2 5/16	6

STEP UP—STEP-DOWN AUTO-TRANSFORMERS: 208 V./230 V., or 230 V./208 V. 60 Cy. by means of Connection. Change inside outlet Box.
(Three wire Line Cord and Receptacle)

Section	Catalog No.	Style	Application	Height	Base Area	Mtg Ctrs	WT. Lbs.
9	PSU-2000	PSU	2.3 KVA for 1/2 to 1 hp Motors	3 1/2	3 3/4 x 6 1/2	2 7/8 x 3 1/4	9
	PSU-3000	PSU	3 KVA for 1 to 2 hp Motors	4	4 1/2 x 6	2 1/2 x 3 3/4	10



PSU

†Has Primary Switch. ▲Has Primary Terminals. ††With 115 volt input. • New part number

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PLATE TRANSFORMERS

FOR REACTOR INPUT SYSTEMS: All Primaries—50/60 Cycles.

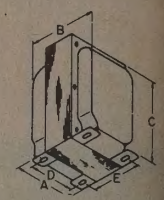
Section	Catalog No.	Style	Plate Winding AC Volts	DC Volts	DCMA CCS	DCMA ICAS	Primary Volts	Dimensions A	B	C	D	E	WT. Lbs.	Styles
1	P-8040▲	C	500-40-0-500	400 / 40	300	375	115	3¾	4⅝	4 11/16	3	3 7/16	9.8	
	P-8041▲	C	615-520-40-0 / 520-615	500 / 400 / 40	250	310	115	3¾	5¼	4 11/16	3	4 1/16	13.6	
	P-45††	SC	675-575-0 / 575-675	500 / 400	250	325	115/230	4 5/16	5¼	5 5/16	2½	4¾	12.0	
	P-8042▲	C	770-510-40-0 / 510-770	600 / 400 / 40	300	375	115	3¾	6½	4 11/16	3	5 5/16	18.0	
	P-67††	SC	900-735-0 / 735-900	750 / 600	250	325	115/230	4 5/16	5¼	5 5/16	2½	4¾	13.5	
	P-8043▲	FS	950-750-40-0 / 750-950	750 / 600 / 40	300	375	115	5⅜	6¾	7⅛	4⅝	4	29.0	
2	P-8044▲	FS	1200-0-1200† / 535-0-535	1000 / 400	150 / 150	190 / 190	115	6⅛	8¼	7⅝	4¾	4	29.8	
	P-8025▲	FS	1230-940-0 / 940-1230	1000 / 750	400	500	115	5⅜	7½	7⅛	4⅝	4¾	35.0	
	P-1240††	SC	1425-0-1425† / 600-0-600	1250 / 400	150 / 200	200 / 260	115/230	5 5/16	5⅞	6 1/16	3½	5⅜	26.0	
	P-8026▲	FS	1475-1175-0 / 1175-1475	1250 / 1000	300	375	115	5⅜	7½	7⅛	4⅝	4¾	36.5	
	P-8027▲	FS	1510-1210-0 / 1210-1510	1250 / 1000	500	625	115	5⅜	8¼	7⅛	4⅝	5½	45.2	
	P-1512††	FS-1	1710-1430-0 / 1430-1710	1500 / 1250	300	425	115/230	7½	7	7	4¾	6	43.0	
	P-8028▲	FS	1740-1460-0 / 1460-1740	1500 / 1250	300	375	115	5⅜	7¾	7⅛	4⅝	5	38.7	
	P-8029▲	FS	1775-1500-0 / 1500-1775	1500 / 1250	500	625	115/230	7¼	8⅛	9	6	5⅝	65.0	
	P-8031▲	FS	2075-1775-0 / 1775-2075	1750 / 1500	500	625	115/230	7¼	8⅛	9	6	5⅝	65.0	
3	P-8030▲	FS	2100-1800-0 / 1800-2100	1750 / 1500	300	375	115	5⅜	7¼	7⅛	4⅝	5½	45.8	
	P-8033▲	FS	2375-2065-0 / 2065-2375	2000 / 1750	500	625	115/230	7¼	8⅜	9	6	5⅞	77.0	
	P-8032▲	FS	2400-2100-0 / 2100-2400	2000 / 1750	300	375	115	5⅜	8	7⅛	4⅝	6¼	46.0	
	P-2520††	FS-1	2820-2260-0 / 2260-2820	2500 / 2000	100	425	115/230	8⅞	7½	8½	5½	6⅝	71.0	
	P-8034▲	FS	2900-2385-0 / 2385-2900	2500 / 2000	300	375	115/230	7¼	8⅛	9	6	5⅝	62.8	
	P-2126††	FS	2900-2320-0 / 2320-2900	2600 / 2100	500	700	115/230	7¼	10½	9	6	7¾	95.0	
	P-8035▲	FS	2950-2375-0 / 2375-2950	2500 / 2000	500	575	115/230	7¼	9⅝	9	6	7 1/16	80.0	

WITH PLATE LEADS OUT OF TOP: For Reactor Input Systems. All Primaries—50/60 Cycles.

Section														
4	PT-8311††	C	1200-0-1200	1000	225	280	117	3¾	5¼	4 11/16	3	4 1/16	13.0	
	PT-8312††	C	1200-0-1200	1000	325	405	117	4⅝	6¾	5⅜	3½	5⅛	22.5	
	PT-8313††	C	1475-0-1475	1250	250	310	117	4⅝	6⅝	5⅜	3½	5	22.0	
	PT-8314††	C	1790-0-1790	1500	225	280	117	4⅝	6½	5⅜	3½	4⅞	21.5	
	PT-8315††	C	2065-0-2065	1750	200	250	117	4⅝	6⅝	5⅜	3½	5	22.0	

CCS RATING FOR REACTOR INPUT-ICAS RATING FOR CAPACITOR INPUT: All Primaries-50/60 Cycles.

Section														
5	PC-8301††	C	415-0-415	300 / 425	200	160	117	3⅛	3½	3⅞	2½	2 3/16	4.8	
	PC-8302††	C	515-0-515	385 / 500	235	200	117	3 7/16	4⅛	4¼	2¾	2 15/16	6.8	
	PC-8303††	C	665-0-665	500 / 750	250	200	117	3¾	4⅜	4 11/16	3	3⅜	9.6	
	PC-8304††	C	750-0-750	600 / 850	265	200	117	3¾	4⅞	4 11/16	3	3 11/16	11.5	
	PC-8305††	C	920-0-920	750 / 1000	250	200	117	3¾	5	4 11/16	3	3 13/16	11.9	
	PC-8306††	C	920-0-920 / 500-0-500 †	750 / 1100 / 380 / 550	150 / 150	125 / 125	117	3¾	5	4 11/16	3	3 13/16	11.9	



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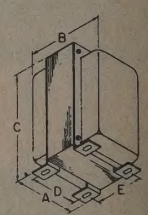

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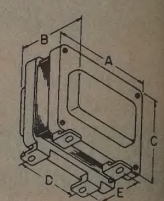
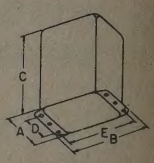


FS1



SC

All "C" style have Leads; "SC" style have lugs; "FS" and "FS1" have Terminals.
†Both Secondaries may be Loaded Simultaneously.

††Secondary C.T. must be grounded.
▲May be used with Secondary C.T. ungrounded.

All Secondary A.C. Voltages ±3%.

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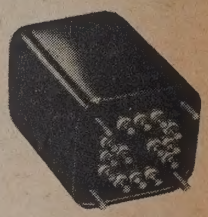
HERMETICALLY SEALED STANDARD TRANSFORMERS

ESSEX Stancor/RBM — STANCOR

AUDIO TRANSFORMERS:

Frequency Response ±2db 300-10,000 Cycles
Maximum operating Altitude—50,000 ft.

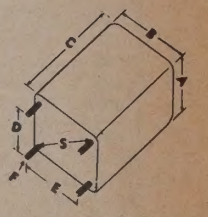
Section	Catalog No.	Application	Impedance	Operating Level	Pri. DCMA	Max. Wt. Lbs.	Dimensions in inches A	B	C	D	E	F	Styles
1	AMS-1	P-P Plates to P-P Grids	Pri: 10,000 ohms CT Sec: 90,000 ohms CT 22,500 ohms CT	15 dbm.	10	.6	1⅝	1⅝	2⅜	1⅜₁₆	1⅜₁₆	6-32	
	AMS-3	Line to P-P Grids	Pri: 600 ohms CT/150 ohms Sec: 135,000 ohms CT	15 dbm.	—	.6	1⅝	1⅝	2⅜	1⅜₁₆	1⅜₁₆	6-32	
	AMS-6	Single Plate to Voice Coil	Pri: 7600/4800 ohms Sec: 4/8/16 ohms	2W	40	.6	1⅝	1⅝	2⅜	1⅜₁₆	1⅜₁₆	6-32	
	AMS-7	P-P Plates to Line	Pri: 15,000 ohms CT Sec: 600 ohms CT/150 ohms	2W	10	.6	1⅝	1⅝	2⅜	1⅜₁₆	1⅜₁₆	6-32	
	AMS-8	P-P Plates to Line	Pri: 24,000 ohms CT Sec: 600 ohms CT/150 ohms	1W	20	.6	1⅝	1⅝	2⅜	1⅜₁₆	1⅜₁₆	6-32	
	AMS-9	P-P Plates to Line	Pri: 60,000 ohms CT Sec: 600 ohms CT/150 ohms	5W	20	.6	1⅝	1⅝	2⅜	1⅜₁₆	1⅜₁₆	6-32	



POWER TRANSFORMERS:

For Reactor Input Systems—Primary 105/115/125 Volts, 54-66 Cycles
Maximum operating Altitude—10,000 ft.

Section	Catalog No.	High Voltage Secondary A-C Volts	D-C Ma.	D-C, V Output	Rectifier Filament Volts	Amps	Filament No. 2 Volts	Amps	Wt. Lbs.	Dimensions in Inches A	B	C	D	E	F
2	PMS-70	200-100-0 100-200	70	155	6.3/5	2	6.3	3	4	3⅛	2⅝	4¼	2¹⁹⁄₆₄	1⁵⁵⁄₆₄	8-32
	PMS-70A	325-0-325	70	260	6.3/5	2	6.3	4	5	3⅜	3⅛	3⅞	2⅝	2⅛	8-32
	PMS-150	325-0-325	150	245	6.3	5	5	3	7¼	3¹⁵⁄₁₆	3⅜	4⅝	3	2⅞	10-32
	PMS-175	400-0-400	175	318	5	3	6.3	8	10	4⅝	3¹¹⁄₁₆	4½	3⅝	2¹¹⁄₁₆	10-32
	PMS-250	450-0-450	250	345	5	3	6.3	8	13	4¹¹⁄₁₆	4	4¹³⁄₁₆	3¹¹⁄₁₆	3	¼-20
	PMS-350	350-0-350	250	255	—	—	—	—	7½	3¹⁵⁄₁₆	3⅜	4⅝	3	2⅞	10-32
	PMS-550	550-0-550	250	419	—	—	—	—	11	4⅝	3¹¹⁄₁₆	4½	3⅝	2¹¹⁄₁₆	10-32
	PMS-800	800-0-800	250	250	—	—	—	—	16½	5¹⁄₁₆	4⅝	5½	4⅛	3⅝	¼-20



PMS FMS

FILAMENT TRANSFORMERS:

Primary 105/115/125 Volts, 54-66 Cycles
Maximum operating Altitude—10,000 ft.

Section	Catalog No.	Secondary Volts	Amps	Insul. Test Volts RMS	Wt. Lbs.	Dimensions in inches A	B	C	D	E	F
3	FMS-23	2.5	3.0	2500	1½	1¹⁵⁄₁₆	1¹³⁄₁₆	2⅞	1⅜	1¼	6-32
	FMS-210	2.5	10	2500	2½	2¾	2⅜	2¹³⁄₁₆	2⅛	1¾	6-32
	FMS-53	5.0	3.0	2500	1¾	2⅝	2⅛	2½	1¹¹⁄₁₆	1⅞	6-32
	FMS-510	5.0	10	2500	4	3⅛	2⅝	3⅜	2¹⁹⁄₆₄	1⁵⁵⁄₆₄	8-32
	FMS-62	6.3	2.0	2500	1¾	2⅝	2⅛	2½	1¹¹⁄₁₆	1⅞	6-32
	FMS-65	6.3	5.0	2500	2¾	2¾	2⅜	2¹³⁄₁₆	2⅛	1¾	6-32
	FMS-210H	2.5	10	10000	4¾	3⅝	3⅛	3⅞	2⅝	2⅛	8-32
	FMS-510H	5.0	10	10000	7	3¹⁵⁄₁₆	3⅜	4⅝	3	2⅞	10-32

WIDE RANGE OUTPUT:

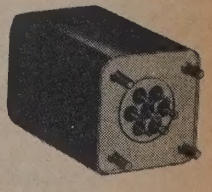
Frequency Response ±1 db 30 to 15,000 cycles.
Maximum operating Altitude—10,000 ft.

Section	Catalog No.	Application	Impedance Ohms Primary—Secondary	Operating Level	Output Tubes	Wt. Lbs.	Dimensions A	B	C	D	E	F
4	BOH-2	Push-Pull Plates to Line	Pri: 20,000 CT Sec: 600/150 CT	+30 dbm.	6C5's or equiv.	3	2.861	2.711	3.492	2.000	1.875	8-32
	BOH-4	Push-Pull Plates to Line	Pri: 7,500 CT Sec: 600/150 CT	+43 dbm.	6L6's or equiv.	5	3.667	3.292	4.305	2.625	2.375	10-32
	BOH-9	P-P Plates to Line or Voice Coil	Pri: 5000/3000 CT Sec: 600/16/8 CT and 150/4	+42 dbm.	6GB4's or equiv.	6	3.667	3.292	4.305	2.625	2.375	10-32

WIDE RANGE INPUT:

Frequency Response ±1 db 30 to 15,000 cycles.
Maximum operating Altitude—10,000 ft.

Section	Catalog No.	Application	Impedance Ohms Primary—Secondary	Operating Level	Hum Reduction	Wt. Lbs.	Dimensions A	B	C	D	E	F
5	BIH-1	Line to Single or Push-Pull Grids	Pri: 600/150 CT Sec: 50,000 CT	+15 dbm.	−70 dbm.	1½	2.241	2.101	2.930	1.562	1.375	6-32
	BIH-7	Low imped. mike, pickup, or multiple line to grid	Pri: 50/150/250/600 Sec: 50,000 CT	+15 dbm.	−70 dbm.	1½	2.241	2.101	2.930	1.562	1.375	6-32
	BIH-8	Single Plate to Push-Pull Grids	Pri: 10,000 Sec: 50,000 CT	+15 dbm.	−70 dbm.	1½	2.241	2.101	2.930	1.562	1.375	6-32
	BIH-10	Sgl. or P.P. Plates to S. or P.P. Grids	Pri: 20,000 CT/5000 Sec: 20,000 CT/5000	+35 dbm.	—	2.0	2.312	2.062	3.125	1.687	1.437	6-32



AMS

All Secondary AC Voltages ±3%.

Available until stock is depleted.

ESSEX Stancor/RBM | STANCOR

HERMETICALLY SEALED TRANSFORMERS

COMMUNICATIONS RANGE INPUT: Frequency Response ±1 db 200 to 3500 cycles. Maximum operating Altitude—10,000 ft.

Section	Catalog No.	Application	Impedances Ohms Primary—Secondary	Wt. Lbs.	Dimensions A	B	C	D	E	F	Styles
1	CIH-1	Low Level Line to Single or P-P Grids	Pri: 600/150 Sec: 100,000 CT	¾	1.546	1.546	2.143	1.000	1.000	6-32	
	CIH-2	Low Level SB or DB Microphone to Sgl. or P-P Grids	Pri: 125/50, 80 ma. Sec: 125,000 CT	¾	2.241	2.101	2.680	1.562	1.375	6-32	

COMMUNICATIONS RANGE OUTPUT: Frequency Response ±1db 200 to 3500 cycles. Maximum operating Altitude—10,000 ft.

Section	Catalog No.	Typical Output Tubes	Class	Impedances Ohms Primary—Secondary	Max. D-C In Pri.	Power Level	Wt. Lbs.	Dimensions A	B	C	D	E	F
2	COH-1	Sgl. 6L6, 6V6, 25A6 etc.	A	Pri: 5,000 Sec: 600/150/16/8/4	55 ma.	5 watts	2¼	2.381	2.381	3.049	1.812	1.687	6-32
	COH-2	Sgl. 6F6, 6V6, 6N6, 6K6, 7B5	A	Pri: 8,000 Sec: 600/150/16/8/4	55 ma.	5 watts	2¼	2.521	2.381	3.049	1.812	1.687	6-32

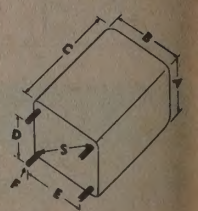
TRANSISTOR AUDIO: Maximum operating Altitude—10,000 ft.

Section	Catalog No.	Application	Impedance in Ohms Pri.	Sec.	Max. Pri. D.C. Ma.	DC Res. in Ohms Pri.	Sec.	Power in Watts	Wt. Lbs.	Dimensions A	B	C	D	E	S	F
3	TAMS-1	Input	600 CT	10	20	42	.8	.05	2½ oz.	1	1	1⅜	—	—	¾	4-40 x ⅜
	TAMS-2	Interstage	100 CT	10 CT	100	4.3	.8	.25	5 oz.	1 5/16	1 5/16	1¾	—	—	1¼	6-32 x ⅜
	TAMS-3	Interstage	100	1000 CT	100	5.8	45	.25	11 oz.	1⅝	1⅝	2⅜	1¾	1⅜	—	6-32 x ⅜
	TAMS-4	Interstage	500 CT	5000 CT	12	37	250	.03	11 oz.	1⅝	1⅝	2⅜	1⅜	1⅜	—	6-32 x ⅜
	TAMS-5	Driver	1000	200 CT	10	400	115	.05	2 oz.	1	1	1⅜	—	—	¾	4-40 x ⅜
	TAMS-6	Driver	2000	200 CT	5	720	115	.05	2 oz.	1	1	1⅜	—	—	¾	4-40 x ⅜
	TAMS-7	Driver	100	100 CT	100	12	12	.5	1 lb.	1 15/16	1 13/16	2 7/16	1⅜	1¼	—	6-32 x ⅜
	TAMS-8	Output	9800	15	2	640	2	.05	2 oz.	1	1	1⅜	—	—	¾	4-40 x ⅜
	TAMS-9	Output	1000	4/8/16	10	180	3.5	.2	2½ oz.	1	1	1⅜	—	—	¾	4-40 x ⅜
	TAMS-10	Output	2000 CT	4/8/16	—	250	4	.2	2½ oz.	1	1	1⅜	—	—	¾	4-40 x ⅜
	TAMS-11	Output	48 CT	8/16	275	5	1.5	5	1½ lb.	2 5/16	2 1/16	3⅛	1 11/16	1 7/16	—	6-32 x ⅜
	TAMS-12	Output	20 CT	8	500	.55	.35	10	12 oz.	1⅝	1⅝	2⅜	1¾	1⅜	—	6-32 x ⅜

TAMS

FOR CAPACITOR INPUT SYSTEMS: Primary 117 volts 50/60 Cycles. Maximum operating Altitude 10,000 ft.

Section	Catalog No.	High Voltage Secondary A-C Volts	D-C Ma.	D-C V. Output	Rectifier Volts	Amps	Filament No. 2 Volts	Amps	No. 3 Volts	Amps	Wt. Lbs.	Dimensions A	B	C	D	E	F
4	PHC-55	270-0-270	55	260	5	2	6.3 CT	2	—	—	3½	2.861	2.711	3.742	2.000	1.875	8-32
	PHC-70	335-0-335	70	320	5	2	6.3 CT	3	—	—	4½	3.245	2.979	4.242	2.375	2.125	8-32
	PHC-105	345-0-345	105	320	5	2	6.3 CT	3.5	—	—	6½	3.667	3.292	4.680	2.625	2.375	10-32
	PHC-120	375-0-375	120	380	5	3	6.3 CT	4	—	—	9½	3.667	3.292	4.680	2.625	2.375	10-32
	PHC-150	370-0-370	150	390	5	3	6.3 CT	4	6.3 CT	1	11½	4.573	4.120	5.318	3.375	3.000	10-32
	PHC-200	385-0-385	200	390	5	3	6.3 CT	4.5	6.3 CT	1	12	4.573	4.120	5.318	3.375	3.000	10-32
	PHC-250	400-80-0-80-400	250	410	5	6	6.3 CT	7	5	2	15	5.323	4.792	6.068	3.375	3.000	12-24



FOR REACTOR INPUT SYSTEMS: Primary 117 volts 50/60 Cycles. Maximum operating Altitude 10,000 ft.

Section	Catalog No.	High Voltage Secondary A-C Volts	D-C Ma.	D-C V. Output	Rectifier Volts	Amps	Filament No. 2 Volts	Amps	No. 3 Volts	Amps	Wt. Lbs.	Dimensions A	B	C	D	E	F
5	PHR-55	350-0-350	55	260	5	2	6.3 CT	2	—	—	3¼	2.861	2.711	3.742	2.000	1.875	8-32
	PHR-70	425-0-425	70	320	5	2	6.3 CT	3	—	—	4½	3.245	2.979	4.242	2.375	2.125	8-32
	PHR-105	450-0-450	105	320	5	2	6.3 CT	3.5	—	—	6½	3.667	3.292	4.680	2.625	2.375	10-32
	PHR-120	500-0-500	120	390	5	3	6.3 CT	4	—	—	9½	3.667	3.292	4.680	2.625	2.375	10-32
	PHR-150	510-0-510	150	395	5	3	6.3 CT	4	6.3 CT	1	11½	4.573	4.120	5.318	3.375	3.000	10-32
	PHR-200	520-0-520	200	390	5	3	6.3 CT	4.5	6.3 CT	1	12¼	4.573	4.120	5.318	3.375	3.000	10-32

FOR REGULATED POWER SUPPLIES: Primary 115 Volts 50/60 Cycles. Maximum operating Altitude 10,000 ft.

Section	Catalog No.	High Voltage Secondary A-C Volts	D-C Ma.	D-C V. Output	Rectifier Volts	Amps	Filament No. 2 Volts	Amps	No. 3 Volts	Amps	Wt. Lbs.	Dimensions A	B	C	D	E	F
6	PHC-165	440-0-440	165	430	5	3	6.3 6.3	7.5 0.6	6.3 6.3	3 3	12	4.573	4.120	5.318	3.375	3.000	10-32
	PHC-200A	450-0-450	200	442	5	2	6.3 6.3	4 4	6.3 —	0.6 —	12	4.573	4.120	5.318	3.375	3.000	10-32

Available until stock is depleted.

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HERMETICALLY SEALED TOROIDS, PULSE TRANS., REACTORS & POWERS

ESSEX Stancor/RBM — STANCOR

FOR SILICON RECTIFIER POWER SUPPLIES:

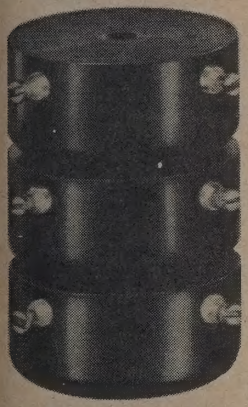
Primary 117 Volts 50/60 Cycles.
Maximum Operating Altitude 10,000 ft.

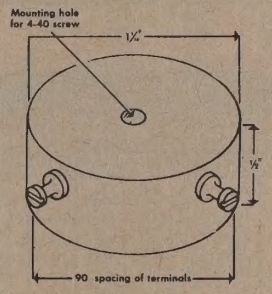
Section	Catalog No.	Secondary No. 1		Secondary No. 2		Secondary No. 3		Case Size	Wt. Lbs.	Dimensions						
		Volts	DCMA	Volts	Amps	Volts	Amps			A	B	C	D	E	S	F
1	HRP-400	400 CT	400	6.3	3.0	6.3	3.0	LA	10.5	4 5/16	3 11/16	5 5/16	3 5/16	2 11/16	—	10-32 x ½
	HRP-600	300 CT	600	6.3	2.5	6.3	2.5	LA	10.5	4 5/16	3 11/16	5 5/16	3 5/16	2 11/16	—	10-32 x ½
	HRP-800	200 CT	800	6.3	2.0	6.3	2.0	LA	10.0	4 5/16	3 11/16	5 5/16	3 5/16	2 11/16	—	10-32 x ½
	HRP-1600	100 CT	1600	6.3	1.5	6.3	1.5	LA	10.5	4 5/16	3 11/16	5 5/16	3 5/16	2 11/16	—	10-32 x ½
	HRP-2000	80 CT	2000	6.3	1.5	6.3	1.5	LA	9.6	4 5/16	3 11/16	5 5/16	3 5/16	2 11/16	—	10-32 x ½
	HRP-2500	60 CT	2500	6.3	1.5	6.3	1.5	LA	9.0	4 5/16	3 11/16	5 5/16	3 5/16	2 11/16	—	10-32 x ½

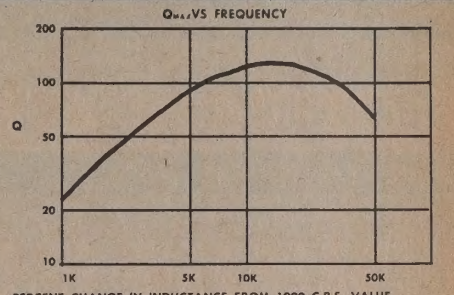
All Secondary AC Voltages ±3%

TOROIDAL INDUCTORS: Inductance Tolerance ±1%, Max Altitude—10,000 ft.

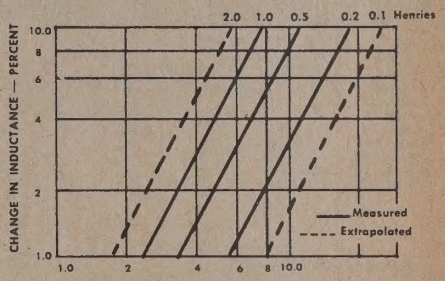
Section	Catalog No.	Inductance (m.h.)	D.C. Res. (ohms)	Catalog No.	Inductance (m.h.)	D.C. Res. (ohms)
2	TM-1A	1	.32	TM-80A	80	29.5
	TM-2A	2	.72	TM-100A	100	32.5
	TM-5A	5	1.85	TM-200A	200	71.5
	TM-8A	8	2.25	TM-500A	500	185
				TM-800A	800	300





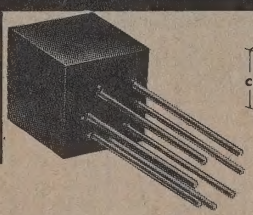


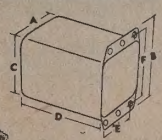
PERCENT CHANGE IN INDUCTANCE FROM 1000 C.P.S. VALUE WITH FREQUENCY



PULSE TRANSFORMERS: RATIO 1:1:1 Fits 7 Pin Miniature Tube Socket

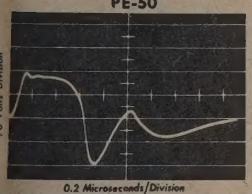
Section	Catalog No.	Nominal Pulse Width in Microseconds	Rise Time in Microseconds	Height	Width	Depth	Aprox. Wt. Lbs.
3	PE-50	0.5	.07	5/16	5/16	5/16	.01
	PE-75	0.75	.07	5/16	5/16	5/16	.01
	PE-500	5	.07	¾	1 1/16	1 1/16	.01
	PE-700	7	.1	¾	1 1/16	1 1/16	.01





TYPICAL OSCILLOGRAPHS

PE-50



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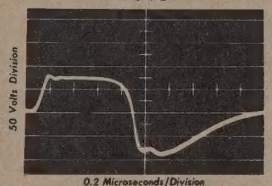
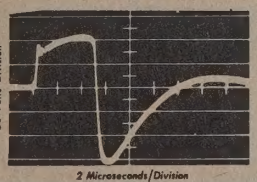
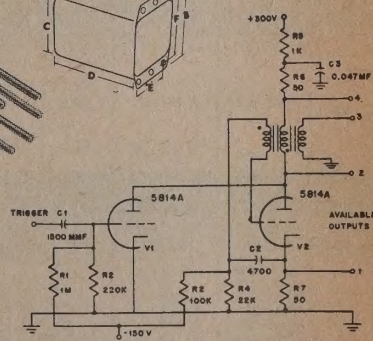


PE-500

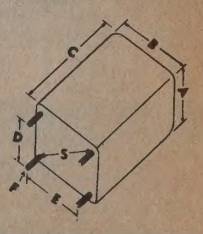




FILTER REACTORS:

Max. Altitude—10,000 ft.

Section	Catalog No.	Ind. Henries	Max. D.C. Ma.	D.C. Res. in Ohms	Insul. Test RMS V	Wt. Lbs.	Dimensions A	B	C	D	E	F
4	RH-1055	10	55	230	2500	1¾	2.241	2.101	2.930	1.562	1.375	6-32
	RH-1085	10	85	175	2500	2½	2.521	2.381	3.049	1.812	1.687	6-32
	RH-1585	15	85	285	2500	2¾	2.521	2.381	3.049	1.812	1.687	6-32
	RH-8105	8	105	100	2500	3¾	2.861	2.711	3.742	2.000	1.875	8-32
	RH-12105	12	105	170	2500	4	2.861	2.711	3.742	2.000	1.875	8-32
	RH-8150	8	150	100	2500	5¼	3.245	2.979	3.867	2.375	2.125	8-32
	RH-12150	12	150	150	2500	5½	3.245	2.979	4.242	2.375	2.125	8-32
	RH-8200	8	200	85	2500	7	3.667	3.292	4.305	2.625	2.375	10-32
	RH-12200	12	200	140	2500	7	3.667	3.292	4.305	2.625	2.375	10-32



Available until stock is depleted.

ESSEX Stancor/RBM | STANCOR

HERMETICALLY SEALED FILAMENTS & 400 CYCLE TRANSFORMERS

FILAMENT TRANSFORMERS:

Primary 115/230 Volts 50-60 Cycles Max. Altitude—10,000 ft.

Section	Catalog Number	Secondary Volts	Secondary Amps	Insulation Test Volts RMS	Wt. Lbs.	Dimensions A	B	C	D	E	F	Styles
1	FH-25	2.5 CT	5.25	3500	2	2.521	2.381	3.299	1.812	1.687	6-32	
	FH-210	2.5 CT	10.	5000	3	2.521	2.381	3.299	1.812	1.687	6-32	
	FH-215H	2.5 CT	15.	9000	5¼	3.667	3.292	4.680	2.625	2.375	10-32	
	FH-58	5.0 CT	10.	2500	3½	2.861	2.711	3.742	2.000	1.875	8-32	
	FH-510H	5.0 CT	10.	8000	6	3.667	3.292	4.680	2.625	2.375	10-32	
	FH-520HB	5.0 CT	20.	10000	13	5.323	4.792	6.068	3.375	3.000	12-24	
	FH-65	6.3 CT	5.5	2500	3	2.861	2.711	3.492	2.000	1.875	8-32	
	FH-610	6.3 CT	10.	2500	5	3.245	2.979	4.242	2.375	2.125	8-32	

FILAMENT TRANSFORMERS:

Primary 105/115/125 Volts, 50-60 Cycles Max. Altitude—10,000 ft.

Section	Catalog Number	Sec. No. 1	Sec. No. 2	Sec. No. 3	Insul. Test	Wt. Lbs.	Dimensions A	B	C	D	E	F
2	FMS-2	5 V. 2A	12.6 V. CT 1.25A	—	2500 V.	3½	2¾	2¾	3 13/16	2⅛	1¾	6-32 x ⅜
	FMS-3	5 V. 3A	6.3 V. CT 5A	—	2500 V.	4	3 1/16	2⅝	4¼	2 19/64	1 55/64	8-32 x ⅜
	FMS-5	5 V. 3A	6.3 V. CT 1A	6.3 V. CT 5A	2500 V.	4¾	3 9/16	3 1/16	3⅞	2⅝	2⅛	8-32 x ⅜
	FMS-8	5V. CT 3A	5 V. CT 3A	5 V. CT 6A	5000 V.	7	3 15/16	3⅜	5¼	3	2 7/16	10-32 x ½

FILAMENT TRANSFORMERS:

Primary 105/115/125 Volts, 380-1000 cycles
Max. Altitude—70,000 ft. Max. Ambient Temp. 85°C

Section	Catalog Number	Sec. Volts	Sec. Amps.	Insul. Test Volts RMS	Wt. Lbs.	MS Case Dimensions A	B	C	D	E	S	F
3	4FMS-65	6.3 CT	5.5	2,500	1¼	1 15/16	1 13/16	2¾	1⅜	1¼	—	6-32 x ⅜
	4FMS-2415	24 CT	1.5	1,500	1.2	1 15/16	1 13/16	2¾	1⅜	1¼	—	6-32 x ⅜
	4FMS-122	12.6 CT	2.0	1,500	1.3	1 15/16	1 13/16	2¾	1⅜	1¼	—	6-32 x ⅜
		12.6	2.0	1,500								

FILAMENT TRANSFORMERS:

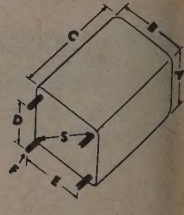
Primary 105/115/125 Volts, 380-1000 Cycles
Max. Altitude—10,000 ft. Max. Ambient Temp. 85°C

Section	Catalog Number	Sec. Volts	Sec. Amps.	Insul. Test Volts RMS	Wt. Lbs.	Dimensions A	B	C	D	E	S	F
4	4FH-63	6.3 CT	3	2,500	¾	1.901	1.791	2.205	1.312	1.062	—	6-32
	4FH-65	6.3 CT	5.5	2,500	1	1.901	1.791	2.424	1.312	1.062	—	6-32
	4FH-610	6.3 CT	10	2,500	1¾	2.241	2.101	2.930	1.562	1.375	—	6-32
	4FH-620	6.3 CT	20	2,500	2½	2.521	2.381	3.299	1.812	1.687	—	6-32

FOR CAPACITOR INPUT SYSTEMS:

Primary 105/115/125 Volts, 380-1000 cycles
Max. Altitude—70,000 ft. Max. Ambient Temp. 85°C

Section	Catalog Number	High Voltage Secondary A.C. Volts	D.C. Ma.	Rectifier Filament Volts	Amps.	Other Filaments Volts	Amps.	Wt. Lbs.	Dimensions A	B	C	D	E	S	F
5	4PMS-40	255-0-255	40	5.0	2	6.3 CT	2	1½	2¾	2⅜	2 13/16	2⅛	1¾	—	6-32 x ⅜
	4PMS-55	270-0-270	55	5.0	2	6.3 CT	2	1¾	2¾	2⅜	2 13/16	2⅛	1¾	—	6-32 x ⅜
	4PMS-70	335-0-335	70	5.0	2	6.3 CT	3	1¾	2¾	2⅜	2 13/16	2⅛	1¾	—	6-32 x ⅜
	4PMS-85	330-0-330	85	5.0	2	6.3 CT	3	2½	2¾	2⅜	3 13/16	2⅛	1¾	—	6-32 x ⅜
	4PMS-105	345-0-345	105	5.0	2	6.3 CT	3.5	2¼	2¾	2⅜	3 13/16	2⅛	1¾	—	6-32 x ⅜
	4PMS-120	375-0-375	120	5.0	3	6.3 CT	4	3½	3 1/16	2⅝	4¼	2 19/64	1 55/64	—	8-32 x ⅜
	4PMS-150	370-0-370	150	5.0	3	6.3 CT	4	4¼	3 9/16	3 1/16	3⅞	2⅝	2⅛	—	8-32 x ⅜
	4PMS-165	440-0-440	165	5.0	3	6.3 CT	1	6½	3 15/16	3⅜	4 5/16	3	2 7/16	—	10-32 x ½
						6.3	7.5								
						6.3	3								
						6.3	3								
						6.3	0.6								
	4PMS-200A	450-0-450	200	5.0	2	6.3	4	6¼	3 15/16	3⅜	4 5/16	3	2 7/16	—	10-32 x ½
						6.3	4								
						6.3	0.6								
		550-370-75-0	300	5.0	6	6.3 CT	5								
	4PMS-300*	75-370-550				6.3 CT	1	7½	3 15/16	3⅜	5¼	3	2 7/16	—	10-32 x ½



FOR CAPACITOR INPUT SYSTEMS:

Primary 105/115/125 Volts. 380-1000 Cycles
Max. Altitude 10,000 ft. Max. Ambient Temp. 85°C

Section	Catalog Number	High Voltage Secondary A.C. Volts	D.C. Ma.	Rectifier Filament Volts	Amps.	Other Filaments Volts	Amps.	Wt. Lbs.	Dimensions A	B	C	D	E	S	F
6	4PHC-165	440-0-440	165	5.0	3	6.3	7.5	6	3.667	3.292	4.305	2.625	2.375	—	10-32
						6.3	3								
						6.3	3								
						6.3	0.6								
	4PHC-200A	450-0-450	200	5.0	2	6.3	4	5¾	3.667	3.292	4.305	2.625	2.375	—	10-32
						6.3	4								
						6.3	0.6								
		550-370-75-0	300	5.0	6	6.3 CT	5								
	4PHR-300*	75-370-550				6.3 CT	1	6½	3.667	3.292	4.680	2.625	2.375	—	10-32

FILTER REACTORS:

†Max. Altitude 70,000 ft. Max. Ambient Temp. 85°C

Section	Catalog Number	Inductance (henries)	Maximum D.C. Ma.	D.C. Resistance (ohms)	Insul. Test Volts RMS	Wt. Lbs.	Dimensions A	B	C	D	E	S	F
7	4RMS-240	2.0	40	190	2,500	¼	1 5/16	1 5/16	1¾	—	—	1¼	6-32 x ⅜
	4RMS-255	2.0	55	160	2,500	¼	1 5/16	1 5/16	1¾	—	—	1¼	6-32 x ⅜
	4RMS-270	2.0	70	165	2,500	¾	1⅝	1⅝	2⅜	1 3/16	1 3/16	—	6-32 x ⅜
	4RMS-285	2.0	85	135	2,500	⅜	1 5/16	1 5/16	1¾	—	—	1¼	6-32 x ⅜
	4RMS-2120	2.0	120	100	2,500	1	1 13/16	1 13/16	2 7/16	1⅜	1¼	—	6-32 x ⅜
	4RMS-3120	3.0	120	150	1,500	1.2	1 13/16	1 13/16	2 7/16	1⅜	1¼	—	6-32 x ⅜
	4RMS-2150	2.0	150	95	2,500	1	1 13/16	1 13/16	2 7/16	1⅜	1¼	—	6-32 x ⅜
	4RMS-2165	2.0	165	90	2,500	1	1 13/16	1 13/16	2 7/16	1⅜	1¼	—	6-32 x ⅜
	4RMS-2200	2.0	200	73	2,500	2	2 5/16	2 1/16	3 1/16	1 11/16	1 7/16	—	6-32 x ⅜
	4RMS-2300	2.0	300	47	2,500	4	3 1/16	2⅝	4¼	2 19/64	1 55/64	—	8-32 x ⅜

FILTER REACTORS:

Max. Altitude 10,000 ft. Max. Ambient Temp. 85°C

Section	Catalog Number	Inductance (henries)	Maximum D.C. Ma.	D.C. Resistance (ohms)	Insul. Test Volts RMS	Wt. Lbs.	Dimensions A	B	C	D	E	S	F
8	4RH-2120	2.0	120	100	2,500	1	1.901	1.791	2.424	1.312	1.062	—	6-32
	4RH-2165	2.0	165	90	2,500	1½	1.901	1.791	2.424	1.312	1.062	—	6-32
	4RH-2200	2.0	200	73	2,500	1¾	2.241	2.101	2.930	1.562	1.375	—	6-32

ISOLATION:

Primary 115 Volts, 380-1000 Cycles Max. Altitude 70,000 ft.
Max. Ambient Temp. 85°C

Section	Catalog Number	Secondary Volts	Secondary Amps.	V.A.	Insul. Test Volts RMS	Wt. Lbs.	Dimensions A	B	C	D	E	S	F
9	4IMS-160	115	1.39	160	1,500	3.1	2¾	2⅜	3 13/16	2⅛	1¾	—	6-32 x ⅜

All secondary AC Voltages ±3%. *For Reactor Input Systems.

Available until stock is depleted.

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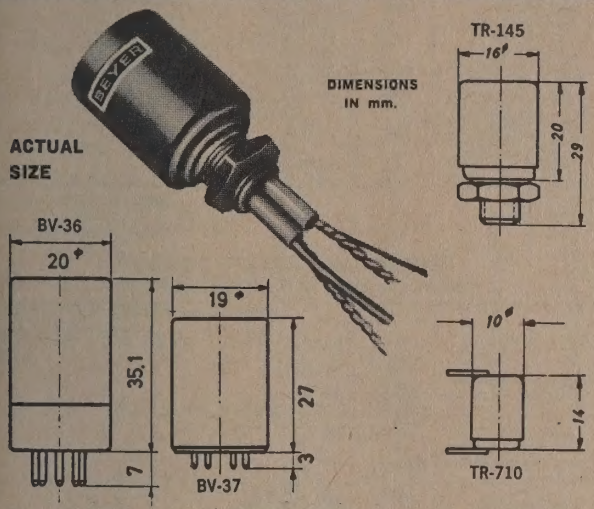
GOTHAM

BEYER TRANSFORMERS
MINIATURE AUDIO



The BEYER line of miniature audio transformers distributed by GOTHAM represents over 30 years of experience in the field on the part of one of Europe's largest quality microphone manufacturers. It is for this reason that we make only one type of transformer in two sizes: A low level audio transformer suitable for microphones, tape playback heads, etc.

A special winding process permits these transformers to be made in this miniature size while maintaining studio quality frequency response, distortion, and level capability. The coil is wound on a continuous laminated core which means the elimination of the split core with its inherent losses. Result is a semi-toroidal construction with its superior resistance to hum induction.

BEYER transformers are used in professional audio equipment by such outstanding manufacturers as Ampex, Bauer, Collins, Precision Instrument, Rust, and many others. All transformers are made to special order to O.E.M. users' specifications. Samples can be supplied within 2 weeks, production usually within 4 weeks.

FOUR PHYSICAL MOUNTINGS ARE AVAILABLE:

Threaded Stud: The Model TR-45 Commercial Quality and TR-145 Studio Quality units are offered in mu-metal housing with threaded stud supplied with two nuts.

Solder Lug: The Model TR-45L and TR-145L are same as above but have radial lugs each end of housing to permit terminal board or Vector socket mounting. Also available in sub-miniature TR-710 Model (see fig.). Primary and secondary windings brought out opposite ends of mu-metal can.

Plug-in: The Model BV-36 is encapsulation of TR-45 and TR-145 Models shown above in molded plastic housing with 7-pin miniature plug base. Same mu-metal shielding.

Printed Circuit: The Model BV-37 is encapsulation of TR-45 and TR-145 Models shown above in molded plastic housing only 1.09" high with special 7-pin, 8-pin, or 9-pin printed circuit base.

ELECTRICAL CHARACTERISTICS:

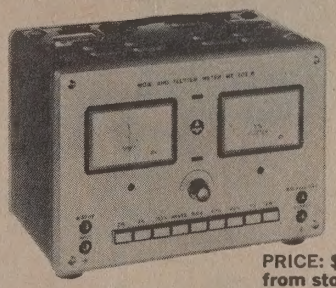
Transformers are supplied with any turns ratio from 1:1 to 1:150, tapped and split windings, static shielding, high voltage test, vacuum impregnating or other requirements.

TYPICAL TRANSFORMER SPECIFICATIONS:
Model TR-145/BV35570 (This Model stocked)

Turns ratio	1:15 ±10%
Impedance ratio	200/45,000 Ohms nominal
Frequency response	±0.2 dB 20 - 20,000 cps.
Maximum input level at 1% THD	370 mV at 30 cps.
Primary open circuit inductance (50 cps)	6.0 H
Primary open circuit impedance (50 cps)	1000 Ohms
Primary DC resistance	70 Ohms
Secondary DC resistance	10,000 Ohms
Hum shielding (EIA std.)	> 70 dB.
BASIC PRICE IN QUANTITY OF 1000 UNITS	$5.58 each

A NEW GENERATION OF FLUTTER METERS AND ANALYZERS

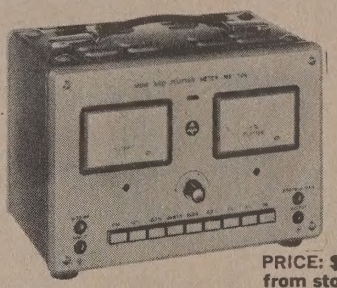
ME 102B FLUTTER METER



PRICE: $460.00 from stock in NY

- ±0.01 to 1% flutter range
- ±2% deviation (drift) range
- Measures either 3kHz or 3.15 kHz
- Level threshold relay prevents indication error
- Self contained oscillator
- Self calibrating ● Solid state
- Freq. deviation meter (drift)
- Weighted & unweighted measurements
- International standard (CCIR/DIN)
- Oscilloscope outputs
- No level adjustment needed

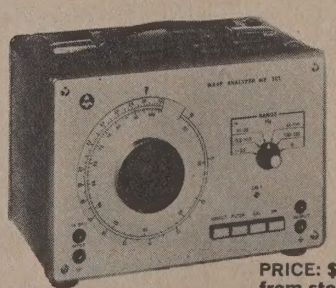
ME 104 FLUTTER METER



PRICE: $365.00 from stock in NY

- ±0.02 to 3% flutter range
- ±4% deviation (drift) range
- Measures at 3.15 kHz only
- Self contained oscillator
- Self calibrating ● Solid state
- Freq. deviation meter (drift)
- Weighted & unweighted measurements
- International standard (CCIR/DIN)
- Oscilloscope outputs
- No level adjustment needed

ME 301 WAVE ANALYZER



PRICE: $780.00 from stock in NY

- Continuous sweep notch filter
- 1 Hz to 330 Hz in 5 ranges
- 40 dB/octave filter slope
- 10% (3 dB points) band width
- Zero loss ● Solid state
- Interconnects to ME-102b and ME-104

GOTHAM AUDIO CORPORATION

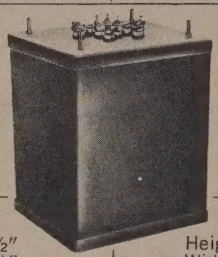
FREED TRANSFORMER CO., INC.

BROADCAST QUALITY COMPONENTS

CASE DIMENSIONS

DC-2B CASE
Height: 3½″
Width: 2⅝″
Depth: 2¼″
Mtg. Cen.: 2″x1¾″
Studs: 4 8-32
Knockout: 1½″ dia.

DC-4A CASE
Height: 3¾″
Width: 3⅛″
Depth: 3″
Mtg. Cen.: 2½″x2½″
Studs: 4 8-32
Knockout: 2″ dia.



DC-2B CASE
Height: 3½″
Width: 2⅝″
Depth: 2¼″
Mtg. Cen.: 2″x1¾″
Studs: 4 8-32
Knockout: 1½″ dia.

DC-4A CASE
Height: 3¾″
Width: 3⅛″
Depth: 3″
Mtg. Cen.: 2½″x2½″
Studs: 4 8-32
Knockout: 2″ dia.

DC-4B CASE
Same as 4A—4″ high

DC-5B CASE
Height: 4½″
Width: 4⅛″
Depth: 3½″
Mtg. Cen.: 3″x2⅝″
Studs: 4 10-32
Knockout: 3″ dia.

DC-6A CASE
Height: 4⅞″
Width: 5″
Depth: 4⅛″
Mtg. Cen.: 3¾″x3″
Studs: 4 10-32
Knockout: 3″ dia.

DC-6B CASE
Height: 6″
Width: 5″
Depth: 4⅛″
Mtg. Cen.: 3¾″x3″
Studs: 4 10-32
Knockout: 3″ dia.

DC-7 CASE
Height: 5⅜″
Width: 5½″
Depth: 5″
Mtg. Cen.: 4⅜″x3¾″
Studs: 4 ¼″-20
Knockout: 3″ dia.

INPUT TRANSFORMERS
Frequency Response 20-20,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Numb
QGA 1	Universal 500 ohm line to push-pull grids	U-500	100,000 split	+10	1:14.1	70	0	0	DC-2
QGA 2	Universal 500 ohm line to push-pull grids	U-500	100,000 split	+10	1:14.1	90	0	0	DC-2
QGA 3	Universal 500 ohm line to single or push-pull grids	U-500	60,000 split	+10	1:11	70	0	0	DC-2
QGA 4	Universal 500 ohm line to single or push-pull grids	U-500	60,000 split	+10	1:11	90	0	0	DC-2
QGA 5	Universal low impedance microphone, pickup or line to single or push-pull grids	U-60	60,000 split	+10	1:31.6	70	0	0	DC-2
QGA 6	Universal low impedance microphone, pickup or line to single or push-pull grids	U-60	60,000 split	+10	1:31.6	90	0	0	DC-2

U-60 IMPEDANCES IN OHMS:
2.5, 5, 10, 15, 20, 30, 40, 60

U-500 IMPEDANCES IN OHMS:
50, 125, 200 CT, 250, 330, 500 CT.
125 and 500 ohms can be used for 150 and 600 ohms.

HYBRID AND REPEAT COILS
Frequency Response 20-20,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Numb
QGA 7	Hybrid. Unbalanced 500/600 ohm lines to 600 ohms.	Total Pri 1200/1000 split 300/250 300/250	600/150 or 500/125 split	+10	1.41:1	70	0	0	DC-2
QGA 8	Hybrid. Balanced 500/600 ohm lines to 600 ohms. Longitudinal balance 70 DB	Total Pri 1200/1000 split 300/250 C.T. 300/250 C.T.	600/150 or 500/125 split	+10	1.41:1	70	0	0	DC-2
QGA 9	Hybrid. Unbalanced 500/600 ohm lines to triode plate. No. D.C. in secondary	Total Pri 1200/1000 split 300/250 300/250	15,000 or 12,500	+10	1:3.54	70	0	0	DC-2
QGA 10	Hybrid. Balanced 500/600 ohm lines to triode plate. No. D.C. in secondary. Longitudinal balance 70 DB.	Total Pri 1200/1000 split 300/250 C.T. 300/250 C.T.	15,000 or 12,500	+10	1:3.54	70	0	0	DC-2
QGA 11	Repeat coil for low frequency ringing. Longitudinal balance 70 DB.	600/500 split	600/500 split Balanced		1:1	90	0	0	DC-4

INTERSTAGE TRANSFORMERS
Frequency Response 20-20,000 C.P.S. ±10 D.B. *50-20,000 C.P.S. ±1.0 D.B.

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Num
QGA 12	Bridging line to single or push-pull grids.	10,000	60,000 split	+10	1:2.45	70	0	0	DC-2
QGA 13	Single triode plate to push-pull grids. Shunt feed.	15,000	60,000 split	+18	1:2	45	0	0	DC-2
QGA 14*	Single triode plate to push-pull grids. Shunt feed.	15,000	60,000 split	+18	1:2	45	8	8	DC-2
QGA 15	Push-pull triode plates to push-pull class A grids.	20,000 split	45,000 split	+25	1:1.5	30	8	0.5	DC-4

HIGH LEVEL OUTPUT TRANSFORMERS
Frequency Response 20-30,000 C.P.S. ±0.5 DB

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Watts	Ratio	Maximum D.C. per Side Ma.	D.C. Unbalance Ma.	Case Numb
QGA 25	Push-pull vacuum tubes to universal 500 ohm line.	5,000 split	U-500	+42	15	3.16:1	70	7	DC-5
QGA 26	As above to Universal voice coil.	5,000 split	U-16	+42	15	17.7:1	70	7	DC-5
QGA 27	Push-pull vacuum tubes to universal 500 ohm line.	8,000 split	U-500	+42	15	4:1	50	5	DC-5
QGA 28	As above to Universal voice coil.	8,000 split	U-16	+42	15	22.4:1	50	5	DC-5
QGA 29	Push-pull vacuum tubes to universal 500 ohm line.	10,000 split	U-500	+42	15	4.47:1	40	4	DC-5
QGA 30	As above to Universal voice coil.	10,000 split	U-16	+42	15	25:1	40	4	DC-5
QGA 31	Push-pull vacuum tubes to universal 500 ohm line.	10,000 split	U-500	+45.5	36	4.47:1	60	6	DC-6
QGA 32	As above to Universal voice coil.	10,000 split	U-16	+45.5	36	25:1	60	6	DC-6
QGA 33	Push-pull vacuum tubes to universal 500 ohm line.	2,500 split	U-500	+45.5	36	2.24:1	100	10	DC-6
QGA 34	As above to Universal voice coil.	2,500 split	U-16	+45.5	36	12.5:1	100	10	DC-6
QGA 35	Push-pull vacuum tubes to universal 500 ohm line.	3,800 split	U-500	+47	50	2.75:1	140	14	DC-6
QGA 36	As above to Universal voice coil.	3,800 split	U-16	+47	50	15.4:1	140	14	DC-6
QGA 37	High level multiple line to Universal voice coil.	U-500	U-16	+42	15	5.6:1	0	0	DC-5
QGA 38	High level multiple line to Universal voice coil.	U-500	U-16	+47	50	5.6:1	0	0	DC-6
QGA 39*	Push-pull vacuum tubes to universal 500 ohm line.	6,600 split	U-500	+45.5	36	3.64:1	70	7	DC-6
QGA 40*	Push-pull vacuum tubes to universal 500 ohm line.	6,600 split	U-16	+45.5	36	20:1	70	7	DC-6
QGA 41	Push-pull vacuum tubes to universal 500 ohm line.	5,000 split	U-500	+50	100	3.16:1	140	14	DC-7
QGA 42	Push-pull vacuum tubes to universal 500 ohm line.	5,000 split	U-16	+50	100	17.7:1	140	14	DC-7

*These units supplied with taps for applying screen feedback
U-16 IMPEDANCES IN OHMS: 2, 4, 8, 12, 16.

U-500 IMPEDANCES IN OHMS. 50, 125, 200, C.T., 250, 330, 500 C
125 and 500 ohms can be used for 150 and 600 ohms.

LOW LEVEL OUTPUT, MIXING, MATCHING TRANSFORMERS
Frequency Response 20-20,000 C.P.S. ±1.0 DB *50-20,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
QGA 16	Single plate or bridging line to Universal 500 ohm line. Shunt feed.	15,000	U-500	+18	5.5:1	70	0	0	DC-2B
QGA 17*	Single plate to Universal 500 ohm line.	15,000	U-500	+18	5.5:1	70	8	8	DC-2B
QGA 18	Push-pull triode plates to Universal 500 ohm line.	20,000 C.T.	U-500	+25	6.3:1	70	8	0.5	DC-2B
QGA 19	Mixing, low impedance microphone or line to Universal 500 ohm line.	U-500	U-500	+12	1:1	70	0	0	DC-2B
QGA 20	Line level mixing and matching.	U-500	U-500	+30	1:1	70	0	0	DC-2B
QGA 21	High mu triode photo-cell to Universal 500 ohm line.	100,000	U-500	+12	14.1:1	70	0	0	DC-2B

DRIVER TRANSFORMERS
Frequency Response 20-20,000 C.P.S. ±1.0 DB

Catalog No.	Application	Primary Impedance Ohms	Maximum Power Level DBM	Turn Ratio Pri.: ½ Sec.	Maximum Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
QGA 22	Universal 500 ohm line to Class B grids.	U-500	+40	1:1	0	0	DC-4A
QGA 23	Push-pull 6J5, etc. to push-pull 2A3's, 6L6's, etc.	20,000 C.T.	+30	3.2:1	8	0.5	DC-2B
QGA 24	Push-pull 2A3, 6B4 to push-pull 809, T2-40, 4/125A.	5,000 C.T.	+40	3.1:1	50	5	DC-4B

See Freed Price Pages 1453-1455

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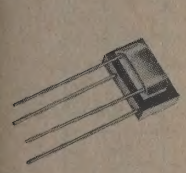
FREED TRANSFORMER CO., INC.

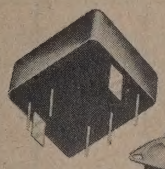
MINIATURE TRANSISTOR AUDIO TRANSFORMERS

These high quality miniature transformers are high efficiency audio components featuring hermetic sealing for maximum protection against electrolysis and subsequent corrosion of fine wires caused by moisture penetration. The units are constructed in accordance with MIL-T-27A specifications. Transistor transformers can also be supplied in an open or encapsulated type of construction.

TYPE		TSA	TNA	TPA	TTA
MAX. POWER		500 MW	1 W	3 W	5 W
FREQ. RESPONSE		.3 — 15 KC ± 2DB	.2 — 15 KC ± 2 DB	.15 — 15 KC ± 2 DB	.15 — 15 KC ± 2 DB
SIZE	UNCASED	———	———	3/4 x 15/32 x 3/4	1 3/16 x 1 3/16 x 1 3/16
	CASED MIL-T-27A-4RX	3/4 D., 15/32 H.	3/4 D. x 23/32 H.	13/16 D. x 1 1/16 H.	1 3/16 D. x 1 3/16 H.
	MOLDED MIL-T-27A-5RX	1/2 D. x 1/2 H.	15/32 x 15/32 x 15/32	7/8 x 25/32 x 15/32	1 5/32 x 1 x 1 5/32

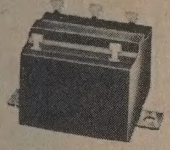
MATCHING IMP. Pri.	MATCHING IMP. Sec.	TSA Cat. No.	TSA Max. I (MA) Total Pri.	TSA Max I dc (MA) Unbal. 1/2 Pri.	TNA Cat. No.	TNA Max. I (MA) Total Pri.	TNA Max I dc (MA) Unbal. 1/2 Pri.	TPA Cat. No.	TPA Max. I (MA) Total Pri.	TPA Max I dc (MA) Unbal. 1/2 Pri.	TTA Cat. No.	TTA Max. I (MA) Total Pri.	TTA Max I dc (MA) Unbal. 1/2 Pri.
150 (CT)	3.2	28	35	12	28	40	16	30	45	20	15	130	50
150 (CT)	12	29	35	12	29	40	16	31	45	20	17	130	50
150 (CT)	50	30	35	12	30	40	16	32	45	20	18	130	50
300 (CT)	3.2	31	30	8	31	32	14	33	35	16	20	100	35
300 (CT)	12	32	30	8	32	32	14	34	35	16	21	100	35
300 (CT)	50	33	30	8	33	32	14	35	35	16	22	100	35
500 (CT)	500	34	20	6	34	22	10	36	25	12	1	80	25
600 (SP)	3.2	1	16	6	1	18	8	1	20	10	23	65	25
600 (SP)	12	2	16	6	2	18	8	2	20	10	24	65	25
600 (SP)	50	35	16	6	35	18	8	3	20	10	25	65	25
600 (SP)	600 (SP)	3	16	6	3	18	8	4	20	10	26	65	25
600 (SP)	1.2K (CT)	22	16	6	22	18	8	37	20	10	7	65	25
1K (CT)	3.2	36	14	4	36	15	6	38	16	8	19	50	20
1K (CT)	12	37	14	4	37	15	6	39	16	8	27	50	20
1K (CT)	50	26	14	4	26	15	6	40	16	8	13	50	20
1.2K (SP)	3.2	4	12	4	4	14	6	5	16	8	28	40	15
1.2K (SP)	12	5	12	4	5	14	6	6	16	8	29	40	15
1.2K (SP)	50	38	12	4	38	14	6	7	16	8	30	40	15
1.2K (SP)	600 (SP)	6	12	4	6	14	6	8	16	8	31	40	15
2K (SP)	3.2	7	9	3	7	10	5	9	14	6	10	25	12
2K (SP)	12	8	9	3	8	10	5	10	14	6	32	25	12
2K (SP)	600 (SP)	9	9	3	9	10	5	11	14	6	33	25	12
4K (SP)	3.2	10	6.5	2	10	8	3	12	9	4	11	20	10
4K (SP)	12	11	6.5	2	11	8	3	13	9	4	34	20	10
4K (SP)	600 (SP)	12	6.5	2	12	8	3	14	9	4	9	20	10
10K (SP)	3.2	13	5	1	13	6	2	15	7	3	35	15	9
10K (SP)	12	14	5	1	14	6	2	16	7	3	36	15	9
10K (CT)	50	39	5	1	39	6	2	17	7	3	37	15	9
10K (SP)	600 (SP)	15	5	1	15	6	2	18	7	3	38	15	9
10K	1K	40	5	1	40	6	1.5	19	7	1.8	38	15	5
10K	10K (SP)	16	5	1	16	6	1.5	20	7	1.8	40	15	5
20K (CT)	50	25	2.5	.8	25	3	1	21	5	2	12	8	6
20K (CT)	600 (CT)	41	2.5	.8	41	3	1	22	5	2	16	8	6
25K (CT)	600 (CT)	23	2.5	.8	23	3	1	23	5	2	8	6	4
25K (CT)	1.2K (CT)	21	2.5	.8	21	3	1	24	5	2	5	6	4
50K (CT)	6 (CT)	18	2	.6	18	2.5	1	25	3.5	1	3	5	3
50K (CT)	500 (CT)	17	2	.6	17	2.5	1	26	3.5	1	2	5	3
50K (CT)	1.2K (CT)	20	2	.6	20	2.5	1	27	3.5	1	6	5	3
100K (CT)	1K (CT)	27	2	.4	27	2	.8	28	2	1	14	4	2
100K (CT)	1.2K (CT)	19	2	.4	19	2	.8	29	2	1	4	4	2


TTA, TPA UNCASED


TPA MOLDED

TTA, TPA CASED

TNA MOLDED


TTA MOLDED

TUA, TSA, TNA CASED TSA MOLDED

TYPE		TUA
MAX. POWER		500 MW
FREQ. RESPONSE		.4 — 15 KC ± 2 DB
SIZE	UNCASED	———
	CASED MIL-T-27A-4RX	11/32 D. x 1/2 H.
	MOLDED	———

MATCHING IMP. Pri.	MATCHING IMP. Sec.	TUA Cat. No.	TUA Max. I (MA) Total Pri.	TUA Max I dc (MA) Unbal. 1/2 Pri.
150 (CT)	3.2	16	15	10
150 (CT)	12	17	15	10
150 (CT)	50	21	15	10
300 (CT)	3.2	20	9	7
300 (CT)	12	19	9	7
300 (CT)	50	22	9	7
500 (CT)	500	23	7	5
600 (CT)	3.2	1	7	5
600 (CT)	12	2	7	5
600 (CT)	50	13	7	5
600 (CT)	600	3	7	5
600 (CT)	1.2K	24	7	5
1K (CT)	3.2	4	6	3.5
1K (CT)	12	25	6	3.5
1K (CT)	50	14	6	3.5
1.2K (CT)	3.2	26	6	3.5
1.2K (CT)	12	5	6	3.5
1.2K (CT)	50	27	6	3.5
1.2K (CT)	600	6	6	3.5

MATCHING IMP. Pri.	MATCHING IMP. Sec.	TUA Cat. No.	TUA Max. I (MA) Total Pri.	TUA Max I dc (MA) Unbal. 1/2 Pri.
2K (CT)	3.2	28	3.5	2.5
2K (CT)	12	29	3.5	2.5
2K (CT)	600	30	3.5	2.5
4K (CT)	3.2	8	3.5	1.5
4K (CT)	12	9	3.5	1.5
4K (CT)	600	10	3.5	1.5
10K (CT)	3.2	7	2	1
10K (CT)	12	11	2	1
10K (CT)	50	12	2	1
10K (CT)	600	15	2	1
10K (CT)	1K	18	2	1
10K	10K (CT)	31	2	1
20K (CT)	50	32	2	.8
20K (CT)	600 (CT)	33	2	.8
25K (CT)	600 (CT)	34	2	.8
25K (CT)	1.2K (CT)	35	2	.8
50K (CT)	6 (CT)	36	2	.6
50K (CT)	500 (CT)	37	2	.5
50K (CT)	1.2K (CT)	38	2	.5

CT = Center Tap. SP = Split Winding.

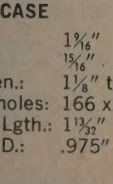
MINIATURE AUDIO TRANSFORMERS

These high quality, miniature transformers feature hermetically sealing for maximum protection from moisture penetration with subsequent electrolysis and corrosion of fine wires. While primarily intended for non-military equipment, these units are constructed in accordance with MIL-T-27A Specifications.

Frequency response: ± 2DB 30-20,000 CPS *± 2DB 200-10,000 CPS.

Catalog No.	Application	MIL Type	Impedance Level Ohms Primary	Impedance Level Ohms Secondary	Max. Power Level DBM	Ratio	Equivalent Shielding D.B.	Max. Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
PMA 1	Line or microphone to single or push-pull grids.	TF4RX10YY	50/200/500	60,000 C.T.	+8	1:11		0	0	DM-20
PMA 2	Dynamic microphone or speaker voice coil to single or P.P. grid.	TF4RX10YY	4/8	60,000 C.T.	+8	1:86.6		0	0	DM-20
PMA 3	Line or microphone to single or push-pull grids. Magnetically shielded.	TF4RX10YY	50/200/500	60,000 C.T.	+8	1:11	30	0	0	DM-20
PMA 4	Single triode plate to single or push-pull grids.	TF4RX10YY	15,000	60,000 C.T.	+8	1:2		0	0	DM-20
PMA 5*	Single triode plate to push-pull grids.	TF4RX12YY	15,000	60,000 C.T.	+8	1:2		2	2	DM-20
PMA 6	Single triode plate to multiple line.	TF4RX16YY	15,000	50/200/500	+8	5.48:1		0	0	DM-20
PMA 7*	Single triode plate to multiple line.	TF4RX12YY	15,000	50/200/500	+8	5.48:1		2	2	DM-20
PMA 8	Push-pull triode plates to multiple line.	TF4RX12YY	30,000 C.T.	50/200/500	+8	7.75:1		2	0.25	DM-20
PMA 9	Crystal mike or pickup to multiple line.	TF4RX16YY	60,000 C.T.	50/200/500	+8	11:1		0	0	DM-20
PMA 10	Mixing or matching.	TF4RX16YY	50/200	50/200/500	+8	1:1.50		0	0	DM-20
PMA 11	Parallel Feed Reactor.	TF4RX20YY	40 hy, 3 ma dc, 3500 ohms d.c. resistance							DM-20
PMA 12	Microphone or line to grid.	TF4RX10YY	50/200/500 C.T.	60,000 C.T.	+5	1.11		0	0	DM-20
PMA 13	Mixing and matching.	TF4RX16YY	150/600	600 C.T.	+8	1.1		0	0	DM-20
PMA 14	Single triode plate to push-pull grids.	TF4RX15YY	15,000	95,000 Split	+5	1:2.5		0	0	DM-20
PMA 15*	Single triode plate to push-pull grids.	TF4RX15YY	15,000	95,000 Split	15	1:2.5		4	4	DM-20

CASE DIMENSIONS



DM-20 CASE

Height: 1 5/16"
Dia.: 15/16"
Mtg. Cen.: 1 1/8" to 1 7/32"
Mtg. 2 holes: 166 x .120
Flange Lgth.: 1 13/32"
Flange D.: .975"

FREED TRANSFORMER COMPANY, INC.

FREED TRANSFORMER CO., INC.

TRANSISTOR SUPPLY TRANSFORMERS
TST SERIES

Manufactured and Guaranteed to Specifications MIL-T-27
TST-6 – Frequency 57 Hz to 63 Hz – Primary 115 volts
units with * primary 115 and/or 230 volts
TST-4 – Frequency 380 Hz to 1000 Hz – Primary 115 volts

D.C. to RMS Conversion Chart

Resistive or Inductive Loads		Capacitive Loads	
Full Wave Center Tapped	Full Wave Bridge	Full Wave Center Tapped	Full Wave Bridge
E_{RMS}=2.22 Edc	E_{RMS}=1.11 Edc	E_{RMS}=1.6 Edc	E_{RMS}= .8 Edc
I_{RMS}= .75 Idc	I_{RMS}=1.05 Idc	I_{RMS}=1.1 Idc	I_{RMS}=1.55 Idc
Edc – should include voltage drop across reactor and voltage drop across one diode for F.W.C.T. and voltage drop across two diodes for F.W. Bridge.			

TST transformers are listed according to their watt rating P.N. 1 to P.N. 34. Ordering information must include frequency and watt rating.

TST-6 – (P.N. 1 to 34) for 57 Hz – 63 Hz
TST-4 – (P.N. 1 to 34) for 380 Hz – 1000 Hz

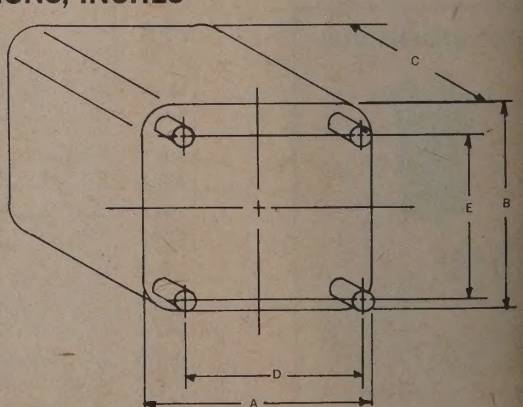
TST units can be supplied in commercial type construction (channel or shell type with leads).

	R.M.S. Output		Case			R.M.S. Output		Case	
Part No.	Volt	Amp	–4	–6	Part No.	Volt	Amp	–4	–6
TST(**)-1	6.3 CT	.30	AH	AH	TST(**)-18	50 Split	1.5	FA	JB*
TST(**)-2	6.3 CT	.60	AH	AJ	TST(**)-19	50 Split	2.0	GB	JA*
TST(**)-3	12.6 Split	.80	AJ	EB	TST(**)-20	60 Split	.50	AJ	GB*
TST(**)-4	12.6 Split	1.5	AJ	FA	TST(**)-21	60 Split	1.0	FA	HA*
TST(**)-5	12.6 Split	2.0	AJ	GB*	TST(**)-22	60 Split	1.5	FA	JA*
TST(**)-6	25.2 Split	1.5	EB	GA*	TST(**)-23	70 Split	.50	EB	GA*
TST(**)-7	25.2 Split.	4.0	GB	JA*	TST(**)-24	70 Split	1.0	FA	JB*
TST(**)-8	30 Split	.50	AJ	FA	TST(**)-25	70 Split	1.5	GB	JA*
TST(**)-9	30 Split	1.0	AJ	GB*	TST(**)-26	80 Split	.25	AJ	FA
TST(**)-10	30 Split	1.5	EB	GA*	TST(**)-27	80 Split	.50	EB	GA*
TST(**)-11	30 Split	2.0	FA	HA*	TST(**)-28	80 Split	1.0	FA	JB*
TST(**)-12	40 Split	.50	AJ	FA	TST(**)-29	90 Split	.25	AJ	GB*
TST(**)-13	40 Split	1.0	EB	GA*	TST(**)-30	90 Split	.50	EB	GA*
TST(**)-14	40 Split	1.5	FA	HA*	TST(**)-31	90 Split	1.0	FA	JA*
TST(**)-15	40 Split	2.0	FA	JB*	TST(**)-32	100 Split	.25	AJ	GB*
TST(**)-16	50 Split	.50	AJ	GB*	TST(**)-33	100 Split	.50	FA	GA*
TST(**)-17	50 Split	1.0	FA	GA*	TST(**)-34	100 Split	1.20	GA	KB*

**When ordering specify (6) for 57 to 63 Hz and (4) for 380 to 1000 Hz

MIL CASES, NOMINAL DIMENSIONS, INCHES

Mil Case	A	B	C	D	L	E	Mtg. Studs	Wt. Lbs.
AH	1 5/16	1 5/16	1 3/4		1 1/4		6-32 x 3/8	3/8
AJ	1 5/8	1 5/8	2 3/8	1 3/16		1 3/16	6-32 x 3/8	2/3
EA	1 15/16	1 13/16	2 3/4	1 3/8		1 1/4	6-32 x 3/8	1
EB	1 15/16	1 13/16	2 7/16	1 1/8		1 1/4	6-32 x 3/8	7/8
FA	2 5/16	2 1/16	3 1/8	1 11/16		1 7/16	6-32 x 3/8	1 3/4
FB	2 5/16	2 1/16	2 1/2	1 11/16		1 7/16	6-32 x 3/8	1 1/2
GA	2 3/4	2 3/8	3 13/16	2 1/8		1 3/4	6-23 x 3/8	3 1/2
GB	2 3/4	2 3/8	2 13/16	2 1/8		1 3/4	6-32 x 3/8	2 1/2
HA	3 1/16	2 5/8	4 1/4	2 19/64		1 55/64	8-32 x 3/8	4 1/2
HB	3 1/16	2 5/8	3 3/16	2 19/64		1 55/64	8-32 x 3/8	3 1/2
JA	3 9/16	3 1/16	4 7/8	2 5/8		2 1/8	8-32 x 3/8	6
JB	3 9/16	3 1/16	3 7/8	2 5/8		2 1/8	8-32 x 3/8	5
KA	3 15/16	3 3/8	5 1/4	3		2 7/16	10-32 x 1/2	8 1/2
KB	3 15/16	3 3/8	4 5/16	3		2 7/16	10-32 x 1/2	7



L-DIAGONAL DIMENSION

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FREED TRANSFORMER CO., INC.

MINIATURE TRANSISTOR TRANSFORMERS

These high quality miniature transformers are high efficiency audio components featuring hermetically sealing for maximum protection against electrolysis and subsequent corrosion of fine wires caused by moisture penetration. The units are constructed in accordance with MIL-T-27A Specifications.

Transistor Transformers can also be supplied in an open or encapsulated type of construction

CASE DIMENSIONS

DM-01 CASE

Height: 2″
Width: 1½″
Depth: 1½″
Mtg. Cen.: 1⅛″x1⅛″
Studs: 4 6-32
Knockout: 1⅜″ dia.

NCASED DIMENSIONS

TMO 1 TO 14

Height: 1⅜″
Width: 1¼″
Depth: 21/32″
Mtg. Cen.: 1⅜″
2 Mtg. Holes: .120 dia.
Flange Lgth: 1⅝″

MO 15 TO 18

Height: 2⅛″
Width: 9/16″
Depth: 13/16″

TMO-19

Height: 1⅜″
Width: 1 15/32″
Depth: 1¼″
Mtg. Cen.: 1¾″
2 Mtg. Holes: ⅜″ dia.
Flange Lgth: 2⅛″

Catalog No.	MIL Type	Impedance Ohms Pri.	Ct.	Sec.	Ct.	D.B.	Frequency Response C.P.S.	Unbalance Primary Current M.A./D.C.	D.C. Resistance Ohms Pri.	Sec.	Max. Power Output M.W.	Case No.
TMA 1*	TF4RX16YY	500		500		1	200 to 15,000	0	18	24	250	DM-20
TMA 2*	TF4RX12YY	50K		500		2	300 to 15,000	3	2,200	49	250	DM-20
TMA 3*	TF4RX13YY	50K		6		2	300 to 15,000	3	2,200	.55	250	DM-20
TMA 4*	TF4RX12YY	100K		1.2K	✓	3	300 to 15,000	1	2,790	95	100	DM-20
TMA 5*	TF4RX12YY	25K		1.2K	✓	2	200 to 15,000	3	1,740	110	250	DM-20
TMA 6*	TF4RX12YY	50K		1.2K	✓	2	300 to 15,000	3	2,200	106	250	DM-20
TMA 7*	TF4RX17YY	600/150		1.2K	✓	1	200 to 15,000	4	30	95	250	DM-20
TMA 8*	TF4RX12YY	25K		600		2	200 to 15,000	3	1,740	61	250	DM-20
TMA 9*	TF4RX12YY	4K	✓	600/150	✓	1	200 to 15,000	1	274	43	250	DM-20
TMA 10*	TF4RX13YY	2K		3.2		2	200 to 15,000	10	160	.28	250	DM-20
TMA 11*	TF4RX13YY	4K	✓	3.2		1	200 to 15,000	1	274	.26	250	DM-20
TMA 12*	TF4RX13YY	20K		50		2	300 to 15,000	4	1,340	2.9	250	DM-20
TMA 13*	TF4RX17YY	1K		50		2	300 to 15,000	8	42.6	2.5	250	DM-20
TMA 14*	TF4RX16YY	100K		1K		2	300 to 15,000	0	1,550	16.8	100	DM-20
TMO 15		20K		50		2	300 to 15,000	1	2,215	7.25	40	open
TMO 16		20K		600		2	300 to 15,000	1	2,215	102	40	open
TMO 17		1K		50		2	300 to 15,000	3	93	5.6	60	open
TMO 18		100K		1K		2	300 to 15,000	0	3,000	57.5	100	open
TMA 19*	TF4RX13YY	1K		3.2		2	200 to 15,000	20	38	.19	1000	DM-01

*When ordering open units specify TMO - - when ordering encapsulated units specify TMC.

PROFESSIONAL GRADE COMPONENTS

This group of components has been designed for use in high fidelity and professional equipment and for public address service. Freed has developed this series of units employing the latest design techniques and the best commercially available materials. Except for units carrying unbalanced direct current the frequency response is ± 1 DB from 30 to 15,000 cps. All units feature excellent performance characteristics with minimum size and weight.

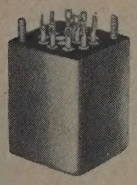
All units are vacuum varnished and then potted in compound to insure long life and trouble free performance.

Professional Grade components are supplied cased. Upon request these units can be supplied open or in shell type construction.

All cased Professional Grade Components supplied with terminals meet "EIA" standards.

Transformers PGA 1 through PGA 10 are supplied in hermetically sealed cases.

CASE DIMENSIONS



DM-01 CASE

Height: 2¼″
Width: 1½″
Depth: 1½″
Mtg. Cen.: 1⅛″x1⅛″
Studs: 2 6-32
Knockout: 1⅜″ dia.

DC-1A CASE

Height: 2½″
Width: 2½″
Depth: 1 13/16″
Mtg. Cen.: 1½″x1¼″
Studs: 4 8-32

DC-2A CASE

Height: 3″
Width: 2⅝″
Depth: 2¼″
Mtg. Cen.: 2″x1¾″
Studs: 4 8-32

INPUT TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Ratio	Equivalent Shielding D.B.	Max. Pri. D.C. per Side Ma.	D.C. Unbalance Ma.	Case Number
PGA 1	Universal 500 ohm line to single grid.	U-500	50,000	+12	1:10	50	0	0	DM-01
PGA 2	Universal 500 ohm line to push-pull grids.	U-500	60,000 split	+12	1:11	50	0	0	DM-01
PGA 3	Universal 500 ohm line to push-pull grids.	U-500	100,000 split	+12	1:14.1	50	0	0	DM-01
PGA 4	Bridging line to single grid.	10,000	60,000	+12	1:2.45	50	0	0	DM-01
PGA 5	Bridging line to push-pull grids.	10,000	60,000 center tap	+12	1:2.45	50	0	0	DM-01
PGA 6	Low level line matching.	U-500	U-500	+18	1:1	50	0	0	DM-01

LOW LEVEL OUTPUT AND MIXING TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Ratio	Max. Pri. D.C. Per Side Ma.	D.C. Unbalance Ma.	Case Number
PGA 7	Single triode plate to Universal 500 ohm line. Shunt feed.	15,000	U500	+18	5.48:1	0	0	DM-01
PGA 8	Single triode plate to Universal 500 ohm line.	15,000	U500	+18	5.48:1	8	8	DM-01
PGA 9	Push-pull triode plates to Universal 500 ohm	20,000 CT	U500	+30	6.32:1	8	0.5	DM-01
PGA 10	Low level line matching.	U500	U500	+18	1:1	0	0	DM-01

U-500 IMPEDANCES IN OHMS: 50, 125, 200 CT, 250, 330, 500 CT. 125 and 500 ohms can be used for 150 and 600 ohms.

DRIVER TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

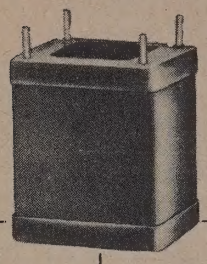
Catalog No.	Application	Primary Impedance Ohms	Turn Ratio Pri: ½ Sec.	Max. Level DBM	Max. Pri. D.C. Per Side Ma.	Max. D.C. Unbalance Ma.	Case Number
PGA 11	Universal 500 ohm line to push-pull grids.	U500	1:1	+40	0	0	DC-2A
PGA 12	Push-pull 6C4, 6SN7 triodes to push-pull 2A3, 6L6 grids.	20,000 C.T.	3.0:1	+30	10	1	DC-1A
PGA 13	Push-pull 2A3, 6B4, 6A5G to push-pull 809, TZ-40, 4/125A	5,000 C.T.	3.2:1	+40	50	5	DC-2A

All units supplied with leads.

FREED TRANSFORMER CO., INC.

PROFESSIONAL GRADE COMPONENTS

CASE DIMENSIONS



DC-1A CASE
Height: 2½"
Width: 2 1/16"
Depth: 1¾"
Mtg. Cen.: 1½"x1¼"
Studs: 4 8-32
Knockout: 1¼" dia.

DC-4A CASE
Height: 3¾"
Width: 3⅛"
Depth: 3"
Mtg. Cen.: 2½"x2½"
Studs: 4 8-32
Knockout: 2"x1¾"

DC-2A CASE
Height: 3"
Width: 2⅝"
Depth: 2¼"
Mtg. Cen.: 2"x1¾"
Studs: 4 8-32
Knockout: 1½"x1⅜"

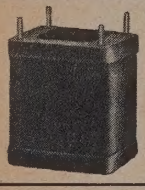
DC-5A CASE
Height: 3⅞"
Width: 4⅛"
Depth: 3½"
Mtg. Cen.: 3⅛"x2⅝"
Studs: 4 10-32
Knockout: 2½"x2"

DC-2B CASE
Height: 3½"
Width: 2⅝"
Depth: 2¼"
Mtg. Cen.: 2"x1¾"
Studs: 4 8-32
Knockout: 1½"x1⅜"

DC-6A CASE
Height: 4⅞"
Width: 5"
Depth: 4⅛"
Mtg. Cen.: 3¾"x3"
Studs: 4 10-32
Knockout: 3"x2½"

CASE DIMENSIONS

DM-01 CASE
Height: 2"
Width: 1½"
Depth: 1½"
Mtg. Cen.: 1 1/16"x1 1/16"
Studs: 4 6-32



DC CASE STYLE

DC-2B
Height: 3½"
Width: 2⅝"
Depth: 2¼"
Mtg. Cen.: 2"x1¾"
Studs: 4 8-32

DC-1A
Height: 2½"
Width: 2 1/16"
Depth: 1 3/16"
Mtg. Cen.: 1½"x1¼"
Studs: 4 8-32

DC-4A
Height: 3¾"
Width: 3⅛"
Depth: 3"
Mtg. Cen.: 2½"x2½"
Studs: 4 8-32

DC-2A
Height: 3"
Width: 2⅝"
Depth: 2¼"
Mtg. Cen.: 2"x1¾"
Studs: 4 8-32

DC-5A CASE
Height: 3⅞"
Width: 4⅛"
Depth: 3½"
Mtg. Cen.: 3⅛"x2⅝"
Studs: 4 10-32

DC-5B
Height: 4½"
Width: 4⅛"
Depth: 3½"
Mtg. Cen.: 3⅛"x2⅝"
Studs: 4 10-32

HIGH LEVEL OUTPUT TRANSFORMERS

Frequency Response 30-15,000 C.P.S. ±1.0 DB

Catalog No.	Application	Impedance Level Ohms Primary	Secondary	Maximum Power Level DBM	Watts	Ratio	Max. Pri. D.C. Per Side Ma	DC Unbalance Ma	Case Numb
PGA 14	Push-pull vacuum tubes to universal 500 ohm line.	12,000 C.T.	U16	+40	10	27.4:1	40	4	DC-2
PGA 15	Push-pull vacuum tubes to universal 500 ohm line.	10,000 C.T.	U16	+43	20	25:1	50	5	DC-4
PGA 16	Push-pull vacuum tubes to universal 500 ohm line.	9,000	U500	+44.8	30	4.23:1	50	5	DC-4
PGA 17	As above to Universal voice coil.	9,000	U16	+44.8	30	23.7:1	50	5	DC-4
PGA 18	Push-pull vacuum tubes to universal 500 ohm line.	8,000 C.T.	U16	+41.8	15	22.3:1	45	5	DC-4
PGA 19*	Push-pull vacuum tubes to universal 500 ohm line.	6,600 C.T.	U500	+44.8	30	3.63:1	70	7	DC-4
PGA 20	As above to Universal voice coil.	6,600 C.T.	U16	+44.8	30	20.3:1	70	7	DC-4
PGA 21	Push-pull vacuum tubes to universal 500 ohm line.	5,000 C.T.	U16	+43	20	17.7:1	80	8	DC-4
PGA 22	Push-pull vacuum tubes to universal 500 ohm line.	4000 C.T.	U500	+47	50	2.83:1	100	10	DC-5
PGA 23	As above to Universal voice coil.	4000 C.T.	U16	+47	50	15.8:1	100	10	DC-5
PGA 24	Push-pull vacuum tubes to universal 500 ohm line.	3000 C.T.	U16	+41.8	15	13.7:1	75	7.5	DC-4
PGA 25	Push-pull vacuum tubes to universal 500 ohm line.	2100 C.T.	U500	+51.8	150	2.05:1	240	12	DC-6
PGA 26	Push-pull vacuum tubes to universal 500 ohm line.	1500 C.T.	U500	+44.8	30	1.73:1	180	15	DC-4
PGA 27	As above to Universal voice coil.	1500 C.T.	U16	+44.8	30	9.7:1	150	15	DC-4
PGA 28	Matching line to Universal voice coil.	U500	U16	+44.8	30	5.6:1	0	0	DC-4
PGA 29	Matching line to Universal voice coil.	U500	U16	+47	50	5.6:1	0	0	DC-5
PGA 30	Matching line to Universal voice coil.	U500	U16	+50	100	5.6:1	0	0	DC-6

†Available with taps to apply screen feedback.

U-16 IMPEDANCES IN OHMS:
2, 4, 8, 12, 16
U-500 IMPEDANCES IN OHMS:
50, 125, 200 C.T., 250, 330, 500 C.T., 125 and 500 ohms can be used for 150 and 600 ohms.

*PGA 28, 29 & 30 supplied with terminals, all other units with leads.

A 70 volts level can be obtained from the following impedances:
500 ohms — 10 watts +40 DB
330 ohms — 15 watts +42 DB
250 ohms — 20 watts +43 DB
200 ohms — 25 watts +44 DB
125 ohms — 40 watts +46 DB
50 ohms — 100 watts +50 DB

FILTER REACTORS

Inductance measured at 50V, 60 cycles with rated direct current in the winding

Catalog No.	Inductance in Henries	Rated Current D.C. Ma.	D.C. Resistance Ohms	Dielectric Test Voltage VRMS	Case Number
PGC 1	40	15	2000	1000	DM-01
PGC 2	12	40	400	1000	DC-1A
PGC 3	8	50	300	1000	DC-1A
PGC 4	20	50	425	2500	DC-2A
PGC 5	10	70	250	2500	DC-2A
PGC 6	6	100	160	2500	DC-2A
PGC 7	6	150	115	2500	DC-2B
PGC 8	10	150	160	2500	DC-4A
PGC 9	5.5	200	95	2500	DC-4A
PGC 10	10	200	150	2500	DC-4A
PGC 11	10	250	135	2500	DC-5B
PGC 12	8	300	95	2500	DC-5B
PGC 13	7	400	60	2500	DC-5B
		PARALLEL FEED	AUDIO CHOKES		
PGC 14	100	10	3500	1000	DM-01
PGC 15	30	50	650	1500	DC-2A
PGC 16	400	1	6000	1000	DM-01

SWINGING INPUT REACTORS

Catalog No.	Inductance in Henries*	Rated Current D.C. Ma.	D.C. Resistance Ohms	Dielectric Test Voltage VRMS	Case Number
PGC 17	5-20	150	160	1500	DC-4A
PGC 18	5-20	250	135	1500	DC-5B
PGC 19	3-15	300	95	1500	DC-5B
PGC 20	3-15	400	60	1500	DC-5B

*Inductance values for 100% and 10% of rated Direct Current.

See Freed Price Pages 1453-1455

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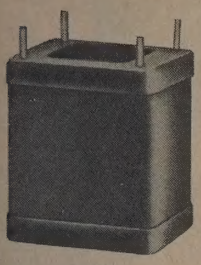
PROFESSIONAL GRADE COMPONENTS



DC-2B
Height: 3½"
Width: 2⅝"
Depth: 2¼"
Mtg. Cen.: 2"x1¾"
Studs: 4 8-32

DC-5B
Height: 4½"
Width: 4⅛"
Depth: 3½"
Mtg. Cen.: 3⅛"x2⅝"
Studs: 4 10-32

DC-4A
Height: 3¾"
Width: 3⅛"
Depth: 3"
Mtg. Cen.: 2½"x2½"
Studs: 4 8-32

DC-6A CASE
Height: 4⅞"
Width: 5"
Depth: 4⅛"
Mtg. Cen.: 3¾"x3"
Studs: 4 10-32

DC-5A CASE
Height: 3⅞"
Width: 4⅛"
Depth: 3½"
Mtg. Cen.: 3⅛"x2⅝"
Studs: 4 10-32

DC-7B CASE
Height: 6¾"
Width: 5½"
Depth: 5"
Mtg. Cen.: 4⅜"x3¾"
Studs: 4½-20

POWER TRANSFORMERS

ALL PRIMARIES ARE FOR 115V., 50/60 c.p.s. Temperature rises range from 45° to 50°C.

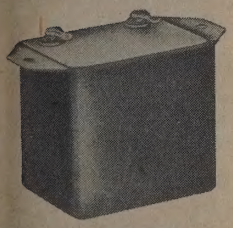
Catalog No.	Py Va	Hi Volt	Choke Input D.C.V.	D.C. Ma	Con. Input D.C.V.	D.C. Ma.	Bias Tap.	Rectifier	Fil. No. 1	Fil. No. 2	Fil. No. 3	Case No.
PGP 1	15	440V C.T.	Low flux density, hum-bucking. For Preamplifier service.		270	15		6X4	6.3VCT @ 0.6A	6.3V @ 0.3A		DC-2B
PGP 2	30	550V C.T.	Low flux density, hum-bucking. For Preamplifier service.		310	35		6X4	6.3VCT @ 0.6A	6.3VCT@0.9A		DC-4A
PGP 3	45	500V C.T.			270	40		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 2A		DC-4A
PGP 4	57	600V C.T.			330	50		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 2.5A		DC-4A
PGP 5	64	650V C.T.			370	50		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 3A		DC-4A
PGP 6	73	600V C.T.			320	70		6X4, 5Y3	5/6.3V @ 2A	6.3V @ 3A		DC-4A
PGP 7	110	650V C.T.	225	140	330	100		5Y3, 5U4	5V @ 3A	6.3V @ 5A		DC-5B
PGP 8	76	700V C.T.	260	100	385	70		5Y3	5V @ 2A	6.3V @ 2.5A		DC-5A
PGP 9	108	700V C.T.	250	125	370	90		5Y3, 5U4	5V @ 3A	6.3V @ 5A		DC-5B
PGP 10	127	700V C.T.	260	170	350	120		5U4	5V @ 3A	6.3V @ 5A		DC-5B
PGP 11	146	700V C.T.	260	210	350	150		5U4	5V @ 3A	6.3V @ 5A	6.3V @ 1A	DC-6A
PGP 12	207	800V C.T.	295	280	400	200		5U4, 2-5Y3	5V @ 4A	6.3V @ 6A		DC-6A
PGP 13	225	800V C.T.	295	280	400	200	80	5U4, 2-5Y3	5V @ 4A	6.3V @ 6A	5/6.3V @ 2A	DC-6A
PGP 14	268	840V C.T.	330	350	450	250	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	DC-6A
PGP 15	320	900V C.T.	340	420	490	300	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	DC-7B
PGP 16	127	900V C.T.	360	150				5U4	5V @ 3A	6.3V @ 5A		DC-6A
PGP 17	150	900V C.T.	350	200				5U4	5V @ 3A	6.3V @ 5A		DC-6A
PGP 18	203	1100V C.T.	400	250				5R4GY	5V @ 3A	6.3V @ 5A		DC-6A
PGP 19	248	1100V C.T.	420	300				2-5R4GY	5V @ 4A	6.3V @ 7A		DC-6A
PGP 20	310	1280V C.T.	480	350				2-5R4GY	5V @ 4A	6.3V @ 7A		DC-7B

All units supplied with leads.

PQC HIGH Q REACTORS

PQC-Reactors are low-priced High Q components designed for use in selective circuits such as wave filters, wave traps, and noise suppressors.

CASE DIMENSIONS



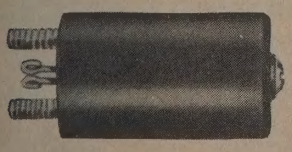
DM-02 CASE
Height: 1 21/32"
Width: 1 21/32"
Depth: 1 13/32"
Flange L: 2⅜"
Mtg. Cen.: 2"

Catalog No.	Application	Rated Ind. in Henries	Q	Tuning *Capacitor (MF)	Case Size
PQC 1	60 cps resonant trap	14.00	10	.5	DM-02
PQC 2	400 cps resonant trap	1.58	15	.1	DM-02
PQC 3	1000 cps resonant trap	1.00	20	.025	DM-02
PQC 4	Dynamic noise suppression inductor	2.40	20 @ 4 KC		DM-02
PQC 5	Dynamic noise suppression inductor	2.00	15 @ 4 KC		DM-02
PQC 6	Dynamic noise suppression inductor	1.30	15 @ 4 KC		DM-02
PQC 7	Dynamic noise suppression inductor	.80	15 @ 4 KC		DM-02
PQC 8	Dynamic noise suppression inductor	.60	15 @ 4 KC		DM-02
PQC 9	Dynamic noise suppression inductor	.40	15 @ 4 KC		DM-02

MINIATURE VARIABLE HIGH FREQUENCY INDUCTORS

- Continuous variation of inductance
- Q practically constant over whole range of variation
- Hermetically sealed
- Inductances other than those listed can be supplied to special order

CASE DIMENSIONS



VI-1
Height: 1"
Diameter: ¾"
2 Studs: 4-40
Mtg. Cen.: ⅜"

Catalog No.	Test Freq. (MC)	Inductance Min.	Inductance Max.	Variations of Q @ L Min.	Variations of Q @ L Max.	RDC (Ω) Nominal	Self Res. Freq. (MC) @ L Max.	Max. Non Destruct Current (MA)	Case Size
VHI-1	.1	1.1 MH	1.75 MH	93.5	100.5	.75	2.2	250	VI-1
VHI-2	.1	1.7 MH	2.5 MH	94.5	96.5	1.1	1.9	200	VI-1
VHI-3	.1	2.3 MH	3.7 MH	94.5	97.2	1.4	1.6	200	VI-1
VHI-4	.1	3. MH	4.5 MH	100.7	101.7	1.9	1.4	160	VI-1
VHI-5	.1	4. MH	5.7 MH	107.	108.	2.2	1.3	160	VI-1
VHI-6	.1	5.5 MH	7.5 MH	112.	119.	3.1	1.	130	VI-1
VHI-7	.1	7. MH	10.5 MH	116.	120.5	4.5	.9	100	VI-1
VHI-8	.1	10. MH	15. MH	106.	109.	6.6	.85	80	VI-1
VHI-9	.1	14.5 MH	20.5 MH	101.	101.5	9.2	.6	60	VI-1
VHI-10	.1	20. MH	30. MH	105.	115.	13.7	.55	50	VI-1
VHI-11	1.	9.50 μH	11.0 μH	104.	114.	.24	>10	150	VI-1
VHI-12	1.	14.0 μH	15.6 μH	113.	127.	.29	>10	150	VI-1
VHI-13	1.	24.5 μH	28.0 μH	145.	156.	.37	>10	150	VI-1
VHI-14	1.	47.0 μH	52.0 μH	178.	195.	.46	>10	150	VI-1
VHI-15	.5	71.0 μH	79.5 μH	152.	168.	.56	>10	150	VI-1
VHI-16	.5	94.0 μH	105.0 μH	165.	173.	.64	>10	150	VI-1
VHI-17	.5	145.0 μH	165.0 μH	200.	222.	.75	9.7	150	VI-1
VHI-18	.5	191.0 μH	218.0 μH	204.	229.	.9	9.4	150	VI-1
VHI-19	.5	234.0 μH	265.0 μH	216.	238.	1.0	8.3	150	VI-1
VHI-20	.5	279.0 μH	318.0 μH	219.	236.	1.1	7.	150	VI-1
VHI-21	.5	380.0 μH	416.0 μH	216.	230.	1.3	6.5	150	VI-1
VHI-22	.5	480.0 μH	545.0 μH	220.	237.	1.5	7.	150	VI-1

FREED TRANSFORMER COMPANY, INC.

FREED TRANSFORMER CO., INC.

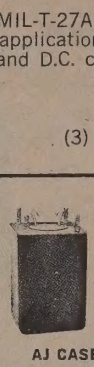
HIGH "Q" REACTORS

QGC—are hermetically sealed, MIL-T-27A, Grade 4, Class R, High Q Reactors for low audio frequency application with an excellent inductance stability with variations of A.C. and D.C. currents, frequencies and temperatures.

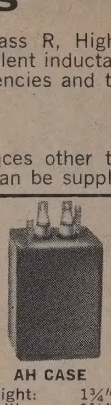
SPECIAL REACTORS:

(1) with a center tap
(2) with a split winding
(3) with inductances other than those listed can be supplied.

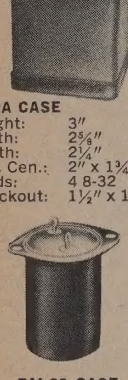
DC-2A CASE
Height: 3″
Width: 2⅝″
Depth: 2¼″
Mtg. Cen.: 2″ x 1¾″
Studs: 4 8-32
Knockout: 1½″ x 1⅜″



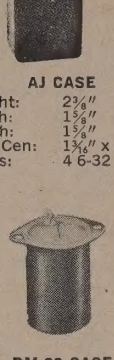
AJ CASE
Height: 2⅜″
Width: 1⅝″
Depth: 1⅜″
Mtg. Cen: 1⅜″ x 1⅜″
Studs: 4 6-32



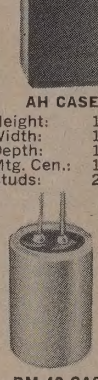
AH CASE
Height: 1¾″
Width: 1⅝″
Depth: 1⅝″
Mtg. Cen.: 1¼″
Studs: 2 6-32



DM-20 CASE
Height: 1⅜″
Diameter: 1⅝″
Flange L: 1¹³⁄₃₂″
Flange D: 0.975″
Mtg. Cen.: 1⅛″ x 1³⁄₃₂″
2 Slots: .166″ x .120″
Knockouts: .875″



DM-30 CASE
Height: ²⁹⁄₃₂″
Diameter: 1⅝″
Flange L: 1¹³⁄₃₂″
Flange D: 0.975″
Mtg. Cen.: 1⅛″ to 1³⁄₃₂″
2 Slots: .166″ x .120″
Knockouts: .875″



DM-40 CASE
Height: ²¹⁄₃₂″
Diameter: ⅜″
Pig Tails:

Catalog No.	Ind. H (±2%)	Ω/H Max.	Max. Norm DC*	Max. Norm AC**	Self Res. Freq. ±25%	Case	"Q" Max.	@ Fre
QGC-1	100						40	25
QGC-2	75						48	28
QGC-3	50						51	30
QGC-4	25	20	85	0.58	$Fo = 22/\sqrt{L_H}$	DC-2A	53	32
QGC-5	10						58	35
QGC-6	5						59	40
QGC-7	1						60	40
QGC-8	75						32	60
QGC-9	50						37	60
QGC-10	25						39	70
QGC-11	10	55	60	0.5	$Fo = 7.2/\sqrt{L_H}$	AJ	43	70
QGC-12	5						46	70
QGC-13	1						53	80
QGC-14	50						29.5	50
QGC-15	25						31.5	50
QGC-16	10	70	40	0.25	$Fo = 35/\sqrt{L_H}$	AH	32	60
QGC-17	5						33	60
QGC-18	1						36	70
QGC-19	10						23	70
QGC-20	7.5						23	73
QGC-21	5	110	15	0.15	$Fo = 34/\sqrt{L_H}$	DM-20	24	73
QGC-22	2.5						24	75
QGC-23	1						25	75
QGC-24	.5						25	75
QGC-25	5						23	150
QGC-26	2.5						23	155
QGC-27	1						24	160
QGC-28	.75	250	13	0.11	$Fo = 35/\sqrt{L_H}$	DM-30	24	165
QGC-29	.5						24	170
QGC-30	.2						25	175
QGC-31	.1						25	180
QGC-32	2						15	150
QGC-33	1.5						15	150
QGC-34	1						15	180
QGC-35	.75						15	180
QGC-36	.5						16	200
QGC-37	.25	500	10	0.04	$Fo = 45/\sqrt{L_H}$	DM-40	16	200
QGC-38	.1						16	200
QGC-39	.075						17	220
QGC-40	.05						17	220
QGC-41	.025						17	250
QGC-42	.01						17	250

*Max. Norm. D.C. = I D.C. (MA) $\sqrt{L_H}$ } at which the inductance
**Max. Norm. A.C. = V/F ~ $\sqrt{L_H}$ } will decrease by 20%.

STANDARD MILITARY TRANSFORMERS

The group comprises audio and power units designed to meet MIL-T-27 A specifications.
The functional characteristics of these transformers were established by the Armed Service Standardization Program. These units are supplie in standard MIL cases.

CASE DIMENSIONS

AJ CASE
Height: 2⅜″
Width: 1⅝″
Depth: 1⅝″
Mtg. Cen.: 1⅜″x1⅜″
Studs: 4 6-32
Cut Out: 1⅛″ D

HA CASE
Height: 4¼″
Width: 3⁹⁄₁₆″
Depth: 2⅝″
Mtg. Cen.: 2¹⁹⁄₆₄″x1⁵⁵⁄₆₄″
Studs: 4 8-32

LB CASE
Height: 4½″
Width: 4⅝″
Depth: 3¹¹⁄₁₆″
Mtg. Cen.: 3⅝″x2¹¹⁄₁₆″
Studs: 4 10-32

JB CASE
Height: 3⅞″
Width: 3⁹⁄₁₆″
Depth: 3¹⁄₁₆″
Mtg. Cen.: 2⅝″x2⅛″
Studs: 4 8-32

MB CASE
Height: 4¹⁵⁄₁₆″
Width: 4¹³⁄₁₆″
Depth: 4″
Mtg. Cen.: 3¹⁄₁₆″x3″
Studs: 4 ¼-20

KB CASE
Height: 4⅝″
Width: 3¹⁵⁄₁₆″
Depth: 3⅜″
Mtg. Cen.: 3″x2⅞″
Studs: 4 10-32

NB CASE
Height: 5½″
Width: 5¹⁄₁₆″
Depth: 4⅝″
Mtg. Cen.: 4¹⁄₁₆″x3⅝″
Studs: 4 ¼-20

Transformers meeting MIL-T-27A specifications Grade 1 through 6 with temperature chara teristics of Class S, T, or U can be supplied on special order.
Encapsulated units using either Epoxy-Resins or Fosterite can be supplied for Grade 2 and Class U components can be supplied molded in special high temperature Freed resin.

STANDARD MILITARY AUDIO TRANSFORMERS

Frequency Response 300-10,000 C.P.S. ±2 DB

Catalog No.	Application	Type Designation	Impedance Level in Ohms Primary	Secondary	Ratio	Max. Power Level DBM	Pri. D.C. Per Side in Ma	Max. D.C. unbal-ance	Ca
MGA 1	Transformer; interstage, single or P.P. plates to single or P.P. grid	TF4RX15AJ	10,000 C.T.	90,000 split and C.T.	1:3 overall	+15	10	10	A
MGA 2	Transformer; matching 600 ohm line to voice coil.	TF4RX16AJ	600 split	4, 8, 16	6.12:1 overall	+33	0	0	A
MGA 3	Transformer; input, 600 ohm line to single or P.P. grids.	TF4RX10AJ	600 split	135,000 C.T.	1:15	+15	0	0	A
MGA 4	Transformer; matching, 600 ohm line to 600 ohm line.	TF4RX16AJ	600 split	600 split	1:1	+15	0	0	A
MGA 5	Transformer; output, single plate 7,600 ohm, 4,800 ohm to 600 ohm line.	TF4RX13AJ	7,600 tap @ 4,800	600 split	3.56:1	+33	40	40	A
MGA 6	Transformer; output, single plate 7,600 ohm, 4,800 ohm to voice coil.	TF4RX13AJ	7,600 tap @ 4,800	4, 8, 16	21.8:1	+33	40	40	A
MGA 7	Transformer; output, single or P.P. plates to 600 ohm line.	TF4RX13AJ	15,000 C.T.	600 split	5:1	+33	10	10	A
MGA 8	Transformer; output, P.P. plates to 600 ohm line.	TF4RX13AJ	24,000 C.T.	600 split	6.32:1	+30	10	1	A
MGA 9	Transformer; output, P.P. plates to 600 ohm line.	TF4RX13AJ	60,000 C.T.	600 split	10:1	+27	10	1	A

STANDARD MILITARY POWER TRANSFORMERS

Primary 105/115/125V 60~

SINGLE PHASE 400 CPS, AND THREE PHASE 60 AND 400 CPS TRANSFORMERS CAN BE SUPPLIED ON SPECIAL ORDER.

Catalog No.	MIL-T-27 Type Designation	Hi Volt	D.C. Volts	D.C. Amps	Fil. No. 1	Fil. No. 2	Case
MGP 1	TF4RX03HA001	200/100/0/100/200	185	.070	5/6. 3V @ 2A	6. 3V @ 3A	HA
MGP 2	TF4RX03JB002	650 C.T.	260	.070	5/6. 3V @ 2A	6. 3V @ 4A	JB
MGP 3	TF4RX03KB006	650 C.T.	245	.150	6. 3V @ 5A	5V @ 3A	KB
MGP 4	TF4RX03LB003	800 C.T.	318	.175	5V @ 3A	6. 3V @ 8A	LB
MGP 5	TF4RX03MB004	900 C.T.	345	.250	5V @ 3A	6. 3V @ 8A	MB
MGP 6	TF4RX02KB001	700 C.T.	255	.250			KB
MGP 7	TF4RX02LB002	1100 C.T.	419	.250			LB
MGP 8	TF4RX02NB003	1600 C.T.	640	.250			NB

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See Freed Price Pages 1453-1455
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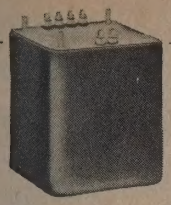
STANDARD MILITARY TRANSFORMERS



EB CASE
Height: 2 7/16"
Width: 1 15/16"
Depth: 1 13/16"
Mtg. Cen.: 1 3/8" x 1 1/4"
Studs: 4 6-32

FB CASE
Height: 2 1/2"
Width: 2 5/16"
Depth: 2 1/16"
Mtg. Cen.: 1 11/16" x 1 7/16"
Studs: 4 6-32

GB CASE
Height: 2 13/16"
Width: 2 3/4"
Depth: 2 3/8"
Mtg. Cen.: 2 1/8" x 1 3/4"
Studs: 4 6-32

HB CASE
Height: 3 3/16"
Width: 3 1/16"
Depth: 2 5/8"
Mtg. Cen.: 2 19/64" x 1 55/64"
Studs: 4 8-32

STANDARD MILITARY FILAMENT TRANSFORMERS

Primary 105/115/125V 60~

SINGLE PHASE 400 CPS, AND THREE PHASE 60 AND 400 CPS TRANSFORMERS CAN BE SUPPLIED ON SPECIAL ORDER.

Catalog No.	MIL-T-27 Type Designation	Secondary Volts	Secondary Current Amps	Secondary Test Volts RMS	Case
MGF 1	TF4RX01EB002	2.5	3.0	2,500	EB
MGF 2	TF4RX01GB003	2.5	10.0	2,500	GB
MGF 3	TF4RX01FB004	5.0	3.0	2,500	FB
MGF 4	TF4RX01HB005	5.0	10.0	2,500	HB
MGF 5	TF4RX01FB006	6.3	2.0	2,500	FB
MGF 6	TF4RX01GB007	6.3	5.0	2,500	GB
MGF 7	TF4RX01JB008	6.3	10.0	2,500	JB
MGF 8	TF4RX01KB009	6.3	20.0	2,500	KB
MGF 9	TF4RX01JB012	2.5	10.0	10,000	JB
MGF 10	TF4RX01KB013	5.0	10.0	10,000	KB

*Standard Military Filament and Power Transformers are also available in Grade 4.

HERMETICALLY SEALED PULSE TRANSFORMERS

Hermetically sealed Pulse Transformers for use in blocking oscillator, low level interstage coupling, and modulator output circuits. These components meet MIL-T-27 A specifications. The pulse transformers are designed for maximum power, efficiency, and optimum pulse performance. Balanced coil structures permit series or parallel connection of windings for turn ratios other than unity. Pulse characteristics, voltages and impedance levels will depend upon the interconnections made.

PULSE TRANSFORMERS

Catalog No.	MIL Type	Blocking Osc.	Interstage Coupling	Low Power Output	Pulse Voltage Kilovolts	Pulse Duration Microseconds	Duty Date	No. of Windings	Test Voltage KV., RMS	Characteristic Impedance Ohms	Case No.
MPT-1	TF4RX35YY	✓	✓		0.25/0.25/0.25	0.2-1.0	.004	3	0.7	250	DM-20
MPT-2	TF4RX35YY	✓	✓		0.25/0.25	0.2-1.0	.004	2	0.7	250	DM-20
MPT-3	TF4RX35YY	✓	✓		0.5/0.5/0.5	0.2-1.5	.002	3	1.0	250	DM-18
MPT-4	TF4RX35YY	✓	✓		0.5/0.5	0.2-1.5	.002	2	1.0	250	DM-18
MPT-5	TF4RX35YY	✓	✓		0.5/0.5/0.5	0.5-2.0	.002	3	1.0	500	DM-20
MPT-6	TF4RX35YY	✓	✓		0.5/0.5	0.5-2.0	.002	2	1.0	500	DM-20
MPT-7	TF4RX35YY	✓	✓	✓	0.7/0.7/0.7	0.5-1.5	.002	3	1.5	200	DM-18
MPT-8	TF4RX35YY	✓	✓	✓	0.7/0.7	0.5-1.5	.002	2	1.5	200	DM-18
MPT-9	TF4RX35YY	✓	✓	✓	1.0/1.0/1.0	0.7-3.5	.002	3	2.0	200	DM-18
MPT-10	TF4RX35YY	✓	✓	✓	1.0/1.0	0.7-3.5	.002	2	2.0	200	DM-18
MPT-11	TF4RX35YY	✓	✓	✓	1.0/1.0/1.0	1.0-5.0	.002	3	2.0	500	DM-01
MPT-12	TF4RX35YY	✓	✓	✓	0.15/0.15/0.3/0.3	0.2-1.0	.004	4	0.7	700	DM-8

CASE DIMENSIONS

DM-8 CASE
Height: 1 1/2"
Width: 1 3/32"
Flange D.: 1 1/4"

DM-01 CASE
Height: 2"
Width: 1 1/2"
Depth: 1 1/2"
Mtg. Cen.: 1 1/16" x 1 1/16"
Studs: 4 6-32
Knockout: 1 1/4 dia.

DM-20 CASE
Height: 1 9/16
Diameter: 1 1/16"
Flange L: 1 13/32"
Flange D: 0.975"
Mtg. Cen.: 1 1/8" x 1 7/32"
Holes: .147 wide
Knockout: .875

DM-18 CASE
Height: 1"
Width: 2 1/4"
Depth: 1 1/8"
Mtg. Cen.: 9/16"
Studs: 2 6-32

MM-1
Length: 3/4"
Diameter: 1/2"

MM-2
Length: 23/32"
Width: 23/32"
Height: 1/2"

MM-3
Length: 1 1/4"
Width: 1 1/4"
Height: 1/2"
Mtg. Cen.: 1 1/2"
Mtg. Flange: 1 11/16"

MM-4
Length: 1 13/16"
Depth: 1 1/4"
Height: 1/2"
Mtg. Cen.: 2 1/8"
Mtg. Flange: 2 1/2"

MOLDED DIMENSIONS

MMO-1
Diameter: 11/16"
Thickness: 29/64"

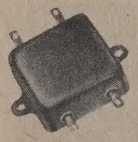
MMO-2
Diameter: 13/16"
Thickness: 19/32"

ULTRA MINIATURE PULSE TRANSFORMERS

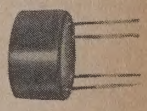
- Meet all requirements of MIL-T-27 A.
- Negligible weight.
- Exceedingly small size.
- Encapsulated or hermetically sealed.

MM-1

MM-2



MM-3
MM-4



MMO-1
MMO-2

Catalog No.	MIL Type	Application	Pulse Volts	Pulse Width usec	Rise time usec	Inductance Prin. uhy	Inductance Leakage uhy	PPS. Mcs	Turns Ratio	Zo ohms	Case Des.
EPT-1	TF4RX31YY	Impedance matching & Interstage coupling	20	.07	.03	125	12	2	1:1	200	MM-1
EPT-2	TF4RX31YY		20	.07	.03	150	15	2	2:1	200	MM-1
EPT-3	TF4RX31YY		20	.07	.03	160	15	2	3:1	100	MM-1
EPT-4	TF4RX31YY		20	.07	.03	200	20	2	4:1	100	MM-1
EPT-5	TF4RX31YY		17	.10	.04	200	6	2	4:1	100	MM-1
EPT-6	TF4RX31YY		15	.10	.04	200	5	2	5:1	100	MM-1
EPT-7	TF4RX31YY		25	.50	.05	1,200	20	1	7:1:1		MM-1
EPT-8	TF4RX31YY		10	10	.04	12,000	70	.01	5:1		MM-2
EPT-9	TF4RX31YY		10	5	.04	7,500	22	.01	3:1	100	MM-2
EPT-11	TF4RX35YY	Blocking oscillator	100	.25	.02	200	2	.012	1:1		MM-1
EPT-12	TF4RX35YY		50	.33	.07	240	2	.002	1:1		MM-1
EPT-13	TF4RX35YY		40	.5	.07	6,000	15		2:1		MM-2
EPT-14	TF4RX35YY		15	6	.1	16,000	15	.0004	1:1.4		MM-2
EPT-15	TF4RX36YY	Memory core & Current driver	5	1.5	.25	4,000	300		5:5:1PP	10	MM-4
EPT-16	TF4RX36YY		2.5	2.4	.2	2,800	200		3.3:3.3:1PP	6	MM-4
EPT-17	TF4RX32YY	Current driver	21	1.4	.22	18,000	800	.250	6:1	200	MM-3
EPT-18	TF4RX32YY	Current transformer	10	6	.2	90,000	200	.05	11:1	75	MM-3
EPT-19	TF4RX36YY	Pulse inversion	22	1.7	.25	55,000	300	.05	6:1.1	400	MM-3

When ordering encapsulated units add "M" to the catalog number.

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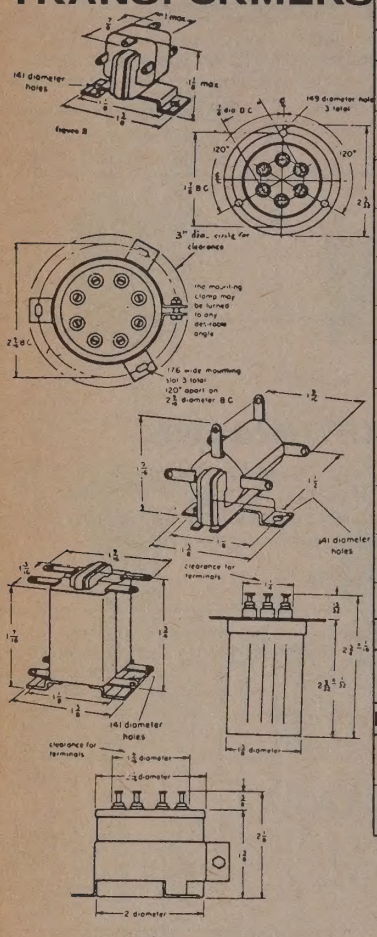
PULSE TRANSFORMERS

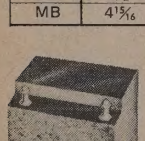


Freed No.	Radiation Laboratory No.	Westinghouse No.	Dimension Figure	GUIDANCE VALUES: Pulse Voltage (KV)	Pulse Duration (Microseconds)	Maximum Duty Ratio	Load Impedance (Ohms)	Test Voltage (60 Cy RMS)
BLOCKING OSCILLATOR, REGENERATIVE DRIVER OR COUPLING TRANSFORMERS								
MPT-13C MPT-13M MPT-13H	132AW2 132AW2F 132AW2P	1P1 7P1 4P101	1 1 4	1.0/1.0/1.0	0.3 to 1.5	0.002	250	1000
MPT-14C MPT-14M MPT-14H	132BW2 132BW2F 132BW2P	1P2 7P2 4P102	1 1 5	0.5/0.5/0.5/0.15	0.3 to 1.5	0.002	200	1000
MPT-15C MPT-15M MPT-15H	132DW2 132DW2F 132DW2P	1P3 7P3 4P103	1 1 4	0.5/0.5/0.5	0.1 to 0.5	0.002	300	1000
MPT-16C MPT-16M MPT-16H	134BW2 134BW2F 134BW2P	1P4 7P4 4P104	3 3 5	2.5/2.5; 2.5/1.25 1.5/1.5; 1.5/0.75	1 to 2.5 1 to 5	0.002 0.002	1500 1500	1500
MPT-17C MPT-17M MPT-17H	134CW2 134CW2F 134CW2P	1P5 7P5 4P105	1 1 4	2.0/2.0/1.0 1.5/1.5/0.75	1 to 2.5 1 to 5	0.002 0.002	1200 1200	1000
MPT-18C MPT-18M	134EW2 134EW2F	1P6 7P6	2 2	2.0/2.0/1.0 1.5/1.4/0.75	0.3 to 1 0.3 to 1.5	0.002 0.002	800 800	750
MPT-19C MPT-19M MPT-19H	145CW2 145CW2F 145CW2P	1P7 7P7 4P107	1 1 4	0.5/0.5/0.5	1.0 to 5	0.002	500	1000
MPT-20C MPT-20M MPT-20H	145EW2 145EW2F 145EW2P	1P8 7P8 4P108	1 1 4	1.0/1.0/1.0	1.0 to 5	0.002	800	1000
MPT-21C MPT-21M MPT-21H	166AW2 166AW2F 166AW2P	1P9 7P9 4P109	1 1 4	1.0/0.67/0.67	1.0 to 5	0.002	800	1000
MPT-22C MPT-22M MPT-22H	176AW2 176AW2F 176AW2P	1P10 7P10 4P110	1 1 4	2.0/1.0/1.0 1.5/0.75/0.75	1 to 2.5	0.002 0.002	1000 1000	1000
MPT-23C MPT-23M MPT-23H	187AW2 187AW2F 187AW2P	1P11 7P11 4P111	1 1 4	1.0/0.5/0.5	0.5 to 2	0.002	400	1000
MPT-24C MPT-24M	224AW2 224AW2F	1P12 7P12	2 2	1.0/1.0/1.0/0.3	0.1 to 0.5	0.002	1000	750
PULSE TRIGGERING OR CURRENT TRANSFORMERS								
MPT-25C MPT-25M MPT-25H	139DW2 139DW2F 139DW2P	1P13 7P13 4P113	1 1 4		0.25 to 5	0.002		1000
PULSE OUTPUT TRANSFORMERS								
MPT-26C MPT-26M MPT-26H	148CW2 148CW2F 148CW2P	1P14 7P14 4P114	3 3 5	0.2/2.0 0.4/2.0 0.4/2.0	0.6 to 3 0.25 to 1.25 0.5 to 2.5	0.002 0.002 0.002	1600 1000 2000	1500
MPT-27C MPT-27M MPT-27H	148DW2 148DW2F 148DW2P	1P15 7P15 4P115	3 3 5	0.29/2.0 0.57/2.0 0.57/2.0	0.5 to 2.5 0.2 to 1.0 0.4 to 2.0	0.002 0.002 0.002	1200 800 1500	1500

C Indicates—varnish impregnated commercial construction.
M Indicates—encapsulated or molded construction to MIL-T-27A Grade 5 Class R.
H Indicates—hermetically sealed to MIL-T-27A Grade 4 Class R.

HERMETICALLY SEALED FILTER REACTORS

Case	Height	Depth	Width	Mtg. Centers	Studs
AJ	2 3/8	1 5/8	1 5/8	1 3/16 x 1 3/16	4 6-32
EB	2 1/16	1 13/16	1 13/16	1 3/16 x 1 1/4	4 6-32
FA	3 1/8	2 1/16	2 5/16	1 11/16 x 1 7/16	4 6-32
GA	3 13/16	2 3/8	2 3/4	2 1/16 x 1 3/4	4 6-32
HB	3 3/16	3 1/16	2 5/8	2 13/64 x 1 53/64	4 8-32
JA	3 5/16	3 1/16	4 7/8	2 5/8 x 2 1/8	4 8-32
JB	3 7/8	3 1/16	3 5/16	2 5/8 x 2 1/8	4 8-32
KB	4 5/16	3 3/8	3 15/16	3 x2 7/16	4 10-32
LA	5 5/16	3 11/16	4 5/16	3 5/16 x 2 11/16	4 10-32
LB	4 1/2	3 11/16	4 5/16	3 5/16 x 2 11/16	4 10-32
MB	4 15/16	4	4 11/16	3 11/16 x 3	4 1/4-20



MC-10 CASE
Height: 1 5/16"
Width: 1 1/4"
Depth: 1 5/16"
Mtg. Cen.: 9/16" x 7/8"
Mtg.: 2 4-40 threaded inserts

MEET MIL-T-27A SPECIFICATIONS

Catalog No.	MIL Type	Inductance Henry	Rat. Current DC Ma.	DC Res. Ohms	Test Volt Kilovolts	Case No.
MGC 1	TF4RX04AJ	100	10	3,500	1.	AJ
MGC 2	TF4RX04AJ	4	50	230	1.	AJ
MGC 3	TF4RX04EB	10	50	325	1.	EB
MGC 4	TF4RX04FA	20	50	475	1.5	FA
MGC 5	TF4RX04FA	30	50	650	1.5	FA
MGC 6	TF4RX04AJ	3	75	175	1.	AJ
MGC 7	TF4RX04EB	6	75	235	1.5	EB
MGC 8	TF4RX04FA	12	75	265	1.5	FA
MGC 9	TF4RX04EB	3.5	100	145	1.	EB
MGC 10	TF4RX04FA	8	100	180	1.5	FA
MGC 11	TF4RX04GA	12	100	190	2.	GA
MGC 12	TF4RX04EB	2	150	92	1.5	EB
MGC 13	TF4RX04FA	4	150	115	1.5	FA
MGC 14	TF4RX04GA	8	150	125	2.	GA
MGC 15	TF4RX04JB	11	150	120	2.5	JB
MGC 16	TF4RX04FA	2.5	200	70	1.5	FA
MGC 17	TF4RX04GA	4	200	80	2.	GA
MGC 18	TF4RX04HB	7	200	135	2.	HB
MGC 19	TF4RX04JA	10	200	125	2.5	JA
MGC 20	TF4RX04GA	2.5	300	50	2.	GA
MGC 21*	TF4RX04HB	4	300	62	2.5	HB
MGC 22	TF4RX04JB	6	300	85	2.5	JB
MGC 23*	TF4RX04KB	8	300	65	2.5	KB
MGC 24	TF4RX04LA	10	300	100	2.5	LA
MGC 25*	TF4RX04HB	2	400	37	2.5	HB
MGC 26	TF4RX04KB	6	400	60	2.5	KB
MGC 27*	TF4RX04JA	2	500	35	2.5	JA
MGC 28	TF4RX04KB	4	500	45	2.5	KB
MGC 29*	TF4RX04MB	7	500	50	2.5	MB
MGC 30*	TF4RX04LB	2	700	20	2.5	LB
MGC 31*	TF4RX04MB	1.75	1,000	12.5	2.5	MB

*Not stocked, available on short delivery.
Above units available in Grade 4.

See Freed Price Pages 1453-1455
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FREED TRANSFORMER CO., INC.

HERMETICALLY SEALED, MIL-T-27A, GRADE 5, CLASS S FILTER REACTORS

hese reactors have a split winding for eries or parallel connections.

/hen using two sections in parallel, ouble the Idc. Both inductance and esistance are divided by 4.

Catalog No.	Min. Inductance @ Idc (Series Connection)				Max. Rdc	Test Voltage	Case No.
MGC-32	3.2 H @ 0dc	2.1 H @ 25 MA	1.70 H @ 35 MA	1.4 H @ 45 MA	220 Ohms	1000 V	MC-10
MGC-33	1.3 H @ 0dc	1.1 H @ 50 MA	0.8 H @ 70 MA	0.5 H @ 90 MA	100 Ohms	1000 V	MC-10
MGC-34	400 MH @ 0dc	300 MH @ 100 MA	240 MH @ 130 MA	190 MH @ 160 MA	35 Ohms	1000 V	MC-10
MGC-35	105 MH @ 0dc	100 MH @ 200 MA	80 MH @ 250 MA	50 MH @ 300 MA	10 Ohms	1000 V	MC-10
MGC-36	25 MH @ 0dc	23.5 MH @ 400 MA	15 MH @ 500 MA	11 MH @ 600 MA	2 Ohms	1000 V	MC-10
MGC-37	5.7 MC @ 0dc	4.5 MH @ 0.8 A	3.9 MH @ 1 A	3 MH @ 1.2 A	0.5 Ohms	1000 V	MC-10

TOROIDAL INDUCTORS

Using the latest developments in the field of magnetic materials and new impregnation and molding techniques the Freed Transformer Co. makes vailable to the industry the most extensive line of toroidal inductors.

Freed toroids are available in three types of constructions. Open units coated with a special high temperature extremely low loss compound, her- etically sealed in metal cases or molded in special **Freed Epoxy Resin.** Both hermetically sealed and molded units meet the latest military specifica- on MIL-T-27A(graded 1 or 4 and 2 or 5 respectively.)Freed toroidal inductors are supplied with either molypermalloy or carbonyl iron powder cores

. Temperature Stabilization:

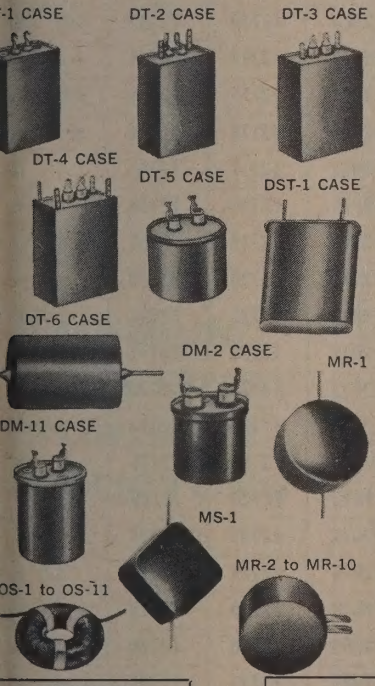
The molypermalloy and carbonyl iron powder cores have a temperature coefficient of inductance. Depending on the degree of temperature stabili- ation the cores have different temperature coefficients. The degree of stabilization is denoted by a two-letter code.

SF Non-stabilized cores, ±2½% inductance variations from —55°C to +85°C.
SN Non-stabilized cores, +2% inductance variations from —55°C to +85°C.
SE Temperature stabilized cores, +0.1% to —0.4% inductance variations from —1.5°C to +54°C.
SB Temperature stabilized cores, ±0.1% inductance variations from +13°C to +35°C.
SD Temperature stabilized cores, ±0.1% inductance variations from —1.5°C to +54°C.
SW Temperature stabilized cores, ±0.25% inductance variations from —54°C to +85°C.
SM Temperature stabilized cores, ±.25% —65°C to +125°C.
SP Temperature stable carbonyl iron cores, ±0.3% inductance variations from —55°C to +85°C.

The temperature (stabilization) coefficient of an inductor will depend upon the nominal inductance value, operating frequency and A.C. voltage cross the coil. Under some unfavorable working conditions the temperature coefficient of inductance corresponding to a given stability character- tic may be exceeded.

Toroids with special requirements such as tapped toroids, toroidal transformers, molded and cased units with dimensions other than standard zes and high temperature toroids can be supplied on request. Our engineering and laboratory facilities are available for consultation, research and evelopment.

ASED, UNCASED AND MOLDED UNITS



TOROIDAL INDUCTORS

Type	Ω/H	Max. Norm. Idc	Max. Norm. Iac	Max. Norm. Vac	Type	Ω/H	Max. Norm. Idc	Max. Norm. Iac	Max. Norm. Vac
TI- 1	70	55	73.5	0.46	TI-19	4,500	25	29	0.18
TI- 1A	68	75	90.5	0.57	TI-20	2,750	100	*	*
TI- 2	160	90	135	0.85	TI-21	1,200	350	*	*
TI- 3	600	100	67	0.42	TI-22	5,600	210	*	*
TI- 3A	310	150	240	1.5	TI-23	7,000	250	*	*
TI- 4	110	55	67	0.42	TI-24	330	15	18	0.11
TI- 5	260	28	35	0.22	TI-25	200	20	24	0.15
TI- 6	230	75	125	0.80	TI-26	150	25	32	0.20
TI- 7	480	40	53	0.33	TI-27	76.5	50	62	0.39
TI- 8	1,500	50	80	0.5	TI-28	48.5	50	64	0.40
TI- 9	150	200	240	1.5	TI-29	33.5	70	88	0.55
TI-10	430	125	270	1.7	TI-30	28	100	135	0.84
TI-11	30	120	190	1.2	TI-31	19.5	100	136	0.85
TI-12	45	100	160	1	TI-32	48.5	6	14.5	0.09
TI-13	55	140	175	1.1	TI-33	2,150	8	13	0.08
TI-14	580	150	—	—	TI-34	1,700	8	9.5	0.06
TI-15	900	100	—	—	TI-35	4,100	10	18	0.11
TI-16	600	16	21	0.13	TI-36	3,950	10	11	0.07
TI-17	1,200	20	29	0.18	TI-37	23.5	10	32	0.20
TI-18	2,600	30	40	0.25	TI-38	100	4	9.5	0.06

*TI-20 through TI-23 have a very low voltage coefficient and inductance will change very little with voltage. Because of high frequency application, the maximum voltage is limited rather by breakdown than by saturation.

UNCASED		
ype	O.D.	Hi.
S-1	5/8"	5/16"
S-2	7/8"	3/8"
S-3	1"	3/8"
S-4	1"	5/16"
S-5	1 3/4"	5/8"
S-6	1 5/8"	7/8"
S-7	1 11/16"	5/8"
S-8	1 7/8"	1 1/16"
S-9	2 1/4"	1 1/8"
S-10	2 3/8"	1 1/4"
S-11	2 5/8"	1 1/8"
S-12	1 13/16"	3/8"
S-13	3/8"	1/4"
S-14	7/16"	7/32"

CASE							
Type	Hi.	Dia.	Length	Width	Mtg.	Mtg. Cen.	Cutout
DT-1	1 7/32"		1 1/16"	1/2"	2 4-40 inserts	3/4"	5/16" x 1/2"
DT-2	1 3/4"		1 7/16"	1 3/16"	2 6-32 studs	7/8" x 3/32"	3/8" x 1 1/16"
DT-3	2"		1 25/32"	7/8"	2 6-32 studs	1 1/4" x 3/8"	3/8" x 3/4"
DT-4	3 1/4"		2 3/4"	1 5/16"	4 8-32 studs	2 1/16" x 1 1/16"	3/4" x 3/8"
DT-5	1 3/8"	1 13/16"			2 6-32 inserts	1 1/8"	3/8" x 1"
DT-6	5/8"	1/2"			Pig Tails		
DM-2	1"	1 1/8"			2 4-40 inserts	5/8"	3/8" x 3/8"
DM-11	1 1/2"	1 3/8"			2 6-32 inserts	7/8"	3/8" x 7/8"
DST-1	25/32"		3/4"	11/32"	1/4" long pins	To fit 1/2" crystal socket	

MOLD			
Type	O.D.	Hi.	Clearance Hole Mounting
MR-1	7/8"	13/32"	Pig Tails
MR-2	1 1/16"	1/2"	No. 4
MR-3	1 3/16"	1/2"	No. 6
MR-3A	1 3/16"	11/16"	No. 6
MR-4	1 1/2"	3/4"	No. 8
MR-5	1 7/8"	1"	No. 8
MR-6	2 1/8"	7/8"	No. 8
MR-7	2 3/8"	1 5/16"	No. 10
MR-8	2 1/2"	1 3/8"	No. 10
MR-9	2 5/8"	1 7/16"	No. 10
MR-10	2 7/8"	1 3/8"	No. 10
MR-11	7/16"	1/4"	Pig Tails
MS-1	25/32" x 25/32"	13/32"	Pig Tails

FREED TRANSFORMER CO., INC.

LOW FREQUENCY TOROIDAL INDUCTORS

Freq. Range	100 ~ to 10 KC			200 ~ to 12 KC								Freq. Range
TYPE	TI-38	TI-32	TI-37	TI-24	TI-25	TI-26	TI-27	TI-28	TI-29	TI-30	TI-31	TYPE
Temp. Stability	SF	SF	SF	SN	SN	SN	SN	SN	SN	SN	SN	Temp. Stability
Size / Uncased Case Mold	OS1 DST1 MR1, MS1	OS3 DT1, DM2 MR3	OS5 DT2, DM11 MR4	OS1 DST1 MR1, MS1	OS12 DT1 MR2	OS3 DT1, DM2 MR3	OS5 DT2, DM11 MR4	OS8 DT3, DT5 MR6	OS9 DT4 MR7	OS9 DT4 MR8	OS11 DT4 MR10	Size / Uncas Cas Mol
Nominal Inductance	CATALOG NUMBER											Nominal Inductanc
1 MH				F2400	F2450	F2500	F2550	F2600	F2650	F2700	F2750	1 MH
2 MH				F2401	F2451	F2501	F2551	F2601	F2651	F2701	F2751	2 MH
3 MH				F2402	F2452	F2502	F2552	F2602	F2652	F2702	F2752	3 MH
5 MH	F3550			F2403	F2453	F2503	F2553	F2603	F2653	F2703	F2753	5 MH
7.5 MH	F3551			F2404	F2454	F2504	F2554	F2604	F2654	F2704	F2754	7.5 MH
10 MH	F3552			F2405	F2455	F2505	F2555	F2605	F2655	F2705	F2755	10 MH
15 MH	F3553			F2406	F2456	F2506	F2556	F2606	F2656	F2706	F2756	15 MH
20 MH	F3554			F2407	F2457	F2507	F2557	F2607	F2657	F2707	F2757	20 MH
30 MH	F3555			F2408	F2458	F2508	F2558	F2608	F2658	F2708	F2758	30 MH
50 MH	F3556	F2800	F4000	F2409	F2459	F2509	F2559	F2609	F2659	F2709	F2759	50 MH
75 MH	F3557	F2801	F4001	F2410	F2460	F2510	F2560	F2610	F2660	F2710	F2760	75 MH
100 MH	F3558	F2802	F4002	F2411	F2461	F2511	F2561	F2611	F2661	F2711	F2761	100 MH
150 MH	F3559	F2803	F4003	F2412	F2462	F2512	F2562	F2612	F2662	F2712	F2762	150 MH
200 MH	F3560	F2804	F4004	F2413	F2463	F2513	F2563	F2613	F2663	F2713	F2763	200 MH
300 MH	F3561	F2805	F4005	F2414	F2464	F2514	F2564	F2614	F2664	F2714	F2764	300 MH
400 MH	F3562	F2806	F4006	F2415	F2465	F2515	F2565	F2615	F2665	F2715	F2765	400 MH
500 MH	F3563	F2807	F4007	F2416	F2466	F2516	F2566	F2616	F2666	F2716	F2766	500 MH
750 MH	F3564	F2808	F4008	F2417	F2467	F2517	F2567	F2617	F2667	F2717	F2767	750 MH
1 H	F3565	F2809	F4009	F2418	F2468	F2518	F2568	F2618	F2668	F2718	F2768	1 H
1.25 H	F3566	F2810	F4010	F2419	F2469	F2519	F2569	F2619	F2669	F2719	F2769	1.25 H
1.5 H	F3567	F2811	F4011	F2420	F2470	F2520	F2570	F2620	F2670	F2720	F2770	1.5 H
1.75 H	F3568	F2812	F4012	F2421	F2471	F2521	F2571	F2621	F2671	F2721	F2771	1.75 H
2 H	F3569	F2813	F4013	F2422	F2472	F2522	F2572	F2622	F2672	F2722	F2772	2 H
2.25 H	F3570	F2814	F4014		F2473	F2523	F2573	F2623	F2673	F2723	F2773	2.25 H
2.5 H	F3571	F2815	F4015		F2474	F2524	F2574	F2624	F2674	F2724	F2774	2.5 H
3 H	F3572	F2816	F4016		F2575	F2525	F2575	F2625	F2675	F2725	F2775	3 H
3.5 H	F3573	F2817	F4017		F2476	F2526	F2576	F2626	F2676	F2726	F2776	3.5 H
4 H	F3574	F2818	F4018		F2477	F2527	F2577	F2627	F2677	F2727	F2777	4 H
4.5 H	F3575	F2819	F4019		F2478	F2528	F2578	F2628	F2678	F2728	F2778	4.5 H
5 H	F3576	F2820	F4020		F2479	F2529	R2579	F2629	F2679	F2729	F2779	5 H
7.5 H	F3577	F2821	F4021		F2480	F2530	F2580	F2630	F2680	F2730	F2780	7.5 H
10 H	F3578	F2822	F4022		F2481	F2531	F2581	F2631	F2681	F2731	F2781	10 H
15 H		F2823	F4023			F2532	F2582	F2632	F2682	F2732	F2782	15 H
20 H		F2824	F4024			F2533	F2583	F2633	F2683	F2733	F2783	20 H
25 H			F4025									25 H
30 H									F2684	F2734	F2784	30 H
40 H									F2685	F2735	F2785	40 H
50 H									F2686	F2736	F2786	50 H
75 H											F2787	75 H
100 H											F2788	100 H

See Freed Price Pages 1453-1455

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FREED TRANSFORMER CO., INC.

LOW FREQUENCY TOROIDAL INDUCTORS

Freq. Range	1 KC to 15 KC									Freq. Range
TYPE	TI-33	TI-34	TI-16	TI-5	TI-4	TI-1	TI-1A	TI-12	TI-11	TYPE
Temp. Stability	SN	SN	SN	SN, SE SD	SN, SD, SW	SN	SN, SD SW	SN, SD, SW	SN, SD, SW	Temp. Stability
Size / Uncased Case Mold	OS13 DT6 MR11	OS14 DT6 MR11	OS1 DST1 MR1, MS1	OS3 DT1, DM2, MR3	OS5 DT2, DM11, MR4	OS8 DT3, DT5, MR6	OS9 DT4 MR7	OS9 DT4 MR8	OS11 DT4 MR10	Size / Uncased Case Mold
Nominal Inductance	Catalog Number									Nominal Inductance
.25 MH	F2850	F2900								.25 MH
.5 MH	F2851	F2901								.5 MH
.75 MH	F2852	F2902								.75 MH
1 MH	F2853	F2903	F2050				F1500	F1655	F1747	1 MH
1.5 MH	F2854	F2904								1.5 MH
2 MH	F2855	F2905					F1501	F1656	F1748	2 MH
2.5 MH	F2856	F2906								2.5 MH
3 MH	F2857	F2907	F2051				F1502	F1657	F1749	3 MH
4 MH	F2858	F2908					F1503	F1658	F1750	4 MH
5 MH	F2859	F2909	F2052	F1700	F850	F800	F1504	F1659	F1751	5 MH
7.5 MH	F2860	F2910					F1505	F1660		7.5 MH
10 MH	F2861	F2911	F2053	F1701	F851	F801	F1506	F1661	F1752	10 MH
12.5 MH	F2862	F2912								12.5 MH
15 MH	F2863	F2913	F2054	F1702	F852	F802	F1507	F1662	F1753	15 MH
17.5 MH	F2864	F2914								17.5 MH
20 MH	F2865	F2915								20 MH
25 MH	F2866	F2916								25 MH
30 MH	F2867	F2917	F2055	F1703	F853	F803	F1508	F1663	F1754	30 MH
50 MH		F2918	F2056	F1704	F854	F804	F1509	F1664	F1755	50 MH
75 MH		F2919	F2057	F1705	F855	F805	F1510	F1665	F1756	75 MH
100 MH		F2920	F2058	F1706	F856	F806	F1511	F1666	F1757	100 MH
150 MH			F2059	F1707	F857	F807	F1512	F1667	F1758	150 MH
200 MH			F2060	F1708	F858	F808	F1513	F1668	F1759	200 MH
300 MH			F2061	F1709	F859		F1514	F1669	F1760	300 MH
400 MH			F2062	F1710	F860		F1515	F1670	F1761	400 MH
500 MH			F2063	F1711	F861	F809	F1516	F1671	F1762	500 MH
600 MH				F1712	F862		F1517	F1672		600 MH
700 MH				F1713	F863					700 MH
750 MH			F2064			F810	F1518	F1673	F1763	750 MH
800 MH				F1714	F864					800 MH
900 MH				F1715	F865					900 MH
1.0 HY			F2065	F1716	F866	F811	F1519	F1674	F1764	1.0 HY
1.25 HY			F2066	F1717	F867	F812				1.25 HY
1.5 HY			F2067	F1718	F868	F813	F1520	F1675	F1765	1.5 HY
1.75 HY			F2068	F1719	F869	F814				1.75 HY
2 HY			F2069	F1720	F870	F815	F1521	F1676	F1766	2 HY
2.25 HY					F871	F816				2.25 HY
2.5 HY					F872	F817	F1522	F1677	F1767	2.5 HY
2.75 HY					F873	F818				2.75 HY
3 HY					F874	F819	F1523	F1678	F1768	3 HY
3.5 HY					F875	F820	F1524	F1679	F1769	3.5 HY
4 HY					F876	F821	F1525	F1680	F1770	4 HY
4.5 HY					F877	F822	F1526	F1681	F1771	4.5 HY
5 HY					F878	F823	F1527	F1682	F1772	5 HY
6 HY						F824	F1528	F1683		6 HY
7 HY						F825	F1529	F1684		7 HY
7.5 HY									F1773	7.5 HY
8 HY						F826	F1530	F1685		8 HY
9 HY						F827	F1531	F1686		9 HY
10 HY						F828	F1532	F1687	F1774	10 HY
12 HY							F1533	F1688		12 HY
15 HY						F829	F1534	F1689	F1775	15 HY
17 HY							F1535	F1690		17 HY
20 HY						F830	F1536	F1691	F1776	20 HY
25 HY							F1537	F1692	F1777	25 HY
30 HY							F1538	F1693	F1778	30 HY
40 HY									F1779	40 HY
50 HY									F1780	50 HY

MEDIUM FREQUENCY TOROIDAL INDUCTORS

Freq. Range	10 KC to 50 KC							30 KC to 75 KC				Freq. Range
TYPE	TI-35	TI-36	TI-17	TI-7	TI-6	TI-2	TI-13	TI-18	TI-8	TI-10	TI-9	TYPE
Temp. Stability	SN	SN	SN	SN	SN, SD SW	SD	SN	SN	SN, SD	SB	SB	Temp. Stability
Size / Uncased Case Mold	OS13 DT6 MR11	OS14 DT6 MR11	OS1 DST1 MR1, MS1	OS3 DT1, DM2 MR3	OS5 DT2, DM11 MR4	OS6 DT3, DT5 MR5	OS9 DT4 MR8	OS1 DST1 MR1, MS1	OS3 DT1, DM2 MR3	OS7 DT3, DT5 MR5	OS10 DT4 MR9	Size / Uncased Case Mold
Nominal Inductance	Catalog Number											Nominal Inductance
.1 MH			F2100					F2140	F1821			.1 MH
.2 MH			F2101					F2141	F1822			.2 MH
.25 MH	F2950	F3000										.25 MH
.3 MH			F2102					F2142	F1823			.3 MH
.4 MH			F2103					F2143	F1824			.4 MH
.5 MH	F2951	F3001	F2104	F1781				F2144	F1825			.5 MH
.75 MH	F2952	F3002										.75 MH
1 MH	F2953	F3003	F2105	F1782	F1726	F1800	F1629	F2145	F1826	F1579	F1554	1 MH
1.5 MH	F2954	F3004										1.5 MH
2 MH	F2955	F3005	F2106	F1783	F1727	F1801	F1630	F2146	F1827	F1580	F1555	2 MH
2.5 MH	F2956	F3006										2.5 MH
3 MH	F2957	F3007	F2107	F1784	F1728	F1802	F1631	F2147	F1828	F1581	F1556	3 MH
4 MH	F2958	F3008	F2108		F1729	F1803	F1632	F2148	F1829	F1582	F1557	4 MH
5 MH	F2959	F3009	F2109	F1785	F1730	F1804	F1633	F2149	F1830	F1583	F1558	5 MH
7.5 MH	F2960	F3010	F2110	F1786	F1731		F1634	F2150	F1831	F1584	F1559	7.5 MH
10 MH	F2961	F3011	F2111	F1787	F1732	F1805	F1635	F2151	F1832	F1585	F1560	10 MH
12.5 MH	F2962	F3012										12.5 MH
15 MH	F2963	F3013	F2112	F1788	F1733	F1806	F1636	F2152	F1833	F1586	F1561	15 MH
17.5 MH		F3014										17.5 MH
20 MH		F3015	F2113	F1789	F1734			F2153	F1834			20 MH
25 MH		F3016		F1790					F1835			25 MH
30 MH		F3017	F2114	F1791	F1735	F1807	F1637	F2154	F1836	F1587	F1562	30 MH
40 MH				F1792					F1837			40 MH
50 MH			F2115	F1793	F1736	F1808	F1638	F2155	F1838	F1588	F1563	50 MH
75 MH			F2116	F1794	F1737	F1809	F1639	F2156	F1839	F1589	F1564	75 MH
100 MH			F2117	F1795	F1738	F1810	F1640	F2157	F1840	F1590	F1565	100 MH
150 MH				F1796	F1739	F1811	F1641			F1591	F1566	150 MH
200 MH				F1797	F1740	F1812	F1642			F1592	F1567	200 MH
250 MH					F1741							250 MH
300 MH					F1742	F1813	F1643				F1568	300 MH
400 MH						F1814	F1644				F1569	400 MH
500 MH					F1743	F1815	F1645				F1570	500 MH

FREED TRANSFORMER CO., INC.

HIGH FREQUENCY TOROIDAL INDUCTORS

Freq. Range	10 KC to 100 KC		50 KC to 200 KC			20 KC to 2 MC	50 KC to 5 MC		100 KC to 10 MC	Freq. Range
TYPE	TI-15	TI-14	TI-19	TI-3	TI-3A	TI-20	TI-22	TI-23	TI-21	TYPE
Temp. Stability	SN	SN	SN	SD	SB	SP	SP	SP	SP	Temp. Stability
Size / Uncased Case Mold	OS3 DT1, DM2 MR3	OS5 DT2, DM11 MR4	OS1 DST 1 MR1, MS1	OS6 DT3, DT5 MR5	OS10 DT4 MR8	OS4 DT2 MR3A	OS2 DT1 MR2	OS2 DT1 MR2	OS1 DT1 MR1, MS1	Size / Uncased Case Mold
Nominal Inductance	Catalog Number									Nominal Inductance
.010 MH							F2270	F2301	F2240	.010 MH
.015 MH							F2271	F2302	F2241	.015 MH
.020 MH							F2272	F2303	F2242	.020 MH
.030MH							F2273	F2304	F2243	.030MH
.040 MH							F2274	F2305	F2244	.040 MH
.050 MH						F2201	F2275	F2306	F2245	.050 MH
.075 MH							F2276	F2307	F2246	.075 MH
.100 MH	F1870		F2180	F1846		F2202	F2277	F2308	F2247	.100 MH
.125 MH									F2248	.125 MH
.150 MH							F2278	F2309	F2249	.150 MH
.200 MH	F1871		F2181	F1847		F2203	F2279	F2310		.200 MH
.300 MH	F1872		F2182	F1848		F2204	F2280	F2311		.300 MH
.400 MH	F1873		F2183	F1849			F2281	F2312		.400 MH
.500 MH	F1874		F2184	F1850		F2205	F2282	F2313		.500 MH
.600 MH			F2185				F2283			.600 MH
.700 MH			F2186				F2284			.700 MH
.750 MH						F2206				.750 MH
.800 MH			F2187							.800 MH
.900 MH			F2188							.900 MH
1 MH	F1875	F1920	F2189	F1851		F2207				1 MH
1.5 MH						F2208				1.5 MH
2 MH	F1876	F1921	F2190	F1852		F2209				2 MH
2.5 MH						F2210				2.5 MH
3 MH	F1877	F1922	F2191	F1853		F2211				3 MH
3.5 MH						F2212				3.5 MH
4 MH	F1878	F1923	F2192	F1854		F2213				4 MH
4.5 MH						F2214				4.5 MH
5 MH	F1879	F1924	F2193	F1855		F2215				5 MH
7.5 MH	F1880	F1925		F1845						7.5 MH
10 MH	F1881	F1926		F1844	F1856					10 MH
15 MH	F1882	F1927			F1857					15 MH
20 MH	F1883	F1928			F1858					20 MH
25 MH	F1884									25 MH
30 MH	F1885	F1929			F1659					30 MH
40 MH	F1886				F1860					40 MH
50 MH	F1887	F1930			F1861					50 MH
75 MH	F1888	F1931			F1862					75 MH
100 MH	F1889	F1932			F1863					100 MH
150 MH		F1933								150 MH
200 MH		F1934								200 MH
250 MH		F1935								250 MH
300 MH		F1936								300 MH

See Freed Price Pages 1453-1455

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FREED TRANSFORMER CO., INC.

MAGNETIC AMPLIFIERS AND SATURABLE TRANSFORMERS

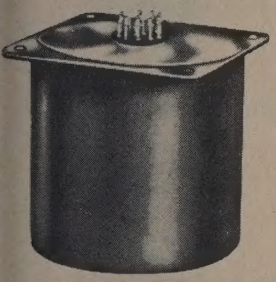
The ever increasing demand for reliability, ruggedness, miniaturization and high performance has made the magnetic amplifier an indispensable component of many military and industrial automatic control and servo systems. Recent advances in materials and techniques permit an even greater utilization of the well-known inherent advantages of magnetic amplifiers such as direct operation from line voltage, no warm-up time, long-life components, ease of signal mixing and hermetic sealing.

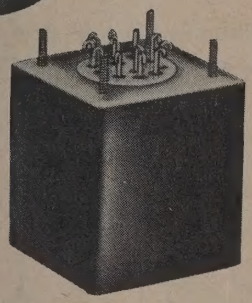
Freed Transformer Co. manufactures an extensive line of magnetic amplifiers ranging from saturable transformers to half-wave type, fast-response servo amplifiers. A line of phase reversible Saturable Transformers DC controlled by vacuum tubes or transistors – Freed MAS type – and designed for 60 Hz or 400 Hz is available upon request. Choice of catalog amplifiers assures standardization, lowest possible cost and rapid delivery.

All standard units are designed for continuous operation and will operate in an ambient temperature range of —55°C to +75°C.

In addition to standard items, Freed Transformer Co. has extensive facilities for the design and production of special amplifiers, saturable reactors and magnetic components.

ALL ITEMS LISTED ARE AVAILABLE FROM STOCK.





FAST RESPONSE MAGNETIC AMPLIFIERS

The MAF type of fast response magnetic amplifier combines high power gain, ruggedness, and reliability with a maximum 2 cycle response. All MAF units are phase-reversible.

Freed No.	MAF-4*	MAF-5*	MAF-6	MAF-7
Power Supply	115V 400 cps	115V 400 cps	115V 400 cps	115V 400 cps
Maximum Output Wattage	10	15	10	15
Output Voltage	57.5V RMS	57.5V RMS	57.5V RMS	57.5V RMS
Typical Load	Kearfott R110-2 Kearfott R111-2	Kearfott R112-2	Kearfott R110-2 Kearfott R111-2	Kearfott R111-2 Kearfott R112-2
Input Signal Required for Full Output	8V AC	8V AC	R110-2 10K 1K 1.2V .4V R111-2 10K 1K 1.6V .6V	R111-2 10K 1K 1.2V .6V R112-2 10K 1K 2.5V 1.0V
Control Winding Resistance	60 Ohms CT 150 Ohms CT	60 Ohms CT 150 Ohms CT	AC or DC 10,000 Ohms Min. 1,000 Ohms Min.	AC or DC 10,000 Ohms Min. 1,000 Ohms Min.
Physical Dimensions	2 3/16" O.D. x 2 3/8" H	2 1/2" O.D. x 2 1/2" H	4 3/8" x 4 1/4" x 2 7/8" H	4 3/4" x 4 1/4" x 2 7/8" H
Weight	13 oz.	18 oz.	4 1/2 lbs.	4 1/2 lbs.

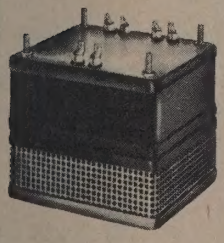
*Designed for use with MAT-1 Transistor Preamplifier.

PUSH-PULL MAGNETIC AMPLIFIERS

A line of 60 Hz single ended Magnetic Amplifiers Freed MAO type – equivalent to Push Pull Magnetic Amplifiers – type MAP – but without the phase reversible feature is available upon request.

Freed No.	MAP-1	MAP-2	MAP-3	MAP-301
Power Supply	115V A.C. 60 Cycles (To MAPT-1)	115V A.C. 60 Cycles (To MAPT-2)	115V A.C. 60 Cycles (To MAPT-3)	115V A.C. 60 Cycles (To MAPT-301)
Maximum Output Wattage	2.8 Watts	15 Watts	50 Watts	50 Watts
Voltage	140V	150V	120V	140V
Typical Load	Kollsman 951-0160	Diehl FPE 25-11	Diehl FPF 49-9	Diehl FPF 49-9
Input Signal Required for Full Output	1.2 ma.	1 ma.	2 ma.	4.5 ma.
Resp. Time	ON OFF 15 cycles 60	ON OFF 5 cycles 38	ON OFF 3 cycles 15	ON OFF 5 cycles 20
Control Winding Resistance	620 ohms each	1230 ohms each	250 ohms each	1700 ohms each
Physical Dimensions	3 3/4"x3 1/4"x5 3/8"H M.A. 2 5/8"x2 1/4"x3"H T.	3 7/8"x4 5/8"x7"H M.A. 2 5/16"x2 3/4"x3 3/4"H T.	5 1/8"x6 7/8"x8"H M.A. 3 5/16"x3 7/8"x4 1/4"H T.	5 1/2"x5"x8"H M.A. 3 5/8"x4 1/4"x3 3/4"H T.
Weight	6 lbs. M.A. 3 lbs. T.	11 lbs. M.A. 3 1/2 lbs. T.	26 1/2 lbs. M.A. 8 lbs. T.	20 lbs. M A. 8 lbs. T.

The map line of push-pull magnetic amplifiers features high gain, polarity-sensitive amplification and a phase-reversible output.



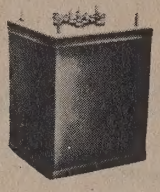
Freed No.	MAP-4	MAP-7	MAP-8	MAP-11
Power Supply	115V A.C. 60 Cycles (To MAPT-4)	115V A.C. 400 Cycles	115V A.C. 400 Cycles (To MAPT-8)	115V A.C. 400 Cycles
Maximum Output Wattage	175 Watts	15 Watts	50 Watts	10 Watts
Voltage	130V	125V	115V	115V
Typical Load	Diehl FPF 85-18-1	Kearfott R112-2A	Bendix CK-3000-1-A	Kearfott R111-2A
Input Signal Required for Full Output	8 ma.	.5 ma.	1.8 ma.	.9 ma.
Resp. Time	ON OFF 17 cycles 66	ON OFF 5 cycles 15	ON OFF 45 cycles 60	ON OFF 4 cycles 75
Control Winding Resistance	3000 ohms each	4,400 ohms each	320 ohms each	3300 ohms each
Physical Dimensions	7 1/4"x5"x7 7/8"H M.A. 4"x4 3/4"x5 3/8"H T.	3 1/4"x3 3/8"x7"H	3 7/8"x3 7/8"x7 7/8"H M.A. 2 5/16"x2 3/4"x3 3/4"H T.	4 1/8"x3 1/2"x5 1/4"H
Weight	35 lbs. M.A. 12 lbs. T.	7 lbs.	7 1/2 lbs. M A. 4 lbs. T.	5 lbs.

FREED TRANSFORMER CO., INC.

TRANSISTORIZED INVERTERS—TDC LINE

For DC/DC inversion from low voltage DC sources to high voltage DC output. Stock units are available in power capabilities to 45 watts, with input voltages of 6, 12, 24, 28, and 48 volts.

All TDC inverters are hermetically sealed and oil filled. Outputs are filtered with ripple less than .1%. Operating temperatures from −55°C to +70°C. They are ruggedly built to withstand shock and vibration.

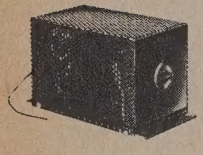


UNITS AVAILABLE AS STOCK ITEMS:

CAT. #	NOM. VDC INPUT	VDC OUT	MAX 1 OUT MA	CASE SIZE
TDC 6-15-05	6	150	50	
TDC 12-30-15	12	300	150	2⅝ x 2½ x 3½
TDC 12-25-12	12	250	120	2⅝ x 2¼ x 3½
TDC 12-30-05	12	300	50	2 x 2¼ x 3½
TDC 12-20-05	12	200	50	2 x 2¼ x 3⅛
TDC 12-12-12	12	120	120	2 x 2¼ x 3
TDC 12-2.4-100	12	24	1000	2¼ x 2⅝ x 3½
TDC 28-30-15	28	300	150	2⅝ x 2¼ x 3½
TDC 28-25-12	28	250	120	2⅝ x 2¼ x 3½
TDC 28-30-05	28	300	50	2 x 2¼ x 3⅛
TDC 28-30-05	28	200	50	2 x 2¼ x 3⅛
TDC 48-20-15	48	200	150	2⅝ x 2¼ x 3½
TDC 48-30-15	48	300	150	2⅝ x 2¼ x 3½

DC TO AC TRANSISTOR CONVERTERS—TAC LINE

For conversion from DC sources to 115 volt outputs at 60 Hz at powers ranging from 50 VA to 350 VA.
Output wave form-square wave; Output frequency – 60 Hz ±1 Hz; Hermetically sealed-oil filled; Maximum operating temperature – 70°C.



OPEN CASE

SEALED CASE

- Output Waveform – Square Wave
- Output Frequency – 60 cps (Adjustment Control)
- Frequency Stability ±3%
- Hermetically Sealed
- Maximum Ambient Temperature 50°C
- Temperature of Base Mounting Plate must not exceed 70°C
- Output Voltage Variation – Varies directly with input voltage

AVAILABLE TYPES:

CAT. #	NOM. VDC IN	OUTPUT VA	SIZE
TAC 6-50	6	50	4⅛ x 3½ x 4½
TAC 12-50	12	50	4⅛ x 3½ x 4½
TAC 12-90	12	90	4⅛ x 3½ x 4⅞
TAC 12-175	12	175	5 x 4⅛ x 6
TAC 28-50	28	50	4⅛ x 3½ x 4½
TAC 28-100	28	100	4⅛ x 3½ x 4⅞
TAC 28-175	28	175	5 x 4⅛ x 6
TAC 28-250	28	250	5½ x 5 x 6¾
TAC 28-350	28	350	5½ x 5 x 6¾
TAC converters are also available with 400 Hz outputs in three models:			
TAC 12-100-4	12	100	4½ x 3½ x 4½
TAC 28-150-4	28	150	4⅛ x 3½ x 4½
TAC 28-250-4	28	250	5 x 4⅛ x 6

DC TO AC TRANSISTOR CONVERTERS—PTC LINE

A new line of DC/AC converters for operation from a 12 volt D.C. source. Output is square wave, 115 volts RMS at 60 Hz. Regulated to ±2 Hz over an input voltage range of 10.5 to 13.5 VDC.

Efficiency on all units is 80% min. at full load. Ambient temperature to 55°C.

Available models listed below:

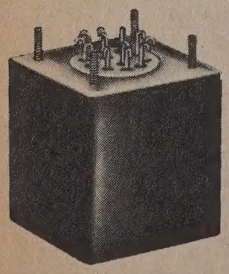
CAT. #	VA OUT	SIZE	MTG.
PTC 12-15	15	3 x 2½ x 4	1 9/16 x 1 13/16
PTC 12-50	50	3½ x 3 x 4 13/16	2 x 2¾
PTC 12-100	100	5⅞ x 4 x 5¼ HI	3¼ x 3⅛
PTC 12-175	175	7⅝ x 4 13/16 x 5¼ HI	6 x 3½

PTC 12-15 and PTC 12-50 are supplied with 4-terminal headers for input and output connections.

PTC 12-100 and PTC 12-175 use barrier strip terminals and in addition have an auxiliary output receptacle.

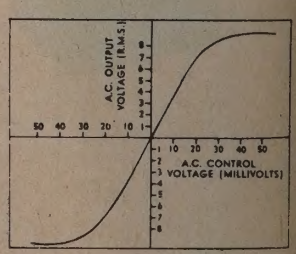
MINIATURIZED SILICON TRANSISTOR PREAMPLIFIER

THE MAT TYPE OF TRANSISTOR PREAMPLIFIER COMBINES LOW POWER CONSUMPTION, HIGH POWER GAIN AND SMALL SIZE AND WEIGHT.



Freed No.	MAT-1-1
Power Supply	115V 400~
Voltage Gain	400
Maximum Output Voltage	10V (RL = 1.5K)
Typical Load	Freed MAF-4 and MAF-5 Magnetic Amplifiers
Input Signal Required for Full Output	50MV
Input Impedance	>10,000 OHMS
Physical Dimensions	1¾" x 1⅛" x 2⅜" H
Weight	10 oz.

TRANSFER CHARACTERISTIC CURVE



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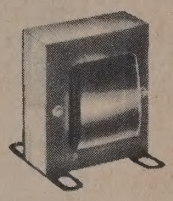
FREED TRANSFORMER CO., INC.

CONSTANT VOLTAGE TRANSFORMERS

The MCV line of constant voltage transformers provides accurate regulation against line and/or load variations, without the use of tubes or moving parts.

- MILITARY SPECIFICATIONS
- NO TUBES
- COMMERCIAL
- NO MOVING PARTS
- ACCURATE REGULATIONS
- FAST RESPONSE
- FULLY AUTOMATIC



COMMERCIAL

MILITARY

Rated output within ±2% of nominal value. Regulation automatically maintained within ±1%. Regulation from 25% to full load ±2%.

Reg. Output in R.M.S. Volts	Input Range in R.M.S. Volts	Output in V.A. P.F-1	CATALOG NUMBERS			
			60 Cycles		400 Cycles	
			Comm.	Military*	Comm.*	Military*
115	95-130	5	MCV65LC	MCV65LM	MCV45LC	MCV45LM
115	95-130	25	MCV625LC	MCV625LM	MCV425LC	MCV425LM
115	95-130	75	MCV675LC	MCV675LM	MCV475LC	MCV475LM
115	95-130	125	MCV6125LC	MCV6125LM	MCV4125LC	MCV4125LM
115	95-130	175	MCV6175LC	MCV6175LM	MCV4175LC	MCV4175LM
115	95-130	250	MCV6250LC	MCV6250LM	MCV4250LC	MCV4250LM
115	95-130	375	MCV6375LC	MCV6375LM	MCV4375LC	MCV4375LM
115	95-130	500	MCV6500LC	MCV6500LM	MCV4500LC	MCV4500LM
115	95-130	750	MCV6750LC	MCV6750LM	MCV4750LC	MCV4750LM
115	95-130	1000	MCV61000LC	MCV61000LM	MCV41000LC	MCV41000LM
26	95-130	5	MCV654FC	MCV654FM	MCV454FC	MCV454FM
26	95-130	25	MCV6254FC	MCV6254FM	MCV4254FC	MCV4254FM
26	95-130	75	MCV6754FC	MCV6754FM	MCV4754FC	MCV4754FM
26	95-130	125	MCV61254FC	MCV61254FM	MCV41254FC	MCV41254FM
6.4	95-130	5	MCV65FC	MCV65FM	MCV45FC	MCV45FM
6.4	95-130	25	MCV625FC	MCV625FM	MCV425FC	MCV425FM
6.4	95-130	75	MCV675FC	MCV675FM	MCV475FC	MCV475FM
6.4	95-130	125	MCV6125FC	MCV6125FM	MCV4125FC	MCV4125FM

*Condensers are not provided with units. Where condensers are provided they are external to units.

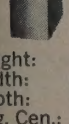
TELEMETERING COMPONENTS

A complete line of Band Pass Filters, Low Pass Filters and Discriminators is available for multi-channel telemetering applications. These components cover the frequency range from 400 cps to 70,000 cps. The filters feature **exceptional phase linearity,** excellent selectivity characteristics and plug-in construction. The Discriminators, either fixed or slug tuned, have exceptional linearity, high amplification, and utmost stability.

TELEMETERING BAND PASS FILTERS

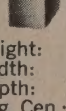
Hermetically sealed to MIL-T-27A and MIL-F-18327

These filters cover the frequencies from 400 c.p.s. to 70KC. Narrow frequency B.P.F. have a band width of 3¼% of center frequency and 45 DB (minimum) points at ±7½% of center frequency of higher or lower adjacent channels. Wide frequency B.P.F. have a band width of 19½% of center frequency and 50 D.B. points at ±15% of center frequencies of higher or lower second adjacent channels.



FA-5 CASE

Height: 4½"
Width: 3½"
Depth: 2⅛"
Mtg. Cen.: 2 1/16"x1 1/16"
Studs: 5 8-32x½"
Octal Header



FA-10 CASE

Height: 4½"
Width: 3½"
Depth: 2⅛"
Mtg. Cen.: 1 1/16"x1 1/16"
Studs: 4 8-32x½"
Knockout: 1½" dia.

FA-15 CASE

Height: 4½"
Width: 2⅞"
Depth: 2⅛"
Mtg. Cen.: 1 1/16"x1 1/16"
Studs: 4 8-32x½"
Knockout: 1½" dia.

CASE SIZES

DF-01
¾ x ¾ x 1⅜
MTN-2.3 Thru MTW-70

DF-02
1 x 1 x 1⅜
MTN-4 Thru MTN 1.7

Characteristic Impedance 500 Ω				Characteristic Impedance 2,500 Ω			
Catalog No.	Center Frequency c.p.s.	3 DB Band Width % of C.F.	Case No.	Catalog No.	Center Frequency c.p.s.	3 DB Band Width % of C.F.	Case No.
FBP-10	400	± 9¾	FA-10	FBP-34	400	± 9¾	FA-5
FBP-11	560	± 9¾	FA-10	FBP-35	560	± 9¾	FA-5
FBP-12	730	± 9¾	FA-10	FBP-36	730	± 9¾	FA-5
FBP-13	960	± 9¾	FA-10	FBP-37	960	± 9¾	FA-5
FBP-14	1,300	± 9¾	FA-10	FBP-38	1,300	± 9¾	FA-5
FBP-15	1,700	± 9¾	FA-10	FBP-39	1,700	± 9¾	FA-5
FBP-16	2,300	± 9¾	FA-10	FBP-40	2,300	± 9¾	FA-5
FBP-17	3,000	± 9¾	FA-15	FBP-41	3,000	± 9¾	FA-5
FBP-18	3,900	± 9¾	FA-15	FBP-42	3,900	± 9¾	FA-5
FBP-19	5,400	± 9¾	FA-15	FBP-43	5,400	± 9¾	FA-5
FBP-20	7,350	± 9¾	FA-15	FBP-44	7,350	± 9¾	FA-5
FBP-21	10,500	± 9¾	FA-15	FBP-45	10,500	± 9¾	FA-5
FBP-22	12,300	± 9¾	FA-15	FBP-46	12,300	± 9¾	FA-5
FBP-23	14,500	± 9¾	FA-15	FBP-47	14,500	± 9¾	FA-5
FBP-24	22,000	± 9¾	FA-15	FBP-48	22,000	± 9¾	FA-5
FBP-25	22,000	±19½	FA-15	FBP-49	22,000	±19½	FA-5
FBP-26	30,000	± 9¾	FA-15	FBP-50	30,000	± 9¾	FA-5
FBP-27	30,000	±19½	FA-15	FBP-51	30,000	±19½	FA-5
FBP-28	40,000	± 9¾	FA-15	FBP-52	40,000	± 9¾	FA-5
FBP-29	40,000	±19½	FA-15	FBP-53	40,000	±19½	FA-5
FBP-30	52,500	± 9¾	FA-15	FBP-54	52,500	± 9¾	FA-5
FBP-31	52,500	±19½	FA-15	FBP-55	52,500	±19½	FA-5
FBP-32	70,000	± 9¾	FA-15	FBP-56	70,000	± 9¾	FA-5
FBP-33	70,000	±19½	FA-15	FBP-57	70,000	±19½	FA-5

SUBMINIATURE TELEMETERING BAND PASS FILTERS

Manufactured to Specification MIL-F-18327A—Type FR-4RX22YY
RBD Standard Frequency Channels

Input and Output Impedance 10K ohms							
Type No.	Center Frequency Fo - in KC	Band Width <3DB	Stop Band Attenuation	Type No.	Center Frequency Fo - in KC	Band Width <3DB	Stop Band Attenuation
MTN-.4	.4	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTN-14.5	14.5	±7½%	≧ 38 DB @ 1.75 & .58 Fo
MTN-.56	.56	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTN-22	22	±7½%	≧ 38 DB @ 1.75 & .58 Fo
MTN-.73	.73	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTN-30	30	±7½%	≧ 38 DB @ 1.75 & .58 Fo
MTN-.96	.96	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTN-40	40	±7½%	≧ 38 DB @ 1.75 & .58 Fo
MTN-1.3	1.3	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTN-52.5	52.5	±7½%	≧ 38 DB @ 1.75 & .58 Fo
MTN-1.7	1.7	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTN-70	70	±7½%	≧ 38 DB @ 1.75 & .58 Fo
MTN-2.3	2.3	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTN-22	22	±15%	≧ 40 DB @ 2.5 & .4 Fo
MTN-3.0	3.0	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTW-30	30	±15%	≧ 40 DB @ 2.5 & .4 Fo
MTN-3.9	3.9	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTW-40	40	±15%	≧ 40 DB @ 2.5 & .4 Fo
MTN-5.4	5.4	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTW-52.5	52.5	±15%	≧ 40 DB @ 2.5 & .4 Fo
MTN-7.35	7.35	±7½%	≧ 38 DB @ 1.75 & .58 Fo	MTW-70	70	±15%	≧ 40 DB @ 2.5 & .4 Fo
MTH-10.5	10.5	±7½%	≧ 38 DB @ 1.75 & .58 Fo				

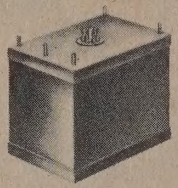
FREED TRANSFORMER CO., INC.

CASE DIMENSIONS

FA-1 CASE
Height: 4½"
Width: 1½"
Depth: 1½"
Mtg. Cen.: 31/32" sq.
4 Inserts: 6-32
Knockout: 1"

FA-185 CASE
Height: 4½"
Width: 1⅞"
Depth: 1⅝"
Mtg. Cen.: 1 15/64" x 1 1/16"
4 Inserts: 6-32
Knockout: 1½"

FA-190 CASE
Height: 4½"
Width: 2¼"
Depth: 1⅝"
Mtg. Cen.: 1 7/32" x 1 1/16"
4 Inserts: 6-32
Knockout: 1½"



FA-410 CASE
Height: 4½"
Width: 6"
Depth: 4"
Mtg. Cen.: 5¼" x 3¼"
5 Studs: 10-32
Octal Header

DISCRIMINATOR INPUT LOW PASS FILTER

HERMETICALLY SEALED TO MIL-T-27A AND MIL-F-18327 SPECIFICATIONS

Catalog No.	Fo Center Freq. in c.p.s.	Characteristic Impedance Ohms	Case No.
LPI-10	400	30,000	FA-1
LPI-11	560	30,000	FA-1
LPI-12	730	30,000	FA-1
LPI-13	960	30,000	FA-1
LPI-14	1,300	30,000	FA-1
LPI-15	1,700	30,000	FA-1
LPI-16	2,300	30,000	FA-1
LPI-17	3,000	30,000	FA-1
LPI-18	3,900	30,000	FA-1

Band Pass Attenuation: 0.05 DB ±9¾% of Center Frequency
30 DB at second harmonic of Pass Band Frequencies
50 DB at third harmonic of Pass Band Frequencies
40 DB above third harmonic of Pass Band Frequencies

Catalog No.	Fo Center Freq. in c.p.s.	Characteristic Impedance Ohms	Case No.
LPI-19	5,400	30,000	FA-1
LPI-20	7,350	30,000	FA-1
LPI-21	10,500	30,000	FA-1
LPI-22	12,300	30,000	FA-1
LPI-23	14,500	30,000	FA-1
LPI-24	22,000	5,100	FA-1
LPI-25	30,000	5,100	FA-1
LPI-26	40,000	5,100	FA-1
LPI-27	52,500	5,100	FA-1
LPI-28	70,000	5,100	FA-1

Band Pass Attenuation: 0.05 DB ±15% of Center Frequen
30 DB at second harmonic of Pass Band Frequencies
50 DB at third harmonic of Pass Band Frequencies
40 DB above third harmonic of Pass Band Frequencies

DISCRIMINATOR OUTPUT LOW PASS FILTER

HERMETICALLY SEALED TO MIL-T-27A AND MIL-F-18327 SPECIFICATIONS

Catalog No.	Fo c.p.s.	Characteristic Impedance Ohms	Case No.
LPO-10	6	330	FA-410
LPO-11	8	330	FA-410
LPO-12	11	330	FA-410
LPO-13	14	330	FA-410
LPO-14	20	330	FA-410
LPO-15	25	330	FA-410
LPO-16	35	330	FA-410
LPO-17	45	330	FA-410
LPO-18	60	330	FA-410
LPO-19	81	330	FA-410
LPO-20	110	330	FA-410
LPO-21	160	330	FA-410
LPO-22	185	330	FA-410

Catalog No.	Fo c.p.s.	Characteristic Impedance Ohms	Case No.
LPO-23	220	330	FA-410
LPO-24	330	330	FA-410
LPO-25	450	330	FA-410
LPO-26	600	330	FA-410
LPO-27	660	330	FA-410
LPO-28	790	330	FA-410
LPO-29	900	330	FA-410
LPO-30	1,050	330	FA-410
LPO-31	1,200	330	FA-410
LPO-32	1,600	330	FA-410
LPO-33	2,100	330	FA-410
LPO-34	7,200	330	FA-410
LPO-35	10,000	330	FA-410

Attenuation: <0.2 DB up to 0.5 times Fo
<0.7 DB from 0.5 to 1. times Fo
>20 DB at 2 Fo to 2.5 Fo
>30 DB from 2.5 times Fo to 100 Kc

FIXED DISCRIMINATORS

HERMETICALLY SEALED TO MIL-T-27A AND MIL-F-18327 SPECIFICATIONS

Catalog No.	Center Frequency (cps)	% Deviation of Fo	Linearity	D.C. Output Volts	Case No.
DST-10	400	±8½	±0.5%	32.5	FA-185
DST-11	560	±8½	±0.5%	32.5	FA-185
DST-12	730	±8½	±0.5%	32.5	FA-185
DST-13	960	±8½	±0.5%	32.5	FA-185
DST-14	1,300	±8½	±0.5%	32.5	FA-185
DST-15	1,700	±8½	±0.5%	32.5	FA-185
DST-16	2,300	±8½	±0.5%	32.5	FA-185

SLUG TUNED DISCRIMINATORS

Catalog No.	Center Frequency (Kc.)	% Deviation of Fo	Linearity	D.C. Output Volts	Case No.
DST-17	3.0	±8½	±0.5%	32.5	FA-190
DST-18	3.9	±8½	±0.5%	32.5	FA-190
DST-19	5.4	±8½	±0.5%	32.5	FA-190
DST-20	7.35	±8½	±0.5%	32.5	FA-190
DST-21	10.5	±8½	±0.5%	32.5	FA-190
DST-22	12.3	±8½	±0.5%	32.5	FA-190
DST-23	14.5	±8½	±0.5%	32.5	FA-190
DST-24	22.0	±8½	±0.5%	32.5	FA-190
DST-25	30.0	±8½	±0.5%	32.5	FA-190

Catalog No.	Center Frequency (Kc)	% Deviation of Fo	Linearity	D.C. Output Volts	Case No.
DST-26	40.0	±8½	±0.5%	32.5	FA-19
DST-27	52.5	±8½	±0.5%	32.5	FA-19
DST-28	70.0	±8½	±0.5%	32.5	FA-19
DST-29	22.0	±15	±1.0%	26.0	FA-19
DST-30	30.0	±15	±1.0%	26.0	FA-19
DST-31	40.0	±15	±1.0%	26.0	FA-19
DST-32	52.5	±15	±1.0%	26.0	FA-19
DST-33	70.0	±15	±1.0%	26.0	FA-19

FREED FILTERS

To MIL-T-27A and MIL-F-18327

Freed Standard Filters are **Hermetically Sealed Miniature and Sub-Miniature** high performance components designed for both production and laboratory appli cations in the Communications and Electronic industry. In order to achieve attenuation requirements not obtainable with one single filter, one can combine severa standard filters of different transmission characteristics. Wide Band Pass characteristics are obtainable by combining low and high Pass Units. The astatic construction of inductive components together with special shielding reduces the hum pick-up of the standard filters.

The standard filters are available in Low Pass, High Pass and Band Pass Filters.

Low Pass Filters: The attenuation characteristics of Low Pass Filters are 6db or less at cut-off frequency, 35db or more at 1.5 cut-off frequency and 40db or more at 2 cut-off frequency.

ILP Interstage Low Pass Filter. Characteristic Impedance 10,000 ohms, in and out.

LLP Line Low Pass Filter. Characteristic Impedance 500 to 600 Ω, in and out.

High Pass Filters: The attenuation characteristics of High Pass Filters are 6db or less at cut-off frequency, 35db and 40db or more at 0.67 and 0.5 cut-off frequency.

IHP Interstage High Pass Filter. Characteristic Impedance 10,000 ohms, in and out.

LHP Line High Pass Filter. Characteristic Impedance 500 to 600 Ω, in and out.

Band Pass Filters: The attenuation characteristics of Band Pass Filters are 2db or less at plus or minus 3% of center frequency 40db or more at 0.5 and 2 center frequency.

IBP Interstage Band Pass Filter. Nominal input impedance—10,000 ohms. Nominal output impedance 5 megohms or grid of vacuum tube. Effective voltage step-up 2:1. (Output voltage to source voltage.)

LBP Line Band Pass Filter. Nominal input impedance 500 to 600 ohms. Nominal output impedance 5 megohms or grid of vacuum tube. Effective voltage step-up 9:1. (Output voltage to source voltage.)

FREED TRANSFORMER COMPANY, INC.

See Freed Price Pages 1453-1455

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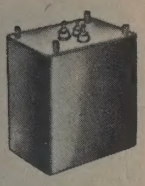
FREED TRANSFORMER CO., INC.

FREED FILTERS
TO MIL-T-27A AND MIL-F-18327



DF-1 CASE
Height: 2½"
Width: 1 1/16"
Depth: 1 3/16"
Mtg. Cen.: 1¼"x¾"
Studs: 4 6-32x3/8"
Knockout: ⅞" dia.

Catalog No.	Cut-off Frequency c.p.s.
ILP- 100	100
ILP- 200	200
ILP- 300	300
ILP- 500	500
ILP- 750	750
ILP- 1,000	1,000
ILP- 1,500	1,500
ILP- 2,000	2,000
ILP- 2,500	2,500
ILP- 3,000	3,000
ILP- 5,000	5,000
ILP- 7,000	7,000
ILP- 10,000	10,000
ILP- 15,000	15,000
ILP- 20,000	20,000
ILP- 23,000	23,000
ILP- 25,000	25,000
ILP- 32,000	32,000
ILP-130,000	130,000
ILP-150,000	150,000

Special filters in all six types are available for any frequency from 100 to 20,000 cycles

Catalog No.	Cut-off Frequency c.p.s.
LLP- 500	500
LLP- 1,000	1,000
LLP- 1,500	1,500
LLP- 1,600	1,600
LLP- 2,000	2,000
LLP- 2,500	2,500
LLP- 3,000	3,000
LLP-16,000	16,000
LLP-20,000	20,000
LLP-70,000	70,000
LLP-80,000	80,000
IHP- 200	200
IHP- 250	250
IHP- 300	300
IHP- 400	400
IHP- 500	500
IHP- 1,000	1,000
IHP- 2,000	2,000
IHP- 3,000	3,000
IHP-10,000	10,000
IHP-15,000	15,000
LHP- 200	200
LHP- 300	300
LHP- 400	400
LHP- 500	500
LHP- 800	800
LHP- 1,000	1,000
LHP- 2,000	2,000
LHP- 6,000	6,000
LHP-10,000	10,000

Catalog No.	Cut-off Frequency c.p.s.
IBP- 100	100
IBP- 200	200
IBP- 250	250
IBP- 400	400
IBP- 500	500
IBP- 700	700
IBP- 800	800
IBP- 900	900
IBP- 1,000	1,000
IBP- 1,500	1,500
IBP- 2,000	2,000
IBP- 3,000	3,000
IBP- 5,000	5,000
IBP- 7,200	7,200
IBP-10,000	10,000
IBP-12,000	12,000
IBP-15,000	15,000
IBP-30,000	30,000
IBP-57,600	57,600
LBP- 100	100
LBP- 300	300
LBP- 400	400
LBP- 600	600
LBP- 800	800
LBP- 1,000	1,000
LBP- 1,500	1,500
LBP- 2,000	2,000
LBP- 3,000	3,000
LBP- 7,200	7,200
LBP-10,000	10,000
LBP-14,400	14,400
LBP-20,000	20,000
LBP-28,800	28,800

HERMETICALLY SEALED SUB-MINIATURE FILTERS

Low Pass Filters: The attenuation characteristics of Low Pass Filters are 6db or less at cut-off frequency, 30db or more at 1.5 cut-off frequency and 40db or more at 2 cut-off frequency.

ILM Interstage Low Pass Filter. Characteristic impedance 10,000 ohms, in and out.

LLM Line Low Pass Filter. Characteristic Impedance 500 to 600 ohms, in and out.

High Pass Filters: The attenuation characteristics of High Pass Filters are 6db or less at cut-off frequency, 30db and 40db or more at 0.67 and 0.5 cut-off frequency.

IHM Interstage High Pass Filter. Characteristic Impedance 10,000 ohms, in and out.

LHM Line High Pass Filter. Characteristic Impedance 500 to 600 ohms, in and out.

Band Pass Filters: The attenuation characteristics of Band Pass Filters are 2db or less at plus or minus 3% of center frequency 35db or more at 0.5 and 2 center frequency.

IBM Interstage Band Pass Filter. Nominal input impedance—10,000 ohms. Nominal output impedance 5 megohms or grid of vacuum tube. Effective voltage step-up 2:1. (Output voltage to source voltage.)

LBM Line Band Pass Filter. Nominal input impedance 500 to 600 ohms. Nominal output impedance 5 megohms or grid of vacuum tube. Effective voltage step-up 5:1. (Output voltage to source voltage.)

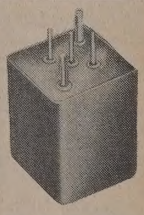
Special filters in all six types are available for any frequency from 200 to 20,000 cycles.

Catalog No.	Cut-off Freq. c.p.s.	Case No.
IBM- 400	400	DF-02
IBM- 500	500	DF-02
IBM- 700	700	DF-02
IBM- 800	800	DF-02
IBM- 900	900	DF-02
IBM- 1,000	1,000	DF-02
IBM- 1,500	1,500	DF-02
IBM- 2,000	2,000	DF-01
IBM- 3,000	3,000	DF-01
IBM- 5,000	5,000	DF-01
IBM- 7,200	7,200	DF-01
IBM-10,000	10,000	DF-01
IBM-12,000	12,000	DF-01
IBM-15,000	15,000	DF-01
IBM-30,000	30,000	DF-01
IBM-57,600	57,600	DF-01
IHM- 300	300	DF-01
IHM- 400	400	DF-01
IHM- 500	500	DF-01
IHM- 1,000	1,000	DF-01
IHM- 2,000	2,000	DF-01
IHM- 3,000	3,000	DF-01
IHM-10,000	10,000	DF-01
IHM-15,000	15,000	DF-01

Catalog No.	Cut-off Freq. c.p.s.	Case No.
ILM- 300	300	DF-01
ILM- 500	500	DF-01
ILM- 750	750	DF-01
ILM- 1,000	1,000	DF-01
ILM- 1,500	1,500	DF-01
ILM- 2,000	2,000	DF-01
ILM- 2,500	2,500	DF-01
ILM- 3,000	3,000	DF-01
ILM- 5,000	5,000	DF-01
ILM- 7,000	7,000	DF-01
ILM- 10,000	10,000	DF-01
ILM- 15,000	15,000	DF-01
ILM- 20,000	20,000	DF-01
ILM- 23,000	23,000	DF-01
ILM- 25,000	25,000	DF-01
ILM- 32,000	32,000	DF-01
ILM-130,000	130,000	DF-01
ILM-150,000	150,000	DF-01
LHM- 300	300	DF-03
LHM- 400	400	DF-03
LHM- 500	500	DF-03
LHM- 800	800	DF-03
LHM- 1,000	1,000	DF-02
LHM- 2,000	2,000	DF-02
LHM- 6,000	6,000	DF-02
LHM-10,000	10,000	DF-02

Catalog No.	Cut-off Freq. c.p.s.	Case No.
LBM- 300	300	DF-02
LBM- 400	400	DF-02
LBM- 600	600	DF-02
LBM- 800	800	DF-02
LBM- 1,000	1,000	DF-01
LBM- 1,500	1,500	DF-01
LBM- 2,000	2,000	DF-01
LBM- 3,000	3,000	DF-01
LBM- 7,200	7,200	DF-01
LBM-10,000	10,000	DF-01
LBM-14,400	14,400	DF-01
LBM-20,000	20,000	DF-01
LBM-28,800	28,800	DF-01
LLM- 500	500	DF-03
LLM- 1,000	1,000	DF-03
LLM- 1,500	1,500	DF-02
LLM- 1,600	1,600	DF-02
LLM- 2,000	2,000	DF-02
LLM- 2,500	2,500	DF-02
LLM- 3,000	3,000	DF-02
LLM-16,000	16,000	DF-02
LLM-20,000	20,000	DF-02
LLM-70,000	70,000	DF-02
LLM-80,000	80,000	DF-02

CASE DIMENSIONS



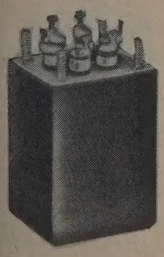
DF CASE STYLE

DF-01
Height: 1⅜"
Width: ¾"
Depth.: ¾"
Mtg. Cen.: 9/16" Diag.
Studs: 2 ÷ 4-40

DF-02
Height: 1⅜"
Width: 1"
Depth.: 1"
Mtg. Cen.: ¾" Diag.
Studs: 2 ÷ 4-40

DF-03
Height: 1⅜"
Width: 1"
Depth.: 1"
Mtg. Cen.: ¾"
Studs: 2 ÷ 4-40

SERIES 1950 NULL "T" FILTERS



The Freed Series 1950 Null T networks consist of two resistance capacitance networks, whose outputs completely cancel each other at the balance frequency. They may be used as rejection networks particularly at low frequencies where LC filters become excessively large and unstable.

Standard models are available for 30, 60 and 120 cycles in a wide range of impedances. Each network will give a minimum of 50 db attenuation at the null frequency.

The null frequency is adjusted to a tolerance of ±2%.

All Null T Filters are hermetically sealed.

Prices on request.

Catalog No.	Frequency
NTF- 30	30 cps
NTF- 60	60 cps
NTF-120	120 cps

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TELEGRAPH TONE CHANNEL FILTERS To MIL-F-18327

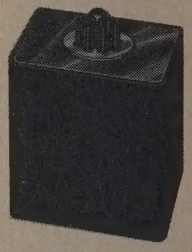
Freed Band Pass Filters are used extensively in multiplex frequency shift transmitting and receiving. All units are built with a standard octal socket.

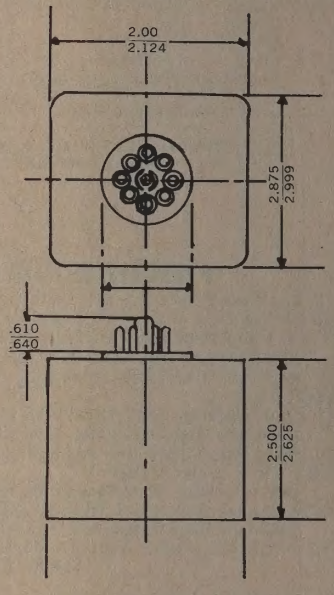
TRANSMITTING FILTERS Type FR 6RX 22 PBI

FBM Transmitting Filters are built for a 600 ohm in and out characteristic impedance. Filter configuration allows paralleling of channel outputs.

MIL. #	CATALOG #	Center Frequency Insertion Loss 5db	Pass Band Attenuation 3db	Stop Band Attenuation 15db
007-001	• FBM-701	425	85	255
-002	-702	595	85	255
-003	-703	765	85	255
-004	-704	935	85	255
007-005	FBM-705	1105	85	255
-006	-706	1275	85	255
-007	-707	1445	85	255
-008	-708	1615	85	255
-009	-709	1785	85	255
007-010	FBM-710	1955	85	255
-011	-711	2125	85	255
-012	-712	2295	85	255
-013	-713	2380	85	255
-014	-714	2465	85	255
007-015	FBM-715	2635	85	255
-016	-716	2805	85	255
-017	-717	2975	85	255
-018	-718	3145	85	255
-019	-719	3230	85	255
007-020	FBM-720	3315	85	255
-021	-721	3485	85	255
-022	-722	3655	85	255
007-023	FBM-723	3825	85	255

1 – Ground
2 – Input
7 – Output
3 & 8 – Common



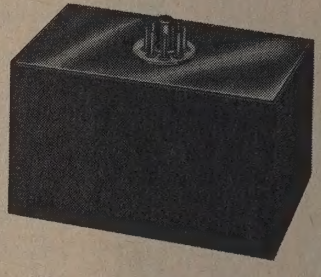


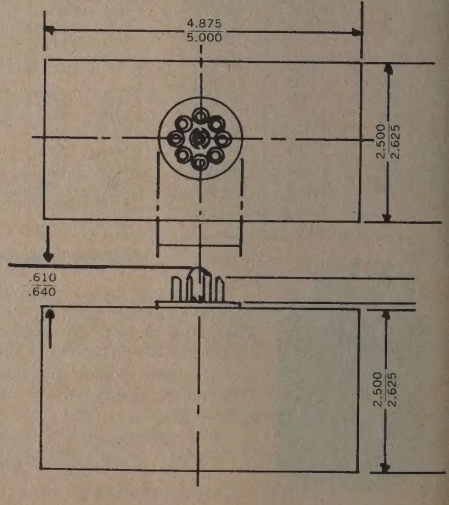
RECEIVING FILTERS Type FR 6PX 22 PCI

FBM Receiving Filters are designed for a characteristic impedance of 600 ohms in and out. Filter configuration permits paralleling of channel inputs.

MIL. #	CATALOG #	Center Frequency Insertion Loss 8db	Pass Band Attenuation 3db	Stop Band Attenuation 35db
007-024	FBM-724	425	85	255
-025	-725	595	85	255
-026	-726	765	85	255
-027	-727	935	85	255
007-028	FBM-728	1105	85	255
-029	-729	1275	85	255
-030	-730	1445	85	255
-031	-731	1615	85	255
-032	-732	1785	85	255
007-033	FBM-733	1955	85	255
-034	-734	2125	85	255
-035	-735	2295	85	255
-036	-736	2380	85	255
-037	-737	2465	85	255
007-038	FBM-738	2635	85	255
-039	-739	2805	85	255
-040	-740	2975	85	255
-041	-741	3145	85	255
-042	-742	3230	85	255
007-043	FBM-743	3315	85	255
-044	-744	3485	85	255
-045	-745	3655	85	255
007-046	• FBM-746	3825	85	255

1 – Ground
2 – Input
7 – Output
3 & 8 – Common





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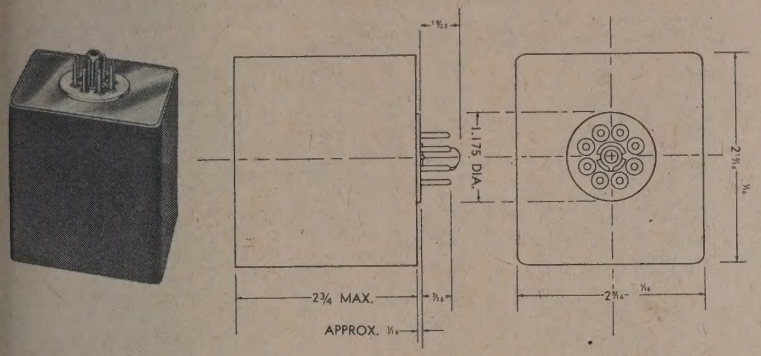
TELEGRAPH TONE CHANNEL FILTERS

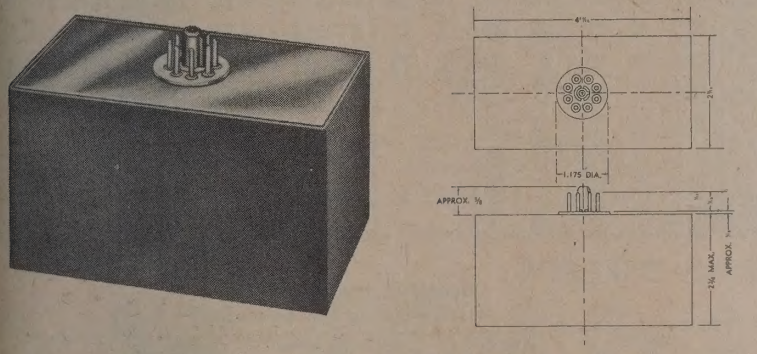
HERMETICALLY SEALED TO MIL-T-27A AND MIL-F-18327 SPECIFICATIONS

Freed Band Pass Filters are extensively used in multiplex frequency shift transmitting and receiving. Stock filters cover all narrow and wide band channels. All units are built with a standard octal socket.

FBT Transmitting Filters are built for a 600 ohm in and out characteristic impedance. Filter configuration allows paralleling of channel outputs. 10db adjacent channel crossover attenuation.



FBR Receiving Filters are designed for a characteristic impedance of 600 ohms in and out. Filter configuration permits paralleling of channel inputs. 20db adjacent channel crossover attenuation.



RECEIVING FILTERS

Catalog No. Case FA-950	Center Frequency (c.p.s.) Insertion Loss 6db	Pass Band (c.p.s.) Attenuation 2db	Stop Band (c.p.s.) Attenuation 33db
FBR-10	425	±42.5	±130
FBR-11	595	±42.5	±130
FBR-12	765	±42.5	±130
FBR-13	935	±42.5	±130
FBR-14	1,105	±42.5	±130
FBR-15	1,275	±42.5	±130
FBR-16	1,445	±42.5	±130
FBR-17	1,615	±42.5	±130
FBR-18	1,785	±42.5	±130
FBR-19	1,955	±42.5	±130
FBR-20	2,125	±42.5	±130
FBR-21	2,295	±42.5	±130
FBR-22	2,465	±42.5	±130
FBR-23	2,635	±42.5	±130
FBR-24	2,805	±42.5	±130
FBR-25	2,975	±42.5	±130
FBR-26	1,955	±85	±260
FBR-27	2,380	±85	±260
FBR-28	2,805	±85	±260
FBR-29	3,230	±85	±260

TRANSMITTING FILTERS

Catalog No. Case FA-955	Center Frequency (c.p.s.) Insertion Loss 5db	Pass Band (c.p.s.) Attenuation 2db	Stop Band (c.p.s.) Attenuation 20db
FBT-10	425	±42.5	±130
FBT-11	595	±42.5	±130
FBT-12	765	±42.5	±130
FBT-13	935	±42.5	±130
FBT-14	1,105	±42.5	±130
FBT-15	1,275	±42.5	±130
FBT-16	1,445	±42.5	±130
FBT-17	1,615	±42.5	±130
FBT-18	1,785	±42.5	±130
FBT-19	1,955	±42.5	±130
FBT-20	2,125	±42.5	±130
FBT-21	2,295	±42.5	±130
FBT-22	2,465	±42.5	±130
FBT-23	2,635	±42.5	±130
FBT-24	2,805	±42.5	±130
FBT-25	2,975	±42.5	±130
FBT-26	1,955	±85	±260
FBT-27	2,380	±85	±260
FBT-28	2,805	±85	±260
FBT-29	3,230	±85	±260

ULTRASONICS

CASE DIMENSIONS

DC-4B CASE
Height: 4¾"
Width: 3⅛"
Length: 3"
Mounting: 4 8-32 Studs
Mtg. Cen.: 2½"x2½"
Cutout: (2) 1⅜"x⅝"

DC-6B CASE
Height: 6"
Width: 5"
Length: 4⅛"
Mounting: 4 10-32 Studs
Mtg. Cen.: 3¾"x3"
Cutout: 3" Dia.

MA-2 CASE
Height: 4"
Width: 4⅝"
Length: 3⅛"
Mounting: 4 10-32 Studs
Mtg. Cen.: 2½"x3¾"
Cutout: (2) 2¾"x¾"

OL-112-1 CASE
Height: 6"
Width: 5⅞"
Length: 4¾"
Mounting: 4 ¼-20 Studs
Mtg. Cen.: 4¾"x3⅝"
Cutout: 3" dia.

EA CASE
Height: 2¹¹⁄₁₆
Width: 1⅞"
Length: 1¾"
Mounting: 4 6-32 Studs
Mtg. Cen.: 1⅜"x1¼"
Cutout: 1⅜"

DM-03 CASE
Height: 2⅛"
Width: 1⅛"
Length: 1⅛"
Mounting: 4 6-32 Studs
Mtg. Cen.: 1⅛"x1⅛"
Cutout: 1¼" Dia.

New developments and applications of ultrasonics for industrial cleaning, soldering, welding, and mixing have created a demand for generators and components specifically designed for ultrasonic applications.

Using the latest developments in the field of special magnetic materials the FREED ultrasonic transformers are designed for greatest efficiency and maximum reliability. They feature small size excellent performance and long life under continuous duty operation.

Transformers with an extended frequency range (frequencies up to 2 MC) can be supplied upon request.

ULTRASONIC DRIVER AND INPUT TRANSFORMERS
Frequency Response: ±1 DB 10 KC to 60 KC.

Catalog No.	Application	Primary Impedance Ohms	Ratio	Maximum Power Watts	Maximum Primary D.C. per Side Ma.	Case Size
ULI-20	Transducer to PP 811A	1, 2, 4	1:17.3	5		DM-03
ULD-20	PP 6CM6 to PP 811A	10,000	4.4:1	5	50	DM-03
ULD-50	PP 5881 to PP 8000	7,200	1.7:1	25	90	EA

ULTRASONIC OUTPUT TRANSFORMERS
Frequency response: ±1 DB 20 KC to 60 KC.

Catalog No.	Application	Impedance in Ohms Primary	Secondary	Maximum Power Watts	Maximum Primary D.C. per Side Ma.	Case Size
ULO-10	PP 6083 to transducer	7,600	1/4	100	120	DC-4B
ULO-11	Same	7,600	2/8	100	120	DC-4B
ULO-12	Same	7,600	4/16	100	120	DC-4B
ULO-13	Same	7,600	7.5/30	100	120	DC-4B
ULO-30	PP 811A to transducer	12,400	1/4	300	170	DC-4B
ULO-31	Same	12,400	2/8	300	170	DC-4B
ULO-32	Same	12,400	4/16	300	170	DC-4B
ULO-33	Same	12,400	7.5/30	300	170	DC-4B
ULO-34	Same	12,400	25	300	170	DC-4B
ULO-35	Same	12,400	125/500	300	170	DC-4B
ULO-36	Same	12,400	250/1000	300	170	DC-4B
ULO-37	Same	12,400	75/300	300	170	DC-4B
ULO-52	PP 8000 to transducer	10,800	4/16	500	230	MA-2
ULO-53	Same	10,800	7.5/30	500	230	MA-2
ULO-54	Same	10,800	25/100	500	230	MA-2
ULO-55	Same	10,800	125/500	500	320	MA-2
ULO-56	Same	10,800	250/1000	500	230	MA-2
ULO-101	PP. Par. 8000 to transducer	5,400	25/100	1000	430	DC-6B
ULO-104	Same	5,400	75/300	1000	430	DC-6B
ULO-110	PP 4-250A to transducer	10,900	18.8/75/300	800	250	OL-112-1

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FREED TRANSFORMER CO., INC.

COMMERCIAL GRADE COMPONENTS

These components are designed to meet the demand for low-cost replacement parts for commercial electronic equipment.

The best commercially available materials have been utilized in the design of these units, to insure reliability and excellent performance characteristics. Vacuum impregnation with a non-hygroscopic varnish to prevent penetration of humidity are employed to give these units long life and trouble-free performance.

230-115 V, 50-60 C.P.S. Stepdown Transformers rated from 25 V A up to 5,000 V A Rating and line booster transformers are included in this series.

All units, with only a few exceptions, are uncased or of shell-type construction.

Isolation transformers and Stepdown transformers are equipped with line cord and receptacle.

CASE DIMENSIONS

Case No.	Height	Width	Depth	Mtg. Centers	Mtg. Studs
HS300	2⅝	3	2½	2½x2	(4) 3/16x3/8
HS303	2⅞	3	2½	2½x2	(4) 3/16x3/8
HS306	3¼	3	2½	2½x2	(4) 3/16x3/8
HS307	3⅜	3	2½	2½x2	(4) 3/16x3/8
HS503	3½	3¾	3⅛	3⅛x2½	(4) 3/16x3/8
HS505	3¾	3¾	3⅛	3⅛x2½	(4) 3/16x3/8
HS603	3¾	4½	3¾	3¾x3	(4) 3/16x3/8
HS605	4	4½	3¾	3¾x3	(4) 3/16x3/8
HS606	4 3/16	4½	3¾	3¾x3	(4) 3/16x3/8
HS610	4⅝	4½	3¾	3¾x3	(4) 3/16x3/8
HS612	4⅞	4½	3¾	3¾x3	(4) 3/16x3/8
HS708	5⅞	5¼	4⅜	4⅜x3½	(4) 9/32x21/32
HS709	6	5¼	4⅜	4⅜x3½	(4) 9/32x21/32

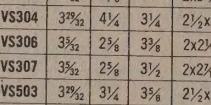
Case No.	Height	Width	Depth	Mtg. Centers	Mtg. Holes
VS300	3 5/32	2⅝	2¾	2x1 11/16	(4) 3/16x3/8
VS303	3 5/32	2⅝	3	2x1 15/16	(4) 3/16x3/8
VS304	3 9/32	4¼	3¼	2½x3	(4) 3/16x3/8
VS306	3 5/32	2⅝	3⅜	2x2 1/16	(4) 3/16x3/8
VS307	3 5/32	2⅝	3½	2x2 1/16	(4) 3/16x3/8
VS503	3 9/32	3¼	3⅝	2½x2 5/16	(4) 3/16x3/8
VS505	3 9/32	3¼	3⅞	2½x2 5/8	(4) 3/16x3/8
VS506	3 9/32	3¼	4¼	2¼x3	3/16x3/8
VS508	3⅝	2⅝	3⅛	2x2 1/16	(4) 3/16x3/8
VS603	4 21/32	3⅞	3⅞	3x2 11/16	(4) 3/16x3/8
VS605	4 21/32	3⅞	4⅛	3x2 15/16	(4) 3/16x3/8
VS606	4 21/32	3⅞	4¼	3x3 1/8	(4) 3/16x3/8
VS610	4 21/32	3⅞	4¾	3x3 5/16	(4) 3/16x3/8
VS612	4 21/32	3⅞	5	3x3 15/16	(4) 3/16x3/8
VS708	5 1/16	4⅜	5¼	3½x4	(4) 9/32x21/32
VS709	5 1/16	4⅜	5⅞	3½x4 1/8	(4) 9/32x21/32

POWER TRANSFORMERS

All primaries designed for 115-volt, 50-60 cycle operation.

Catalog No.	Py Va	Hi Volt	Choke Input D.C.V.	Choke Input D.C.Ma.	Cond. Input D.C.V.	Cond. Input D.C.Ma.	Bias Tap	Rectifier	Fil. No.1	Fil. No. 2	Fil. No. 3	Case No.
RGP 1	45	500V CT			270	40		6X4,5Y3	5/6.3V @ 2A	6.3V @ 2A		VS300
RGP 2	45	500V CT			270	40		6X4,5Y3	5/6.3V @ 2A	6.3V @ 2A		HS300
RGP 3	57	600V CT			330	50		6X4,5Y3	5/6.3V @ 2A	6.3V @ 2.5A		VS303
RGP 4	57	600V CT			330	50		6X4,5Y3	5/6.3V @ 2A	6.3V @ 2.5A		HS303
RGP 5	64	650V CT			370	50		6X4,5Y3	5/6.3V @ 2A	6.3V @ 3A		VS306
RGP 6	64	650V CT			370	50		6X4,5Y3	5/6.3V @ 2A	6.3V @ 3A		HS306
RGP 7	73	600V CT			320	70		6X4,5Y3	5/6.3V @ 2A	6.3V @ 3A		VS307
RGP 8	73	600V CT			320	70		6X4,5Y3	5/6.3V @ 2A	6.3V @ 3A		HS307
RGP 9	110	650V CT	225	140	330	100		5Y3,5U4	5V @ 3A	6.3V @ 5A		VS503
RGP 10	110	650V CT	225	140	330	100		5Y3,5U4	5V @ 3A	6.3V @ 5A		HS503
RGP 11	76	700V CT	260	100	385	70		5Y3	5V @ 2A	6.3V @ 2.5A		VS307
RGP 12	76	700V CT	260	100	385	70		5Y3	5V @ 2A	6.3V @ 2.5A		HS307
RGP 13	108	700V CT	250	125	370	90		5Y3,5U4	5V @ 3A	6.3V @ 5A		VS505
RGP 14	108	700V CT	250	125	370	90		5Y3,5U4	5V @ 3A	6.3V @ 5A		HS505
RGP 15	127	700V CT	260	170	350	120		5U4	5V @ 3A	6.3V @ 5A		VS508
RGP 16	127	700V CT	260	170	350	120		5U4	5V @ 3A	6.3V @ 5A		HS508
RGP 17	146	700V CT	260	210	350	150		5U4	5V @ 3A	6.3V @ 5A	6.3V @ 1A	VS603
RGP 18	146	700V CT	260	210	350	150		5U4	5V @ 3A	6.3V @ 5A	6.3V @ 1A	HS603
RGP 19	207	800V CT	295	280	400	200		5U4,2-5Y3	5V @ 4A	6.3V @ 6A		VS606
RGP 20	207	800V CT	295	280	400	200		5U4,2-5Y3	5V @ 4A	6.3V @ 6A		HS606
RGP 21	225	800V CT	295	280	400	200	80	5U4,2-5Y3	5V @ 4A	6.3V @ 6A	5/6.3V @ 2A	VS606
RGP 22	225	800V CT	295	280	400	200	80	5U4,2-5Y3	5V @ 4A	6.3V @ 6A	5/6.3V @ 2A	HS606
RGP 23	268	840V CT	330	350	450	250	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	VS612
RGP 24	268	840V CT	330	350	450	250	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	HS612
RGP 25	320	900V CT	340	420	490	300	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	VS708
RGP 26	320	900V CT	340	420	490	300	80	2-5U4	5V @ 6A	6.3V @ 6A	5/6.3V @ 2A	HS708
RGP 27	127	900V CT	360	150				5U4	5V @ 3A	6.3V @ 5A		VS603
RGP 28	127	900V CT	360	150				5U4	5V @ 3A	6.3V @ 5A		HS603
RGP 29	150	900V CT	350	200				5U4	5V @ 3A	6.3V @ 5A		VS605
RGP 30	150	900V CT	350	200				5U4	5V @ 3A	6.3V @ 5A		HS605
RGP 31	203	1100V CT	400	250				5R4GY	5V @ 3A	6.3V @ 5A		VS610
RGP 32	203	1100V CT	400	250				5R4GY	5V @ 3A	6.3V @ 5A		HS610
RGP 33	248	1100V CT	420	300				2-5R4GY	5V @ 4A	6.3V @ 7A		VS612
RGP 34	248	1100V CT	420	300				2-5R4GY	5V @ 4A	6.3V @ 7A		HS612
RGP 35	310	1280V CT	480	350				2-5R4GY	5V @ 4A	6.3V @ 7A		VS709
RGP 36	310	1280V CT	480	350				2-5R4GY	5V @ 4A	6.3V @ 7A		HS709

Case No.	Height	Width	Depth	Mtg. Centers	Mtg. Studs
DC2B	3½	2⅝	2¼	2x1¾	(4) 8-32
DC4A	3¾	3⅛	3	2½x2½	(4) 8-32
DC5C	4⅞	4⅛	3½	3⅛x2⅝	(4) 10-32
DC6A	4⅞	5	4⅛	3¾x3	(4) 10-32
CH50	1 1/16	2 3/16	1¾	2⅜	(2) 3/16
CH60	2	3¼	1¾	2 3/16	(2) 3/16
CH62	2	3¼	2⅛	2 3/16	(2) 3/16
CH70	2⅜	3 1/16	2¼	3⅛	(2) 3/16
CH80	2⅝	4	2⅝	3 9/16	(2) 3/16
FV10	3 1/16	2½	2⅜	2x2	(4) 13/64x21/64
FV12	3 1/16	2½	2 1/16	2x2 1/16	(4) 13/64x21/64
FV22	3 1/16	2 13/16	2⅞	2¼x2¼	(4) 3/16x3/8
FV30	4½	3 1/16	3	2½x2¼	(4) 13/64x21/64
HB718	6¼	6½	8½	4¾x4½	(4) 9/32x21/32
HB728	6¼	6½	9¾	4¾x5¾	(4) 9/32x21/32
HB828	6⅝	7 3/16	9 7/16	5⅝x5¾	(4) 9/32x21/32
HB920	6⅝	7 7/16	10¼	6½x7 5/16	(4) 9/32x21/32
VS300	3 5/32	2⅝	3	2x2	(4) 3/16x3/8
VS401	3 9/16	2 13/16	3¼	2¼x1 15/16	(4) 3/16x3/8
VS501	3 9/32	3¼	3⅜	2½x2 1/16	(4) 3/16x3/8
VS503	3 9/32	3¼	3⅝	2½x2 5/16	(4) 3/16x3/8
VS601	4 21/32	3⅞	3⅝	3x2 1/16	(4) 3/16x3/8
VS604	4 21/32	3⅞	4	3x2 7/8	(4) 3/16x3/8
VS611	4 21/32	3⅞	4⅞	3x3 11/16	(4) 3/16x3/8
VS612	4 21/32	3⅞	5	3x3 13/16	(4) 3/16x3/8
VS700	5 1/16	3⅞	5	3½x3¼	(4) 3/16x3/8
VS706	5 1/16	4 3/16	5½	3½x3¾	(4) 3/16x3/8
VS714	5 1/16	4 3/16	6½	3½x4¾	(4) 3/16x3/8
VS718	5 1/16	4 3/16	7	3½x5¼	(4) 9/32x21/32
VS728	5 1/16	4 3/16	8¼	3½x6½	(4) 3/16x3/8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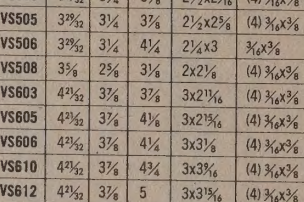
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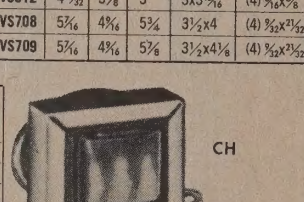
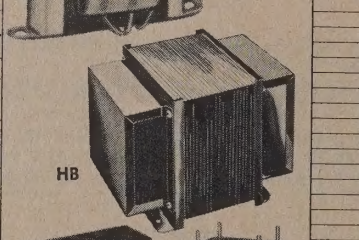
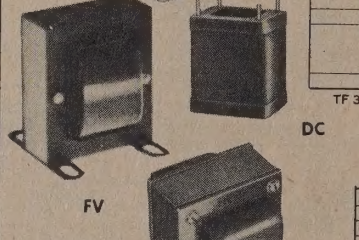

DC


FV


VS

FILAMENT TRANSFORMERS

All primaries are for 115V, 50/60 c.p.s.

Catalog No.	Secondary Voltage	Secondary Current Amps	Secondary Test Voltage RMS	Case Size
TF 1	2.5 (C.T.)	7.5	1500	CH60
TF 2	2.5 (C.T.)	10	1500	CH70
TF 3	2.5 (C.T.)	5	7500	DC2B
TF 4	2.5 (C.T.)	10	7500	DC4A
TF 5	5.0 (C.T.)	4	1500	CH60
TF 6	5.0 (C.T.)	6	1500	CH70
TF 7	5.0 (C.T.)	10	1500	CH80
TF 8	5.0 (C.T.)	10	1500	FV10
TF 9	5.0 (C.T.)	20	2500	FV30
TF 10	5.0 (C.T.)	20	10,000	DC6A
TF 11	6.3 (C.T.)	1.35	1500	CH50
TF 12	6.3 (C.T.)	3	1500	CH60
TF 13	6.3 (C.T.)	5	1500	CH70
TF 14	6.3 (C.T.)	7	1500	FV12
TF 15	6.3 (C.T.)	10	1500	FV22
TF 16	10 (C.T.)	5	2500	CH80
TF 17	10 (C.T.)	5	2500	FV10
TF 18	10 (C.T.) or 11 (C.T.) (tapped primary)	12 or 11	7500	DC-5C
TF 19	12.6 (C.T.)	2	1500	CH62

TF 3, 4, 10 & 18 supplied with terminals. All others with leads.

AUTO TRANSFORMERS

To be used as step-down transformer. Equipped with standard receptacle and line cord.

Catalog No.	Transformation	VA Rating	Weight (lbs.)	Case Size
SDT 1*	230/115 V. 50/60 c.p.s.	25	1	CH-60
SDT 2*	230/115 V. 50/60 c.p.s.	50	1¼	CH-62
SDT 3	230/115 V. 50/60 c.p.s.	50	2½	VS-300
SDT 4	230/115 V. 50/60 c.p.s.	100	3	VS-401
SDT 5	230/115 V. 50/60 c.p.s.	200	5	VS-501
SDT 6	230/115 V. 50/60 c.p.s.	300	6½	VS-601
SDT 7	230/115 V. 50/60 c.p.s.	400	8	VS-604
SDT 8	230/115 V. 50/60 c.p.s.	500	11	VS-611
SDT 9	230/115 V. 50/60 c.p.s.	750	15	VS-706
SDT 10	230/115 V. 50/60 c.p.s.	1000	23	VS-718
SDT 11	230/115 V. 50/60 c.p.s.	1500	29½	VS-728
SDT 12*	230/115 V. 50/60 c.p.s.	2000	37	HB-718
SDT 13*	230/115 V. 50/60 c.p.s.	2500	47	HB-728
SDT 14*	230/115 V. 50/60 c.p.s.	3000	58	HB-828
SDT 15*	230/115 V. 50/60 c.p.s.	5000	72	HB-920

*Supplied with leads without line cord and receptacle.

ISOLATION TRANSFORMERS

Electrostatic shield between primary and secondary. Equipped with standard receptacle and line cord.

Catalog Number	Primary Voltage 50/60 c.p.s.	Secondary Voltage	VA Rating	Case Size
IT 1	115	115	50	VS-401
IT 2	115	115	100	VS-503
IT 3	115	115	300	VS-700
IT 4	115	115	500	VS-714
IT 5*	220/440	110/220	250	VS-612
IT 6*	220/440	110/220	500	VS-714

*Supplied with leads without line cords and receptacle.

LINE BOOSTER TRANSFORMERS

Operates from 90 to 110 volts input to provide 10% step-up.

Catalog Number	Primary Voltage	Secondary Voltage	VA Rating	Case Size
LB-1	90-110	1.1 x input	350	VS-300
LB-2	90-110	1.1 x input	2000	VS-611

See Freed Price Pages 1453-1455

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FREED TRANSFORMER CO., INC.

COMMERCIAL GRADE COMPONENTS

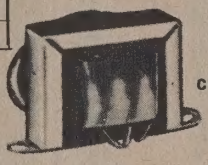
AUDIO TRANSFORMERS

Catalog No.	Application	Impedance Level Ohms Primary	Impedance Level Ohms Secondary	Max. Power Level DBM or Power in Watts	Ratio	Max. Pri D.C. per Side Ma.	D.C. Unbalance Ma.	Freq. Response C.P.S.	Case No.
RGA 1	Input; multiple line or double button mike to single or push-pull grids.	500 CT 200 CT	100,000 CT	+20	1:14.1	50	5	±2DB 200-5000	CH-40
RGA 2	Input; single button mike to single or push-pull grids.	100	100,000 CT	+20	1:31.6	50		±2DB 200-5000	CH-40
RGA 3	Input; voice coil to grid. Intercom	3.2	100,000	+20	1:179			±2DB 200-5000	CH-40
RGA 4	Mixing and matching line to line	600 CT 500 CT 200 CT 150/125/50	600 CT 500 CT 200 CT 150/125/50	+20	1:1			±2DB 100-5000	CH-40
RGA 5	Interstage; single triode plate to single or P.P. grids.	10,000	90,000 CT	+30	1:3	10		±2DB 200-5000	CH-40
RGA 6	Output; single plate to line or mixer.	10,000	600 CT 500 CT 200 CT 150/125/50	+30	4.8:1	10		±2DB 200-5000	CH-40
RGA 7	Output; Push-pull plate to line or mixer.	20,000 CT	600 CT 500 CT 200 CT 150/125/50	+30	6.32:1	10	1	±2DB 200-5000	CH-40
RGA 8	Output; plate to V.C. 6AL6, 6L6, 6Y6, 25B6, 25C6, 35A5, 35B5, 35C5, 50B5, 50C5, 50C6, 50L6, 117N7.	2500	3.2	5W		70		±3DB 200-10000	CH-40
RGA 9	Output; plate to V.C. 6V6, 6AQ5, 6AS5, 7C5.	5000	3.2	5W		50		±3DB 200-10000	CH-40
RGA 10	Output; plate to V.C. 6AR5, 6K6, 6V6, 7B5, 14A5, 3S4, 3U4, 3Q4, 3Q5, 3C5, 3A4.	10,000 or 7500	3.2	5W		30		±3DB 200-10000	CH-40
RGA 11	Output; P.P. plates to V.C. P.P. 6V6, PP6K6.	12,000 CT or 8000 CT	3.2	15W		50	5	±2DB 200-8000	CH-60
RGA-12	Output: TP to V.C. 6V6, 6AQ5, 7C5. C1AB.	10,000 CT	3.2	10W	5.6:1	40	4	±3DB 200-10000	CH-60

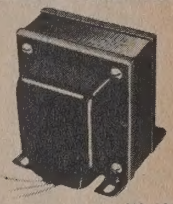
COMMERCIAL GRADE CHOKES

Catalog No.	Inductance in Henries	Rated Current D.C. Ma.	D.C. Resistance	Dielectric Test Voltage	Case Number
RGC 17	40	15	2000	1000	CH-40
RGC 1	4	40	200	1000	CH-40
RGC 2	9	40	400	1000	CH-40
RGC 3	6	50	400	1000	CH-40
RGC 18	20	50	425	1500	CH-60
RGC 4	10	55	400	1500	CH-60
RGC 19	3	75	200	1500	CH-40
RGC 5	10	75	250	1500	CH-60
RGC 6	10	75	250	1500	VS-100
RGC 7	6	100	150	1500	CH-60
RGC 8	6	100	150	1500	VS-100
RGC 9	3.5	150	100	1500	CH-60
RGC 10	3.5	150	100	1500	VS-100
RGC 20	12	160	180	2500	VS-306
RGC 11	2	200	60	1500	CH-60
RGC 12	2	200	60	1500	VS-100
RGC 13	3.7	200	65	1500	CH-80
RGC 21	7	200	100	2500	VS-303
RGC 14	3.7	200	65	1500	VS-300
RGC 15	2.8	300	65	1500	CH-80
RGC 16	2.8	300	65	1500	VS-300
RGC 22	5	300	65	2500	VS-308

CASE DIMENSIONS



CH CASE



VS CASE

CH-40 CASE
Height: 1⅞"
Width: 2¾"
Depth: 1¾"
Mtg. Cen.: 2"

CH-50 CASE
Height: 1¹⁵⁄₁₆"
Width: 2¹³⁄₁₆"
Depth: 1¾"
Mtg. Cen.: 2⅜"

CH-60 CASE
Height: 2"
Width: 3¼"
Depth: 1¾"
Mtg. Cen.: 2¹³⁄₁₆"

CH-80 CASE
Height: 2¼"
Width: 4"
Depth: 2¼"
Mtg. Cen.: 3⅜"

VS-100 CASE
Height: 2¹¹⁄₁₆"
Width: 1⅞"
Depth: 2¼"
Mtg. Cen.: 1½"x1⅞"

VS-300 CASE
Height: 3½"
Width: 2⅝"
Depth: 2¾"
Mtg. Cen.: 2"x1¹⁵⁄₁₆"

VS-303 CASE
Height: 3½"
Width: 2⅝"
Depth: 3"
Mtg. Cen.: 2x1¹⁵⁄₁₆"
Mtg. Hole: (4) 3⁄₁₆x3⁄₈"

VS-306 CASE
Height: 3½"
Width: 2⅝"
Depth: 3⅝"
Mtg. Cen.: 2x2⅝"
Mtg. Hole: (4) 3⁄₁₆x3⁄₈"

VS-308 CASE
Height: 3³¾₆₄"
Width: 2³²⁄₃₂"
Depth: 3⅝"
Mtg. Cen.: 2"x2⅛"

PRICE LIST

Catalog No.	Net Price
PT-1	8.75
PT-2	8.75
PT-3	8.75
PT-4	8.75
PT-5	8.75
PT-6	8.75
PT-7	8.75
PT-8	11.00
PT-9	11.00
PT-11	8.75
PT-12	8.75
PT-13	11.00
PT-14	11.00
PT-15	14.00
PT-16	14.00
PT-17	13.50
PT-18	13.50
PT-19	13.50
Note—Molded Units $1.00 additional.	
T-1	7.25
T-2	11.40
T-3	26.40
T-4	31.95
T-5	26.40
T-6	34.95
CA-10	19.00
CP-11	10.50
CC-10	5.40
CC-11	1.90
CB-1	8.40
CB-2	23.25
MAC-5-2-F1	42.50
MAC-5-1-F2	42.50
MAC-5-3F2	42.50
MAC-5-4-F	42.50
MAC-12-3-60	29.95
MAC-12-10-1	36.50
MAC-12-10-2	44.20
MAC-12-20-1	46.50
MAC-12-20-2	57.00
MAC-12-30-1	63.70
MAC-12-30-2	77.50
MAF-4	78.00
MAF-5	80.00
MAF-6	180.00
MAF-7	180.00
MAO-1	70.00
MAO-2	102.00
MAO-3	110.00
MAO-4	155.00
MAO-5	175.00
MAP-1	90.00
MAP-2	150.00
MAP-3	225.00
MAP-301	175.00
MAP-4	280.00
MAP-7	105.00
MAP-8	133.00
MAP-11	95.00

Catalog No.	Net Price
MAT-1-1	148.50
MCV-4-5LC	14.00
MCV-4-25LC	20.00
MCV-4-75LC	30.00
MCV-4-125LC	38.00
MCV-4-175LC	45.00
MCV-4-250LC	54.00
MCV-4-375LC	69.00
MCV-4-500LC	85.00
MCV-4-750LC	115.00
MCV-4-1000LC	143.00
MCV-4-5-4FC	14.00
MCV-4-25-4FC	20.00
MCV-4-75-4FC	30.00
MCV-4-125-4FC	38.00
MCV-4-5FC	15.00
MCV-4-25FC	21.00
MCV-4-75FC	31.00
MCV-4-125FC	39.00
MCV-4-5LM	22.00
MCV-4-25LM	28.00
MCV-4-75LM	39.00
MCV-4-125LM	48.00
MCV-4-175LM	55.00
MCV-4-250LM	66.00
MCV-4-375LM	81.00
MCV-4-500LM	100.00
MCV-4-750LM	131.00
MCV-4-1000LM	160.00
MCV-4-5-4FM	22.00
MCV-4-25-4FM	28.00
MCV-4-75-4FM	39.00
MCV-4-125-4FM	48.00
MCV-4-5FM	23.00
MCV-4-25FM	29.00
MCV-4-75FM	40.00
MCV-4-125FM	49.00
MCV-6-5LC	11.00
MCV-6-25LC	17.00
MCV-6-75LC	27.00
MCV-6-125LC	34.00
MCV-6-175LC	41.00
MCV-6-250LC	50.00
MCV-6-375LC	64.00
MCV-6-500LC	76.00
MCV-6-750LC	104.00
MCV-6-1000LC	128.00
MCV-6-54FC	11.00
MCV-6-25-4FC	17.00
MCV-6-75-4FC	27.00
MCV-6-125-4FC	34.00
MCV-6-5FC	12.00
MCV-6-25FC	18.00
MCV-6-75FC	28.00
MCV-6-125FC	35.00
MCV-6-5LM	20.00
MCV-6-25LM	26.00
MCV-6-75LM	37.00
MCV-6-125LM	45.00
MCV-6-175LM	53.00
MCV-6-250LM	62.00

Catalog No.	Net Price
MCV-6-375LM	76.00
MCV-6-500LM	90.00
MCV-6-750LM	123.00
MCV-6-1000LM	150.00
MCV-6-54FM	20.00
MCV-6-25-4FM	26.00
MCV-6-75-4FM	37.00
MCV-6-125-4FM	45.00
MCV-6-5FM	21.00
MCV-6-25FM	27.00
MCV-6-75FM	36.00
MCV-6-125FM	46.00
MGA-1	13.75
MGA-2	13.25
MGA-3	12.75
MGA-4	12.75
MGA-5	11.65
MGA-6	12.00
MGA-7	11.65
MGA-8	12.00
MGA-9	11.65
MGC-1	8.65
MGC-2	7.10
MGC-3	7.50
MGC-4	8.35
MGC-5	8.65
MGC-6	7.10
MGC-7	7.50
MGC-8	8.05
MGC-9	7.50
MGC-10	8.05
MGC-11	10.00
MGC-12	7.50
MGC-13	8.05
MGC-14	10.00
MGC-15	10.90
MGC-16	8.05
MGC-17	10.00
MGC-18	11.50
MGC-19	14.40
MGC-20	10.00
MGC-21	*
MGC-22	10.90
MGC-23	*
MGC-24	20.70
MGC-25	*
MGC-26	18.40
MGC-27	*
MGC-28	18.40
MGC-29	*
MGC-30	*
MGC-31	*
MGC-32	7.90
MGC-33	7.90
MGC-34	7.90
MGC-35	7.90
MGC-36	7.90
MGC-37	7.90

*Not stocked, available on short delivery. Prices on request.

Catalog No.	Net Price
MGF-1	13.50
MGF-2	15.00
MGF-3	13.50
MGF-4	18.00
MGF-5	13.50
MGF-6	15.00
MGF-7	19.50
MGF-8	24.00
MGF-9	19.50
MGF-10	22.50
MGP-1	22.20
MGP-2	24.00
MGP-3	26.40
MGP-4	33.00
MGP-5	39.00
MGP-6	21.00
MGP-7	28.50
MGP-8	37.50
MPT-1	20.20
MPT-2	17.25
MPT-3	25.90
MPT-4	23.00
MPT-5	20.20
MPT-6	17.25
MPT-7	20.20
MPT-8	17.25
MPT-9	25.90
MPT-10	23.00
MPT-11	20.20
MPT-12	31.60
MPT-13C	13.40
MPT-13M	17.70
MPT-13H	22.10
MPT-14C	19.45
MPT-14M	24.00
MPT-14H	29.00
MPT-15C	17.95
MPT-15M	22.40
MPT-15H	30.50
MPT-16C	21.70
MPT-16M	26.30
MPT-16H	32.30
MPT-17C	22.40
MPT-17M	26.00
MPT-17H	30.60
MPT-18C	14.70
MPT-18M	19.10
MPT-19C	22.40
MPT-19M	26.00
MPT-19H	26.00
MPT-20C	17.00
MPT-20M	21.40
MPT-20H	27.60
MPT-21C	24.00
MPT-21M	27.00
MPT-21H	27.60
MPT-22C	22.40
MPT-22M	26.00
MPT-22H	30.60
MPT-23C	24.00
MPT-23M	27.10

Catalog No.	Net Price
MPT-23H	29.40
MPT-24C	15.75
MPT-24M	19.30
MPT-25C	16.10
MPT-25M	20.80
MPT-25H	26.60
MPT-26C	24.00
MPT-26M	25.30
MPT-26H	34.50
MPT-27C	23.40
MPT-27M	25.30
MPT-27H	34.50
PGA-1	16.50
PGA-2	16.50
PGA-3	16.50
PGA-4	14.10
PGA-5	14.85
PGA-6	18.15
PGA-7	12.40
PGA-8	12.40
PGA-9	12.40
PGA-10	13.20
PGA-11	14.05
PGA-12	14.05
PGA-13	16.50
PGA-14	16.50
PGA-15	20.65
PGA-16	20.65
PGA-17	20.65
PGA-18	19.00
PGA-19	20.65
PGA-20	20.65
PGA-21	20.65
PGA-22	22.55
PGA-23	22.55
PGA-24	20.65
PGA-25	36.30
PGA-26	20.65
PGA-27	20.65
PGA-28	20.65
PGA-29	20.65
PGA-30	36.30
PGC-1	6.30
PGC-2	6.30
PGC-3	6.30
PGC-4	7.05
PGC-5	7.05
PGC-6	7.05
PGC-7	7.65
PGC-8	8.70
PGC-9	8.70
PGC-10	9.00
PGC-11	12.30
PGC-12	12.30
PGC-13	13.95
PGC-14	8.75
PGC-15	9.45
PGC-16	9.15
PGC-17	8.70
PGC-18	12.20
PGC-19	12.20

Catalog No.	Net Price
PGC-20	13.85
PGP-1	16.20
PGP-2	18.00
PGP-3	9.60
PGP-4	10.08
PGP-5	10.08
PGP-6	10.80
PGP-7	12.60
PGP-8	10.80
PGP-9	12.60
PGP-10	13.20
PGP-11	16.60
PGP-12	19.80
PGP-13	21.80
PGP-14	26.15
PGP-15	30.40
PGP-16	15.12
PGP-17	16.20
PGP-18	21.80
PGP-19	26.15
PGP-20	32.40
PMA-1	10.90
PMA-2	8.93
PMA-3	12.58
PMA-4	8.93
PMA-5	8.93
PMA-6	10.90
PMA-7	10.90
PMA-8	10.90
PMA-9	10.90
PMA-10	10.23
PMA-11	7.92
PMA-12	10.90
PMA-13	9.90
PMA-14	11.10
PMA-15	10.90
PQC-1	9.40
PQC-2	9.40
PQC-3	9.40
PQC-4	9.40
PQC-5	9.40
PQC-6	9.40
PQC-7	9.40
PQC-8	9.40
PQC-9	9.40
PTC-12-15	39.50
PTC-12-50	52.50
PTC-12-100	58.50
PTC-12-175	71.50
QGA-1	22.30
QGA-2	27.70
QGA-3	19.80
QGA-4	27.70
QGA-5	25.20
QGA-6	29.20
QGA-7	19.80
QGA-8	27.70
QGA-9	27.70
QGA-10	31.60
QGA-11	23.80

Catalog No.	Net Price
QGA-12	23.80
QGA-13	19.80
QGA-14	20.50
QGA-15	25.20
QGA-16	20.50
QGA-17	20.50
QGA-18	22.00
QGA-19	20.50
QGA-20	26.30
QGA-21	23.80
QGA-22	39.60
QGA-23	27.70
QGA-24	27.70
QGA-25	27.70
QGA-26	27.70
QGA-27	27.70
QGA-28	27.70
QGA-29	27.70
QGA-30	27.70
QGA-31	35.60
QGA-32	35.60
QGA-33	35.60
QGA-34	35.60
QGA-35	39.20
QGA-36	39.20
QGA-37	23.80
QGA-38	39.20
QGA-39	27.70
QGA-40	27.70
QGA-41	39.20
QGA-42	39.20
QGC-1	22.50
QGC-2	22.50
QGC-3	22.50
QGC-4	22.50
QGC-5	22.50
QGC-6	22.50
QGC-7	22.50
QGC-8	15.00
QGC-9	15.00
QGC-10	15.00
QGC-11	15.00
QGC-12	15.00
QGC-13	15.00
QGC-14	13.50
QGC-15	13.50
QGC-16	13.50
QGC-17	13.50
QGC-18	13.50
QGC-19	11.50
QGC-20	11.50
QGC-21	11.50
QGC-22	11.50
QGC-23	11.50
QGC-24	11.50

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Net

FREED TRANSFORMER CO., INC.

PRICE LIST

Catalog No.	Net Price
QGC-25	10.50
QGC-26	10.50
QGC-27	10.50
QGC-28	10.50
QGC-29	10.50
QGC-30	10.50
QGC-31	10.50
QGC-32	10.50
QGC-33	10.50
QGC-34	10.50
QGC-35	10.50
QGC-36	10.50
QGC-37	10.50
QGC-38	10.80
QGC-39	10.50
QGC-40	10.50
QGC-41	10.50
QGC-42	10.50
RGA-1	4.50
RGA-2	3.63
RGA-3	3.63
RGA-4	4.50
RGA-5	3.63
RGA-6	4.33
RGA-7	4.50
RGA-8	2.06
RGA-9	2.06
RGA-10	2.48
RGA-11	3.63
RGA-12	4.50
RGC-1	1.69
RGC-2	1.69
RGC-3	1.69
RGC-4	1.90
RGC-5	2.29
RGC-6	3.41
RGC-7	2.29
RGC-8	3.41
RGC-9	2.29
RGC-10	3.41
RGC-11	2.29
RGC-12	3.41
RGC-13	3.62
RGC-14	5.17
RGC-15	3.62
RGC-16	5.17
RGC-17	2.07
RGC-18	2.60
RGC-19	1.69
RGC-20	5.85
RGC-21	5.85
RGC-22	7.60
RGP-1	6.62
RGP-2	6.62
RGP-3	7.04
RGP-4	7.04
RGP-5	7.04
RGP-6	7.04
RGP-7	7.75
RGP-8	7.75
RGP-9	9.50
RGP-10	9.50
RGP-11	7.75
RGP-12	7.75
RGP-13	9.50
RGP-14	9.50
RGP-15	10.00
RGP-16	10.00
RGP-17	11.74
RGP-18	11.74
RGP-19	12.40
RGP-20	12.40
RGP-21	16.20
RGP-22	16.20
RGP-23	21.80
RGP-24	21.80
RGP-25	26.00
RGP-26	26.00
RGP-27	9.65
RGP-28	9.65
RGP-29	11.74
RGP-30	11.74
RGP-31	17.30
RGP-32	17.30
RGP-33	21.80
RGP-34	21.80
RGP-35	26.00
RGP-36	26.00
SDT-1	2.63
SDT-2	3.07
SDT-3	5.39
SDT-4	7.18
SDT-5	8.98
SDT-6	12.05
SDT-7	12.78
SDT-8	13.51
SDT-9	18.30
SDT-10	23.30
SDT-11	36.10
SDT-12	42.00
SDT-13	54.80
SDT-14	72.00
SDT-15	112.50
TAC 6-50	55.75
TAC-12-50	65.55
TAC-12-90	73.00
TAC-12-175	88.50
TAC-28-50	73.50
TAC-28-100	81.50
TAC-28-175	95.50
TAC-28-250	105.50
TAC-12-100-4	77.50
TAC-28-150-4	81.50
TAC-28-250-4	125.00
TDC-6-15-05	39.50
TDC-12-30-15	51.70
TDC-12-25-12	50.55
TDC-12-30-05	42.50
TDC-12-20-05	39.50
TDC-28-30-15	56.45
TDC-28-25-12	54.80
TDC-28-30-05	45.30
TDC-28-20-05	42.90
TDC-48-20-15	78.50
TDC-48-30-15	82.50
TF-1	3.42
TF-2	4.55
TF-3	11.40
TF-4	14.00
TF-5	3.42
TF-6	4.55
TF-7	5.00
TF-8	7.15
TF-9	8.74
TF-10	18.20
TF-11	2.28
TF-12	3.42
TF-13	4.55
TF-14	5.53
TF-15	6.74
TF-16	5.00
TF-17	7.15
TF-18	18.20
TF-19	3.80
TMA-1	8.25
TMA-2	10.56
TMA-3	8.60
TMA-4	10.90
TMA-5	10.90
TMA-6	10.90
TMA-7	8.90
TMA-8	10.56
TMA-9	8.60
TMA-10	8.25
TMA-11	8.60
TMA-12	10.90
TMA-13	8.25
TMA-14	10.90
TMO-15	4.30
TMO-16	4.30
TMO-17	3.64
TMO-18	4.30
TMA-19	8.25
TNA-1	6.95
TNA-2	6.95
TNA-3	7.38
TNA-4	6.60
TNA-5	6.60
TNA-6	7.38
TNA-7	6.95
TNA-8	6.95
TNA-9	8.15
TNA-10	7.50
TNA-11	7.50
TNA-12	8.15
TNA-13	8.15
TNA-14	8.15
TNA-15	8.25
TNA-16	7.38
TNA-17	7.38
TNA-18	7.38
TNA-19	7.93
TNA-20	7.38
TNA-21	6.60
TNA-22	7.25
TNA-23	6.95
TNA-25	6.95
TNA-26	6.50
TNA-27	7.93
TNA-28	6.38
TNA-29	6.38
TNA-30	6.60
TNA-31	6.38
TNA-32	6.38
TNA-33	6.60
TNA-34	6.95
TNA-35	6.95
TNA-36	6.50
TNA-37	6.50
TNA-38	6.95
TNA-39	7.50
TNA-40	6.95
TNA-41	7.15
TPA-1	8.36
TPA-2	8.36
TPA-3	8.36
TPA-4	8.85
TPA-5	8.36
TPA-6	8.36
TPA-7	8.36
TPA-8	8.85
TPA-9	8.36
TPA-10	8.36
TPA-11	8.85
TPA-12	8.36
TPA-13	8.36
TPA-14	8.85
TPA-15	9.13
TPA-16	9.13
TPA-17	8.60
TPA-18	9.35
TPA-19	8.25
TPA-20	9.13
TPA-21	8.58
TPA-22	9.13
TPA-23	9.13
TPA-24	9.13
TPA-25	9.13
TPA-26	9.13
TPA-27	9.13
TPA-28	9.68
TPA-29	9.68
TPA-30	8.03
TPA-31	8.03
TPA-32	8.03
TPA-33	8.03
TPA-34	8.03
TPA-35	8.03
TPA-36	8.03
TPA-37	8.75
TPA-38	8.03
TPA-39	8.03
TPA-40	8.03
TSA-1	7.15
TSA-2	7.15
TSA-3	7.70
TSA-4	6.93
TSA-5	6.93
TSA-6	7.70
TSA-7	7.15
TSA-8	7.15
TSA-9	7.15
TSA-10	7.70
TSA-11	7.70
TSA-12	8.25
TSA-13	8.25
TSA-14	8.25
TSA-15	8.80
TSA-16	7.70
TSA-17	7.70
TSA-18	7.70
TSA-19	8.25
TSA-20	7.70
TSA-21	7.15
TSA-22	7.42
TSA-23	7.15
TSA-25	7.15
TSA-26	6.60
TSA-27	8.25
TSA-28	6.60
TSA-29	6.60
TSA-30	6.93
TSA-31	6.60
TSA-32	6.60
TSA-33	6.93
TSA-34	7.15
TSA-35	7.15
TSA-36	6.60
TSA-37	6.60
TSA-38	7.15
TSA-39	7.70
TSA-40	7.15
TSA-41	7.42
TTA-1	8.90
TTA-2	7.26
TTA-3	9.46
TTA-4	10.00
TTA-5	9.46
TTA-6	7.26
TTA-7	9.63
TTA-8	9.46
TTA-9	9.76
TTA-10	9.30
TTA-11	9.30
TTA-12	9.35
TTA-13	8.90
TTA-14	10.00
TTA-15	8.90
TTA-16	9.40
TTA-17	8.90
TTA-18	8.90
TTA-19	8.90
TTA-20	8.90
TTA-21	8.90
TTA-22	8.90
TTA-23	9.30
TTA-24	9.30
TTA-25	9.30
TTA-26	9.79
TTA-27	8.90
TTA-28	9.30
TTA-29	9.30
TTA-30	9.30
TTA-31	9.79
TTA-32	9.30
TTA-33	9.79
TTA-34	9.30
TTA-35	9.46
TTA-36	9.46
TTA-37	9.35
TTA-38	10.00
TTA-39	9.20
TTA-40	9.46
TUA-1	6.60
TUA-2	6.60
TUA-3	6.60
TUA-4	6.60
TUA-5	6.60
TUA-6	6.60
TUA-7	6.93
TUA-8	6.93
TUA-9	6.93
TUA-10	7.26
TUA-11	6.93
TUA-12	7.15
TUA-13	5.94
TUA-14	6.93
TUA-15	7.26
TUA-16	6.27
TUA-17	6.27
TUA-18	7.26
TUA-19	6.27
TUA-20	6.27
TUA-21	6.32
TUA-22	6.32
TUA-23	6.60
TUA-24	6.71
TUA-25	6.60
TUA-26	6.60
TUA-27	5.94
TUA-28	6.60
TUA-29	6.60
TUA-30	7.26
TUA-31	8.25
TUA-32	7.26
TUA-33	7.59
TUA-34	7.59
TUA-35	7.59
TUA-36	7.59
TUA-37	7.59
TUA-38	7.59
ULD-20	12.50
ULD-50	19.55
ULI-20	12.50
ULO-10	31.20
ULO-11	31.20
ULO-12	31.20
ULO-13	31.20
ULO-30	35.75
ULO-31	35.75
ULO-32	35.75
ULO-33	35.75
ULO-34	35.75
ULO-35	35.75
ULO-36	35.75
ULO-37	35.75
ULO-52	93.75
ULO-53	93.75
ULO-54	93.75
ULO-55	93.75
ULO-56	93.75
ULO-101	181.00
ULO-104	181.00
ULO-110	181.00
VHI-1	9.50
VHI-2	9.50
VHI-3	9.50
VHI-4	9.50
VHI-5	9.50
VHI-6	9.50
VHI-7	9.50
VHI-8	9.50
VHI-9	9.50
VHI-10	9.50
VHI-11	9.50
VHI-12	9.50
VHI-13	9.50
VHI-14	9.50
VHI-15	9.50
VHI-16	9.50
VHI-17	9.50
VHI-18	9.50
VHI-19	9.50
VHI-20	9.50
VHI-21	9.50
VHI-22	9.50

Filters & Discriminators

MTN .4 TO 7.35	35.00
MTN 10.5 to MTW 70	40.00
IBM*	25.00
	35.00
IBP*	25.00
	35.00
IHM*	25.00
	35.00
IHP*	25.00
	35.00
ILM*	25.00
	35.00
ILP*	25.00
	35.00
LBM*	25.00
	35.00
LBP*	25.00
	35.00
LHM*	25.00
	35.00
LHP*	25.00
	35.00
LLM*	25.00
	35.00
LLP*	25.00
	35.00

*Stock Frequencies are $35.00 Net.

Special Frequencies are $40.00 Net

DSF-10	39.50
DSF-11	39.50
DSF-12	39.50
DSF-13	39.50
DSF-14	39.50
DSF-15	39.50
DSF-16	39.50
DSF-17	39.50
DSF-18	39.50
DSF-19	39.50
DSF-20	39.50
DSF-21	39.50
DSF-22	39.50
DSF-23	39.50
DSF-24	39.50
DSF-25	39.50
DSF-26	39.50
DSF-27	39.50
DSF-28	39.50
DSF-29	39.50
DST-10	50.00
DST-11	50.00
DST-12	50.00
DST-13	50.00
DST-14	50.00
DST-15	50.00
DST-16	50.00
DST-17	50.00
DST-18	50.00
DST-19	50.00
DST-20	50.00
DST-21	50.00
DST-22	50.00
DST-23	50.00
DST-24	60.00
DST-25	60.00
DST-26	60.00
DST-27	50.00
DST-28	60.00
DST-29	60.00
DST-30	60.00
DST-31	60.00
DST-32	60.00
DST-33	60.00
FBP-10	86.00
FBP-11	86.00
FBP-12	86.00
FBP-13	86.00
FBP-14	70.80
FBP-15	70.80
FBP-16	70.80
FBP-17	70.80
FBP-18	70.80
FBP-19	70.80
FBP-20	70.80
FBP-21	70.80
FBP-22	70.80
FBP-23	70.80
FBP-24	86.00
FBP-25	70.80
FBP-26	86.00
FBP-27	86.00
FBP-28	86.00
FBP-29	86.00
FBP-30	86.00
FBP-31	86.00
FBP-32	86.00
FBP-33	86.00
FBP-34	73.00
FBP-35	73.00
FBP-36	73.00
FBP-37	73.00
FBP-38	73.00
FBP-39	80.00
FBP-40	88.00
FBP-41	88.00
FBP-42	88.00
FBP-43	88.00
FBP-44	88.00
FBP-45	88.00
FBP-46	88.00
FBP-47	88.00
FBP-48	88.00
FBP-49	88.00
FBP-50	88.00
FBP-51	88.00
FBP-52	88.00
FBP-53	88.00
FBP-54	88.00
FBP-55	88.00
FBP-56	88.00
FBP-57	88.00
FBR-10	89.50
FBR-11	89.50
FBR-12	89.50
FBR-13	89.50
FBR-14	89.50
FBR-15	89.50
FBR-16	89.50
FBR-17	89.50
FBR-18	89.50
FBR-19	89.50
FBR-20	89.50
FBR-21	89.50
FBR-22	89.50
FBR-23	89.50
FBR-24	89.50
FBR-25	89.50
FBR-26	89.50
FBR-27	89.50
FBR-28	89.50
FBR-29	89.50
FBT-10	42.50
FBT-11	42.50
FBT-12	42.50
FBT-13	42.50
FBT-14	42.50
FBT-15	42.50
FBT-16	42.50
FBT-17	42.50
FBT-18	42.50
FBT-19	42.50
FBT-20	42.50
FBT-21	42.50
FBT-22	42.50
FBT-23	42.50
FBT-24	42.50
FBT-25	42.50
FBT-26	42.50
FBT-27	42.50
FBT-28	42.50
FBT-29	42.50
LPI-10	43.25
LPI-11	43.25
LPI-12	43.25
LPI-13	43.25
LPI-14	43.25
LPI-15	43.25
LPI-16	43.25
LPI-17	43.25
LPI-18	43.25
LPI-19	43.25
LPI-20	43.25
LPI-21	43.25
LPI-22	43.25
LPI-23	43.25
LPI-24	43.25
LPI-25	43.25
LPI-26	43.25
LPI-27	43.25
LPI-28	43.25
LPO-10	93.30
LPO-11	85.50
LPO-12	81.30
LPO-13	85.00
LPO-14	72.00
LPO-15	88.85
LPO-16	64.50
LPO-17	62.50
LPO-18	61.60
LPO-19	62.80
LPO-20	61.15
LPO-21	55.60
LPO-22	55.60
LPO-23	48.20
LPO-24	47.10
LPO-25	47.10
LPO-26	47.10
LPO-27	48.20
LPO-28	47.10
LPO-29	47.10
LPO-30	47.10
LPO-31	48.20
LPO-32	47.10
LPO-33	47.10
LPO-34	47.10
LPO-35	47.10
NTF-30	25.00
NTF-60	25.00
NTF-120	25.00

Toroidal Inductors

Prices shown are Net for Hermetically Sealed. Deduct $1.50 from Net for Uncased units. Add $1.00 to Net for Encapsulated units.

Type TI-1

F-800	6.65
F-801	6.65
F-802	6.65
F-803	7.10
F-804	6.60
F-805	6.60
F-806	8.50
F-807	8.50
F-808	8.50
F-809	9.50
F-810	9.50
F-811	10.50
F-812	10.50
F-813	10.50
F-814	10.50
F-815	10.50
F-816	11.00
F-817	11.50
F-818	12.00
F-819	12.35
F-820	12.65
F-821	12.75
F-822	13.00
F-823	13.30
F-824	13.75
F-825	14.25
F-826	14.50
F-827	14.80
F-828	15.20
F-829	16.15
F-830	17.10

Type TI-4 and 4s

F-850	7.90
F-851	7.90
F-852	7.90
F-853	7.90
F-854	7.90
F-855	7.90
F-856	8.25
F-857	8.60
F-858	8.80
F-859	8.95
F-860	9.05
F-861	9.20
F-862	9.35
F-863	9.50
F-864	9.80
F-865	10.35
F-866	10.65
F-867	10.65
F-868	10.65
F-869	11.15
F-870	11.15
F-871	11.15
F-872	11.50
F-873	11.50
F-874	12.00
F-875	12.45
F-876	12.90
F-877	13.40
F-878	13.90

Type TI-IA and As

F-1500	7.50
F-1501	7.50
F-1502	7.50
F-1503	7.50
F-1504	7.50
F-1505	7.50
F-1506	7.50
F-1507	7.75
F-1508	7.75
F-1509	7.75
F-1510	7.75
F-1511	7.75
F-1512	7.75
F-1513	7.90
F-1514	7.90
F-1515	7.90
F-1516	8.10
F-1517	8.10
F-1518	8.10
F-1519	8.3
F-1520	8.3
F-1521	8.5
F-1522	8.5
F-1523	8.7
F-1524	8.7
F-1525	9.0
F-1526	9.0
F-1527	9.2
F-1528	9.7
F-1529	10.1
F-1530	10.1
F-1531	10.3
F-1532	10.7
F-1533	11.2
F-1534	11.7
F-1535	11.7
F-1536	12.7
F-1537	13.1
F-1538	13.6

Type TI-9s

F-1554	16.6
F-1555	16.8
F-1556	17.0
F-1557	17.3
F-1558	17.4
F-1559	17.5
F-1560	17.6
F-1561	17.8
F-1562	18.0
F-1563	18.3
F-1564	18.5
F-1565	18.5
F-1566	19.0
F-1567	19.5
F-1568	19.9
F-1569	20.4
F-1570	21.4

Type TI-10s

F-1579	14.15
F-1580	14.15
F-1581	14.35
F-1582	14.45
F-1583	14.50
F-1584	14.60
F-1585	14.70
F-1586	14.80
F-1587	14.90
F-1588	15.00
F-1589	15.10
F-1590	15.30
F-1591	15.40
F-1592	15.60

Type TI-13

F-1629	16.60
F-1630	16.80
F-1631	17.00
F-1632	17.30
F-1633	17.40
F-1634	17.50
F-1635	17.60
F-1636	17.80
F-1637	18.05
F-1638	18.30
F-1639	18.50
F-1640	18.50
F-1641	19.00
F-1642	19.50
F-1643	19.95
F-1644	20.40
F-1645	21.40

Type TI-12 and 12s

F-1655	13.60
F-1656	13.60
F-1657	13.60
F-1658	14.05
F-1659	14.05
F-1660	14.05
F-1661	14.65
F-1662	14.65
F-1663	15.10
F-1664	15.10
F-1665	13.75
F-1666	13.75
F-1667	14.15
F-1668	14.15
F-1669	14.65
F-1670	14.65
F-1671	14.65
F-1672	15.10
F-1673	15.60
F-1674	16.05
F-1675	16.05
F-1676	16.50
F-1677	16.50
F-1678	17.00
F-1679	17.00
F-1680	17.50
F-1681	17.50
F-1682	17.50
F-1683	17.95
F-1684	17.95
F-1685	17.95
F-1686	18.45
F-1687	18.90
F-1688	19.50
F-1689	19.95
F-1690	20.40
F-1691	20.90
F-1692	21.40
F-1693	21.85

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PRICE LIST

Catalog No.	Net Price
Type TI-5	
F-1700	5.70
F-1701	5.70
F-1702	5.70
F-1703	6.20
F-1704	6.65
F-1705	6.90
F-1706	7.10
F-1707	7.35
F-1708	7.60
F-1709	7.85
F-1710	8.05
F-1711	8.30
F-1712	9.00
F-1713	9.60
F-1714	9.80
F-1715	10.25
F-1716	10.60
F-1717	10.95
F-1718	11.20
F-1719	11.50
F-1720	11.90
Type TI-5s	
F-1700s	7.90
F-1701s	7.90
F-1702s	7.90
F-1703s	7.90
F-1704s	7.90
F-1705s	8.15
F-1706s	8.25
F-1707s	8.50
F-1708s	8.80
F-1709s	8.95
F-1710s	9.05
F-1711s	9.20
F-1712s	9.30
F-1713s	9.60
F-1714s	9.80
F-1715s	10.25
F-1716s	10.65
F-1717s	10.85
F-1718s	11.20
F-1719s	11.50
F-1720s	11.90
Type TI-6 and 6s	
F-1726	8.15
F-1727	8.15
F-1728	8.15
F-1729	8.15
F-1730	8.15
F-1731	8.15
F-1732	8.45
F-1733	8.45
F-1734	8.55
F-1735	8.55
F-1736	8.55
F-1737	9.00
F-1738	10.00
F-1739	10.00
F-1740	10.00
F-1741	10.00
F-1742	10.45
F-1743	11.90
Type TI-11s	
F-1747	14.20
F-1748	14.20
F-1749	14.20
F-1750	14.20
F-1751	14.20
F-1752	15.20
F-1753	15.20
F-1754	15.20
F-1755	15.20
F-1756	15.20
F-1757	14.20
F-1758	14.20
F-1759	14.65
F-1760	14.65
F-1761	15.20
F-1762	15.85
F-1763	16.15
F-1764	16.65
F-1765	17.10
F-1766	17.60
F-1767	17.80
F-1768	18.05
F-1769	18.45
F-1770	18.45
F-1771	18.45
F-1772	19.00
F-1773	19.50
F-1774	19.95
F-1775	20.40
F-1776	20.90
F-1777	21.85
F-1778	22.80
F-1779	23.75
F-1780	24.70
Type TI-7	
F-1781	7.90
F-1782	7.90
F-1783	7.90
F-1784	7.90
F-1785	7.90
F-1786	7.90
F-1787	8.05
F-1788	8.05
F-1789	8.25
F-1790	8.25
F-1791	8.45
F-1792	8.65
F-1793	8.65
F-1794	8.65
F-1795	9.00
F-1796	9.45
F-1797	10.00
Type TI-2s	
F-1800	14.20
F-1801	14.20
F-1802	14.20
F-1803	14.20
F-1804	14.20
F-1805	14.65
F-1806	14.65
F-1807	14.65
F-1808	14.65
F-1809	14.65
F-1810	14.65
F-1811	14.90
F-1812	14.90
F-1813	14.90
F-1814	14.90
F-1815	14.90
Type TI-8 and 8s	
F-1821	8.65
F-1822	8.65
F-1823	8.65
F-1824	8.65
F-1825	8.65
F-1826	8.65
F-1827	8.65
F-1828	8.65
F-1829	8.65
F-1830	8.65
F-1831	8.65
F-1832	8.75
F-1833	8.85
F-1834	9.00
F-1835	9.00
F-1836	9.00
F-1837	9.10
F-1838	9.40
F-1839	9.50
F-1840	9.90
Type TI-3s	
F-1844	14.25
F-1845	14.25
F-1846	14.25
F-1847	14.25
F-1848	14.25
F-1849	14.25
F-1850	14.25
F-1851	14.25
F-1852	14.25
F-1853	14.25
F-1854	14.25
F-1855	14.25
Type TI-3As	
F-1856	20.00
F-1857	20.50
F-1858	20.50
F-1859	22.30
F-1860	22.80
F-1861	22.80
F-1862	23.30
F-1863	23.30
Type TI-15	
F-1870	7.25
F-1871	7.25
F-1872	7.25
F-1873	7.25
F-1874	7.25
F-1875	7.25
F-1876	7.25
F-1877	7.25
F-1878	7.25
F-1879	7.25
F-1880	7.25
F-1881	7.45
F-1882	7.45
F-1883	7.65
F-1884	7.65
F-1885	7.85
F-1886	8.05
F-1887	8.05
F-1888	8.05
F-1889	8.45
Type TI-14	
F-1920	7.40
F-1921	7.40
F-1922	7.40
F-1923	7.40
F-1924	7.40
F-1925	7.40
F-1926	7.85
F-1927	7.85
F-1928	7.95
F-1929	7.95
F-1930	7.95
F-1931	8.40
F-1932	8.75
F-1933	8.75
F-1934	9.00
F-1935	9.25
F-1936	9.75
Type TI-16	
F-2050	6.05
F-2051	6.05
F-2052	6.05
F-2053	5.85
F-2054	5.85
F-2055	6.30
F-2056	6.80
F-2057	7.05
F-2058	7.25
F-2059	7.35
F-2060	7.70
F-2061	8.00
F-2062	8.20
F-2063	8.45
F-2064	9.75
F-2065	10.80
F-2066	11.00
F-2067	11.40
F-2068	11.65
F-2069	12.00
Type TI-17	
F-2100	7.90
F-2101	7.90
F-2102	7.90
F-2103	7.90
F-2104	7.90
F-2105	7.90
F-2106	7.90
F-2107	7.90
F-2108	7.90
F-2109	7.90
F-2110	7.90
F-2111	8.05
F-2112	8.05
F-2113	8.25
F-2114	8.25
F-2115	8.65
F-2116	8.65
F-2117	9.05
Type TI-18	
F-2140	8.65
F-2141	8.65
F-2142	8.65
F-2143	8.65
F-2144	8.65
F-2145	8.65
F-2146	8.65
F-2147	8.65
F-2148	8.65
F-2149	8.65
F-2150	8.65
F-2151	8.75
F-2152	8.85
F-2153	9.00
F-2154	9.00
F-2155	9.20
F-2156	9.50
F-2157	9.70
Type TI-19	
F-2180	7.90
F-2181	7.90
F-2182	7.90
F-2183	7.90
F-2184	7.90
F-2185	7.90
F-2186	7.90
F-2187	7.90
F-2188	7.90
F-2189	7.90
F-2190	7.90
F-2191	7.90
F-2192	7.90
F-2193	7.90
Type TI-20s	
F-2201	6.40
F-2202	6.40
F-2203	6.95
F-2204	6.95
F-2205	6.95
F-2206	7.15
F-2207	7.45
F-2208	8.10
F-2209	8.10
F-2210	8.10
F-2211	8.10
F-2212	8.10
F-2213	8.10
F-2214	8.10
F-2215	8.10
Type TI-21s	
F-2240	6.00
F-2241	6.00
F-2242	6.00
F-2243	6.00
F-2244	6.00
F-2245	6.00
F-2246	6.40
F-2247	6.40
F-2248	6.40
F-2249	6.40
Type TI-22s	
F-2270	6.00
F-2271	6.00
F-2272	6.00
F-2273	6.00
F-2274	6.00
F-2275	6.00
F-2276	6.40
F-2277	6.40
F-2278	6.40
F-2279	6.40
F-2280	7.15
F-2281	7.15
F-2282	7.15
F-2283	7.15
F-2284	7.15
Type TI-23s	
F-2301	6.25
F-2302	6.25
F-2303	6.25
F-2304	6.25
F-2305	6.25
F-2306	6.25
F-2307	6.75
F-2308	6.75
F-2309	6.75
F-2310	6.75
F-2311	7.50
F-2312	7.50
F-2313	7.50
Type TI-24	
F-2400	5.90
F-2401	5.90
F-2402	5.90
F-2403	5.90
F-2404	6.05
F-2405	6.05
F-2406	6.05
F-2407	6.05
F-2408	6.30
F-2409	6.30
F-2410	6.80
F-2411	7.05
F-2412	7.25
F-2413	7.35
F-2414	7.70
F-2415	8.00
F-2416	8.20
F-2417	8.45
F-2418	9.75
F-2419	10.50
F-2420	10.80
F-2421	11.00
F-2422	11.40
Type TI-25	
F-2450	7.90
F-2451	7.90
F-2452	7.90
F-2453	7.90
F-2454	7.70
F-2455	7.70
F-2456	7.50
F-2457	7.50
F-2458	7.30
F-2459	7.30
F-2460	7.20
F-2461	7.10
F-2462	7.10
F-2463	7.05
F-2464	7.00
F-2465	7.00
F-2466	7.05
F-2467	7.10
F-2468	7.20
F-2469	7.20
F-2470	7.40
F-2471	7.40
F-2472	7.60
F-2473	7.80
F-2474	8.00
F-2475	8.40
F-2476	8.80
F-2477	9.50
F-2478	9.80
F-2479	9.95
F-2480	10.20
F-2481	10.50
Type TI-26	
F-2500	5.70
F-2501	5.70
F-2502	5.70
F-2503	5.70
F-2504	5.70
F-2505	5.70
F-2506	5.70
F-2507	5.70
F-2508	6.05
F-2509	6.20
F-2510	6.60
F-2511	6.80
F-2512	7.10
F-2513	7.35
F-2514	7.60
F-2515	7.80
F-2516	8.05
F-2517	8.30
F-2518	8.50
F-2519	8.70
F-2520	8.90
F-2521	9.20
F-2522	9.50
F-2523	9.90
F-2524	10.30
F-2525	10.80
F-2526	11.05
F-2527	11.30
F-2528	11.50
F-2529	11.90
F-2530	12.20
F-2531	12.60
F-2532	13.05
F-2533	13.80
Type TI-27	
F-2550	7.90
F-2551	7.90
F-2552	7.90
F-2553	7.90
F-2554	7.90
F-2555	8.10
F-2556	8.10
F-2557	8.20
F-2558	8.40
F-2559	8.20
F-2560	8.30
F-2561	8.50
F-2562	8.60
F-2563	8.80
F-2564	8.95
F-2565	9.10
F-2566	9.30
F-2567	9.50
F-2568	9.90
F-2569	10.50
F-2570	10.70
F-2571	10.90
F-2572	11.40
F-2573	11.60
F-2574	12.10
F-2575	12.40
F-2576	12.90
F-2577	13.40
F-2578	13.70
F-2579	13.90
F-2580	14.20
F-2581	14.20
F-2582	14.50
F-2583	14.50
Type TI-28	
F-2600	6.75
F-2601	6.85
F-2602	6.90
F-2603	6.95
F-2604	7.05
F-2605	7.10
F-2606	7.30
F-2607	7.40
F-2608	7.60
F-2609	7.80
F-2610	7.20
F-2611	7.60
F-2612	8.40
F-2613	8.50
F-2614	8.70
F-2615	9.20
F-2616	9.40
F-2617	9.55
F-2618	9.70
F-2619	9.90
F-2620	10.05
F-2621	10.10
F-2622	10.20
F-2623	10.30
F-2624	10.50
F-2625	10.80
F-2626	11.80
F-2627	12.20
F-2628	12.35
F-2629	12.65
F-2630	13.30
F-2631	14.65
F-2632	15.20
F-2633	16.15
Type TI-29	
F-2650	8.05
F-2651	8.10
F-2652	8.20
F-2653	8.20
F-2654	8.20
F-2655	8.20
F-2656	8.20
F-2657	8.30
F-2658	8.10
F-2659	8.10
F-2660	7.90
F-2661	7.60
F-2662	7.70
F-2663	7.75
F-2664	7.80
F-2665	7.90
F-2666	7.90
F-2667	8.00
F-2668	8.00
F-2669	8.10
F-2670	8.15
F-2671	8.20
F-2672	8.25
F-2673	8.30
F-2674	8.35
F-2675	8.40
F-2676	8.50
F-2677	8.60
F-2678	8.75
F-2679	8.75
F-2680	9.25
F-2681	10.10
F-2682	10.75
F-2683	11.75
F-2684	12.75
F-2685	13.60
F-2686	13.80
Type TI-30	
F-2700	12.05
F-2701	12.30
F-2702	12.50
F-2703	12.80
F-2704	12.95
F-2705	13.20
F-2706	13.50
F-2707	13.70
F-2708	13.90
F-2709	14.20
F-2710	14.50
F-2711	13.60
F-2712	13.75
F-2713	14.10
F-2714	14.20
F-2715	14.30
F-2716	14.50
F-2717	14.70
F-2718	15.10
F-2719	15.20
F-2720	15.30
F-2721	15.50
F-2722	15.70
F-2723	15.80
F-2724	15.95
F-2725	16.05
F-2726	16.20
F-2727	16.50
F-2728	16.70
F-2729	17.00
F-2730	17.50
F-2731	17.95
F-2732	18.90
F-2733	19.45
F-2734	20.40
F-2735	21.85
F-2736	22.50
Type TI-31	
F-2750	14.40
F-2751	14.80
F-2752	14.90
F-2753	14.90
F-2754	14.90
F-2755	14.90
F-2756	14.90
F-2757	14.90
F-2758	15.05
F-2759	15.10
F-2760	15.20
F-2761	15.20
F-2762	14.50
F-2763	14.80
F-2764	15.10
F-2765	15.50
F-2766	15.80
F-2767	16.05
F-2768	16.10
F-2769	16.20
F-2770	16.40
F-2771	16.60
F-2772	16.80
F-2773	17.00
F-2774	17.10
F-2775	17.40
F-2776	17.60
F-2777	17.90
F-2778	18.05
F-2779	18.45
F-2780	19.00
F-2781	19.50
F-2782	19.95
F-2783	20.90
F-2784	21.80
F-2785	22.80
F-2786	23.80
F-2787	24.70
F-2788	27.50
Type TI-32	
F-2800	7.40
F-2801	7.60
F-2802	7.80
F-2803	8.40
F-2804	8.60
F-2805	8.70
F-2806	8.80
F-2807	8.90
F-2808	9.60
F-2809	9.80
F-2810	10.20
F-2811	10.40
F-2812	10.60
F-2813	10.80
F-2814	11.05
F-2815	11.20
F-2816	11.40
F-2817	11.65
F-2818	12.10
F-2819	12.20
F-2820	12.30
F-2821	12.50
F-2822	12.70
F-2823	13.05
F-2824	13.30
Type TI-33	
F-2850	5.90
F-2851	6.00
F-2852	6.10
F-2853	6.30
F-2854	6.40
F-2855	6.70
F-2856	6.90
F-2857	7.10
F-2858	7.30
F-2859	7.40
F-2860	7.60
F-2861	7.70
F-2862	7.80
F-2863	8.10
F-2864	8.20
F-2865	8.30
F-2866	8.50
F-2867	8.60
Type TI-34	
F-2900	5.60
F-2901	5.60
F-2902	5.60
F-2903	5.60
F-2904	5.60
F-2905	5.80
F-2906	5.80
F-2907	6.00
F-2908	6.00
F-2909	6.00
F-2910	6.30
F-2911	6.60
F-2912	6.60
F-2913	7.30
F-2914	8.30
F-2915	8.30
F-2916	8.40
F-2917	8.60
F-2918	8.80
F-2919	8.80
F-2920	8.90
Type TI-35	
F-2950	6.80
F-2951	6.90
F-2952	7.20
F-2953	7.40
F-2954	7.60
F-2955	7.80
F-2956	8.00
F-2957	8.10
F-2958	8.30
F-2959	8.50
F-2960	8.70
F-2961	8.90
F-2962	9.05
F-2963	9.20
Type TI-36	
F-3000	5.90
F-3001	5.90
F-3002	5.90
F-3003	6.00
F-3004	6.00
F-3005	6.15
F-3006	6.30
F-3007	6.30
F-3008	6.60
F-3009	6.60
F-3010	6.80
F-3011	7.20
F-3012	7.40
F-3013	7.70
F-3014	8.20
F-3015	8.50
F-3016	8.80
F-3017	8.90
Type TI-38	
F-3550	7.50
F-3551	7.50
F-3552	7.50
F-3553	7.45
F-3554	7.40
F-3555	7.35
F-3556	7.30
F-3557	7.25
F-3558	7.75
F-3559	8.00
F-3560	8.25
F-3561	8.50
F-3562	8.65
F-3563	8.85
F-3564	9.00
F-3565	9.10
F-3566	9.30
F-3567	9.80
F-3568	9.80
F-3569	10.20
F-3570	10.80
F-3571	10.90
F-3572	11.15
F-3573	11.50
F-3574	11.90
F-3575	12.30
F-3576	12.70
F-3577	13.10
F-3578	13.50
Type TI-37	
F-4000	9.30
F-4001	9.30
F-4002	9.30
F-4003	9.30
F-4004	9.10
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F-4006	9.05
F-4007	9.00
F-4008	8.80
F-4009	8.70
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F-4011	8.80
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F-4015	9.50
F-4016	9.70
F-4017	9.90
F-4018	10.30
F-4019	10.60
F-4020	11.10
F-4021	11.70
F-4022	12.50
F-4023	13.10
F-4024	13.50
F-4025	13.90

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FREED TRANSFORMER CO., INC.

HIGH "Q" INDUCTORS

FREQUENCY RANGE: 1 KHz to 30 KHz

MIL-T-27B: TF4(OR 5)RX

TYPE		PFL 1	PFL 2	PFL 3	PFL 4	PFL 5	PFL 6	PFL 7	PFL 8
Size	Dia.	21/32	27/32	1"	1-1/4	1-3/8	1-1/2	1-3/4	2"
	H'ght	15/32	9/16	5/8	1-1/8	1-1/4	1-5/16	1-7/16	1-1/2
Typi-	Ind.	1.5 MH	2.7 MH	3.9 MH	10 MH	22 MH	39 MH	68 MH	180 MH
cal	Freq.	250KHz	200KHz	180KHz	50KHz	35KHz	15KHz	10KHz	5KHz
"Q"	"Q"	300	350	300	400	400	450	380	300
Inductance		Catalog Number							
1.0	MH	F5000	F5050	F5100	F5150	F5200	F5250	F5300	F5400
1.2	MH	F5001	F5051	F5101	F5151	F5201	F5251	F5301	F5401
1.5	MH	F5002	F5052	F5102	F5152	F5202	F5252	F5302	F5402
1.8	MH	F5003	F5053	F5103	F5153	F5203	F5253	F5303	F5403
2.2	MH	F5004	F5054	F5104	F5154	F5204	F5254	F5304	F5404
2.7	MH	F5005	F5055	F5105	F5155	F5205	F5255	F5305	F5405
3.3	MH	F5006	F5056	F5106	F5156	F5206	F5256	F5306	F5406
3.9	MH	F5007	F5057	F5107	F5157	F5207	F5257	F5307	F5407
4.7	MH	F5008	F5058	F5108	F5158	F5208	F5258	F3308	F5408
5.6	MH	F5009	F5059	F5109	F5159	F5209	F5259	F5309	F5409
6.8	MH	F5010	F5060	F5110	F5160	F5210	F5260	F5310	F5410
8.2	MH	F5011	F5061	F5111	F5161	F5211	F5261	F5311	F5411
10	MH	F5012	F5062	F5112	F5162	F5212	F5262	F5312	F5412
12	MH	F5013	F5063	F5113	F5163	F5213	F5263	F5313	F5413
15	MH	F5014	F5064	F5114	F5164	F5214	F5264	F5314	F5414
18	MH	F5015	F5065	F5115	F5165	F5215	F5265	F5315	F5415
22	MH	F5016	F5066	F5116	F5166	F5216	F5266	F5316	F5416
27	MH	F5017	F5067	F5117	F5167	F5217	F5267	F5317	F5417
33	MH	F5018	F5068	F5118	F5168	F5218	F5268	F5318	F5418
39	MH		F5069	F5119	F5169	F5219	F5269	F5319	F5419
47	MH		F5070	F5120	F5170	F5220	F5270	F5320	F5420
56	MH		F5071	F5121	F5171	F5221	F5271	F5321	F5421
68	MH		F5072	F5122	F5172	F5222	F5272	F5322	F5422
82	MH		F5073	F5123	F5173	F5223	F5273	F5323	F5423
100	MH		F5074	F5124	F5174	F5224	F5274	F5324	F5424
120	MH		F5075	F5125	F5175	F5225	F5275	F5325	F5425
150	MH		F5076	F5126	F5176	F5226	F5276	F5326	F5426
180	MH		F5077	F5127	F5177	F5227	F5277	F5327	F5427
220	MH		F5078	F5128	F5178	F5228	F5278	F5328	F5428
270	MH		F5079	F5129	F5179	F5229	F5279	F5329	F5429
330	MH			F5130	F5180	F5230	F5280	F5330	F5430
390	MH			F5131	F5181	F5231	F5281	F5331	F5431
470	MH			F5132	F5182	F5232	F5282	F5332	F5432
560	MH			F5133	F5183	F5233	F5283	F5333	F5433
680	MH				F5184	F5234	F5284	F5334	F5434
820	MH				F5185	F5235	F5285	F5335	F5435
1.0	H				F5186	F5236	F5286	F5336	F5436
1.2	H				F5187	F5237	F5287	F5337	F5437
1.5	H				F5188	F5238	F5288	F5338	F5438
1.8	H				F5189	F5239	F5289	F5339	F5439
2.2	H				F5190	F5240	F5290	F5340	F5440
2.7	H					F5241	F5291	F5341	F5441
3.3	H					F5242	F5292	F5342	F5442
3.9	H					F5243	F5293	F5343	F5443
4.7	H					F5244	F5294	F5344	F5444
5.6	H					F5245	F5295	F5345	F5445
6.8	H						F5296	F5346	F5446
8.2	H						F5297	F5347	F5447
10	H						F5298	F5348	F5448
12	H							F5349	F5449
15	H							F5350	F5450
18	H							F5351	F5451
22	H							F5352	F5452
27	H								F5453
33	H								F5454

FREQUENCY RANGE: 200 KHz to 2,500 KHz

MIL-T-27B: TF4(OR 5)RX

TYPE		PFM 1	PFM 2	PFM 3	PFM 4	PFM 5	PFM 6	PFM 7	PFM 8
Size	Dia.	21/32	27/32	1"	1-1/4	1-3/8	1-1/2	1-3/4	
	H'ght	15/32	9/16	5/8	1-1/8	1-1/4	1-5/16	1-7/16	
Typi-	Ind.	56 μH	68 μH	100 μH	150 μH	270 μH	680 μH	2.2 MH	
cal	Freq.	1 MHz	400KHz	400KHz	250KHz	200KHz	150KHz	100KHz	
"Q"	"Q"	300	300	400	500	700	650	750	
Inductance		Catalog Number							
15	μH	F5500	F5550	F5600	F5650	F5700	F5750	F5800	
18	μH	F5501	F5551	F5601	F5651	F5701	F5751	F5801	
22	μH	F5502	F5552	F5602	F5652	F5702	F5752	F5802	
27	μH	F5503	F5553	F5603	F5653	F5703	F5753	F5803	
33	μH	F5504	F5554	F5604	F5654	F5704	F5754	F5804	
39	μH	F5505	F5555	F5605	F5655	F5705	F5755	F5805	
47	μH	F5506	F5556	F5606	F5656	F5706	F5756	F5806	
56	μH	F5507	F5557	F5607	F5657	F5707	F5757	F5807	
68	μH	F5508	F5558	F5608	F5658	F5708	F5758	F5808	
82	μH	F5509	F5559	F5609	F5659	F5709	F5759	F5809	
100	μH	F5510	F5560	F5610	F5660	F5710	F5760	F5810	
120	μH	F5511	F5561	F5611	F5661	F5711	F5761	F5811	
150	μH	F5512	F5562	F5612	F5662	F5712	F5762	F5812	
180	μH	F5513	F5563	F5613	F5663	F5713	F5763	F5713	
220	μH	F5514	F5564	F5614	F5664	F5714	F5764	F5814	
270	μH	F5515	F5565	F5615	F5665	F5715	F5765	F5815	
330	μH	F5516	F5566	F5616	F5666	F5716	F5766	F5816	
390	μH	F5517	F5567	F5617	F5667	F5717	F5767	F5817	
470	μH	F5518	F5568	F5618	F5668	F5718	F5768	F5818	
560	μH	F5519	F5569	F5619	F5669	F5719	F5769	F5819	
680	μH	F5520	F5570	F5620	F5670	F5720	F5770	F5820	
820	μH	F5521	F5571	F5621	F5671	F5721	F5771	F5821	
1.0	MH	F5522	F5572	F5622	F5672	F5722	F5772	F5822	
1.2	MH	F5523	F5573	F5623	F5673	F5723	F5773	F5823	
1.5	MH	F5524	F5574	F5624	F5674	F5724	F5774	F5824	
1.8	MH	F5525	F5575	F5625	F5675	F5725	F5775	F5825	
2.2	MH	F5526	F5576	F5626	F5676	F5726	F5776	F5826	
2.7	MH	F5527	F5577	F5627	F5677	F5727	F5777	F5827	
3.3	MH	F5528	F5578	F5628	F5678	F5728	F5778	F5828	
3.9	MH	F5529	F5579	F5629	F5679	F5729	F5779	F5829	
4.7	MH	F5530	F5580	F5630	F5680	F5730	F5780	F5830	
5.6	MH	F5531	F5581	F5631	F5681	F5731	F5781	F5831	
6.8	MH	F5532	F5582	F5632	F5682	F5732	F5782	F5832	
8.2	MH	F5533	F5583	F5633	F5683	F5733	F5783	F5733	
10.0	MH	F5534	F5584	F5634	F5684	F5734	F5784	F5834	
12.0	MH	F5535	F5585	F5635	F5685	F5735	F5785	F5835	
15.0	MH	F5536	F5586	F5636	F5686	F5736	F5786	F5836	
18.0	MH	F5537	F5587	F5637	F5687	F5737	F5787	F5837	
22.0	MH		F5588	F5638	F5688	F5738	F5788	F5838	
27.0	MH		F5589	F5639	F5689	F5739	F5789	F5839	
33.0	MH		F5590	F5640	F5690	F5740	F5790	F5840	
39.0	MH		F5591	F5641	F5691	F5741	F5791	F5841	
47.0	MH		F5592	F5642	F5692	F5742	F5792	F5842	
56.0	MH			F5643	F5693	F5743	F5793	F5843	
68.0	MH			F5644	F5694	F5744	F5794	F5844	
82.0	MH				F5695	F5745	F5795	F5845	
100.0	MH						F5796	F5846	

See Freed Price Pages 1453-1455

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FREED TRANSFORMER CO., INC.

HIGH "Q" INDUCTORS

PRICE LIST

Catalog No.	Net Price
F5000	11.75
F5001	11.75
F5002	11.75
F5003	11.75
F5004	11.75
F5005	11.75
F5006	11.75
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F5674	15.80
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F5676	15.80
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F5781	15.80
F5782	15.80
F5783	15.80
F5784	15.80
F5785	15.80
F5786	15.80
F5787	15.80
F5788	15.80
F5789	15.80
F5790	15.80
F5791	15.80
F5792	15.80
F5793	15.80
F5794	15.80
F5795	15.80
F5796	15.80
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F5802	21.50
F5803	21.50
F5804	21.50
F5805	21.50
F5806	21.50
F5807	21.50
F5808	21.50
F5809	21.50
F5810	21.50
F5811	21.50
F5812	21.50
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F5815	21.50
F5816	21.50
F5817	21.50
F5818	21.50
F5819	21.50
F5820	21.50
F5821	21.50
F5822	21.50
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F5824	21.50
F5825	21.50
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F5831	21.50
F5832	21.50
F5833	21.50
F5834	21.50
F5835	21.50
F5836	21.50
F5837	21.50
F5838	21.50
F5839	21.50
F5840	21.50
F5841	21.50
F5842	21.50
F5843	21.50
F5844	21.50
F5845	21.50
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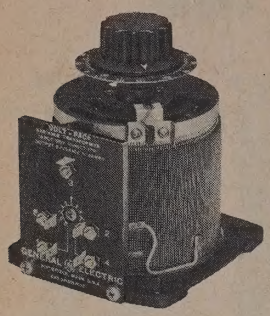
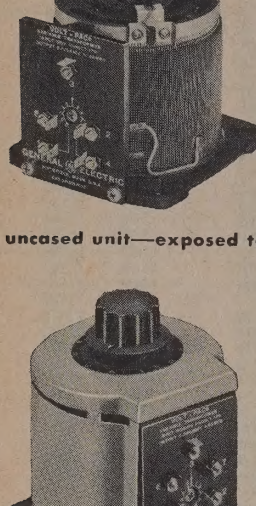
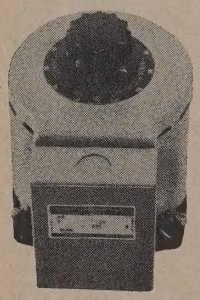
volt-pac® VARIABLE TRANSFORMERS



Manual uncased unit—exposed terminals



Manual cased unit—exposed terminals



Manual cased unit—enclosed terminals

The Volt-Pac variable transformer is a control device which provides continuously adjustable output voltage from a fixed line input to vary the voltage applied to a particular electrical load. With Volt-Pac units, output voltage is changed by flux transformation . . . in the unsaturated range of the magnetic core. The results . . . low cost, versatility, reliability, simplicity, and no wave form distortion.

Volt-Pac units, for surface or back-of-panel mounting, are designed for operation in ambients of −20C to +40C at full rated load, and under all load conditions have low electrical losses.

* When Overvoltage Connection is used, rated current should not be exceeded. Output kva for Overvoltage Connection is maximum output voltage times rated current.

† When using extended tap connections, operation is for 60 hertz per second only.

‡ Output at Overvoltage Connection is 0-132 volts.

§ When operated on lower input-voltage tap, rated current must be reduced when output voltage exceeds 140 percent of input voltage.

¶ For Line-voltage Connection only — No Overvoltage Connection provided.

■ For 240-volt input, 0-240-volt output, application only.

• For 480-volt input, 0-480-volt output, application only.

ϕ 60 hertz only.

Line-voltage Connection		Over-voltage Con-nection, Amp*	UNCASED MODELS Exposed Terminals		CASED MODELS			
					Exposed Terminals		Enclosed Terminals	
Rated Amp	Max Amp		Model Number	List Price	Model Number	List Price	Model Number	List Price
MANUAL — SINGLE-PHASE, 50/60 HERTZ								
120 VOLT INPUT: OUTPUT — 0-120 VOLT (LINE VOLTAGE CONN.) 0-140 VOLT (OVERVOLTAGE CONN.)								
2.5‡	3.2	2.5	9T92A1	$12.00	.....	.....	.....	.....
4.5†	6.5	4.0	9T92Y5	17.00	.....	.....	.....	.....
7.5†	10.8	7.5	9T92Y7	22.00	9T92Y7G2	$27.00	9T92Y7G3	$28.00
9.0†	11.5	9.0	9T92Y9	24.00	9T92Y9G2	29.00	9T92Y9G3	30.00
10.0ϕ	13.0	None	9T92Y8¶	24.00	9T92Y8G2¶	29.00	9T92Y8G3¶	30.00
11.5ϕ	14.5	None	9T92Y10¶	26.00	9T92Y10G2¶	31.00	9T92Y10G3¶	32.00
15.0†	19.0	15.0	9T92Y27	41.00	9T92Y27G2	47.00	9T92Y27G3	49.00
18.0†	21.7	18.0	9T92Y28	51.00	9T92Y28G2	57.00	9T92Y28G3	59.00
30.0†	34.0	30.0	9T92Y37	97.00	9T92Y37G2	104.00	9T92Y37G3	108.00
37.0†	37.0	37.0	9T92Y38	119.00	9T92Y38G2	126.00	9T92Y38G3	130.00
50.0	55.0	50.0	9T92Y49	147.00	9T92Y49G2	154.00	9T92Y49G3	161.00
60.0	60.0	60.0	9T92Y50	225.00	9T92Y50G2	232.00	9T92Y50G3	239.00
74.0†	74.0	74.0	9T92Y41	257.00	9T92Y41G2	271.00	9T92Y41G3	279.00
100.0	110.0	100.0	9T92Y53	326.00	9T92Y53G2	340.00	9T92Y53G3	354.00
120.0	120.0	120.0	9T92Y54	472.00	9T92Y54G2	486.00	9T92Y54G3	500.00
150.0	165.0	150.0	9T92Y55	568.00	9T92Y55G2	589.00	9T92Y55G3	610.00
180.0	180.0	180.0	9T92Y56	734.00	9T92Y56G2	755.00	9T92Y56G3	776.00
240.0	240.0	240.0	9T92Y57	1070.00	9T92Y57G2	1098.00	9T92Y57G3	1128.00
300.0	300.0	300.0	9T92Y58	1325.00	9T92Y58G2	1353.00	9T92Y58G3	1383.00
360.0	360.0	360.0	9T92Y59	1640.00	9T92Y59G2	1682.00	9T92Y59G3	1726.00
120/240 VOLT INPUT§ OUTPUT 0-240 VOLT (LINE VOLTAGE CONN.) 0-280 VOLT (OVERVOLTAGE CONN.)								
4.0†	5.0	4.0	9T92Y13	$26.00	9T92Y13G2	$31.00	9T92Y13G3	$32.00
4.0ϕ	5.8	None	9T92Y12■	26.00	9T92Y12G2■	31.00	9T92Y12G3■	32.00
5.0ϕ	6.8	None	9T92Y14■	28.00	9T92Y14G2■	33.00	9T92Y14G3■	34.00
7.0†	10.1	7.0	9T92Y29	41.00	9T92Y29G2	47.00	9T92Y29G3	49.00
8.5†	11.0	8.5	9T92Y30	51.00	9T92Y30G2	57.00	9T92Y30G3	59.00
14.0†	14.0	14.0	9T92Y39	97.00	9T92Y39G2	104.00	9T92Y39G3	108.00
16.0†	16.0	16.0	9T92Y40	119.00	9T92Y40G2	126.00	9T92Y40G3	130.00
30.0	33.0	30.0	9T92Y51	147.00	9T92Y51G2	154.00	9T92Y51G3	161.00
35.0	35.0	35.0	9T92Y52	225.00	9T92Y52G2	232.00	9T92Y52G3	239.00
60.0	66.0	60.0	9T92Y60	375.00	9T92Y60G2	389.00	9T92Y60G3	403.00
70.0	70.0	70.0	9T92Y61	472.00	9T92Y61G2	486.00	9T92Y61G3	500.00
90.0	99.0	90.0	9T92Y62	605.00	9T92Y62G2	626.00	9T92Y62G3	647.00
105.0	105.0	105.0	9T92Y63	734.00	9T92Y63G2	755.00	9T92Y63G3	776.00
120.0	132.0	120.0	9T92Y5021	872.00	9T92Y5021G2	900.00	9T92Y5021G3	930.00
140.0	140.0	140.0	9T92Y64	1090.00	9T92Y64G2	1118.00	9T92Y64G3	1148.00
175.0	175.0	175.0	9T92Y65	1330.00	9T92Y65G2	1365.00	9T92Y65G3	1402.00
210.0	210.0	210.0	9T92Y66	1625.00	9T92Y66G2	1667.00	9T92Y66G3	1711.00
240/480 VOLT INPUT§ OUTPUT 0-480 VOLT (LINE VOLTAGE CONN.) 0-560 VOLT (OVERVOLTAGE CONN.)								
4.0†	5.0	4.0	9T92Y17	$73.00	9T92Y17G2	$83.00	9T92Y17G3	$85.00
4.0ϕ	5.8	None	9T92Y16•	66.00	9T92Y16G2•	$76.00	9T92Y16G3•	78.00
5.0ϕ	6.8	None	9T92Y18•	73.00	9T92Y18G2•	83.00	9T92Y18G3•	85.00
7.0†	10.1	7.0	9T92Y31	90.00	9T92Y31G2	102.00	9T92Y31G3	106.00
8.5†	11.0	8.5	9T92Y32	123.00	9T92Y32G2	135.00	9T92Y32G3	139.00
14.0†	14.0	14.0	9T92Y42	211.00	9T92Y42G2	225.00	9T92Y42G3	233.00
16.0†	16.0	16.0	9T92Y43	246.00	9T92Y43G2	260.00	9T92Y43G3	268.00
30.0	33.0	30.0	9T92Y67	326.00	9T92Y67G2	340.00	9T92Y67G3	354.00
35.0	35.0	35.0	9T92Y68	461.00	9T92Y68G2	475.00	9T92Y68G3	489.00
60.0	66.0	60.0	9T92Y69	872.00	9T92Y69G2	893.00	9T92Y69G3	914.00
70.0	70.0	70.0	9T92Y70	1057.00	9T92Y70G2	1078.00	9T92Y70G3	1099.00
90.0	99.0	90.0	9T92Y71	1290.00	9T92Y71G2	1332.00	9T92Y71G3	1376.00
105.0	105.0	105.0	9T92Y72	1605.00	9T92Y72G2	1647.00	9T92Y72G3	1691.00
MANUAL — THREE-PHASE, 50/60 HERTZ								
240 VOLT LINE TO LINE INPUT: OUTPUT — 0-240 VOLT (LINE VOLTAGE CONN.) 0-280 VOLT (OVERVOLTAGE CONN.)								
2.5ϕ	3.2	None	9T92A3¶	$55.00	.....	.....	.....	.....
4.5ϕ	6.5	None	9T92Y6¶	75.00	.....	.....	.....	.....
7.5	10.8	7.5	9T92Y19	83.00	9T92Y19G2	$98.00	9T92Y19G3	$101.00
9.0	11.5	9.0	9T92Y21	90.00	9T92Y21G2	105.00	9T92Y21G3	108.00
10.0ϕ	13.0	None	9T92Y20¶	90.00	9T92Y20G2¶	105.00	9T92Y20G3	108.00
11.5ϕ	14.5	None	9T92Y22¶	94.00	9T92Y22G2¶	109.00	9T92Y22G3	112.00
15.0	19.0	15.0	9T92Y33	145.00	9T92Y33G2	163.00	9T92Y33G3	169.00
18.0	21.7	18.0	9T92Y34	182.00	9T92Y34G2	200.00	9T92Y34G3	206.00
30.0	34.0	30.0	9T92Y44	320.00	9T92Y44G2	341.00	9T92Y44G3	353.00
37.0	37.0	37.0	9T92Y45	384.00	9T92Y45G2	405.00	9T92Y45G3	417.00
50.0	55.0	50.0	9T92Y74	546.00	9T92Y74G2	567.00	9T92Y74G3	588.00
60.0	60.0	60.0	9T92Y75	712.00	9T92Y75G2	733.00	9T92Y75G3	754.00
74.0	74.0	74.0	9T92Y48	870.00	9T92Y48G2	912.00	9T92Y48G3	936.00
100.0	110.0	100.0	9T92Y78	1175.00	9T92Y78G2	1217.00	9T92Y78G3	1261.00
120.0	120.0	120.0	9T92Y79	1600.00	9T92Y79G2	1642.00	9T92Y79G3	1686.00
240/480 VOLT LINE TO LINE INPUT§ OUTPUT — 0-480 VOLT (LINE VOLTAGE CONN.) 0-560 VOLT (OVERVOLTAGE CONN.)								
4.0	5.0	4.0	9T92Y25	$90.00	9T92Y25G2	$105.00	9T92Y25G3	$108.00
4.0ϕ	5.8	None	9T92Y24•	90.00	9T92Y24G2•	105.00	9T92Y24G3	108.00
5.0ϕ	6.8	None	9T92Y26•	94.00	9T92Y26G2•	109.00	9T92Y26G3	112.00
7.0	10.1	7.0	9T92Y35	145.00	9T92Y35G2	163.00	9T92Y35G3	169.00
8.5	11.0	8.5	9T92Y36	182.00	9T92Y36G2	200.00	9T92Y36G3	206.00
14.0	14.0	14.0	9T92Y46	320.00	9T92Y46G2	341.00	9T92Y46G3	353.00
16.0	16.0	16.0	9T92Y47	384.00	9T92Y47G2	405.00	9T92Y47G3	417.00
30.0	33.0	30.0	9T92Y76	546.00	9T92Y76G2	567.00	9T92Y76G3	588.00
35.0	35.0	35.0	9T92Y77	712.00	9T92Y77G2	733.00	9T92Y77G3	754.00
60.0	66.0	60.0	9T92Y80	1175.00	9T92Y80G2	1217.00	9T92Y80G3	1261.00
70.0	70.0	70.0	9T92Y81	1600.00	9T92Y81G2	1642.00	9T92Y81G3	1686.00

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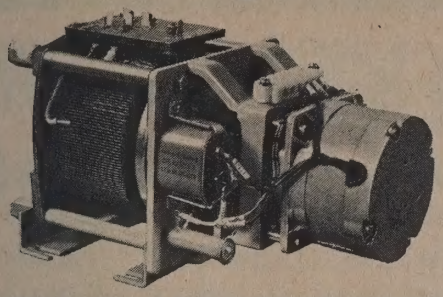


Motor uncased unit — exposed terminals

MOTOR-OPERATED—SINGLE-PHASE, 50/60 HERTZ

120 VOLT INPUT: OUTPUT 0-120 VOLT (LINE VOLTAGE CONN) 0-140 VOLT (OVERVOLTAGE CONN)

Line Voltage Connection Rated Amp	Line Voltage Connection Max Amp	Overvoltage Connection Amp*	UNCASED MODELS Exposed Terminals Model Number (For 28-second Operation Only△)	UNCASED MODELS Exposed Terminals List Price	CASED MODELS Enclosed Terminals Model Number (For 28-second Operation Only△)	CASED MODELS Enclosed Terminals List Price
2.5‡	3.2	2.5	9T92A1G51	$122.00	.....	.....
4.5†	6.5	4.5	9T92Y5G51	127.00	.....	.....
7.5†	10.8	7.5	9T92Y7G51	137.00	9T92Y7G54	$143.00
9.0†	11.5	9.0	9T92Y9G51	139.00	9T92Y9G54	145.00
10.0ϕ	13.0	None	9T92Y8G51¶	139.00	9T92Y8G54¶	145.00
11.5ϕ	14.5	None	9T92Y10G51¶	141.00	9T92Y10G54¶	147.00
15.0†	19.0	15.0	9T92Y27G51	184.00	9T92Y27G54	192.00
18.0†	21.7	18.0	9T92Y28G51	194.00	9T92Y28G54	202.00
30.0†	34.0	30.0	9T92Y37G51	240.00	9T92Y37G54	251.00
37.0†	37.0	37.0	9T92Y38G51	262.00	9T92Y38G54	273.00
50.0	55.0	50.0	9T92Y49G51	290.00	9T92Y49G54	304.00
60.0	60.0	60.0	9T92Y50G51	368.00	9T92Y50G54	382.00
74.0†	74.0	74.0	9T92Y41G51	400.00	9T92Y41G54	422.00
100.0	110.0	100.0	9T92Y53G51	469.00	9T92Y53G54	497.00
120.0	120.0	120.0	9T92Y54G51	615.00	9T92Y54G54	643.00
150.0	165.0	150.0	9T92Y55G51	711.00	9T92Y55G54	753.00
180.0	180.0	180.0	9T92Y56G51	887.00	9T92Y56G54	919.00
240.0	240.0	240.0	9T92Y57G51	1213.00	9T92Y57G54	1271.00
300.0	300.0	300.0	9T92Y58G51	1468.00	9T92Y58G54	1526.00
360.0	360.0	360.0	9T92Y59G51	1783.00	9T92Y59G54	1869.00

120/240 VOLT INPUT§: OUTPUT 0-240 VOLT (LINE VOLTAGE CONN) 0-280 VOLT (OVERVOLTAGE CONN)

Line Voltage Connection Rated Amp	Line Voltage Connection Max Amp	Overvoltage Connection Amp*	UNCASED MODELS Exposed Terminals Model Number (For 28-second Operation Only△)	UNCASED MODELS Exposed Terminals List Price	CASED MODELS Enclosed Terminals Model Number (For 28-second Operation Only△)	CASED MODELS Enclosed Terminals List Price
4.0†	5.0	4.0	9T92Y13G51	$141.00	9T92Y13G54	$147.00
4.0ϕ	5.8	None	9T92Y12G51■	141.00	9T92Y12G54■	147.00
5.0ϕ	6.8	None	9T92Y14G51■	143.00	9T92Y14G54■	149.00
7.0	10.1	7.0	9T92Y29G51	184.00	9T92Y29G54	192.00
8.5†	11.0	8.5	9T92Y30G51	194.00	9T92Y30G54	202.00
14.0†	14.0	14.0	9T92Y39G51	240.00	9T92Y39G54	251.00
16.0†	16.0	16.0	9T92Y40G51	262.00	9T92Y40G54	273.00
30.0	33.0	30.0	9T92Y51G51	290.00	9T92Y51G54	304.00
35.0	35.0	35.0	9T92Y52G51	368.00	9T92Y52G54	382.00
60.0	66.0	60.0	9T92Y60G51	518.00	9T92Y60G54	546.00
70.0	70.0	70.0	9T92Y61G51	615.00	9T92Y61G54	643.00
90.0	99.0	90.0	9T92Y62G51	748.00	9T92Y62G54	790.00
105.0	105.0	105.0	9T92Y63G51	877.00	9T92Y63G54	919.00
120.0	132.0	120.0	9T92Y5021G51	1015.00	9T92Y5021G54	1073.00
140.0	140.0	140.0	9T92Y64G51	1233.00	9T92Y64G54	1291.00
175.0	175.0	175.0	9T92Y65G51	1473.00	9T92Y65G54	1545.00
210.0	210.0	210.0	9T92Y66G51	1768.00	9T92Y66G54	1954.00

240/480 VOLT INPUT§: OUTPUT 0-480 VOLT (LINE VOLTAGE CONN) 0-560 VOLT (OVERVOLTAGE CONN)

Line Voltage Connection Rated Amp	Line Voltage Connection Max Amp	Overvoltage Connection Amp*	UNCASED MODELS Exposed Terminals Model Number (For 28-second Operation Only△)	UNCASED MODELS Exposed Terminals List Price	CASED MODELS Enclosed Terminals Model Number (For 28-second Operation Only△)	CASED MODELS Enclosed Terminals List Price
4.0†	5.0	4.0	9T92Y17G51	$188.00	9T92Y17G54	$200.00
4.0ϕ	5.8	None	9T92Y16G51•	181.00	9T92Y16G54•	193.00
5.0ϕ	6.8	None	9T92Y18G51•	188.00	9T92Y18G54•	200.00
7.0†	10.1	7.0	9T92Y31G51	233.00	9T92Y31G54	249.00
8.5†	11.0	8.5	9T92Y32G51	266.00	9T92Y32G54	282.00
14.0†	14.0	14.0	9T92Y42G51	354.00	9T92Y42G54	376.00
16.0†	16.0	16.0	9T92Y43G51	389.00	9T92Y43G54	411.00
30.0	33.0	30.0	9T92Y67G51	469.00	9T92Y67G54	497.00
35.0	35.0	35.0	9T92Y68G51	604.00	9T92Y68G54	632.00
60.0	66.0	60.0	9T92Y69G51	1015.00	9T92Y69G54	1057.00
70.0	70.0	70.0	9T92Y70G51	1200.00	9T92Y70G54	1242.00
90.0	99.0	90.0	9T92Y71G51	1433.00	9T92Y71G54	1519.00
105.0	105.0	105.0	9T92Y72G51	1748.00	9T92Y72G54	1834.00
140.0	140.0	140.0	9T92Y73G51	2430.00	9T92Y73G54	2545.00

△ Time to change output from 0 to 100%. Other times, from 2.5 to 60 sec, are available.

○ When operated on 120-volt input taps, rated current must be reduced when output voltage exceeds 168 volts.

For other footnotes, see opposite page.

Prices subject to change without notice.

MOTOR-OPERATED—THREE-PHASE, 50/60 HERTZ†

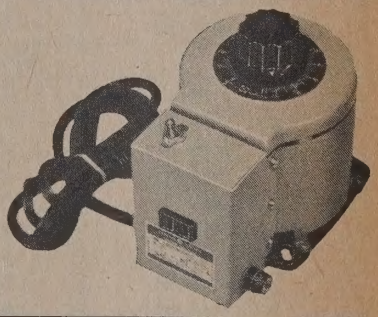
240 VOLT LINE TO LINE INPUT: OUTPUT 0-240 VOLT (LINE VOLTAGE CONN) 0-280 VOLT (OVERVOLTAGE CONN)

Line Voltage Connection Rated Amp	Line Voltage Connection Max Amp	Overvoltage Connection Amp*	UNCASED MODELS Exposed Terminals Model Number (For 28-second Operation Only△)	UNCASED MODELS Exposed Terminals List Price	CASED MODELS Enclosed Terminals Model Number (For 28-second Operation Only△)	CASED MODELS Enclosed Terminals List Price
2.5ϕ	3.2	None	9T92A3G51	$165.00	.....	.....
4.5ϕ	6.5	None	9T92Y6G51	185.00	.....	.....
7.5	10.8	7.5	9T92Y19G51	198.00	9T92Y19G54	$216.00
9.0	11.5	9.0	9T92Y21G51	205.00	9T92Y21G54	223.00
10.0ϕ	13.0	None	9T92Y20G51¶	205.00	9T92Y20G54¶	223.00
11.5ϕ	14.5	None	9T92Y22G51¶	209.00	9T92Y22G54¶	227.00
15.0	19.0	15.0	9T92Y33G51	288.00	9T92Y33G54	312.00
18.0	21.7	18.0	9T92Y34G51	325.00	9T92Y34G54	349.00
30.0	34.0	30.0	9T92Y44G51	463.00	9T92Y44G54	496.00
37.0	37.0	37.0	9T92Y45G51	527.00	9T92Y45G54	560.00
50.0	55.0	50.0	9T92Y74G51	689.00	9T92Y74G54	731.00
60.0	60.0	60.0	9T92Y75G51	855.00	9T92Y75G54	897.00
74.0	74.0	74.0	9T92Y48G51	1013.00	9T92Y48G54	1079.00
100.0	110.0	100.0	9T92Y78G51	1318.00	9T92Y78G54	1404.00
120.0	120.0	120.0	9T92Y79G51	1743.00	9T92Y79G54	1829.00
150.0	165.0	150.0	9T92Y82G51	1945.00	9T92Y82G54	2125.00
180.0	180.0	180.0	9T92Y83G51	2620.00	9T92Y83G54	2750.00

240/480 VOLT LINE TO LINE INPUT§: OUTPUT 0-480 VOLT (LINE VOLTAGE CONN) 0-560 VOLT (OVERVOLTAGE CONN)

Line Voltage Connection Rated Amp	Line Voltage Connection Max Amp	Overvoltage Connection Amp*	UNCASED MODELS Exposed Terminals Model Number (For 28-second Operation Only△)	UNCASED MODELS Exposed Terminals List Price	CASED MODELS Enclosed Terminals Model Number (For 28-second Operation Only△)	CASED MODELS Enclosed Terminals List Price
4.0	5.0	4.0	9T92Y25G51	$205.00	9T92Y25G54	$223.00
4.0ϕ	5.8	None	9T92Y24G51•	205.00	9T92Y24G54•	223.00
5.0ϕ	6.8	None	9T92Y26G51•	209.00	9T92Y26G54•	227.00
7.0	10.1	7.0	9T92Y35G51	288.00	9T92Y35G54	312.00
8.5	11.0	8.5	9T92Y36G51	325.00	9T92Y36G54	349.00
14.0	14.0	14.0	9T92Y46G51	463.00	9T92Y46G54	496.00
16.0	16.0	16.0	9T92Y47G51	527.00	9T92Y47G54	560.00
30.0	33.0	30.0	9T92Y76G51	689.00	9T92Y76G54	731.00
35.0	35.0	35.0	9T92Y77G51	855.00	9T92Y77G54	897.00
60.0	66.0	60.0	9T92Y80G51	1318.00	9T92Y80G54	1404.00
70.0	70.0	70.0	9T92Y81G51	1743.00	9T92Y81G54	1829.00
90.0	99.0	90.0	9T92Y84G51	1995.00	9T92Y84G54	2125.00
105.0	105.0	105.0	9T92Y85G51	2620.00	9T92Y85G54	2750.00

PLUG-IN SETS



For laboratory or shop source of adjustable a-c voltage. Provides output voltage of 0-117% of input voltage. Equipped with a line switch and a fuse for overload protection.

Cord is 6 feet long.

Connection† Line Voltage Rated Amp†	Line Voltage Max Amp	Overvoltage Connection Amp*	New Model Number	List Price	Type Plug and Rec	Receptacle Configuration Fig. No.
120 VOLT INPUT: OUTPUT 0-120 VOLT (LINE VOLTAGE CONN) 0-140 VOLT (OVERVOLTAGE CONN)						
7.5	10.8	7.5	9T92Y90	$29.00	Ungrounded	Fig. 2
7.5	10.8	7.5	9T92Y86	33.00	Grounded	Fig. 1
9.0	11.5	9.0	9T92Y91	31.00	Ungrounded	Fig. 2
9.0	11.5	9.0	9T92Y87	36.00	Grounded	Fig. 1
15.0	19.0	15.0	9T92Y88	56.00	Grounded	Fig. 1
18.0	21.7	18.0	9T92Y89	73.00	Grounded	Fig. 3
120/240 VOLT INPUT○: OUTPUT 0-240 (LINE CONN) 0-280 VOLT (OVERVOLTAGE CONN)						
4.0	5.0	4.0	9T92Y93	$36.00	Ungrounded	Fig. 2
4.0	5.0	4.0	9T92Y95	42.00	Grounded	Fig. 4
7.0	10.1	7.0	9T92Y96	56.00	Grounded	Fig. 4
8.5	11.0	8.5	9T92Y97	73.00	Grounded	Fig. 4

RECEPTACLE CONFIGURATIONS

Fig. 1

Fig. 2

Fig. 3

Fig. 4

GENERAL ELECTRIC

HIPOTRONICS INC.

HIGH VOLTAGE TRANSFORMERS

New facilities, including a 53,000 square foot addition, now allows Hipotronics to enlarge upon its transformer capabilities — from making transformers only for its own equipment to offering for sale a complete range of high voltage specialty units.

Hipotronics' modern plant has produced transformers with AC voltages in excess of 500 kv and power ratings in excess of 2000 kva. Quick solutions to special high voltage problems are readily available.

The following is a sample selection of high voltage transformers with suggested applications.

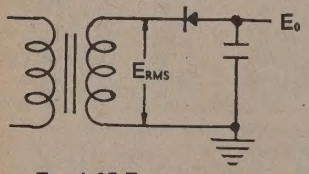
DC OUTPUTS FOR TYPICAL APPLICATIONS

MODEL	RMS OUTPUT	HALF WAVE RECTIFIER (5ma)	FULL WAVE BRIDGE (10ma)	FULL WAVE DOUBLER (5ma)	NET PRICE ($)
UNITS DESIGNED FOR AIR INSULATION					
RM-1	1 kv	1.2 kv	1.2 kv	2.4 kv	7.00
RM-1.5	1.5 kv	1.8 kv	1.8 kv	3.6 kv	7.00
RM-2	2 kv	2.4 kv	2.4 kv	4.8 kv	7.00
RM-2.5	2.5 kv	3 kv	3 kv	6 kv	8.00
RM-3	3 kv	3.6 kv	3.6 kv	7 kv	9.00
RM-3.5	3.5 kv	4.2 kv	4.2 kv	8 kv	12.00
RM-4	4 kv	4.8 kv	4.8 kv	9.5 kv	13.00
RM-4.5	4.5 kv	5.5 kv	5.5 kv	10.5 kv	14.00
RM-5	5 kv	6 kv	6 kv	12 kv	15.00
RM-6	6 kv	7 kv	7 kv	14 kv	19.00
RM-7	7 kv	8 kv	8 kv	16 kv	21.00
RM-8	8 kv	9.5 kv	9.5 kv	19 kv	24.00
RM-9	9 kv	10.5 kv	10.5 kv	21 kv	27.00
RM-10	10 kv	12.6 kv	12.6 kv	24 kv	30.00
UNITS DESIGNED FOR OIL OR EPOXY INSULATION					
RM-12.5	12.5 kv	15 kv	15 kv	30 kv	30.00
RM-17	17 kv	20 kv	20 kv	40 kv	40.00
RM-21	21 kv	25 kv	25 kv	50 kv	50.00
RM-25	25 kv	30 kv	30 kv	60 kv	65.00
RM-33	33 kv	40 kv	40 kv	80 kv	80.00
RM-42	42 kv	50 kv	50 kv	100 kv	150.00
RM-50	50 kv	60 kv	60 kv	120 kv	175.00
RM-63	63 kv	75 kv	75 kv	150 kv	225.00
RM-84	84 kv	100 kv	100 kv	200 kv	350.00

NOTE: All transformers are designed for nominal 15ma at rated rms voltage output and 117 v AC 50/60Hz input.

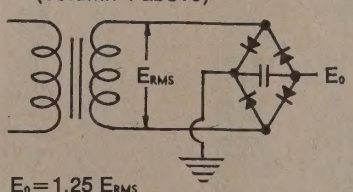
DC RECTIFIER CIRCUITS FOR LISTED TRANSFORMERS (TYPICAL APPLICATIONS)

HALF WAVE RECTIFIER
(column 3 above)



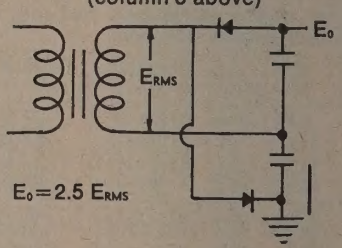
$E_0 = 1.25\ E_{RMS}$

FULL WAVE BRIDGE
(column 4 above)



$E_0 = 1.25\ E_{RMS}$

FULL WAVE DOUBLER
(column 5 above)



$E_0 = 2.5\ E_{RMS}$

Prices and specifications subject to change without notice
Consult factory for quotation on special requirements

HIPOTRONICS INC

High-Potential Electronics
HIPOTRONICS, INC.

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NEW!

PLUG-IN PRINTED CIRCUIT POWER TRANSFORMERS BY MICROTRAN

- 60 & 400 Hz. — Broad Range of Low Power Ratings.
- Compact Design For Miniaturized Solid State Circuitry.
- Precision Spaced Molded-in Terminals.
- Adaptable For Point to Point Wiring.
- MIL Construction at Commercial Pricing.
- Off-The-Shelf Delivery From Franchised Distributors.
- Constructed Per MIL-T-27 Grade 6 — Class R

A new series of plug-in printed circuit transformers designed for use in latest solid state circuitry application such as power supplies, control equipment and instrument applications. Units in this series provide a voltage step down and isolation from power line at relatively low power levels. The 60 Hz series has power ratings ranging from 1.5 VA to 7.5 VA. The 400 Hz series has power ratings ranging from .325 VA to 4 VA. Units are designed for 500 Volt Hi-Pot.

Smaller in size yet designed for increased power ratings to permit optimum equipment miniaturization. Precision spaced plug-in terminals provide fixed mounting centers, usually found only in expensive molded transformers. Units are constructed in accordance with MIL-T-27 Grade 6, class R. Class S available on special order.

Dual secondaries may be parallel connected to obtain twice the current rating of one winding or series connected to give twice the rated voltage of one winding. Series connection also provides a center tap. For example: All transformers having dual 58V secondaries may be connected to obtain 115V to 115V C.T. isolation. Units are available on special order with other ratings, winding configurations, or mountings other than stock items listed herein.

Series PC4300, 4400 and 6500 (Fig. 1) may also be used for point to point wiring by epoxy cementing the transformer with the terminals opposite mounting surface. Series PC6600 and 6700 may also be supplied for point to point wiring on special order as shown in Fig. 3. To order add — FBR to part number, i.e. PC6604-FBR. For quantities 1-49 pcs. add $10.00 lot set up charge.

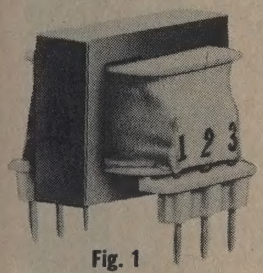


Fig. 1

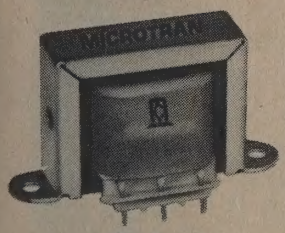
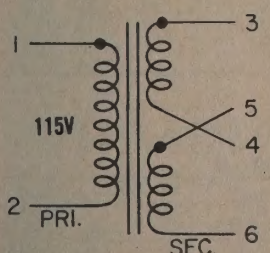
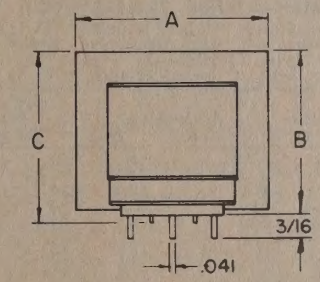


Fig. 2

Fig. 3



Series: Connect 4 & 5
Parallel: Connect 3 & 5, 4 & 6



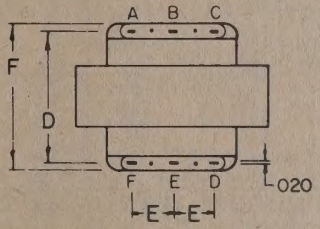
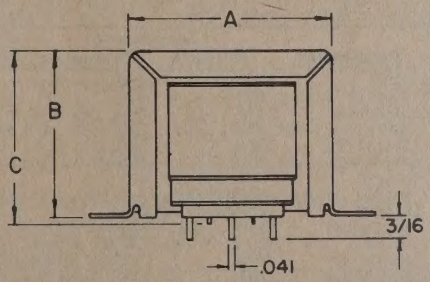


Fig. A



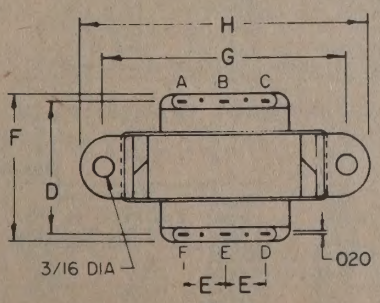


Fig. B

Catalog No.	SECONDARY		Net Price 1-9 *
	Parallel	Series	
SERIES PC4300			
400 Hz. • 115V Primary • Approx. .325 Watts			
PC4304	3.15V @ .1A	6.3V C.T. @ .05A	$4.35
PC4312	12.6V @ .026A	25.2V C.T. @ .013A	4.50
PC4316	28V @ .012A	56V C.T. @ .006A	4.50
PC4320	35V @ .01A	70V C.T. @ .005A	4.65
SERIES PC4400			
400 Hz • 115V Primary • Approx. 4 Watts			
PC4408	6.3V @ 0.60A	12.6V C.T. @ .30A	4.50
PC4412	12.6V @ 0.30A	25.2V C.T. @ .15A	4.50
PC4416	28V @ 0.14A	56V C.T. @ .07A	4.65
PC4424	40V @ 0.10A	80V C.T. @ .05A	4.65
PC4428	58V @ .066A	116V C.T. @ .033A	4.80
PC4432	115V @ .010A, 12.6V @ .150A		4.95
SERIES PC6500			
60 Hz • 115V Primary • Approx. 1½ Watts			
PC6506	6.3V C.T. @ .250A (Single Secondary)		4.35
PC6512	12.6V @ .120A	25.2V C.T. @ .060A	4.65
PC6524	40V @ .040A	80V C.T. @ .020A	4.80
PC6528	58V @ .026A	116V C.T. @ .013A	4.80
SERIES PC6600			
60 Hz • 115V Primary • Approx. 4½ Watts			
PC6608	6.32V @ .70A	12.6V C.T. @ .35A	4.35
PC6616	28V @ .156A	56V C.T. @ .078A	4.50
PC6624	40V @ .110A	80V C.T. @ .055A	4.65
PC6628	58V @ .066A	116V C.T. @ .033A	4.65
PC6632	115V @ .020A, 12.6V @ .150A		4.95
SERIES PC6700			
60 Hz • 115V Primary • Approx. 7½ Watts			
PC6708	6.3V @ 1.2A	12.6V C.T. @ .60A	4.80
PC6712	12.6V @ .6A	25.2V C.T. @ .30A	4.80
PC6716	28V @ .27A	56V C.T. @ .135A	4.80
PC6724	40V @ .18A	80V C.T. @ .090A	4.95
PC6728	58V @ .130A	116V C.T. @ .065A	4.95
PC6732	115V @ .025A, 12.6V @ .250A		5.25

DIMENSIONS

Series	Fig.	A	B	C	D	E	F	G	H
PC4300	A	4⅝4	23/32	†	.420	.187	11/16		
PC4400	A	1¾4	27/32	†	.781	.200	6¼4		
PC6500	A	1 25/64	1 11/64	1 13/64	1.00	.312	1 5/32		
PC6600	B	1 45/64	1 25/64	1 3/16	1.10	.400	1¼	2	2⅜
PC6700	B	1 61/64	1 41/64	1 11/16	1.30	.400	1 15/32	2⅜	2 13/16

† Do not have standoff

★SEE OTHER MICROTRAN PAGES FOR QTY. PRICING, MIL CASE SIZES.

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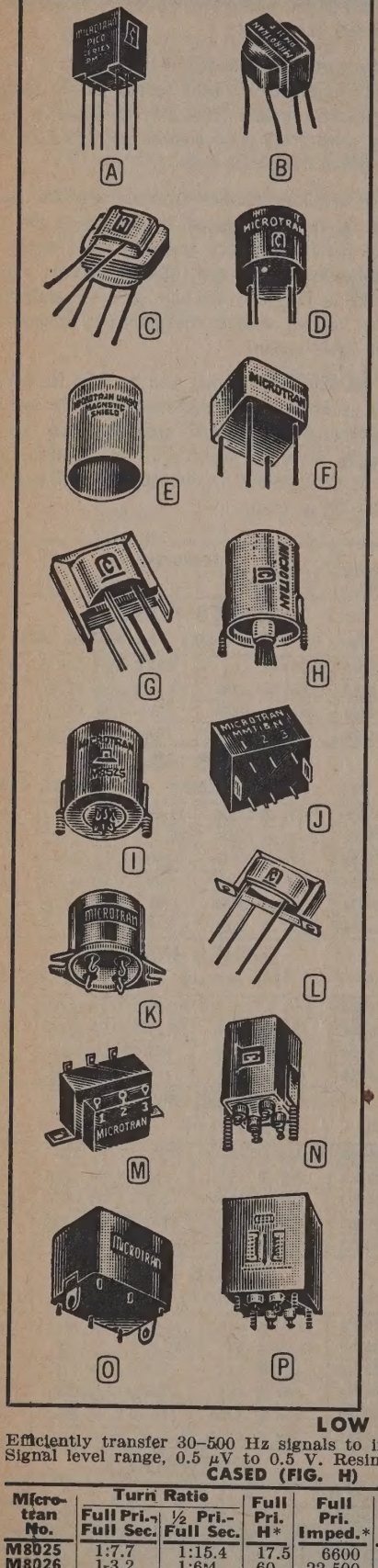
MICROTRAN — MINIATURIZED MILITARY TRANSFORMERS



PICO MINIATURE TRANSFORMERS—PM SERIES

PM-M (Fig. A): Epoxy molded finish; gold plated leads, 0.020″ x ¾″. Frequency response ±2 db, 300 Hz to 100 kHz (PM3 and PM5, to 45 kHz). Power level given for 15% max. distortion, except PM35, 20% and PM37, 25%. Size, .410″ x .465″ x .310″ max. Wt., 0.1 oz. MIL type TF5RX—ZZ. **PM-F (Fig. B):** Open frame, resin impregnated, 4″ #30 plastic leads. Size, .250″ x .375″ x .406″ max. Wt., .05 oz. MIL type TF6RX—ZZ.

Microtran No.†	Application	Impedance Primary	Impedance Secondary	Pri. DC mA*	DC Resist., Ohms Pri.	DC Resist., Ohms Sec.	Power Level, mW	MIL No.	Net Each, Lots of 1-9* -M	-F
PM3-	Input	200K CT	1K CT	0	5300	110	10	16	$11.40	.....
PM5-	Input	200K	1K	0	5300	110	10	16	10.50	.....
PM7-	Interstage	50K CT	1K CT	0	3300	75	10	16	10.95	.....
PM9-	Interstage	50K	1K/250‡	0	3300	75	10	16	10.95	.....
PM11-	Interstage	25K CT	1K CT	0.5	1700	110	40	12	10.05	.....
PM13-	Interstage	25K	1K/250‡	0.25	1700	110	40	12	10.65	.....
PM15-	Interstage	25K	1K	0.25	1700	110	40	12	9.15	$5.10
PM17-	Isolation	10K CT	10K CT	1	1000	1300	50	12	9.75	.....
PM19-	Driver	10K CT	2K CT	1	1000	300	50	12	9.60	.....
PM21-	Driver	10K	2K/500‡	0.5	1000	300	50	12	10.35	.....
PM23-	Driver	10K CT	1200 CT	1	1050	280	50	12	9.45	.....
PM25-	Driver	10K	1200/300‡	0.5	1050	280	50	12	10.20	.....
PM27-	Driver	10K	1200	0.5	1050	280	50	12	8.55	4.80
PM29-	Driver	10K CT	500 CT	1	1050	80	50	12	9.45	.....
PM31-	Isolation	2500	2500 CT	1	250	325	50	12	9.30	6.60
PM33-	Output	1500 CT	600	3	170	135	50	12	9.15	4.95
PM34-	Output	600 CT	600 CT	3	72	92	50	17	8.85	.....
PM35-	Output	500	50	3	60	8	50	17	7.80	4.35
PM36-	Output	500	500/125‡	3	72	85	50	17	9.15	.....
PM37-	Output	120 CT	3.2	10	16	0.75	50	17	8.10	4.65
PM38-	Output	300 CT	600	7	41	98	50	17	9.15	4.80
PM39-	Audio Choke	6 H		2	1800	.....	.....	20	7.65	4.20
PM40-		3.5 H		2	560	.....	.....	20	7.20	4.05
PM41-		.3 H		4	43	.....	.....	20	6.75	3.90
PM90-	Magnetic shield mu-metal slip-on can; 20 db shld.								1.05	.....

*Unbalanced. ‡Split.

ULTRA-MINIATURE TRANSISTOR TRANSFORMERS—UM SERIES

Frequency Response: ±2 db, 300-10K Hz. Leads supplied, 4″ #27 color-coded. Power levels given for 7½% max. distortion. **UM-F (Fig. C):** Size, ⅜″ x ⅜″ x 11/32″. Weight, 0.08 oz. MIL type TF6RX—ZZ (Insert MIL No. from table). **UM-M (Fig. D):** Size, ½″ dia. x ½″, with 1″ leads. Weight, 0.14 oz. MIL type TF5RX—ZZ.

Microtran No.†	Application	Impedance Primary	Impedance Sec.	Unbal. Pri., DC mA	DC Resis., Ohms Pri.	DC Resis., Ohms Sec.	Level at 1 kHz mW	MIL No.	Net Each, 1-9* -F	-M
UM21-	Input	100K	1K	0	1900	135	70	16	$6.00	$7.65
UM22-	Driver	20K	1K	0.5	1100	100	300	13	4.35	7.35
UM23-	Driver	20K	1200 CT	0.5	1100	110	300	13	4.65	7.50
UM24-	Output	1K	50	3	65	10	500	17	3.90	6.30
UM25-	Output	400	50	3	35	5	500	17	3.90	6.30
UM26-	Output	400	11	3	35	1.5	500	17	3.90	6.30
UM27-	Output	400 CT	11	6	35	1.5	500	17	4.20	6.45
UM28-	Choke	10 H, 0 DC;	8 H, 0.5 mA		650	.....	.....	20	3.75	5.70
UM29-	Interstage	600 CT	600 CT	7	45	60	400	21	4.65	7.50
UM30-	Choke	1.5 H, 0 DC;	.7 H, 2 mA		100	.....	.....	20	3.60	4.95
UM31-	Interstage	10K CT	1200 CT	2	850	120	500	21	4.80	8.70
UM32-	Output	1500 CT	600	5	135	65	500	13	4.35	6.90
UM33-	Output	1K CT	600	6	80	65	500	17	4.35	6.90
UM34-	Driver	10K CT	600 CT	2	850	40	500	13	4.50	8.55
UM35-	Isolation	15K CT	15K CT	1	930	1210	300	15	4.95	9.15
UM36-	Driver	20K CT	800 CT	0.5	1100	80	500	13	4.80	9.00
UM37-	Driver	10K	2K CT	1	850	200	500	13	4.50	7.20
UM39-	Interstage	2.5K CT	600 CT	2	250	50	500	13	4.50	7.05
UM90	Magnetic shield mu-metal slip-on can; 20 db shld. (Fig. E)								1.35	.....

VERI-MINIATURE TRANSISTOR TRANSFORMERS—VM SERIES

Frequency Response: ±2 db, 200-10K Hz. Leads supplied, 4″ #27 color-coded. Power levels given for 7½% max. distortion. **VM-M (Fig. F):** For plug-in printed circuit applications. Cast epoxy resin provides high resistance. Size, 9/16″ x 9/16″ x ½″. Weight, 0.25 oz. MIL type TF5RX—ZZ (Insert MIL No. from table). **VM-FPB (Fig. G):** Plug-in tab mounted channel. Size, 17/32″ x 15/32″ x 7/16″. Weight, 0.2 oz. MIL type TF6RX—ZZ.

Micro. No.†	Application	Impedance Primary	Impedance Secondary	DCR, Ohms Pri.	DCR, Ohms Sec.	Level, mW	MIL No.	Net Ea., 1-9* -FPB	-M
VM1-	Input	50	600, 1.5 mA	7	90	15	21	$4.20	$5.85
VM2-	Input or intrstg.	200K	600, 1.0 mA	3000	110	2.5	21	5.70	7.50
VM3-	Interstage	25K	600, 1.0 mA	720	45	2.5	21	4.50	6.60
VM4-	Input or intrstg.	200K	1200, .72 mA	3100	165	5	21	5.70	7.50
VM5-	Interstage	50K	600, 1.0 mA	830	55	5	21	4.65	6.90
VM6-	Interstage	100K	1200‡ .72 mA	2000	150	5	21	5.85	7.65
VM7-	Output	500, 3.5 mA	3.4	50	0.5	15	21	4.20	5.85
VM8-	Output	1250, 2.0 mA	3.4	135	0.5	15	21	4.35	6.00
VM9-	Output	1250, 2.0 mA	50	135	6.5	15	21	4.35	6.00
VM10-	Interstage	2500, 1.5 mA	2500 CT	225	215	3	21	4.65	7.20
VM11-	Choke	20 H, 0 mA;	12 H, .5 mA	1000	.....	.....	21	4.05	5.40
VM12-	Interstage	20K	1000, .75 mA	625	85	5	21	4.50	6.60
VM13-	Interstage	20K	1000‡ .75 mA	625	85	5	21	4.65	7.20
VM14-	Interstage	600‡, 7 mA	600 CT	50	65	15	17	4.50	7.05
VM15-	Isolation	50K CT	50K CT	2000	2600	5	15	6.00	8.85
VM16-	Driver	500‡ 7.5 mA	250 CT	40	13	15	17	4.50	7.05
VM17-	Interstage	10K CT	5K CT	400	300	5	17	5.85	7.65
VM90	Magnetic shield mu-metal slip-on can; 20 db shld.							1.95	.....

‡CT.

LOW LEVEL CHOPPER INPUT TRANSFORMERS

Efficiently transfer 30–500 Hz signals to instrument amplifiers. Signal level range, 0.5 μV to 0.5 V. Resin impregnated. Three mu-metal, two copper shields; 90 db shielding. Size, 1⅜″ dia. x 1 25/32″ h. with 6–32 x ⅜″ studs on 1½″ ctrs. Wt., 5 oz.

CASED (FIG. H)

Microtran No.	Turn Ratio Full Pri.-Full Sec.	Turn Ratio ½ Pri.-Full Sec.	Full Pri. H*	Full Pri. Imped.*	DC Resis. Full Pri.	DC Resis. Sec.	Net Each, 1-9*
M8025	1:7.7	1:15.4	17.5	6600	365Ω	4140Ω	$13.80
M8026	1:3.2	1:6.4	60	22,500	455Ω	3500Ω	13.80
M8052	1:4.53	1:9.06	90	34,000	760Ω	5220Ω	14.25
M8053‡	1:0.5	1:1	140	53,000	920Ω	653Ω	13.65
M8112	1:0.5	1:1	450	80,000	2300Ω	1600Ω	15.00

HERMETIC (FIG. I)

Microtran No.	Turn Ratio Full Pri.-Full Sec.	Turn Ratio ½ Pri. Full Sec.	Full Pri. H*	Full Pri. Imped.*	DC Resis. Full Pri.	DC Resis. Sec.	Net Each, 1-9*
M8525	1:7.7	1:15.4	17.5	6600	365Ω	4140Ω	$16.65
M8526	1:3.2	1:6.4	60	22,500	455Ω	3500Ω	16.65
M8552	1:4.53	1:9.06	90	34,000	760Ω	5220Ω	17.10
M8553‡	1:0.5	1:1	140	53,000	920Ω	653Ω	16.50

*At 0.5 V, 60 Hz. ‡Secondary is center tapped.

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MINIATURIZED MILITARY TRANSFORMERS

MICRO-MINIATURE AUDIO AND TRANSISTOR TRANSFORMERS—MM AND MMT SERIES

MM-M (Fig. J): Molded, for plug-in printed circuit applications. Cast epoxy resin for high resistance to extremes of ambient temperature. MIL Type TF5RX—ZZ. Size, 7/8" x 25/32" x 17/32" with 5/16" pins, .020" dia. Weight, 1/2 oz. **MM-H (Fig. K):** Hermetically sealed with high compression glass terminals. Gray enamel finish. MIL Type TF4RX—YY. Size, 15/16" dia. x 11/16". Weight, 3/4 oz.

MM-FB (Fig. L): Open frame with channel. Available with plug-in tab channel or without channel on special order. MIL Type TF6RX—ZZ. Size, 13/16" x 19/32" x 15/32", plus tabs. **MM-CM (Fig. M):** Contour molded on special order only; for mtg. on top of chassis. Size, 7/8" x 9/16" x 25/32". Prices on request.

Microtran No.†	Application	Impedance Pri.	Impedance Sec.	Pri. Unbal. DC mA	Oper. Level, dbm	Freq. Resp. ±2 db, Hz	MIL No.	Net Each, Lots of 1-9* -FB	-H	-M
MM1-	Input	200/50	250K/62.5K	0	4	200–10K	10	$4.50	$7.35	$8.55
MM2-	Interstage 3:1	10K	90K	0	4	150–10K	10	4.80	7.50	8.70
MM3-	Plate to line	10K	200	3	20	150–10K	13	4.20	7.20	8.40
MM4-	Output	30K	50	1	20	150–10K	13	4.05	7.05	8.25
MM5-	Reactor 50 H at 1 mil DC	4.7K ohms DC Res.					20	4.05	6.90	8.10
MM6-	Output	100K	60	0.5	20	250–10K	13	4.20	7.20	8.40
MM7-	Output	30K	1200	0.5	20	200–10K	13	3.30	6.45	7.65
MMT1-	Line to base	600	600	8	22	200–15K	17	3.90	7.35	8.55
MMT3-	Coll. to base or line	50K	600	0.7	20	200–15K	13	4.05	7.50	8.70
MMT4-	P-p coll. to p-p base	50K CT	600 CT	1.4	20	200–15K	13	4.80	8.55	9.75
MMT5-	Coll. to speaker	50K	6	1	20	200–15K	13	4.35	7.95	9.15
MMT7-	Coll. to p-p base	25K	1200 CT	1	20	200–15K	13	4.50	8.40	9.60
MMT8-	P-p coll. to p-p base	50K CT	1200 CT	1.4	20	200–15K	13	4.65	8.55	9.75
MMT9-	Line to p-p base	600 CT	1200 CT	16	22	200–15K	17	4.20	7.65	8.85
MMT10-	Coll. to base	25K	600	1	20	200–15K	13	4.35	7.20	8.40
MMT11-	P-p coll. to p-p base or line	4K CT	600 CT	5	28	200–15K	12	4.50	7.80	9.00
MMT12-	Coll. to speaker	2K	3.4	5	28	200–15K	13	3.90	7.35	8.55
MMT13-	Output p-p coll. to speaker	4K CT	3.4	5	28	200–15K	13	4.05	7.50	8.70
MMT16-	Coll. to p-p base	10K	1500 CT	1	20	200–15K	13	4.50	8.40	9.60
MMT17-	P-p coll. to p-p base	10K CT	200 CT	6	20	200–15K	13	4.50	8.10	9.30
MMT18-	P-p coll. to p-p base	25K CT	1200 CT	2	20	200–15K	13	4.65	8.55	9.75
MMT19-	Coll. to p-p base	2500	2500 CT	2	23	200–15K	13	4.35	7.50	8.70
MMT21-	P-p coll. to p-p base	4K CT	600/150 split	5	28	200–15K	13	4.65	8.55	9.75
MMT25-	P-p coll. to p-p base	7500 CT	600 CT	4	22	200–15K	13	4.50	7.80	9.00
MMT26-	Line to base	600 CT	600 CT	16	22	200–15K	17	4.20	7.65	8.85
MMT27-	P-p coll. to p-p base	25K CT	600 CT	2	20	200–15K	13	4.50	8.40	9.60
MMT28-	P-p coll. to p-p base	10K CT	1500 CT	2	20	200–15K	13	4.65	8.55	9.75
MMT29-	Driver/Isolation	10K CT	10K CT	2	20	200–15K	13	4.65	8.55	9.75
MMT30-	P-p coll. to p-p base	7500 CT	1200 CT	4	22	200–15K	13	4.50	8.40	9.60
MMT31-	P-p coll. to p-p base	2K CT	500 CT	10	28	200–15K	13	4.35	8.25	9.45
MMT32-	Line to p-p base	600 CT	1.2K/300 split	16	22	200–15K	17	4.65	8.55	9.75
MMT33-	Line to p-p base	600 CT	600/150 split	16	22	200–15K	10	4.50	8.40	9.75
MMT35-	P-p coll. to p-p base	10K CT	150/37.5 split	2	20	200–15K	13	4.80	8.70	9.90

SUBMINIATURE AUDIO AND TRANSISTOR TRANSFORMERS—SM AND SMT SERIES

SM-AF (Fig. N): MIL-T-27B-AF modified case; compression sealed ceramic terminals; gray enamel finish. MIL type TF4RX—YY. Size, 3/4" x 3/4" x 1 1/8" max. with two 4-40NC-2 spade mtg. bolts. Wt., 1 1/4 oz. **SM-H (Fig. K):** Hermetically sealed; high compression glass terminals; gray enamel finish. MIL type TF4RX—YY. Size, 15/16" dia. x 15/16" h. Weight, 1 oz.

SM-FB (Fig. L): Open frame with channel. With plug-in tab mounted channel or without channel on special order. MIL type TF6RX—ZZ. Size, 15/16" x 19/32" x 3/4", plus tabs. Wt., 0.750 oz. **SM-M (Fig. O):** Molded, for plug-in PC applications. MIL type TF5RX—ZZ. Size, 1 5/32" x 7/8" x 3/4" max. Wt., 1 1/2 oz. **SM-CM (Fig. M):** Contour molded on special order; prices on request.

Microtran No.†	Application	Impedance Pri.	Impedance Sec.	Pri. Unbal. DC mA	Oper. Level, dbm	Frequency Resp., ±2 db, Hz	MIL No.	Net Each, Lots of 1-9* -AF	-FB	-H	-M
SM1-	Input	200/50	250K/62.5K	0	6	80–10K	10	$9.00	$4.65	$7.20	$9.00
SM2-	Interstage 3:1	10K	90K	0	8	100–10K	10	8.70	4.20	6.90	9.00
SM3-	Plate to line	10K	200	3	21	150–10K	13	8.70	4.20	6.90	9.00
SM4-	Output	30K	50	1	21	150–10K	13	8.70	4.20	6.90	9.00
SM5-	Reactor 50 H at 1 mil DC	3K ohms DC Resis.					20	7.20	3.60	6.30	8.40
SM6-	Output	100K	60	0.5	21	150–10K	13	8.70	4.65	7.05	9.00
SMT1-	Line to base	600	600	9	23	200–15K	17	6.75	3.90	6.30	7.65
SMT3-	Coll. to base or line	50K	600	1	20	300–15K	13	7.35	4.50	6.90	8.25
SMT4-	P-p coll. to p-p base	50K CT	600 CT	2	20	200–15K	13	.....	4.95	7.35	8.70
SMT5-	Coll. to speaker	50K	6	1	20	300–15K	13	7.20	4.35	6.75	8.10
SMT7-	Coll. to p-p base	25K	1200 CT	1.5	20	200–15K	13	7.50	4.65	7.05	8.40
SMT8-	P-p coll. to p-p base	50K CT	1200 CT	2	20	200–15K	13	.....	4.95	7.35	8.70
SMT9-	Line to p-p Base	600 CT	1200 CT	18	23	200–15K	17	.....	4.20	6.60	7.95
SMT10-	Coll. to base	25K	600	2	20	200–15K	13	7.05	4.20	6.60	7.95
SMT12-	Output coll. to speaker	2K	3.4	5	30	200–15K	13	6.75	3.90	6.30	7.65
SMT13-	Output p-p coll. to speaker	4K CT	3.4	5	30	200–15K	13	6.90	4.05	6.45	7.80
SMT16-	Coll. to p-p base	10K	1500 CT	1	23	200–15K	13	7.50	4.65	7.05	8.40
SMT17-	P-p coll. to p-p base	10K CT	200 CT	6	20	200–15K	13	.....	4.80	7.20	8.55
SMT18-	P-p coll. to p-p base	25K CT	1200 CT	3	20	200–15K	13	.....	4.95	7.35	8.70
SMT19-	Coll. to p-p base	2500	2500 CT	5	26	200–15K	13	7.50	4.65	7.05	8.40
SMT26-	Line to base	600 CT	600 CT	18	23	200–15K	17	.....	4.50	6.90	8.25
SMT36-	Interstage	2.5K CT	2.5K/625 split	10	26	200–15K	13	.....	5.10	7.50	8.85

TRANSISTOR DRIVER AND OUTPUT TRANSFORMERS (FIG. P)

Hermetically sealed to MIL-T-27B construction. MIL type TF4RX—(Add MIL No. 17 except as noted, and case from table). When present stock is depleted, M8006, M8007 and M8014 will be available on special order only.

Micro. No.	Application	Impedance Pri.	Impedance Sec.	Pri. Unb. DC mA	Level Watts	Freq. Resp. ±2 db, Hz	MIL Case	Net Ea., 1-9*
M8002*	Coll. to p-p base	560	400 CT	18	0.15	200–20K	AJ	$12.75
M8003*	Coll. to p-p base	625 CT	100 CT	20	1.5	200–20K	AJ	13.05
M8004	Coll. to p-p base	5400	600 CT	15	0.075	200–15K	AH#	14.85
M8005	Coll. to p-p base	7000	320 CT	7	0.040	70–15K	AH#	14.85
M8006	Coll. to p-p base	10K	6500 CT	0.75	0.005	200–15K	YY#	9.45
M8008	Coll. to speaker	25	3–4	600	3	200–20K	AJ	12.30
M8007*	P-p auto transformer	30 CT	3–4	200	2	100–20K	AJ	12.60
M8009	P-p output to spkr.	48 CT	3.2/8	50	5	200–20K	AJ	12.75
M8010	P-p coll. to servo	120 CT	1K	40	6	300–15K	AJ	12.60
M8011	P-p output to spkr.	125 CT	3–4	20	1.5	200–15K	AH	14.55
M8012*	P-p coll. to servo	140 CT	500	50	6	300–15K	AJ	12.75
M8013*	P-p output to spkr.	250 CT	3–4	20	0.4	70–15K	AH	14.55
M8014	P-p output to spkr.	400 CT	11	2	0.25	300–15K	YY	9.15
M8015	P-p coll. to servo	1600 CT	800	5	2.5	150–20K	AJ#	12.90
M8016	P-p output to spkr.	2500 CT	12	4	0.10	300–15K	YY#	9.30
M8054	P-p output to servo	250 CT	130	20	3	200–15K	AH	14.55

*Bifilar wound to minimize switching transients. #MIL No. 13.

MODEL 400K TRANSISTOR TRANSFORMER SELECTOR KIT

Set of nine transistor transformer covers impedance range of 150 through 200K ohms, matching most new transistor impedance ratings. Ideal for breadboard circuitry. Sizes range from a 3/8" cube to 3/4" x 3/4" x 1". All are vacuum resin impregnated and have 4" color-coded leads. Includes full design data; nomographs and circuitry for determining correct impedances for Class A and B transistor amplifiers; power versus dbm chart; terminal connection sheet; MIL-T-27B guide; cross reference index; outline drawings for later selection of stock items with same electrical ratings in many other mechanical constructions and reactance chart. Each transformer individually boxed in transparent plastic case.

Microtran Model 400K Transistor Transformer Selector Kit—Net Each. . **$29.50**

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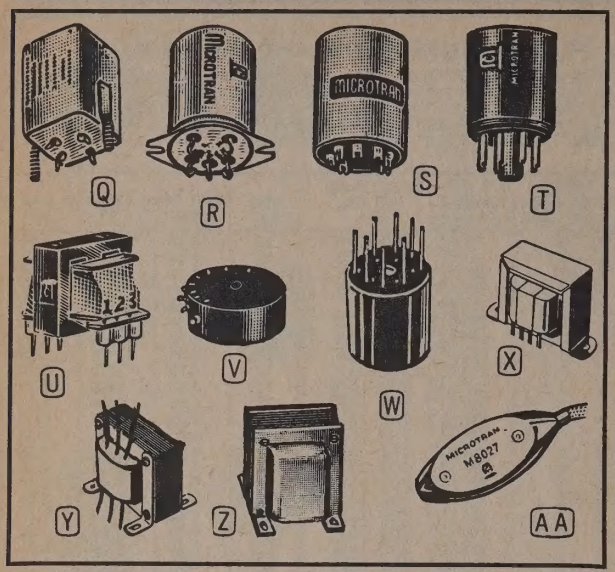
MINIATURIZED MILITARY TRANSFORMERS



MINIATURE TRANSISTOR AND AUDIO TRANSFORMERS—M AND MT SERIES

M-M (Fig. O): Molded, for plug-in printed circuit use. Cast epoxy resin provides highest resistance to temperature extremes. MIL Type TF5RX—ZZ (Insert MIL No. from table). Max. Size, 1 5/32" x 7/8" x 7/8". Weight, 1¾ oz. **M-AG (Fig. Q):** Enclosed in modified MIL-T-27B AG case with compression sealed ceramic terminals. MIL Type TF4RX—YY. Max. Size, 1" x 1" x 1 3/16". Weight, 2⅜ oz. **M-H (Fig. R):** Hermetically sealed with high compression glass terminals, gray enamel finish. Available on special order with .120" holes. MIL Type TF4RX—YY. Size, 15/16" dia. x 1 7/16" max. Weight, 1¼ oz. **M-A (Fig. S):** Aluminum case with 2-56 screws. MIL Type TF3RX—YY. Size, .875" dia. x 1 3/16". Weight, 1.25 oz. **M-FB (Fig. L):** Open frame with channel. Available with plug-in tab channel or without channel on special order. MIL Type TF6RX—ZZ. Size, 1 3/4" x 1 3/16" x 2 7/32" max., plus tabs. Weight, 1.13 oz. **M-P (Fig. T):** Octal plug-in type in sealed plastic housing. MIL Type TF6RX—ZZ. Size, 1 3/32" dia. x 1 15/32". Wt., 2 oz. **M90 Shield (Fig. E):** 25 db magnetic shield for Type M-A. Two clearance holes on 11/16" centers. **M-PC (Fig. U):** Open frame PC with terminals molded into bobbin to maintain accurate dimensions for PC board. MIL Type TF6RX—ZZ. Size, 7/8" x 1 1/32" x 1"; terminals 3/16" below bobbin. Wt., 1.2 oz. **M-CM (Fig. M):** Contour molded on special order only; for mtg. on top of chassis. Size, 1 5/32" x 1/8" x 7/8" Prices on request.

MINIATURE AUDIO TRANSFORMERS—M SERIES

Microtran No.†	Application	Impedance Pri.	Impedance Sec.	Pri. DC mA*	Oper. Level, dbm	Freq. Resp. ±2 db, Hz	MIL No.	Net Each, Lots of 1-9* -A	-AG	-FB, -PC	-H	-M	-P
M1-♦	Mike or line to 1 grid	‡	50K	0	5	20–20K	10	$9.15	$9.90	$5.55	$9.00	$9.90	$8.85
M2-♦	Mike or line to 2 grids	‡	50K CT	0	5	20–20K	10	9.30	10.35	5.70	9.45	10.20	8.85
M3-	Dynamic mike to 1 grid	7.5/30	50K	0	5	20–20K	10	8.70	9.90	5.40	9.00	9.75	8.40
M4-	Single plate to 1 grid	15K	60K	0	6	20–15K	10	7.65	8.55	4.20	7.65	8.55	7.50
M5-	Single plate to 1 grid	15K	60K	4	14	200–20K	15	7.65	8.55	4.20	7.65	8.55	7.50
M6-	Single plate to 2 grids	15K	95K CT	0	5	20–15K	10	8.55	9.45	5.10	8.55	9.45	8.25
M7-	Single plate to 2 grids	15K	95K CT	4	11	200–20K	15	8.55	9.75	4.35	8.85	9.75	8.25
M8-♦	Single plate to line	15K	‡	0	8	20–20K	16	9.30	10.50	5.55	9.60	10.50	8.85
M9-♦	Single plate to line	15K	‡	4	21	150–20K	13	9.30	10.50	4.65	9.60	10.50	8.85
M10-♦	Push-pull plates to line	30K, p-p	‡	0	8	30–50K	16	9.45	10.80	5.70	9.60	10.80	9.00
M11-♦	Crystal mike to line	50K	‡	0	5	20–20K	16	9.15	10.50	5.55	9.30	10.50	8.85
M12-♦	Mixing and matching	§	‡	0	8	20–20K	16	8.70	10.50	5.25	9.30	10.50	9.00
M13-	Reactor	300#	•	.....	.....	6K ohms DCR	20	7.20	8.25	3.75	7.35	8.25	7.50
M14-	50:1 mike to grid	200	½ meg.	0	9	80–3K	10	8.40	9.90	4.95	9.00	10.20	8.85
M15-	10:1 plate to grid	10K	1 meg.	0	11	100–2500	10	8.40	9.30	4.95	8.40	9.30	8.85
M90	Magnetic shield mu-metal slip on can; 25 db shielding							1.35	.....	.....	.....	.....	.....

MINIATURE TRANSISTOR TRANSFORMERS—MT SERIES

MT1-	Line to base	600	600	10	23	200–15K	17	$8.10	$8.70	$3.75	$7.80	$9.00	$7.35
MT2-♦	Coll. to p-p base 2N57	100	10 CT/ 40 CT	100	27	200–20K	17	9.00	9.60	4.20	8.70	9.90	8.25
MT3-	Coll. to base or line	50K	600	3	20	300–15K	13	8.70	9.30	4.50	8.40	9.60	7.95
MT5-	Coil to speaker	50K	6	3	20	300–15K	13	8.70	9.30	4.50	8.40	9.60	7.95
MT6-	Coll. to p-p base	100K	1200 CT	1.4	17	200–15K	13	8.85	9.45	4.80	8.55	9.75	8.10
MT7-♦	Coll. to p-p base	25K	1200 CT	3	22	200–15K	13	8.85	9.45	4.65	8.55	9.75	8.10
MT8-	P-p coll. to p-p base	50K CT	1200 CT	3	20	300–15K	13	9.00	9.60	4.80	8.70	9.90	8.25
MT9-	Line to p-p base	600 CT	1200 CT	4	23	200–15K	17	9.00	9.60	4.65	8.70	9.90	7.80
MT10-♦	Coll. to base	25K	600	3	22	200–15K	13	8.70	9.30	4.05	8.40	9.60	7.95
MT11-	P-p coll. to p-p base	4K CT	600 CT	3	32	200–15K	13	9.00	9.60	4.50	8.70	9.90	8.25
MT12-	Output coll. to spkr.	2K	3.4	10	32	200–15K	13	8.70	9.30	4.05	8.40	9.60	7.95
MT13-♦	P-p coll. to spkr.	4K CT	3.4	3	32	200–15K	13	8.85	9.45	4.20	8.55	9.75	8.10
MT14-	Coll. to spkr. 2N179	400	10	50	25	200–20K	17	8.10	8.70	3.75	7.80	9.00	7.35
MT15-♦	P-p servo output 2N57	500 CT	210	30	27	300–20K	17	8.70	9.30	4.05	8.40	9.60	7.95
MT18-♦	P-p coll. to p-p base	25K CT	1200 CT	6	22	200–15K	13	9.00	9.60	4.80	8.70	9.90	8.25
MT20-♦	P-p coll. to p-p base	50K CT	▲	3	20	300–15K	13	9.30	9.90	4.80	9.00	10.20	8.55
MT21-♦	P-p coll. to p-p base	4K CT	■	3	32	200–15K	13	9.15	9.75	4.65	8.85	10.05	8.40
MT22-♦	Line to p-p base	■	1200 CT	4	23	200–15K	17	9.15	9.75	4.80	8.85	10.05	8.40
MT23-	P-p coll. to servo	250 CT	1000	10	30	200–15K	17	8.70	9.30	4.05	8.40	9.60	7.95
MT24-♦	Coll. to p-p base	2500	600 CT	10	32	200–15K	13	8.70	9.30	4.05	8.40	9.60	7.95
MT25-	P-p coll. to p-p base	7500CT	600 CT	8	32	200–15K	12	9.00	9.60	4.50	8.70	9.90	8.25
MT26-	Line to p-p base	600 CT	600 CT	20	23	200–15K	17	8.85	9.45	4.50	8.55	9.75	8.10
MT29-	P-p coll. to servo	1600CT	450	15	30	200–15K	13	8.70	9.30	4.05	8.40	9.60	7.95
MT30-	P-p coll. to servo	250 CT	500	10	30	200–15K	17	8.70	9.30	4.05	8.40	9.60	7.95
MT33-♦	Line to p-p base	■	■	20	23	200–20K	17	9.30	9.90	4.80	9.00	10.20	8.55
MT34-♦	P-p coll. to p-p base	10K/ 2500 split	2000/500 split	4	20	200–20K	13	9.45	10.05	4.95	9.15	10.35	8.70

*Unbalanced. ‡50/250/600 CT. §50/250 CT. #H 0 DC. •50 H at 3 mA. ▲1200/300 split. ■600/150 split. ♦Not available in -PC type.

DC TO DC CONVERTER TRANSFORMERS—BLOCKING OSCILLATOR TYPE

Laminated series blocking oscillator type. Approximate repetition rate, 400 Hz. All are **Fig. L** except M8051, **Fig. Q.** DC output voltage for all but M8073 is given for transformer used in blocking oscillator circuit with single capacitor-input rectifier. DC input current, output current and output voltage of Model M8073 depend on load and bias; frequency varies from 100 to 2800 Hz. Fig. L types are open frame units meeting MIL designation TF6RX09ZZ; Fig. Q type is enclosed unit meeting MIL designation TF4RX09YY.

Microtran No.	Turns Ratio HV: Coll.: Feedback	Input DC V	Input DC mA	Output DC Volts	Output DC µA	Size, Inches W. x D. x H.	Mtg. Ctr., In.	Net Each, 1-9*
M8050	600:12:1	3	20	1000	25	13/16x1 11/16x 2 7/32	1 3/8	$ 6.90
M8051	600:12:1	3	20	1000	25	1 x1 x1 3/8	1 1/8	12.30
M8073	44:1:1	4	2–15	425–500	50*	3/8 x 3/8 x 3/8	.....	5.25
M8074	65.5:.33:1	3	45	535	90	13/16x1 11/16x 2 7/32	1 3/8	5.40

*Maximum.

MICROTRAN TRANSFORMERS ARE AVAILABLE IN MANY OTHER MECHANICAL AND ELECTRICAL TYPES ON SPECIAL ORDER. WRITE FOR COMPLETE INFORMATION.

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†ORDER BY COMPLETE MICROTRAN NUMBER (M1-A)

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MICROTRAN MINIATURIZED MILITARY TRANSFORMERS

DC TO DC CONVERTER TRANSFORMERS—SWITCHING TYPE

LAMINATED SERIES

Provide improved reliability and efficiency over vibrator and rotary power converters. Approximate repetition rate, 800 Hz. Full wave and CT loads may be simultaneously drawn, but total VA output should not be exceeded for continuous-duty operation. All are **Fig. P** except M8072 and M8120, **Fig. L.** Transistors listed are for reference only; user must verify that max. ratings will not be exceeded.

Microtran No.	Input VDC	Output VA	Transistors Suggested	DC Output FW V	DC Output mA†	DC Output CT FW V	DC Output CT FW mA	Size, Inches W. x D. x H.	Mtg. Ctrs., In. ML	Mtg. Ctrs., In. MW	MIL Case	Net Each, 1-9*
M8034	28	125	2N174	500	250	250	420	2 3/8 x 2 3/4 x 3 13/16	2 1/8	1 3/4	GA	$34.20
M8035	13.6	125	2N442	500	250	250	420	2 3/8 x 2 3/4 x 3 13/16	2 1/8	1 3/4	GA	34.20
M8036	13.6	40	2N442	450	90	225	155	2 1/16 x 2 5/16 x 3 1/8	1 11/16	1 1/16	FA	32.10
M8072	2.7	190§	2N1307	480*	400‡	....	....	13/16 x 1 11/16 x 27/32	1 3/8	....	ZZ	7.80
M8120	28	190§	2N3417	480*	400‡	....	....	13/16 x 1 11/16 x 27/32	1 3/8	....	ZZ	7.80

TOROIDAL SERIES (FIG. V)

Permit conversion of low-voltage direct current to higher voltages for operating mobile electronic equipment. Operating frequencies between 1500 and 5000 Hz. Case is epoxy molded with terminals and clearance hole for mounting. DC output shown is based on 1 volt drop per rectifier.

M8113	13.8	50	2N278	28	1750	14	3500	2 1/8 x 1 1/4 #	.170•	....		$26.40
M8114	28	50	2N375	28	1750	14	3500	2 1/8 x 1 1/4 #	.170•	....		25.65
M8115	13.8	5	2N376	500	10	250	20	1 1/4 x 3/4 #	.140•	....		16.80
M8116	13.8	50	2N278	70	700	35	1400	2 1/8 x 1 1/4 #	.170•	....		26.40
M8117	28	5	2N375	500	10	250	20	1 1/4 x 3/4 #	.140•	....		16.80
M8118	28	50	2N375	70	700	35	1400	2 1/8 x 1 1/4 #	.170•	....		25.65

*Output when used with half-wave capacitor-input rectifier. †Bridge. ‡μA. §mW. #Dia. x ht. •Clearance hole dia.

POWER SUPPLY TRANSFORMERS (FIG. P)

For silicon rectifier circuitry and filament applications. Hermetically sealed. Primary, 105/115/125 V. Output voltage given for resistive or inductive loads, based on approx. 1 V drop per rectifier. MIL Type TF4RX01— (add MIL case type from table) per MIL-T-27B.

400 Hz TYPE

Micro. No.	Secondary VAC	Secondary rms	Rect. Cir. VDC*	Rect. Cir. VDC†	Size, Inches W. x D. x H.	MIL Case	Net, 1-9*
M8063‡•	2.85	.045 A	1.5§	3	15/16 dia. x 1 1/16	YY	$10.50
	2.85	.045 A					
M8064‡	6.3 CT	.6 A	1.9	3.8	1 5/16 x 1 5/16 x 1 3/4	AH	11.55
M8075‡•	6.3 CT	.3 A	1.9	3.8	15/16 dia. x 1 1/16	YY	9.75
M8076‡	12.6 CT	.3 A	4.7	9.4	1 5/16 x 1 5/16 x 1 3/4	AH	11.70
M8039	12.6	.8 A	10.5§	21§	1 5/8 x 1 5/8 x 2 3/8	AJ	19.65
	12.6 CT	.8 A					
M8077	12.6	2 A	10.5§	21§	2 1/16 x 2 5/16 x 3 1/8	FA	24.00
	12.6 CT	2 A					
M8038	12.6	.3 A	16§	32§	1 5/8 x 1 5/8 x 2 3/8	AJ	18.60
	12.6	.3 A					
	12.6	.3 A					
M8018	18.5 CT	1 A	7.4	14.8	1 13/16 x 1 15/16 x 2 3/4	EA	16.50
M8019	18.5 CT	3 A	7.4	14.8	2 1/16 x 2 5/16 x 3 1/8	FA	21.60
M8065	26 CT	1.5 A	10.8	21.6	1 13/16 x 1 15/16 x 2 3/4	EA	21.60
M8066	26 CT	3 A	10.7	21.5	2 1/16 x 2 5/16 x 3 1/8	FA	26.85
M8079	26 CT	4 A	10.8	21.6	2 3/8 x 3 1/16 x 4 1/4	HA	28.50
M8067	30 CT	1.5 A	12.5	25	2 1/16 x 2 5/16 x 2 1/2	FB	24.15
M8020	35 CT	3 A	14.5	29	2 3/8 x 2 3/4 x 3 13/16	GA	28.50
M8068	40 CT	.2 A	17	34	1 5/8 x 1 5/8 x 2 3/8	AJ	13.50
M8041‡	50 CT	.25 A	21.5	43	1 5/16 x 1 5/16 x 1 3/4	AH	11.10
M8080	50 CT	.2 A	21.5	43	1 5/8 x 1 5/8 x 2 3/8	AJ	13.80
M8069‡•	60 CT	.003 A	26	52	15/16 dia. x 1 1/16	YY	9.75
M8070‡	65 CT	.170 A	28.4	56.8	1 5/16 x 1 5/16 x 1 3/4	AH	12.45
M8081‡•	65 CT	.030 A	28.4	56.8	15/16 dia. x 1 1/16	YY	9.75
M8021	70 CT	1 A	30	60	2 1/16 x 2 5/16 x 3 1/8	FA	26.10
M8071	80 CT	.90 A	35	70	2 1/16 x 2 5/16 x 3 1/8	FA	22.20

60 Hz TYPE

M8042	6.3 CT	.6 A	1.9	3.8	1 5/8 x 1 5/8 x 2 3/8	AJ	$13.80
M8043	6.3 CT	2 A	1.9	3.8	2 1/16 x 2 5/16 x 2 1/2	FB	17.40
M8086	6.3 CT	6 A	1.9	3.8	2 3/8 x 2 3/4 x 3 13/16	GA	21.60
M8087	12.6 CT	3 A	4.7	9.4	2 3/8 x 2 3/4 x 3 13/16	GA	21.60
M8044	12.6	2 A	10.5§	21§	3 1/16 x 3 5/16 x 3 7/8	JB	24.75
	12.6 CT	2 A					
M8022	18.5 CT	3 A	7.4	14.8	3 1/16 x 3 5/16 x 3 7/8	JB	26.40
M8088	26 CT	2.5 A	10.8	21.6	2 3/8 x 3 1/16 x 4 1/4	HA	24.15
M8045	28 CT	.6 A	11.7	23.4	2 1/16 x 2 5/16 x 3 1/8	FA	18.90
M8055	30 CT	2.5 A	12.5	25	3 1/16 x 3 5/16 x 4 7/8	JA	27.60
M8023	35 CT	3 A	14.5	29	3 3/8 x 3 13/16 x 5 1/4	KA	27.15
M8089	40 CT	.1 A	17	34	1 5/8 x 1 5/8 x 2 3/8	AJ	13.80
M8090	40 CT	.3 A	17	34	1 13/16 x 1 15/16 x 2 3/4	EA	18.90
M8091	40 CT	.75 A	17	34	2 3/8 x 2 3/4 x 2 13/16	GB	21.15
M8046	49 CT	2.5 A	21	42	3 11/16 x 4 5/16 x 5 9/16	LA	30.60
M8024	70 CT	1 A	30	60	3 1/16 x 3 5/16 x 4 7/8	JA	26.85
M8056	80 CT	.6 A	35	70	2 3/8 x 3 1/16 x 4 1/4	HA	22.20

*Full-wave CT. †Full-wave bridge. ‡Primary 115 V only. §Series. •Fig. K.

400 Hz ISOLATION TRANSFORMERS (FIG. P)

Electrostatic shielding. Also for use in either FW bridge or FW CT circuit. MIL Type TF4RX01—.

Micro. No.	Input Volts	Output Volts	rms Amps	VA	Size, Inches W. x D. x H.	MIL Case	Net, 1-9*
M8058†	115	115 CT	.017	2	15/16 dia. x 1 7/16	YY	$10.20
M8059	115	115 CT	.35	40	1 13/16 x 1 15/16 x 2 7/16	EB	17.10
M8060	115	115 CT	1.3	150	2 3/8 x 2 3/4 x 3 13/16	GA	28.50
M8061	115*	115 CT	2.6	300	3 1/16 x 3 5/16 x 4 7/8	JA	46.05
M8062	115*	115 CT	4.4	500	3 3/8 x 3 13/16 x 5 1/4	KA	50.70
M8082†	26	12.6 CT	.15	1.9	15/16 dia. x 1 7/16	YY	10.50
		12.6	.15	1.9			
M8083	115	115 CT	.03	10	1 5/8 x 1 5/8 x 2 3/8	AJ	18.60
		12.6 CT	.25	total			
		12.6	.25				
M8084	115	115 CT	.12	14	1 5/8 x 1 5/8 x 2 3/8	AJ	15.30
M8085	115	115 CT	.7	80	2 1/16 x 2 5/16 x 3 1/8	FA	31.50

*Primary 105/115/125 V. †Fig. K.

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400 Hz TOROIDAL POWER TRANSFORMERS (FIG. W)

Ideal for applications requiring minimum size and weight. Feature epoxy molded case and printed circuit pins which can be bent for chassis mounting. Toroidal cores provide greater efficiency and low phase shift. All have 115 V primary windings and center .170" clearance hole for #8 screw. MIL Type TF5SX01ZZ.

Micro. No.	Secondary V	Secondary mA	VA	Size, Inches O.D. x Ht.	Wt., Oz.	Net Ea., 1-9*
M8106	28 CT	320	9	1 5/32 x 1 1/8	2	$16.65
M8107	28 CT	710	20	1 1/2 x 1 1/4	4	17.10
M8108	56 CT	160	9	1 5/32 x 1 1/8	2	16.50
M8109	56 CT	356	20	1 1/2 x 1 1/4	4	16.65
M8110	115 CT	78	9	1 5/32 x 1 1/8	2	17.10
M8111	115 CT	170	20	1 1/2 x 1 1/4	4	16.80

60 Hz ISOLATION/POWER TRANSFORMERS (FIG. P)

Electrostatic shielding. Center tap permits use in either FW bridge or FW CT circuit. MIL type TF4X01—.

Micro. No.	Input Volts	Output Volts	rms Amps	VA	Size, Inches W. x D. x H.	MIL Case	Net Ea., 1-9*
M8094	115	115 CT	.0085	1	1 5/16 x 1 5/16 x 1 3/4	AH	$14.10
M8095	115	115 CT	.03	3.5	1 13/16 x 1 15/16 x 2 3/4	EA	25.50
		12.6 CT	.25	3.15			
		12.6	.25	3.15			
M8096*	115	115 CT	.35	40	2 3/8 x 2 3/4 x 3 3/16	GA	22.20
M8078*	115	115 CT	.9	100	3 3/8 x 3 15/16 x 5 1/4	KA	31.80

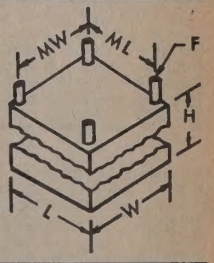
*Primary 105/115/125 V.

FILTER INDUCTORS (FIG. P)

For transistor and low voltage applications. May be connected in series or parallel for varied inductive requirements. MIL Type TF4RX04—. Tested 1500 V.

Microtran No.	Series Connected Induct. H	Series Connected DC Amps	Series Connected DC Res. Ohms	Parallel Connected Induct. H	Parallel Connected DC Amps	Parallel Connected DC Res. Ohms	MIL Case	Net Each, 1-9*
M8098	3.5	.05	200	.875	.10	50	AH	$ 9.90
M8099	1.0	.15	65	.25	.30	16	AJ	12.90
M8100	.5	.3	30	.125	.6	7.5	EB	14.70
M8101	.32	.6	16	.08	1.2	4	FB	16.65
M8102	.2	1.0	4	.05	2.0	1	JA	21.60
M8103	.07	2.5	.84	.0175	5.0	.21	JA	24.00
M8104	.022	4.0	.4	.0055	8.0	.1	JA	22.80
M8105	.022	5.0	.2	.0055	10	.05	KA	25.65

STANDARD MIL-T-27B CASE SIZES



Case symbol **YY**—all metal cases not included below or with non-standard mounting centers. Case symbol **ZZ**—open type and encapsulated units. In tabulation below, * indicates not in conformance with MIL-T-27B; † indicates two studs in a diagonal.

Case Type	Size, Inches W. x L. x H.	Mtg. Centers, In. MIL	Mtg. Centers, In. MW	Stud Type F
AF	3/4 x 3/4 x 1 1/8	13/16*	.....	4-40 x 3/8
AG	1 x 1 x 1 3/8	1 1/8*	.....	6-32 x 3/8
AH	1 5/16 x 1 5/16 x 1 3/4	1 1/4†	.....	6-32 x 5/8
AJ	1 5/8 x 1 5/8 x 2 3/8	1 5/16	1 5/16	6-32 x 5/8
EA	1 13/16 x 1 15/16 x 2 3/4	1 3/8	1 1/4	6-32 x 3/8
EB	1 13/16 x 1 15/16 x 2 7/16	1 3/8	1 1/4	6-32 x 3/8
FA	2 1/16 x 2 5/16 x 3 1/8	1 11/16	1 7/16	6-32 x 3/8
FB	2 1/16 x 2 5/16 x 2 1/2	1 11/16	1 7/16	6-32 x 3/8
GA	2 3/8 x 2 3/4 x 3 13/16	2 1/8	1 3/4	6-32 x 3/8
HA	2 5/8 x 3 1/16 x 4 1/4	2 19/64	1 55/64	8-32 x 3/8
JA	3 1/16 x 3 5/16 x 4 7/8	2 5/8	2 1/8	8-32 x 3/8
JB	3 1/16 x 3 5/16 x 3 7/8	2 5/8	2 1/8	8-32 x 3/8
KA	3 3/8 x 3 15/16 x 5 1/4	3	2 7/16	10-32 x 1/2
LA	3 11/16 x 4 5/16 x 5 9/16	3 5/16	2 11/16	10-32 x 1/2
NB	4 5/16 x 5 1/16 x 5 1/2	4 1/16	3 5/16	1/4-20 x 5/8
OA	4 1/2 x 5 1/2 x 6 3/4	3 3/4	3	1/4-20 x 5/8

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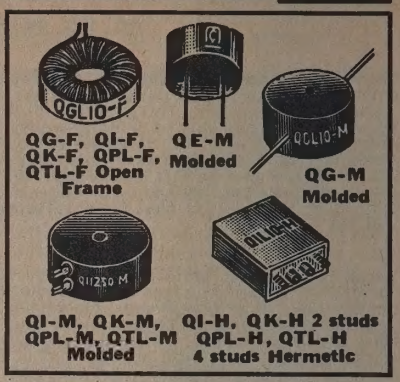
MICROTRAN MINIATURIZED MILITARY TOROIDAL INDUCTORS

ULTRA-MINIATURE TOROIDAL INDUCTORS—QE-M SERIES

Affords new application opportunities in high density packaging. Ultra miniaturized with low height design. Exceptionally high "Q" and wide frequency range. Available on special order with ±1% inductance tolerance. Frequency range of QEL Series 1 to 300 kHz; QEM, 3 to 500 kHz. Accuracy, ±2%. Molded in epoxy resin with .020" x 2" gold-plated nickel alloy leads. Size, .450" dia. x .285".

Induc-tance	QEL-M Series: Microtran No.	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Ea., Lots of 1-9*	QEM-M Series: Microtran No.	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Ea., Lots of 1-9*
.5 mH					•QEM05-M	1.6	9	$8.40
1 mH	•QEL1-M	1.5	9	$7.95	•QEM1-M	2.8	10	8.40
2 mH	•QEL2-M	2.7	10	7.95	QEM2-M	6.1	12	8.40
5 mH	QEL5-M	6.7	13	8.40	QEM5-M	16	15	8.85
10 mH	QEL10-M	15.6	15	8.55	QEM10-M	29	19	9.00
15 mH	•QEL15-M	24	18	8.70	•QEM15-M	43	21	9.15
25 mH	QEL25-M	38	22	9.00	•QEM25-M	56	25	9.45
50 mH	QEL50-M	55	25	9.15	•QEM50-M	127	30	9.75
100 mH	•QEL100-M	125	30	9.60				

•These items not normally carried in stock; available on special order only.



QG-F, QI-F, QK-F, QPL-F, QTL-F Open Frame

QE-M Molded

QG-M Molded

QI-M, QK-M, QPL-M, QTL-M Molded

QI-H, QK-H 2 studs QPL-H, QTL-H 4 studs Hermetic

MICRO-MINIATURE TOROIDAL INDUCTORS—QG SERIES

Frequency range of QGL Series, to 20 kHz; QGM Series, 2 to 100 kHz. Accuracy, ±2%. **QG-F:** Open frame, microcrystalline wax dipped with 4" #28 plastic leads. Size, ⅝" dia. x 9/32". **QG-M:** Molded in high temperature epoxy resin with .020" x 2" gold plated nickel alloy leads. Leads may be bent downward for plug-in printed circuit use. Size, ⅞" dia. x ⅜". **QGH:** Hermetically sealed on special order only (**$12.50** setup charge in Lots of 1-49). Size, 11/16" dia. x 13/32". **QG-HC:** Hermetic crystal can. Special order only; prices setup charge same as QG-H Series. Size, 23/32" x 11/32" x 49/64".

QGL SERIES

Microtran No.†	Induc-tance	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Each, Lots of 1-9* -F	-H	-M
QGL5-	5 mH	2.5	30	$4.35	$7.50	$6.90
QGL10-	10 mH	5	33	4.35	7.50	6.90
QGL15-	15 mH	8	34	4.50	7.65	7.05
•QGL30-	30 mH	17	37	4.65	7.80	7.20
QGL50-	50 mH	28	40	4.80	7.95	7.35
QGL100-	100 mH	50	42	$4.95	$8.40	$7.50
QGL250-	250 mH	130	46	5.10	8.40	7.65
QGL500-	500 mH	290	48	5.85	9.15	9.30
QGL1000-	1.0 H	530	51	6.75	9.60	9.90
QGL1500-	1.5 H	825	53	6.90	10.20	10.35

QGM SERIES

Microtran No.†	Induc-tance	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Each, Lots of 1-9* -F	-H	-M
QGM1-	1 mH	1.4	22	$4.80	$8.10	$7.35
QGM2-	2 mH	2.5	25	4.80	8.10	7.35
QGM5-	5 mH	6	28	5.10	8.25	7.50
QGM10-	10 mH	12	31	5.25	8.25	7.65
QGM15-	15 mH	18	32	$5.40	$8.40	$7.80
QGM25-	25 mH	30	35	5.70	8.55	7.95
QGM50-	50 mH	52	37	6.30	9.60	8.10
•QGM100-	100 mH	115	39	6.45	9.90	8.85

SUBMINIATURE TOROIDAL INDUCTORS—QIL SERIES

Frequency range to 20 kHz; accuracy, ±2%. **QIL-M:** Molded in high temperature epoxy with silver plated turret lugs. Size, 1 3/16" dia. x ½". **QIL-H:** Hermetically sealed in metal case with Teflon® terminals. Size, 1 1/16" x ½" x 1 17/32". **QIL-F:** Open frame. Microcrystalline wax dipped with 4" #28 plastic leads. Size, 1" dia. x 13/32". ®Registered DuPont trademark

Microtran No.†	Induc-tance	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Each, Lots of 1-9* -F	-H	-M
•QIL3-	3 mH	.73	36	$4.20	$7.35	$7.05
QIL5-	5 mH	1.1	38	4.20	7.35	7.05
QIL10-	10 mH	2.1	40	4.20	7.35	7.05
•QIL15-	15 mH	3.3	42	4.20	7.35	7.20
QIL25-	25 mH	5.3	45	4.35	7.80	7.20
QIL50-	50 mH	11	47	4.35	7.80	7.35
QIL100-	100 mH	22	49	4.50	8.25	7.65
•QIL150-	150 mH	34	50	$4.65	$8.40	$7.80
QIL250-	250 mH	55	53	4.80	8.85	7.95
QIL500-	500 mH	95	55	5.10	9.15	8.10
QIL1000-	1.0 H	210	57	5.40	9.75	8.55
•QIL1500-	1.5 H	335	59	6.15	10.20	9.60
QIL2500-	2.5 H	550	61	7.05	11.55	11.10

MINIATURE TOROIDAL INDUCTORS—QK SERIES

Frequency range of QKL Series, to 10 kHz; QKM Series, 5 to 50 kHz. Accuracy, ±2%. **QK-F:** Open frame, microcrystalline wax dipped; 4" #28 plastic leads. Size, 1¼" dia. x ⅝". **QK-H:** Hermetic with Teflon terminals. Size, 1 15/32" x 2 5/32" x 1 47/64". **QK-M:** Molded in high temperature epoxy resin; silver plated turret lugs. Size, 1⅜" dia. x ¾"; #8 clearance hole.

QKL SERIES

Microtran No.†	Induc-tance	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Each, Lots of 1-9* -F	-H	-M
•QKL5-	5 mH	.62	60	$4.35	$7.65	$6.90
QKL10-	10 mH	1.1	66	4.50	7.80	6.90
•QKL15-	15 mH	1.7	68	4.80	7.95	6.90
•QKL25-	25 mH	2.8	72	4.95	8.10	7.05
QKL50-	50 mH	6	76	4.95	8.40	7.05
QKL100-	100 mH	11	81	5.10	9.00	7.50
•QKL150-	150 mH	17	83	5.25	9.15	7.65
QKL250-	250 mH	28	87	$5.25	$9.45	$7.80
QKL500-	400 mH	63	91	5.40	9.75	7.95
QKL1000-	1.0 H	110	96	5.55	10.20	8.40
•QKL1500-	1.5 H	175	98	5.70	10.65	8.55
•QKL2500-	2.5 H	275	103	6.30	10.95	8.70
QKL5000-	5 H	645	106	7.05	12.00	9.60
QKL10,000-	10 H	1175	112	7.80	13.35	10.95

QKM SERIES

Microtran No.†	Induc-tance	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Each, Lots of 1-9* -F	-H	-M
QKM2-	2 mH	.45	52	$5.10	$8.70	$7.50
QKM5-	5 mH	1.1	58	5.25	8.85	7.50
QKM10-	10 mH	2.5	62	5.25	9.00	7.65
•QKM25-	25 mH	6.5	70	5.40	9.30	7.80
•QKM50-	50 mH	11	74	5.55	9.45	7.95
•QKM100-	100 mH	25	79	$5.70	$9.45	$8.10
•QKM250-	250 mH	65	87	5.85	9.75	8.40
•QKM500-	500 mH	115	92	6.15	10.05	8.70
•QKM1000-	1.0 H	250	97	6.45	11.10	9.90

HIGH-Q TOROIDAL INDUCTORS—QPL SERIES

Frequency range to 10 kHz; accuracy, ±2%. **QPL-F:** Open frame, microcrystalline wax dipped; 4" #24 leads. Size, 1 1/16" dia. x ⅞". **QPL-H:** Hermetically sealed with Teflon terminals. Size, 1 1/16" x 1 1/16" x 2 9/32". **QPL-M:** Molded in high temperature epoxy resin; silver plated turret lugs. Size, 2" dia. x 1".

Microtran No.†	Induc-tance	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Each, Lots of 1-9* -F	-H	-M
QPL25-	25 mH	1.5	100	$6.90	$12.75	$ 9.90
QPL50-	50 mH	2.5	105	7.05	12.90	10 05
QPL100-	100 mH	6	110	7.20	13.20	10 20
•QPL250-	250 mH	15	115	7.35	13.35	10.50
QPL500-	500 mH	25	120	7.50	13.50	10.80
QPL1000-	1.0 H	60	125	7.80	13.95	11.25
•QPL1500-	1.5 H	90	130	8.10	14.55	11.55
•QPL2500-	2.5 H	150	133	$ 8.70	$15.30	$12.15
QPL5000-	5.0 H	350	138	9.45	16.20	12.90
•QPL7500-	7.5 H	525	140	10.05	17.55	13.65
QPL10,000-	10 H	600	142	11.10	18.45	14.85
•QPL15,000-	15 H	900	146	12.00	19.80	15.60
QPL25,000-	25 H	1500	150	13.05	21.60	17.40

HIGH-Q TOROIDAL INDUCTORS—QTL SERIES

Frequency range to 15 kHz; accuracy, ±2%. **QTL-F:** Open frame, microcrystalline wax dipped; 4" #24 leads. Size, 2 7/16" dia. x 1". **QTL-H:** Hermetic, Teflon terminals. Size, 2 9/16" x 1 5/16" x 2 13/16". **QTL-M:** Molded in epoxy resin. Size, 2 7/16" dia. x 1⅜".

Microtran No.†	Induc-tance	Typ. DC Res., Ohms	Typ. Dist. Cap., pF	Net Each, Lots of 1-9* -F	-H	-M
•QTL25-	25 mH	0.85	127	$11.85	$13.50	$14.55
QTL50-	50 mH	1.5	136	12.00	13.65	14.70
QTL100-	100 mH	2.8	144	12.45	13.95	15.00
•QTL150-	150 mH	3.9	149	12.90	14.25	15.75
•QTL250-	250 mH	7	156	13.20	14.55	16.05
QTL500-	500 mH	15	164	13.50	14.85	16.05
QTL1000-	1.0 H	27	173	13.50	15.15	13.95
•QTL1500-	1.5 H	40	177	$13.65	$15.45	$16.35
QTL2500-	2.5 H	70	184	14.40	16.05	17.10
QTL5000-	5 H	140	192	14.40	16.65	17.25
•QTL10,000-	10 H	270	200	15.75	17.25	18.60
•QTL15,000-	15 H	430	205	16.80	18.30	19.80
QTL25,000-	25 H	850	212	18.00	19.50	21.15
•QTL50,000-	50 H	1500	221	25.20	26.40	27.75

•These items not normally carried in stock; available on special order.

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MICROTRAN MINIATURIZED INDUSTRIAL TRANSFORMERS AND CHOKES

60 Hz CONTROL/POWER SUPPLY TRANSFORMERS

For low voltage, high current applications such as filament supplies, relays, silicon rectifiers, etc. Primary 105/115/125 VAC. Open frame construction.

Micro. No.	Fig.	Secondary VAC	Secondary rms A	Rectifier VDC*	Rectifier VDC‡	Size, Inches W. x D. x H.	Net Ea., 1-9*
M8242	X	6.3 CT	.6	1.9	3.8	2 3/8 x1 3/16 x1 1/2	$ 6.75
M8243	X	6.3 CT	2.0	1.9	3.8	2 1/2 x1 5/16 x1 15/16	8.25
M8286	X	6.3 CT	6.0	1.9	3.8	3 1/16 x2 1/16 x2 1/4	8.85
M8287	X	12.6 CT	3.0	4.7	9.4	3 1/16 x2 1/16 x2 1/4	8.85
M8247#	Y	12	4.0	9.9§	19.8§	4 1/16 x3 1/16 x3 3/4	16.05
		12	4.0	9.9§	19.8§		
M8244	Y	12.6 CT	2.0	10.5§	21§	3 3/8 x2 7/16 x3 5/32	12.00
		12.6	2.0	10.5§	21§		
M8222	Y	18.5 CT	3.0	7.4	14.8	3 3/8 x2 1/16 x3 5/32	10.50
M8288	Y	26 CT	2.5	10.8	21.6	3 x2 3/4 x2 3/4	11.10
M8245	X	28 CT	.6	11.7	23.4	2 1/2 x2 1/16 x1 15/16	8.55
M8255	Y	30 CT	2.5	12.5	25	3 3/4 x2 3/4 x3 15/32	10.65
M8223	Y	35 CT	3.0	14.5	29	4 1/16 x3 x3 3/4	15.00
M8289	X	40 CT	.1	17	34	2 3/8 x1 3/16 x1 1/2	7.05
M8290	X	40 CT	.3	17	34	2 13/16 x1 5/16 x1 5/8	8.10
M8291	X	40 CT	.75	17	34	3 11/16 x2 1/16 x2 1/4	9.45
M8246	Y	49 CT	2.5	21	42	4 1/2 x3 1/4 x4 1/32	17.10
M8224	Y	70 CT	1.0	30	60	3 3/4 x2 3/4 x3 15/32	12.45
M8256	Y	80 CT	.6	35	70	3 x2 5/16 x2 3/4	10.35

DC output for resistive or inductive load, output volts based on 1 V approx., drop/rectifier. Full wave *CT; ‡bridge. §Series. #Sec. connected series, 24 V at 4 A; parallel, 12 V at 8 A.

60 Hz ISOLATION AND POWER TRANSFORMERS

With center tap for use in either full wave bridge or full wave CT circuitry. Electrostatic shielding; open frame.

Micro. No.	Fig.	Volts Input	Volts Output	rms Amps	VA	Size, Inches W. x D. x H.	Net Ea., 1-9*
M8294	X	115	115 CT	.0085	1	2 1/8 x1 1/16 x1 3/16	$ 5.10
M8295	X	115	115 CT	.030	3.5	2 13/16 x1 1/8 x1 5/8	8.25
			12.6 CT	.25	3.15		
			12.6	.25	3.15		
M8296	Z	115*	115 CT	.35	40	2 3/8 x3 1/16 x2 3/4	10.80
M8278	Y	115*	115 CT	.9	100	3 3/4 x3 1/4 x3 15/32	17.55

*Primary 105/115/125 volts.

FILTER INDUCTORS (FIG. X)

Windings may be connected in series or parallel for varied inductive requirements. Tested at 1500 volts.

Microtran No.	Series Connected Ind., H	Series Connected DC Amps	Series Connected DCR Ohms	Parallel Connected Ind., H	Parallel Connected DC Amps	Parallel Connected DCR Ohms	Mtg. Ctrs., Inches	Net Each, 1-9*
M8198	3.5	.050	200	.875	.10	50	1 3/4	$ 3.60
M8199	1.0	.15	65	.25	.30	16	2	3.75
M8200	.5	.3	30	.125	.6	7.5	2 3/8	5.25
M8201	.32	.6	16	.08	1.2	4	2 9/16	5.40
M8202*	.2	1.0	4	.05	2.0	1	2 13/16 x2 1/8	10.05
M8203*	.07	2.5	.84	.0175	5.0	.21	3 1/8 x2 1/2	12.90
M8204*	.022	4.0	.4	.0055	8.0	.1	2 5/16 x2 1/2	12.60
M8205*	.022	5.0	.2	.0055	10	.05	3 3/4 x2 1/2	15.15

*Fig. Y.

DECI-MINIATURE PC CHOKES (FIG. U)

For audio frequency, servo mechanisms, computer applications, etc. **Size:** 13/16" w. x 19/32" d. x 15/16" h. Open frame.

Micro. No.	Inductance, Henries At 0 mA	Inductance, Henries At Rated Cur.	DC Res., Ohms	Net Each, 1-9*
DCM51-PC	10	5 at 3 mA	300	$3.60
DCM52-PC	5	2 at 5 mA	155	3.30
DCM53-PC	2.5	1 at 7 mA	75	3.15

TRANSISTOR AUDIO TRANSFORMERS (FIG. X)

Designed for input, interstage, isolation, output and impedance matching of solid state circuits. Primary and secondary windings may be interchanged with only slight differences in impedance ratios. Open frame construction. **Size:** 8316, 1 9/32" w. x 11/16" d. x 21/32" h.; 8304, 5, 11 and 13, 2 1/16" w. x 1 1/4" d. x 1 5/16" h.; all others, 2 3/8" w. x 1 3/8" d. x 1 3/8" h.

Microtran No.	Impedance Pri.	Impedance Sec.	Unbal. Pri. mADC	Level Watts	Freq. Resp. ±2 db, Hz	Net Each, 1-9*
M8302	560	400 CT	18	.15	200–20K	$4.20
M8303	625 CT	100 CT	20	1.5	200–20K	4.35
M8304	5400	600 CT	15	.075	200–20K	3.90
M8305	7000	320 CT	7	.040	70–15K	4.05
M8308	25	3–4	600	3.0	200–20K	3.90
M8309	48 CT	3.2/8.0	50	5.0	200–20K	4.05
M8310	120 CT	1000	40	6.0	300–15K	4.20
M8311	125 CT	3–4	20	1.5	200–15K	4.20
M8312	140 CT	500	50	6.0	300–15K	4.20
M8313	250 CT	3–4	20	.4	70–15K	3.75
M8315	1600 CT	800	5.0	2.5	150–20K	4.05
M8316	2500 CT	12	4.0	.1	300–15K	3.60

MICROPHONE INPUT TRANSFORMERS (FIG. T)

Broadcast fidelity type, double mu-metal shielded. M8030 designed to replace Ampex No. 1733-1. Frequency response, ±2 db, 20–20,000 Hz except M8027, 50–20,000 Hz, and M8031, 30–20,000 Hz. Magnetic shielding, 65 db; low level, 5 dbm.

Micro. No.	Impedance, Ohms Primary	Impedance, Ohms Sec.	Size, In. H. x Dia.	Base	Wt., Oz.	Net Ea., 1-9*
M8027	200	40K	2 3/4 x1 13/16 x1 7/8	*	2	$ 9.00
M8030	200/50 CT	50K	2 1/8 x1 1/8	Octal	6	15.45
M8031	600 CT/150	50K	2 1/8 x1 1/8	Octal	6	16.05
M8032	250 CT	50K	2 1/8 x1 1/8	9-pin‡	6	15.15
M8033	50 CT	50K	2 1/8 x1 1/8	9-pin‡	6	15.15
M1-S	50/250 CT 600 CT	50K	1 17/32 x1 1/16	Wire leads§	3	12.30

*In-line, 20" shielded cable; 25 db single mu-metal magnetic shield; Fig. AA. ‡Mates with many RCA amplifier sockets. §Fig. H.

DECI-MINIATURE PC TRANSFORMERS (FIG. U)

Primary and secondary windings may be interchanged to obtain varied matching requirements such as input, interstage, output and isolation. Designed for printed circuits; frequency response: ±2 db, 200–15,000 Hz. **Size:** 13/16" w. x 19/32" d. x 3/4" h.

Micro. No. DCM	Impedance Primary	Impedance Secondary	Unbal. Pri. mADC	Oper. Level dbm	Net Each, 1-9*
DCM1-PC	25K CT	1200 CT	2	18	$4.95
DCM2-PC	15K CT	15K CT	3	19	5.10
DCM3-PC	15K CT	600 CT	3	19	4.80
DCM4-PC	10K CT	5000 CT	4	20	4.95
DCM5-PC	10K	2500/625 split	2	20	4.95
DCM6-PC	10K CT	1500 CT	4	20	4.65
DCM7-PC	5000 CT	80K CT	6	15	5.25
DCM8-PC	4000 CT	1200 CT	6	20	4.50
DCM9-PC	4000 CT	600 CT	6	20	4.35
DCM10-PC	4000	600/150 split	3	20	4.80
DCM11-PC	2500 CT	2500 CT	8	20	4.50
DCM12-PC	2500	2500/625 split	4	20	4.80
DCM13-PC	2500 CT	625 CT	8	20	4.35
DCM14-PC	2500 CT	200 CT	8	20	4.20
DCM18-PC	600 CT	50K CT	16	20	4.65
DCM19-PC	600	8000/2000 split	8	20	4.80
DCM20-PC	600 CT	200 CT	16	20	4.05
DCM21-PC	600 CT	600 CT	16	20	4.05
DCM22-PC	250 CT	600 CT	25	20	4.05

★QUANTITY PRICING

Net Each, 1-9	Net Each, Lots of 10-49	50-99	100-249	Net Each, 1-9	Net Each, Lots of 10-49	50-99	100-249	Net Each, 1-9	Net Each, Lots of 10-49	50-99	100-249	Net Each, 1-9	Net Each, Lots of 10-49	50-99	100-249
$1.05	$0.95	$0.88	$0.70	$7.95	$7.16	$6.63	$5.30	$13.50	$12.15	$11.25	$9.00	$21.30	$19.17	$17.75	$14.20
1.35	1.22	1.13	0.90	8.10	7.29	6.75	5.40	13.65	12.29	11.38	9.10	21.60	19.44	18.00	14.40
1.65	1.49	1.38	1.10	8.25	7.43	6.88	5.50	13.80	12.42	11.50	9.20	21.90	19.71	18.25	14.60
2 85	2.57	2.38	1.90	8.40	7.56	7.00	5.60	13.95	12.56	11.63	9.30	22.20	19.98	18.50	14.80
3.00	2.70	2.50	2.00	8.55	7.70	7.13	5.70	14.10	12.69	11.75	9.40	22.80	20.52	19.00	15.20
3.15	2.84	2.63	2.10	8.70	7.83	7.25	5.80	14.25	12.83	11.88	9.50	23.25	20.93	19.38	15.50
3.30	2.97	2.75	2.20	8.85	7.97	7.38	5.90	14.40	12.96	12.00	9.60	23.40	21.07	19.50	15.60
3.45	3.11	2.88	2.30	9.00	8.10	7.50	6.00	14.55	13.10	12.13	9.70	23.55	21.20	19.63	15.70
3.60	3.24	3.00	2.40	9.15	8.24	7.63	6.10	14.70	13.23	12.25	9.80	24.00	21.60	20.00	16.00
3.75	3.38	3.13	2.50	9.30	8.37	7.75	6.20	14.85	13.37	12.38	9.90	24.15	21.74	20.13	16.10
3 90	3.51	3 25	2.60	9.45	8.51	7.88	6.30	15.00	13.50	12.50	10.00	24.75	22.28	20.63	16.50
4.05	3.65	3.38	2.70	9.60	8.64	8.00	6.40	15.15	13.64	12.63	10.10	25.20	22.68	21.00	16.80
4.20	3.78	3.50	2.80	9.75	8.78	8.13	6.50	15.30	13.77	12.75	10.20	25.50	22.95	21.25	17.00
4.35	3.92	3.63	2.90	9.90	8.91	8.25	6.60	15.45	13.91	12.88	10.30	25.65	23.09	21.38	17.10
4.50	4.05	3.75	3.00	10.05	9.05	8.38	6.70	15.60	14.04	13.00	10.40	26.10	23.49	21.75	17.40
4.65	4.19	3.88	3.10	10.20	9.18	8.50	6.80	15.75	14.18	13.13	10.50	26.40	23.76	22.00	17.60
4.80	4.32	4.00	3.20	10.35	9.32	8.63	6.90	15.90	14.31	13.25	10.60	26.85	24.17	22.38	17.90
4.95	4.46	4.13	3.30	10.50	9.45	8.75	7.00	16.05	14.45	13.38	10.70	27.15	24.44	22.63	18.10
5.10	4.59	4.25	3.40	10.65	9.59	8.88	7.10	16.20	14.58	13.50	10.80	27.60	24.84	23.00	18.40
5.25	4.73	4.38	3.50	10.80	9.72	9.00	7.20	16.35	14.72	13.63	10.90	27.75	24.98	23.13	18.50
5.40	4.86	4.50	3.60	10.95	9.86	9.13	7.30	16.50	14.85	13.75	11.00	28.50	25.65	23.75	19.00
5.55	5.00	4.63	3.70	11.10	9.99	9.25	7.40	16.65	14.99	13.88	11.10	29.10	26.19	24.25	19.40
5.70	5.13	4.75	3.80	11.25	10.13	9.38	7.50	16.80	15.12	14.00	11.20	29.40	26.46	24.50	19.60
5.85	5.27	4.88	3.90	11.40	10.26	9.50	7.60	17.10	15.39	14.25	11.40	29.70	26.73	24.75	19.80
6.00	5.40	5.00	4.00	11.55	10.40	9.63	7.70	17.25	15.53	14.38	11.50	30.00	27.00	25.00	20.00
6.15	5.54	5.13	4.10	11.70	10.53	9.75	7.80	17.40	15.66	14.50	11.60	30.60	27.54	25.50	20.40
6.30	5.67	5.25	4.20	11.85	10.67	9.88	7.90	17.55	15.80	14.63	11.70	31.50	28.35	26.25	21.00
6.45	5.81	5.38	4.30	12.00	10.80	10.00	8.00	18.00	16.20	15.00	12.00	31.80	28.62	26.50	21.20
6.60	5.94	5.50	4.40	12.15	10.94	10.13	8.10	18.30	16.47	15.25	12.20	32.10	28.89	26.75	21.40
6.75	6.08	5.63	4.50	12.30	11.07	10.25	8.20	18.45	16.61	15.38	12.30	34.20	30.78	28.50	22.80
6.90	6.21	5.75	4.60	12.45	11.21	10.38	8.30	18.60	16.74	15.50	12.40	36.00	32.40	30.00	24.00
7.05	6.35	5.88	4.70	12.60	11.34	10.50	8.40	18.90	17.01	15.75	12.60	36.30	32.67	30.25	24.20
7.20	6.48	6.00	4.80	12.75	11.48	10.63	8.50	19.05	17.15	15.88	12.70	42.00	37.80	35.00	28 00
7.35	6.62	6.13	4.90	12.90	11.61	10.75	8.60	19.50	17.55	16.25	13.00	43.50	39.15	36.25	29.00
7.50	6.75	6.25	5.00	13.05	11.75	10.88	8.70	19.65	17.69	16.38	13.10	46.05	41.45	38.38	30.67
7.65	6.89	6.38	5.10	13.20	11.88	11.00	8.80	19.80	17.82	16.50	13.20	48.00	43.20	40.00	32.00
7.80	7.02	6.50	5.20	13.35	12.02	11.13	8.90	21.15	19.01	17.62	13.90	50.70	45.63	42.25	34.00

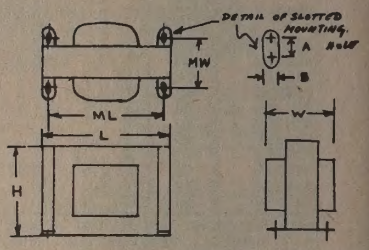
DIRECTRON

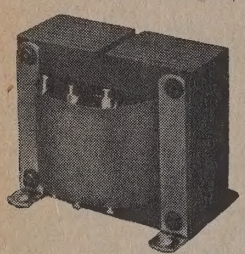
Industrial Transformers, Selenium and Silicon Rectifiers, Chokes and Power Supplies

RECTIFIER TRANSFORMERS

Transformers are with 2 — 18 volt center-tapped windings. Connected in series delivers 36 volts as rated. Connected in parallel — delivers 18 volts at twice rated current. (Taps 9, 18, 27, 36 V.)

Primary taps at 100, 105, 110 and 115 volts available on 12 amp, 24 amp, 30 amp and 50 amp transformers. No extra charge.





12 amp. Transformer 18T12

Part No.	Amp.	Users Net Price	L (MAX)	W (MAX)	H (MAX)	ML ±1/16	MW ±1/8	A ±1/64	B ±1/64	Weight
18 T 1	1	$ 6.20	2 31/32	3	2 3/4	2 1/2.	2 1/4	1/8	13/64	2.5
18 T 2	2	8.55	3 13/16	3	2 3/8	3 1/8	2	↓	↓	3.4
18 T 4	4	11.70	4 3/16	3	3 3/4	3 7/16	2 3/8	↓	↓	5.5
18 T 8	8	17.85	4 9/16	3 5/8	4	3 3/4	3	↓	↓	9.5
18 T 12	12	23.90	5 5/16	4 1/4	4 1/2	4 3/8	3 3/8	↓	9/32	14.5
18 T 24	24	42.25	6 1/2	4 5/8	5 1/2	5 5/16	3 3/8	9/32	↓	22
18 T 30	30	52.00	6 1/2	5	5 1/2	5 5/16	3 5/8	↓	↓	25
18 T 50	50	61.20	6 1/2	5 3/4	5 1/2	5 5/16	4 3/8	↓	↓	33

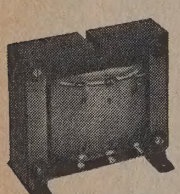
WITH 2-28 CENTER TAP WINDINGS

28 T 2	2	$10.15	3 7/8	3 1/4	3 1/8	2 1/2	2 3/8	1/8	13/64	5
28 T 4	4	14.85	4 1/4	3 3/4	3 7/16	3	3	↓	↓	8
28 T 6	6	27.50	5 5/16	4 1/4	4 1/2	4 3/8	3 5/8	3/8	9/32	14
28 T 12	12	36.30	6 1/2	5	5 1/2	5 5/16	3 3/8	↓	↓	21
28 T 24	24	74.00	6 1/2	6 1/2	5 1/2	5 3/8	3 1/2	↓	↓	24.5

STEP UP TRANSFORMERS

PRIMARY WINDINGS — 100-105-110-115 VOLT			SECONDARY WINDINGS — 130-135-140 VOLT		
Part No.	Amps.	Users Net Price	Part No.	Amps.	Users Net Price
SU 10	10	$ 70.00	SU 25	25	$128.00
SU 15	15	85.00	SU 30	30	160.00
SU 20	20	12.50	SU 35	35	185.00

HIGH CURRENT CHOKES



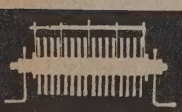
4 amp. Choke CK4

Part No.	Amps.	Hy.	Ohms	Users Net Price	L (MAX)	W (MAX)	H (MAX)	ML ±1/16	MW ±1/8	A ±1/64	B ±1/64	Weight
CK 1	1	.1	1.5	$ 5.90	3 1/32	2 3/4	2 3/4	2 1/2	2	1/8	13/64	2
CK 2	2	.04	.9	7.20	3 7/16	3 3/4	3 1/8	2 13/16	2 1/8	↓	↓	3.1
CK 4	4	.07	.6	9.25	3 13/16	3 1/8	3 3/8	3 1/8	2 1/2	↓	↓	5
CK 8	8	.03	.3	14.60	4 3/16	3 5/8	3 3/4	3 7/16	3	↓	↓	8
CK 12	12	.01	.1	18.00	5 5/16	3 3/4	4 1/2	4 3/8	2 7/8	↓	9/32	11.5
CK 20	20	.004	.05	21.00	5 1/4	5	4 1/2	4 1/2	4	1/2	↓	14
CK 24	24	.004	.025	31.25	5 5/16	4 3/4	4 1/2	4 3/8	3 7/8	↓	↓	17.5
CK 30	30	.003	.01	41.75	6 1/2	4 5/8	5 1/2	5 5/16	3 3/8	↓	↓	22
CK 50	50	.001	.001	53.85	6 1/2	4 7/8	5 1/2	5 1/16	3 3/8	↓	↓	23
CK 100	100	.0005	.005	62.35	6 1/2	6	5 1/2	5 5/16	4 1/8	↓	↓	30

CUSTOM BUILT TRANSFORMERS AND CHOKES — 48 HOUR SERVICE

POWER SUPPLIES TO **YOUR** SPECIFICATIONS, QUOTATIONS ON REQUEST

SEE OUR AD UNDER "RECTIFIERS" IN SECTION 4800 FOR SELENIUM AND SILICON STACKS



Mfd. by SANFORD MILLER CORP.

Net

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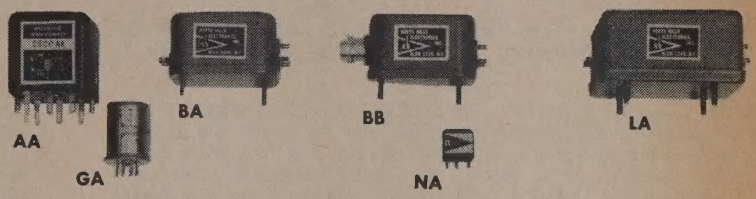
NORTH HILLS ELECTRONICS, INC.

WIDEBAND TRANSFORMERS — PULSE AND CW 20 Hz TO 400 MHz

OVERALL DIMENSIONS (In.)

Case Style	W	L	H	Package
AA	1.4	1.4	1.4	Aluminum Can
BA	1.3	2.3	1.1	Hermetically Sealed Steel Can
BB	1.3	2.6	1.1	Hermetically Sealed Steel Can
FA	0.9	0.9	1.0	Hermetically Sealed Steel Can
GA	0.9 Dia.		1.1	Hermetically Sealed Steel Can
HB	0.9	0.9	0.7	Hermetically Sealed Steel Can
JA	0.8	2.0	0.8	Hermetically Sealed Steel Can
LA, LB	1.7	2.8	1.2	Hermetically Sealed Steel Can
NA	0.56	0.56	0.3	Molded Case
RA	2.9	3.0	2.0	Hermetically Sealed Steel Can



1 Watt Series in AA, BA, BB, FA, GA, HB Cases

Unbalanced to Balanced Designs. Secondaries are center-tapped and dc isolated.

Type No.	Impedance Ratio-Ω	Bandwidth MHz	Type No.	Impedance Ratio-Ω	Bandwidth MHz
0001	50:50	.1-125	1300	75:100	.1-100
0101	50:75	.1-125	1302	75:124	.1-100
0200	50:90	.1-125	1400	75:150	.1-100
0300	50:100	.1-100	1500	75:200	.1-100
0307	50:124	.1-100	1501	75:300	.1-100
0400	50:150	.1-100	1600	75:450	.1-60
0500	50:200	.1-100	1700	75:600	.1-60
*0503	50:200	.5-250	1701	75:600	.3-100
0501	50:300	.1-100	1702	75:600	.007-8
0600	50:450	.1-65	1800	75:800	.1-30
0700	50:600	.1-65	1900	75:1200	.1-30
0800	50:800	.1-60	1901	75:1850	.01-10
0900	50:1200	.1-30	7700	600:600	.1-30
1100	75:75	.1-100			

* No dc isolation.

Unbalanced to Unbalanced Designs (No dc Isolation)

0103	50:75	.1-200	0504	50:200	.1-200

25 Watt Series in BA and BB Cases

Unbalanced to Balanced Designs. Secondaries are center-tapped and dc isolated.

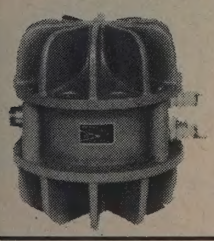
0106	50:75	30-80	1303	75:100	30-80
0305	50:100	30-80	1304	75:100	.1-30
0308	50:100	.1-30	1401	75:150	.1-30
0402	50:150	.1-30	1402	75:150	30-80
0403	50:150	30-80	1509	75:300	30-80
0507	50:200	30-80	1510	75:300	.1-30
0512	50:200	.1-30	1703	75:600	.1-30
0701	50:600	.1-30			

100 Watt Series in BA and BB Cases

Unbalanced to Balanced Designs. Secondaries are center-tapped and dc isolated.

0105	50:75	.5-30	0506	50:300	.5-30
0304	50:100	.5-30	1403	75:150	.5-30
0404	50:150	.5-30	1505	75:300	.5-30

1 kW Series in KA Case — 2 to 32 MHz



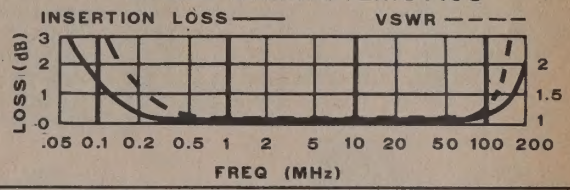
Type No.	Impedance Unb/Bal (Ω)
0107	50: 75
0513	50:300
0702	50:600
1108	75: 75
1511	75:300
1705	75:600

Special — Specify ratio, bandwidth, power

Type 0102 JA Wide Band Adapter

50Ω Unbalanced to 75Ω Unbalanced
Low VSWR
Flat 1 dB, 0.08 to 400 MHz
BNC Connectors.

TYPICAL CHARACTERISTICS



Subminiature Series in NA Case

Unbalanced to Unbalanced Designs

Type No.	Impedance Ratio-Ω	Bandwidth MHz
Non-inverting		
0002	50:12.5	.06-400
0508	50:200	.06-400
1506	75:300	.06-400
Phase reversing		
0003	50:50	.06-400
1106	75:75	.06-400
2200	90:90	.06-400
Phase-reversing, dc isolated		
0007	50:50	.06-400
1107	75:75	.06-400
2201	90:90	.06-400

Unbalanced to Balanced Designs
Balanced side center-tapped

Type No.	Impedance Ratio-Ω	Bandwidth MHz
0004	50:50	.06-400
0509	50:200	.06-400
1101	75:75	.06-400
1507	75:300	.06-400

Balanced to Balanced Designs
center-tapped

0510	50:200	.06-400
1508	75:300	.06-400

Video Series in LA Case

Unbalanced to Balanced Designs. Secondaries are center-tapped and dc isolated.

0306	50:124	.001-20	1704	75:600	.001-10
0511	50:200	.001-15	1902	75:1200	.001-9
1301	75:124	.001-20	1903	75:1850	.001-6
1502	75:300	.001-15	2300	90:124	.001-15

Unbalanced to Unbalanced Designs — dc Isolated.

0005	50:50	.001-20	1103	75:75	.001-15
0505	50:200	.001-15	1504	75:300	.001-10

Extended Video Series — 20 Hz to 5 MHz

Unbalanced to Balanced Designs, dc Isolated center-tapped secondaries, LB case.

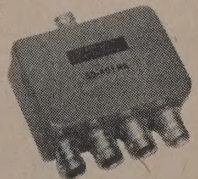
Type No. 1307 75:110 | Type No. 1706 75:600

75Ω Line Isolation Transformer — High rejection of noise between isolated "LO" sides of input and output. PA case, insulated BNC connectors.

Type No. 1109 75:75

Hybrids — Power Dividers and Adders

50-201 BD (50Ω)
75-201 BD (75Ω)



50-401 MA (50Ω)
75-401 MA (75Ω)

50 and 75Ω ports; 1:2 and 1:4 division; 1 to 50 MHz bandwidth, 35 dB isolation, 0.25 dB insertion loss, 1.2 VSWR, 0.5° phase and 0.2 dB amplitude balance. 1:8 version available in RA case.

See Page 434 for Coils.

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OHMITE variable transformers

Unique for the design innovations they incorporate, Ohmite "OHMITRAN" v.t® variable transformers include exclusive field-proven features. They offer long, low maintenance operation with excellent regulation at any voltage setting within the rated load plus an output free of waveform distortion. Six frame sizes offer a wide range of electrical ratings to meet most industrial applications. These include three new, compact, low-power models (VT1, VT02, VT3,) which permit a fine choice of six ratings from 1 to 3 amperes.

The VT1, rated 1 ampere, is the smallest commercial variable transformer available.

UL LISTING: A number of VT4, VT8 and VT20 transformers used for 120 volt line operation are underwriters' laboratories listed. See tables, page 26 for details.

POSITIVE CURRENT TRANSFER . . . achieved with specially designed brushes connected through high conductivity contact arms or pigtails to a large slip ring which contacts a wide area of the collector ring. The brush contact assembly on the VT1, VT02, and VT3 is instantly replaceable, when necessary, as a result of a slide-on, snap-in design. Brushes of the other models are easily replaced also.

ADJUSTABLE SHAFT: On all Ohmite transformers, except the VT2LN, the shaft may be extended out from either the brush or opposite side as desired. On the VT1, VT02 and VT3, both single and tandem assemblies, this is an **exclusive** Ohmite feature which affords greater versatility of mounting and application. For example, substitution of a longer shaft or extension of the standard shaft allows actuation of other devices, such as switches or potentiometers without special construction. The shaft is freed simply by loosening set screw in the hub assembly. A double flat on the shaft permits two knob positions.

On the VT4, VT8, and VT20 types, the adjustable shaft feature permits **table or panel use.** "Ganged" or tandem VT4, VT8 and VT20 units employ a thru-shaft offering the same flexibility. On VT4 and VT8 units, shafts are fixed in the desired position by means of socket head screws located in the hub of each "brush-radiator" plate. The VT20 employs a unique collet-type shaft lock.

INTERCHANGEABLE WITH OTHER POPULAR TYPES: Basic "v.t." units have mounting provisions which match those of virtually all popular transformers of comparable current rating. Models VT4, VT8 and VT20 mount by me of bolts. Normally 3-hole mounting, single VT4 units can be "4-hole mo ed" by means of adapter plate, see page 27. Individual Model VT1, V VT2LN, or VT3 units mount by means of a standard ⅜-32 threaded b ing. All tandem assemblies mount by means of bolts or nuts. Knob, and mounting hardware are included with each transformer.

DIRECT READING, TWO SCALE DIAL . . . calibrated on one side for o voltage connection; on the reverse side for line voltage connection. D normally included with transformer read clockwise for increasing volt counter-clockwise calibration available—see page 27.

WIRING AND CONNECTIONS: Wiring instructions to arrange various mo of operation are enclosed with all OHMITE variable transformers. Term panels or adjacent nameplate carry convenient wiring diagram, coded te inals and input and output data. Three way terminals on VT1, VT2LN, V VT3 will accept ¼" push-on connectors, screws and nuts, or conventio soldering.

ROTATION OPTION: On VT4, VT8 and VT20 transformers connected for o voltage, either clockwise or counter-clockwise increase of voltage can arranged easily by the user. Increasing voltage in either direction can arranged on all units connected for no-overvoltage output. Dials for co ter-clockwise operation are stocked. See "Accessories."

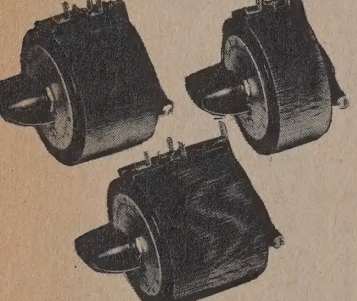
OVERVOLTAGE OPTION: On all transformers with overvoltage feature, overvoltage operation can be arranged on the terminal panel.

NO-OVERVOLTAGE TRANSFORMERS ("N" suffix): Provide considerably m current due to heavier gage winding.

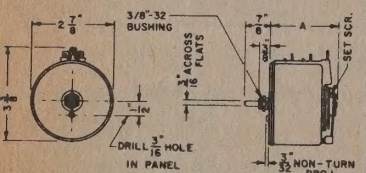
240-VOLT INPUT ("H" suffix): On units which are wound for 240-volt inp a 120 volt input tap is also provided. With the use of this input, the m mum current rating applies up to 120 volts output but beyond this redu proportionately to approximately 50% at maximum voltage output.

LOW VOLTAGE INPUT ("L" feature): Designed for a maximum input of proximately 40 volts, with high current output.

GROUNDED INPUT & OUTPUT ("C" feature): Units in type F or G cases be provided with a three-conductor cord and outlet. One conductor grounded to the case. This feature standard on all cased VT20 units on all metered units.

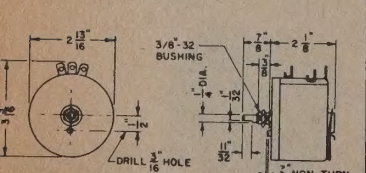


VT1, VT02, VT2LN, VT3, SINGLE, UNCASED
Angle of rotation 320° ±5°

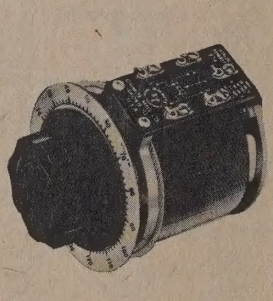


"A" DIMENSION

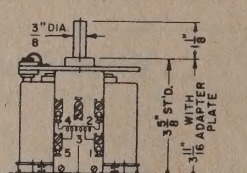
VT1, VT1N	1 13/16"
VT02, VT02N	2 5/16"
VT3, VT3N	2 13/16"

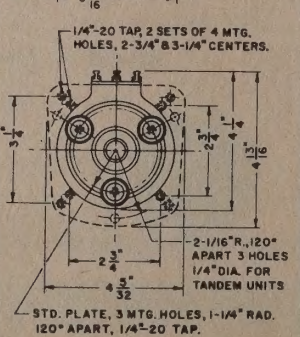


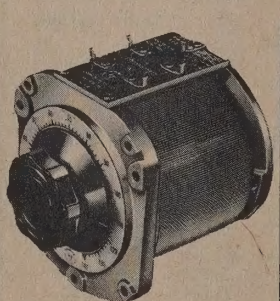
VT2LN
U.S. Patent Nos. 2,790,882 2,985,857



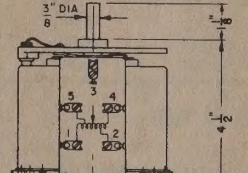
VT4 TYPES, SINGLE, UNCASED
Angle of rotation: 324° ±5°

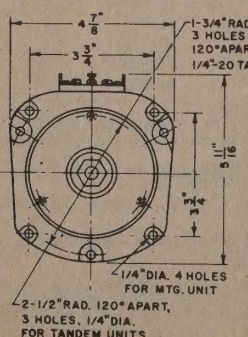


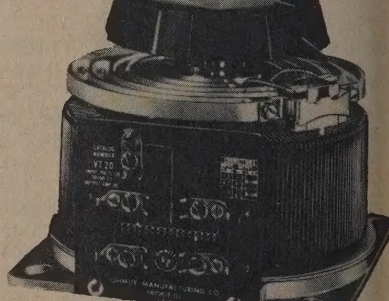




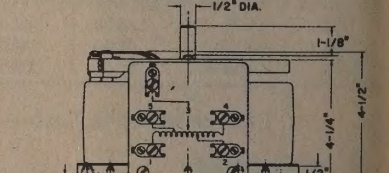
VT8 TYPES, SINGLE, UNCASED
Angle of rotation: 324° ±5°

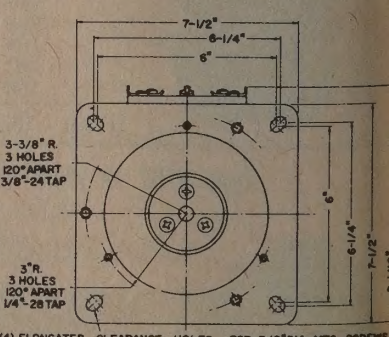






VT20 TYPES, UNCASED
Angle of rotation: 317° ±5°





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OHMITE variable transformers

ICLOSED OR CASED UNITS: In grey hammer tone finish. "Basic protective closures" (Type B) expose the transformer's terminal panel and mounting se and are supplied presently on VT20 models only. (See tandems in "B" closures below.) "Fixed mounting enclosures" (Type E) are intended for rmanent mounting on table, panel or inconduit-line. Standard portable its (Type F) carry a line cord, outlet socket, and fuse except for VT20F hich has a circuit breaker. Deluxe portable units (Type G) utilize a circuit eaker, can be switched to overvoltage or no-overvoltage as desired, have handle which also serves as an easel.

ETERED ENCLOSURES: VT8NFC, VT8GC, VT20NFC and VT20GC transformers e available with voltmeter (V), voltmeter and ammeter (A) or voltmeter d wattmeter (W). The metered transformer enclosures are larger than the n-metered types of comparable designation, (see dimensions below). All ock metered units have the three-conductor grounded cord and outlet d all, except the VT8NF group, are equipped with carrying handles.

SINGLE UNIT CASE DIMENSIONS

Series	Case◆	W	D	H
VT1 or VT02	E	3 3/8	2 1/2 *	4 1/4
	F	3 3/8	2 1/2 *	4 1/4
VT4	E	4 1/2	4 1/2 *	6 3/16
	F	4 7/8	4 1/2 *	6 1/4
VT8	E	5 3/16	5 1/4 *	7 3/16
	F	5 17/32	5 1/4 *	7 3/8
	FV, FVA, FVW	7 3/8	5 1/4 *	10 1/2
	G	5 3/16 †	5 1/4 *	7 3/8 ‡
	GV, GVA, GVW	7	5 1/4 *	10 1/2 ‡
	3E	5 3/16	15 3/4 *	7 3/16
VT20	B	7 5/8	8 1/8	4 7/8 *
	E	7 3/4	5 1/2 *	10 15/16
	F	8 1/4	5 1/2 *	11 1/4
	FV, FVA, FVW	8 1/4	5 1/2 ‡	14 ‡
	G	7 3/4 §	5 1/2 *	11 1/4 ‡
	GV, GVA, GVW	8 1/4	5 1/2 ‡	14 ‡

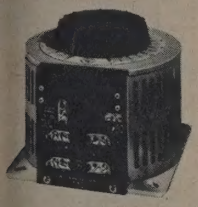
* Add 1" for knob thickness for VT8 types; 7/8" for VT1, 02 and VT4 types, 1 1/4" for VT20 types.

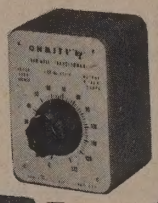
† 5 3/4" including handle fittings.

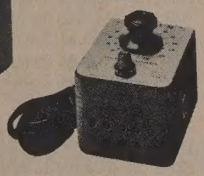
‡ Case height only.

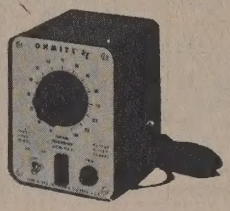
§ 9" including handle fittings.

◆ V, A and W = voltmeter, ammeter and wattmeter respectively.

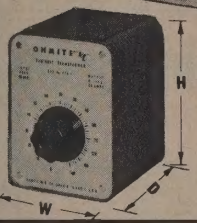

VT20B

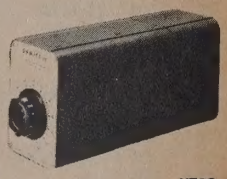

VT02E


VT02F


VT4F

VT4FC


VT4E


VT8-3E

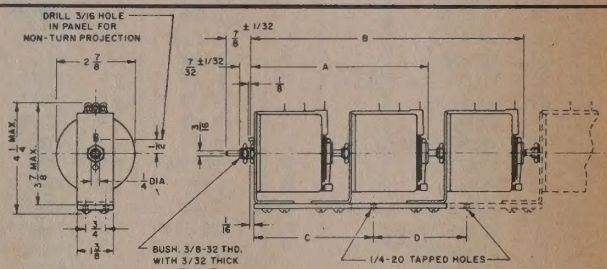
VT8GCV (with voltmeter)

VT8G

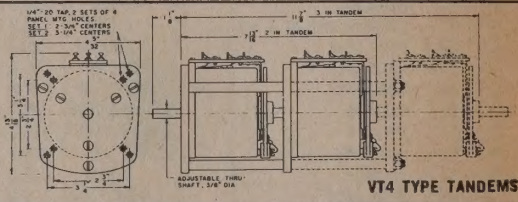
ANDEM OR GANGED UNITS: Two or 3-in-tandem assemblies are standard. Larger tandem assemblies available made to order. All tandem assemblies are normally furnished with inter-connections between the units. A few cased tandems are stocked. Tandems in "B" type enclosures have individual cases for each transformer.

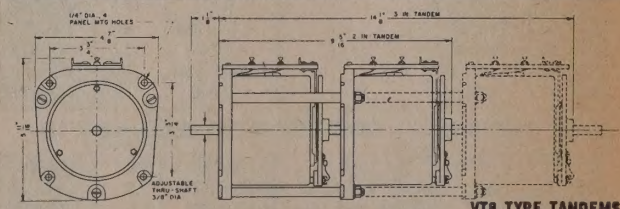
TANDEM VT1, VT02, VT3 DIMENSIONS

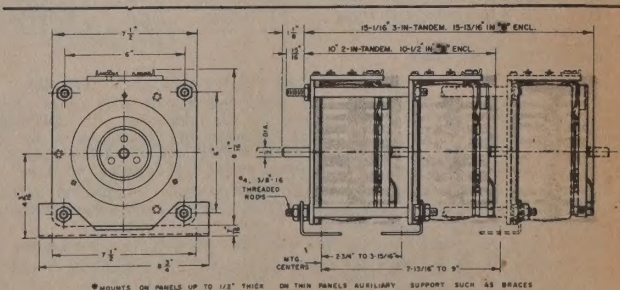
	A	B	C
VT1	4 7/32	6 17/32	4 1/4
VT02	5 7/32	8 1/32	4 1/2
VT3	6 17/32	9 27/32	4 1/2

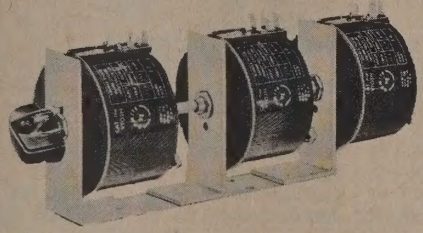


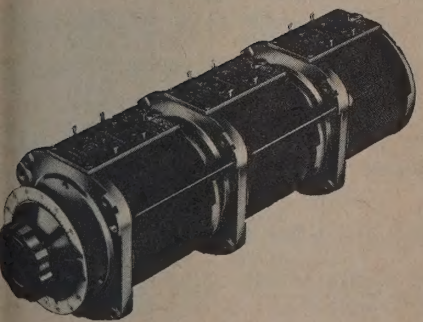
VT1, VT02, VT3 TYPE TANDEMS

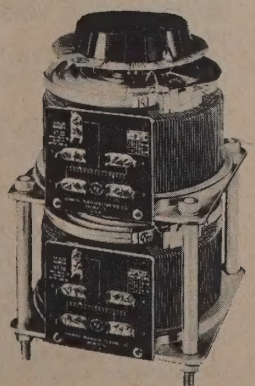

VT4 TYPE TANDEMS


VT8 TYPE TANDEMS


VT20 TYPE TANDEMS


VT02N-3


VT8-3


VT20-2

See page 26 for ratings and ordering information.

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OHMITE variable transformers

STOCK VARIABLE TRANSFORMERS

SINGLE PHASE

SINGLE TRANSFORMERS — UNCASED (Dimensions p. 24)

Input Volts	Freq.[1] cps. from	Feature or Connection	U.L. see footnotes below	Maximum Output Volts	Maximum Output Amps	Catalog No.[13]	Wt. Lbs.[7]
40	60	Hi-amps, low volts		0-40	5	**VT2LN**	2.4
40	50	Hi-amps, low volts		0-40	12.0	VT4LN	5.25
40	50	Hi-amps, low volts		0-40	22.0	**VT8LN**	10.25
120	60	Basic 1.0A Model		0-120/132	1.0	**VT1**	1.5
120	60[8]	No overvoltage		0-120	1.2	**VT1N**	1.5
120	60[8]	Basic 1.75A Model		0-120/132	2.0	**VT02**	2.25
120	60	No overvoltage		0-120	2.0	**VT02N**	2.25
120	60[8]	Basic 2.6A Model		0-120/132	2.6	**VT3**	3.0
120	60	No overvoltage		0-120	3.0	**VT3N**	3.0
120	50	Basic 3.5A Model	11	0-120/140	3.5	**VT4**	5.25
120	50	No overvoltage	11	0-120	4.75	**VT4N**	5.25
120	50	Basic 7.5A Model	11	0-120/140	7.5	**VT8**	10.25
120	50	No overvoltage	11	0-120	10.0	**VT8N**	10.25
120	50	Basic 20A Model	11	0-120/140	20.0	**VT20**	22.0
120	50	No overvoltage	11	0-120	25.0	**VT20N**	22.0
240[2]	50	240V Input[2]		0-240/280	3.0	**VT8H**	10.25
240[2]	50	240V In. No ovrvlt.[2]		0-240	4.0	VT8HN	10.25
240[2]	50	240V Input[2]		0-240/280	9	VT20H	22.0
240[2]	50	240V In. No ovrvlt.[2]		0-240	11	VT20HN	22.0

SINGLE TRANSFORMERS — CASED (Dimensions p. 25)

120	60[8]	Fixed Mtg.		0-120/132[4]	.8	VT1E	1.9
120	60[8]	Portable		0-132[3]	1.0	VT1F	2.3
120	60	Fixed Mtg.		0-120	1.0	VT1NE	1.9
120	60	Portable		0-120	1.2	VT1NF	2.3
120	60[8]	Fixed Mtg.		0-120/132[4]	1.4	**VT02E**	2.8
120	60[8]	Portable		0-132[3]	1.75	**VT02F**	3.2
120	60	Fixed Mtg.		0-120	1.6	VT02NE	2.8
120	60	Portable		0-120	2.0	**VT02NF**	3.2
120	50	Fixed Mtg.	12	0-120/140[4]	2.8	VT4E	7.4
120	50	Portable	12	0-140[3]	3.5	**VT4F**	7.8
120	50	VT4F w/gnd. in. & out.	12	0-140[3]	3.5	**VT4FC**	7.8
120	50	Fixed Mtg.		0-120	3.8	VT4NE	7.4
120	50	Portable		0-120	4.75	VT4NF	7.8
120	50	VT4NF w/gnd. in. & out.		0-120	4.75	VT4NFC	7.8
120	50	Fixed Mtg.	12	0-120/140[4]	6.0	**VT8E**	13.5
120	50	Portable	12	0-140[3]	7.5	**VT8F**	13.8
120	50	VT8F w/gnd. in. & out.	12	0-140[3]	7.5	**VT8FC**	13.8
120	50	Deluxe Portable	12	0-120/140[3]	6.0	**VT8G**	14.2
120	50	VT8G w/gnd. in. & out.	12	0-120/140[3]	6.0	VT8GC	14.2
120	50	Fixed Mtg.		0-120	8.0	VT8NE	13.5
120	50	Portable		0-120	10.0	VT8NF	13.8
120	50	VT8NF w/gnd. in. & out.		0-120	10.0	VT8NFC	13.8
120	50	Basic Case		0-120/140	20.0	**VT20B**	22.5
120	50	Basic Case		0-120	25.0	VT20NB	22.5
120	50	Fixed Mtg.	12	0-120/140[4]	20.0	VT20E	29.0
120	50	Portable		0-140	20.0	VT20FC	31.0
120	50	Portable	12	0-120/140[3]	20.0	VT20GC	31.0
120	50	Fixed Mtg.	12	0-120	25.0	VT20NE	29.0
120	50	Portable		0-120	25.0	VT20NFC	31.0
240[2]	50	Basic Case		0-240/280	9.0	VT20HB	21.5
240[2]	50	Basic Case		0-240	11.0	VT20HNB	21.5
240[2]	50	Fixed Mtg.		0-240/280[4]	9.0	VT20HE	28.0
240[2]	50	Fixed Mtg.		0-240	11.0	VT20HNE	28.0
240[2]	50	Portable		0-240/280	9.0	VT20HFC	30.0
240[2]	50	Portable		0-240	11.0	VT20HNFC	30.0

SINGLE TRANSFORMERS — CASED WITH METERS (Dimensions p. 25)

120	50	w/voltmeter, gnd. conn.	0-120/140[3]	6.0	**VT8GCV**	15.2
120	50	w/volt. & ammtr., gnd. conn.	0-120/140[3]	6.0	VT8GCVA	15.5
120	50	w/volt. & wattmtr., gnd. conn.	0-120/140[3]	6.0	VT8GCVW	15.5
120	50	w/voltmeter, gnd. conn.	0-120	10.0	VT8NFCV	14.8

SINGLE PHASE (contd.)

SINGLE TRANSFORMERS — CASED WITH METERS (Dimensions p. 25) (contd.)

Input Volts	Freq.[1] cps. from	Feature or Connection	Maximum Output Volts	Maximum Output Amps	Catalog No.	Wt. Lbs.
120	50	w/volt. & ammtr., gnd. conn.	0-120	10.0	VT8NFCVA	15
120	50	w/volt. & wattmtr., gnd. conn.	0-120	10.0	VT8NFCVW	15
120	50	w/voltmeter, gnd. conn.	0-120/140[3]	20.0	VT20GCV	32
120	50	w/volt. & ammtr., gnd. conn.	0-120/140[3]	20.0	VT20GCVA	32
120	50	w/volt. & wattmtr., gnd. conn.	0-120/140[3]	20.0	VT20GCVW	32
120	50	w/voltmeter, gnd. conn.	0-120	25.0	VT20NFCV	32
120	50	w/volt. & ammtr., gnd. conn.	0-120	25.0	VT20NFCVA	32
120	50	w/volt. & wattmtr., gnd. conn.	0-120	25.0	VT20NFCVW	32

TWO-IN-TANDEM ASSEMBLIES[5] [10] (Dimensions p. 25)

240	60[8]	Series Conn.[6]	0-240/264	1.0	VT1-2	3
240	60	Series Conn.[6]	0-240	1.2	VT1N-2	3
240	60[8]	Series Conn.[6]	0-240/264	1.75	VT02-2	5
240	60	Series Conn.[6]	0-240	2.0	VT02N-2	5
240	60[8]	Series Conn.[6]	0-240/264	2.6	VT3-2	6
240	60	Series Conn.[6]	0-240	3.0	VT3N-2	6
240	50	Series Conn.[6]	0-240/280	3.5	VT4-2	11
240	50	Series Conn.[6]	0-240	4.75	VT4N-2	11
240	50	Series Conn.[6]	0-240/280	7.5	VT8-2	20
240	50	Series Conn.[6]	0-240	10.0	**VT8N-2**	20
240	50	Series Conn.[6]	0-240/280	20.0	VT20-2	45
240	50	Above unit, B case	0-240/280	20.0	VT20-2B	46
240	50	Series Conn.[6]	0-240	25.0	VT20N-2	45
240	50	Above unit, B case	0-240	25.0	VT20N-2B	46
480[2]	50	Series Conn.[6]	0-480/560	3.0	VT8H-2	20
480[2]	50	Series Conn.[6]	0-480	4.0	VT8HN-2	20
480[2]	50	Series Conn.[6]	0-480/560	9.0	VT20H-2	43
480[2]	50	Series Conn.[6]	0-480	11.0	VT20HN-2	43

THREE PHASE

120	60[8]	Open Delta Conn.	0-120/132	1.0	VT1-2	3
120	60	Open Delta Conn.	0-120	1.2	VT1N-2	3
120	60[8]	Open Delta Conn.	0-120/132	1.75	VT02-2	5
120	60	Open Delta Conn.	0-120	2.0	VT02N-2	5
120	60[8]	Open Delta Conn.	0-120/132	2.6	VT3-2	6
120	60	Open Delta Conn.	0-120	3.0	VT3N-2	6
120	50	Open Delta Conn.	0-120/140	3.5	VT4-2	11
120	50	Open Delta Conn.	0-120	4.75	VT4N-2	11
120	50	Open Delta Conn.	0-120/140	7.5	VT8-2	20
120	50	Open Delta Conn.	0-120	10.0	**VT8N-2**	20
120	50	Open Delta Conn.	0-120/140	20.0	VT20-2	45
120	50	Above unit, B case	0-120/140	20.0	VT20-2B	46
120	50	Open Delta Conn.	0-120	25.0	VT20N-2	45
120	50	Above unit, B case	0-120	25.0	VT20N-2B	46
240[2]	50	Open Delta Conn.	0-240/280	3.0	VT8H-2	20
240[2]	50	Open Delta Conn.	0-240	4.0	VT8HN-2	20
240[2]	50	Open Delta Conn.	0-240/280	9.0	VT20H-2	43
240[2]	50	Open Delta Conn.	0-240	11.0	VT20HN-2	43

THREE-IN-TANDEM ASSEMBLIES[5] [10] (Dimensions p. 25)

240	60	"Y" Conn.	0-240[9]	1.0	VT1-3	5
240	60	"Y" Conn.	0-240[9]	1.75	**VT02-3**	8
240	60	"Y" Conn.	0-240[9]	2.6	VT3-3	9
240	60[8]	"Y" Conn.	0-240/280	3.5	VT4-3	17
240	60[8]	"Y" Conn.	0-240/280	7.5	VT8-3	31
240	60[8]	Above unit, E case	0-240/280	6.0	VT8-3E	40
240	60[8]	"Y" Conn.	0-240/280	20.0	VT20-3	68
240	60[8]	Above unit, B case	0-240/280	20.0	VT20-3B	69
240	60	"Y" Conn.	0-240	25.0	VT20N-3	68
240	60	Above unit, B case	0-240	25.0	VT20N-3B	69
480[2]	60[8]	"Y" Conn.	0-480/560	3.0	VT8H-3	31
480[2]	60[8]	"Y" Conn.	0-480/560	9.0	VT20H-3	65
480[2]	60	"Y" Conn.	0-480	11.0	VT20HN-3	65

Footnotes for Stock Table

[1] Frequency shown is a minimum — units may be used up to 1000 cps.
VT8H and VT20H and 240V output for VT8HN and VT20HN. With use of 120V input VT8H, VT8HN, VT20H, VT20HN also have taps for 120V input with 280V output for the max. current rating applies up to 120V output but reduces to approx. 50% at max. output voltage. In the case of tandem units, use of the low voltage inputs would correspondingly derate the current at the higher output voltages.

[2] Connected at factory for overvoltage output — easily reconnected by user for no-overvoltage output. On VT8G and VT20G, switch selects overvoltage or no-overvoltage.

[3] User wires for desired output. Dial normally calibrated for overvoltage.

[4] 2-in-tandem normally wired for series connection; 3-in-tandem for Y connection.

[5] When transformers are series connected, load cannot be grounded.

[7] Includes knob, dial and mounting hardware.

[8] May be used at 50 cps if connected for no-overvoltage output.

[9] Overvoltage connection must not be used.

[10] 240/280 volt cw dial standard except on VT1, VT02 and VT3 tandems whe 240/264 volt dial is standard or on VT8H-2, VT8HN-2, VT8H-3, VT20H-2, VT20HN- VT20H-3 and VT20HN-3 where 480/560 volt dial is standard. Request other dia if desired — see "Dials" above.

[11] Underwriters' Laboratories listed under components program (File Number E10946)

[12] Underwriters' Laboratories listed under apparatus program (File Number E10946).

[13] **ITEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.**

OHMITE PAGE 26

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OHMITE variable transformers

CCESSORIES — PARTS

DAPTER PLATE for 4-hole mtg. of VT4 — matches other popular 4-hole tgs.; dimensions same as shown for front plate of VT4 tandems, page 25.
atalog No. 6512 ..... Net 1-9

rush-Contact Assemblies for . . .

	Catalog No.
T1, VT1N, VT02, VT02N, VT3, VT3N	6507
T2LN	6517
T4 Types except VT4LN	6515
T8 Types except VT8H, HN, LN	6515
T4LN	6518
T8H, HN only	6516H
T8LN only	6519
T20 Types and VT20N	6594
T20H, HN only	6596

DJUSTABLE STOP for limiting rotational arc of transformers.

	Catalog No.
top for VT4 types	6536
top for VT8 types	6537
top for VT20 types	6538

EXTRA DIALS OR DIALS WITH C.C.W. CALIBRATION

"v.t."	Dial Calibration	Catalog No.
VT1	0-120, 0-132 CW	5005
VT02	0-100, 100-0* CW	5011
VT2LN	0-240, 0-264 CW	5019
VT3		
VT4 and VT8	0-120, 0-140 CW	5006
	0-120, 0-140 CCW	5008
	0-240, 0-280 CW	5009
	0-240, 0-280, CCW	5010
	0-100, 100-0* CW	5012
	0-480, 0-560 CW	5018
VT20	0-120, 0-140 CW	5013
	0-120, 0-140 CCW	5014
	0-240, 0-280 CW	5015
	0-240, 0-280 CCW	5016
	0-100, 100-0 CW	5017

*Percent-of-output dial furnished with "LN" series units.

EXTRA KNOBS FOR UNCASED UNITS

	Catalog No.
For VT1, VT02, VT2LN, VT3 types	5158
types ..... For VT4, VT8	5155
For VT20 Types	5157

MOTOR-DRIVEN ASSEMBLIES
Single or tandem assemblies can be supplied with motor drives, direct from the factory. Either AC or DC motors are available. Standard AC motor drives have traverse speeds of 3-4, 10-12, 40-50, 100-120 seconds. Typical traverse speeds for DC drives are 4, 8, 16, 30 and 45 seconds. Write to the factory for more information.

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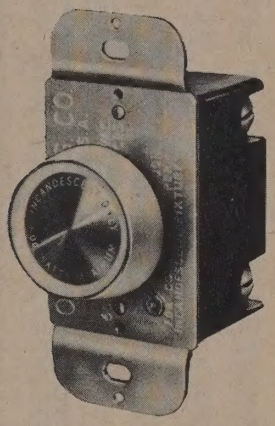
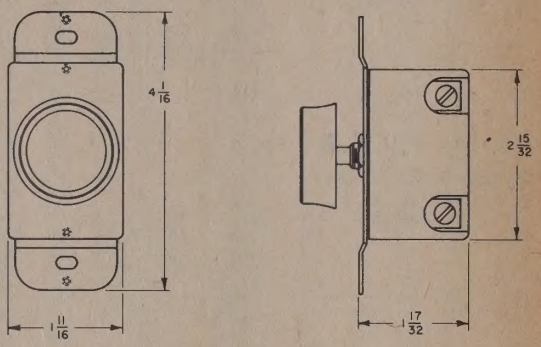
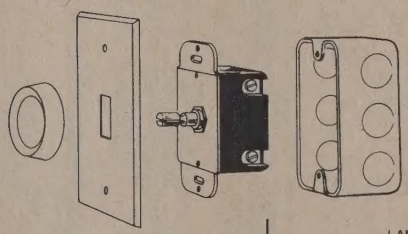
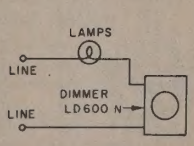
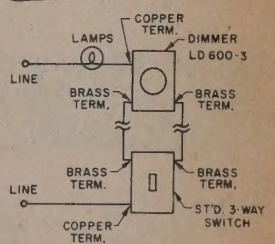








CONNECTIONS—
SINGLE POLE



CONNECTIONS—
3-WAY

ONTINUOUSLY VARIABLE DIMMING by means of silicon symmeical switch — a modern semiconductor device.

USH-PUSH KNOB for ON/OFF at **any** light setting.

ONSERVES POWER — Draws only the power needed by the circuit the light level desired.

CREW TERMINALS for convenient wiring without splicing or wire stening nuts — eliminates space consuming leads — permits se of dimmer even in shallow boxes.

O RADIO OR TV INTERFERENCE due to special filter.

UARANTEED for 1 year against defects in materials and workanship provided units have been properly installed and operated.

NSTALLATION NOTES

aximum Ambient — 120°F.
se only 1 dimmer for each lighting circuit.
stall dimmer with power OFF.

anging — Several dimmers may be installed in a common box rovided units are derated as follows: two units, 500 watts each; ree or more units, 400 watts each.

ORDERING INFORMATION

Catalog No.	UL Listed	Description
LD600 N	—	Single-Pole Push-Push Switch
LD600	Yes	600 Watts, 120 Volts, 60 Cycle
LD600-3 N	—	3-Way Push-Push Switch
LD600-3	Yes	600 Watts, 120 Volts, 60 Cycle

TEMS APPEARING IN BOLD PRINT ARE POPULAR VALUES AND ARE USUALLY STOCKED BY AUTHORIZED OHMITE DISTRIBUTORS.

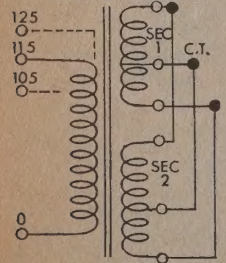
OHMITE PAGE 27

SHIPPED FROM STOCK IMMEDIATELY

HIGH & LOW CURRENT TRANSFORMERS

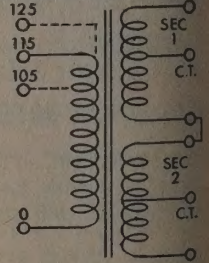
OPEN FRAME • EPOXY ENCAPSULATED (GRADE 5) • HERMETICALLY SEALED (GRADE 4)

SECONDARY VOLTS	Part No.	Primary Volts	SECONDARY AMPS Series	SECONDARY AMPS Parallel	OPEN FRAME OR EPOXY ENCAPSULATED* Mtg. Style	L	W	H	ML	MW	Mtg. Screw	Appr. Lbs.	HERMETICALLY SEALED IN STEEL CASE‡ L	W	H	ML	MW	Mtg. Stud
10 or 5 V C.T. Series 0 - 2.5 - 5 - 7.5 - 10 V Parallel 0 - 2.5 - 5 V @ 2 x Current	10-0.1	115	0.1	0.2	C	2	1½	1¾	1 23/32	—	#8	0.3	1⅝	1⅝	2 3/16	1 3/16	1 3/16	6-32 x ⅜
	10-0.25	115	0.25	0.5	C	2⅜	1½	2	2	—	#8	0.5	1 13/16	1 13/16	2 7/16	1⅜	1¼	6-32 x ⅜
	10-0.5	115	0.5	1.0	C	2⅜	1¾	2	2	—	#8	0.8	1 13/16	1 13/16	2 7/16	1⅜	1¼	6-32 x ⅜
	10-1	115	1	2	C	2⅞	1¾	2 5/16	2⅜	—	#8	1.0	2 1/16	2 1/16	2½	1 7/16	1 7/16	6-32 x ⅜
	10-2	115	2	4	C	3⅛	2⅛	2¾	2 13/16	—	#8	1.5	2¾	2⅜	2⅞	2⅛	1¾	6-32 x ⅜
	10-4	115	4	8	C	3 5/16	2⅜	3 1/16	3⅛	—	#8	2.3	3¼	2¾	2 7/8	2½	2	8-32 x ⅜
	10-6	115	6	12	B	3⅜	2¾	2 13/16	2 13/16	2⅛	#8	3.3	3⅝	3	3¼	2 13/16	2⅛	8-32 x ⅜
	10-8	115	8	16	B	3⅜	3⅛	2 13/16	2 13/16	2½	#8	4.0	3⅝	3⅜	3¼	2 13/16	2⅜	8-32 x ⅜
	10-12	115	12	24	B	3¾	3¼	3⅛	3⅛	2½	#8	5.0	4⅛	3¾	3½	3⅛	2½	10-32 x ½
	10-25	115	25	50	B	4½	3¾	3¾	3¾	2¾	#10	8.7	4¾	5¼	4¼	3¾	4¼	10-32 x ½
	10-50	105, 115, 125	50	100	B	5¼	5½	4⅜	4⅜	3⅝	¼	17.0	5½	7	5½	4⅜	5⅞	¼-20 x ⅝
	10-100	105, 115, 125	100	200	B	6⅜	7¼	5 5/16	5 5/16	4⅜	¼	34.5	6¾	8¾	6½	5 5/16	6¼	¼-20 x ⅝
12.8 or 6.4 C.T. Series 0 - 3.2 - 6.4 - 9.6 - 12.8 V Parallel 0 - 3.2 - 6.4 V @ 2 x Current	12.8-0.1	115	0.1	0.2	C	2	1½	1¾	1 23/32	—	#8	0.3	1⅝	1⅝	2 3/16	1 3/16	1 3/16	6-32 x ⅜
	12.8-0.25	115	0.25	0.5	C	2⅜	1½	2	2	—	#8	0.5	1 13/16	1 13/16	2 7/16	1⅜	1¼	6-32 x ⅜
	12.8-0.5	115	0.5	1	C	2⅞	1⅝	2 5/16	2⅜	—	#8	0.8	2 1/16	2 1/16	2½	1 7/16	1 7/16	6-32 x ⅜
	12.8-1	115	1	2	C	2⅞	2	2 5/16	2⅜	—	#8	1.2	2 3/16	2 1/16	2½	1 1/16	1 1/16	6-32 x ⅜
	12.8-2A	115	2	4	C	3⅛	2⅛	2¾	2 13/16	—	#8	1.5	2¾	2⅝	2⅞	2⅛	1¾	6-32 x ⅜
	12.8-2	115	2	4	B	3	2½	2½	2½	2	#8	2.3	3¼	2¾	2⅞	2½	2	8-32 x ⅜
	12.8-4	115	4	8	B	3	2⅞	2½	2½	2⅜	#8	2.8	3¼	3⅛	2⅞	2½	2⅜	8-32 x ⅜
	12.8-6	115	6	12	B	3⅜	3 1/16	2 13/16	2 13/16	2½	#8	4.0	3⅝	3⅜	3¼	2 13/16	2⅜	8-32 x ⅜
	12.8-8	115	8	16	B	3¾	3⅛	3⅛	3⅛	2¼	#8	4.5	4⅛	3½	3½	3⅛	2¼	10-32 x ½
	12.8-12	115	12	24	B	4⅛	3¼	3 7/16	3 7/16	2⅜	#10	6.0	4½	3¾	3⅞	3 7/16	2⅜	10-32 x ½
	12.8-25	115	25	50	B	5¼	4¼	4⅜	4⅜	2⅞	#10	12.5	5½	5¾	5¼	4⅜	4⅝	¼-20 x ⅝
	12.8-50	105, 115, 125	50	100	B	5¼	6	4⅜	4⅜	4⅛	¼	20.7	5½	7½	5½	4⅜	6⅜	¼-20 x ⅝
	12.8-100	105, 115, 125	100	200	B	6⅜	7¼	5 5/16	5 5/16	4⅜	¼	34.5	6¾	8¾	6½	5 5/16	6¼	6-20 x ⅝
16 or 8 V C.T. Series 0 - 4 - 8 - 12 - 16 V Parallel 0 - 4 - 8 @ 2 x Current	16-0.1	115	0.1	0.2	C	2	1⅝	1¾	1 23/32	—	#8	0.4	1⅝	1⅝	2 3/16	1 3/16	1 3/16	6-32 x ⅜
	16-0.25	115	0.25	0.5	C	2⅜	1¾	2	2	—	#8	0.7	1 13/16	1 3/16	2 7/16	1⅜	1¼	6-32 x ⅜
	16-0.5	115	0.5	1	C	2⅞	1⅝	2 5/16	2⅜	—	#8	0.8	2 1/16	2 1/16	2½	1 7/16	1 7/16	6-32 x ⅜
	16-1	115	1	2	C	2⅞	2	2 5/16	2⅜	—	#8	1.2	2 5/16	2 1/16	2½	1 1/16	1 7/16	6-32 x ⅜
	16-2	115	2	4	C	3⅛	2¼	2¾	2 13/16	—	#8	1.7	2¾	2⅜	2⅞	2⅛	1¾	6-32 x ⅜
	16-4	115	4	8	B	3⅜	2¾	2 13/16	2 13/16	2⅛	#8	3.3	3⅝	3	3¼	2 13/16	2⅛	8-32 x ⅜
	16-6	115	6	12	B	3¾	3⅛	3⅛	3⅛	2¼	#10	4.5	4⅛	3½	3½	3⅛	2¼	10-32 x ½
	16-8	115	8	16	B	3¾	3½	3⅛	3⅛	2⅝	#10	5.4	4⅛	3¾	3½	3⅛	2½	10-32 x ½
	16-12	115	12	24	B	4⅛	3⅞	3⅝	3 7/16	3	#10	7.9	4½	4½	3⅞	3 7/16	3	10-32 x ½
	16-25	115	25	50	B	4½	5⅜	4	3¾	4	#10	14.5	4¾	6½	4¼	3¾	5½	10-32 x ½
	16-50	105, 115, 125	50	100	B	6⅜	5¾	5 5/16	5 5/16	3¾	¼	26.5	6¾	6⅝	6	5 5/16	5⅛	¼-20 x ⅝
	16-100	105, 115, 125	100	200	B	7½	7½	6⅜	6¾	4⅝	¼	50.0	8	8½	7	6¾	7¼	¼-20 x ⅝
24 or 12 C.T. Series 0 - 6 - 12 - 18 - 24 V Parallel 0 - 6 - 12 V @ 2 x Current	24-0.1	115	0.1	0.2	C	2⅜	1½	2	2	—	#8	0.5	1 13/16	1 13/16	2 7/16	1⅜	1¼	6-32 x ⅜
	24-0.25	115	0.25	0.5	C	2⅞	1¾	2 5/16	2⅜	—	#8	1.0	2 1/16	2 1/16	2½	1 7/16	1 7/16	6-32 x ⅜
	24-0.5	115	0.5	1	C	2⅞	2	2 5/16	2⅜	—	#8	1.2	2 5/16	2 1/16	2½	1 1/16	1 1/16	6-32 x ⅜
	24-1A	115	1	2	C	3⅛	2⅛	2¾	2 13/16	—	#8	1.5	2¾	2⅜	2⅞	2⅛	1¾	6-32 x ⅜
	24-1	115	1	2	B	3	2½	2½	2½	2	#8	2.3	3¼	2¾	2⅞	2½	2	8-32 x ⅜
	24-2	115	2	4	B	3	2⅞	2½	2½	2⅜	#8	2.9	3¼	3⅛	2⅞	2½	2⅜	8-32 x ⅜
	24-4	115	4	8	B	3¾	3⅛	3⅛	3⅛	2¼	#8	4.5	4⅛	3½	3½	3⅛	2¼	10-32 x ½
	24-6	115	6	12	B	4⅛	3¼	3 7/16	3 7/16	2⅜	#10	5.8	4½	3¾	3⅞	3 7/16	2⅜	10-32 x ½
	24-8	115	8	16	B	4⅛	3⅞	3⅝	3 7/16	3	#10	7.9	4½	4½	3⅞	3 7/16	3	10-32 x ½
	24-12	105, 115, 125	12	24	B	4½	4½	3¾	3¾	3⅜	#10	11.0	4¾	5⅜	4¼	3¾	4⅜	10-32 x ½
	24-20	105, 115, 125	20	40	B	5¼	4¾	4⅜	4⅜	3⅜	¼	15.3	5½	5½	5¼	4⅜	3½	¼-20 x ⅝
	24-25	105, 115, 125	25	50	B	5¼	5⅝	4⅜	4⅜	4⅛	¼	19.5	5½	6½	5¼	4⅜	5⅜	¼-20 x ⅝
	24-50	105, 115, 125	50	100	B	6⅜	6¼	5 5/16	5 5/16	4⅜	¼	31.3	6¾	7½	6	5 5/16	6	¼-20 x ⅝
	24-100	115/230	100	200	B	7½	7	6⅜	6¾	4⅛	¼	43	8	8	7	6¾	6¾	¼-20 x ⅝
36 or 18 V C.T. Series 0 - 9 - 18 - 27 - 36 V Parallel 0 - 9 - 18 V @ 2 x Current	36-0.1	115	0.1	0.2	C	2⅜	1⅝	2	2	—	#8	0.5	1 13/16	1 13/16	2 7/16	1⅜	1¼	6-32 x ⅜
	36-0.25	115	0.25	0.5	C	2⅞	1⅝	2 5/16	2⅜	—	#8	0.8	2 1/16	2 1/16	2½	1 7/16	1 7/16	6-32 x ⅜
	36-0.5	115	0.5	1	C	3⅛	2	2¾	2 13/16	—	#8	1.3	2¾	2⅜	2⅞	2⅛	1¾	6-32 x ⅜
	36-1A	115	1	2	C	3 5/16	2⅜	3 1/16	3⅛	—	#8	2.3	3¼	2¾	2⅞	2½	2	8-32 x ⅜
	36-1	115	1	2	B	3	2¾	2½	2½	2¼	#8	2.6	3¼	3⅛	2⅞	2½	2⅜	8-32 x ⅜
	36-2	115	2	4	B	3⅜	2 15/16	2 13/16	2 13/16	2⅜	#8	3.8	3⅝	3⅜	3¼	2 13/16	2⅜	8-32 x ⅜
	36-4	115	4	8	B	4⅛	3⅜	3 7/16	3 7/16	2⅝	#10	6.8	4½	3¾	3⅞	3 7/16	2⅜	10-32 x ½
	36-6	115	6	12	B	4½	3¾	3¾	3¾	2¾	#10	8.7	4¾	4¼	4¼	3¾	2⅞	10-32 x ½
	36-8	105, 115, 125	8	16	B	4½	4½	4⅛	3¾	3⅜	#10	11.0	4¾	5	4⅜	3¾	3⅜	10-32 x ½
	36-12	105, 115, 125	12	24	B	5¼	5	4⅜	4⅜	3⅜	¼	15.0	5½	5½	5¼	4⅜	3½	¼-20 x ⅝
	36-20	105, 115, 125	20	40	B	6⅜	5⅜	5 5/16	5 5/16	3⅜	¼	22.8	6¾	5¾	5¾	5 5/16	4¼	¼-20 x ⅝
	36-25	105, 115, 125	25	50	B	6⅜	5¾	5 5/16	5 5/16	3¾	¼	26.5	6¾	6⅝	6	5 5/16	5⅛	¼-20 x ⅝
	36-30	105, 115, 125	30	60	B	6⅜	6	5 5/16	5 5/16	4⅜	¼	31.5	6¾	7½	6	5 5/16	6	¼-20 x ⅝
	36-50	115/230	50	100	B	6⅜	7¼	5 5/16	5 5/16	5⅛	¼	40.0	6¾	8	6	5 5/16	6½	¼-20 x ⅝
	36-100	115/230	100	200	B	7½	9	6¼	6¾	5 7/16	¼	63.5	8	10	7	6¾	8¾	¼-20 x ⅝
56 or 28 V C.T. Series 0 - 14 - 28 - 42 - 56 V Parallel 0 - 14 - 28 V @ 2 x Current	56-0.1	115	0.1	0.2	C	2⅜	1¾	2	2	—	#8	.8	1 13/16	1 13/16	2 7/16	1⅜	1¼	6-32 x ⅜
	56-0.25	115	0.25	0.5	C	2⅞	2	2 5/16	2⅜	—	#8	1.2	2 5/16	2 1/16	2½	1 1/16	1 7/16	6-32 x ⅜
	56-0.5	115	0.5	1	C	3⅛	2¼	2¾	2 13/16	—	#8	1.7	2¾	2⅜	2⅞	2⅛	1¾	6-32 x ⅜
	56-1	115	1	2	B	3⅜	2⅞	2 13/16	2 13/16	2¼	#8	3.5	3⅝	3⅜	3¼	2 13/16	2⅜	8-32 x ⅜
	56-2	115	2	4	B	3¾	3¼	3⅛	3⅛	2½	#8	5.0	4⅛	3¾	3½	3⅛	2½	10-32 x ½
	56-4	115	4	8	B	4⅛	3¾	3 7/16	3 7/16	3	#10	7.7	4½	4½	3⅞	3 7/16	3	10-32 x ½
	56-6	115	6	12	B	5¼	4¼	4⅜	4⅜	2⅞	#10	12.0	5½	4¾	5	4⅜	3	¼-20 x ⅝
	56-8	105, 115, 125	8	16	B	5¼	5	4⅜	4⅜	3⅝	¼	17.0	5½	5½	5¼	4⅜	3½	¼-20 x ⅝
	56-12	105, 115, 125	12	24	B	6⅜	5¼	5 5/16	5 5/16	3⅜	¼	22.0	6¾	5¾	5¾	5 5/16	4¼	¼-20 x ⅝
	56-25	105, 115, 125	25	50	B	6⅜	7⅛	5 5/16	5 5/16	5⅛	¼	38.0	6¾	8	6	5 5/16	6½	¼-20 x ⅝
	56-50	115/230	50	100	B	7½	7½	6¼	6¾	4⅞	¼	56.3	8	8½	7	6¾	7¼	¼-20 x ⅝
	56-100	115/230	100	200	B	7½	11¼	6¼	6¾	8¼	¼	95.0	8	13	7	6¾	11¾	¼-20 x ⅝



PARALLEL CONNECTED SECONDARIES

SERIES CONNECTED SECONDARIES



All transformers are designed conservatively for a max of 45°C rise above ambient, for use on 115V power line from 50-500 cps. Only prime raw materials are used. Units are thoroughly impregnated and baked with Signal's own high gloss black baking varnish. The transformers and chokes are rugged in construction, well-insulated, and have a consistently uniform appearance. All ratings are at full load current continuous operation.

Electrical ratings have been chosen to cover a wide range of applications. All transformers have two center-tapped secondary windings.

SIGNAL TRANSFORMER CO., INC

ENGINEERS • DESIGNERS • MANUFACTURERS

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BACK ORDER NOTICE

LRP electronics

Customer _____

City, State _____

Please refer to your order #_____, dated _____. We are temporarily out of stock of the items listed below. This material is on order, and will be shipped to you as soon as it is received. Please advise AT ONCE if this is not satisfactory.

Quantity	Catalog No.	Description

Mfr._____ Order #_____ Date_____

Due from Factory _____

Remarks _____

Salesman_____ By_____

HIGH & LOW CURRENT TRANSFORMERS

OPEN FRAME • EPOXY ENCAPSULATED (GRADE 5) • HERMETICALLY SEALED (GRADE 4)

0.1 to 200 Amps
2.5 to 300 Volts

IDEAL FOR USE IN SINGLE OR DUAL DC POWER SUPPLIES

SECONDARY VOLTS	Part No.	Primary Volts	SECONDARY AMPS Series	SECONDARY AMPS Parallel	OPEN FRAME OR EPOXY ENCAPSULATED* Mtg. Style	L	W	H	ML	MW	Mtg. Screw	Appr. Lbs.	HERMETICALLY SEALED IN STEEL CASE‡ L	W	H	ML	MW	Mtg. Stud
68 or 34 C.T. Series 0 - 17 - 34 - 51 - 68 V Parallel 0 - 17 - 34 V @ 2 x Current	68-0.1	115	0.1	0.2	C	2 7/8	1 5/8	2 5/16	2 3/8	—	#8	0.8	2 1/16	2 1/16	2 1/2	1 7/16	1 7/16	6-32 x 3/8
	68-0.25	115	0.25	0.5	C	2 7/8	2	2 5/16	2 3/8	—	#8	1.2	2 5/16	2 1/16	2 1/2	1 11/16	1 7/16	6-32 x 3/8
	68-0.5A	115	0.5	1	C	3 1/8	2 1/4	2 3/4	2 13/16	—	#8	1.7	2 3/4	2 3/8	2 7/8	2 1/8	1 3/4	6-32 x 3/8
	68-0.5	115	0.5	1	B	3	2 3/4	2 1/2	2 1/2	2 1/4	#8	2.7	3 1/4	3 1/8	2 7/8	2 1/2	2 3/8	8-32 x 3/8
	68-1	115	1	2	B	3 3/8	2 13/16	2 13/16	2 13/16	2 3/8	#8	3.8	3 5/8	3 3/8	3 1/4	2 13/16	2 3/8	8-32 x 3/8
	68-2	115	2	4	B	4 1/8	3 3/8	3 7/16	3 7/16	2 5/8	#10	6.8	4 1/2	3 3/4	3 7/8	3 7/16	2 3/8	10-32 x 1/2
	68-4	115	4	8	B	4 1/2	4 1/2	4 1/8	3 3/4	3 3/8	#10	11.5	4 3/4	5	4 3/8	3 3/4	3 3/8	10-32 x 1/2
	68-6	105, 115, 125	6	12	B	5 1/4	5	4 3/8	4 3/8	3 3/8	1/4	15.0	5 1/2	5 1/2	5 1/4	4 3/8	3 1/2	1/4-20 x 5/8
	68-8	105, 115, 125	8	16	B	5 1/4	5 1/2	4 3/8	4 3/8	3 7/8	1/4	19.0	5 1/2	6	5	4 3/8	3 7/8	1/4-20 x 5/8
	68-12	105, 115, 125	12	24	B	6 3/8	5 3/4	5 5/16	5 5/16	3 3/4	1/4	26.5	6 3/4	6 5/8	6	5 5/16	5 1/8	1/4-20 x 5/8
	68-25	115/230	25	50	B	6 3/8	7 1/4	5 5/16	5 5/16	5 1/8	1/4	39.7	6 3/4	8	6	5 5/16	6 1/2	1/4-20 x 5/8
	68-50	115/230	50	100	B	7 1/2	9	6 1/4	6 3/4	5 7/16	1/4	58.5	8	10	7	6 3/4	8 3/4	1/4-20 x 5/8
80 or 40 C.T. Series 0 - 20 - 40 - 60 - 80 V Parallel 0 - 20 - 40 V @ 2 x Current	80-0.1	115	0.1	0.2	C	2 7/8	1 5/8	2 5/16	2 3/8	—	#8	0.8	2 1/16	2 1/16	2 1/2	1 7/16	1 7/16	6-32 x 3/8
	80-0.25	115	0.25	0.5	C	3 1/8	2	2 3/4	2 13/16	—	#8	1.3	2 3/4	2 3/8	2 7/8	2 1/8	1 3/4	6-32 x 3/8
	80-0.5A	115	0.5	1	C	3 5/16	2 3/8	3 1/16	3 1/8	—	#8	2.2	3 1/4	2 3/4	2 7/8	2 1/2	2	8-32 x 3/8
	80-0.5	115	0.5	1	B	3	2 3/4	2 1/2	2 1/2	2 1/4	#8	2.8	3 1/4	3 1/8	2 7/8	2 1/2	2 3/8	8-32 x 3/8
	80-1	115	1	2	B	3 3/8	3 1/16	2 13/16	2 13/16	2 1/2	#8	4.0	3 5/8	3 3/8	3 1/4	2 13/16	2 3/8	8-32 x 3/8
	80-2	115	2	4	B	4 1/8	3 3/8	3 7/16	3 7/16	2 5/8	#10	6.8	4 1/2	3 3/4	3 7/8	3 7/16	2 3/8	10-32 x 1/2
	80-4	115	4	8	B	5 1/4	4 1/4	4 3/8	4 3/8	2 7/8	1/4	12.3	5 1/2	4 3/4	5	4 3/8	3	1/4-20 x 5/8
	80-6	105, 115, 125	6	12	B	5 1/4	5 1/2	4 5/8	4 3/8	3 7/8	1/4	19.0	5 1/2	6	5	4 3/8	3 7/8	1/4-20 x 5/8
	80-8	105, 115, 125	8	16	B	6 3/8	5 1/4	5 5/16	5 5/16	3 1/4	1/4	20.5	6 3/4	5 3/4	5 3/4	5 5/16	4 1/4	1/4-20 x 5/8
	80-12	105, 115, 125	12	24	B	6 3/8	6	5 5/16	5 5/16	4 1/8	1/4	29.0	6 3/4	6 5/8	6	6 5/16	5 1/8	1/4-20 x 5/8
	80-25	115/230	25	50	B	7 1/2	6 1/2	6 1/4	6 3/4	3 7/8	1/4	40.3	8	7	7	6 3/4	6 3/4	1/4-20 x 5/8
	80-50	115/230	50	100	B	7 1/2	9	6 1/4	6 3/4	6 1/2	1/4	78.0	8	10	7	6 3/4	8 3/4	1/4-20 x 5/8
88 or 44 C.T. Series 0 - 22 - 44 - 66 - 88 V Parallel 0 - 22 - 44 V @ 2 x Current	88-0.1	115	0.1	0.2	C	2 7/8	1 3/4	2 5/16	2 3/8	—	#8	1.0	2 1/16	2 1/16	2 1/2	1 7/16	1 7/16	6-32 x 3/8
	88-0.25	115	0.25	0.5	C	3 1/8	2 1/8	2 3/4	2 13/16	—	#8	1.5	2 3/4	2 3/8	2 7/8	2 1/8	1 3/4	6-32 x 3/8
	88-0.5	115	0.5	1	C	3 5/16	2 3/8	3 1/16	3 1/8	—	#8	2.2	3 1/4	2 3/4	2 7/8	2 1/2	2	8-32 x 3/8
	88-1	115	1	2	B	3 3/4	3	3 1/8	3 1/8	2 1/4	#8	4.5	4 1/8	3 1/2	3 1/2	3 1/8	2 1/4	10-32 x 1/2
	88-2	115	2	4	B	4 1/8	3 3/8	3 7/16	3 7/16	2 5/8	#10	6.8	4 1/2	3 3/4	3 7/8	3 7/16	2 3/8	10-32 x 1/2
	88-4	115	4	8	B	5 1/4	4 1/2	4 3/8	4 3/8	3 1/8	1/4	13.4	5 1/2	4 3/4	5	4 3/8	3	1/4-20 x 5/8
	88-6	105, 115, 125	6	12	B	5 1/4	5 1/2	4 3/8	4 3/8	3 7/8	1/4	19.0	5 1/2	6	5	4 3/8	3 7/8	1/4-20 x 5/8
	88-8	105, 115, 125	8	16	B	6 3/8	5 3/8	5 5/16	5 5/16	3 3/8	1/4	22.8	6 3/4	5 3/4	5 3/4	5 5/16	4 1/4	1/4-20 x 5/8
	88-12	105, 115, 125	12	24	B	6 3/8	6 1/2	5 5/16	5 5/16	4 5/8	1/4	35.0	6 3/4	7	5 3/4	5 5/16	5 1/2	1/4-20 x 5/8
	88-25	115/230	25	50	B	7 1/2	8	6 1/4	6 3/4	5 5/8	1/4	62.0	8	10	7	6 3/4	8 3/4	1/4-20 x 5/8
	88-50	115/230	50	100	B	7 1/2	11	6 1/4	6 3/4	8 5/8	1/4	100.0	8	13	7	6 3/4	11 3/4	1/4-20 x 5/8
120 or 60 C.T. Series 0 - 30 - 60 - 90 - 120 V Parallel 0 - 30 - 60 V @ 2 x Current	120-0.5	115	0.5	1.0	B	3 3/8	2 7/8	2 13/16	2 13/16	2 1/4	#8	3.2	3 5/8	3 3/8	3 1/4	2 13/16	2 3/8	8-32 x 3/8
	120-1	115	1	2	B	3 3/4	3 3/8	3 1/8	3 1/8	2 3/4	#8	5.8	4 1/8	4	3 1/2	3 1/8	2 7/8	10-32 x 1/2
	120-2	115	2	4	B	4 1/2	3 3/4	3 3/4	3 3/4	2 3/4	#10	8.5	4 3/4	4 1/4	4 1/4	3 3/4	2 7/8	10-32 x 1/2
	120-4	115	4	8	B	5 1/4	5 1/2	4 3/8	4 3/8	3 7/8	1/4	17.0	5 1/2	6	5	4 3/8	3 7/8	1/4-20 x 5/8
	120-6	105, 115, 125	6	12	B	6 3/8	6	5 5/16	5 5/16	3 7/8	1/4	27.0	6 3/4	6 5/8	6	5 5/16	5 1/8	1/4-20 x 5/8
	120-8	105, 115, 125	8	16	B	6 3/8	6 1/2	5 5/16	5 5/16	4 5/8	1/4	34.0	6 3/4	7	5 3/4	5 5/16	5 1/2	1/4-20 x 5/8
	120-12	105, 115, 125	12	24	B	6 3/8	7 1/4	5 5/16	5 5/16	5 3/8	1/4	42.0	6 3/4	8	6	5 5/16	6 1/2	1/4-20 x 5/8
	120-20	105, 115, 125	20	40	B	7 1/2	8	6 1/4	6 3/4	5 3/8	1/4	57.0	8	9	7	6 3/4	7 3/4	1/4-20 x 5/8
160 or 80 C.T. Series 0 - 40 - 80 - 120 - 160 V Parallel 0 - 40 - 80 V @ 2 x Current	160-0.5	115	0.5	1	B	3 3/8	3 1/16	2 13/16	2 13/16	2 1/2	#8	4.0	3 5/8	3 3/8	3 1/4	2 13/16	2 3/8	8-32 x 3/8
	160-1	115	1	2	B	4 1/8	3 5/8	3 7/16	3 7/16	2 5/8	#10	6.5	4 1/2	3 3/4	3 7/8	3 7/16	2 3/8	10-32 x 1/2
	160-2	115	4	8	B	4 1/2	4 3/8	3 3/4	3 3/4	3 3/8	#10	11.0	4 3/4	5	4 3/8	3 3/4	3 3/8	10-32 x 1/2
	160-4	105, 115, 125	4	8	B	6 3/8	5 1/4	5 5/16	5 5/16	3 1/4	1/4	21.0	6 3/4	5 3/4	5 3/4	5 5/16	4 1/4	1/4-20 x 5/8
	160-8	105, 115, 125	8	16	B	6 3/8	6 3/4	5 5/16	5 5/16	4 7/8	1/4	36.0	6 3/4	7 1/2	6	5 5/16	6	1/4-20 x 5/8
	160-12	115/230	12	24	B	7 1/2	6 1/2	6 1/4	6 3/4	3 7/8	1/4	39.8	8	8	7	6 3/4	6 3/4	1/4-20 x 5/8
180 or 90 C.T. Series 0 - 45 - 90 - 135 - 180 V Parallel 0 - 45 - 90 @ 2 x Current	180-0.5	115	0.5	1	B	3 3/4	3 3/8	3 1/8	3 1/8	2 3/4	#8	5.8	4 1/8	4	3 1/2	3 1/8	2 3/8	10-32 x 1/2
	180-1	115	1	2	B	4 1/8	3 7/8	3 5/8	3 7/16	3	#10	8.2	4 1/2	4 1/2	3 7/8	3 7/16	3	10-32 x 1/2
	180-2	115	2	4	B	5 1/4	5	4 3/8	4 3/8	3 5/8	1/4	15.8	5 1/2	5 1/2	5 1/4	4 3/8	3 1/2	1/4-20 x 5/8
	180-4	115	4	8	B	6 3/8	5 3/4	5 5/16	5 5/16	3 3/4	1/4	27.0	6 3/4	6 5/8	6	5 5/16	5 1/8	1/4-20 x 5/8
	180-6	105, 115, 125	6	12	B	6 3/8	7 1/4	5 5/16	5 5/16	5 1/8	1/4	37.0	6 3/4	8	6	5 5/16	6 1/2	1/4-20 x 5/8
	180-8	105, 115, 125	8	16	B	6 3/8	7 3/4	5 5/16	5 5/16	5 5/8	1/4	42.0	6 3/4	8	6	5 5/16	6 1/2	1/4-20 x 5/8
	180-12	105, 115, 125	12	24	B	7 1/2	8 1/4	6 1/4	6 3/4	5 5/8	1/4	62.0	8	9	7	6 3/4	7 3/4	1/4-20 x 5/8
230 or 115 C.T. Series 0-57 1/2-115-172 1/2-230 V Parallel 57 1/2 - 115 V @ 2 x Current	230-0.5	115	0.5	1	B	3 3/4	3 5/8	3 1/8	3 1/8	3	#8	6.5	4 1/8	4	3 1/2	3 1/8	2 7/8	10-32 x 1/2
	230-1	115	1	2	B	4 1/2	3 3/4	3 3/4	3 3/4	3	#10	9.4	4 3/4	4 1/4	4 1/4	3 3/4	2 7/8	10-32 x 1/2
	230-2	115	2	4	B	5 1/4	4 3/4	4 3/8	4 3/8	3 3/8	1/4	14.5	5 1/2	5 1/2	5 1/4	4 3/8	3 1/2	1/4-20 x 5/8
	230-4	105, 115, 125	4	8	B	6 3/8	6	5 5/16	5 5/16	4 1/8	1/4	28.4	6 3/4	6 3/8	6	5 5/16	5 1/8	1/4-20 x 5/8
	230-6	105, 115, 125	6	12	B	6 3/8	7 1/4	5 5/16	5 5/16	5 1/8	1/4	38.0	6 3/4	8	6	5 5/16	6 1/2	1/4-20 x 5/8
300 or 150 C.T. Series 0-75-150-225-300 V Parallel 0 - 75 - 150 V @ 2 x Current	300-0.5	115	0.5	1	B	4 1/2	3 1/2	3 3/4	3 3/4	2 1/2	#10	7.0	4 3/4	4 1/4	4 1/4	3 3/4	2 7/8	10-32 x 1/2
	300-1	115	1	2	B	5 1/4	4 1/8	4 3/8	4 3/8	3	1/4	12.8	5 1/2	4 3/4	5	4 3/8	3	1/4-20 x 5/8
	300-2	115	2	4	B	5 1/4	5 3/4	4 3/8	4 3/8	4 1/2	1/4	21.0	5 1/2	6 1/4	5	4 3/8	5 1/8	1/4-20 x 5/8
	300-4	105, 115, 125	4	8	B	6 3/8	5 3/4	5 5/16	5 5/16	3 7/8	1/4	27.5	6 3/4	6 3/8	6	5 5/16	5 1/8	1/4-20 x 5/8

AVAILABLE IN 3 STYLES

FOR OPEN FRAME USE PART NUMBERS SHOWN

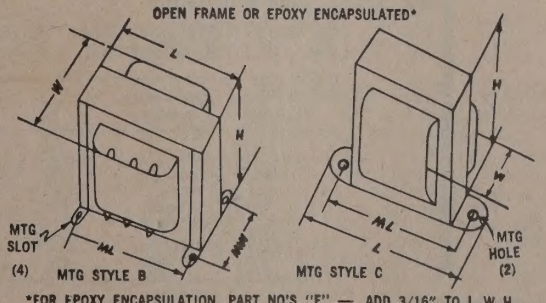
* For epoxy encapsulation add prefix "E-" to Part No., e.g., E-36-1 add 3/16 to L, W, H Dim. Grade 5.
‡ For hermetically sealed units add prefix "H-" to Part No., e.g., H-36-1. Grade 4.

AVAILABLE IN 3 STYLES

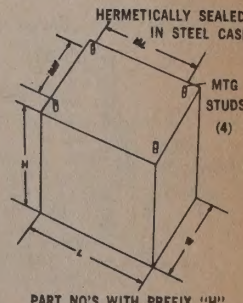
METHOD OF DETERMINING SECONDARY CURRENT RATINGS

RECTIFIER TYPE	FILTER TYPE	RMS SECONDARY CURRENT
Full Wave Center-Tap	Choke Input	.7 × DC amps
Full Wave Center-Tap	Capacitor Input	1.2 × DC amps
Full Wave Bridge	Choke Input	= to DC amps
Full Wave Bridge	Capacitor Input	1.8 × DC Amps

OPEN FRAME OR EPOXY ENCAPSULATED*



HERMETICALLY SEALED IN STEEL CASE



*FOR EPOXY ENCAPSULATION, PART NO'S "E" — ADD 3/16" TO L, W, H

PART NO'S WITH PREFIX "H"

SIGNAL TRANSFORMER CO., INC

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HIGH & LOW CURRENT CHOKES 0.1 to 1000 AMPS

OPEN FRAME • EPOXY ENCAPSULATED (GRADE 5) • HERMETICALLY SEALED (GRADE 4)

Signal's line of High and Low Current Chokes is the most extensive available. It is designed to complement the selection of High and Low Current Transformers so that a set may be specified for power supplies using inductive filters.

The inductance ratings given are minimum values guaranteed at full DC current. All resistance ratings are maximum values.

Special variations or intermediate values of inductance, current, or resistance can be supplied promptly and accurately.

FOR MECHANICAL DIMENSIONS REFER TO TRANSFORMER OUTLINES ON PREVIOUS PAGE

PART No.	IND. (MHY)	CURR. (Amps)	RES. (Ohms)	OPEN FRAME OR EPOXY ENCAPSULATED* MTG. STYLE	L	W	H	ML	MW	MTG. SCREW	APPR. LBS.	HERMETICALLY SEALED IN STEEL CASE‡ L	W	H	ML	MW	MTG. STUD
CH-0.1	1000	0.1	25	C	2	1½	1¾	1 23/32	—	#8	0.3	1⅝	1⅝	2 3/16	1 3/16	1 3/16	6-32 x ⅜
CH-0.2	800	0.2	15	C	2⅜	1⅝	2	2	—	#8	0.7	1 13/16	1 13/16	2 1/16	1⅜	1¼	6-32 x ⅜
CH-0.25	800	0.25	10.0	C	2⅞	1¾	2 5/16	2⅜	—	#8	1.0	2 1/16	2 1/16	2½	1 7/16	1 7/16	6-32 x ⅜
CH-0.5	400	0.5	4.0	C	3⅛	2⅛	2¾	2 13/16	—	#8	1.5	2¾	2⅜	2⅞	2⅛	1¾	6-32 x ⅜
CH-1	100	1	1.5	B	3	2½	2½	2½	2	#8	2.3	3¼	2¾	2⅞	2½	2	8-32 x ⅜
CH-2	70	2	0.9	B	3⅜	2¾	2⅞	2 13/16	2⅛	#8	3.2	3⅝	3	3¼	2 13/16	2⅛	8-32 x ⅜
CH-4	70	4	0.6	B	3¾	3⅛	3¼	3⅛	2½	#8	5.3	4⅛	3½	3½	3⅛	2½	8-32 x ⅜
CH-6	40	6	0.4	B	3¾	3⅝	3¼	3⅛	3	#8	6.5	4⅛	4	3½	3⅛	2⅞	8-32 x ⅜
CH-8	30	8	0.3	B	4⅛	3⅝	3½	3 7/16	3	#10	8	4½	4	3⅞	3 7/16	3	10-32 x ½
CH-12	15	12	0.1	B	5¼	4	4 7/16	4⅜	3⅛	#10	13.7	5½	4½	5	4⅜	3⅛	10-32 x ½
CH-16	15	16	.08	B	5¼	4⅝	4 7/16	4⅜	3⅝	#10	17.5	5½	5⅛	5	4⅜	3⅝	10-32 x ½
CH-20	7	20	.05	B	5¼	4	4 7/16	4⅜	3⅛	#10	13.3	5½	4¾	5	4⅜	3⅛	10-32 x ½
CH-25	5	25	.025	B	5¼	4¾	4 7/16	4⅜	3⅞	#10	17.8	5½	5⅜	5	4⅜	3⅞	¼-20 x ⅝
CH-30	4	30	.01	B	6⅜	5	5⅜	5 5/16	3⅜	¼	24.4	6¾	5¼	5⅞	5 5/16	3⅜	¼-20 x ⅝
CH-50	1.4	50	0.01	B	6⅜	5¼	5⅜	5 5/16	3¾	¼	26.7	6¾	5¼	5⅞	5 5/16	3¾	¼-20 x ⅝
CH-100	0.5	100	0.005	B	6⅜	6¼	5⅜	5 5/16	4⅛	¼	31.4	6¾	6⅝	5⅞	5 5/16	4⅛	¼-20 x ⅝
CH-200	0.3	200	0.0025	B	7½	7	6⅜	6¾	4⅛	¼	48.0	NOT AVAILABLE					
CH-500	0.055	500	0.00027	B	7½	6½	6⅜	6¾	4⅛	¼	50.0	NOT AVAILABLE					
CH-1000	0.015	1,000	0.000065	B	7½	6½	6¾	6¾	4⅜	¼	70.0	NOT AVAILABLE					

AVAILABLE IN 3 STYLES

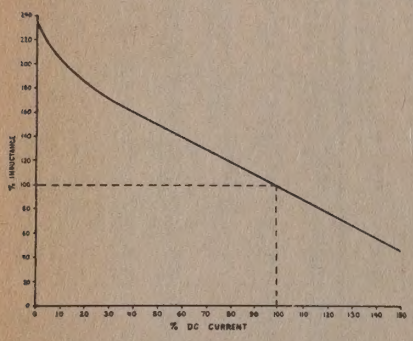
FOR OPEN FRAME USE PART NUMBERS SHOWN

* For epoxy encapsulation add prefix "E-" to Part No., e.g., E-CH-1 add 3/16 to L, W, H W, H Dim. Grade 5.

‡ For hermetically sealed units add prefix "H" to Part No., e.g., H-CH-1, Grade 4.

AVAILABLE IN 3 STYLES

INDUCTANCE VARIATION WITH DC CURRENT



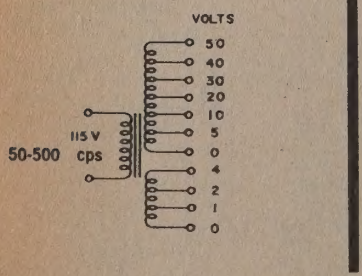
The curve shown applies to the whole line of chokes. It allows the user to determine the value of inductance which will be obtained at intermediate and overload values of DC current. The values on the curve are stated in generalized coordinates of % inductance versus % DC current.

For example, the CH-100 at 50 amperes (50% DC Current) will have an inductance of 0.75 MHY (150% of rating, the CH-25 at 31 amperes (125% DC current) will have an inductance of 3.5 MHY (70% of rating).

It is not recommended that chokes be used at over 100% of rated current since temperature rise will then be excessive. However, if load current is intermittent, and RMS current is less than maximum rated current, it is permissible.

Special "swinging chokes" can be supplied where the slope of this characteristic is emphasized. Specify minimum inductance required at two current values (usually maximum and minimum current) and we will furnish prompt quotations.

MULTI-VOLT 1 to 54 VOLTS in 1 VOLT STEPS



"MV" LINE

MV (multi-voltage) secondaries may be series connected for any output from 1 to 54 volts, in 1 volt steps, at rated current. This is accomplished by using the small buck-boost secondary.

Part No.	Secondary Amps.	DIMENSIONS L	W	H	ML	MW	Appr. Wt.
MV-1	1	3⅜	2¾	2 13/16	2 13/16	2⅛	3.2
MV-2	2	3¾	3⅛	3⅛	3⅛	2⅜	5.0
MV-4	4	4½	3⅝	3¾	3¾	2½	7.5
MV-6	6	5¼	4	4⅜	4⅜	2⅞	12
M-12	12	5¼	6	4⅜	4⅜	4⅝	23

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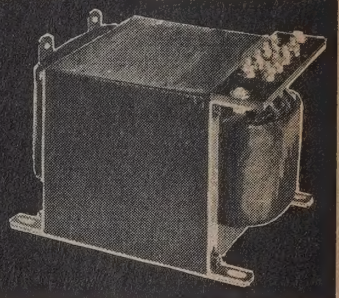
VERY HIGH CURRENT

TRANSFORMERS & CHOKES

500 to 1400 AMPERES

NEVER AVAILABLE BEFORE

STOCKED FOR SAME DAY SHIPMENT

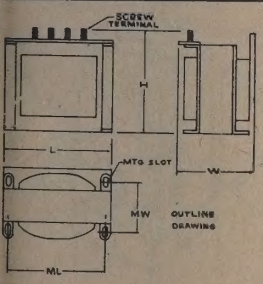


TRANSFORMERS

Part No.	Secondary Volts	Secondary Amps. Nominal (45°C rise)	Secondary Amps. Max. (100°C rise)	Dimensions L	W	H	ML	MW	Mtg. Screw	Appr. Lbs.
6-500	6	500	700	7½	6	7¼	6¾	4⅜	¼	40
9-500	9	500	700	7½	7½	7¼	6¾	6⅛	¼	60
12-500	12	500	700	7½	9	7¼	6¾	7⅜	¼	80
3-1000	3	1000	1400	7½	6	7¼	6¾	4⅜	¼	40
6-1000	6	1000	1400	7½	9	7¼	6¾	7⅜	¼	80

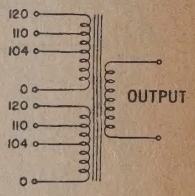
CHOKES

Part No.	Inductance (Milli-hy)	Current (Amperes)	Resis. (Ohms)	L	W	H	ML	MW	Mtg. Screw	Appr. Lbs.
CH-500	.055	500	.00027	7½	6½	6¼	6¾	4⅛	¼	50
CH-1000	.015	1000	.000065	7½	7½	6¼	6¾	5⅛	¼	70

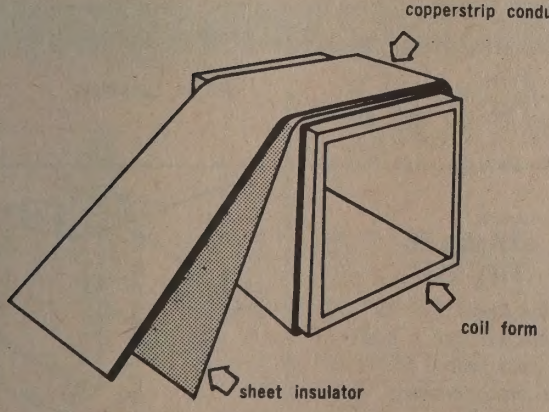


As shown on the schematic diagram dual primaries are provided. This permits parallel connection for 104, 110, or 120 volts or series connection for 208, 214, 220, 230, and 240 volts. Frequency range is 50 to 500 cps.

It is important to note that primary taps may be used to adjust the secondary voltages. Line voltages up to 125V (parallel) or 250V (series) may be used on the lowest primary tap. Nickel plated screw terminals are provided on a heavy phenolic board for easy primary connections



WINDINGS OF HEAVY COPPER STRIP



STRIP-WOUND SECONDARIES

At the heavy current used in this line it becomes practical and desirable to use wide copper strip (as wide as the coil itself) for windings. Besides the obvious advantages of excellent winding space factor, the heat dissipation of the coil is improved. This improvement is due to the fact that the heat generated in the windings has a pure copper path to the coil ends, where it can be dissipated. In conventional windings of many turns per layer this heat flow is impeded by wire insulation and air spaces between turns. Therefore, the use of copper strip windings yields a dramatic reduction in size and weight.

GRAIN-ORIENTED STEEL CORE

These cores permit the use of higher peak flux densities for the same core loss. This results in a lower number of turns required and therefore, a smaller, more compact transformer.

CLASS F INSULATION USED THROUGHOUT

Class F insulation is rated for unlimited life at a total temperature of 155°C (ambient plus temperature rise).

Class A insulation has a maximum temperature rating of 105°C. The "nominal" current ratings given to this series are for a temperature rise of 45°C above 55°C ambient (Class A). Since Class F insulation is used it is permissible to increase these ratings by 40% (700 and 1400 amperes) without reducing the reliability of the transformer. The temperature rise will be 100°C over a 55°C ambient. The only limitation is not the transformer, but the temperature rating of surrounding components which may be affected by the additional heat radiated by the transformer.

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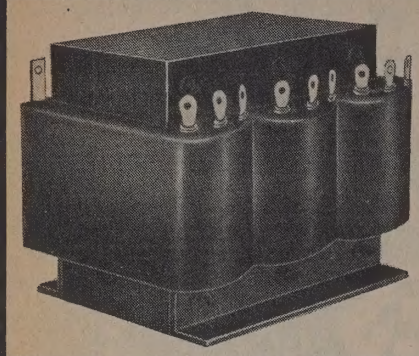
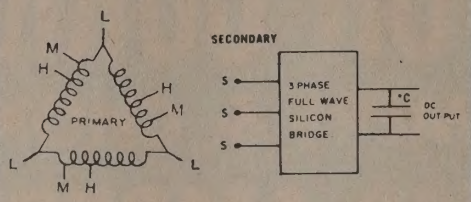
3 PHASE HIGH CURRENT RECTIFIER TRANSFORMERS

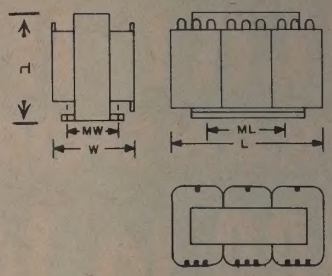


SCHEMATIC DIAGRAM



*C — Optional, no capacitor will give DC output shown at approx. 5% ripple.

MECHANICAL DIMENSIONS



DC OUTPUT VOLTAGE

PART NO.	PRI TAP "L" SUPPLY VOLTAGE 208	PRI TAP "L" SUPPLY VOLTAGE 220	PRI TAP "M" SUPPLY VOLTAGE 208	PRI TAP "M" SUPPLY VOLTAGE 220	PRI TAP "H" SUPPLY VOLTAGE 208	PRI TAP "H" SUPPLY VOLTAGE 220	DC RATED AMPS	APPROX. DIMENSIONS L	W	H	ML	MW	APX. LBS.
3PH 24-50	24	25	26	27.5	28	30	50	7¾	6	5½	4.8	4⅞	35
3PH 24-100	24	25	26	27.5	28	30	100	11½	5	8¼	7.2	4	42
3PH 24-200	24	25	26	27.5	28	30	200	11½	8⅝	8¼	7.2	6¼	90
3PH 48-30	42	44	47	50	52	55	30	7¾	6	5½	4.8	4⅞	35
3PH 48-60	42	44	47	50	52	55	60	11½	5	8¼	7.2	4	42
3PH 48-120	42	44	47	50	52	55	120	11½	8⅝	8¼	7.2	6¼	90

At higher power loads (above 2-3 KVA) it becomes inefficient to use single phase 115 or 230 volt standard lines. With this in mind, our engineering staff has developed a line of 3 phase transformers for use off 208 or 220V 3 phase power lines. These offer the significantly higher conversion efficiency and lighter power line drain of 3 phase systems. Since the principal application of these items is in high power dc power supplies, output ratings are given in dc voltage and current assuming the use of a 3 phase full wave rectifier.

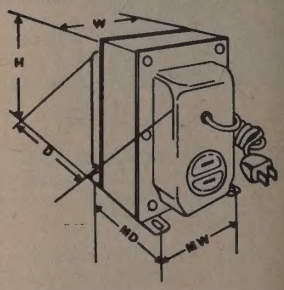
AUTO TRANSFORMERS

STEP-DOWN 230 TO 115 V
"SD" SERIES — LINE CORD & RECEPTACLE

VA Rating	Part No.	W	D	H	MW	MD	Mtg. Screw	Appr. Lbs.
100	SD-100	2⅝	2⅞	3⅛	2	1 13/16	#8	2.3
150	SD-150	2⅝	3½	3⅛	2	2 7/16	#8	3.6
250	SD-250	3⅞	3½	4⅝	3	2⅜	#8	6.2
350	SD-350	3⅞	4¼	4⅝	3	3 1/16	#8	8.3
500	SD-500	3⅞	4¾	4⅝	3	3 9/16	#8	10.5
750	SD-750	4⅝	5⅜	5⅜	3½	3¾	¼	14.5
1000	SD-1000	4⅝	5⅞	5⅜	3½	4¼	¼	18
1500	SD-1500	4⅝	6⅝	5⅜	3½	5	¼	22
2000	SD-2000	4⅝	7⅛	5⅜	3½	5½	¼	26

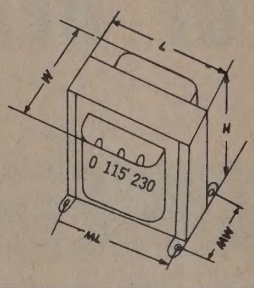
(100-2000 VA)
TYPE SD

Low Regulation • Fully encased — Black Wrinkle Finish • 45°C Temperature Rise • U/L Approved 2 prong line cord and receptacle.



STEP-UP OR DOWN 115/230 OR 230/115 V
"SDO" SERIES — OPEN FRAME • SOLDER LUGS

VA Rating	Part No.	L	W	H	ML	MW	Mtg. Screw	Appr. Lbs.
100	SDO-100	3	2½	2½	2½	2⅛	#8	2.3
150	SDO-150	3	3¼	2½	2½	2¾	#8	3.6
250	SDO-250	4½	2¾	3¾	3¾	2	#10	6.2
350	SDO-350	4½	3¾	3¾	3¾	2¾	#10	8.3
500	SDO-500	4½	4¼	3¾	3¾	3¼	#10	10.5
750	SDO-750	5¼	4½	4⅜	4⅜	3⅜	¼	14.5
1000	SDO-1000	5¼	5	4⅜	4⅜	3⅞	¼	18
1500	SDO-1500	5¼	5¾	4⅜	4⅜	4⅝	¼	22
2000	SDO-2000	5¼	6¼	4⅜	4⅜	5⅛	¼	26



TYPE SDO

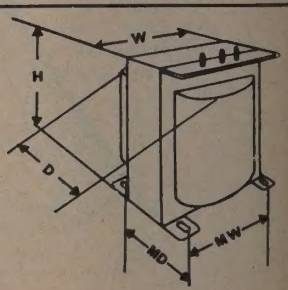
Same Electrically as Type SD. Open Frame • Black Enamel Finish • Solder Lugs • Inexpensive Version for Use in Equipment.

STEP-UP OR DOWN 115/230 OR 230/115
"HSD" SERIES
RUGGED • HEAVY DUTY • PHENOLIC TERMINAL BOARDS

VA Rating	Part No.	W	D	H	MW	MD	Mtg. Screw	Appr. Lbs.
3000	HSD-3000	7½	6	6¾	6¾	4⅛	¼	40
4000	HSD-4000	7½	6½	6¾	6¾	4⅝	¼	46
5000	HSD-5000	7½	7	6¾	6¾	5⅛	¼	52
6000	HSD-6000	7½	8	6¾	6¾	6⅛	¼	65

(3000-6000 VA)
TYPE HSD

Very low Regulation • 45°C Temperature Rise • Black High Gloss Enamel Fnish • Screw type terminals on phenolic board.



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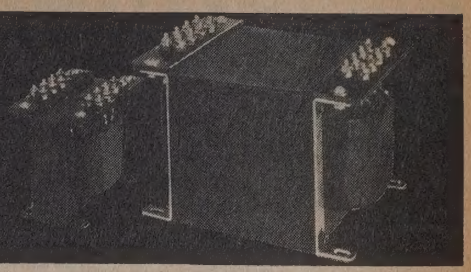
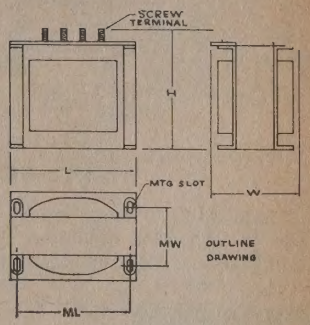
INDUSTRIAL GRADE
STEP-UP OR STEP-DOWN
POWER ISOLATION OR AUTO-TRANSFORMERS
HIGH DEGREE OF VERSATILITY OFFERS MANY POSSIBLE VOLTAGE RATINGS



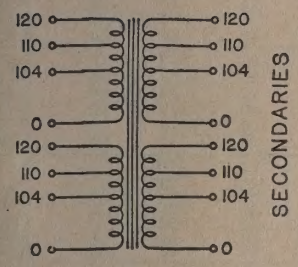
AVAILABLE FROM STOCK FOR IMMEDIATE SHIPMENT

The "DU" and "UP" lines are designed for a maximum of 55°C rise above ambient, for use on standard power lines from 50 to 500 Cps. Only prime raw materials are used. Units are thoroughly impregnated and baked with Signal's own high gloss black baking varnish. The transformers are rugged in construction, well-insulated, and have a consistently uniform appearance. All ratings are at full load current, continuous operation.

Heavy ¼ inch phenolic terminal boards are provided with plated brass screws and flat washers. Connections can be easily made with a nut driver. It is also simple to alter the inter-connections to change transformer ratings.



"DU SERIES" 110/220 Dual Primary To 110/220 Dual Sec.

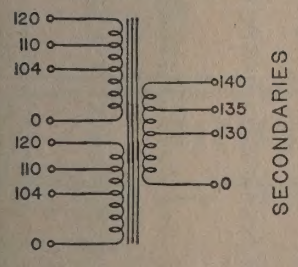


As shown on the schematic diagram the "DU" line is designed with dual primaries and secondaries. All four windings are identically rated at 0/104/110/120 volts. This permits series or parallel connections on either primary or secondary. Therefore, a nominal 110 to 110 volt, 220 to 220 volt, 110 to 220 volt, or 220 to 110 volt transformer can be set up. The winding taps permit intermediate series ratings such as 208, 214, or 230 volts.

It is also possible to make auto-transformer connections by connecting a primary group in series with a secondary group. Such nominal ratings as 440 to 220 volts or 220 to 440 volts can be set-up, in addition to the standard ratings described above. A further advantage to auto-transformer connection is the fact that the KVA rating of a particular type is **doubled.**

Part No.	KVA	Series Secondaries		Parallel Secondaries		Mechanical Dimensions					Mtg. Screw	Appr. Lbs.
		Volts	Max. Amps	Volts	Max. Amps	L (Max.)	W (Max.)	H (Max.)	ML ± 1/32	MW ± 1/16		
DU-¼	¼	0/208/220/240	1.1	0/104/110/120	2.2	5 5/16	4¼	5¼	4⅜	2½	#10	12
DU-½	½	0/208/220/240	2.3	0/104/110/120	4.6	5 5/16	5 5/16	5¼	4⅜	3⅝	#10	18
DU-1	1	0/208/220/240	4.5	0/104/110/120	9	7 9/16	6¼	7¼	6¾	4⅛	¼	33
DU-2	2	0/208/220/240	9	0/104/110/120	18	7 9/16	8¼	7¼	6¾	6	¼	56
DU-3	3	0/208/220/240	14	0/104/110/120	28	7 9/16	9¼	7¼	6¾	7	¼	70
DU-5	5	0/208/220/240	23	0/104/110/120	46	7 9/16	10¾	7¼	6¾	8½	¼	89
DU-7.5	7.5	0/208/220/240	31	0/104/110/120	62	9	9	8	7½	6½	¼	105
DU-10	10	0/208/220/240	41	0/104/110/120	83	9	12	8	7½	9	¼	150

"UP SERIES" 110/220 Dual Primary To 0/130/135/140 V. Sec.



The "UP" line utilizes the same dual primary as the "DU" line. It has, however, a single secondary rated at 0/130/135/140 volts.

This type is quite useful to boost low line voltages or raise line voltages to compensate for drops in series elements. It also finds application in bridge rectifiers for DC voltage outputs of approximately 115 to 130 volts.

Part No.	KVA	Secondary Volts	Max. Secondary Amps	L (Max.)	W (Max.)	H (Max.)	ML ± 1/32	MW ± 1/16	Mtg. Screw	Appr. Lbs.
UP-2	¼	0/130/135/140	2	5 5/16	4¼	5¼	4⅜	2½	#10	12
UP-4	½	0/130/135/140	4	5 5/16	5 5/16	5¼	4⅜	3⅝	#10	18
UP-8	1	0/130/135/140	8	7 9/16	6¼	7¼	6¾	4⅛	¼	33
UP-15	2	0/130/135/140	15	7 9/16	8¼	7¼	6¾	6	¼	56
UP-25	3	0/130/135/140	25	7 9/16	9¼	7¼	6¾	7	¼	70
UP-40	5	0/130/135/140	40	7 9/16	10¾	7¼	6¾	8½	¼	89

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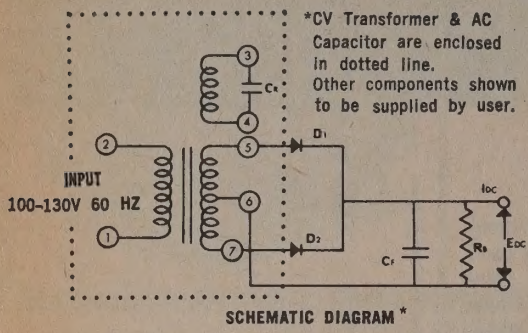
CONSTANT VOLTAGE TRANSFORMERS

FOR USE IN DC POWER SUPPLIES (TYPE CDC)



SCHEMATIC DIAGRAM *

CDC CONSTANT VOLTAGE TRANSFORMERS

Signal's CDC Regulating Transformers are specifically manufactured for use in DC Power Supplies. They are designed and rated for use with a full wave center-tapped silicon rectifier. CDC transformers are operated in ferro-resonance and are used in conjunction with an AC **tuning capacitor** (Cr in schematic diagram), which is supplied with the transformer.

In order to construct a regulated power supply the only other parts necessary are two diodes (D_1 and D_2), an electrolytic computer grade capacitor (C_f) and a bleeder resistor (R_b). These are standard shelf items.

The specification chart lists specific outputs available and the recommended auxiliary components. Part numbers are coded in terms of DC outputs, e.g., CDC-15-2 will give an output of 15V DC at 2 amps DC.

Electrical performance is completely specified. The DC voltage is constant to ±1% over the line voltage range of 100 to 130V at 60 HZ. The nominal output is held to ±2%. Closer tolerance on nominal output (±1%) can be obtained on special order at slightly higher cost.

Load regulation is specified as the rise in dc voltage output (increase in E_{dc}) from full load to the no load, ¼ load, and ½ load points. The filter capacitor (C_f) specified should be used and will yield the values of ripple voltage shown.

A significant protection feature is the fact that the DC short circuit current is limited to a maximum of 2 times rated current (3 times in size "C-6" units). This protects the entire circuit against shorts.

OUTPUT D.C. VOLTS	DC Amps I_{dc}	Part Number	Load Regulation (Rise in DCV from FL) NL-FL	¼-FL	½-FL	Ripple Volts (RMS)	Recommended Diodes (D_1 & D_2) P.I.V.	I/Cell	Filter Cap. (C_f) MFD.	DCWV	Bleeder‡ Resistor (R_b) Ohms	Watts	Style* & Size
6 vdc	0.8	CDC-6-0.8	2.0	1.5	0.8	0.3	50	1	3K	10	50	2	C-6
	4.5	CDC-6-4.5	1.0	0.7	0.5	0.4	50	6	15K	10	10	5	B-25
	9.0	CDC-6-9	1.0	0.7	0.5	0.4	50	16	25K	10	6	10	B-50
	16	CDC-6-16	1.0	0.7	0.4	0.4	50	16	75K	10	5	10	B-120
	40	CDC-6-40	0.7	0.4	0.2	0.4	50	60	150K	10	3	20	B-250
	75	CDC-6-75	0.8	0.6	0.4	0.4	50	100	200K	10	1	40	B-500
12 vdc	0.4	CDC-12-0.4	3.0	2.2	1.1	0.3	100	1	2K	15	150	2	C-6
	2.2	CDC-12-2.2	1.5	1.0	0.6	0.4	100	3	8K	15	25	10	B-25
	4.5	CDC-12-4.5	1.2	0.7	0.5	0.4	100	6	15K	15	25	10	B-50
	9.0	CDC-12-9	1.0	0.7	0.4	0.4	100	16	40K	15	10	20	B-120
	20	CDC-12-20	0.8	0.5	0.3	0.3	100	40	75K	15	5	40	B-250
	38	CDC-12-38	0.9	0.7	0.4	0.4	100	60	120K	15	4	50	B-500
15 vdc	0.35	CDC-15-0.35	3.5	2.3	1.3	0.3	100	1	1.5K	20	200	2	C-6
	2.0	CDC-15-2	1.6	1.0	0.6	0.4	100	2	7K	20	50	5	B-25
	3.5	CDC-15-3.5	1.3	0.8	0.6	0.3	100	6	15K	20	25	10	B-50
	8	CDC-15-8	1.5	0.9	0.6	0.4	100	16	30K	20	15	20	B-120
	16	CDC-15-16	1.0	0.8	0.5	0.3	100	16	75K	20	10	30	B-250
	30	CDC-15-30	1.0	0.6	0.4	0.3	100	40	120K	20	5	50	B-500
18 vdc	0.32	CDC-18-0.32	3.7	2.3	1.3	0.4	100	1	1K	20	300	2	C-6
	1.8	CDC-18-1.8	2.0	1.2	0.7	0.4	100	2	7K	20	100	5	B-25
	3	CDC-18-3	1.7	1.2	0.7	0.3	100	3	12K	20	50	10	B-50
	6	CDC-18-6	1.7	0.9	0.6	0.3	100	6	30K	20	25	20	B-120
	13	CDC-18-13	1.3	1.0	0.7	0.3	100	16	50K	20	15	30	B-250
	26	CDC-18-26	1.5	0.6	0.5	0.3	100	40	120K	20	10	50	B-500
24 vdc	0.25	CDC-24-0.25	4.0	3.4	1.5	0.3	200	1	1K	25	350	2	C-6
	1.2	CDC-24-1.2	2.0	1.2	0.7	0.4	200	2	5K	25	100	10	B-25
	2.1	CDC-24-2.1	1.8	1.5	1.0	0.3	200	3	10K	25	50	20	B-50
	4.5	CDC-24-4.5	2.0	1.0	0.7	0.3	200	6	25K	25	50	20	B-120
	11	CDC-24-11	1.3	1.0	0.5	0.3	200	16	50K	25	25	30	B-250
	20	CDC-24-20	1.5	0.7	0.3	0.3	200	40	75K	25	15	50	B-500
28 vdc	0.22	CDC-28-0.22	5.6	4.0	2.3	0.3	200	1	1K	35	500	2	C-6
	1.0	CDC-28-1	2	1.5	0.6	0.3	200	1	5K	35	100	10	B-25
	2.0	CDC-28-2	2.5	1.5	1.0	0.3	200	2	10K	35	100	10	B-50
	4.0	CDC-28-4	2.0	1.2	0.8	0.3	200	6	25K	35	50	20	B-120
	9.0	CDC-28-9	1.3	1.0	0.5	0.3	200	16	50K	35	25	40	B-250
	16	CDC-28-16	1.7	0.8	0.3	0.3	200	16	75K	35	15	60	B-500
36 vdc	0.18	CDC-36-0.18	7.0	5.5	3.5	0.3	200	1	1K	50	1K	2	C-6
	0.9	CDC-36-0.9	2.0	1.4	0.8	0.3	200	1	5K	50	150	10	B-25
	1.8	CDC-36-1.8	3.0	2.0	1.3	0.3	200	2	8K	50	100	20	B-50
	3.2	CDC-36-3.2	2.5	1.4	0.7	0.3	200	3	20K	50	100	20	B-120
	6	CDC-36-6	2.0	1.5	1.0	0.3	200	16	25K	50	25	60	B-250
	12	CDC-36-12	1.8	1.0	0.7	0.3	200	16	50K	50	25	60	B-500
48 vdc	0.12	CDC-48-0.12	8.0	6.0	4.0	0.2	200	1	1K	50	1.5K	2	C-6
	0.6	CDC-48-0.6	2.5	2.0	1.0	0.3	200	1	3K	50	300	10	B-25
	1.5	CDC-48-1.5	3.0	1.5	1.0	0.3	200	2	6K	50	250	10	B-50
	2.5	CDC-48-2.5	3.0	1.5	1.0	0.2	200	2	15K	50	200	20	B-120
	5.0	CDC-48-5	2.0	1.0	0.6	0.3	200	6	15K	50	50	50	B-250
	10	CDC-48-10	2.0	1.0	0.5	0.4	200	16	25K	50	50	50	B-500
60 vdc	0.1	CDC-60-0.1	8.0	6.0	4.0	0.2	400	1	1K	75	2.5K	2	C-6
	0.5	CDC-60-0.5	3.0	2.0	1.2	0.4	400	1	2K	75	500	10	B-25
	1.2	CDC-60-1.2	4.2	3.0	2.0	0.3	400	2	5K	75	400	10	B-50
	2.0	CDC-60-2	3.5	2.0	1.0	0.3	400	2	10K	75	300	20	B-120
	4	CDC-60-4	1.5	1.2	1.0	0.4	400	6	12K	75	75	50	B-250
	8	CDC-60-8	3.0	2.0	0.6	0.4	400	16	20K	75	75	50	B-500
120 vdc	0.05	CDC-120-0.05	9.0	8.0	5.0	0.2	400	1	0.5K	150	10K	2	C-6
	0.3	CDC-120-0.3	6.0	4.0	2.5	0.3	400	1	2K	150	2K	10	B-25
	0.6	CDC-120-0.6	5.5	3.5	2.5	0.3	400	1	3K	150	1.5K	10	B-50
	1.0	CDC-120-1	5.5	3.2	2.0	0.4	400	1	4K	150	1K	20	B-120
	2	CDC-120-2	4.0	3.0	2.0	0.3	400	2	9K	150	250	60	B-250
	4	CDC-120-4	4.0	2.0	0.8	0.4	400	6	15K	150	150	100	B-500

* See mechanical dimensions on opposite page.

‡ Bleeder resistor may be eliminated if load current does not fall to zero. DC amp rating may be increased accordingly.

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CONSTANT VOLTAGE TRANSFORMERS

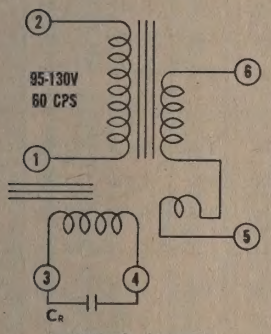
FOR USE IN AC APPLICATIONS (TYPE ACV)

Signal ACV transformers are manufactured for use with AC loads. They are simple and rugged designs and will regulate to within plus or minus 1% for input variations from 95-130V at 60 cps. If regulation of plus or minus ½% or better is desired, special units can be made to your order. ACV transformers will regulate with loads that are not unity power factor.

Full regulation is maintained at any load from about 20% to 100%. Overload current is limited to a maximum of 200% of rated current at short circuit. The 6.4 and 12.8V ratings are ideal for use with tube or lamp loads since the short circuit current rating limits the inrush current to cold filaments. Stabilization of the voltage results in longer filament life.

ACV transformers are "normal" harmonic type with approximately a square wave output.

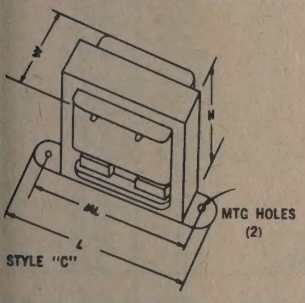
PART NO.	VOLTS AC	AMPS AC	STYLE & SIZE
6 ACV-6.4	6.4	1	C-6
6 ACV-12.8	12.8	0.5	C-6
6 ACV-26	26	0.25	C-6
6 ACV-118	118	0.05	C-6
25 ACV-6.4	6.4	4	B-25
25 ACV-12.8	12.8	2	B-25
25 ACV-26	26	1	B-25
25 ACV-118	118	0.25	B-25
50 ACV-6.4	6.4	8	B-50
50 ACV-12.8	12.8	4	B-50
50 ACV-26	26	2	B-50
50 ACV-118	118	0.43	B-50
120 ACV-6.4	6.4	20	B-120
120 ACV-12.8	12.8	10	B-120
120 ACV-26	26	5	B-120
120 ACV-118	118	1	B-120
250 ACV-12.8	12.8	20	B-250
250 ACV-26	26	10	B-250
250 ACV-118	118	2.2	B-250
500 ACV-118	118	4.5	B-500

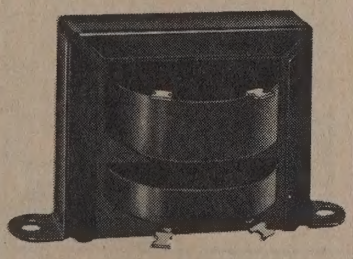


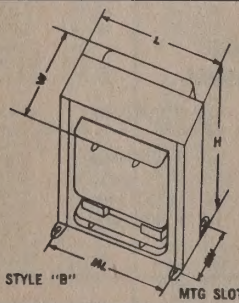
CAPACITOR WINDING SCHEMATIC DIAGRAM

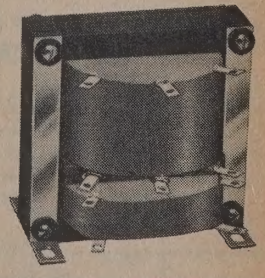
MECHANICAL DIMENSIONS

STYLE & SIZE	L	W	H	ML	MW	MTG. SCREW
C-6	3¼	1⅞	1 15/16	2 13/16	—	#8
B-25	3	2⅝	3⅛	2⅝	1 15/16	#8
B-50	3	3⅝	3⅛	2⅝	2 9/16	#8
B-120	4	3⅞	4 1/16	3½	2⅜	#10
B-250	4	5¾	4 1/16	3½	3 15/16	#10
B-500	5	5¾	5 1/16	4⅜	3 15/16	#10









ADVANTAGES OF CONSTANT VOLTAGE TRANSFORMERS

EGULATION — output regulated to plus or inus 1% for line voltage variations of 95 130V at 60 cps.

ELF-PROTECTION — against output short rcuit. Current limited to a maximum of 2 mes rated current.

ECHANICALLY RUGGED — as resistant to echanical shock as conventional power ansformers.

NO MOVING PARTS — no adjustment or maintenance necessary.

SQUARE WAVE OUTPUT — ideal for use in rectifier circuits — little filtering needed.

HIGH DEGREE OF ISOLATION — between input and output circuits — both physical and electrical isolation, electro-static shields not necessary.

RESONATING CAPACITOR — supplied with transformers.

EPOXY IMPREGNATION — minimizes acoustic noise.

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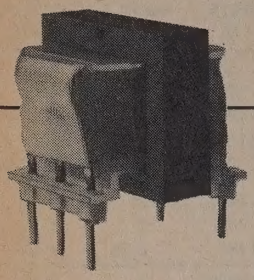
MINIATURE PLUG-IN POWER TRANSFORMERS

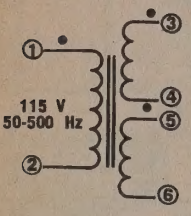
SHIPPED FROM STOCK IMMEDIATELY

FOR PRINTED CIRCUIT APPLICATIONS

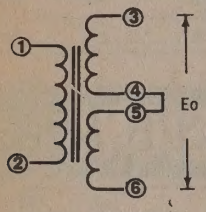
low profile • low regulation • 50-500 Hz



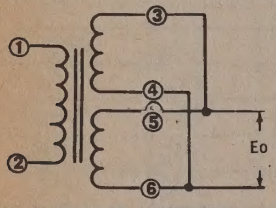
IDEAL FOR — SINGLE OR DUAL OUTPUT DC SUPPLIES
— ISOLATED CONTROL CIRCUIT AND REFERENCE SUPPLIES.



BASIC SCHEMATIC



SERIES CONNECTED

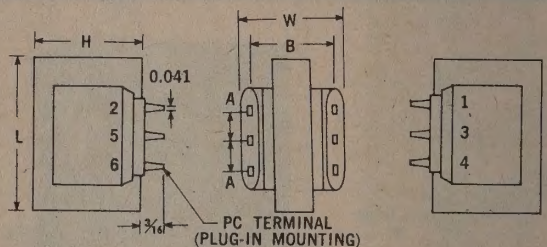


PARALLEL CONNECTED

SECONDARY VOLTS	Part No.	Secondary Milliamps Series	Secondary Milliamps Parallel	DIMENSIONS L	W	H	A	B	Approx. Oz.
20 V.C.T. or 10 V.	PC-20-60	60	120	1 3/8	1 1/8	1 3/16	0.312	1.00	3
SERIES 20 V.C.T.	PC-20-220	220	440	1 5/8	1 1/4	1 3/8	0.400	1.10	5
PARALLEL 10 V @ 2 x CURRENT	PC-20-500	500	1,000	1 7/8	1 7/16	1 5/8	0.400	1.30	9
24 V.C.T. or 12 V.	PC-24-50	50	100	1 3/8	1 1/8	1 3/16	0.312	1.00	3
SERIES 24 V.C.T.	PC-24-180	180	360	1 5/8	1 1/4	1 3/8	0.400	1.10	5
PARALLEL 12 V @ 2 x CURRENT	PC-24-450	450	900	1 7/8	1 7/16	1 5/8	0.400	1.30	9
34 V.C.T. or 17 V.	PC-34-35	35	70	1 3/8	1 1/8	1 3/16	0.312	1.00	3
SERIES 34 V.C.T.	PC-34-125	125	250	1 5/8	1 1/4	1 3/8	0.400	1.10	5
PARALLEL 17 V @ 2 x CURRENT	PC-34-300	300	600	1 7/8	1 7/16	1 5/8	0.400	1.30	9
40 V.C.T. or 20 V.	PC-40-30	30	60	1 3/8	1 1/8	1 3/16	0.312	1.00	3
SERIES 40 V.C.T.	PC-40-110	110	220	1 5/8	1 1/4	1 3/8	0.400	1.10	5
PARALLEL 20 V @ 2 x CURRENT	PC-40-250	250	500	1 7/8	1 7/16	1 5/8	0.400	1.30	9
88 V.C.T. or 44 V.	PC-88-15	15	30	1 3/8	1 1/8	1 3/16	0.312	1.00	3
SERIES 88 V.C.T.	PC-88-50	50	100	1 5/8	1 1/4	1 3/8	0.400	1.10	5
PARALLEL 44 V @ 2 x CURRENT	PC-88-120	120	240	1 7/8	1 7/16	1 5/8	0.400	1.30	9
120 V.C.T. or 60 V.		10	20	1 3/8	1 1/8	1 3/16	0.312	1.00	3
SERIES 120 V.C.T.		35	70	1 5/8	1 1/4	1 3/8	0.400	1.10	5
PARALLEL 60 V @ 2 x CURRENT		85	170	1 7/8	1 7/16	1 5/8	0.400	1.30	9

METHOD OF DETERMINING SECONDARY CURRENT RATINGS

RECTIFIER TYPE	FILTER TYPE	RMS SECONDARY CURRENT
Full Wave Center-Tap	Choke Input	.7 X DC amps
Full Wave Center-Tap	Capacitor Input	1.2 X DC amps
Full Wave Bridge	Choke Input	= to DC amps
Full Wave Bridge	Capacitor Input	1.8 X DC amps



MECHANICAL OUTLINE

Signal's PC Transformers are constructed of prime raw materials using Class S insulation and nylon bobbins with PC pins molded directly in the bobbin wall. They are vacuum varnish impregnated and 100% tested for all parameters before shipment.

Primaries are rated at 115 V. 50 to 500 Hz. Dual secondaries provide two outputs, or secondaries may be series or parallel connected. This results in a wide variety of output combinations. Load regulation is limited to a maximum of 20%.

AVAILABLE ON SPECIAL ORDER

- Special output voltages and/or currents
- PC filter Chokes
- Encapsulated versions

SPECIAL PC TRANSFORMERS OR CHOKES — PROMPT QUOTATIONS

SIGNAL TRANSFORMER CO., INC

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SIGNAL TRANSFORMER PRICE LIST

Part No.	User Net
10-0.1	3.40
10-0.25	3.60
10-0.5	3.75
10-1	4.15
10-2	5.20
10-4	6.50
10-6	8.40
10-8	9.00
10-12	10.50
10-25	18.20
10-50	26.50
10-100	43.00
12.8-0.1	3.40
12.8-0.25	3.65
12.8-0.5	4.00
12.8-1	4.45
12.8-2A	5.15
12.8-2	6.35
12.8-4	7.70
12.8-6	9.00
12.8-8	9.60
12.8-12	11.00
12.8-25	22.40
12.8-50	30.50
12.8-100	44.00
16-0.1	3.50
16-0.25	3.70
16-0.5	3.95
16-1	4.30
16-2	5.35
16-4	8.10
16-6	9.50
16-8	10.30
16-12	12.75
16-25	24.00
16-50	38.00
16-100	64.00
24-0.1	3.50
24-0.25	4.10
24-0.5	4.50
24-1A	4.90
24-1	6.35
24-2	7.30
24-4	9.15
24-6	11.00
24-8	15.20
24-12	17.80
24-20	22.40
24-25	30.00
24-50	44.00
24-100	70.00
36-0.1	3.60
36-0.25	4.00
36-0.5	4.55
36-1A	5.65
36-1	6.60
36-2	7.80
36-4	10.90
36-6	15.60
36-8	16.70
36-12	20.00
36-20	33.70
36-25	39.60
36-30	44.00
36-50	55.00
36-100	108.00
56-0.1	3.80
56-0.25	4.45
56-0.5	5.00
56-1	8.00
56-2	8.90
56-4	14.90
56-6	21.50
56-8	26.50
56-12	35.00
56-25	57.00
56-50	102.00
56-100	151.00
58-0.1	3.90
58-0.25	4.40
58-0.5A	5.10
58-0.5	6.75
58-1	7.90
58-2	10.00
58-4	18.80
58-6	21.50
58-8	25.80
58-12	38.00
58-25	57.00
58-50	103.00
70-0.1	4.00
70-0.25	4.60
80-0.5A	5.60
80-0.5	6.75
80-1	8.50
80-2	12.70
80-4	21.00
80-6	27.00
80-8	32.50
80-12	41.00
80-25	69.50
80-50	124.00
88-0.1	4.10
88-0.25	4.80
88-0.5	5.70
88-1	8.80
88-2	12.90
88-4	22.00
88-6	27.50
88-8	33.50
88-12	42.00
88-25	72.00
88-50	128.00
120-0.5	8.20
120-1	10.40
120-2	14.70
120-4	28.00
120-6	34.00
120-8	42.50
120-12	52.50
120-20	76.50
160-0.5	8.70
160-1	12.90
160-2	18.00
160-4	31.00
160-8	48.50
160-12	65.00
180-0.5	9.10
180-1	14.20
180-2	20.00
180-4	36.00
180-6	42.50
180-8	52.00
180-12	78.00
230-0.5	10.50
230-1	15.00
230-2	21.50
230-4	42.00
230-6	50.00
300-0.5	11.00
300-1	19.70
300-2	31.00
300-4	48.50
CH-0.1	2.25
CH-0.2	2.60
CH-0.25	3.00
CH-0.5	3.80
CH-1	5.70
CH-2	6.60
CH-4	8.80
CH-6	11.00
CH-8	14.00
CH-12	18.00
CH-16	20.00
CH-20	19.50
CH-25	27.50
CH-30	33.00
CH-50	38.00
CH-100	43.00
CH-200	68.00
CH-500	92.00
CH-1000	102.00
E-10-0.1	5.10
E-10-0.25	5.43
E-10-0.5	5.80
E-10-1	6.35
E-10-2	8.00
E-10-4	11.10
E-10-6	13.00
E-10-8	14.00
E-10-12	16.55
E-10-25	28.80
E-10-50	42.20
E-10-100	69.00
E-12.8-0.1	5.10
E-12.8-0.25	5.51
E-12.8-0.5	6.05
E-12.8-1	6.75
E-12.8-2A	7.85
E-12.8-2	9.75
E-12.8-4	11.85
E-12.8-6	13.90
E-12.8-8	14.90
E-12.8-12	17.20
E-12.8-25	35.40
E-12.8-50	48.60
E-12.8-100	70.50
E-16-0.1	5.25
E-16-0.25	5.57
E-16-0.5	5.96
E-16-1	6.52
E-16-2	8.16
E-16-4	12.45
E-16-6	14.70
E-16-8	16.05
E-16-12	20.00
E-16-25	38.00
E-16-50	61.00
E-16-100	102.00
E-24-0.1	5.25
E-24-0.25	6.20
E-24-0.5	6.85
E-24-1A	7.50
E-24-1	9.77
E-24-2	11.22
E-24-4	14.20
E-24-6	17.05
E-24-8	23.60
E-24-12	27.80
E-24-20	35.00
E-24-25	47.10
E-24-50	69.50
E-24-100	111.00
E-36-0.1	5.40
E-36-0.25	6.03
E-36-0.5	6.88
E-36-1A	8.55
E-36-1	10.05
E-36-2	11.90
E-36-4	16.80
E-36-6	24.20
E-36-8	26.00
E-36-12	31.20
E-36-20	52.80
E-36-25	62.20
E-36-30	69.50
E-36-50	87.50
E-36-100	173.00
E-56-0.1	5.70
E-56-0.25	6.70
E-56-0.5	7.55
E-56-1	12.10
E-56-2	13.50
E-56-4	22.80
E-56-6	33.10
E-56-8	41.10
E-56-12	54.50
E-56-25	89.50
E-56-50	161.00
E-56-100	240.00
E-68-0.1	5.85
E-68-0.25	6.62
E-68-0.5A	7.70
E-68-0.5	10.22
E-68-1	12.00
E-68-2	15.30
E-68-4	28.80
E-68-6	33.10
E-68-8	40.00
E-68-12	59.50
E-68-25	90.00
E-68-50	165.00
E-80-0.1	6.00
E-80-0.25	6.95
E-80-0.5A	8.50
E-80-0.5	10.30
E-80-1	13.10
E-80-2	19.60
E-80-4	32.60
E-80-6	42.00
E-80-8	51.00
E-80-12	64.70
E-80-25	110.00
E-80-50	198.00
E-88-0.1	6.15
E-88-0.25	7.23
E-88-0.5	8.65
E-88-1	13.45
E-88-2	19.90
E-88-4	34.10
E-88-6	42.80
E-88-8	52.50
E-88-12	66.30
E-88-25	114.00
E-88-50	204.00
E-120-0.5	12.30
E-120-1	15.70
E-120-2	22.40
E-120-4	43.10
E-120-6	52.60
E-120-8	65.80
E-120-12	83.00
E-120-20	122.00
E-160-0.5	13.05
E-160-1	19.50
E-160-2	27.40
E-160-4	47.70
E-160-8	75.60
E-160-12	103.00
E-180-0.5	13.65
E-180-1	21.40
E-180-2	30.40
E-180-4	55.50
E-180-6	65.80
E-180-8	81.00
E-180-12	123.00
E-230-0.5	15.75
E-230-1	22.80
E-230-2	33.00
E-230-4	65.00
E-230-6	77.50
E-300-0.5	16.50
E-300-1	30.00
E-300-2	48.00
E-300-4	75.60
E-CH-0.1	2.90
E-CH-0.2	3.40
E-CH-0.25	3.95
E-CH-0.5	5.00
E-CH-1	7.60
E-CH-2	8.80
E-CH-4	11.80
E-CH-6	14.80
E-CH-8	18.90
E-CH-12	24.50
E-CH-16	27.40
E-CH-20	26.80
E-CH-25	38.00
E-CH-30	45.70
E-CH-50	52.70
E-CH-100	60.00
E-CH-200	96.00
E-CH-500	132.00
E-CH-1000	148.00
H-10-0.1	9.85
H-10-0.25	10.50
H-10-0.5	10.95
H-10-1	12.10
H-10-2	15.25
H-10-4	19.30
H-10-6	25.20
H-10-8	27.10
H-10-12	31.70
H-10-25	55.20
H-10-50	77.80
H-10-100	133.00
H-12.8-0.1	9.85
H-12.8-0.25	10.60
H-12.8-0.5	11.65
H-12.8-1	13.00
H-12.8-2A	15.10
H-12.8-2	18.75
H-12.8-4	22.80
H-12.8-6	26.70
H-12.8-8	28.80
H-12.8-12	33.20
H-12.8-25	68.30
H-12.8-50	93.70
H-12.8-100	137.00
H-16-0.1	10.20
H-16-0.25	10.75
H-16-0.5	11.50
H-16-1	12.60
H-16-2	15.70
H-16-4	23.80
H-16-6	28.00
H-16-8	30.50
H-16-12	38.00
H-16-25	72.00
H-16-50	114.00
H-16-100	192.00
H-24-0.1	10.20
H-24-0.25	11.90
H-24-0.5	13.10
H-24-1A	14.35
H-24-1	18.70
H-24-2	21.50
H-24-4	27.20
H-24-6	32.80
H-24-8	45.70
H-24-12	53.50
H-24-20	67.40
H-24-25	90.50
H-24-50	134.00
H-24-100	214.00
H-36-0.1	10.45
H-36-0.25	11.60
H-36-0.5	13.25
H-36-1A	16.50
H-36-1	19.35
H-36-2	22.90
H-36-4	32.10
H-36-6	46.00
H-36-8	49.50
H-36-12	59.40
H-36-20	100.00
H-36-25	118.00
H-36-30	131.00
H-36-50	165.00
H-36-100	326.00
H-56-0.1	11.00
H-56-0.25	12.90
H-56-0.5	14.55
H-56-1	23.30
H-56-2	26.00
H-56-4	43.60
H-56-6	63.10
H-56-8	78.40
H-56-12	104.00
H-56-25	170.00
H-56-50	305.00
H-56-100	455.00
H-68-0.1	11.30
H-68-0.25	12.78
H-68-0.5A	14.90
H-68-0.5	19.70
H-68-1	23.00
H-68-2	29.30
H-68-4	55.50
H-68-6	63.80
H-68-8	77.00
H-68-12	113.50
H-68-25	174.00
H-68-50	316.00
H-80-0.1	11.60
H-80-0.25	13.35
H-80-0.5A	16.45
H-80-0.5	20.00
H-80-1	25.10
H-80-2	37.70
H-80-4	62.50
H-86-6	81.00
H-80-8	97.80
H-80-12	124.00
H-80-25	212.00
H-80-50	380.00
H-88-0.1	11.90
H-88-0.25	13.95
H-88-0.5	16.75
H-88-1	26.00
H-88-2	38.30
H-88-4	65.50
H-88-6	82.50
H-88-8	101.00
H-88-12	127.00
H-88-25	219.00
H-88-50	392.00
H-120-0.5	23.80
H-120-1	30.40
H-120-2	43.20
H-120-4	83.00
H-120-6	100.00
H-120-8	127.00
H-120-12	157.00
H-120-20	232.00
H-160-0.5	25.20
H-160-1	37.70
H-160-2	52.80
H-160-4	92.00
H-160-8	145.00
H-160-12	195.00
H-180-0.5	26.40
H-180-1	41.50
H-180-2	58.70
H-180-4	106.00
H-180-6	126.00
H-180-8	155.00
H-180-12	234.00
H-230-0.5	30.50
H-230-1	43.80
H-230-2	63.10
H-230-4	124.00
H-230-6	149.00
H-300-0.5	31.90
H-300-1	57.50
H-300-2	91.00
H-300-4	143.00
H-CH-0.1	6.50
H-CH-0.2	7.55
H-CH-0.25	8.75
H-CH-0.5	11.10
H-CH-1	16.70
H-CH-2	19.50
H-CH-4	26.20
H-CH-6	33.00
H-CH-8	42.20
H-CH-12	54.50
H-CH-16	60.80
H-CH-20	59.30
H-CH-25	83.80
H-CH-30	101.00
H-CH-50	117.00
H-CH-100	133.00
6-500	98.00
9-500	127.00
12-500	158.00
3-1000	104.00
6-1000	168.00
MV-1	13.50
MV-2	16.00
MV-4	21.00
MV-6	29.00
MV-12	40.00
3PH-24-50	90.00
3PH-24-100	127.00
3PH-24-200	207.00
3PH-48-30	90.00
3PH-48-60	127.00
3PH-48-120	207.00
SD-100	7.30
SD-150	8.60
SD-250	10.00
SD-350	13.00
SD-500	15.10
SD-750	19.25
SD-1000	23.00
SD-1500	27.00
SD-2000	35.00
SDO-100	5.00
SDO-150	6.00
SDO-250	7.40
SDO-350	10.50
SDO-500	12.40
SDO-750	16.50
SDO-1000	20.20
SDO-1500	23.50
SDO-2000	31.80
HSD-3000	55.00
HSD-4000	60.00
HSD-5000	69.00
HSD-6000	76.00
DU-¼	27.80
DU-½	34.50
DU-1	55.00
DU-2	75.00
DU-3	107.00
DU-5	144.00
DU-7½	185.00
DU-10	235.00
UP-2	28.00
UP-4	32.50
UP-8	53.00
UP-15	77.00
UP-25	99.00
UP-40	138.00
CDC-6-0.8	14.00
CDC-6-4.5	19.90
CDC-6-9	23.50
CDC-6-16	29.50
CDC-6-40	44.40
CDC-6-75	68.00
CDC-12-0.4	13.95
CDC-12-2.2	19.80
CDC-12-4.5	23.40
CDC-12-9	29.40
CDC-12-20	44.10
CDC-12-38	67.80
CDC-15-0.35	13.90
CDC-15-2	19.70
CDC-15-3.5	23.30
CDC-15-8	29.20
CDC-15-16	43.90
CDC-15-30	67.60
CDC-18-0.32	13.85
CDC-18-1.8	19.60
CDC-18-3	23.20
CDC-18-6	29.10
CDC-18-13	43.90
CDC-18-26	67.50
CDC-24-0.22	13.80
CDC-24-1.2	19.50
CDC-24-2.1	23.10
CDC-24-4.5	29.00
CDC-24-11	43.80
CDC-24-20	67.30
CDC-28-0.25	13.75
CDC-28-1	19.40
CDC-28-2	23.00
CDC-28-4	28.90
CDC-28-9	43.70
CDC-28-16	67.20
CDC-36-0.18	13.65
CDC-36-0.9	19.30
CDC-36-1.8	22.90
CDC-36-3.2	28.80
CDC-36-6	43.50
CDC-36-12	67.00
CDC-48-0.12	13.60
CDC-48-0.6	19.20
CDC-48-1.5	22.80
CDC-48-2.5	28.70
CDC-48-5	43.40
CDC-48-10	66.80
CDC-60-0.1	13.40
CDC-60-0.5	19.10
CDC-60-1.2	22.70
CDC-60-2	28.50
CDC-60-4	43.30
CDC-60-8	66.70
CDC-120-0.05	13.40
CDC-120-0.3	19.00
CDC-120-0.6	22.60
CDC-120-1	28.40
CDC-120-2	43.20
CDC-120-4	66.50
6ACV-6.4	14.10
6ACV-12.8	13.90
6ACV-26	13.70
6ACV-118	13.40
25ACV-6.4	20.00
25ACV-12.8	19.80
25ACV-26	19.50
25ACV-118	19.00
50ACV-6.4	23.60
50ACV-12.8	23.20
50ACV-26	22.70
50ACV-118	22.20
120ACV-6.4	29.10
120ACV-12.8	28.90
120ACV-26	28.60
120ACV-118	28.20
250ACV-12.8	44.00
250ACV-26	43.00
250ACV-118	41.90
500ACV-118	68.00
PC-20-60	3.65
PC-20-220	3.80
PC-20-500	4.00
PC-24-50	3.75
PC-24-180	3.90
PC-24-450	4.10
PC-34-35	3.85
PC-34-125	4.00
PC-34-300	4.20
PC-40-30	3.90
PC-40-110	4.05
PC-40-250	4.25
PC-88-15	3.95
PC-88-50	4.10
PC-88-120	4.30
PC-120-10	4.00
PC-120-35	4.15
PC-120-85	4.35

OEM DISCOUNT SCHEDULE

QTY.	DISCOUNT	QTY.	DISCOUNT
1-9	NET	50-99	33⅓%
10-24	15%	100-199	40%
25-49	25%	200 Over	QUOTE

TERMS: NET 30 DAYS ON APPROVED CREDIT

SIGNAL TRANSFORMER CO., INC
ENGINEERS • DESIGNERS • MANUFACTURERS

SOLA ELECTRIC STB

DIVISION OF SOLA BASIC INDUSTRIES

CV Transformers

Constant-voltage Sola transformers provide a stabilized output voltage even though the input voltage varies over a considerable range. Their applications are numerous and varied. CV's are especially ideal for high-accuracy requirements such as in computers and data-processing equipment.

Another advantage in CV transformers is their ability to prolong the life of electronic components by eliminating injurious over- and under-voltages. The Sola transformer's current-limiting factor protects semi-conductors and other components from excessive inrush and fault currents.

Write for catalog CV-100 for complete listings including 50 and 400 Hz models.

Sola Sinusoidal Type (CVS)

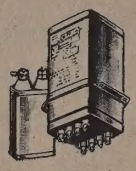
LESS THAN 3% HARMONIC CONTENT
SPECIFICATIONS • 60 CYCLE SINGLE PHASE

Voltage Rating						
Regulated Output	Input Range	VA	Catalog Number	Price Ind'l & Govt. Users	Approx. Ship. Wt. Lbs.	Structure Code
118	95-130	30	23-13-030-2	$ 28.35	8	W
	95-130	60	23-13-060-2	33.60	10	W
	190-260X 380-520	60	23-23-060-2	36.75	10	W
	95-130X 190-260	120	23-22-112-2	43.05	14	W
	190-260X 380-520	120	23-23-112-2	46.20	14	W
	95-130X 190-260	250	23-22-125	58.80	28	W
	190-260X 380-520	250	23-23-125	63.00	29	W
	95-130X 190-260	500	23-22-150	91.35	45	W
	190-260X 380-520	500	23-26-150	97.65	46	W
	95-130X 175-235X	750	23-25-175	126.00	54	W
	190-260	1000	23-25-210	153.30	72	W
	190-260X 380-520	1000	23-26-210	153.30	72	W
	95-130X 175-235X	1500	23-25-215	204.75	128	W
	190-260	2000	23-25-220	278.25	140	W
	190-260X 380-520	2000	23-26-220	278.25	148	W
118x236	95-130X 175-235X 190-260	3000	23-25-230-3	373.80	194	W
	190-260X 380-520	3000	23-26-230	373.80	192	W
	95-130X 175-235X 190-260	5000	23-25-250	583.80	335	Y*
	190-260X 380-520	5000	23-26-250	583.80	342	Y*
	190-260X 380-520	7500	23-28-275	867.30	502	7**

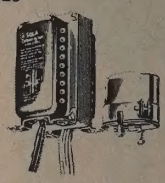
*Same as W, but duplex. **Same as W, but triplex.

AUTOMATIC, INSTANTANEOUS VOLTAGE REGULATION FOR A WIDE VARIET OF ELECTRIC AND ELECTRONIC DEVICES

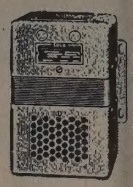
D — Drawn case; integral capacitor unit; flex leads.



S — Hermetically-sealed case; separate capacitor; solder lugs.



E—Exposed core; end bells; separate capacitor; flex leads.



W—Exposed core end housings screw-type termi als in outlet bo

Normal Harmonic Type (CVN)

SPECIFICATIONS • 60 CYCLE SINGLE PHASE

Voltage Rating						
Output Regulated	Input Range	VA	Catalog Number	Price 1-4 pcs.	Ship. Wt. (Lbs.)	Structure Code
118	95-130	15	20-10-015	$ 16.80	4	D
			20-11-015	23.10	4	S
			20-14-015	15.75	3	E
		30	20-14-030	17.85	5	E
			20-13-030-2	23.10	7	W
		60	20-13-060-2	28.35	10	W
			20-14-060	24.15	8	E
118	95-130	120	20-14-112	32.55	11	E
			20-13-112-2	37.80	12	W
236	190-260	120	20-21-112-2	37.80	13	W
118	95-130	150	20-13-115	45.15	22	W
		250	20-13-125	55.65	25	W
	95-130X 190-260	250	20-22-125	55.65	25	W
	190-260X 380-520	250	20-23-125	55.65	25	W
	95-130	500	20-13-150	87.15	36	W
	95-130X 190-260	500	20-22-150	87.15	36	W
	190-260X 380-520	500	20-23-150	87.15	36	W
236	190-260X 380-520	500	20-24-150	87.15	38	W
118x236	190-260X 380-520	500	20-26-150	93.45	37	W
118	95-130	1000	20-13-210	144.90	48	W
	190-260		20-20-210	144.90	48	W
118	95-130X 190-260	1000	20-22-210	144.90	48	W
118x236	95-130X 175-235X	2000	20-25-220	263.55	128	W
	190-260	3000	20-25-230	357.00	170	W
	190-260X	5000	20-27-250	555.45	290	W
	380-520	10000	20-26-310	1048.95	590	Y

Electronic-Power Types ±1% REGULATION FOR FILAMENT TYPE, ±3% FOR PLATE-FILAMENT TYPE

The electronic-power type of Sola transformer is designed as a component for simple assembly into many kinds of electronic equipment. The filament type (CVF) provides 6.0 or 6.3 volts of output regulated within ± 1% over line variations of ± 15%; the combination plate-and-filament type (CVE) regulates within ± 3%.

D — Drawn case; integral capacitor unit; flex leads.

E — Exposed core; end bells separate capacitor; flex leads

for filament service (Type CVF)

SPECIFICATIONS • 60 CYCLE SINGLE PHASE

Voltage Rating Regulated ±1% Output	Input Range	Output Capacity in Amps.	Catalog Number	Approx. Net Price Each to Industrial Users	Approx. Ship. Wt. in Lbs.	* Structure Code
6.0	95-130	2.50	20-01-015	$16.80	4	D
			20-06-015	15.75	3	E
6.3	95-130	2.38	20-02-015	16.80	4	D
			20-03-015	23.10	4	S
			20-04-015	15.75	3	E
	95-130X 190-260	5.0	20-04-030	17.85	6	E
		10.0	20-04-065	23.10	8	E
		15.0	20-04-095	27.30	11	E
		25.0	20-04-116	39.90	23	E

for plate filament service (Type CVE)

SPECIFICATIONS • 60 CYCLE SINGLE PHASE
Input range, 100-130 volts

Typical Rectifier Tube	Average D.C. Input Volts to Filter*	Filament Windings 6.3 Volts	Filament Windings 5.0 Volts	Catalog Number	Approx. Net Price Each to Industrial Users	Approx. Ship. Wt. in Lbs.	* Structure Code
5Y3	275v D.C. @ 50 M.A.	2.5 amps C.T.	2.0 amps	7104	$14.04	6	E
5Y3	385v D.C. @ 110 M.A.	3.0 amps C.T.	2.0 amps	7106	17.28	8	E
5U4	380v D.C. @ 250 M.A.	No. 1: 4.0 amps No. 2: 8.0 amps unregulated	3.0 amps	7107	32.40	19	E

*Voltage values are taken at output of 5Y3GT rectifier for No. 7104 and No. 7106 transformers and at output of 5U4GA-GB for No. 7107. Guaranteed regulation o ±3% on plate voltage output is contingent on the use of Sola-regulated 5.0μ filament supply winding for the rectifier tube.

For more information on SOLA CVDC Power Supplies, see page 995, Section 4000.

Net

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SPRAGUE PULSE TRANSFORMERS

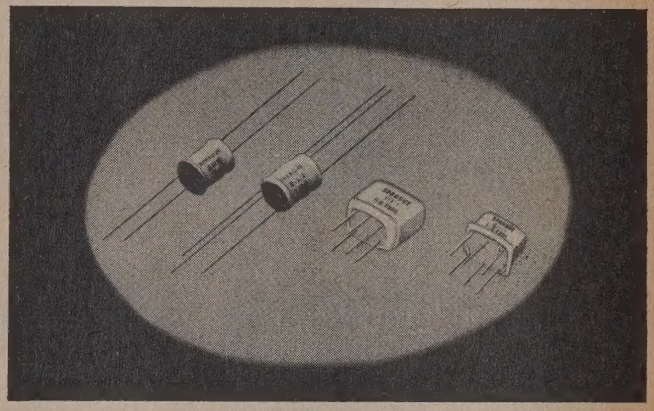
Type 11Z

TRIGATE® PULSE TRANSFORMERS

FLEXIBLE LEAD AND PRINTED WIRING BOARD DESIGNS FOR LOW-COST SCR CIRCUIT APPLICATIONS

- Specifically Designed For Commercial and Industrial SCR Triggering Applications Where Low Cost and Excellent Performance Are Required
- Single-ended Pulse Transformers Are Designed With Leads Especially Intended For Mounting On Printed Wiring Boards; These Units are Self Supporting
- Balanced Pulse Characteristics and Energy Transfer Between Windings
- Minimum Saturation Effect To Allow Operation Where Increased Pulse Widths Are Required
- Fast Pulse Rise Time and Increased Current Capability To Prevent SCR di/dt Failure
- Operating Temperature Range of −10 C to +70 C
- For Complete Technical Data, See Latest Issue of Sprague Engineering Bulletin 40003

Call Your Sprague Industrial Distributor For Current Quantity Prices



DIMENSIONS

FLEXIBLE LEAD	HORIZONTAL PLUG-IN
D. x L.	L. x W. x H.
.593 x .828	.968 .775 .800

FLEXIBLE LEAD DESIGN

urns atio	Catalog Number	Min. Lp (μH)	Max. L_L (μH)	Max. C_C (pF)	Max. DCR (Ω)	60 Cycle Dielectric Test (Volts RMS)	Max. 60 Cy A-C Line Voltage (Volts RMS)
:1	11Z12	200	3	800	1.5-1.5	1600	240
:1:1	11Z13	200	3	800	2-2-2	1600	240
:1	11Z14	1000	10	1300	10-2	1600	240
:1:1	11Z15	1000	15	1300	10-2-2	1600	240
:1	11Z16	5000	1500	400	19-3	1600	240

HORIZONTAL PLUG-IN DESIGN

urns atio	Catalog Number	Min. Lp (μH)	Max. L_L (μH)	Max. C_C (pF)	Max. DCR (Ω)	60 Cycle Dielectric Test (Volts RMS)	Max. 60 Cy A-C Line Voltage (Volts RMS)
:1	11Z2000	200	3.0	800	1.5-1.5	1600	240
:1	11Z2001	1000	12.0	2000	8-8	1600	240
:1	11Z2003	1000	10.0	1300	10-2	1600	240
:1	11Z2004	5000	1500	400	19-3	1600	240
:1:1	11Z2100	200	3.0	800	2-2-2	1600	240
:1:1	11Z2101	1000	12.0	1400	10-10-10	1600	240
:1:1	11Z2103	1000	15.0	1300	10-2-2	1600	240
:1:1	11Z2104	5000	1500	400	20-4-4	1600	240

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of electronic
products
sold through
distributors

120 VOLT SINGLE PHASE PANEL MOUNTING

Cased and uncased units designed for mounting on panels 1/4" thick to 5/8" thick. Most panel mounting units can also be bench mounted.

Mfr's Type No.	Volts	Output Amps	KVA	Size	Weight (Lbs.)	Price
171-	*0-132	1.75	.23	$2^{13}/_{16} \times 2^{3}/_{32}$	3	10.50
241	0-120/140	2.4	.33	$3^{1}/_{4} \times 3^{1}/_{4} \times 3^{15}/_{16}$	4	17.50
251	*0-132	2.5	.33	$2^{13}/_{16} \times 2^{9}/_{16}$	3.5	11.25
371	*0-120/140	3.75	.53	$3^{1}/_{4} \times 3^{1}/_{4} \times 3^{1}/_{4}$	5	15.75
501	0-120/140	5.0	.70	$3^{1}/_{4} \times 3^{1}/_{4} \times 3^{5}/_{16}$	6	16.00
601	0-120/140	6.0	.84	$4^{1}/_{2} \times 4^{1}/_{2} \times 3^{15}/_{16}$	7	21.00
1010	0-120/140	10.0	1.4	$5^{5}/_{16} \times 5 \times 4^{3}/_{16}$	12	21.00
1010CT	0-120/140	*10.0	1.4	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12	28.00
1210	**0-120	12.5	1.4	$5^{5}/_{16} \times 5 \times 4^{3}/_{16}$	12	23.00
1210CT	**0-120	12.5	1.4	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12	29.00
1510	0-120/140	15.0	2.1	$6^{1}/_{8} \times 6^{5}/_{8} \times 4^{3}/_{8}$	20	39.00
2510	0-120/140	25.00	3.5	$8^{3}/_{16} \times 7^{5}/_{8} \times 4^{1}/_{8}$	23	57.00
2510CT	0-120/140	25.0	3.5	$9^{5}/_{8} \times 7^{5}/_{8} \times 4^{1}/_{8}$	23	66.00
5010	0-140	50.0	7.0	$12^{1}/_{8} \times 12^{1}/_{2} \times 6^{1}/_{2}$	60	140.00
5010CT	0-140	50.0	7.0	$15^{5}/_{8} \times 14 \times 6^{1}/_{2}$	60	155.00

*60 cycle operation only at overvoltage.
**60 cycle operation only.

120 VOLT SINGLE PHASE MODELS WITH CORD & RECEPTACLE

All models housed in rugged cases include pilot light, switch fuse, line cord, plug and matching receptacle.
2 PF models are equipped with 2-wire cords, plugs and receptacles.
3PN models are equipped with 3-wire grounded cords, plugs, and receptacles.

Mfr's Type No.	Volts	Output Amps	KVA	Size	Weight (Lbs.)	Price
2PF171	**0-132	1.75	.23	$3^{7}/_{8} \times 3^{7}/_{8} \times 3^{1}/_{2}$	3.5	20.00
3PN171	**0-132	1.75	.23	$3^{7}/_{8} \times 3^{7}/_{8} \times 3^{1}/_{2}$	3.5	22.00
2PF371	*0-120/140	3.75	.53	$6^{1}/_{2} \times 6^{1}/_{8} \times 6^{1}/_{2}$	7.0	22.00
3PN371	*0-120/140	3.75	.53	$6^{1}/_{2} \times 6^{1}/_{8} \times 6^{1}/_{2}$	7.0	24.00
2PF501	0-120/140	5.0	.70	$6^{1}/_{2} \times 6^{1}/_{8} \times 6^{1}/_{2}$	9.0	24.00
3PN501	0-120/140	5.0	.70	$6^{1}/_{2} \times 6^{1}/_{8} \times 6^{1}/_{2}$	9.0	26.00
3PN601	0-140	6.0	.84	$4^{7}/_{8} \times 4^{3}/_{8} \times 6^{1}/_{2}$	11.0	33.00
2PF1010	0-120/140	10.0	1.4	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	29.00
3PN1010	0-120/140	10.0	1.4	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	33.00
2PF1210	**0-120	12.5	1.4	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	34.00
3PN1210	**0-120	12.5	1.4	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	36.00
3PN2210	0-140	22.0	2.4	$10^{3}/_{4} \times 7^{5}/_{8} \times 4^{1}/_{8}$	23.0	79.00

*60 cycle operation only on overvoltage. **60 cycle operation only.

240 VOLT SINGLE PHASE PANEL MOUNTING

Cased and uncased units designed for mounting on panels 1/4" thick to 5/8" thick. Most panel mounting units can also be benched mounted.

Mfr's Type No.	Volts	Output Amps	KVA	Size	Weight (Lbs.)	Price
1020	0-240/280	3.5	.98	$5^{5}/_{16} \times 5 \times 4^{3}/_{16}$	12.0	24.00
1020CT	0-240/280	3.5	.98	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	32.00
1220	0-240	5.0	1.2	$5^{5}/_{16} \times 5 \times 4^{3}/_{16}$	12.0	26.00
1220CT	0-240	5.0	1.2	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	34.00
1520	0-240/280	9.5	2.7	$6^{1}/_{8} \times 6^{5}/_{8} \times 4^{13}/_{16}$	20.0	39.00
2520	0-240/280	10.0	2.8	$8^{3}/_{8} \times 7^{5}/_{8} \times 4^{1}/_{8}$	23.0	57.00
2520CT	0-240/280	10.0	2.8	$9^{5}/_{8} \times 7^{5}/_{8} \times 4^{1}/_{8}$	23.0	66.00
5020	0-240/280	28.0	7.8	$12^{1}/_{2} \times 12^{1}/_{2} \times 6^{1}/_{2}$	60.0	140.00
5020CT	0-240/280	28.0	7.8	$15^{5}/_{8} \times 14 \times 6^{1}/_{2}$	60.0	155.00

120 VOLT VARIABLE ISOLATION TRANSFORMERS

All models housed in rugged cases include pilot light, switch, fuse, line cord, plug and matching receptacle.
2 PF models are equipped with 2-wire cords, plugs and receptacles.
3 PN models are equipped with 3-wire grounded cords, plugs, and receptacles.

Mfr's Type No.	Volts	Output Amps	KVA	Size	Weight (Lbs.)	Price
2PF1020	0-280	3.5	.98	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	33.00
3PN1020	0-280	3.5	.98	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	37.00
2PF1220	**0-240	5.0	1.2	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	38.00
3PN1220	**0-240	5.0	1.2	$6^{7}/_{8} \times 5 \times 4^{7}/_{16}$	12.0	40.00
3PN2520	0-240	10.0	2.8	$9^{5}/_{8} \times 7^{5}/_{8} \times 4^{1}/_{8}$	23.0	79.00

**60 cycle operation only.

240 VOLT SINGLE PHASE MODELS WITH CORD & RECEPTACLE

STACO isolated variable autotransformers provide a means for smooth control of an electrically isolated AC voltage output. Uncased models offer isolated, non-isolated voltage doubler, and series connections with proper external hook-up. Cased models feature circuit breaker, switch pilot light, output voltmeter 3-wire grounded cord, plug, and matching receptacles. Cased models available in isolated connection only. Ratings shown are for isolated connections.

Mfr's Type No.	Volts	Output Amps	KVA	Size	Weight (Lbs.)	Price
J201	0-140	2.0	.28	$4^{1}/_{2} \times 4^{1}/_{2} \times 4^{7}/_{16}$	17.0	34.00
J401	0-140	4.0	.56	$6^{1}/_{8} \times 6^{5}/_{8} \times 4^{7}/_{8}$	13.0	46.00
J901	0-140	9.0	1.26	$8^{9}/_{32} \times 7^{3}/_{4} \times 5^{1}/_{8}$	25.0	65.00
EJ201V	0-140	2.0	.28	$7^{3}/_{8} \times 15^{7}/_{16} \times 5^{7}/_{8}$	13.0	79.00
EJ401V	0-140	4.0	.56	$9^{1}/_{2} \times 12^{15}/_{16} \times 6^{3}/_{8}$	26.0	89.00
EJ901V	0-140	9.0	1.26	$11^{1}/_{4} \times 14^{9}/_{16} \times 6^{5}/_{8}$	36.0	105.00

EJ201V, EJ401V, EJ901V have a 0-140 VAC and 0-120 VDC at full rated current available at isolated banana receptacles.

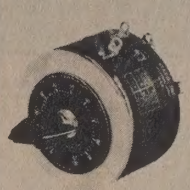
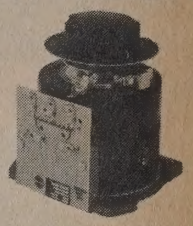
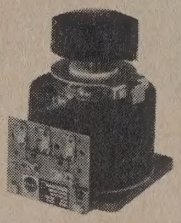
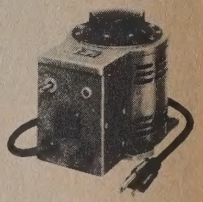
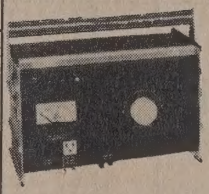
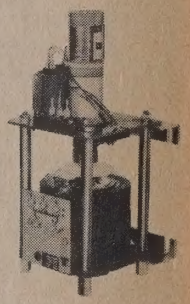
DELUXE VARIABLE AUTOTRANSFORMERS

STACO offers a selected group of variable autotransformers with new style, broad applications, and a unique combination of practical features. Suitable for use in any industrial application, classroom or laboratory. All units provide continuous voltage control over a wide range, and all are protected against short circuit. Convenient controls provide error-free operation and distortionless adjustment of AC voltage.

Mfr's Type No.	Input Volts	Output Volts	Output Amps	KVA	Size	Weight (Lbs.)	Price
E171	120	0-132	1.75	.23	$5^{7}/_{8} \times 9^{9}/_{16} \times 3^{5}/_{8}$	8.0	25.50
E371	120	0-140	3.75	.52	$7^{3}/_{8} \times 11^{3}/_{16} \times 4^{7}/_{8}$	11.0	27.00
E501	120	0-140	5.0	.7	$7^{3}/_{8} \times 11^{3}/_{16} \times 4^{7}/_{8}$	12.0	32.00
E501V	120	0-140	5.0	.7	$7^{3}/_{8} \times 15^{7}/_{16} \times 5^{7}/_{8}$	13.0	58.00
E501VA	120	0-140	5.0	.7	$11^{1}/_{4} \times 12^{9}/_{16} \times 5^{7}/_{8}$	17.0	95.00
E501VAW	120	0-140	5.0	.7	$11^{1}/_{4} \times 14^{9}/_{16} \times 5^{7}/_{8}$	18.0	156.00
E1010	120	0-140	10.0	1.4	$7^{3}/_{8} \times 11^{15}/_{16} \times 5^{7}/_{8}$	18.0	40.50
E1010V	120	0-140	10.0	1.4	$7^{3}/_{8} \times 15^{7}/_{16} \times 5^{7}/_{8}$	19.0	73.00
E1010VA	120	0-140	10.0	1.4	$11^{1}/_{4} \times 12^{9}/_{16} \times 5^{7}/_{8}$	23.0	114.00
E1010VAW	120	0-140	10.0	1.4	$11^{1}/_{4} \times 14^{9}/_{16} \times 5^{7}/_{8}$	23.0	184.00
E1210	120	0-120	12.0	1.44	$7^{3}/_{8} \times 11^{15}/_{16} \times 5^{7}/_{8}$	18.0	48.00
E1020	240	0-280	3.5	.98	$7^{3}/_{8} \times 11^{15}/_{16} \times 5^{7}/_{8}$	18.0	48.50
E1710	120	0-140	17.0	2.38	$11^{1}/_{4} \times 14^{9}/_{16} \times 5^{7}/_{8}$	31.0	84.00
E1720	240	0-280	10.0	2.8	$11^{1}/_{4} \times 14^{9}/_{16} \times 5^{7}/_{8}$	30.0	86.00

E501V, E501VA, E501VAW, E1010V, E1010VA, E1010VAW have isolated AC and DC outputs of 10% of the output current rating of the unit. Outputs are available at isolated banana receptacles.
V = Voltmeter A = Ammeter W = Wattmeter

STACO®
Variable Autotransformers

STACO Variable Autotransformers are precision built to exacting tolerances from the finest materials available.

Staco's new improved design provides long life with negligible maintenance, high efficiency and regulation, greater power to size ratio. Staco designs permit replacement of competitive equipment or previous Staco models without modification.

Models are available in various configurations from 1.75 to 300 amperes output. Choose from panel mounted units, cord and plug types or deluxe fully enclosed portable models, with or without metering. Staco products represent 25 years experience in providing safe and dependable control of power.

Contact your local representative for full details or write the factory for our new Product Guide.

STACO® INCORPORATED

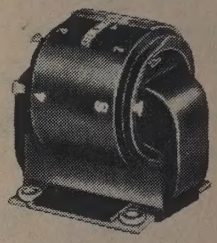
STERLING TRANSFORMER

ENCAPSULATED 400 cps transformers

CLIPPER SERIES

Fig.	Cat. No.	Sec. Volts	Sec. Amp	Insul. Volts (RMS)	Pri. Volts	Mold Size	Net Price
19	4C1	6.3 CT	0.8	1500	115	SM3	13.80
19	4C2	6.3 CT	1.2	1500	115	SM2	13.80
19	4C3	6.3 CT	6.8	1500	110/115/120	2	22.15
20	4C4	6.3 6.3	4.9 2.7	1500	115	3	19.80
19	4C5	6.3 CT	7.2	1500	115	35	23.00
21	4C6	6.3 6.3 6.3	7 7 1.5	1500 1500 1500	120	35	22.40
22	4C7	6.3 CT 6.3 CT	7 7	1500 1500	120	4	26.65
21	4C8	6.3 6.3 6.3	13.7 2.9 0.3	1500 1500 1500	115	4	26.65
19	4C9	6.3 CT	12.3	1500	115	5	24.65
21	4C11	6.3 6.3 6.3	2.4 2.5 2.7	1500	115	3	24.65
19	4C26	6.3 CT	2	1500	115	SM1	17.55
19	4C27	6.3 CT	3	1500	115	1A	18.25
19	4C28	6.3 CT	5	1500	115	2	18.90
19	4C29	5 CT	3	2500	115	SM1	17.55
19	4C30	5 CT	6	2500	115	2	18.90
19	4C31	8.5 CT	12	1500	115	5	24.63
19	4C32	8.5 CT	23	1500	115	7	27.30
19	4C33	8.5 CT	35	1500	115	8	29.75
19	4C34	8.5 CT	45	1500	115	9	35.90
18	4C12	14.1	3	1500	115	3	18.79
19	4C35	21 CT	4.5	1500	115	5	24.63
19	4C13	21 CT	9	1500	115	7	21.30
19	4C36	21 CT	18	1500	115	9	35.90
19	4C10	20 CT	0.6	1500	115	SM1	17.55

FREQUENCY
380-1000 cps.



FOR MINIMUM SIZE & MINIMUM WEIGHT
- CONTOUR MOLDED
- HIPERSIL CORES

MIL-T27C Specifications

MIL Type TF5SX01ZZ

85°C Max. Ambient
130°C Max. Oper. Temp.

HIGH SHOCK EXTREME ENVIRONMENT CONDITIONS
LIGHT WEIGHT FOR AIRBORNE USE
10,000 HOUR PLUS-LIFE SERVO APPLICATIONS
ISOLATION POWER SUPPLIES
AIRBORNE CONTROL CIRCUITS
MISSILE CIRCUITS

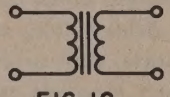


FIG. 18

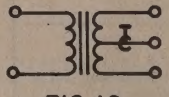


FIG. 19

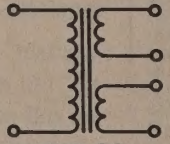


FIG. 20

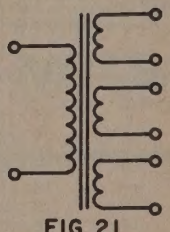


FIG. 21

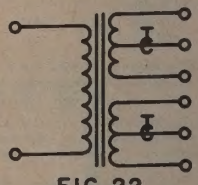


FIG. 22

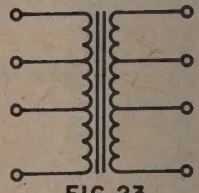


FIG. 23

STERLING TRANSFORMER CORPORATION

Net

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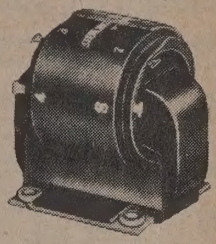
STERLING TRANSFORMER

ENCAPSULATED 400 cps transformers

CLIPPER SERIES

Fig.	Cat. No.	Sec. Volts	Sec. Amp.	Insul. Volts (RMS)	Pri. Volts	Mold Size	Net Price
19	4C37	21 CT	24	1500	115	10	43.10
19	4C38	24 CT	4	1500	115	5	24.63
19	4C39	24 CT	8	1500	115	7	27.30
19	4C40	24 CT	16	1500	115	9	35.90
19	4C41	24 CT	21	1500	115	10	43.10
18	4C14	26	0.5	1500	115	SM1	17.12
19	4C15	26 CT	1.5	1500	115	3	18.79
19	4C23	26 CT	3	1500	115	4	21.30
19	4C24	26 CT	5	1500	115	6	24.85
22	4C16	28 CT 6.3 CT	0.8 7	1500	115	3	26.62
19	4C42	41 CT	2.3	1500	115	5	24.63
19	4C43	41 CT	4.5	1500	115	7	27.30
19	4C44	41 CT	9	1500	115	9	35.90
19	4C45	41 CT	12	1500	115	10	43.10
19	4C46	48 CT	2	1500	115	5	24.63
19	4C47	48 CT	4	1500	115	7	27.30
19	4C48	48 CT	8	1500	115	9	35.90
19	4C49	48 CT	10	1500	115	10	43.10
19	4C25	52 CT	2	1500	115	5	24.63
19	4C17	52 CT	0.2	1500	115	SM1	18.99
19	4C18	90 CT	4.5	1500	115	9	35.90
18	4C19	115	.05	1500	115	SM2	14.10
18	4C21	115	2.8	1500	115	8	29.23
23	4C20	105/115/125	0.4	1500	105/115/125	2	20.30
23	4C50	105/115/125	1	1500	105/115/125	6	25.75
23	4C51	105/115/125	2.4	1500	105/115/125	8	30.20
23	4C52	105/115/125	3.2	1500	105/115/125	9	36.40
23	4C53	105/115/125	4	1500	105/115/125	10	43.70
18	4C22	334	.025	1500	115	SM1	16.12

FREQUENCY
380-1000 cps.



FOR MINIMUM SIZE & MINIMUM WEIGHT
- CONTOUR MOLDED
- HIPERSIL CORES

MIL-T27C
Specifications

MIL Type
TF5SX01ZZ
85°C Max. Ambient
130°C Max.
Oper. Temp.

HIGH SHOCK EXTREME ENVIRONMENT CONDITIONS
LIGHT WEIGHT FOR AIRBORNE USE
10,000 HOUR PLUS-LIFE
SERVO APPLICATIONS
ISOLATION
POWER SUPPLIES
AIRBORNE CONTROL CIRCUITS
MISSILE CIRCUITS

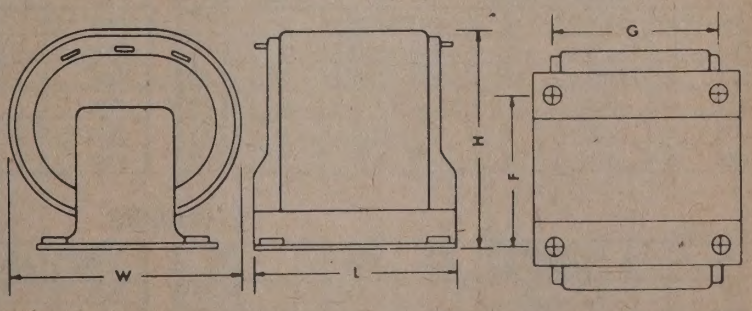
MOLD NO.	OVERALL DIMENSIONS L	W	H	MTG. DIMENSIONS F	G	APP. WT. (LBS.)	MTG. METH.
SM3	1	1-1/4	1-3/16	1	Note 1	0.06	Note 1
SM2	1-1/2	1-1/4	1-11/16	1	Note 1	0.10	Note 1
SM1	1-1/2	1-1/2	1-11/16	1-1/8	Note 1	0.16	Note 1
1	1-13/16	1-7/8	1-13/16	1-1/4	1-7/16	0.25	Note 2
1A	1-11/16	1-17/32	1-13/16	1-5/32	1-1/8	0.25	Note 2
2	2	1-15/16	2-1/8	1-9/32	1-1/4	0.40	Note 2
3	2-5/16	1-13/16	2-1/8	1-9/32	1-7/16	0.45	Note 2
35	2-1/16	2-3/8	2-3/16	1-17/32	1-11/16	0.70	Note 2
4	2-5/16	2-3/8	2-9/16	1-17/32	1-11/16	0.90	Note 2
5	2-3/4	2-3/8	2-7/8	1-17/32	2-3/16	1.20	Note 2
6	2-3/4	2-5/8	3-1/8	1-17/32	2-3/16	1.50	Note 2
7	3	2-7/8	3-3/8	1-25/32	2-1/2	2.00	Note 2
8	3-3/8	2-7/8	3-3/8	1-25/32	2-1/2	2.50	Note 2
83	3-3/4	3-1/4	3-3/8	2-1/4	3	3.25	Note 3
86	3-3/4	3-3/4	3-3/8	2-3/4	3-1/8	4.25	Note 3
9	4-1/16	3-3/8	3-7/8	2-3/16	3-1/2	5.00	Note 3
10	4-1/2	3-15/16	3-15/16	2-3/4	3-1/8	6.00	Note 3

Note 1—SM series are two hole mounting with holes on center line. #4-40 Pem nuts are fastened to the bracket.

Note 2—#6-32 Pem nuts on bracket are standard.

Note 3—#8-32 Pem nuts on bracket are standard.

- All primaries 380-1000 cps
- Dielectric test voltages:
  PRIMARIES 1500 Volts RMS
  SECONDARIES 1500 Volts RMS
- Epoxy resin used as encapsulant
- Prices subject to change without notice



STERLING TRANSFORMER CORPORATION

transistor transformers

STERLING TRANSFORMER

UNIVERSAL DC POWER MODULE TRANSFORMERS

High reliability transformers having a tapped primary and single or dual secondary windings which may be connected F.W. bridge or F.W. center tap so as to obtain a wide range of DC voltages and current ratings.

INPUT PRIMARY 115 volts 50-500 cps

TYPE	FIG.		F.W. BRIDGE								F.W. CT			MIL STD'D* HERM SEAL TF 45x02		INDUST. OPEN FRAME	
		AC VOLT	40 5	32.25	28.5	24	20.25	16 5	12	8.25	40.5	24	16.5	Style	Net Pr.	Style	Net Pr.
		DC VOLT	53.0	41.0	34	25	24	18	12	6	24	12	6.6				
7K1	1	DC AMP	.025	.035	.040	.042	.055	.042	.070	.085	.042	.055	.068	H	12.90	F	7.90
		INPUT CAP	(.1)	(.1)	(.1)	(.1)	(.2)	(.2)	(.2)	(.2)	(.2)	(.2)	(.2)				
7K2	1	DC AMP	.085	.12	.13	.14	.18	.14	.23	.23	.14	.17	.21	H	14.20	L	9.20
		INPUT CAP	(.1)	(.1)	(.1)	(.1)	(.2)	(.2)	(.2)	(.2)	(.2)	(.2)	(.2)				
7K3	1	DC AMP	.48	.60	.60	.64	1.0	.8	1.2	1.52	.8	.883	.92	H	15.85	F	8.15
		INPUT CAP	(.5)	(.5)	(.5)	(.5)	(1.0)	(1.0)	(2.0)	(2.0)	(1.0)	(1.0)	(2.0)				
7K4	1	DC AMP	1.2	1.5	1.5	1.6	2.5	2.0	3.0	3.8	2.0	2.2	2.8	H	21.80	L	13.40
		INPUT CAP	(.5)	(.5)	(.5)	(.5)	(1.0)	(1.0)	(2.0)	(2.0)	(1.0)	(1.0)	(2.0)				
7K5	1	DC AMP	3.0	3.5	3.8	4.0	6.0	4.5	7.5	9.0	4.5	5.5	6.7	H	31.70	L	22.65
		INPUT CAP	(1.0)	(1.0)	(1.0)	(1.0)	(2.0)	(2.0)	(4)	(4)	(2.0)	(2.0)	(2.0)				
7K6	1	DC AMP	7.5	8.5	9.5	10	15	11	19	23	11	13.5	17	H	52.80	L	39.80
		INPUT CAP	(4.0)	(4.0)	(4.0)	(4.0)	(4.0)	(6.0)	(12)	(12)	(6)	(6)	(12)				
TYPE	FIG.	AC VOLTS	81	64.5	57.0	48	40.5	33	24	16.5	81	48	33				
		DC VOLT	106	82	68	50	48	36	24	12	48	24	13				
7K7	2	DC AMP	0.6	0.75	0.75	0.8	1.25	1.0	1.5	1.9	1.0	1.1	1.4	H	22.44	L	14.05
		INPUT CAP	(.125)	(.125)	(.125)	(.125)	(.25)	(.25)	(.5)	(0.5)	(.25)	(.25)	(.5)				

TYPE	FIG.	PRI TAP	F.W. BRIDGE SEC. AC Volt	SEC. AC Amp	CHOKE INPUT DC Volt	CHOKE INPUT DC Amp	CAP INPUT DC Volt	CAP INPUT DC Amp	CAP INPUT Cap	F.W. CT CHOKE INPUT DC Volt	CHOKE INPUT DC Amp	CAP INPUT DC Volt	CAP INPUT DC Amp	CAP INPUT Cap	MIL STD * HERM SEAL Style	MIL STD * HERM SEAL Net Pr.	INDUST. OPEN FRAME Style	INDUST. OPEN FRAME Net Pr.
7K8	3	—	20CT	0.3	16.5	0.3	26	0.2	(.2)	8	0.43	12	0.3	(.5)	H	11.25	F	5.70
7K9	3	—	20CT	0.6	16.5	0.6	26	0.4	(.4)	9	0.85	13	0.6	(1.0)	H	14.20	F	8.65

			F.W. BRIDGE SEC. in PARALLEL CONN.							SEC. in SERIES CONN.								
7K10	4	L	17	1.5	14	3.0	18.5	2.0	(1.0)	28	1.5	45	1	(.5)	H	20.50	L	13.40
		H	21.5	1.5	17.5	3.0	25	2.0	(1.0)	35	1.5	36	1	(.5)				
7K11	4	L	17	4	14	8.0	18.5	5.0	(2.0)	28	4.0	45	2.5	(1.0)	H	33.00	L	23.60
		H	21.5	4	17.5	8.0	25	5.0	(2.0)	35	4.0	36	2.5	(1.0)				
7K12	4	L	17	9	14	18.0	18.5	12.0	(6.0)	28	9.0	45	6	(4.0)	H	50.50	L	37.10
		H	21.5	9	17.5	18.0	25	12.0	(6.0)	35	9.0	36	6	(4.0)				
7K13	4	L	34	4.5	28	9.0	43	6.0	(4.0)	56	4.5	85	3 0	(1.0)	H	50.50	L	37.10
		H	43	4.5	35	9.0	56	6.0	(4.0)	70	4.5	110	3.0	(1.0)				
7K14	4	L H	10	20	8.2	20	10	13	(12)	—	—	—	—	—	H	29.70	L	22.95

*FOR MILITARY USE REDUCE DC AMP 20%. Note Input Cap = (K) 1000 MFD. in Rectifier Circuit.

HIGH CURRENT TRANSFORMERS AND CHOKES

115V. 50-500 CPS

TRANSFORMERS

TYPE	FIG.	SEC. IN PARALLEL AC Volt	SEC. IN PARALLEL AC Amp	SEC. IN SERIES AC Volt	SEC. IN SERIES AC Amp	Net Price
7K15	5	3.2/6.4	16	3.2/6.4/9.6/12.8	8	7.55
7K16	5	3.2/6.4	24	3.2/6.4/9.6/12.8	12	8.95
7K17	5	3.2/6.4	50	3.2/6.4/9.6/12.8	25	18.90
7K18	5	3.2/6.4	100	3.2/6.4/9.6/12.8	50	26.20
7K19	5	6/12	16	6/12/18/24	8	12.55
7K20	5	6/12	24	6/12/18/24	12	15.70

TYPE	FIG.	SEC. IN PARALLEL AC Volt	SEC. IN PARALLEL AC Amp	SEC. IN SERIES AC Volt	SEC. IN SERIES AC Amp	Net Price
7K21	5	6/12	50	6/12/18/24	25	25.10
7K22	5	6/12	100	6/12/18/24	50	37.65
7K23	5	9/18	16	9/18/27/36	8	16.55
7K24	5	9/18	24	9/18/27/36	12	19.95
7K25	5	9/18	50	9/18/27/36	25	31.10
7K26	5	9/18	100	9/18/27/36	50	45.00

CHOKES

TYPE	FIG.	INDUCTANCE (Millihenries)	D.C. Amps	DCR (Ω)	Net Price
7K27	9	30	8	0.3	11.35
7K28	9	15	12	0.1	14.65

TYPE	FIG.	INDUCTANCE (Millihenries)	D.C. Amps	DCR (Ω)	Net Price
7K29	9	5	25	0.025	23.00
7K30	9	1.4	50	0.01	31.35

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transistor transformers

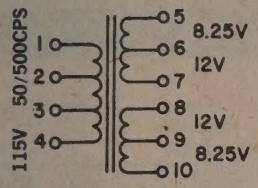


FIG. 1

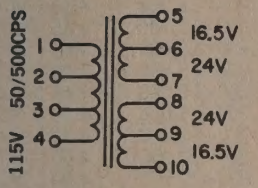


FIG. 2

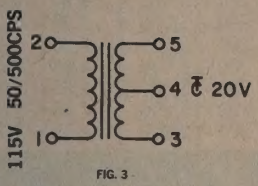


FIG. 3

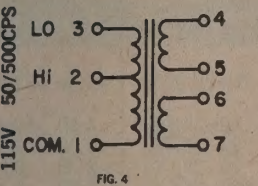


FIG. 4

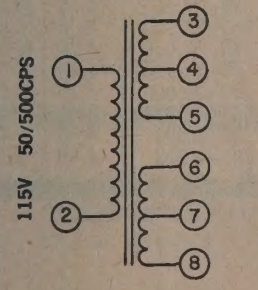


FIG. 5

TYPE	STYLE	FIG.	L	W	H	M1	M2	MTG. HOLES	STUDS
7K1	H	8	1 5/16	1 5/16	1 3/4	1 1/4	—	—	(2) 6-32
	F	6	2 1/8	1 1/4	1 1/4	1 3/4	—	(2) 3/16	—
7K2	H	8	1 5/8	1 5/8	2 3/8	1 3/16	1 3/16	—	(4) 6-32
	L	7	1 3/8	1 5/8	2 1/8	1 1/16	1 3/8	(4) 5/32	—
7K3	H	8	2 5/16	2 1/16	3 1/8	1 11/16	1 7/16	—	(4) 6-32
	F	6	3 3/4	2	2 5/16	3 1/8	—	(2) 3/16	—
7K4	H	8	3 1/16	2 5/8	4 1/4	2 19/64	1 55/64	—	(4) 8-32
	L	7	2 7/8	2 5/8	3 7/16	2 1/4	2 1/8	(4) 13/64	—
7K5	H	8	3 15/16	3 3/8	5 1/4	3	2 7/16	—	(4) 10-32
	L	7	3 7/8	3 1/2	4 5/8	3	2 1/2	(4) 13/64	—
7K6	H	8	5 1/2	4 1/2	6 3/4	3 3/4	3	—	(4) 1/4-20
	L	7	4 7/16	4 1/2	5 3/8	3 1/2	3 3/8	(4) 9/32	—
7K7	H	8	3 1/16	2 5/8	4 1/4	2 19/64	1 55/64	—	(4) 8-32
	L	7	2 7/8	2 5/8	3 7/16	2 1/4	2 1/8	(4) 13/64	—
7K8	H	8	1 15/16	1 13/16	2 7/16	1 3/8	1 1/4	—	(4) 6-32
	F	6	2 7/8	1 1/2	1 11/16	2 3/8	—	(2) 3/16	—
7K9	H	8	1 15/16	1 13/16	2 3/4	1 3/8	1 1/4	—	(4) 6-32
	F	6	3 5/16	2 1/4	2	2 13/16	—	(2) 3/16	—
7K10	H	8	3 1/16	2 5/8	4 1/4	2 19/64	1 55/64	—	(4) 8-32
	L	7	2 7/8	2 1/2	3 7/16	2 1/4	2	(4) 13/64	—
7K11	H	8	4 5/16	3 11/16	5 5/16	3 5/16	2 11/16	—	(4) 10-32
	L	7	3 7/8	3 5/8	4 5/8	3 5/16	2 3/4	(4) 13/64	—
7K12	H	8	5 7/8	4 3/4	6 11/16	4 1/8	3 1/2	—	(4) 1/4-20
	L	7	4 1/2	5 1/4	5 3/8	3 1/2	4 1/8	(4) 9/32	—
7K13	H	8	5 7/8	4 3/4	6 11/16	4 1/8	3 1/2	—	(4) 1/4-20
	L	7	4 1/2	5 1/4	5 3/8	3 1/2	4 1/8	(4) 9/32	—
7K14	H	8	3 15/16	3 3/8	5 1/4	3	2 7/16	—	(4) 10-32
	L	7	3 7/8	3 1/2	4 5/8	3	2 1/2	(4) 13/64	—
7K15	L	9	3 13/16	3	3 3/16	3 1/8	2 1/4	(4) 13/64	—
7K16	L	9	4 3/16	3 1/4	3 1/2	3 7/16	2 3/8	(4) 13/64	—
7K17	L	9	5 3/8	4 1/4	4 5/8	4 3/8	2 7/8	(4) 9/32	—
7K18	L	9	5 3/8	5 3/4	4 5/8	4 3/8	4 1/8	(4) 9/32	—
7K19	L	9	4 3/16	3 7/8	3 1/2	3 7/16	3	(4) 13/64	—
7K20	L	9	4 9/16	4 1/2	3 7/8	3 3/4	3 3/8	(4) 13/64	—
7K21	L	9	5 3/8	5 3/4	4 5/8	4 3/8	4 1/8	(4) 9/32	—
7K22	L	9	6 1/2	6 3/8	5 5/8	5 5/16	4 3/8	(4) 9/32	—
7K23	L	9	4 9/16	4 3/8	3 7/8	3 3/4	3 3/8	(4) 13/64	—
7K24	L	9	5 3/8	4 7/8	4 5/8	4 3/8	3 3/8	(4) 9/32	—
K725	L	9	6 1/2	6	5 5/8	5 5/16	3 3/4	(4) 9/32	—
7K26	L	9	6 1/2	7 3/4	5 5/8	5 5/16	5 1/8	(4) 9/32	—
7K27	L	9	4 3/16	3 5/8	3 1/2	3 7/16	3	(4) 13/64	—
7K28	L	9	5 3/8	4 1/4	4 5/8	4 3/8	3 1/8	(4) 9/32	—
7K29	L	9	5 3/8	4 3/4	4 5/8	4 3/8	3 7/8	(4) 9/32	—
7K30	L	9	6 1/2	5 3/4	5 5/8	5 5/16	4 1/8	(4) 9/32	—

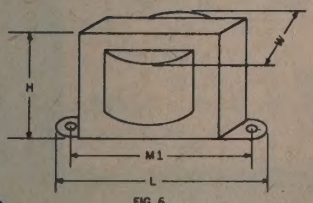


FIG. 6

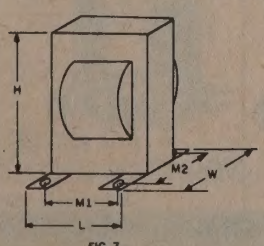


FIG. 7

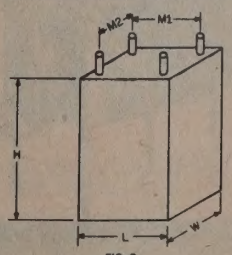


FIG. 8

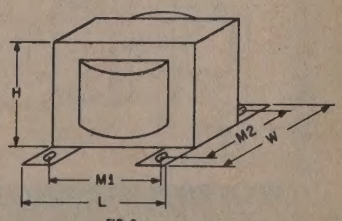


FIG. 9

STERLING TRANSFORMER CORP.

transistor transformers

STERLING TRANSFORMER

MINISPEC TRANSISTOR TRANSFORMERS — 300 SERIES

Part No.	Application	Primary Impedance	Secondary Impedance	Pri. D.C. Unbal. Ma.	Oper. Lev. DBM	Freq. Response ±2 db.	Net Price 1–9 pcs. F	H
300	Line to Base	600	600	10	23	200–15,000	$4.00	$8.60
301	Coll. to P.P. Base	100	10 C.T./40 C.T.	100	27	200–20,000	4.65	9.60
302	Coll. to Base or line	50,000	600	3	20	300–15,000	4.30	9.25
303	Collector to speaker	50,000	6	3	20	300–15,000	4.30	9.25
304	Coll. to P.P. Base	100,000	1,200 C.T.	1.4	17	200–15,000	4.50	9.45
305	Coll. to P.P. Base	25,000	1,200 C.T.	3	22	200–15,000	4.50	9.45
306	P.P. Coll. to P.P. Base	50,000 C.T.	1,200 C.T.	3	20	300–15,000	4.65	9.60
307	Line to P.P. Base	600 C.T.	1,200 C.T.	4	23	200–15,000	4.65	9.60
308	Collector to Base	25,000	600	3	22	200–15,000	4.30	9.25
309	P.P. Coll. to P.P. Base	4,000 C.T.	600 C.T.	3	32	200–15,000	4.65	9.60
310	Output Coll. to speaker	2,000	3.4	10	32	200–15,000	4.30	9.25
311	P.P. Coll. to speaker	4,000 C.T.	3.4	3	32	200–15,000	4.50	9.45
312	Coll. to Speaker	400	10	50	25	200–20,000	4.00	8.60
313	P.P. Servo Output	500 C.T.	210	30	27	300–20,000	4.30	9.25
314	P.P. Coll. to P.P. Base	25,000 C.T.	1,200 C.T.	6	22	200–15,000	4.65	9.60
315	P.P. Coll. to P.P. Base	50,000 C.T.	1200/300 Split	3	20	300–15,000	4.95	9.90
316	P.P. Coll. to P.P. Base	4,000 C.T.	600/150 Split	3	32	200–15,000	4.80	9.75
317	Line to P.P. Base	600/150 Split	1,200 C.T.	4	23	200–15,000	4.80	9.75
318	P.P. Coll. to Servo	250 C.T.	1,000	10	30	200–15,000	4.30	9.25
319	Coll. to P.P. Base	2,500	600 C.T.	10	32	200–15,000	4.30	9.25
320	P.P. Coll. to P.P. Base	7,500 C.T.	600 C.T.	8	32	200–15,000	4.65	9.60
321	Line to P.P. Base	600 C.T.	600 C.T.	20	23	200–15,000	4.50	9.45
322	P.P. Coll. to Servo	1,600 C.T.	450	15	30	200–15,000	4.30	9.25
323	P.P. Coll. to Servo	250 C.T.	500	10	30	200–15,000	4.30	9.25

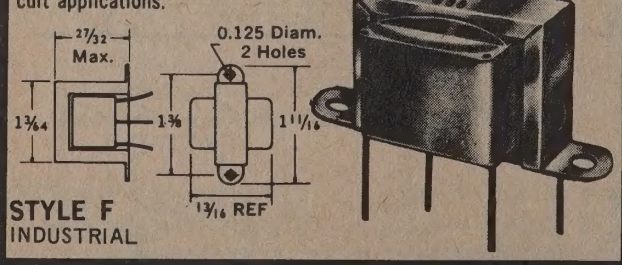
MINISPEC AUDIO TRANSFORMERS — 300 SERIES

Part No.	Application	Primary Impedance	Secondary Impedance	Pri. D.C. Unbal. Ma.	Oper. Lev. DBM	Freq. Response ±2 db.	Net Price 1–9 pcs. F	H
375	Mike or line to 1 grid	50/250/600 C.T.	50,000	0	5	20–20,000	$4.50	$9.90
376	Mike or line to 2 grids	50/250/600 C.T.	50,000 C.T.	0	5	20–20,000	4.65	10.40
377	Dynamic mike to 1 grid	7.5/30	50,000	0	5	20–20,000	4.30	9.90
378	Single plate to 1 grid	15,000	60,000	0	6	20–15,000	3.80	8.45
379	Single plate to 1 grid	15,000	60,000	4	14	200–20,000	3.80	8.45
380	Single plate to 2 grids	15,000	95,000 C.T.	0	5	20–15,000	4.00	9.45
381	Single plate to 2 grids	15,000	95,000 C.T.	4	11	200–20,000	4.15	9.75
382	Single plate to line	15,000	50/250/600 C.T.	0	8	20–20,000	4.15	10.60
383	Single plate to line	15,000	50/250/600 C.T.	4	21	150–20,000	4.15	10.60
384	Push pull plates to line	30,000 C.T.	50/250/600 C.T.	0	8	30–50,000	4.30	10.60
385	Crystal mike to line	50,000	50/250/600 C.T.	0	5	20–20,000	4.15	10.25
386	Mixing and matching	50/250 C.T.	50/250/600 C.T.	0	8	20–20,000	4.15	10.25
387	Reactor	300 hy. 0 d.c.	50 hy. @ 3 ma.			DCR 6,000	3.65	8.10
388	50:1 mike to grid	200	½ Megohm	0	9	80–3,000	4.30	9.90
389	10:1 plate to grid	10,000	1 Megohm	0	11	100–2,500	4.00	9.25

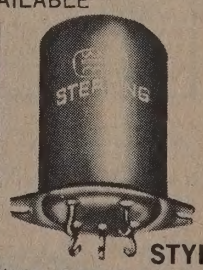
MINISPEC 300 SERIES

Highest efficiency miniature transformer for transistor and audio circuit applications.

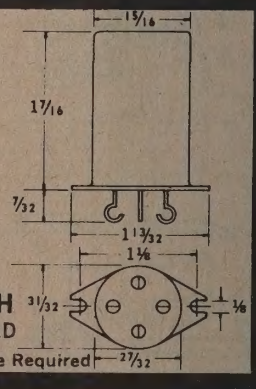
MILITARY STYLE ENCAPSULATED VERSIONS ARE AVAILABLE



STYLE F
INDUSTRIAL



STYLE H
HERMETICALLY SEALED



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STERLING TRANSFORMER

transistor transformers

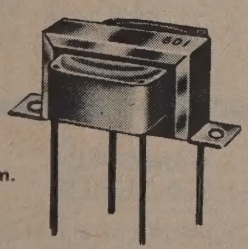
MICROSPEC TRANSISTOR TRANSFORMERS — 600 SERIES

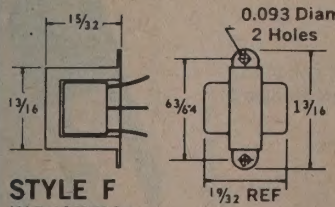
Part No.	Application	Primary Impedance	Secondary Impedance	Pri. D.C. Unbal. Ma.	Oper. Lev. DBM	Freq. Response ±2 db.	Net Price 1–9 pcs. F	H
601	Line to Base	600	600	8	22	200–15,000	$4.30	$8.10
602	Coll. to Base or line	50,000	600	0.7	20	200–15,000	4.50	8.25
603	P.P. coll. to P.P. Base	50,000 C.T.	600 C.T.	1.4	20	200–15,000	5.30	9.45
604	Collector to speaker	50,000	6	1	20	200–15,000	4.80	8.75
605	Coll. to P.P. Base	25,000	1,200 C.T.	1	20	200–15,000	4.95	9.25
606	P.P. coll. to P.P. Base	50,000 C.T.	1,200 C.T.	1.4	20	200–15,000	5.15	9.45
607	Line to P.P. Base	600 C.T.	1,200 C.T.	16	22	200–15,000	4.65	8.45
608	Collector to Base	25,000	600	1	20	200–15,000	3.80	7.95
609	P.P. coll. to P.P. Base or line	4,000 C.T.	600 C.T.	5	28	200–15,000	4.80	8.60
610	Coll. to Spkr.	2,000	3.4	5	28	200–15,000	4.30	8.10
611	Output P.P. coll. to spkr.	4,000 C.T.	3.4	5	28	200–15,000	4.50	8.25
612	Coll. to P.P. Base	10,000	1,500 C.T.	1	20	200–15,000	4.95	9.25
613	P.P. Coll. to P.P. Base	10,000 C.T.	200 C.T.	6	20	200–15,000	4.95	8.95
614	P.P. Coll. to P.P. Base	25,000 C.T.	1,200 C.T.	2	20	200–15,000	5.15	9.45
615	Coll. to P.P. Base	2,500	2,500 C.T.	2	23	200–15,000	4.50	8.25
616	P.P. Coll. to P.P. Base	4,000 C.T.	600/150 split	5	28	200–15,000	5.15	9.45
617	P.P. Coll. to P.P. Base	7,500 C.T.	600 C.T.	4	22.	200–15,000	4.80	8.60
618	Line to Base	600 C.T.	600 C.T.	16	22	200–15,000	4.65	8.45
619	P.P. Coll. to P.P. Base	25,000 C.T.	600 C.T.	2	20	200–15,000	4.95	9.25
620	P.P. Coll. to P.P. Base	10,000 C.T.	1,500 C.T.	2	20	200–15,000	5.15	9.45
621	Driver/Isolation	10,000 C.T.	10,000 C.T.	2	20	200–15,000	5.15	9.45
622	P.P. Coll. to P.P. Base	7,500 C.T.	1,200 C.T.	4	22	200–15,000	4.95	9.25
623	P.P. Coll. to P.P. Base	2,000 C.T.	500 C.T.	10	28	200–15,000	4.80	9.10
624	Line to P.P. Base	600 C.T.	1200/300 split	16	22	200–15,000	5.15	9.45

MICROSPEC AUDIO TRANSFORMERS — 600 SERIES

Part No.	Application	Primary Impedance	Secondary Impedance	Pri. D.C. Unbal. Ma.	Oper. Lev. DBM	Freq. Response ±2 db.	Net Price 1–9 pcs. F	H
675	Input	200/50	250,000/62,500	0	4	200–10,000	$4.95	$8.10
676	Interstage 3:1	10,000	90,000	0	4	150–10,000	5.30	8.25
677	Plate to line	10,000	200	3	20	150–10,000	4.65	7.95
678	Output	30,000	50	1	20	150–10,000	4.50	7.80
679	Reactor 50 HY at 1 madc				4700	ohms DCR	4.50	7.60
680	Output	100,000	60	0.5	20	250–10,000	4.65	7.95
681	Output	30,000	1,200	0.5	20	200–10,000	3.65	7.10

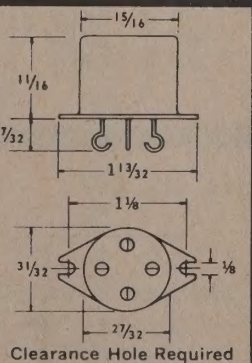
MICROSPEC 600 SERIES
Subminiature transformers for high efficiency circuits.





STYLE F
INDUSTRIAL

MILITARY STYLE ENCAPSULATED VERSIONS ARE AVAILABLE



Clearance Hole Required

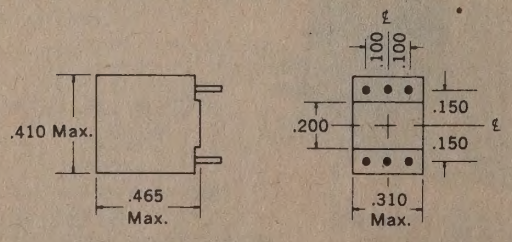
STYLE H
HERMETICALLY SEALED

STERLING TRANSFORMER

transistor transformers

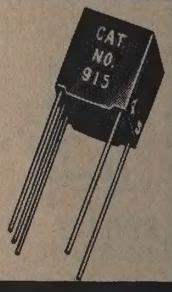
NANOSPEC TRANSISTOR TRANSFORMERS — 900 SERIES
Frequency Response ± 2 db 300 Cycles to 90 KC

Part No.	Application	Color Application Guide	Primary Impedance	Secondary Impedance	Unbal. Pri. DC Ma.	Power Level MW.	DC Resistance		Net Price
							Primary	Secondary	1-9 Pcs.
903	Interstage	Red	50,000 CT	1,000 CT	0	10	3300	75	8.25
904	Interstage	Red	50,000	1000/250 Split	0	10	3300	75	8.95
905	Interstage	Red	25,000 CT	1,000 CT	0.5	40	1700	115	7.80
906	Interstage	Red	25,000	1000/250 Split	0.25	40	1700	115	8.45
907	Interstage	Red	25,000	1,000	0.25	40	1700	115	7.15
908	Isolation	Green	10,000 CT	10,000 CT	1	50	1200	1300	8.45
909	Driver	Orange	10,000 CT	2,000 CT	1	50	1050	300	7.45
910	Driver	Orange	10,000	2000/500 Split	0.5	50	1050	300	8.10
911	Driver	Orange	10,000 CT	1,200 CT	1	50	1050	280	7.45
912	Driver	Orange	10,000	1200/300 Split	0.5	50	1050	280	7.95
913	Driver	Orange	10,000	1,200	0.5	50	1050	280	6.60
914	Driver	Orange	10,000 CT	500 CT	1	50	1050	80	7.45
915	Isolation	Green	2,500	2,500 CT	1	50	250	325	6.95
916	Output	Yellow	1,500 CT	600	3	50	170	135	6.80
917	Output	Yellow	500	50	3	50	60	8	5.95
918	Output	Yellow	120 CT	3.2	10	50	17	.75	6.30
919	Audio Choke	Blue	6 HY.	DCR 1800 OHMS	2				5.95
920	Audio Choke	Blue	.3 HY.	DCR 45 OHMS	4				5.15
921	Audio Choke	Blue	1.25 H	DCR 180 OHMS	2				5.30
922	Audio Choke	Blue	3.5 H	DCR 1040 OHMS	2				5.30
923	Audio Choke	Blue	.9 H	DCR 110 OHMS	2				5.30
924	Audio Choke	Blue	.1 H	DCR 15 OHMS	5				5.30
925	Interstage	Red	10,000 CT	1,500 CT	1	50	1050	300	7.95
926	Isolation	Green	600 CT	600 CT	3	50	72	92	7.95
927	Output	Yellow	1,000	50	3	50	145	8	6.45
928	Output	Yellow	300 CT	600	7	50	41	98	6.60
929	Output	Yellow	500 CT	600	3	50	67	98	6.60
930	Output	Yellow	900 CT	600	4	50	104	96	6.80
931	Output	Yellow	150 CT	12	10	50	18	3.5	6.45
932	Output	Yellow	300 CT	12	7	50	42	3.4	6.45
933	Output	Yellow	600 CT	12	4.5	50	77	3	6.60
934	Output	Yellow	1,000 CT	12	3.5	50	120	3	6.80
935	Output	Yellow	1,500 CT	12	3	50	179	2.9	6.95
936	Output	Yellow	7,500 CT	12	1	50	796	2.9	7.45
937	Output	Yellow	320 CT	3.2	6	50	44	.77	6.45
938	Output	Yellow	600	3.2	3	50	70	.76	6.15
939	Output	Yellow	600 CT	3.2	4.5	50	70	.85	6.60
940	Output	Yellow	800 CT	3.2	4	50	107	.86	6.80
941	Output	Yellow	1,200	3.2	2	50	131	.76	6.15
942	Output	Yellow	1,200 CT	3.2	3	50	131	.87	6.80
943	Output	Yellow	1,600 CT	3.2	2.5	50	186	.8	6.95
944	Output	Yellow	10,000	3.2	1	50	1160	.81	6.80
945	Output	Yellow	8,000 CT	3.2	1	50	790	.76	7.45



NANOSPEC 900 SERIES

Designed for printed circuit transistor use in high component density applications.
Epoxy resin encapsulated.



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STERLING TRANSFORMER

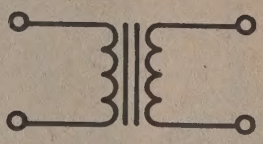
step-up/step-down ISOLATION – AUTO *transformers*

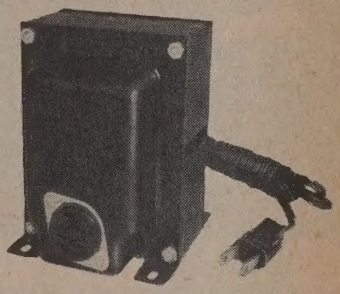
STEP-DOWN ISOLATION TRANSFORMERS

PRIMARY: 240 Volts • 50/60 HZ • Line Cord and Plug*
SECONDARY: 120 Volts • Standard Female Receptacle • Electrostatic Shield • UL Approved Cord and Plug.

Cat No.	VA Watts	Style	DIMENSIONS L	W	H	Mounting Centers M1	M2	Appr. Wt.	Net Price
S2-50	50	A	2 29/32	3 1/16	3 1/2	2 1/4	1 13/16	3	9.20
S2-100	100	A	3 3/32	3 7/8	3 7/8	2 1/2	2 3/16	5	11.90
S2-150	150	A	3 17/32	4 3/8	4 1/4	2 3/4	2 13/16	7	13.50
S2-220	220	A	3 27/32	4 5/8	4 5/8	3	3 1/16	9.5	15.00
S2-330	330	A	4 17/32	5 1/4	5 7/16	3 1/2	3 1/4	14.5	22.00
S2-500	500	A	4 17/32	6 1/4	5 7/16	3 1/2	4 1/4	21	24.00
S2-700	700	A	5 1/2	5 15/16	6 5/16	4 1/4	3 1/2	25	25.50
S2-1000	1000	A	5 1/2	6 15/16	6 5/16	4 1/4	4 1/2	35	45.00
S2-1500	1500	B	9	7 3/4	6 5/16	8 1/4	4 3/8	42	57.00
S2-2200	2200	B	9	9 3/8	6 5/16	8 1/4	6	65	70.00
S2-3300	3300	B	9	11 5/8	6 5/16	8 1/4	8 1/4	95	110.00

**Style A Only; Style B — Knockouts for Conduit Connectors.*





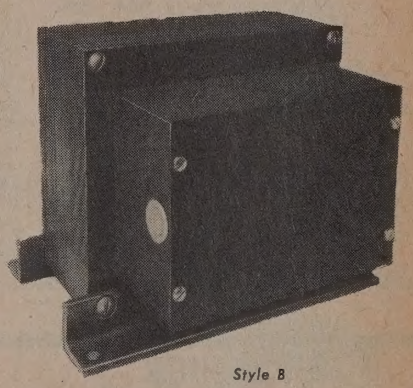
Style A

ISOLATION TRANSFORMERS

PRIMARY: 120 Volts • 50/60 HZ • Line Cord and Plug*
SECONDARY: 120 Volts • Standard Female Receptacle • Electrostatic Shield • UL Approved Cord and Plug.

Cat No.	VA Watts	Style	DIMENSIONS L	W	H	Mounting Centers M1	M2	Appr. Wt.	Net Price
S1-50	50	A	2 29/32	3 1/16	3 1/2	2 1/4	1 13/16	3	9.20
S1-100	100	A	3 3/32	3 7/8	3 7/8	2 1/2	2 3/16	5	11.90
S1-150	150	A	3 17/32	4 3/8	4 1/4	2 3/4	2 13/16	7	13.50
S1-220	220	A	3 27/32	4 5/8	4 5/8	3	3 1/16	9.5	15.00
S1-330	330	A	4 17/32	5 1/4	5 7/16	3 1/2	3 1/4	14.5	22.00
S1-500	500	A	4 17/32	6 1/4	5 7/16	3 1/2	4 1/4	21	24.00
S1-700	700	A	5 1/2	5 15/16	6 5/16	4 1/4	3 1/2	25	25.50
S1-1000	1000	A	5 1/2	6 15/16	6 5/16	4 1/4	4 1/2	35	45.00
S1-1500	1500	B	9	7 3/4	6 5/16	8 1/4	4 3/8	42	57.00
S1-2200	2200	B	9	9 3/8	6 5/16	8 1/4	6	65	70.00
S1-3300	3300	B	9	11 5/8	6 5/16	8 1/4	8 1/4	95	110.00

**Style A Only; Style B — Knockouts for Conduit Connectors.*



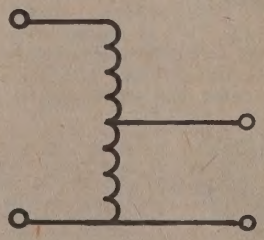
Style B

STEP-DOWN AUTO TRANSFORMERS

PRIMARY: 240 Volts • 50/60 HZ • Line Cord and Plug*
SECONDARY: 120 Volts • Standard Female Receptacle • UL Approved Cord and Plug.

Cat No.	VA Watts	Style	DIMENSIONS L	W	H	Mounting Centers M1	M2	Appr. Wt.	Net Price
SA-100	100	A	2 29/32	3 1/16	3 1/2	2 1/4	1 13/16	3	8.20
SA-150	150	A	2 29/32	3 3/4	3 1/2	2 1/4	2 1/8	4	9.40
SA-200	200	A	3 3/32	3 7/8	3 7/8	2 1/4	2 3/16	5	12.00
SA-300	300	A	3 17/32	4 3/8	4 1/4	2 3/4	2 13/16	7	15.30
SA-450	450	A	3 27/32	4 5/8	4 5/8	3	3 1/8	9 1/2	17.10
SA-650	650	A	4 17/32	5 1/4	5 7/16	3 1/2	3 1/4	14 1/2	20.20
SA-1000	1000	A	4 17/32	6 1/4	5 7/16	3 1/2	4 1/4	21	23.50
SA-1500	1500	A	5 1/2	5 15/16	6 5/16	4 1/4	3 1/2	25	34.00
SA-2000	2000	A	5 1/2	6 15/16	6 5/16	4 1/4	4 1/2	35	39.40
SA-3000	3000	B	9	7 3/4	6 5/16	8 1/4	4 3/8	42	58.00
SA-4500	4500	B	9	9 3/8	6 5/16	8 1/4	6	65	75.00
SA-6500	6500	B	9	11 5/8	6 5/16	8 1/4	8 1/4	95	105.00
SA-8000**	8000	B	10 5/8	9 5/8	8 1/4	9 5/8	6 1/8	90	120.00
SAB-5300†	5300	A	5 3/4	8 5/16	4	3 3/4	6 1/2	17.5	54.00

**Style A Only **60 HZ Only Style B — Knockouts for Conduit Connector*
†Step-up/down Auto Transformer. Connections for 208/230 V or 230/208 V, 23 Amp 50/60 HZ



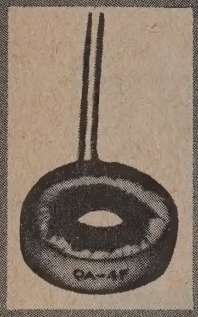
STERLING TRANSFORMER CORP.

STERLING TRANSFORMER

hi-Q toroidal inductors

MANUFACTURED TO MIL-T-27A. ALL HERMETICALLY SEALED UNITS (STYLE H) ARE MIL TYPE TF4RX20YY

- ALL MOLDED UNITS STYLE M ARE MIL TYPE TF5RX20ZZ
- ALSO TOROIDAL INDUCTORS IN OTHER SIZES AND VALUES AVAILABLE ON SPECIAL ORDER.
- MOLYBDENUM PERMALLOY POWDER CORES USED IN ALL UNITS.

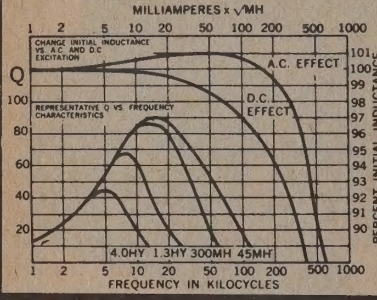


STYLE F
* ALL INDUCTORS SHOWN AVAILABLE IN OPEN STYLE F.

QA SERIES

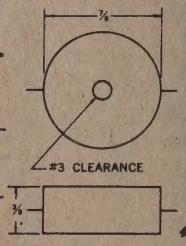
FREQUENCY TO 20KC•ACCURACY ± 2%

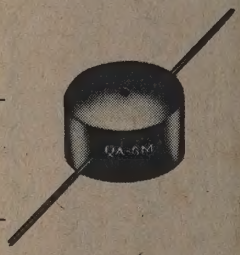
The QA series is designed to optimize small size and high "Q" for miniaturized applications. These units are available on special order with stabilized cores and inductance from 1MH to 4.0H.



AVAILABLE ON SPECIAL ORDER
HERMETICALLY SEALED

Part No.	Inductance	Approx. DCR Ohms	Approx. Distributed Capacity PF	Net Price 1–9 pcs. Style F	Style M
QA-1	5MH	2.5	30	4 80	6.30
QA-2	10	5	33	4.80	6.30
QA-3	15	8	34	4.95	6.45
QA-4	20	11.2	36	5.10	6.60
QA-5	30	17	37	5.15	6.80
QA-6	50	28	40	5.30	6.95
QA-7	100	50	42	5.45	7.10
QA-8	150	80	44	5.65	7.30
QA-9	200	120	45	5.75	7.40
QA-10	300	150	46	5.85	7.65
QA-11	500	290	48	5.95	7.95
QA-12	1.00H	530	51	6.80	8.75
QA-13	1.50	825	53	6.95	9.60





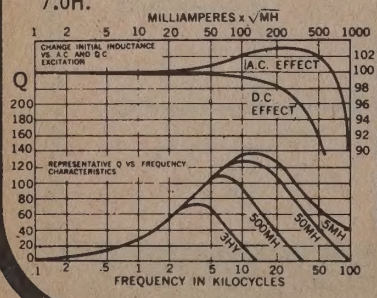
MOLDED STYLE M

Encapsulated in Epoxy Resin. Pigtail leads for printed circuit applications.

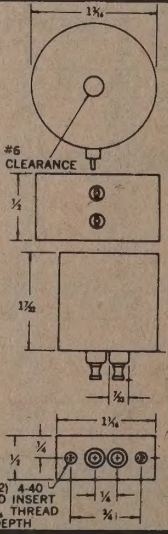
QB SERIES

FREQUENCY TO 20KC•ACCURACY ± 2%

The QB series is designed for airborne applications where stable high "Q" is needed with minimized size and weight. Available on special order with stabilized cores and inductance to 7.0H.



Part No.	Inductance	Approx. DCR Ohms	Approx. Distributed Capacity PF	Net Price 1–9 pcs. Style F	Style H	Style M
QB-1	5MH	1.1	38	4.30	7.45	5.80
QB-2	10	2.1	40	4.30	7.45	5.80
QB-3	15	3.3	42	4.30	7.45	5.95
QB-4	20	3.7	43	4.35	7.55	6.05
QB-5	30	5.8	45	4.40	7.70	6.15
QB-6	50	11	47	4.50	7.95	6.25
QB-7	100	22	49	4.65	8.45	6.30
QB-8	150	34	50	4.80	8.60	6.45
QB-9	200	47	52	5.05	9.00	6.70
QB-10	300	60	53	5.15	9.25	6.80
QB-11	500	95	55	5.30	9.45	6.95
QB-12	1.00H	213	57	5.65	9.90	7.45
QB-13	1.50	335	59	6.45	10.40	8.10



MOLDED STYLE M

Encapsulated in Epoxy Resin. Silver plated turret lugs.

HERMETIC STYLE H

Hermetically sealed in metal case. Teflon terminals assure permanent seal at temperature extremes.

STERLING TRANSFORMER CORP.

Net

© United Technical Publications

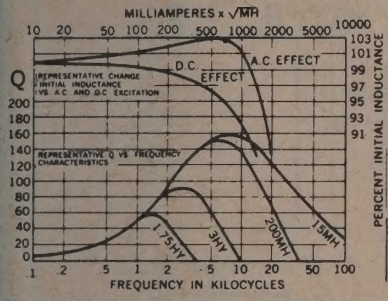
hi-Q toroidal inductors

STERLING TRANSFORMER

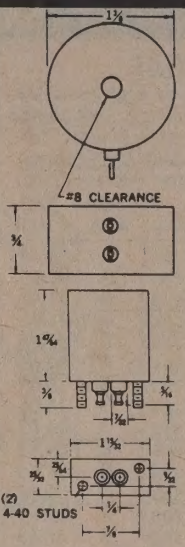
QC SERIES

FREQUENCY TO 10KC
ACCURACY ± 2%

The QC series is designed for high "Q", increased power level & stability. Available on spe-order with stabilized cores and inductance to 20H.



Part No.	Inductance	Approx. DCR Ohms	Approx. Distributed Capacity PF	Net Price 1–9 pcs. Style F	Style H	Style M
QC-1	5MH	0.62	60	4.80	7.80	6.80
QC-2	10	1.1	66	4.95	7.95	6.80
QC-3	15	1.7	68	4.95	8.10	6.80
QC-4	20	1.9	70	5.05	8.25	6.80
QC-5	30	3	72	5.10	8.45	6.80
QC-6	50	6	76	5.15	8.60	6.80
QC-7	100	11	81	5.30	9.25	7.30
QC-8	150	17	83	5.45	9.45	7.30
QC-9	200	24	85	5.50	9.65	7.40
QC-10	300	37	88	5.60	9.80	7.50
QC-11	500	63	91	5.65	10.10	7.60
QC-12	1.00H	110	96	5.80	10.60	7.95
QC-13	1.50	185	98	5.95	10.75	8.10
QC-14	2.00	250	100	6.50	11.20	8.40
QC-15	3.00	380	103	7.05	11.65	8.80
QC-16	5.00	645	106	7.45	12.25	9.25
QC-17	7.50	950	109	8.00	13.00	10.05
QC-18	10.00	1175	112	8.25	12.70	10.60



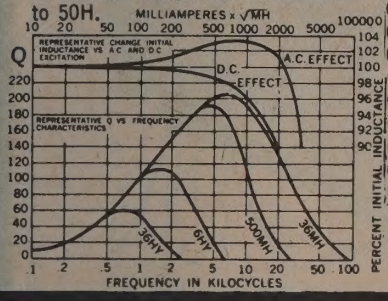
MOLDED STYLE M
Encapsulated in Epoxy Resin. Silver plated turret lugs.

HERMETIC STYLE H
Hermetically sealed in metal case. Teflon terminals assure permanent seal at temperature extremes.

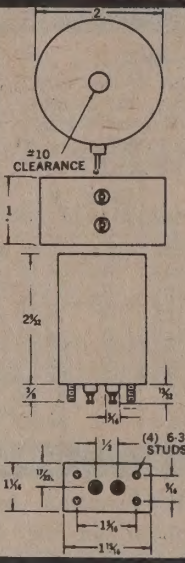
QD SERIES

FREQUENCY TO 10KC•ACCURACY ± 2%

The QD series is designed for very high "Q" in the audio band allowing for application in sharp frequency filters with high power levels and low losses. They are excellent for tuned transformers and oscillators. Available on special order with stabilized cores and inductance to 50H.



Part No.	Inductance	Approx. DCR Ohms	Approx. Distributed Capacity PF	Net Price 1–9 pcs. Style F	Style H	Style M
QD-1	20MH	1.0	97	7.80	11.60	9.60
QD-2	30	1.5	100	7.80	11.60	9.60
QD-3	50	2.5	105	7.80	11.60	9.60
QD-4	100	6	110	7.95	11.75	9.75
QD-5	150	7	113	8.10	11.85	10.35
QD-6	200	10	115	8.10	11.85	10.35
QD-7	300	15	117	8.25	12.05	10.60
QD-8	500	25	121	8.25	12.05	10.60
QD-9	1.00H	60	126	8.60	12.55	10.90
QD-10	1.50	90	130	8.95	12.90	11.25
QD-11	2.00	100	131	9.85	13.90	11.70
QD-12	3.00	155	134	10.20	14.30	12.00
QD-13	5.00	275	138	10.40	14.55	12.25
QD-14	7.50	400	140	11.10	15.55	13.20
QD-15	10.00	600	142	12.25	16.50	14.20
QD-16	15.00	900	146	13.20	17.35	15.20
QD-17	20.00	1100	148	14.15	19.10	16.80
QD-18	25.00	1500	150	14.40	19.35	17.00



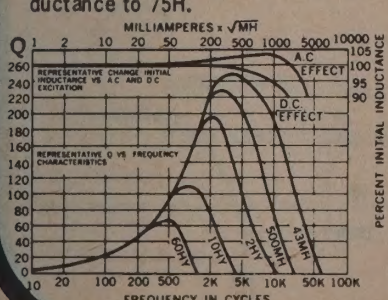
MOLDED STYLE M
Encapsulated in Epoxy Resin. Silver plated turret lugs.

HERMETIC STYLE H
Hermetically sealed in metal case. Teflon terminals assure permanent seal at temperature extremes.

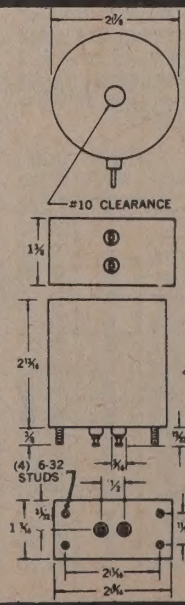
QE SERIES

FREQUENCY TO 15KC
ACCURACY ± 2%

The QE series is most widely used in low audio frequency applications where high "Q" is essential. They are used where inductance stability over a wide voltage range is required. Available on special order with inductance to 75H.



Part No.	Inductance	Approx. DCR Ohms	Approx. Distributed Capacity PF	Net Price 1–9 pcs. Style F	Style H	Style M
QE-1	25MH	0.85	127	11.90	14.85	13.90
QE-2	50	1.6	136	12.05	15.05	14.05
QE-3	100	3	144	15.35	15.35	14.40
QE-4	150	3.9	149	15.70	15.70	15.05
QE-5	200	5.9	153	16.25	16.25	15.25
QE-6	300	8.5	158	16.30	16.30	15.30
QE-7	500	15	164	16.35	16.35	15.35
QE-8	1.00H	30	173	16.70	16.70	15.35
QE-9	1.50	40	177	17.00	17.00	15.70
QE-10	2.00	60	181	17.95	17.95	16.10
QE-11	3.00	85	185	18.05	18.05	16.30
QE-12	5.00	142	192	18.35	18.35	16.50
QE-13	7.50	215	196	18.70	18.70	17.55
QE-14	10.00	300	200	19.00	19.00	17.85
QE-15	15.00	430	205	20.15	20.15	19.00
QE-16	20.00	560	209	21.20	21.20	20.00
QE-17	25.00	800	212	21.45	21.45	20.30
QE-18	30.00	850	214	25.30	25.30	24.15
QE-19	50.00	1500	221	27.75	27.75	26.60



MOLDED STYLE M
Encapsulated in Epoxy Resin. Silver plated turret lugs.

HERMETIC STYLE H
Hermetically sealed in metal case. Teflon terminals assure permanent seal at temperature extremes.

STERLING TRANSFORMER CORP

STERLING TRANSFORMER

STANDARD INTERSTAGE AND LINE TRANSISTOR AND TUBE APPLICATIONS *filters*

Hermetically Sealed — Manufactured to MIL-F-18327B Available in Other Frequencies

LOW PASS

INTERSTAGE

LI units have a loss of approximately 3 db at cutoff frequency, and an attenuation of 35 db at 1.5 cutoff frequency. Input and output 10,000 ohms. LI units are MIL type FR4RX11YY.

Part No.	Frequency	Case Size	Net Price
LI-60	60 cps	A	34.65
LI-100	100 cps	A	34.65
LI-200	200 cps	B	34.65
LI-400	400 cps	B	34.65
LI-500	500 cps	B	34.65
LI-800	800 cps	B	34.65
LI-1,000	1,000 cps	B	34.65
LI-1,500	1,500 cps	B	34.65
LI-2,000	2,000 cps	B	34.65
LI-2,500	2,500 cps	B	34.65
LI-3,000	3,000 cps	B	34.65
LI-4,000	4,000 cps	B	34.65
LI-5,000	5,000 cps	B	34.65
LI-10,000	10,000 cps	B	34.65

LINE

LL units have a loss of approximately 3 db at cutoff frequency, and an attenuation of 35 db at 1.5 cutoff frequency. Input and output 500/600 ohms. LL units are MIL type FR4RX11YY.

Part No.	Frequency	Case Size	Net Price
LL-600	600 cps	A	34.65
LL-1,000	1,000 cps	A	34.65
LL-1,500	1,500 cps	A	34.65
LL-2,000	2,000 cps	A	34.65
LL-2,500	2,500 cps	A	34.65
LL-4,000	4,000 cps	A	34.65
LL-8,000	8,000 cps	A	34.65
LL-10,000	10,000 cps	A	34.65
LL-12,000	12,000 cps	A	34.65

HIGH PASS

INTERSTAGE

HI units have a loss of less than 6 db at cutoff frequency, and an attenuation of 35 db at .67 cutoff frequency. Input and output 10,000 ohms. HI units are MIL type FR4RX33YY.

Part No.	Frequency	Case Size	Net Price
HI-100	100 cps	A	34.65
HI-200	200 cps	A	34.65
HI-300	300 cps	A	34.65
HI-400	400 cps	A	34.65
HI-500	500 cps	A	34.65
HI-800	800 cps	A	34.65
HI-1,000	1,000 cps	A	34.65
HI-2,000	2,000 cps	A	34.65
HI-3,000	3,000 cps	A	34.65

LINE

HL units have a loss of less than 6 db at cutoff frequency, and an attenuation of 35 db at .67 cutoff frequency. Input and output 500/600 ohms. HL units are MIL type FR4RX33YY.

Part No.	Frequency	Case Size	Net Price
HL-200	200 cps	A	42.90
HL-300	300 cps	A	42.90
HL-500	500 cps	A	42.90
HL-1,000	1,000 cps	A	42.90

FOR WIDE BAND PASS FILTERS THE LI & HI OR LL & HL MAY BE CONNECTED IN SERIES.

BAND PASS

INTERSTAGE

BI units have 2:1 voltage gain. They are sharply peaked, having approximately 2 db attenuation at plus or minus 3% from center frequency and attenuation greater than 40 db at 1/2 and twice center frequency. Input 10,000 ohms, output to grid. BI units are MIL type FR4RX22YY.

Part No.	Frequency	Case Size	Net Price
BI-50	50 cps	A	33.00
BI-60	60 cps	A	33.00
BI-100	100 cps	A	33.00
BI-120	120 cps	B	33.00
BI-200	200 cps	B	33.00
BI-240	240 cps	B	33.00
BI-400	400 cps	B	33.00
BI-500	500 cps	B	33.00
BI-750	750 cps	B	33.00
BI-800	800 cps	B	33.00
BI-1,000	1,000 cps	B	33.00
BI-1,500	1,500 cps	B	33.00
BI-2,000	2,000 cps	B	33.00
BI-3,000	3,000 cps	B	33.00
BI-4,000	4,000 cps	B	33.00
BI-5,000	5,000 cps	B	33.00
BI-10,000	10,000 cps	B	33.00

LINE

BL units have 9:1 voltage gain. They are sharply peaked, having approximately 2 db attenuation at plus or minus 3% from center frequency and attenuation greater than 40 db at 1/2 and twice center frequency. Input 500/600 ohms, output to grid. BL units are MIL type FR4RX22YY.

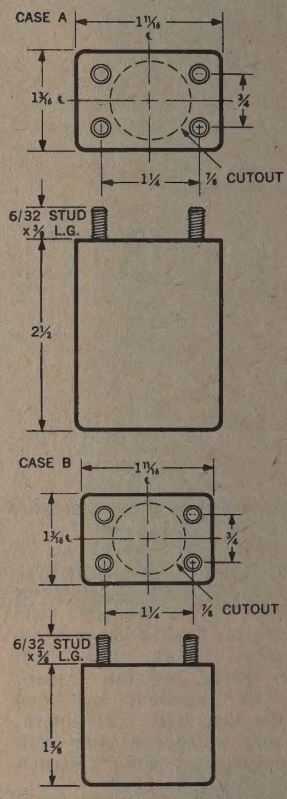
Part No.	Frequency	Case Size	Net Price
BL-400	400 cps	B	33.00
BL-1,000	1,000 cps	B	33.00

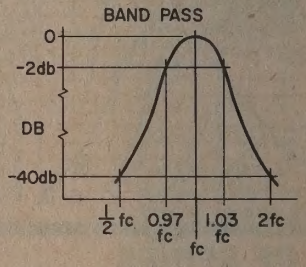
TRANSISTOR INTERSTAGE

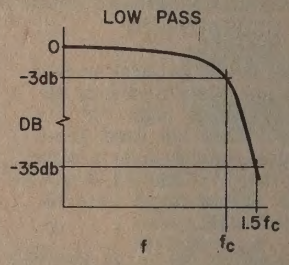
They are sharply peaked, having approximately 2 db attenuation at plus or minus 3% from center frequency and attenuation greater than 40 db at 1/2 and twice center frequency. Input 10,000 ohms, output 10,000 ohms. BIT units are MIL type FR4RX22YY.

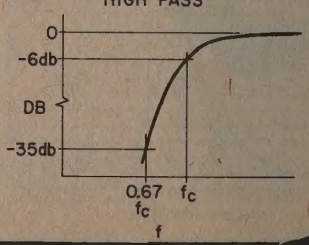
Part No.	Frequency	Case Size	Net Price
BIT-60	60 cps	A	39.60
BIT-100	100 cps	A	39.60
BIT-120	120 cps	B	39.60

CASE DETAIL









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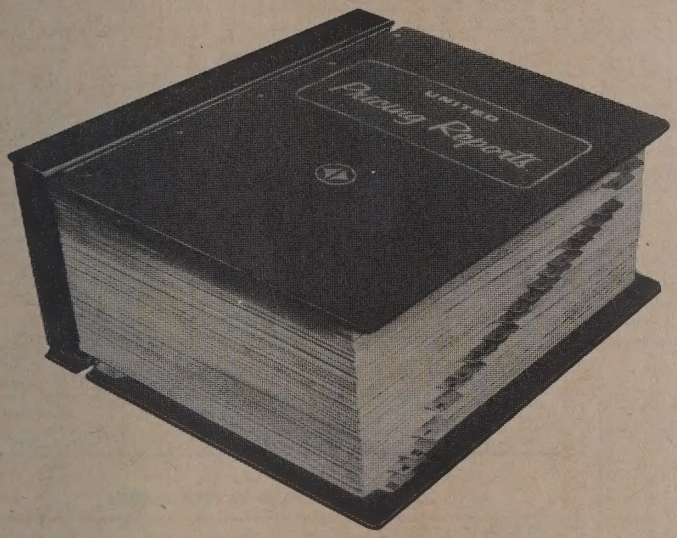

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New epoxy-coated POWERKOTE Coils make the POWERSTAT line the most outstanding value in variable transformers today. *Without increase in price, size or weight,* only POWERSTAT Variable Transformers give an average of 20% higher current ratings, 10:1 greater overload capability, longer life, greater resistance to fungus, salt spray and other contaminating atmospheres. POWERKOTE Coil commutator bars are embedded in place preventing steady-state operating temperature and severe overloads from distorting the commutator.

POWERSTAT Variable Transformers are designed to deliver continuously adjustable voltage from a-c power lines. They introduce no waveform distortion and feature rugged construction, precious metal plated commutators, excellent regulation, high efficiency and conservative ratings. All manually operated types listed in the charts except the 10B-12, EN116B-EN216B and EN117B-EN217B Series are available with motor drives if desired. Motor-driven speeds are 5, 15, 30 or 60 seconds for full range travel on all except types having -4, -5, or -6 suffixes which do not offer the 5-second speed. Single types in the 116B-216B, 117B-217B, 126-226 and 136B-236B Series are also offered with 2- or 3-wire cord-plug sets. 1156D-1256D Series types are available in ratings to 244 kva.

ADJUSTABLE SPEED DRIVES

All motor-driven units in the 116B-216B, 117B-217B, 126-226, 136B-236B and 146-246 Series are available with adjustable speed drives which permit the output voltage of the transformer to be controlled over the full range of zero to maximum output voltage at speeds ranging from 5 seconds to 200 seconds. All control circuitry is solid-state and adaptable for present speed systems. The Adjustable Speed Control Potentiometer BHP65455-G1 can be remotely located from the variable transformer.

RATINGS AND SPECIFICATIONS

INPUT		OUTPUT					TYPE	Ship. Wt. Lbs.
			Const. Current Lead		Const. Impedance Lead			
Volts	Cycles	Volts	Max. Amp.	Max. KVA	Max. Amp.	Max. KVA		
10B-12 SERIES								
Single Phase								
120	60	0-132	1	0.13	—	—	2PF10	3½
120	50/60	0-120	2.25*	0.27	3‡	0.36	10B	2½
120	60	0-132	2.25*	0.30	—	—		
240	50/60	0-240	0.7*	0.17	0.9‡	0.22	12	2½
240	50/60	0-264	0.5**	0.13	—	—		
240	50/60	0-240	2.25*	0.54	3‡	0.72	10B-2	6
240	60	0-264	2.25*	0.59	—	—		
480	50/60	0-480	0.7*	0.34	0.9‡	0.43	12-2	6
480	50/60	0-528	0.5**	0.26	—	—		
Three Phase								
120	50/60	0-120	2.25*	0.47	3‡	0.62	10B-2	6
120	60	0-132	2.25*	0.51	—	—		
240	50/60	0-240	0.7*	0.29	0.9‡	0.37	12-2	6
240	50/60	0-264	0.5**	0.23	—	—		
240	60	0-240	2.25*	0.94	3‡	1.2	10B-3	8½
480	50/60	0-480	0.7*	0.58	0.9‡	0.75	12-3	8½
480	60	0-528	0.5**	0.46	—	—		
21-22 SERIES								
Single Phase								
120	50/60	0-120	4.5	0.54	6.5	0.78	21	6
120	50/60	0-140	4.5	0.63	—	—		
240	50/60	0-240	2.25	0.54	3.25	0.78	22	6
240	50/60	0-280	2.25	0.63	—	—		
240	50/60	0-240	4.5	1.1	6.5	1.6	21-2	13½
240	50/60	0-280	4.5	1.3	—	—		
480	50/60	0-480	2.25	1.1	3.25	1.6	22-2	13½
480	50/60	0-560	2.25	1.3	—	—		
Three Phase								
120	50/60	0-120	4.5	0.94	6.5	1.4	21-2	13½
120	50/60	0-140	4.5	1.1	—	—		
240	50/60	0-240	2.25	0.94	3.25	1.4	22-2	13½
240	50/60	0-280	2.25	1.1	—	—		
240	50/60	0-240	4.5	1.9	6.5	2.7	21-3	19
240	60	0-280	4.5	2.2	—	—		
480	50/60	0-480	2.25	1.9	3.25	2.7	22-3	19
480	60	0-560	2.25	2.2	—	—		

*Rating when mounted on metal panel. On bracket or nonmetallic panel, derate 10B Series to 1.75 amp., 12 Series to 0.5 amp.
‡Rating when mounted on metal panel. On bracket or nonmetallic panel, derate 10B Series to 2.5 amp., 12 Series to 0.75 amp.
**0.7 amp. maximum in range from 0 to line voltage when mounted on metal panel.

INPUT		OUTPUT					TYPE	Ship. Wt. Lbs.
			Const. Current Lead		Const. Impedance Lead			
Volts	Cycles	Volts	Max. Amp.	Max. KVA	Max. Amp.	Max. KVA		
116B-216B and 117B-217B SERIES†								
Single Phase								
120	50/60	0-120	10	1.2	13	1.6	116B	12
120	50/60	0-140	10	1.4	—	—		
120	60	0-120	12	1.4	15	1.8	117BT	12
240	50/60	0-240	3.5	0.84	5	1.2	216B	12
240	50/60	0-280	3.5	0.98	—	—		
240	60	0-240	5	1.2	7	1.7	217BT	12
240	50/60	0-240	10	2.4	13	3.1	116BT-2	24
240	50/60	0-280	10	2.8	—	—		
240	60	0-240	12	2.9	15	3.6	117BT-2	24
480	50/60	0-480	3.5	1.7	5	2.4	216BT-2	24
480	50/60	0-560	3.5	2.0	—	—		
480	60	0-480	5	2.4	7	3.4	217BT-2	24
Three Phase								
120	50/60	0-120	10	2.1	13	2.7	116BT-2	24
120	50/60	0-140	10	2.4	—	—		
120	60	0-120	12	2.5	15	3.1	117BT-2	24
240	50/60	0-240	3.5	1.5	5	2.1	216BT-2	24
240	50/60	0-280	3.5	1.7	—	—		
240	60	0-240	5	2.1	7	2.9	217BT-2	24
240	50/60	0-240	10	4.2	13	5.4	116BT-3	36
240	60	0-280	10	4.8	—	—		
240	60	0-240	12	5.0	15	6.2	117BT-3	36
480	50/60	0-480	3.5	2.9	5	4.2	216BT-3	36
480	60	0-560	3.5	3.4	—	—		
480	60	0-480	5	4.2	7	5.8	217BT-3	36
EN116B-EN216B and EN117B-EN217B SERIES								
Single Phase								
120	50/60	0-120	8	0.96	13	1.6	EN116B	15
120	50/60	0-140	8	1.1	—	—		
120	60	0-120	10	1.2	14.5	1.7	EN117B	15
240	50/60	0-240	3	0.72	4.5	1.1	EN216B	15
240	50/60	0-280	3	0.84	—	—		
240	60	0-240	4.4	1.1	5.8	1.4	EN217B	15
240	50/60	0-240	8	1.9	13	3.1	EN116B-2	28
240	50/60	0-280	8	2.2	—	—		
240	60	0-240	10	2.4	14.5	3.5	EN117B-2	28
480	50/60	0-480	3	1.4	4.5	2.2	EN216B-2	28
480	50/60	0-560	3	1.7	—	—		
480	60	0-480	4.4	2.1	5.8	2.8	EN217B-2	28
Three Phase								
120	50/60	0-120	8	1.7	13	2.7	EN116B-2	28
120	50/60	0-140	8	1.9	—	—		
120	60	0-120	10	2.1	14.5	3.0	EN117B-2	28
240	50/60	0-240	3	1.2	4.5	1.9	EN216B-2	28
240	50/60	0-280	3	1.5	—	—		
240	60	0-240	4.4	1.8	5.8	2.4	EN217B-2	28
240	50/60	0-240	8	3.3	13	5.4	EN116B-3	39
240	60	0-280	8	3.9	—	—		
240	60	0-240	10	4.2	14.5	6.0	EN117B-3	39
480	50/60	0-480	3	2.5	4.5	3.7	EN216B-3	39
480	60	0-560	3	2.9	—	—		
480	60	0-480	4.4	3.7	5.8	4.8	EN217B-3	39

†Also available with open construction. Suffix U when ordering.

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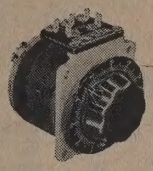
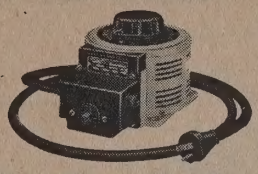
with POWERKOTE® COILS

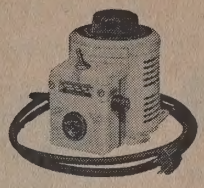
TYPE 10B



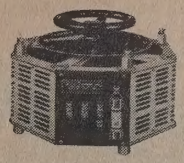
TYPE 21



TYPE 3PN126

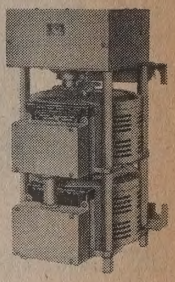


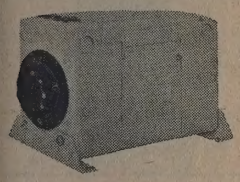
TYPE 116B



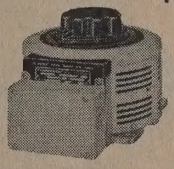
TYPE 1156D

TYPE 15MD136BT-2



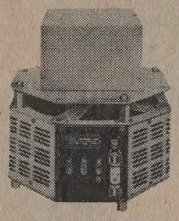


TYPE EN216B-2



TYPE 136BT

TYPE 146



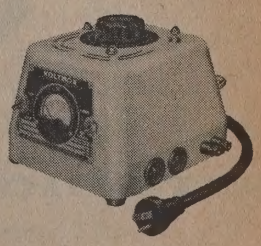
TYPE 5MB1156D

INPUT		OUTPUT						
			Const. Current Load		Const. Impedance Load			
Volts	Cycles	Volts	Max. Amp.	Max. KVA	Max. Amp.	Max. KVA	TYPE	Ship. Wt. Lbs.
126-226 SERIES†								
Single Phase								
120	50/60	0-120	15	1.8	20	2.4	126	17
120	50/60	0-140	15	2.1	—	—		
240	50/60	0-240	7.5	1.8	10	2.4	226	17
240	50/60	0-280	7.5	2.1	—	—		
240	50/60	0-240	15	3.6	20	4.8	126-2	32
240	50/60	0-280	15	4.2	—	—		
480	50/60	0-480	7.5	3.6	10	4.8	226-2	32
480	50/60	0-560	7.5	4.2	—	—		
Three Phase								
120	50/60	0-120	15	3.1	20	4.2	126-2	32
120	50/60	0-140	15	3.6	—	—		
240	50/60	0-240	7.5	3.1	10	4.2	226-2	32
240	50/60	0-280	7.5	3.6	—	—		
240	50/60	0-240	15	6.2	20	8.3	126-3	49
240	60	0-280	15	7.3	—	—		
480	50/60	0-480	7.5	6.2	10	8.3	226-3	49
480	60	0-560	7.5	7.3	—	—		
136B-236B SERIES†								
Single Phase								
120	50/60	0-120	22	2.6	28	3.4	136B	25
120	50/60	0-140	22	3.1	—	—		
120	50/60	0-120	44	5.3	56	6.7	136B-2§	52
120	50/60	0-140	44	6.2	—	—		
240	50/60	0-240	10	2.4	13	3.1	236B	25
240	50/60	0-280	10	2.8	—	—		
240	50/60	0-240	22	5.3	28	6.7	136B-2	52
240	50/60	0-280	22	6.2	—	—		
480	50/60	0-480	20	4.8	26	6.2	236B-2	52
480	50/60	0-560	20	5.6	—	—		
Three Phase								
120	50/60	0-120	22	4.6	28	5.8	136B-2	52
120	50/60	0-140	22	5.3	—	—		
240	50/60	0-240	10	4.2	13	5.4	236B-2	52
240	50/60	0-280	10	4.8	—	—		
240	50/60	0-240	22	9.1	28	11.6	136B-3	76
240	60	0-280	22	10.7	—	—		
480	50/60	0-480	10	8.3	13	10.8	236B-3	76
480	60	0-560	10	9.7	—	—		
146-246 SERIES†								
Single Phase								
120	50/60	0-120	30	3.6	35	4.2	146	38
120	50/60	0-140	30	4.2	—	—		
120	50/60	0-120	60	7.2	70	8.4	146-2§§	83
120	50/60	0-140	60	8.4	—	—		
240	50/60	0-240	15	3.6	19	4.6	246	38
240	50/60	0-280	15	4.2	—	—		
240	50/60	0-240	30	7.2	35	8.4	146-2	83
240	50/60	0-280	30	8.4	—	—		
480	50/60	0-480	15	7.2	19	9.1	246-2	83
480	50/60	0-560	15	8.4	—	—		

†Also available with open construction. Suffix U when ordering.
§Requires also one paralleling choke type T5000.
§§Requires also one paralleling choke type T6053.

INPUT		OUTPUT						
			Const. Current Load		Const. Impedance Load			
Volts	Cycles	Volts	Max. Amps.	Max. KVA	Max. Amps.	Max. KVA	TYPE	Ship. Wt. Lbs.
146-246 SERIES† (contd.)								
Three Phase								
120	50/60	0-120	30	6.2	35	7.3	146-2	83
120	50/60	0-140	30	7.3	—	—		
240	50/60	0-240	15	6.2	19	7.9	246-2	83
240	50/60	0-280	15	7.3	—	—		
240	50/60	0-240	30	12.5	35	14.5	146-3	125
240	60	0-280	30	14.5	—	—		
480	50/60	0-480	15	12.5	19	15.8	246-3	125
480	60	0-560	15	14.5	—	—		
1156D-1256D SERIES†								
Single Phase								
120	50/60	0-120	50	6.0	55	6.6	1156D	82
120	50/60	0-140	50	7.0	—	—		
120	50/60	0-120	100	12.0	110	13.2	1156D-2P	169
120	50/60	0-140	100	14.0	—	—		
120	50/60	0-120	150	18.0	165	19.8	1156D-3P	272
120	50/60	0-140	150	21.0	—	—		
240	50/60	0-240	28	6.7	28	6.7	1256D	82
240	50/60	0-280	28	7.8	—	—		
240	50/60	0-240	50	12.0	55	13.2	1156D-2S	156
240	50/60	0-280	50	14.0	—	—		
240	50/60	0-240	56	13.4	56	13.4	1256D-2P	169
240	50/60	0-280	56	15.7	—	—		
240	50/60	0-240	84	20.2	84	20.2	1256D-3P	272
240	50/60	0-280	84	23.5	—	—		
240	50/60	0-240	100	24.0	110	26.4	1156D-4PS	361
240	50/60	0-280	100	28.0	—	—		
480	50/60	0-480	28	13.4	28	13.4	1256D-2S	156
480	50/60	0-560	28	15.7	—	—		
480	50/60	0-480	56	26.9	56	26.9	1256D-4PS	361
480	50/60	0-560	56	31.4	—	—		
Three Phase								
120	50/60	0-120	50	10.4	55	11.4	1156D-2D	155
120	50/60	0-140	50	12.1	—	—		
240	50/60	0-240	28	11.6	28	11.6	1256D-2D	155
240	50/60	0-280	28	13.6	—	—		
240	50/60	0-240	50	20.8	55	22.9	1156D-3Y	230
240	60	0-280	50	24.2	—	—		
240	50/60	0-240	100	41.6	110	45.7	1156D-6Y	507
240	50/60	0-280	100	48.5	—	—		
480	50/60	0-480	28	23.3	28	23.3	1256D-3Y	235
480	60	0-560	28	27.2	—	—		
480	50/60	0-480	56	46.6	56	46.6	1256D-6Y	507
480	60	0-560	56	54.3	—	—		

VOLTBOX® A-C POWER SUPPLY



Contains POWERSTAT Variable Transformer, voltmeter, three output receptacles, two 5-WAY Binding Posts, "on-off" switch, line-load meter switch, fuse and six-foot cord-plug. Type UC1MB ratings are 120 volt, single phase 50/60 hertz input and 0-140 volt 10 ampere, 1.4 kva output.

IN SECTIONS 2100, 3500 AND 4000

POWERSTAT® Variable Transformers

NOW WITH POWERKOTE* COILS

*PATENT PENDING

40-VOLT SERIES

Meet high current, low voltage requirements of low voltage power supplies and a wide range of transistor circuit applications. Manually-operated and motor-driven single, 2- and 3-gang single phase types available.

TYPE 10B-40

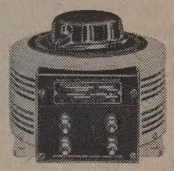
TYPE 21-40

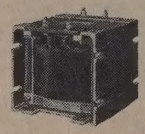
40-VOLT SERIES

INPUT		OUTPUT						
			Const. Current Load		Const. Impedance Load			Ship.
Volts	Hertz	Volts	Max. Amps.	Max. KVA	Max. Amps.	Max. KVA	TYPE	Wt. Lbs.
Single Phase								
40	60	0-40	7	0.28	9	0.36	10B-40	3½
			18	0.72	22	0.88	21-40	6
			25	1.0	30	1.2	116BU-40	11

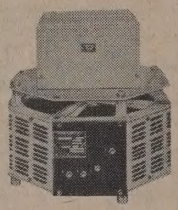
LINE CORRECTORS

Used to correct line voltage variations to maintain a constant output voltage or to supply a limited range of output voltage from a stable a-c source. Manually operated and motor-driven types available.





TYPE LC2106D



TYPE 5MBLC2115E

LINE CORRECTOR SERIES

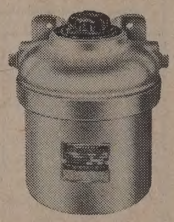
INPUT		OUTPUT				Ship.
Volts	Hertz	Volts	Max. Amps.	Max. KVA	TYPE	Wt. Lbs.
Used as Line Correctors — SINGLE PHASE						
95-135	50/60	115	52	6.0	LC2106D	80
95-135	50/60	115	130	15.0	LC2115E	200
195-255	50/60	230	32.5	7.5	LC2207D	85
205-250	50/60	230	120	27.5	LC2228E	205
400-520	50/60	460	40	18.4	LC2418E	205
Used as Line Correctors — THREE PHASE						
195-255	50/60	230	50	20.0	LC3220YD	241
195-255	50/60	230	113	45.0	LC3245YE	615
195-255	50/60	230	175	70.0	LC3270DE	795
400-520	50/60	460	33	26.3	LC3425YD	230
400-520	50/60	460	100	79.7	LC3475YE	630
420-500	50/60	460	131	104	LC34100YE	630

When units of the LC series are used as limited range adjustable transformers, the input voltage is the output voltage shown in the above chart and the output voltage is the input voltage shown in the above chart.

OIL-COOLED AND EXPLOSION-PROOF

Oil-cooled units substantially increase ratings above equivalent air-cooled types and provide a measure of safety. Explosion-proof models are Underwriters' Laboratories listed for Class 1, Group D service. Both are manually operated only.

OIL-COOLED
TYPE 0-116B



EXPLOSION-PROOF
TYPE X-116

OIL-COOLED

INPUT		OUTPUT			
Volts	Hertz	Volts	Max. Amps.	Max. KVA	TYPE††	Ship. Wt. Lbs.
120	50/60	0-120	15	1.8	0-116B	32
120	50/60	0-140	15	2.1		
120	50/60	0-140	30	4.2	0-1126	100
240	50/60	0-240	6	1.4	0-216B	32
240	50/60	0-280	6	1.7		
240	50/60	0-280	18	5.0	0-1226	105

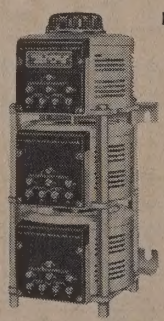
††Other Types available on special order.

EXPLOSION-PROOF

120	50/60	0-120	7.5	0.90	X-116	47
120	50/60	0-140	7.5	1.0		
120	50/60	0-140	12	1.7	X-1126	142
240	50/60	0-240	3	0.72	X-216	47
240	50/60	0-280	3	0.84		
240	50/60	0-280	6	1.7	X-1226	142

LW136B SERIES

Have three windings. Connections can be made for operation as a source of adjustable low output voltage, a line voltage corrector or a limited range variable transformer. Manually operated and motor-driven, open and enclosed construction types available. Full connections and ratings on request.



TYPE LW136B-3

TYPE LW136BU

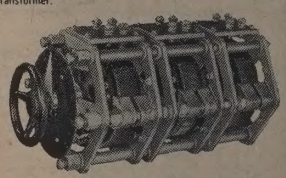
LW136B SERIES

INPUT		OUTPUT‡‡				
Volts	Hertz	Volts	Max. Amps.	Max. KVA	TYPE	Ship. Wt. Lbs.
Single Phase						
120/240	50/60	15-0-15	35	0.52	LW136B	25
120/240/480	50/60	30-0-30	35	1.0	LW136B-2	52
120/240	50/60	45-0-45	35	1.6	LW136B-3	76
120/240	50/60	0-30	25	0.75	LW136B	25
120/240/480	50/60	0-60	25	1.5	LW136B-2	52
120/240	50/60	0-90	25	2.2	LW136B-3	76
Three Phase						
120/240	50/60	0-30	25	1.3	LW136B-2	52
120/240	50/60	0-30	43.3	2.2	LW136B-3	76
120/240	50/60	0-52	25	2.2	LW136B-3	76
240/480	60	0-35	43.3	2.6	LW136B-3	76
240/480	60	0-60	25	2.6	LW136B-3	76

‡‡LW136B Series ratings are for use as low voltage isolated output transformer.

HIGH FREQUENCY POWERSTAT® VARIABLE TRANSFORMERS

TYPE 5-1011



TYPE 2HL15UK-3Y

Standard manually-operated types designed to meet applicable military specifications are available for 28, 120, 240 and 480 volt, 400/800 hertz single and three phase operation in ratings from 56 va to 7.3 kva; for 115 volt, 400/800 hertz single phase service with outputs of 0-28 volts, 2.5 or 8 amperes and 0-5 volts, 6 or 12 amperes; for 400/1600 hertz service as limited range variable transformers, low voltage output variable transformers or line correctors.

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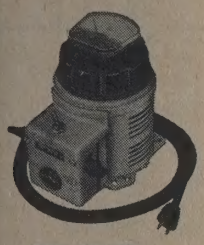
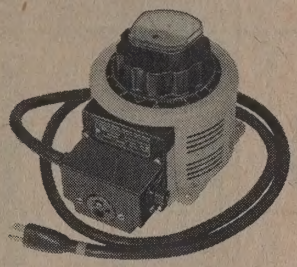
STATIONARY METERED KNOB POWERSTAT® Variable Transformers

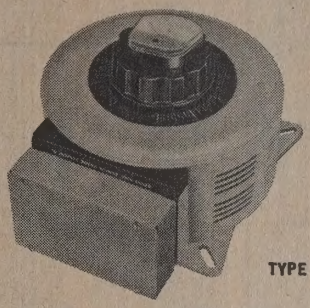
- FOR BACK-OF-PANEL OR GENERAL UTILITY MOUNTING
- ACCURATE VOLTMETER REMAINS STATIONARY INSIDE KNOB RIM. . . DOES NOT TURN WITH THE KNOB
- AVAILABLE IN TYPES TO 4 KVA
- MAXIMUM APPLICATION FLEXIBILITY
- SAVES PANEL SPACE, WIRING AND INSTALLATION COSTS



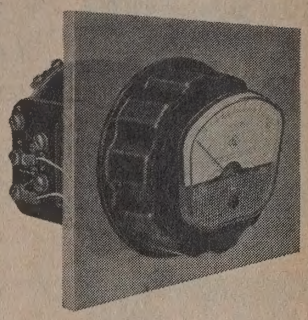
TYPE VS116B



TYPE VS3PN126



TYPE VS146T



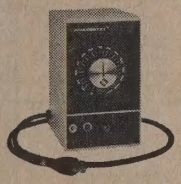
GENERAL UTILITY MOUNTING – Single units (those listed in charts without -2 or -3 suffixes) in the 116B-216B, 117B-217B, 126-226, 136B-236B and 146-246 series are also available with knobs incorporating direct-reading voltmeters. Voltmeters remain stationary as the knob rim is turned, have an accuracy of ±3% of full scale and are insensitive to stray magnetic fields. When ordering, add VS prefix to the type number given in the charts.

BACK-OF-PANEL MOUNTING – Standard cataloged POWERSTAT Variable Transformers in the 21-22 through the 146-246 series designed or adaptable for back-of-panel mounting can be combined with Metered Knob Assemblies. Models for 120 volt service require Metered Knob Assembly VS150 having a 0-150 volt scale and units for 240 volt use require Metered Knob Assembly VS300 having a 0-300 volt scale. Existing models can be retrofitted also.

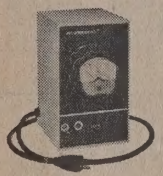
ENCLOSED LABORATORY POWERSTAT® Variable Transformers

TYPE N10B

TYPE N21



TYPE N116B



TYPE N116BK

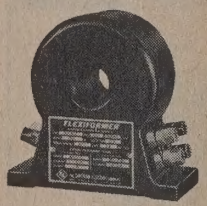
Portable, single phase units having grounded NEMA cord-plug assembly, on-off switch, output receptacle, pilot light and fuse. The handle is integrally designed and the panel controls are recessed. A slot is provided at the rear of each unit to accept wall hanger brackets supplied with the assembly. Types N21, N116B, N116BK, N116BL and N116BLK have POWERKOTE Coils.

METERED KNOB types N116BK and N116BLK have metered knobs to conveniently measure load voltage without the necessity of providing a separate voltmeter. The knob is designed so that the voltmeter remains stationary as the knob is turned to vary the voltage, assuring accurate readings and maximum meter visibility.

INPUT		OUTPUT					
			CONSTANT CURRENT LOAD		CONSTANT IMPEDANCE LOAD		
VOLTS	HERTZ	VOLTS	MAX. AMP.	MAX. KVA	MAX. AMP.	MAX. KVA	TYPE
120	60	0-132	2.25	0.30	—	—	N10B
120	50/60	0-140	4.5	0.63	—	—	N21
120	50/60	0-140	10	1.4	—	—	N116B N116BK
120	50/60	0-120	10	1.2	13	1.6	N116BL N116BLK

FLEXIFORMER®

Packaged Transformer Primaries



TYPE TP150

When used as a source of a-c voltage, the center opening permits hand-threading the correct number of secondary winding turns to obtain the desired output voltage. When used as a current transformer, the unit winding is shuted by an ammeter which indicates the current flow in a conductor hand-threaded through the center opening. For 50/60 hertz duty.

RATINGS AS A SOURCE OF A-C VOLTAGE

TYPE	NORMAL PRIMARY VOLTS	Hertz	MAXIMUM VA	VOLTS PER SECONDARY TURN	REGULATION AT MAXIMUM OUTPUT
TP150	120	50/60	150	0.3	25%
TP1000	120	50/60	1000	0.75	10%
TP152	240	50/60	150	0.3	25%
TP1020	240	50/60	1000	0.75	10%

RATINGS AS A CURRENT TRANSFORMER

TYPE	INPUT/ OUTPUT RATIO	MAXIMUM PRIMARY AMPERES	MAXIMUM SECONDARY AMPERES	ACCURACY AT 60 Hertz
TP150	400/1	400	1.0	1%
TP1000	160/1	800	5.0	1%
TP152	800/1	400	0.5	1%
TP1020	320/1	800	2.5	1%

POWERSTAT

DC Motor Speed Controllers

Continuously adjustable speed control of d-c shunt-wound motors from a-c power lines. Full rated torque available at any speed. Instantaneous start, stop and reverse, tubeless transient-protected circuitry. Rated for 120 volt, 60 hertz single phase input. Type MSC16 for motors to ⅛ hp, type MSC33 to ⅓ hp and type MSC75 to ¾ hp. NEMA frame 1725 rpm, dc motors in ⅛, ⅓ and ¾ hp also available.

TYPE MSC33

IN SECTIONS 2100, 3500 AND 4000

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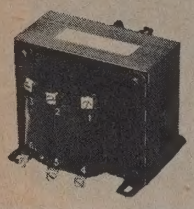
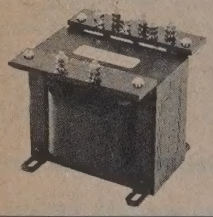
HIGH CURRENT TRANSFORMERS & CHOKES
ELECTRICAL SPECIFICATIONS

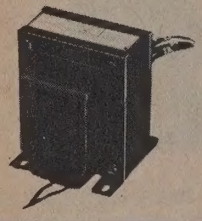
SHIP B (UNDER 700 VA)



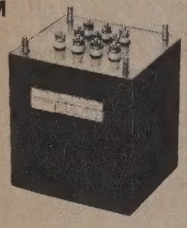
SAME B* (OVER 700 VA)



DAY V



CM



SECONDARY VOLTS (& Taps)	PART NO.	PRIMARY VOLTS 50-500 CY	SECONDARY AMPS (RMS) FOR OPTIONAL WIRING	
			SERIES HOOKUP	PARALLEL HOOKUP
10 VOLTS Series 2.5-5-7.5-10 Parallel 2.5-5	10 02	115	2 AMPS	4 AMPS
	10 05	115	5	10
	10 10	115	10	20
	10 20	115	20	40
12.6 VOLTS Series 3.1-6.3-9.4-12.6 Parallel 3.1-6.3	12 02	115	2 AMPS	4 AMPS
	12 05	115	5	10
	12 10	115	10	20
	12 20	115	20	40
24 VOLTS Series 6-12-18-24 Parallel 6-12	24 01	115	1 AMPS	2 AMPS
	24 02	115	2	4
	24 04	115	4	8
	24 06	115	6	12
	24 08	115	8	16
	24 12	105, 115, 125	12	24
	24 20	105, 115, 125	20	40
	24 25	105, 115, 125	25	50
	24 30	105, 115, 125	30	60
	24 50	105, 115, 125	50	100
	24 100	115, 230	100	200
36 VOLTS Series 9-18-27-36 Parallel 9-18	36 00	115	0.5 AMPS	1 AMPS
	36 01	115	1	2
	36 02	115	2	4
	36 04	115	4	8
	36 06	115	6	12
	36 08	105, 115, 125	8	16
	36 12	105, 115, 125	12	24
	36 20	105, 115, 125	20	40
	36 30	105, 115, 125	30	60
	36 50	115, 230	50	100
	36 100	115, 230	100	200
56 VOLTS Series 14-28-42-56 Parallel 14-28	56 00	115	0.5 AMPS	1 AMPS
	56 01	115	1	2
	56 02	115	2	4
	56 04	115	4	8
	56 06	115	6	12
	56 08	105, 115, 125	8	16
	56 12	105, 115, 125	12	24
	56 25	105, 115, 125	25	50
	56 50	115, 230	50	100
	56 100	115, 230	100	200
64 VOLTS Series 16-32-48-64 Parallel 16-32	64 00	115	0.5 AMPS	1 AMPS
	64 01	115	1	2
	64 02	115	2	4
	64 04	115	4	8
	64 06	115	6	12
	64 08	105, 115, 125	8	16
	64 12	105, 115, 125	12	24
	64 25	105, 115, 125	25	50
	64 50	115, 230	50	100
80 VOLTS Series 20-40-60-80 Parallel 20-40	80 00	115	0.5 AMPS	1 AMPS
	80 01	115	1	2
	80 02	115	2	4
	80 05	115	5	10
	80 10	105, 115, 125	10	20
	80 25	115, 230	25	50
	80 50	115, 230	50	100
120 VOLTS Series 30-60-90-120 Parallel 30-60	120 00	115	0.5 AMPS	1 AMPS
	120 01	115	1	2
	120 02	115	2	4
	120 04	115	4	8
	120 08	105, 115, 125	8	16
	120 12	105, 115, 125	12	24
	120 20	105, 115, 125	20	40
180 VOLTS Series 45-90-135-180 Parallel 45-90	180 00	115	0.5 AMPS	1 AMPS
	180 01	115	1	2
	180 02	115	2	4
	180 05	115	5	10
	180 10	105, 115, 125	10	20
230 VOLTS Series 57.5-115-172.5-230 Parallel 57.5-115	230 00	115	0.5 AMPS	1 AMPS
	230 01	115	1	2
	230 02	115	2	4
	230 05	105, 115, 125	5	10
	230 08	115, 230	8	16
300 VOLTS Series 75-150-225-300 Parallel 75-150	300 00	115	0.5 AMPS	1 AMPS
	300 01	115	1	2
	300 02	115	2	4
	300 05	105, 115, 125	5	10

DC TO RMS CONVERSION CHART

SECONDARY RMS CURRENT = DC CURRENT × FACTOR BELOW			
	Choke Input Filter or Inductive Load	Resistive Load	Capacitor Input Filter or Capacitive Load
FULL WAVE BRIDGE	1.0	1.0	1.8
FULL WAVE C.T.	.7	1.0	1.15

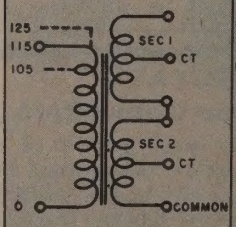
TODD ELECTRIC high current transformers and chokes are most widely used for high power rectifier and high current A.C. applications. They are built to the highest standards of workmanship. All types are designed for a nominal temperature rise of 45°C at full load and will easily withstand unusual overloads. The regulation is extremely low, varying from 10% on the smallest unit to 1% on the largest.

Four constructional types are available for maximum flexibility for use in either the laboratory, test rigs, OEM equipment, or production.

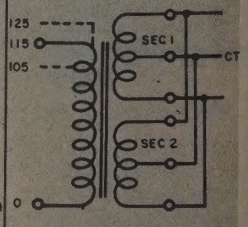
All Prices and Data Subject to Change Without Notice.

CERTIFIED DATA AVAILABLE — CUSTOM VARIATIONS QUOTED PROMPTLY

SERIES HOOKUP



PARALLEL HOOKUP



• ENGINEERING • RELIABILITY • SERVICE

TODD ELECTRIC CO., INC.

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All units have name plates and wiring diagrams for installation ease, future reference and permanent identification.

MECHANICAL SPECIFICATIONS

FOR HIGH CURRENT TRANSFORMERS & CHOKES

SPECIFY STYLE DESIRED WHEN ORDERING

45° TEMPERATURE RISE MINIMUM REGULATION

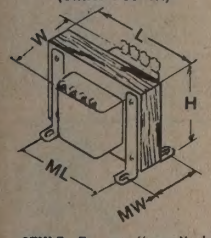
• BRACKET MTD (STYLE B) • ENCAPSULATED (STYLE BE)						STYLE B	STYLE BE
L	W	H	ML	MW	WGT	Price	Price
3	2 5/32	2 1/2	2 1/2	1 1/2	1.5	$ 6.05	$11.98
3	2 13/32	2 1/2	2 1/2	2 1/8	2.5	7.15	13.45
3 3/4	3 3/4	3 1/8	3 1/8	2 5/16	5.0	9.75	17.38
4 1/2	5 7/32	3 3/4	3 3/4	3 1/8	11.2	18.10	34.75
3	2 1/2	2 1/2	2 1/2	1 3/4	1.8	6.40	12.10
3	3	2 1/2	2 1/2	2 5/8	3.4	7.65	13.70
3 3/4	3 1/4	3 1/8	3 1/8	2 5/8	6.0	10.30	18.05
5 1/4	4 1/2	4 3/8	4 3/8	2 1/2	10.0	19.75	27.95
3	2 11/32	2 1/2	2 1/2	2	2.6	6.52	12.10
3	2 3/4	2 1/2	2 1/2	2	2.8	7.30	13.03
3 3/4	3 1/8	3 1/8	3 1/8	2 1/4	5.0	9.15	17.38
4 1/8	3 5/8	3 7/16	3 7/16	2 3/8	6.5	11.09	18.88
4 1/8	4 1/4	3 7/16	3 7/16	3	8.7	15.48	25.94
4 1/2	4 7/8	3 3/4	3 3/4	3 3/8	11.0	17.75	28.94
5 1/4	4 7/8	4 3/8	4 3/8	3 1/2	17.0	24.75	43.63
5 1/4	5 7/8	4 3/8	4 3/8	4 1/2	22.0	30.80	51.88
*6 3/8	5 3/4	5 5/8	5 1/4	3 3/4	29.0	36.25	59.80
* 6 3/8	6 3/8	5 5/8	5 5/16	5 1/4	30.0	47.75	79.25
* 7 1/2	8	6 5/8	6 3/4	5 3/4	38.0	71.50	113.88
3	2 1/4	2 1/2	2 1/2	1 3/4	2.4	6.40	12.15
3	2 1/2	2 1/2	2 1/2	2	2.7	6.60	12.69
3 3/8	3	2 13/16	2 13/16	2 1/4	3.6	7.61	14.10
4 1/8	4 1/8	3 7/16	3 7/16	2 5/8	6.9	11.40	19.06
4 1/2	4 3/8	3 3/4	3 3/4	2 3/4	9.0	15.60	26.44
4 1/2	5	3 3/4	3 3/4	3 1/2	12.0	16.40	27.25
5 1/4	5 3/16	4 3/8	4 3/8	3 3/4	17.2	27.75	39.83
*6 3/8	5 3/4	5 5/8	5 1/4	3 3/4	29.0	36.80	63.38
*6 3/8	6 3/4	5 5/8	5 1/4	4 3/4	36.0	48.78	76.25
*7 1/16	8	6 1/2	5 13/16	6 1/8	51.0	68.50	110.50
*7 1/2	9 3/8	6 3/4	6 3/4	7 5/8	70.0	109.00	168.88
3	2 5/8	2 1/2	2 1/2	2	2.5	7.10	13.50
3 3/8	3	2 13/16	2 13/16	2 1/8	3.6	8.06	13.56
3 3/4	3 1/2	3 1/8	3 1/8	2 1/2	5.6	8.98	17.48
4 1/8	4 5/8	3 7/16	3 7/16	3	8.4	15.45	26.56
5 1/4	4 3/4	4 3/8	4 3/8	3 1/8	13.0	20.98	31.13
5 1/4	6	4 3/8	4 3/8	3 3/4	17.3	26.10	42.06
* 6 3/8	5 3/8	5 7/8	5 5/16	3 3/4	24.5	36.85	61.31
* 6 3/8	6 7/8	5 7/8	5 5/16	5 1/4	39.7	57.10	92.38
* 7 1/2	7 5/8	6 5/8	6 3/4	5 3/4	54.0	104.50	144.88
* 9	10 1/4	9	7 5/8	7 1/2	100.0	152.65	228.13
3	2 3/8	2 1/2	2 1/2	2	2.3	6.55	12.50
3	3	2 1/2	2 1/2	2 5/8	3.4	7.55	13.75
3 3/4	3 3/4	3 1/8	3 1/8	2 5/8	6.0	10.20	18.10
4 1/2	4 3/4	3 3/4	3 3/4	3 3/4	10.0	20.10	28.05
5 1/4	4 1/4	4 3/8	4 3/8	3 1/4	14.0	23.45	38.75
5 1/4	6	4 3/8	4 3/8	3 3/4	17.2	25.85	45.70
* 6 3/8	6	5 5/16	5 5/16	3 13/16	28.0	38.10	66.25
* 7 1/16	7 3/4	6 1/8	5 13/16	5 7/8	47.0	64.50	105.50
* 7 1/2	9	6 1/2	6 3/4	7 1/4	65.0	104.50	161.75
3	2 1/2	2 1/2	2 1/2	2 1/8	2.6	6.75	12.85
3 3/8	3 3/4	2 13/16	2 13/16	2 3/8	4.4	8.35	14.40
4 1/8	3 3/4	3 7/16	3 7/16	2 5/8	7.8	12.10	18.40
5 1/4	4 1/4	4 3/8	4 3/8	3 1/4	14.0	23.25	35.45
* 6 3/8	6 1/8	6	5 5/16	4	30.0	41.10	67.50
* 7 1/16	6 3/4	7 3/8	5 13/16	4 3/4	34.0	70.50	112.75
* 7 1/2	9 3/4	7 3/8	6 3/4	9	60.0	124.85	180.31
3 3/8	2 3/4	2 13/16	2 13/16	2 1/4	3.6	8.00	13.69
3 3/4	3 5/8	3 1/8	3 1/8	2 1/2	6.0	10.59	17.83
4 1/2	4 5/8	3 3/4	3 3/4	3 5/16	9.0	14.60	21.50
5 1/4	5 3/8	4 3/8	4 3/8	5	17.0	27.05	44.56
*6 3/8	7	5 5/8	5 1/4	4 1/2	34.0	45.50	72.69
*6 3/8	7 1/2	5 5/8	5 1/4	5 1/2	45.0	57.25	95.50
*7 1/16	8 1/2	6	5 13/16	6 3/8	75.0	71.50	114.50
3 3/4	2 3/4	3 1/8	3 1/8	2 1/4	3.8	9.15	17.14
4 1/8	4	3 7/16	3 7/16	2 3/8	6.6	13.35	19.31
5 1/4	5	4 3/8	4 3/8	3 3/4	15.0	22.00	38.88
* 6 3/8	6 1/4	5 5/8	5 5/16	4 3/8	35.0	42.75	69.85
* 6 3/8	6 5/8	6	5 5/16	5 5/8	45.0	66.50	104.75
3 3/4	3 3/16	3 1/8	3 1/8	2 1/2	5.0	10.25	17.56
4 1/8	4 1/4	3 7/16	3 7/16	3 1/8	8.5	14.50	21.03
5 1/4	5 5/8	4 3/8	4 3/8	4	17.3	24.85	43.19
* 6 3/8	7 1/2	5 7/8	5 5/16	4 7/8	36.0	50.25	80.50
*7 1/16	8	6 1/2	5 13/16	6 1/8	46.0	68.50	109.25
4 1/8	4 1/4	3 7/16	3 7/16	2 3/4	7.0	10.00	17.91
5 1/4	4 1/4	4 3/8	4 3/8	3 1/4	12.5	19.15	27.81
5 1/4	6	4 3/8	4 3/8	4 1/2	21.0	31.75	52.75
* 6 3/8	6 3/4	5 7/8	5 5/16	4 3/4	40.0	58.50	97.50

• FULLY MTD SHELLS (STYLE V)						STYLE V
L	W	H	ML	MW	WGT	Price
2 5/8	2 3/16	3 1/8	2	1 3/16	2.0	$ 5.87
2 13/32	2 11/16	3 1/8	2	1 7/8	3.0	6.90
3 7/32	3 5/16	3 7/8	2 1/2	2 5/16	5.5	9.36
3 27/32	4 1/16	4 5/16	3	3 5/8	11.5	17.40
2 13/32	2 3/8	3 1/8	2	1 1/2	1.8	6.21
2 13/32	3 1/16	3 1/8	2	2 1/4	4.2	7.50
3 1/4	3 3/4	3 7/8	2 1/2	2 1/2	6.5	9.85
4 1/2	4 1/2	5 5/16	3 1/2	3	11.0	18.80
2 13/32	2 11/16	3 1/8	2	1 7/8	2.6	6.32
2 13/32	2 11/16	3 1/8	2	1 11/16	2.8	7.08
3 7/32	3 7/16	3 27/32	2 1/2	2 5/16	5.0	8.88
3 11/32	3 13/16	4 7/32	2 3/4	2 11/16	6.5	10.65
3 11/32	4 7/16	4 7/32	2 3/4	3 5/16	8.7	14.86
3 27/32	4 13/16	4 5/16	3	3 11/16	11.0	17.04
4 1/2	5 7/16	5 5/16	3 1/2	3 7/8	17.5	24.60
4 1/2	6 7/16	5 5/16	3 1/2	4 7/8	22.0	33.12
5 1/2	4 3/4	6 1/2	4 1/4	3 3/4	30.0	38.00
5 5/8	7 1/4	6 1/2	4 1/4	5 1/4	31.0	42.50
2 5/8	2 1/2	3 1/8	2	1 1/2	2.4	6.30
2 13/32	2 3/4	3 1/8	2	1 7/8	2.7	6.40
2 23/32	3 5/16	3 15/32	2 1/4	2 1/8	3.6	7.38
3 17/32	4 1/8	4 7/32	2 3/4	2 13/16	6.9	11.06
3 27/32	4 3/16	4 5/16	3	3 1/16	9.0	14.98
3 27/32	4 13/16	4 5/16	3	3 11/16	12.0	15.74
4 1/2	5 7/16	5 5/16	3 1/2	4 1/8	17.2	26.64
5 1/2	4 3/4	6 1/2	4 1/4	3 3/4	30.0	37.50
5 1/2	5 3/4	6 1/2	4 1/4	4 3/4	37.0	49.10
2 13/32	2 5/8	3 1/8	2	1 5/8	2.4	6.80
2 23/32	3 3/16	3 15/32	2 1/4	2	3.8	7.82
3 7/32	3 11/16	3 27/32	2 7/16	2 3/16	5.6	8.71
3 17/32	4 7/16	4 7/32	2 3/4	3 5/16	8.7	14.99
4 7/16	4 7/8	5 5/16	3 1/2	3 5/8	14.0	20.35
4 1/2	5 11/16	5 5/16	3 1/2	4 1/8	17.3	25.32
5 1/2	4 3/4	6 1/2	4 1/4	3 5/8	26.0	31.15
5 1/2	6 1/4	6 1/2	4 1/4	5 1/8	41.0	49.20
2 13/32	2 5/8	3 1/8	2	1 5/8	2.3	6.35
3 7/32	3 5/8	3 27/32	2 1/2	2 5/8	4.2	7.48
3 17/32	3 13/16	4 7/32	2 3/4	2 1/2	6.5	9.85
3 27/32	5	4 5/16	3	3 7/8	11.0	19.30
4 1/2	4 15/16	5 5/16	3 1/2	3 5/8	15.0	23.15
4 1/2	5 1/16	5 5/16	3 1/2	4 1/8	17.2	25.10
5 1/2	5 3/4	6 1/2	4 1/4	5 3/8	34.0	34.10
2 13/32	2 13/16	3 1/8	2	1 13/16	2.6	6.55
2 23/32	3 3/8	3 7/16	2 1/4	2 1/4	4.4	8.10
3 17/32	4	4 7/32	2 3/4	3 1/16	7.8	11.74
4 1/2	4 15/16	5 5/16	3 1/2	3 5/8	15.0	22.80
5 1/2	5 1/2	6 1/2	4 1/4	4 1/4	31.0	65.50
2 29/32	2 15/16	3 15/32	2 1/4	1 15/16	3.6	7.76
3 7/32	3 1/2	3 27/32	2 1/2	2 1/2	6.0	10.27
3 27/32	4 7/8	4 5/16	3	3 3/4	9.0	14.16
4 1/2	5 5/8	5 5/16	3 1/2	4 1/8	18.0	26.24
5 1/2	5 3/4	6 1/2	4 1/4	4 5/8	35.0	46.20
5 1/2	6 3/4	6 1/2	4 1/4	5 5/8	46.0	47.80
3 7/32	3 3/8	3 27/32	2 1/2	2 1/4	5.4	8.88
3 17/32	3 3/4	4 7/32	2 3/4	2 3/4	6.6	12.95
4 1/2	5 3/16	5 5/16	3 1/2	3 5/8	17.3	21.34
5 5/8	5 1/4	6 1/2	4 1/4	4 1/4	34.0	36.50
5 1/2	6 3/8	6 1/2	4 1/4	5 3/8	45.0	57.75
3 7/32	3 7/16	3 27/32	2 1/2	2 1/2	5.0	9.94
3 17/32	4 1/2	4 7/32	2 3/4	3 7/16	8.9	14.07
4 1/2	5 11/16	5 5/16	3 1/2	4 1/8	17.3	24.10
5 5/8	6 1/2	6 1/2	4 1/4	5 1/2	45.0	46.50
3 17/32	4 1/4	4 7/32	2 3/4	3 1/8	7.0	9.70
4 1/2	4 15/16	5 5/16	3 1/2	3 1/4	13.25	18.58
4 1/2	6 1/2	5 5/16	3 1/2	4 7/8	21.0	30.80
5 1/2	6 1/4	6 1/2	4 1/4	5 1/8	43.0	51.40

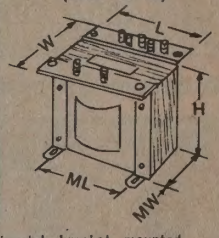
• HERMETIC SEALED MIL-T (STYLE CM)						STYLE CM	
L	W	H	ML	MW	WGT	Price	Part No.
3	3 1/2	3 13/16	2 1/8	2 5/8	3.1	$20.57	10 02
3	3 1/2	3 13/16	2 1/8	2 5/8	4.2	23.85	10 05
3 5/8	4 1/2	4 7/16	2 11/16	3 5/16	6.0	33.15	10 10
4 1/4	5	5 7/16	3 5/16	4 1/16	13.0	62.75	10 20
3	3 1/2	3 13/16	2 1/8	2 5/8	3.1	21.76	12 02
3	3 1/2	3 13/16	2 1/8	2 5/8	3.8	25.85	12 05
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	6.0	33.80	12 10
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	15.6	68.50	12 20
3	3 1/2	3 13/16	2 1/8	2 5/8	3.1	22.17	24 01
3	3 1/2	3 13/16	2 1/8	2 5/8	4.0	24.82	24 02
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	5.5	31.11	24 04
3 15/16	4 5/8	4 7/8	3	3 11/16	6.6	37.71	24 06
3 15/16	4 5/8	4 7/8	3	3 11/16	8.8	52.63	24 08
4 1/4	5	5 7/16	3 5/16	4 1/16	14.7	60.35	24 12
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	20.0	85.15	24 20
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	21.0	104.72	24 25
5 13/16	6 7/8	7 1/2	4 1/2	5 5/16	31.0	121.60	24 30
6 7/8	5 13/16	7 1/2	4 1/4	5 5/16	37.0	162.35	24 50
6 3/4	8	8 3/4	5 1/2	6 3/4	60.0	243.10	24 100
3	3 1/2	3 13/16	2 1/8	2 5/8	3.2	20.80	36 00
3	3 1/2	3 13/16	2 1/8	2 5/8	3.4	22.44	36 01
3 5/16	3 7/8	4 1/4	2 7/16	3	4.8	25.87	36 02
3 15/16	4 5/8	4 7/8	3	3 11/16	7.8	38.76	36 04
4 1/4	5	5 7/16	3 5/16	4 1/16	10.7	53.04	36 06
4 1/4	5	5 7/16	3 5/16	4 1/16	13.1	55.76	36 08
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	16.9	94.35	36 12
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	31.0	125.12	36 20
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	38.0	165.85	36 30
6 17/32	7 7/16	8 1/4	4 3/4	5 13/16	43.7	232.90	36 50
6 3/4	8	10 3/8	5 1/2	6 3/4	58.0	370.60	36 100
3	3 1/2	3 13/16	2 1/8	2 5/8	3.0	20.60	56 00
3 5/16	3 7/8	4 1/4	2 7/16	3	3.9	27.40	56 01
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	6.3	30.53	56 02
3 15/16	4 5/8	4 7/8	3	3 11/16	10.1	52.53	56 04
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	15.6	71.33	56 06
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	18.6	88.74	56 08
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	26.3	125.29	56 12
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	43.0	194.14	56 25
6 3/4	8	8 3/4	5 1/2	6 3/4	65.0	355.30	56 50
							56 100
3	3 1/2	3 13/16	2 1/8	2 5/8	3.2	22.35	64 00
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	7.0	26.50	64 01
3 15/16	4 5/8	5 1/16	4 7/8	3 11/16	6.0	34.75	64 02
4 1/4	5	5 7/16	3 5/16	4 1/16	12.6	69.15	64 04
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	16.4	81.75	64 06
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	19.1	87.50	64 08
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	29.2	132.50	64 12
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	40.0	226.00	64 25
6 3/4	8	10 3/8	5 1/2	6 3/4	54.0	359.50	64 50
3	3 1/2	3 13/16	2 1/8	2 5/8	4.0	22.95	80 00
3 5/16	3 7/8	4 1/4	2 7/16	3	5.6	28.39	80 01
3 15/16	4 5/8	4 7/8	3	3 11/16	8.7	41.14	80 02
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	16.4	81.10	80 05
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	29.0	139.50	80 10
6 5/8	7 9/16	8 1/4	4 25/32	5 13/16	46.0	239.70	80 25
							80 50
3 5/16	3 7/8	4 1/4	2 7/16	3	4.2	27.20	120 00
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	7.0	36.01	120 01
4 1/4	5	5 7/16	3 5/16	4 1/16	10.5	49.64	120 02
4 7/8	5 3/8	6 1/4	3 1/2	4 3/8	19.0	91.97	120 04
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	38.0	154.70	120 08
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	49.0	194.65	120 12
6 17/32	7 7/16	8 1/4	4 25/32	5 13/16	48.0	243.10	120 20
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	6.0	31.11	180 00
3 15/16	4 5/8	4 7/8	3	3 11/16	7.6	45.39	180 01
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	20.3	74.80	180 02
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	33.0	144.60	180 05
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	58.0	221.15	180 10
3 5/8	4 1/4	4 7/16	2 11/16	3 5/16	6.0	34.85	230 00
3 15/16	4 5/8	4 7/8	3	3 11/16	8.5	49.30	230 01
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	20.0	84.49	230 02
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	44.0	170.75	230 05
6 1/2	7 9/16	8 1/4	4 3/4	5 13/16	49.0	231.50	230 08
3 15/16	4 5/8	4 7/8	3	3 11/16	8.0	34.00	300 00
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	15.0	65.11	300 01
4 7/8	5 3/4	6 1/4	3 1/2	4 3/8	23.0	107.95	300 02
5 13/16	6 7/8	7 1/2	4 1/4	5 5/16	46.0	197.25	300 05

Add 3/16 to LWH for Style BE

(Under 700 VA)

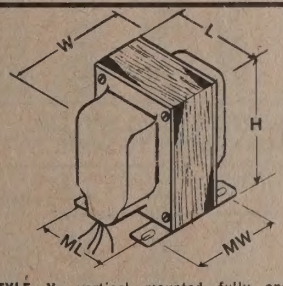


*(Over 700 VA)



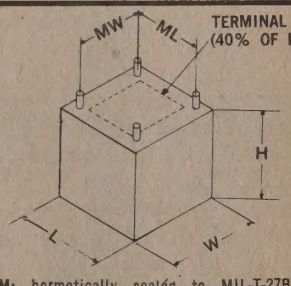
STYLE B: an "open" horizontal bracket mounted unit, double vacuum varnish impregnated for maximum environmental protection.

STYLE BE: identical to Style B plus an epoxy encapsulation per MIL-T-27B, Grade 5, Class S.



STYLE V: vertical mounted fully enclosed shells offer physical protection, improved appearance, and ease of "wiring with leads"... double vacuum varnish impregnated.

TERMINAL AREA (40% OF L & W)



STYLE CM: hermetically sealed to MIL-T-27B, Grade 4, Class S for the most rigorous environmental conditions.

• ENGINEERING • RELIABILITY • SERVICE

TODD ELECTRIC CO., INC.

HIGH CURRENT CHOKES | LINE ISOLATION

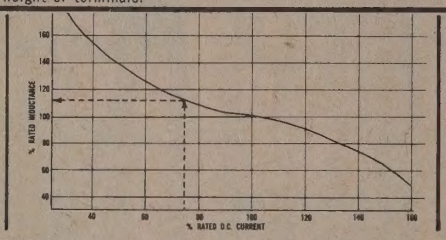
HIGH CURRENT CHOKES

50/400 CYCLES
(DIMENSIONS REFER TO HIGH CURRENT XFMR STYLES)

Part No.	Induc-ance	Cur. (D.C.)	Resist-ance	• BRACKET MTD (STYLE B) • ENCAPSULATED (STYLE BE) L	W	H	ML	MW	WGT	Style B Price	Style BE Price	• FULLY MTD. SHELLS (STYLE V) L	W	H	ML	MW	WGT	Style V Price	• HERMETIC SEALED MIL-T (STYLE CM) L	W	H	ML	MW	WGT	Style CM Price
CH-00	140	.5	3	2⅝	2⅛	2¼	2¾₁₆	2	2.0	$6.10	$9.05	2¼	2½	2⅝	1¾	1⅝	1.9	$7.15	2⅜₁₆	3	3⅛	1⅞	2⅝₁₆	2.6	$20.90
CH-01	100	1	1.5	3	2⅜	2½	2½	2	2.6	6.65	9.48	2⅜₁₆	2⅝	3⅛	2	1¹¹⁄₁₆	2.6	7.58	3	3½	3¹³⁄₁₆	2⅛	2⅝	3.0	22.40
CH-02	80	2	.95	3	2⅜	2½	2½	2	2.6	7.89	11.35	2⅜₁₆	2⅝	3⅛	2	1¹¹⁄₁₆	3.2	9.15	3	3½	3¹³⁄₁₆	2⅛	2⅝	3.8	26.80
CH-04	60	4	.60	3¾	3⅛	3⅛	3⅛	2⅝	5.2	9.66	13.90	3⅜₁₆	3⅞	3¹³⁄₁₆	2½	2⅝	5.8	10.85	3⅝	4¼	4⁷⁄₁₆	2¹¹⁄₁₆	3⅜₁₆	6.8	33.10
CH-05	50	5	.40	3¾	3⅜	3⅛	3⅛	2¾	5.8	10.70	14.25	3⅜₁₆	3⅞	3¹³⁄₁₆	2½	2¾	6.0	11.75	3⅝	4¼	4⁷⁄₁₆	2¹¹⁄₁₆	3⅜₁₆	7.1	38.50
CH-06	40	6	.30	3¾	3½	3⅛	3⅛	2⅞	6.4	12.87	18.60	3⅜₁₆	3⅞	3¹³⁄₁₆	2½	2⅞	6.2	14.45	3⅝	4¼	4⁷⁄₁₆	2¹¹⁄₁₆	3⅜₁₆	7.8	43.50
CH-08	30	8	.20	4⅛	3⅞	3⁷⁄₁₆	3⁷⁄₁₆	3	8.7	15.80	22.45	3½	4⅜	4³⁄₁₆	2¾	3⅝	8.7	18.10	4	4⅝	4⅞	3	3¹¹⁄₁₆	10.0	54.40
CH-12	20	12	.10	5¼	4¾	4⅜	4⅜	3½	13.0	19.60	28.40	4½	5¼	5⅜	3½	3¾	13.0	21.80	4⅞	5¾	6¼	3½	4⅜	15.0	66.50
CH-16	15	16	.08	5¼	5⅛	4⅜	4⅜	3¾	15.0	20.10	29.00	4½	5⅜	5⅜	3½	3⅞	14.0	22.10	4⅞	5¾	6¼	3½	4⅜	16.2	67.50
CH-20	10	20	.05	5¼	4¾	4⅜	4⅜	3½	13.0	20.40	29.10	4½	5	5⅜	3½	3½	13.0	22.95	4⅞	5¾	6¼	3½	4⅜	17.5	69.10
CH-25	7	25	.035	5¼	5⅜	4⅜	4⅜	4⅜	18.0	29.70	42.60	4½	5⅞	5⅜	3½	4⅜	18.0	34.15	4⅞	5¾	6¼	3½	4⅜	21.0	101.50
CH-40	3.5	40	.02	6⅜	5¼	†5⅞	5⅜₁₆	3½	20.0	36.50	50.20	5⅝	5¼	6⅜	4¼	3¼	24.0	38.75	5¹³⁄₁₆	6⅞	7½	4¼	5⅜₁₆	26.0	128.50
CH-50	2	50	.01	6⅜	5⅜	†5⅞	5⅜₁₆	3⅝	24.0	41.70	59.87	5⅝	5⅜	6⅜	4¼	3½	26.0	43.50	5¹³⁄₁₆	6⅞	7½	4¼	5⅜₁₆	30.0	140.80
CH-100	.7	100	.004	6⅜	5⅝	†5⅞	5⅜₁₆	3⅞	32.0	46.05	66.25	5⅝	5⅝	6⅜	4¼	3⅞	29.0	51.10	5¹³⁄₁₆	6⅞	7½	4¼	5⅜₁₆	37.0	155.50
CH-200	.35	200	.002	7½	6½	†7	6¾	4¾	45.0	69.60	98.15														

MILLIHENRIES — AMPS — OHMS

† Includes height of terminals.



TODD ELECTRIC HIGH CURRENT CHOKES are the perfect companion to our High Current Transformers when utilizing inductive filtering in designing a power supply.

INDUCTANCE VARIATION

The inductance realized from any stock High Current Choke will vary from the normal rated values as shown by the graph when subjected to a non-rated current. Due to greater heating loss, steady state current should not be exceeded by more than 30% except for intermittent operation.

LINE ISOLATION

50/60 CYCLES—OUTPUT 115 VOLTS
UL COMPONENTS

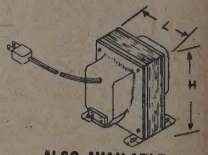
STRAIGHT ISOLATION

ELECTROSTATIC SHIELD CONNECTED TO CORE

CONVENIENT MOUNTING STYLES

Part No.	(VA) Watts	Input Volts	Rms Hipot Test Volts	Dimensions H	L	W*	MW*	ML	Weight	Price: Line Cord & Receptacle	Price Leads Only
LI-25	25	115	2000	3½	2⅞	2⅞	1⅞	2	3.2	$ 8.70	$ 8.40
LI-50	50	115	2000	3½	2⅞	3⅛	1⅞	2¼	3.7	9.24	8.82
LI-100	100	115	2000	4¾	3¾	3	2	3	6.2	12.32	11.67
LI-175	175	115	2000	4¾	3¾	4¼	3⅜	3	8.8	17.71	16.82
LI-250	250	115	2000	4¾	3¾	5⅛	4⅛	3	12.0	21.88	20.80
LI-500	500	115	2000	5⅝₁₆	4½	6⅛	5⅛	3½	20.0	35.75	33.99
LI-750	750	115	2000	5⅝₁₆	4½	7	6	3½	25.2	42.08	40.04
LI-1000	1000	115	2000	5⅝₁₆	4½	7⅞	6⅞	3½	30.0	48.95	46.37
LI-1500	1500	115	2000	7⅜	6¼	7¼	6⅛	4¾	36.2	62.84	59.75
LI-2000	2000	115	2000	7⅜	6¼	8¾	7⅝	4¾	48.0	72.50	69.50
LI-100-1	100	230	2500	4⅜	3¾	3	2	3	6.5	12.60	11.98
LI-250-1	250	230	2500	4⅜	3¾	5⅛	4⅛	3	12.5	22.88	21.76
LI-500-1	500	230	2500	5⅝₁₆	4½	6⅛	5⅛	3½	21.0	36.41	38.01
LI-1000-1	1000	230	2500	5⅝₁₆	4½	8	7	3½	31.0	49.67	47.27
LI-1500-1	1500	230	2500	7⅜	6¼	7¼	6⅛	4¾	37.0	63.40	60.25
LI-2000-1	2000	230	2500	7⅜	6¼	8¾	7⅝	4¾	49.0	73.10	70.25

*"Add 3/8" to W & MW for Line Cord and Receptacle Model."



ALSO AVAILABLE W/LEAD TERMINALS

HI-POWER ISOLATION

ELECTROSTATIC SHIELD CONNECTED TO TERMINAL

BRACKET MOUNTED

Part No.	(VA) Watts	Input Volts	Rms Hipot Test Volts	H	L	W	MW	ML	Weight	Price
LI-2500-4	2500	115/230	2500	6¼	7⅛	7⅛	5⅛	5¾	53.0	$ 72.75
LI-3000-4	3000	115/230	2500	6¼	7½	7⅞	6	6¾	59.0	83.50
LI-4000-4	4000	115/230	2500	7⅜	7½	9¾	9	6¾	75.0	99.25
LI-5000-4	5000	115/230	2500	7½	9	9	8½	7⅝	105.0	118.50
LI-6000-4	6000	115/230	2500	7½	9	10	9⅝	7⅝	125.0	154.50
LI-2500-5	2500	230/460	3000	6¼	7⅛	7⅛	5⅛	5¾	53.0	74.50
LI-3000-5	3000	230/460	3000	6¼	7½	7⅞	6	6¾	59.0	85.25
LI-4000-5	4000	230/460	3000	7⅜	7½	9¾	9	6¾	75.0	102.10
LI-5000-5	5000	230/460	3000	7½	9	9	8½	7⅝	105.0	121.25
LI-6000-5	6000	230/460	3000	7½	9	10	9⅝	7⅝	125.0	158.50

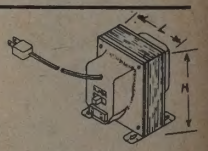
SCREW TERMINALS

ADJUSTABLE ISOLATION

ELECTROSTATIC SHIELD CONNECTED TO CORE

INPUT TAP SWITCH MOUNTED IN SHELL

Part No.	(VA) Watts	Input Volts	Rms Hipot Test Volts	Dimensions H	L	W	MW	ML	Weight	Price: Line Cord & Receptacle	Price Leads Only
LI-100-2	100	105/115/125	2000	4¾	3¾	3¾	2⅝	3	7.8	$18.12	$17.19
LI-250-2	250	105/115/125	2000	4¾	3¾	5½	4¾	3	14.3	29.26	27.84
LI-500-2	500	105/115/125	2000	5⅝₁₆	4½	6⅝	5⅝	3½	22	41.20	38.94
LI-1000-2	1000	105/115/125	2000	5⅝₁₆	4½	8½	7⅜	3½	33.5	55.88	52.91
LI-100-3	100	210/230/250	2500	4¾	3¾	3¾	2⅝	3	7.5	17.77	16.92
LI-250-3	250	210/230/250	2500	4¾	3¾	5½	4⅜	3	14	28.66	27.40
LI-500-3	500	210/230/250	2500	5⅝₁₆	4½	6½	5½	3½	21	40.26	38.34
LI-1000-3	1000	210/230/250	2500	5⅝₁₆	4½	8⅜	7¼	3½	32	54.78	51.90



ALSO AVAILABLE W/LEAD TERMINALS

• ENGINEERING • RELIABILITY • SERVICE
TODD ELECTRIC CO., INC.

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FILAMENT TRANSFORMERS | CONTROL TRANSFORMERS

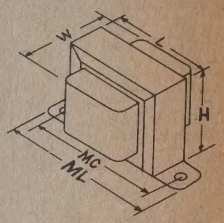
FILAMENT TRANSFORMERS

50/60 CYCLES
SINGLE SECONDARY — CENTER TAPPED

CHANNEL MOUNTED

PRIMARY 117 VOLTS

Part No.	Secondary Volts (CT)	Secondary Amps	Rms Hipot Test Volts	Dimensions H	L	W	MC	ML	Weight	Price
F2 15	2.5	1.5	2500	1 5/8	2	1 5/8	2 3/8	2 7/8	.75	$2.53
F2 30	2.5	3	1500	1 5/8	2	1 5/8	2 3/8	2 13/16	.7	2.90
F2 50	2.5	5	1500	2	2 3/8	1 7/8	2 13/16	3 1/4	1.2	3.30
F5 30	5	3	2500	2	2 3/8	2 1/8	2 13/16	3 1/4	1.4	3.53
F5 60	5	6	1500	2 3/32	2 3/4	2 1/8	3 1/8	3 3/4	1.7	4.83
F5 80	5	8	2500	2 5/8	3 1/8	2 1/4	3 5/16	4	2.5	5.70
F6 06	6.3	.6	2500	1 3/8	1 3/4	1 1/2	2	2 3/8	.4	2.60
F6 12	6.3	1.2	2500	1 5/8	2	1 7/8	2 3/8	2 7/8	.8	2.98
F6 13	6.3	1.2	5000	2	2 3/8	1 7/8	2 13/16	3 1/4	.8	3.94
F6 30	6.3	3	2500	2	2 3/8	2 1/8	2 13/16	3 1/4	1.4	3.92
F6 60	6.3	6	2000	2 3/8	2 3/4	2 3/8	3 1/8	3 3/4	2	5.58
F7 30	7.5	3	1500	2 3/32	2 3/4	2	3 1/8	3 3/4	1.6	4.60
F7 50	7.5	5	1500	2 5/8	3 1/8	2 1/4	3 5/16	4	2.4	5.50
F12 20	12.6	2	1500	2	2 3/8	2 1/8	2 13/16	3 1/4	1.4	4.42
F12 30	12.6	3	1500	2 3/8	2 3/4	2 1/4	3 1/8	3 3/4	1.6	5.65
F25 10	25.2	1	1500	2	2 3/8	2 1/8	2 13/16	3 1/4	1.4	4.53
F25 20	25.2	2	1500	2 5/8	3 1/8	2 1/4	3 5/16	4	2.2	6.70



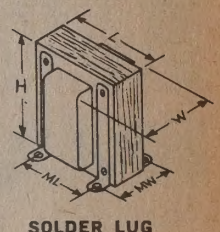
8" LEAD TERMINALS

BRACKET MOUNTED

PRIMARY 117 VOLTS

ELECTROSTATIC SHIELD GROUNDED TO FRAME

Part No.	Secondary Volts (CT)	Secondary Amps	Rms Hipot Test Volts	Dimensions H	L	W	MW	ML	Weight	Price
F2 100	2.5	10	10000	3 1/16	2 13/16	2 3/8	1 7/8	2 1/4	2.5	$8.71
F2 150	2.5	15	1500	3	2 1/2	2 7/8	2	2	2.4	6.65
F5 050	5	5	2500	3 1/8	2 1/2	2 1/8	1 7/8	2	2.2	5.85
F5 100	5	10	2500	3 1/8	2 1/2	2 3/4	2 3/8	2	3.0	7.87
F5 150	5	15	2000	3 1/8	2 1/2	2 3/4	2 1/4	2	3.5	9.80
F5 250	5	25	2500	3 7/8	2 7/8	3 3/8	2 5/8	2 1/2	4.8	14.08
F6 040	6.3	4	2500	3 1/8	2 1/2	2 3/8	2 1/8	2	2.4	5.95
F6 060	6.3	6	2000	3 1/8	2 1/2	2 3/8	2	2	2.4	6.87
F6 100	6.3	10	2500	3 7/16	2 7/8	2 5/8	2 1/8	2 1/4	3.5	8.97
F6 200	6.3	20	2500	4 5/8	3 3/4	3 3/8	2 3/8	3	6.8	14.27
F7 040	7.5	4	2000	3 1/8	2 1/2	2 1/4	2 1/8	2	2.8	6.28
F7 080	7.5	8	2500	3 7/8	3 1/8	2 3/4	2 3/8	2 1/2	4.8	8.65
F10 040	10	4	2500	3 7/16	2 7/8	2 1/2	2	2 1/4	3.4	7.06
F10 080	10	8	2500	3 7/8	3 1/8	3	2 3/8	2 1/2	5.0	10.29



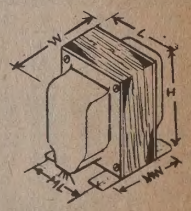
SOLDER LUG TERMINALS

VERTICAL SHELL MOUNTED

PRIMARY 117/105 VOLTS (Tapped)

ELECTROSTATIC SHIELD GROUNDED TO FRAME

Part No.	Secondary Volts (CT)	Secondary Amps	Rms Hipot Test Volts	Dimensions H	L	W	MW	ML	Weight	Price
F2 061	2.5	6	2500	3 1/8	2 1/2	2 1/2	1 1/2	2	2.2	$7.24
F2 101	2.5	10	2500	3 1/8	2 1/2	2 7/8	1 3/4	2	2.5	6.31
F5 031	5	3	2500	3 1/8	2 1/2	2 1/2	1 1/2	2	2.4	6.71
F5 061	5	6	2000	3 1/8	2 1/2	3	2	2	3.1	7.41
F5 301	5	30	2500	4 1/4	3 7/16	3 7/8	2 3/4	2 3/4	6.3	18.81
F6 041	6.3	4	2000	3 1/8	2 1/2	2 3/4	1 3/4	2	2.7	6.69
F6 061	6.3	6	2500	3 1/2	2 7/8	3 1/8	2	2 1/4	3.5	8.58
F6 101	6.3	10	2000	3 1/2	2 7/8	3 3/8	2 3/8	2 1/4	3.8	8.77
F7 051	7.5	5	2500	3 1/2	2 7/8	3 1/8	2	2 1/4	3.4	9.25
F7 051	10	5	2500	3 7/8	3 1/8	3 1/4	1 7/8	2 1/2	4.0	10.07
F10 081	10	8	2000	3 7/8	3 1/8	3 3/4	2 1/2	2 1/2	5.2	9.58
F10 101	10	10	2000	3 7/8	3 1/8	3 7/8	2 3/4	2 1/2	5.8	11.23



LEAD WIRE TERMINALS

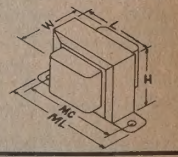
CONTROL TRANSFORMERS

PRIMARY 117 VOLTS 50/60 ~
(Also Available 230 V)

LEAD WIRE TERMINALS

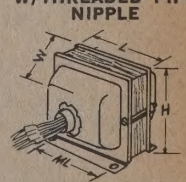
MINIATURE STYLE OPEN FRAME

Part No.	Secondary (RMS) Volts	Secondary (RMS) Amps	Equivalent Secondary Current Bridge	½ Wave	Full Wave	H	L	W	MC	ML	Weight	Price
CT12-150	12	.150	.10 DC	.05 DC	—	1 1/4	1 1/2	1 1/4	1 3/4	2 1/8	.25	$3.27
CT12-375	12	.375	.24 DC	.12 DC	—	1 3/8	1 3/4	1 3/8	2	2 3/8	.36	3.39
CT12-750	12	.750	.48 DC	.24 DC	—	1 5/8	2	1 1/2	2 3/8	2 7/8	.60	3.54
CT12-1250	12	1.250	.80 DC	.40 DC	—	2	2 3/8	1 5/8	2 3/4	3 1/4	.85	4.47
CT24-090	24 CT	.090	.07 DC	—	.145 DC	1 1/4	1 1/2	1 1/4	1 3/4	2 1/8	.25	3.57
CT24-220	24 CT	.220	.15 DC	—	.30 DC	1 3/8	1 3/4	1 3/8	2	2 3/8	.36	3.72
CT24-400	24 CT	.400	.27 DC	—	.55 DC	1 5/8	2	1 1/2	2 3/8	2 7/8	.60	3.87
CT24-750	24 CT	.750	.50 DC	—	1.00 DC	2	2 3/8	1 5/8	2 3/4	3 1/4	.85	4.80



SHELL ENCLOSED W/THREADED PIPE NIPPLE

Part No.	Secondary (RMS) Volts	Secondary (RMS) Amps	VA Cap.	H	L	W	MW	ML	Weight	Price
CTR-2425	24	1.05	25	2 1/2	2 5/8	2 1/2	1 1/2	2 1/8	2.3	$ 7.47
CTR-2450	24	2.1	50	2 3/4	3	3 1/4	1 3/4	2 3/8	3.6	8.83
CTR-2475	24	3.1	75	3 1/16	3 3/8	3 5/8	2 1/4	3	4.6	9.82
CTR-24100	24	4.1	100	3 1/2	3 3/4	3 7/8	2 7/8	3 1/4	5.2	13.15
CTR-24150	24	6.2	150	4	4 1/2	4 1/8	3	3 3/4	8.5	17.63
CTR-3225	32	.78	25	2 1/2	2 5/8	2 1/2	1 1/2	2 1/8	2.3	8.10
CTR-3250	32	1.55	50	2 3/4	3	3 1/4	1 3/4	2 3/8	3.6	9.34
CTR-3275	32	2.35	75	2 13/16	3 3/8	3 5/8	2 1/4	3	4.6	10.56
CTR-32100	32	3.1	100	3 1/2	3 3/4	3 7/8	2 7/8	3 1/4	5.2	14.05
CTR-32150	32	4.7	150	4	4 1/2	4 1/8	3	3 3/4	8.5	16.61



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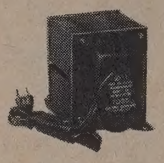
TODD ELECTRIC CO., INC.

STEPDOWN AUTO TRANSFORMERS

STEPDOWN AUTO TRANSFORMERS

HEAVY DUTY MODEL — 220/240 Input 110/120 Output

Catalog Number	Rating Watts	Weight Lbs.	Dimension Inches H	L	W	Price
SD-15	75	2¼	3 3/16	2¾	3 3/16	$10.72
SD-16	100	2⅓	3 3/16	2¾	3 3/16	10.80
SD-17	150	3⅔	3 3/16	2¾	3 15/16	12.40
SD-38	200		3 3/16	2¾	4¼	14.50
SD-12	250	6	4⅝	3⅞	3⅝	15.70
SD-18	350	6⅔	4⅝	3⅞	3¾	17.80
SD-11	500	10⅔	4⅝	3⅞	4⅞	22.60
SD-19	750	12	4⅝	3⅞	5⅛	27.50
SD-13	1000	15⅔	4⅝	3⅞	6⅛	38.50
SD-14	1500	20	4⅝	3⅞	7⅛	44.50
SD-20	2000	24	6	4½	6⅝	89.95
SD-39	2500	34	6½	5½	7½	138.50



UL LINE CORD & RECEPTACLE.

INDUSTRIAL MODEL — 208/220/240 Input 110/120 Output

Catalog Number	Rating Watts	Weight Lbs.	Dimension Inches H	L	W	Price
SD-28	3000	38	6⅛	7 1/16	6¼	$192.50
SD-29	4000	47	6⅛	7 1/16	6¼	249.75
SD-22	5000	58	6⅛	7 1/16	6¼	284.40
SD-30	6000	70	6⅛	7 1/16	6¼	346.20

*Available Panel MTD. Add Suffix "P"

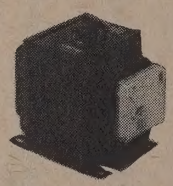
SCREW TERMINALS

HEAVY DUTY VOLTAGE REGULATOR — WITH METER & SWITCH

TYPE	PRIMARY INPUT TAPS ON SELECTOR SWITCH	OUTPUT VOLTS
11	84 92 100 108 115 122 130 138	115
12	84 92 100 108 115 122 130 138	230
21	170 185 200 215 230 245 260 275	115
22	170 185 200 215 230 245 260 275	230

SPECIFY TYPE

Catalog Number	Type	Rating W.	WT. Lbs.	Dimension (") H	L	W	Price
TC-17	11 or 22	150	6	5 1/32	3 25/32	5	$ 33.75
TC-18	11 or 22	350	7	5 1/32	3 25/32	5⅜	47.70
TC-11	11 or 22	500	11	5 1/32	3 25/32	5¾	55.00
TC-19	11 or 22	750	15	5 1/32	3 25/32	6⅜	69.00
TC-13	11 or 22	1000	20	5 1/32	3 25/32	7⅛	83.50
TC-14	11 or 22	1500	25	5 1/32	3 25/32	8⅛	109.50
TC-20	11 or 22	2000	30	6 3/32	4 3/32	8¾	204.75
TC-17	12 or 21	150	6	5 1/32	3 25/32	5¼	39.50
TC-18	12 or 21	350	7	5 1/32	3 25/32	5¾	54.50
TC-11	12 or 21	500	11	5 1/32	3 25/32	6	63.00
TC-19	12 or 21	750	15	5 1/32	3 25/32	6¾	81.50
TC-13	12 or 21	1000	20	6 3/32	4 3/32	7¾	101.25
TC-14	12 or 21	1500	25	6 3/32	4 3/32	8¾	124.50
TC-20	12 or 21	2000	30	6 3/32	4 3/32	9¾	233.50



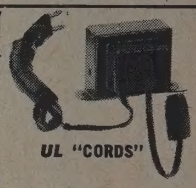
UL LINE CORD & RECEPTACLE

50/60 CYCLES—UL COMPONENTS

(MOST UNITS CAN BE REVERSED FOR STEPUP USE)

NORMAL DUTY MODEL — 220/240 Input 110/120 Output

Catalog Number	Rating Watts	Weight Lbs.	Dimension Inches H	L	W	Price
SD-24	50	1½	2⅜	3¾	2¼	$7.25
SD-21	65	1⅔	2⅜	3¾	2¼	7.40
SD-25	80	1⅔	2⅜	3¾	2¼	7.60
SD-23	100	1⅔	2⅜	3¾	2⅜	7.80
SD-26	125	2	2 1/16	4	2⅝	9.20
SD-27	150	2¼	2 1/16	4	2⅝	9.60

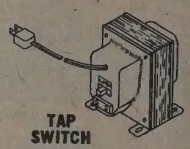


UL "CORDS"

3 TAP REFRIGERATION — 188/210 210/236 236/260 → 105/115 V

LINE CORD & RECEPTACLE

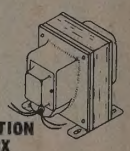
Catalog Number	Rating Watts	Wght. Lbs.	Dimension Inches H	L	W	Price
SD-31 LR	350	7.0	4¾	3⅞	4¼	$29.80
SD-32 LR	550	9.4	4¾	3⅞	4⅞	32.10
SD-33 LR	750	12.9	4¾	3⅞	5⅝	37.75
SD-34 LR	1000	16.8	4¾	3⅞	6½	51.60



TAP SWITCH

LEADS — JUNCTION BOX

Catalog Number	Rating Watts	Wght. Lbs.	Dimension Inches H	L	W	Price
SD-31 LO	350	6.0	4¾	3⅞	4⅛	$27.50
SD-32 LO	550	8.5	4¾	3⅞	4¾	29.75
SD-33 LO	750	12.0	4¾	3⅞	5½	35.50
SD-34 LO	1000	16.0	4¾	3⅞	6⅜	49.50



JUNCTION BOX

PANEL MOUNTED VOLTAGE REGULATOR — WITH METER & SWITCH (Junction Box)

TYPE	PRIMARY INPUT TAPS ON SELECTOR SWITCH	OUTPUT VOLTS
11	84 92 100 108 115 122 130 138	115
12	84 92 100 108 115 122 130 138	208/230
21	170 185 200 215 230 245 260 275	115
22	170 185 200 215 230 245 260 275	208/230

SPECIFY TYPE

Catalog Number	Type	Rating W.	WT. Lbs.	Dimension (") H	W	L	Price
TA-20	11 or 22	2000	40	6⅞	7½	17⅜	$239.00
TA-28	11 or 22	3000	50	6⅞	7½	17⅜	273.50
TA-29	11 or 22	4000	60	6⅞	7½	17⅜	334.25
TA-22	11 or 22	5000	70	6⅞	7½	17⅜	386.50
TA-30	11 or 22	6000	85	6⅞	7½	17⅜	458.30
TA-20	12 or 21	2000	40	6⅞	7½	17⅜	259.60
TA-28	12 or 21	3000	50	6⅞	7½	17⅜	291.40
TA-29	12 or 21	4000	60	6⅞	7½	17⅜	357.50
TA-22	12 or 21	5000	70	6⅞	7½	17⅜	414.70
TA-30	12 or 21	6000	85	6⅞	7½	17⅜	491.50

Packed One Per Carton

LEAD TERMINALS CONDUIT KNOCKOUTS

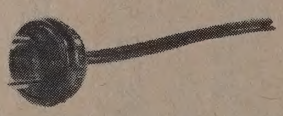
PORTABLE STEPDOWNS — 220/240 INPUT → 110/120 OUTPUT — 6' LINE CORD & RECEPTACLE

Catalog Number	Rating Watts	Weight Lbs.	Dimension Inches H	L	W	Price
SD-35	20	1	1½	2⅝	1⅞	$7.75
SD-36	40	1.5	1½	4	2	8.45
SD-37	60	1.7	1½	4	2	8.95

ACCESSORIES — AVAILABLE WHERE APPLICABLE

3 WIRE LINE CORD

FOREIGN PLUGS



3 WIRE RECEPTACLE

PLUG ADAPTERS

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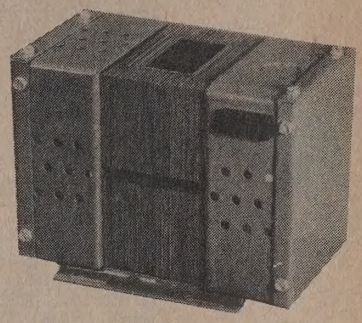
CONSTANT VOLTAGE TRANSFORMERS — 60 Hz

UNFILTERED HARMONIC TYPE ▶ 118 VOLT OUTPUT (CONSTANT)

• 1% AUTOMATIC REGULATION OF OUTPUT WITH LINE VARIATION OF UP TO 15% (95 - 130V) • RUGGED — NO MOVING PARTS • RESPONDS WITHIN 1½ CYCLES • EFFICIENCY APPROXIMATELY 85 - 90% • FULLY OPERATIONAL OVER WIDE AMBIENT TEMPERATURE RANGE: −20° TO +40°C • PROVIDES LINE ISOLATION • PROTECTS LOADS FROM HIGH SHORTING CURRENT SINCE OUTPUT IS AUTOMATICALLY LIMITED TO 150% OF RATED VALUE.

TODD ELECTRIC Style ***CVH*** Constant Voltage Transformers produce a semi-square output voltage wave form containing approximately 20% RMS harmonic content. This wave form will not affect the operation of non-harmonic sensitive loads such as solenoids, relays, filaments, and rectification applications.



JUNCTION BOX WITH BUILT-IN CONVENIENCE OUTLET

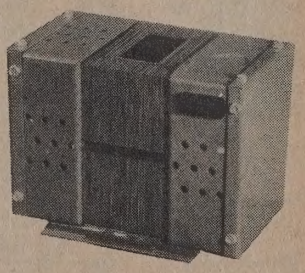
INPUT: 95 - 130 VOLT RANGE

Part No.	Capacity V-A	Dimension Inches H	L	W	Mounting Centers	Weight Lbs.	Price
CVH-10	10	3	4	5½	3¼ x 5	4.5	$18.10
CVH-20	20	3	4	5½	3¼ x 5	6.0	20.20
CVH-30	30	5¼	4⅛	7	3 x 3⅝	7.5	22.50
CVH-60	60	5¼	4⅛	7¾	3 x 3⅝	10.2	28.10
CVH-120	120	5¼	4⅛	8⅜	3 x 3⅝	12.5	36.80
CVH-250	250	6½	7¼	12	4¾ x 6½	24.0	54.80
CVH-375	375	6½	7¼	12½	4¾ x 6½	29.0	69.60
CVH-500	500	6½	7¼	13	4¾ x 6½	35.5	85.50
CVH-750	750	6½	7¼	15	4¾ x 6½	48.5	111.75
CVH-1000	1000	6½	7¼	17½	4¾ x 6½	60.0	144.25

FILTERED SINUSOIDAL TYPE ▶ 118 VOLT OUTPUT (CONSTANT)

TODD ELECTRIC STYLE ***CVS*** CONSTANT VOLTAGE TRANSFORMERS PROVIDE ALL OF THE AUTOMATIC RUGGED — QUICK RESPONSE FEATURES OF THE HARMONIC TYPE ***CVH*** WITH THE ADDITIONAL FEATURE OF A FULLY FILTERED OUTPUT WAVE FORM WHICH CONTAINS A MAXIMUM HARMONIC CONTENT OF 3%.

TODD ELECTRIC Style ***CVS*** is recommended for use where the loads are sensitive to the voltage or to the current wave form, such as equipment designed to operate on 120 volt sinusoidal line voltage.



JUNCTION BOX WITH BUILT-IN CONVENIENCE OUTLET

INPUT: 95 - 130 VOLT RANGE

Part No.	Capacity V-A	Dimension Inches H	L	W	Mounting Centers	Weight Lbs.	Price
CVS-30	30	5¼	4⅛	9¼	3 x 3⅝	9.5	$29.75
CVS-60	60	5¼	4⅛	10½	3 x 3⅝	13.0	36.25
CVS-120	120	5¼	4⅛	11¼	3 x 3⅝	15.3	45.60
CVS-250	250	6½	7¼	13⅛	4¾ x 6½	29.0	62.50
CVS-500	500	6½	7¼	14¾	4¾ x 6½	44.8	97.25
CVS-750	750	6½	7¼	18½	4¾ x 6½	61.0	135.80
CVS-1000	1000	6½	7¼	19¾	4¾ x 6½	74.5	164.30

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TODD ELECTRIC CO., INC.

TRIAD DISTRIBUTOR DIVISION

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MINIATURES

†† JAF SERIES — Hermetically Sealed

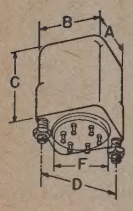
Type No.	Primary Impedance	Secondary Impedance	Max. Level-DBM	Freq. Resp.	** MTG.
JAF-1‡	600/250/50	50000	0	60-15000	AF
JAF-2‡	600/250/50	250000	0	100-15000	AF
JAF-3	600/250/50	60000 CT.	0	60-15000	AF
JAF-5‡	30/12/4	50000	0	50-15000	AF
JAF-11	15000	50000	10	60-15000	AF
JAF-12	15000	60000 CT.	10	60-15000	AF
JAF-13	15000 (3 Ma.)	95000 CT.	10	350-7000	AF
JAF-14‡	200	½ megohm	0	300-3000	AF
JAF-15	15000	1 megohm	10	350-5000	AF
JAF-21	15000	600/250/50	10	60-15000	AF
JAF-22	15000 (3 Ma.)	600/250/50	10	350-7000	AF
JAF-23	20000 CT.	600/250/50	10	60-15000	AF
JAF-24	10000 CT.(2Ma.)	2000 CT.	10	50-20000	AF
JAF-25	12000CT.(2 Ma.)	600 CT./150	10	50-15000	AF
JAF-26	50000CT.(.5Ma.)	600 CT./150	13	50-20000	AF
JAF-31‡	600/250/50	600/250/50	10	60-15000	AF
JAF-32	1500 CT. (2Ma.)	600 CT./150	14	50-20000	AF
JAF-33‡	5000 CT.	5000 CT.	10	60-15000	AF
JAF-34	500 CT.	500 CT./125	14	50-20000	AF
JAF-35	600 CT.	2000 CT./500	10	50-20000	AF
JAF-101	50 h.-.75 Ma.				AF
JAF-102	6 HY.—3 MA. or 4 HY.—6 Ma.				AF

JZ

TZ

SUB-MINIATURE AUDIO — Hermetically Sealed

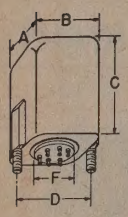
Type No.	Primary Impedance	Secondary Impedance	DC Res. Ohms (Approx.) Pri.	Sec.	** Case
JZ-1	600/250/50	60000	350	4100	JZ
JZ-5	30/12/4	50000	11.5	3800	JZ
JZ-13	15000 (1. Ma.)	135000 CT.	1150	4400	JZ
JZ-15	20000 (.5 Ma.)	1200/600/100	2700	350	JZ
JZ-25	10000 (1 Ma.)	200	1500	120	JZ
JZ-26	1000 (5 Ma.)	50	355	20	JZ



AF
AJ

SUB-MINIATURE AUDIO — Open Frame

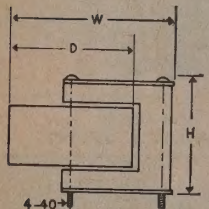
Type No.	Primary Impedance	Secondary Impedance	DC Res. Ohms (Approx.) Pri.	Sec.
TZ-1	600/250/50	60000	350	4100
TZ-2XT	200 CT.	200000	35	5000
TZ-5	30/12/4	50000	6	3500
TZ-7	30/12/4	1000	5	480
TZ-13	15000 (1 Ma.)	135000 CT.	985	4400
TZ-15	20000 (.5 Ma.)	1200/600/100	2700	350
TZ-24XT	25000 CT. (.5 Ma.)	500 CT.	2000	60
TZ-25	10000 (1 Ma.)	200	1500	120
TZ-32XT	1500 CT.(2.5Ma.)	600 CT./150	160	65
TZ-26	1000 (5 Ma.)	50	355	20
TZ-103XT	4 Hy. or 1 Hy.	—	400	—
T-41X	1000 (10 Ma.)	200 CT.	430	130
T-42X	9800 (2 Ma.)	16	855	1.7
TY-44X	1000 (10 Ma.)	16/8/4	180	3.8
TY-47X	2000 CT.(10 Ma.)	16/8/4	260	4



AG
AH

TRANSFORMERS FOR TRANSISTOR POWER SUPPLIES

Type No.	D.C. Volts Out of Rect.	D.C. Ma. Max.	Dimensions—Inches H	W	D	MW
TY-68S	250	65	1¾	1¾	1 11/32	1½
TY-69S	300	100	1⅞	2⅜	1⅞	1½
TY-70S	325	150	2	2⅜	2 7/16	1½
TY-71S	375	200	2	2⅜	2 7/16	1½
TY-74S	600	200	2	4⅛	3	3¾

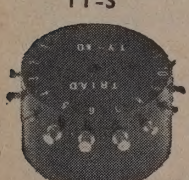


TY-S

EPOXY MOLDED TOROIDAL TYPE

Type No.	D.C. Source Volts	D.C. Volts Out Of Rectifier	D.C. Ma. Max.	Dimension—Inches Dia.	Ht.	Wt. Lbs.
TY-78	12.6	250/125	100	1¾	1 1/16	.35
TY-79	12.6	300/150	200	1¾	1	.35
TY-80	12.6	325/162.5	150	1¾	1	.35
TY-81	12.6	375/187.5	200	2	1	.50
TY-82	12.6	450/225	150	2	1	.50
TY-83	12.6	500/250	250	2¾	1⅜	.85
TY-84	12.6	600/300	200	2¾	1⅜	1.00
TY-85	12.6	600/300	350	2⅞	1⅞	2.00
TY-86	12.6	425/212.5	350	2¾	1⅜	1.00
TY-87§	12.6	600/300	200	2¾	1⅜	1.00
TY-88	28	250/125	80	1 5/16	5/16	.25
TY-89	28	300/150	100	1¾	1 1/16	.35
TY-90	28	325/162.5	200	1¾	1	.35
TY-91	28	375/187.5	200	2	1	.50
TY-92	28	450/225	200	2	1	.50
TY-93	28	500/250	250	2¾	1⅜	.85
TY-94	28	600/300	200	2¾	1⅜	1.00
TY-99	6.3	300/150	100	1¾	1	.35
TY-100	6.3	325/162.5	150	2	1	.50
TY-101	6.3	375/187.5	200	2¾	1⅜	1.00
TY-102	6.3	450/225	150	2¾	1⅜	1.00

§ Additional winding 125 V. @ 10 ma. for SSB.



TY-MOLDED

‡Static Shield •New item

†† MINIATURE AUDIO — "Trijets"

Type No.	Primary Impedance	Secondary Impedance	Max. Level-DBM	Freq. Resp.
T-1X‡	600/250/50	50000	0	60-15000
T-2X‡	600/250/50	250000	0	100-15000
T-3X	600/250/50	60000 CT.	0	60-15000
T-5X‡	30/12/4	50000	0	50-15000
T-11X	15000	50000	10	60-15000
T-12X	15000	60000 CT.	10	60-15000
T-13X	15000 (3 Ma.)	950000 CT.	10	350-7000
T-14X‡	200	500000	10	300-3000
T-15X	15000	1 Megohm	10	150-15000
T-20X	15000	600/250/50	10	60-15000
T-21X	3000	50	10	100-15000
T-22X	15000 (3 Ma.)	600/250/50	10	350-7000
T-23X	20000 CT.	600/250/50	10	60-15000
T-24X	10000 CT.	20000 CT.(2Ma.)	10	50-20000
T-25X	12000 CT.(2 Ma.)	600 CT. 150	10	50-16000
T-26X	50000 CT.(.5 Ma.)	600 CT./150	13	100-15000
T-31X‡	600/250/50	600/250/50	10	50-15000
T-32X	1500 CT. (2 Ma.)	600 CT./150	13	50-20000
T-33X‡	5000 CT.	5000 CT.	10	60-15000
T-34X	500 CT.	500 CT./125	13	50-20000
T-35X	600 CT.	2000 CT./500	10	50-20000
T-101X	50 henries @ .75 Ma.			
T-102X	6 Hy.-3 Ma. or 4 Hy.-6 Ma.			

††Low frequency loss will result from DC in windings other than where specified.

**See Case Chart on Triad Page 15

MINIATURES

TRANSISTOR TRANSFORMERS

Type No.	Primary Matching Impedance	Primary Current MA	Secondary Matching Impedance	Maximum Level
TY-23X	50000	.5	500 CT.	100 MW
TY-24X	50000	.5	3000 CT.	200 MW
TY-25X	100000	.5	200 CT.	200 MW
TY-26X	100000	.5	3000 CT.	200 MW
TY-27XT	500 CT.	2	500 CT.	10 MW
TY-28XT	500 CT.	2	200 CT.	10 MW
TY-29X	24 CT.	500	8/4	8W
TY-30X	100 CT.	100	8/4	2W
TY-31X	200 CT.	50	8/4	2W
TY-32X	200 CT.	2	2000 CT.	200 MW
TY-33X	400 CT.	5	16/8/4	200 MW
TY-34X	400 CT.	5	2000 CT.	200 MW
*TY-35X	500 CT.	2	150 CT.	100 MW
TY-36X	2000	2	1500 CT.	200 MW
*TY-37X	2000 CT.	4	8000 CT.	200 MW
*TY-38X	3000 CT.	4	1000 CT.	200 MW
TY-39X	4000 CT.	4	16/8/4	200 MW
TY-40X	5000	1	200 CT.	100 MW
TY-41X	16000	1	4000	100 MW
TY-42X	20000	.5	8/4	100 MW
TY-43X	20000	.5	800 CT.	100 MW
TY-44X	1000	10	16/8/4	200 MW

Continued on TRIAD Page 2

* Available in XT mounting for printed circuit board use as TY-35XT, TY-37XT and TY-38XT.

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MINIATURES (Continued)

Type No.	Primary Matching Impedance	Primary Current MA	Secondary Matching Impedance	Maximum Level
*TY-45X	500 CT.	5	16/8/4	200 MW
TY-46X	100	100	1000 CT.	250 MW
TY-47X	2000 CT.	10	16/8/4	200 MW
TY-48X	100 CT.	40	16/8/4	.5 W
TY-49X	500 CT.	12	5000 CT.	300 MW
TY-50X	125000	0	2000 CT.	40 MW
*TY-51X	2000 CT.	10	200 CT.	50 MW
TY-52X	20000 CT.	1	2000 CT.	100 MW
TY-53X	200 CT.	10	400 CT.	600 MW
TY-54X	15000	1.5	200 CT.	100 MW
TY-55X	2000 CT.	2	500 CT.	200 MW
TY-56X	10000	1	2000 CT.	50 MW
TY-57X	250 CT.	10	16/8/4	200 MW
TY-58X	125 CT.	15	8/4	200 MW
TY-59X	5000 CT.	1	50000 CT.	200 MW
TY-60X	200000	0	1000	100 MW
TY-61X	100	100	100 CT.	500 MW
TY-62X	10000	2	4	100 MW
TY-63X	48 CT.	275	16/8	5 W
TY-64X	32 CT.	575	16/8/4	10 W
TY-65Z	32 CT.	575	6K/4K/3K	10 W
TY-66A	6 CT.	5A	6K/4K/3K	40 W
TY-67A	6 CT.	5A	16/8/4	40 W

* Available in XT mounting for printed circuit board use as TY-45XT and TY-51XT.

†† JO SERIES — Hermetically Sealed

Type No.	Primary Impedance	Secondary Impedance	Max. Level-DBM	Freq. Resp.	Case
JO-1	600/250/50	50000	0	60-15000	JOA
JO-2	600/250/50	250000	0	100-8000	JOA
JO-3	600/250/50	60000 CT.	0	60-15000	JOA
JO-11	15000	60000	10	50-15000	JOB
JO-12	15000	60000 CT.	10	50-15000	JOB
JO-13	15000-3 Ma.	95000 CT.	10	300-7000	JOB
JO-21	15000	600/250/50	10	50-15000	JOB
JO-22	15000-3 Ma.	600/250/50	10	300-7000	JOB
JO-23	20000 CT.	600/250/50	10	50-15000	JOB
JO-31	600/250/50	600/250/50	10	50-15000	JOB
JO-101	50 h.-2 Ma.				JOB

DC TO AC TRANSISTOR TRANSFORMERS

Type	Primary	Secondary		
TY-75A	12v	115v	60cps	115 watts
TY-76A	12v	115v	60cps	60 watts
TY-468	28v	115v	400cps	60 watts
TY-462	12v	115v	400cps	60 watts

DC TO DC CONVERTER TRANSFORMERS
For use in blocking oscillator type power supplies

No. Type	L.	W.	H.	Mtg. Centers	*Typical Operation Input	Output
TY-200X	1⅝	⅞	13/16	1⅜	3VDC @ 20 Ma.	1050VDC @ 25 μa
TY-201TZ	½	1/16	7/16	—	4VDC @ 15 Ma.	500VDC @ 50 μa
TY202X	1⅝	⅞	13/16	1⅜	4VDC @ 45 Ma.	550VDC @ 80 μa

POWER COMPONENTS
HERMETICALLY SEALED

Combined PLATE and FILAMENT Transformers
Primary 115V — 50/60 cycle

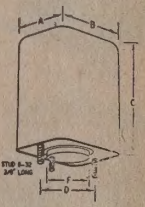
Type No.	Plate Supply AC Volts	Plate Supply DC Ma.	Filaments	F Dim. (Min.) Inches	Case
HSM-200	120	100	6.3 CT.-1.6A.	⅞	FA
HSM-201	500 CT.	20	6.3 CT.-2A.	1⅜	GA
HSM-202	120	20	6.3 CT.-.6A.	⅞	EA
HSM-203	600 CT.	50	6.3 CT.-2.5A. 5 -2A.	1⅜	JB
HSM-205	700 CT.	70	6.3 CT.-3A. 5 -3A.	1⅜	JA
HSM-207	700 CT.	120	6.3 CT.-5A. 5 -3A.	1⅜	KA
HSM-208	626 CT.	200	6.3/5.0-3A. 6.3 CT. 5	1⅜	KA
HSM-241	700 CT.-70V. bias tap.	150	6.3 CT.-6A. 6.3-V. -2A. 5 -3A.	1⅜	LA
HSM-212	1000/800 CT.	150 (ch. in.) 117 (cd. in.)	6.3/5-4A. 6.3 CT.-4A. 6.3 V-4A.	1⅜	LA
HSM-245	800/700 CT. 70 V. bias tap.	200	6.3 CT.-6A. 6.3-V. -4A. 5 -6A.	1⅜	MA
HSM-216	1000/800 CT.	200 (ch. in.) 157 (cd. in.)	6.3/5-4A. 6.3 CT.-5A. 6.3-5A.	1⅜	MA
HS-247	800/700 CT. 70 V. bias tap.	800	6.3 CT.-8A. 6.3-V. -4A. 5 -6A.	1⅜	GP-15
HSM-218	1000/800 CT.	300 (ch. in.) 235 (cd. in.)	6.3/5-6A. 6.3 CT.-6A. 6.3-6A.	1⅜	GP-15
HSM-219	760 1600 CT. (115/230 pri.)	40/230 (ch.input)		Spcl.	GP-15

All types electrostatically shielded
GP-15 dimens. 4¾" x 5⅞" x 6⅝" high. Wt. approx. 22 lbs.
Mtg. centers 3¾" x 4⅞".

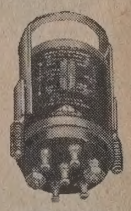
HS Series

Combined PLATE and FILAMENT Transformers
Primary 115V—400 cycle to operate 380 to 1500 cycles

Type No.	Plate Supply AC Volts	Plate Supply DC Ma.	Filaments	Insur. Test Volt.	F Dim. (Min.) Inches	Case
HS-401	500 CT.	40	6.3 CT.-1A. 6.3-1A	1500	⅞	EB
HS-400	125	25	6.3 CT.-.8A.	1500	23/32	AH
HS-404	500 CT.	120	6.3 CT.-3A. 6.3/5.0-3A.	1500	⅞	FA
HS-405	600 CT.	70	6.3 CT.-2A. 6.3-2A. *6.3-2A.	1500	1⅜	GA
HS-407	600 CT.	120	6.3 CT.-3.5A. 6.3-3.5A. *6.3/5-3A.	1500	1⅜	JB
HS-409	700 CT.	150	6.3 CT.-4A. *6.3/5-3A.	1500	1⅜	HA
HS-413	450 CT.	200	6.3 CT.-6A. 6.3 -6A. *6.3/5-4A.	1500	1⅜	JA
HS-415	800/600 CT.	200	63. CT.-6A. 6.3-6A. *6.3/5-6A.	2500	1⅜	KB
HS-417	800/600 CT.	300	6.3 CT.-6A. 6.3-6A. *6.3/5-6A.	2500	1⅜	LA



* Tapped for 5 volt rectifier use. All types electrostatically shielded.

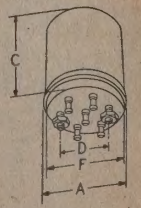

JO Series

SOLID STATE LOW-VOLTAGE TRANSFORMER
Primary 10/115/125 volts — 50/60 cycles

Type No.	Secondary AC Volts	Secondary RMS Amps	Rectifier Circuit CT. Full Wave	Rectifier Circuit Bridge FW	Case
•HSM-248	35 CT.	3	14.5v	29v	KA

AUDIO INTERSTAGE Transformers

Type No.	Primary Imped.	Turn Ratio	Freq. Resp.	Power Output	Shld'g	Case
HS-25	15000	1:2.72 overall	20-20000	75 MW	P-1	GP-4
HS-35	15000	1:2.72 overall	20-20000	26 MW	P-1	GP-2
HS-27	20000/5000	1:1.72 overall	20-20000	130 MW	P-1	GP-4
HS-29	20000/5000	1:2 overall	20-20000	20 MW	P-5	GP-4
HSM-31	20000/5000	1:1 or 2:1	20-20000	3 W		FA
HS-32	15000 (6 Ma.)	1:2 overall	20-15000	200 MW	P-1	GP-5



•New item

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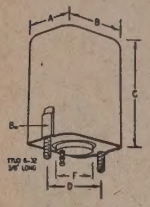
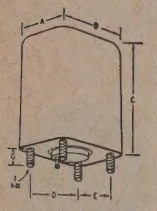
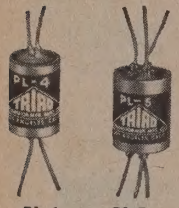


GP 1, 2, 3



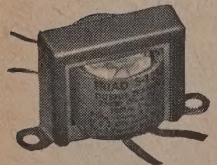
MIL-T-27A CASE

Case A

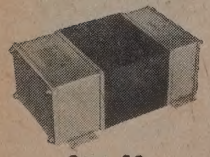


PL-4 PL-5

PL-6



Case X



Case SC

POWER OUTPUT to Line and VC. Hermetically Sealed

Type No.	Primary Impedance	Secondary Impedance	Max. Level Watts	Freq. Resp.	** Case
HS-71	10000 (10 Ma.)	600/150	2	150-15000	AH-2
HS-73	5000 (40 Ma.)	500/250/ 16/8/4	5	70-15000	AJ-2
HS-75	1000 CT. (50 Ma. bal.)	500/250/ 16/8/4	10	100-25000	EB
HS-77	9000 CT. (120 Ma. bal.)	500/250/ 16/8/4	25	70-20000	GA

LOW LEVEL AUDIO

AUDIO INPUT TRANSFORMERS Hermetically Sealed

Type No.	Primary Imped.	Turn Ratio	Freq. Resp.	Power Output MW	Shld'g	** Case
HS-1	600*/250*/ 150/62.5	1:11.3	20-20000	10	P-5	GP-4
HS-11	Same as above				P-1	GP-2
HS-3	600*/250*/ 150/62.5	1:14 overall	20-20000	10	P-5	GP-5
HS-4	Same as above				P-3	GP-4
HS-14	Same as above				P-1	GP-3
HS-15	600*/250*/ 150/62.5 (10 Ma.)	1:8 overall	30-20000	100	P-3	GP-5
HS-5	30	1:65.2	40-12000	1	P-5	GP-4

*Balanced center tap.

OUTPUT, MIXING, MATCHING, BRIDGING

Type No.	Primary Imped.	Secondary Impedance	Freq. Resp.	Power Output MW	Shld'g	** Case
HS-50	15000	600*/250*/ 150/62.5	20-20000	400	P-3	GP-4
HS-60	15000	600*/250*/ 150/62.5	20-20000	20	P-1	GP-2
HS-61	15000 (5 Ma.)	600*/250*/ 150/62.5	40-15000	200	P-1	GP-5
HS-52	20000 CT./ 5000	600*/250*/ 150/62.5	20-20000	400	P-1	GP-4
HS-54	20000 CT./ 5000	600*/250*/ 150/62.5	20-20000	10	P-5	GP-4
HS-56V	600*/250*/ 150*62.5	600*/250*/ 150/62.5	10-30000	100	P-3	GP-4
HS-66	600*/250*/ 150*62.5	600*/250*/ 150/62.5	10-30000	100	P-1	GP-3
HS-58	600*/250*/ 150*62.5	600*/250*/ 150/62.5	20-20000	50	P-3H	GP-5

* Balanced center tap.

POWER COMPONENTS

Type No.	Primary Volts	Secondary Volts	Secondary Amperes	Insulation Test Voltage	** Case
HSM-223	115	6.3	0.6	1500	AJ-2
HSM-225	105-115-125	6.3 CT.	2	1500	EA
HSM-226	105-115-125	6.3 CT.	3.6	1500	FA
HSM-224	105-115-125	6.3 CT.	5.5	2500	HB
HSM-234	105-115-125	†6.3 CT. 6.3	10 10	2500	KA
HSM-227	105-115-125	†6.3 CT. 6.3	3 3	2500	GA
HSM-229	105-115-125	6.3 CT.	8	2500	JB
HSM-233	105-115-125	12.6 CT.	8	1500	EA
HSM-237	105-115-125	12.6 CT.	2	2500	FA
HSM-230	105-115-125	24 CT.	0.8	1500	FA
HSM-239	105-115-125	24 CT.	1.5	2500	GA
HSM-240	115/230	†12.6 CT. †12.6	1.5 1.5	2500	GA
HSM-236	105-115-125	†12.6 CT. 12.6	2 2	2500	JB
HSM-228	105-115-125	†6.3 CT. 6.3	6 6	2500	JA
HSM-231	105-115-125	6.3 CT. 5 CT.	5 3	2500	JB
HSM-235	105-115-125	2.5 CT. 10 CT.	10 10	7500 2500	MA
HSM-238	105-115-125	†26 CT. †26	2 2	2500	JA

† Series or parallel connections.
** See case chart Triad Page 15.

FILAMENT Transformers, 380/1500 cycle

Type No.	Primary Volts	Secondary Volts	Secondary Amperes	Insulation Test Voltage	** Case
HS-436	115	6.3 CT.	1	1500	AH
HS-425	105-115-125	6.3 CT.	2	1500	AJ-2
HS-427	105-115-125	6.3 CT.	5	2500	EA
HS-445	105-115-125	12.6 CT.	3	2500	FA
HS-438	105-115-125	24 CT.	1.5	1500	EA
HS-433	105-115-125	*6.3 CT. *6.3	5 5	2500	FA
HS-435	105-115-125	*6.3 CT. *6.3 †6.3/5	3.5 3.5 3	2000	FA
HS-441	105-115-125	*5 CT. *5 2.5 CT.	10 10 10	2000 7500	HA
HS-443	105-115-125	*12.6 CT. *12.6	0.8 0.8	1500	AJ-2
HS-442△	57.5-99.7-115-120 Single phase.	*12.6 CT. *12.6	2 2	1500	EA
HS-444△	57.5-99.7-115-120	*26 CT. *26 CT.	2 2	2000	FA

△ Two Units can be used, 115 volt 3 phase to 26 volt 2 phase, Scott-connected. * Series or parallel connection. † 5 volt tap for filament type rectifiers.

UNIVERSAL RECTIFIER POWER SUPPLY TRANSFORMERS Primaries 115 Volts, 50/60 Cycles

Type No.	DC Range	MIL Case
HSM-249	6V.-.065A. to 53V.-.02A.	AH
HSM-250	6V.-.22A. to 53V.-.07A.	AJ
HMS-251	6V.-1.2A. to 53V.-.4A.	FA
HSM-252	6V.-3A. to 53V.-1A.	HA
HSM-253	6V.-7.5A. to 53V.-2.5A.	KA
HSM-254	6V.-18A. to 53V.-6A.	OA

HIGH FIDELITY OUTPUT

HIGH LEVEL OUTPUT — Hermetically Sealed

Type No.	Primary Impedance	Secondary Impedance	Freq. Resp.	Max. Level Watts	F Di. Min. In.	** Case
HSM-79	20000 CT. (20 Ma.) or 5000 (40 Ma.)	16/8/4	40-20000	5	1⅜	FA
HSM-80	20000 CT. (20 Ma.) or 5000 (40 Ma.)	600 CT./ 250CT./ 150/62.5	40-20000	5	1⅜	FA
HSM-81	8000 CT. Split primary.	16/8/4	7-50000	15	1⅜	JB
HSM-82	8000 CT. Split primary.	600/ 250/125	7-50000	15	1⅜	JB
*HSM-182	8000/ 2000 CT. Split primary.	600/ 250/125	7-50000	15	1⅜	JB
HSM-84	5000 CT. Split primary.	16/8/4	15-30000	20	1⅜	JB
†HSM-184	8000 CT. Split primary.	16/8/4	10-50000	25	1⅜	KB
†HSM-189	10000 CT. 2500 CT. Split primary.	16/8/4	7-50000	25	1⅜	KB
†HSM-190	10000 CT. 2500 CT. Split primary.	500/ 250/125	7-50000	25	1⅜	KB
†HSM 187	6600 CT. or 1650 CT. Split primary.	500/ 250/125	7-50000	25	1⅜	KB

† Tapped for Williamson circuit.

(Continued on next page.)

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HIGH FIDELITY OUTPUT (cont.)

HSM-94	4500 CT. (Split Wind'g)	16/8/4	7-50000	55	1⅜ LA

HIGH LEVEL OUTPUT

Type No.	Primary Impedance	Secondary Impedance	Output Watts
S-34X	4000 CT.	32/16/8	7.5
S-31A	8000 CT.	16/8/4	15
S-32A	8000 CT.	500/250/125	15
†S-142A	8000 CT.	16/8/4	15
S-35A	5000 CT.	16/8/4	20
S-36A	5000 CT.	500/250/125	20
†S-146A	6600 CT.	16/8/4	25
S-149A	3300 CT.	16/8/4	50
SR-45Z*	4000/2000/1000/500	16/8/4	10
S-46A	2000/1000/500/250	16/8/4	20
†SX-201	3300 ohms CT.	4-8-16 ohms	10-15
†SX-202	4500 ohms CT.	4-8-16 ohms	10-15
SX-203	5000 ohms	4-8-16 ohms	5-7
SX-204	5000 ohms CT.	4-8-16 ohms	10-15
SX-205	6600 ohms CT.	4-8-16 ohms	10-15
†SX-206	6600 ohms CT.	4-8-16 ohms	10-15
†SX-207	8000 ohms CT.	4-8-16 ohms	10-15
SX-208	8000 ohms CT.	4-8-16 ohms	10-15

† Williamson type circuit. Proper taps on primary for screen operation, leads out both end bells.
* Replaces S-45Z.

LINE POWER

ISOLATION Transformers, 50/60 cycles

(See Triad page 6 for 380/1500 cycle isolation transformers)

Type No.	V. A. Output	Input Volts	Output Volts
N-48X	15	115	115
N-49X	35	115	57.5/115§
N-51X	35	115	115
N-68X	50	230/115	115
N-53M	85	115	115
N-54M	150	115	115
N-73A	150	115	115/230
N-74A	150	115	57.5/115
N-67A	150	230/115	115
*N-55M	250	115	115
N-66A	250	230/115	115
*N-57M	500	115	115
*N-59M	1000	115	115
†N-52M	350	95 to 130 (in 5V steps)	115
†N-56M	150	95 to 130 (in 5V. steps)	115
N-469A	50	440/220	115
N-470A	150	440/220	115
N-471A	300	440/220	115

†With switch and meter for primary voltage control. Detachable cord. § Split Winding.

CONSTANT VOLTAGE TRANSFORMERS

Type No.	Rating V. A.	Input Volts	Output Volts
K-48U	24 24	95-130 95-130	24 CT. 24 CT.
K-100	30	95-130	118
K-101	60	95-130	118
K-102	120	95-130	118
K-103	250	95-130	118
K-104	500	95-130	118
K-105	750	95-130	118
K-106	1000	95-130	118

*Available with 3-wire cord, plug and socket as N-55MG, N-57MG and N-59MG.

PULSE TRANSFORMERS BLOCKING OSCILLATOR TYPE

Type No.	Pulse Voltage per Winding	Pulse Duration—us	Load Impedance —Ohms
PL-4	100-100	.54 to .66	500*
*PL-5	100-100-100	.36 to .54	2000*
PL-6	100-100-100	.36 to .54	2000*

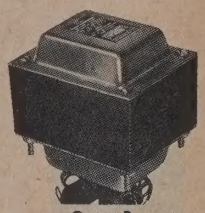
* As blocking oscillator in Triad circuit. Can be used with lower impedances and higher peak power at lower duty cycle.

Note: Last letter of Type No. denotes case style.

FILTER REACTORS

Type No.	Current DC Ma.	Inductance *Henries	Resistance Ohms	Insulation Test Voltage
HSM-301	20	30	1000	1500
HSM-302	20	14	560	1500
HS-331	40	4	375	1500
HS-303	50	12	385	1500
HS-333	70	3	225	1500
HSM-305	70	15	300	2500
HS-335	120	3	150	1500
HSM-307	120	15	185	2500
HSM-309	150	9	115	2500
HS-339	200	3	105	2000
HSM-315	200	10	100	2500
HS-341	300	2	48	2000
HSM-319	300	10	85	2500

Minimum Inductance—20%

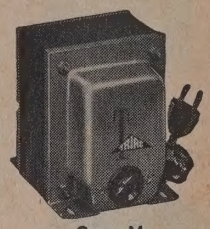


Case B

STEPDOWN Autoformers, 50/60 cycles

Type No.	V. A. Output	Input Volts	Output Volts
N-1X	50	230	115
N-3M	85	230	115
N-4M	150	230	115
N-5M	250	230	115
*N-7M	600	230	115
*N-9M	1250	230	115
*N-11M	2000	230	115
N-34X	150	95/105/115/125/135	115
†N-35M	250	95 to 130 (in 5V. steps)	115
†N-50M	500	95 to 130 (in 5V. steps) With switch and meter.	115

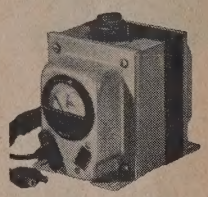
† M case with switch for primary voltage control and detachable cord.
* Available with 3-wire cord, plug and socket as N-7MG, N-9MG and N-11MG.



Case M

TRIGGER—PHOTOFLASH transformers

Type No.	Application	Turns Ratio	Primary Inductance	Leakage Inductance	Output Volts or Volt—μSec Rating
PL-10	Photoflash	1:30	15 μH	1.5 μH	6-8 KV
PL-11	Photoflash	1:30	2 μH	1 μH	10-12 Kv
PL-20	SCR Trigger	1:1	200 μH	8 μH	2000 VμSec
PL-21	SCR Trigger	1:1:1	200 μH	8 μH	2000 VμSec
VR-30Z	For photoflash applications from 115V-60 cycle line or 4 volt-180 cy. vibrator to 350V RMS @ 14 ma.				

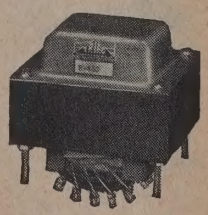


Case M with Meter

HIGH SPEED FERRITE TOROIDAL CORE LOW POWER

Type No.	Turns Ratio	Pulse Width μ Sec.	Rise Time μ Sec.	Repetition Rate	Suggested Load Ohms	Volts
PL-80E	1-1	.07	.03	1-2 Mc	200	15
PL-81E	2-1	.07	.03	1-2 Mc	200	20
PL-82H	3-1	.08	.03	1-2 Mc	100	15
PL-83H PL-83P	4-1	.08	.03	1-2 Mc	100	15
PL-84E PL-84H	5-1	.08	.03	1-2 Mc	100	15

The letter "H" indicates Hermetically Sealed, the letter "P" indicates Miniature Plug-in and the letter "E" indicates Epoxy Molded.

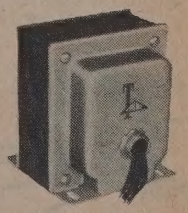


Case C

LOW SPEED SILICON CORE LOW POWER

Type No.	Pulse Voltage per Winding	Pulse Duration—μ Sec.	Load Impedance —Ohms
PL-124H	300-300-300	.6 to 5	150
PL-140H PL-140M	100-400-100	.6 to 5	175
PL-139E PL-139H PL-139M	100-100	.3 to 1.5	250
PL-146E PL-146H PL-146M	300-300	.6 to 5	250

Letter "M" indicates MIL type case. For pulse types only.



Case AC

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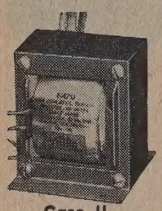
Instrument POWER SUPPLY Transformers

For PREAMPLIFIERS, VTVM, etc.
Primary 115 volts — 60 cycles

Type No.	Plate Supply AC Volts	Plate Supply DC Ma.	Filament Windings Volts and Amperes
R-68A	800 CT.	30	5V.-2A, 6.3V-1.2A, 6.3V-1.2A.
R-2C	135	15	6.3V-.9A.
R-23B	250 CT.	22	6.3-.8A. 15.5/12.6V-.6A.
R-3A	500 CT.	20	6.3V CT.-2A.
•R-53Z	500 CT.	25	6.3V-1A.
R-29A	230 CT.	40	6.3V.CT.-1.5A.
R-30X	135	50	6.3V.-1.5A.
R-54X	115	15	6.3V.-.6A.
R-56A	130	20	0/15/22.5/30V-.6A.
R-73B	135	200	6.3V CT.-5.5A.

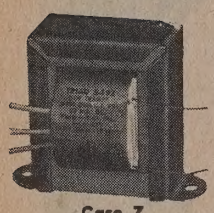


Case U

For CATHODE RAY Tubes
Primary 115 volts — 60 cycles

Type No.	Plate Supply AC Volts	Plate Supply DC Ma.	Filament Windings Volts and Amperes	
R-41C	440-0-440-1250.	125/5	*6.3V.-.6A. †2.5V.-1.75A.	†2.5V.-1.75A. 5V.-3A
R-45C	400-0-400-800.	30/5	*6.3V.-.6A. 6.3 CT.-3A. †5V.-2A	6.3V.-1A. 5V.-2A.
R-43C	1600	3	*6.3/5/2.5V.-1A. †6.3/5/2.5V.-3A.	

* Static shielded and insulated for full plate voltage.
† Insulated for full plate voltage.

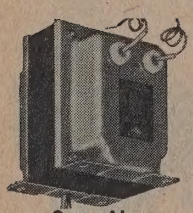


Case Z

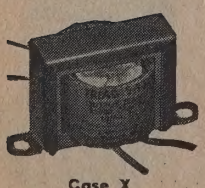
UNIVERSAL RECTIFIER Transformers
Primary 60 cycles
These transformers are for use with solid-state rectifiers. Rectifiers NOT included.

Type No.	Primary Volts	Secondary AC Volts	Secondary Amperes RMS	Half Wave Volts DC	Full Wave Volts DC
F-47U	115	17-18	3	6-7	13-14
F-48U	115	17-18	6	6-7	13-14
F-49U	115	36 36	3 3	13	26
F-60U	115	6.5-13-19.5-26	3	9	18
F-61U	115	24-27-30 33-36	3	13	26
F-67U	110-120	24-27-30-33-36	8	13	26
F-63U	115	8-9 8-9	2 2		6-7
F-64U	115	7-8-9	7		6-7
F-62U	105-115-125	9-9-9-9	10 ea. wdg.		6-7 ea. wdg.
F-68U	115	9 CT. 9 9 9	3.5 3.5 3.5 3.5		6-7 ea. wdg.
F-65U	110-120	140-150-160	.75	60	115
F-66U	110-120	140-150-160	2.5	60	115
•F-74U	115	14-28 14-28		2 series conn. 4 parallel conn.	
•F-75U	115	14-28 14-28		4 series conn. 8 parallel conn.	
F-79U	115	24-26-28-30	15	11.4	22.8
F-80U	115 tapped for mult. sec.	12 to 18 or 24 to 36CT	40 20	—	13
F-84AC	230-115	24CT or 12CT	10 20	—	8.5
F85U		5 or 7.5CT 5 or 7.5CT	20 20		1500 1500
F-90X	115 tapped	40CT-20CT-10	100ma	15	30
F-91X	115 tapped	40CT-20CT-10	300ma	15	30
F-92A	115 tapped	40CT-20CT-10	1 amp	15	30
R-93A	115	6.3CT (voltage doubler circuit) 150-160-170	6 (500ma)	65	120
F-93X	115 tapped	40CT-20CT-10	750ma	15	30
F-94X	115 tapped	40CT-20CT-10	35ma	15	30

• New item.



Case AL



Case X

For REGULATED POWER SUPPLIES
Primary 115 volts — 60 cycles

Type No.	Plate Supply AC Volts	Plate Supply DC Ma. Choke Input	Filament Windings Volts and Amperes	
R-70A	880 CT.	75	6.3V.-.6A. 6.3V.-.3A.	6.3V.-.9A. 6.3V.-3A.
R-26A	880-720 CT.	200	6.3 CT.-8A. 6.3V.-1A.	6.3V.-3A. 5V.-3A.
R-28A	1250 CT.	300	6.3 CT.-8A. 6.3V.-3A.	6.3V.-3A. 5V.-6A.
R-46A	1250 CT. 130 (Bias winding)	350	5V.-4A.	6.3V.-4A. 6.3V.-1A. 6.3V.-1A.
R-46A will supply 550 V. D.C. using 2 5R4G rectifier tubes, choke input. Will also supply 130 V. for bias using Selenuim rectifier. Sufficient filament windings to regulate screen voltages.				
R-27A	1500 CT.	400	5V.-6A.	6.3V.-3A. 6.3V.-8A.

UNIVERSAL
Isolation, Autoformer, Voltage Control 50/60CPS

Type No.	V.A. (Isolation)	V.A. (Autoformer)
N-64AC	500	1000
N-62AC	1000	2000
N-60SC	2000	4000

SOLID STATE RECTIFIER POWER TRANSFORMERS
Primary 117 volts — 50/60 cycles

Type No.	Secondary No. 1 Volts	Secondary No. 1 MADC	Secondary No. 2 Volts @ A		Secondary No. 3 Volts @ A		Mounting Centers
R-82B	35-0-35	3.5 Amp.	—	—	—	—	3 x3¾
R200A	200-0-200	400	6.3	3	6.3	3	2¾x3 1/16
R201A	150-0-150	600	6.3	2.5	6.3	2.5	2¾x3 1/16
R202A	100-0-100	800	6.3	2	6.3	2	2¾x2 15/16
R-203A	50-0-50	1600	6.3	1.5	6.3	1.5	2¾x2 11/16
R-204A	40-0-40	2000	6.3	1.5	6.3	1.5	2¾x2 13/16
R-205A	30-0-30	2500	6.3	1.5	6.3	1.5	2¾x2 11/16
R-206B	27-0-27	1.9 Amp.	—	—	—	—	2½x3⅛
R-208A	40-0-40	1.2 Amp.	—	—	—	—	2¼x2½

FILAMENT Transformers, Single Secondary
Primary 115 volts — 50/60 cycles

Type No.	Secondary Volts	Secondary Amperes	Test Volts
F-1X	2.5 CT.	3	1500
*F-72Z	2.5 CT.	5	7500
F-6X	2.5 CT.	6	2500
*F-3X	2.5 CT.	10	3000
F-5U	2.5 CT.	10	7500
*F-71U	2.5 CT.	10	10000
F-7X	5 CT.	3	1500
F-8X	5 CT.	6	1500
F-12X	5 CT.	8	2500
F-9A	5.2 CT.	13	1500
*F-10U	5 CT.	14	10000
F-9U	5.2 CT.	13	1500
*F-15U	5 CT.	15	3000
F-11U	5.2 CT.	24	1500
F-13X	6.3	.6	1500
*F-14X	6.3 CT.	1.2	2500
F-52X	6.3	1.2	5000
*F-51X	6.3/5	2	5000
F-53X	6.3	4	5000
F-16X	6.3 CT.	3	2500
*F-43X	6.3	4	1500
F-18X	6.3 CT.	6	1500
F-18A	6.3 CT.	6	1500
F-19X†	6.3/6 CT.	6	2000
F-21A	6.3 CT.	10	1500
F20U†	6.3/6 CT.	11	3000
*F-17U	6.3 CT.	15	Pri. 1500 Sec. 10000
F-22A	6.3 CT.	20	2000
F-24U†	7.5/6.3 CT.	8	3000
F-28U†	7.5/6.3 CT.	25	3000
F-23U	10 CT.	7	1500
F-29U†	12/11/10 CT.	11	3000
F-25X	12.6 CT.	1.5	1500

* 60 cycles. † Tapped primary to produce lower voltages.

(Continued on next page.)

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*F-44X	12.6 CT.	2	1500
*F-26X	12.6 CT.	2.5	1500
*F-45X	24 CT.	1	1500
F-46X	24	1	1500
*F-41X	25.2 CT.	2	1500
*F-40X	26.8 CT.	1	1500
F-55X	26.8	1.7	1500
*F-50X	Filament line transformer Pri. 6.3V/5V Sec. 6.3/5V 2A		5000
F-54X	35 CT.	1.5	1500

* 60 cycles.

CHOKES

SWINGING FILTER REACTORS

Type No.	Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS
C-31A	25/5	20/200	150	2500
C-33A	25/5	30/300	105	3000
C-32AL	20/4	35/350	105	5000
C-35A	20/4	40/400	65	3000
C-39A	25/5	50/500	65	3000
C-38AL	25/5	50/500	65	5000

SMOOTHING FILTER REACTORS

Type No.	Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS
C-30X	50	15	3500	1500
C-2X	2	15	70	1500
C-1X	15	20	1000	1000
C-3X	10	50	500	1500
C-4X	4	50	360	1500
C-6X	5	65	330	1500
C-5X	12	75	390	1000
C-8X	7	75	240	1500
C-7X	10	90	270	1000
C-9X	4	90	100	1500
C-11X	6	110	160	1500
C-10X	9	125	250	1000
C-12X	6	160	165	1500
C-12A	6	160	165	1500
C-13X	3	160	75	1500
C-14X	6	200	150	1500
C-14A	6	200	150	1500
C-16A	10	200	150	2500
C-21X	1.5	225	65	1500
C-15X	4	250	100	1500
C-15A	4	250	100	1500
C-23X	1.2	260	45	1500
C-24X	1	240	50	1500
C-27X	.7	290	25	1500
C-36X	.5	300	30	1500
C-17X	1.5	300	40	1500
C-18A	8	300	90	2500
C-19A	10	300	105	3000
C-25A	2.6	310	44	1500
C-42AL	8	350	105	5000
C-34X	.6	350	35	1500
C-28X	1	350	35	1500
C-29X	1.5	375	50	1500
C-50X	2	400	40	2500
C-20A	6	400	60	3000
C-22A	10	500	65	3000
C-45AL	10	500	65	5000
C-40X	.32	600	10	1500
C-47U	.3-.075	1A-2A	3-.75	1500
C-48U	.08-.02	2.5A-5A	.57-.143	1500
C-49U	.032-.008	5A-10A	.19-.05	1500
C-80U	.024-.006	20A-40A	.1/.025	1500
C-56U	.035	2.0A	.75	1500
C-57U	.025	4.0A	.55	1500
C-58U	.01	8.0A	.15	1500
C-59U	.01	12.5A	.10	1500
C-60U	.005	22.5A	.06	1500

ISOLATION Transformers

Primary 115V—400 cycle to operate 380 to 1500 cycles

Type No.	Secondary Volts	Amp.	V. A.	F Dim. (Min.) Inches	Case
HS-470	115	.35	40	7/8	EA
HS-471	115	.7	80	7/8	FA
HS-472	115	1.4	160	7/8	GA
HS-474	115	2.6	300	7/8	JA
HS-475	115	4.4	500	7/8	KA

60 cycle — hermetically sealed. Primary 115/230 volts

Type No.	secondary volts	amp.	V.A.	F dim. (Min.) inches	Case
HSM-270	105-115-125	.4	50	1	JB
HSM-271	105-115-125	1	125	1	KA
HSM-272	105-115-125	2	250	1 1/16	NB

All isolation transformers electrostatically shielded.

FILAMENT Transformers, Multiple Secondary

Primary 115 volts — 60 cycles

Type No.	Secondary Volts and Amperes		Test Volts RMS
F-27U	10 CT.-10A.	2.5 CT.-10A.	1500 7500
F-30A	5 CT.-3A.	6.3 CT.-8A.	1500
F-32A	6.3 CT.-3A.	6.3 CT.-3A.	1500
F-34A	6.3 CT.-1.75A. 6.3V.-1.75A.	6.3V.-1.75A. 6.3V.-1.75A.	1500
F-36A	6.3 CT.-3.5A. 6.3V.-3.5A.	6.3V.-3.5A. 6.3V.-3.5A.	1500
F-38A	6.3 CT.-5A. 6.3V.-1A. 5V.-4A.	6.3V.-5A. 5 CT.-2A.	1500
F-42A	12.6 CT.-2.5A.	12.6-2.5A.	1500
F-83A	12.6 CT. 12.6 CT.	5 5	1500

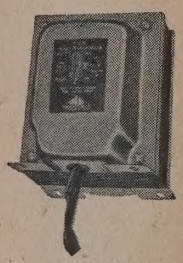
AUDIO TRANSFORMERS

Low Level High Fidelity

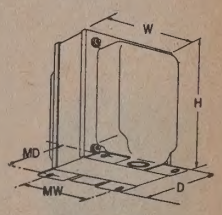
Type No.	Application	Frequency Response	Primary Impedance	Turns Ratio
A-9J	line or mike to grid	30-15000	600/250/50	12
A-10J	line to grid	30-15000	600/150 split wdgs.	10.5
A-11J	line or mike to grid 60-80DB shielding	30-15000	600/250/50	10
A-12J	same as A-11J	30-15000	600 CT./150 split windings	10
A-13J	line to transistor or line to line (70 db Shldg)	30-15000	600/300/ 200 CT./110/50 split windings	1
A-40J	par. fed 6J5 or 6SN7 plate to P.P. grids	30-15000	15000	2.76
A-50J	pp plates to voice coil	30-15000	10000 CT.	35.3
A-52J	line or transistor to line or transistor	30-15000	500 CT./125 20 MA. D.C. Split Winding	2
A-55J	par. fed 6J5 or 6SN7 to line	30-15000	15000	5
A-56J	line or transistor to Voice Coil	30-15000	500 CT./125 15 MA. D.C. Split Winding	5.6
A-61J	line to 2 lines or transistors	60-15000	600/150 split wdgs.	1.41:1:1
A-65J	par. fed 6J5 or 6SN7 to line	30-15000	15000 CT.	5
A-66J	same as A-65J— 4 ma DC in primary	40-15000	15000	5
A-67J	line to line	30-15000	600 CT./150 split windings	1
A-68J	pp plate to line 4 ma DC in primary	40-15000	150000 CT.	5
A-69J	pp plates or bridging to line 3 MA. D.C. in Primary	50-20000	25000 CT./ 6250 Split Winding	7.1
A-70J	line or transistor to line or transistor	30-15000	500 CT./125 Split Winding	2.24
A-77J	Audio choke — dual winding	250 henries - 5 ma DC 62.5 henries - 10 ma DC		
A-57J	line or transistor to line	30-15000	600/250/50	1:1
A-79J	Transistor inter-stage 10ma in primary	20-15000	1000	2.2

Line or Microphone to Grid

Type No.	Application	Frequency Response	Primary Impedance	Turn Ratio
A-1X	Line or single button mike to grid.	100-15000	100	31.4
A-3X	Line or D.B. mike to grid.	200-10000	400 CT.	22.1
A-4X	Line to grid.	100-20000	500 CT./ 333/200 CT./125/ 67.5/50	12
A-5X	Single button mike to p.p. grids—Hi-gain.	100-15000	100	84
A-6X	Speaker V.C. to grid	150-20000	8/3.2	79.6
A-7J	Voice coil to grid	150-10000	3.2	124



Case A



Case A

Triad J Series offers flexibility enabling your amplifiers to exceed broadcast standards. Although economy in construction has cut costs, these transformers approach and closely approximate performance characteristics found in more costly hermetically sealed parts. Single hole mounting provides for rotation for maximum reduction of hum . . . alloy shielding gives you 40-60 db hum reduction (60-80 db in Types A-11J & A-12J) . . . you can obtain wide frequency ranges . . . flexible leads facilitate ease in mounting . . . input units are electrostatically and magnetically shielded . . . light weight and encased in Triad's satin smooth baked gray enamel cases, 1 3/8" diameter, 1 3/4" above chassis . . . legible circuit diagrams are permanently affixed to every case.

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TRIAD DISTRIBUTOR DIVISION

A DIVISION OF LITTON INDUSTRIES

AUDIO OUTPUT TRANSFORMERS
Line to Voice Coil

Type No.	Primary Impedance	Output Imped.	Output Watts	Freq. Resp.
S-23X	50 (autoformer).	3.2	1	100-8000
S-26X	500/50 (autoformer).	3.2	4	100-8000
S-65X	500	8/4	5	300-7000
S-66X	500 (autoformer).	16/8/4	3	100-10000
S-76Z	250/125/62.5/31	16/8/4	10	40-15000
S-77U	500 CT./125 split wdgs.	32/16/8/ 4/2	30	40-15000

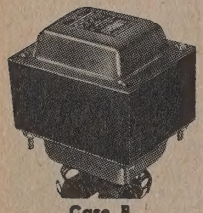
POWER

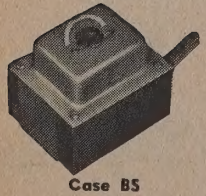
Combined PLATE and FILAMENT Transformers
Primary 115 volts — 60 cycles

Type No.	Plate Supply AC Volts	Plate Supply DC Ma.	Rect. Fil. Volts	Rect. Fil. Amp.	Other Fil. Volts	Other Fil. Amp.
R-22A	380/320 CT.	70	6.3	.6	6.3 CT.	3
R-22B	380/320 CT.	70	6.3	.6	6.3 CT.	3
R-4A	500 CT.	40			6.3 CT.	2
R-4B	500 CT.	40			6.3 CT.	2
R-5A	600 CT.	65			6.3 CT.	2.7
R-5B	600 CT.	65			6.3 CT.	2.7
R-6A	480 CT.	50	5	2	6.3 CT.	2
R-6B	480 CT.	50	5	2	6.3 CT.	2
R-7A	600 CT.	50	5	2	6.3 CT.	2
R-7B	600 CT.	50	5	2	6.3 CT.	2
R-8A	500 CT.	75	5	2	6.3 CT.	2.5
R-8B	500 CT.	75	5	2	6.3 CT.	2.5
R-9A	600 CT.	75	5	2	6.3 CT.	3
R-9B	600 CT.	75	5	2	6.3 CT.	3
R-10A	525 CT.	90	5	2	6.3 CT.	5
R-10B	525 CT.	90	5	2	6.3 CT.	5
R-11A	700 CT.	90	5	2	6.3 CT.	3.5
R-11B	700 CT.	90	5	2	6.3 CT.	3.5
R-98B	650 CT. 40 Tap.	100	5	3	6.3 CT.	3
R-12A	550 CT.	110	5	2	6.3 CT.	5
R-12B	550 CT.	110	5	2	6.3 CT.	5
R-14A	700 CT.	125	5	3	6.3 CT.	4.5
R-14B	700 CT.	125	5	3	6.3 CT.	4.5
R-16A	700 CT.	160	5	3	6.3 CT.	5
R-16B	700 CT.	160	5	3	6.3 CT.	5
R-17A	750 CT. 80 Tap	160	5	3	6.3 CT. 2.5 CT.	5 5
R-18A	750 CT.	175	5	3	6.3 CT.	8
R-18B	750 CT.	175	5	3	6.3 CT.	8
R-99B	600 CT. 40 Tap.	200			6.3 CT.	4
R-19A	750 CT. 80 Tap	200	5	3	6.3 CT. 2.5 CT.	6 10
R-20A	700 CT.	200	5	3	6.3 CT.	8
R-20B	700 CT.	200	5	3	6.3 CT.	8
R-72A	800 CT.	140	5	3	6.3 CT.	4
R-21A	800 CT.	200	5	3	6.3 CT.	6
R-21B	800 CT.	200	5	3	6.3 CT.	6
R-24A	800 CT.	300	5	6	6.3 CT.	6
R-24B	800 CT.	300	5	6	6.3 CT.	6
R-25A	800 CT.	500	5	6	6.3 6.3 CT.	3 7
R-58A	875 CT.	185	5	3	6.3 6.3	4 3
R-59A	1200 CT.	200	5	3	6.3 6.3	3 3
R-71A	900 CT.	250	5 CT.	4	6.3 CT. 6.3	2 4

Combined PLATE and FILAMENT Transformers "100" Series

Case A


Case B


Case B5

Never have the outstanding features of Triad Combined Plate and Filament Power Transformers been available at such realistic costs. No quality or performance requirement has been overlooked... specify Triad and be certain. Shielding, impregnation, chatter freedom ...to Triad's demanding quality control standards.

PRIMARY 115 VOLTS 60 CYCLES

Type No.	Plate Supply AC Volts	Plate Supply DC Ma.	Rect. Filaments Volts	Rect. Filaments Amp.	Other Filaments Volts	Other Filaments Amp.	Case Dim. H	Case Dim. W	Case Dim. D	Mtg. Dim. MW	Mtg. Dim. MD	Wt. Lbs.
R-104A	500 C.T.	40			6.3 V.C.T.	2	2¾	2⅜	2¼	1¾	1½	1.55
R-104B	500 C.T.	40			6.3 V.C.T.	2	1⅝	2⅝	2¾₆	2¾₆	1¾	1.55
R-105A	600 C.T.	65			6.3 V.C.T.	2.7	3⅛	2⅝	2½	2	1¹⁵⁄₁₆	2
R-105B	600 C.T.	65			6.3 V.C.T.	2.7	1⅝	3¹⁄₁₆	2½	2½	2	2
R-106A	480 C.T.	50	5	2	6.3 V.C.T.	2	3⅛	2⅝	2⅜	2	1⁷⁄₁₆	2.05
R-106B	480 C.T.	50	5	2	6.3 V.C.T	2	1½	3¹⁄₁₆	2½	2½	2	2.05
R-107A	600 C.T.	50	5	2	6.3 V.C.T.	2	3⅛	2⅝	2½	2	1¹⁵⁄₁₆	2.35
R-107B	600 C.T.	50	5	2	6.3 V.C.T	2	1⅝	3¹⁄₁₆	2½	2½	2	2.35
R-108A	500 C.T.	75	5	2	6.3 V.C.T.	2.5	3⅛	2⅝	2⅝	2	1¹¹⁄₁₆	2.4
R-108B	500 C.T.	75	5	2	6.3 V.C.T.	2.5	1¾	3¹⁄₁₆	2½	2½	2	2.4
R-109A	600 C.T.	75	5	2	6.3 V.C.T.	3	3½	3	2⅞	2¼	1¾	2.9
R-109B	600 C.T.	75	5	2	6.3 V.C.T.	3	1⅝	3⅞₆	2⅞	2¹³⁄₁₆	2¼	2.9
R-110A	525 C.T.	90	5	2	6.3 V.C.T.	5	3½	3	3⅛	2¼	2	3.25
R-110B	525 C.T.	90	5	2	6.3 V.C.T.	5	1⅞	3⅞₆	2⅞	2¹³⁄₁₆	2¼	3.25
R-111A	700 C.T.	90	5	3	6.3 V.C.T.	3.5	3½	3	3⅛	2¼	2	3.25
R-111B	700 C.T.	90	5	3	6.3 V.C.T.	3.5	1⅞	3⅞₆	2⅞	2¹³⁄₁₆	2¼	3.25
R-112A	550 C.T.	110	5	2	6.3 V.C.T.	5	3½	3	3¼	2¼	2⅛	3.7
R-112B	550 C.T.	110	5	2	6.3 V.C.T	5	2	3⅞₆	2⅞	2¹³⁄₁₆	2¼	3.7
R-113A	650 C.T.	40	5	2	6.3 V.C.T.	2	3⅛	2⅝	2⅝	2	1¾	2.3
R-113B	650 C.T.	40	5	2	6.3 V.C.T.	2	1¾	3	2½	2½	2	2.3
R-114A	700 C.T.	125	5	3	6.3 V.C.T.	4.5	3⅞	3¼	3¼	2½	2⅜	4.7
R-114B	700 C.T.	125	5	3	6.3 V.C.T.	4.5	2⅜	3¾	3½	3⅛	2½	4.7
R-115A	680 C.T.	70	5	2	6.3 V.C.T.	2.5	3¾₆	3	3	2	1¹⁵⁄₁₆	3.5
R-115B	680 C.T.	70	5	2	6.3 V.C.T.	2.5	2	3	2½	2½	2	3.5
R-116A	700 C.T.	160	5	3	6.3 V.C.T.	5	3⅞	3¼	3¾	2½	2⅝	5.65
R-116B	700 C.T.	160	5	3	6.3 V.C.T.	5	2⅝	3¾	3⅛	3⅛	2½	5.65
R-118A	750 C.T.	175	5	3	6.3 V.C.T.	8	4¼	3⅝	4	2¾	2⅞	7.45
R-118B	750 C.T.	175	5	3	6.3 V.C.T.	8	2¾	4⅛	3½	3⅞₆	2¾	7.45
R-120A	700 C.T.	200	5	3	6.3 V.C.T.	8	4¼	3⅝	4⅛	2¾	3	8.25
R-120B	700 C.T.	200	5	3	6.3 V.C.T.	8	2⅞	4⅛	3½	3⅞₆	2¾	8.25
R-121A	800 C.T.	200	5	3	6.3 V.C.T.	6	4¼	3⅝	4⅜	2¾	3¼	8.25
R-121B	800 C.T.	200	5	3	6.3 V.C.T.	6	3⅛	4⅛	3½	3⅞₆	2¾	8.25

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TRIAD DISTRIBUTOR DIVISION

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PLATE POWER Transformers
Primary 115 volts — 50/60 cycles

Type No.	Secondary Volts AC	Secondary Volts DC	Sec. D.C. Ma. CCS	Sec. D.C. Ma. ICAS	Rect. Fil.
P-1A	440/220 CT.	180/90	160	190	5V-3A
P-3A	600/300 CT.	250/125	300	360	5V-4A
P-5A°	1100 CT.	400	250	300	5V-4A
P-7A°	1235 CT.	500	250	300	5V-4A
P-9A	1235 CT.	500	500	600	5V-6A
■P-30A	600 CT. 105 Bias	800**	500 80		6.3V-4A 6.3V-4A
P-11A°	1455 CT.	600	250	300	
P-213AL*†	1780 CT.	750	250	300	
§P-14A	1780 CT.	750/600	250	300	
P-215AL*†	2340 CT.	1000	250	300	
P-216AL*†	2430 CT.	1000	500	600	
P-217AL*†	2880 CT.	1250	250	300	
P218AL*†	2880 CT.	1250	500	600	
P-220AL*†	3300 CT.	1500	350	420	
PR-21AL	3300 CT.	1500	500	600	

** FW bridge, cap. input filter.
† Plate leads out side of case for 866 rectifiers.
§ Tapped Pri. to produce the lower D.C. voltage.
*Pri. is 230/115V.
°60 cycle only.
■ New item.

POWER TRANSFORMERS

Combined Plate and Filament
Electrostatically shielded. Primary 115 volts 60 cycles.

Type No.	Plate Supply AC Volts	Plate Supply DC Ma.	Filaments — Volts and Amperes	
R-37BC	735 V.C.T.	275	5V.—6A.	6.3V.—8.5A. 6.3V./5V.—2A.*
R-38A	750 V.C.T.	225	5V.—3A.	6.3V.—10A. 6.3V.—1.2A.* 6.3V.—2.5A.
R-40BC	780/440 V.C.T.	300	5V.—3A. 5V.—3A. 5V.—2A.	6.3V.—8.5A. 6.3V.—3.5A.
R-49BS R-49BC	650 V.C.T.	240	5V.—3A.	6.3V.—9A. 6.3V.—0.9A. 6.3V.—1.2A.*
R-50A R-50BC	790/650 V.C.T.	310	5V.—3A. 5V.—3A. 5V.—2A.	6.3V.—5A. 6.3V.—5A. 6.3V.—2.6A.
R-51BC	505 V.C.T.	320	5V.—6A.	6.3V.—5A. 6.3V.—5A. 6.3V.—1.2A.*
R-61BC	560 V.C.T.	300	5V.—6A.	6.3V.—6A. 6.3V.—6A. 6.3V.—1.2A.*
R-62BC	680 V.C.T.	290	5V.—6A.	6.3V.—10A. 6.3V.—2.5A. 6.3V.—1.2A.*
R-64BC	520 V.C.T.	270	5V.—3A.	6.3V.—10A.
R-65BC	550 V.C.T.	270	5V. —3A.	6.3V. —10A.
R-67BC	600 V.C.T.	250	5V. —3A.	6.3V. —9A.
R-69BC	550 V.C.T.	270	5V. —3A.	6.3V. —10A.
R-74BC	680 V.C.T.	190	6.3V.—7.8A. 6.3V.—1.2A. (damper wdg)	5V.—3A.

* Less than 100 m.m.f.d. capacity to ground and insulated for high voltage damper tube.
Height of transformers in BC cases is measured from chassis line to top of case. Copper shading ring on all BC cases to reduce external magnetic field.

Note: Last letter of Type No. denotes case style.

UNIVERSAL RECTIFIER POWERS

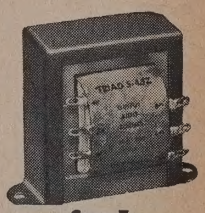
Type No.	Secondary No. 1 AC Volts	Secondary DC Amps Full Wave CT	Secondary DC Amps Bridge	Secondary No. 2 AC Volts DC Amps
F-200A	13 or 18 @ .9 ADC	—	—	13 or 18 @ .9 ADC
F-202U	11.0 to 29.5	2.0	1.25	—
F-203U	12.0 to 30.0	4.0	2.0	—
F-204U	11.5 to 29.0	8.0	4.0	—
F-205U	12.0 to 29.5	12.0	6.0	—

AUDIO

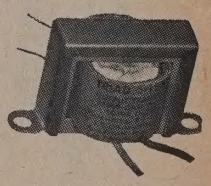
Triad Replacement Output Transformers furnish a wide range of size and mounting characteristics . . . specifically engineered for mounting in precise location in chassis. Climatite treated . . . manufactured to exacting quality standards of more costly types . . . progressively designed for advanced circuitry and audio tubes . . . total complete coverage over impedance and wattage ranges . . . Triad units provide finest response in minimum space . . . and outlive all others.

REPLACEMENT OUTPUT TRANSFORMERS
Single Tube To Standard Voice Coil 3-4 Ohms

Type No.	Primary Impedance	D.C. Ma	Audio Watt
S-20X	2000	50	2-3
S-20Z	2000	50	2-3
S-2X	2000	55	3-5
S-12X	2500	50	2-3
S-12Z	2500	50	2-3
S-1X	2500	60	3-5
S-50X	2500	60	4-6
S-16X	3000 5% Tap	50	2-3
S-30X	3000	60	3-5
S-67X	3200	60	4-6
S-4X	3000	70	5-8
S-14Z	4000	50	2-3
S-41X	4000	50	3-5
S-41Z	4000	50	3-5
S-6X	5000	35	2-3
S-6Z	5000	35	2-3
S-3X	5000	40	3-5
S-5X	5000	50	5-8
S-5Z	5000	50	5-8
S-48X	6500	35	2-3
S-48Z	6500	35	2-3
S-49X	6500	35	3-5
S-7X	7500	30	3-5
S-9X	7500	50	5-8
S-9Z	7500	50	5-8
S-8X	8000	30	2-3
S-8Z	8000	30	2-3
S18X	8000	45	4-6
S-18Z	8000	45	4-6
S-11X	10000	30	2-3
S-11Z	10000	30	2-3
S-17X	10000	30	3-5
S-10X	10000	45	4-6
S-40X	14000	5.5	¼
S-38X	16000	15	2-3
S-38Z	16000	15	2-3
S-37X	25000	4.0	¼
S-13X	25000	10	2-3
S-13Z	25000	10	2-3


Case Z

Case A


Case X

REPLACEMENT PUSH-PULL OUTPUT TRANSFORMERS
Push-Pull Tubes To Voice Coil 3-4 Ohms

Type No.	Impedance	D.C. MA. Each Side	Audio Watts
S-39X	12000 CT.	30	3-4
S-64X	6000 CT.	40	4-6
S-15X	10000 CT.	35	7-10
S-19Z	10000 CT.	50	10-14
S-68Z	3000/3800 CT.	90	15-18
S-69Z	5000 CT.	60	15-18
S-21A	8000 CT.	55	15-18
S-21Z	8000 CT.	55	15-18

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LOW VOLTAGE, LOW CURRENT Transformers
All 117 v., 50/60 cycle pri

Type No.	Secondary Volts	Secondary Amps.	Test Volts
•F-112X	14 v. CT.	250 ma.	1500
F-113X	12 volts	150 ma.	1500
F-114X	12 volts	700 ma.	1500
F-115X	24 v. CT.	85 ma.	1500
F-116X	24 v. CT.	200 ma.	1500
F-117X	24 v. CT.	400 ma.	1500
F-118X	24 v. CT.	700 ma.	1500
F-119X	26.8 v. CT.	150 ma.	1500
F-120X	26.8 v. CT.	500 ma.	1500

• New item.

Case X

AUDIO

LOW LEVEL OUTPUT Transformers

Type No.	Application	Freq. Resp.	Pri. Imped.	Second. Imped.
A-51X	Tube to line.	300-3000	7000	50
A-53X	Single or p.p. tubes to line.	70-7000	18000 CT.	600/250/50
S-58X	Line to line.	100-10000	600/150	600/150 —Split windings—

SPLATTER Chokes

Type No.	Inductance Henries	Current Ma.	Res. Ohms	Wt. Lbs.
C-26X	Tapped .2 to 1.5	100	95	1¼
C-43X	Tapped .05 to 1	300	40	2

Case J

UNIVERSAL OUTPUT Transformers
Single Or Push-Pull Tubes To Voice Coil

Type No.	Application	Impedance	DC MA	Audio Watts
S-62X	Single or P.p. plates	2000-10000	30	2
S-52X	Single or p.p. plates	4000-24000	25	4
S-51X	Single or p.p. plates	4000-14000	35	5
S-63X	Single or p.p. plates	1500- 7000	50	6
S-54X	Single	1500- 5000	70	8
S-53X	Single or p.p. plates	4000-14000	40	8
S-55X	P.p. plates	4000-14000	40	10
S-55Z	P.p. plates	4000-14000	40	10
S-56Z	Single	1500- 6000	85	12
S-59Z	P.p. plates	1500- 4000	65	15
S-57Z	P.p. plates	4000-14000	55	15
S-61Z	P.p. plates	4000-10000	60	20

Case P

PLUG-IN INPUT Transformers

Type No.	Application	Pri. Imped.	Second Imped.	Freq. Resp.	Shld'g
A-202P	Line or mike to grid	200/50 CT. △	36,000	20-20000	90 db.
HS-273P	Same as above	200/50 CT. △	80,000	30-30000	70 db.
A-210P	Stereo Isolation	1:1 ratio	30,000	20-20000	45 db.

△ Split Winding

INTERSTAGE Transformers
Plate to Grid

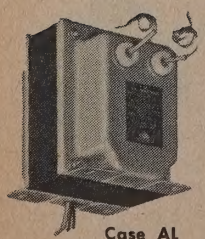
Type No.	Application	Freq. Resp.	Pri. Imped.	Second Imped.	Ratio
A-31X	Plate to single or p.p. grids	300-3000	10000	90000CT	1 : 3
A-33X	Plate to single or p.p. grids	70-7000	10000	90000CT	1 : 3
A-42Z	Multi-ratio single or p.p. plates to single or p.p. grids.	70-7000	15000 CT.	135000C.T. or 33750	1 : 1.5 1 : 3 1 : 6
A-35A	Plate to single or p.p. grids	50-10000	10000	90000CT	1 : 3
A-40J	Parallel-fed 6J5 or 6SN7. Plate to p.p. grid 45 db. shielding.	30-15000	15000	115000CT	1 : 2.76

MODULATION Transformers
Tube to RF Load

Type No.	Primary	Freq. Resp.	Secondary Impedance	Secondary Ma.	Aud. Wtts.
TY-65Z	32 CT. (575 Ma.) (Transistor use)	70-15000	3000-4000-6000	100	10
M-4Z	5000 (Auto-former).	300-3000	6750 4	100 (total)	10
M-1X	10000 CT. for 19, 1J6, 6N7, 6A6, etc.	300-3000	5000-8000-10000	50	5
M-3X	10000 CT. for 6N7, 6A6, 6F6's, etc.	300-3000	3000-5000-8000	100	20
TY-66A	6 CT. (5A) (Transistor use)	300-3000	3000-4000-6000	200	40
†M-7AL	4250 CT. for 807's	300-3000	3000-5000-8000	200	60
†M-12AL	Multi-match	300-3000	4000 to 20000	300	125

DRIVER Transformers

Type No.	Driver Tubes	Output Tubes	Frequency Response	Ratio Primary ½ Sec.	Primary D.C. Ma.
A-81X	30, 1H4, etc.	19, 30's, 1J6, etc.	200-20,000	2.66:1	15
A-83X	6F6, 42, 45, etc.	6L6, 6F6, 6V6, 807, etc.	70-7000	1.33:1	40
A-85X	6F6, 42, 45, etc.	6L6, 6F6, 6V6, 807, etc.	50-10000	2.66:1	40
A-89A	P.p. plates to class B or AB grids— Universal 15 watt.	Any class B or AB tubes. 100-500 watts output	50-10000	3.1 or 1.8:1	100 per side
TY-61X	Transistor use		70-10000	1:0.5	100
TY-158X	Transistor use, dual secondaries		20-20,000	1.5:1:1	50
TY-159X	Transistor use, dual secondaries		20-20,000	3:1:1	50
TY-160X	Transistor use, dual secondaries		20-20,000	6:1:1	50



Case AL

†Plate leads out side

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OUTPUT Transformers
Tube to Voice Coil and Line

Type No.	Tubes	Pri. Imped.	Sec. Imped.	DC Pri.	Audio Watts
S-27A	2A3, 6A3, 6B4, 6L6, 6U6, 6Y6, 12A5, 25B6, 35B5, 50A5.	2500	500/16/8/4	80	8
S-28X	2A5, 6AC5, 6B5, 6F6, 6K6, 7B5, 14A5, 25AC5.	7500	500/16/8/4	40	5
S-29X	6AQ5, 6AS5, 6V6, 7C5, 25A6, 25B5, 25L6, 25N6, 35A5, 35L6.	5000	500/16/8/4	45	5
S-22A	P.p. 2A3, 6B4, 6A5, 6L6, etc.	5000 CT.	500/16/8/4	100 (bal.)	15
S-24A	P.p. 6V6, 7C5, 6K6, 6F6, etc.	8000 CT.	500/16/8/4	80 (bal.)	15
S-60A	P.p. 6L6, 5881, 807, etc.	6600 CT.	500/250/16/8/4	150	35

70.7 volt Line to Voice Coil

Type No.	Primary Impedance	Sec. Imped.	Output Watts	Freq. Resp.
S-70Z	Autoformer 16000/8000/4000/2000/1000.	8/4	5	40-15000
S-71Z	Autoformer 4000/2000/1000/500.	16/8/4	10	40-20000
S-25Z	Autoformer 4000/2000/1000/500.	8/4	10	30-20000
SR-45Z	Autoformer 4000/2000/1000/500.	16/8/4	10	20-20000
SR-74K	Weatherproof autoformer 4000/2000/1000/500.	16/8/4	10	20-20000
S-72Z	Autoformer 2000/1000/500/250.	16/8/4	20	40-20000
•S-43Z		16/8/4	30-20 10-5	35-20000
•S-44Z		16/8/4	50-40 25-15	35-20000

• New item.

70.7 volt Line to Voice Coil (Cont.)

Type No.	Primary Impedance	Sec. Imped.	Output Watts	Freq. Resp.
S-46A	Autoformer 2000/1000/500/250.	16/8/4	20	20-20000
S-75K	Weatherproof autoformer 2000/1000/500/250.	16/8/4	20	20-20000
S-78Z	Isolation 4000/2000/1000/500.	16/8/4	10	40-20000
S-79Z	Isolation 2000/1000/500/250.	16/8/4	20	40-20000
S-47Z	10K/5K/2.5K/1250/625	16/8/4	8	20-20000
S-73X	Isolation 16K/8K/4K/2K/1K	16/8/4	5	40-15000

25 VOLT LINE TRANSFORMERS

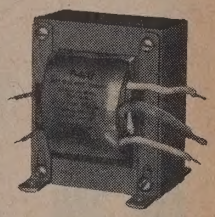
Type No.	Primary Matching Impedance	Secondary Load Impedance	Output Watts
S-131X	1250/625/312	8/4	2
S-132X	1000/500/250/125	16/8/4	5
S-133Z	500/250/125/62.5	16/8/4	10

MATCHING TRANSFORMERS FOR 25 OR 70.7 VOLT LINE

S-129Z	70.7V line to 25V line or, 25V line to 70.7V line	30	20-15000
S-130Z	70.7V line to 25V line or, 25V line to 70.7V line	10	20-15000

Special TRANSCEIVER Transformers
(Voice Frequencies)

Type No.	Application	Primary Impedance	Secondary Impedance
A-21X	S.B. mike or plate to grid (2 primaries)	100 10000	100000
A-23X	Tube to line and hi-impedance phones.	10000	50 and 2000



Case U

INSTRUMENTATION GEOFORMERS

LOW FREQUENCY TRANSISTOR TRANSFORMERS

Type No.	Impedance Ohms Pri.	Impedance Ohms Sec.	Turns Ratio	Min. pri. Ind. @ 100MV—60 cy. With No Unbalanced D.C. Current	D. C. Resistance (Ohms) Pri.	D. C. Resistance (Ohms) Sec	Frequency Response in Cycles Primary Signal of 1 Volt Unbalanced D.C. Secondary Current of 1 Ma. −3DB	1 Ma. −1DB	2 Ma. −3DB	2 Ma. −1DB	3 Ma. −3DB	3 Ma. −1DB	5 Ma. −3DB	5 Ma. −1DB	Shielding	Case Mtg.	Wt.
G-18	1000 or 250	125 or 31	2:83:1	60.	500	44	5 to 20000	8 to 7000	5 to 20000	8 to 7000	6 to 20000	9 to 7000	7 to 20000	10 to 7000	P1-H	GP-1F	3.2 oz.
G-19	1000 or 250	1000 or 250	1:1	65.	540	230	12 to 7000	15 to 3800	12 to 7000	15 to 3800	12 to 7000	15 to 3800	20 to 7000	40 to 3800	P1-H	GP-2L	5¼ oz.
G-30	1000 CT.	2500 CT.	1:1.58	20.	350	1800	20 to 8000	40 to 4200	22 to 8000	45 to 4200	40 to 8000	75 to 4200	70 to 8000	160 to 4200	P1	GP-1F	3.2 oz.

CHOPPER INPUT TRANSFORMERS

Triad Chopper Input Transformers provide exceedingly close balance between the two halves of the primary winding . . . minimum noise in microvolt ranges of input signals is assured with Triad's special core treatment techniques. For demanding transistor and tube applications, Triad's special design capabilities have an outstanding record. For special applications, consult Triad.

Type No.	Turns Ratio	Minimum Primary Inductance @ 1V—60 Hz.	Maximum Primary Volts @ 60 Hz.	Primary Matching Impedance In Ohms	Secondary Matching Impedance In Ohms	D.C. Resistance Primary In Ohms	D.C. Resistance Secondary In Ohms	Stray Fields Shield	Case and Mounting	Weight
G-20‡	1:8	120 h.	25	10,000 CT or 2500	640,000 CT	370	21,000	P5-H	GP-4T	11½ oz.
G-21‡	4:1	1200 h.	84	200,000 CT	12,500 CT	4000	1300	P1-H	GP-2L	5¼ oz.
G-21TS‡								P5-H	GP-4T	11½ oz.
G-22‡	1:4	1000 h.	90	50,000 CT	800,000 CT	2200	19,000	P5-H	GP-5W	1 lb.
G-23‡	6.32:1	1000 h.	75	40,000 CT	1000 CT	4400	160	P1-H	GP-2L	5¼ oz.
G-24‡	1:1	400 h. Low capacity coupling less than .02 μμF between windings.	19.5	40,000 CT	40,000 CT	1625	1625	P5	GP-5S	1 lb.
G-25‡	2:1	800 h.	70	40,000 CT or 10,000 CT	10,000 CT	3200	2200	P1-H	GP-2L	5¼ oz.
G-25TS‡								P5-H	GP-4T	11½ oz.

‡Static Shield

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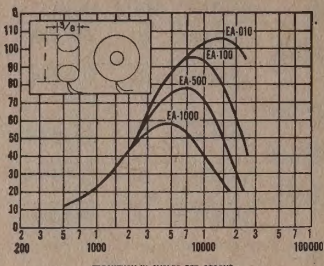
TOROIDS

Triad toroids may be ordered with standard leads in strong plastic coating, or epoxy molded encapsulated per Specification MIL-T-27A; TF5RX20ZZ. To specify molded toroids with gold-plated fixed terminals, an "A" should be added to the full type number; for example, EM-001A.

A

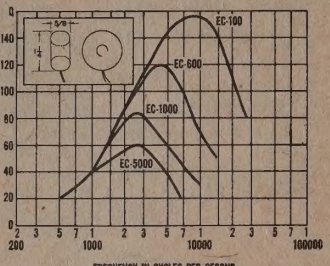
TOROIDS

EA SERIES



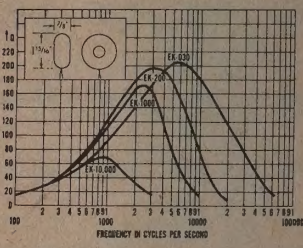
Type No.	Ind.	Res-Ohms Average	D.C.-Ma. for 5% Ind. drop
EA-001	1 mh	.40	270
EA-002	2 mh	.58	192
EA-003	3 mh	.73	157
EA-004	4 mh	.85	135
EA-005	5 mh	1.10	121
EA-007	7 mh	1.35	102
EA-010	10 mh	2.10	86
EA-015	15 mh	3.10	70
EA-020	20 mh	4.25	60
EA-025	25 mh	4.80	54
EA-030	30 mh	6.70	50
EA-040	40 mh	9.50	43
EA-050	50 mh	11.00	38
EA-070	70 mh	16.00	32
EA-100	100 mh	23.00	27
EA-150	150 mh	37.00	22
EA-200	200 mh	42.00	19
EA-250	250 mh	60.00	17
EA-300	300 mh	70.00	16
EA-400	400 mh	95.00	14
EA-500	500 mh	115.00	12
EA-600	600 mh	150.00	11
EA-700	700 mh	160.00	10
EA-1000	1000 mh	260.00	8.6

EC SERIES



Type No.	Ind.	Res-Ohms Average	D.C.-Ma. for 5% Ind. drop
EC-001	1 mh	.40	520
EC-002	2 mh	.56	368
EC-003	3 mh	.70	300
EC-004	4 mh	.82	260
EC-005	5 mh	.92	233
EC-007	7 mh	1.05	195
EC-010	10 mh	1.30	165
EC-015	15 mh	1.60	134
EC-020	20 mh	1.85	116
EC-030	30 mh	2.85	95
EC-040	40 mh	4.20	82
EC-050	50 mh	5.50	62
EC-070	70 mh	8.30	74
EC-100	100 mh	13.00	52
EC-200	200 mh	23.00	37
EC-250	250 mh	33.00	33
EC-300	300 mh	35.00	30
EC-400	400 mh	42.00	26
EC-500	500 mh	72.50	23
EC-600	600 mh	80.00	21
EC-700	700 mh	68.00	19.5
EC-1000	1000 mh	134.00	16.5
EC-1500	1500 mh	200.00	13.5
EC-2000	2000 mh	220.00	11.6
EC-3000	3000 mh	370.00	9.5
EC-4000	4000 mh	550.00	8.2
EC-5000	5000 mh	780.00	7.4
EC-7000	7000 mh	700.00	6.2
EC-10000	10000 mh	1100.00	5.2

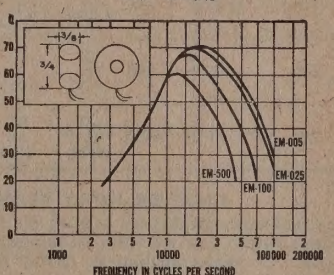
EK SERIES



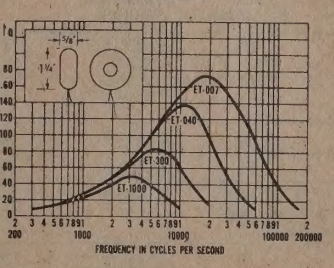
Type No.	Ind.	Res-Ohms Average	D.C.-Ma. for 5% Ind. drop
EK-010	10 mh	.82	262
EK-020	20 mh	1.10	184
EK-030	30 mh	1.40	150
EK-040	40 mh	1.90	130
EK-060	60 mh	2.60	106
EK-080	80 mh	3.10	92
EK-100	100 mh	4.40	82
EK-120	120 mh	4.80	75
EK-150	150 mh	6.20	67
EK-200	200 mh	7.50	58
EK-250	250 mh	9.00	52
EK-300	300 mh	12.00	47
EK-400	400 mh	14.00	41
EK-500	500 mh	19.00	37
EK-700	700 mh	27.00	31
EK-1000	1000 mh	45.00	26
EK-1500	1500 mh	67.00	21
EK-2000	2000 mh	100.00	18.4
EK-2500	2500 mh	108	16.5
EK-3000	3000 mh	116	15
EK-4000	4000 mh	150	13
EK-5000	5000 mh	200	11.6
EK-7000	7000 mh	300	9.8
EK-10000	10000 mh	350	8.2
EK-20000	20000 mh	800	5.8
EK-30000	30000 mh	1250	4.7
EK-40000	40000 mh	2000	4.1

Type No.	Ind.	Res-Ohms Average	D.C.-Ma. for 5% Ind. drop
EM-001	1 mh	1.25	150
EM-002	2 mh	1.70	108
EM-003	3 mh	2.25	87
EM-004	4 mh	2.60	76
EM-005	5 mh	3.10	68
EM-007	7 mh	4.5	57
EM-010	10 mh	6.5	48
EM-015	15 mh	10.00	39
EM-020	20 mh	11.5	34
EM-025	25 mh	16.5	30
EM-030	30 mh	18	27.6
EM-040	40 mh	27	24
EM-050	50 mh	30	22
EM-060	60 mh	40	19.5
EM-070	70 mh	43	18
EM-100	100 mh	66	15
EM-150	150 mh	100	12.5
EM-200	200 mh	115	11
EM-250	250 mh	155	9.6
EM-300	300 mh	180	8.8
EM-400	400 mh	265	7.6
EM-500	500 mh	295	7
EM-700	700 mh	400	5.8
EM-1000	1000 mh	650	4.8

EM SERIES



ET SERIES



Type No.	Ind.	Res Ohms Approx.	D.C.-Ma. for 5% Ind. drop
ET-001	1 mh	.30	680
ET-002	2 mh	.50	480
ET-003	3 mh	.68	396
ET-004	4 mh	.81	342
ET-005	5 mh	1.10	306
ET-007	7 mh	1.50	260
ET-010	10 mh	2	217
ET-015	15 mh	2.85	177
ET-020	20 mh	4.0	153
ET-025	25 mh	4.8	137
ET-030	30 mh	6.5	125
ET-040	40 mh	9.2	108
ET-050	50 mh	10.3	97
ET-060	60 mh	14.5	88
ET-070	70 mh	15.0	82
ET-100	100 mh	24.0	68
ET-150	150 mh	35.0	56
ET-200	200 mh	44.5	48
ET-250	250 mh	64	43
ET-300	300 mh	70	40
ET-400	400 mh	94	34
ET-500	500 mh	108	31
ET-700	700 mh	173	26
ET-1000	1000 mh	230	22

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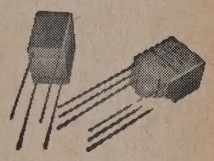
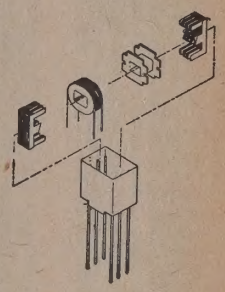
RED SPEC TRANSISTOR TRANSFORMERS

Type No.	Application Type	MIL-T-27B Designation	Primary Impedance	D.C. Res. Pri. Ohms	Max. Unbal. Pri. D.C. Ma.	Secondary Impedance	Max. Power MW
SP-4	Input	TF5SX16ZZ	200000 c.t.	5300	0	1000 c.t.	10
SP-5	Input	TF5SX16ZZ	50000 c.t.	3800	0	1000 c.t.	25
SP-11	Interstage	TF5SX13ZZ	25000/20,000	1700	.5	1000/800	40
SP-13	Interstage	TF5SX13ZZ	25000 c.t./20,000 c.t.	1700	.5	1000 c.t./800 c.t.	40
SP-15	Interstage	TF5SX13ZZ	10000 c.t.	1050	1	1500 c.t.	50
SP-20	Driver	TF5SX13ZZ	10000 c.t.	1050	1	1200 c.t.	50
SP-21	Driver	TF5SX13ZZ	10000 c.t.	1050	1	2000 c.t.	50
SP-22	Driver	TF5SX13ZZ	10000	1050	1	2000 c.t./500†	50
SP-29	Driver	TF5SX13ZZ	10000 c.t.	1050	1	500 c.t.	50
SP-32	Output	TF5SX17ZZ	500	60	3	50	50
SP-33	Output	TF5SX17ZZ	1000	145	3	50	50
SP-34	Output	TF5SX17ZZ	600	70	3	3.2	50
SP-35	Output	TF5SX13ZZ	1200	131	2	3.2	50
SP-42	Output	TF5SX17ZZ	150 c.t.	18	10	12	50
SP-47	Output	TF5SX13ZZ	1500 c.t.	179	3	12	50
SP-48	Output	TF5SX13ZZ	7500 c.t.	796	1	12	50
SP-49	Output	TF5SX17ZZ	300 c.t.	41	7	600	50
SP-50	Output	TF5SX17ZZ	500 c.t.	67	3	600	50
SP-51	Output	TF5SX17ZZ	900 c.t.	104	4	600	50
SP-52	Output	TF5SX13ZZ	1500 c.t.	168	3	600	50
SP-63	Output	TF5SX13ZZ	1200 c.t.	125	3	3.2	50
SP-64	Output	TF5SX13ZZ	1600 c.t.	186	2.5	3.2	50
SP-65	Output	TF5SX13ZZ	8000 c.t.	790	1	3.2	50
SP-66	Output Isolation	TF5SX13ZZ	10000 c.t.	1000	1	10000 c.t.	50
SP-67	Output Isolation	TF5SX17ZZ	600 c.t.	73	3	600 CT.	50
SP-68	Output Isolation	TF5SX13ZZ	10000	1000	1	10000 c.t./2500†	50
SP-69	Output Isolation	TF5SX17ZZ	600	72	3	600 c.t./150†	50
SP-70	Output Isolation	TF5SX17ZZ	600	72	3	600	50
SP-106	Choke	TF5SX20ZZ	6 hy.	1700	2		
SP-107	Choke	TF5SX20ZZ	1.25 hy.	180	2		
SP-108	Choke	TF5SX20ZZ	3.5 hy.	1100	2		
SP-117	Choke	TF5SX20ZZ	.9HY	110	2	—	—
SP-118	Choke	TF5SX20ZZ	.3 hy.	42	4		
SP-128	Choke	TF5SX20ZZ	.1HY	15	5	—	—
SP-310	Magnetic shielding case						

CT For Center Tap. †Split secondary.





Sub-miniature Encapsulated TOROIDAL INDUCTORS

Triad sub-miniature toroidal inductors, designed for quick, easy printed-circuit board mounting, are now stocked for immediate delivery in a range of standard ratings from 50 micro-henries to 400 milli-henries. Many uses, especially in airborne telemetering applications incorporating Triad's sub-miniature filters FL-384 through FL-388. Case size of units is 7/16 inch diameter by 1/4 inch high. Providing an optimum combination of high Q and extremely small-size, this series is ideal for printed board, transistor or vacuum tube application.

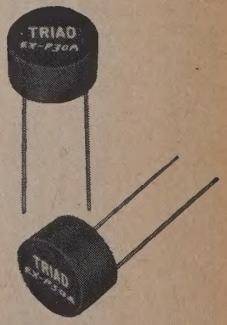
Triad sub-miniature inductors are toroidally wound on permalloy powdered cores. Encapsulated in high temperature epoxy resin. Weldable or solderable leads of gold plated nickel alloy. Highly resistant to severe acceleration, shock or vibration. Manufactured to MIL-T-27B, Grade 5 Class S (MIL type TF5SX20ZZ).

NOTE: Ma. DC maximum is for approximately 5% drop in inductance. Those figures marked * will give less than 5% inductance drop but should not be exceeded under operating conditions.
Inductance tolerance of EX-P05A through EX-P60A is ±5%; EX-001A through EX-400A is ±2%.

Prices subject to change without notice. Net prices shown for 1-9 quantity. For 1 to 249 pieces, see your stocking Triad Distributor for quantity discount schedule. For 250 or more pieces, contact your Triad Representatives or call the factory.

Cat. No.	Inductance (ODC)	DCR (ohms) ±25%	Maximum Ma DC
EX-P05A	50 μh	0.9	75*
EX-P10A	100 μh	1.2	75*
EX-P20A	200 μh	1.7	75*
EX-P30A	300 μh	2.0	75*
EX-P50A	500 μh	2.7	75*
•EX-P60A	600 μh	3.0	75*
EX-001A	1.0 mh	3.8	75*
•EX-001.5A	1.5 mh	4.9	60*
EX-002A	2.0 mh	7.0	60*
•EX-002.5A	2.5 mh	5.3	60*
EX-003A	3.0 mh	6.2	60
EX-005A	5.0 mh	10.0	47
•EX-006A	6.0 mh	11.5	43
•EX-008A	8.0 mh	13.0	37
EX-010A	10.0 mh	15.0	33
•EX-012.5A	12.5 mh	17.0	30
•EX-015A	15.0 mh	23.0	27
EX-020A	20.0 mh	32.0	23
•EX-025A	25.0 mh	37.0	21
EX-030A	30.0 mh	52.0	19
EX-040A	40.0 mh	54.0	15
EX-050A	50.0 mh	62.0	13
•EX-060A	60.0 mh	82.0	12
EX-100A	100 mh	135.0	10
•EX-120A	120 mh	142.0	8
EX-200A	200 mh	145.0	6
EX-300A	300 mh	210.0	5
EX-400A	400 mh	315.0	4

• New item.



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TRIAD DISTRIBUTOR DIVISION

A DIVISION OF LITTON INDUSTRIES

PRICE INDEX BY TYPE NUMBER

Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price
A-1X	2.97	A-302X	5.33	D-58	6.63	D-161	7.50	D-618	10.20	EC-250	4.33	EM-004A	5.67	EX-P50A	7.65
A-3X	3.32	A-304X	5.95	D-59	7.35	D-162	7.80	D-619	8.00	EC-250A	6.80	EM-005	4.03	†EX-P60A	7.65
A-4X	4.15	A-305X	6.17	D-60R	6.43	D-163	6.62	D-620	6.50	EC-300	4.40	EM-005A	5.73	EX-001A	8.00
A-5X	4.28	A-200P	15.00	D-61	5.55	D-164	7.28	D-621	7.80	EC-300A	6.95	EM-007	4.08	†EX-001.5A	8.00
A-6X	3.25	A-202P	20.85	D-62	5.82	D-165	7.41	D-622	8.70	EC-400	4.50	EM-007A	5.75	EX-002A	8.00
A-7J	4.95	A-210P	10.86	D-63	6.40	D-166	6.45	D-623	8.40	EC-400A	6.93	EM-010	4.15	†EX-002.5A	7.25
A-9J	10.00	C-1X	2.35	D-64	7.50	D-167	9.92	D-624	8.80	EC-500	4.60	EM-010A	5.80	EX-003A	7.25
A-10J	9.43	C-2X	2.07	D-65	9.25	D-168	5.35	D-625	6.82	EC-500A	6.93	EM-015	4.23	EX-005A	7.25
A-11J	9.64	C-3X	2.75	D-66	9.60	D-169	8.40	D-626	7.20	EC-600	4.67	EM-015A	5.88	†EX-006A	7.25
A-12J	9.95	C-4X	2.30	D-67	9.98	D-170	7.83	D-627	7.90	EC-600A	7.00	EM-020	4.30	†EX-008A	7.25
A-13J	9.35	C-5X	3.28	D-68	10.15	D-171	7.33	D-628	7.68	EC-700	4.75	EM-020A	5.95	EX-010A	7.25
A-21X	3.53	C-6X	2.73	D-69	7.28	D-172	8.49	D-629	3.57	EC-700A	7.08	EM-025	4.38	†EX-012.5A	7.65
A-23X	3.18	C-7X	3.48	D-70	8.40	D-173	8.73	D-630	7.68	EC-1000	4.85	EM-025A	6.00	†EX-015A	7.65
A-31X	3.90	C-8X	3.38	D-71	7.20	D-174	8.75	D-631	7.86	EC-1000A	7.25	EM-030	4.45	EX-020A	7.65
A-33X	4.85	C-9X	2.90	D-72	8.27	D-175	7.13	D-632	7.86	EC-1500	4.90	EM-030A	6.17	†EX-025A	7.65
A-35A	8.90	C-10X	4.13	D-73R	8.57	D-176	2.85	D-638	7.72	EC-1500A	7.57	EM-040	4.50	EX-030A	7.65
A-39A	8.80	C-11X	3.62	D-74	7.14	D-178	8.43	D-639	7.00	EC-2000	5.00	EM-040A	6.20	EX-040A	8.35
A-40J	9.82	C-12A	6.00	D-75	8.40	D-179	6.88	EA-001	3.28	EC-2000A	7.65	EM-050	4.53	EX-050A	8.35
A-41J	9.24	C-12X	4.32	D-76R	9.02	D-180	7.88	EA-001A	5.70	EC-3000	5.10	EM-050A	6.22	†EX-060A	9.20
A-42Z	5.13	C-13X	4.55	D-77R	9.47	D-181	7.80	EA-002	3.32	EC-3000A	7.97	EM-060	4.55	EX-100A	9.20
A-51X	3.33	C-14A	6.48	D-78	7.48	D-182	7.48	EA-002A	5.73	EC-4000	5.18	EM-060A	6.25	†EX-120A	9.20
A-52J	7.50	C-14X	4.75	D-79	7.57	D-183	7.50	EA-003	3.33	EC-4000A	8.00	EM-070	4.60	EX-200A	10.35
A-53X	4.08	C-15A	6.27	D-80	7.95	D-184	8.22	EA-003A	5.75	EC-5000	5.25	EM-070A	6.27	EX-300A	11.05
A-55J	9.47	C-15X	4.58	D-81	7.27	D-185	8.70	EA-004	3.35	EC-5000A	8.32	EM-100	4.65	EX-400A	11.05
A-571	9.12	C-16A	8.25	D-82	9.32	D-186	7.80	EA-004A	5.77	EC-7000	5.35	EM-100A	6.33	F-1X	3.55
A-58J	8.22	C-17X	3.77	D-83R	5.95	D-188R	7.88	EA-005	3.37	EC-7000A	8.18	EM-150	4.73	F-3X	4.98
A-61J	10.90	C-18A	9.80	D-84	9.35	D-189	9.05	EA-005A	5.78	EC-10000	5.42	EM-150A	6.40	F-5U	7.03
A-64J	6.30	C-19A	12.30	D-85	9.44	D-190 Kit	7.95	EA-007	3.37	EC-10000A	9.60	EM-200	4.83	F-6X	4.62
A-65J	9.69	C-20A	13.65	D-86	9.77	D-191	7.48	EA-007A	5.78	EK-010	5.70	EM-200A	6.47	F-7X	4.00
A-66J	8.65	C-21X	3.15	D-87	8.18	D-192	6.98	EA-010	3.38	EK-010A	8.90	EM-250	4.88	F-8X	5.22
A-67J	9.77	C-22A	22.50	D-88	7.40	D-193	9.32	EA-010A	5.80	EK-020	5.73	EM-250A	6.57	F-9U	10.85
A-68J	9.87	C-23X	3.67	D-89R	9.55	D-194	7.20	EA-015	3.40	EK-020A	8.92	EM-300	4.93	F-10U	11.10
A-69J	9.19	C-24X	2.68	D-90	8.45	D-195	6.50	EA-015A	5.90	EK-030	5.77	EM-300A	6.67	F-11U	12.07
A-70J	7.10	C-25A	6.10	D-91	6.99	D-196	6.57	EA-020	3.42	EK-030A	8.95	EM-400	4.98	F-12X	6.05
A-75J	5.85	C-26X	3.55	D-92	8.15	D-197	6.33	EA-020A	5.92	EK-040	5.82	EM-400A	6.72	F-13X	2.67
A-77J	8.39	C-27X	2.50	D-93R	8.30	D-198	9.45	EA-025	3.47	EK-040A	9.00	EM-500	5.03	F-14X	3.17
A-78J	8.42	C-28X	3.57	D-94R	7.95	D-199	7.35	EA-025A	6.08	EK-050A	9.00	EM-500A	6.73	F-14Z	3.55
A-79J	8.32	C-29X	3.80	D-95	7.20	D-200	6.68	EA-030	3.47	EK-060	5.93	EM-700	5.10	F-15U	9.31
A-81X	3.23	C-30X	3.00	D-96	9.57	D-201	7.50	EA-030A	6.08	EK-060A	9.09	EM-700A	6.83	F-16X	3.98
A-83X	3.75	C-31A	8.13	D-97R	10.30	D-202	7.43	EA-040	3.50	EK-080	5.98	EM-1000	5.15	F-17U	15.09
A-85X	4.12	C-32AL	13.00	D-98R	10.57	D-203	7.58	EA-040A	6.12	EK-080A	9.24	EM-1000A	6.92	F-18A	7.05
A-89A	8.55	C-33A	12.22	D-99	7.97	D-204	7.92	EA-050	3.50	EK-100	5.92	ET-001	4.47	F-18X	5.88
A-91A	8.45	C-34X	2.68	D-100	7.47	D-205	8.00	EA-050A	6.12	EK-100A	9.45	ET-001A	6.83	F-19X	6.15
A-95X	3.08	C-35A	13.98	D-101	7.90	D-206	7.65	EA-070	3.57	EK-120	6.13	ET-002	4.50	F-20U	11.00
A-96X	3.67	C-36X	2.42	D-102	7.65	D-207	7.92	EA-070A	6.18	EK-120A	9.40	ET-002A	6.92	F-21A	9.00
A-97K	4.28	C-39A	23.34	D-103	8.80	D-208	6.88	EA-100	3.62	EK-150	6.20	ET-003	4.52	F-22A	12.50
A-97X	3.05	C-40X	3.15	D-104	6.30	D-209	9.32	EA-100A	6.23	EK-150A	9.55	ET-003A	6.93	F-23U	8.89
A-97Y	4.70	C-42AL	12.62	D-105	7.67	D-210	6.67	EA-150	3.75	EK-200	6.27	ET-004	4.53	F-24U	9.44
A-98K	5.10	C-43X	4.77	D-106	7.33	D-211	7.77	EA-150A	6.50	EK-200A	9.55	ET-004A	6.97	F-25X	3.75
A-98X	2.68	C-45AL	30.74	D-107	8.44	D-212	7.85	EA-200	3.80	EK-250	6.40	ET-005	4.57	F-26X	4.15
A-99X	4.65	C-47U	7.60	D-108	10.20	D-213	7.86	EA-200A	6.55	EK-250A	9.74	ET-005A	7.00	F-27U	15.92
A-101U	6.00	C-48U	9.55	D-109	6.90	D-214	7.57	EA-250	3.83	EK-300	6.57	ET-007	4.60	F-28U	19.84
A-102X	4.07	C-49U	14.69	D-110	8.28	D-215	8.34	EA-250A	6.58	EK-300A	9.85	ET-007A	7.03	F-29U	14.24
A-103X	4.27	C-50X	6.88	D-111	8.10	D-216	8.94	EA-300	3.88	EK-400	6.70	ET-010	4.62	F-32A	7.02
A-104X	4.73	C-56U	5.27	D-112	8.62	D-218	8.94	EA-300A	6.63	EK-400A	10.00	ET-010A	7.08	F-34A	8.67
A-105X	3.93	C-57U	6.72	D-113	8.57	D-219	6.67	EA-400	3.97	EK-500	6.77	ET-015	4.63	F-36A	11.39
A-107X	5.68	C-58U	8.84	D-114	9.35	D-220	6.87	EA-400A	6.72	EK-500A	10.07	ET-015A	7.10	F-38A	11.94
A-108X	4.52	C-59U	10.74	D-115R	7.17	D-221	8.50	EA-500	4.08	EK-700	6.85	ET-020	4.65	F-40X	3.38
A-109X	4.82	C-60U	18.55	D-116	10.94	D-222	9.02	EA-500A	6.83	EK-700A	10.17	ET-020A	7.17	F-41X	4.82
A-110X	4.08	C-80U	41.34	D-117	7.02	D-223	11.10	EA-600	4.17	EK-1000	7.15	ET-025	4.70	F-42A	7.40
A-111X	3.98	CE-1	9.92	D-118R	8.40	D-224	10.35	EA-600A	6.92	EK-1000A	10.24	ET-025A	7.20	F-43X	4.38
A-112X	4.43	CE-4	11.50	D-119	8.18	D-225	9.40	EA-700	4.25	EK-1500	7.05	ET-030	4.73	F-44X	3.73
A-113X	4.27	CE-5	10.85	D-120	7.30	D-226	9.00	EA-700A	7.00	EK-1500A	10.37	ET-030A	7.25	F-45X	3.77
A-113Z	3.43	CL-1	.60	D-122	7.30	D-227	8.40	EA-1000	4.35	EK-2000	7.08	ET-040	4.80	F-46X	3.87
A-114X	4.90	D-2	6.90	D-123	7.88	D-228	8.32	EA-1000A	7.10	EK-2000A	10.44	ET-040A	7.37	F-47U	9.10
A-115X	4.35	D-11	10.22	D-124	6.67	D-229	7.73	EC-001	3.60	EK-2500	7.15	ET-050	4.85	F-48U	11.20
A-115Z	3.40	D-14R	7.80	D-125	7.62	D-230	8.33	EC-001A	5.72	EK-2500A	10.54	ET-050A	7.43	F-49U	18.20
A-116X	3.82	D-19	9.01	D-126	9.87	D-231	6.00	EC-002	3.63	EK-3000	7.25	ET-060	4.90	F-50X	5.35
A-117X	4.08	DA-20	4.75	D-127	7.44	D-232	7.00	EC-002A	5.68	EK-3000A	10.57	ET-060A	7.50	F-51X	5.68
A-118X	4.53	D-22	7.80	D-128	2.53	D-233	6.72	EC-003	3.67	EK-4000	7.35	ET-070	4.92	F-52X	4.15
A-119X	5.20	D-27	7.82	D-129	6.82	D-300	12.92	EC-004	3.70	EK-4000A	10.67	ET-070A	7.52	F-53X	5.48
A-120Z	2.83	D-28	6.57	D-130R	6.47	D-301	14.98	EC-005	3.73	EK-5000	7.47	ET-100	4.93	F-54X	4.87
A-122X	2.72	D-33	7.14	D-131	9.58	D-302	12.83	EC-005A	5.73	EK-5000A	10.87	ET-100A	7.55	†F-55X	5.15
A-122Z	2.72	DA-36	3.77	D-132	7.77	D-303	13.30	EC-007	3.78	EK-7000	7.58	ET-150	4.97	F-60U	7.68
A-131X	3.85	D-40	9.95	D-133	9.12	D-304	13.30	EC-007A	6.12	EK-7000A	10.97	ET-150A	7.58	F-61U	11.64
A-132X	4.63	D-41	6.28	D-134	7.58	D-305	13.00	EC-010	3.83	EK-10000	7.74	ET-200	5.00	F-62U	30.50
A-133X	4.32	D-42	8.92	D-135	2.02	D-601	7.80	EC-010A	6.20	EK-10000A	11.10	ET-200A	7.60	F-63U	7.93
A-134X	4.50	D-43	7.82	D-136	5.23	D-602	7.52	EC-015	3.88	EK-20000	7.87	ET-250	5.02	F-64U	9.89
A-135X	5.08	D-44	6.65	D-138	7.68	D-603	7.65	EC-015A	6.23	EK-20000A	11.24	ET-250A	7.62	F-65U	11.39
A-136X	3.98	D-45R	6.40	D-139	7.42	D-604	9.79	EC-020	3.93	EK-25000	8.00	ET-300	5.05	F-66U	32.06
A-137X	4.07	D-46	9.32	D-141	7.50	D-605	11.07	EC-020A	6.27	EK-25000A	11.37	ET-300A	7.62	F-67U	22.37
A-138X	4.23	D-47R	7.50	D-142	12.89	D-606	6.98	EC-030	3.98	EK-30000	8.28	ET-400	5.07	F-86U	12.00
A-139X	4.98	D-48	7.12	D-143	8.60	D-607	8.28	EC-030A	5.92	EK-30000A	11.60	ET-400A	7.67	F-71U	8.70
A-140X	5.07	D-49	9.32	D-151R	7.42	D-608	7.50	EC-040	4.03	EK-40000	8.44	ET-500	5.10	F-72Z	5.77
A-141X	4.08	D-50	8.63	D-152	8.83	D-609	6.82	EC-040A	6.33	EK-40000A	11.74	ET-500A	7.70	F-74U	10.75
A-142X	4.48	D-52	4.98	D-153 Kit	9.92	D-610	7.80	EC-050	4.08	EM-001	3.92	ET-700	5.10	F-75U	17.84
A-143X	3.78	D-53	8.67	D-154	7.87	D-611	7.93	EC-050A	6.38	EM-001A	5.60	ET-700A	7.70	F-79U	31.26
A-144X	4.53	D-54	5.10	D-155	7.00	D-612	7.80	EC-070	4.13	EM-002	3.93	ET-1000	5.13	F-80U	53.28
A-146X	4.57	D-55R	9.55	D-156R	9.35	D-613	7.77	EC-070A	6.63	EM-002A	3.93	ET-1000A	7.75	F-83A	12.27
A-300X	5.55	D-56	8.07	D-157	10.35	D-614	8.34	EC-100	4.18	EM-003	3.95	EX-P05A	7.65	F-84AC	25.04
A-301X	5.13	D-57	9.15	D-158	4.88	D-615	6.68	EC-100A	6.92	EM-003A	5.63	EX-P10A	7.65	F-85U	21.14
†New item				D-159	7.90	D-616	7.82	EC-200	4.27	EM-004	3.98	EX-P20A	7.65	F-90X	3.77
				D-160	8.55	D-617	8.40	EC-200A	6.72			EX-P30A	7.65	F-91X	4.45

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TRIAD DISTRIBUTOR DIVISION

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PRICE INDEX BY TYPE NUMBER

Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price	Triad No.	Sugg'd Resale Price
F-92A	7.73	G-65	17.40	HSM-200	18.20	JAF-3	16.25	N-55M	22.44	R-6A	8.03	R-81BS	32.09	S-10X	2.87
F-93X	5.48	G-72	21.20	HSM-201	23.09	JAF-5	16.25	N-55MG	26.02	R-6B	7.95	R-82B	15.25	S-11X	2.45
F-94X	3.72	G-80	31.32	HSM-202	17.79	JAF-11	16.25	N-56M	39.17	R-7A	8.22	R-83A	18.59	S-11Z	2.45
F-102X	6.33	G-84	21.20	HSM-203	26.34	JAF-12	16.25	N-57M	54.19	R-7B	8.13	R-84K	6.15	S-12X	2.37
F-104U	9.77	G-101	26.22	HSM-205	33.87	JAF-13	16.25	N-57MG	54.58	R-8A	8.65	R-85A	15.99	S-12Z	2.38
F-105Z	4.17	G-101TS	32.67	HSM-207	36.24	JAF-14	16.25	N-59M	60.35	R-8B	8.57	R-86BA	12.48	S-13X	2.48
F-106Z	5.05	G-135	24.02	HSM-208	44.49	JAF-15	14.57	N-59MG	61.35	R-9A	10.15	R-87BC	16.62	S-13Z	2.58
F-107Z	6.30	G-150	19.60	HSM-212	47.43	JAF-21	16.25	N-60SC	121.96	R-10A	10.09	R-88A	17.92	S-14Z	2.47
F-108U	11.25	G-183	29.41	HSM-216	54.64	JAF-22	16.25	N-62AC	65.85	R-10B	10.00	R-90BC	18.10	S-15X	3.27
F-109U	20.17	G-202	26.21	HSM-218	78.78	JAF-23	16.25	N-64AC	32.46	R11A	10.77	R-91HA	17.82	S-16X	2.28
F-112X	3.77	G-235	24.17	HSM-219	72.53	JAF-24	16.25	N-66A	19.24	R-11B	10.70	R-92A	18.15	S-17X	2.43
†F-113X	3.12	G-250	22.19	HSM-223	11.62	JAF-25	16.25	N-67A	11.55	R-12A	9.64	R-94H	26.11	S-18X	3.38
†F-114X	4.28	G-255	23.10	HSM-224	19.94	JAF-26	16.25	N68X	5.88	R-12B	9.64	R-98B	13.45	S-18Z	3.40
†F-115X	3.85	G-266	26.61	HSM-225	22.47	JAF-31	16.25	N-73A	11.28	R-14A	12.67	R-99B	12.44	S-19Z	4.22
†F-116X	4.12	G-274	26.17	HSM-226	19.00	JAF-32	16.25	N-74A	11.67	R-14B	12.67	R-104A	6.00	S-20X	2.40
†F-117X	4.42	G-284	24.57	HSM-227	22.42	JAF-33	16.49	N-469A	7.35	R-16A	13.87	R-104B	6.02	S-20Z	2.40
†F-118X	3.87	G-285	20.00	HSM-228	26.66	JAF-34	16.25	N-470A	10.62	R-16B	13.87	R-105A	6.90	S-21Z	4.45
†F-119X	4.12	G-286	25.15	HSM-229	24.25	JAF-35	16.25	N-471A	16.92	R-17A	15.27	R-105B	6.90	S-22A	7.13
†F-120X	3.83	G-301	20.82	HSM-230	17.35	JAF-101	16.25	NW-1	.60	R-18A	16.13	R-106A	7.28	S23X	2.37
F-200A	7.22	G-306	21.40	HSM-231	25.39	JAF-102	16.25	NW-2	.72	R-18B	15.92	R-106B	7.33	S-24A	6.77
F-202U	7.98	G-309	63.89	HSM-232	33.14	JO-1	12.84	NW-3	.78	R-19A	16.45	R-107A	7.60	S-25Z	3.98
F-203U	10.05	G-310	49.87	HSM-233	18.97	JO-2	12.84	NW-4	.78	R-20A	15.95	R-107B	7.60	S-26X	2.50
F-204U	14.89	G-313	21.77	HSM-235	50.43	JO-3	12.84	NW-5	.78	R-20B	15.64	R-108A	7.82	S-27A	6.05
F-205U	19.25	G-315	21.57	HSM-236	23.15	JO-5	12.84	NW-6	.72	R-21A	17.28	R-108B	7.73	S-28X	4.72
FL-381	43.90	G-335	20.00	HSM-237	16.49	JO-11	12.84	NW-7	.60	R-21B	17.00	R-109A	7.38	S-29X	4.77
FL-384	62.25	G-336	19.74	HSM-238	30.19	JO-12	12.84	NW-10	.60	R-22A	7.90	R-109B	7.38	S-30X	2.67
FL-385	61.42	G-388	16.34	HSM-239	18.67	JO-13	12.84	NW-14	.78	R-22B	7.80	R-110A	8.65	S-31A	8.67
FL-386	61.42	G-391	18.91	HSM-240	21.77	JO-21	12.84	NW-18	.60	R-23B	6.45	R-110B	8.65	S-32A	8.82
FL-387	61.42	G-394	14.02	HSM-241	44.83	JO-22	12.84	NW-19	.60	R-24A	21.29	R-111A	8.95	S-34X	4.73
FL-388	63.62	G-401	19.60	HSM-245	53.51	JO-23	12.84	NW-21	.67	R-24B	21.29	R-111B	8.95	S-35A	10.27
FL-389	41.39	G-435	23.89	HS-247	70.53	JO-31	12.84	NW-22	.82	R-25A	33.14	R-112A	9.15	S-36A	9.32
FL-404	39.00	G-437	23.52	HSM-248	29.18	JO-101	12.84	NW-23	.72	R-26A	24.00	R-112B	9.15	S-37X	4.43
FL-405	39.00	G-455	23.07	HSM-249	15.25	JZ-1	10.83	NW-24	.72	R-27A	44.03	R-113A	7.57	S-38X	2.15
FL-406	39.00	G-500	34.44	HSM-250	17.60	JZ-5	10.83	NW-25	.67	R-28A	31.94	R-113B	7.57	S-38Z	2.15
FL-407	39.00	G-501	32.84	HSM-251	24.27	JZ-7	10.83	P-1A	9.90	R-29A	5.92	R-114A	9.95	S-39X	2.40
FL-408	39.00	G-502	35.84	HSM-252	31.16	JZ-13	10.83	P-3A	12.00	R-30X	5.45	R-114B	9.95	S-40X	3.48
FL-409	39.00	GF-600	36.84	HSM-253	47.06	JZ-15	10.83	P-5A	15.65	R-35A	20.85	R-115A	8.50	S-41X	2.30
FL-410	39.00	GF-601	47.87	HSM-254	67.46	JZ-25	10.83	P-7A	16.60	R-37BC	27.22	R-115B	8.50	S-42A	15.19
FL-411	39.00	GF-602	33.25	HSM-270	26.04	JZ-26	10.83	P-9A	30.00	R-38A	24.75	R-116A	11.07	S-43Z	5.62
FL-412	39.00	HC-115	29.25	HSM-271	33.87	K-20 Kit	6.98	P-11A	15.05	R-38BC	20.45	R-116B	11.07	S-44Z	5.33
FL-413	39.00	HC-300	38.10	HSM-272	48.19	K-48U	21.45	P-14A	23.00	R-39BC	23.60	R-118A	13.00	SR-45Z	6.40
FL-414	39.00	HS-1	25.27	HS-273P	19.65	K-100	23.10	P-15AL	27.30	R-40BC	27.77	R-120A	12.75	S-46A	9.67
FL-415	42.00	HS-3	31.92	HSM-301	21.10	K-101	28.35	P-17AL	28.41	R-41C	15.97	R-120B	12.75	S-47Z	4.03
FL-416	42.00	HS-4	28.40	HSM-302	12.44	K-102	37.80	P-18AL	53.13	R-42BC	17.97	R-121A	14.65	S-48Z	2.00
FL-417	42.00	HS-5	22.00	HS-303	14.49	K-103	55.65	P-20AL	52.03	R-43C	12.49	R-122A	17.15	S-50X	3.20
FL-418	42.00	HS-11	19.05	HSM-305	16.95	K-104	87.15	P-30A	40.30	R-45C	14.99	R-123HA	16.47	S-51X	3.57
FL-419	42.00	HS-14	25.59	HSM-307	22.65	K-105	100.00	PR-21AL	51.96	R-46A	28.51	R-124BC	13.84	S-52X	4.38
FL-420	42.00	HS-15	31.92	HSM-309	21.82	K-106	144.96	P-213AL	21,77	R-49BC	22.90	R-125BC	16.15	S-53X	4.10
FL-421	42.00	HS-23	22.87	HSM-315	23.59	KA-1	2.50	P-215AL	24.34	R-49BS	25.97	R-126A	15.44	S-54X	4.52
G-2	33.61	HS-25	26.22	HSM-319	33.87	KA-2	2.50	P-216AL	47.49	R-50A	26.06	R-127A	16.14	S-55X	5.45
G-4	33.44	HS-27	24.72	HS-331	9.37	KA-3	3.25	P-217AL	26.79	R-50BC	24.60	R-128BC	17.34	S-55Z	5.57
G-5	31.77	HS-29	25.92	HS-333	10.67	M-1X	3.48	P-218AL	54.84	R-51BC	22.19	R-129BC	19.00	S-56Z	5.27
G-7	31.69	HSM-31	27.33	HS-335	14.20	M-3X	5.77	P-220AL	45.86	R-52BC	17.15	R-131A	24.25	S-57Z	5.93
G-8	39.22	HS-32	26.84	HS-339	16.50	M-4Z	4.17	PL-4	10.05	R-53Z	5.89	R-132BC	15.55	S-58X	3.18
G-10	39.99	HS-35	19.51	HS-341	17.75	M-5Z	4.11	PL-5	12.13	R-54X	2.72	R-133A	17.15	S-59Z	5.72
G-12	27.84	HS-50	25.29	HS-400	15.34	M-6X	4.77	PL-10	2.10	R-56A	6.55	R-134A	16.40	S-60A	10.24
G-17	30.84	HS-52	26.27	HS-401	23.17	M-7AL	11.22	PL-11	2.45	R-58A	18.39	R-135BC	18.14	S-61Z	5.93
G-18	23.49	HS-54	25.71	HS-402	15.96	M-8AL	14.77	PL-20	4.38	R-59A	18.90	R-136BC	15.84	S-62X	4.17
G-18TS	24.40	HS-56V	30.19	HS-404	26.47	M-12AL	22.15	PL-21	4.62	R-61BC	22.29	R-200A	16.20	S-63X	3.52
G-19	25.11	HS-58	36.64	HS-405	28.56	M-15A	9.05	PL-80E	10.94	R-62BC	28.42	R-201A	15.82	S-64X	2.80
G-20	37.51	HS-60	19.32	HS-407	34.32	M-16AL	11.34	PL-80H	12.14	R-63BC	16.15	R-202A	15.07	S-65X	2.57
G-21	31.69	HS-61	20.64	HS-409	30.87	MB-20	.72	PL-81E	11.47	R-64BC	18.19	R-203A	14.15	S-66X	2.85
G-21TS	38.67	HS-66	25.71	HS-413	34.82	MB-31	.45	PL-82H	12.69	R-64BC	18.19	R-204A	14.87	S-67X	2.77
G-22	38.12	HS-71	14.10	HS-415	47.21	MK-1	3.25	PL-83H	12.92	R-64BC	18.19	R-205A	14.27	S-68Z	3.78
G-22H	25.85	HS-73	16.75	HS-417	49.44	MK-2	3.25	PL-83P	12.27	R-65BC	17.24	R-206B	11.32	S-69Z	5.35
G-23	31.22	HS-75	24.39	HS-425	16.34	MK-3	4.10	PL-84E	11.82	R-67BC	16.15	R-208A	8.65	S-70Z	3.63
G-24	33.34	HS-77	21.20	HS-427	21.19	MK-4	4.10	PL-84H	13.07	R-68A	9.77	R-300A	19.00	S-71Z	5.10
G-25	31.11	HSM-79	22.89	HS-433	23.34	N-1X	4.10	PL-124H	12.77	R-69BC	17.37	R-675A	21.44	S-72Z	4.20
G-25TS	38.22	HSM-80	24.45	HS-435	25.54	N-3M	8.90	PL-139E	9.80	R-70A	11.97	S-1X	2.70	S-73X	4.00
G-30	18.00	HSM-81	33.92	HS-436	11.75	N-4M	10.20	PL-139H	10.88	R-71A	21.12	S-2X	2.45	SR-74K	6.45
G-31	25.69	HSM-82	35.64	HS-438	20.59	N-5M	13.30	PL-140H	11.75	R-72A	12.20	S-3X	2.60	S-76Z	5.23
G-32	32.74	HSM-84	34.02	HS-441	39.47	N-7M	22.72	PL-140M	12.77	R-73B	8.64	S-4X	2.98	S-77U	10.22
G-33	30.79	HSM-85R	36.52	HS-442	22.34	N-7MG	27.89	PL-146E	13.85	R-74BC	17.99	S-5X	3.32	S-78Z	4.47
G-36	19.79	HSM-94	49.87	HS-443	18.69	N-9M	53.43	PL-146H	11.39	R-75BA	19.29	S-5Z	3.32	S-79Z	4.92
G-40	29.86	HSM-95	43.65	HS-444	31.32	N-9MG	54.08	PL-146M	12.72	R-76BC	26.97	S-6X	2.30	S-129Z	4.95
G-40TS	37.27	HSM-181	23.60	HS-445	21.89	N-11M	60.18	R-2C	13.84	R-77BC	20.27	S-6Z	2.45	S-130Z	3.75
G-48	18.40	HSM-182	37.21	HS-470	17.97	N-11MG	60.95	R-3A	6.35	R-77BS	31.72	S-7X	2.60	S-131X	3.00
G-48TS	26.69	HSM-184	30.02	HS-471	20.75	N-34X	6.25	R-4A	6.83	R-78BC	18.65	S-8X	2.33	S-132X	3.63
G-51	22.02	HSM-187	44.43	HS-472	22.09	N-35M	18.17	R-4B	6.65	R-79BA	13.19	S-8Z	2.47	S-133Z	5.27
G-51A	22.62	HSM-189	43.14	HS-474	31.77	N-48X	4.00	R-5A	6.53	R-80BA	24.72	S-9X	3.12	S-142A	10.38
G-53	29.02	HSM-190	45.19	HS-475	35.92	†N-49X	5.33	R-5B	7.77	R-81BC	24.32	S-9Z	3.27		
G-53A	20.80	JAF-1	16.25	JAF-2	15.33	N-50M	41.58								
G-54	28.79	JAF-2	15.33			N-51X	4.73								
G-57	19.62					N-52M	57.08								
G-59	31.39					N-53M	12.83								
G-64	17.40					N-54M	14.83								

†New item

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S-144A	15.24	SP-118	6.02	TY-1XT	3.82	TY-51X	4.95	TY-91	15.37	WC-13	1.32	Y-22	8.42	Y-70-1	9.49
S-146A	15.78	SP-128	5.93	TY-2Z	4.13	TY-51XT	4.88	TY-92	15.50	WLC-3	1.33	Y-22-1	9.09	Y-72-1	10.09
S-148A	15.35	SP-310	.84	TY-3XT	3.73	TY-52X	5.63	TY-93	24.77	WLC-4	1.32	Y-22-3	9.07	Y-81-3	11.62
S-149A	18.35	SX-201	7.44	TY-16XT	1.67	TY-53X	4.20	TY-94	22.64	WLC-5	1.33	Y-24	9.74	Y-82-1	9.59
SP-4	10.50	SX-202	7.41	TY-17XT	2.32	TY-54X	5.22	TY-99	15.10	WLC-6	1.32	Y-24-3	7.00	Y-83-1	9.92
SP-5	9.95	SX-203	7.26	TY-23X	5.57	TY-55X	5.22	TY-100	23.95	WLC-7	1.35	Y-25	5.83	YC-1	.82
SP-11	8.27	SX-204	7.44	TY-24X	5.42	TY-56X	3.77	TY-101	19.39	WLC-8	1.80	Y-25-1	6.45	YC-110	1.17
SP-13	9.07	SX-205	7.50	TY-25X	6.17	TY-57X	4.07	TY-102	19.75	WLC-8A	1.80	Y-25-3	6.33	YC-111	1.17
SP-15	8.99	SX-206	7.59	TY-26X	9.17	TY-58X	3.78	TY-158X	4.88	WLC-9	1.88	Y-26-2	8.67	YC-112	1.17
SP-20	8.72	SX-207	7.62	TY-27XT	4.22	TY-59X	6.73	TY-159X	4.93	WLC-10	1.59	Y-28	7.97	YC-300-1	22.50
SP-21	8.77	SX-208	7.50	TY-28XT	4.67	TY-60X	6.32	TY-160X	5.47	WLC-11	2.05	Y-28-3	8.37	YC-310-2	18.33
SP-22	9.10	T-1X	4.35	TY-29X	4.95	TY-61X	3.49	TY-200X	7.57	WLC-12	1.38	Y-30G	8.94	YC-311-2	19.51
SP-29	8.49	T-2X	5.30	TY-30X	3.32	TY-62X	4.32	TY-201TZ	5.32	WLC-17	1.41	Y-31G	9.24	YC-312-2	19.28
SP-32	6.87	T-3X	5.27	TY-31X	3.25	TY-63X	4.83	TY-202X	5.77	WLC-21	1.33	Y-40	8.32	YT-101	8.91
SP-33	7.10	T-5X	4.32	TY-32X	3.77	TY-64X	4.95	TY-462	16.64	WLC-23	1.33	Y-40-3	8.80	YT-102-2	9.09
SP-34	6.55	T-11X	4.57	TY-33X	3.72	TY-65Z	4.52	TY-468	13.35	WLC-25	1.52	Y-41	7.63	YT-103-1	10.00
SP-35	6.65	T-12X	5.32	TY-34X	3.60	TY-66A	10.22	TZ-1	6.05	WLC-26	1.62	Y-41-2	9.37	YT-106-2	9.80
SP-42	7.28	T-13X	5.08	TY-35X	3.43	TY-67A	11.57	TZ-2XT	6.38	WLC-29	1.85	Y-41-3	8.87	YT-107-2	9.80
SP-47	7.70	T-14X	4.00	TY-35XT	3.45	TY-68S	7.52	TZ-5	8.07	WLC-30	1.68	Y-42-2	8.73	13125	4.90
SP-48	7.78	T-15X	4.12	TY-36X	3.57	TY-69S	9.49	TZ-7	4.75	WLC-31	1.88	Y-44	8.75	13500-1	6.60
SP-49	7.48	T-20X	4.35	TY-37X	4.72	TY-70S	10.10	TZ-13	6.37	Y-12	6.52	Y-44-1	9.39	13500-2	8.20
SP-50	7.62	T-21X	4.17	TY-37XT	4.73	TY-71S	10.20	TZ-15	4.62	Y-12-1	7.68	Y-45	9.15	13510	6.60
SP-51	7.67	T-22X	4.00	TY-38X	4.55	TY-74S	12.25	TZ-17XT	5.07	Y-12-3	7.23	Y-45-2	9.90	13510-2	8.20
SP-52	7.98	T-23X	4.68	TY-38XT	4.57	TY-75A	16.54	TZ-24XT	5.80	Y-17	7.77	Y-46	5.95	13511	14.25
SP-63	7.23	T-24X	3.98	TY-39X	5.15	TY-76A	10.67	TZ-25	5.25	Y-17-1	6.05	Y-46-3	7.57	13540	6.60
SP-64	7.27	T-25X	4.03	TY-40X	4.18	TY-78	14.72	TZ-26	4.65	Y-17-2	8.65	Y-47	5.98	13541	6.60
SP-65	7.50	T-26X	3.73	TY-41X	5.13	TY-79	14.72	TZ-28	4.08	Y-17-3	8.54	Y-48	6.40	†13542	6.60
SP-66	8.48	T-31X	4.20	TY-42X	4.97	TY-80	15.94	TZ-32XT	4.87	Y-19	8.03	Y-48-3	7.48	†13543	6.60
SP-67	7.55	T-32X	3.35	TY-43X	4.88	TY-81	15.19	TZ-103XT	3.53	Y-19-1	6.82	Y-60R	9.29	†13544	12.25
SP-68	8.90	T-33X	4.90	TY-44X	4.08	TY-82	14.72	V-21B	5.93	Y-19-3	8.22	Y-60-1	9.29	†13545	6.60
SP-69	8.50	T-34X	3.38	TY-45X	4.65	TY-83	21.17	V-21K	9.19	Y-20	7.78	Y-60-2	11.49	†13546	6.60
SP-70	6.95	T-35X	3.98	TY-45XT	4.68	TY-84	21.57	V-21Z	5.38	Y-20-2	8.90	Y-62	8.59	13600	9.20
SP-106	7.07	T-41X	4.62	TY-46X	3.03	TY-85	22.94	V-23	5.50	Y-20-3	8.20	Y-62-1	9.40	13600-2	11.50
SP-107	5.98	T-42X	3.90	TY-47X	4.55	TY-86	21.80	V-23Z	5.67	Y-21	8.50	Y-64	9.15	13750	3.92
SP-108	6.22	T-101X	4.02	TY-48X	4.02	TY-88	13.02	VR-30Z	4.15	Y-21-1	8.90	Y-64-1	9.35	13751	3.92
		T-102X	2.77	TY-49X	3.98	TY-89	12.82	V-31	4.47	Y-21-3	7.05	Y-66-1	9.29	13800	1.40
				TY-50X	7.13	TY-90	16.10					Y-70	8.94	13801	1.40

† New item. ■Discontinued item. Available until supply is exhausted

TRIAD CASES

	GB	HA	HB	JA	JB	KA	KB
A	2 3/8	2 5/8	2 5/8	3 1/16	3 1/16	3 3/8	3 3/8
B	2 3/4	3 1/16	3 1/16	3 5/16	3 5/16	3 15/16	3 15/16
C	2 13/16	4 1/4	3 3/16	4 7/8	3 7/8	5 1/4	4 5/16
D	2 1/8	2 13/64	2 13/64	2 5/8	2 5/8	3	3
E	1 3/4	1 55/64	1 55/64	2 1/8	2 1/8	2 7/16	2 7/16
G	3/8	3/8	3/8	3/8	3/8	1/2	1/2
I	6-32	8-32	8-32	8-32	8-32	10-32	10-32
Wt. (avg.) lbs	1 3/4	2 1/2	2 1/4	4 1/2	4	7 3/4	7

	LA	LB	MA	MB	NA	NB
A	3 11/16	3 11/16	4	4	4 5/16	4 5/16
B	4 5/16	4 5/16	4 11/16	4 11/16	5 1/16	5 1/16
C	5 9/16	4 1/2	6	4 15/16	6 13/16	5 1/2
D	3 5/16	3 5/16	3 11/16	3 11/16	4 1/16	4 1/16
E	2 11/16	2 11/16	3	3	3 5/16	3 5/16
G	1/2	1/2	5/8	5/8	5/8	5/8
I	10-32	10-32	1/4-20	1/4-20	1/4-20	1/4-20
Wt. (avg.) lbs.	9 1/4	8 1/2	13 1/2	12 1/2	18	16

	AH	AJ	EA	EB	FA	FB	GA
A	1 5/16	1 5/8	1 13/16	1 13/16	2 1/16	2 1/16	2 3/8
B	1 5/16	1 5/8	1 15/16	1 15/16	2 5/16	2 5/16	2 3/4
C	1 3/4	2 3/8	2 3/4	2 7/16	3 1/8	2 1/2	3 13/16
D	1 1/4	1 3/16	1 3/8	1 3/8	1 11/16	1 11/16	2 1/8
E		1 3/16	1 1/4	1 1/4	1 7/16	1 7/16	1 3/4
G	3/8	3/8	3/8	3/8	3/8	3/8	3/8
I	6-32	6-32	6-32	6-32	6-32	6-32	6-32
Wt. (avg.) lbs.	4 oz.	9 oz.	1	15 oz.	1 3/4	1 1/2	2

	AF	AG	AH-2	AJ-2	JZ*†
A	5/64	1	1 5/16	1 5/8	5/16 dia.
B	5/64	1	1 5/16	1 5/8	Round
*Bw	1 1/64	1 3/32	1 11/32		
C	1 5/32	1 3/8	1 3/4	2 3/8	25/32
D	*27/32	*1 1/32	*1 11/32	*1 5/8	
F	5/8	3/4	7/8	7/8	
I	4/40	6/32	6/32	6/32	
Unit Wt.	1 1/4	2 1/2	5 1/4	11	.5
	oz.	oz.	oz.	oz.	oz.

* Not in conformance with MIL-T-27A.

	GP-1	GP-2	GP-3	GP-4	GP-5
A	7/8	1 1/16	1 1/4	1 7/16	1 5/8
B	1 1/16	1 1/4	1 5/16	1 3/4	2
Bw	1 1/16	1 11/32	1 21/32		
C	1 11/16	2 1/4	2 3/8	2 1/2	2 3/4
D	1 3/32	1 3/16	1 15/32	1 1/2	1 1/2
F	3/4	3/4	15/16	15/16	15/16
Wt.	3 oz.	5 1/2 oz.	8 oz.	12 oz.	17 oz.

	JOA	JOB
A	15/16 dia.	15/16 dia.
B	Round	Round
C	1 13/32	1 25/32
D	5/16	5/16
F	7/8	7/8
Unit Wt.	2 oz.	2 1/2 oz.

SHIELDING

P-1—One nickel alloy high permeability shield — 45db. reduction in pickup.
P-3—Two nickel alloy shields interleaved with one heavy copper shading ring — 70db. reduction in pickup.
P-5—Three nickel alloy shields interleaved with two heavy copper shading rings— 95 db. reduction in pickup.

Prices subject to change without notice. Net prices shown for 1-9 quantity. For 1 to 249 pieces, see your stocking Triad Distributor for quantity discount schedule. For 250 or more pieces, contact your Triad Representative or call the factory.

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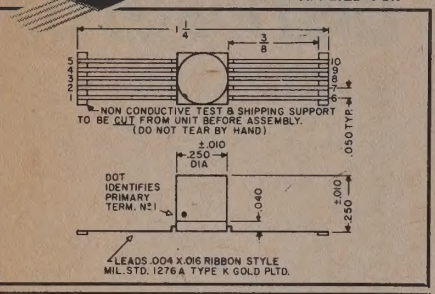
NEW ULTRAMINIATURE TRANSFORMERS & HIGH Q COILS

See UTC High Q Coils in inductor section 1800 and Electronic Wave Filters in filter section 2700.

BIT-250* A COMPLETELY NEW DEVELOPMENT IN TRANSFORMER TECHNOLOGY

WEIGHT 1.1 GM.

PATENT APPLIED FOR



NOTES

- Frequency response: ±2 db, 300 Hz — 250,000 Hz @ 1 MW Ref. level
- Dielectric strength tested @ 200V RMS
- Designed and tested to full MIL-T-27C environmental requirements
- MIL Grade 4, metal-encased, ruggedized
- Lead Material: Gold-plated ribbon-style Kovar, solderable and weldable — MIL-STD 1276A Type K

PACKAGING

Size reduction without loss of performance is achieved by major reduction of air gaps in the magnetic circuit. Core permeability closely approaches the theoretical maximum for material and structure.

Materials, dimensions and surface finish are identical with IC Flat Pack standards. Removable support protects terminal alignment prior to final assembly. This insulated support allows testing in conventional jigs.

RELIABILITY

Cylindrical bobbin-winding techniques eliminate corner stress normally found in fine-wire windings of conventional rectangular structures.

Lead arrangements and terminations have been designed to maximum reliability under thermal shock and temperature cycling.

FLEXIBILITY

These units are designed to afford maximum flexibility of application.

Transformers are 7-terminal types, with center-tapped primaries and split secondaries. When connected in parallel, split-winding secondaries provide ¼ the impedance and twice the DC current capability as series connections.

Inductors in the stock line include both single-winding and split-winding types.

Leader may be bent for plug-in PC application.

AUDIO TYPE TRANSFORMERS

TRANSFORMERS

BIT-250 Type No.	MIL Type No.	Pri Imp	Sec Imp (Split Wdg) Series/Par	Power Level MW for 5% Max Dist @ 1 KHz	Pri DCR Ω	(Series Conn.) Sec DCRΩ	Turns Ratio Pri/Sec/Sec	Turns Ratio Pri/ Overall Sec	Typical Applica-tion	Sugg. Net Ea.
BIT-250-14	TF4RX17YY	150 CT	12/3	80	13	1.5	7.1:1:1	3.54:1	Output	$8.40
BIT-250-18	TF4RX17YY	300 CT	600/150	80	30	65	1.4:1:1	1:1.4	Ouput or Matching	8.40
BIT-250-20	TF4RX17YY	400 CT	400/100	80	50	50	2:1:1	1:1	Matching or Interstage	9.00
BIT-250-26	TF4RX17YY	500 CT	50/12.5	80	58	5.5	7.3:1:1	3.65:1	Output	9.00
BIT-250-30	TF4RX17YY	600 CT	600/150	80	65	65	2:1:1	1:1	Isolation or Matching	9.00
BIT-250-36	TF4RX17YY	1000 CT	1000/250	80	110	100	2:1:1	1:1	Output or Matching	9.30
BIT-250-40	TF4RX12YY	1500 CT	600/150	75	150	65	3.16:1:1	1.58:1	Output	9.30
BIT-250-48	TF4RX12YY	2000 CT	8000/2000	75	140	600	1:1:1	1:2	Isolation or Interstage	9.90
BIT-250-56	TF4RX12YY	10K CT	500/125	75	900	60	8.92:1:1	4.46:1	Output or Driver	10.20
BIT-250-60	TF4RX12YY	10K CT	1200/300	75	900	100	5.78:1:1	2.89:1	Driver	10.20
BIT-250-64	TF4RX12YY	10K CT	2000/500	75	900	160	4.48:1:1	2.24:1	Interstage	10.20
BIT-250-70	TF4RX12YY	10K CT	10K/2500	75	900	900	2:1:1	1:1	Isolation or Interstage	10.20
BIT-250-90	TF4RX12YY	25K CT	1000/250	40	2400	80	10:1:1	5:1	Interstage	10.80

INDUCTORS

BIT-250 Type No.	MIL Type No.	Connections	Inductance Hys Min. @ 1 KHz 5V @	DC ma	DC Res Ω	Ratio of Wdgs	Sugg. Net Ea.
BIT-250-03 (2 wdgs)	TF4RX20YY	Series	8.6 2.5	0 2	2260	1:1	$8.40
		Parallel	2.4 .63	0 4	565		
BIT-250-05 (1 wdg)	TF4RX20YY		5.5 1.5	0 2	1000		7.50
BIT-250-06 (1 wdg)	TF4RX20YY		.80 .25	1 6	250		7.50
BIT-250-09 (2 wdgs)	TF4RX20YY	Series	.60 .15	0 5	146	1:1	8.40
		Parallel	.15 .038	0 10	37		

BIT-P PULSE TRANSFORMERS

TO COMPLETE MIL-T-21038B SPECIFICATIONS PULSE WIDTH .05 μSEC-100 μSEC RATIO 4:4.1 MIL TYPE TP6RX4410CZ

	APPROX. DCR, OHMS			BLOCKING OSCILLATOR PULSE					COUPLING CIRCUIT CHARACTERISTICS							
Type No.	1 & 5	6 & 7	9 & 10	P Width μ Sec.	Rise Time	% Over Shoot	Droop %	% Back Swing	P Width μ Sec.	Volt Out	Rise Time	% Over Shoot	Droop %	% Back Swing	Imp.* in/out	Sugg. Net Each
BIT-P21	.32	.29	.28	.05	.01	0	0	35	.05	0.2	.01	0	0	20	50	$8.40
BIT-P22	.33	.32	.29	.1	.012	0	0	25	.1	.5	.015	0	0	20	50	8.40
BIT-P23	.38	.37	.3	.2	.02	0	0	15	.2	1.2	.02	0	0	20	100	8.40
BIT-P24	.5	.48	.32	.5	.023	0	5	15	.5	1.5	.022	0	5	25	100	8.40
BIT-P25	.62	.57	.35	1	.03	0	10	14	1	1.5	.025	0	20	28	100	8.40
BIT-P26	.7	.64	.4	2	.035	0	12	15	2	1.5	.028	0	15	23	100	8.40
BIT-P27	.85	.76	.48	3	.04	0	13	15	3	1.5	.032	0	18	28	100	8.40
BIT-P28	.96	.86	.52	5	.045	0	15	14	5	2	.035	0	20	20	200	8.40
BIT-P29	1.4	1.1	.57	10	.065	0	15	10	10	2	.05	0	25	25	200	8.40
BIT-P30	2.1	1.7	.8	15	.07	0	15	13	15	2	.06	0	27	18	200	8.40
BIT-P31	2.7	2.1	.97	25	.08	0	15	13	25	3	.1	0	30	30	500	8.40
BIT-P32	20	15	6	50	.2	0	10	5	50	3	.3	0	22	20	500	8.40
BIT-P33	42	32	12	100	.35	0	11	13	100	6	.4	0	15	18	500	8.40

* Input winding terminals 1 & 5; output winding terminals 6 & 7; terminals 9 & 10 open.

UNITED® TRANSFORMER CO. TRW®

UTC PAGE T-1

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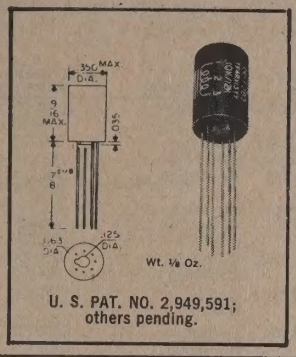
AUDIO & POWER TRANSFORMERS AND MAG AMPS

DO-T200* SERIES, ULTRAMINIATURE PLUG-IN TRANSISTORS TRANSFORMERS

Manufactured and successfully tested to complete environmental requirements of MIL-T-27C. Most Ruggedized MIL Structure. Grade 4, Metal Encased. MIL types TF4RX13YY, TF4RX16YY. Immediate Delivery From Stock. Full Conformance to MIL Mounting Requirements. Solderable and Weldable Leads. Hermetically Sealed. Straight Pin Terminals. Excellent Response. High Efficiency. Low Distortion. Leads are ⅞" long, .016 Dumet wire, gold plated, and may be either welded or soldered. They are uninsulated and are spaced on a .1" radius circle. In pulse coupling impedance matching applications (when measured with a 30 microsecond input pulse voltage wave), typical values for these transformers are: 5% or less droop, zero overshoot, and less than 10% backswing. Also see **UTC page T-3 for other DO-T family constructions.**



U. S. PAT. NO. 2,949,591; others pending.

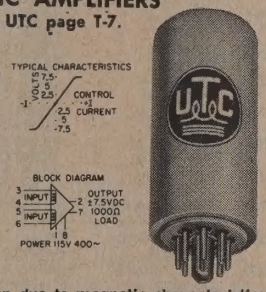
Type No.	Pri. Imp.	D.C. ma‡ in Pri.	Sec. Imp.	Application	Suggested Net Price
DO-T255	1000 CT 1200 CT	3 3	50 60	Output or matching	$6.90
DO-T275	10,000 CT 12,000 CT	1 1	1500 CT 1800 CT	Interstage	7.80
DO-T277	10,000 CT 12,000 CT	1 1	2000 split 2400 split	Interstage	8.70
DO-T278	10,000 12,500	1 1	2000 CT 2500 CT	Driver	8.70
DO-T283	10,000 CT 12,000 CT	1 1	10,000 CT 12,000 CT	Isolation or Interstage (Ratio 1:1) also pulse appl.	8.70
DO-T288	20,000 CT 30,000 CT	.5 .5	800 CT 1200 CT	Interstage	8.70
DO-T297	200,000 CT	0	1000 CT	Input and Chopper	10.80
DO-T200SH	Drawn Hipermalloy shield provides 15 to 20 db shielding through side of case				.75

‡DCma shown is for single ended usage. For push pull, DCma can be any balanced value taken by .5W transistors. Where windings are listed as split, ¼ of the listed impedance is available by paralleling the winding.

NEW LINE OF SOLID STATE "MAS"* PUSH-PULL MAGNETIC AMPLIFIERS

For other Magamps see UTC page T-7.

The "MAS" magamps operate on an input of 115 V 400 Hz with an output of ±7.5 V DC, 1000 ohm load and have 2 isolated control inputs. These magnetic amplifiers afford a **power gain of approximately 30,000.** The power input and output are also completely and individually isolated. The "MAS" magamps are manufactured to MIL-T-27C standards. Units are housed in a hermetically sealed steel case with plug-in octal compressed glass terminals. The "MAS" magamps are 3 inches high with a 1½ inch diameter and weighs approximately ½ pound.



The "MAS" magamps have many advantages over other active circuit elements such as tubes, transistors: • Long life and years of maintenance free operation due to magnetic characteristics and solid state elements. • Ruggedness can withstand high shock, vibration, radiation, and moisture. • Reliability — can withstand 10 times overloads and operate into short without damage.

Possible applications include: • Control Amplifier • Photocell • SCR Controls • Strain Gauge Amplifier • Meter Preamps • Thermocouple • Differential Amplifier • Signal mixing, summing, integration • Hydraulic Servo Valve Driver • Servo Motor • Linear Amplifications of Transducer Signals.

Type Number	Winding Number	Input Resistance Ohms	Trans-resistance Ohms	Nominal DC μamps 5V DC Output 1000 Ω Load	Suggested Price Net
MAS-400	1	45	2.5×10^4	200	$135.00
	2	45	2.5×10^4	200	
MAS-410	1	500	8.0×10^4	60	270.00
	2	500	8.0×10^4	60	
MAS-420	1	1000	12.5×10^4	40	270.00
	2	100	4.0×10^4	125	

NEW "PIL"* AUDIO TRANSFORMERS

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications.

Type No.	Con-nection	Ind.Hys. Min @ IV, 1KC	DC ma	DCR Ohms
PIL-5	Series	.12	0	43
	Parallel	.03	0	10.7
	Series	.10	10	
	Parallel	.025	10	
PIL-8	Series	.32	0	115
	Parallel	.08	0	28
	Series	.16	10	
	Parallel	.06	10	
PIL-12	Series	.8	0	300
	Parallel	.2	0	75
	Series	.4	5	
	Parallel	.15	5	

All units are subjected to a 500 volt dielectric strength test, instead of the usual 100 volts, for higher safety margins and reliability.

The units are terminated in weldable and solderable, insulated Gold plated Dumet leads. Dim: ¾" dia. x 3/16" h., 1/20 oz.

All units are metal encased to Grade 4. Units made to Class S are available on special order. U. S. Patent No. 2,949,591.

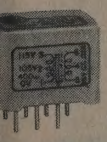
PIL-5, -8, -12, suggested net $6.00 each.

Type No.	MIL Type	Pri Imp	Unbal D.C. ma In Pri	Sec Imp	Pri DCR	Max Mw Level	±3 db Fre Range @ 1 Mw	Suggested Net Price
PIL-50	TF4RX17YY	500 CT	3	500 CT	40	100	800 cps-250KC	$7.20
PIL-70	TF4RX13YY	10K CT	1	500 CT	530	100	800 cps-250KC	7.50
PIL-75	TF4RX13YY	10K CT	1	2K CT	530	100	800 cps-250KC	7.50

BALANCED MODULATOR TRANSFORMER WITH ELECTROTATIC SHIELD

Type No.	MIL Type	Pri. Imp Ω	Sec. Imp Ω	Pri. DCR Ω ±25%	Sec. DCR Ω ±25%	Frequency Range	Sugg. Net Each
PIL-850	TF4RX16YY	150	600 CT	3	7	300 kHz-450 kHz	7.50

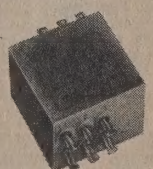
MOLDED ISOLATION & SUPPLY TRANSFORMERS



Designed, manufactured and successfully tested to complete MIL-T-27C specifications. hese units are vacuum molded MIL Grade 5. Units are ELECROSTATICALLY SHIELDED. See age 5 for Metal Cased lines of ransistor supply transformers.

Type No.	H-149	H-148
Application	—	Isolation
Primary	28V 380-1000Hz	105/115V 400Hz
Secondary	1) 6.3V-.08A 2) 6.3V-.08A	115VCT-.02A
Series Con.	12.6V-.08A	
Parallel Con.	6.3V-.16A	
MIL Type	TF5SX03ZZ	TF5SX03ZZ
Base	¾ x ⅞"	¾ x 1"
Height	5/16"	23/32"
Weight	.04 lbs.	.05 lbs.
Suggested Net Price	$7.50	$10.80

UNIVERSAL INVERTER AND CONVERTER TRANSFORMERS



NEW NV* SERIES

• Hermetically sealed • Made to complete MIL-T-27C specs; Grade 4, Class V.

DIMENSIONS

NV-520, NV-720, NV-920: 1 3/16 sq x 1 3/16" high max.; NV-530, NV-730: 1 3/16 sq x 1 3/16" high max.; Approximate weights: 1.5 oz and 2.5 oz.

		FULL WAVE BRIDGE								FULL WAVE CT			
0 to Peak Volts →		81	64.5	57	48	40.5	33	24	16.5	81 CT	48 CT	33 CT	Sugg. Net Each
Type No.	Freq. (kHz)	Current in amperes RMS, at above voltages											
NV-520	10	.4	.45	.5	.55	.8	.6	1.05	1.2	.55	.65	.85	$19.80
NV-530	10	.8	.9	1	1.1	1.6	1.2	2.1	2.4	1.1	1.3	1.7	23.40
NV-720	20	.55	.6	.65	.70	1.1	.8	1.3	1.6	.70	.85	1.05	23.40
NV-730	20	1.1	1.2	1.3	1.4	2.2	1.60	2.6	3.2	1.4	1.7	2.1	27.30
NV-920	50	1.0	1.1	1.2	1.3	2	1.5	2.5	3.0	1.3	1.55	2.0	15.60

EXPERIMENTER/HOBBYIST TRANSFORMER

HCA-308 OUTPUT TRANSFORMER

imary: 125 ohms centertapped
econdary: 3.2 ohms
equency Response: ±1 db, 100 Hz to 10 kHz
wer Level: up to 1 watt
ze: 2⅛ x 1¼; 1¾ mounting.
eight: .2 lbs.
uggested Net Price: $4.80.

* UTC Trade Mark. All Product Lines or Type Designations are UTC Trade Marks. Specify by Trade Mark to assure UTC high quality and reliability. © 1969 United Transformer Co., Div. of TRW INC.

TRW®

TRANSISTOR TRANSFORMERS

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications.

DO-T* AND DI-T* TRANSISTOR TRANSFORMERS

DO-T DI-T
(Actual Size)

Revolutionary transistor transformers hermetically sealed to MIL-T-27C specs. Plastic insulated solderable leads, firmly anchored to withstand 10 pound pull. Ideal for printed circuits. DO-T: 5/16" dia. x 13/16" long, wt., 1/10 oz. DI-T: 5/16" dia. x 1/4" long, wt., 1/15 oz. these compact units provide frequency response, high efficiency and low distortion. U.S. Pat. No. 2,949,591

DO-T Type	DI-T Type	Application	Pri. Imped., Ohms	Sec. Imped. Ohms	Suggested Net Each
DO-T1	DI-T1	a	20K/30K, 0.5 ma	800/1200	$6.00
DO-T2	DI-T2	b	500/600, 3 ma	50/60	5.40
DO-T3	DI-T3	b	1K/1.2K, 3 ma	50/60	5.40
DO-T4	.....	b	600, 3 ma	3.2	5.40
DO-T5	DI-T5	b	1.2K, 2 ma	3.2	5.40
DO-T6	.....	b	10K, 1 ma	3.2	6.00
DO-T7	.....	c	200K	1K	9.30
DO-T8	DI-T8	d•	3.5 hys. @ 2 ma	2.5 hys.‡‡	4.80
DO-T9	DI-T9	e	10K/12K, 1 ma	500/600 CT	6.60
DO-T10	DI-T10	f	10K/12.5K, 1 ma	1.2K-1.5K CT	6.60
DO-T11	DI-T11	f	10K/12.5K, 1 ma	2K/2.5K CT	6.60
DO-T12	.....	b	150/200 CT, 10 ma	12/16	5.70
DO-T13	.....	b	300/400 CT, 7 ma	12/16	5.70
DO-T14	.....	b	600/800 CT, 5 ma	12/16	6.00
DO-T15	.....	b	800/1070 CT, 4 ma	12/16	6.00
DO-T16	.....	b	1K/1330 CT, 3.5 ma	12/16	6.00
DO-T17	.....	b	1.5K/2K CT, 3 ma	12/16	6.00
DO-T18	.....	b	7.5K/10K CT, 1 ma	12/16	6.30
DO-T19	DI-T19	b	300 CT, 7 ma	600	6.00
DO-T20	DI-T20	b	500 CT, 5.5 ma	600	6.00
DO-T21	DI-T21	b	900 CT, 4 ma	600	6.00
DO-T22	DI-T22	b	1500 CT, 3 ma	600	6.00
DO-T23	DI-T23	a	20K/30K CT, .5 ma	0.8K/1.2K CT	6.90
DO-T24	.....	c	200K CT	1K CT	9.90
DO-T25	DI-T25	a	10K/12K CT, 1 ma	1.5K/1.8K CT	7.20
DO-T26	DI-T26	d†	6 hys. @ 2 ma	4.5 hys.‡‡	5.70
DO-T27	DI-T27	d‡	1.25 hys. @ 2 ma	0.9 hy.‡‡	4.80
DO-T28	DI-T28	d§	0.3 hy. @ 4 ma	0.1 hy.‡‡	4.80
DO-T29	.....	b	120/150 CT, 10 ma	3.2/4	5.70
DO-T30	.....	b	320/400 CT, 7 ma	3.2/4	5.70
DO-T31	.....	b	640/800 CT, 5 ma	3.2/4	6.00
DO-T32	.....	b	800/1K CT, 4 ma	3.2/4	6.00
DO-T33	.....	b	1060/1330 CT, 3.5 ma	3.2/4	6.00
DO-T34	.....	b	1.6K/2K CT, 3 ma	3.2/4	6.00
DO-T35	.....	b	8K/10K CT, 1 ma	3.2/4	6.30
DO-T36	DI-T36	a	10K/12K CT, 1 ma	10K/12K CT	7.50
DO-T37	DI-T37	a	2K/2.5K CT, 3 ma	8K/10K Split	7.80
DO-T38	DI-T38	a	10K/12K CT, 1 ma	2K/2.4 Split	7.80
DO-T39	.....	a	20K/30K CT, .5 ma	1K/1.5K Split	7.80
DO-T40	.....	a	40K/50K CT, .25 ma	400/500 Split	8.40
DO-T41	DI-T41	a	400/500 CT, 8/6 ma	400/500 Split	7.50
DO-T42	.....	a	400/500 CT, 8/6 ma	120/150 Split	7.50
DO-T43	DI-T43	a	400/500 CT, 8/6 ma	40/50 Split	7.50
DO-T44	DI-T44	a	80/100 CT, 12/10 ma	32/40 Split	7.50
DO-T45	.....	a	1K/1.25K CT, 3.5 ma	16K/20K Split	7.80
DO-T46	.....	c	100K CT	500 CT	9.60
DO-T47	.....	a	9K/10K, 1 ma	9K/10K CT	8.10
DO-T48	.....	a	8K/10K, 1 ma	1.2K/1.5K CT	7.80
DO-T49	.....	d§§	Series—20 hys @ 1 ma, 5100Ω Parallel—5 hys @ 2 ma, 1275Ω		7.80
DO-T50	.....	d§§	Series—.075 hys @ 10 ma, 10.5Ω Parallel—.018 hys @ 20 ma, 2.6Ω		5.70
DO-T51	DI-T51	a	2K/2.5K CT, 3 ma	2K/2.5 K split	7.80
DO-T52	DI-T52	a	4K/5K CT, 2 ma	8K/10K CT	7.80
DO-T53	DI-T53		400/500 CT, 8 ma	4K/5K CT	7.80
DO-T54	.....		40K/50K CT, .25 ma	4K/5K CT	8.70
DO-T400	.....	h	28V, 380-1 kHz	6.3 V, 60 ma	6.60
DO-T410	.....	h	28V, 380-1 kHz	Two 6.3 V, 30 ma	7.80
DO-T420	.....	h	28V, 380-1 kHz	28 V, 10 ma	7.80
DO-TSH	DI-TSH		High mu shield and cover; 25 db		.90

•630 ohms. †2100 ohms. §25 ohms.
‡‡DI-T primary impedance. §§2 Wdgs.
a—Interstage; b—Output; c—Input; d—Inductor; e—Driver or Output; f—Driver; g—matching; h—Power Unit.

NEW
DI-T200* SERIES TRANSISTOR TRANSFORMERS
(ALSO SEE UTC PAGE T-2 FOR DO-T200)

These revolutionary transistor transformers embody the same rugged reliable construction afforded by the unique winding techniques and physical construction found in the DO-T & DI-T transformers. DI-T200 series differ by having straight pin, 1" long, .017 d. Dumet wire, gold plated leads.
To MIL-T-27C, size 5/16 x 3/8", wt. 1/15 oz. U.S. Pat. No. 2,949,591

Type No.	Application	Pri. Imped., Ohms	Sec. Imped., Ohms	Suggested Net Each
DI-T225	Interstage	80 CT 100 CT	32 Split 40 Split	$8.40
DI-T230	Output or Matching	300 CT	600 Split	7.20
DI-T235	Interstage	400 CT 500 CT	40 Split 50 Split	8.40
DI-T240	Interstage or Output (Ratio 2:1:1)	400 CT 500 CT	400 Split 500 Split	8.40
DI-T245	Output or Matching	500 CT 600 CT	50 CT 60 CT	6.90
DI-T250	Output or Mixing	500 CT	600 CT	7.20
DI-T255	Output or Matching	1,000 CT 1,200 CT	50 CT 60 CT	6.90
DI-T260	Output	1,500 CT	600 CT	7.20
DI-T265	Isolation or Interstage	2,000 CT 2,500 CT	8,000 Split 10,000 Split	8.70
DI-T270	Output or Driver	10,000 CT 12,000 CT	500 CT 600 CT	7.80
DI-T273	Output or Driver	10,000 CT 12,500 CT	1,200 CT 1,500 CT	7.80
DI-T276	Interstage or Driver	10,000 CT 12,000 CT	2,000 CT 2,400 CT	7.80
DI-T278	Interstage or Driver	10,000 CT 12,500 CT	2,000 Split 2,500 Split	8.70
DI-T283	Isolation or Interstage	10,000 CT 12,000 CT	10,000 CT 12,000 CT	8.40
DI-T288	Interstage or Driver	20,000 CT 30,000 CT	800 CT 1,200 CT	8.10
DI-T204	Split Inductor (2 wdgs)	Series: .1 hy @ 4 ma DC, 25Ω Parallel: .025 hy @ 8 ma DC, 6Ω		6.00
DI-T208	Split Inductor (2 wdgs)	Series: .9 hy @ 2 ma DC, 105Ω Parallel: .2 hy @ 4 ma DC, 26Ω		6.00
DI-T212	Split Inductor (2 wdgs)	Series: 2.5 hy @ 2 ma DC, 630Ω Parallel: .6 hy @ 4 ma DC, 157Ω		6.00
DI-T216	Split Inductor (2 wdgs)	Series: 4.5 hy @ 2 ma DC, 2300Ω Parallel: 1.1 hy @ 4 ma DC, 575Ω		6.90
DI-T200SH	Drawn Hipermalloy shield provides 15 to 20 db shielding through side of case			.75

PRECISION SCOTT-T REFERENCE TRANSFORMER
NEW SRC-10*

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications

Used in the precise conversion of three wire synchro information to equivalent resolver information. Two outputs 90° apart are obtained, which can be utilized in analog and digital computer application or coordinate transformation applications. Mil type TF4SX09AJ.

Special custom built units with other electrical values are available to your requirements

Input 90V 60/400 Hz 3 Phase high impedance suitable for synchro output.
Output 1) 3V @ .25 MA } 2 Phase Output.
2) 3V @ .25 MA }

a) Magnitudes of output voltage matched within 0.25%.
b) Phase angle of output voltages is 90° ± .225°.

AJ case
Suggested Net Each: $24.00
see page T-12

PIP* SERIES TRANSISTOR PULSE TRANSFORMERS

UTC's PIP series of subminiature transistor type pulse transformers is designed to give a maximum of component density in equipments, their configuration being especially compatible with transistors. The design is based on the UTC DO-T and DI-T series to impart exceptional reliability. PIP-1 through PIP-9 have a ratio of 4:4:1, PIP-10 through PIP-12 have a ratio of 5:3:1. All units are checked and adjusted in a transistor test circuit to give the required pulse width.

Hermetically sealed, manufactured and guaranteed to MIL-T-20138B by full environmental testing . . . all units, completely METAL CASED, MIL type TP6RX4410CZ. See UTC pages T-1, T-7 for other miniature pulse transformers.

U.S. Pat. No. 2,949,591

All Units Individually Adjusted to Parameters Shown in Table

5/16" Dia. x 3/16" high
Weight 1/20 oz.

Type No.	APPROX. DCR, OHMS 1-Brn 2-Rd	3-Org 4-Yel	5-Grn 6-Blu	BLOCKING OSCILLATOR PULSE Width µSec.	Rise Time	% Over Shoot	Droop %	% Back Swing	COUPLING CIRCUIT CHARACTERISTICS P Width µSec.	Volt Out	Rise Time	% Over Shoot	Droop %	Back Swing	Imp. in, out,	Suggested Net Each
PIP-1	.18	.20	.07	.05	.02	0	0	37	.05	9	.018	0	0	12	50	$6.00
PIP-2	.47	.56	.17	.1	.025	0	0	25	.1	8	.02	0	0	5	50	6.00
PIP-3	1.01	1.25	.37	.2	.030	2	0	15	.2	7	.035	0	0	5	100	6.00
PIP-4	1.5	1.85	.54	.5	.05	0	0	15	.5	7	.06	0	0	0	100	6.00
PIP-5	2.45	3.1	.9	1	.08	0	0	14	1	6.8	.15	0	0	5	100	6.00
PIP-6	3.0	3.7	1.1	2	.10	0	0	15	2	6.6	.18	0	2	10	100	6.00
PIP-7	4.9	6.05	1.8	3	.20	0	0	14	3	6.8	.20	0	2	10	100	6.00
PIP-8	8.0	9.7	2.9	5	.30	0	0	3	5	7.9	.22	0	13	25	200	6.00
PIP-9	13.1	15.9	4.7	10	.35	0	5	12	10	6.5	.4	0	15	20	200	6.00
PIP-10	.55	.41	.15	.1	.01	0	0	20	.1	8	.01	0	0	5	140/50	6.00
PIP-11	2.9	2.2	.82	1	.02	4	4	6	1	6.6	.05	0	6	12	280/100	6.00
PIP-12	9.4	7.1	2.6	5	.05	0	12	12	5	8	.09	2	12	25	560/200	6.00
PIP-100	Transistor pulse transformer kit, consisting of PIP-1 thru PIP-9 in plastic case.															51.00
PIP-SH	Drawn Hipermalloy shield and cover for PIP's provides 20 to 30 db shielding.															.90

UNITED® TRANSFORMER CO.

TRW®

UTC PAGE T-3

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TRANSISTOR TRANSFORMERS

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications.

TRANSISTOR SUPPLY TRANSFORMERS

Primary 115V. 50/60 Hz (tapped on H-143 thru H-146 for dual secondary voltages). DC ratings are approximate, based on silicon bridge rectifier (except H-141, H-142 also shown F.W.CT.). Choke input DCV is based on 10% voltage drop in choke. Condenser value, C, is in 1000 mfd. H-141, H-142, H-147 listing under "Secs in parallel" is single winding. All units MIL type TF4RX02.

Type No.	Sec. V Rms	Sec. A Rms	Sec. in Parallel: Choke DCV	Input DCA	Cond. DVC	Input DCA	C	Sec. in Series: Choke DCV	Input DCA	Cond. DVC	Input DCA	C	MIL Case (Pg. T-12)	Sugg. Net Each
H-141	20 CT	.3	16.5	.3	26	.2	.2						EB	$12.30
			8	.43	12	.3	.5							
H-142	20 CT	.6	16.5	.6	26	.4	.4						EA	13.50
			9	.85	13	.6	1							
H-143	17/21.5	1.5	14/17.5	3	18.5/25	2	1	28/35	1.5	43/56	1	.5	HA	20.40
	17/21.5	1.5												
H-144	17/21.5	4	14/17.5	8	18.5/25	5	2	28/35	4	43/56	2.5	1	LA	40.00
	17/21.5	4												
H-145	17/21.5	9	14/17.5	18	18.5/25	12	6	28/35	9	43/56	6	4	RC-175	102.00
	17/21.5	9												
H-146	34/43	4.5	28/35	9	43/56	6	4	56/70	4.5	85/110	3	1	UTC Pg. 12	63.00
	34/43	4.5												
H-147	10	20	8.2	20	10	13	12						KA	30.00

UNIVERSAL TRANSISTOR SUPPLY TRANSFORMERS

Low Voltage DC Supply
Telephone Supply
Bias Supply
Battery Chargers
Plating Rectifiers

UTC universal transistor supply transformers are high reliability units in drawn MIL cases. Primary tapes can modify nom. AC voltages by −6%, +6%, and +12%. The capacitor following the rectifier affects the DC voltage.

PRIMARY 115 VOLTS, 50/60 Hz
NOMINAL SEC. VOLTS, 8.25 to 40.5

Type No.	MIL DC Range	Indust. DC Range	MIL Case (Pg. T-12)	Sugg. Net Each
H-915	6V-.065A to 53V-.02A	6V-.085A to 53V-.025A	AH	$13.50
H-925	6V-.22A to 53V-.07A	6V-.28A to 53V-.085A	AJ	14.10
H-935	6V-1.2A to 53V-4A	6V-1.52A to 53V-.48A	FA	18.00
H-94	6V-3A to 53V-1A	6V-3.8A to 53V-1.2A	HA	22.50
H-95	6V-7.5A to 53V-2.5A	6V-9A to 53V-3A	KA	30.00
H-96	6V-18A to 53V-6A	6V-23A to 53V-7.5A	OA	55.80

PRIMARY 115 VOLTS, 50/60 Hz
NOMINAL SEC. VOLTS, 16.5 TO 81

H-965	12V-1.5A to 106V-.5A	12V-1.9A to 106V-.6A	HA	$22.50

NEW 400 Hz MET* TYPES

PRIMARY 115 VOLTS, 400 Hz • NOMINAL SEC., 8.25-40.5 VOLTS

MET 455	6V-1.2A to 53V-.4A	6V-1.52A to 53V-.48A	AJ	$16.50
MET 465	6V-3A to 53V-.4A	6V-3.8A to 53V-1.2A	FA	15.90
MET 475	6V-7.5A to 53V-2.5A	6V-9A to 53V-3A	HA	21.90
MET 495	12V-.6A to 106V-.2A	12V-.76A to 106V-.24A		17.70
MET 445	6V-.6A to 53V-.2A	6V-.75A to 53V-.24A		13.50

Primary 105/115 Volts 380-1000 Hz. Sec: 6.3 VCT 2500V RMS Test

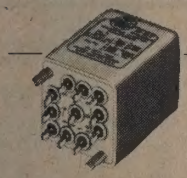
MOLDED 400 Hz TYPE TF55X01ZZ

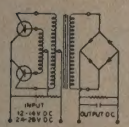
Type No.	Sec. Amp.	L In.	W In.	H In.	Wt. Lbs.	Sugg. Net Each
H-101	3.5	1 3/32	1 3/32	2	.3	$15.60
H-102	5.5	1 3/4	2	2 1/4	.44	22.00
H-103	10	2 3/16	2 1/8	2 1/2	.8	21.00
H-104	25	2 7/8	2 1/2	3 1/32	1.5	33.00
H-118	.3	Subouncers mold see pg. T-10				9.90

TRANSISTOR INVERTER TRANSFORMERS

High reliability (layer insulated) types providing high efficiency in small size. Units are in drawn MIL cases. Circuit details supplied with transformer. With 6 V. input instead of 12 V., output voltage is halved, current rating remains the same.

FOR 12/14 OR 24/48 VOLT BATTERY





Type No.	DC output, when used in circut shown	MIL Case (Pg. T-12)	Sugg. Net Each
H-97	250V.-60 ma	AH	$16.50
H-98	375V.-100 ma	AJ	18.00
H-99	425V.-175 ma	FA	36.00
H-100	550V.-200 ma	GB	23.70

IMMEDIATE DELIVERY ON ALL ITEMS FROM STOCK

NEW MET* 400-Hz SERIES

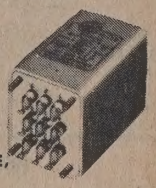
Type No.	MIL Type	Sec. Volt	Amps. (MIL)	Amps. (Indust.)	Sec. Test V. RMS	MIL Case (Pg. T-12)	Sugg. Net Each
MET-400††	TF4SX03AH 380-1000 Hz‡	115CT	.06	.072	1000	AH	$13.50
		115CT	.06	.072			
		230▲	.06	.072			
		115•	.12	.144			
MET-405††	TF4SX01EA 380-1000 Hz‡	115CT	0.2	.24	1000	EA	16.50
		115CT	0.2	.24			
		230▲	0.2	.24			
		115•	0.4	.48			
MET-410#	TF4SX01YY 400 cy. pri.	6.3	.6	.75	500	RC-25 (Pg. T-6)	$ 7.80
MET-420	TF4SX01AH 3800-1000 cy.‡	6.3CT	2	2.5	1500	AH	12.60
MET-430†	TF4SX01FA 400 cycles§	12.6CT	2	2.5	1500	FA	24.00
		12.6	2	2.5			
MET-435	TF4SX01FA 380-1000 cy.‡	6.3CT	10	12	2500	FA	24.00
MET-440	TR4SX01GB 380-1000 cy.‡	6.3CT	6	7	2500	GB	15.00
		6.3CT	6	7			

†Two MET-430's, Scott-connected, provide 26v., 2-phase from 115 v., 3-phase 400 Hz input. Replaces former No. H-139.
‡105/115/125 v. primary.
§57.5/99.7/115 v. primary.
▲ Series connected. • Parallel connected.
†† ELECTROSTATICALLY SHIELDED.

HERMETIC SEALED TRANSISTOR/FILAMENT SUPPLY TRANSFORMER

Primary: 105/115/210/220 volts, 50/60 Hz, except H-130, H-137, H-138, H-104 (115v.) and H-131 (115/220v.) Suited to 400/100 Hz. H-128: 6½ x 5½" x 7¾" h. (wt. 34 lbs.) H-129: 6½" x 5½" x 7¾" h. (wt. 28 lbs.)

METAL CASED TF4 TYPE



MIL-T-27C RATINGS IN REGULAR TYPE, INDUSTRIAL RATINGS IN BOLD TYPE.

Type No.	MIL Type	Sec. Volts	Amps. (MIL)	Amps. (Indust.)	Sec. Test V. RMS	MIL Case Pg T-12	Sugg. Net Each
H-119	TF4RX01AH	6.3CT	.3	.38	1500	AH	$ 9.90
H-120	TF4RX01GB	2.5	10	12	4000	GB	34.00
H-121	TF4RX01JB	2.5	10	12	10000	JB	33.00
H-122	TF4RX01KB	2.5	20	26	10000	KB	49.00
H-123	TF4RX01NB	2.5	5	7.5	10000	NB	85.00
		2.5	5	7.5			
		2.5	10	15			
H-124	TF4RX01FB	5	3	3	2000	FB	15.00
H-125	TF4RX01KB	5	10	12	10000	KB	36.00
H-126	TF4RX01LA	5	20	25	10000	LA	46.00
H-127	TF4RX01NA Term. Opp. Mtg.	5	20	30	21000	NA	97.00
H-128	TF4RX01YY Term. Opp. Mtg.	5	60	75	21000		189.00
H-129	TF4RX01YY Term. Opp. Mtg.	5	10	12	21000		199.00
		5	10	12			
		5	20	24			
H-130	TF4RX01AJ	6.3CT	.6	.75	1500	AJ	10.80
H-131	TF4RX01FB	6.3CT	2	2.5	2500	FB	15.00
H-132	TF4RX01JA	6.3CT	6	7	2500	JA	34.00
		6.3CT	6	7			
H-133	TF4RX01HB	6.3CT	7	8	2500	HB	18.30
H-134	TF4RX01HA	6.3CT	10	12	2500	HA	21.60
H-135	TF4RX01JB	10 CT	10	13	2500	JB	28.50
H-136	TF4RX01LA	14, 12, 11 CT	10	14	2500	LA	52.00
H-137	TF4RX01EB	6.3	.6	.75	1500	EB	15.00
		6.3	.6	.75			
H-138	TF4RX01GA	12.6	2	2.5	1500	GA	21.00
		12.6	2	2.5			

* UTC Trade Mark. All Product Lines or Type Designations are UTC Trade Marks. Specify by Trade Mark to assure UTC high quality and reliability. © 1969 United Transformer Co., Div. of TRW INC.

TRANSISTOR TRANSFORMERS
(Commercial Types)
& M-S Transformers & Inductors

TRANSISTOR TRANSFORMERS *(Commercial Type)*

NEW CAT* TRANSISTOR IMPEDANCE TYPES

All units in RC-50 case. (see page T-9) Frequency range ±2 db, 50-15,000 Hz. Power level 1 watt except CAT-15, 5 watts.

UTC Type	Application	Imped. Ohms	Primary Unbal. ma DC	Secondary Imped., Ohms	Sugg. Net Each
CAT-15	Output	48/12 spl.	750•	16 spl./8/4	$11.10
CAT-20	Istg./outp.	500/125 spl.	20	16/4 split	9.30
CAT-25	Isol./outp.	500/125 spl.	20	500/125 spl.	9.30
CAT-30	Input/istg.	500/125 spl.	20	2K/500 split	9.60
CAT-40	Istg./outp.	10K/2.5K spl.	8	2K/500 split	9.90

• Balance. * Trade mark.

CHANNEL FRAME FILAMENT/TRANSISTOR TRANSFORMERS
Pri. 115 V. 50/60 Hz—Test Volts RMS: 1500

See Fig. E page T-11.

Type No.	Secondary	W	D	H	M	Lbs.	Sugg. Net Each
FT-1	2.5 VCT-3A	2⅞	1⅝	1 11/16	2⅜	¾	$4.50
FT-2	6.3 VCT-1.2A	2⅞	1⅝	1 11/16	2⅜	¾	4.80
FT-3	2.5 VCT-6A	3 5/16	1⅞	2	2 13/16	1	7.50
FT-4	5.3 VCT-3A	3 5/16	1⅞	2	2 13/16	1	5.40
FT-5	2.5 VCT-10A	3¾	2⅛	2 5/16	3⅛	1½	9.00
FT-6	5 VCT-3A	3¾	2⅛	2 5/16	3⅛	1½	6.00
FT-7	7.5 VCT-3A	3¾	2⅛	2 5/16	3⅛	1½	6.00
FT-8	6.3 VCT-8A	4	2½	2⅝	3 5/16	2½	6.90
FT-10	24 VCT-2A or 12V-4A	4	2 5/16	2 11/16	3 5/16	2½	7.80
FT-11	24 VCT-1A or 12 V-2A	3¾	2⅛	2 5/16	3⅛	1½	6.90
FT-12	36 VCT-1.3A or 18 V-2.6A	4	2⅝	2⅝	3 5/16	2½	7.80
	Taps on pri. of FT-13, FT-14 & FT-15 to modify sec. nominal V, −6% +6%, +12%						
FT-13	26 VCT-.04A	2⅛	1⅜	1¼	1¾	¼	$6.60
FT-14	26 VCT-.25A	2⅞	1⅝	1 11/16	2⅜	¾	6.00
FT-15	48VCT-1A	4	2½	2⅝	3 5/16	2½	8.70
FT-16*	11 VCT-2.5A or 5.5 V.-5A	3¾	2⅛	2 5/16	3⅛	1½	10.50

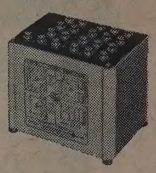
* For 120 V input, use 6% tap

TRANSISTOR/FILAMENT TRANSFORMERS
Pri. 115 x 50/60 Hz; Bridge Rectifier
S-77, S-78 & S-79 Tapped For Dual Secondary Voltages

UTC Type	DCV	DCA	Case No. See Page T-11	Sugg. Net Ea.
S-75	5.2/14	1.2/.4	G-1	$ 7.80
S-76	10/26	4/1.4	G-4	10.80
S-77	14/56	3/1	G-5	14.40
S-78	28/110	9/3	G-10	45.00
S-79	32/120	3/1	G-7	33.00

CIRCUIT DEVELOPMENT TRANSFORMERS FOR TRANSISTORS

LAB* UNIT



The UTC LABoratory circuit development transformers aid the designer in selecting optimum impedances for best power and distortion results from his transistor circuit.

LAB-5
20 Hz to 20 kHz
Up to 50mw Continuous

Pri Imp. Ω	Sec. Imp. Ω
125	125
200 split	200 split
500 split	500 split
2000 split	2000 split

Suggested Net Each: $48.00

LAB-5 & LAB-10
units in LS-1 case
3⅛x2⅝x3¼"; 3 lbs.

LAB-20
units in LS-3 case
5 13/16x5x4 1/16"; 15 lbs.

Terminal board as shown above

LAB-10
20 Hz to 20 kHz
Up to 1W Continuous

Pri. Imp. Ω Range	Pri. to Sec. Ratio	Sec. Imp. Ω Range
1900 Ω to 14,400 Ω	20:1 or 10:1	19 Ω to 36 Ω
925 Ω to 7600 Ω	10:1 or 5:1	37 Ω to 76 Ω

Suggested Net Each: $30.00

LAB-20
20 Hz to 20 kHz
Up to 50W Continuous

Pri. Imp. Ω	Sec. Imp.
6, 12, 24, 40, 54, 70,	4, 8, 16, 64

Suggested Net Each: $60.00

TRANSISTOR/FILAMENT SUPPLY TRANSFORMERS
Primary 115 volts 50/60 Hz

Type No.	Sec. V RMS	Sec. A RMS	In Parallel Choke in DCV	In Parallel Choke in DCA	In Parallel C in DCV	In Parallel C in DCA	In Series Choke in DCV	In Series Choke in DCA	In Series C in DCV	In Series C in DCA	Case No. See Pg. T-9	Sugg. Net Ea
CG-30	17/21.5 17/21.5	1.5 1.5	14/17.5	3	18.5/25	2	28/35	1.5	43/56	1	RC-112	$39.00
CG-31	34/43 34/43	4.5 4.5	28/35	9	43/56	6	56/70	4.5	85/110	3	RC-175	84.00
CG-32	6.3VCT	1.2									RC-62	21.00

FILAMENT/TRANSISTOR SUPPLY TRANSFORMERS

Primary 105, 115, 210, 220, 230 volts, 50/60 Hz, except CG-34 . . . 105, 115, 220, 230. These transformers may be used on 25 to 43 Hz if 220 volt primary is used on 110 volts. Secondary voltage is simultaneously reduced to half.

Type No.	Sec. Volts C.T.	Sec. Amp.	Working Voltage	Sec. Test Volts RMS	Case No. See Page T-9	Sugg. Net Each
CG-33	6.3	4	500	2000	RC-75	$15.00
CG-34	2.5	10	2500	6000	RC-112	21.00
CG-35	6.3	6	500	2000	RC-87	12.60
CG-36	6.3/6.3	5/5	500	2000	RC-100	27.00
CG-120	2.5	10	5000	11000	RC-125	36.00
CG-121	5	25	5000	11000	RC-150	25.20
CG-122	7.5/6.3	10	1500	4000	RC-125	19.20
CG-124	10	10	1500	4000	RC-150	33.00
CG-125	14/12/11	10	1500	4000	RC-150	48.00
CG-126	14/11/10 14/11/10	10	1500	4000	RC-152	51.00

RC CASE
See page T-9

MILITARY STANDARD TRANSFORMERS AND INDUCTORS

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications

FILAMENT, POWER, PLATE TRANSFORMERS

Primary 105/115/125 v., 54/66 Hz. Current ratings are for high voltage secondary DC, choke input filter. For condenser input, reduce by 70%. All units are MIL grade 4, ruggedized; equally usable where grade 1 is specified. Electrostatically shielded.

UTC Type	MS No.	MIL Type TF4RX-	Secondary Rating	MIL Case (Pg. T-12)	Sugg. Net Ea.
N-583A	90016-2	01EB002	2.5 v.-3 a.; 1000 WV	EB	$21.00
N-584A	90017-2	01GB003	2.5 v.-10 a.; 1000 WV	GB	24.00
N-585A	90018-2	01FB004	5 v.-3 a.; 1000 WV	FB	15.00
N-586A	90019-2	01HB005	5 v.-10 a.; 1000 WV	HB	24.00
N-587A	90020-2	01FB006	6.3 v.-2 a.; 1000 WV	FB	15.30
N-588A	90021-2	01GB007	6.3 v.-5 a.; 1000 WV	GB	16.50
N-589A	90022-2	01JB008	6.3 v.-10 a.; 1000 WV	JB	19.50
N-590A	90023-2	01KB009	6.3 v.-20 a.; 1000 WV	KB	27.00
N-591A	90024-2	01JB012	2.5 v.-10 a.; 6300 WV	JB	21.90
N-592A	90025-2	01KB013	5 v.-10 a.; 6300 WV	KB	49.00
N-593A	90026-2	03HA001	200-100-0-100-200, 70 ma; 6.3/5 v.-2 a.; 6.3 v.-3 a.	HA	25.20
N-594A	90027-2	03JB002	325-0-325, 70 ma; 6.3/5 v.-2 a.; 6.3 v.-4 a.	JB	33.00
N-595A	90028-2	03KB006	325-0-325, 150 ma; 5 v.-3 a.; 6.3 v.-5 a.	KB	43.00
N-596A	90029-2	03LB003	400-0-400, 175 ma; 5 v.-3 a.; 6.3 v.-8 a.	LB	46.00
N-597A	90030-2	03MB004	450-0-450, 250 ma; 5 v.-3 a.; 6.3 v.-8 a.	MB	88.00
N-598A	90031-2	02KB001	350-0-350, 250 ma	KB	23.40
N-599A	90032-2	02LB002	550-0-550, 250 ma	LB	51.00
N-600A	90036-2	02NB003	800-0-800, 250 ma	NB	82.50

AUDIO TRANSFORMERS

Frequency response 300-10,000 Hz ±2 db. Split 600-ohm units provides for 600 ohms CT and 1500 ohms. Electrostatic shielding provided on W-784, W-785 and W-786. No. W-783 has center-tapped secondary for 90K CT or 22.5K CT. All units in AJ case (Pg. T-12) Wt., 0.6 lb.

UTC Type	MS No.	MIL Type TF4RX-	#	Pri. Ohms	Pri. DC ma., Unbal.	Sec. Ohms	Sugg. Net Ea.
W-783	90000-A	15AJ001	a	10K CT	10	90K spl.	$16.50
W-784	90001-A	16AJ002	b	600 spl.	.....	4/8/16	15.90
W-785	90002-A	10AJ001	c	600 spl.	.....	135K CT	16.50
W-786	90003-A	16AJ001	d	600 spl.	.....	600 spl.	15.30
W-787	90004-A	13AJ001	e	7.6K/4.8K	40	600 spl.	13.95
W-788	90005-A	13AJ002	f	7.6K/4.8K	40	4/8/16	14.25
W-789	90006-A	13AJ003	g‡	15K CT	10	600 spl.	13.95
W-790	90007-A	13AJ004	g+	24K CT	20†	600 spl.	14.25
W-791	90008-A	13AJ005	g**	60K CT	20+	600 spl.	13.95

Use: a—PP plates to pp grids, 15 dbm level. b—Line to VC, 2 watts. c—Line to pp grids, 15 dbm. d—Line to line, 15 dbm. e—Plate to line, 2 watts. f—Plate to VC, 2 watts. g—PP plates to line. †Balanced. ‡2 watts. +1 watt. **0.5 watt.

INDUCTORS

Two windings for series or parallel connection. Inductance shown for series connection. All but Z-847 are standard MIL case types. Rated 3500 WVDC, unless otherwise noted.

UTC Type	MS No.	MIL Type	Induct. Hy.	ma DC	DCR Ohms	MIL Case Pg. T-12	Sugg. Net Each
Z-848*	90009-2	04FA001■	16	80	645	FA	$21.00
Z-849*	90010-2	04GA002■	25	80	670	GA	33.00
Z-850*	90011-2	04HA003■	40	80	1020	HA	45.00
Z-851†	90013-2	04HA005■	16	125	330	HA	36.00
Z-852†	90014-2	04JB006■	25	125	460	JB	51.00
Z-853	90037-2	04KA007■	40	125	535	KA	63.00
Z-854	75000-2	04LA009•	16	200	180	LA	69.00
Z-855	75001-2	04MA010•	25	200	210	MA	75.00
Z-856	75002-2	04NA012•	16	315	105	NA	54.00
Z-857	75003-2	04YY013•	25	315	150	YY	150.00

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HERMETIC COMPONENTS

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications.

HERMETIC AUDIO UNITS

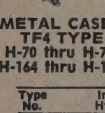
RC-25 RC-50 FH SM

These extremely compact units are proved to specifications of MIL-T-27B. **Response & level ratings:** RC-25: Similar to Ouncers for case (1 13/32" x 4 1/4" x 1 1/16" h. 1.5 oz.). RC-50: Similar to ultra compact units for case (1 5/8" x 1 5/8" x 2 3/16" h. 8 oz.). SM: Similar to SSO units for case (1 1/16" x 1 1/2" x 29/32" h. 0.8 oz.). FH: 27/32" x 29/32" x 3/16", h. .8 oz.

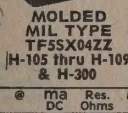
UTC Type	Application	Pri. Imped., Ohms	Sec. Imped., Ohms	#	Sugg. Net Ea.
H-1	Line to grid	50, 200 CT, 500 CT	50K	a	$9.00
H-2	Mike to grid	82, 50 ma	135K	a	9.90
H-3	Pl. to grid	15K	60K	a	7.80
H-4	Pl. to grid	15K, 4 ma	60K	a	7.80
H-5	Pl. to p-p	15K	95K CT	a	8.40
H-6	Pl. to p-p	15K, 4 ma	95K split	a	10.20
H-7	Pl. to line	20K CT, 4 ma	150/600	a	9.60
H-8	Mixing	150/600	600 CT	a	9.00
H-9	Input	150/600	1 meg.	a	9.00
H-10	Pl. to grid	10K	1 meg.	a	8.40
H-11	Reactor: 300 hys, 50 hys @ 3 ma, 600 ohms			a	7.50
H-12	Line to p-p	50, 200 CT, 500 CT	50K CT	a	9.60
H-13	Interstage	10K/2.5K split	2K/.5K split	a	9.00
H-14	Interstage	10K/2.5K split	4K/1K split	a	9.00
H-15	Tr. to line	1.5K CT	500/125 split	a	9.00
H-16	Tr. to V.C.	2K/4K CT	8/16	a	9.00
H-17	Tr. Input	600/150 split	2K/500 split	a	8.70
H-18	Tr. Interstage	10K CT	500/125 split	a	8.70
H-19A	Input*	250 CT/500 CT	50K/100 CT	b	16.50
H-20	Interstage	15K split	80K split	b	15.90
H-21	Pl. to p-p	15K, 8 ma	80K split	b	18.00
H-219	Tr. Interstage	50K CT	500/125 split	a	9.30
H-22	Pl. to line	15K, 8 ma	50/200, 125/500	b	16.50
H-220	Tr. Interstage	500/125 split	500/125 split	a	9.00
H-221	Tr. Interstage	500/125 split	150/37.5 split	a	9.00
H-222	Split Inductor:	Series: 60 Mhy-80 ma, 4 ohms Parallel: 15 Mhy-160 ma, 1 ohm		a	6.60
H-224	Split Inductor:	Series: 1 Hy-20 ma, 60 ohms Parallel: .25 Hy-40 ma, 15 ohms		a	6.60
H-225	Tr. Interstage	100/25 split	40/10 split	a	9.00
H-23	P-p to line	30K split	50/200, 125/500	b	16.30
H-24	Inductor: 250 hys.	@ 5 ma†, 65 hys. @ 10 ma‡		b	12.90
H-25	Mixing	500 CT	125/500	b	15.00
H-26	Interstage	10K/2.5K split	2K/500 split	b	15.00
H-27	Tr.to V.C.	500 CT	16/4 split	b	15.00
H-280	Interstage	200 CT	400 split	b	13.60
H-281	Tr. to V.C.§	48 CT	16, 8, 4	b	12.60
H-282	Tr. to V.C.††	20 CT	16, 8, 4	c	13.50
H-283	Mixing/ Matching	50, 125/150 200/250, 333 500/600	50, 125/150, 200/250,-333 500/600	b	19.80
H-284	Split Inductor:	Series: 4 Hys-50 ma, 100 ohms Parallel: 1 Hy-100 ma, 25 ohms		b	8.70
H-286	Split Inductor:	Series: 40 Hys-15 ma, 1000 ohms Parallel: 10 Hys-30 ma, 250 ohms		b	9.00
H-290	Shld. chopper	2500 e. s.	100K	b	21.00
H-291	Max. shld. chop.	2000/500 e. s.	312K	c	30.00
H-295	Shld. chopper	10K/2.5K e. s.	50K	f	18.00
H-30	Input	50	62,500	d	9.00
H-31	Pl. to grid	10K	90K	d	8.40
H-32	Pl. to line	10K, 3 ma	200	d	8.40
H-33	Output	30K, 1 ma	50	d	9.00
H-35	Inductor: 100 hys., 50 hys. @ 1 ma, 4400 ohms			d	6.90
H-36	Interstage	25K, 0.5 ma	1K	d	7.50
H-37A	Tr. output	500 CT	50	d	7.50
H-38	Interstage	10K CT, 2 ma	1.2K CT	d	7.50
H-39	Interstage	10K CT, 2 ma	2K CT	d	7.50
H-40A	Tr. output	500 CT	600 CT	d	7.50
H-41A	Tr. output	1500 CT	600 CT	d	7.50
H-42A	Isol./Tr. Inter.	10K CT	10K CT	d	8.40
FHA-5	Tr. Input	5VO/125 split, 12 ma	5K/1250 split	FH	9.30
FHA-10	Tr. Input or Isol.	5K/1250 split, 4 ma	5K/1250 split	FH	9.30
FHA-15	Tr. Interstage	10K CT/2.5K split	200 CT/50 split	e	9.60
FHA-25	Tr. Interstage	20K CT/5K split	800 CT/200 split	e	9.60
FHI-3	Split Inductor:	Series: 60 Mhys-32 ma, 6 ohms Parallel: 15 Mhys-64 ma, 1.5 ohms		e	6.00
FHI-7	Split Inductor:	Series: 1 Hy-8 ma, 100 ohms Parallel: .25 Hy-16 ma, 25 ohms		e	6.00
FHI-11	Split Inductor:	Series: 2.4 Hys-2 ma, 160 ohms Parallel: .6 Hys-4 ma, 40 ohms		e	6.00

*Has 75 db shielding. †6000 ohms. ‡1500 ohms. §5 watts. ††10 watts.
#Case: a—RC-25. b—RC-50. c—RC-62. d—SM. e—FH. f—RC-37.
(See above and pg. T-9)

HERMETIC SEALED FILTER INDUCTORS TUBE and TRANSISTOR TYPE



METAL CASED TF4 TYPE
H-70 thru H-79, H-164 thru H-173



MOLDED MIL TYPE TF5SX04ZZ
H-105 thru H-109 & H-300

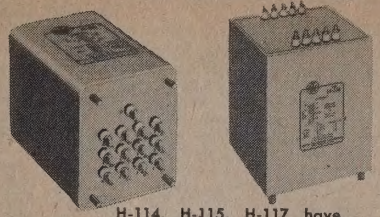
The multiple ratings for the "H" series of filter chokes suit these units for the complete gamut of military and industrial applications. Transistor supply units are swinging type to enhance regulation. H-79 terminals opposite mounting.
*Relates to ripple voltage, in input filter circuits only.

Type No.	Ind. Hys.	@ ma DC	Res. Ohms	Max. DCV* Ch. Input	Test V. RMS	MIL Case Pg. T-12	Sugg. Net Ea.
H-70	20	20	925	350	1000	AH	$ 9.00
H-71	20	40	350	500	2500	FB	11.10
H-72	13	70	215	500	2500	GB	12.60
H-73	11	100	150	700	2500	HB	13.50
H-74	11	150	135	700	2500	JB	15.90
H-75	11	200	90	700	2500	KB	21.00
H-76	11	200	85	1500	4500	LB	27.00
H-77	10	300	60	2000	5500	MB	31.50
H-78	7	400	48	2500	7000	OA	43.80
H-79	7	800	20	3000	9000	7x7x8	104.40
H-164 †	45‡	35	1.2		500	AG	8.10
(2 wdgs.) *	11.25‡	70	.295				
H-166 †	125‡	50	1.2		500	AH	9.60
(2 wdgs.) *	31‡	100	.3				
H-168 †	68‡	100	.8		750	AJ	11.70
(2 wdgs.) *	17‡	200	.2				
H-170 †	.18	125	.6		1000	GB	13.20
(2 wdgs.) *	.045	250	.15				
H-171 †	9‡	.75A	.03		1000	JA	20.10
(2 wdgs.) *	2.25‡	1.5A	.0075				
H-172 †	70‡	.25A	.22		1000	HA	17.10
(2 wdgs.) *	17.5‡	.5A	.055				
H-173 †	90‡	.5A	.15		1000	KA	25.50
(2 wdgs.) *	22.5‡	1A	.038				
H-174†	.50‡	.65A	.08		1000	MB	31.20
(2 wdgs.)*	12.5‡	1.3A	.02				

Type No.	Inductance Henries @ DC MA	DCR Ohms	Test Volts	L	W	H	Wgt. Lbs.	Sugg. Net Ea.
H-105	2.5 @ 25 ma	225	1000	1 1/4	1 3/16	1 3/16	.1	$7.50
H-106	2.25 @ 60 ma	110	1000	1 5/16	1 3/16	1 3/16	.28	6.60
H-107	2 @ 120 ma	55	2500	2 1/16	1 3/4	1 15/16	.9	10.50
H-108	2 @ 220 ma	35	2500	2 7/16	2 1/2	2 17/32	1.7	13.50
H-109†	.2 @ 150 ma	.6	750	2 7/16	2 1/2	2 17/32	1.7	14.40
(2 wdgs.)*	.06 @ 250 ma	.15						
H-300 †	1 @ 5 ma	40	500	1	3/4	25/32	0.5	15.00
(2 wdgs.)*	.25 @ 10 ma	10						

†Split winding in series *Split winding in parallel
‡Rated in millihenries

HERMETIC SEALED POWER and PLATE TRANSFORMERS



H-114, H-115, H-117 have terminals opposite mounting.

Power transformers: primary 115V, 60 Hz suited to 50*-1000 Hz service. Plate transformers: primary 105/115/210/220 volts, 50/60 cycles. "L" ratings are choke input . . . "C" ratings are condenser input. H-80 thru H-197 MIL type TF4RX03, H-110 thru H-117 MIL type TF4RX02. The tapped high voltage winding provides either of two secondary voltages for greatest versatility. The power transformer listings indicate DC voltages and permissible currents for both choke and condenser input filters, as well as for military and industrial applications.

"W" suffix units designed for full wave center tap and full wave bridge application. Center tap of secondary may be disconnected from ground.

MIL-T-27C Ratings in Regular Type, Industrial Ratings in Bold Type

Type No.	HV Sec. C. T.		Approx. DC Volts	DC ma	Fil. Wdg.		Approx. DC Volts	DC ma	Fil. Wdg.	MIL Case Pg. T-12	Sugg. Net Each
H-80	450	C	240	30	6.3VCT-2A	C	215	38	6.3VCT-2.5A	FA	$16.80
H-81	500	L	170	95		L	160	110			
		C	270	55	6.3VCT-3A	C	245	75	6.3VCT-3A	HA	28.50
	550	L	200	85	5V-2A	L	180	105	5V-2A		
		C	310	50		C	280	65			
H-82	550	L	180	145		L	160	190			
		C	290	90	6.3VCT-4A	C	270	115	6.3VCT-4.5A	JB	24.90
	600	L	215	135	5V-2A	L	190	180	5V-2A		
		C	330	85		C	315	100			
H-83	600	L	215	165		L	200	210			
		C	315	100	6.3V-5A	C	320	120	6.3V-6A	JA	26.10
	670	L	250	150	5V-2A	L	230	200	5V-2A		
		C	400	90		C	380	110			
H-84	700	L	245	225		L	240	255			
		C	390	135	6.3V-5A	C	375	160	6.3V-6A	KA	31.20
	750	L	275	205	6.3V-1A	L	270	230	6.3V-1.5A		
		C	430	125	5V-3A	C	410	150	5V-4A		
H-85	700	L	245	300		L	230	370			
		C	390	190	6.3V-6A	C	355	230	6.3V-6A	LA	70.00
	750	L	270	280	6.3V-1.5A	L	250	350	6.3V-2A		
		C	425	170	5V-3A	C	395	210	5V-4A		
H-86	720	L	270	310		L	250	360			
		C	425	180	6.3V-6A	C	395	225	6.3V-7.5A	MB	41.70
	790	L	295	300	6.3V-2A	L	280	350	6.3V-2A		
		C	475	160	5V-3A	C	440	210	5V-4A		
H-87	730	L	245	420		L	230	515			
		C	390	275	6.3V-6A	C	390	300	6.3V-6A	NB	69.00
	800	L	275	400	6.3V-2A	L	275	480	6.3V-2A		
		C	440	250	5V-4A	C	430	290	5V-6A		
H-89	850	L	305	430		L	275	550			
		C	460	280	6.3V-8A	C	445	340	6.3V-10A	OA	69.00
	1050	L	400	400	6.3V-4A	L	370	500	6.3V-5A		
		C	600	260	5V-6A	C	575	320	5V-6A		
H-91	900	L	340	200	6.3V-5A	L	330	220	6.3V-6A	KA	48.00
	1000	L	390	190	6.3V-1A 5V-3A	L	385	195	6.3V-1.5A 5V-4A		
H-92	900	L	340	265	6.3V-6A	L	330	310	6.3V-8A	MB	40.80
	1050	L	400	240	6.3V-2A 5V-4A	L	395	290	6.3V-2A 5V-4A		
H-93	1000	L	370	300	6.3V-8A	L	340	390	6.3V-10A	OA	55.80
	1200	L	465	265	6.3V-4A 5V-6A	L	455	350	6.3V-5A 5V-6A		
H-194**	200	L	170	140	6.3V-3.5A	L	160	155	6.3V-4A	HA	33.00
		C	275	85		C	260	95			
	235	L	200	125		L	190	135			
		C	325	75		C	310	85			
H-195**	215	L	185	285	6.3V-5A	L	175	300			
		C	300	180		C	285	195	6.3V-6A	JA	25.50
	265	L	230	240		L	220	255			
		C	375	150		C	360	165			
H-196**	230	L	200	445	6.3V-5A	L	190	480			
		C	320	280	6.3V-1.5A	C	300	300	6.3V-6A	KA	33.00
	285	L	250	380		L	240	420	6.3V-2A		
		C	400	235		C	380	260			
H-197**	260	L	230	500	6.3V-6A	L	220	550			
		C	360	320	6.3V-2A	C	340	350	6.3V-7A	MB	84.00
	320	L	280	420		L	270	470	6.3V-2A		
		C	450	260		C	430	290			
H-198 Highly shielded Scope transformer	No CT 800 1600 2400		1000 2000 3000	5 5 5	1.25 V—.2A connected to one end of HV winding. 6.3 V—.6A 5.2 KV RMS test voltage					HA	30.60
H-110W #		L	730	210		L	280			MB	78.00
		L	860	190		L	265				
H-111W #		L	830	350		L	420			NA	51.90
		L	960	310		L	380				
H-112W #		L	1230	220		L	270			NA	87.00
		L	1580	190		L	230				
H-113	2500	L	1050	310		L	375			†	69.90
	3000	L	1275	275		L	330				
H-114	2500	L	1050	475		L	525			‡	150.00
	3000	L	1265	425		L	475				
H-115	3500	L	1500	275		L	375			‡	124.00
	4400	L	1900	235		L	320				
H-117	5000	L	2125	950		L	1150			††	385.00
	6000	L	2550	850		L	1050				

*For 50 Hz, secondary current ratings reduced by 10%.
**DC ratings for bridge rectifier circuits.
†6x5 1/8x6 3/4, ‡6 3/4x6 1/2x8, ††11x11x14 3/4
New full wave bridge rectifier types

IMMEDIATE DELIVERY ON ALL UTC STOCK ITEMS

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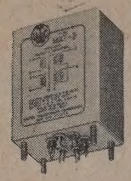
HERMETIC COMPONENTS

Designed, Manufactured and Successfully Tested to Complete MIL-T-27C Specifications.

MAT* MAGNETIC AMPLIFIERS FOR SERVO MOTOR APPLICATIONS

For NEW Magamps See UTC page T-2

VACUUM TUBE TYPE



The MAT 1-4 Magnetic Amplifiers are exceptionally stable units designed for the control of 2 phase, 115V., 400 Hz servo motors. They are compact . . . hermetically sealed . . . magnetically shielded . . . and meet MIL-T-27C and MIL-E-5400 Specifications. The output is sinusoidal, amplitude variable, and phase reversible. Control is provided by a dual triode such as 12AU7 operating with a plate voltage of 115 volts, 400 Hz, or higher. The signal to the triode grids can be polarity reversible DC or phase reversible 400 Hz with or without suppressed carrier modulation. These units eliminate DC power requirements as well as temperature sensitive dry disc rectifiers. The high input impedance provides minimum loading on sensing elements and high power gain. Ringing at low load level has been reduced to a minimum through high internal damping factors. The power output figures are conservative . . . power gain of the *Magnetic Structure* is approximately 40 . . . response time approximately 7.5 milliseconds. The maximum null voltage is 3 volts RMS. For single phase supply voltage the load capacitor should effect 90° phase shift with motor load . . . for 3 phase, 30° phase shift.

Type No.	MAT-1	MAT-2	MAT-3	MAT-4
230 Volt Supply				
Power output	4 W.	8 W.	11 W.	18 W.
RL, ohms	3300	1600	1200	720
CL, mfd., approx.	.2	.3	.5	.7
115 Volt Supply				
Power output	2 W.	4 W.	6 W.	9 W.
RL, ohms	6500	3300	2200	1450
CL, mfd.	.13	.2	.3	.45
Reson. Freq.	40 Hz	35 Hz	35 Hz	20 Hz
Log-Decr.	.18	.23	.03	.65
Cont. Wdg. Res.	6200 ohms	8450 ohms	4750 ohms	5650 ohms
Case, Length, in.	1¼	1½	1¾	2⅛
Width, In.	1⅝	2⅛	2½	3⅛
Height, In.	2⅜	2¾	2 5/16	3⅜
Mtg. Dim., In.	⅜ x 1½	1 x 1⅝	1⅛ x 1⅞	1½ x 2½
Studs, stainless	4-40	6-32	8-32	8-32
Cutout, in.	1	1	1	1
Unit Weight, lbs.	.67	1.1	1.7	2.75
Sugg. Net Each	$69.00	$69.00	$54.00	$78.00

MAT-5 115V.-400 Hz to 460 VCT; provides 230V. 48 ma DC or 460V. 24 ma DC. RC-37 case (UTC pg. T-9). MIL-type TF4SY02YY. **Suggested Net Each $13.50**

MAT-6 Input . . . 10,000 ohms pri. . . . 1:15 C.T. ratio . . . phase shift under 1° . . . RC-25 case (UTC pg. T-6). MIL-type TF4R10YY. **Suggested Net Each $9.00**

TRANSISTOR TYPE

UTC transistor MAT units are identical to their vacuum tube counterparts, but designed for low impedance control. The input transformer may be chosen by impedance ratio rather than precise rated impedance.

Type No.	MAT-7	MAT-8	MAT-9	MAT-10	MAT-60
Power output	4 W.	8 W.	11 W.	18 W.	50 W.
RL, ohms	3300	1600	1200	720	260
CL, mfd approx.	.2	.3	.5	.7Ω	.7
Cont. Wind. Res.	38Ω	52Ω	30Ω	36Ω	50Ω
Case Length, In.	2⅝	2½	2¾	2 23/32	MIL MB
Width, In.	1 13/16	2¼	2½	2 23/32	
Height, In.	1 17/32	1 11/16	2	2¼	
Mtg. Dim., In	⅜ x 1⅞	1 13/16 x 2	1 5/16 x 2 5/16	2⅜ x 2⅜	60 cycle type
Studs, stainless	4-40	6-32	8-32	8-32	
Cutout, In.	1	1	1	1	
Weights, lbs.	.65	1.1	1.7	2.75	
Sugg. Net Each	$61.50	$62.00	$69.00	$108.00	$61.50

MAT-11 115V.-400 Hz to two 28 Volt 2A windings for 56 VCT-.2A or 28V.-.4A RC-37 (UTC pg. T-9) case. MIL type TF4SY02YY **Suggested Net Each $15.00**

MAT-65 115V.-60 Hz to 8.5 VCT @ 500 ma & 63 VCT @ 300 ma. FA case (pg. T-12). MIL type TF4SX02FA. **Sugg. Net Each $19.50**

ULTRASHIELDED POWER-LINE ISOLATION TRANSFORMERS

Simulates battery operation for critical circuits requiring extreme isolation from power line.

HIT*

Designed to give the ultimate in isolation, for line-powered equipment, which formerly could only be obtained from battery power. The effective capacity coupling between primary and secondary windings is less than 0.1 MMFD. For this purpose shields are individually terminated to allow maximum flexibility. Input and output terminals are brought out on opposite sides of a special housing in order to maintain the excellent isolation between line and load.

MIL-T-27C Ratings in Regular Type
Industrial Ratings in Bold Type
Primary 115 V 50/60 Hz

Type No.	Power Watts	Power Watts	Case Size	Sugg. Net Ea.
HIT-1	50	**60**	4 1/32 x 4 1/32 x 3 1/32"	$45.00
HIT-15	120	**150**	5 11/32 x 5 x 3 1/2"	59.40
HIT-2	160	**200**	5 17/32 x 5 17/32 x 4 17/32"	61.20
HIT-3	400	**480**	8 x 6 17/32 x 5 17/32"	93.90
HIT-4	1000	**1200**	9 x 7 1/2 x 7 1/2"	124.80
HIT-450†	80	**100**	4 1/32 x 4 1/32 x 3 1/32"	69.00

† Primary 115v. 400 Hz. Secondary 115 volts.

PRECISION MINIATURE WIDE APPLICATION PULSE TRANSFORMERS MANUFACTURED & GUARANTEED TO COMPLETE MIL-T-21038B

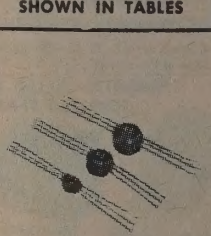
UTC miniature, wound core, pulse transformers are individually precision adjusted in standard test circuits to close tolerances. They are high reliability units, hermetically sealed by vacuum molding and suited for service from −70° C. to +130° C. Wound core structure provides excellent temperature stability (unlike ferrite). Designs are high inductance type to provide minimum of droop and assure true pulse width. H-45 thru H-57 ratio 1:1:1. H-60 thru H-69 ratio 4:4:1. Others ratio 5:3:1.

Also see pulse units on UTC pages T-1 & T-3.

ALL UNITS INDIVIDUALLY ADJUSTED TO PARAMETERS SHOWN IN TABLES

TRANSISTOR PULSE TRANSFORMERS

Type No.	APPROX. DCR, OHMS 1-2	3-4	5-6	BLOCKING OSCILLATOR PULSE Width μ Sec.	Rise Time	% Over Shoot	% Droop	% Back Swing	COUPLING CIRCUIT CHARACTERISTICS P Width μ Sec.	Volts Out	Rise Time	% Over Shoot	% Droop	% Back Swing	Imp. in, out, ohms	Sugg. Net Each
H-60	.124	.14	.05	.05	.016	0	0	30	.05	9.3	.012	0	0	20	50	$ 8.70
H-61	.41	.48	.19	.1	.016	0	0	30	.1	8.2	.021	0	0	15	50	8.70
H-62	.78	.94	.33	.2	.022	0	0	18	.2	7.4	.034	0	5	12	100	8.70
H-63	1.86	2.26	.70	.5	.027	2	10	20	.5	7.5	.045	0	20	25	100	9.00
H-64	3.73	4.4	1.33	1	.033	0	12	25	1	7	.078	0	15	23	100	9.00
H-65	6.2	7.3	2.22	2	.066	0	15	25	2	6.6	.14	0	10	20	100	9.90
H-66	10.2	12	3.6	3	.087	0	18	30	3	6.8	.17	0	10	20	100	9.90
H-67	14.5	17.5	5.14	5	.097	0	23	28	5	7.9	.2	0	18	28	200	9.90
H-68	42.3	52.1	14.8	10	.14	0	15	28	10	6.5	.4	0	15	30	200	9.90
H-611	.426	.32	.132	.1	.018	8	0	12	.1	8.2	.02	0	0	30	140/50	8.40
H-641	5	3.6	1.4	1	.04	0	10	10	1	7	.07	0	20	30	280/100	8.40
H-671	21	16	6	5	.08	0	14	12	5	8	.2	0	25	30	560/200	9.00
H-69	Transistor pulse tranformer kit, consists of H-60 thru H-68 in plastic case.															82.40



Size & weight of these units same as H-45.

VACUUM TUBE PULSE TRANSFORMERS

Type No.	APPROX. DCR, OHMS 1-2	3-4	5-6	BLOCKING OSCILLATOR PULSE Width μ Sec.	Rise Time	% Over Shoot	% Droop	% Back Swing	COUPLING CIRCUIT CHARACTERISTICS P Width μ Sec.	Volts Out	Rise Time	% Over Shoot	% Droop	% Back Swing	DIMENSIONS Imp.in, out, ohms	L In.	W In.	Wt. Grams	Sugg. Net Each
H-45	3	3.5	4	.05	.022	0	20	10	.05	17	.01	20	0	35	250	⅜	⅜	1	$ 8.40
H-46	5.5	6.5	7	.10	.024	0	25	10	.10	19	.01	30	10	50	250	⅜	⅜	1	8.40
H-47	3.7	4.0	4	.20	.026	0	25	8	.20	18	.01	30	15	65	500	5/16	5/16	4	7.50
H-48	5.5	5.8	6	.50	.03	0	20	5	.50	20	.01	30	20	65	500	5/16	5/16	4	7.50
H-49	8	8.5	9	1	.04	0	20	10	1	24	.02	15	15	65	500	5/16	5/16	4	7.50
H-50	20	21	22	2	.05	0	20	10	2	27	.05	10	15	35	500	5/16	5/16	4	7.50
H-51	28	31	33	3	.10	1	20	8	3	26	.07	10	10	35	500	5/16	5/16	4	7.80
H-52	36	41	44	5	.13	1	25	8	5	23	.15	10	10	45	1000	5/16	5/16	4	7.80
H-53	37	44	49	7	.28	0	25	8	7	24	.20	10	10	50	1000	5/8	5/8	6	7.80
H-54	50	58	67	10	.30	0	20	8	10	24	.25	10	10	50	1000	5/8	5/8	6	8.10
H-55	78	96	112	16	.75	0	20	10	16	23	.40	5	15	20	1000	5/8	5/8	6	8.10
H-56	93	116	138	20	1.25	0	25	10	20	23	.6	5	10	10	1000	5/8	5/8	6	8.10
H-57	104	135	165	25	2.0	0	30	10	25	24	1.5	5	10	10	1000	5/8	5/8	6	8.10
H-461	9.6	6.4	2.5	.1	.025	0	0	8	.1	19	.02	3	5	20	700/250	⅜	⅜	1	8.10
H-501	30	20	7	2	.08	0	12	5	2	27	.06	12	15	35	1400/500	5/16	5/16	4	8.10
H-531	66	47	17	7	.32	0	12	3	7	24	.23	12	10	40	2800/1000	5/8	5/8	6	9.60
H-561	180	142	53	20	1.75	0	13	5	20	23	.7	5	10	10	2800/1000	5/8	5/8	6	9.60
H-58	Pulse transformer kit. Consisting of H-45 thru H-57 in a partitioned plastic case.																		7.80 96.50

UNITED® TRANSFORMER CO. TRW®

UTC PAGE T-7

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HI-FI & BROADCASTING COMPONENTS

ULTRACOMPACT* HI-FI AUDIOS

Small light weight, wide range units. Level +15 dbm except where otherwise noted. Top and bottom mounting. Die cast case, 1½" x 1½" x 2" h. Weight, ½ lb.

UTC Type	Application	Primary Impedance, Ohms	Sec. Imped., Ohms	#	Sugg. Net Ea.
A-10	Input	50, 125/150, 200/250, 333, 500/600	50K split	a	$16.50
A-11	Shield. Input	50, 200, 500	50K CT	a	12.90
A-12	Input	Same as A-10	80K split	a	15.00
A-15	Interstage*	10K/2.5K split**	2K/500 sp.	c	11.10
A-16	Pl. to grid	15K	60K	a	12.30
A-18	Pl. to p-p	15K split	80K split	a	14.10
A-19	Pl. to p-p	15K, 8 ma	80K split	c	12.60
A-20	Mixing	Same as A-10	Same as pri.	d	15.90
A-21	Shield Mixing	50, 200/250, 500/600	Same as pri.	e	12.00
A-22	Tr. to line*	500 CT	500/125 spl.	c	9.90
A-23	Tr. to V.C.*	500 CT	16/4 split	c	9.90
A-24	Pl. to line	15K split	See A-10 pri.	f	15.60
A-25	Pl. to line	15K, 8 ma	See A-10 pri.	c	12.90
A-26	P-p to line	30K CT	See A-10 pri.	f	16.50
A-27	Input	100K split	See A-10 pri.	b	14.70
A-28	Tr. to V.C.	48 CT, 5 w.	16 (split), 8, 4	c	10.20
A-34	Transistor Interstage	25K/6250 split	500/125 split	b	11.40
A-35		10K/2.5K split	500/125 split	b	8.40
A-36		500/125 split	150/37.5 split	c	3.90
A-37		500/125 split	50/12.5 split	c	11.10
A-38		100/25 split	40/10 split	c	10.80
A-39	line to transist.	600/150 split	2K/500 split	a	10.20
A-30	Inductor: 250 hys. @ 5 ma†; 65 hys @ 10 ma‡				10.20
A-32 (2-wdgs.)	Split Filter Inductor	Series: 60 Hys @ 15 ma, 2000 ohms Parallel: 15 Hys @ 30 ma, 500 ohms			9.90
A-33	Hipermalloy shield fits A units 20 db				12.00
A-40	Power transformer: 115v 60 cycles to two 6.3 CT—.2A Secs.				10.50
A-41 (2-wdgs.)	Split Filter Inductor	Series: 240 Mhy @ .2A, 6 ohms Parallel: 60 Mhy @ .4A, 1.50 ohms			7.80
A-42 (2-wdgs.)	Split Filter Inductor	Series: 4 hys-50 ma, 100 ohms Parallel: 1 hy-100 ma, 25 ohms			7.50
A-43	Matching to 2 simult. lines or Tr.	600/150 split	(2) 600/150 split g		15.90
A-44	1st stge/output	4K/1K split, 12 ma	600/150 spl.	b	12.00
A-45	Spkr. match	4, 8, 16	4 w. max lvl.	c	12.00
A-46	Chopper	10K/2.5K	50K		18.00
A-47	3-wdg. hybrd.	500/600CT	2 x 500/600CT 500/600 2	c	15.00
A-48	Hybrid	500/600	500/600 wdg	f	18.00

*+30 dbm. †6K ohms. ‡1.5K ohms. §2K ohms. ††500 ohms. **8 ma. #Frequency response (±2 db), cps: a—20-20,000. b—30-20,000. c—40-20,000. d—10-50,000. e—30-30,000. f—20-40,000. g—20-30,000.

HIPERMALLOY* TRANSFORMERS

Hipermalloy audio and power transformers are specifically designed for portable and compact service. High fidelity though light in weight and dependable. The frequency characteristic of the Hipermalloy audio units is uniform from 30 to 20,000 Hz. They incorporate a Hipermalloy nickel iron core and hum balanced coil structure. The rugged die cast case is of high conductivity alloy finished in grey, arranged for mounting with the terminals either up or down. DC in Primary shown is maximum unbalanced.

TYPE H-2 CASE
Length ..... 3⅜"
Width ..... 2⅛"
Height ..... 3⅛"
Mounting 2 x 2¾"
Screws 6-32
Cutout 2⅛" dia.
Unit Wt. ..5 lbs.

TYPE H-1 CASE
Length ..... 2⅜"
Width ..... 1⅝"
Height ..... 3⅛"
Mount 1⅜ x 1⅜"
Screws 6-32
Cutout 1⅜" dia.
Unit Wt. ..2 lbs.

LOW IMPEDANCE TO GRID AND MIXING TRANSFORMERS
Units Housed in Type H-1 Case

UTC Type	Application	Primary Imped. Ohms	Sec. Imped. Ohms	Level dbm	Sugg. Net Ea.
HA-100	Line to grid	50, 125/150, 200, 250, 333, 500/600	60K split	+18	$21.00
HA-100X	As above but multiple alloy shields for low hum pick up			+16	21.00
HA-101	Line to grids	Same as HA-100	120K split	+18	27.00
HA-101X	As above but muliple alloy shields for low hum pickup		80K split	+16	19.50
HA-103A	Mike/mixer to grid	2.5, 5.5, 10, 15, 22, 30, 38, 60	60K split 60K split	+18	16.50
HA-108*	Mixing	Same as HA-100	Same as Pri	+20	26.40
HA-108X*	As above but multiple alloy shields for low hum pick up			+18	24.00
HA-130X	Line to grids.	30, 50, 200, 250	60K Split	+18	27.00

*High electrostatic shielding.

INTERSTAGE AUDIO TRANSFORMERS
Units Housed in Type H-1 Case, except HA-107: in H-2 Case

UTC Type	Application	Primary Imped. Ohms	Sec. Imped. Ohms	Level Mw.	Sugg. Net Ea.
HA-104	Pl. to grids	15K split	95K	100	$24.90
HA-105	Pl. to grid	15K	60K	100	26.10
HA-106	Pl. to grids	15K split	135K	100	24.00
HA-107	Pl's. to grids	30K	80K	600	33.00
HA-137	Pl's. to grids	30K	68K	100	21.60

Continued on next column

LINEAR STANDARD* TRANSFORMERS

Guaranteed frequency response of ±1 db 20-20,000 Hz, ±1 db 7-50,000 Hz on high level units, make these ideal transformers for uniform frequency response and low distortion. High efficiency and dependability through shielding. Top and bottom mounting.

LOW LEVEL TRANSFORMERS

Type LS-1 case, 2⅝" x 3⅛" x 3¼" h. Suffix X indicates multiple alloy shield. Weight, 3 lbs.

UTC Type	Application	Pri. Imp., Ohms	Sec. mp., Ohms	Level, dbm	Sugg. Net Ea.
LS-10	Input	50, 125/150, 200, 250, 333, 500/600	60K split	+19	$27.00
LS-10X	Input	As above	50K	+17	27.00
LS-12	Input	As above	120K split	+19	30.00
LS-12X	Input	As above	80K split	+17	26.70
LS-30	Mixing	As above	Same as pri.	+23	29.70
LS-30X	Mixing	As above	Same as pri.	+20	30.00
LS-19	Pl. to grids	15K	95K	+20	26.40
LS-21	Pl. to p-p	15K	135K split	+20	27.00
LS-40	Pl. to p-p	15K, 8 ma	135K split	+20	33.00
LS-25	P-P to p-p	30K split	50K split	+23	33.00
LS-27	Pl. to line	15K, 8 ma	See LS-10 pri.	+23	31.80
LS-50	Pl. to line	15K	See LS-10 pri.	+23	27.90
LS-51	P-p to line	30K split	See LS-10 pri.	+24	33.90
LS-14X	Lo-Z to grids	2.5, 5.5, 10, 15, 22, 30, 38, 60	50K	+17	28.80
LS-26	Line to grids	5K	60K	+23	28.80
LS-31	Line to line	30, 50, 200,250	See LS-10 pri.	+23	27.60
LS-32	Lo-Z to line	Same as LS-14X	See LS-10 pri.	+23	33.00
LS-68	Matching to 2 Simult. lines or Tr..	600/150 split	(2) 600/150 split	+15	27.00
LS-150	Line to line	4K	See LS-10 pri.	+23	27.00
LS-151	Line to line	16K	See LS-10 pri.	+26	27.60
LS-140	70 db hybrid	500/600 split	Same as pri.	+18	28.20
LS-141	Hybrid †	500/600 split	Same as pri.	+18	24.90

† Has 3 sets of coils.

HIGH LEVEL TRANSFORMERS

UTC Type	Application	Pri. Imped., Ohms	#	Level Watts	Sugg. Net Ea.
LS-33	Matching	50, 125/150, 200, 250, 333, 500/600	a	20	$33.90
LS-34	Matching	As above	a	40	46.80
LS-47	Driver	5K	i	20	27.90
LS-48	Driver	12K	i	40	73.50
LS-6L1	P-p output	9K	b	30	40.80
LS-6L4	P-p output	4,500/3,800	b	55	71.70
LS-58	P-p output	2.5K/1.5K	b	40	72.60
LS-52	P-p output	8000	b	20	29.10
LS-55	P-p output	5K/3K split	b	20	30.90
LS-61	P-p output	10K/6K split	b	20	31.20
LS-54	P-p output	8000	c	20	24.00
LS-57	P-p output	5K/3K split	c	20	27.00
LS-63	P-p output	10K/6K split	c	20	24.60
LS-56	P-p output	5K/3K split	d	20	32.40
LS-35	EL-34's †	5K CT 43% taps	e	35	37.80
LS-65	6550's †	3.3K CT 40% taps	e	60	68.00
LS-666	P-p transistor	8 split	f	50	39.30
LS-667	P-p transistor	8 split	e	50	35.10
LS-691	Modulation	10,400	g	1,000	825.00
LS-692	Modulation	4,750	h	2,500	1,170.00

† With feedback. #Secondary Impedance: a—1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125/150, 200/250, 333, 500/600 ohms. b—500, 333, 250/200, 125, 50, 30, 20, 10, 7.5, 5, 2.5, 1.2 ohms. c—30, 20, 15, 10, 7.5, 5, 2.5, 1.2 ohms. d—6K, 5K, 4K, 1.8K, 1.5K, 1K, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2 ohms. e—4, 8, 16 ohms. f—500 ohms split. g—4.5K, 4K, 3.5K, 2.75K, 2K, h—2.5K, 2K, 1.75K, 1.5K, 1.25K, i—Pri./½ Sec. 3.2:1. j—Pri./½ Sec. 5.1:1.

Sizes: LS-33, -47, -52, -54, -55, -56, -57, -61, -63, 3½" x 4⅛" x 4⅜" h. (Wt., 7½ lbs.). LS-6L1, -6L4, -34, -35, -48, -58, -65, -666, -667, 5" x 5⅛" x 4¹¹⁄₁₆" h. (Wt., 15 lbs.). LS-691,13" x 15¾" x 24"h. (Wt., 370 lbs.). LS-692, 13" x 15¾" x 28"h. (Wt., 520 lbs.).

Continued from bottom of previous column

PLATE TO LINE TRANSFORMERS
Units Housed in Type H-1 Case

UTC Type	Application	Prim. Imped. Ohms	Sec. Imped. Ohms	Level mw	Sugg. Net Ea.
HA-113	to multiple line	15K split	50, 125/150, 200, 250, 333, 500/600	125	$24.60
HA-114	Lo-Z to multi-line	30K		200	28.20
HA-133	to multi-line	15K split		160	28.20

OUTPUT TRANSFORMERS
Units Housed in Type H-2 Case

UTC Type	Application	Prim. Imped. Ohms	Sec. Imped. Ohms	Level Watts	Sugg. Net Ea.
HA-134	P-p to line	5K/9.4K	50, 125/150, 200, 250, 330, 500/600	15	$24.90
HA-135	P-p to V.C.	3K/5K	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	18	23.70
HA-136	5881's screen-taps	6.6K	4, 8, 16	20	24.60

POWER TRANSFORMERS
Units Housed: HP-122 in Type H-1 Case; HP-123 in Type H-2 Cas

UTC Type	Application	Psi. Volt 50/60u	Hi-Volt	Fil. Wind	Sugg. Net Ea.
HP-122	Pre-amp	115	220-0-220 15 Ma	6.3 V.C.T.—.6A 6.3 V.C.T.—1.2A	$30.00
HP-123	Pre-amp or Tuner	115	275-0-275 35 Ma	6.3 V.C.T.—.6A 6.3 V.C.T.—2A	15.60

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COMMERCIAL GRADE COMPONENTS

DIMENSIONS, COMMERCIAL GRADE "RC" CASE

Performance insured during constant usage due to the ruggedness of this vacuum impregnated component with special sealing compound. Case, finished in light gray enamel, is ready for mounting on chassis. (All audio components linear).

Case No.	Base Dim.(Sq.)	Mounting Dim. (Sq.)	Ht., +1/8, −1/16	Cutout Dia.	Unit Wt. (Lbs.)
RC-37	1 3/8	1 1/8	1 5/8	1 1/4	.35
RC-50	1 5/8	1 3/16	2 1/4	1 1/2	1/2
RC-62	1 13/16	1 1/2	2 1/2	1 1/2	1
RC-75	2 3/16	1 13/16	2 7/8	1 7/8	1 1/2
RC-87	2 5/16	2 3/32	3 1/4	2	2 1/2
RC-100	3	2 3/8	3 3/4	2 5/8	3 1/2
RC-112	3 7/16	2 11/16	4 1/8	2 7/8	5
RC-125	3 3/4	3	4 1/2	3	6 1/2
RC-150	4 1/2	3 3/16	5 1/2	3 3/4	11
RC-152	5 1/8	4 1/8	5 1/2	4	15 1/2
RC-175	5 3/4	4 7/8	7	4	22

SWINGING INPUT AND FILTER INDUCTORS

UTC Type	Induct. Henries	DC ma	DC Res. Ohms	Test Volts	Case No.	Sugg. Net Ea.
CG-40	10	200	110	1750	RC-112	$11.70
CG-44	30	100	400	1750	RC-100	13.00
CG-45	250	15	5000	1750	RC-87	8.40
CG-48C	75	50	2200	1750	RC-87	9.00
CG-100	12	150	110	2500	RC-125	9.00
CG-102	12	250	100	3000	RC-150	16.00
CG-104	10	350	90	5000	RC-152	17.10
CG-108	10	500	52	7000	RC-175	21.00
CG-1S	10	1000	40	9000	11 1/2 x 4 3/4 x 6 7/8 H. Wt., 40 lbs.	33.00 / 87.30
CG-101	25/5	150	110	2500	RC-125	24.00
CG-103	25/5	250	100	3000	RC-150	27.00
CG-105	25/5	350	90	5000	RC-152	21.30
CG-109	25/5	500	52	7000	RC-175	42.00
CG-111§	100/10mh	2.5a.	.6	1500	RC-87	16.00
(2 wdgs)‡	25/2.5mh	.5a.	.15			
CG-112§	40/10mh	6 a.	.24	1500	RC-112	19.00
(2 wdgs)‡	10/2.5mh	12 a.	.06			
CG-113§	7/1.75mh	17.5a.	.036	1500	RC-125	30.00
(2 wdgs)‡	1.8/.45mh	35 a.	.009			
CG-1C	25/5	1000	40	9000	11 1/2 x 4 3/4 x 6 7/8 H. Wt., 40 lbs.	88.20

§Split winding in series. †Wt., 40 lbs. ‡Split winding in parallel.

PLATE TRANSFORMERS

Primaries for 105, 115, 220, 230 volts; 50/60 Hz. For reduced power, secondary can be cut in half, using 220 v. primary on 110 volts; may be used on 25 to 43 Hz in this case. "W" suffix units designed for full wave center tap and full wave bridge application. Center tap may be disconnected from ground.

UTC Type	High Voltage	DC Volts	Case No.	Sugg. Net Ea.
CG-300W	625-515-0-515-625	1000/800	RC-150	$38.40
CG-301W	580-530-300-0-300-530-580	950/850/500	RC-152	38.40
CG-302W	950-750-0-750-950	1520/1220	RC-175	45.00
CG-303W	1500-1235-400-0-400-1235-1500	2500/2000 600	RC-175	51.00

POWER AND BIAS TRANSFORMERS

Primary 115 volts, 50/60 Hz. DCma is for choke input; reduce 70% for condenser input. Filament 1 is 5 volts, 3 amps., and Filament 2 is 5 volts, 2 amps., except as otherwise noted.

UTC Type	High Voltage	DC ma	Filament 3	Filament 4	Case No.	Sugg. Net Ea.
CG-422	435-365-0-365-435 125-0-125	125 25	6.3 VCT-3A	2.5 VCT-5A	RC-150	$51.00
CG-428	500-0-500 80-0-80	250 100	6.3 VCT-4A	6.3 VCT-3A, tapped 2.5 VCT-3A	RC-152	78.00
CG-429*	600-525-0-525-600	250	7.5 VCT-3A, tapped 6.3 VCT-4A		RC-152	43.00
CG-431†	500-400-0-400-500 80-0-80	500 100	6.3 VCT-5A	6.3 VCT-3A	RC-175	94.00
CG-315	Tapped for any DC voltage from 15 to 100 volts within 6%—250 MA				RC-125	25.00
CG-316	Tapped for any DC voltage from 75 to 400 volts within 6%—250 MA				RC-152	45.00

*Filament 2 is 6.3 VCT-3A. †Filament 1 is 5V-6A.

AUDIO UNITS

UTC Type	Use †	Pri. Imped., Ohms	Level	Case RC-	Sugg. Net Ea.
CG-131	a	15K	+28 dbm	50	$13.50
CG-132	b	15K	+30 dbm	62	13.50
CG-133	c	30K CT	+32 dbm	75	13.50
CG-134	d	50, 200, 500	+30 dbm	50	12.30
CG-135	e	50, 200, 500	+30 dbm	50	14.40
CG-235	f	50, 200, 500	+28 dbm	75	21.00
CG-136	g	15K, 50, 200	+30 dbm	62	18.00
CG-137	h	50, 200, 500	+28 dbm	50	12.30
CG-140	i	15K	+30 dbm	50	11.40
CG-141	j	30K CT	+32 dbm	50	11.10
CG-233	k	30K CT	+35 dbm	87	15.00
CG-333	k	30K CT	+35 dbm	87	15.00
CG-433	k	5K CT	10 w.	100	15.00
CG-15	l	8K CT	20 w.	100	21.00
CG-16	l	3K/5K CT	20 w.	100	18.30
CG-19	l	6K/10K CT	20 w.	100	18.30
CG-710	l	14K/20K CT	20 w.	100	22.80
CG-216	l	9K CT	30 w.	125	20.10
CG-20	m	5K CT, 43% screen taps	25 w.	125	22.50
CG-21	m	3.3K CT, 40% screen taps	50 w.	150	27.00
CVP-1	n	3K/5K/6K/8K/10K/14K CT	12 w.	100	21.60
CVP-2	n	"	30 w.	125	22.80
CVP-3	n	"	60 w.	150	32.40
CVP-4	n	"	125 w.	152	37.20
CVP-5	n	"	300 w.	175	54.90
CVL-1	p	500	15 w.	87	13.80
CVL-2	p	500	40 w.	125	18.00
CVL-3	p	500	75 w.	150	22.20
CVM-0	q	Any Class B	12 w.	100	18.60
CVM-1	q	"	30 w.	125	21.60
CVM-2	q	"	60 w.	150	28.80
CVM-3	q	"	125 w.	152	34.20
CVM-4	q	"	300 w.	175	66.00
CVM-5	q	"	600 w.	†	195.00
CG-51AX	r	15K	5 w.	87	15.00
CG-53AX	r	3K/10K/ CT	20 w.	112	16.50
CG-59AX	r	50, 200, 500	20 w.	112	17.40

† 7" x 12" x 9"; Wt., 60 lbs. †a—Pl. to grid. b—Pl. to 2 grids. c—2 pl. to 2 grids. d—Input, humbucking. e—P-p input, humbucking. f—Input, mag. shielded. g—Dual input, humbucking. h—Mixing. i—Pl. to line. j—P-p to line. k—Driver. l—Output. m—Feedback output. n—Universal output. p—Universal matching. q—Universal modulator. r—Universal driver.

END CASTING UNITS

See note on "W" suffix units under plate transformers.

UCT Type	High Volt	DC Volt	L	W	H	Wt. Lbs.	Sugg. Net Ea.
CG-304W†	1500-1235-0-1235-1500	2.5K	2K	14 5/8	8 1/2	10 3/8 100	$340.00
CG-305W†	2400-1750-0-1750-2400	4K	3K	10 1/2	4 3/4	6 7/8 50	121.00
CG-306W†	as above	4K	3K	13 7/8	8 1/2	10 3/8 100	340.00
CG-307	3500-3000-2400-0-2400-3000-3500	3K 2K	2.5K	13 5/8	8 1/2	10 3/8 90	288.00
CG-308	as CG-307	3K 2K	2.5K	15 1/8	8 1/2	10 3/8 125	390.00
CG-309	as CG-307	3K 2K	2.5K	21	10	13 1/4 253	620.00
CG-310	4600-4050-3500-0-3500-4050-4600	4K 3K	3.5K	17 1/4	10	13 1/4 150	560.00
CG-311W	1500-1235-0-1235-1500	2.5K	2K	10 1/2	4 3/4	6 7/8 50	189.00
CG-312	1800-1500-0-1500-1800	1.5K	1.25K	10 1/2	4 3/4	6 7/8 38	187.00

† Full Wave Bridge Rectifier types.

VARIPOWER* AUTOFORMERS

Simultaneous control of filament, plate and line voltage. Filament voltage control within 2 1/2%. Output voltage from 0 to 130 volts. 50/60 Hz. Taps at 25, 55, 75, 95, 100, 105, 110, 115, 120, 125, and 130 volts.

UTC Type	Watts Output	Case No.	Sugg. Net Ea.	UTC Type	Watts Output	Case No.	Sugg. Net Ea.
CVA-1	150	RC-112	$27.50	CVA-4	1000	RC-152	$63.00
CVA-2	250	RC-125	31.50	CVA-5	2000	RC-175	42.90
CVA-3	500	RC-150	29.40				

UNITED® TRANSFORMER CO. TRW®

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MINIATURE, OUNCER, SUBOUNCER & SUB-SUBOUNCER UNITS

SUBOUNCER*& SUB-SUBOUNCER*AUDIO TRANSFORMERS
TRANSISTOR & TUBE TYPES HERMETICALLY SEALED

Designed, Manufactured and Successfully Tested to complete MIL-T-27C Specifications.

UTC SSO-#P and SO-#P units are ideal miniaturized components having high efficiency and wide frequency response. Special nickel iron core materials and winding methods provide exceptional performance and reliability.

SO-#P UNIT Dim. ¾×1×2³⁄₃₂" Pin Length ¼" Wt. .....05 lb.

SSO-#P UNIT Dim. ¾×⅞×⅜" Pin Length ¼" Wt. .....04 lb.

SML-70 ⅜×³⁄₄×⅜" Wt. .2 oz.

These units are vacuum molded to MIL Grade 5. They employ 50 mil deeply anchored pin terminals ideally suited for printed circuit and transistor application. Terminals are strong enough to support these light weight units.

The UTC SML-70 is an ultra miniature transformer providing high shielding, extremely low insertion loss with wide band response, 200 Hz to 20 kHz. These units are provided with pin terminals (.025 dia.) strong enough to support the unit and are ideal for printed circuits.

PRINTED CIRCUIT AUDIO UNIT — HIPERMALLOY SHIELD CASE

Type No.	Application	Pri. Imp. ohms	Sec. Imp. ohms	Sugg. Net Ea.
SML-70	Input or Chopper Service	200K	1K	$8.40

MIL TYPE: TF5RX16ZZ.

PRINTED CIRCUIT MOLDED TYPES TO MIL GRADE 5

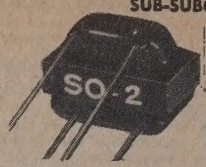
Type No.	Application	Pri. Imp. ohms	Sec. Imp. ohms	Sugg. Net Ea.
SO-2P	Interstage/3:1	10K	90K	$7.50
SO-3P*	Plate to Line	10K	200	7.50
		25K	500	
SO-5P	Inductor: 40 hy at 1 ma, 2675 ohms, series; 4 hy at 4 ma, 670 ohms, parallel;			7.50
SO-7P*	Transistor	20K	800	6.90
	Interstage	30K	1200	
SO-8P	Transistor to PP Sec.	10K	2000 CT	7.50
SO-9P	PP Transistor to V.C.	500 CT	3.2	7.50
SO-14P	Transistor	80 CT	32 Split	7.80
	Interstage	100 CT	40 Split	
SO-15P	Tr. output	600 CT	600 Split	7.80
SO-17P	Inductor: 16 hy at 2 ma, 1.1K ohms, series; 4 hy at 4 ma, 275 ohms, parallel;			7.20
SO-18P	Tr. output	50K CT	600 Split	7.80

MIL TYPES: TF5RX13ZZ: SO-3P, SO-7P, SO-8P, SO-18P; TF5RX15ZZ: SO-2P; TF5RX17ZZ: SO-9P, SO-14P, SO-15P, SO-17P; TF5RX20ZZ: SO-5P.

SSO-3P	Plate to line	10K	200	$7.95
		25K		
SSO-5P	Inductor: 100 hy at 0 ma, 4.4K ohms, series; 25 hy at 0 ma, 1.1K ohms, parallel			7.50
SSO-8P	Transistor to pp sec.	10K	2000 CT	7.80
SSO-14P	Transistor	10K CT	200 CT	7.95
	Interstage	25K CT	500 CT	
SSO-15P	Transistor	20K CT	800 CT	7.95
	Interstage	30K CT	1200 CT	
SSO-19P	Output matching	500 CT	600 CT	7.20
SSO-20P	Output	1.5K CT	600 CT	7.20
SSO-21P	Crystal/Chopper	200K CT	1000 CT	8.55
SSO-22P	Interstage	10K CT	1500 CT	7.65
		12K CT	1800 CT	
SSO-23P	Inductor: 8 hy at 2 ma, 600 ohms, series; 2 hy at 4 ma, 150 ohms, parallel			7.50
SSO-24P	Inductor: 3.5 hy at 2 ma, 160 ohms, series; 0.9 hy at 4 ma, 40 ohms, parallel			7.50
SSO-25P	Transistor	10K CT	10K/	8.10
	Interstage		2.5K spl.	
SSO-27P	Tr. Output	4K CT 2.5 ma	600 spl.	8.10

MIL TYPES: TF5RX13ZZ: SSO-3P, SSO-8P, SSO-14P, SSO-15P, SSO-20P, SSO-22P, SSO-25P, SSO-27P; TF5RX16ZZ: SSO-21P; TF5RX17ZZ: SSO-19P; TF5RX20ZZ: SSO-5P, SSO-23P, SSO-24P.

SUB-SUBOUNCERS*AND SUBOUNCERS*



Lead mounted (channel available as separate item) miniature nickel iron core units for transistor or vacuum tube circuits. Plastic mounted leads. SSO Sub-Subouncers: Approx. 2 db, 140-10,000 Hz; +20 VU except inputs +7 VU. (3⁄16" x ¾" x 4³⁄₆₄"; wt., .02 lb.) SO Subouncers: Approx. 2 db, 100-10,000 Hz; +24 VU except inputs +10 VU. (1³⁄₃₂" x 4³⁄₆₄" x ⅞"; wt., .03 lbs.)

UTC SSO-	Sugg. Net Ea.	Application	Pri. Imp., Ohms	Sec. Imp., Ohms	UTC SO-	Sugg. Net Ea.
1	$4.95	Input	50/200	62.5K/250K	1	$4.20
2	4.95	Interstage	10K, .25 ma	90K	2	3.90
3	4.80	Pl. to line	10K/25K, 1.5 ma	200/500	3	3.90
4	4.80	Output	30K, 1 ma	50	4	3.90
5	4.20	Inductor:	50 hys. @ 1 ma	4400 ohms#	5‡	3.30
6	4.80	Output	100K, .5 ma	60	6	4.50
7	3.90	Tr. intrstg.	20K/30K†	80/1200	7	3.30
8	4.20	Tr. intrstg.	10K, 1 ma	2K CT	8	3.90
9	3.60	Tr. to V.C.	10K, 2 ma	16	.....	.....
.....	.....	Tr. to V.C.	500 CT	3.2	9	3.60
10	3.60	Tr. to V.C.	10K, 2 ma	3.2	.....	.....
.....	.....	Tr. to V.C.	2K/4K CT	8/16	10	3.60
11	3.60	Tr. Output	500/600§	50/60	.....	.....
.....	.....	Transist. Int.	400/500 CT	400/500 Split	11	4.20
12	3.60	Tr. Output	1K/1.2K††	50/60	.....	.....
.....	.....	Transist. Int.	400/500 CT	120/150 Split	12	4.20
13	4.50	Input	200K	1K	.....	.....
.....	.....	Transist. Int.	400/500 CT	40/50 Split	13	4.20
14	4.50	Tr. intrstg.	10K/25K CT	200/500 CT	.....	.....
.....	.....	Transist. Int.	80/100 CT	32/40 Split	14	4.20
15	4.50	Tr. intrstg.	20K/30K CT	.8K/1.2K CT	.....	.....
.....	.....	Tr. output	600 CT, 5 ma	600 Split	15	4.20
16	3.60	Tr. output	1.2K/1.5K††	3.2/4	.....	.....
.....	.....	Tr. intrstg.	2.5K CT, 4 ma	2500 Split	16	4.20
17	3.90	Output	10K/12.5K**	500/600 CT	.....	.....
.....	.....	Inductor: 16 hy at 2ma, 1.1K ohms, series; 4 hy at 4 ma, 275 ohms, parallel			17	3.90
18	3.90	Output	10K/12.5K CT	3.2/4	.....	.....
.....	.....	Tr. Output	50K CT	600 Split	18	5.25
19	3.60	Matching	500 CT	600 CT	.....	.....
20	3.60	Output	1.5K CT	600 CT	.....	.....
21	4.95	Chopper	200K CT	1K CT	.....	.....
22	4.20	Tr. intrstg.	10K/12K CT	1.5 K/1.8K CT	.....	.....
23	3.00	Inductor: 4 hys @ 5 ma, 650 ohms				
24	3.00	Inductor: 1.5 hys. @ 5 ma, 160 ohms				
25	5.10	Transist. Int.	10K/12K CT	10K/12 CT	.....	.....
26	5.10	Transist. Int.	40K/50K CT	400/500 Split	.....	.....
27	5.10	Tr. output	4K CT, 2.5 ma	600 Split	.....	.....
CH	.30	Mounting channel for any of above			CH	.30

†0.5 ma. ‡Resis., 2675 ohms. §3.5 ma. **2 ma. ††3 ma. #DC resis.

OUNCER*AUDIO UNITS
Standard and Plug-in Types

UTC ouncer components provide wide range ±1 db, 30 to 20,000 Hz (except Nos. 0-14 and 0-15). O unit case: ⅞" Dia x 1³⁄₁₆" H, Wt: 1 oz. (except 0-16; heavy shielding case 1⅛" Dia x 1½" H, Wt: 3 oz.) P unit case: 1³⁄₃₂" Dia x 1¹⁵⁄₃₂" H, Wt: 2 oz. (except P-16: heavy shielding case 1³⁄₁₆" Dia x 2¾" H, Wt: 4 oz.)

UTC No.	Sugg. Net Ea.	Application	Pri. Imped., Ohms	Sec. Imped., Ohms	UTC No.	Sugg. Net Ea.
O-1	$7.80	Input	50, 200, 500	50K	P-1	$9.00
O-2	7.80	P-p input	50, 200, 500	50K CT	P-2	9.00
O-3	7.50	Input	7.5/30	50K	.....	.....
O-4	6.60	Pl. to grid	15K	60K	.....	.....
O-5	6.60	Pl. to grid	15K, 2 ma	60K	.....	.....
O-6	7.50	Pl. to p-p	15K	95K CT	P-6	8.40
O-7	7.50	Pl. to p-p	15K, 2 ma	95K CT	P-7	8.40
O-8	7.80	Pl. to line	15K	50, 200, 500	P-8	9.00
O-9	7.80	Pl. to line	15K, 2 ma	50, 200, 500	P-9	9.00
O-10	8.40	P-p to line	30K CT	50, 200, 500	P-10	9.00
O-11	7.80	Cryst. out.	50K	50, 200, 500	P-11	9.00
O-12	7.80	Mixing	50, 200,	50, 200, 500	P-12	9.00
O-13	6.30	Inductor	300 Hys-0 ma; 6000 ohms		.....	.....
O-14	7.50	50:1 input	200	500K	.....	.....
O-15	7.50	10:1 P/G	15K	1 meg.	P-15	9.00
O-16	10.20	Shld. input	250 CT	50K	P-16	11.40
O-17	1.50	Hipermalloy shield, 25 db, for Ouncers			.....	.....
O-18	7.80	Tr. intrstg.	10K split	2K split	.....	.....
O-19	7.80	Tr. intrstg.	10K split	4K split	.....	.....
O-20	6.30	Tr. to line	1.5K CT	500 split	.....	.....
O-21	5.40	Tr. to V.C.	2K/4K CT	8/16	.....	.....
O-22	5.40	Tr. to V.C.	500/400 CT	4/3.2	.....	.....
O-23	5.10	Inductor 7 Hys-3 ma; 230 ohms			.....	.....
O-24	5.10	Inductor 1.6 Hys-3 ma; 25 ohms			.....	.....
O-25	8.10	Transist. Input	600/150 split	2K/500 split	.....	.....
O-26	8.10	Transist. Int.	10K CT 4 ma.	10K CT	.....	.....
O-27	8.40	Transist. Int.	10K CT 4 ma.	500/125 split	.....	.....
O-28	8.40	Transist. Int.	50K CT. 2 ma.	500/125 split	.....	.....
O-29	8.70	Transist. Int. or chopper	100K CT 1 ma.	500/125 split	.....	.....
O-30	8.10	Transist. Int.	500/125 split	500/125 split	.....	.....
O-31	8.10	Transist. Int.	500/125 split	150/37.5 split	.....	.....
O-32	8.10	Transist. Int.	500/125 split	50/12.5 split	.....	.....
O-33	8.10	Transist. Int.	100/25 split	40/10 split	.....	.....
O-34	5.10	Split Inductor	Series: 60 Mhy-80 ma; 4 ohms Parallel: 15 Mhy-160 ma; 1 ohm		.....	.....
O-36	5.10	Split Inductor	Series: 1 Hy-20 ma; 60 ohms Parallel: .25 Hy-40 ma; 15 ohms		.....	.....
O-37	8.10	Tr. to line	4K/1K spl., 4 ma	650/150 split	.....	.....
O-38	5.10	Spkr. match	0, 4, 8, 16 ODC		.....	.....
O-BR	.39	Mounting U-bracket for ouncers			.....	.....

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AMATEUR & PUBLIC ADDRESS TRANSFORMERS "S"* SERIES

DIMENSIONS, SPECIAL SERIES TRANSFORMERS

G-1 thru G-4 G-5 thru G-12

UTC Special Series transformers are specifically designed for amateur and popular-priced PA service. These units are finished in a rich, commercial type medium gray enamel. A recessed terminal strip is provided, permitting above chassis or breadboard wiring in addition to standard chassis type.

G-CASE SIZES

Case	Height, In.	Width, In.	Depth, In.	Wt., Lbs.
G-1	1 7/8	2 13/16	1 3/4	1
G-2	2 5/16	3 3/8	1 15/16	1 1/2
G-3	2 1/2	3 3/4	2 5/32	2
G-4	2 15/16	4 1/8	2 3/16	3
G-5	3 3/4	3 1/8	4 1/2	4 1/2
G-7	4 5/8	4 5/8	5 1/2	8
G-8	4 5/8	5 3/8	5 3/8	12
G-9	5 7/8	5 3/8	6 3/4	21
G-10	5 7/8	6 1/8	6 5/8	24
G-11	5 7/8	6 1/2	7 3/8	31
G-12	10 1/4	7 3/8	9 1/4	52

INPUT AND DRIVER TRANSFORMERS

Type UTC	Application	Ratio Pri. to Sec.	Level	Case	Sugg. Net Ea.
S-2	Plate to p-p grids	1:4†	+30 dbm	G-2	$9.30
S-3	Pl. to 1 or 2 grids	1:4†	+25 dbm	G-1	8.70
S-5	Line to grid, humbkg.	1:16	+30 dbm	G-2	9.60
S-6	Line to grid, compact	1:16	+25 dbm	G-1	7.80
S-8	Driver pl. to p-p	2.66:1, 5:1†	5 w.	G-3	11.40
S-9	Driver p-p to p-p	2.66:1, 3.6:1 5:1†	20 w.	G-4	16.50
S-10	Driver p-p to p-p	2.25:1†	5 w.	G-3	11.40

†Center tapped.

MATCHING, OUTPUT AND MODULATION UNITS

UTC Type	Application	Pri. Imped., Ohms	†	Level, Watts	Case	Sugg. Net Ea.
S-11	Pl. to line	15K	a	.25	G-2	$ 8.40
S-12	Line to V.C.	.5K/2K/4K	b	15	G-2	10.50
S-13	Line to V.C.	.5K/2K/4K	b	30	G-4	14.10
S-14	Output	2.5K/4K/7K/10K	c	10	G-2	11.10
S-15	PP output	4K/5K/10K CT	c	12	G-2	13.20
S-16	PP output	3K/6K/9/10K CT	c	30	G-4	15.30
S-17	PP output	3.8K/4.5/5K CT	c	55	G-5	21.00
S-18	Univ. modul.	Any Class B	d	12	G-3	13.50
S-19	Univ. modul.	Any Class B	d	30	G-4	15.90
S-20	Univ. modul.	Any Class B	d	55	G-5	22.20
S-21	Univ. modul.	Any Class B	d	110	G-7	28.50
S-22	Univ. modul.	Any Class B	d	250	G-9	49.50

†Secondary Impedance: a—200/500 ohms. b—2, 4, 8, 15 ohms. c—2, 8, 15, 500 ohms. d—Any Class C.

FILTER, SWINGING AND AUDIO INDUCTORS

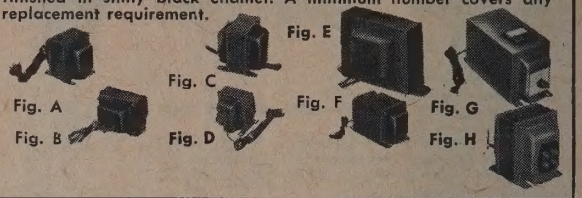
Type	Henries	ma DC	Ohms	Insul.	Case	Sugg. Net Ea.
S-23§	300	5	5000	1500 v.	G-2	$ 7.80
S-24‡	500	3	6000	1500 v.	G-2	8.70
S-25	30	30	800	1500 v.	G-2	5.70
S-26	12	60	250	1500 v.	G-2	5.70
S-27	25	75	350	1500 v.	G-4	7.80
S-28	20	100	350	1500 v.	G-4	21.00
S-29	6	175	90	1500 v.	G-4	9.00
S-30†	4/20	175	90	1500 v.	G-4	6.90
S-31	6	225	100	2700 v.	G-5	10.20
S-32†	4/20	225	100	2700 v.	G-5	15.00
S-33	8	300	100	4000 v.	G-7	13.20
S-34†	4/20	300	100	4000 v.	G-7	13.50
S-35	8	400	60	5000 v.	G-8	14.40
S-36†	4/20	400	60	5000 v.	G-8	31.50
S-37	8	550	60	6000 v.	G-8	19.80
S-38†	4/20	550	60	6000 v.	G-8	19.80
S-80	50/10 Mhy	1.75A	.5	500 v.	G-1	6.00
S-81 (2Wdgs)	100/8 Mhy 25/2 Mhy	2.5A 5A	.6 .15	1500 v.	G-3	7.20

§Audio. ‡P.P. Audio C. T. †Swinging.

Information on components in this box listed on UTC page T-12.

REPLACEMENT TYPE COMPONENTS

The shells and brackets of these vacuum sealed components are finished in shiny black enamel. A minimum number covers any replacement requirement.



FILAMENT TRANSFORMERS

Primary Tapped 105, 115 Volts, 50-60 Hz.

UTC Type	Secondary Volts	Secondary Current	Insulation	Case No.	Sugg. Net Ea.
S-53	2.5 VCT	10 Amp	1500 V	G-3	$ 8.70
S-54	5 VCT	4 Amp	2500 V	G-3	10.50
S-55	6.3 VCT	3 Amp	1500 V	G-3	8.10
S-57	2.5 VCT	10 Amp	10000 V	G-5	20.50
S-58	2.5 VCT	20 Amp	10000 V	G-5	14.70
S-59	5 to 5.25 VCT	13 Amp	5000 V	G-5	13.50
S-60	5 to 5.25 VCT	22 Amp	10000 V	G-7	19.50
S-61	7.5 VCT tapped 6.3 VCT	10 Amp	3000 V	G-5	15.00
S-62	10 VCT	10 Amp	3000 V	G-5	13.50
S-63	14 VCT tapped 12 VCT & 11 VCT	10 Amp	5000 V	G-7	16.80

Type	Filament 1	Filament 2	Filament 3	Case	Sugg. Net Ea.
§S-64	2.5 VCT-5A	2.5 VCT-5A	5 VCT-6A	G-5	$31.50
§S-67	5 VCT-6A	6.3 VCT-54		G-5	27.00
‡S-68	5 VCT-3A	6.3 VCT-4A	7.5 VCT-5A	G-5	31.50
‡S-70	6.3 VCT-5A	6.3 VCT-5A	.....	G-5	11.40
§S-71	2.5 VCT 6A	2.5 VCT-6A	2.5 VCT-12A	G-7	28.50
†S-72	5 VCT-3A	5 VCT-3A	5 VCT-6A	G-5	31.50

§Insulation 10,000 v. †Insulation 5000 v. ‡Insulation 3000 v.

COMBINED PLATE AND FILAMENT TRANSFORMERS

Primary 115 V., 50-60 Hz

UTC Type	Voltage	DC V.	Rect. Fil.	Filament No. 1	Filament No. 2	Case No.	Sugg. Net Ea.
S-39	490-400-0-400-490 175 ma	400/310	5V-3A	2.5 VCT-6A	6.3 VCT-4A	G-7	$24.00
S-40	525-425-0-425-525 250 ma	400/310	5V-3A	6.3 VCT-3A	6.3 VCT-3A	G-7	25.80
S-41	600-0-600 200 ma	475	5 V-3A	7.5 V tapped 6.3 V-3A	6.3 VCT-2A	G-7	27.50
S-42	600-525-0-525-600 300 ma	480/400	5 V-6A	7.5 V tapped 6.3 V-3A	6.3 VCT-3A	G-7	28.20

PLATE AND BIAS TRANSFORMERS

Primary 115 V. 50/60 Hz.

UTC Type	2.5 VCT-12A High Voltage	DC Voltages †	DC Ma	Case	Sugg. Net Ea.
S-44	575-525-0-525-575	470/430	500	G-9	$34.50
S-45	900-750-0-750-900	750/620	200	G-8	26.70
S-46	1000-750-0-750-1000	825/600	300	G-9	32.40
S-47	1500-1250-1000-0-1000-1250-1500	1275/1050/825	300	G-10	43.50
S-48	1500-1250-1000-0-1000-1250-1500	1300/1075/850	500	G-11	49.50
S-49	2100-1800-1500-0-1500-1800-2100	1815/1540/1275	300	G-11	46.80
S-50	3000-2500-0-2500-3000	2625/2175	300	G-12	84.00
S-51	Any bias voltage from 15 to 100 ± 6%		200	G-5	25.50
S-52	Any bias voltage from 75 to 400 ± 6%		200	G-7	28.50

†Based on two section filter for 200 ma. and 300 ma. units. Single section filter for 500 ma. units, both choke input.

IMMEDIATE DELIVERY
ON ALL UTC STOCK ITEMS
AND SPECIAL CUSTOM BUILT UNITS TO YOUR SPECS.

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TRANSFORMERS FOR INDUSTRY WIDE APPLICATIONS

DOUBLE SHELL POWER TRANSFORMERS (FIG. B SEE PG. T-11)

Rectifier filaments 5 volts, 3 amps except R-101, 2 amps.

UTC Type	High V.	DC ma	Amplifier Filament	Overall Height	Wt., Lbs.	Sugg. Net Ea.
R-101	275-0-275	50	6.3 v. CT-2.7A	3"	2½	$15.00
R-102	350-0-350	70	6.3 v. CT-3A	3⅝"	3½	15.00
R-103	350-0-350	90	6.3 v. CT-3.5A	3 15/16"	4½	16.50
R-104	350-0-350	120	6.3 v. CT-5A	3⅞"	5½	27.00
R-105	385-0-385	160	6.3 v. CT-5A	4 5/16"	7	30.00

VERTICAL SHELL POWER TRANSFORMERS (FIG. C SEE PG. T-11)

Rectifier filaments 5 volts, 3 amps., except R-110, 2 amps.

R-110	300-0-300	50	6.3 v. CT-2.7A	3¼"	2½	$13.50
R-111	350-0-350	70	6.3 v. CT-3A	3¼"	3½	12.00
R-112	350-0-350	120	6.3 v. CT-5A	4"	5½	13.50
R-113	400-0-400	200	6.3 v. CT-6A	4⅝"	8	17.40

CHANNEL FRAME FILTER INDUCTORS (FIG. E SEE PG. T-11)

Inductance Shown is at Rated D.C.ma .—Test Volts RMS: 1500

Type No.	Induct. Hys.	Current	Resist. Ohms	Dimensions, in. W	D	H	M	Wt. Lbs.	Sugg. Net Ea.
R-55	6	40 ma	300	2⅜	1⅜	1⅜	2	½	$ 2.40
R-14	8	40 ma	250	2⅞	1½	1 11/16	2⅜	¾	2.70
R-15	12	30 ma	450	2⅞	1½	1 11/16	2⅜	¾	2.70
R-16	15	30 ma	630	2⅞	1½	1 11/16	2⅜	¾	2.70
R-17	20	40 ma	850	3 5/16	1⅝	2	2 13/16	1	3.30
R-18	8	80 ma	250	3 3/32	1⅝	2	2 13/16	1	3.90
R-19	14	100 ma	450	3¾	1⅞	2⅝	3⅛	1½	6.00
R-20	5	200 ma	90	4⅛	2¼	2⅝	3 5/16	2½	10.50
R-21	15/3	200 ma	90	4⅛	2¼	2⅝	3 5/16	2½	12.00
R-220	100/8 Mhy. 25/2 Mhy.	2.5A 5A	.6 .16	3¾	2	2 5/16	3⅛	1½	5.40

PHOTOFLASH TRANSFORMERS

STANDARD 982

Can be used for either standard (Amglo type) or trigger (Sylvania type) multiple flash tubes. Circuit details included with transformer.

PF-1 Primary for 115 volts, 50/60 Hz. Secondaries for power supply delivering 2200 volts DC to condenser up to 100 Mfd. Compound sealed in G-3 (UTC page T-11) case 2⅛ x 2¾ (3¾ including flanges) x 2½ inches high. Wt. 2 lbs. **Suggested net each: $10.20**

PF-3 Trigger Transformer 15 KV peak. ⅞ O.D.x3 long. Weight 2 oz. **Suggested net each: $7.20**

PF-6

TRANSISTOR TYPE

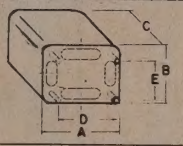
These are miniaturized light weight units for transistor type photoflash supply.

PF-5 Primary for 115 volts, 50/60 Hz or for 4½ V. battery switched by PF-6 inverter transformer. Output delivers 400 V. DC when used in voltage doubler circuit to charge photoflash capacitor (typically 40 watt-Sec.). G-1 case (UTC page T-11)
Suggested net each: $10.20

PF-6 Inverter transformer transforms 4½ V. DC from battery to input for PF-5 stepup transformer. Ouncer case (UTC page T-11)
Suggested net each: $7.50

PF-7 Trigger transtormer. Shorting .25 mfd. capacitor (charged to approx. 225 V. DC) across terminals 1-2 produces 6 KV pulse at terminal 3 for triggering flash tube. ⅞" Dia. x 15/16"; Wt. ½ oz.
Suggested net each: $4.50

MIL-T-27C CASE SIZES



MIL Case	A	B	C	D	E	Mtg. Studs
AF	¾	¾	1⅛	Diag.	5/16	4-40 x 3/8
AG	1	1	1⅜	Diag.	¾	4-40 x 3/8
AH	1 5/16	1 5/16	1¾	Diag.	1¼	6-32 x 3/8
AJ	1⅜	1⅜	2⅜	1 3/16	1 3/16	6-32 x 3/8
EA	1 13/16	1 13/16	2¾	1⅜	1¼	6-32 x 3/8
EB	1 13/16	1 13/16	2 7/16	1⅜	1¼	6-32 x 3/8
FA	2 5/16	2 1/16	3⅛	1 11/16	1 7/16	6-32 x 3/8
FB	2 5/16	2 1/16	2½	1 11/16	1 7/16	6-32 x 3/8
GA	2¾	2⅜	3 13/16	2⅛	1¾	6-32 x 3/8
GB	2¾	2⅜	2 13/16	2⅛	1¾	6-32 x 3/8
HA	3 1/16	2⅝	4¼	2 13/64	1 55/64	8-32 x 3/8
HB	3 1/16	2⅝	3 3/16	2 13/64	1 55/64	8-32 x 3/8
JA	3 5/16	3 1/16	4⅞	2⅝	2⅛	8-32 x 3/8
JB	3 5/16	3 1/16	3⅞	2⅝	2⅛	8-32 x 3/8
KA	3 13/16	3⅜	5¼	3	2 7/16	10-32 x ½
KB	3 13/16	3⅜	4 5/16	3	2 7/16	10-32 x ½
LA	4 5/16	3 11/16	5 5/16	3 5/16	2 13/16	10-32 x ½
LB	4 5/16	3 11/16	4½	3 5/16	2 13/16	10-32 x ½
MA	4 11/16	4	6	3 11/16	3	¼-20 x 5/8
MB	4 11/16	4	4 15/16	3 11/16	3	¼-20 x 5/8
NA	5 1/16	4 5/16	6 13/16	4 1/16	3 5/16	¼-20 x 5/8
NB	5 1/16	4 5/16	5½	4 1/16	3 5/16	¼-20 x 5/8
OA	5½	4½	6¾	3¾	3	¼-20 x 5/8

STEP-DOWN AUTO-TRANSFORMERS (FIG. A SEE PG. T-11)

With 6-ft. cord and female receptacle, except R-64; 220/240 to 110/120 v., 50/60 Hz.

UTC Type	Rating	Size, Inches L.	W.	H.	Wt., Lbs.	Sugg. Net Ea.
R-41	85 watt capacity	3 3/16	2⅝	3⅛	4	$ 9.00
R-42	125 watt capacity	3½	3	3½	5	10.50
R-43	175 watt capacity	3¾	3¼	3⅞	5½	11.10
R-44	250 watt capacity	4⅜	3¼	3⅞	6½	13.20
R-45	500 watt capacity	4⅝	3⅞	4⅝	12	15.60
R-46	1200 watt capacity	6⅞	3⅞	4⅝	18	30.30
R-64	2500 watts, no cord	10½	4¾	6¾	30	66.30

ISOLATION TRANSFORMERS (FIG. F SEE PG. T-11)

Ideal for isolating line noise. AC-DC sets, etc. Excellent electrostatic shielding 1500 volt breakdown test. Six foot cord and female receptacle, except R-77.

Primary 110-120 volts 50/60 Hz—Secondary 110-120 volts
Except R-97 220 volt Primary—120 volt Sec.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.	Sugg. Net Ea.
R-72	40	3⅛	2⅝	3⅛	2x1⅞	4	$ 9.60
R-73	100	3¾	3¼	3⅞	2½x2⅜	6	13.20
R-74	250	4⅞	3⅞	4⅝	3x3½	12	19.80
R-75	600	7⅜	3⅞	4⅝	3x5⅞	20	32.70
R-76	1200	8½	4½	6⅛	3⅝x6⅝	30	66.00
R-77	2500	12	7	9	6x11	70	174.00
R-97	250	4⅞	3⅞	4⅝	3x3½	12	18.00

LINE VOLTAGE ADJUSTERS WITH METERS (FIG. H SEE PG. T-11)

The perfect answer to abnormal or fluctuating line voltage. Adjust switch so that meter reads at red line and you know that your equipment is working at correct voltage. These units combine a tapped auto-transformer with a switch and meter in a compact, rugged assembly. The nine-tap switch provides for line voltage of 60 to 140 volts on 115 volt output models and 160 to 240 volts on 230 volt output model. All units are designed for 50/60 Hz service and come complete with 6 foot input cord and plug and outlet receptacle.

Type No.	Primary Voltages	Sec. Volts	Watts Ratings	L	W	H	Wgt. Lbs.	Sugg. Net Ea.
R-78	†	115	150	7	4	4¾	6	$54.00
R-79	†	115	300	7	4	4¾	9	34.50
R-80	†	115	600	10¼	4	4¾	13	35.40
R-81	†	115	1200	10¼	4	4¾	21	48.00
R-86	‡	230	1200	10¼	4	4¾	21	91.50

† 60, 70, 80, 90, 100, 110, 120, 130, 140
‡ 160, 170, 180, 190, 200, 210, 220, 230, 240

EXPORT VOLTAGE ADAPTER (FIG. D SEE PG. T-11)

Complete with cord and plug and special locking switch providing for line voltages of 105, 115, 125, 135, 150, 210, 230, 250 volts; 42 to 60 Hz. Output voltage 115.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.	Sugg. Net Ea.
R-47	85	4¾	3	3½	2¼x2⅝	4½	$15.60
R-48	150	4¾	3¼	4	2½x2¾	5½	16.20

TV VOLTAGE REGULATOR (FIG. D SEE PG. T-11)

Complete with cord, plug, and special locking switch. Permits operation of 115 volt 50/60 Hz TV sets on line voltages of 85, 90, 95, 100, 105, 110, 120, 125 V.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.	Sugg. Net Ea.
R-49	350	4 13/16	3¼	4	2½x2 13/16	5	$16.80

SIGNALLING & CONTROL TRANSORMERS (FIG. HSEE PG. T-11)

Primary 110-220 volts, 50/60 Hz — Secondary
4/8/12/16/20/24 volts

High power transformers suitable for operating relays, sirens horns, gongs, etc. from 115 V. 50/60 Hz line. These units have four secondary terminals providing 4, 8, 12, 16, 20 and 24 volt output. The volt ampere rating is based on the 24 volt secondary tap with corresponding reduction at the lower voltages. Underwriters' approved primary leads are employed, and screw-type binding posts.

Type No.	Rating Watts	L	W	H	Mtg. Dim.	Wgt. Lbs.	Sugg. Net Ea.
SC-3	50	3	3 1/16	3 3/16	1¾x2¼	3	$93.0
SC-4	100	3¼	3 7/16	4	2⅛x2½	5	10.80
SC-5	250	4	4⅝	4¾	3 5/16x3	10	15.90

INDUSTRIAL DISCOUNTS

Applicable to any UTC products listed in this catalog.

1-24	25-99	100-249	250-499
Net Price	Net —15%	Net —20%	Net —26%

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Amperex Industrial, Communication

TUBE TYPE
0A2
0B2
0E3
0G3
0Z4
0Z4A
1A3/DA90
1AB6
1AC6
1AD2
1AH5
1AJ4
1AN5
1AY2
1B3GT
1BC2
1BG2
1BH2
1BL2
1G3GT/1B3GT
1K3/1J3
1L4/DF92
1M3/DM70
1N3/DM71
1R5
1S2A/DY87
1S5
1T4
1U4/DF904
1U5
1V2
1X2A/1X2B
2AF4
2AF4B/2DZ4
2AH2
2AS2
2AV2
2BN4A
2C39A
2C39BA
2CN3A
2CW4
2CY5
2D21
2D21W
2ER5/XC95
2FH5
2FY5/XC97
2FS5
2GK5/2FQ5A
2GU5
2HA5
2J42
2J51
2J51A
2J55
2K25
3-400Z
3A2
3A3
3A3A/3AW3/3B2
3A4/DL93
3A5/DCC90
3AF4A/3AF4B
3AF4B/3DZ4
3AL5
3AT2
3AV6
3AW2
3B28
3BH2
3BN2
3BN4
3BN6
3BS2
3BSA
3BU8
3BZ6
3C4/DL96
3CB6/3CF6
3CE5/3BC5
3CN3
3CN3A
3CS6
3CX3
3CY5
3DG4
3DK6
3DT6
3EH7/XF183
3EJ7/XF184
3ER5
3FS5
3GK5
3GS8/3BU8
3HA5/LC900

TUBE TYPE
3HM5/3HA5
3HQ5
3NP4/MW6-2
3Q4/DL95
3S4/DL92
3V4/DL94
4-65A
4-125A/4D21
4-250A/5D22
4-400A
4AU6
4B32
4BC8
4BL8/XCF80
4BN6
4BQ7A/4BZ7
4BS8
4BZ6
4C35
4CB6
4CS6
4CX250B
4CX250F
4CX250FG
4CX250R
4CX350A
4CX350F
4DE6
4DK6
4DT6
4EH7
4EJ7
4ES8/XCC189
4EW6
4GK5
4GS8/4BU8
4GZ5
4HA5/PC900
4HA7/4HC7
4HQ5
4HS8
4J50A
4J52A
4JC6
4JD6
4LJ8
4X150A
4X150A JAN
4X150D
4X150D JAN
4X500A
5AM8
5AN8
5AQ4
5AQ5
5AR4/GZ34
5AS8
5AT8
5AU4
5AV8
5B8
5BC3
5BK7A
5BQ7A
5BR8
5BT8
5BW8
5CG8
5CL8A
5CQ8
5DH8
5DJA
5EA8
5EU8
5EW6
5FG7
5GH8
5GJ7/LCF801
5GX7
5HA7
5HG8/LCF86
5J26
5J6
5JK6
5KE8
5KZ8
5LJ8
5R4GY
5R4GYB
5T8
5U4GB/5AS4A
5U8
5U9/LCF201
5V3/5AU4
5V4GA
5V6GT

TUBE TYPE
5X8
5X9/LCF200
5Y3GT
5Z4/GZ30
6AB4
6AB8
6AC7
6AC10
6AD10
6AF3
6AF4
6AF4/6DZ4
6AF9
6AF11
6AG5
6AG7
6AG9
6AG11
6AH4GT
6AJ8/ECH81
6AK5/EF95
6AK5W
6AK8
6AL3
6AL5/EAA91
6AL5W
6AL7GT
6AL11
6AM4
6AM5
6AM6
6AM8A
6AN8A
6AQ4
6AQ5
6AQ5A/6HG5
6AQ5A/EL90MP
6AQ6
6AQ7GT
6AQ8/ECC85
6AR5
6AR8
6AR11
6AS5
6AS8
6AS11
6AT6/EBC90
6AT8A
6AU4GTA
6AU5GT
6AU6
6AU6A
6AV6
6AV11
6AW8A
6AX3
6AX4GT
6AX4GTB
6AX5GT
6AX8
6AY3B/6BS2A
6AY11
6AZ8
6B10
6BA6/EF93
6BA8A
6BA11
6BC7
6BC8/6BZ8
6BD6
6BD7A
6BD11
6BE3
6BE6
6BE7
6BF6
6BF8
6BF11
6BG6GA
6BH6
6BH8
6BH11
6BJ3
6BJ6A
6BJ7
6BJ8
6BK4B
6BK5
6BK7B
6BL7GTA
6BL8/ECF80
6BM8/ECL82
6BN4A
6BN5
6BN6/6KS6
6BN8

TUBE TYPE
6BN11
6BQ5/EL84
6BQ5/EL84MP
6BQ6GA/6CU6
6BQ6GTB
6BQ7A/6BZ7
6BR5/EM80
6BR8A/6FV8A
6BS2A
6BS8
6BT4
6BU8
6BV8
6BV11
6BW8
6BW11
6BX6/EF80
6BX7GT
6BY5GA
6BY6
6BY7
6BY8
6BZ3
6BZ6
6BZ8
6C4
6C9
6C10
6CA4
6CA5
6CA7/EL34
6CA7/EL34MP
6CB5A
6CB6A/6CF6
6CD6GA
6CD7/EM34
6CE5/6BC5
6CG3/6CE3/6CD3
6CG7
6CG8A
6CH6
6CH8
6CJ3/6DW4B
6CJ5
6CJ6
6CK4
6CK5
6CK6
6CL6
6CL8A
6CM4/EC86
6CM5
6CM6
6CM7
6CN6
6CN7
6CQ4
6CQ6
6CQ8
6CS6
6CS7
6CT7
6CU5
6CU6
6CU7
6CU8
6CV7
6CW4
6CW5/EL86
6CW7
6CX8
6CY5
6CY7
6CZ5
6D10
6DA4
6DA4A/6DM4A
6DA5/EM81
6DA6/EF89
6DB5
6DC8/EBF89
6DE4/6CQ4
6DE6
6DE7
6DG6GT
6DJ8/ECC88
6DK6
6DL4/EC88
6DL5/EL95
6DL5/EL95MP
6DN7
6DQ5
6DQ6B/6GW6
6DR7
6DR8
6DS4

TUBE TYPE
6DS8/ECH83
6DT5
6DT6
6DT6A
6DT8
6DV4
6DX8/ECL84
6DZ4
6DZ7
6EA8
6EB8
6EC4
6ED4
6EH4A
6EH5
6EH7/EF183
6EH8
6EJ4A
6EJ7/EF184
6EM5
6EM7/6EA7
6EQ7
6ER5
6ES5
6ES6
6ES8/ECC189
6ET6
6EU7
6EU8
6EV5
6EV7
6EW6
6EW7
6EY6
6EZ5
6EZ8
6FD7
6FG5
6FG6/EM84
6FG7
6FH5
6FJ7
6FM7
6FM8
6FQ7/6CG7
6FS5
6FV6
6FW5
6FY5
6FY7
6G11
6GB5/EL500
6GC5
6GE5
6GF5
6GF7
6GF7A
6GH8A
6GJ7/ECF801
6GK5/6FQ5A
6GK6
6GL7
6GM6
6GM8/ECC86
6GN8/6EB8
6GT5
6GU5
6GU7
6GV5
6GV8/ECL85
6GW8/ECL86
6GX7
6GY5
6GY6/6GX6/6HZ6
6GY8
6GZ5
6H6
6HA5/EC900
6HB5
6HB6/6HA6
6HB7
6HE5
6HF5
6HF8
6HG5
6HG8/ELF86
6HJ8
6HK5
6HM5/6HA5
6HQ5
6HR5
6HS5
6HS6
6HS8
6HU6/EM87
6HU8/ELL80

TUBE TYPE
6HW8
6HZ6
6HZ8
6J5
6J6
6J6A
6J7
6J11
6JB6A
6JC6
6JC8
6JD6
6JE6A
6JE6B
6JE8
6JH6
6JH8
6JK8
6JM6
6JM6A
6JN6A
6JN8
6JS6A
6JT8
6JU8A
6JV8
6JW8/ECF802
6JX8/ECH84
6JZ6
6JZ8
6K6GT
6K7
6K11/6Q11
6KA8
6KD6
6KG6
6KR8
6KR8A
6KT8
6KZ8
6L6GC
6LB6
6LE8
6LF6
6LF8
6LH6A
6LJ6
6LJ8
6LM8
6LN8/LCF80
6LT8
6LU8
6LX8/LCF802
6LY8
6M11
6ME8
6MJ8
6N3
6N7
6N8
6Q4/EC80
6R3/EY81
6R4/EC22
6S2
6S2A
6S4A
6SA7
6SC7
6SG7
6SH7
6SJ7
6SK7
6SL7GT
6SN7GTB
6SQ7
6T8A
6T9
6T10
6U3
6U8
6U8A
6U9/ECF201
6U10
6V3A
6V4/EZ80
6V6
6V6GTA
6V9/ECH200
6W4GT
6W4GTA
6W6GT
6X2
6X4/EZ90
6X5GT
6X8A
6X9/ECF200

TUBE TYPE
6Y6GT
6Y9/EFL200
6Z10/6J10
7AN7
7AU7
7C34
7DJ8
7ES8
7EY6
7GV7
7HG8/PCF86
7XQ
8AR11
8AU8
8AW8A
8B10
8BA11
8BM11
8BN11
8BQ5
8BQ11
8BU11
8CM7
8CS7
8CW5/XL86
8CX8
8EM5
8ET7
8FQ7/8CG7
8GJ7/PCF801
8GN8/8EB8
8JU8A
8JV8
8LT8
8MB6
8MG6
8MY6
8U9/PCF201
8X9/PCF200
9A8/PCF80
9AB4
9AK8
9AQ8/PCC85
9AU7
9BJ11
9ED4
9GV8/XCL85
9KZ8
9U8/PCF82
9U8A
9V9/PCH200
10AL11
10BQ5
10C8
10CW5/LL86
10DE7
10DX8/LCL84
10EG7
10EW7
10GK6
10HF8
10JY8
10KR8
10LD6
10LE8
10LW8
10LZ8/10JA8
11AF9
11AR11
11BQ11
11BT11
11CY7
11FY7
11JE8
11KV8
11LT8
11Y9/LFL200
12AB5
12AC5
12AD6
12AE6A
12AE10
12AF3
12AF6
12AJ7
12AL5
12AL11
12AQ5
12AT6
12AT7/ECC81
12AU6
12AU7/ECC82
12AU7A
12AU7WA/6189
12AV5GA
12AV6/HBC91

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and Receiving Tubes. . . .

TUBE TYPE
12AV7
12AX3
12AX4GTB
12AX7A/6681
12AX7A/ECC83
12AY3A/12BS3A
12AZ7A
12B4A
12BA6
12BD6
12BE3
12BE6/HK90
12BF6
12BF11
12BH7A
12BK5
12BL6
12BN6
12BQ6GA/12CU6
12BQ6GTB
12BR7
12BS3A
12BT3
12BV7
12BY7A
12C5
12CA5
12CT8
12CU5/12C5
12D4
12DB5
12DQ6B/12GN6
12DQ7
12DS7
12DS7A
12DT5
12DT8
12ED5
12EK6/12DZ6/12EA6
12F8
12FQ8
12FX8A
12GC6
12GE5
12GN7A
12HE7
12HG7
12HL7
12J5
12JN6
12JN8
12K5
12L6GT
12R5
12S7
12SA7
12SG7
12SJ7
12SK7
12SL7GT
12SN7GTA
12SQ7
12T10
12V6GT
12W6GT
12X4
13DE7
13DR7
13EM7/15EA7
13FD7
13GB5/XL500
13GF7A
13V10
13Z10/13J10
14BL11
14BR11
14GT8
14GW8
14JG8
14K7
14L7
15A6
15AF11
15BD11
15CW5/PL84
15DQ8/PCL84
15FM7/13FM7
15FY7
15LE8
16A5
16A8/PCL82
16AQ3/XY88
16GK6
16GY5
16KA6
16Y9/PFL200

TUBE TYPE
17AX3
17AX4GTA
17AY3A/17BS3A
17BE3
17BF11
17BS3A
17BZ3
17C5/17CU5
17C8
17C9
17D4/17DM4A
17DE4
17DM4A
17DQ6B/17GH6
17EW8/HCC85
17GV5
17H3
17JB6A
17JM6A
17JN6A
17JZ8
17X10/17AB10
17Z3
18A5
18FW6
18FX6
18FY6
18GB5/LL500
18GV8
19AU4GTA
19BG6GA
19BR5
19CG3
19CL84
19D8
19EA8
19EZ8
19FL8
19GQ7
19HV8
19JN8
19KF6
19KG8
19T8
19X3
19Y3
20AQ3/LY88
20EZ7
21A6
21GY5
21HB5
21HB5A
21JV6
21JZ6
21KA6
21LU8
22BH3A
22BW3
22DE4
22JG6A
23Z9
24BF11
24JZ8
25AV5GA
25AV5GT
25AX4GT
25BQ6GA/25CU6
25BQ6GTB
25C5
25CD6GB
25DN6
25E5
25EC6
25EH5
25F5A
25L6GT/25W6GT
25W4GT
25W6GT
25Z6GT
27GB5/PL500
30A5
30AE3
30AG11
31A3
31JS6A
32ET5A
33GT7
33GY7
33GY7A
33JV6
34GD5
35C5
35EH5
35L6GT
35W4
35Z5GT

TUBE TYPE
36AM3A
38A3
38HE7
38HK7
40KD6
40KG6
42EC4
45A5
45B5/UL84
45B5/UL84MP
50B5
50M8/UCL82
50BM8/UCL82MP
50C5
50DC4
50EH5
50HC6
50HK6
50HN5
50L6GT
52AVP
53AVP
53CG
53HK7
53UVP
54AVP
54UVP
55HK7
56AVP
56CVP
56DUVP
56DVP
56DVP-03
56P17/2
56P17/3
56TUVP
56TVP
56UVP
57AVP
58AVP
58DVP
58CG
58CV
58UVP
60AVP
60FX5
75C1
75NB3
76NB6
78L
79L
80
85A1/0E3
85A2/0G3
85NB3
90AG
90AV
90CI
90CG
90CV
90NB3
90NB4
92AV
100LB
120NB
117Z3
150A1
150AVP
150B2/6354
150C1P
150CVP
150N
150UVP
153AVP
153C
155N
160G
161G
163G
200CB
200HB
200LB
200N
200NB
300PC-452
303PC-321
303PC-331
303PC-421
303PC-431
310PC-310
312PC-310
356
367
404A
417A
500N

TUBE TYPE
501RA
504R
554N
560N
575A
632B
651
652
653B
655
673
725A
805
807
810
811A
812A
813
828
829B
832A
833A
833A JAN
838
845
849
857B
866A
866AX
869B
869 JAN
869BL
872A
872AX
880
892
892R
912NB3
912NB4
967
1164
1561
1805
1838
1849
1875
1908
1913
1941A
2050
2050A
3200
3533A
3538
3545
3546PW
3554
4065
4152
4349
4369
4370
4371
4372
4379
4383
4390
4397
4654
4662
4699
5544
5545
5551A
5552A
5553B
5555
5557/FG17
5559
5560/FG95
5586
5586 JAN
5604
5632/C31
5651
5654/6AK5W
5658
5666
5667
5678
5684/C3JA
5685/C6JA
5718
5726/6AL5W
5727/2D21W
5759

TUBE TYPE
5762
5771
5822A
5823/Z900T
5842
5842 JAN
5847
5847 JAN
5861/EC55
5866
5866A
5867A
5868
5869
5870
5876
5876A
5893
5894
5894A
5894B/8737
5894 JAN
5895
5911
5913
5920
5923
5924
5924A
6007
6008
6075
6076
6076/QY5-300A
6077
6078
6079
6083
6084
6085
6146
6146A
6146B/8298A
6155
6155U
6156
6159
6159B
6189
6189/12AU7WA
6201
6211
6211A
6218
6227
6252
6252 JAN
6263
6263A
6264
6264A
6267/EF86
6268
6279
6339
6354
6360
6360A
6360 JAN
6370/E1T
6375/DC70
6463
6508
6589
6617
6618
6661
6662
6681/12AX7A
6686
6687
6688
6688A
6688B
6688 JAN
6689
6693
6756
6757
6759
6786
6800A
6801
6816
6883
6883B/8032A/8552

TUBE TYPE
6884
6907
6907 JAN
6922
6922 JAN
6923
6939
6939 JAN
6960
6961
6972/JP9-75
6975
6977
6979
7025
7034/4X150A
7034/4X150A JAN
7035/4X150D
7035/4X150D JAN
7062
7090
7092
7093
7119
7136
7189
7189A
7189 AMP
7203/4CX250B
7203/4CX250B JAN
7204/4CX250F
7237
7247
7308
7308 JAN
7316
7320/E84L
7355
7377
7378
7408
7459
7527
7534
7537
7580
7580W/4CX250R
7580W/4CX250R JAN
7581A
7591A
7609
7609 JAN
7643
7645
7650
7693
7694
7695
7699
7721/D3A
7722/E280F
7737
7737 JAN
7753
7788
7788 JAN
7800
7804
7805
7806
7807
7843
7844
7854
7899
7900
7983
7986/5866A
8008A
8020AX
8032
8032A
8042
8078
8108/EC157
8116A
8117A
8118
8136
8163
8165
8177
8179
8223/E288CC
8228
8233

TUBE TYPE
8233 JAN
8254/EC1000
8255/E88C
8268
8269
8270
8278/EL503
8298A
8300
8321/4CX350A
8322/4CX350F
8348
8408
8416
8425A/6AU6A
8426A/12AU6
8436/EC158
8438/4-400A
8457
8458
8463
8482
8505A
8509
8552
8556
8560A
8577
8579
8580
8591
8592
8593
8594
8595
8603
8608
8621/4CX250FG
8621 JAN
8624
8637
8639
8639 JAN
8643
8647
8654
8666
8667
8668
8669
8670
8679
8680
8683
8731
8732
8733
8734
8735
8736
8737
8744
8752
8753
8867
8801
13201AE
18042
18045
18503
18504
18505
18506
18509
18515
18526
18529
18536
18545
18546
18550
18552
55032 thru 55092
55309
55310
55335/DX184
55340
55875
55875L
55875R
55875G
55875B
55876
56001

(continued)

AMPEREX ELECTRONIC CORPORATION
A NORTH AMERICAN PHILIPS COMPANY

Amperex®
TOMORROW'S THINKING IN TODAY'S PRODUCTS

Amperex Industrial, Communication and Receiving Tubes....

TUBE TYPE
AB2
ABC1
AF3
AF7
AGR9950
AGR9951
AK2
AL4
AX50
AX150/FG105
AX260
AZ1
AZ4
AZ11
AZ12
AZ31
AZ41
C3JA
C3M
C6JA
C8
CCTV101
CCTV111
CF3
CF50
CK1
CL4
CY1
CY2
D3A/7721
D7-11GH
D7-190GH
D10-11GH
D10-12GH
D10-160GH
D10-170GH
D13-24GH
D13-26GH
D13-27GH
D13-450GH
D13-480GH
D13-500GH
D14-120GH
DA90
DAF40
DAF41
DAF91
DAF92
DAF96
DC70/6375
DC90
DCC90
DF21
DF22
DF91
DF92
DF96
DF97
DF904
DCG4/1000G
DCG5/5000EG
DG7-32
DH3-91
DK21
DK40
DK91
DK92
DK96
DL41
DL92
DL93
DL94
DL95
DL96
DLL21
DM70
DM70/1M3
DM71
DM71/1N3
DX206

TUBE TYPE
DX247
DX249/YJ1170
DX260
DX267
DX276
DX278
DX285/YJ1180
DX287
DX290
DY86
DY87
DY87/1S2A
E1T/6370
E10-12GH
E55L/8233
E80CC/6085
E80CF/7643
E80F/6084
E80L/6227
E80T/6218
E81CC/6201
E81L/6686
E82CC/6189
E83CC/6681
E83F/6689
E84L/7320
E86C
E88C/8255
E88CC/6922
E90CC/5920
E90F/7693
E91AA/5726
E91H/6687
E91N/5727
E92CC
E95F/5654
E99F/7694
E130L/7534
E180CC/7062
E180F/6688
E182CC/7119
E182F/5847
E186F/7737
E188CC
E280F/7722
E288CC/8223
EA52
EA53
EA76
EAA91
EABC80
EAF42
EB34
EB41
EB91
EBC3
EBC33
EBC41
EBC81
EBC90
EBC91
EBF2
EBF32
EBF80
EGF83
EBF89
EBL1
EBL21
EC50
EC55/5861
EC80
EC81
EC86
EC88
EC90
EC91
EC92
EC95
EC97
EC157/8108

TUBE TYPE
EC158/8436
EC900
EC1000/8254
EC8010
ECC33
ECC34
ECC35
ECC40
ECC81
ECC82
ECC83
ECC84
ECC85
ECC86
ECC88/6DJ8
ECC91
ECC189
ECC2000
ECF1
ECF80
ECF82
ECF86
ECF200
ECF201
ECF801
ECF802
ECH3
ECH4
ECH21
ECH35
ECH41
ECH42
ECH81
ECH83
ECH84
ECH200
ECL80
ECL82
ECL83
ECL84
ECL85
ECL86
EEP1
EF6(N)
EF9
EF22
EF36
EF37A
EF39
EF40
EF41
EF42
EF43
EF50
EF55
EF80
EF83
EF85
EF86
EF89
EF91
EF92
EF93
EF94
EF95
EF97
EF98
EF183
EF184
EFF51
EFL200
EPF60
EH90
EK2
EK90
EL2
EL3(N)
EL6
EL11
EL12

TUBE TYPE
EL33
EL34
EL34MP
EL36
EL37
EL37MP
EL38
EL41
EL42
EL50
EL51
EL60
EL81
EL83
EL84
EL84MP
EL85
EL86
EL90
EL90MP
EL91
EL95
EL95MP
EL360
EL500
EL503
EL821
EL822
ELL80
EM4
EM34
EM80
EM81
EM84
EM87
EQ80
EY51
EY80
EY81
EY82
EY86
EY87
EY88
EZ2
EZ40
EZ41
EZ80
EZ81
EZ90
FG17/5557
FG95
FG105
GZ30
GZ32
GZ33
GZ34
HBC90
HBC91
HCC85
HCH81
HF94
HF200
HF300
HK90
HL92
HL94
HZ90
JP90-01
JP9-2.5B
JP9-2.5B/YJ1100
JP9-7B
JP9-7D
JP9-15
JP9-250
JPT9-01
K50A
K51A
K81A
KS7-85
KS7-85A

TUBE TYPE
KS9-20
KS9-20A
KS9-20D
KS9-40D
LB6-40
LC900
LCF80
LCF86
LCF200
LCF201
LCF801
LCF802
LCL84
LFL200
LL86
LL500
LY88
ORP30
ORP50
ORP60
ORP61
ORP62
ORP63
PABC80
PC900
PCC84
PCC85
PCC88
PCC189
PCF80
PCF82
PCF86
PCF200
PCF201
PCF801
PCH200
PCL82
PCL84
PCL85
PCL86
PE05/25
PE06/40E
PE06/40N
PE06/40P
PF86
PFL200
PL21
PL36
PL81
PL82
PL83
PL84
PL150
PL500
PL6574
PL6755
PY80
PY81
PY82
PY88
QY5/3000A
RPY13
RPY17
RPY18
RPY19
RPY20
RPY27
RPY41
SD513
SD560
U30
UABC80
UAF42
UB41
UBC41
UBC81
UBF80
UBF89
UBL21
UC92

TUBE TYPE
UCC85
UCH4
UCH21
UCH41
UCH42
UCH81
UCL11
UCL82
UCL82MP
UCL83
UF41
UF42
UF80
UF85
UF86
UF89
UL41
UL84
UL84MP
UM4
UM80
UY1(N)
UY11
UY41
UY42
UY82
UY85
UY89
XC95
XC97
XCC189
XCF80
XCL85
XF183
XF184
XL84
XL86
XL500
XL7900
XP1000
XP1001
XP1002
XP1003
XP1004
XP1005
XP1010
XP1011
XP1015
XP1016
XP1021
XP1023
XP1030
XP1031
XP1032
XP1040
XP1110
XP1111
XP1113
XP1114
XP1115A, B, C
XP1116
XP1117
XP1118
XP1120
XP1121
XP1122
XP1123
XP1130
XP1131
XP1143
XP1180
XP1210
XQ1020
XQ1020AC
XQ1020AL
XQ1020B
XQ1020G
XQ1020L
XQ1020R
XQ1021

TUBE TYPE
XQ1023L
XQ1023R
XQ1024
XY88
YJ1010/7008
YJ1011/7111
YJ1020
YJ1021
YJ110
YJ1120
YJ1160
YJ1162
YJ1190
YJ1191
YK1000
YK1001
YK1002
YK1003
YK1010/DX151
YK1090
YK1091
Z70
Z70U/7710
Z71U/7711
Z303C
Z502S
Z504S
Z505S
Z550M/8453
Z803U/6779
Z805U/7714
Z900T/5823
ZB3200
ZC1050
ZM1000
ZM1001
ZM1020
ZM1021
ZM1022
ZM1023
ZM1024
ZM1025
ZM1030
ZM1031
ZM1032
ZM1033
ZZ1000/8228

AMPEREX ELECTRONIC CORPORATION
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Amperex®
TOMORROW'S THINKING IN TODAY'S PRODUCTS

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The RADIO-ELECTRONIC **MASTER**
A United Technical Publication

AUTOMATIC AMPERITE REGULATOR

BALLAST TUBE FOR AUTOMATIC REGULATION OF CURRENT AND VOLTAGE

STANDARD

MINIATURE

AUTOMATIC REGULATION

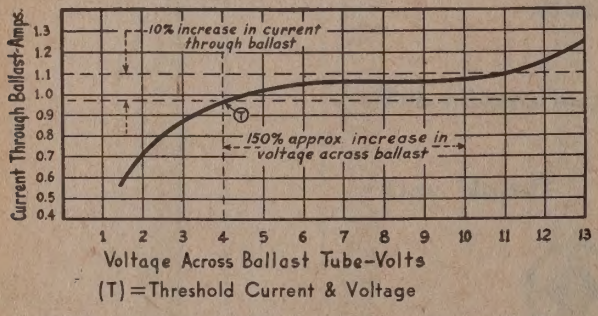
WHAT IT IS

The *AMPERITE Ballast-Regulating Tube* is an automatic *"rheostat"* designed to keep the current in a circuit at a definite value, for example, 0.5 amp.

Should the supply voltage increase, the *Amperite* will automatically increase in resistance enough to take up the increase in supply voltage — keeping the voltage on the load constant. It consists of an iron wire *hermetically sealed* in a bulb containing *hydrogen* or *helium* — the two gases with the *highest heat conductivity*. Its regulating action is based on the high temperature co-efficient of resistance of the iron wire and the rapid cooling of *hydrogen* or *helium* gas.

Being a constant current device, the *AMPERITE Ballast-Regulating Tube* can be used only to regulate a constant load—fixed wattage. Thermostatic relays can sometimes be included in these regulators to reduce initial surge.

We strongly recommend that you send us your specifications on special problems, and let us recommend the BALLAST TUBE you need.



(T) = Threshold Current & Voltage

Characteristic curve of a typical Amperite. Approximate curve of any other Amperite can be obtained by multiplying or dividing the current or voltage scale by any number.

Standard Types of Amperite Ballast Tubes ..... Net $1.80
Amperite NE70V Neon Lamp ..... Net $1.80

**D6TK7	**1HTF11	3H4	3A20	5-11	6-8B	**7HTF2	9A10	12-4
**D6TF10	1H20	**3HTF4	3H-25	5H3	6A10	**7HTF3	10-3	12A10
**D6TF30	1H22	**3TF4A	3-38A	5H4	6-11	**7HTF4	10-4A	12-11
D7-20	**2TK7	**3TF4	3-50A	5H10	6-12	7H4	*0-4B	13-4
D7H4	2A10	**3TFV4	4A10	5H11	6-13	7H4B	10-4C	15-4
*D7HT11	2A12	3V4	4-12	6-3	6A15	7H7	*0-4D	16-4
1A10	2A20	3-7	4H3	6-4	6-36	7H11	10A10	17-3
**1TF10	*2HT2	**3TF7	4H4C	6-4A	6H4	**8TF2	10A12	20-3
1-15	2H4	3A10	**4HTF4	6-4B	**6HTF4	8-3B	10-25	20-4
*1HT2	**2HTF4	3-11	**4HTF7	*6T4F	6H6	8-4	!1-3	22-4
*1HT4	2H10	3H11	4H10	**6TF4	7-4	8A10	!1-4	34-2
1H10	**3TK2	3TF11	4H11	**7TF4	9-4	9-4A	!1A10	41-7E
**1HTF10	3-4	*3TF12	5-4	6-7	7A10	9-7	11-11	55-1
	3H-1-7	3-14	**5TF4	**6TF7	7-11			55-4
		3-16	5A10					

*T denotes T5½ bulb-7 pin miniature, e.g., 3T4.
**TF denotes T6½ bulb-9 pin miniature, e.g., 3TF4.
Base Wiring: Octal, 7 and 9 pin miniature—prongs 2-7.

AMPERITE NEON LAMP
TYPE NE70V Net $1.80

GENERAL ADVANTAGES:

• Light, compact • No moving parts • Rugged; will withstand vibration of 10G. minimum • Hermetically sealed; not affected by altitude or humidity changes • Can be changed as easily as a radio tube • Operates equally well on A.C. or D.C. • Inexpensive

CAPACITIES AVAILABLE

Current values of 60 ma. to 5 amps; threshold voltage 0.4 to 40 V. Maximum dissipation 50w per tube (ST19 bulb). Any number of AMPERITES with the same voltage range can be operated in parallel. AMPERITES should not be used in series.

AGEING

AMPERITE Ballast Tubes may change approximately up to 3% in current if aged for 4 to 8 hours, at maximum voltage. They will change very little thereafter.

LIFE EXPECTANCY

Average life if operated as recommended	**2000 Hours**
If operated continuously at maximum voltage	**1000 Hours**
If operated continuously at 80% maximum voltage	**5000 Hours**
If filament is operated below glow point	**5000 Hours up**

In operation, the *Amperite* filament starts to glow at one point; as the voltage is increased, the glow spreads over the entire filament. Like incandescent lamps, turning *Amperite* on and off reduces its life, especially if operating near its maximum voltage.

TIME LAG CHARACTERISTICS

Time lag encountered in an *Amperite Ballast Tube* depends upon the wattage consumed by the ballast and the size of the bulb. Where the wattage is small for the size of the bulb, the action can be made practically instantaneous — less than 1 second. In such cases the bulb will remain at practically ambient temperature. When the wattage is high enough to heat the bulb to a temperature uncomfortable to the hand (160°F) the lag might be as much as several minutes for final readings—but normally reaches within 90% of final readings within a few seconds.

AMPERITE NUMBERING SYSTEM

In general, the AMPERITE number approximately denotes the current—voltage threshold value. For example:

Amperite Number	3-4	3H4	10-7	12-11	12H11
Threshold Current	0.3	0.35	1.0	1.2	1.25
Threshold Voltage	4.0	4.0	7.0	11.0	11.0

We strongly recommend that you send us your specifications on special problems, and let us recommend the BALLAST TUBE you need.

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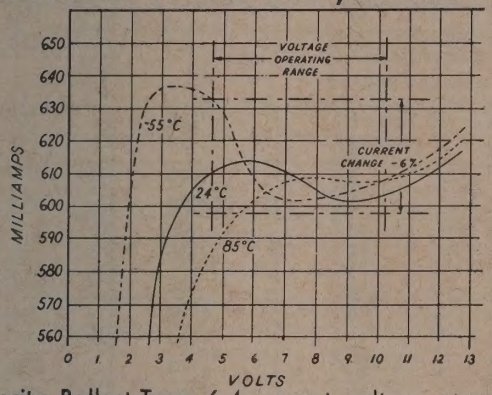
AUTOMATIC AMPERITE REGULATOR

BALLAST TUBE FOR AUTOMATIC REGULATION OF CURRENT AND VOLTAGE

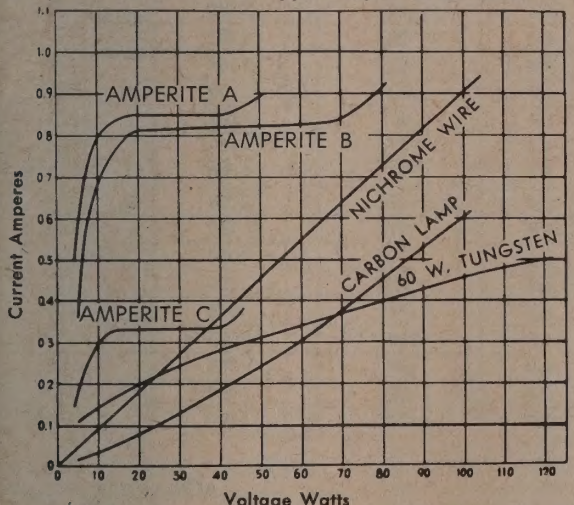
AMBIENT EFFECTS

Ambient temperature variation of −50° to +70° C will change the current value of an *Amperite* approximately 2% on regulating portion of curve as shown directly below. Being hermetically sealed the *Amperite* is not affected by altitude or humidity changes.

We strongly recommend that you send us your specifications on special problems, and let us recommend the BALLAST TUBE you need.



Amperite Ballast-Type 6-4 current voltage characteristic under ambient conditions of −55°, 24°, and 85° C. The percentage change with ambient is approximately the same with all type *Amperite* ballasts.

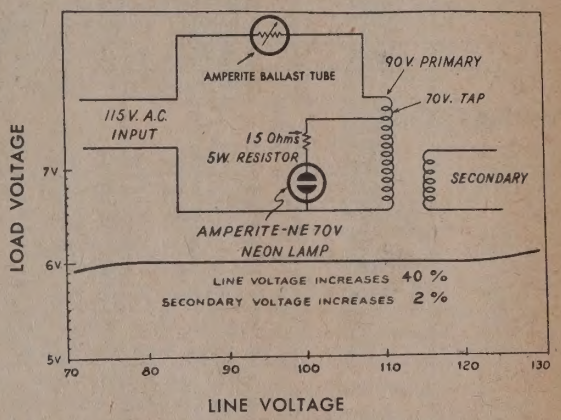


This diagram illustrates far superior regulating characteristics of the *Amperite* Ballast-Regulating Tube.

STANDARD SIZES available for various wattage consumption . . . For good regulation, a bulb should not be required to dissipate more than 50% of maximum wattage.

BATTERY CHARGING AND DISCHARGING

Amperite Ballast Tubes are very successfully used for keeping the current constant in charging and discharging batteries. Any number of *Amperites* of the same voltage range can be placed in parallel to obtain proper current. The current can be kept to ± 1%. Advise voltage variation and currents desired.



A light, compact, and inexpensive method of obtaining close regulation is to use an *Amperite Ballast Tube* with an *Amperite* Neon Lamp — type NE70V. Base octal-base wiring-prongs 2-5. One NE70V is used for all loads up to 100W.

POWER SUPPLIES

We strongly recommend, for any particular application, to fill in and return one of our special problem sheets (ASP 343) and permit us to recommend the most suitable AMPERITE.

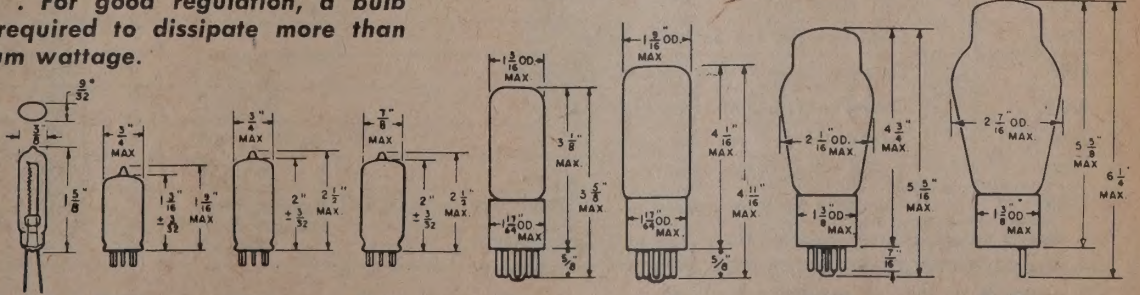
POWER SUPPLY	Dry Cells	6 Volts	12 Volts	26 Volts	115 Volts
Supply Variation	2.2-3.0V	5.5-7.5V	11.4-13.8V	22.0-30.0V	105-125V
Desired on Load	1.8-2.0V	3.9-4.1V	6.1- 6.4V	12.4-12.8V	90- 95V
Required on AMPERITE	0.4-1.0V	1.6-3.4V	5.3- 7.4V	9.6-19.2V	15- 30V
Current Variation	.29-.32a	.29-.32a	.29- .32a	.29- .32a	.29-.32a

The above chart shows the maximum load voltage for the given supply to obtain ± 2% current regulation on load. Better regulation is obtainable by increasing the voltage across the **AMPERITE.** Up to a point, the higher the percentage of the supply voltage taken up by the **AMPERITE,** the better the regulation.

Radio tube filament loads — have low cold resistance which causes a high initial surge. For such loads we recommend a bleeder of 20 to 50% prox. of load and the corresponding **AMPERITE.** e.g.

FILAMENT LOAD	USE AMPERITE	TOTAL CURRENT
0.3a	4HTF4	0.45a
0.6a	8-4	0.8a
0.7a	9H4	0.95a

On Radio tube filament loads the bleeder will also improve the regulation.



SIZE	SUB. MIN. L	T5½S	T5½L	T6½L	T9	T-12	ST-16	ST-19
MAX. WATTS	2 W.	3	5	5	12	25	30	50
WT. PER TUBE	2 GMS.	7 GMS.	8 GMS.	8 GMS.	1 OZ.	2¼ OZ.	2½ OZ.	2¾ OZ.

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Electrons Industrial Components

TYPE	OTHER DESIGNATIONS	DESCRIPTION	MAX. CONTINUOUS AVERAGE DC ANODE CURRENT (AMPS)	OSCILLOGRAPH PEAK ANODE CURRENT CONTINUOUSLY RECURRING (AMPS)	MAX. INSTANTANEOUS PEAK FORWARD VOLTAGE	MAX. INSTANTANEOUS PEAK INVERSE VOLTAGE
RECTIFIERS Xenon-Filled						
EL 1C	3B22	Full Wave. A4-10 Base. Single End.	1.0	4.0		725
EL 3B	6013	Half Wave A4-10 Base. Anode Cap.	2.5	20		920
EL 3C	4B24	Full Wave. A4-81 Base. Single End.	2.5	10		725
EL 3C/L	6982	Full Wave. Lug Type Base. Single End.	2.5	10		725
EL 6B	5892	Half Wave. A4-81 Base. Anode Cap.	6.4	77		920
EL 6B/L	6983	Half Wave. Lug Type Base. Anode Cap.	6.4	77		920
EL 6C		Full Wave. A4-81 Base. Single End.	6.4	25.6		725
EL 6F	6015	Half Wave. Panel Mounted. Flexible Leads	6.4	77		920
EL 16F		Half Wave. Panel Mounted. Flexible Leads	16.0	96		620
THYRATRONS						
EL C1B	3C31	A4-10 Base. Anode Cap. Xenon	1.0	8.0	525	700
EL C1B/A	5664	A4-10 Base. Anode Cap. Xenon	1.0	8.0	750	1250
EL C1K	6014	A4-10 Base. Single End. Xenon	1.0	8.0	1000	1250
EL C1K/B	7319	A4-10 Base. Single End. Xenon	1.0	8.0	2000	2000
EL C3J	5632	A4-10 Base. Anode Cap. Xenon	2.5	30	900	1250
EL C3J/A	5684	A4-10 Base. Anode Cap. Xenon	2.5	30	1000	1250
EL C3J/L	7216	Lug Type Base. Anode Cap. Xenon	2.5	30	900	1250
EL C3J/AL	7556	Lug Type Base. Anode Cap. Xenon	2.5	30	1000	1250
EL C4H-1		A4-81 Base. Anode Cap. Xenon	4.0	50	1700	1700
EL C4H-2		Panel Mounted. Anode Cap. Xenon	4.0	50	1700	1700
EL C4H-3		Lug Type Base. Anode Cap. Xenon	4.0	50	1700	1700
EL C4H-4		Panel Mounted. Flexible Leads. Xenon	4.0	50	1700	1700
EL C4H-5		Lug Type Base. Flexible Lead. Xenon	4.0	50	1700	1700
EL C6C	6987	#4310 Base. Anode Cap. Xenon	6.4	77	2000	4000
EL C6H-1		A4-81 Base. Anode Cap. Xenon	6.4	80	1700	1700
EL C6H-2		Panel Mounted. Anode Cap. Xenon	6.4	80	1700	1700
EL C6H-3		Lug Type Base. Anode Cap. Xenon	6.4	80	1700	1700
EL C6H-4		Panel Mounted. Flexible Leads. Xenon	6.4	80	1700	1700
EL C6H-5		Lug Type Base. Flexible Lead. Xenon	6.4	80	1700	1700
EL C6J	5C21	A4-81 Base. Anode Cap. Xenon	6.4	77	750	1250
EL C6J/A	5685	A4-81 Base. Anode Cap. Xenon	6.4	77	1000	1250
EL C6J/F	6860	Panel Mounted. Anode Cap. Xenon	6.4	77	1000	1250
EL C6J/L	6988	Lug Type Base. Anode Cap. Xenon	6.4	77	750	1250
EL C6J/K	6864	A4-81 Base. Anode Cap. Xenon	6.4	77	1000	1250
EL C6J/KF	6871	Panel Mounted. Flexible Leads. Xenon	6.4	77	1000	1250
EL C6J/KL	6989	Lug Type Base. Anode Cap. Xenon	6.4	77	1000	1250
EL C16J	5665	Panel Mounted. Flexible Leads. Xenon	16.0	160	1000	1250
EL C16H		Panel Mounted. Flexible Leads. Xenon	16.0	160	1700	1700
EL 6011/710	7307A	A4-10 Base. Anode Cap. Mercury Gas	2.5	30	1700	1700
EL 7518/710L	7509A	Lug Type Base. Anode Cap. Mercury Gas	2.5	30	1700	1700

GAS GAP SURGE ARRESTERS AND EQUIPMENT

TYPE	DESCRIPTION	APPLICATION	
		Volts	KVA ③
EL 252S	.313" O.D. Ceramic	①	1
EL 252SL	Same with Pig Tail Soldering Leads	①	1
EL 262S	.375" O.D. Ceramic	①	2
EL 262SL	Same with Pig Tail Soldering Leads	①	2
EL 460A	Ceramic, to fit Western Electric Equipment	①	1
EL RP100	Ceramic, in 30 Amp. Fuse Cartridge	①	2
EL 2140	3 Gap, Glass, 4 pin base	①	1
EL 2175	3 Gap, Glass, 4 pin base	②	1
EL P1001	Complete 3ϕ system protector in conduit box, varistors and 6 protectors	①	100

① 127 volts to ground (can be used on 220V, 3ϕ, 3 or 4 wire system)
② 254 volts to ground (can be used on 440V, 3ϕ, 3 or 4 wire system)
③ KVA capability of line, not equipment KVA load

ELECTRONS COMPANY
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DUMONT

DUTREX INDUSTRIES, INC.

INDUSTRIAL TUBES, POWER TUBES, SPECIAL PURPOSE TUBES

Type	Sugg. Dist. Resale and User Price	Warranty Class	Description
OA2	$ 1.32	S	Voltage Regulator
OA2WA	3.35	S	Diode
OA3	1.54	S	Voltage Regulator
OA4G	1.86	S	Thyratron
OA5	6.96	N	Trigger Tube
OB2	1.37	S	Voltage Regulator
OB2WA	2.40	S	Voltage Regulator
OB3	2.35	S	Voltage Regulator
OC3	1.50	S	Voltage Regulator
OD3	1.44	S	Voltage Regulator
C1K/6014	11.80	A	Grid Controlled Rectifier
VG1A	32.60	O	Ionization Gauge
1P39	3.15	S	Phototube
1P40	4.80	S	Phototube
2-01C	20.00	E	Rectifier
2C39A	20.75	E	Power Amplifier
2C39A	32.15	G	Power Amplifier
2C39WA	20.75	C	Power Amplifier
2C40	31.75	G	Power Amplifier
2C40A	36.15	G	Power Amplifier
2C43	26.95	G	Power Amplifier
2C51	4.05	S	Duotriode
2D21	1.29	S	Thyratron
2D21W	.....	..	(See 5727/2D21W)
2E24	7.10	S	Power Amplifier
2E26	3.70	S	Power Amplifier
2J42	102.00	B	Magnetron
2X2A	4.30	S	Rectifier
3-400Z	.....	..	(See 8163/3-400Z)
3B28	7.00	S	Rectifier
3C23	11.98	K	Thyratron
3CPN10A5	.....	..	(See 7815/3CPN10A5)
3CX100A5	.....	..	(See 7289/3CX100A5)
3CX2500A3	200.00	E	Power Amplifier
3CX2500F3	205.00	E	Power Amplifier
3CX3000A1	238.00	E	Power Amplifiers
3CX3000F1	245.00	E	Power Amplifiers
3E29	21.50	K	Power Amplifier
C3J/5632	12.70	A	Grid Controlled Rectifier
C3J/A/5684	13.10	A	Grid Controlled Rectifier
C3J/AL/7556A	14.60	A	Thyratron
3X2500A3	.....	..	(See 8161/3X2500A3)
3X2500F3	.....	..	(See 8251/3X2500F3)
4-65A	.....	..	(See 8165/4-65A)
4-125A	36.00	E	Power Amplifier
4-250A	48.00	E	Power Amplifier
4-400A	.....	..	(See 8438/4-400A)
4-1000A	.....	..	(See 8166/4-1000A)
4CX250B	.....	..	(See 7203/4CX250B)
4CX250F	.....	..	(See 7204/4CX250F)
4CX250K	.....	..	(See 8245/4CX250K)
4CX300A	.....	..	(See 8167/4CX300A)
4CX1000A	.....	..	(See 8168/4CX1000A)
4CX5000A	.....	..	(See 8170/4CX5000A)
4E27A/5-125B	50.00	E	Power Amplifier
4PR60B	.....	..	(See 8252/4PR60B)
4W20,000A	.....	..	(See 8173/4W20,000A)
4X150A	.....	..	(See 7034/4X150A)
4X250B	35.60	E	Power Amplifier
4X500A	127.50	E	Power Amplifier
5R4GYB	2.03	S	Duodiode
5Y3WGTA	4.05	S	Duodiode
5Y3WGTA	4.05	S	Duodiode
6AD4	3.40	S	Subminiature Triode
6AH6WA	7.60	S	Pentode
6AJ5	3.85	S	Pentode
6AK6	1.40	S	Power Pentode
6AN5	4.20	S	Beam Pentode
6AN5WA	10.80	S	Pentode
6AS6	3.43	S	Pentode
6AS7G	4.93	S	Duo Power Triode
6AS7GA	4.93	S	Duo Power Triode
6AU6WB	2.70	S	Pentode
6BF7W	4.90	S	Subminiature Duo-Triode
6C4W	1.55	S	Triode
6C4WA	3.15	S	Triode
6CY5	1.85	S	Tetrode
6D4	3.30	S	Thyratron
6DJ8	2.70	S	Duotriode
6J4	4.02	S	Triode
6J4WA	5.60	S	Triode
C6J/A/5685	28.30	A	Grid Controlled Rectifier
6J6WA	5.35	S	Duotriode
6SJ7WGT	2.70	S	Pentode
6SL7WGT	3.15	S	Duotriode
6SN7WGT	2.35	S	Duotriode
6SN7WGTA	4.90	S	Duotriode
6V6GTY	1.45	S	Beam Pentode
6X4W	1.60	S	Duo-Diode
6X4WA	2.85	S	Duo-Diode
6X5WGT	1.70	S	Duo-Diode
7AK7	8.15	S	Pentode
7F8W	7.05	S	Duotriode
12AT7WA	2.55	S	Duotriode
12AT7WB	2.55	S	Duotriode
12AY7	2.45	S	Duotriode
C16J/5665	52.50	A	Grid Controlled Rectifier
RX21A	25.75	E	Rectifier
25T	43.00	E	Power Amplifier
28D7	4.95	S	Duo. Beam Pentode
83	1.90	S	Rectifier
FG-95	.....	..	(See 5560/FG95)
100	.....	..	(See 5575/100)
100TH	26.00	E	Power Amplifier
102A	174.00	E	Rectifier
200	.....	..	(See 5576/200)
SK-220A	.....	..	(See Klystrons)
SK-220B-F	.....	..	(See Klystrons)
SK-221A	.....	..	(See Klystrons)
SK-221B-K	.....	..	(See Klystrons)
SK-222B-G	.....	..	(See Klystrons)
250TH	45.00	E	Power Amplifier
304TH	83.00	E	Power Amplifier
304TL	83.00	E	Power Amplifier
407A	5.90	S	Duotriode
408A	4.95	S	Pentode
450TL	97.00	E	Power Amplifier
481B	10.90	E	Rectifier
575A	20.15	E	Rectifier
579B	20.50	F	Rectifier
592/3-200A3	63.00	E	Power Amplifier
604L	13.00	A	Rectifier
615	10.05	A	Rectifier
627	27.50	H	Thyratron
632B	33.00	H	Thyratron
635	13.00	A	Rectifier
635L	13.50	A	Rectifier
652	.....	..	(See 5551A/652)
672A	39.85	H	Thyratron
673	20.15	E	Rectifier
678	49.50	H	Thyratron
710	.....	..	(See 6011/710)
760	28.10	A	Thryatron
760L	29.40	A	Thryatron
807	3.40	S	Power Amplifier
810	28.60	K	Power Amplifier
811A	7.15	S	Power Amplifier

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DUMONT ERP

DUTREX INDUSTRIES, INC.

INDUSTRIAL TUBES, POWER TUBES, SPECIAL PURPOSE TUBES

Type	Sugg. Dist. Resale and User Price	Warranty Class	Description
812A	9.10	S	Power Amplifier
813	24.30	K	Power Amplifier
815	35.75	K	Power Amplifier
816	4.15	S	Rectifier
828	34.50	K	Power Amplifier
829B	19.85	K	Power Amplifier
832A	16.65	K	Power Amplifier
833A	67.90	E	Power Amplifier
857B	218.50	E	Rectifier
866A	3.25	S	Rectifier
869B	123.50	E	Rectifier
872A	9.90	E	Rectifier
889RA	.....	..	(See 5667/889RA)
891	310.00	E	Triodes
892	315.00	E	Triodes
921	5.20	S	Phototube
922	3.80	S	Phototube
923	4.70	S	Phototube
927	6.00	S	Phototube
929	3.70	S	Phototube
930	3.80	S	Phototube
931A	12.30	K	Phototube
1000T	169.00	E	Power Amplifier
1051A	65.00	H	Ignitron
1052A	99.00	H	Ignitron
1061	65.00	H	Ignitron
R1111	12.70	O	Ionization Gauge
R1111M	26.00	O	Ionization Gauge
1218A	5.00	S	Triode
1219/5670	3.70	S	Duotriode
1220/5654	3.05	S	Pentode
1229	5.35	S	Tetrode
1252/6U8A	2.00	S	Triode Pentode
1319	125.00	G	Vidicon
1624	10.35	S	Power Amplifier
2050	2.37	S	Thyratron
2050A	2.03	S	Thyratron
K-4014	.....	..	(See Klystrons)
5530-H	450.00	E	Power Amplifier
5531	795.00	E	Power Amplifier
5541	670.00	E	Power Amplifier
5550/681	49.00	T	Ignitron
5551A/652	65.00	H	Ignitron
5552A	99.00	H	Ignitron
5553B	305.00	H	Ignitron
5554/679	215.00	L	Ignitron
5555/653B	316.00	T	Ignitron
5555A	305.00	T	Ignitron
5557	9.50	B	Thyratron
5558	17.50	B	Rectifier
5559	23.00	B	Thyratron
5560/FG95†	33.00	B	Thyratron
5575/100	225.00	E	Rectifier
5576/200	245.00	E	Rectifier
5604	570.00	E	Power Amplifier
5606	288.00	E	Power Amplifier
5632	.....	..	(See C3J/5632)
5636	6.10	S	Subminiature Pentode
5639	5.25	S	Subminiature Beam Pentode
5641	7.55	S	Subminiature Diode
5642	3.55	S	Subminiature Diode
5643	9.05	S	Subminiature Gas Tetrode
5644	9.90	S	Subminiature Gas Diode
5647	9.15	S	Subminiature Diode
5651	1.90	S	Gas Diode
5651WA	3.75	S	Gas Diode
5654	2.45	S	Pentode
5658	595.00	E	Power Amplifier
5665	.....	..	(See C16J/J665)
5667 (889RA)†	370.00	E	Power Amplifier
5668	350.00	E	Power Amplifier
5670	2.45	S	Duotriode
5682	2625.00	E	Triode
5684	.....	..	(See C3J/A/5684)
5685	.....	..	(See C6J/A/5685)
5687	4.00	S	Duotriode
5687WA	5.66	S	Duotriode
5692	8.25	S	Duotriode
5693	6.60	S	Pentode
5696	1.95	S	Thyratron
5718	3.20	S	Subminiature Triode
5719	3.60	S	Subminiature Triode
5722	8.35	S	Diode
5725	3.15	S	Pentode
5726	1.55	S	Duodiode
5727	2.90	S	Tetrode Thyratron
5727/2D21W	2.90	S	Tetrode Thyratron
5736	195.00	E	Power Amplifier
5749	2.20	S	Pentode
5750	3.45	S	Heptode
5751	2.55	S	Duotriode
5763	2.45	S	Power Amplifier
5796	17.25	F	Thyratron
5814A	2.35	S	Duotriode
5822A	116.00	T	Ignitron
5823	1.72	S	Thyratron
5840	5.35	S	Subminiature Pentode
5845	9.95	S	Duodiode
5855	85.00	T	Thyratron
5879	1.95	S	Pentode
5881	3.10	S	Power Amplifier
5894	25.00	E	Power Amplifier
5896	4.60	S	Subminiature Duodiode
5899	5.55	S	Subminiature Pentode
5902	4.80	S	Subminiature Pentode
5903	7.45	S	Subminiature Duodiode
5904	7.90	S	Subminiature Triode
5905	8.40	S	Subminiature Pentode
5906	9.80	S	Subminiature Pentode
5907	9.80	S	Subminiature Pentode
5908	9.80	S	Subminiature Pentode
5918A	1200.00	E	Triodes
5931	6.80	S	Duodiode
5932	11.30	S	Beam Pentode
5933	12.35	S	Beam Pentode
5933WA	16.50	S	Beam Pentode
5934	22.00	I	Rectifier
5936	1480.00	E	Triode
5963	1.34	S	Duotriode
5964	1.54	S	Duotriode
5965	1.95	S	Duotriode
5966	42.00	F	Gas Pressure Measuring Tube
5977	6.55	S	Subminiature Triode
5987	11.10	S	Subminiature Triode
6005	3.23	S	Beam Pentode
6011/710	12.00	T	Thyratron
6012	7.65	S	Thyratron
6014	.....	..	(See C1K/6014)
6021	3.50	S	Subminiature Duotriode
6028	4.95	S	Pentode
6072	3.90	S	Duotriode
6080	5.33	S	Duotriode

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INDUSTRIAL TUBES, POWER TUBES, SPECIAL PURPOSE TUBES

DUTREX INDUSTRIES, INC.

Type	Sugg. Dist. Resale and User Price	Warranty Class	Description
6080WA	10.80	S	Duotriode
6101	5.35	S	Duotriode
6110	8.05	S	Subminiature Duotriode
6111	3.70	S	Subminiature Duotriode
6112	4.10	S	Subminiature Duotriode
6135	2.40	S	Triode
6136	2.70	S	Pentode
6146A	4.35	S	Power Amplifier
6146B/8298A	5.20	S	Power Amplifier
6159A	4.80	S	Power Amplifier
6186	3.85	S	Pentode
6186/6AG5WA	3.85	S	Pentode
6189	3.70	S	Duotriode
6197	2.30	S	Pentode
6201	2.55	S	Duotriode
6205*	5.90	S	Subminiature Pentode
6206	7.25	S	Subminiature Pentode
6211	1.95	S	Duotriode
6216	4.15	S	Beam Power Pentode
6257	330.00	E	Power Amplifier
6292	63.00	..	Photomultiplier Tube
6350	1.85	S	Duotriode
6352	9.85	S	Subminiature Duodiode
6360	4.95	S	Twin Tetrode
6366	175.00	..	Power
6367	182.00	..	Power
6420	445.00	E	Triode
6421	520.00	E	Triode
6421-F	545.00	E	Power Amplifier
6422	450.00	E	Triode
6423	525.00	E	Triode
6423F	545.00	E	Triode
6424	518.00	E	Triode
6425	645.00	E	Triode
6425-F	645.00	E	Power Amplifier
6426	720.00	E	Triode
6467	63.00		Photomultiplier Tube
6476A	14.95	O	Counter Tube
6483	3.09	O	Trigger Tube
6485	2.05	S	Power Pentode
6550	4.95	S	Power Amplifier
6623	200.00	E	Triode
6660/6BA6	1.01	S	Pentode
6661/6BH6	1.34	S	Pentode
6662/6BJ6	1.29	S	Pentode
6663/6AL5	.92	S	Duodiode
6664/6AB4	1.12	S	R. F. Amplifier
6669/6AQ5A	1.06	S	Beam Pentode
6676/6CB6A	1.06	S	Pentode
6677/6CL6	1.85	S	Beam Pentode
6678/6U8A	1.62	S	Tri. Pentode
6679/12AT7	1.50	S	Duotriode
6680/12AU7A	1.22	S	Duotriode
6681/12AX7	1.26	S	Duotriode
6688	6.80	S	Pentode
6696	1090.00	E	Triode
6788	10.85	S	Subminiature Pentode
6802	11.43	O	Counter Tube
6807	32.25	T	Thyratron
6832	20.65	S	Subminiature Duo Triode
6879	13.37	O	Counter Tube
6883A	4.30	S	Power Amplifier
6897	32.15	G	Power Amplifier
6909	11.43	O	Counter Tube
6910	13.37	O	Counter Tube
6922	4.87	S	Double Triode
6939	12.25	S	Twin Power Pentode
6943	11.10	S	Subminiature Pentode
6944	11.10	S	Subminiature Pentode
6945	11.10	S	Subminiature Beam Pentode
6946	10.85	S	Subminiature Triode
6947	11.35	S	Subminiature Duotriode
6948	11.35	S	Subminiature Duotriode
6973	.....	..	(Receiving Type)
6977	2.50	S	Indicator Triode
7025	.....	..	(Receiving Type)
7034/4X150A	23.15	E	Power Amplifier
7038	170.00	G	Vidicons
7044	2.70	S	Duotriode
7054	1.54	S	Power Pentode
7056	.92	S	Pentode
7058	1.26	S	Twin Triode
7059	1.48	S	Triode Pentode
7060	1.75	S	Triode Tetrode
7155	13.37	O	Counter Tube
7167	1.45	S	7 Pin Miniature Tetrode
7199	.....	..	(Receiving Type)
7203/4CX250B	35.60	E	Power Amplifier
7204/4CX250F	38.00	E	Power Amplifier
7215	210.00	E	Triode
7255	210.00	E	Triode
7258	1.80	S	Triode Pentode
7289/3CX100A5	26.50	E	Power Amplifier
7325	170.00	G	Vidicon
7551	3.40	S	Beam Pentode
7560	4455.00	E	Triode
7560V	4550.00	E	Triode
7669	65.00	T	Ignitron
7670	75.95	T	Ignitron
7671	99.00	T	Ignitron
7681	155.00	D	Ignitron
7703	170.00	T	Ignitron
7735A	150.00	G	Vidicon
7735B	170.00	E	Vidicon
7738	2.80	S	Triode
7761	8.25	S	Subminiature Pentode
7815/3CPN10A5	25.50	E	Power Amplifier
7962	7.50	S	Subminiature Double Triode
7963	8.00	S	Subminiature Double Triode
7984	5.35	S	Beam Pentode
8008	10.00	K	Rectifier
8035 (CT-4251)	11.10	O	Counter Tube
8070	8.00	S	Subminiature Triode
8071	8.00	S	Subminiature Triode
8077/7054	1.50	S	Power Pentode
8161/3X2500A3	200.00	E	Power Amplifier
8163/3-400Z	34.00	E	Power Amplifier
8165/4-65A	27.00	E	Power Amplifier
8166/4-1000A	131.50	E	Power Amplifier
8167/4CX300A	54.00	E	Power Amplifier
8168/4CX1000A	200.00	E	Power Amplifier
8170/4CX5000A	495.00	E	Power Amplifier
8173/4W20,000A	2480.00	E	Power Amplifier
8210	10.75	S	Subminiature Pentode
8233	13.25	S	Twin Triode
8238/3X3000A1	.....	..	(See 3CX3000A1)
8239/3X3000F1	.....	..	(See 3CX3000F1)
8245/4CX250K	70.00	E	Power Amplifier
8251/3X2500F3	205.00	E	Power Amplifier
8252/4PR60B	115.00	E	Power Amplifier
8298A	.....	..	(See 6146B/8298A)
8306	67.75	T	Ignitron
8334	5.00	S	Triode
8353	11.10	O	Counter Tube
8438/4-400A	48.00	E	Power Amplifier
8484	170.00	G	Vidicon
8507	215.00	E	Vidicon
70780	.65	..	Socket types 8035, 8353
7460-0008	1.20	..	Socket types 6476A, 6910

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DU MONT E R P

DUTREX INDUSTRIES, INC.

DUMONT WARRANTY
SPECIAL PURPOSE AND INDUSTRIAL TUBES

Warranty Class Subject to Adjustment	Full Adjustment	Pro-rata Adjustment	Adjustment from Date of Shipment
A		3000 hours	1½ years
B		1 year	1½ years
C	50 hours		1½ years
D		2 years	3 years
E	50 hours	1000 hours or 1 year	1½ years
F	1 month		1 year
G	50 hours	500 hours	1½ years
H	1 month	1 year	2 years
I	50 hours		
J		5000 hours	
K	1000 hours or 3 months		1½ years
L		2 years	3 years
M	10,000 hours or 2 years		2½ years
N	1 year		1½ years
O	6 months		
P	3 months		6 months
Q		7500 hours	2 years
R		2000 hours	2 years
S	5% in lieu of defective adjustment		
T	15 days	12 months or 3000 hours	2 years
U	6 months	12 months	1½ years unless tube life exceeds 1000 hours
V	12 months	24 months	2 years unless tube life exceeds 1000 hours
W	50 hours	750 hours	1½ years

To receive credit consideration for tube failure within warranty period, claim must be presented within thirty (30) days after failure of tube.

All in warranty industrial products other than code classification "S" must be accompanied with a tube service report.

WARRANTY AND ADJUSTMENTS

When operated within their specified ratings, Du Mont E. R. P. Power, Transmitting, and Special Purpose tubes are warranted against defects in workmanship and materials. No other warranties are given or may be implied. In no instance will Dutrex Industries, Inc. be liable for consequential damage.

PRICE POLICY

Prices of Du Mont E. R. P. Industrial Electronic tubes are those stated in current published price schedules and special price bulletins as issued by Dutrex Industries, Inc. All prices are subject to change or withdrawal without notice.

This is a partial listing of tube types available from our warehouse. Contact us for your requirements on:

- IGNITRONS
- PHOTO TUBES
- THYRATRONS
- VIDICONS
- RECTIFIERS
- INDUSTRIAL RECEIVING TUBES
- POWER & TRANSMITTING TUBES
- IMAGE ORTHICONS
- KLYSTRONS
- INDUSTRIAL CATHODE RAY
- VOLTAGE REGULATORS

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HEINTZ AND KAUFMAN LTD SINCE 1927

Type	Resale Price
0G3/85A2	2.30
1AD4	3.05
1AJ5	3.50
1B24A	32.00
1B58A	83.00
1B63A	35.00
1P30	5.25
1P37	6.35
1P39	2.75
1P40	3.90
1P41	4.75
1R5WA	8.26
1T4WA	8.00
1U4WA	8.00
1U5WA	8.00
1Z2	9.88
2-450A	170.00
2AC15	11.00
2AP1A	20.70
2AS15A	10.50
2BP1	27.75
2C36	69.00
2C37	69.00
2C39A	19.90
2C39WA	19.95
2C51	3.25
2C53	11.25
2D21W	2.75
2E22	8.25
2FP1	59.00
2J55	240.00
2J70A	441.00
2K25	43.00
2K26	64.00
2K28	85.00
2K39	350.00
2K48	97.00
2K50	440.00
3AQP1	29.00
3ASP1	49.00
3B4	2.88
2B24WA	8.90
3B24WB	9.00
3B28	6.40
3B29W	15.75
3BP1A	29.50
3C23	7.40
3C24	27.50
3C45	21.00
3C45W	41.00
3D21WA	32.80
3D21WB	62.00
3JP1	32.00
3JP2	32.00
3JP12	32.00
3RP1A	28.00
3RP7A	32.00
3SP7	50.00
3WP1	32.50
3XP1	65.00
4B26	6.70
4B32	8.90
4C22/HF100	32.00
4C35A	36.00
4D32	72.00
4E27	42.00
4PR60B	115.00
4X150A	23.15
4V150D	29.00
5A6	6.50
5ABP1	48.00
5ADP1	48.00
5ADP7	49.00
5AQP1	54.00
5C22	36.00
5CP1A	44.35
5DEP1	32.00
5R4WGA	9.65
5R4WGB	14.20
5UP1	24.80
5Y3WGTB	5.75
6AD4	3.33
6AH6WA	6.40
6AJ5	3.40
6AN5	4.14
6AN5WA	9.50
6AS6	3.33
6B4G	9.15
6BF7	2.00
6BL6	77.00
6BM6	77.00
6C21	90.00
6D4	2.83
6J6WA	4.85
6L6WGB	5.75
6Q5G	6.00
6SA7WGT	7.90
6SK7WA	2.95
7JP1	47.00
7VP1	43.00
10KP7A	64.45
12AT7WA	2.50
12AU7WA	3.45
12AY7	2.40
25T	32.00
26A7GT	6.15
26E6WG	27.00
26Z5W	3.25
28D7W	9.50
35T	30.50
100TH	24.00
100TL	24.00
203WA	45.00
206	9.90
211D	26.46
211W	49.70
249B	15.42
249C	12.30
250TH	37.50
250TL	37.50
254W	39.80
310A	12.00
311CH	41.11
311CT	44.11
313CA	5.67
313CC	4.97
323B	7.00
328A	9.75
329A	8.28
353A	7.25
354A	30.00
355A	28.00
371B	18.75
393A	8.75
394A	11.00
403B	4.00
407A	5.80
408A	4.40
409A/6AS6	5.55
416B	68.00
417A	8.75
418A	24.00
429A	17.00
437A	58.70
468	39.00
543	48.00
545	84.00
561	74.50
572B	18.50
575A	17.50
576A	24.00
577W	44.00
582	37.00
583	13.68
631-P1	7.30
673	23.60
705WA	42.00
715C	42.50
719A	178.00
723A/B	43.50
725A	197.50
726B	49.00
726C	72.00
803	38.50
805	21.75
807	3.05
808	12.25
809	10.75
810	21.75
811A	7.40
812A	7.40
813	24.25
814	21.40
815	25.00
816	4.00
826	39.00
829B	19.75
830B	17.50
832A	16.30
836	13.80
838	20.00
845	22.22
845W	48.00
851	795.00
861	142.50
866A	2.58
868	4.44
872A	8.00
873	14.90
918	4.30
922	3.65
923	3.88
927	4.15
928	16.75
930	3.80
934	4.70
959	11.90
966	8.70
973	17.00
1236C	11.75
1258	39.17
1603	7.20
1611	4.45
1612	5.60
1616	9.85
1620	7.55
1621	3.85
1622	5.36
1624	6.75
2033	4.95
2050A	2.05
4415E	1666.66
4536	1888.88
5530	375.00
5581	3.50
5608A	11.40
5636	6.00
5639	4.20
5641	5.90
5642	3.85
5643	5.25
5647	9.00
5650	218.00
5651	1.78
5651WA	3.50
5654/6AK5W	2.25
5656	16.35
5663	2.10
5670	2.11
5670WA	2.30
5672	2.45
5676	3.05
5678	2.45
5679	6.60
5685/C6JA	29.00
5686	3.30
5687	3.00
5687WA	5.25
5702WA	6.10
5702WB	8.60
5703	3.20
5703WA	6.08
5703WB	8.20
5718	3.65
5721	116.00
5725/6AS6W	3.05
5726/6AL5W	1.36
5727/2021W	2.44
5736	185.00
5744WA	6.88
5749/6BA6W	2.10
5750/6BE6W	3.45
5751	2.40
5751WA	2.35
5755/420A	8.65
5768	82.00
5780	895.00
5783WA	6.25
5784WB	15.00
5787	4.50
5787WA	4.86
5796	19.15
5814A	2.25
5820AL	1666.66
5823	1.70
5829	4.10
5829WA	6.66
5836	81.00
5837	81.00
5840	5.05
5841	10.80
5842/417A	7.25
5842WA	15.29
5847/404A	8.75
5861	37.50
5864	48.40
5875	2.95
5881	3.10
5886	5.30
5894	25.00
5896	3.05
5897	6.00
5899	5.05
5902A	4.66
5903	6.75
5904	6.50
5905	7.25
5906A	7.69
5910	2.40
5920	3.20
5922	38.38
5932/6L6WGA	8.25
5933/807W	11.45
5933WA	16.25
5948/1754	165.00
5949/1907	110.00
5956	64.00
5957	64.00
5962	13.25
5976	68.00
6005/6AQ5W	3.15
6014/C1K	12.50
6021A	3.45
6057	5.85
6060	4.80
6076	338.00
6080WA	10.10
6080WB	26.00
6100/6C4WA	2.50
6101/6J6WA	5.35
6111	3.50
6112	4.00
6115A	92.00
6130	22.50
6134/6AC7WA	5.95
6136/6AU6WA	2.60
6146B/8298A	5.10
6155	36.00
6156	41.00
6161	117.00
6177	230.00
6186/6AG5WA	3.70
6189/12AU7WA	3.45
6201/12AT7WA	2.50
6227	3.95
6236	112.00
6236A	122.00
6245	8.50
6247	10.22
6252	25.00
6279	44.40
6280	68.00
6303	73.00
6336A	18.00
6336B	26.00
6360	4.70
6390	125.00
6418	3.20
6442	38.00
6481	68.00
6503	79.00
6528	21.55
6533	12.22
6550	4.95
6686	5.60
6688	7.44
6689	3.80
6788	10.85
6857	22.50
6858	28.10
6883B	5.30
6888	4.00
6901	14.70
6922	4.65
6939	11.11
6977	2.45
7006	1388.00
7025	1.42
7035	29.00
7043	15.00
7062	2.75
7077	39.05
7119	4.05
7203	35.90
7241	59.00
7242	65.00
7289	26.00
7293A	999.99
7293B	1088.88
7295B	1088.88
7308	4.95
7360	3.75
7389C	1777.77
7410	9.90
7513C	1666.66
7643	4.95
7693	3.95
7714	7.00
7722	8.00
7737	7.95
7788	9.70
8000	27.50
8008	8.00
8093A/L	1666.66
8108	225.00
8120	249.00
8165	27.00
8252	115.00
8270	87.00
8370	95.00
8429	48.00
8436	375.00
8485	255.00
8552	5.30
8673	1555.55
8674	1555.55
8748	1777.77
8749	1777.77
8775	1666.66
C1A	13.50
C1K	12.50
C3J, C3JA	14.75
GC10B	12.50
GC10D	15.65
GC12/4B	15.60
GS10C	15.45
GS10D	17.25
GS10H	11.25
GS12D	18.25
HF200	36.75
HF300	36.66
HK24	32.00
HK24G//3C24	27.50
HK253	47.00
HK254W	39.80
KT66	7.75
KU17	55.00
KU23	36.66
KY21A	28.50
PL177A	29.00
SGR-1	39.00
SS501	26.50
UXCV11	22.50
X13	315.00

HEINTZ & KAUFMAN Ltd. • Sold World Wide Since 1927

ENTERTAINMENT RECEIVING TUBES

Type	Suggested List Price‡
0Z4/0Z4A	$3.40
1A7GT	5.40
1AD2	3.40
1AY2	3.55
1B3GT — (Use 1G3GT/1B3GT)	
1BC2	2.90
1BG2	2.80
1BH2	3.05
1D-K1	3.45
1D-K27	4.30
1D-K29	3.00
1DN5	4.40
1G3GT/1B3GT	3.40
1H2	3.95
1K3/1J3	3.40
1L4	3.25
1L6	12.55
1LH4	7.60
1N2A	4.40
1R5	4.45
1S2A/DY87	2.55
1S5	3.40
1T4	3.85
1U4	3.85
1U5	3.40
1V2	2.40
1X2A/1X2B	3.70
2AF4	4.10
2AF4B — (Use 2DZ4/2AF4B)	
2AH2	3.85
2AS2	3.30
2AV2	2.75
2BN4A	3.55
2BU2	3.90
2CN3A	3.25
2CW4	4.90
2CY5	4.40
2DS4	4.90
2DV4	6.45
2DZ4/2AF4B	4.10
2EN5	3.20
2ER5	3.70
2FH5	3.70
2FQ5A — (Use 2GK5/2FQ5A)	
2FS5	4.85
2GK5/2FQ5A	3.85
2GU5	4.50
2HA5	3.85
2HK5	3.85
2HQ5	3.85
3A2	5.50
3A3A/3AW3/3B2	3.20
3AF4B — (Use 3DZ4/3AF4B)	
3AL5	2.70
3AT2	3.40
3AU6	2.95
3AV6	2.95
3AW2	3.20
3AW3 — (Use 3A3A/3AW3/3B2)	
3B2 — (Use 3A3A/3AW3/3B2)	
3BC5 — (Use 3CE5/3BC5)	
3BE6	2.70
3BL2	3.55
3BM2	3.60
3BN2	4.00
3BN4	3.40
3BN6	4.75
3BS2A	3.25
3BT2	3.75
3BU8/3GS8	4.90
3BY6	3.00
3BZ6	3.30
3CA3	3.20
3CB6/3CF6	2.30
3CE5/3BC5	2.95
3CF6 — (Use 3CB6/3CF6)	
3CN3A	3.45
3CS6	3.70
3CU3	3.75
3CX3	3.75
3CY3	3.55
3CY5	3.75
3CZ3	4.35
3DA3	4.20
3DB3	4.05
3DC3	4.60
3DG4	5.20
3DK6	2.95
3DT6	3.25
3DZ4/3AF4B	4.10
3EH7	2.55
3EJ7	2.55
3ER5	4.45
3FS5	4.30
3GK5	3.85
3GS8 — (Use 3BU8/3GS8)	
3HA5 — (Use 3HM5/3HA5)	
3HM5/3HA5	3.85
3HQ5	5.25
3JC6	4.40
3Q4	3.35
3S4	3.40
3V4	3.75
4AU6	3.40
4AV6	2.95
4BC5 — (Use 4CE5/4BC5)	
4BC8	4.00
4BL8/XCF80	2.40
4BN6	4.05
4BQ7A — (Use 4BZ7/4BQ7A)	
4BS8	4.25
4BU8/4GS8	4.45
4BZ6	2.95
4BZ7/4BQ7A	4.45
4CB6	2.70
4CE5/4BC5	3.05
4CS6	3.40
4CY5	2.70
4DE6	2.95
4DK6	3.40
4DT6	3.25
4EH7	3.55
4EJ7	3.55
4ES8	5.50
4EW6	3.55
4GK5	3.85
4GM6	2.15
4GS8 (Use 4BU8/4GS8)	
4HA5	2.30
4HA7/4HC7	4.25
4HM6	3.10
4HQ5	4.60
4HS8	3.70
4HT6	2.55
4JC6A	4.60
4JD6	4.60
4KN8/4R-HH8	7.95
4LJ8	4.10
4R-HH2 (Use 4BC8	
4R-HH8 — (Use 4KN8/4R-HH8)	
5AM8	4.90
5AN8	5.20
5AQ5	2.95
5AR4/GZ34	4.25
5AS4A — (Use 5U4GB/5AS4A)	
5AS8	4.40
5AT8	4.45
5AU4 (Use 5V3/5AU4)	
5AV8	4.05
5B8	5.50
5BC3A	3.40
5BK7A	4.05
5BQ7A — (Use 5BZ7/5BQ7A)	
5BR8 — (Use 5FV8/5BR8)	
5BT8	3.10
5BW8	3.85
5BZ7/5BQ7A	4.30
5CG8	3.70
5CL8A	4.90
5CM8	3.55
5CQ8	4.10
5CZ5	4.45
5DH8	5.50
5DJ4	3.55
5EA8	5.05
5ES8	5.50
5EU8	4.00
5EW6	3.40
5FG7	4.05
5FV8/5BR8	4.90
5GH8	4.60
5GJ7	2.95
5GM6	3.25
5GS7	3.65
5GX6	3.25
5GX7	4.00
5HA7	4.25
5HB7	3.40
5HG8	3.70
5HZ6	3.25
5J6	3.60
5JK6	3.85
5JL6	3.85
5KD8 (Use 6U8A/6KD8/5KD8)	
5KE8	5.75
5KZ8	3.55
5LJ8	4.10
5MB8	3.65
5M-HH3 (Use 5J6)	
5T8	4.20
5U4GB/5AS4A	2.75
5U8	4.25
5U9/LCF201	2.95
5V3/5AU4	3.80
5V4GA	4.30
5V6GT	3.70
5X8	4.15
5Y3GT	2.60
5Z3	4.45
6AB4	3.60
6AC7	5.75
6AC10	4.25
6AD10	7.10
6AF3	3.55
6AF4	4.45
6AF4A — (Use 6DZ4/6AF4A)	
6AF9	3.50
6AF11	5.20
6AG5	3.80
6AG7	6.85
6AG9	6.15
6AG11	5.70
6AH4GT	3.25
6AH6	5.20
6AH9	4.75
6AK5/EF95	4.50
6AK6	2.55
6AK10	5.05
6AL3	2.60
6AL5	2.70
6AL7GT	8.15
6AL11	4.75
6AM4	7.20
6AM8A	4.05
6AN4	6.15
6AN8A	4.65
6AQ5A/6HG5	2.95
6AQ6	3.25
6AQ7GT	4.70
6AQ8/ECC85	3.00
6AR5	2.45
6AR8	5.90
6AR11	5.35
6AS5	3.75
6AS8	4.85
6AS11	5.85
6AT6	2.05
6AT8A	5.20
6AU4GTA	4.40
6AU5GT	5.20
6AU6A	2.65
6AU8A	5.20
6AV5GA	5.20
6AV6	1.95
6AV11	4.40
6AW8A	4.00
6AX3	2.90
6AX4GTB	3.40
6AX5GT	3.85
6AX8	3.45
6AY3B/6BS3A	3.45
6AY11	5.70
6AZ8	5.55
6B10	3.80
6BA6/EF93	2.70
6BA7	5.90
6BA8A	4.60
6BA11	4.45
6BC4	5.50
6BC5 (Use 6CE5/6BC5)	
6BC7	3.60
6BC8/6BZ8	4.45
6BD6	2.30
6BD11	5.85
6BE3	3.75
6BE6	3.10
6BF5	3.35
6BF6	2.80
6BF11	5.05
6BG6GA	6.45
6BH6	3.60
6BH8	4.60
6BH11	4.70
6BJ3	3.25
6BJ6	3.60
6BJ7	2.95
6BJ8	4.45
6BK4B — (Use 6BK4C/6EL4A)	
6BK4C/6EL4A	7.55
6BK5	3.45
6BK7B	4.45
6BL7GTA	5.60
6BL8/ECF80	2.70
6BM8/ECL82	2.90
6BN4A	3.95
6BN6 — (Use 6KS6/6BN6)	
6BN8	3.70
6BN11	5.35
6BQ5/EL84	3.55
6BQ6GA/6CU6	4.90
6BQ6GTB	4.90
6BQ7A — (Use 6BZ7/6BQ7A)	
6BR3/6R-K19	4.85
6BR8A — (Use 6FV8A/6BR8A)	
6BS3A — (Use 6AY3B/6BS3A)	
6BS8	4.90
6BU8	4.55
6BV8	3.30
6BV11	4.95
6BW4	2.75
6BW8	4.45
6BW11	5.35
6BX7GT	5.90
6BY5GA	4.80
6BY6	3.40
6BY8	2.70
6BZ3	2.95
6BZ6	2.70
6BZ7/6BQ7A	4.55
6BZ8 (Use 6BC8/6BZ8)	
6C4	2.95
6C5	5.35
6C9	5.50
6C10	3.70
6CA4	3.25
6CA5	3.00
6CA7/EL34	5.35
6CB5A	9.40
6CB6A/6CF6	2.80
6CD3 — (Use 6CG3/6CE3/6CD3)	
6CD6GA	6.20
6CE3 — (Use 6CG3/6CE3/6CD3)	
6CE5/6BC5	3.25
6CF6 — (Use 6CB6A/6CF6)	
6CG3/6CE3/6CD3	3.70
6CG7 — (Use 6FQ7/6CG7)	
6CG8A	3.85
6CH8	5.65
6CJ3/6DW4B/6CL3	3.50
6CK3	3.70
6CK4	3.55
6CL3 (Use6CJ3/6DW4B/6CL3)	
6CL6	4.15
6CL8A	4.15
6CM3	4.90
6CM6	3.85
6CM7	3.60
6CM8	4.05
6CN7	4.45
6CQ4 (Use 6DE4/6CQ4)	
6CQ8	4.10
6CR6	2.95
6CS6	3.30
6CS7	3.75
6CU5	3.55
6CU6 — (Use 6BQ6GA/6CU6)	
6CU8	4.60
6CW4	4.90
6CW5/EL86	2.75
6CX8	5.20
6CY5	4.25
6CY7	3.05
6CZ5	4.75
6D10	4.65
6DA4A/6DM4A	3.70
6DB5	5.00
6DC6	3.85
6DE4/6CQ4	3.55
6DE6	3.25
6DE7	4.45
6DG6GT	3.85
6DK6	2.95
6DL5/EL95	2.95
6DM4A — (Use 6DA4A/6DM4A)	
6DN6	7.00
6DN7	4.60
6DQ5	7.85
6DQ6B/6GW6	4.60
6DR7	4.60
6DS4	4.90
6DS5	3.65
6DT5	3.55
6DT6A	2.70
6DT8	3.75
6DV4	6.45
6DW4B (Use 6CJ3/6DW4B/6CL3)	
6DX8/ECL84	2.95
6DZ4/6AF4A	4.45
6DZ7	10.35
6E5	5.65
6EA4 (Use 6EH4A)	
6EA7 (Use 6EM7/6EA7)	
6EA8	3.55
6EB8 (Use 6GN8/6EB8)	
6EF4 (Use 6EJ4A)	
6EH4A	8.20
6EH5	3.55
6EH7/EF183	3.85
6EH8	3.50
6EJ4A	9.35
6EJ7/EF184	3.55
6EL4 — (Use 6BK4C/6EL4A)	
6EM5	4.00
6EM7/6EA7	5.70
6EQ7	2.95
6ER5	4.20
6ES5	2.85
6ES8/ECC189	5.45
6EU7	3.60
6EU8	3.70
6EV5	3.55
6EV7	3.25
6EW6	3.00
6EW7	6.00
6EX6	7.50
6EY6	5.00
6EZ5	5.05
6EZ8	3.55
6F5	5.85
6F6	6.15
6F6GT (Use 6F6)	
6FD6	3.55
6FD7	5.70
6FG5	5.35
6FG6/EM84	3.30
6FG7	4.15
6FH5	4.55
6FH8	4.40
6FJ7	4.15
6FM7	3.90
6FM8	3.55
6FQ5A — (Use 6GK5/6FQ5A)	
6FQ7/6CG7	2.45
6FS5	4.10
6FV6	4.45
6FV8A/6BR8A	4.70
6FW5	4.60
6FY5	2.75
6FY7	3.50
6G11	5.30
6GB3A — (Use 6BQ6GTB)	
6GB5/EL500	3.80
6GB6 — (Use 6DQ6B/6GW6)	
6GC5	5.00
6GE5	4.55
6GF5	3.80
6GF7A	4.85
6GH8A	3.20
6GJ5A	6.15
6GJ7/ECF801	3.10
6GK5/6FQ5A	4.15
6GK6	3.40
6GK17 — (Use 6AU4GTA)	
6GL7	5.75
6GM5	3.05
6GM6	3.25
6GM8/ECC86	4.35
6GN8/6EB8	4.70
6GQ7	3.75
6GT5A	6.35
6GU5	4.10
6GU7	3.70
6GV5	4.10
6GW6 — (Use 6DQ6B/6GW6)	
6GW8/ECL86	3.05
6GX6 — (Use 6GY6/6GX6)	
6GX7	4.00
6GY5	4.60
6GY6/6GX6	3.20
6GY8	4.70
6GZ5	2.70
6H6	5.25
6HA5 — (Use 6HM5/6HA5)	
6HA6 — (Use 6HB6/6HA6)	
6HB5	4.60
6HB6/6HA6	4.45
6HB7	4.00
6HE5	4.20
6HF5	8.05
6HF8	5.25
6HG5 — (Use 6AQ5A/6HG5)	
6HG8/ECF86	3.70
6HJ8	3.10
6HK5	3.90
6HL8	3.05
6HM5/6HA5	3.85
6HM6	2.95
6HQ5	4.45
6HR5	2.55
6HS5	7.75
6HS6	3.70
6HS8	4.30
6HV5	7.75
6HZ6	2.90
6HZ8	5.50
6J5	4.60
6J6A	4.05
6J7	5.75
6J10 — (Use 6Z10/6J10)	
6J11	5.75
6JB6A	5.85
6JC6A	3.95
6JC8	3.30
6JD6	3.55
6JE6B	8.50
6JE8	3.70
6JF6	6.85
6JG6A	6.50
6JH6	2.95
6JH8	5.25
6JK6	3.85
6JK8	4.05
6JM6	4.95
6JN6	4.90
6JN8	3.65
6JS6B	7.30
6JT6A	5.40
6JT8	4.05
6JU8A	3.85
6JV8	4.40
6JW8/ECF802	3.10
6JZ6	4.60
6JZ8	3.55
6K6GT	3.45
6K7	5.50
6K11/6Q11	3.80
6KA8	4.45
6KD6	8.50
6KD8 (Use 6U8A/6KD8/5KD8)	
6KE8	5.65
6KM6	8.20
6KM8	3.45
6KN6	7.20
6KN8/6R-HH8	7.95
6KR8	4.25
6KS6/6BN6	4.10
6KT6	3.30
6KT8	4.90

‡ Manufacturer's suggested list price: subject to change without notice.

Trade Discount Applies To List Prices Only

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ENTERTAINMENT RECEIVING TUBES

Type	Suggested List Price‡
6KU8	4.80
6KV8	5.85
6KY8A	7.25
6KZ8	3.70
6L6	9.65
6L6GC	5.25
6LB6	8.60
6LB8	4.70
6LC6	(Use 6LH6A)
6LC8	4.75
6LE8	5.55
6LF6	8.45
6LF8	4.60
6LH6A	7.70
6LJ6	6.75
6LJ8	4.10
6LM8	4.45
6LN8	2.40
6LQ8	5.55
6LT8	3.45
6LU8	4.75
6LX8/LCF802	2.60
6LY8	3.90
6M11	5.35
6MB8	3.65
6MD8	4.85
6ME8	5.05
6MF8	4.75
6MG8	2.45
6MJ8	4.60
6M-HH3	(Use 6J6A)
6MK8	4.30
6N7	5.05
6Q11 —	(Use 6K11/6Q11)
6R-HH2 —	(Use 6BC8/6BZ8)
6R-HH8 —	(Use 6KN8/6R-HH8)
6R-P22	10.70
6R-K19 —	(Use 6BR3/6R-K19)
6S4A	3.40
6SA7	5.50
6SC7	5.35
6SF5	5.00
6SG7	5.60
6SH7	6.15
6SJ7	4.90
6SK7	5.00
6SL7GT	4.40
6SN7GTB	3.55
6SQ7	4.95
6T8A	4.35
6T9	4.40
6T10	4.65
6U8A/6KD8/5KD8	3.45
6U9	2.90
6U10	3.80
6V3A	4.55
6V4/EZ80	1.50
6V6	6.80
6V6GTA	3.75
6W4GTA	3.30
6W6GT	4.10
6X4	2.75
6X5GT	3.30
6X8A	3.80
6X9/ECF200	2.95
6Y6GT	3.55
6Y9	2.95
6Z10/6J10	5.50
7A7	7.15
7AU7	3.10
7B5	8.35
7C5	3.30
7C7	3.40
7EY6	3.70
7F7	7.50
7F8	8.25
7GS7	4.70
7GV7	3.90
7HG8/PCF86	2.75
7N7	7.10
7V7	4.65
8A8 —	(Use 9A8/8A8/PCF80)
8AC10	5.05
8AL9	8.15
8AR11	5.35
8AU8	3.85
8AW8A	4.85
8B10	3.50
8BA11	4.15
8BM11	4.70
8BN11	4.35
8BQ5	3.75
8BQ11	4.30
8BU11	5.00
8CB11	5.60
8CG7	(Use 8FQ7/8CG7)
8CM7	2.70
8CN7	3.05
8CS7	3.95
8CW5	2.55
8CX8	4.40
8EB8 —	(Use 8GN8/8EB8)
8EM5	4.10
8ET7	4.15
8FQ7/8CG7	2.45
8GJ7	2.90
8GN8/8EB8	4.15
8JU8A	3.35
8JV8	4.30
8KA8	4.65
8KR8	6.70
8LC8	4.75
8LT8	3.25
9A8/8A8/PCF80	2.65
9AQ8	7.65
9AU7	2.95
9BJ11	5.35
9BR7	3.15
9CL8	2.95
9GH8A	4.10
9GV8	3.40
9KC6	4.35
9KZ8	2.95
9R-AL1	(Use 10DE7)
9R-HR2	5.25
9U8A	3.10
10AL11	4.55
10BQ5	2.75
10C8	6.05
10CW5	2.55
10DE7	4.45
10DX8/LCL84	2.75
10EG7	4.40
10EM7	4.90
10EW7	5.25
10GF7A	4.75
10GK6	3.45
10GN8	4.45
10HF8	5.35
10JA8 —	(Use 10LZ/10JA8)
10JT8	4.05
10JY8	3.65
10KR8	4.25
10KU8	4.85
10LB8	4.70
10LE8	5.90
10LW8	4.70
10LY8	3.90
10LZ8/10JA8	4.15
11AF9	3.10
11AR11	5.35
11BM8	5.85
11BQ11	5.35
11BT11	6.50
11CA11	6.90
11CY7	4.60
11FY7	3.70
11HM7	5.25
11JE8	3.85
11KV8	5.90
11LQ8	5.90
11LT8	3.45
11Y9	3.70
12AB5	3.85
12AC6	2.10
12AD6	3.50
12AE6A	3.10
12AE10	5.35
12AF3	4.25
12AF6	3.15
12AL5	2.75
12AL8	6.20
12AL11	5.65
12AQ5	3.45
12AT6	2.75
12AT7/ECC81	3.20
12AU6	2.90
12AU7/ECC82	2.75
12AV5GA	5.45
12AV6	1.95
12AV7	4.10
12AX3	3.00
12AX4GTB	2.95
12AX7/ECC83	2.70
12AX7A/7025	2.80
12AY3A/12BS3A	2.90
12AZ7A	3.70
12B4A	3.50
12BA6	2.10
12BA7	5.90
12BD6	2.30
12BE3	3.45
12BE6	2.55
12BF6	2.30
12BF11	5.75
12BH7A	3.45
12BK5	3.75
12BL6	3.70
12BN6	4.60
12BQ6GA/12CU6	4.20
12BQ6GTB	4.20
12BR3/12R-K19	3.85
12BR7	3.05
12BS3A —	(Use 12AY3A/12BS3A)
12BT3	3.45
12BV7	(Use 12BY7A/12BV7/12DQ7)
12BW4	3.30
12BY7A/12BV7/12DQ7	3.20
12BZ7	4.15
12C5 —	(Use 12CU5/12C5)
12CA5	3.95
12CN5	3.25
12CR6	2.95
12CT8	6.40
12CU5/12C5	3.90
12CU6 —	(Use 12BQ6GA/12CU6)
12CX6	2.75
12D4	3.05
12DB5	2.60
12DE8	3.10
12DQ6B/12GW6	4.95
12DQ7	(Use 12BY7A/12BV7/12DQ7)
12DS7	5.40
12DT5	3.10
12DT8	3.55
12DW4A	5.85
12DY8	7.95
12DZ6	(Use 12EK6/12DZ6/12EA6)
12EA6	(Use 12EK6/12DZ6/12EA6)
12ED5	2.70
12EG6	3.45
12EK6/12DZ7/12EA6	3.60
12EQ7	2.75
12EZ6	3.55
12F8	3.25
12FK6	2.55
12FM6	2.60
12FQ8	5.20
12FX5	3.25
12FX8A	3.85
12GA6	2.70
12G-B3	10.00
12G-B7 —	(Use 12DQ6B/12GW6)
12GC6	4.35
12GE5	4.50
12GN7A	5.10
12GT5A	5.35
12GW6 —	(Use 12DQ6B/12GW6)
12H6	4.45
12HE7	6.80
12HG7	5.10
12HL7	4.45
12J5	4.10
12J8	4.35
12JN6	3.90
12JN8	3.70
12JT6A	4.95
12K5	3.45
12L6GT	3.55
12MD8	4.85
12R5	3.30
12R-K19 —	(Use 12BR3/12R-K19)
12SA7	5.50
12SF5	3.95
12SG7	4.70
12SJ7	4.30
12SK7	5.25
12SL7GT	4.95
12SN7GTA	3.85
12SQ7	4.95
12T10	4.65
12V6GT	4.45
12W6GT	4.90
12X4	2.25
13CW4	5.05
13DE7	4.75
13DR7	5.25
13EM7/15EA7	5.85
13FD7	5.25
13FM7 —	(Use 15FM7/13FM7)
13GB5	3.80
13GF7A	4.65
13J10 —	(Use 13Z10/13J10)
13JZ8	5.05
13V10	4.45
13Z10/13J10	5.55
14BL11	6.90
14BR11	5.80
14GT8	3.50
14JG8	4.00
15AF11	4.75
15BD11A	5.50
15CW5/PL84	2.45
15DQ8	3.55
15EA7 —	(Use 13EM7/15EA7)
15FM7/13FM7	3.40
15FY7	3.90
15KY8A	5.75
15LE8	7.65
16A8	3.45
16AK9	6.40
16AQ3/XY88	2.70
16BQ11	5.35
16BX11	5.85
16GK6	3.05
16GY5	4.85
16KA6	5.75
16LU8A	6.75
17AB9	6.50
17AB10/17X10	4.45
17AX3	2.60
17AX4GTA	3.55
17AY3A/17BS3A	3.40
17BB14	10.50
17BE3	3.20
17BF11	4.70
17BR3/17R-K19	3.35
17BS3A —	(Use 17AY3A/17BS3A)
17BW3	3.20
17BZ3	3.20
17C5 —	(Use 17CU5/17C5)
17C9	7.15
17CK3	3.55
17CT3	2.95
17CU5/17C5	3.10
17D4/17DM4A	4.05
17DE4	3.65
17DM4A —	(Use 17D4/17DM4A)
17DQ6B/17GW6	5.25
17EW8/HCC85	2.75
17GE5	4.35
17GJ5	6.05
17GT5A	5.55
17GV5	4.20
17GW6 —	(Use 17DQ6B/17GW6)
17H3	3.25
17HB25	8.15
17JB6A	5.50
17JM6	4.95
17JN6	4.50
17JZ8	3.55
17R-K19 —	(Use 17BR3/17R-K19)
17X10 —	(Use 17AB10/17X10)
17Z8	4.75
18A5	4.65
18AJ10	5.35
18FW6	2.45
18FX6	2.95
18FY6	2.95
18GB5	10.70
19AU4GTA	4.35
19BG6GA	6.65
19CG3	3.60
19CL8A —	(Use 19JN8/19CL8A)
19EA8	4.45
19EZ8	5.40
19GQ7	3.80
19HV8	4.10
19JN8/19CL8A	3.20
19KG8	3.10
19MR9	(Use 18FW6)
19T8	4.90
20AQ3/LY88	3.30
20EZ7	3.45
21GY5	4.60
21HB5A	4.75
21JS6A/23JS6A	13.35
21JV6	4.60
21JZ6	4.85
21KA6	4.45
21LG6	7.65
21LR8	4.75
21LU8	4.75
22BH3A	3.10
22BW3	3.40
22DE4	4.20
22JF6	6.80
22JG6A	6.20
22JU6	6.35
23JS6A —	(Use 21JS6A/23JS6A)
23Z9	4.75
24BF11	5.20
24JE6A	8.50
24JZ8	4.50
25AV5GA	5.65
25AX4GT	3.05
25BK5	3.40
25BQ6GA/25CU6	4.35
25BQ6GTB	4.35
25C5	3.30
25CA5	3.60
25CD6GB	6.40
25CG3	3.40
25CU6 —	(Use 25BQ6GA/25CU6)
25DK4	2.20
25DN6	6.60
25E5	7.10
25EC6	6.40
25EH5	3.70
25F5A	3.85
25L6GT/25W6GT	3.70
25W4GT	3.70
25W6GT —	(Use 25L6GT/25W6GT)
25Z6GT	3.85
26HU5	12.05
27	5.10
27GB5/PL500	3.70
29GK6	3.60
29KQ6	12.60
30AG11	5.70
30KD6	13.35
31AL10	5.85
31JS6A	7.30
32ET5A	2.40
32HQ7	7.70
33GT7	6.95
33GY7A	6.05
33JV6	4.60
34CE3	3.90
34GD5	2.95
35B5	3.20
35C5	2.70
35EH5	3.40
35GL6	2.90
35L6GT	3.85
35W4	1.65
35Y4	4.50
35Z5GT	2.95
36AM3A	2.55
36KD6	8.85
38HE7	6.65
38HK7	6.55
40KD6	8.05
42KN6	7.20
45B5/UL84	2.80
50B5	2.95
50C5	2.55
50DC4	2.40
50EH5	3.00
50FE5	4.45
50HC6	3.55
50HK6	2.15
50HN5	2.75
50L6GT	4.00
53HK7	8.35
60FX5	2.95
75	6.40
80	4.80
117Z3	4.50
5879	5.00
6267	2.85
6931	3.40
6973	4.60
7025 —	(Use 12AX7A/7025)
7027A	7.40
7189A	3.85
7199	4.90
7247	4.05
7355	3.65
7408	3.20
7543	3.25
7581A/KT66	6.15
7591A	2.80
7695	4.40
7868	4.75
8417	5.65
8425A/6AU6A	2.55
8426A/12AU6	2.80
DY87	(Use 1S2A/DY87)
ECC81 —	(Use 12AT7/ECC81)
ECC82 —	(Use 12AU7A/ECC82)
ECC83 —	(Use 12AX7/ECC83)
ECC85 —	(Use 6AQ8/ECC85)
ECC86 —	(Use 6GM8/ECC86)
ECC189 —	(Use 6ES8/ECC189)
ECF80 —	(Use 6BL8/ECF80)
ECF86 —	(Use 6HG8/ECF86)
ECF200 —	(Use 6X9/ECF200)
ECF801 —	(Use 6GJ7/ECF801)
ECF802 —	(Use 6JW8/ECF802)
ECL82 —	(Use 6BM8/ECL82)
ECL84 —	(Use 6DX8/ECL84)
ECL86 —	(Use 6GW8/ECL86)
EF93	(Use6BA6/EF93)
EF95	(Use 6AK5/EF95)
EF183 —	(Use 6EH7/EF183)
EF184 —	(Use 6EJ7/EF184)
EL34	(Use 6CA7/EI34)
EL84	(Use 6BQ5/EL84)
EL86	(Use 6CW5/EL86)
EL95	(Use 6DL5/EL95)
EL500 —	(Use GB5/EL500)
EM84 —	(Use 6FG6/EM84)
EZ80	(Use 6V4/EZ80)
GZ34	(Use 5AR4/GZ34)
HCC85 —	(Use 17EW8/HCC85)
KT66 —	(Use 7581A/KT66)
LCF201 —	(Use 5U9/LCF201)
LCL84	(10DX8/LCL84)
LY88 —	(Use 20AQ3/LY88)
PCF80 —	(Use 9A8/8A8/PCF80)
PCF86 —	(Use 7HG8/PCF86)
PL84 —	(Use 15CW5/PL84)
PL500 —	(Use 27GB5/PL500)
UL84	(Use 45B5/UL84)
XCF80 —	(Use 4BL8/XCF80)
XY88 —	(Use 16AQ3/XY88)

‡ Manufacturer's suggested list price; subject to change without notice.

GENERAL ELECTRIC

TV PICTURE TUBES

ULTRACOLOR PICTURE TUBES

Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)
11SP22θ	$63.60	19GZP22	(Use 19EYP22)	22JP22θ	$92.60	25GP22A	(Use 25AP22A)	490HB22	(Use 19EXP22)
11WP22θ	85.20	21AXP22Aϕ	$80.00	22KP22θ	84.45	25RP22	(Use 25BP22A)	490JB22	(Use 19EXP22)
19EXP22θ	72.25	21CYP22Aϕ	66.65	23EGP22ϕ	142.65	25SP22	(Use 25AP22A)	490KB22	(Use 19EXP22)
19EYP22θ	80.45	21FBP22ϕ	54.55	23EGP22Aθ	155.30	25UP22θ	$152.00		
19FMP22	(Use 19EYP22)	21FBP22Aθ	60.15	25AP22Aθ	63.20	25VP22	(Use 25AP22A)		
19FXP22	(Use 19EYP22)	21FJP22ϕ	61.40	25BP22θ	57.75	25WP22	(Use 25AP22A)		
19GLP22	(Use 19EYP22)	21FJP22Aθ	66.25	25CP22θ	63.20	25XP22	(Use 25AP22A)		
19GVP22	(Use 19EXP22)	21FKP22	(Use 21FJP22A)	A25CP22	(Use 25CP22)	25ZP22	(Use 25AP22A)		
19GWP22	(Use 19EYP22)	21FKP22A	(Use 21FJP22A)	25FP22	(Use 25BP22A)	490EB22	(Use 19EXP22)		
19GXP22	(Use 19EXP22)	21GFP22θ	120.00	25FP22A	(Use 25BP22A)	490FB22	(Use 19EXP22)		
19GYP22	(Use 19EXP22)	21GWP22θ	144.00	25GP22	(Use 25AP22A)	490GB22	(Use 19EXP22)		

COLOR TEST TUBES

CT19	$53.35
CT19B	62.65
CT21	52.65

θ Rare earth phosphor. ϕ Sulfide phosphor.

MONOCHROME PICTURE TUBES

Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)	Tube Type	Suggested Price (or Replacement)
8XP4	$27.35	17DKP4	$24.00	19DWP4	$33.75	21CEP4	$20.70	23DBP4	$37.30
8YP4	30.00	17DLP4	18.60	19DZP4	19DVP4	21CEP4A	21EMP4	23DKP4	39.30
9QP4A	28.35	17DQP4	24.00	19EAP4	19ENP4	21CMP4	21CBP4A	23DLP4	23DLP4A
9VP4	21.70	17DRP4	29.55	19ECP4	31.30	21CQP4	26.20	23DLP4A	39.30
10ARP4	21.35	17DSP4	21.70	19EDP4	33.75	21CUP4	21AMP4B	23DNP4	38.00
11AP4	11BP4	17DTP4	17DKP4	19EFP4	33.75	21CVP4	21CBP4A	23DSP4A	49.60
11BP4	11HP4	17DXP4	24.00	19EGP4	35.10	21CWP4	21CBP4A	23DTP4	23DKP4
11GP4	27.10	17DZP4	17DXP4	19EHP4	19EDP4	21CXP4	21DSP4	23DWP4	50.45
11HP4	24.75	17EAP4	17HP4C	19EHP4A	19EDP4	21CZP4	21DMP4	23DZP4	23EWP4A
11RP4	11UP4	17EBP4	17DXP4	19EKP4	35.10	21DAP4	21DMP4	23ECP4	38.00
11UP4	25.70	17EFP4	17DXP4	19ELP4	19AVP4	21DEP4	21DEP4A	23EDP4	38.00
12BEP4	23.50	17FP4	17HP4C	19ENP4	33.75	21DEP4A	20.70	23EQP4	23EWP4A
12BKP4	22.80	17FP4A	17HP4C	19ENP4A	19ENP4	21DFP4	21EMP4	23EP4	38.00
12BMP4	12CDP4	17HP4	17HP4C	19ERP4	19EDP4	21DHP4	26.20	23ESP4	40.75
12BZP4	25.00	17HP4A	17HP4C	19ESP4	19EFP4	21DLP4	24.70	23EWP4	23EWP4A
12CDP4	25.00	17HP4B	17HP4C	19EUP4	19EDP4	21DMP4	22.35	23EWP4A	40.50
12CWP4	25.00	17HP4C	18.55	19EZP4	35.10	21DNP4	21CBP4A	23EYP4	43.10
13AP4	30.15	17JP4	17BP4B	19FBP4	19EGP4	21DPQ4	21DLP4	23FEP4	40.60
14ATP4	21.30	17KP4	17HP4C	19FCP4	19DWP4	21DSP4	22.35	23FNP4	43.10
14HP4	14QP4B	17KP4A	17HP4C	19FJP4	33.75	21EAP4	21FDP4	23FP4	23FP4A
14NP4	14WP4	17LP4	17LP4B	19FSP4	19ENP4	21EMP4	22.35	23FP4A	33.30
14NP4A	14WP4	17LP4A	17LP4B	19GAP4	35.10	21EP4	21EP4C	23FRP4	41.90
14QP4	14QP4B	17LP4B	20.15	19XP4	19AVP4	21EP4A	21EP4C	23FSP4	41.90
14QP4A	14QP4B	17QP4	17QP4B	19YP4	19BTP4	21EP4B	21EP4C	23FVP4A	40.60
14QP4B	28.35	17QP4A	17QP4B	19ZP4	19AVP4	21EP4C	28.80	23GBP4	40.60
14RP4	14WP4	17QP4B	20.15	20AHP4	32.95	21EQP4	30.15	23GFP4	41.90
14RP4A	14WP4	17RP4	17HP4C	20CP4	20DP4D	21ESP4	20.70	23GTP4	40.60
14SP4	14WP4	17RP4C	17HP4C	20CP4A	20DP4D	21EVP4	29.30	23GWP4	40.60
14WP4	22.60	17SP4	17LP4B	20CP4B	20DP4D	21FAP4	22.35	23GP4	23CP4A
14XP4	14XP4A	17UP4	17QP4B	20CP4C	20DP4D	21FDP4	34.50	23HFP4	23FVP4A
14XP4A	25.80	17VP4	17LP4B	20CP4D	20DP4D	21FLP4	21CBP4A	23HWP4	41.90
14ZP4	14WP4	17VP4B	17LP4B	20DP4	20DP4D	21FMP4	26.20	23JP4	38.00
16ATP4	27.60	17YP4	17QP4B	20DP4A	20DP4D	21FP4	21FP4D	23KP4	23KP4A
16AUP4	29.50	470ACB4	19AYP4	20DP4B	20DP4D	21FP4A	21FP4D	23KP4A	29.30
16AVP4	16BCP4	19ABP4	31.40	20DP4C	20DP4D	21FP4C	21FP4D	23MP4	23FP4A
16AYP4	29.50	19ACP4	19CHP4	20DP4D	31.40	21FP4D	28.80	23MP4A	23FP4A
16AZP4	23.95	19AFP4	32.55	20HP4	20HP4D	21FUP4	41.20	23NP4	33.30
16BCP4	34.50	19AGP4	19AVP4	20HP4A	20HP4D	21FXP4	41.20	23TP4	30.60
16BSP4	16ATP4	19AHP4	27.75	20HP4B	20HP4D	21GBP4	39.35	23UP4	23BQP4
16BUP4	27.60	19AJP4	27.75	20HP4C	20HP4D	21WP4	21WP4B	23WP4	23FP4A
16BVP4	33.20	19ARP4	19AFP4	20HP4D	22.00	21WP4A	21WP4B	23XP4	23BTP4
16BXP4	33.90	19AUP4	19AFP4	20LP4	20HP4D	21WP4B	29.55	23YP4	23BTP4
16BYP4	29.40	19AVP4	27.75	20MP4	20HP4D	21XP4A	26.90	24ADP4	24CP4B
16CFP4	16CQP4	19AXP4	19AYP4	21ACP4	21AMP4B	21YP4	21YP4A	24AEP4	25.30
16CNP4	31.95	19AYP4	27.75	21ACP4A	21AMP4B	21YP4A	21.30	24AHP4	37.90
16CQP4	30.60	19BDP4	27.75	21AFP4	21YP4A	21ZP4	21ZP4C	24ALP4	24AHP4
16CWP4	30.60	19BHP4	24.70	21ALP4	21CBP4A	21ZP4A	21ZP4C	24AJP4	35.40
16KP4A	16RP4B	19BLP4	19AVP4	21ALP4A	21CBP4A	21ZP4B	21ZP4C	24ANP4	24AEP4
16RP4B	18.40	19BMP4	19AFP4	21ALP4B	21CBP4A	21ZP4C	21.30	24ATP4	24AJP4
17AP4	17BP4B	19BTP4	27.75	21AMP4	21AMP4B	23ACP4	23BTP4	24AUP4	35.40
17ATP4	17BJP4	19BQP4	31.95	21AMP4A	21AMP4B	23AFP4	23BTP4	24AVP4	48.35
17ATP4A	17BJP4	19BVP4	19AVP4	21AMP4B	17.70	23ANP4	23BKP4	24BEP4	48.35
17AVP4	17BJP4	19BWP4	19AYP4	21ANP4	21CBP4A	23AHP4	33.20	24CP4	24CP4B
17AVP4A	17BJP4	19CDP4	27.70	21ANP4A	21CBP4A	23ALP4	33.20	24CP4A	24CP4B
17BJP4	20.50	19CFP4	19CHP4	21AQP4	21AMP4B	23ARP4	39.40	24CP4B	25.30
17BP4	17BP4B	19CHP4	27.70	21AQP4A	21AMP4B	23ASP4	33.20	24DP4	24AEP4
17BP4A	17BP4B	19CJP4	19AVP4	21ATP4	21CBP4A	23ATP4	23BKP4	24DP4A	24AEP4
17BP4B	18.55	19CKP4	19CHP4	21ATP4A	21CBP4A	23AUP4	23AHP4	24QP4	24CP4B
17BP4C	17BP4B	19CLP4	19CRP4	21ATP4B	21CBP4A	23AVP4	23CP4A	24TP4	24CP4B
17BRP4	17DSP4	19CQP4	19CDP4	21AUP4	21AUP4C	23AWP4	23BJP4	24VP4	24CP4B
17BUP4	17BJP4	19CRP4	32.00	21AUP4A	21AUP4C	23BDP4	23BTP4	24VP4A	24CP4B
17BVP4	17BWP4	19CUP4	27.70	21AUP4B	21AUP4C	23BGP4	38.00	24XP4	24CP4B
17BWP4	24.00	17CVP4	32.55	21AUP4C	26.35	23BHP4	23BGP4	24YP4	24AEP4
17BZP4	17DSP4	19CXP4	27.70	21AVP4	21AUP4C	23BJP4	33.20	24ZP4	24AEP4
17CAP4	17DSP4	19CYP4	19BTP4	21AVP4A	21AUP4C	23BKP4	38.00	27ABP4	27ADP4
17CBP4	17BJP4	19CZP4	32.55	21AVP4B	21AUP4C	23BLP4	23BKP4	27ADP4	86.15
17CDP4	30.80	19DAP4	33.75	21AVP4C	21AUP4C	23BMP4	23BTP4	27AGP4	27ADP4
17CFP4	24.00	19DBP4	32.55	21AWP4	21AWP4A	23BNP4	23CP4A	27EP4	27RP4
17CKP4	17DSP4	19DCP4	19EDP4	21AWP4A	22.70	23BQP4	38.00	27GP4	27RP4
17CLP4	17BJP4	19DEP4	19AVP4	21BAP4	21CBP4A	23BTP4	38.00	27NP4	27RP4
17CRP4	24.00	19DFP4	26.60	21BDP4	21AUP4C	23BVP4	23BTP4	27RP4	72.00
17CSP4	17BWP4	19DKP4	32.55	21BNP4	21CBP4A	23BWP4	23BTP4	27XP4	72.00
17CWP4	17DSP4	19DLP4	19CHP4	21BSP4	21AMP4B	23CBP4	23BQP4	27ZP4	76.35
17CXP4	17CRP4	19DQP4	19DWP4	21BTP4	21CBP4A	23CP4	23CP4A		
17CZP4	17BJP4	19DRP4	19EDP4	21CBP4	21CBP4A	23CP4A	38.00		
17DAP4	29.55	19DUP4	31.30	21CBP4A	17.70	23CQP4	23ALP4		
17DHP4	17DXP4	19DVP4	35.75	21CBP4B	21CBP4A	23CZP4	23AHP4		

ULTRACOLOR — These tubes are manufactured to all of the essential original equipment specifications; will utilize rare earth or sulfide phosphors, new electron guns, and may or may not utilize used glass and other materials.

MONOCHROME — All materials and parts used in the manufacture of General Electric monochrome picture tubes are new except for the envelope which, prior to re-use, has been inspected and tested to meet our high-quality standards.

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Industrial Receiving and Communication Tubes

GENERAL ELECTRIC

5654

FIVE STAR TUBES

In industrial and communication equipment — critical sockets where there can be no compromise with electronic tube performance — you can depend on the proven reliability of GE Five-Star tubes. Their high reliability is a result of special design features, special manufacturing processes, special tests, and stabilizing periods.

5670

6146A

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For industrial and military applications involving electronic instrumentation and control, there is a G-E industrial receiving tube specifically designed to meet your particular requirement.

6661

6688A

ENTERTAINMENT TUBES

G. E. offers a full line of entertainment tubes encompassing the fields of radio, TV, and hi-fi. Featured as a portion of this line are 26 types specifically designed for high-fidelity monaural and stereo applications.

5963

5965A

COMPUTER TUBES

Two complete tube lines, Computer and Five-STAR Computer, are designed to meet the specialized needs of the computer industry. Outstanding features include: high perveance, low heater power requirements, controlled cutoff characteristics, and long life.

6005

TYPE	DESCRIPTION	GENERAL: Base Connections	Dimensions In Inches: Length	Dimensions In Inches: Diameter	Cathode: Volts	Cathode: Current Amps.	Cathode: Type	MAXIMUM RATINGS: Max. Freq. for Full Ratings, mc.	DC Plate Volts	Plate Dissipation Watts	Screen Grid No. 2, Volts	Screen Dissipation Watts	TYPICAL OPERATING CONDITIONS: Class and Type of Service	Plate Input Watts	Voltages: Plate	Voltages: Screen Grid No. 2	Voltages: Control Grid No. 1	Currents: Plate, ma	Currents: Screen Grid No. 2, ma	Currents: Control Grid No. 1, ma	GM. μmhos	Triode μ Factor	Drive Watts	Load for Rated Output Ohms	RMS Power Output Watts
0A2σ	Glow-Discharge Diode Voltage Regulator	5BO	2⅝	¾	—	—	—	Regulation (5 to 30 ma)=2 volts Min. anode supply=185 volts DC						DC operating current=5 ma min. DC operating current=30 ma max.							Ionizing voltage=155 volts DC* Operating voltage=150 volts DC*				
0A3	Glow-Discharge Diode Voltage Regulator	4AJ	4⅛	1 5/16	—	—	—	Regulation (5 to 40 ma)=5 volts Min. anode supply=105 volts DC						DC operating current=5 ma min. DC operating current=40 ma max.							Ionizing voltage=100 volts DC* Operating voltage=75 volts DC*				
0A4G	Gas Triode	4V	4⅛	1 5/16	—	—	—							Peak cathode current=100 ma max. DC cathode current=25 ma max.							Starter anode drop=55 volts DC* Anode drop=70 volts DC*				
0B2σ	Glow-Discharge Diode Voltage Regulator	5BO	2⅝	¾	—	—	—	Regulation (5 to 30 ma)=1 volt Min. anode supply=133 volts DC						DC operating current=5 ma min. DC operating current=30 ma max.							Ionizing voltage=115 volts DC* Operating voltage=105 volts DC*				
0B3	Glow-Discharge Diode Voltage Regulator	4AJ	4⅛	1 5/16	—	—	—	Regulation (5 to 40 ma)=8 volts Min. anode supply=125 volts DC						DC operating current=5 ma min. DC operating current=40 ma max.							Ionizing voltage=110 volts DC* Operating voltage=90 volts DC*				
0C3	Glow-Discharge Diode Voltage Regulator	4AJ	4⅛	1 5/16	—	—	—	Regulation (5 to 40 ma)=2 volts Min. anode supply=133 volts DC						DC operating current=5 ma min. DC operating current=40 ma max.							Ionizing voltage=115 volts DC* Operating voltage=105 volts DC*				
0D3	Glow-Discharge Diode Voltage Regulator	4AJ	4⅛	1 5/16	—	—	—	Regulation (5 to 40 ma)=4 volts Min. anode supply=185 volts DC						DC operating current=5 ma min. DC operating current=40 ma max.							Ionizing voltage=160 volts DC* Operating voltage=150 volts DC*				
1AD4α	Sharp-Cutoff RF/AF Pentode	1AD4	1.50	0.385	1.25	0.1	CF	—	45¶	—	45¶	—	Class A Amplifier	—	45	45	Rg_1= 2 Meg.	3.0	0.8	—	2,000				
2D21σ	Thyratron	7BN	2⅛	¾	6.3	0.6	CU	Anode voltage drop= 8 volts					Controlled Rectifier	Max. DC cathode current=100 ma■ Max. peak inverse voltage=1,300 volts■							Max. peak cathode current=500 ma■			
2DF4σ	Pentode	9JL	2 3/16	⅞	2.5 1.25	0.345 0.60	CF	—	250■	30■	125■	1.5■	Class A Amplifier	4.4	120	120	−3.6	37	3.5	—	6,850				
2E26	Beam Power Amplifier	7CK	2 21/32	1 5/16	6.3	0.8	CU	125	300■ 500■ 400■ 400■ 500■ 500■ 600■	10■ 12.5■ 10■ 6.7■ 9■ 10■ 13.5■	200■ 200■ 200■ 200■ 200■ 200■ 200■	2.5■ 2.5■ 2.5■ 2.5■ 2.5■ 1.7■ 2.3■	A_1(1) CCS AB_2(2)ICAS AB_2(2) CCS C-P CCS C-P ICAS C-T CCS C-T CCS C-T ICAS	8:8 72* 60* 20 27 30 30 39.6	250 500 400 400 500 400 500 600	160 125 125 160 180 190 185 185	−14 −15 −15 −50 −50 −30 −40 −45	35† −42* 22† −150* 20† −150* 50 54 75 60 66	7† −10* 32* 32* 7.5 9 11 11 10	— — — — 5.2 5.2 3 3 3	3,500 — — — — — — — —	— — — — — — — — —	0 0.36 0.36 0.15 0.15 0.15 0.15 0.17	5,500 6,200ρ 8,000ρ — — — — —	4 42 54 12.5* 18* 20* 20* 27*
2X2-A	Half-Wave, High-Voltage Rectifier	4AB	4 17/32	1 5/16	2.5	1.75	CU							Max. DC output current=7.5 ma; max. peak inverse voltage=12,500 volts; rms supply voltage=5,500 volts; max. peak current=60 ma											
GL-3B28	Half-Wave Gas Rectifier	4P	6 5/32	2 1/16	5.2	5.0	CF						Tube voltage drop=10 v.	For 10,000 peak inverse volts, 1 peak amp. max.; 0.25 avg. amp. max. For 5,000 peak inverse volts, 2 peak amp. max.; 0.5 avg. amp. max.											
5R4-GYA	Full-Wave, High-Vacuum Rectifier	5T	4 13/16	1 5/16	5.0	2.0	CF						Tube voltage drop per section= 67 volts at 250 ma DC	Max. DC output current=250 ma; max. peak inverse voltage=2,800 volts; rms supply voltage per plate= 750 volts; max. peak current per plate=650 ma											
5Y3WGTBθ(R)	See 6087(R)																								
6AC7WAθ(R)	See 6134(R)																								
	Power Amplifier Pentode	7BK	2⅛	¾	6.3	0.15	CU	—	300¶	2.75¶	250¶	0.75¶	Class A Amplifier	2.70	180	180	−9.0	15†	2.5†	—	2,300	—	—	10,000	1.1
6AN5σ	Beam Power Amplifier	7BD	2⅛	¾	6.3	0.45	CU	—	120¶	4.2¶	120¶	1.4	Class A Amplifier	4.2	120	120	Rk= 120	35†	12†	—	8,000	—	—	2,500	1.3
6AS6σ	Dual-Control RF Pentode	7CM	1¾	¾	6.3	0.175	CU	—	180¶	1.7¶	140¶	0.75	Class A Amplifier	— —	120 120	120 120	−2.0 −2.0	5.2 3.6	3.5 4.8	— —	3,200 1,850	Eg_3=0 volt Eg_3=−3 volt	— —	— —	
6AS7GA	Low-Mu Twin Triode	8BD	4¼	1 5/16	6.3	2.5	CU	—	250¶	13§	—	—	DC Amplifier	—	135	—	Rk= 250	125	—	—	7,000	2.0			
6C4WAθ(R)σ	See 6100θ(R)																								
6D4	Gas Triode	5AY	2⅛	¾	6.3	0.25	CU						Relay Control	Tube voltage drop*=16 volts at 25 ma DC; max. DC cathode current=25 ma; max. voltage between elements=450 volts; max. peak cathode current=100 ma											

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Industrial Receiving and Communication Tubes

GENERAL ELECTRIC

TYPE	DESCRIPTION	GENERAL: Base Connections	Dimensions In Inches: Length	Dimensions In Inches: Diameter	Cathode: Volts	Cathode: Current Amps.	Cathode: Type	MAXIMUM RATINGS: Max. Freq. for Full Ratings, mc.	DC Plate Volts	Plate Dissipation Watts	Screen Grid No. 2, Volts	Screen Dissipation Watts	TYPICAL OPERATING CONDITIONS: Class and Type of Service	Plate Input Watts	Voltages: Plate	Voltages: Screen Grid No. 2	Voltages: Control Grid No. 1	Currents: Plate, ma	Currents: Screen Grid No. 2, ma	Currents: Control Grid No. 1, ma	GM. μmhos	Triode μ Factor	Drive Watts	Load for Rated Output Ohms	RMS Power Output Watts
6DJ8	Twin Triode	9DE	2 3/16	7/8	6.3	0.365	—	—	130	1.8	—	—	Class A Amplifier	—	90	—	−1.3	15	—	—	12,500	33	—	—	—
6J4σ	High-Frequency Triode	7BQ	2 1/8	3/4	6.3	0.4	CU	—	150¶	2.25¶	—	—	Class A Amplifier	2.25	150	—	Rk= 100	15‡	—	—	12,000	55	—	—	—
6SK7WAθ(R)	See 6137(R)																								
6X4WAθ(R)σ	See 6202(R)																								
12AT7WB θ(R)σ	See 6201																								
12AY7σ	Twin Triode	9A	2 3/16	7/8	6.3 12.6	0.3 0.15	CU	—	300¶	1.5§¶	—	—	Class A Amplifier (per section)	0.75	250	—	−4.0	3.0	—	—	1,750	44	—	—	—
28D7	Double Beam Power Amplifier	8BS	3 3/32	1 3/16	28.0	0.4	CU	—	100¶	3.0§¶	67.5¶	0.5¶	Class A Amplifier (per section)	0.35	28	28	−3.5	12.5†	1.0†	—	3,400	—	—	4,000	0.100
407Aσ	Medium-Mu Twin Triode	407A	1 3/4	7/8	40 2.0	0.05 0.1	CU	—	330■	1.35§■	—	—	Class A Amplifier	—	150	—	Rk= 240	8.2	—	—	5,500	35	—	—	—
408Aσ	Sharp-Cutoff Pentode	7BD	1 3/4	3/4	2.0	0.05	CU	—	180■	1.7■	180‡■	0.5■	Class A Amplifier	—	120	120	Rk= 200	7.0	2.2	—	5,000	—	—	—	—
83	Full-Wave Mercury-Vapor Rectifier	4C	5 3/8	2 1/16	5.0	3.0	CF	Tube voltage drop *=15 volts					Max. DC output current=225 ma; max. peak inverse voltage=1,550 volts; max. rms supply voltage per plate=450 volts; max. peak current per plate=1,000 ma													
502A	Thyratron	6BS	2 5/8	1 5/16	6.3	0.6	CU	Anode voltage drop=8 volts					Controlled Rectifier	Max. DC cathode current■=100 ma; max. peak inverse voltage■= 1,300 volts; max. peak cathode current■=1.0 ampere											
807	Beam Power Amplifier	5AW	5 3/4	2 1/16	6.3	0.9	CU	60	400■	25■	400■T	—	AB1τ CCS	24	400	400T	−45	60† −140x	—	0	6,000	8	0	3,000	15
									400■	30■	400■T	—	AB1τ ICAS	24	400	400T	−45	60† −140x	—	0	6,000	8	0	3,000	15
													AB1(2) CCS	57.2x	400	300	−30	56† −143x	2† −16x	0	—	—	0	6,800ρ	36
									600■	25■	300■	3.5■	AB1(2) CCS	70.5x	500	300	−32	44† −141x	1† −15x	0	—	—	0	8,200ρ	46
													AB1(2) CCS	83.3x	600	300	−34	36† −139x	0.6† −15x	0	—	—	0	10,000ρ	56
									750■	30■	300■	3.5■	AB1(2) ICAS	105x	750	300	−35	30† −139x	0.5† −16x	0	—	—	0	12,000ρ	72
													AB2(2) CCS	96x	400	300	−28	72† −240x	2.0† −20x	0.2	—	—	0.2	3,700ρ	55
									600■	25■	300■	3.5■	AB2(2) CCS	120x	500	300	−30	60† −240x	0.9† −20x	0.2	—	—	0.2	4,600ρ	75
													AB2(2) CCS	120x	600	300	−32	48† −200x	0.7† −18x	0.2	—	—	0.1	6,900ρ	80
									750■	30■	300■	3.5■	AB2(2) ICAS	180x	750	300	−35	30† −240x	0.5† −20x	0.2	—	—	0.2	7,300ρ	120
													B-P CCS	30	400	300	−40	75	5	0	—	—	0.4	—	9*
									600■	25■	300■	2.5■	B-P CCS	35	500	300	−40	70	4	0	—	—	0.3	—	11*
													B-P CCS	37.5	600	300	−40	62.5	4	0	—	—	0.2	—	12.5*
									750■	30■	300■	2.5■	B-P ICAS	45	750	300	−40	60	3	0	—	—	0.2	—	15*
													C-P CCS	26	325	250	−75	80	6	3.5	—	—	0.3	—	17*
									475■	16.5■	300■	2.5■	C-P CCS	32	400	250	−75	80	6	3.5	—	—	0.3	—	22*
													C-P CCS	39.4	475	250	−85	83	8	4	—	—	0.4	—	28*
									600■	25■	300■	2.5■	C-P ICAS	60	600	300	−85	100	8	4	—	—	0.4	—	44*
													C-T CCS	40	400	250	−45	100	8	4	—	—	0.3	—	25*
									600■	25■	300■	3.5■	C-T CCS	50	500	250	−45	100	8	4	—	—	0.3	—	32*
													C-T CCS	60	600	250	−45	100	8	4	—	—	0.3	—	40*
									750■	30■	300■	3.5■	C-T ICAS	75	750	250	−45	100	8	4	—	—	0.3	—	54*
GL-811-A	High-Perveance High-Mu Zero—Bias Triode	3G	6 13/32	2 7/16	6.3	4.0	TF						B(2) CCS	262x	750	—	0	32† −350x	—	—	—	160	9.7	5,100ρ	178
									1,250	45	—	—	B(2) CCS	350x	1,000	—	0	44† −350x	—	—	—	160	7.5	7,400ρ	248
													B(2) CCS	325x	1,250	—	0	50† −260x	—	—	—	160	3.8	12,400ρ	235
									1,500	65	—	—	B(2) ICAS	448x	1,250	—	0	54† −350x	—	—	—	160	6	9,200ρ	310
													B(2) ICAS	470x	1,500	—	−4.5	32† −313x	—	—	—	160	4.4	12,400ρ	340
									1,000	30	—	—	C-P CCS	115	1,000	—	−55	115	—	45*	—	160	6.1*	—	88*
									1,250	45	—	—	C-P ICAS	175	1,250	—	−120	140	—	45*	—	160	10*	—	135*
									1,250	45	—	—	C-T CCS	175	1,250	—	−50	140	—	45*	—	160	5.7*	—	135*
									1,500	65	—	—	C-T ICAS	260	1,500	—	−70	173	—	40*	—	160	7.1*	—	200*
									1,750■‡	45■	—	—	C-Tω CCS	204	1,750‡	—	−70	130	—	46*	—	160	12*	—	175*
									1,125■	45■	—	—	C-Tβ CCS	175	1,125	—	−35	125	—	25*	—	160	3*	—	135*
GL-812-A	High-Perveance Medium-Mu Triode	3G	6 13/32	2 7/16	6.3	4.0	TF	30	1,250■	45■	—	—	B(2) CCS	325x	1,250	—	−40	22† −260x	—	—	—	29	3.5	12,200ρ	235
									1,500■	65■	—	—	B(2) ICAS	465x	1,500	—	−48	28† −310x	—	—	—	29	5	13,200ρ	340
									1,000■	30■	—	—	C-P CCS	115	1,000	—	−110	115	—	33*	—	29	6.6*	—	85*
									1,250■	45■	—	—	C-P ICAS	175	1,250	—	−115	140	—	35*	—	29	7.6*	—	130*
									1,250■	45■	—	—	C-T CCS	175	1,250	—	−90	140	—	30*	—	29	5.4*	—	130*
									1,500■	65■	—	—	C-T ICAS	260	1,500	—	−120	173	—	30*	—	29	6.5*	—	190*
									1,750■‡	45■	—	—	C-Tω CCS	236	1,740‡	—	−100	150	—	29*	—	29	12*	—	200*
GL-816	Half-Wave, Mercury-Vapor Rectifier	4P	4 11/16	1 5/16	2.5	2.0	CF	—	—	—	—	—	max. peak plate current■=0.5 ampere; max. average plate current■=0.125 ampere Tube voltage drop=15 volts; max. peak inverse voltage■=7,500 volts;													
GL-866-A	Half-Wave, Mercury-Vapor Rectifier	866-A	6 9/16	2 7/16	2.5	5.0	CF	—	—	—	—	—	Tube voltage drop= 15 volts	For 10,000 peak inverse volts, max. peak current■=1.0 amp.; max. average current■=0.25 amp. For 5,000 peak inverse volts, max. peak current■= 1.0 amp.; max. average current■=0.25 amp. For 2,500 peak inverse volts, max. peak current■=2.0 amp.; max. average current■=0.5 amp.											
GL-872A/ 872	Half-Wave, Mercury-Vapor Rectifier	872-A	8 1/2	2 5/16	5.0	7.5	CF	—	—	—	—	—	Tube voltage drop= 15 volts	For 10,000 peak inverse volts, max. peak current■=5.0 amp.; max. average current■=1.25 amp. For 5,000 peak inverse volts, max. peak current■= 5.0 amp.; max. average current■=1.25 amp.											

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Industrial Receiving and Communication Tubes

GENERAL ELECTRIC

TYPE	DESCRIPTION	GENERAL						MAXIMUM RATINGS					TYPICAL OPERATING CONDITIONS												
		Base Connections	Dimensions In Inches: Length	Dimensions In Inches: Diameter	Cathode: Volts	Cathode: Current Amps.	Cathode: Type	Max. Freq. for Full Ratings, mc.	DC Plate Volts	Plate Dissipation Watts	Screen Grid No. 2, Volts	Screen Dissipation Watts	Class and Type of Service	Plate Input Watts	Voltages: Plate	Voltages: Screen Grid No. 2	Voltages: Control Grid No. 1	Currents: Plate, ma	Currents: Screen Grid No. 2, ma	Currents: Control Grid No. 1, ma	GM. μmhos	Triode μ Factor	Drive Watts	Load for Rated Output Ohms	RMS Power Output Watts
2050	Thyratron	6BS	4⅛	1 5/16	6.3	0.6	CU	Anode voltage drop=8 volts					Controlled Rectifier	Max. DC cathode current■=100 ma; max. peak inverse voltage■=1,300 volts; max. peak cathode current■=1.0 ampere											
2050A	Thyratron	6BS	3 1/16	1 3/32	6.3	0.6	CU	Anode voltage drop=8 volts					(Same as 2050)												
5636θα(R)	Dual-Control Pentode	8DC	1.375	0.400	6.3	0.15	CU	—	165	0.65	155	0.7	Gated Amplifier	.53 .4	100 100	100 100	Rk= Rk=	5.3 4.0	3.6 5.8	— —	3,200 1,950	G_3 tied to cathode Eg_3=−1.0 volts			
5642α	Half-Wave, High-Voltage Rectifier	5642	2.380	0.400	1.25	0.2	CF	—	—	—	—	—	TV Flyback Rectifier	Voltage drop=30 volts at 4.0 ma DC; max. DC output current=0.25 ma; max. peak inverse voltage=10,000 volts; max. peak current=5.0 ma												
5651σ	Glow-Discharge Diode Voltage Reference	5BO	2⅝	¾	—	—	—	—	—	—	—	—	Max. anode supply voltage■=150 volts; max. DC operating current■=3.5 ma; max. ionization voltage=115 volts. Min. DC operating current=1.5 ma; max. operating voltage=92 volts. Regulation (1.5 to 3.5 ma)=3.0 volts, max.												
5654θ(R)σ	Sharp-Cutoff RF Pentode	7BD	1¾	¾	6.3	0.175	CU	—	200■	1.65■	155■	0.55■	Class A Amplifier	.9	120	120	Rk= 200	7.5	2.5	—	5,000	—	—	—	—
5663σ	Thyratron	6CE	1½	¾	6.3	0.15	CU	—	—	—	—	—	Controlled Rectifier	Anode voltage drop =11 volts; max. DC cathode current■=20 ma; max. peak inverse voltage■=500 volts; max. peak cathode current■=60 ma												
5670θ(R)σ	High-Frequency Twin Triode	8CJ	1¾	⅞	6.3	0.35	CU	—	330■	1.35■	—	—	Class A Amplifier AB_1(1)	1.2 3.8	150 300	— —	Rk= 240 Rk= 800ε	8.2 9.8† −12.6¤	— —	— —	5,500 —	35 —	— —	— 27,000	— 1.0
5686θ(R)σ	Beam Power Amplifier	9G	2 5/16	⅞	6.3 6.3	0.35 0.35	CU	— 160 160	— 275■ —	— 7.5■ —	— 275■ —	— 3.0■ —	Class A Amplifier C-T CCS C-T CCS	6.7 10.0	250 250 250	250 180 250	−12.5 −30 −50	27† 30 40	3‡ 6.5 10.5	— 2.0* 2.0*	3,100 — —	— — —	— 0.1* 0.15*	9,000 — —	2.7 5* 6.5*
5687θσ	Medium-Mu Twin Triode	9H	2 5/16	⅞	12.6 6.3	0.45 0.9	CU	— —	300¶ —	4.2¶§ 7.5¶ω	— —	— —	Class A Amplifier (per section)	4.1 3.0	180 250	— —	−7.0 −12.5	23.0 12.0	— —	— —	8,500 5,400	17 16	— —	— —	— —
5687WAθ(R)σ See 5687θ																									
5691	High-Mu Twin Triode	8BD	2⅞	1 3/32	6.3	0.6	CU	—	275■	1.0■§	—	—	Class A Amplifier (per section)	.58	250	—	−2.0	2.3	—	—	1,600	70	—	—	—
5692	Medium-Mu Twin Triode	8BD	2⅞	1 3/32	6.3	0.6	CU	—	275■	1.75■§	—	—	Class A Amplifier (per section)	1.6	250	—	−9.0	6.5	—	—	2,200	20	—	—	—
5693	Sharp-Cutoff Pentode	8N	2⅝	1 5/16	6.3	0.3	CU	—	300■	2.0■	125■	0.3■	Class A Amplifier	.75	250	100	−3.0	3.0	0.85	—	1,650	—	—	—	—
5718θα	Medium-Mu Triode	8DK	1.375	0.400	6.3	0.15	CU	— 500	165■	0.9■	—	—	Class A Amplifier UHF Oscillator	.85 3.0	100 150	— —	Rk= 150 —	8.5 20.0	— —	— —	5,800 —	27 —	— —	— —	— 0.9*
5719θα	High-Mu Triode	8DK	1.375	0.400	6.3	0.15	CU	—	165■	0.1■	—	—	Class A Amplifier	.073	100	—	Rk= 1500	0.73	—	—	1,700	70	—	—	—
5725(R)σ	Dual-Control RF Pentode	7CM	1¾	¾	6.3	0.175	CU	—	200■	1.65■	155■	0.55■	Class A Amplifier	.62	120	120	−2.0	5.2	3.5	—	3,200	Eg=0 volts			
5726(R)σ	Twin Diode	6BT	1¾	¾	6.3	0.30	CU	—	—	—	—	—	Half Wave Rectifier	Tube voltage drop per section=10 volts at 60 ma DC; max. DC output current er plate■=10 ma; max. peak inverse voltage■=360 volts; rms supply voltage per plate=117 volts; max. peak current per plate■=60 ma											
5727(R)σ	Thyratron	7BN	2⅛	¾	6.3	0.6	CU	—	—	—	—	—	Controlled Rectifier	Anode voltage drop=8 volts; max. DC cathode current■=100 ma; max. peak inverse voltage■=1,300 volts; max. peak cathode current■=500 ma												
5749(R)σ	Remote-Cutoff RF Pentode	7BK	2⅛	¾	6.3	0.3	CU	—	330■	3.1■	300■▲	1.1■	Class A Amplifier	2.75 1.08	250 100	100 100	Rk= 68 Rk= 68	11.0 10.8	4.2 4.4	— —	4,400 4,300	— —	— —	— —	— —
5750θ(R)σ	Pentagrod Converter	7CH	2⅛	¾	6.3	0.3	CU	—	330■	1.1■	110■	1.0■	Converter	.65	250	100	−1.5	2.6	7.5	osc. Ig_1=0.5 ma; Rg_1=20,000 ohms				
5751θ(R)σ	High-Mu Twin Triode	9A	2 5/16	⅞	12.6 6.3	0.175 0.35	CU	—	330■	0.8■	—	—	Class A Amplifier (per section)	.25 .08	250 100	— —	−3.0 −1.0	1.0 0.8	— —	— —	1,200 1,200	70 70	— —	— —	— —
5763σ	Beam Power Amplifier Pentode	9K	2⅝	⅞	6.0	0.75	CU	30-Amp. 30-Amp. 30-Amp. 30-Amp. 50-Amp. 175-Dbl. 175-Trip.	250■ 300■ 300■ 350■ 300■ 300■	8.0■ 12.0■ 12.0■ 13.5■ 12.0■ 12.0■	250■ 250■ 250■ 250■ 250■ 250■	1.5■ 1.5■ 2.0■ 2.0■ 2.0■ 2.0■	C-P CCS C-P ICAS C-T CCS C-T ICAS C-T CCS Doubler-CCS Tripler-CCS	10 15 15 17 15 12 8.5	250 300 300 350 300 300 300	250 250 250 250 250 250 235	−39 −42.5 −28.5 −28.5 −60 −75 −100	40 50 50 48.5 50 40 35	5.6 6 6.6 6.2 5 4 5	1* 2.4* 1.6* 1.6* 3* 1* 1*	7,000 7,000 — — — — —	— — — — — — —	0.05* 0.15* 0.1* 0.1* 0.35* 0.6* 0.6*	— — — — — — —	6.4* 10* 10.3* 12* 7* 2.1* 1.3*
5814-Aθ(R)σ	Medium-Mu Twin Triode	9A	2 5/16	⅞	12.6 6.3	0.175 0.35	CU	—	330■	3.0§	—	—	Class A Amplifier (per section)	2.7 1.2	250 100	— —	−8.5 0.0	10.5 11.8	— —	— —	2,200 3,100	17 19.5	— —	— —	— —
5823	Gas Triode	4CK	1⅞	¾	—	—	—	—	—	—	—	—	Peak cathode current■=100 ma max; d-c cathode current■=25 ma max; starter voltage drop■=61 volts; anode drop■=62 volts												
5824	Beam Power Amplifier	7AC	4⅝	1 13/16	25.0	0.3	CU	—	200¶	12.5¶	135¶	2.0¶	Class A Amplifier	9.4	135	135	−22.0	61† −69¤	2.5† −14.5¤	—	5,000	—	—	1,700	4.3
5840θα	Sharp-Cutoff RF Pentode	8DL	1.375	0.400	6.3	0.15	CU	—	165■	0.8■	155■	0.35■	Class A Amplifier	.75	100	100	Rk= 150	7.5	2.4	—	5,000	—	—	—	—
5844σ	Medium-Mu Twin Triode	7BF	2⅛	¾	6.3	0.3	CU	—	200■	1.0■§	—	—	Class A Amplifier (per section)	.75	100	—	Rk= 470	4.8	—	—	3,700	28	—	—	—
5879σ	Sharp-Cutoff AF Pentode	9AD	2¾	⅞	6.3	0.15	CU	— —	300¶ 250¶	1.25¶ 1.5¶	250¶ —	0.25¶ —	Class A Amplifier (pentode con.) Class A Amplifier (Triode con.)	.45 1.4	250 250	100 —	−3.0 −8.0	1.8 5.5	0.4 —	— —	1,000 1,530	— 21	— —	— —	— —

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Industrial Receiving and Communication Tubes

GENERAL ELECTRIC

TYPE	DESCRIPTION	GENERAL						MAXIMUM RATINGS					TYPICAL OPERATING CONDITIONS												
		Base Connections	Dimensions In Inches		Cathode			Max. Freq. for Full Ratings, mc.	DC Plate Volts	Plate Dissipation Watts	Screen Grid No. 2, Volts	Screen Dissipation Watts	Class and Type of Service	Plate Input Watts	Voltages			Currents			GM. μmhos	Triode μ Factor	Drive Watts	Load for Rated Output Ohms	RMS Power Output Watts
			Length	Diameter	Volts	Current Amps.	Type								Plate	Screen Grid No. 2	Control Grid No. 1	Plate, ma	Screen Grid No. 2, ma	Control Grid No. 1, ma					
5881	Beam Power Amplifier	7AC	3 15/32	1 7/16	6.3	0.3	CU	—	360¶	23¶	270¶	3.0¶	Class A Amplifier (single tube)	13.3	350	250	−18	53† −65*	2.5† −8.5*	—	5,200	—	—	4,200	11.3
								—	360¶	23¶	270¶	3.0¶		18.8	250	250	−14	75† −80*	4.3† −7.6*	—	6,100	—	—	2,500	6.7
								—	360¶	23¶	270¶	3.0¶	Class A (2 tubes, push-pull)	30	250	250	−16.0	120† −140*	10† −16*	—	—	—	—	5,000ρ	14.5
														36.2	270	270	−17.5	134† −155*	11† −17*	—	—	—	—	5,000ρ	17.5
								—	360¶	23¶	270¶	3.0¶	Class AB_1 (2 tubes, push-pull)	32	360	270	−22.5	88† −132*	5.0† −15*	—	—	—	—	6.600ρ	26.5
								—	360¶	23¶	270¶	3.0¶		32	360	270	−22.5	88† −140	5.0† −11*	—	—	—	—	3,800ρ	18.0
5886	Electrometer Pentode	5886	1½	0.400	1.25	0.01	—	—	45	—	45	—	Elec-trometer	—	12	4.5	-2.0	6.0	3.6	—	14	—	—	—	—
5896θa	High-Frequency Twin Diode	8DJ	1.375	0.400	6.3	0.3	CU	—	—	—	—	—	Full-Wave Rectifier	Tube voltage drop (per section)=4.5 volts at 18 ma DC; max. DC output per plate■=10 ma; max. perk inverse voltage■=460 volts; rms supply voltage per plate=150 volts; max. peak current per plate■=60 ma												
5899θa	Semi-Remote-Cutoff RF Pentode	8DL	1.375	0.400	6.3	0.15	CU	—	165■	0.75■	155■	0.35■	Class A Amplifier	.72	100	100	Rk= 120	7.2	2.0	—	4,500	—	—	—	—
5902θa	Beam Power Amplifier	8DL	1.750	0.400	6.3	0.45	CU	—	165■	3.7■	155■	0.4■	Class A Amplifier	3.3	110	110	Rk= 270	30	2.2	—	4,200	—	—	3,000	1.0
5963σ	Medium-Mu Twin Triode	9A	2 3/16	7/8	12.6	0.15	CU	—	250■	2.5■§	—	—	Class A Amplifier (per section)	.58	67.5	—	0	8.5	—	—	3,200	21	—	—	—
					6.3	0.3		—	—	—	—	—	Freq. Halfer (per section)	— .75	150♦ 150♦	— —	−15 0	0 5.1	Rg_1=47,000 Rg_1=47,000		— —	— —	— —	20,000 20,000	— —
5964σ	High-Mu Twin Triode	7BF	2⅛	¾	6.3	0.45	CU	—	250■	1.5■§	—	—	Class A Amplifier (per section)	.95	100	—	Rk= 50	9.5	—	—	6,000	39	—	—	—
								—	—	—	—	—	Freq. Halfer (per section)	— .75	150♦ 150♦	— —	−10 0	0 5.0	Rg_1=47,000 Rg_1=47,000		— —	— —	— —	20,000 20,000	— —
5965σ 5965Aσ	Twin Triode	9A	2 3/16	7/8	12.6	0.225	CU	—	330	2.4■§	—	—	Class A Amplifier (per section)	1.28	150	—	Rk= 220	8.5	—	—	6,700	47	—	—	—
					6.3	0.45		—		4.4■ω	—	—	Freq. Halfer (Per section)	1.25	150♦ 150♦	— —	— −5.5	10.5* 0.15*	I_C=140 ma —		— —	— —	— —	7,200 7,200	— —
5998A	Low-Mu Twin Triode	8BD	4¼	1 9/16	6.3	2.4	CU	—	275■	15§■	—	—	Class A Amplifier	11	110♦		Rk= 105	100	—	—	15,500	5.4	—	—	—
6005θ(R)σ	Beam Power Amplifier	7BZ	2⅝	¾	6.3	0.45	CU	—	275	11	275	2.2	Class A Amplifier (single tube)	11	250	250	−12.5	45† −47*	4.5† −7.0*	—	4,100	—	—	5,000	4.5
														5.4	180	180	−8.5	29† −30*	3.0† −4.5*	—	3,700	—	—	5,500	2.0
								—	—	—	—	—	AB_1(2) CCS	—	250	250	−15	70† −79*	5† −13*	—	—	—	—	10,000ρ	10.0
6012	Thyratron	6CO	3⅞	1⅝	6.3	2.6	CU	—	—	—	—	—	Contro'ed Rectifier	Tube voltage drop■=10 volts; max. peak inverse voltage■=1,300 volts; max. peak current■=5 amp.; max. average current■=0.5 amp.; max peak forward voltage■=650 volts.												
6021θa(R)	Medium-Mu Twin Triode	8DG	1.375	0.400	6.3	0.3	CU	—	165■	0.7■§	—	—	Class A (per seciton)	.65	100	—	Rk= 150	6.5	—	—	5,400	35	—	—	—
6046	Beam Power Amplifier	7AC	3 5/16	1 5/32	25.0	0.3	CU	—	200¶	10¶	125¶	1.5¶	Class A Amplifier	9.2	200	125	Rk= 180	46†	2.2†	—	8,000	—	—	4,000	3.8
														5.5	110	110	−7.5	49†	4.0†	—	8,000	—	—	2,000	2.1
													Relay Energizer	— —	115♦ 115♦	115♦ 115♦	0 −25	105 0.1*	12.8 —		Rg_1=2 megohms Rg_2=1000 ohms			500 500	— —
6072Aθ(R)σ	Twin Triode	9A	2 3/16	7/8	12.6	0.175	CU	—	330■	1.6■§	—	—	Class A (per section)	.75	250	—	−4.0	3.0	—	—	1,750	44	—	—	—
					6.3	0.35																			
6080θ	Low-Mu Twin Triode Power Amplifier	8BD	4 1/16	1 23/32	6.3	2.5	CU	—	250■	13■§	—	—	DC Amplifier (per section)	17	135	—	Rk= 250	125	—	—	7,000	2	—	—	—
6087θ(R)	See 6087/5Y3WGTBθ(R)																								
6087θ(R)	Full-Wave, High-Vacuum Rectifier	5L	3 5/16	1 5/32	5.0	2.0	CU	—	—	—	—	—	Full-Wave Rectifier	Tube voltage drop per section=50 volts at 125 ma DC; max. DC output current=125 ma; max. peak inverse voltage=1,400 volts; rms supply voltage per plate=350 volts; max. peak current per plate=375 ma												
6111θa(R)	Medium-Mu Twin Triode	8DG	1.375	0.400	6.3	0.3	CU	—	165■	0.95■§	—	—	Class A Amplifier (per section)	.85	100	—	Rk= 220	8.5	—	—	5,000	20	—	—	—
6112θa(R)	High-Mu Twin Triode	8DG	1.375	0.400	6.3	0.3	CU	—	165■	0.3■§	—	—	Class A Amplifier (per section)	.26	150	—	Rk= 820	1.75	—	—	2,500	70	—	—	—
														.08	100	—	Rk= 1,500	0.8	—	—	1,800	70	—	—	—
6134	Sharp-Cutoff RF Pentode	8N	2⅝	1 5/16	6.3	0.45	CU	—	330	3.3	330	0.45	Class A Amplifier	3.0	300	150	Rk= 160	10	2.5	—	9,000	—	—	—	—
6135θ(R)σ	Medium-Mu Triode	6BG	2⅛	¾	6.3	0.175	CU	—	330	3.8■	—	—	Class A Amplifier	2.6	250	—	−8.5	10.5	—	—	2,200	17	—	—	—
														1.2	100	—	0	11.8	—	—	3,100	19.5	—	—	—
6136σ	Sharp-Cutoff RF Pentode	7BK	2⅛	¾	6.3	0.3	CU	—	330■	3.3■	165■	0.7■	Class A Amplifier	2.6	250	150	Rk= 68	10.6	4.3	—	5,200	—	—	—	—
														.5	100	100	Rk= 150	5.0	2.1	—	3,900	—	—	—	—
6137θ(R)	Remote-Cutoff RF Pentode	8N	2⅝	1 5/16	6.3	0.3	CU	—	330■	3.3■	140■	0.44■	Class A Amplifier	2.3	250	100	−3	9.2	2.6	—	2,000	—	—	—	—
														1.3	100	100	−1	13.0	4.0	—	2,350	—	—	—	—
6146	Beam Power Amplifier	7CK	3 13/16	1 23/32	6.3	1.25	CU		400■	20■	400■τ	—	AB_1(2) CCS	31.3*	250	250τ	−50	120† −125*	—	0	7,000	4,5	0	5,000ρ	10
													AB_1(2) CCS	40*	400	400τ	−100	40† −100*	—	0	—	—	0	8,000ρ	22
									400■	25■	400■τ	—	AB_1(2)ICAS	40*	400	400τ	−100	40† −100*	—	0	—	—	0	8,000ρ	22
													AB_1(2) CCS	91*	400	190	−40	63† −228*	2.5† −25*	0	—	—	0	4,000ρ	55

(Continued)

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Industrial Receiving and Communication Tubes

GENERAL ELECTRIC

TYPE	DESCRIPTION	GENERAL: Base Connections	GENERAL: Dimensions In Inches: Length	GENERAL: Dimensions In Inches: Diameter	GENERAL: Cathode: Volts	GENERAL: Cathode: Current Amps.	GENERAL: Cathode: Type	MAXIMUM RATINGS: Max. Freq. for Full Ratings, mc.	MAXIMUM RATINGS: DC Plate Volts	MAXIMUM RATINGS: Plate Dissipation Watts	MAXIMUM RATINGS: Screen Grid No. 2, Volts	MAXIMUM RATINGS: Screen Dissipation Watts	TYPICAL OPERATING CONDITIONS: Class and Type of Service	Plate Input Watts	Voltages: Plate	Voltages: Screen Grid No. 2	Voltages: Control Grid No. 1	Currents: Plate, ma	Currents: Screen Grid No. 2, ma	Currents: Control Grid No. 1, ma	GM. μmhos	Triode μ Factor	Drive Watts	Load for Rated Output Ohms	RMS Power Output Watts
(Continued)									600■	20■	250■	3.0■		108*	500	185	−40	57† −215*	2† −25*	0	—	—	0	5,500ρ	70
														120*	600	180	−45	26† −200*	1† −23*	0	—	—	0	7,000ρ	82
													AB_1(2)ICAS	137*	600	200	−50	28† −229*	1† −27*	0	—	—	0	6,000ρ	95
									750■	25■	250■	3.0■		165*	750	195	−50	23† −220*	1† −26*	0	—	—	0	8,000ρ	120
													AB_2(2) CCS	93*	400	175	−41	33† −232*	1.1† −18*	1.6*	—	—	0.2	3,700ρ	62
								60	600■	20■	250■	3.0■		121*	500	175	−44	27† −242*	0.7† −18*	1.9*	—	—	0.3	4,600ρ	83
6146	Beam Power Amplifier	7CK	3 13/16	1 23/32	6.3	1.25	CU							124*	600	165	−44	22† −207*	0.6† −17*	1.1*	—	—	0.2	6,800ρ	90
													AB_2(1)ICAS	162*	600	190	−48	28† −270*	1.2† −20*	2.0*	—	—	0.3	5,000ρ	113
									750■	25■	250■	3.0■		180*	750	165	−46	22† −240*	0.3† −20*	2.6*	—	—	0.4	7,400ρ	131
											250■	2.0■	C-P CCS	45	400	150	−87	112	7.8	3.4*	—	—	0.4*	—	32*
														45	475	135	−77	94	6.4	2.8*	—	—	0.3*	—	34*
									600■	16.7■	250■	2.0■	C-P ICAS	67.2	600	150	−87	112	7.8	3.4*	—	—	0.4*	—	52*
									600■	20■	250■	3.0■	C-T CCS	67.2	500	170	−66	135	9	2.5*	—	—	0.2*	—	48*
														67.2	600	150	−58	112	9	2.8*	—	—	0.2*	—	52*
									750■	25■	250■	3.0■	C-T ICAS	90	600	180	−71	150	10	2.8*	—	—	0.3*	—	66*
														90	750	160	−62	120	11	3.1*	—	—	0.2*	—	70*
6146A and 6146B								175	—	—	—	—	C-T CCS C-T ICAS	44.8 60	320 400	180 190	−51 −54	140 150	10 10.4	2* 2.2*	— —	— —	3* 3*	— —	25* 35*
6197σ	Sharp-Cutoff Power Amplifier Pentode	9BV	2 5/8	7/8	6.3	0.65	CU	—	300■	7.5■	250■	2.5■	Class A Amplifier	7.5	250	150	−3.0	30	7.0	—	11,000	—	—	—	—
6201σ	High-Frequency Twin Triode	9A	2 3/16	7/8	12.6 6.3	0.15 0.3	CU	—	330	2.5§	—	—	Class A Amplifier (per section)	2.5 .33	250 100	— —	Rk= 200 Rk= 270	10 3.3	— —	— —	5,500 4,000	60 57	— —	— —	— —
6202σ	Full-Wave, High-Vacuum Rectifier	5BS	2 5/8	3/4	6.3	0.6	CU	—	—	—	—	—	Tube voltage drop per section=22 volts at 50 ma DC; max. DC output current■=55 ma; max. peak inverse voltage■=1,375 volts; rms supply voltage per plate=325 volts; max. peak current per plate■=220 ma												
6203θ(R)σ	Full-Wave, High-Vacuum Rectifier	9CD	2 5/8	7/8	6.3	0.9	CU	—	—	—	—	—	Tube voltage drop per section=22 volts at 70 ma DC; max. DC output current■=77 ma; max. peak inverse voltage■=1,375 volts; rms supply voltage per plate=325 volts; max. peak current per plate■=300 ma												
6205θ(R)σ	Sharp-Cutoff RF Pentode	8DC	1.375	0.400	6.3	0.15	CU	—	165■	0.8■	155■	.35■	Class A Amplifier	.75	100	100	Rk= 150	7.5	2.4	—	5,000	—	—	—	—
6206θ(R)σ	Semi-Remote-Cutoff RF Pentode	8DC	1.375	0.400	6.3	0.15	CU	—	165■	0.75■	155■	.35■	Class A Amplifier	.72	100	100	Rk= 120	7.2	2.2	—	4,500	—	—	—	—
6211σ	Medium-Mu Twin Triode	9A	2 3/16	7/8	12.6	0.15	CU	—	200■	1.5■§	—	—	Class A (per section)	.46	100	—	Rk= 470	4.6	—	—	3,600	27	—	—	—
6211Aσ					6.3	0.3		—			—	—	Freq. Halfer (per section)	— —	150♦ 150♦	— —	0 −10 max.	4.8 min. 0.1	— —	Rg_1=47,000 Rg_1=47,000	— —	— —	20,000 20,000	—
6216	Beam Power Amplifier	9CE	2 5/8	7/8	6.3	1.2	—	—	300	10	200	2.0	Class AA Amplifier	—	200	100	−6.0	47*	2.0*	—	8,800	—	3.8	—	—
6222θα	High-Mu Triode	8HF	1.375	0.400	6.3	0.175	CU	—	165■	0.55■	—	—	Class A Amplifier	.07	100	—	Rk= 1500	0.7	—	—	1,700	70	—	—	—
6265θ(R)σ	Sharp-Cutoff RF Pentode	7CM	2 1/8	3/4	6.3	0.175	CU	—	300¶	2.0¶	300¶♦	0.5¶	Class A Amplifier	1.85	250	150	Rk= 100	7.4	2.9	—	4,600	—	—	—	—
6336A	Low-Mu Twin Triode	8BD	4.750	2.070	6.3	5.0	CU	—	400■	30■§	—	—	DC Amplifier (per section)	35	190	—	Rk= 200	185	—	—	13,500	2.7	—	—	—
6350σ	Medium-Mu Twin Triode	9JZ	2 5/8	7/8	12.6 6.3	0.3 0.6	CU	—	330■	4.0■§	—	—	Class A Amplifier (per section)	1.65	150	—	−5.0	11	—	—	4,600	18	—	—	—
													AB_1(2) CCS (Both sec. in push-pull)	13.2*	200	200	−21.5	30† −66*	2.4† −14*	0	—	—	0	6,500ρ	7
									300■	7■§	200■	2■ε		17.3*	250	200	−21.5	30† −69*	1.4† −12.4*	0	—	—	0	8,000ρ	9.3
														21.6*	300	200	−21.5	30† −72*	1.2† −12.6*	0	—	—	0	10,000ρ	12
													AB_2(2) CCS (Both sec. in push-pull)	16.4*	200	200	−21.5	30† −82.2*	2.4† −19*	0.44	—	—	0.02*	5,000ρ	8.7*
									300■	7■§	200■	2■ε		25*	250	200	−21.5	30† −100*	1.4† −13*	1.24	—	—	0.04*	5,000ρ	14*
														30*	300	200	−21.5	30† −100*	1.2† −11.4*	1.12	—	—	0.04*	6,500ρ	17.5*
6360σ	Twin Tetrode Power Amplifier	9PW	3 1/16	7/8	12.6 6.3	0.41 0.82	CU						C-T CCS (Both sec. in push-pull)	14	200	200♦	Rg_1= 15,000	70	2.2	2.7*	Rg_2=22,000	0.14*	—	8.4*
								200	300■	5■§	200■	2■ε		16.8	250	250♦	Rg_1= 18,000	67	1.8	2.2*	Rg_2=47,000	0.12*	—	11*
														22.5	300	175	−40	75	2.3	1.8*	—	0.1*	—	14.5*
													C-T ICAS (Both sec. in push-pull	16.8	200	200♦	Rg_1= 15,000	84	3.1	3*	Rg_2=8,200	0.18*	—	10*
								200	300■	7■§	200■	2■ε		20	250	250♦	Rg_1= 18,000	80	2.4	2.5*	Rg_2=27,000	0.15*	—	13*
														30	300	200	−45	100	3.0	3*	—	0.2*	—	18.5*
								200	300■	5■§	200■	2■ε	C-T CCS (Freq. tripler both sec.)	11.4	200	155	−105	57	3	3.2*	—	0.35*	—	3.8*
														12.5	250	160	−94	50	1.9	2*	—	0.23*	—	5*
														14.4	300	150	−100	48	2	2*	—	0.23*	—	6.5*

(Continued)

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Industrial Receiving and Communication Tubes

GENERAL ELECTRIC

TYPE	DESCRIPTION	GENERAL						MAXIMUM RATINGS					TYPICAL OPERATING CONDITIONS												
		Base Connections	Dimensions In Inches		Cathode			Max. Freq. for Full Ratings, mc.	DC Plate Volts	Plate Dissipation Watts	Screen Grid No. 2, Volts	Screen Dissipation Watts	Class and Type of Service	Plate Input Watts	Voltages			Currents			GM. μmhos	Triode μ Factor	Drive Watts	Load for Rated Output Ohms	RMS Power Output Watts
			Length	Diameter	Volts	Current Amps.	Type								Plate	Screen Grid No. 2	Control Grid No. 1	Plate, ma	Screen Grid No. 2, ma	Control Grid No. 1, ma					
(Continued)																									
6360σ	Twin Tetrode Power Amplifier	9PW	3 1/16	7/8	12.6 6.3	0.41 0.82	CU	200 200	300■ 240■	7■§ 3.3■§ 4.6■§	200■	2■ε 1.3■ε	C-T ICAS (Freq. tripler, both sec.) C-P CCS C-P ICAS	15.6 18 19.5 19.5 13.4 17.2	200 250 300 300 200 200	175 175 175 150 170 165	−102 −102 −100 −100 −50 −50	78 72 65 65 67 86	5.2 4.1 2.7 3.5 2.6 3.1	4.6* 3.8* 2.4* 3.8* 1.5* 3.3*	— — — — — —	— — — — — —	0.52* 0.43* 0.28* 0.45* 0.1* 0.2*	— — — — — —	4.5* 6.2* 7.2* 7.8* 8.1* 9.8*
6386θ(R)σ	Medium-Mu Remote-Cutoff Twin Triode	8CJ	1¾	7/8	6.3	0.35	CU	—	300¶	1.5¶§	—	—	Class A Amplifier (per section)	.96	100	—	Rk=200	9.6	—	—	4,000	17	—	—	—
6397a	Power Amplifier Pentode	6CL	1.60	0.400	2.5 1.25	0.0625 0.125	CF	—	135■	1.5■	135■	0.6■ε	Class A Amplifier	.9	125	125	−7.5	7.25	1.2	—	1,950	—	—	—	—
6414θ(R)σ	Twin Triode	9A	2 5/8	7/8	12.6 6.3	0.225 0.45	CU	— —	200■ —	2.2■§ 4.0■ε	— —	— —	Class A Amplifier (per section)	1.44 — 1.7	180 150 100	— — —	−2.0 −4.8 —	8.0 0.15 17.0	— — Ic=0.2 ma	— — —	5,550 — —	42.5 — —	— — —	— — —	— — —
6463σ	Medium-Mu Twin Triode	9CZ	2 5/8	7/8	12.6 6.3	0.3 0.6	CU	—	300¶	4.0¶§ 7.0¶ε	— — —	— — —	Class A (per section) Freq. Halfer (per section)	3.7 2.9 .2	250 100 200	— — —	Rk=620 — −11	14.5 29 1.0	— Ic=0.2 ma —	— — —	5,200 — —	20 — —	— — —	— — —	— — —
6485σ	Sharp-Cutoff RF Pentode	7BK	2 1/8	¾	6.3	0.45	CU	—	300¶	3.2¶	150¶	0.6¶	Class A Amplifier	3.0	300	150	Rk=160	10	2.5	—	9,000	—	—	—	—
6550	Beam Power Amplifier	7AC	4¾	2 1/16	6.3	1.8	—	—	660	42	440	6.0	Class A Amplifier	—	400	225	−16.5	87	4.0	—	—	—	2.0	—	—
6660σ	Remote-Cutoff RF Pentode	7BK	2 1/8	¾	6.3	0.3	CU	—	330	3.3	330♦	0.65	Class A Amplifier	2.75 1.08	250 100	100 100	Rk=68 Rk=68	11 10.8	4.2 4.4	— —	4,400 4,300	Ec3=0 volt Ec3=0 volt			
6661σ	Sharp-Cutoff RF Pentode	7CM	2 1/8	¾	6.3	0.15	CU	—	330	3.3	330♦	0.65	Class A Amplifier	1.85	250	150	Rk=100	7.4	2.6	—	4,600	Ec3=0 volt			
6662σ	Remote-Cutoff RF Pentode	7CM	2 1/8	¾	6.3	0.15	CU	—	330	3.3	330♦	0.55	Class A Amplifier	2.3 .9	250 100	100 100	Rk=80 Rk=80	9.2 9.0	3.3 3.5	— —	3,600 3,650	Ec3=0 volt Ec3=0 volt			
6663σ	Twin Diode	6BT	1¾	¾	6.3	0.3	CU	—	—	—	—	—	Rectifier Service	Tube voltage drop per section=10 volts at 60 ma DC; max. peak inverse voltage=250 volts; max. DC output current per plate=9.0 ma; max. peak current per plate=54 ma.											
6664σ	High-Frequency Triode	5CE	2 1/8	¾	6.3	0.15	CU	—	330■	2.8■	—	—	Class A Amplifier	2.5 .37	250 100	— —	Rk=200 Rk=270	10 3.7	— —	— —	5,500 4,000	60 60	— —	— —	— —
6669σ	Beam Power Amplifier	7BZ	2 5/8	¾	6.3	0.45	CU	—	250	12	250	2.0	Class A Amplifier (single tube) AB1 (2 tubes, push-pull)	11.3 17.5	250 250	250 250	−12.5 −15	45† −47‡ 70† −79‡	4.5† −7.0‡ 5.0† −13‡	— —	4,100 —	— —	— —	5,000 10,000ρ	4.5 10
6676σ	Sharp-Cutoff RF Pentode	7CM	2 1/8	¾	6.3	0.3	CU	—	330■	2.3■	330■♦	0.55■	Class A Amplifier	1.63 .35	125 125	125 125	Rk=56 −3.0	13 2.8	3.7	—	8,000	—	—	—	—
6677σ	Power Amplifier Pentode	9BV	2 5/8	7/8	6.3	0.65	CU	—	330	8.5	330♦	2.0■	Class A Amplifier	7.5	250	150	−3.0	30† −31‡	7.0† −7.2‡	—	11,000	g3 tied to k	—	7,500	2.8
6678σ	Triode-Pentode	9AE	2 3/16	7/8	6.3	0.45	CU	— —	330 330■	3.0 3.0■	330♦ —	0.55■ —	Class A Amplifier (Pentode sec.) Class A Amplifier (Triode sec.)	2.5 2.7	250 150	110 —	Rk=68 Rk=56	10 18	3.5 —	— —	5,200 8,500	— 40	— —	— —	— —
6679σ	High-Mu Twin Triode	9A	2 3/16	7/8	12.6 6.3	0.15 0.3	CU	—	330	2.8§	—	—	Class A Amplifier (per section)	2.5	250	—	Rk=200	10	—	—	5,500	60	—	—	—
6680σ	Medium-Mu Twin Triode	9A	2 3/16	7/8	12.6 6.3	0.15 0.3	CU	—	330■	3.0■	—	—	Class A Amplifier§	2.63 1.18	250 100	— —	−8.5 0	10.5 11.8	— —	— —	2,200 3,100	17 20	— —	— —	— —
6681σ	High-Mu Twin Triode	9A	2 3/16	7/8	12.6 6.3	0.15 0.3	CU	—	330	1.1§	—	—	Class A Amplifier (per section)	.3 .05	250 100	— —	−2.0 −1.0	1.2 0.5	— —	— —	1,600 1,250	100 100	— —	— —	— —
6688Aθ(R)σ	RF Pentode	9EQ	1¾	7/8	6.3	0.3	CU	—	210■	3.0■	175■	0.9■	Class A Amplifier	2.5	190	160	Rk=630 Ecc1=+9v.	13	3.3		16,500	—	—	—	—
6814aθ	Medium-Mu Triode	8DK	1.375	0.400	6.3	0.15	CU	—	165	2.1	—	—	Class A Amplifier	1.0	100	—	Rk=150	10	—	—	6,000	29	—	—	—
6829θ(R)σ	Twin Triode	9A	2 5/8	7/8	12.6 6.3	0.225 0.45	CU	—	275	2.2§ 4.0ε	— —	— —	Class A Amplifier (per section)	1.28 .0225 1.7	150 150 100	— — —	Rk=220 −4.8 Ic=0.2 ma	8.5 0.15 17	— — —	— — —	6,700 — —	47 — —	— — —	— — —	— — —
6883	Beam Power Amplifier	8EC	3 13/16	1 21/32	12.6	0.625	CU	Ratings otherwise same as for Type 6146 Beam Power Amplifier																	
6919σ	Twin Diode	6BT	1¾	¾	6.3	0.2	CU	—	—	—	—	—	Gating and Clamping Service	Tube voltage drop per section=1.2 volts at 6 ma DC; max. peak inverse voltage=360 volts; max. DC output current per plate=10 ma; max. peak current per plate=30 ma.											
6922	Twin Tetrode	9AJ	2 5/8	7/8	6.3	0.3	—	—	220	1.5	—	—	Class A Amplifier	—	90	—	Rk=120	12	—	—	—	—	—	—	—
7036σ (Continued)	Heptode	7CH	2 5/8	¾	6.3	0.3	CU						Gated	—	150♦	75	−10	0	0	—	Ec3=0 v.; Rg1=Rg3=47,000			20,000	—

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GENERAL ELECTRIC

TYPE	DESCRIPTION	GENERAL						MAXIMUM RATINGS					TYPICAL OPERATING CONDITIONS													
		Base Connections	Dimensions In Inches		Cathode			Max. Freq. for Full Ratings, mc.	DC Plate Volts	Plate Dissipation Watts	Screen Grid No. 2, Volts	Screen Dissipation Watts	Class and Type of Service	Plate Input Watts	Voltages			Currents			GM. μmhos	Triode μ Factor	Drive Watts	Load for Rated Output Ohms	RMS Power Output Watts
			Length	Diameter	Volts	Current Amps.	Type								Plate	Screen Grid No. 2	Control Grid No. 1	Plate, ma	Screen Grid No. 2, ma	Control Grid No. 1, ma					
(Continued)								—	250	0.9	250♦	1.35	Amplifier	—	150♦	69*	0	0	.4	—	Ec_3=10 v.; Rg_1=Rg_3=47,000			20,000	—
7036σ	Heptode	7CH	2⅝	¾	6.3	0.3	CU						(Computer service)	.8	150♦	71*	0	5.8	9	—	Ec_3=0 v.; Rg_1=Rg_3=47,000			20,000	—
7044	Medium-Mu Twin Triode	9H	2⅝	⅞	6.3	0.9	—	—	300	4.5	—	—	Class A Amplifier	—	120	—	2.0	36	—	—	12,000	—	—	—	—
7054σ	RF Pentode	9GT	2⅝	⅞	13.5	0.275	CU	—	330■	5.0■	180■	1.0■	Class A Amplifier	4.8	250	250	Rk= 120	19	3.5	—	11,500	—	—	—	—
7056σ	Sharp-Cutoff Pentode	7CM	2⅛	¾	13.5	0.15	CU	—	330■	2.0■	330■♦	0.5■	Class A Amplifier	1.9	200	150	Rk= 180	9.5	2.8	—	6,200	—	—	—	—
7058σ	High-Mu Twin Triode	9AJ	2 3/16	⅞	13.5	0.155	CU	—	330■	1.0■§	—	—	Class A (per section)	.31	250	—	−2.0	1.25	—	—	1,650	100	—	—	—
7059σ	Triode-Pentode	9AE	2 3/16	⅞	13.5	0.195	CU	—	300■	2.8■	300■♦	0.5■	Class A (Pentode sec.)	2.5	250	110	Rk= 68	10	3.5	—	5,200	—	—	—	—
								—	330■	2.5■	—	—	Class A (Triode sec.)	2.7	150	—	Rk= 56	18	—	—	8,500	40	—	—	—
7061σ	Beam Power Amplifier	9EU	2⅝	⅞	13.5	0.21	CU	—	345■	9.0■	310■	2.0■	Class A Amplifier	7.1†	200	200	−10.0	35.5†	9.0†	—	4,200	—	—	5,000	3.0
7077	Ceramic tube, see page on ceramic tubes.																								
7167	Tetrode	7EW	2⅛	¾	13.5	0.09	—	—	180	2.0	180	0.5	Class A Amplifier	—	125	80	−1.0	10	1.4	—	8,000	—	—	—	—
7233	Low-Mu Triode	9FR	3 1/16	⅞	6.3	1.0	CU	—	330	8.0	—	—	Series Regulator Service	6	50	—	Rk= 22	120	—	— 1	17,500	4	—	—	—
														—	125	—	−60	—	—		—	—	—	—	—
7239θσ	Beam Pentode	9KH	2 13/32	⅞	6.3	0.3	CU	—	2000■	4.0	—	—	High-Voltage Pulse Amplifier	—	1,500	100	−12.0	0.2*	—	—	Ec_3=0 (Applied for short [2 sec. max.] intervals only)			—	—
														4.3	100	100	Ec_3= 0	43	13.5	.4				—	—
														4.05	300	100	−5.0	10.5	2.6	—	4,200	—	Ec_3=	—	—
7266	Ceramic tube, see page on ceramic tubes.																								
7296	Ceramic tube, see page on ceramic tubes.																								
7462	Ceramic tube, see page on ceramic tubes.																								
7486	Ceramic tube, see page on ceramic tubes.																								
7588	Ceramic tube, see page on ceramic tubes.																								
7625	Ceramic tube, see page on ceramic tubes.																								
7701σ	Beam Power Pentode	9MS	2⅝	⅞	13.6	0.16	—	—	350	9	300	3.5	Class C Amplifier	7.0	250	250	−12.5	28	3.1	—	3,600	—	—	—	—
7716σ	High-Mu Triode and Sharp-Cutoff Pentode	9DX	2⅝	⅞	13.6	0.35	CU	—	330	1.0	—	—	Avg. Ch. Triode	0.19	125	—	−1	1.5	—	—	2,900	102	—	—	—
								—	330	5.0	330♦	1.1	Avg. Ch. Pentode	4.8	200	125	Rk= 68	24	5.2	—	10,000	—	—	—	—
7717σ	Sharp-Cutoff VHF Tetrode	7EW	2⅛	¾	6.3	0.2	CU	—	180	2.0	180♦	0.5	Class A Amplifier	1.25	125	80	−1.0	10	1.4	—	8,000	—	—	—	—
7720	Ceramic tube, see page on ceramic tubes.																							0	
7724σ	Duplex-Diode, High-Mu Triode (with separate cathodes)	9KR	2 3/16	⅞	14.0	0.15	—	—	330	1.1	—	—	Class A Amplifier FM Detector	.175	250	—	−3.0	0.7	—	—	1,000	72	—	—	—
														Average diode current at 5.0 volts DC=18 ma; diode current for continuous operation (each diode)=5 ma.										
7841	Ceramic tube, see page on ceramic tubes.																								
7861θσ	Medium-Mu Twin Triode	8CJ	1¾	⅞	12.6	0.175	CU	—	330	1.35§	—	—	Class A Amplifier	1.25§	150	—	Rk= 240	8.2	—	—	5,500	35	—	—	—
7984	Beam Power Amplifier	12EU	2⅞	1 5/16	13.5	0.58	CU	175	750■	35■	250■	3.0■	Class A Amplifier	25	200	125	−20	125	4.5	—	7,300	—	—	—	—
													Class C Amplifier	81	450	200	−60	180	12	4.0	—	—	2.0	—	—
8102σ	Triode-Pentode	9PJ	2 3/16	⅞	13.5	0.23	CU	—	330■	2.5■	330♦■	0.55■	Class A Amplifier	—	125	125	−1.0	12	4.0	—	7,500	—	—	—	—
							CU	—	330	2.5	—	—	Class A Amplifier	—	125		−1.0	13.5	—	—	8,500	46	—	—	—
8106σ	Beam Pentode	9PL	2 3/16	⅞	13.5	0.25	CU	—	330■	6.0■	300■	1.25■	Class A Amplifier	—	300	150	−3.5	16	3.2	—	9,000	—	—	—	—
8113θσ	Sharp-Cutoff RF Tetrode	7EW	2⅛	¾	6.3	0.2	CU	—	180■	2.0■	180■	0.5■	Class A Amplifier	—	120	120	−2.0	10	2.3	—	7,000	—	—	—	—
8156	Beam Pentode	12EU	2 3/16	1 3/16	13.5	0.3	CU	175	600■	15■	250■	2.5■	Class A Amplifier	7.0	200	125	−9.0	75	3.5	—	7,600	—	—	—	—
													Class C Amplifier	36	400	170	−60	90	10	—	3.0	—	1.0	—	21

A_1(1) Single Tube Class A Audio Power Amplifier.
A_1(2) Push-Pull Class A Audio Power Amplifier.
AB_1(1) Single Tube Class AB_1 Audio Power Amplifier.
AB_1(2) Push-Pull Class AB_1 Audio Power Amplifier.
■ Absolute Maximum rating.
‡ AC (rms) Plate Voltage.
ç Applied for short interval (2 seconds, maximum) so as not to damage the tube.
* Approximate rating.
AB_2(2) Push-Pull Class AB_2 Audio Power Amplifier.
B(2) Push-Pull Class B Audio Power Amplifier.
B-P Single Tube Class RF Telephony Service.
CCS Continuous Commercial Service.
CF Coated filament (directly heated).
C-P Single Tube Class C Plate-Modulated Telephony Service.
C-T Single Tube Class C Telegraphy or FM Service.
CU Coated, Indirectly Heated Cathode (unipotential).
ICAS Intermittent Commercial and Amateur Service.
(R) Special ruggedized type for sever mechanical environment.
▲ Design-maximum Ratings
TF Thoriated-Tungsten Filament (directly heated).
Metal types are in boldface type.
σ Miniature types.
ρ Plate-to-Plate.
β Class C Amplifier with separate, rectified, unfiltered single phase, full-wave plate supply.
¶ Design-Center Value.
θ Five-Star type.
ε For Both Sections.
‡ Maximum Signal Value with Sine Wave Signal.
φ Peak Value during 15-microsecond pulse with Duty Factor of 0.0012.
§ Per Section.
ω Self-Rectifying Amplifier — Class C.
α Subminiature type.
♦ Supply Voltage.
τ Triode Connected; Grid No. 2 Tied to Plate.
† Zero Signal rating.

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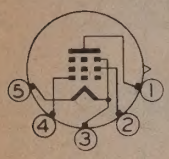
Industrial Receiving and Communication Tubes

GENERAL ELECTRIC



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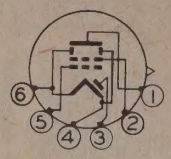

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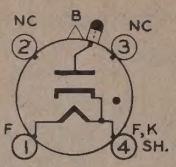

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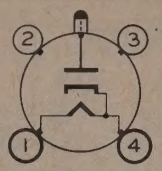

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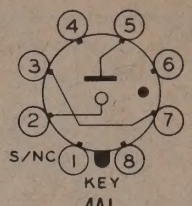

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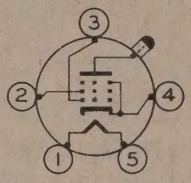

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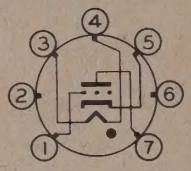

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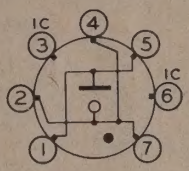

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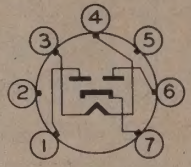

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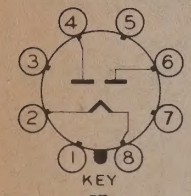

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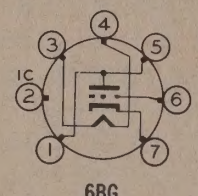

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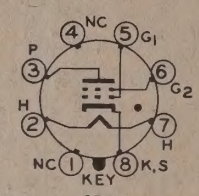

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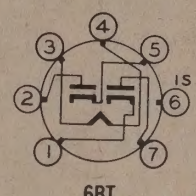

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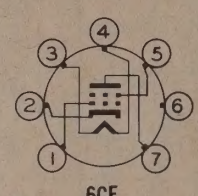

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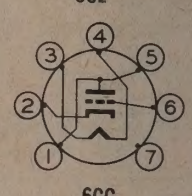

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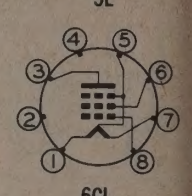

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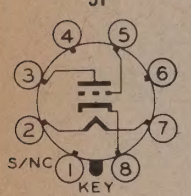

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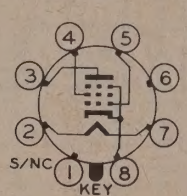

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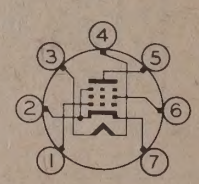

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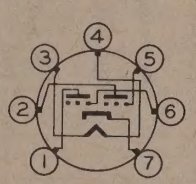

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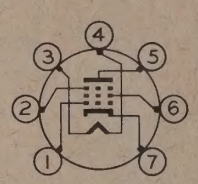

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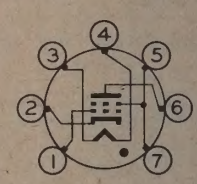

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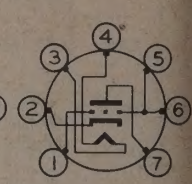

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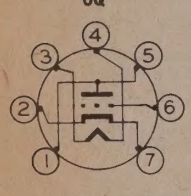

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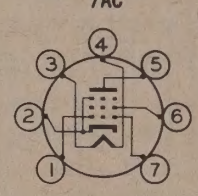

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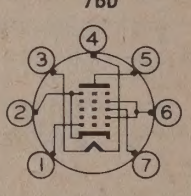

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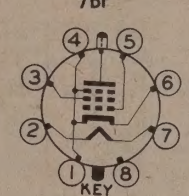

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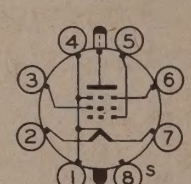

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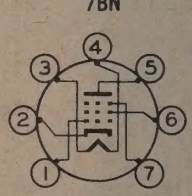

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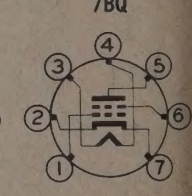

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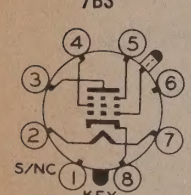

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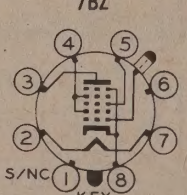

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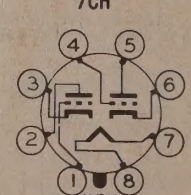

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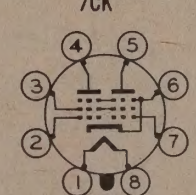

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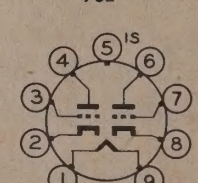

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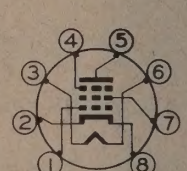

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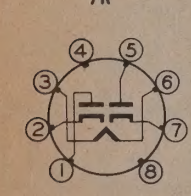

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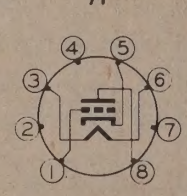

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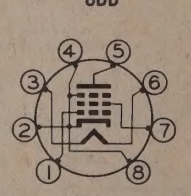

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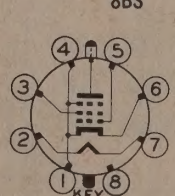

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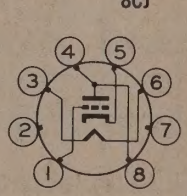

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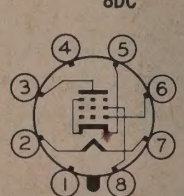

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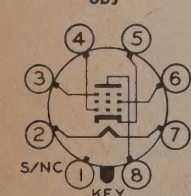

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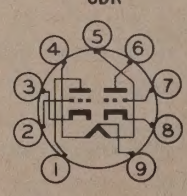

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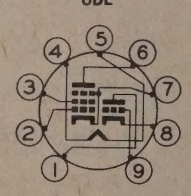

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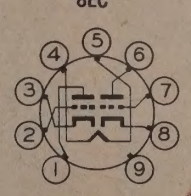

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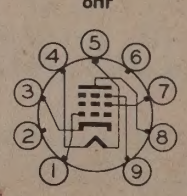

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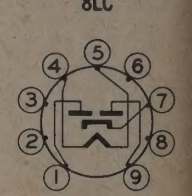

9CD

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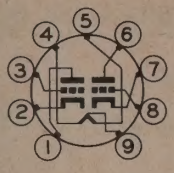
Industrial Receiving and Communication Tubes

GENERAL ELECTRIC

9CE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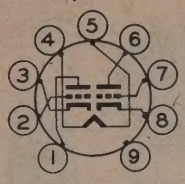
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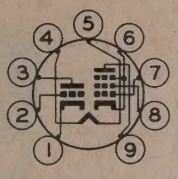
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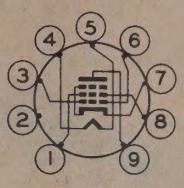
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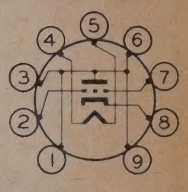
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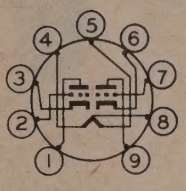
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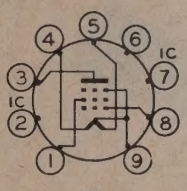
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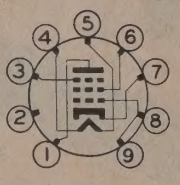
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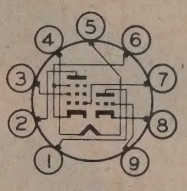
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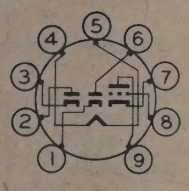
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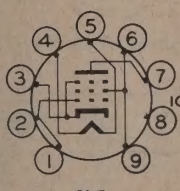
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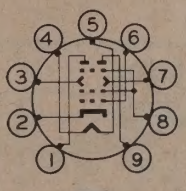
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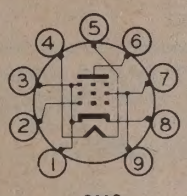
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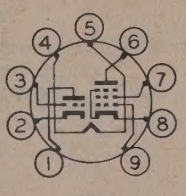
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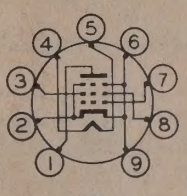
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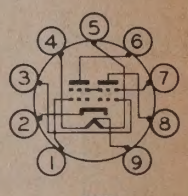
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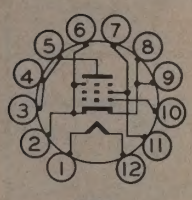
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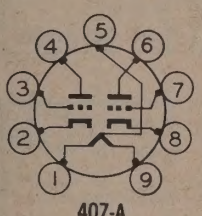
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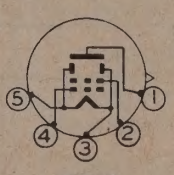
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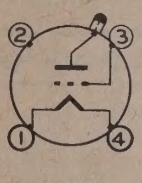
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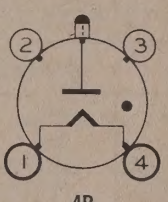
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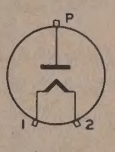
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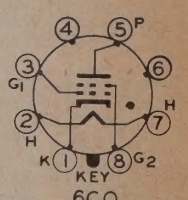
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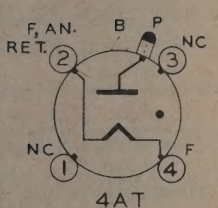

4AT

18 VALUE-ANALYZED benefits of G E 5-Star Tubes...

- Controlled inside diameter on bulbs reduces vibrational output and microphonics.
- Highly efficient getter performs throughout tube life and guides flash to avoid inter-element leakage.
- A getter flash shield improves initial leakage characteristics.
- Two double mica spacers, with additional anti-leakage slots, brace internal parts, provide superior inter-element insulation and improve vibration characteristics. 12 or 16 contact points give firmer fit between bulb and mount.
- Short, sturdy cages increase rigidity of tube structure.
- Plate ears are embossed for added strength and improved mica fit.
- U-bolt construction through top and bottom micas firmly secures the cage assembly.
- Smooth grid legs prevent a "sawing" action on the mica, reducing grid vibration and microphonic noise.
- Critical grids are plated with gold or silver to minimize grid emission.
- Passive cathode alloys assure reliability and long life in low-duty cycle circuits where interface tends to develop.
- Outside diameter and density of cathode coating are statistically controlled.
- Low thermo-conductivity cathode tab reduces heat loss.
- Cataphoretic coating of all heater bends after forming insures complete heater-cathode insulation.
- Folded heater design proved most reliable under shock, vibration and heater cycling conditions. Heater is temperature-controlled to further improve reliability and lengthen life.
- Rhenium-tungsten heater material increases tensile strength, reduces brittleness, and allows larger-diameter heater wire.
- Lead-glass stems help ward off glass electrolysis.
- Pins are annealed to prevent glass strain at socket insertion.
- Stem design minimizes welds — fewer points of possible failure — less change of short-causing particles from weld splash.

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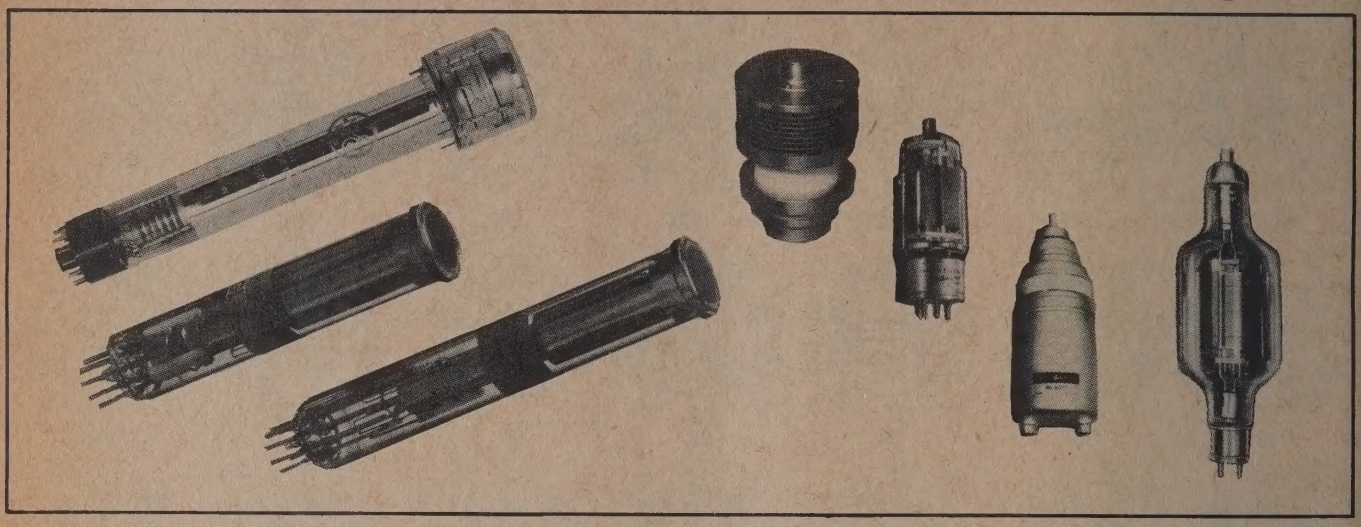
Broadcast, Industrial & Special Purpose Power Tubes

GENERAL ELECTRIC



LONG LIFE IMAGE ORTHICONS

Type	Target	Field Mesh	Signal:Noise (4.5 mc)	Amplitude Response @ 400 TV Lines	Typical Lens Aperture vs. Scene Illumination		Application	
					Color	Monochrome	Primary	Other
Z7899	Electronic Glass	No	65:1	65%	—	f:16 @ 80 - 100 ft-c	Studio, VTR	Color remote
Z7888		Yes	65:1	65%	f:8 @ 200 ft-c	f:16 @ 80 - 100 ft-c	Color remote	Monochrome VTR
Z7866	Semiconductor	Yes	50:1	70%	f:5.6 @ 50 ft-c	f:22 @ 50 - 100 ft-c	Color studio	Monochrome X-ray
7629A	MgO	No	50:1	65%	—	f:16 @ 25 - 50 ft-c	Monochrome Remote	X-ray

STANDARD IMAGE ORTHICONS

4401	Glass	No	50:1	60%	—	f:16 @ 50 ft-c	Studio, remote	X-ray
5820A 5820A/R	Glass (Ruggedized)	No	50:1	60%	—	f:16 @ 100 ft-c	Studio, VTR	Remote
7293A 7293A/R	Glass (Ruggedized)	Yes	50:1	60%	—	f:16 @ 100 ft-c	Monochrome studio	Color studio
8093A 8093A/R	Glass (Ruggedized)	Yes	60:1	60%	—	f:16 @ 120 ft-c	Studio color, VTR	Monochrome

SPECIAL PURPOSE IMAGE ORTHICONS

Type	Target	Field Mesh	Photo Cathode	Resolution Sensitivity*	Applications
Z5395 Z7805	MgO Ruggedized Z5395	No	S-1	500 @ 7.6 x 10^{-5} 200 @ 1.0 x 10^{-5}	**Near IR sensitive,** infrared detection aerial mapping, star tracking, missile tracking
7538 7409	MgO Ruggedized 7538	No	S-10	500 @ 1.5 x 10^{-5} 100 @ 4 x 10^{-7}	**Low light level** surveillance, electro optical telescope systems, airborne and tank fire control
7967 Z7806	MgO Ruggedized 7967	No	S-20	500 @ 5 x 10^{-6} 100 @ 1.5 x 10^{-7}	**Extremely low light level** surveillance, underwater TV systems, astronomical systems
7969 Z7807	MgO Ruggedized 7969	No	UV	500 @ 1.5 x 10^{-5} 100 @ 4 x 10^{-7}	**Near UV sensitive** medical biological studies, missile detection
Z7809	MgO	No	S-10		**Similar to 7538** except fiber optic faceplate. Fibre optic systems. Can be coupled to image intensifier
Z7810 Z7822	MgO Ruggedized Z7810	No	S-20		**Similar to 7967** except fiber optic faceplate. Fiber optic systems, radiation scintillator studies. Can be coupled to image intensifier
Z7814	MgO	Yes	S-20	500 @ 5 x 10^{-6} 100 @ 2.7 x 10^{-7}	**Improved Corner resolution,** electro-optical telescope systems
7198A	Glass	No	S-10		**General Purpose** surveillance, fire control

* Resolution sensitivity is defined as television lines per target inch @ specified photocathode illumination in foot-candles.

BROADCAST AND INDUSTRIAL VIDICONS

Type	Application	Maximum Dimensions		Heater Current @ 6.3 V Amperes	Amplitude Response @ 400 TV Lines Focus Coil Field Strength		Sensitivity	OPERATING PARAMETERS			
		Dia. Inches	Length Inches		@ 40 Gauss	@ 60 Gauss		Faceplate Illumination ft-c	Target Volts	Dark Current Micro-amperes	Signal Output Micro-amperes
7038 7038V	Film Color Film	1.135	6.50	.6	30%	40%	Average Min. Lag	15 100	30 - 50 10 - 30	.02 .004	.4 .3
8134V	Color Film	1.135	6.35	.09	30%	35%	Average Max.	1.0 .1	30 - 50 40 - 60	.03 .1	.27 .1
7735A	Live	1.135	6.50	.6	30%	40%	Average Max.	1.0 .1	20 - 40 35 - 70	.02 .2	.2 .2
7735B	Live	1.135	6.50	.6	35%	45%	Average Max.	1.0 .1	20 - 40 35 - 70	.02 .2	.2 .2

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Special Purpose Power Tubes
Broadcast, Industrial &

GENERAL ELECTRIC

BROADCAST AND INDUSTRIAL VIDICONS (Continued)

Type	Application	Maximum Dimensions Dia. Inches	Maximum Dimensions Length Inches	Heater Current @ 6.3 V Amperes	Amplitude Response @ 400 TV Lines Focus Coil Field Strength @ 40 Gauss	Amplitude Response @ 400 TV Lines Focus Coil Field Strength @ 60 Gauss	Sensitivity	OPERATING PARAMETERS Faceplate Illumination ft-c	OPERATING PARAMETERS Target Volts	OPERATING PARAMETERS Dark Current Micro-amperes	OPERATING PARAMETERS Signal Output Micro-amperes
7226	Live	1.135	5.25	.15	30%	40%	Average Max.	1.0 .2	30 - 50 40 - 100	.02 .2	.2 .2
8484	Live	1.135	5.50	.6	30%	40%	Average Max.	1.0 .2	30 - 50 40 - 100	.02 .2	.2 .2
7262A	Live	1.135	5.25	.09	30%	40%	Average Max.	1.0 .1	20 - 40 35 - 70	.02 .2	.2 .2
7263A	Ruggedized 7262A	1.135	5.25	.09	30%	40%	Average Max.	1.0 .1	20 - 40 35 - 70	.02 .2	.2 .2
8507 F507A	Live	1.135	6.50	.6	50%	70%	Average Max.	1.0 .1	20 - 40 35 - 70	.02 .2	.2 .2
8541	Live	1.135	6.50	.09	50%	70%	Average Max.	1.0 .0	20 - 40 35 - 70	.02 .2	.2 .2
8572 8572V	Film Color Film	1.135	6.50	.6	50%	70%	Average Min. Lag	15 100	30 - 50 10 - 30	.02 .004	.4 .3
8604	Film	1.135	6.50	.09	50%	70%	Average Min. Lag	15 100	30 - 50 10 - 30	.02 .004	.4 .3

TRANSMITTING TUBES

TYPE	DESCRIPTION	DIMENSIONS IN INCHES Length	DIMENSIONS IN INCHES Diameter	CATHODE Volts	CATHODE Amps.	CATHODE Type	MAXIMUM RATINGS Max. Freq. for Full Input, mc.	MAXIMUM RATINGS Plate Dissipation Watts	MAXIMUM RATINGS Plate Volts	MAXIMUM RATINGS Plate Input Watts	MAXIMUM RATINGS Screen Grid No. 2 Volts	CLASS AND TYPE OF SERVICE	TYPICAL OPERATING CONDITIONS Plate Volts	Plate Current, ma	Screen Grid No. 2 Volts	Screen Grid No. 2 Current, ma	Grid No. 1 Volts	μ Factor	GM μmhos	Approx. Drive Power, Watts	Approx. Output Power, Watts
GL-2H21θ	Phasitron type. For use as phase modulator. Max. frequency 500 KC.	4 9/16	1 5/8	6.3	0.3	CU						DC Plate Volts=300; Deflector volts=100; RF output volts=4.									
GL-4-400A	Forced-air cooled power tetrode.	6 3/8	3 9/16	5.0	14.5	TF	110	400 270 400	4,000 3,200 4,000	— — —	600 600 600	AB_2(2) C-P C-T	3,000 2,500 3,000	700 275 350	500 500 500	40 28 46	−80 −220 −220	— 5.1 —	— 4,000 —	4.5 3.5 6.1	1,375 510 800
GL-4-1000A	Forced-air cooled beam power tetrode.	9 5/8	5 1/4	7.5	21	TF	110	1,000	6,000	—	1,000	C-T C-P	6,000 5,000	700 600	500 500	140 130	−200 −200	7.2 —	10,000 —	15 11	3,440 2,440
GL-4D21/ 4-125A	Air-cooled beam power tetrode.	5 11/16	2 7/8	5.0	6.5	TF	120 120	85 125	2,500 3,000	— —	400 400	C-P C-T	2,500 3,000	152 167	350 350	30 30	−210 −150	6.2 —	2,450 —	3.3 2.5	300 375
GL-4X150A	Air-cooled beam power tetrode.	2 13/32	1.635	6.0	2.6	CU	— 500 500	150 100 150	1,250 1,000 1,250	— — —	400 300 300	AB_2(2) C-P C-T	1,250 1,000 1,250	475 200 200	300 250 280	65 20 20	−44 −150 −115	— 5.0 —	— 12,000 —	0.15 2 30	425 140 140
GL-7C29θ	Forced-air cooled triode.	5 3/8	2 1/2	10.5	28	TF	110	500	3,000	1,200	—	C-T	2,800	330	—	—	−250	29	—	—	600
GL-7D21θ	Thoriated-tungsten filiment. Forced-air cooled tetrode.	7 1/2	3.015	6.3	30	TF	110	1,200	4,000	3,000	750	C-T	3,750	670	600	100	−102	8.0	—	60	1,575
GL-810	High-perveance triode; jumbo 4-pin base. Medium grid and plate caps.	8 3/4	2 1/4	10	4.5	TF	— 30 30	175 125 175	2,750 2,000 2,500	510 500 750	— — —	B(2)■ C-P■ C-T	2,250 2,000 2,500	450 250 300	— — —	— — —	−60 −350 −180	— 36 —	— — —	13 35 19	725 380 575
GL-813	Beam power amplifier; giant 7-pin bayonet base; medium cap.	7 1/2	2 9/16	10	5.0	TF	— 30 30	125 100 125	2,500 2,000 2,250	450 400 500	— — —	AB_1(2)■ C-P■ C-T■	2,500 2,000 2,250	290 200 220	750 350 400	— — —	−95 −175 −155	— — —	— — —	0 4.3 4.0	490 300 375
GL-829-B	Twin beam power amplifier; septar 7-pin base; wire plate terminals.	4 5/16	2 3/8	6.3 12.6	2.25 1.125	CU	— 200 200	30 28 40	750 600 750	100 90 120	— — —	AB_1(2)■ C-P■ C-T■	600 600 750	110 150 160	200 200 200	— — —	−18 −60 −50	— 9.0 —	— 8,500 —	0 0.5 0.4	44 70 99
GL-832-A	Twin beam power amplifier; septar 7-pin base; wire plate terminals.	3 5/16	2 3/8	6.3 12.6	1.6 0.8	CU	200 200	15 20	600 750	36 50	— —	C-P■ C-T■	600 750	60 65	200 200	— —	−70 −50	6.5 —	3,500 —	0.21 0.24	26 35
GL-833-A	High perveance triode; forced-air cooled; special post terminals.	8 13/16	4 13/32	10	10	TF	— 20 20	450 350 450	4,000 4,000 4,000	1,800 1,800 2,000	— — —	B(2)■ C-P■ C-T■	4,000 4,000 4,000	900 450 500	— — —	— — —	−100 −325 −225	— 35 —	— — —	38 42 35	2,700 1,500 1,600
GL-838	Air-cooled triode; jumbo 4-pin base.	7 7/8	2 5/16	10	3.25	TF	30	100	1,250	220	—	C-T	1,250	150	—	—	−90	—	—	6.0	130
GL-862-Aθ	Water-cooled triode. Dissipation 50 to 100 KW.	60	3 1/8	33	207	TF	1.6	100,000	20,000	100,000	—	C-P	12,000	5,000	—	—	−800	45	—	2,000	45,000
GL-880θ	Water-cooled triode; for broadcast and RF heating; special terminals.	11 1/2	7	12.6	320	PT	— 25 25	15,000 12,000 20,000	10,500 10,500 10,500	40,000 36,000 60,000	— — —	B(2) C-P C-T	10,000 10,000 10,000	7,000 3,600 6,000	— — —	— — —	−450 −1200 −1000	— 20 —	— — —	540 1,100 1,500	46,000 27,000 40,000
GL-889-Aθ	Water-cooled triode; for broadcast and RF heating; special terminals.	10 11/16	3 5/8	11.0	125	PT	— 50 50	5,000 3,000 5,000	8,500 6,000 8,500	12,000 6,000 16,000	— — —	B(2) C-P C-T	7,500 6,000 7,500	3,200 1,000 2,000	— — —	— — —	−300 −900 −800	— 21 —	— — —	150 140 400	15,000 4,000 10,000
GL-892	Water-cooled triode; two-section filament; special connections.	20 7/8	6 13/16	11.0 per sec.	60	PT	— 1.6 1.6	7,500 6,000 10,000	15,000 10,000 15,000	20,000 10,000 30,000	— — —	B(2) C-P C-T	12,500 10,000 12,000	2,800 780 1,550	— — —	— — —	−170 −1,600 −1,600	— 50 —	— — —	160 460 565	22,000 6,000 14,000
GL-5513θ	Forced-air cooled triode; thoriated-tungsten filament.	7 1/2	3.015	6.3	32.0	TF	220	1,200	3,000	3,300	—	Class B,TV	2,000	680	—	—	−20	—	—	223	1,125

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Broadcast, Industrial & Special Purpose Power Tubes

GENERAL ELECTRIC

TRANSMITTING TUBES (Continued)

TYPE	DESCRIPTION	DIMENSIONS IN INCHES		CATHODE			MAXIMUM RATINGS					CLASS AND TYPE OF SERVICE	TYPICAL OPERATING CONDITIONS								
		Length	Diameter	Volts	Amps.	Type	Max. Freq. for Full Input, mc.	Plate Dissipation Watts	Plate Volts	Plate Input Watts	Screen Grid No.2 Volts		Plate Volts	Plate Current, ma	Screen Grid No.2 Volts	Screen Grid No.2 Current, ma	Grid No. 1 Volts	μ Factor	GM μmhos	Approx. Drive Power, Watts	Approx. Output Power, Watts
GL-5518#	Forced-air cooled triode tungsten filament.	12⅜	5.530	6.3	235	PT	110	4,000	7,000	12,000	—	C-T	6,600	1,300	—	—	−520	21	—	180	6,500
GL-5549	Forced-air cooled triode. Dissipation 4.0 KW.	11	5½	12.6	57	TF	50	4,000	8,500	10,000	—	C-T	8,000	1,250	—	—	−800	23	—	230	7,500
GL-5556	Air-cooled triode; small 4-pin bayonet base.	4½	1⅝	4.5	1.1	TF	6	10	350	14		C-T	350	35	—	—	−80	—	—	0.25	6
GL-5593#	Phasitron type for use as phase modulator.	4 9/16	1⅝	6.3	0.3	CU	Max. frequency for full rating=250 MC.; Anode volts=300; Deflector volts=100; RF output volts=4.														
GL-5675	Medium-mμ "pencil type" triode; for service up to 3,000 MC.	2.252	0.816	6.3	0.135	CU	—	9	300	9	—	C-T oscillator at 1,700 MC.	120	25	—	—	−8	20	—	—	0.475
GL-5736	Forced-air cooled triode. Special connections.	7⅜	3⅝	6.0	60	TF	— 60 60	2,500 2,500 1,650	3,000 5,000 3,500	4,200 5,000 4,000	—	B C-T C-P	3,000 5,000 3,500	2,800 1,000 1,140	— — —	— — —	−160 −850 −600	— 22 —	— — —	140 250 270	4,350 4,100 3,200
GL-5762/ 7C24	Forced-air cooled triode; special terminal connections.	7⅛	4 1/16	12.6	29	TF	— 30 30	3,000 2,000 3,000	6,200 5,000 6,200	8,700 5,000 8,700	— —	B C-P C-T-F	4,700 4,700 6,000	2,800 960 1,250	— — —	— — —	−200 −400 −550	— 29 —	— — —	195 720 1,225	8,800 4,200 7,000
GL-5894	Air-cooled twin tetrode. Max. ratings up to 250 MC.	4 5/16	1 5/16	6.3 12.6	1.8 0.9	CU	250	40	750	120	300	B C-T C-P	600 600 600	200 200 150	300 250 250	26 16 20	−25 −80 −80	— 8.2 —	— — —	0.2 3.0 0.8	86 90 71
GL-6039#	Water-cooled triode; Replaces GL-9C24 with filament change.	8 17/32	3.9	5.0	78	TF	220	7,000	6,000	13,500	—	Class B, TV	5,000	2,100	—	—	−300	21	—	1,060	4,900
GL-6161#	Forced-air cooled triode; special terminal connections.	3 13/32	1.76	6.3	3.4	CU	900 900 Doubler to 900 Mc.	250 250	1,600 1,600	560 400	—	B-T C-T-F C-M	1,600[b] 1,650[b] 1,675[b]	350 250 250	— — —	— — —	−100[a] −150[a] −175[a]	— 2 —	— — —	75[c] 80[c] 100[c]	230[d] 180[d] 140[d]
GL-6251#	Water-cooled metal and ceramic tetrode.	13¼	5 5/32	5.5	19.0	TF	220	25,000	7,000	50,000	700	Class B, TV	6,800	7,500	600	50	−20	20	—	2,300	25,000
GL-6907	Twin tetrode for use up to 600 MC. Standard 7-pin base.	3⅜	1.8	12.6	0.65	CU	— 400 600	20 14 20	600 500 600	— 60 36	250 300 250	B C-P C-T	500 400 400	70 80 100	250 300 250	16 6 5	−26 −50 −50	8	2,500	— — —	23.5 13 20
GL-6942#	Forced-air cooled metal and ceramic tetrode.	8¾	3½	5.7	24	CV	1,000 1,000	1,500 1,500	4,000 4,000	2,500 2,500	— —	Class B, TV C-T	3,500 4,000	520 420	500 500	35 11	−40 −110			100 65	1,000 1,000
GL-7007#	Forced-air cooled metal and ceramic tetrode. Special connections.	11.63	6.4	5.0	180	CU	220 220	8,000 12,000	5,000 7,500	10,000 20,000	2,000 2,000	C-P C-T	4,800 7,000	1,800 2,600	800 1,000	160 200	−300 −300	10	—	100 80	6,000 12,000
7034/4X150A See 4X150A																					
GL-7085/ 356	Water and forced-air cooled triode for broadcast and industrial heating. Replaces GL-880.	11¼	7	7.5	170	TF	— 25 25 25 2	22,500 22,500 15,000 22,500 22,500	12,500 12,500 10,000 12,500 15,000	45,000 33,000 40,000 60,000 67,500	— — — — —	B(2) B-P C-P C-T C-T	12,500 12,500 10,000 10,000 12,500 15,000	6,400 2,400 3,800 4,500 5,600 4,700 4,400	— — — — — — —	— — — — — — —	−600 −625 −840 −1,150 −1,300 −1,400 −1,500	20	— — — — —	430 1,070 1,010 960 1,440 850 770	55,000 12,000 29,000 32,000 38,000 42,000 51,000
GL-7289	High transconductance triode, forced-air cooled with integral radiator.	2¾	1 7/64	6.3	1.0	Otherwise same as GL-2C39-B															
GL-8000	High-perveance triode; jumbo 4-pin base; skirted medium and cap, medium side cap.	8¾	2¼	10.0	4.5	TF	— 30 30	175 125 175	2,750 2,000 2,500	510 500 750	— —	B C-P C-T	2,250 2,000 2,500	450 250 300	— —	— —	−130 −370 −240	16.5	— —	7.9 20 18	725 380 575
GL-8005	Maximum ratings up to 150 MC.	5	1 5/16	16.0	38	PT	150	750	2,500	1,250	—	C-P	—	—	—	—		20	—	—	—
GL-8020	High-perveance triode; jumbo 4-pin base; medium cap.	6 11/16	2 7/16	10	3.25	TF	— 60 60	85 75 85	1,500 1,250 1,500	250 240 300	—	B C-P C-T	1,500 1,250 1,500	330 190 200	— —	— —	−67.5 −195 −130	20	— —	5.5 9 7.5	330 170 220

See Ceramic Section pgs. 0 - 0 for types 2C39B.
See Ceramic Section pgs. 0 - 0 for GL-6299 - GL-6897.
Outline diagrams for GL-7644 and GL-7784 are on page 12.
Outline diagrams for GL16897 and GL-7289 are on page 4.
Basing diagram for GL-7085/356 is on page 9.
Footnotes are on page 14.

FOOTNOTES FOR TRANSMITTING TUBE LISTINGS

A Cathode to grid volts.
A_1(1) Single tube class A audio power amplifier.
AB_1(2) Push-pull class AB_1 audio power amplifier.
AB_2(2) Push-pull class AB_2 audio power amplifier.
B Referred to grid terminal.
B(2) push-pull class B audio power amplifier.
B-P Single tube class B RF telephone service.
C Driver power output.
C-P Single tube class C plate-modulated telephony service.
C-T Single tube class C telegraphy or FM service.
C-T (Pulsed) Single tube class C RF pulsed oscillator.
CF Coated filament (directly heated).
CV Thoriated tungsten cathode (indirectly heated)
CU Coated indirectly heated cathode (unipotential).
D Useful power output.
C-G-T Single tube class C grid-modulated video service.
PT Pure tungsten filament (directly heated).
TF Thoriated-tungsten filament (directly heated).
Broadcast tube type.
■ Intermittent Commercial and Amateur Service rating.
[a] Cathode to grid volts.
[b] Referred to grid terminal.
[c] Driver power output.
[d] Useful power output.

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Broadcast, Industrial & Special Purpose Power Tubes

GENERAL ELECTRIC

BROADCAST, INDUSTRIAL & SPECIAL PURPOSE POWER TUBES—HIGH VACUUM RECTIFIERS

TYPE	DESCRIPTION	DIMENSIONS IN INCHES		CATHODE		MAXIMUM ANODE RATINGS			TYPICAL OPERATION*			
		Length	Diameter	Volts	Amps.	Peak Inverse Volts	Peak Amperes	Average Current Amperes	Peak Inverse Volts	A.C. Anode Volts	D.C. Output Volts	D.C. Output Current Amperes
GL-2B22	UHF lighthouse type diode, 8-pin octal base.	1 3/16	1.312	6.3	0.75	300	0.7	0.02	150	100	50	0.005
GL-2B23	Magnetically-controlled diode. Six-pin octal base.	3 3/16	1 3/16	6.3	0.3			0.03		—	150	0.030
GL-3B24-W	Small size, high peak—Inverse voltage diode, shock and vibration resistant.	4 7/8	1 1/2	2.5 5.0	3.0 3.0	20,000 20,000	0.15 0.3	0.03 0.06	20,000 20,000	—	—	0.03 0.06
GL-836	Heater-cathode type. Small 4-pin bayonet base. Medium cap.	6 5/16	2 1/16	2.5	5	5,000	1	0.25	5,000¶	3,400¶	1,550¶	0.5¶
GL-1616	Coated-filament type. Small 4-pin bayonet base. Medium cap.	6 13/16	2 1/16	2.5	5	6,000	0.8	0.13	5,500¶	3,800¶	1,730¶	0.26¶
GL-5973	Thoriated tungsten filament. Two-pin base. Medium cap.	19 1/2	6 1/8	16.0	19.1	75,000 40,000	5.0 5.0	1.0 1.25	75,000 40,000	— —	— —	1.0 1.25
GL-8020	Tungsten-filament type. Small 4-pin bayonet base.	8	2 5/16	5.0	6.0	40,000	0.75	0.1	40,000	28,000	—	0.1

BROADCAST, INDUSTRIAL & SPECIAL PURPOSE POWER TUBES—GAS-FILLED RECTIFIERS

TYPE	DESCRIPTION	Tube Voltage Drop	MAX. ANODE RATING — FOR 60 CPS SUPPLY				DIMENSIONS IN INCHES		CATHODE		OPERATING CONDITIONS#			
			Temp. Range Condensed Mercury, C.	Peak Inverse Volts	Peak Amperes	Average Amperes	Fault Amperes	Length	Diameter	Volts	Amps.	Peak Inverse Volts	Max. A.C. Plate-to-Plate Supply Volts	Approx. D.C. Output Volts to Filter	D.C. Output Amperes
GL-3B28	Small 4-pin, bayonet base. Medium cap—ceramic-insulated, Xenon-filled.	10	−75 to +90	5,000 10,000	2 1	0.5 0.25	20 20	6	2 1/16	2.5	10.0	5,000 10,000	3,400 7,000	1,550 3,200	1.0 0.5
FG-32	See GL-5558/FG-32														
FG-104	See GL-5561/FG-104														
FG-280	All-metal tube for use in low-voltage applications. Flexible leads.	15	40 to 80	1,000	40	6.4	200	10 3/4	2 1/4	5.0	10.0	2,000	1,400	645	12.8
GL-575-A	Jumbo 4-pin, bayonet base. Medium cap.	10	20 to 50	15,000	10	2.5	100	11 1/8	3 1/8	5.0	10.0	15,000	10,600	4,800	5
GL-673	Same as GL-575-A except for super-jumbo 4-pin, bayonet base.	Same as GL-575-A						11 7/16	3 1/8						
GL-857-B	Special terminal connections. Skirted large cap.	15	30 to 40 25 to 60	22,000 10,000	40 40	10 10	400 400	19 7/8‖	7 1/8	5.0	30.0	22,000 10,000	15,400 7,000	7,000 3,200	20 20
GL-866-A	Small 4-pin, bayonet base. Medium cap—ceramic-insulated.	15	20 to 60	10,000	1	0.25	20	6 3/16	2 1/16	2.5	5.0	10,000	7,000	3,200	0.5
GL-869-B	4-pin base. Skirted large cap.	15	30 to 40	20,000	10	2.5	100	14 7/16	5 1/8	5.0	19.0	20,000	14,000	6,400	5
GL-870-A	Heavy-duty heater-cathode type. Flexible leads.	16	35 to 40 35 to 50	16,000 7,500	450 450	75 75	4,500 4,500	26‖	5 1/2	5.0	65.0	16,000 7,500	9,060 4,260	4,150 1,950	150
GL-872-A	Jumpo 4-pin base. Medium cap—ceramic-insulated.	10	20 to 60 20 to 70	10,000 5,000	5 5	1.25 1.25	50 50	8 1/2	2 5/16	5.0	7.5	10,000 5,000	7,000 3,400	3,200 1,550	2.5 2.5
GL-5558/ FG-32	Small 4-pin, bayonet base. Medium cap.	15 —	30 to 60 30 to 80	5,000 2,000	15 15	2.5 2.5	200 200	7 —	3 —	5.0 —	4.5 —	5,000 2,000	3,400 1,400	1,550 645	5 5
GL-5561/ FG-104	Super-jumbo 4-pin, bayonet base. Maximum averaging time 15 sec. for welder-control service.	15 15	40 to 80 25 to 50	3,000 10,000	40 16	6.4 4.0	400 160	11 1/4	3 13/16	5.0	10.0	3,000 Welder-control Service	2,000 —	910 —	12.8 —
GL-8008	Same as GL-872-A except for super-jumbo 4-pin, bayonet base.	Same at GL-872-A						8 3/4	2 5/16						

THYRATRON TUBES

TYPE	DESCRIPTION	Dimensions Inches (Max.)		Cathode		Approx. Tube Drop Volts	MAXIMUM RATINGS					Critical Grid Volts at Anode Volts
		Length	Diam.	Volts	Amps.		Temperature Range of Condensed Mercury, °C.	Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Cathode Amperes	Average Cathode Amperes	Fault Amperes	
2D21	Negative-control, heater-cathode type. Miniature 7-pin base.	2 1/8	3/4	6.3	0.6	8	−75 to +90*	650	1,300	0.5	0.1	10	4.2 @ 450
3C23	Gas and mercury-filled. Negative-control, filament type. Small 4-pin bayonet base, medium cap.	6 1/8	2 1/16	2.5	7	15	−40 to +80 −40 to +100	1,250 200	1,250 200	6 6	1.5 1.5	120 120	−5.5 @ 1,000 −2.5 @ 100
6D4	Relay tube or relaxation oscillator. Miniature 7-pin base.	2 1/8	3/4	6.3	.25	16	−55 to +90*	350	350	0.11	.025	—	—
FG-81-A	Mercury vapor type for relay control Medium 4-pin bayonet base, medium cap.	6 5/8	2 1/16	2.5	5	16	−55 to +85	500	500	2.0	0.5	40	−7.5 @ 500
FG-97	Mercury vapor, double-grid type. Medium 4-pin bayonet base, medium cap top and side.	6 3/4	2 1/16	2.5	5	16	+40 to +80	1,000	1,000	2.0	0.5	40	−13 @ 1,000
FG-98A	Mercury vapor, double-grid type. Medium 4-pin bayonet base, medium cap top and side.	6 3/4	2 1/16	2.5	5	16	−55 to +85	500	500	2.0	0.5	40	−16 @ 500
FG-105	Negative-control, heater-cathode type. Super-jumbo 4-pin bayonet base, large cap top and side.	11 1/4	2 1/2R	5.0	10	16	−40 to +80	2,500	2,500	40	6.4	400	−9 @ 1,000
FG-154	Negative-control, heater-cathode type. Uses low grid power. Medium 4-pin bayonet base, medium cap.	8	3	5.0	7	16	−20 to +50*	500	500	10	2.5	80	−9 @ 500
FG-172	Negative-control, heater-cathode type. Metal envelope with flexible leads and threaded terminal. †Welder Control Ratings.	10 3/4	2 5/8R	5.0 5.5†	10 11†	16 16	+40 to +80 +30 to +95	2,000 750	2,000 750	40 77	6.4 2.5	400 400	−9 @ 1,000

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Broadcast, Industrial & Special Purpose Power Tubes

GENERAL ELECTRIC

THYRATRON TUBES (Continued)

TYPE	DESCRIPTION	Dimensions Inches (Max.)		Cathode		Approx. Tube Drop Volts	MAXIMUM RATINGS						Critical Grid Volts at Anode Volts
		Length	Diam.	Volts	Amps.		Temperature Range of Condensed Mercury, °C.	Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Cathode Amperes	Average Cathode Amperes	Fault Amperes	
393-A	Negative-control, filament type, mercury vapor and gas-filled. Octal base, small cap.	6 5/8	2 1/16	2.5	7	15	−40 to +80	1,250	1,250	6.0	1.5	—	−5.5 @ 1,000
414	Negative-control, mercury vapor, heater-cathode type. Bracket mounted, flexible leads.	15 3/16	3 1/8	5	19	20	+40 to +80	3,000	3,000	100	5.0	1,500	−10 @ 1,000
502-A	Negative-control, heater-cathode type. Metal envelope, octal base.	2 5/8	1 5/16	6.3	0.6	11	−55 to +90*	650	1,300	1.0	0.1	10	−3.5 @ 1,000
672-A	Negative-control, heater-cathode type. Ignitor firing applications. Super-jumbo 4-pin bayonet base, medium cap.	8 1/8	2 5/16	5	5	12	+40 to +80	2,500	2,500	40	3.2	150	−10 @ 1,000
678	Negative-control, filament type. Relay control application. Jumbo 4-pin bayonet base, medium cap.	10 3/4	2 5/16	5	7.5	15	+25 to +50	10,000	15,000	6.0	1.6	50	−15 @ 1,000
884	Negative-control, heater-cathode type. Relaxation oscillator and relay control. Small 5-pin base.	4 1/8	1 5/16	6.3	0.6	16	−75 to +90*	350	350	0.3	0.075	—	−25 @ 250
2050-A	Negative-control, heater-cathode type. Octal 8-pin base.	4 1/8	1 5/16	6.3	0.6	8	−75 to +90*	650	1,300	1.0	0.1	10	−3 @ 650
5544	Negative-control, inert gas, filament type. Quick-heating cathode. Super-jumbo 4-pin base, medium cap.	7 1/2	2 5/8	2.5	12	16	−55 to +70*	1,500	1,500	40	3.2	560	−8 @ 1,000
5557	Negative-control, mercury vapor, filament type. Medium 4-pin bayonet base, medium cap.	6 1/8	2 1/16	2.5	5	15	+40 to +80	2,500	5,000	2	0.5	40	−7 @ 1,000
5559	Negative-control, heater-cathode type. Small 4-pin bayonet base, medium cap.	7 1/4	3	5.0	4.5	16	+40 to +80	1,000	1,000	15	2.5	200	−6.5 @ 1,000
5560	Negative-control, heater-cathode type. Ignitor firing applications. Small 4-pin bayonet base, two medium caps.	7 5/16	2 1/4	5.0	4.5	16	+40 to +80	1,000	1,000	15	2.5	200	−9 @ 1,000
5563-A	Negative-control, filament type. Jumbo 4-pin bayonet base, medium cap.	10 17/32	2 5/8	5.0 FOR QUADRATURE OPERATION	10	15	+25 to +50 +25 to +55 +25 to +50 +25 to +55	20,000 15,000 20,000 15,000	20,000 15,000 20,000 15,000	6.4 10 11.5 11.5	1.6 1.8 2.5 2.5	70 70 70 70	−2.5 @ 500
5632/C3J	Negative-control, filament type. Small 4-pin bayonet base, medium cap.	6	1 5/16	2.5	9	10	−55 to +75*	900	1,250	30	2.5	300	−4.5 @ 750
5663	Negative-control, inert-gas-filled. For relay and grid-control rectifier applications. Seven-pin miniature.	1 1/2	3/4	6.3	0.15	11	−55 to +90*	500	500	0.06	0.02	1.0	−2.5 @ 500
5665/C16J	Negative-control, xenon, filament type. Base bracket and flexible leads.	10 1/2	2 1/16	2.5	31	11	−55 to +75*	1,000	1,250	160	16	1,000	−2.2 @ 500 −4.0 @ 1,000
5696A	Negative-control, inert-gas-filled cathode type. seven-pin miniature.	1 3/4	3/4	6.3	0.15	10	−55 to +90	500	500	0.125	0.028	2.0	—
5720	Positive-control, heater-cathode type. Medium 4-pin bayonet base, medium cap.	7 1/2	3	5.0	4.5	—	+35 to +80	1,000	1,000	15	2.5	200	+9.5 @ 1,000
5727	Negative-control, inert-gas-filled cathode type. Seven-pin miniature.	1 7/8	3/4	6.3	0.6	8	−75 to +90*	650	1,300	0.5	0.1	10	−3.5 @ 450
5728	Negative/positive-control, heater-cathode type. Small 4-pin bayonet base, medium cap.	7	3	5.0	4.5	16	+40 to +80	1,000	1,000	15	2.5	200	+4 @ 100 0 @ 1,000
5830	Negative-control, heater-cathode type for high voltage and current applications.	17 3/4	5 1/16	5.0	20	16	+40 to +65	10,000	10,000	75	12.5	1,500	−6 @ 10,000
5855	Negative-control, filament type. High commutation factor for motor control. Lugs for connections.	11 1/64	3 5/8	2.5	34	16	−55 to +70*	1,500	1,500	160	18	2,000	−3 @ 1,000
6011/710	Negative-control, mercury vapor and gas-filled type. Medium 4-pin bayonet base, large cap.	6 1/4	1 5/8	2.5	9	15	−40 to +80	1,000	1,250	30	2.5	250	−5 @ 1,000
6012	Negative-control, heater-cathode type. Octal, 6-pin base.	4 1/4	1 1/32	6.3	2.5	10	−75 to +90*	650	1,300	5	0.5	20	−10 @ 650
6014/C1K	Negative-control, filament, xenon type. Small 4-pin bayonet base.	4 1/4	1 5/16	2.5	6.3	8	−55 to +75*	1,000	1,250	8	1	77	−2 @ 500
6807	Negative-control, gas type. Super-jumbo bayonet base.	9	2 5/8	2.5	21	16	−55 to +70*	1,500	1,500	80	6.4	1,120	−6 @ 1,000
6808	Same as GL-6807 with flexible leads and bracket mount.	9	2 5/8	2.5	21	16	−55 to +70*	1,500	1,500	80	6.4	1,120	−6 @ 1,000
6809	Same as GL-6807 with spade lugs for panel mounting.	9	2 5/8	2.5	21	16	−55 to +70*	1,500	1,500	80	6.4	1,120	−6 @ 1,000
6858/760	Negative-control, filament type. Four-pin bayonet base. Medium cap.	9 1/2	2 5/16	2.5	21	12	−40 to +80	1,500	1,500	77	6.4	770	−4 @ 500 −5.5 @ 1,250
6859/760-P	Negative-control, filament type. Bracket-type base for panel mounting. Medium cap.	9 1/2	2 5/16	2.5	21	12	−40 to +80	1,500	1,500	77	6.4	770	−4 @ 500 −5.5 @ 1,250
7518/710-L	Negative-control, gas and mercury type. Spade lugs for panel mounting. Medium cap.	6 1/4	1 5/8	2.5	9	15	−40 to +80	1,000	1,250	30	2.5	250	−5 @ 1,000
7725	Negative-control, gas and mercury type. Quick-heating filament. Four-pin bayonet base. Medium cap.	6 1/4	1 5/8	2.5	9	15	−40 to +80	3,500	3,500	30	2.5	250	−5 @ 1,000 −9 @ 3,500
7726	Same as GL-7725 except spade lugs for panel mounting.	6 1/4	1 5/8	2.5	9	15	−40 to +80	3,400	3,500	30	2.5	250	−5 @ 1,000 −9 @ 3,500

Miniature types are in bold face.

* Temperature rating expressed in ambient temperature range over which the tube will operate.

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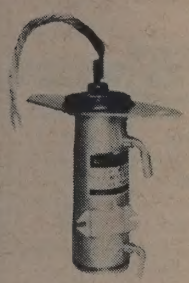
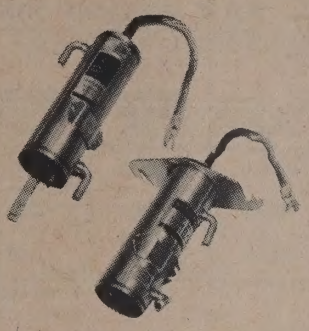
Ignitrons

GENERAL ELECTRIC



Ignitrons are gas-discharge tubes employing a mercury pool as the cathode. The mercury pool cathode provides extremely high emission capability. Initiation of conduction in the ignitron is accomplished by means of a starting electrode called the ignitor. The ignitor is a small rod of highly refractory material which dips into the mercury pool. The passage of ignition current through the ignitor causes a cathode spot to form at the junction of the ignitor and mercury pool. Ionization from the cathode spot spreads throughout the volume of the ignitron and when the anode is positive electrons flow to it. By control of the point in the A-C cycle at which the ignitor is fired the duration of current flow through the ignitron is controlled. The ignitron, therefore, is ideally suited for high current rectification and control service. The following charts present summarized rating information for General Electric ignitrons. All ratings are based on 25-60 CPS operation. For convenience to the user the ignitron types are grouped by typical application service. Many types are rated for more than one service and therefore appear in two or more rating charts. More detailed ratings are available upon request for all of the G.E. ignitrons listed.
The ignitron has long been recognized as a long life, highly reliable device. As the industry's leading ignitron manufacturer General Electric is pleased to present the information contained in this booklet and invites your inquiry for additional application assistance if required.



IGNITRONS — RESISTANCE WELDING CONTROL SERVICE

TYPE	SIZE	MECHANICAL DATA			MAXIMUM ELECTRICAL RATINGS*				
		Maximum Dimensions - Inches							
		Rigid Length	Diameter	Mounting	Supply Volts RMS	Maximum Demand KVA	Corresponding Average Anode Current Amperes	Maximum Average Anode Current Amperes	Corresponding Demand KVA
GL-5550	A	9 1/16	2 7/8	Clamp	250-600	300	12.1	22.4	100
GL-5551A/GL-5551A-PC	B	13	2 3/4	Conventional	250-600	600	30.2	56	200
GL-5552A/GL-5552A-PC	C	14	4 1/4	Conventional	250-600	1200	75.6	140	400
GL-5553B/GL-5553B-PC	D	19 1/2	5 5/8	Conventional	250-600	2400	192	355	800
GL-5554 (2)	—	17	4 1/8	Conventional	2400	1200	75	113	600
GL-5555 (2)	—	17 13/16	5 3/4	Conventional	2400	2400	135	207	1105
GL-5564 (2)	—	27 1 1/16	9 1/8	Special	2400	4800	270	414	2210
GL-6512 (2)	Integral Thermostat Version of GL-5554. Same Ratings Apply.								
GL-6513 (2)	Integral Thermostat Version of GL-5555. Same Ratings Apply.								
GL-6515 (2)	Integral Thermostat Version of GL-5564. Same Ratings Apply.								
GL-7151	E	23 1/4	9 1/8	Special	250-600	4800 (1)	486	900	1600
GL-7669/GL-7669-PC	B	9 7/8	2 3/4	Coaxial	250-600	600	30.2	56	200
GL-7671/GL-7671-PC	C	11 7/8	4 1/4	Coaxial	250-600	1200	75.6	140	400
GL-7673/GL-7673-PC	D	19 1/2	5 5/8	Coaxial	250-600	2400	192	355	800
GL-7681/GL-7681-PC	Jumbo C	17 1/2	4 1/4	Conventional	250-600	1800	135	220	600
GL-7998/GL-7998-PC	Jumbo C	14 1/4	4	Coaxial	250-600	1800	135	220	600
GL-8205	E	23	9 1/8	Coaxial	250-600	4800 (1)	486	900	1600
GL-37250/GL-37250-PC	B-2000	13	2 3/4	Conventional	250-600	1000	43.2	75	200
GL-37251/GL-37251-PC	B-2000	13	2 3/4	Coaxial	250-600	1000	43.2	75	200
GL-37252/GL-37252-PC	C-4000	14 1/4	4 1/4	Conventional	250-600	2000	108	150	380
GL-37253/GL-37253-PC	C-4000	14 1/4	4 5/8	Coaxial	250-600	2000	108	150	380
GL-37254/GL-37254-PC	D-6000	19 1/2	5 5/8	Conventional	250-600	3000	224	400	1000
GL-37255/GL-37255-PC	D-6000	19 1/2	5 5/8	Coaxial	250-600	3000	224	400	1000

Warranty for all types listed above is H-12 except for those marked (2), see footnote below.
PC Indicates plastic coated version.
* All ratings based on use of liquid cooling.

(1) Maximum demand current below 500 volts should not exceed 9600 amperes RMS.
(2) Have H-24 warranty.

IGNITRONS — FREQUENCY-CHANGER WELDING CONTROL SERVICE

TYPE	SIZE	MECHANICAL DATA			MAXIMUM ELECTRICAL RATINGS*				
		Maximum Dimensions - Inches							
		Rigid Length	Diameter	Mounting	Peak Inverse Voltage Volts	Maximum Peak Anode Current Amperes	Corresponding Average Anode Current Amperes	Maximum Average Anode Current Amperes	Corresponding Peak Anode Current Amperes
GL-5551A GL-5551A-PC	B	13	2 3/4	Conventional	1200 1500	600 480	5 4	22.5 18	135 108
GL-5553B GL-5553B-PC	D	19 1/2	5 5/8	Conventional	1200 1500	3000 2400	40 32	140 112	840 672
GL-5822A GL-5822A-PC	C	14 1/4	4 1/4	Conventional	1200 1500	1500 1200	20 16	70 56	420 336
GL-7669 GL-7669-PC	B	9 7/8	3 1/4	Coaxial	1200 1500	600 480	5 4	22.5 18	135 108
GL-7672 GL-7672-PC	C	11 7/8	4 5/8	Coaxial	1200 1500	1500 1200	20 16	70 56	420 336
GL-7673 GL-7673-PC	D	19 1/2	5 5/8	Coaxial	1200 1500	3000 2400	40 32	140 112	840 672
GL-7681 GL-7681-PC	Jumbo C	17 1/2	4 1/4	Conventional	1200 1500	2250 1800	30 24	105 84	630 502
GL-7998 GL-7998-PC	Jumbo C	16	4	Coaxial	1200 1500	2250 1800	30 24	105 84	630 502

Warranty for all types listed above is H-12. PC Indicates plastic coated version. * All ratings based on use of liquid cooling.

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IGNITRONS — PULSE WELDING CONTROL SERVICE

TYPE	SIZE	MECHANICAL DATA: Maximum Dimensions - Inches: Rigid Length	MECHANICAL DATA: Maximum Dimensions - Inches: Diameter	MECHANICAL DATA: Mounting	MAXIMUM ELECTRICAL RATINGS*: Peak Inverse Voltage Volts	Initial Peak Inverse Voltage Volts	Peak Anode Current Amperes	Average Anode Current Amperes	Averaging Time Seconds	Anode Current Repetition Rate - Pulses Per Second	Anode Current Pulse Width Microseconds
GL-7670	B	9 7/8	2 3/4	Coaxial	2500	1250	2000	10	2	60	1000
GL-7673	C	19 1/2	5 5/8	Coaxial	2500	1250	4000	20	2	60	1200
GL-8360	B	9 7/8	2 3/4	Coaxial	2500	1250	2000	10	2	60	1000

Warranty for all types listed above is H-12.

* All ratings based on use of liquid cooling.

IGNITRONS — POWER RECTIFIER SERVICE

TYPE	DESCRIPTION	MECHANICAL DATA: Max. Dimensions Inches: Rigid Length	MECHANICAL DATA: Max. Dimensions Inches: Diameter	MECHANICAL DATA: Mounting	MAXIMUM ELECTRICAL RATINGS*: Peak Anode Voltage Volts: Forward	Peak Anode Voltage Volts: Inverse	Anode Current Amperes: Peak	Anode Current Amperes: Average	Warranty
GL-5554	For continuous-duty power rectifier service at 100 amperes at 900 volts peak forward and inverse. Has auxiliary anode and two ignitors.	17	4 1/8	Conventional	900 2,100	900 2,100	900 600	100 75	H-24, G-12
GL-5555	For continuous-duty power rectifier service at 200 amperes at 900 volts peak forward and inverse. Has auxiliary anode and two ignitors.	17 15/16	5 3/4	Conventional	900 2,100	900 2,100	1,800 1,200	200 150	H-24, G-12
GL-5564	For continuous-duty power rectifier service at 400 amperes at 900 volts peak forward and inverse. Has auxiliary anode and two ignitors.	27 1/16	9 1/8	Special	750	750	3,600	400	H-24, G-12
GL-5630	For high voltage power-rectifier and inverter service. Also used as capacitor discharge or DC short-circuiting switch.	22 3/16	5 3/4	Conventional	20,000	20,000	200	50	G-12
GL-5779	Small glass air-cooled type for demonstrating the operating principles of ignitors and ignitrons.	8 1/4	2 1/2	Conventional	350	350	30	10	G-12
GL-5788	Similar to GL-5555. Features reliable operation at higher water temperatures and phase-retard operation; has larger diameter ignitor terminals.	19 1/4	5 3/4	Conventional	2,100	2,100	1,200	150	H-24, G-12
GL-6228	For high voltage power-rectifier and inverter service. Also used in capacitor discharge and DC short-circuiting switch service.	42	9	Special	20,000	20,000	900	150	H-36, G-12
GL-6504	Double-grid type with three ignitors for locomotive rectifier service. Twelve tubes will supply DC power for 4000 HP locomotive.	30 1/4	9	Coaxial	4,000	4,000	2,000	350	G-12
GL-6509	Similar to GL-5555. For auxiliary power in rectifier locomotives. Has three ignitors.	7 15/16	5 3/4	Conventional	900 2,100	900 2,100	1,800 1,200	200 150	G-12
GL-6512	Integral thermostat version of GL-5554. Same ratings apply.								H-24, G-12
GL-6513	Integral thermostat version of GL-5555. Same ratings apply.								H-24, G-12
GL-6514	Integral thermostat version of GL-5788. Same ratings apply.								H-24, G-12
GL-6515	Integral thermostat version of GL-5564. Same ratings apply.								H-24, G-12
GL-6878	Double-grid type for locomotive rectifier service. Features coaxial cathode connection to reduce magnetic field effects.	30 1/4	13 1/8	Coaxial	100	4,000	2,500	675	G-12
GL-6958	Double-grid type for industrial power rectifier and inverter service. Especially suited for phase retard operation. Features coaxial cathode connection to reduce magnetic field effects.	29 7/8	9	Special	4,000	4,000	2,000	275	G-12
GL-7042	Integral thermostat version of GL-6958. Same ratings apply.								G-12
GL-7736	Similar to GL-5564. Features reliable operation at high voltage and with phase-retard operation.	27 7/16	9 1/8	Special	900 2,100	900 2,100	3,600 2,400	400 300	G-12
GL-8420	Forced-air-cooled type for locomotive electronic contactor service. Features coaxial cathode connection to reduce magnetic field effects; integral thermostat control.	22 15/16	10 1/16	Coaxial	1,000	1,000	2,500	200	G-12
GL-8465	For motor control service. Has auxiliary anode and two ignitors.	17 15/16	5 3/4	Conventional	900 2,100	900 2,100	1,800 1,200	200 150	H-24, G-12
GL-8466	Integral thermostat version of GL-8465. Same ratings apply.								H-24, G-12
GL-35438	Double-grid motor control ignitron. Features cathode connection to reduce magnetic field effects.	30 1/4	13 1/8	Special	4,000	4,000	2,500	675	G-12

* All ratings are based on use of liquid cooling except GL-5779 and GL-8420 whose ratings are based on use of forced air cooling.

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IGNITRONS — CAPACITOR DISCHARGE SERVICE

TYPE	MECHANICAL DATA			MAXIMUM ELECTRICAL RATINGS					Cooling
	Maximum Dimensions - Inches		Mounting	Peak Anode Voltage Volts		Peak Anode Current Amperes	Typical Discharge Rate Pulses Per Minute	Ionization Time-Micro-seconds	
	Rigid Length	Diameter		Forward	Inverse				
GL-5630	22 3/16	5 3/4	Conventional	35,000	35,000	20,000	2	0.8	Liquid
GL-6228	42	9	Special	50,000	50,000	30,000	2	0.8	Liquid
GL-7171	8 3/4	2 5/32	Clamp	15,000	15,000	35,000	2	0.5	Air
GL-7703	7 5/8	2 1/4	Clamp	20,000	20,000	100,000	2	0.5	Liquid or Air
GL-37207	20	5 3/4	Conventional	25,000	25,000	300,000	500	0.5	Liquid
GL-37228	7 5/8	2 1/4	Clamp	20,000	20,000	100,000	2	0.5	Liquid or Air
GL-37248	7 5/8	2 1/4	Clamp	50,000	50,000	25,000	2	0.7	Liquid or Air
GL-37267A	10 1/4	6 1/2	Coaxial	20,000	20,000	300,000	500	0.7	Liquid

For above types, warranty is normally K-1000, however warranty information for specific applications will be supplied upon request.

IGNITRON ACCESSORIES

THERMOSTAT KITS

Kit includes thermostat and spring-loaded fastener in a captive assembly for connection to mounting pad located on ignitron water jacket.

Single-pole contacts perform control functions as shown in chart below.

Kit No.	Function	Contacts	Temperature Open (°F)	Temperature Close (°F)	Termination
N15272AA	Water control	NO	86	96	36-inch leads with spade terminals
N15273AA	Over-temperature protection	NC	125	105	36-inch leads with spade terminals
N15286AA	Water control	NO	86	96	Terminal block
N15287AA	Over-temperature protection	NC	125	105	Terminal block

COOLING CLAMP

Suitable for use with GL-5550, GL-7171 and GL-7703 to accomplish cathode connection and liquid cooling: Cat. No. L 6922259-G5

IGNITOR TERMINAL CONNECTING LEADS

Insulated leads for connection to 0.250-inch diameter ignitor terminals

Cat. No. N 22006LC — 7¾ inches long
Cat. No. N 22007LC — 13½ inches long

QUICK-CHANGE WATER CONNECTORS

Ignitron installation time is reduced through the use of slotted anode and cathode terminals . . . provided as a regular feature on all standard G-E welding ignitrons . . . and the use of the quick-change brass water hose connectors shown in table.

Fitting No.	Description	Use with G-E Ignitron Type
B1HK	Socket	GL-5551-A, GL-5552-A, GL-5822-A, GL-7669, GL-7670, GL-7671, GL-7672, GL-7681, GL-7998, GL-8360, GL-37250, GL-37251, GL-37252, GL-37253
B1K11	Plug	
B2HK	Socket	GL-5553-B, GL-5554, GL-5555, GL-6512, GL-6513, GL-7673, GL-37254, GL-37255
B2K16	Plug	

CONDENSED WARRANTY INFORMATION

G-12—
(Rectifier service only.) Warranted for full replacement within one year of service. Expires 18 months from date of sale to ultimate user or two years from date of shipment by G.E.

H-12—
Warranted for one year with prorated adjustment after 15 days of service. Expires 18 months from date of sale to ultimate user, 12 months from date of initial installation, or 2 years from date of shipment by G.E.

H-24—
Warranted for two years with prorated adjustment after 15 days of service. Expires 36 months from date of sale to ultimate user, 24 months from date of initial installation, or 3½ years from date of shipment by G.E.

K-1000—
Warranted for 1000 operations or six months of service with prorated adjustment for the difference between elapsed number of operations and 1000. Expires nine months from date of sale to ultimate user, six months from date of initial installation, or twelve months from date of shipment by G.E.

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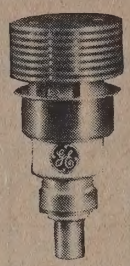
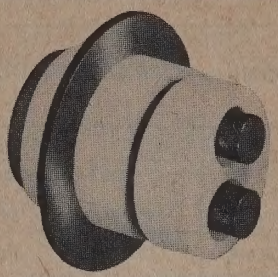
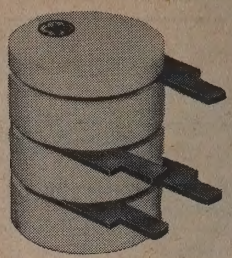
PLANAR TUBES — CERAMIC • GLASS LIGHTHOUSE

GENERAL ELECTRIC

GENERAL, MAXIMUM RATINGS

CHARTERISTIC AND TYPICAL OPERATION

TYPE	GENERAL DESCRIPTION	Out-line Dwg.	Heater Volts	Heater Amps	Max. Plate Volts And Watts	Max. Grid Current ma	Max. Freq. MC (8)		Plate Volts	Neg. Grid Volts	Plate Milli-amperes	Grid Milli-amperes	μ	Rp, Ohms	Gm, μMhos	Gain in db	R.F. Power Output	Freq. MC
2B22	Metal-glass diode—"lighthouse" type, intended for detector service.	A	6.3	0.75	300 (1)	—	1,500	Signal detector	Tube voltage drop: 6.0 volts at I_b=20 milliamperes. Maximum DC cathode current=20 milliamperes; maximum peak cathode current=700 milliamperes									
2C39-A	Metal-ceramic triode—intended for UHF power amplifier, oscillator, or frequency multiplier service.	B	6.3	1.03	1,000 100 (3)	50	2,500	Avg. char. Class C Oscillator Class C Oscillator	600 900 800	(7) −22 −20	70 90 80	— 27 32	100 — —	— — —	2,500 — —	— — —	— 27W 12W	— 500 2,500
2C39-B	Metal-ceramic triode—intended for UHF power amplifier, oscillator, or frequency multiplier service.	B	6.3 (2)	1.03	1,000 100 (3)	50	2,500	Avg. char. Class-C oscillator Class-C oscillator	600 900 900	(4) 22 40	75 90 90	— 27 30	95 — —	— — —	24,800 — —	— — —	— 17W 40W	— 2,500 500
2C39-WA	Military version of 3C39B when subject to considerable vibration and shock. Interchangeable with 2C39B.	Same as 2C39B																
2C40	Metal-glass triode—"lighthouse" type, intended for UHF oscillator or amplifier service.	C	6.3	0.75	500 6.5	8.0	3,370	Avg. char. Radio-frequency oscillator	250 250	R_k=200 5.0	17 20	— 0.5	36 —	— —	4,850 —	— —	— 75MW	— 3,370
2C40-A	Metal-glass triode—"lighthouse" type, intended for UHF oscillator service, either CW or pulse.	C	6.3	0.75	500 6.5 1,400 (5) 4.0 (6)	8.0 1,000 (6)	3,370	Avg. char. Radio-frequency oscillator Plate-pulsed oscillator D.F.=.001	250 250 1,400	R_k=200 5.0 —	17 20 1,000	— 0.5 —	35 — —	— — —	5,100 — —	— — —	— 75MW 300W	— 3,370 3,000
2C42	Lighthouse triode. For use as plate-pulsed oscillator up to 1300 mc.	D	6.3	0.9	3,000 25			C-T Oscillator At 3370 mc.	250	−5	20	—	36	—	4,850	—	—	—
2C43	Metal-glass triode—"lighthouse" type, intended for UHF CW	D	6.3	0.9	500 12 3,500 (5)	—	1,500 3,370 (6)	Avg. char. Push-pull radio-frequency oscillator—values for two tubes Plate-pulsed oscillator D.F.=.001	250 470 3,000	R_k=100 R_g=1,000 R_g=100 —	21 38 2,500	— — —	50 — —	— — —	8,100 — —	— — —	— 9.0W 1.75KW	— 350 3,370
2C46	Lighthouse triode. For use in cavity as stable oscillator between 1,000 and 1,200 mc.	D	6.3	0.75	500 12			C-T UHF Oscillator	150	—	8	—	60	—	3,500	—	—	—
3CX100A5	Metal-ceramic triode—intended for UHF oscillator or amplifier service, either CW or pulse.	E	6.0 (2)	1.0	1,000 100 (3)	50	2,500 3,000 (6)	Avg. char. Class-C amplifier Plate-pulsed oscillator D.F.=.0025	600 900 3,500	(7) 40 —	70 90 3,000	— 30 1,800	100 — —	— — —	25,000 — —	— — —	— 40W 1.6W	— 500 3,000
6299	Metal-ceramic triode—intended for low-noise UHF amplifier service.	F	6.3	0.3	200 2.0	0	3,000	Avg. char. Class-A radio-frequency amplifier—grounded-grid	175 (10) (10)	(9) 0 0	10 10 10	— — —	110 115 —	7,300 9600 —	15,000 — —	— 17.5 11	— — —	— 450 3,000
6442	Metal-ceramic triode—intended for UHF oscillator or amplifier service, either CW or pulse.	G	6.3 (2)	0.9	350 8.0 (3) 3,000 (5) 7.5 (6)	15 1,250 (6)	2,500 5,000 (6)	Avg. char. Class-C amplifier Plate-pulsed oscillator—D.F.=.001	350 250 3,000	4.25 — 75	35 23 2,500	— 6.0 1,250	50 — —	— — —	16,500 — —	— — —	— 2.8W 0.5KW	— 1,000 5,000
6771	Metal-ceramic triode—intended for UHF oscillator or amplifier service, either CW or pulse.	G	6.3 (2)	0.575	300 6.25 (3) 1,750 (5)	8.0 700 (6)	4,000 5,000 (6)	Avg. char. Radio-frequency oscillator	250 275	1.6 —	25 25	— —	90 —	— —	23,000 —	— —	— 300MW	— 4,000
6897	Metal-ceramic triode—intended for UHF CW oscillator or amplifier service.	B	6.3 (2)	1.03	1,000 100 (3)	50	2,500	Avg. char. Class-C oscillator	600 900 500	(4) 22 40	75 90 90	— 27 30	90 — —	— — —	24,800 — —	— — —	— 17W 40W	— 2,500 500
7077	Metal-ceramic triode—intended for low-noise UHF amplifier service.	H	6.3	0.24	250 1.1	—	3,000	Avg. char. Grounded-grid amplifier	250 (11) 250 (11)	R_k=82 R_k=82	6.5 6.5	— —	90 —	9,000 —	10,000 —	— 14.5	— —	— 450
7266	Metal-ceramic diode—intended for instrument-probe service.	I	6.3	0.215	600 (1)	—	3,000	Instrument detector	Tube voltage drop: 1.0 volts at I_b=1.0 milliamperes. Maximum DC cathode current=2.2 milliamperes; maximum peak cathode current=11 milliamperes									
7289	Metal-ceramic triode—intended for UHF oscillator or amplifier service, either CW or pulse.	E	6.0 (2)	1.0	1,000 100 (3) 3,500 (5) 27 (6)	50 1,800 (6)	2,500 3,000 (6)	Avg. char. Class-C amplifier Plate-pulsed oscillator—D.F.=.0025	600 900 3,500	(7) 40 —	70 90 3,000	— 30 1,800	100 — —	— — —	25,000 — —	— — —	— 40W 1.6KW	— 500 3,000
7296	Metal-ceramic triode—intended for VHF oscillator or amplifier service.	J	6.3	0.4	330 5.5	10	500	Avg. char.	200	R_k=68	17	—	90	5,450	16,500	—	—	—
7391	Metal-ceramic triode—intended for UHF oscillator service.	F	6.3	0.38	200 2.25	3.0	6,000	Avg. char. Class-C oscillator	175 150 150	1.5 — —	10 12 12	— 3.0 3.0	62 — —	— — —	11,000 — —	— — —	— 65MW 500MW	— 5,400 500
7462	Metal-ceramic triode—intended for low-noise VHF amplifier service.	K	6.3	0.24	250 1.1	—	500	Avg. char.	150	(12)	7.2	—	94	10,500		—	—	—
7486	Metal-ceramic triode—intended for UHF oscillator or amplifier service.	H	6.3	0.24	250 1.0	2.2	3,000	Avg. char. UHF oscillator service Class-C amplifier	150 150 150	R_k=82 R_g=1,000 R_g=3,000	7.5 8.0 5.0	— 2.0 1.0	90 — —	— — —	10,500 — —	— — —	— 300MW 300MW	— 1,200 450
7588	Metal-ceramic triode—intended for VHF amplifier service.	J	6.3	0.4	300 5.5	—	500	Avg. char.	200	(13)	24	—	175	3,900	45,000	—	—	—

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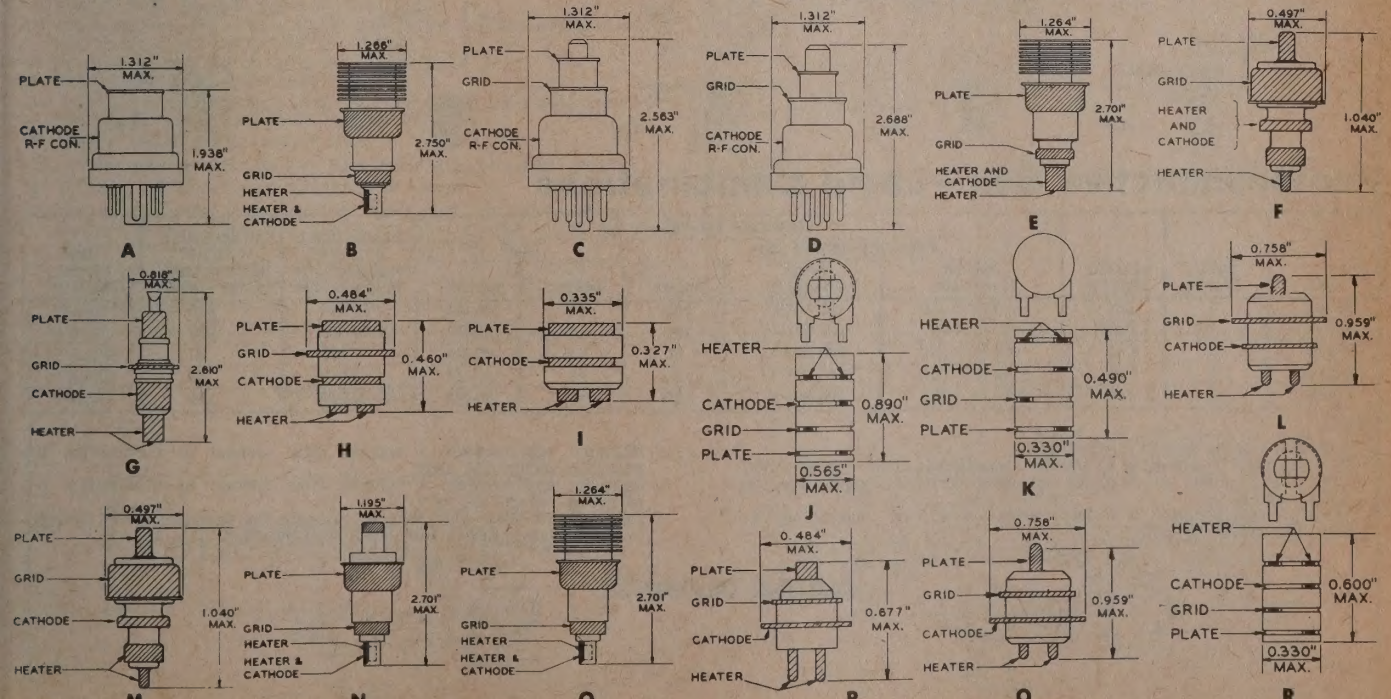
PLANAR TUBES — CERAMIC • GLASS LIGHTHOUSE

GENERAL ELECTRIC

GENERAL, MAXIMUM RATINGS								CHARTERISTIC AND TYPICAL OPERATION											
TYPE	GENERAL DESCRIPTION	Out-line Dwg.	Heater Volts	Heater Amps	Max. Plate Volts And Watts	Max. Grid Cur-rent ma	Max. Freq. MC (8)		Plate Volts	Neg. Grid Volts	Plate Milli-am-peres	Grid Milli-am-peres	μ	Rp, Ohms	Gm, μMhos	Gain in db	R.F. Power Output	Freq. MC
7625	Metal-ceramic triode—intended for low-level audio-frequency amplifier service.	K	6.3	0.215	275 0.85	—	—	Avg. char.	150	R_k=1,000	0.95	—	80	57,000	1,400	—	—	—
7644	Metal-ceramic triode—intended for low-noise UHF amplifier service.	F	6.3	0.3	200 2.0	—	3,000	Avg. char. Class-A radio-frequency amplifier — grounded-grid	175 300 (14) 300 (14)	(9) 0 0	10 10 10	— — —	110 — —	7,300 — —	15,000 — —	— 11 17.5	— — —	— 3,000 450
7720	Metal-ceramic triode—intended for VHF oscillator service.	K	6.3	0.24	250 1.0	2.2	500	Avg. char. Class-C oscillator	150 150	R_k=82 R_g=7,000	7.5 4.0	— 0.5	90 —	— —	10,500 —	— —	— 100MW	— 450
7768	Metal-ceramic triode—intended for UHF amplifier service.	L	6.3	0.4	330 5.5	—	3,000	Avg. char.	200	(13)	24	—	225	4,500	50,000	—	—	—
7784	Metal-ceramic triode—intended for low-noise UHF amplifier service.	M	6.3	0.3	200 2.0	—	3,000	Avg. char. Class-A radio-frequency amplifier — grounded-grid	175 (10) (10)	(9) 0 0	10 10 10	— — —	110 — —	7,300 — —	15,000 — —	— 17.5 11	— — —	— 450 3000
7815	Metal-ceramic triode—intended for UHF pulsed oscillator or amplifier service.	N	6.0 (2)		3,500	5.0	3,000	Plate-pulsed oscillator — D.F.=.003	3,500	—	3,000	3.0	—	—	—	—	2KW	2,500
7815R	Metal-ceramic triode—intended for UHF pulsed oscillator or amplifier service.	O	6.0 (2)	1.0	3,500 (5) 10 (6, 15)	5.0	3,000	Plate-pulsed oscillator — D.F.=.003	3,500	—	3,000	3.0	—	—	—	—	2KW	2,500
7841	Metal-ceramic diode — intended for detector service.	I	6.3	0.215	350 (1)	—	3,000	Signal detector	Tube voltage drop: 2.6 volts at I_b=5.0 milliamperes. Maximum DC current=55 milliamperes; maximum peak current=22 milliamperes									
7910	Metal-ceramic triode—intended for UHF plated-pulsed oscillator or amplifier service.	P	6.3	0.275	1,200 (5) 1.5 (6)	200 (6)	7,500	Avg. char. Plate-pulsed oscillator — D.F.=.001	125 1,000	R_k=82 —	11.5 600	— 200	75 —	— —	16,000 —	— —	— 100W	— 5,900
7911	Metal-ceramic triode—intended for UHF plate-pulsed oscillator or amplifier service.	Q	6.3	0.55	3,000 (5) 6.5 (6)	1,000 (6)	6,000	Avg. char. Plate-pulsed oscillator — D.F.=.001	200 3,000	R_k=100 —	23 2,500	— 300	58 —	2,300 —	25,000 —	— —	— 2.2KW	— 4,100
7913	Metal-ceramic triode—intended for UHF oscillator or amplifier service.	L	6.3	0.4	330 5.5	10	3,000	Avg. char. Class-C oscillator	200 300	R_k=47 R_g=1,500	25 25	— 5.0	100 —	2,500 —	40,000 —	— —	— 4.0W	— 400
8081	Metal-ceramic triode—intended for low-level audio-frequency amplifier service.	R	6.3	0.215	275 0.85	—	—	Avg. char.	150	R_k=1,000	0.95	—	80	57,000	1,400	—	—	—
8082	Metal-ceramic triode—intended for UHF oscillator service.	R	6.3	0.24	250 1.0	2.2	500	Avg. char. UHF oscillator	150 150	R_k=82 R_g=7,000	7.5 4.0	— 0.5	90 —	— —	10,500 —	— —	100MW	450
8083	Metal-ceramic triode—intended for low-noise VHF amplifier service.	R	6.3	0.24	250 1.1	—	500	Avg. char.	150	(12)	7.2	—	94	9,000	10,500	—	—	—

NOTES

(1) Peak inverse voltage.
(2) This is the bogey value at which average characteristics are determined. For some classes of operation a lower value may be recommended.
(3) These are the highest values listed for any class of CW operation; lower values may be indicated for some classes of CW operation. Refer to complete data sheets for this information.
(4) Adjusted for I_b=75 milliamperes.
(5) Peak voltage rating for pulse service.
(6) Pulse service.
(7) Adjusted for I_b=70 milliamperes.
(8) The frequency listed is one at which significant application data are available or expected, and does not necessarily represent an absolute frequency limit.
(9) Adjusted for I_b=10 milliamperes.
(10) Adjusted for I_b=10 milliamperes; range must be variable from 75 to 200 volts.
(11) Bypassed resistor (18k) in plate-supply lead.
(12) With R_k=910 and E_g=+6.0 volts.
(13) With R_k=270 and E_g=+6.0 volts.
(14) Bypassed resistor (17.5k) in plate-supply lead.
(15) Plate dissipation of 100 watts is permissible with forced-air cooling.



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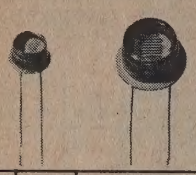
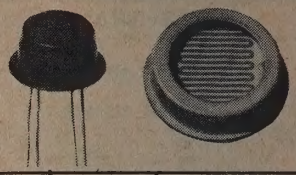
Special Devices — Photo Conductive Cells

GENERAL ELECTRIC



Reliable, hermetically sealed, or plastic encapsulated, cadmium sulfide and cadmium selenide photoconductive cells are available in a wide assortment of package sizes and electrical characteristics.

Photocell-lamp combinations consist of a photoconductive cell and an illumination source enclosed in a light tight, metal package available in an assortment of electrical characteristics.



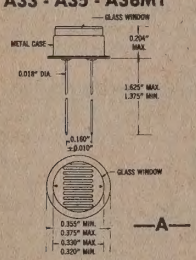
TYPE	Outline Drawing	Enclosures	Sensitive Material	Peak Spectral Response	MAXIMUM RATINGS			Resistance at 2 Footcandles — Ohms	Resistance at 20 Footcandles — Ohms	Dark Current (Maximum)	RESPONSE TIME	
					Ambient Temperature	Power Dissipation	Voltage				Turn-on Time(1) Sec.	Turn-off Time(2) Sec.
A33	A	Metal-Glass	CdS	5500A	−40 to +65C	75 MW(3)	30	6,300	1,070	100μA(4)	0.88	0.21
A33P1	B	Plastic	CdS	5500A	−40 to +65C	50 MW(10)	30	6,300	1,070	100μA(4)	0.88	0.21
A35	A	Metal-Glass	CdS	5500A	−40 to +65C	75 MW(3)	50	12,000	*2,900	100μA(4)	1.0	0.28
A36M1	A	Metal-Glass	CdS	5500A	−40 to +65C	75 MW(3)	60	30,000	3,800	60μA(4)	0.089	0.005
B46	C	Metal-Glass	CdS	6100A	−40 to +80C	250 MW(5)	60	1,250	260	80μA(6)	0.75	0.57
B425	C	Metal-Glass	CdS	6100A	−40 to +65C	250 MW(3) 500 MW(7)	250	9,100	1,400	80μA(4)	0.56	0.09
B425P1	D	Plastic	CdS	6100A	−40 to +65C	200 MW(3)	250	9,100	1,400	80μA(4)	0.56	0.09
C425P1	D	Plastic	CdSe	7300A	−40 to +65C	50 MW(10)	250	15,000	1,800	50μA(4)	0.016	0.021
B430	C	Metal-Glass	CdS	6100A	−40 to +65C	250 MW(3) 500 MW(7)	300	15,000	2,500	100μA(4)	0.32	0.08
B1035M1	F	Metal-Glass	CdS	6100A	−40 to +65C	600 MW(3) 1.0 W(8)	350	12,000	1,570	400μA(9)	0.23	0.1
B1035M2	F	Metal-Glass	CdS	6100A	−40 to +65C	600 MW(3) 1.0 W(8)	350	5,500	970	400μA(9)	0.23	0.1
B1035M3	F	Metal-Glass	CdS	6100A	−40 to +65C	600 MW(3) 1.0 W(8)	350	2,750	580	1500μA(9)	0.23	0.1

NOTES

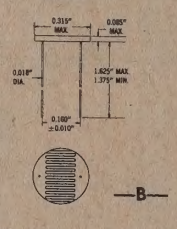
(1) The time required for current through the cell to reach 90% of its steady value upon switching from darkness to a light level of 5 footcandles.
(2) The time required for current through the cell to decrease to 10% of its steady value upon switching from a light level of 5 footcandles to darkness.
(3) This dissipation is allowable at ambient temperatures from −40 to +40C. From +40 to +65C, the allowable dissipation decreases linearly, reaching zero at +65C.
(4) Measures approximately 30 seconds after removal of illumination of two footcandles produces by a tungsten-filament source operated at a color temperature of 2854 Kelvin and at rated cell voltage.
(5) This dissipation is allowable at ambient temperatures from −40 to +40C. From +40 to +80C, the allowable dissipation decreases linearly, reaching 37 milliwatts at +80C, and going to zero above +80C.
(6) Measured approximately 20 seconds after removal of illumination of two footcandles produced by a tungsten-filament source operated at a color temperature of 2854 Kelvin; d-c polarizing voltage 12 volts.
(7) Allowable dissipation may reach 500 milliwatts with external heat-conducting bracket.
(8) For a maximum of 20 minutes at 12-hour intervals.
(9) Measured approximately 30 seconds after removal of illumination of one footcandle produced by a tungsten-filiment source operated at a color temperature of 2854 Kelvin; d-c polarizing voltage 50 volts.
(10) This dissipation is allowable at ambient temperatures from −40 to +30C. From +30 to +65C, the allowable dissipation decreases linearly, reaching zero at +65C.

OUTLINE DRAWINGS

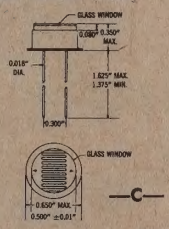
A33 - A35 - A36M1



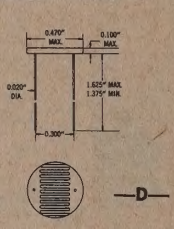
A33P1



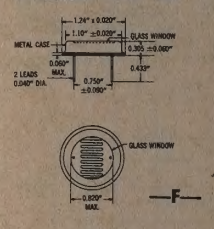
B46 - B425 - B430



B425P1 - C425P1



B1035M1 - M2 - M3



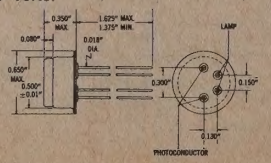
Photoconductive Cell — Lamp Combinations

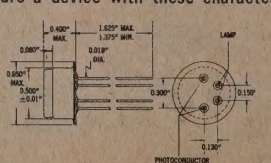
TYPE	Outline Drawing	Sensitive Material	MAXIMUM RATINGS					Cell Resistance At 20% Of Maximum Lamp Voltage — Ohms	Cell Resistance At 90% Of Maximum Lamp Voltage — Ohms	Dark Current (Maximum)
			PHOTOCONDUCTIVE CELL			LAMP				
			Ambient Temperature	Power Dissipation	Voltage	Voltage	Current(1)			
PL5B1	A	CdS	−40 to +65C	100 MW(2)	250	5.0	60 MA	40,000	260	80μA(4)
PL5C1	A	CdSe	−40 to +65C	100 MW(2)	200	5.0	60 MA	20,000	260	15μA(6)
PL5B2	A	CdS	−40 to +65C	100 MW(2)	60	5.0	60 MA	3,400	60	400μA(3)
Y-1248*	A	CdS	−40 to +65C	100 MW(2)	60	28	40 MA	2,000	30	100μA(3)
Y-1260*	A	CdS	−40 to +65C	100 MW(2)	250	28	40 MA	5,000	130	80μA(4)

NOTES

(1) Current of a bogey lamp at rated voltage.
(2) This dissipation is allowable at ambient temperatures from −40 to +30C. From +30 to +65C, the allowable dissipation decreases linearly, reaching zero at +65 C.
(3) Measured approximately 5 minutes after removal of illumination; d-c polarizing voltage 60 volts.
(4) Measured approximately 5 minutes after removal of illumination; d-c polarizing voltage 250 volts.
(6) Measured approximately 5 minutes after removal of illumination; d-c polarizing voltage 200 volts.
* Publication of these data does not obligate the General Electric Company to manufacture a device with these characteristics.

OUTLINE DRAWINGS





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Special Devices — Reed Switches

GENERAL ELECTRIC

In a relatively short period of years, the dry reed switch has begun to play an important role in performing the switching function for a wide variety of electronic/electro-mechanical equipment. Major application, now in general use, range from telephone switchgear, appliances, and data processing units to logic circuitry for industrial controls.

The General Electric reed switch capsule consists of a pair of low reluctance, magnetically actuated, flat metal reeds, hermetically sealed in an atmosphere of dry inert gas. The reeds are of equal length and are supported as cantilevers, overlapping at the center of the glass cylinder where they are separated by a small air gap, thus forming a normally opn Single Pole, Single Throw (SPST) switch.

Type[1]	Former Designation	MAXIMUM CONTACT RATING			SENSITIVITY		Maximum Initial Contact Resistance In Milliohms	Breakdown Voltage Minimum, 60 cps rms	Life Expectancy In Millions of Cycles[2]	MAXIMUM DIMENSIONS IN INCHES			Contacts And Leads
		Resistive Load	Maximum Current	Maximum Voltage	Pull-In Ampere-Turns	Drop-Out Ampere-Turns				Glass Dia. (A)	Glass Length (B)	Overall Length (C)	
MINIATURE — INERT-GAS FILLED													
DR100	IDR04	4VA	0.25A	250	43±11[3]	18±8[3]	150	300	20[4]	0.108	0.84	2.03	[5]
DR121	Y-1292	10VA	0.25A	250	43±11[3]	28±8[3]	150	300	20[4]	0.108	0.84	2.55	[6]
DR123	Y-1513	10VA	0.25A	250	35±11[3]	15±10[3]	150	300	20[4]	0.108	0.84	2.55	[6]
DR125	Y-1454	4VA	0.25A	250	35±13[3]	18±10[3]	150	300	20[4]	0.108	0.84	2.03	[5]
DR145		10VA	0.25A	250	28±10	6 Min.	150	300	20[4]	0.108	0.84	2.55	[6]
2″ — INERT-GAS FILLED													
DR101	2DR15	15VA	1.0A	250	90±15[7]	34±8[7]	50	500	20[8]	0.215	2.10	3.21	[9]
DR104	2DR15-3	15VA	1.0A	125	40±10[7]	23±7[7]	50	350	20[8]	0.215	2.10	3.21	[9]
DR113	2DR50	50VA	3.0A	250	90±15[7]	45±10[7]	50	500	20[15]	0.215	2.10	3.21	[18]
2″ — VACUUM													
DRV120	2VR15	—	3.0A[16]	5000[16]	113±20[17]	52±10[17]	50	7000	—	See Drawing			
FORM C													
DR138		5VA	0.25A	250	90±20	32±15	50	350	20	See Drawing			

NOTES

(1) All switches use single-pole, single-throw, normally open, Form A contact arrangements. With the exception of type DRV120, which is a vacuum switch, all switches are filled with inert gas at an internal pressure ½ atmosphere

(2) Some degradation or improvement in performance may be expected at operating conditions other than those specified.

(3) Sensitivity measured using a 6300 turn coil of #41 wire wound on a 0.8″ long bobbin approximately 0.17″ in diameter.

(4) Full load, 25 volts d-c, 60 operations per second at H.V.A.

(5) Diffused gold contacts with gold-plated leads.

(6) Rhodium-plated contacts with gold-plated leads.

(7) Sensitivity measured using a 10,000 turn coil of #39 wire wound on a 2.0″ long bobbin approximately 0.25″ in diameter.

(8) Full load, 50 volts d-c, 60 operations per second.

(9) Diffused gold contacts with both leads tinned.

(12) Sensitivity measured using a 10,000 turn coil of #36 wire wound on a 1.750″ long bobbin approximately 0.330″ in diameter.

(13) Nominal center-to-center of bent leads.

(14) Diffused gold contacts with both leads tinned and bent on 90° angle.

(15) Full load, 125 volts d-c, 60 operations per second.

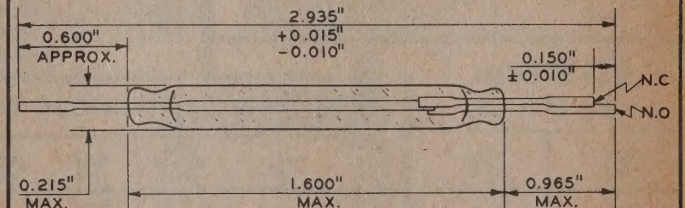
(16) The voltage rating is a "hold-off" value, and the current rating is a measure of the current the contacts will carry but not switch. Maximum permissible switching currents are to be determined.

(17) Sensitivity measured using a 5,700 turn coil of #36 wire wound on a 2.0″ long bobbin having an oval cross-section of approximately 0.5″ x 0.28″.

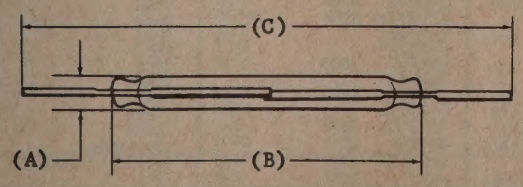
(18) Rhodium-plated contacts with both leads tinned.

OUTLINE DRAWING

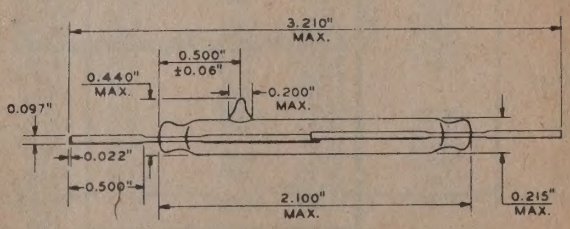
DR138



GAS-FILLED



VACUUM



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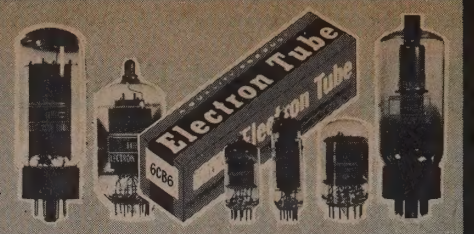
IEC Electron Tubes For Entertainment and Industry



IEC SERVICE RANGE

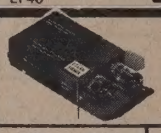
A large selection of the most popular receiving tubes for the U.S. service dealer renewal market.

TUBE TYPE	TUBE TYPE	TUBE TYPE	TUBE TYPE	TUBE TYPE
1AD2	6AL11	6EM7	6JN6	12CU5/ 12C5
1B3GT/ 1G3GT	6AN8A	6ER5	6JS6A	12DQ6B/ 12GW6
1K3/1J3	6AQ5A/ 6HG5	6EW6	6JT8	12DT8
1V2	6AQ8	6FG7	6JU8A	12FQ7
1X2B/ 1X2A	6AT6	6FH5	6K6GT	12GN7A
2AF4B/ 2DZ4	6AT8	6FQ7/ 6CG7	6KA8	13GF7
2AV2	6AU4GTA	6GC5	6KZ8	15BD11
3A3/3B2	6AU8	6GF7A	6KD8/ 6U8A	15CW5
3AL5	6AV6	6CG8A	6KE8	15KY8/ 17LD8
3AT2	6AW8A	6CL8A	6L6GB	16GY5
3BN6	6AX4GTB	6CM7	6L6GC	17AY3A
3BY6	6AY3B	6CQ8	6LM8	17BE3/ 17BZ3
3BZ6	6B10	6CS6	6S4A	17BF11
3CA3	6BA6	6CW5	6SN7GTB	17BS3
3CB6/ 3CF6	6BG6GA	6CY5	6T8A	17BZ3/ 17BE3
3CS6	6BH6	6DA6	6T10	17CU5/ 17C5
3DT6A	6BJ8	6DE6	6U8A/ 6KD8	17DM4A
3GK5	6BK4B	6DJ8	6V6GTA	17DQ6B/ 17GW6
3GS8/ 3BU8	6BK7B	6DK6	6W6GT	17EW8
3HQ5	6BL7GT	6DQ6B/ 6GW6	6X8A	17JZ8
4AU6	6BL8	6DT6A	7AU7	21GY5
4BL8	6BM8	6GH8A/ 6EA8	7GS7	21JZ6
4BQ7A/ 4BZ7	6BQ5	6GJ7	8AW8A	22BH3
4DT6A	6BQ6GTB/ 6CU6	6GK5/ 6FQ5A	8B10	23Z9
4EH7	6BQ7A/ 6BZ7	6GK6	8BQ5	25C5
4EJ7	6BR8A	6GM6	8CG7/ 8FQ7	25CD6GB
4HA5	6BS8	6GU7	8JV8	25EH5
4HQ5	6BZ6	6GX6	9A9/8A8	25L6GT
5AM8	6BZ7/ 6BQ7A	6GY6	10CW5	33GY7
5AN8	6C4	6HB7	10DE7	35C5
5AQ5	6CB6A/ 6CF6	6HF8	12AD6	35EH5
5BK7A	6CD6GA	6HG8	12AL5	35L6GT
5GS7	6DW4B	6HM5/ 6HA5	12AT6	35W4
5T8	6DX8	6HQ5	12AT7	35Z5GT
5U4GB	6EA8/ 6GH8A	6HS8	12AU7A	38EH7
5U8	6EB8	6HZ6	12AV6	50C5
5V3A	6EH7	6J6A	12AV7	50EH5
6AF4A/ 6DZ4	6EJ7	6JC6	12AX4GTB	50L6GT
6AK5	6EM5	6JD6	12AX7A	7025A
6AL3		6JE6A	12AZ7A	7189
6AL5		6JH6	12BA6	7247/ 12DW7
		6JM6	12BE6	
			12BH7A	
			12BY7A	

IEC MULLARD RECEIVING TUBES

Universally recognized and preferred for • Hi Fidelity • Stereo • Foreign Replacement

TUBE TYPE	CROSS REF.	TUBE TYPE	CROSS REF.	TUBE TYPE	CROSS REF.
DAF96	1AH5	EF80	6BX6	LFL200	11Y9
DK91	1R5	EF85	6BY7	LL86	10CW5
DL98	3B4	EF86	6267	LY88	20AQ3
DM70	1M3	EF89	6DA6	PABC80	9AK8
DY87	1S2A	EF91	6AM6	PC900	4HA5
EABC80	6AK8	EF92	6CQ6	PCC85	9AQ8
EB91	6AL5	EF93	6BA6	PCC88	7DJ8
EBC33		EF94	6AU6	PCF80	9A8
EBC41	6CV7	EF95	6AK5	PCF82	9U8
EBC81	6BD7A	EF183	6EH7	PCF200	8X9
EBC90	6AT6	EF184	6EJ7	PCF201	8U9
EBF80	6N8	EL34	6CA7	PCF801	8GJ7
EBF89	6DC8	EL84	6BQ5	PCH200	9V9
EC88	6DL4	EL86	6CW5	PCL82	16A8
EC92	6AB4	EL90	6AQ5	PCL84	15DQ8
EC97	6FY5	EL95	6DL5	PCL85	18GV8
EC900	6HA5	EL500	6GB5	PCL86	14GW8
ECC81	12AT7	EM34	6CD7	PL36	25E5
ECC82	12AU7	EM81	6DA5	PL84	15CW5
ECC83	12AX7	EM84	6FG6	PL500	27GB5
ECC85	6AQ8	EM87	6HU6	PY81	17Z3
ECC86	6GM8	EY88	6AL3	PY88	30AE3
ECC88	6DJ8	EZ80	6V4	UCC85	
ECC189	6ES8	EZ81	6CA4	UCH81	19D8
ECF80	6BL8	EZ90	6X4	UCL82	50BM8
ECF82	6U8	GZ34	5AR4	UL84	45B5
ECF86	6HG8	HCC85	17EW8	UY85	38A3
ECF200	6X9	LC900	3HA5	XCF80	4BL8
ECF201	6U9	LCF80	6LN8	XCF801	4GJ7
ECF801	6GJ7	LCF86	5HG8	XL84	8BQ5
ECH81	6AJ8	LCF200	5X9	XL86	8CW5
ECH200	6V9	LCF201	5U9	XL500	13GB5
ECL80	6AB8	LCF801	5GJ7	XY88	16AQ3
ECL82	6BM8	LCF802	6LX8	7025A	
ECL85	6GV8	LF183	4EH7	7189A	
ECL86	6GW8	LF184	4EJ7	7247	12DW7
EF40					



IEC MATCHED PAIRS

For the most complete range for optimum performance.
• Laboratory Balanced

TUBE TYPE	CROSS REF.	TUBE TYPE	CROSS REF.	TUBE TYPE	CROSS REF.
ECL82MP	6BM8MP	EL90MP	6AQ5MP	UL84MP	45B5MP
ECL86MP	6GW8MP	EL95MP	6DL5MP	7189MP	
EL34MP	6CA7MP	KT66MP		**KT SERIES**	
EL84MP	6BQ5MP	KT77MP		**TUBE TYPE**	
EL86MP	6CW5MP	KT88MP		KT66	
		UCL82MP	50BM8MP	KT77	
				KT88	

IEC 10M TUBE SERIES

A selected series of individually laboratory tested tubes ideally suited for today's advanced electronic equipment.

• TUBE-TO-TUBE UNIFORMITY • LONG LIFE
• SECTION-TO-SECTION UNIFORMITY

TUBE TYPE	SUGG. RESALE PRICE	TUBE TYPE	SUGG. RESALE PRICE
6AB8/ECL80	$2.75	12DW7/7247	$2.55
6AJ8/ECH81	2.65	15CW5/PL84	2.50
6AK5/EF95	3.25	5654/6AK5W	4.50
6AK8/EABC80	2.80	6267/EF86	2.50
6AL5/EB91	1.95	7025	2.35
6AQ5/EL90	2.15	7247/12DW7	2.55
6AQ5A	2.15	EABC80/6AK8	2.80
6AQ8/ECC85	2.40	EB91/6AL5	1.95
6AT6/EBC90	2.00	EBC90/6AT6	2.00
6AU6/EF94	2.05	EBC91/6AV6	1.95
6AU6A	2.05	EBF89/6DC8	2.65
6AV6/EBC91	1.95	EC90/6C4	2.85
6BA6/EF93	2.00	EC95/6ER5	2.40
6BE6/EK90	2.10	EC97/6FY5	2.35
6BL8/ECF80	3.05	ECC81/12AT7	2.55
6BQ5/EL84	2.15	ECC82/12AU7	2.20
6BQ5A	2.15	ECC83/12AX7	2.20
6C4/EC90	2.85	ECC85/6AQ8	2.40
6DA6/EF89	2.55	ECC88/6DJ8	3.10
6DC8/EBF89	2.65	ECC91/6J6	2.55
6DJ8/ECC88	3.10	ECC189/6ES8	3.50
6DL5/EL95	2.55	ECF80/6BL8	3.05
6DX8/ECL84	2.85	ECF86/6HG8	3.10
6EH7/EF183	2.60	ECH81/6AJ8	2.65
6EJ7/EF184	2.60	ECL80/6AB8	2.75
6ER5/EC95	2.40	ECL84/6DX8	2.85
6ES8/ECC189	3.50	EF86/6267	2.50
6EU7	2.35	EF89/6DA6	2.55
6FY5/EC97	2.35	EF93/6BA6	2.00
6GK5	2.40	EF94/6AU6	2.05
6HG8/ECF86	3.10	EF95/6AK5	3.25
6J6/ECC91	2.55	EF183/6EH7	2.60
6J6A	2.55	EF184/6EJ7	2.60
6T8A	2.80	EK90/6BE6	2.10
8HG8/PCF86	2.65	EL84/6BQ5	2.15
9A8/PCF80	3.25	EL90/6AQ5	2.15
12AT7/ECC81	2.55	EL95/6DL5	2.55
12AU7/ECC82	2.20	HBC91/12AV6	1.95
12AU7A	2.20	PCF80/9A8	3.25
12AV6/HBC91	1.95	PCF86/8HG8	2.65
12AX7/ECC83	2.20	PL84/15CW5	2.50
12AX7A	2.20		

IEC SPECIAL JIS SERIES

TUBE TYPE	TUBE TYPE
1BK2	7GS7
1DK27	8KR8
1DK29	12BR3/ 12AF3
1RK31	12DW4A
1RK41	
4KN8/ 4R-HH8	12GB3
4RHH2	12GB6
5GS7	12RK19
5MHH3	15DQ8
6GB3A	
6GK17	17AB9
	17BB14
	17BR3
6GS7	17HB25
6KN8/ 6RHH8	17Z3
6MHH3	
6RHH2	18GB5
6RHH8	18GV8
	23JS6A
	29KQ6
6RK19	30A5
6RP22	30KD6

IEC SPECIAL PURPOSE TUBES over 700 dependable Tubes for virtually every industrial application.

TUBE TYPE	CROSS REF.	SUGG. RESALE PRICE
AW17-20		$135.00
DH3-91	1CP1/ 1CP31	17.70
DM160	6977	2.50
E55L	8233	13.25
E80CC	6085	3.30
E80CF	7643	4.95
E80F	6084	3.30
E80L	6227	3.05
E81L	6686	4.10
E83F	6689	3.85
E88CC	6922	4.87
E90CC	5920	3.20
E90F		3.75
E91H	6687	2.75
E92CC		2.00
E180CC	7062	2.25
E180F	6688	6.80
E182CC	7119	2.95
E186F	7737	7.20
E188CC	7308	5.20
E810F	7788	9.75
EA76	6489	4.70
EL360		4.75
EN91	2D21	1.29
JP9-2.5	7028	142.00
KS9-20D		115.00
M8079	6058	4.20
M8080/ 6C4WA	6100	$ 7.25
M8081/ 6J6WA	6101	5.35
M8082	6516	5.75
M8083	6064	4.75
M8096	6062	7.60
M8100/ 6AK5W	6096/5654	2.45
M8136/ 12AU7WA	6189	3.70
M8137	6057	6.50
M8161	6065	5.85
M8162	12AT7WA	3.25
M8163		7.95
M8190/ 85A3	5783WA	14.00
M8196/ 6AS6W	5725	8.50
M8204/ 2D21W	5727	2.50
M8212/ 6AL5W	6097/5726	1.55
M8224	0B2WA	6.50
M8248	6J4WA	11.60
ME1400		6.70
ME1401/ 4065	5800	15.50
ME1402/ 4066	5802	$ 29.50
ME1403/ 4068/ 58A9	5886	21.50
ME1404/ 4069		13.85
OCP71		5.50
ORP10	7632	88.00
ORP90		2.65
QQV02-6	6939	12.00
QQV03-10	6360	4.95
QQV06-40A	5894	25.50
QV05-10	2E26	4.35
QV05-25	807	3.25
QV06-20	6146	4.35
QV06-20B	6883	4.45
QY5-3000A	6076	305.00
RG1-240A		12.50
RG3-250A		15.65
RR3-250	3B28	16.50
TD03-10/ EC55	5861	37.50
TD03-10E		45.00
XG1-2500	5559	23.00
XH3-045	3C45	50.10
XR1-6400A	6807	71.85
Z300T	1267	7.95
Z502S		$11.00
Z510M/ ZM1020	6844	9.80
Z803U	6779	5.75
Z900T	5823	3.45

Numerical cross listing begins here and includes additional EIA types not listed previously.

OA2	150C4	1.26
OB2	108C1	1.32
OB2WA	M8224	6.50
OG3	85A2	2.30
58CV		8.50
61RV		164.00
75B1		7.00
75C1		2.40
90AG		5.90
90AV		5.90
90C1		2.25
90CG		3.80
90CV		1.95
92AV		19.00
95A1		10.50
150B3		5.45
150C3		5.20
5591/403B		3.55
5651	85A2	2.30
6211		3.20

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RCA

ELECTRON TUBES
ENTERTAINMENT RECEIVING TYPES

*Optional List

PRICE SCHEDULE — JULY 1, 1969

RCA Type	List Price*
0Z4	$3.40
0Z4A	3.40
1A3	6.65
1A5GT	4.00
1AD2	3.40
1AY2	2.60
1B3GT use 1G3GT/1B3GT	
1BC2	3.25
1BH2	3.05
1G3GT/1B3GT	3.40
1K3/1J3	3.40
1L6	12.55
1N5GT	4.90
1R5	4.45
1S2A/DY87	2.55
1S4	4.10
1S5	3.40
1T4	3.85
1U4	3.85
1U5	3.40
1V2	2.55
1X2A use 1X2B/1X2A	
1X2B/1X2A	3.70
2A3	9.90
2AF4B/2DZ4	4.10
2AH2	3.40
2AS2	3.30
2AV2	2.85
2BJ2	4.20
2BN4A	3.55
2BU2	3.90
2CN3A	3.25
2CW4	4.90
2CY5	4.40
2DS4	4.90
2DV4	6.45
2DZ4 use 2AF4B/2DZ4	
2EG4	4.90
2EN5	3.20
2ER5	3.70
2FH5	3.70
2FQ5A use 2GK5/2FQ5A	
2FS5	4.85
2GK5/2FQ5A	4.20
2GU5	4.50
2HA5	3.85
2HQ5	3.85
3A2	5.50
3A3A/3B2 use 3A3B	
3A3B	3.20
3AF4A/3DZ4	4.10
3AL5	2.70
3AT2	3.40
3AU6	2.95
3AV6	2.95
3AW2	3.20
3AW3 use 3A3B	
3B2 use 3A3B	
3BA6	2.35
3BC5/3CE5	2.95
3BL2	3.55
3BM2	3.60
3BN2	3.45
3BN4A	3.40
3BN6	4.75
3BS2A	3.25
3BT2	3.55
3BU8/3GS8	4.90
3BY6	3.00
3BZ6	3.30
3CA3	3.20
3CB6/3CF6	2.95
3CE5 use 3BC5/3CE5	
3CF6 use 3CB6/3CF6	
3CN3A	3.20
3CS6	3.70
3CU3 use 3CU3A	
3CU3A	4.65
3CX3	3.50
3CY5	3.90
3CZ3	4.15
3DB3	4.05
3DC3	4.65
3DG4	5.20
3DK6	2.95
3DT6A	3.25
3DZ4 use 3AF4B/3DZ4	
3EA5	3.55
3EH7/XF183	2.55
3EJ7/XF184	2.55
3ER5	4.45
3FH5	3.25
3FS5	4.30
3GK5	4.20
3GS8 use 3BU8/3GS8	
3HM5/3HA5	3.85
3HQ5	5.25
3JC6A	4.40
3KT6	3.80
3Q4	3.35
3Q5GT	5.85
3S4	3.40
3V4	3.75
4AU6	3.40
4AV6	2.95
4BC8	4.00
4BL8/XCF80	2.40
4BN6	4.05
4BQ7A	4.90
4BS8	4.25
4BU8/4GS8	4.45
4BZ6	2.95
4BZ7	4.90
4CB6	2.85
4CS6	3.40
4DE6	2.95
4DK6	3.40
4DT6A	3.25
4EH7/LF183	3.55
4EJ7/LF184	3.55
4ES8/XCC189	5.50
4EW6	2.90
4GK5	3.90
4GM6	2.20
4GS8 use 4BU8/4GS8	
4GX7	4.00
4HA5/PC900	2.35
4HA7	3.05
4HC7	3.05
4HM6	3.10
4HQ5	4.60
4HS8	3.70
4JC6A	4.60
4JD6	4.60
4JH6	3.40
4KE8	6.05
4KT6	3.65
4LJ8	4.10
5AM8	4.90
5AN8	5.20
5AQ5	2.95
5AR4/GZ34	4.25
5AS4A	3.45
5AS8	4.40
5AT8	4.45
5AU4 use 5V3A/5AU4	
5AV8	4.05
5AZ4	5.30
5B8	5.50
5BC3A	3.40
5BE8	3.10
5BK7A	4.15
5BQ7A	4.30
5BR8	4.90
5BT8	3.10
5BW8	3.20
5CG8	3.70
5CL8A	4.90
5CQ8	4.10
5CZ5	4.45
5DJ4	3.55
5EA8	5.05
5ES8/YCC189	5.50
5EU8	4.00
5EW6	3.40
5FG7	4.05
5FV8	3.25
5GH8A	4.60
5GJ7/LCF801	2.95
5GM6	3.25
5GS7	3.65
5GX6	2.45
5GX7	4.00
5HA7	3.05
5HB7	3.40
5HG8/LCF86	3.70
5HZ6	3.25
5J6	3.70
5JK6	3.85
5JL6	3.85
5KD8	2.50
5KE8	5.80
5KZ8	2.55
5LJ8	4.10
5MB8	3.65
5T8	4.45
5U4G	2.75
5U4GB	2.75
5U8	4.25
5U9/LCF201	2.95
5V3A/5AU4	3.80
5V4GA	4.30
5V6GT	3.70
5X8	4.15
5Y3GT	2.60
5Y4GA	2.45
5Y4GT	3.40
5Z3	4.45
5Z4 use 5Y3GT	
6A7	8.00
6A8	7.10
6AB4	3.60
6AC7	5.75
6AC10	4.25
6AD10	7.10
6AF3	3.55
6AF4	4.45
6AF4A	4.45
6AF6G	6.30
6AF9	3.55
6AF11	5.20
6AG5	3.80
6AG7	6.85
6AG9	5.65
6AG11	4.15
6AH4GT	3.25
6AH6	5.20
6AH9	4.75
6AK5/EF95	4.75
6AK8/EABC80	3.30
6AL3/EY88	2.60
6AL5	2.70
6AL7GT	6.95
6AL11	4.75
6AM4	5.55
6AM8A	4.05
6AN4	6.15
6AN8A	4.65
6AQ5A	2.95
6AQ6	3.25
6AQ7GT	4.70
6AQ8/ECC85	3.00
6AR5	2.45
6AR8	4.85
6AR11	4.50
6AS5	3.75
6AS8	4.85
6AS11	5.10
6AT6	2.40
6AT8A	5.20
6AU4GTA	4.40
6AU5GT	5.20
6AU6A	2.65
6AU8A	5.20
6AV5GA	5.20
6AV6	1.95
6AV11	4.40
6AW8A	4.00
6AX3	2.90
6AX4GTB	3.40
6AX5GT	3.85
6AX8	3.50
6AY3B	3.40
6AY11	4.50
6AZ8	5.50
6B8	6.85
6B10	3.80
6BA3	3.05
6BA6/EF93	2.70
6BA7	5.85
6BA8A	4.65
6BA11	4.45
6BC4	5.50
6BC5/6CE5	3.25
6BC7	3.60
6BC8/6BZ8	4.45
6BD6	2.35
6BD11	5.55
6BE3/6BZ3	3.75
6BE6	3.10
6BF5	3.35
6BF6	2.85
6BF11	5.05
6BG6G	6.45
6BH3A	2.80
6BH6	3.60
6BH8	4.60
6BH11	4.70
6BJ3	2.80
6BJ6	3.60
6BJ7	2.95
6BJ8	4.45
6BK4B use 6BK4C/6EL4A	
6BK4C/6EL4A	7.55
6BK5	3.50
6BK7B	4.45
6BL7GTA	5.60
6BL8/ECF80	2.70
6BM8/ECL82	2.90
6BN4A	4.00
6BN6/6KS6	4.10
6BN8	3.70
6BN11	4.50
6BQ5/EL84	3.55
6BQ6GTB/6CU6	4.90
6BQ7A	4.55
6BR8A	4.70
6BS3A	3.70
6BS8	4.90
6BU8	4.55
6BV8	3.30
6BV11	4.95
6BW4	2.75
6BW8	3.35
6BW11	4.40
6BX7GT	5.90
6BY5GA	4.80
6BY6	3.40
6BY8	2.70
6BZ6	2.70
6BZ7	4.45
6BZ8 use 6BC8/6BZ8	
6C4	2.95
6C5	5.35
6C6	7.85
6C9	5.50
6C10	3.70
6CA4	3.25
6CA5	3.00
6CA7/EL34	5.35
6CB5A	9.35
6CB6A/6CF6	2.85
6CD6GA	6.20
6CE3 use 6CG3/6CE3/6CD3/6BW3	
6CE5 use 6BC5/6CE5	
6CF6 use 6CB6A/6CF6	
CG3/6CE3/6CD3/6BW3	3.70
6CG7 use 6FQ7/6CG7	
6CG8A	3.85
6CH8	5.60
6CJ3/6CH3	3.60
6CK3	3.70
6CK4	3.55
6CL3	3.50
6CL6	4.15
6CL8A	4.15
6CM3	4.90
6CM6	3.85
6CM7	3.60
6CM8	4.05
6CN7	4.45
6CQ4	3.55
6CQ8	4.10
6CR6	2.95
6CS6	3.30
6CS7	3.75
6CU5	3.55
6CU6 use 6BQ6GTB/6CU6	
6CU8	4.60
6CW4	4.90
6CW5/EL86	2.75
6CX8	5.20
6CY5	4.25
6CY7	3.05
6CZ5	4.75
6D10	4.65
6DA4	3.70
6DB5	5.00
6DC6	3.85
6DC8/EBF89	3.05
6DE4	3.55
6DE6	3.25
6DE7	4.45
6DG6GT	3.85
6DK6	2.95
6DL4/EC88	7.95
6DL5/EL95	2.95
6DM4A	3.70
6DN6	7.00
6DN7	4.60
6DQ5	7.85
6DQ6B use 6GW6/6DQ6B	
6DR7	4.60
6DS4	4.90
6DS5	3.65
6DT5	3.55
6DT6A	2.70
6DT8	3.75
6DV4	6.45
6DW4B	3.50
6DX8/ECL84	2.90
6DZ4	4.10
6E5	5.65
6EA5 use 6CY5	
6EA7	5.70
6EA8	3.55
6EB8	5.05
6EH4A	8.20
6EH5	3.55
6EH7/EF183	3.85
6EH8	3.50
6EJ4A	8.50
6EJ7/EF184	3.55
6EL4 use 6BK4C/6EL4A	
6EM5	4.00
6EM7	5.70
6EQ7	2.95
6ER5	4.20
6ES5	2.85
6ES8/ECC189	5.45
6ET7	4.00
6EU7	3.60
6EU8	3.70
6EV5	3.55
6EV7	3.25
6EW6	3.00
6EW7	6.00
6EZ5	5.05
6EZ8	3.55
6F5	5.85
6F6	6.15
6F6GT	5.80
6F8G	8.45
6FA7	2.95
6FD7	5.70
6FE5	3.40
6FG6/EM84	3.35
6FG7	4.15
6FH5	4.55
6FH8	4.40
6FJ7	4.15
6FM7	3.90
6FM8	2.85
6FQ5A use 6GK5/6FQ5A	
6FQ7/6CG7	2.45
6FS5	4.10
6FV6	4.45
6FV8A	4.70
6FW5	3.85
6FY5/EC97	2.75
6FY7	3.50
6G11	4.40
6GB5/EL500	3.80
6GC5	5.00
6GE5	4.55
6GF5	3.80
6GF7A	4.85
6GH8A	3.20
6GJ5A	6.15
6GJ7/ECF801	3.10
6GK5/6FQ5A	4.15
6GK6	3.40
6GL7	5.80
6GM5	3.05
6GM6	3.25
6GN8	4.60
6GQ7	3.75
6GS7	3.75
6GT5A	6.35
6GU5	4.10
6GU7	3.70
6GV5	4.15
6GV8/ECL85	4.60
6GW6/6DQ6B	4.65
6GW8/ECL86	3.05
6GX6	3.20
6GX7	4.00
6GY5	4.60
6GY6	2.90
6GY8	3.90
6H6	5.30
6HA5 use 6HM5/6HA5	
6HA6 use 6HB6/6HA6	
6HB5	4.60
6HB6/6HA6	4.45
6HB7	4.00
6HE5	4.20
6HF5	8.05
6HF8	5.30
6HG5	2.95
6HG8/ECF86	3.70
6HJ8	3.10
6HK5	3.90
6HL8	3.05
6HM5/6HA5	3.85
6HM6	2.95
6HQ5	4.50
6HR5	2.55
6HR6	3.70
6HS5	7.75
6HS6	3.70
6HS8	4.30
6HU6/EM87	4.85
6HU8/ELL80	5.40
6HV5	7.75
6HZ6	3.00
6J5	4.60
6J5GT	4.10
6J6A	4.05
6J7	5.80
6J10 use 6Z10/6J10	
6J11	4.80
6JB6A	5.85
6JC6A	3.95
6JC8	3.05
6JD6	3.55
6JE6A use 6LQ6/6JE6C	
6JE8	3.70
6JF6	6.85
6JG6A	6.50
6JH6	2.95
6JH8	5.30
6JK6	3.85
6JK8	4.05
6JM6A	4.95
6JN6	4.90
6JN8	3.65
6JQ6	3.85
6JR6	6.35
6JS6C	7.30
6JT6A	5.40
6JT8	4.00
6JU6	6.35
6JU8A	3.85
6JV8	4.40
6JW8/ECF802	3.10
6JZ6	4.65
6JZ8	3.55
6K6GT	3.50
6K7	5.90
6K8	7.70
6K11/6Q11	3.80
6KA8	4.50
6KD6	8.50
6KD8 use 6U8A/6KD8	
6KE8	5.65
6KL8	2.95
6KM6	8.20
6KM8	3.45
6KN6	7.20
6KR8	4.25
6KT6	3.30
6KT8	4.90
6KU8	4.80
6KV8	5.85
6KY8A	7.25
6KZ8	3.70
6L6	9.65
6L6GC	5.25
6L7	6.95
6LB6	8.60
6LB8	4.70
6LC8	4.75
6LE8	6.20
6LF6	8.45
6LF8	4.65
6LH6A	7.70
6LJ6	7.55
6LJ8	4.10
6LM8	4.45
6LN8/LCF80	2.40
6LQ6/6JE6C	8.50
6LQ8	5.55
6LR6	7.30
6LR8	4.75
6LT8	3.50
6LU8	4.75
6LX8/LCF802	2.60
6LY8	3.90
6M11	5.00
6MB8	3.65
6MD8	4.85
6ME8	5.05
6MF8	4.75
6MG8	2.45
6MJ8	4.65
6MK8	4.30
6MN8	4.20
6MQ8	3.80
6N7	5.05
6N7GT	5.90
6Q7	5.90
6RK19	4.85
6S4A	3.40
6SA7	5.90
6SA7GT	4.40
6SB7Y	5.95
6SC7	5.35
6SF5	5.00
6SF7	6.30
6SG7	5.60
6SH7	6.15
6SJ7	4.90
6SK7	5.00
6SK7GT	5.50
6SL7GT	4.40
6SN7GTB	3.55
6SQ7	4.95
6SR7	4.90
6T4	5.15
6T8A	4.35
6T9	4.40
6T10	4.65
6U5	7.40
6U8A/6KD8	3.45
6U9/ECF201	2.90
6U10	3.80
6V3A	4.55

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RCA

ELECTRON TUBES
ENTERTAINMENT RECEIVING TYPES

*Optional List

PRICE SCHEDULE — JULY 1, 1969

RCA Type	List Price*
6V6	6.80
6V6GTA	3.75
6W4GT	3.30
6W6GT	4.10
6X4	2.75
6X5GT	3.30
6X8A	3.80
6X9/ECF200	2.90
6Y6GA/6Y6G	4.95
6Y9/EFL200	2.95
6Z4 use 84/6Z4	
6Z10/6J10	5.50
7A7	7.15
7AU7	2.70
7C5	3.35
7C7	3.40
7EY6	3.35
7F7	7.50
7F8	8.25
7GS7	4.70
7HG8/PCF86	2.75
7KY6	4.30
7N7	7.10
8AC10	5.05
8AR11	4.35
8AU8	3.85
8AW8A	4.30
8B10	3.35
8BA8A	3.45
8BA11	4.00
8BH8	3.35
8BM11	4.25
8BN8	3.70
8BN11	4.35
8BQ5	3.25
8BQ11	4.30
8BU11	4.55
8CG7 use 8FQ7/8CG7	
8CM7	2.70
8CN7	3.05
8CS7	3.55
8CW5/XL86	2.55
8CX8	4.40
8EB8	4.10
8EM5	3.70
8ET7	4.15
8FQ7/8CG7	2.35
8GJ7/PCF801	2.90
8GN8	4.15
8GU7	3.20
8JU8A	3.35
8JV8	4.30
8KA8	4.25
8LC8	4.25
8LT8	2.70
9A8/PCF80	2.65
9AU7	2.95
9BJ11	4.80
9BR7	3.15
9EA8	3.05
9GH8A	4.10
9GV8/XCL85	3.40
9KC6	4.35
9KX6	4.15
9KZ8	2.95
9LA6	4.20
9U8A	3.10
10AL11	4.55
10BQ5	2.55
10C8	5.15
10CW5/LL86	2.55
10DE7	4.45
10DR7	4.45
10DX8/LCL84	2.75
10EG7	4.35
10EM7	4.90
10EW7	4.90
10GF7A	4.75
10GK6	3.05
10GN8	4.45
10HF8	4.90
10JA8	4.15
10JT8	4.05
10JY8	3.65
10KR8	4.25
10KU8	4.85
10LB8	4.70
10LE8	5.90
10LW8	4.25
10LZ8	2.95
11AR11	4.10
11BM8	5.85
11BQ11	4.10
11BT11	5.90
11CA11	5.65
11CY7	3.60
11DS5	4.60
11FY7	3.40
11HM7	4.75
11JE8	3.85
11KV8	5.90
11LQ8	5.90
11LT8	3.25
11Y9/LFL200	3.70
12AB5	3.85
12AC6	2.10
12AD6	3.10
12AE6A	3.10
12AE10	4.65
12AF3/12BR3/ 12RK19	3.85
12AF6	3.15
12AL5	2.30
12AL8	6.15
12AL11	4.20
12AQ5	3.10
12AT6	2.40
12AT7/ECC81	2.85
12AU6	2.55
12AU7A/ECC82	2.55
12AV5GA	5.05
12AV6	1.95
12AV7	3.60
12AW6	3.55
12AX3	3.00
12AX4GTB	2.70
12AX7A/ECC83	2.70
12AY3A	2.65
12AY7	5.20
12AZ7A	3.25
12B4A	3.20
12BA6	2.10
12BA7	5.90
12BD6	2.35
12BE3	3.05
12BE6	2.55
12BF6	2.35
12BF11	4.35
12BH7A	3.15
12BK5	3.75
12BL6	3.70
12BN6	3.65
12BQ6GTB/12CU6	4.45
12BR7	3.05
12BS3A	3.70
12BT3	2.85
12BV7 use 12BY7A/ 12BV7/12DQ7	
12BV11	4.80
12BW4	3.35
12BY7A/12BV7/ 12DQ7	3.20
12BZ6	2.40
12BZ7	4.15
12C5 use 12CU5/12C5	
12CA5	3.40
12CL3	3.50
12CN5	3.25
12CR6	2.95
12CU5/12C5	3.40
12CU6 use 12BQ6GTB/12CU6	
12CX6	2.75
12D4	3.05
12DB5	2.60
12DK6	2.30
12DQ6B use 12GW6/12DQ6B	
12DQ7 use 12BY7A/ 12BV7/12DQ7	
12DS7	5.40
12DT5	3.10
12DT8	4.00
12DW7	3.05
12DY8	7.95
12DZ6	3.60
12ED5	2.70
12EK6	3.55
12EQ7	2.75
12F8	3.25
12FK6	2.55
12FM6	2.60
12FQ8	5.20
12FV7	3.40
12FX5	3.25
12GC6	3.95
12GE5	4.10
12GJ5A	4.90
12GN7A	4.45
12GT5	5.35
12GW6/12DQ6B	4.25
12H6	4.45
12HE7	6.80
12HG7	4.45
12HL7	4.45
12J5GT	4.80
12J8	4.35
12JB6A	6.20
12JN6	3.90
12JN8	3.70
12JQ6	3.70
12JT6A	4.95
12K5	3.45
12K7GT	6.60
12KL8	2.45
12L6GT	3.55
12MD8	4.85
12R5	3.35
12SA7	5.90
12SC7	5.20
12SF5	3.85
12SF7	6.20
12SG7	4.70
12SH7	5.40
12SJ7	4.30
12SK7	4.45
12SK7GT	4.45
12SL7GT	4.15
12SN7GTA	3.40
12SQ7	4.45
12T10	4.25
12V6GT	4.45
12W6GT	4.45
12X4	2.25
13CW4	5.05
13DE7	4.00
13DR7	4.75
13EM7/15EA7	5.35
13FD7	5.05
13FM7	3.00
13GB5/XL500	3.70
13GF7A	4.70
13J10 use 13Z10/13J10	
13JZ8	5.05
13V10	4.10
13Z10/13J10	5.05
14BL11	5.60
14BR11	5.30
14GT8	3.45
14JG8	3.10
15AF11	4.75
15BD11A	5.50
15CW5/PL84	2.45
15DQ8/PCL84	3.40
15FM7	3.40
15FY7	3.90
15KY8A	5.80
15LE8	7.65
16A8/PCL82	3.40
16AK9	5.90
16AQ3/XY88	2.70
16BQ11	4.35
16BX11	5.10
16GK6	3.05
16GY5	4.85
17AB10/17X10	4.45
17AX3	2.60
17AX4GTA	3.70
17AY3A	3.25
17BB14	10.45
17BE3/17BZ3	2.90
17BF11	4.55
17BH3	2.85
17BQ6GTB	5.20
17BR3/17RK19	3.35
17BS3A/17DW4A	3.35
17BW3	3.20
17BZ3 use 17BE3/17BZ3	
17C5 use 17CU5/17C5	
17C9	7.15
17CK3	2.95
17CT3	2.95
17CU5/17C5	2.70
17D4	3.70
17DE4	3.65
17DM4A	3.70
17DQ6B use 17GW6/17DQ6B	
17DW4A use 17BS3A/17DW4A	
17EW8/HCC85	2.75
17GE5	4.35
17GJ5A	5.50
17GT5A	4.90
17GV5	4.20
17GW6/17DQ6B	4.60
17HB25	8.20
17JB6A	5.50
17JG6A	6.30
17JM6A	4.20
17JN6	3.90
17JQ6	4.45
17JT6A	4.95
17JZ8	3.55
17KV6A	7.30
17LD8 use 15KY8A	
17X10 use 17AB10/17X10	
18AJ10	4.40
18FW6A	2.45
18FX6A	2.95
18FY6A	2.95
18GB5/LL500	5.15
18GD6A	2.95
19AU4GTA	4.00
19BG6GA	6.65
19CG3	3.40
19CL8A	3.70
19EA8	4.45
19EZ8	4.50
19GQ7	3.80
19HR6	2.45
19HS6	2.40
19HV8	3.75
19J6	3.70
19JN8	3.20
19KG8	3.10
19T8	4.90
19X8	4.10
20AQ3/LY88	3.25
20EZ7	3.40
21GY5	4.65
21HB5A	4.75
21JV6	4.65
21JZ6	4.85
21KA6	4.45
21LG6	7.65
21LR8	4.75
21LU8	4.75
22BH3A	3.10
22BW3	3.05
22DE4	3.70
22JF6	6.85
22JG6A	6.20
22JR6	6.20
22JU6	6.35
22KM6	8.20
23JS6A	13.35
23Z9	4.70
22BF11	5.20
24JE6A	8.50
24JZ8	4.50
24LQ6/24JE6C	8.50
25AV5GA	5.65
25AX4GT	3.05
25BK5	3.40
25BQ6GTB/25CU6	4.40
25C5	2.95
25CA5	3.60
25CD6GB	5.75
25CG3	3.40
25CK3	3.40
25CU6 use 25BQ6GTB/25CU6	
25DN6	5.95
25EC6	6.15
25EH5	3.25
25F5A	3.85
25L6GT/25W6GT	3.70
25W4GT	3.70
25W6GT use 25L6GT/25W6GT	
25Z6GT	3.85
26HU5	9.50
27GB5/PL500	3.70
31AL10	5.10
31JS6C	7.30
32ET5A	2.40
32HQ7	6.20
33GT7	6.95
33GY7A	6.05
33JV6	4.65
34CE3	3.90
34GD5A	2.95
35B5	3.20
35C5	2.70
35EH5	3.40
35GL6	2.90
35L6GT	3.85
35LRG	7.30
35W4	1.65
35Y4	4.50
35Z4GT	2.55
35Z5GT	2.70
36AM3B	2.55
36KD6	8.85
38HE7	6.65
38HK7	6.55
40KD6	8.10
42	4.85
42KN6	7.20
43	7.20
50A5	5.85
50B5	2.95
50BM8/UCL82	4.35
50C5	2.55
50DC4	2.40
50EH5	2.70
50FE5	4.45
50FK5	2.20
50HC6	2.40
50HK6	2.15
50L6GT	3.55
50X6	5.85
50Y6GT	4.35
53HK7	8.35
60FX5	2.95
80	4.80
117L7/M7GT	9.55
117N7GT	12.85
117Z3	4.50
5879	4.75
6973	4.60
7025	3.10
7027A	6.75
7189	3.40
7199	4.90
7247	3.20
7355	3.65
7408	3.35
7543	3.25
7581A	4.55
7591A	2.80
7695	4.40
7868	4.75
8417	5.65
EM84/66FG6 use 6FG6/EM84	

INDUSTRIAL TUBES FOR DEALER SERVICE

0A2	$1.85
0A2WA	4.05
0A3	2.20
0A3A	2.20
0A4G	2.65
0B2	1.95
0B2WA	2.85
0C3	2.10
0C3A	2.10
0D3	2.05
0D3A	2.05
1L4	3.10
1P40	6.55
2D21	1.85
2E24	8.90
2E26	4.65
2X2A	4.95
3A5	2.85
3AQP1	40.20
5CP1A	43.40
5R4GYB	2.85
5UP1	29.45
6AK6	2.90
6AS6	4.85
6AS7G	6.95
6DJ8/ECC88	2.65
6J4	5.65
6X4W	2.25
12A6	4.75
12AT7WA	3.55
12AT7WB	3.55
12SW7	2.10
12SX7GT	3.55
12SY7	3.75
83	2.65
807	4.90
811A	9.10
812A	8.45
816	5.25
866A	4.40
868	8.00
884	3.20
918	8.00
920	12.35
922	4.40
925	6.95
927	8.35
929	4.30
930	6.55
991	2.30
1612	8.10
1614	6.95
1619	8.75
1620	10.60
1625	7.40
1629	2.90
1635	5.90
2050	3.35
2050A	2.85
2076/5R4GYB	2.95
5581	7.25
5642	4.95
5651A	2.50
5654	3.40
5670	3.45
5672	3.20
5686	4.75
5687	4.80
5725	4.45
5725/6AS6W	4.45
5750	4.85
5751	3.60
5763	3.45
5783	5.90
5814A	3.30
5823	2.45
5824	4.20
5881	4.35
5915	2.30
5963	1.95
5964	2.20
5965	2.70
6005	4.55
6080	7.50
6136	3.80
6146A	5.05
6146B/8298A	6.05
6159B	5.90
6197	3.25
6201	3.55
6202	3.80
6336A	26.70
6350	2.60
6360	6.30
6360A	8.75
6386	10.85
6417	4.70
6550	6.45
6550V1 (Matched Pair)	14.80
6660/6BA6	1.45
6661/6BH6	1.90
6662/6BJ6	1.85
6663/6AL5	1.30
6664/6AB4	1.60
6669/6AQ5A	1.50
6676/6CB6A	1.50
6677/6CL6	2.60
6678/6U8A	2.30
6679/12AT7	2.10
6680/12AU7A	1.75
6681/12AX7A	1.80
6883	5.00
6883B/8032A/8552	6.20
6922/E88CC	6.85
6939	15.95
6977	3.50
7054	2.20
7056	1.30
7057	2.75
7058	1.80
7059	2.10
7061	1.65
7167	2.00
7258	2.60
7308	6.00
7360	5.30
7551	4.75
7558	4.90
7717/6CY5	1.95
7724/14GT8	2.10
7898	1.90
7905	5.40
8077/7054	2.00
8156	5.45
9001	7.55
9002	5.80
9003	7.55

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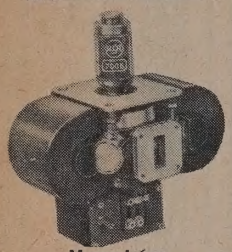
ELECTRON TUBES
FOR INDUSTRY AND COMMUNICATIONS

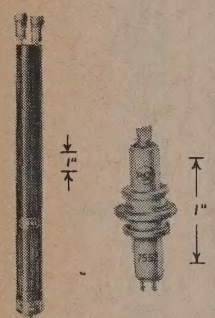
RESALE PRICE SCHEDULE • JULY 7, 1969

POWER/MICROWAVE/PHOTOSENSITIVE/CAMERA/DISPLAY/INDUSTRIAL RECEIVING

MICROWAVE DEVICES



Magnetrons



Traveling Wave — Pencil

CAMERA & DISPLAY

Image Orthicons

Vidicons

RCA POWER TUBES

RCA VACUUM POWER TUBES FOR CW APPLICATIONS

RCA Type	Dist. Resale Price Optional
2C39A	$20.75
2C39A/V1	28.00
2C39WA	28.00
2C40	31.75
2C43	26.95
2E24	7.60
2E26	3.95
2K26	68.00
4-125A/4D21	36.00
4-250A/5D22	48.00
4E27A/5-125B	50.00
4X500A	128.50
9C25	2,395.00
807	4.20
810	30.75
811A	7.75
812A	7.20
813	25.85
827R	615.00
828	37.00
829B	19.40
832A	16.30
833A	69.95
837	16.65
845	35.20
891R	430.00
892	315.00
892R	425.00
1624	12.50
1625	6.30
4604	9.00
4624	295.00
4628	1,225.00
4629	420.00
4631	95.25
4632	1,160.00
4635	2,500.00
4636	525.00
4637	117.30
4651	370.00
4654/5762	430.00
5556	57.50
5671	2,310.00
5713	770.00
5762	230.00
5770	1,930.00
5771	700.00
5786	370.00
6076	305.00
6146A	4.30
6146B/8298A	5.15
6146W	6.60
6155	36.00
6159B	5.05
6159W	9.00
6161	135.00
6166	825.00
6166A/7007	975.00
6181	1,280.00
6448	5,675.00
6524	25.90
6806	6,975.00
6816	51.80
6850	25.90
6883	4.25
6883B/8032A/8552	5.30
6884	39.20
6897	34.60
7094	41.15
7203/4CX250B	35.60
7213	400.00
7271	42.00
7457	63.90
7650	265.00
7842	63.90
7843	33.60
8000	26.25
8005	19.10
8032	4.90
8072	19.70
8121	33.60
8122	35.00
8165/4-65A	29.50
8166/4-1000A	135.00
8167/4CX-300A	54.00
8168/4CX-1000A	200.00
8170/4CX5000A	495.00
8171/4CX10000D	$575.00
8226	80.05
8239/3X3000F1	245.00
8281/4CX15000A	695.00
8437	2,890.00
8438/4-400A	48.00
8462	49.00
8501	1,150.00
8596	105.00
8684	2,335.00
8791	148.00
8792	215.00
8793	555.00
8794	645.00
8806	760.00

RCA VACUUM POWER TUBES FOR PULSE APPLICATIONS

3E29	21.10
2041	P
2054	P
4600A	345.00
4612	P
4614	345.00
4616	P
4621	125.00
4626	645.00
4630	2,670.00
4634	460.00
4634/V1	460.00
4638	700.00
5946	145.00
6293	4.90
6949	P
6950	P
6952	P
7214	440.00
7651	260.00
7835	P
8184	2,555.00
8587	P

RCA HARD-TUBE MODULATORS

3E29	21.10
6293	4.90

RCA VACUUM POWER TUBES FOR SPECIAL APPLICATIONS

4600A	345.00
4614	345.00

RCA RECTIFIERS VACUUM TYPES — Half-Wave Types

2X2A	4.20
3B28 (Gas Type)	8.85
579B	20.50
836	14.75
1616	17.85
5825	33.00
8013A	21.45
8020	23.50

MERCURY-VAPOR TYPES — Half-Wave Types (except as noted)

575A	20.60
604/7014 (Full-Wave)	11.80
615/7018	10.05
673	20.60
816	4.50
857B	225.00
866A	3.75
869B	138.00
872A	10.70
5558	17.50
5561	59.00
6894	25.90
6895	25.90
8008	11.50

RCA IGNITRONS

5550	49.00
5551A	65.00
5552A	99.00

RCA THYRATRONS TRIODES (Mercury-Vapor Types)— For Control Service

3C23	11.98
627	27.50
676	63.80
677	63.80
710/6011	12.00
714/7021	10.00
760/6858	28.10
5557	9.50
5559	23.00
5563A	53.90

TRIODES (Gas Types)— For Control Service

6130/3C45	25.75
C1K/6014	11.80
C3J/5632	12.70
C3JA/5684	13.10
C3J/L	14.20
C6J/5C21	28.10
C6JA/5685	29.00
C16J/5665	52.50

TETRODES (Mercury-Vapor Types)— For Control Service

3D22A (Gas Type)	$41.00
105	59.00
632B	33.00
672A	39.85
5560	33.00

RCA MICROWAVE TUBES

RCA MAGNETRONS For Pulsed-Oscillator Service

6521	725.00
6521/R	725.00
8684	2,335.00

RCA KLYSTRONS

8568	P
2K26	68.00

RCA TRAVELING-WAVE TUBES

4012	P
4013	P
4015	P
4017	P
4019	P
4020	P
4021	P
4041	P
4053	P
4054	P
6861	995.00
7642	1,265.00
8379	1,525.00

RCA PENCIL TUBES

4028A	32.35
4037A	27.55
4055	32.90
4058	17.60
4062A	32.90
4065	31.50
5675	6.90
5876A	6.90
5893	18.45
6173	15.20
6263A	13.55
6264A	14.35
6562/5794A	P
7533	7.75
7552	46.65
7553	55.80
7554	39.20
8727	35.00

RCA PHOTOSENSITIVE TUBES & DEVICES

PHOTOCONDUCTIVE CELLS

SQ2502	1.90
SQ2503	1.21
SQ2508	1.24
SQ2519	1.16
SQ2520	1.32
SQ2521	1.40
SQ2526	1.32
SQ2527	1.32
SQ2529	1.24
SQ2530	1.32
SQ2534	1.24
SQ2535	1.57
SQ2536	1.24
SQ2543	2.06
SQ2544	1.90
SQ2544V1	1.90
SQ2545	1.90
SQ2545V1	1.90
SQ2546	1.90
SQ2554	1.24
SQ2555	1.24
SQ2556	1.24
SQ2557	1.40
SQ2558	1.57
4403	1.21
4404	1.21
4448	1.21
4453	1.21
7163	1.21

RCA PHOTOTUBES SINGLE- AND TWIN-UNIT TYPES — Gas Types

1P29	8.45
1P37	6.85
1P40	5.60
1P41	6.15
868	6.85
918	6.85
920	$10.55
921	5.75
923	5.50
927	7.15
930	5.60
4409	5.30
5581	6.20
5582	7.45
5583	9.30
6405/1640	9.00
6953	8.60

SINGLE AND TWIN-UNIT TYPES — Vacuum Tubes

1P39	3.45
1P42	16.20
917	9.55
919	10.15
922	3.75
925	5.95
926	5.75
929	3.65
934	7.00
935	15.35
2022	5.50
5652	8.60
5653	5.35
6570	12.10
7043	8.15

RCA MULTIPLIER PHOTOTUBES

1P21	55.30
1P22	17.25
1P28	21.80
1P28A	27.30
931A	12.10
931VA	12.75
2020	89.00
2031	16.90
2055	17.60
2060	50.40
2061	60.90
2062	53.20
2063	105.00
2064B	120.00
2065	165.00
2067	170.00
4438	115.00
4439	115.00
4440	115.00
4441	170.00
4441A	350.00
4459	495.00
4460	235.00
4461	280.00
4463	260.00
4464	260.00
4465	290.00
4471	19.00
4472	24.60
4473	93.85
4516	185.00
4517	85.60
4518	105.00
4521	675.00
4522	850.00
4523	125.00
4524	135.00
4525	205.00
4526	610.00
5819	78.65
6199	50.40
6217	82.80
6328	14.45
6342A	60.90
6472	16.20
6655A	63.70
6810A	210.00
6903	395.00
7046	P
7102	115.00
7117	13.10
7200	200.00
7264	265.00
7265	380.00
7326	405.00
7746	205.00
7764	130.00
7767	135.00
7850	240.00
8053	105.00
8054	120.00
8055	170.00
8571	310.00
8575	315.00
8575/V1	320.00
8644	370.00
8645	475.00
8664	1,665.00
8664/V1	2,000.00
8850	600.00

P—Price and Delivery on Request

Net

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RCA

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FOR INDUSTRY AND COMMUNICATIONS

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POWER/MICROWAVE/PHOTOSENSITIVE/CAMERA/DISPLAY/INDUSTRIAL RECEIVING

RCA CAMERA & DISPLAY TUBES

RCA IMAGE ORTHICONS

RCA Type	Dist. Resale Price Optional
4470	$8,775.00
4536	2.165.00
5820A	995.00
5820A/L	1,800.00
7198A	1,335.00
7295B	1,440.00
7295C	1,975.00
7389B	1,440.00
7389C	1,975.00
8673	1,800.00
8673/S	1,800.00
8674	1,800.00
8674/S	1,800.00
8748	1,975.00
8749	1,975.00
8775	1,800.00

RCA MONOSCOPES

2F21	300.00
1699	P

RCA VIDICONS

2048	720.00
4427	705.00
4478	36.00
4493	1,055.00
4494	1,055.00
4495	1,055.00
4500	480.00
4503A	515.00
4542	430.00
7038	175.00
7262A	215.00
7263A	430.00
7735	110.00
7735A	150.00
7735B	175.00
8051	610.00
8134	210.00
8134/V	370.00
8480	760.00
8480/V1	1,140.00
8507A	190.00
8521	610.00
8541A	215.00
8567	995.00
8572	215.00
8573A	310.00

RCA CATHODE-RAY TUBES OSCILLOGRAPH TYPES

1EP1	29.40
1EP11	30.80
2AP1A	18.55
2BP1	19.70
3AP1A	26.60
3AQP1	34.35
3BP1A	33.90
3JP1	25.40
3JP7	27.65
3KP1	28.60
3RP1	18.30
3RP1A	27.00
3RP7A	31.60
3WP1	35.90
3WP11	37.80
5ABP1	47.60
5ABP31	47.60
5ADP1	47.60
5BP1A	38.85
5CP1A	37.10
5FP7A	39.20
5UP1	21.10
5UP7	25.70
5UP31	21.80
7MP7	54.05
7VP1	30.80
7VP31	30.80
902A	21.00
4490	36.05
4491	39.85
4499	28.00
4510	35.70
4557	54.60

MONITOR KINESCOPES

7TP4	73.15
8HP4	52.50
8NP4	59.50
8QP4	63.00
10SP4	99.35
17DWP4	31.00
21EYP4	44.60

PROJECTION KINESCOPES

5AZP4	135.00
7NP4	1,140.00
7WP4	1,140.00
4486	1,150.00

FLYING-SPOT CATHODE-RAY TUBES

5AUP24	150.00
5ZP16	98.00

DISPLAY STORAGE TUBES Direct-View Types

4412	3,415.00
4454	990.00
6866	1,280.00
7183A	1,025.00
7268B	P
7315	925.00
7539	1,765.00

RADECHON Single Beam, Barrier-Grid Type

6499	285.00

RCA IMAGE-CONVERTER TUBES

4449A	1,750.00
6381	P
6914	P
6914A	P
6929	P

RECEIVING TYPE TUBES FOR INDUSTRY AND COMMUNICATIONS

Beam Deflection

7360	3.77

Beam Power

3B4WA	5.85

Subminiature:

5902	4.80

Miniature:

5686	3.37
5763	2.45
6005	3.23
6417	3.33
6669/6AQ5A	1.06
7061	1.16
7551	3.37
7558	3.49
7905	3.85

Other Air-Cooled Types:

12A6	3.36
26A7GT	7.70
1614	4.93
1619	6.23
1622	5.35
5824	3.60
5881	3.10
6550	4.59
6550V1 (Match Pair)	9.25

Diodes

9005	8.05
9006	2.70

Glow-Discharge

0A4G	1.86
1C21	4.15
5823	1.72

Voltage Regulators

0A2	1.32
0A2WA	3.35
0A3	1.54
0A3A	1.54
0B2	1.37
0B2WA	2.40
0C2	1.50
0C3	1.50
0C3A	$1.50
0D3	1.44
0D3A	1.44
6AS7G	4.93
991	1.62
5651A	1.78
5651WA	3.75
5783	4.19
6073	3.00
6073/0A2	3.35
6074	3.45
6074/0B2	3.70
6080	5.33
6080WA	10.80
6082	5.60
6336A	19.04
6626/0A2WA	3.35

Pentodes

6AH6WA	7.60
7258	1.82

Subminiature:

5636	6.10
5639	5.25
5672	2.27
5678	2.30
5840	5.35
5899	5.55

Miniature:

1L4	1.50
3A4	1.55
6AK6	1.40
6AN5	4.20
6AS6	3.43
6AU6WB	2.70
26A6	3.70
408A	4.95
5654	2.41
5725	3.15
5725/6AS6W	3.12
5749	2.20
5847/404A	9.55
6136	2.70
6186	3.85
6186/6AG5WA	3.85
6197	2.30
6660/6BA6	1.01
6661/6BH6	1.34
6662/6BJ6	1.29
6676/6CB6A	1.06
6677/6CL6	1.85
6688A	6.80
6939	11.37
7054	1.54
7056	.92
8077/7054	1.40
9001	5.38
9003	5.38

Acorn:

959	13.85

Other Air-Cooled Types:

6AC7W	5.45
6AG7Y	2.80
6SJ7Y	2.15
1613	3.30
1620	7.55
1621	3.85
5693	6.60

Power Rectifiers

5R4GYB	2.03
6X4W	1.60
83	1.89
2076/5R4GYB	2.11
5642 (Pulsed)	3.53
6202	2.69

Tetrodes

105	59.00
6360A	6.25
7167	1.41
7717/6CY5	1.39

Thyratrons

Gas:

2D21	1.29
884	2.28
2050	2.37
2050A	2.03
5663	2.30
5696	1.95
5727	2.90
6012	7.65

Triodes

Subminiature:

5718	$3.65
5719	3.15

Miniature:

6D4	3.20
6J4	4.02
407A	5.90
5842/417A	7.35
6664/6AB4	1.12
9002	4.14

Nuvistor:

7586	3.35
7587	5.20
7895	3.35
8056	5.00
8058	14.95
8203	3.80
8393	3.45
8532	5.60
8627	14.15
8628	5.00

Acorn:

6F4	14.40
955	7.05

Twin Diodes

5726	1.55
5896	3.80
6663/6AL5	.92
6887	1.40
7055	1.00

TWIN TRIODES

3A5	2.03
6DJ8/ECC88	1.89
6J6WA	5.35
12AT7WA	2.53
12AT7WB	2.53
1635	4.20
5670	2.45
5687	4.05
5691	8.75
5692	8.25
5751	2.55
5814A	2.35
5844	2.40
5963	1.36
5964	1.55
5965	1.92
6021	3.50
6072	3.90
6101	5.35
6111	3.70
6112	4.15
6189	3.70
6201	2.95
6211	2.15
6350	1.85
6386	8.00
6679/12AT7	1.50
6680/12AU7A	1.22
6681/12AX7A	1.26
6922/E88CC	4.87
7044	2.70
7057	1.95
7058	1.26
7308	5.20
7898	1.34

TWIN DIODE TRIODES AND TRIODE PENTODES

12SW7	1.49
26C6	3.05
6678/6U8A	1.62
7059	1.48
7060	1.75
7724/14GT8	1.48

MISCELLANEOUS TYPES

2K26	68.00
12SY7	2.67
26D6	3.05
1612	5.77
1629	2.04
1946	16.15
1947	47.00
1949	23.75
5734	22.05
5750	3.45
5915	1.62
6550	4.59
6977	2.48

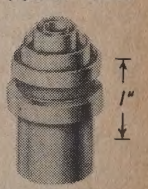
PHOTOSENSITIVE

Multiplier

Phototubes

Photocells

POWER TUBES



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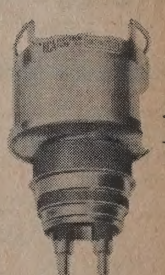

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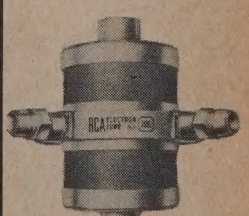

Super

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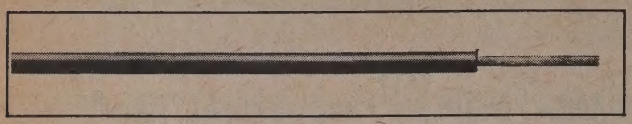
ALPHA WIRE



MIL-W-76B-PLASTIC WIRE

TYPE MW—UNCOVERED PLASTIC

DESCRIPTION: Solid or extra flexible stranded tinned copper, color coded **medium wall** polyvinylchloride insulation. The stranded conductor has an extra tight lay to prevent springing open when stripped.

CHARACTERISTICS: Temperature rating —40°C to +80°C, Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

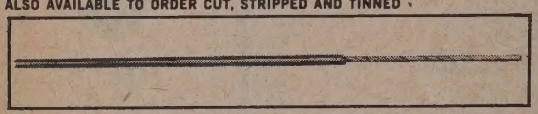
STRANDED

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOMINAL O.D.	* STOCK COLORS
1550	MW-C 24(7)U	24	7/32	.016"	.059"	1-30 AS LISTED BELOW
1551	MW-C 22(7)U	22	7/30	.016"	.064"	
1553	MW-C 20(10)U	20	10/30	.016"	.073"	
1555	MW-C 18(16)U	18	16/30	.016"	.084"	
1557	MW-C 16(26)U	16	26/30	.016"	.095"	
1559	MW-C 14(41)U	14	41/30	.016"	.110"	
1560	MW-C 12(65)U	12	65/30	.016"	.125"	

SOLID

1561/24	MW-C 24(1)U	24	1	.016"	.055"	1-30 AS LISTED BELOW
1561	MW-C 22(1)U	22	1	.016"	.060"	
1563	MW-C 20(1)U	20	1	.016"	.066"	
1565	MW-C 18(1)U	18	1	.016"	.074"	
1567	MW-C 16(1)U	16	1	.016"	.083"	

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED AND TINNED



TYPE LW — UNCOVERED PLASTIC

Regular Tinned Conductor

DESCRIPTION:
Stranded tinned copper, color coded **light wall** polyvinylchloride insulation. **(Nom. wall thickness .010".)**

CHARACTERISTICS:
Temperature rating —40°C to +80°C. Voltage rating 300 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. O.D.
1685	LW-C 30(7)U	30	7/38	.033"
1686	LW-C 28(7)U	28	7/36	.035"
1687	LW-C 26(7)U	26	7/34	.038"
1688	LW-C 24(7)U	24	7/32	.043"
1689	LW-C 22(7)U	22	7/30	.049"
1690	LW-C 20(7)U	20	7/28	.060"

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED, MARKED AND TINNED

STOCK COLORS

(Other striped combinations available to order.)

1—White
2—Black
3—Red
4—Green
5—Yellow
6—Light Blue
7—Brown
8—Orange
9—Gray (slate)
10—Violet (purple)
11—White/Black
12—White/Red
13—White/Green
14—White/Yellow
15—White/Blue
16—White/Brown
17—White/Orange
18—White/Gray
19—White/Violet

Mil-W-16878D

TYPE B—UNCOVERED PLASTIC

Pre-Bonded Tinned Copper Conductor

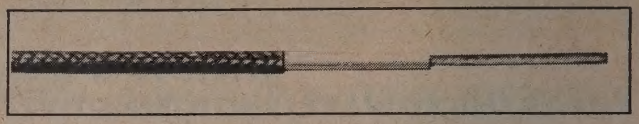
DESCRIPTION:
Each strand of the conductor is double tinned and then heated, which bonds the individual strands together for easy stripping. Color coded .010" polyvinylchloride insulation. The insulation meets requirements of MIL-W-16878D.

CHARACTERISTICS:
Temperature rating —55°C to +105°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents, and fungus.

APPLICATION:
A pre-bonded conductor is the ideal construction when leads are to be cut and stripped for point to point wiring. The pre-bonded conductor maintains much of the flexibility of an ordinary stranded wire but reduces processing and handling costs on soldering, retwisting of strands after stripping and hand tinning operations. Since the individual strands are bonded, expensive induction heating equipment is unnecessary.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.
3154	B-24	24	7/32	.010"	.044"
3155	B-22	22	7/30	.010"	.051"
3156	B-20	20	7/28	.010"	.059"
3157	B-18	18	7/26	.010"	.070"

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED, MARKED.



MIL-W-76B-PLASTIC WIRE

TYPE MW—SHIELDED

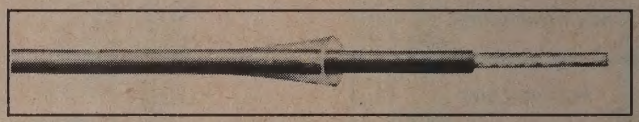
DESCRIPTION: Extra flexible stranded tinned copper, color coded **medium wall** polyvinylchloride insulation, braided tinned copper shield overall, 80% coverage. Stranded conductor has an extra tight lay to prevent springing open when stripped.

CHARACTERISTICS: Temperature rating —40°C to +80°C, Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOMINAL O.D.	* STOCK COLORS
1350	MW-C 24(7)S	24	7/32	.016"	.075"	White
1351	MW-C 22(7)S	22	7/30	.016"	.085"	White
1352	MW-C 20(10)S	20	10/30	.016"	.095"	White
1353	MW-C 18(16)S	18	16/30	.016"	.105"	White
1354	MW-C 16(26)S	16	26/30	.016"	.115"	White
1355	MW-C 14(41)S	14	41/30	.016"	.130"	White
1356	MW-C 12(65)S	12	65/30	.016"	.145"	White

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED AND TINNED

*Other solid colors and striped combinations available to order.



MIL-W-76B-PLASTIC WIRE

TYPE MW—NYLON JACKET

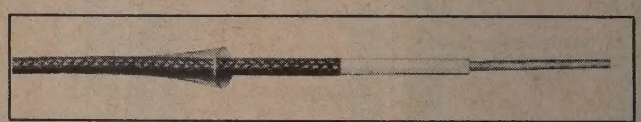
DESCRIPTION: Extra flexible stranded tinned copper, color coded **medium wall** polyvinylchloride insulation, clear nylon (polyamide) jacket overall. Stranded conductor has an extra tight lay to prevent springing open when stripped.

CHARACTERISTICS: Temperature rating —40°C to +90°C. Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICK.	NOM. O.D.	* STOCK COLORS
1503	MW-C 24(7)J	24	7/32	.016"	.002"	.065"	1-19 as listed below
1504	MW-C 22(7)J	22	7/30	.016"	.003"	.072"	1-19 as listed below
1505	MW-C 20(10)J	20	10/30	.016"	.003"	.079"	1-19 as listed below
1506	MW-C 18(16)J	18	16/30	.016"	.003"	.090"	1-19 as listed below
1507	MW-C 16(26)J	16	26/30	.016"	.004"	.103"	1-19 as listed below
1508	MW-C 14(41)J	14	41/30	.016"	.004"	.118"	1-6 as listed below
1509	MW-C 12(65)J	12	65/30	.016"	.005"	.135"	1-3 as listed below

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED AND TINNED

*Other solid colors and striped combinations available to order.



MIL-W-76B-PLASTIC WIRE

TYPE MW—SHIELDED—NYLON JACKET

DESCRIPTION: Stranded tinned copper, white **medium** wall polyvinylchloride insulation, braided tinned copper shield, 80% minimum coverage, clear nylon (polyamide) jacket overall.

CHARACTERISTICS: Temperature rating —40° to +90°C. Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOMINAL JACKET	NOMINAL O.D.
1370	MW-C 24(7)SJ	24	7/32	.016"	.005"	.091"
1371	MW-C 22(7)SJ	22	7/30	.016"	.005"	.100"
1372	MW-C 20(7)SJ	20	7/28	.016"	.005"	.105"
1373	MW-C 18(19)SJ	18	19/30	.016"	.005"	.115"
1374	MW-C 16(19)SJ	16	19/29	.016"	.005"	.125"
1375	MW-C 14(19)SJ	14	19/27	.016"	.005"	.138"
1376	MW-C 12(19)SJ	12	19 25	.016"	.005"	.156"

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED AND TINNED

*** STOCK COLORS**

1—White	7—Brown	13—White/Green	19—White/Violet
2—Black	8—Orange	14—White/Yellow	20—White Black/Red
3—Red	9—Gray (slate)	15—White Blue	21—White Black Green
4—Green	10—Violet (purple)	16—White Brown	22—White Black Yellow
5—Yellow	11—White Black	17—White Orange	23—White Black Blue
6—Light Blue	12—White Red	18—White Gray	24—White Black Brown

25—White/Black Orange	26—White/Black/Gray	27—White Black/Violet	28—Tan
29—Pink	30—Dark Blue		

*Other striped color combinations available to order.

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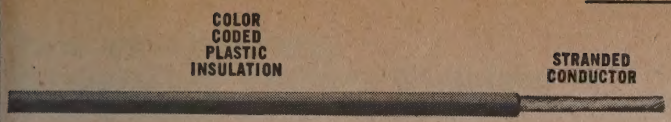


Mil-W-16878D Plastic Wire

TYPE B — UNCOVERED PLASTIC

Regular Tinned Copper Conductor

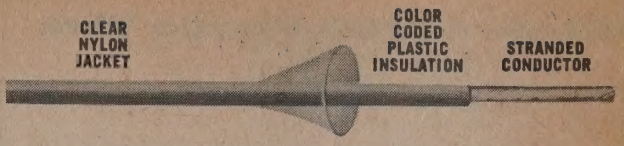
DESCRIPTION: Stranded tinned copper, color coded. .010" polyvinylchloride insulation.
CHARACTERISTICS: Temperature rating −55°C to +105°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents, and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.
1850	B-32	32	7/40	.010"	.028"
1851	B-30	30	7/38	.010"	.032"
1852	B-28	28	7/36	.010"	.034"
1853	B-26	26	7/34	.010"	.038"
1854	B-24	24	7/32	.010"	.043"
1854/19	B-24	24	19/36	.010"	.043"
1855	B-22	22	7/30	.010"	.050"
1855/19	B-22	22	19/34	.010"	.050"
1856	B-20	20	7/28	.010"	.058"
1856/19	B-20	20	19/32	.010"	.058"
1857	B-18	18	7/26	.010"	.068"
1857/19	B-18	18	19/30	.010"	.068"
1858/19	B-16	16	19/29	.010"	.077"
1859/19	B-14	14	19/27	.010"	.091"

*** STOCK COLORS**

1—White
2—Black
3—Red
4—Green
5—Yellow
6—Light Blue
7—Brown
8—Orange
9—Gray (slate)
10—Violet (purple)
11—White/Black
12—White/Red
13—White/Green
14—White/Yellow
15—White/Blue
16—White/Brown
17—White/Orange
18—White/Gray
19—White/Violet

*Other striped color combinations to order.



TYPE B — NYLON JACKET

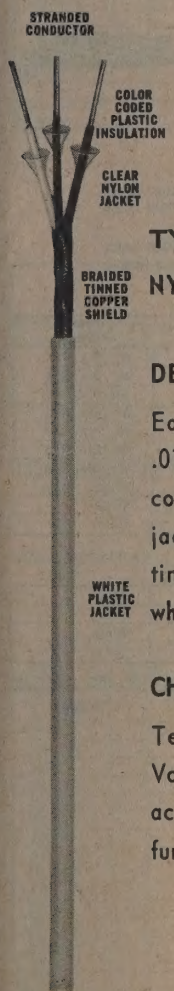
Regular Tinned Copper Conductor

DESCRIPTION: Stranded tinned copper, color coded. .010" polyvinylchloride insulation, clear nylon (polyamide) jacket overall.
CHARACTERISTICS: Temperature rating −55°C to +115°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents, and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.
1860	B-32	32	7/40	.010"	.003"	.035"
1861	B-30	30	7/38	.010"	.003"	.039"
1862	B-28	28	7/36	.010"	.003"	.041"
1863	B-26	26	7/34	.010"	.003"	.044"
1864	B-24	24	7/32	.010"	.003"	.049"
1864/19	B-24	24	19/36	.010"	.003"	.049"
1865	B-22	22	7/30	.010"	.003"	.056"
1865/19	B-22	22	19/34	.010"	.003"	.056"
1866	B-20	20	7/28	.010"	.003"	.064"
1866/19	B-20	20	19/32	.010"	.003"	.064"
1867	B-18	18	7/26	.010"	.003"	.074"
1867/19	B-18	18	19/30	.010"	.003"	.074"
1868/19	B-16	16	19/29	.010"	.003"	.085"
1869/19	B-14	14	19/27	.010"	.004"	.099"

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED, MARKED AND TINNED.

Mil-W-16878D Multi-Conductor Cable



TYPE B — NYLON SHIELDED-PLASTIC JACKET

DESCRIPTION:

Each conductor stranded tinned copper, .010" polyvinylchloride insulation, color coded, clear nylon (polyamide) jacket, conductors cabled, braided tinned copper shield 90% coverage, white polyvinylchloride jacket overall.

CHARACTERISTICS:

Temperature rating −55°C to +105°C Voltage rating 600 volts, resistant to acids, alkalis, oil, flame, moisture, fungus, solvents.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. NYLON THICKNESS	NOM. OVERALL JACKET	NOM. O.D.
3200	1	26	7/34	.010"	.003"	.010"	.087"
3201	2	26	7/34	.010"	.003"	.014"	.138"
3202	3	26	7/34	.010"	.003"	.014"	.142"
3203	4	26	7/34	.010"	.003"	.016"	.162"
3210	1	24	19/36	.010"	.003"	.010"	.092"
3211	2	24	19/36	.010"	.003"	.016"	.152"
3212	3	24	19/36	.010"	.003"	.016"	.161"
3213	4	24	19/36	.010"	.003"	.017"	.162"
3220	1	22	19/34	.010"	.003"	.010"	.100"
3221	2	22	19/34	.010"	.003"	.016"	.168"
3222	3	22	19/34	.010"	.003"	.017"	.178"
3223	4	22	19/34	.010"	.003"	.019"	.174"
3230	1	20	19/32	.010"	.003"	.010"	.106"
3231	2	20	19/32	.010"	.003"	.019"	.186"
3232	3	20	19/32	.010"	.003"	.019"	.196"
3233	4	20	19/32	.010"	.003"	.021"	.193"
3240	1	18	19/30	.010"	.003"	.012"	.120"
3241	2	18	19/30	.010"	.003"	.021"	.210"
3242	3	18	19/30	.010"	.003"	.022"	.227"
3243	4	18	19/30	.010"	.003"	.023"	.218"
3245	1	16	19/29	.010"	.003"	.016"	.137"
3246	2	16	19/29	.010"	.003"	.023"	.236"
3247	3	16	19/29	.010"	.003"	.023"	.240"
3248	4	16	19/29	.010"	.003"	.025"	.274"

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS
1—White, 2—Black, 3—Red, 4—Green

alpha **ALPHA WIRE**

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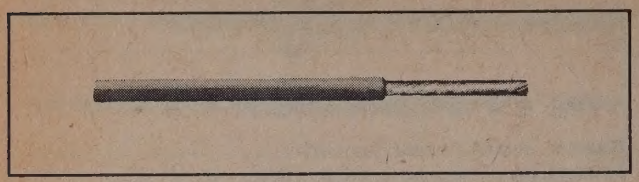
Mil-W-16878D Plastic Wire



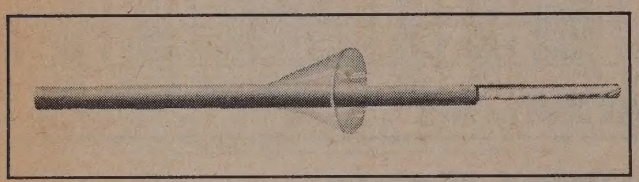
TYPE C — UNCOVERED PLASTIC

DESCRIPTION: Stranded tinned copper, color coded .016" polyvinylchloride insulation.

CHARACTERISTICS: Temperature rating —55°C to +105°C. Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOMINAL O.D.	* STOCK COLORS
1830	C-24	24	7/32	.016"	.058"	1-19 as listed below
1831	C-22	22	7/30	.016"	.064"	1-19 as listed below
1832	C-20	20	7/28	.016"	.072"	1-19 as listed below
1833	C-18	18	7/26	.016"	.082"	1-19 as listed below
1834	C-16	16	19/29	.016"	.091"	1 & 11-19 as listed below
1835	C-14	14	19/27	.016"	.105"	1 & 11-19 as listed below
1836	C-12	12	19/25	.016"	.124"	1 & 11-19 as listed below

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED, MARKED AND TINNED



TYPE C — NYLON JACKET

DESCRIPTION: Stranded tinned copper, color coded .016" polyvinylchloride insulation, clear nylon (polyamide) jacket overall.

CHARACTERISTICS: Temperature rating —55°C to +115°C. Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

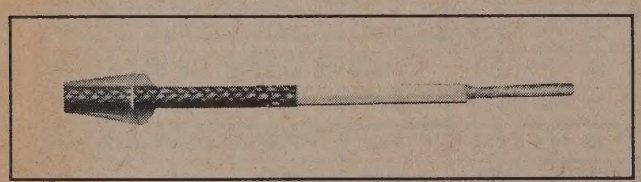
ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICK.	NOMINAL O.D.	* STOCK COLORS
1840	C-24	24	7/32	.016"	.002"	.065"	1-19 as listed below
1841	C-22	22	7/30	.016"	.003"	.072"	1-19 as listed below
1842	C-20	20	7/28	.016"	.003"	.079"	1-19 as listed below
1843	C-18	18	7/26	.016"	.003"	.090"	1-19 as listed below
1844	C-16	16	19/29	.016"	.004"	.099"	1 & 11-19 as listed below
1845	C-14	14	19/27	.016"	.004"	.114"	1 & 11-19 as listed below
1846	C-12	12	19/25	.016"	.005"	.135"	1 & 11-19 as listed below

***STOCK COLORS**

1—White	6—Light Blue	11—White/Black	16—White/Brown
2—Black	7—Brown	12—White/Red	17—White/Orange
3—Red	8—Orange	13—White/Green	18—White/Gray
4—Green	9—Gray (slate)	14—White/Yellow	19—White/Violet
5—Yellow	10—Violet (purple)	15—White/Blue	

* Other solid colors and striped combinations available to order.

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, MARKED AND STRIPPED



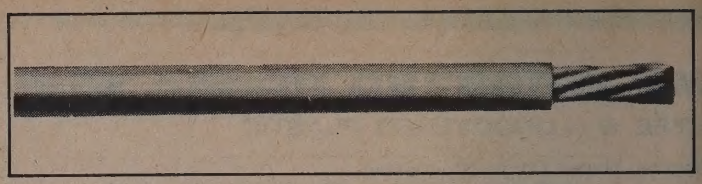
TYPE C — SHIELDED — NYLON JACKET

DESCRIPTION: Stranded tinned copper, white .016" polyvinylchloride insulation, braided tinned copper shield, 90% coverage, clear nylon (polyamide) jacket overall (which can be striped to order for color identification).

CHARACTERISTICS: Temperature rating —55°C. to +115°C. Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOMINAL JKT. THICKNESS	NOMINAL O.D.
1470	C-24	24	7/32	.016"	.005"	.091"
1471	C-22	22	7/30	.016"	.005"	.098"
1472	C-20	20	7/28	.016"	.005"	.105"
1473	C-18	18	19/30	.016"	.005"	.115"
1474	C-16	16	19/29	.016"	.005"	.125"
1475	C-14	14	19/27	.016"	.005"	.142"
1476	C-12	12	19/25	.016"	.005"	.156"

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED, MARKED AND TINNED



TYPE D — UNCOVERED PLASTIC

DESCRIPTION: Stranded tinned copper, color coded polyvinylchloride insulation.

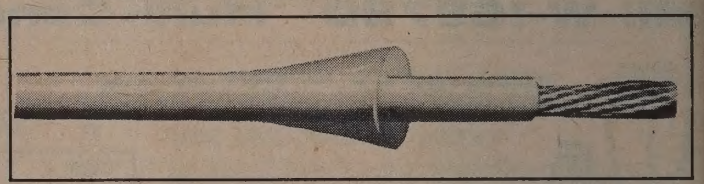
CHARACTERISTICS: Temperature rating —55°C to +105°C. Voltage rating 3000 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.	*STOCK COLORS
1870	D-24	24	7/32	.029"	.082"	Wh., Blk., Red
1871	D-22	22	7/30	.029"	.088"	Wh., Blk., Red
1872	D-20	20	7/28	.029"	.096"	Wh., Blk., Red
1873	D-18	18	7/26	.029"	.106"	Wh., Blk., Red
1874	D-16	16	19/29	.029"	.115"	Wh., Blk., Red
1875	D-14	14	19/27	.029"	.129"	Wh., Blk., Red
1876	D-12	12	19/25	.034"	.158"	Wh., Blk., Red
1877	D-10	10	37/26	.037"	.185"	White
1878	D- 8	8	133/29	.040"	.247"	White
1879	D- 6	6	133/27	.040"	.290"	White
■1879/4	D- 4	4	133/25	.045"	.355"	White
■1879/2	D- 2	2	665/30	.045"	.425"	White
■1879/1	D- 1	1	817/30	.050"	.480"	White
■1879/0	D- 0	0	1045/30	.052"	.530"	White

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED, MARKED AND TINNED

* Other solid colors and striped combinations available to order.

■ NEW



TYPE D — NYLON JACKET

DESCRIPTION: Stranded tinned copper, color coded polyvinylchloride insulation. Sizes 24-6, clear nylon (polyamide) jacket overall, sizes 4-0, white nylon braid overall.

CHARACTERISTICS: Temperature rating —55°C to +115°C. Voltage rating 3000 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

CLEAR NYLON JACKET

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOMINAL O.D.	*STOCK COLORS
1880	D-24	24	7/32	.029"	.004"	.090"	Wh., Blk., Red
1881	D-22	22	7/30	.029"	.004"	.096"	Wh., Blk., Red
1882	D-20	20	7/28	.029"	.004"	.104"	Wh., Blk., Red
1883	D-18	18	7/26	.029"	.004"	.114"	Wh., Blk., Red
1884	D-16	16	19/29	.029"	.005"	.125"	Wh., Blk., Red
1885	D-14	14	19/27	.029"	.005"	.139"	Wh., Blk., Red
1886	D-12	12	19/25	.034"	.005"	.168"	Wh., Blk., Red
1887	D-10	10	37/26	.037"	.006"	.197"	White
1888	D- 8	8	133/29	.040"	.009"	.265"	White
1889	D- 6	6	133/27	.040"	.010"	.310"	White

WHITE NYLON BRAID

■1889/4	D- 4	4	133/25	.045"	.010"	.375"	White
■1889/2	D- 2	2	665/30	.045"	.011"	.447"	White
■1889/1	D- 1	1	817/30	.050"	.011"	.502"	White
■1889/0	D- 0	0	1045/30	.052"	.011"	.552"	White

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.
ALSO AVAILABLE TO ORDER CUT, STRIPPED, MARKED AND TINNED

* Other solid colors and striped combinations available to order

■ NEW

ALPHA WIRE

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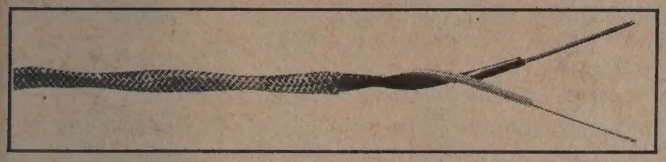
Mil-W-16878D Shielded Teflon† Cables

alpha



NO OUTER COVERING OVER SHIELD

DESCRIPTION: Each conductor stranded silver plated copper, Type E extruded TFE .010" insulation, braided silver plated copper shield over conductor(s), 90% coverage.

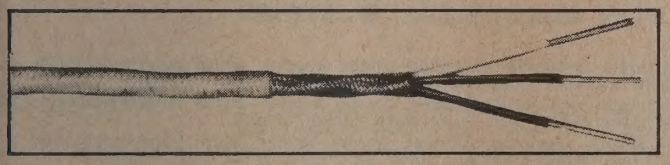
CHARACTERISTICS: Temperature rating −65°C to +200°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. O.D.	NOM. CAP. IN MMF SHIELD TO COND.	NOM. CAP. IN MMF COND. TO COND.
2809	1	24	19/36	.069"	45	—
2809/2	2	24	19/36	.112"	35	25
2809/3	3	24	19/36	.120"	35	20
2809/4	4	24	19/36	.132"	35	20
2812	1	22	19/34	.075"	55	—
2812/2	2	22	19/34	.124"	45	25
2812/3	3	22	19/34	.132"	35	25
2812/4	4	22	19/34	.146"	35	25
2815	1	20	19/32	.083"	55	—
2815/2	2	20	19/32	.142"	95	25
2815/3	3	20	19/32	.151"	85	25
2815/4	4	20	19/32	.168"	140	30
2818	1	18	19/30	.093"	70	—
2818/2	2	18	19/30	.162"	60	35
2818/3	3	18	19/30	.172"	60	35
2818/4	4	18	19/30	.192"	55	35
■2807	1	16	19/29	.103"	107	—
■2807/2	2	16	19/29	.184"	67	35

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS
1—White 2—Black 3—Red 4—Green

■ NEW



TEFLON IMPREGNATED BRAID OVER SHIELD

DESCRIPTION: Each conductor stranded silver plated copper, Type E extruded .010" TFE Teflon insulation, color coded, cabled, braided silver plated copper shield, 90% coverage, braided white fused Teflon impregnated, fiberglass braid overall.

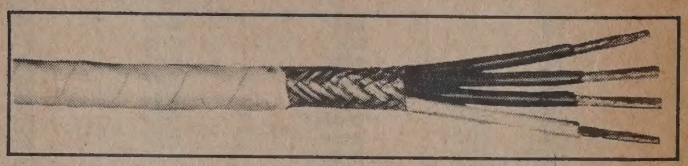
CHARACTERISTICS: Temperature rating −65°C to +200°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. O.D.	NOM. CAP. IN MMF SHIELD TO COND.	NOM. CAP. IN MMF COND. TO COND.
2811	1	24	19/36	.081"	45	—
2811/2	2	24	19/36	.126"	35	25
2811/3	3	24	19/36	.133"	35	20
2811/4	4	24	19/36	.144"	35	20
2814	1	22	19/34	.088"	55	—
2814/2	2	22	19/34	.137"	45	25
2814/3	3	22	19/34	.144"	35	25
2814/4	4	22	19/34	.158"	35	25
2817	1	20	19/32	.097"	55	—
2817/2	2	20	19/32	.154"	95	25
2817/3	3	20	19/32	.163"	85	25
2817/4	4	20	19/32	.180"	140	30
2819	1	18	19/30	.106"	70	—
2819/2	2	18	19/30	.174"	60	35
2819/3	3	18	19/30	.185"	60	35
2819/4	4	18	19/30	.205"	55	35
■2820	1	16	19/29	.117"	107	—
■2820/2	2	16	19/29	.196"	67	35

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS
1—White 2—Black 3—Red 4—Green

†T.M. DuPont ■ NEW



TEFLON TAPE WRAP JACKET OVER SHIELD

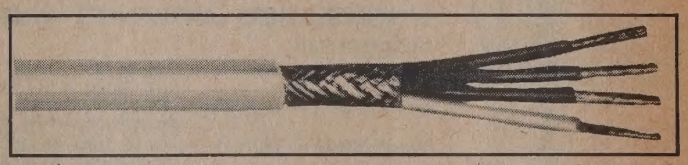
DESCRIPTION: Each conductor stranded silver plated copper, Type E extruded .010" TFE Teflon insulation, color coded, cabled, braided silver plated copper shield 90% coverage, sintered wrapped white Teflon tape jacketed overall.

CHARACTERISTICS: Temperature rating −65°C to +200°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. JKT. THICKNESS	NOM. O.D. AT HIGH POINT	NOM. CAP. IN MMF SHIELD TO COND.	NOM. CAP. IN MMF COND. TO COND.
2821	1	24	19/36	.010"	.095"	45	—
2821/2	2	24	19/36	.010"	.140"	35	25
2821/3	3	24	19/36	.010"	.147"	35	20
2821/4	4	24	19/36	.014"	.159"	35	20
2824	1	22	19/34	.010"	.102"	55	—
2824/2	2	22	19/34	.014"	.154"	45	25
2824/3	3	22	19/34	.014"	.162"	35	25
2824/4	4	22	19/34	.014"	.176"	35	25
2827	1	20	19/32	.010"	.110"	55	—
2827/2	2	20	19/32	.014"	.170"	95	25
2827/3	3	20	19/32	.014"	.175"	85	25
2827/4	4	20	19/32	.018"	.213"	140	30
2829	1	18	19/30	.010"	.120"	70	—
2829/2	2	18	19/30	.014"	.190"	60	35
2829/3	3	18	19/30	.018"	.219"	60	35
2829/4	4	18	19/30	.018"	.237"	55	35
■ 2826	1	16	19/29	.010"	.130"	107	—
■ 2826/2	2	16	19/29	.018"	.230"	67	25

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS
1—White, 2—Black, 3—Red, 4—Green



TEFLON FEP EXTRUDED JACKET OVER SHIELD

DESCRIPTION: Each conductor stranded silver plated copper, Type E extruded TFE insulation color coded, cabled, braided silver plated copper shield 90% coverage, extruded FEP white Teflon jacket overall.

CHARACTERISTICS: Temperature rating −65°C to +200°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus. Extruded FEP Teflon jacket is tough and abrasion resistant.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.	NOM. CAP. IN MMF SHIELD TO COND.	NOM. CAP. IN MMF COND. TO COND.
2831	1	24	19/36	.010"	.010"	.085"	45	—
2831/2	2	24	19/36	.010"	.010"	.130"	35	25
2831/3	3	24	19/36	.010"	.010"	.135"	35	20
2834	1	22	19/34	.010"	.010"	.091"	55	—
2834/2	2	22	19/34	.010"	.014"	.150"	45	25
2834/3	3	22	19/34	.010"	.014"	.158"	35	25
2837	1	20	19/32	.010"	.010"	.100"	55	—
2837/2	2	20	19/32	.010"	.014"	.168"	95	25
2837/3	3	20	19/32	.010"	.014"	.178"	85	25
2839	1	18	19/30	.010"	.010"	.110"	70	—
2839/2	2	18	19/30	.010"	.014"	.188"	60	35
2839/3	3	18	19/30	.010"	.018"	.207"	60	35
■ 2836	1	16	19/29	.010"	.010"	.123"	107	—
■ 2836/2	2	16	19/29	.010"	.018"	.220"	67	35

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS
1—White, 2—Black, 3—Red

■ NEW

† T.M. DuPont

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Mil-W-16878D Teflon† Wire

TYPE E — EXTRUDED (600 VOLTS)

DESCRIPTION: Single conductor stranded silver plated copper, TFE extruded Teflon insulation.

CHARACTERISTICS: Temperature rating: −65°C to +200°C. Voltage rating: 600 volts. Resistant to acid, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.	*STOCK COLORS
2850	E-32	32	7/40	.010″	.029″	1-19 as listed
2851	E-30	30	7/38	.010″	.032″	1-19 as listed
2852	E-28	28	7/36	.010″	.036″	1-19 as listed
2853	E-26	26	7/34	.010″	.040″	1-19 as listed
2854	E-24	24	19/36	.010″	.045″	1-19 as listed
■ 2854/7	E-24	24	7/32	.010″	.044″	1-19 as listed
2855	E-22	22	19/34	.010″	.051″	1-19 as listed
■ 2855/7	E-22	22	7/30	.010″	.050″	1-19 as listed
2856	E-20	20	19/32	.010″	.059″	1-19 as listed
■ 2856/7	E-20	20	7/28	.010″	.058″	1-19 as listed
2857	E-18	18	19/30	.010″	.070″	1-19 as listed
2858	E-16	16	19/29	.010″	.077″	1-19 as listed
2859	E-14	14	19/27	.012″	.094″	1-6 6 11-19
2859/12	E-12	12	19/25	.012″	.113″	1 & 11-19
2859/10	E-10	10	37/26	.012″	.134″	1 & 11-19

TYPE EE — EXTRUDED (1000 VOLTS)

DESCRIPTION: Single conductor stranded silver plated copper, extruded TFE Teflon insulation.

CHARACTERISTICS: Temperature rating: −65°C to +200°C. Voltage rating: 1000 volts. Resistant to acid, alkalis, oil, flame, moisture, solvents and fungus.

ALPHA NO.	TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.	*STOCK COLORS
2874	EE-24	24	19/36	.014″	.055″	1-19
2875	EE-22	22	19/34	.014″	.062″	1-19
2876	EE-20	20	19/32	.014″	.070″	1-19
2877	EE-18	18	19/30	.014″	.080″	1-19
2878	EE-16	16	19/29	.014″	.089″	1 & 11-19
2879	EE-14	14	19/27	.017″	.106″	1 & 11-19
2879/12	EE-12	12	19/25	.017″	.124″	1 & 11-19
2879/10	EE-10	10	37/26	.017″	.145″	1 & 11-19
2879/8	EE-8	8	133/29	.020″	.210″	White only

*** STOCK COLORS**

1—White	5—Yellow	9—Gray (slate	13—White/Green	17—White/Orange
2—Black	6—Light Blue	10—Violet (purple)	14—White/Yellow	18—White/Gray
3—Red	7—Brown	11—White/Black	15—White/Blue	19—White/Violet
4—Green	8—Orange	12—White/Red	16—White/Brown	

*Other solid colors and striped combinations available to order. † T.M. DuPont

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT. ALSO AVAILABLE TO ORDER CUT, MARKED AND STRIPPED. ■ NEW

Mil-W-5086A

UNSHIELDED AIRCRAFT WIRE FOR ELECTRICAL SYSTEMS

DESCRIPTION

MIL-W-5086A — Type I — AN-22 thru AN-12 — Single conductor stranded tinned copper, white polyvinylchloride insulation, clear nylon, (polyamide) jacket overall.

MIL-W-5086A — Type II — AN-22 thru AN-12 — Single conductor stranded tinned copper, white polyvinylchloride insulation, white glass braid, clear nylon (polyamide) jacket overall.

MIL-W-5086A — Type II — AN-10 thru AN-0000 — Single conductor stranded tinned copper, white polyvinylchloride insulation, white glass braid, flame retardant nylon lacquered nylon braid overall.

CHARACTERISTICS: Temperature rating: −55°C. to +105°C. Voltage rating: 600 volts. Resists effects of water, oil, aircraft fuels, hydraulic fluid, skydral, ethyleneglycol, alcohol, dilute acids, alkalis, fungus and abrasion.

UNSHIELDED (MIL-W-5086A) TYPE I

ALPHA NO.	MIL TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	NOMINAL O.D.	NOM. WGT LBS. PER M/FT.
1381	AN-22	22	19/34	.068″	4.0
1382	AN-20	20	19/32	.078″	5.7
1383	AN-18	18	19/30	.088″	8.3
1384	AN-16	16	19/29	.098″	18.4
1385	AN-14	14	19/27	.117″	15.9
1386	AN-12	12	19/25	.137″	23.7

UNSHIELDED (MIL-W-5086A) TYPE II

1341	AN-22	22	19/34	.075″	4.6
1342	AN-20	20	19/32	.085″	6.3
1343	AN-18	18	19/30	.095″	8.9
1344	AN-16	16	19/29	.105″	10.9
1345	AN-14	14	19/27	.125″	16.3
1346	AN-12	12	19/25	.143″	24.2
1387	AN-10	10	49/27	.189″	39.2
1388	AN-8	8	133/29	.240″	66.2
1389	AN-6	6	133/27	.293″	102.8
1389/4	AN-4	4	133/25	.355″	158.2
1389/2	AN-2	2	665/30	.425″	244.1
■ 1389/1	AN-1	1	817/30	.470″	300.0
1389/0	AN-0	0	1045/30	.525″	381.0
1389/00	AN-00	00	1330/30	.590″	485.0
■ 1389/000	AN-000	000	1661/30	.645″	609.0
■ 1389/0000	AN-0000	0000	2104/30	.715″	755.0

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT. ALSO AVAILABLE TO ORDER CUT, MARKED AND STRIPPED. ■ NEW

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Flat Ribbon Cable

MULTI-CONDUCTOR — PLASTIC INSULATION CONDUCTORS PER MIL-W-16878D, Type C

DESCRIPTION: Each conductor stranded tinned copper, color coded .016" polyvinylchloride insulation, conductors bonded together to form flat ribbon cable.

CHARACTERISTICS: Temperature rating −55°C to +105°C. Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents, and fungus.

APPLICATIONS: Saves time, weight, and space on circuit connections, interconnecting assemblies and systems, wiring harnesses for racks, sliding drawer and drop panels. Conductors fully color coded and easily separated for neat terminations.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOMINAL O.D.
3504	4	22	7/30	.016"	.065" x .260"
3508	8	22	7/30	.016"	.065" x .520"
3512	12	22	7/30	.016"	.065" x .780"
3516	16	22	7/30	.016"	.065" x 1.040"
3520	20	22	7/30	.016"	.065" x 1.300"

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS

1—White
2—Black
3—Red
4—Green
5—Yellow
6—Light Blue
7—Brown
8—Orange
9—Gray (slate)
10—Violet (purple)
11—White/Black
12—White/Red
13—White/Green
14—White/Yellow
15—White/Blue
16—White/Brown
17—White/Orange
18—White/Gray
19—White/Violet
20—White/Black/Red

Shielded Control Cable

GENERAL PURPOSE MULTI-CONDUCTOR PLASTIC JACKETED CABLE

DESCRIPTION: Each conductor, stranded tinned copper, color coded, polyethylene insulation, cabled with fillers where necessary, rayon wrap, braided tinned copper shield, chrome gray polyvinylchloride jacket overall.

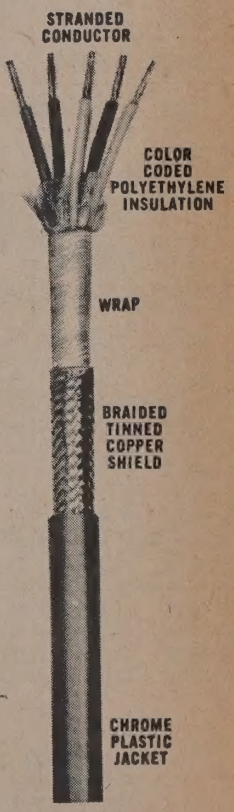
CHARACTERISTICS: Suggested Operating Temperature: −20°C to +60°C. Suggested Operating Voltage: 600 Volts.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.
1712	2	20	26/34	.014"	.030"	.230"
1713	3	20	26/34	.014"	.035"	.250"
1715	4	20	26/34	.014"	.035"	.260"
1716	5	20	26/34	.014"	.035"	.275"
1717	6	20	26/34	.014"	.035"	.300"
1719	8	20	26/34	.014"	.035"	.330"
1721	10	20	26/34	.014"	.035"	.375"
1723	12	20	26/34	.014"	.035"	.380"
1726	15	20	26/34	.014"	.035"	.410"
1728	20	20	26/34	.014"	.035"	.455"

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS

1—Black
2—White
3—Red
4—Green
5—Yellow
6—Blue
7—Brown
8—Orange
9—Slate
10—Purple
11—White/Black
12—White/Red
13—White/Green
14—White/Yellow
15—White/Blue
16—White/Brown
17—White/Purple
18—White/Slate
19—Black/Red
20—Black/Yellow



ALPHA WIRE

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Alpha RG Cable Types

POLYETHYLENE DIELECTRIC

All Illustrations — Actual Size

ALPHA PART NO.	RG CABLE TYPE	INNER CONDUCTOR			DIELECTRIC		SHIELDS			JACKET		ARMOR (.0126 ALUM. WIRE)	OPR VOLTS RMS	LBS. PER M/FT.	NOM. IMPED. OHMS	NOM. CAP MMF/ FT.
		MAT.	STRAND	NOM. O.D.	MAT.	O.D.	Inner	Outer	O.D.	MAT	O.D.					
9006A	6A/U	CW	1	.0285	PE	.189	SC	C	.264	NCV	.336		2700	74	75	20
9008	8/U	C	7/.0285	.086	PE	.295	C	–	.340	V	.415		5000	105	52	29.5
9008A	8A/U	C	7/.0285	.086	PE	.295	C	–	.340	NCV	.415		5000	99	52	29.5
9009B	9B/U	SC	7/.0285	.086	PE	.285	SC	SC	.355	NCV	.430		5000	126	50	30
9010A	10A/U	C	7/.0285	.086	PE	.295	C	–	.340	NCV	.415	.475	5000	125	52	29.5
9011	11/U	TC	7/.0159	.048	PE	.295	C	–	.340	V	.415		5000	94	75	20.5
9011A	11A/U	TC	7/.0159	.048	PE	.292	C	–	.340	NCV	.412		5000	89	75	20.5
9012A	12A/U	TC	7/.0159	.048	PE	.292	C	–	.340	NCV	.412	.475	5000	113	75	20.5
9014A	14A/U	C	1	.102	PE	.383	C	C	.463	NCV	.558		7000	201	52	29.5
9017A	17A/U	C	1	.188	PE	.695	C	–	.760	NCV	.885		11000	462	52	29.5
9019A	19A/U	C	1	.250	PE	.925	C	–	.990	NCV	1.135		14000	720	52	29.5
9022B	22B/U	C	Two7/.0152	.047	PE	.291	TC	TC	.355	NCV	.430		1000	124	95	16
9055	55/U	C	1	.032	PE	.121	TC	TC	.176	NP	.206		1900	31	53.5	28.5
9055B	55B/U	SC	1	.032	PE	.121	TC	TC	.176	BP	.206		1900	32	53.5	28.5
9058	58/U	C	1	.032	PE	.121	TC	–	.150	V	.200		1900	24	53.5	28.5
9058A	58A/U	TC	19/.0071	.0375	PE	.120	TC	–	.150	V	.199		1900	25	50	29.5
9058C	58C/U	TC	19/.0071	.0375	PE	.120	TC	–	.150	NCV	.199		1900	25	50	29.5
9059	59/U	CW	1	.0253	PE	.150	C	–	.191	V	.250		2300	36	73	21
9059B	59B/U	CW	1	.023	PE	.150	C	–	.191	NCV	.246		2300	36	75	20.5
9062	62/U	CW	1	.025	SSP	.151	C	–	.191	V	.250		750	34	93	13.5
9062A	62A/U	CW	1	.025	SSP	.151	C	–	.191	NCV	.249		750	34	93	13.5
9063B	63B/U	CW	1	.0253	SSP	.295	C	–	.340	NCV	.415		1000	78	125	10
9071B	71B/U	CW	1	.025	SSP	.151	C	TC	.208	BP	.250		750	42	93	13.5
9174	174/U	CW	7/.0063	.019	PE	.060	TC	–	.088	V	.105		1500	7	50	30
9212	212/U	SC	1	.056	PE	.189	SC	SC	.265	NCV	.336		3000	85	50	29.5
9213	213/U	C	7/.0296	.090	PE	.292	C	–	.340	NCV	.412		5000	100	50	30.5
9214	214/U	SC	7/.0296	.090	PE	.292	SC	SC	.360	NCV	.432		5000	129	50	30.5
9215	215/U	C	7/.0296	.090	PE	.292	C	–	.340	NCV	.412	.475	5000	122	50	30.5
9217	217/U	C	1	.106	PE	.380	C	C	.463	NCV	.555		7000	202	50	30
9218	218/U	C	1	.195	PE	.690	C	–	.760	NCV	.880		11000	457	50	30
9219	219/U	C	1	.195	PE	.690	C	–	.760	NCV	.880	.945	11000	507	50	30
9223	223/U	SC	1	.036	PE	.120	SC	SC	.176	NCV	.216		1900	36	50	30

ALL TYPES LISTED CONFORM TO LATEST REVISION MIL-C-17.

ALL DIMENSIONS ARE MAXIMUM EXCEPT WHERE INDICATED

C—Bare Copper
TC—Tinned Copper
SC—Silver Covered Copper
CW—Copper Covered Steel
PE—Solid Polyethylene
SSP—Semi Solid Polyethylene
BP—Black Polyethylene—Type IIIA
NP—Natural Polyethylene—Type III
V—Polyvinylchloride—Type I
NCV—Non-Contaminating Polyvinylchloride—Type IIA

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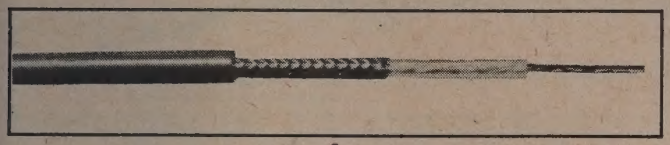
Shielded Microphone Cable



PLASTIC JACKET

DESCRIPTION: **1702-1706:** Single conductor, stranded tinned copper, white polyethylene insulation, braided or spiral wrapped tinned copper shield, gray polyvinylchloride jacket overall.

1709-1712: Each conductor stranded tinned copper, color coded polyethylene insulation, cabled with fillers, textile wrap, braided or spiral wrapped tinned copper shield, gray polyvinylchloride jacket overall.

APPLICATIONS: **1702-1706:** All high impedance microphones, lapel, ribbon, velocity, crystal contact, hi-fi interconnecting cables.

1709-1712: All low impedance microphones—carbon, condenser, dynamic.

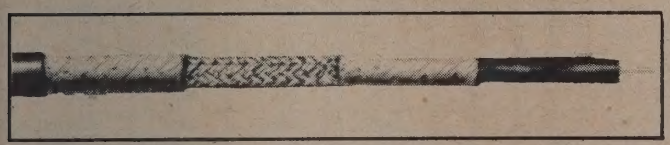
CHARACTERISTICS: Suggested operating temperature: −20°C to +60°C.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	*CAPACITY NOM./FT.	SUG. WORK. VOLTAGE	TYPE OF SHIELD	NOM. JKT THICKNESS	NOM. O.D.
1702	1	26	3/34† 4/34†	.016″	38 mmf.	1000	Spiral Wrapped	.020″	.110″
1703	1	24	10/34	.020″	35 mmf.	3500	Braided	.030″	.145″
1704	1	24	10/34	.040″	23 mmf.	5000	Braided	.030″	.190″
1705	1	24	10/34	.016″	45 mmf.	1000	Spiral Wrapped	.020″	.110″
1706	1	20	26/34	.030″	36 mmf.	4000	Braided	.030″	.175″
1709	2	24	10/34	.016″	38 mmf.	1000	Spiral Wrapped	.030″	.190″
1710	2	22	16/34	.025″	31 mmf.	1000	Braided	.025″	.230″
1712	2	20	26/34	.014″	45 mmf.	600	Braided	.030″	.245″

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

* Between one conductor and remaining conductors connected to shield.
† Three strands of tinned copper and four strands of tinned copperweld.

COLOR CODE OF CONDUCTORS
1—White 2—Black



RUBBER AND NEOPRENE JACKETS

DESCRIPTION: Each conductor stranded tinned copper, color coded rubber insulation, cotton wrap, braided tinned copper shield, cotton wrap, tough black rubber or neoprene jacket overall.

APPLICATIONS: **1248-1449:** All high impedance microphone, broadcast and heavy duty studio use, communication and audio systems.

1250-1450/16: All low impedance microphone, broadcast and heavy duty studio use. Can also be used for control circuits, video and audio interconnection cable, and as electronic power cables.

CHARACTERISTICS: Suggested operating temperature: −20°C to +60°C.

Rubber jacketed cable suited for standard duty indoor use.

Neoprene jacketed cable suited for heavy duty outdoor use and direct burial. Will resist oil, acid, sunlight, ageing and abrasion.

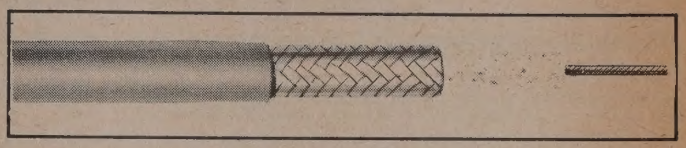
ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	TYPE OF JKT.	*NOM. CAP. MMF/FT.	NOM. O.D.
1248†	1	20	26/34	.025″	.030″	Rubber	97	.190″
1249	1	20	26/34	.040″	.035″	Rubber	60	.230″
1249/18	1	18	41/34	.040″	.035″	Rubber	69	.240″
1449	1	18	41/34	.040″	.035″	Neoprene	69	.240″
1250	2	20	26/34	.020″	.035″	Rubber	68	.270″
1250/18	2	18	41/34	.020″	.035″	Rubber	78	.295″
1450	2	18	41/34	.020″	.035″	Neoprene	78	.295″
1450/16	2	16	65/34	.025″	.035″	Neoprene	82	.335″

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

Between one conductor and remaining conductors (if any) connected to shield.
Mylar wrap under tinned copper shield.

COLOR CODE OF CONDUCTORS
1—Black 2—White

Low Capacitance Shielded Microphone Cable



CELLULAR FOAM POLYETHYLENE INSULATION — PLASTIC JACKET

DESCRIPTION: Single conductor, stranded tinned copper, white foam polyethylene insulation, braided tinned copper shield, chrome gray polyvinylchloride jacket.

Two conductors, stranded tinned copper, color coded foam polyethylene insulation, 1 white and 1 black, cabled with fillers, textile wrap, braided tinned copper shield, chrome gray polyvinylchloride jacket.

CHARACTERISTICS: Suggested operating temperature: −20°C to +60°C. Low loss foam polyethylene provides lower capacitance and attenuation than standard solid polyethylene microphone cables, thereby increasing the effective length of usable cable without loss of signal.

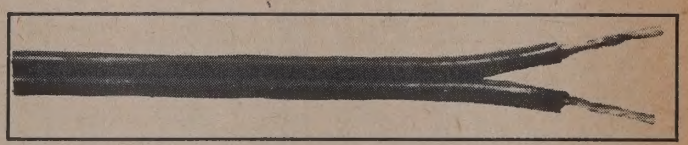
ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	*CAPACITY NOM./FT.	NOM. JKT. THICKNESS	NOM. O.D.
2310	1	26	3/34† 4/34†	.016″	30 mmf	.020″	.115″
2311	1	24	10/34	.035″	20 mmf	.030″	.180″
2312	1	24	10/34	.055″	15 mmf	.030″	.225″
2323	2	22	16/34	.035″	11 mmf	.030″	.300″

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

* Between one conductor and remaining conductors connected to shield.
† Three strands of tinned copper and four strands of tinned copperweld.

COLOR CODE OF CONDUCTORS
1— White 2— Black

E-Z-Strip Lamp Cord



U.L. APPROVED

DESCRIPTION: Conductors parallel, stranded extra flexible bare copper, rubber or polyvinylchloride jacket overall. Slit in jacket to permit "E-Z" separation.

APPLICATIONS: For line cord on radios, lamps, electric clocks, food mixers and other small instruments and appliances.

CHARACTERISTICS: Suggested operating temperature: −20°C to +60°C. Suggested operating voltage: 300 volts.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	INSUL. TYPE	NOM. WALL THICKNESS	U/L TYPE	NOMINAL O.D.	STOCK COLORS
1967	2	18	41/34	Rubber	.032″	SP-1(POSJ)	.220″ x .120″	Brown, Black, White
1977	2	18	41/34	Plastic	.032″	SPT-1(POT)	.215″ x .115″	Brn., Blk., Wh., Gray, Tan
1978	2	18	41/34	Plastic	.045″	SPT-2(POT)	.285″ x .150″	Brown
1979	2	18	41/34	Plastic	.032″	SPT-1(POT)	.215″ x .115″	Clear
1982	2	16	65/34	Plastic	.045″	SPT-2(POT)	.300″ x .160″	Brown

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

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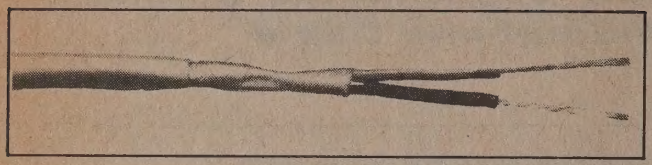
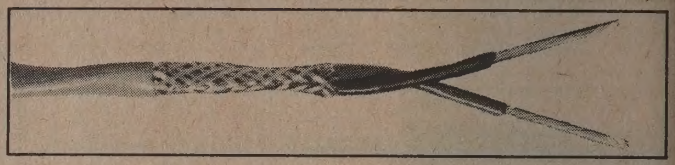
Shielded Plastic Jacketed Cable

alpha





SPIRAL WRAPPED COPPER SHIELD

DESCRIPTION: Each conductor stranded or solid tinned copper, color coded polyvinylchloride insulation, conductors twisted, spiral wrapped copper shield, gray polyvinylchloride jacket overall. **Nominal jacket thickness .020".**

CHARACTERISTICS: Use of spiral shield makes pigtailing off extremely simple and fast. Excellent for production line work. Provides close to 100% shielded coverage for audio and RF frequencies. Suggested operating temperature: 20°C to +60°C.

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.	SUGG. WORKING VOLTAGE
2255	2	22	Solid	.016"	.170"	350V
2254/1	1	22	7/30	.016"	.115"	350V
2254	2	22	7/30	.016"	.175"	350V
2254/3	3	22	7/30	.016"	.190"	350V
2254/4	4	22	7/30	.016"	.200"	350V
2254/6	6	22	7/30	.016"	.235"	350V
2256/1	1	20	10/30	.016"	.130"	350V
2256	2	20	10/30	.016"	.195"	350V
2256/3	3	20	10/30	.016"	.210"	350V
2256/4	4	20	10/30	.016"	.225"	350V
2256/6	6	20	10/30	.016"	.265"	350V
2258/1	1	18	16/30	.016"	.135"	350V
2258	2	18	16/30	.016"	.230"	350V
2258/3	3	18	16/30	.016"	.235"	350V
2258/4	4	18	16/30	.016"	.245"	350V
2260	2	16	26/30	.016"	.240"	350V
2260/3	3	16	26/30	.016"	.245"	350V
2265	2	14	41/30	.020"	.285"	450V
2265/3	3	14	41/30	.020"	.290"	450V
2268	2	12	65/30	.020"	.325"	450V
2268/3	3	12	65/30	.020"	.330"	450V

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.
COLOR CODE OF CONDUCTORS
1—Black 2—Red 3—White 4—Green 5—Yellow 6—Blue

BRAIDED COPPER SHIELD

DESCRIPTION: Each conductor tinned copper, color coded polyvinylchloride insulation, conductors twisted, braided copper shield, gray polyvinylchloride jacket overall. Suitable for outdoor installations.

CHARACTERISTICS: A conventional type of braided shield providing approximately 75% coverage is particularly desirable where flexibility is required. The copper shield allows ease of pigtail soldering. Shield construction provides additional cable strength. Operating temperature: −20°C to +60°C. **Nominal jacket thickness .020".**

APPLICATIONS: For public address and sound systems, ideal for recording studios, amateur radio transmitters, shielded power or electronic circuits, wherever an economical shielded cable is required.

STRANDED

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.	SUGG. WORKING VOLTAGE
1735	1	22	7/30	.016"	.125"	350V
1736	2	22	7/30	.016"	.185"	350V
1737	3	22	7/30	.016"	.200"	350V
1738	4	22	7/30	.016"	.210"	350V
1740	1	20	10/30	.016"	.135"	350V
1741	2	20	10/30	.016"	.200"	350V
1742	3	20	10/30	.016"	.220"	350V
1743	4	20	10/30	.016"	.230"	350V
1745	1	18	16/30	.016"	.145"	350V
1746	2	18	16/30	.016"	.235"	350V
1747	3	18	16/30	.016"	.245"	350V
1747/4	4	18	16/30	.016"	.255"	350V
1748	2	16	26/30	.016"	.250"	350V
1749	3	16	26/30	.016"	.255"	350V
1750	2	14	41/30	.020"	.290"	450V
1751	3	14	41/30	.020"	.295"	450V
1760	2	12	65/30	.020"	.335"	450V
1761	3	12	65/30	.020"	.340"	450V

SOLID

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.	SUGG. WORKING VOLTAGE
1775*	2	22	1	.016"	.175"	350V
1779	2	20	1	.016"	.210"	350V
1783	2	18	1	.016"	.220"	350V

*With 22 AWG solid tinned copper ground wire under braided copper shield.

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.
COLOR CODE OF CONDUCTORS 1—Black 2—Red 3—White 4—Green

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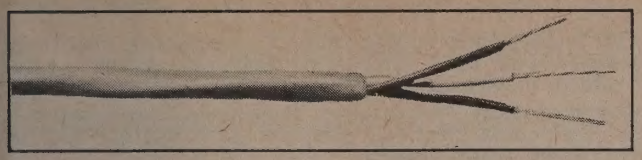
Unshielded Audio Cable



MULTI-CONDUCTOR — PLASTIC JACKET

DESCRIPTION: Each conductor stranded tinned copper, color coded polyvinylchloride insulation, conductors twisted, gray polyvinylchloride jacket overall. Suitable for outdoor installations.

APPLICATIONS: Unbalanced intercom systems. Low voltage relay control cable. P.A. systems. Electronic computer cable. Interconnecting cables. Remote control circuits. Telephones. Telemetering connecting cable. "Baby Sitter" intercom.

CHARACTERISTICS: Suggested Operating Temperature: -20°C to +60°C.

200 VOLTS — **STRANDED CONDUCTORS**

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.
1172	2	22	7/30	.010″	.020″	.140″
1173	3	22	7/30	.010″	.020″	.145″
1174	4	22	7/30	.010″	.020″	.170″
1175	5	22	7/30	.010″	.020″	.175″
1176	6	22	7/30	.010″	.020″	.185″
1177	7	22	7/30	.010″	.020″	.190″
1178	8	22	7/30	.010″	.020″	.200″
1179	9	22	7/30	.010″	.020″	.225″
1180	10	22	7/30	.010″	.020″	.235″
1181	12	22	7/30	.010″	.020″	.255″
1181/15	15	22	7/30	.010″	.020″	.280″
1181/20	20	22	7/30	.010″	.020″	.310″
1181/25	25	22	7/30	.010″	.020″	.340″
1181/30	30	22	7/30	.010″	.020″	.365″
1181/40	40	22	7/30	.010″	.025″	.425″
1181/50	50	22	7/30	.010″	.035″	.500″
1181/60	60	22	7/30	.010″	.035″	.530″

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

300 VOLTS — **STRANDED CONDUCTORS**

ALPHA NO.	NO.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.
1897	2	18	16/30	.016″	.020″	.200″
1898	3	18	16/30	.016″	.020″	.210″
1898/4	4	18	16/30	.016″	.020″	.240″
1898/6	6	18	16/30	.016″	.020″	.290″
1898/8	8	18	16/30	.016″	.025″	.315″
1898/10	10	18	16/30	.016″	.025″	.370″
1898/12	12	18	16/30	.016″	.025″	.385″

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

300 VOLTS — **SOLID CONDUCTORS**

ALPHA NO.	CONDUCTOR NO.	CONDUCTOR SIZE	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.
1797	2	18	.016″	.020″	.190″
1798	3	18	.016″	.020″	.200″
1798/4	4	18	.016″	.020″	.220″
1798/5	5	18	.016″	.020″	.235″
1798/6	6	18	.016″	.020″	.265″

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS

1—Black	21—White/Brown	41—White/Green/Red
2—Red	22—White/Orange	42—White/Green/Green
3—White	23—White/Gray	43—White/Green/Blue
4—Green	24—White/Violet	44—White/Green/Brown
5—Orange	25—White/Black/Red	45—White/Green/Purple
6—Blue	26—White/Black/Green	46—White/Blue/Black
7—Brown	27—White/Black/Yellow	47—White/Blue/Red
8—Yellow	28—White/Black/Blue	48—White/Blue/Green
9—Purple	29—White/Black/Brown	49—White/Blue/Blue
10—Slate	30—White/Black/Orange	50—White/Blue/Brown
11—Pink	31—White/Black/Slate	51—White/Blue/Purple
12—Tan	32—White/Black/Purple	52—White/Brown/Black
13—Red/Green	33—White/Black/Black	53—White/Brown/Red
14—Red/Yellow	34—White/Red/Black	54—White/Brown/Green
15—Red/Black	35—White/Red/Red	55—White/Brown/Blue
16—White/Black	36—White/Red/Green	56—White/Brown/Brown
17—White/Red	37—White/Red/Blue	57—White/Brown/Purple
18—White/Green	38—White/Red/Brown	58—White/Purple/Red
19—White/Yellow	39—White/Red/Purple	59—White/Purple/Green
20—White/Blue	40—White/Green/Black	60—White/Purple/Blue

MULTI-CONDUCTOR — PLASTIC JACKET

DESCRIPTION: Each conductor tinned copper, color coded polyvinylchloride insulation, conductors twisted, gray polyvinylchloride jacket overall. Suitable for outdoor installations.

APPLICATIONS: Intercoms. Interconnecting cables. Remote control circuits. Telephones. Telemetering connecting cable. "Baby Sitter" intercom.

CHARACTERISTICS: Suggested Operating Temperature: 20°C to +60°C

SOLID

ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOMINAL JACKET	NOMINAL O.D.	SUGG. OPER. VOLTAGE
1793	2	22	1	.010″	.020″	.130″	200 V
1794	3	22	1	.010″	.020″	.140″	200 V
1794/4	4	22	1	.010″	.020″	.160″	200 V
1795	2	20	1	.016″	.020″	.170″	350 V
1796	3	20	1	.016″	.020″	.180″	350 V
1796/4	4	20	1	.016″	.020″	.200″	350 V
1797	2	18	1	.016″	.020″	.190″	350 V
1798	3	18	1	.016″	.020″	.200″	350 V
1798/4	4	18	1	.016″	.020″	.220″	350 V
1799	2	16	1	.016″	.020″	.215″	350 V
1799/3	3	16	1	.016″	.020″	.230″	350 V
1799/4	4	16	1	.016″	.020″	.250″	350 V

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT

COLOR CODE OF CONDUCTORS: 1—Black 2—Red 3—White 4—Green

STRANDED

1893	2	22	7/30	.010″	.020″	.135″	200 V
1894	3	22	7/30	.010″	.020″	.145″	200 V
1894/4	4	22	7/30	.010″	.020″	.170″	200 V
1895	2	20	10/30	.016″	.020″	.180″	350 V
1896	3	20	10/30	.016″	.020″	.190″	350 V
1896/4	4	20	10/30	.016″	.020″	.215″	350 V
1897	2	18	16/30	.016″	.020″	.200″	350 V
1898	3	18	16/30	.016″	.020″	.210″	350 V
1898/4	4	18	16/30	.016″	.020″	.240″	350 V
1899	2	16	26/30	.016″	.020″	.225″	350 V
1899/3	3	16	26/30	.016″	.020″	.245″	350 V
1899/4	4	16	26/30	.016″	.020″	.270″	350 V
1891	2	14	41/30	.016″	.020″	.260″	350 V
1891/3	3	14	41/30	.016″	.020″	.280″	350 V
1892	2	12	65/30	.016″	.020″	.300″	350 V
1892/3	3	12	65/30	.016″	.020″	.320″	350 V

STANDARD SPOOL PUT-UP: 100 FT., 250 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS: 1—Black 2—Red 3—White 4—Green

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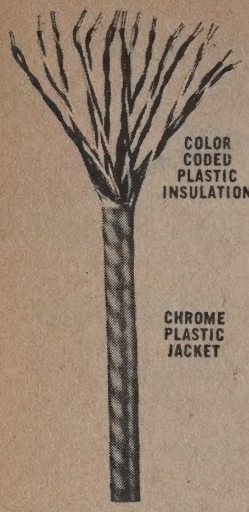
Unshielded Intercom Cable

PAIRED CONDUCTORS — PLASTIC JACKET



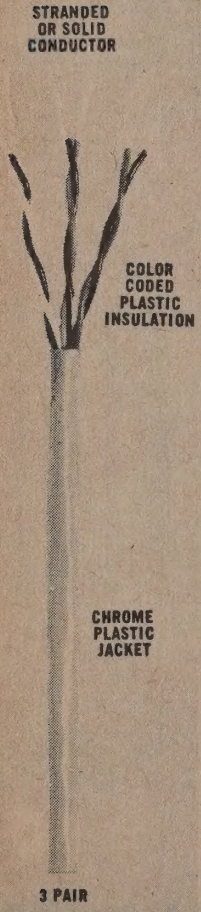
DESCRIPTION: Each conductor tinned copper, color coded polyvinylchloride insulation, conductors twisted into pairs, gray polyvinylchloride jacket overall. Suitable for outdoor installations.

APPLICATIONS: Balanced intercom systems. Annunciators. Telephones. Nurses call systems. Control circuit cable. Electronic computer cable. Multiple speaker cable. Signal systems. Alarm systems.

CHARACTERISTICS: Suggested operating temperature: −20°C to +60°C. Suggested operating voltage: 200 volts.

SOLID CONDUCTORS

ALPHA NO.	NO. OF PAIRS	NO. OF COND.	COND. SIZE	COND. STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.
1300	1	2	22 Solid	1	.010″	.020″	.130″
1302	2	4	22 Solid	1	.010″	.020″	.195″
1304	3	6	22 Solid	1	.010″	.020″	.220″
1307	6	12	22 Solid	1	.010″	.020″	.275″
1307/7	7	14	22 Solid	1	.010″	.020″	.285″
1307/9	9	18	22 Solid	1	.010″	.020″	.310″
1308/11	11	22	22 Solid	1	.010″	.020″	.340″
1309	13	26	22 Solid	1	.010″	.025″	.380″
1309/15	15	30	22 Solid	1	.010″	.025″	.400″
1310	16	32	22 Solid	1	.010″	.025″	.420″
1313	27	54	22 Solid	1	.010″	.035″	.510″
1313/31	31	62	22 Solid	1	.010″	.035″	.555″
1313/41	41	82	22 Solid	1	.010″	.035″	.630″
1314	51	102	22 Solid	1	.010″	.045″	.735″



STRANDED CONDUCTORS

1316	1	2	22	7/30	.010″	.020″	.145″
1317	2	4	22	7/30	.010″	.020″	.210″
1318	3	6	22	7/30	.010″	.020″	.225″
1319	4	8	22	7/30	.010″	.020″	.240″
1320	5	10	22	7/30	.010″	.020″	.265″
1322	6	12	22	7/30	.010″	.020″	.290″
1323	9	18	22	7/30	.010″	.020″	.355″
1324	11	22	22	7/30	.010″	.020″	.365″
1327	15	30	22	7/30	.010″	.025″	.450″
1327/19	19	38	22	7/30	.010″	.025″	.480″
1328	23	46	22	7/30	.010″	.030″	.530″
1329	27	54	22	7/30	.010″	.035″	.570″
1329/31	31	62	22	7/30	.010″	.040″	.635″
1329/41	41	82	22	7/30	.010″	.040″	.710″
1330	51	102	22	7/30	.010″	.045″	.800″

STANDARD SPOOL PUT-UP: 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

PAIR NO.	COLOR COMBINATION
1	Black paired with Red
2	Black paired with White
3	Black paired with Green
4	Black paired with Blue
5	Black paired with Brown
6	Black paired with Yellow
7	Black paired with Orange
8	Red paired with Green
9	Red paired with White
10	Red paired with Blue
11	Red paired with Yellow
12	Red paired with Brown
13	Red paired with Orange
14	Green paired with Blue
15	Green paired with White
16	Green paired with Brown
17	Green paired with Orange
18	Green paired with Yellow
19	White paired with Blue
20	White paired with Brown
21	White paired with Orange
22	White paired with Yellow
23	Blue paired with Brown
24	Blue paired with Orange
25	Blue paired with Yellow
26	Brown paired with Orange
27	Brown paired with Yellow
28	Purple paired with Red
29	Purple paired with White
30	Purple paired with Green
31	Purple paired with Blue
32	Purple paired with Brown
33	Purple paired with Yellow
34	Purple paired with Orange
35	Purple paired with Slate
36	Purple paired with Black
37	Slate paired with Red
38	Slate paired with White
39	Slate paired with Green
40	Slate paired with Blue
41	Slate paired with Brown
42	Slate paired with Yellow
43	Slate paired with Orange
44	Slate paired with Black
45	White/Black paired w. Red
46	White/Black paired w. Green
47	White/Black paired w. Blue
48	White/Black paired w. Brown
49	White/Black paired w. Yellow
50	White/Black paired w. Orange
51	White/Black paired w. Purple

ALPHA WIRE

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Shielded Audio & Data Cable

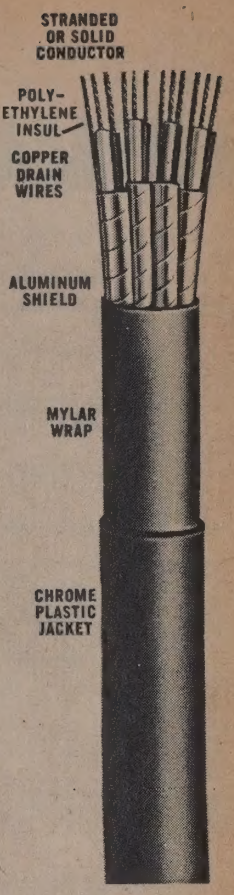
INDIVIDUALLY SHIELDED MULTIPLE PAIRS — PLASTIC JACKET

NEW

DESCRIPTION: Each conductor, tinned copper, color coded, high density polyethylene, conductors twisted into pairs. 22 gauge tinned copper drain wire. Mylar-supported aluminum foil shield, aluminum facing inward. Chrome Grey PVC jacket overall.

CHARACTERISTICS: Mutual conductance between conductors of a pair, 25 pf/ft. Capacitance of a single conductor to shield, 45 pf/ft.

APPLICATIONS: For audio, R.F. and pulse applications requiring superior circuit isolation.



#22 — SOLID

ALPHA NO.	NO. OF PAIRS	NO. OF COND.	COND. STRAND	NOM. WALL THICK. (Inches)	NOM. JKT. THICK. (Inches)	NOM. O.D. (Inches)
6000	3	6	1	.010	.025	.235
6002	6	12	1	.010	.030	.318
6004	9	18	1	.010	.030	.371
6006	11	22	1	.010	.035	.414
6008	15	30	1	.010	.040	.485

#22 — STRANDED

ALPHA NO.	NO. OF PAIRS	NO. OF COND.	COND. STRAND	NOM. WALL THICK. (Inches)	NOM. JKT. THICK. (Inches)	NOM. O.D. (Inches)
6010	3	6	7/30	.010	.025	.252
6012	6	12	7/30	.010	.030	.342
6014	9	18	7/30	.010	.035	.410
6016	11	22	7/30	.010	.040	.457
6018	15	30	7/30	.010	.040	.523
6020	19	38	7/30	.010	.050	.570
6022	27	54	7/30	.010	.055	.687

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

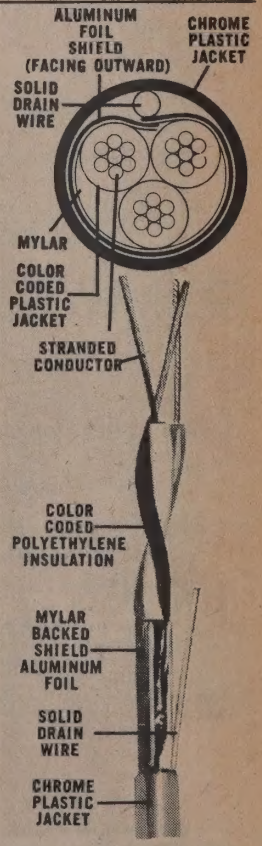
PAIR NO.	COLOR COMBINATION OF PAIRS	
1	Black paired with Red	10—Red paired with Blue
2	Black paired with White	11—Red paired with Yellow
3	Black paired with Green	12—Red paired with Brown
4	Black paired with Blue	13—Red paired with Orange
5	Black paired with Brown	14—Green paired with Blue
6	Black paired with Yellow	15—Green paired with White
7	Black paired with Orange	16—Green paired with Brown
8	Red paired with Green	17—Green paired with Orange
9	Red paired with White	18—Green paired with Yellow
19	White paired with Blue	
20	White paired with Brown	
21	White paired with Orange	
22	White paired with Yellow	
23	Blue paired with Brown	
24	Blue paired with Orange	
25	Blue paired with Yellow	
26	Brown paired with Orange	
27	Brown paired with Yellow	

Shielded Plastic Jacketed Cable

MYLAR SUPPORTED ALUMINUM FOIL SHIELD

DESCRIPTION: Each conductor stranded tinned copper, color coded polyethylene insulation, conductors cabled, wrapped mylar supported aluminum foil shield, 100% coverage with drain wire laid parallel, aluminum foil facing outward to provide maximum ground, gray pvc jacket overall.

CHARACTERISTICS: Operating temperature: −20°C to +60°C. Operating voltage: 400 volts. Light weight, reduces cable diameter, and provides 100% shield coverage.



ALPHA NO.	NO. OF COND.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. JKT. THICKNESS	NOM. O.D.
2402	2	22	7/30	.016″	.020″	.195″
2403	3	22	7/30	.016″	.020″	.210″
2404	4	22	7/30	.016″	.020″	.225″
2412	2	20	10/30	.016″	.020″	.210″
2413	3	20	10/30	.016″	.020″	.225″
2414	4	20	10/30	.016″	.020″	.240″
2422	2	18	16/30	.016″	.020″	.230″
2423	3	18	16/30	.016″	.020″	.245″
2424	4	18	16/30	.016″	.020″	.265″
2432	2	16	26/30	.016″	.020″	.255″
2433	3	16	26/30	.016″	.020″	.275″
2442	2	14	41/30	.016″	.020″	.290″
2443	3	14	41/30	.016″	.020″	.310″

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

COLOR CODE OF CONDUCTORS: 1—Black 2—Red 3—White 4—Green

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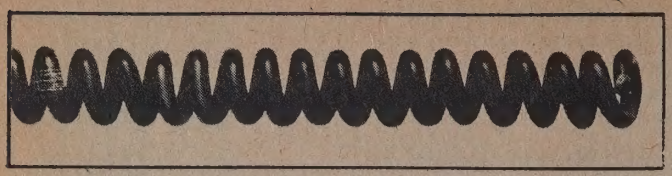

RETRACTILE COIL CORDS

POWER CORDS—NEOPRENE JACKET U.L. APPROVED

RETRACTED LENGTHS 2 & 4 FEET—EXTENDED LENGTHS 12 & 25 FEET

DESCRIPTION: Long-lasting service is assured with this quality multi-conductor power cord. Each conductor is stranded copper, with rubber installation, and a rugged weather and oil resistant neoprene jacket overall.

APPLICATION: Used on electric tools, portable drills, soldering wires, electrical appliances, household appliances, etc., to eliminate loose hanging wires and to prevent wires from tangling and twisting.

CHARACTERISTICS: Suggested operating temperature: 20 C to 60 C.

ALPHA NO. 2 FT. LGTHS.	4 FT. LGTHS.	†1 FT. LGTHS.	NO. OF CONDS.	CONDUCTOR SIZE	STRAND	U.L. TYPE	AMP RATING	VOLT RATING	NOM. COIL O.D.	NOM. O.D. CORD
660 2	660 4	660 1	2	18	41 34	SVO	7	300	7 8″	.260″
760 2	760 4		3	18	41 34	SVO	7	300	1″	.275″
661 2	661 4	661 1	2	18	41 34	SJO	7	300	1-3 16″	.320″
662 2	662 4	662 1	3	18	41 34	SJO	7	300	1-3 8″	.350″
663 2	663 4		4*	18	41 34	SJO	5.6	300	1-7 16″	.385″
782 2	782 4		3	18	41 34	SO	7	600	1-5 8″	.405″
783 2	783 4		4*	18	41 34	SO	5.6	600	1-5 8″	.435″
664 2	664 4	664 1	2	16	65 34	SJO	10	300	1-3 8″	.360″
665 2	665 4	665 1	3	16	65 34	SJO	10	300	1-7 16″	.390″
666 2	666 4		4*	16	65 34	SJO	8	300	1-1 2″	.425″
670 2	670 4		3	16	41 34	SO	10	600	1-13 16″	.470″
671 2	671 4		4*	16	65 34	SO	8	600	1-7 8″	.500″
672 2	672 4		2	14	41 30	SO	15	600	2-1 8″	.540″
673 2	673 4		3	14	41 30	SO	15	600	2-1 8″	.560″
674 2	674 4		4*	14	41 30	SO	12	600	2-1 4″	.605″
675 2	675 4		2	12	65 30	SO	20	600	2-1 4″	.605″
676 2	676 4		3	12	65 30	SO	20	600	2-3 8″	.635″
677 2	677 4		4*	12	65 30	SO	16	600	2-3 8″	.678″

COLOR CODE OF CONDUCTORS
1—Black 2—White 3—Green 4—Red

*If all four conductors normally carry current, amp rating is as shown. If one lead is used as a ground, amp rating is the same as 2 and 3 conductor cords.

†A 12″ retracted length with a 12″ straight lead on each end for easy stripping and termination. Cord extends to approximately 6 feet.

RETRACTILE TEST LEAD WIRE

RETRACTED LENGTH 12″—EXTENDED LENGTH 6 FEET

DESCRIPTION: A high grade quality rubber insulation for maximum flex life extruded over a single conductor of extra flexible tinned copper which gives long life to this retractile test lead wire. Available in a 12″ retracted length with a 6″ straight lead on each end, the cord extends to approximately 5 feet.

ALPHA NO.	CONDUCTOR SIZE	STRAND	AMP. RATED	VOLT RATING	NOM. COIL O.D.	NOM. O.D. CORD	COLOR CODE
650	20	41 36	4	5,000	¾″	.165″	Black-Red

COLOR CODE
SPECIFY BLACK OR RED.

RETRACTILE POWER CORD SETS U.L. APPROVED

RETRACTED LENGTH 18″—EXTENDED LENGTH 7½ FEET

DESCRIPTION: Coiled power cord with a sturdy molded male plug on one end. On the other end we have removed a portion of the neoprene jacket, exposed the conductors and stripped them for easy termination. Operating voltage, 300 volts.

APPLICATION: Same as power cords, but with a plug on one end.

ALPHA NO.	NO. OF CONDS.	CONDUCTOR SIZE	STRAND	U.L. TYPE	NOM. COIL O.D.	NOM. O.D. CORD
654	2	18	41 34	SVO	7 8″	.260″
655	2	18	41 34	SJO	1-3 16″	.320″
656	3	18	41 34	SJO	1-3 8″	.350″
657	2	16	65 34	SJO	1-3 8″	.360″
658	3	16	65 34	SJO	1-7 16″	.390″

COLOR CODE OF CONDUCTORS
1—Black 2—White 3—Green

RETRACTILE COIL CORDS

RETRACTILE COMMUNICATION COIL CORDS

RETRACTED LENGTHS 2 & 4 FEET—EXTENDED LENGTHS 12 & 25 FEET

DESCRIPTION: Multi-conductor communication cord manufactured with extra flexible #23 AWG-21 36 tinned soft cadmium copper for maximum flex life. Insulated with rubber for communication circuits of maximum 120 working volts. The overall jacket is a specially compounded cured neoprene jacket giving long life to the retractile cord.

APPLICATION: Used in communication equipment, such as telephone car carriers, mobile radio equipment, ham operations, head sets, citizen band units and radio transmitter to receiver head sets, communication cords eliminate hazards and inconveniences caused by tangled straight cords.

ALPHA NO. 2 FT. LGTHS.	4 FT. LGTHS.	NO. OF CONDS.	CONDUCTOR SIZE	STRAND	AMP RATING	VOLTAGE RATING	NOM. COIL O.D.	CORD O.D.	COLOR CODE OF CONDUCTORS
680 2	680 4	2	23	21 36	1	120	3 4″	.215″	1—Black
681 2	681 4	3	23	21 36	1	120	13 16″	.220″	2—White
682 2	682 4	4	23	21 36	1	120	15 16″	.250″	3—Red
683 2	683 4	5	23	21 36	1	120	1-1 16″	.285″	4—Green
684 2	684 4	6	23	21 36	1	120	1-1 8″	.305″	5—Blue
685 2	685 4	7	23	21 36	1	120	1-1 4″	.320″	6—Yellow
									7—Brown

RETRACTILE COMMUNICATION CORDS (SHIELDED)

RETRACTED LENGTHS 2 & 4 FEET—EXTENDED LENGTHS 12 & 25 FEET

DESCRIPTION: Same as above, except that shielded conductors are individually shielded with a cadmium copper shield to eliminate external electrical interference. Shield can be pigtailed for direct soldering connections.

APPLICATION: When shielded communication cords are needed.

ALPHA NO. 2 FT. LGTHS.	4 FT. LGTHS.	NO. OF CONDS.	CONDUCTOR SIZE	STRAND	VOLTAGE RATING	SHIELDING	NOM. COIL O.D.	NOM. O.D. CORD	COLOR CODE OF CONDUCTORS
690 2	690 4	1	24	41 40	75	Shielded	5⁄16″	.160″	White
692 2	692 4	2	1-23	21 36	120	Unshielded	7⁄16″	.240″	Black
			1-24	41 40	75	Shielded			White
694 2	694 4	3	2-23	21 36	120	Unshielded	7⁄16″	.240″	Black & Red
			1-24	41 40	75	Shielded			White
696 2	696 4	4	2-23	21 36	120	Unshielded	1″	.270″	Red & Black
			2-24	41 40	75	Individually Shielded			White & Green

RETRACTILE COMMUNICATION CORDS

PREPARED FOR EASY INSTALLATION AND REPLACEMENT

RETRACTED LENGTH 12″—EXTENDED LENGTH 6 FEET

DESCRIPTION: Same as communication cords except each end is prepared as indicated.

ALPHA NO.	NO. OF CONDS.	AWG	NOM. COIL O.D.	NOM. CORD O.D.	PREPARATION
686	3	23-21 36	13 16″	.220″	**1 end:** total length 1½″. Conductors stripped and tinned. **Other end:** total length 1½″ jacket removed.
687	4	23-21/36	15 16″	.250″	**1 end:** total length 1″. Conductors stripped and tinned. **Other end:** total length 1½″ jacket removed.
688	5	23-21/36	1-1 16″	.285″	**1 end:** total length 4⅛″. Conductors stripped and tinned. **Other end:** total length 4⅛″ conductors stripped and tinned.

MINIATURE RETRACTILE COMMUNICATIONS CORDS

RETRACTED LENGTH 2 FEET—EXTENDED LENGTH 10 FEET

DESCRIPTION: A small diameter plastic cord with stranded tinned copper conductors for maximum flexibility, insulated and jacketed with polyvinylchloride. Each cord is available in a 2 ft. retracted length with a 6″ straight lead on each end and extends to approximately 10 feet.

APPLICATION: For low voltage power and communication equipment where miniaturization is required due to space and weight limitations.

ALPHA NO.	NO. OF CONDS.	CONDUCTOR SIZE	STRAND	AMP RATING	VOLT RATING	NOM. COIL O.D.	NOM. CORD O.D.	COLOR CODE OF CONDUCTORS
651●	2	28	19 40	0.5	100	½″	.135″	1—Black 2—White
652	4	28	19 40	0.5	100	½″	.150″	3—Green 4—Red

For 3 conductor, use 4 conductor with one lead unused

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Flat Braid

DESCRIPTION: A woven braid, composed of tinned copper strands, which is rolled flat at time of manufacture to a specific width depending upon construction.

ALPHA NO.	NOM. FLAT WIDTH	NOM. THICKNESS	BRAID CONSTRUCTION AWG OF INDIV. ENDS	CARRIERS	TOTAL NO. OF INDIV. ENDS	APPROX. AWG EQUIV.	NOM. CIRCULAR MILLS	*CURRENT CARRYING CAP. (Amps)	PUT-UP CODE
1221	.025	.015"	36	8	8	27	200	4.0	1 thru 5
1222	1/32"	.020"	36	16	16	24	400	6.0	1 thru 5
1223	3/64"	.020"	36	24	24	22	600	7.0	1 thru 5
1224	3/32"	.020"	36	16	48	19	1200	11.0	1 thru 5
1229	1/8"	.020"	36	24	72	18	1800	16.0	1 thru 5
1230	3/16"	.020"	36	24	120	15	3000	25.0	1 thru 5
1231	1/4"	.030"	36	24	168	14	4200	32.0	1 thru 5
1232	3/8"	.030"	36	48	288	12	7200	46.0	1 thru 5
1233/2	1/2"	.030"	36	48	384	10	9600	53.0	1 thru 5
1233	5/8"	.030"	36	48	384	10	9600	53.0	1 thru 5
1234	3/4"	.040"	36	48	832	7	20800	85.0	1 thru 5
1235	1"	.045"	36	48	832	7	20800	85.0	1 thru 5
1239	1 3/8"	.050"	30	48	336	5	33700	100.0	1 thru 5
1240	1 1/2"	.060"	30	48	528	3	53064	150.0	1 thru 3
1241	1 3/4"	.080"	30	48	1248	00	125424	280.0	1 thru 3
1242	2"	.120"	30	48	1536	000	154368	310.0	1 thru 3
1242/1	2 1/4"	.150"	30	48	1680	000	168840	320.0	1 & 2
1242/2	2 1/2"	.170"	30	48	1920	000	192000	340.0	1 & 2
1242/3	2 3/4"	.180"	30	48	2160	0000	216000	370.0	1 & 2
1242/4	3"	.200"	30	48	2256	0000	225000	390.0	1 & 2

PUT-UP CODE 1—50Ft. 2—100 Ft. 3—250 Ft. 4—500 Ft. 5—1000 Ft.

Oval Commercial Braid

DESCRIPTION: A woven tinned copper braid which is left in the tubular configuration as it leaves the braiding equipment. It is manufactured to a specific inside diameter but because of its extreme flexibility cannot maintain its completely round shape and becomes oval.

ALPHA NO.	NOM. I.D. WHEN ROUNDED	BRAID CONSTRUCTION AWG OF INDIV. ENDS	CARRIERS	TOTAL NO. OF INDIV. ENDS	APPROX. AWG. EQUIV.	NOM. CIRCULAR MILLS	*CURRENT CARRYING CAPACITY (Amps)	PUT-UP CODE
2130	1/32"	34	24	24	20	954	9.0	1 thru 5
2132	1/16"	34	16	32	19	1192	11.0	1 thru 5
2134	7/64"	34	16	64	16	2544	20.0	1 thru 5
2136	1/8"	34	24	72	15	2862	25.0	1 thru 5
2138	11/64"	34	24	120	14	4770	32.0	1 thru 5
2140	3/16"	34	24	144	13	5724	38.0	1 thru 4
2142	1/4"	34	24	168	12	6678	41.0	1 thru 4
2144	3/8"	34	24	192	11	7632	46.0	1 thru 4
2146	1/2"	34	48	336	9	13356	62.0	1 thru 3
2148	5/8"	34	48	384	8	14264	64.0	1 thru 3
2150	11/16"	34	48	480	7	19080	81.0	1 thru 3
2152	25/32"	34	48	528	7	20988	85.0	1 thru 3

PUT-UP CODE 1—50Ft. 2—100 Ft. 3—250 Ft. 4—500 Ft. 5—1000 Ft.

* Values shown are for bare cable in free air at 30°C (86°F) and intended as a reference guide only. Actual values will depend on permissible temperature rise, permissible voltage drop and other conditions of service.

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Tinned Copper Tubular Braid To MIL Spec QQ-B-575

DESCRIPTION: A woven tinned copper braid which is manufactured completely round as outlined in Mil Spec QQ-B-575. Each strand of the braid is soft drawn tinned copper wire. The braid is self-supporting and maintains its round configuration. The percentage of shielding coverage is 95% or more when placed over a mandrel of an equivalent diameter to the inside braid diameter.

ALPHA NO.	NOM. I.D. WHEN ROUNDED	BRAID CONSTRUCTION AWG OF INDIV. ENDS	CARRIERS	TOTAL NO. OF INDIV. ENDS	APPROX. AWG. EQUIV.	NOM. CIRCULAR MILLS	*CURRENT CARRYING CAPACITY (Amps)	PUT-UP CODE
2160	1/32"	36	24	24	22	600	7.0	1-3
2162	1/16"	36	24	48	19	1200	11.0	1-3
2163	3/64"	36	24	72	18	1800	16.0	1-3
2164	1/16"	36	24	96	16	2400	19.0	1-3
2166	1/8"	36	24	120	15	3000	25.0	1-3
2167	5/32"	36	24	240	12	6000	40.0	1-3
2168	11/64"	36	24	168	14	4200	32.0	1-3
2170	13/64"	34	24	192	11	7630	46.0	1-2
2171	1/4"	36	24	384	10	9600	53.0	1-2
2171/1	9/32"	30	24	120	9	12060	60.0	1-2
2172	3/8"	36	48	384	10	9600	53.0	1-2
2173	7/16"	30	24	240	6	24120	90.0	1-2
2174	1/2"	36	48	528	9	13200	62.0	1-2
2175	9/16"	30	48	480	3	48240	145.0	1-2
2175/1	21/32"	30	48	768	1	77180	190.0	1-2
2176	25/32"	36	48	864	7	21600	88.0	1-2

PUT-UP CODE: 1—50 Ft. 2—100 Ft. 3—250 Ft.

EXTRA LARGE TINNED COPPER TUBULAR BRAID

DESCRIPTION: These tubular braids manufactured to standards of QQ-B-575 although these sizes are not listed in the specification.

ALPHA NO.	NOM. I.D. WHEN ROUNDED	BRAID CONSTRUCTION AWG OF INDIV. ENDS	CARRIERS	TOTAL NO. OF INDIV. ENDS	APPROX. AWG. EQUIV.	NOM. CIRCULAR MILLS	*CURRENT CARRYING CAPACITY (Amps)	PUT-UP CODE
2177	7/8"	30	48	336	5	33700	100.0	1 & 2
2178	1"	30	48	384	4	38600	120.0	1 & 2
2179	1 1/8"	30	48	432	4	43330	130.0	1 & 2
2180	1 1/4"	30	48	480	3	48150	145.0	1 & 2
2181	1 3/8"	30	48	528	3	53000	150.0	1 & 2
2182	1 1/2"	30	48	576	2	57775	165.0	1 & 2

PUT-UP CODE: 1—50 Ft. 2—100 Ft.

SILVER PLATED TUBULAR BRAID CONSTRUCTION TO MIL SPEC QQ-B-575

DESCRIPTION: A woven silver plated copper braid which is manufactured completely round as outlined in Mil Spec QQ-B-575. Each strand of the braid is soft drawn silver plated copper wire. The braid is self-supporting and maintains its round configuration. The percentage of shielding coverage is 95% or more when placed over a mandrel of an equivalent diameter to the inside braid diameter.

ALPHA NO.	NOM. I.D. WHEN ROUNDED	BRAID CONSTRUCTION AWG OF INDIV. ENDS	CARRIERS	TOTAL NO. OF INDIV. ENDS	APPROX. AWG. EQUIV.	NOM. CIRCULAR MILLS	*CURRENT CARRYING CAPACITY (Amps)	PUT-UP CODE
2190	1/32"	36	24	24	22	600	7.0	1-3
2191	1/16"	36	24	48	19	1200	11.0	1-3
2192	3/64"	36	24	72	18	1800	16.0	1-3
2193	1/16"	36	24	96	16	2400	19.0	1-3
2194	1/8"	36	24	120	15	3000	25.0	1-3
2195	5/32"	36	24	240	12	6000	40.0	1-3
2196	11/64"	36	24	168	14	4200	32.0	1-3
2197	13/64"	34	24	192	11	7640	46.0	1 & 2
2198	1/4"	36	24	384	10	9600	53.0	1 & 2

PUT-UP CODE: 1—50 Ft. 2—100 Ft. 3—250 Ft.

* Values shown are for bare cable in free air at 30°C (86°F) and intended as a reference guide only. Actual values will depend on permissible temperature rise, permissible voltage drop and other conditions of service.

alpha **ALPHA WIRE**

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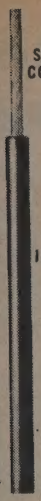
U.L. Approved Hook-Up Wire



DESCRIPTION: Stranded tinned copper, color coded polyvinylchloride insulation.

CHARACTERISTICS: Temperature rating (−10°C to +80°C, 300 V) (−10°C to +105°C, 600 V). Resistant to acids, alkalis, oil, flame, moisture and fungus.

300 VOLT 80°C – STYLE No. 1007

ALPHA NO.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. O.D.
3050	24	7/32	.057″
3051	22	7/30	.065″
3053	20	10/30	.071″
3055	18	16/30	.080″
3057	16	26/30	.095″

*** STOCK COLORS: 1-19**

1—White
2—Black
3—Red
4—Green
5—Yellow
6—Light Blue
7—Brown
8—Orange
9—Gray (slate)
10—Violet (purple)
11—White Black
12—White Red
13—White Green
14—White Yellow
15—White Blue
16—White Brown
17—White Orange
18—White Gray
19—White Violet

*Other striped color — combinations to order

600 VOLT* 105°C – STYLE No. 1015

ALPHA NO.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. O.D.
3071	22	7/30	.095″
3073	20	10/30	.102″
3075	18	16/30	.112″
3077	16	26/30	.125″
3079	14	41/30	.142″

*** STOCK COLORS: 1-10**

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

U.L. Semi-Rigid Business Machine Wire

DESCRIPTION: Stranded tinned copper, color coded semi-rigid polyvinylchloride insulation.

CHARACTERISTICS: Temperature rating −10°C to +80°C, 300 volts in business machine or electronic computers only.

APPLICATIONS: Internal wiring of computers, electric bookkeeping, accounting machines, and other office and control equipment.

300 VOLT 80°C — STYLE No. 1061

ALPHA NO.	CONDUCTOR SIZE	CONDUCTOR STRAND	NOM. WALL THICKNESS	NOM. O.D.
3250	24	7/32	.009″	.042″
3251	22	7/30	.009″	.048″
3252	20	7/28	.009″	.056″

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT. 5000 FT.

STOCK COLORS

1—White
2—Black
3—Red
4—Green
5—Yellow
6—Blue
7—Brown
8—Orange
9—Gray
10—Violet

*Other striped color combinations available to order.

U.L. Silicone Rubber Appliance and Fixture Wire

NEW

300 VOLT 80°C — STYLE No. 1061

DESCRIPTION: Stranded tinned copper conductor, silicone rubber insulation, impregnated white fiberglass braid overall.

CHARACTERISTICS: Resistant to abrasion, oil, moisture, and fungus.

APPLICATIONS: For wiring all types of lighting fixtures and other high wattage devices.

MAXIMUM OPERATING TEMPERATURE +200°C (392°F)

ALPHA NO.	N.E.C. TYPE DESIGNATION	CONDUCTOR SIZE	CONDUCTOR STRAND	INSULATION WALL (64ths)	VOLTAGE RATING (Volts)	NOM. O.D. (Inches)	NET WT. LBS. PER M/FT.
6124	SF-2	18	7/26	2	600	.13	12
6125	SF-2	16	7/24	2	600	.14	16
6126	SF-2	14	7/22	2	600	.16	22
6127	—	12	19/25	2	600	.18	32
6128	—	10	41/26	3	600	.24	52

MAXIMUM OPERATING TEMPERATURE +150°C (302°F)

6129	—	22*	7/30	1	300	.08	5
6130	—	22*	7/30	2	600	.11	8
6131	—	20*	10/30	1	300	.09	7
6132	—	20*	10/30	2	600	.12	9
6133	SFF-1	18	16/30	1	300	.10	9
6134	SFF-2	18	16/30	2	600	.13	12
6135	SFF-2	16	26/30	2	600	.14	16
6136	SFF-2	14	41/30	2	600	.16	22
6137	—	12	41/28	2	600	.18	32

* Listed by U/L for radio hookup wire. **STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.**

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ALPHA WIRE

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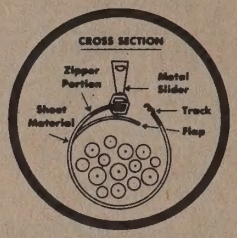
ALPHLEX® ZIPPER TUBING

DESCRIPTION Alphlex Zipper Tubing is the all purpose modern way to harness, cover and protect cables. Just zip to close — and zip to reopen. If you wish, it may be permanently sealed with PB-200 Special Compound Liquid Sealer. Alphlex Zipper Tubing is strong, flexible, durable, and offers new freedom in design, production and repair.

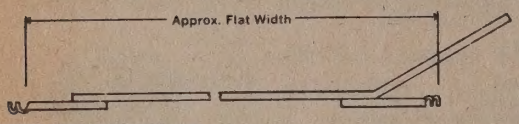
APPLICATIONS To shield, to harness wire, to custom-cable to any length, to enclose, to encase, to identify (such as cable markers), to protect, to replace worn jackets.

TYPES OF ZIPPER TUBING

TYPE	MATERIAL	WALL THICKNESS (Inches)	OPER. TEMP.	APPLICATIONS	STOCK COLORS	STANDARD PUT-UPS
ZIP-31	Polyvinyl-chloride made from MIL-I-631 D, GRADE C Materials	.020	—20° C to 105 C	All Purpose Type	Clear Black Yellow	25' 50' 100' 25' 50' 100' 25' 50' 100'
ZIP-31M	Polyvinyl-chloride made from MIL-I-631 D, GRADE C Materials	.040	—20° C to 105° C	Heavy Duty Constructions	Clear Black	100' 100'
ZIP-44	Polyvinyl-chloride made from MIL-I-7444 B Materials	.020	—67° C to 70° C	Extreme Flexibility, Low Temperature & Aircraft industry	Clear Black	100' 100'
ZIP-50	Polyvinyl-chloride "sandwich" of aluminum foil laminated between two sheets of polyvinyl	.040	—20° C to 105° C	100% RF shielding	Silver-Grey	100'



*Because of small Inside Diameter, these sizes cannot be closed by using the slider. The tracks must be closed by manual pressure.



ZIPPER SPECIFICATIONS FOR ALL TYPES OF ALPHLEX ZIPPER TUBING

Material	Polyvinylchloride	Cold Brittleness	—86° C
Track Thickness (when closed)	.095"	Fungus-proof	will not support fungus
Dielectric Strength, V/mil	759	Flammability	self-extinguishing
Tensile Strength P.S.I.	3810	Lateral Pull Strength (unsealed)	42.7 pounds/inch
Ultimate Elongation	255%	Lateral Pull Strength (permanently sealed)	59.8 pounds/inch
Operating Temperature, Upper Limit	106° C	Standard Colors	Black, Clear, Yellow

Contrasting color combinations of zipper and body are available to order. The zipper portion can be supplied in any of the following colors: Black, Yellow, Clear, Blue, White, Brown, Purple, Red, Orange, Green, Slate.

STANDARD SIZES FOR ALL ZIPPER TUBING

Zipper Tubing Inside Diameter	Approx. Flat Width (From track to track — excluding flap)
*1/16"	1 3/16"
*3/16"	1 5/8"
1/8"	2"
5/16"	2 3/8"
3/4"	2 3/4"
7/16"	3 1/8"
1"	3 9/16"
1 1/8"	3 15/16"
1 1/4"	4 1/4"
1 1/2"	4 7/8"
1 3/4"	5 5/8"
2"	6 3/8"

HOW TO ORDER
Select the type of Zipper Tubing desired from the chart and the required Inside Diameter. When ordering, request as follows: For example, ZIP-31 Tubing in 5/8" Inside Diameter order — ZIP-31 — 5/8.

ALPHLEX® ELECTRONIC LACING CORDS AND TAPES

MIL-T-713A NYLON TWISTED CORD

ALPHA NO.	CLASS	TYPE	BREAKING STRENGTH	FINISH	NOMINAL DIAMETER	STOCK COLORS	YARDS PER POUND	STANDARD PUT-UP
LC-113	I	P Twine	70 lbs.	MW	.050"	Wh., Blk.	560	8 oz. spls.
LC-114	II	P Twine	48 lbs.	MW	.035"	Wh., Blk.	750	8 oz. spls.
LC-115	III	P Twine	32 lbs.	MW	.030"	Wh., Blk.	1180	8 oz. spls.

MIL-T-713A NYLON FLAT BRAIDED TAPE

ALPHA NO.	CLASS	TYPE	BREAKING STRENGTH	NOMINAL WIDTH	NOMINAL THICKNESS	FINISH	STOCK COLORS	STANDARD PUT-UP
LC-136	II	P Tape	50 lbs.	.090" (3/32")	.014"	MW	Wh., Blk.	500 yd. spls.

NYLON FLAT BRAIDED TAPE

ALPHA NO.	WIDTH	THICKNESS	TENSILE STRENGTH	FINISH	STOCK COLORS	STANDARD PUT-UP
LC-132	3/32"	.014"	50 lbs.	GE	Wh., Blk.	500 yd. tubes
LC-134	1/16"	.010"	30 lbs.	MW	Wh., Blk.	500 yd. spls.
LC-136	3/32"	.014"	50 lbs.	MW	Wh., Blk.	500 yd. spls.
LC-140	3/32"	.014"	50 lbs.	SR	Wh., Blk.	500 yd. spls.
LC-143	3/32"	.014"	50 lbs.	AM	Wh., Blk.	500 yd. spls.

DACRON FLAT BRAIDED TAPE

ALPHA NO.	WIDTH	THICKNESS	TENSILE STRENGTH	FINISH	STOCK COLORS	STANDARD PUT-UP
LC-158	3/32"	.014"	50 lbs.	GE	Wh., Blk.	500 yd. tubes
LC-162	3/32"	.014"	50 lbs.	MW	Wh., Blk.	500 yd. spls.

Other materials, finishes and sizes available to order.

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ALPHA WIRE

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Alphlex® Polyvinylchloride Plastic Tubing (PVC-105)

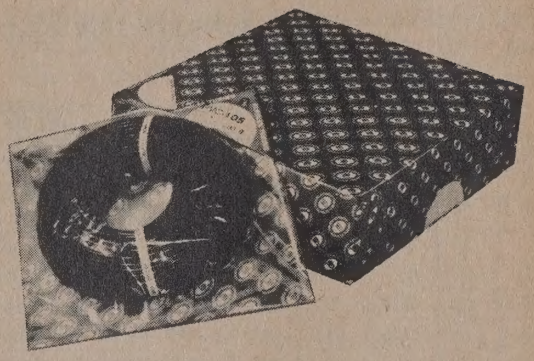
CONFORMS TO MIL-I-631D †

DESCRIPTION: The superior mechanical, thermal, and electrical properties of Alphlex PVC-105, coupled with its economical cost have led to an ever increasing use of this all-purpose insulating material. Another major advantage of Alphlex PVC-105 is its high degree of flexibility, which is maintained even under severe environmental conditions.

Rated for temperatures as high as 105°C, PVC-105 has a high dielectric strength that remains unaffected by increasing temperature throughout its range. PVC-105 maintains a high resistance to the agents of heat, oil, chemical corrosion and fungi with no loss in tensile strength, or flexibility. Other features include an exceptional resistance to abrasion and indefinite shelf life.

Alphlex PVC-105 is compounded with first quality, non-migratory resinous type plasticizers. Carefully selected stabilizers and modifiers added in the manufacturing process, counteract chemical and environmental degradation. Under adverse conditions Alphlex PVC-105 retains its flexibility which permits it to cling to and protect irregular shapes. An unusually simple to handle insulating material, PVC-105 "snakes" well under all environmental conditions.

APPLICATIONS: Designed and manufactured for general electronic, aircraft and electrical applications involving temperatures as high as 105°C. Especially useful to protect wires and cables subject to abrasion or where a flexible tubing with a high degree of resistivity to oil, chemicals or solvents is necessary.



DIMENSIONS CHART

ALPHLEX NUMBER	SIZE	NOM. INSIDE DIA. (Inch.)	NOM. WALL THICK-NESS (Inch.)	*STOCK COLORS	STANDARD PUT-UPS
PVC-105/24	24	.022	.013	1 - 6	100′, 500′, 1000′ Spools
PVC-105/22	22	.027	.012	1 - 6	100′, 500′, 1000′ Spools
PVC-105/20	20	.034	.016	1 - 6	100′, 500′, 1000′ Spools
PVC-105/19	19	.038	.016	1 - 6	100′, 500′, 1000′ Spools
PVC-105/18	18	.042	.016	1 - 6	100′, 500′, 1000′ Spools
PVC-105/17	17	.047	.016	1 - 6	100′, 500′, 1000′ Spools
PVC-105/16	16	.053	.016	1 - 6	100′, 500′, 1000′ Spools
PVC-105/15	15	.059	.016	1 - 6	100′, 500′, 1000′ Spools
PVC-105/14	14	.066	.016	1 - 6	100′, 500′, — Spools
PVC-105/13	13	.076	.016	1 - 6	100′, 500′, — Spools
PVC-105/12	12	.085	.016	1 - 6	100′, 500′, — Spools
PVC-105/11	11	.095	.016	1 - 6	100′, 500′, — Spools
PVC-105/10	10	.106	.016	1 - 6	100′, 500′, — Spools
PVC-105/9	9	.118	.020	1 - 6	100′, 500′, — Spools
PVC-105/8	8	.133	.020	1 - 6	100′, 500′, — Spools
PVC-105/7	7	.148	.020	1 - 6	100′, 500′, — Spools
PVC-105/6	6	.166	.020	1 - 6	100′, 500′, — Spools
PVC-105/5	5	.186	.020	1 - 6	100′, 500′, — Spools
PVC-105/4	4	.208	.020	1 - 6	100′, 250′, — Coils
PVC-105/3	3	.234	.020	1 - 6	100′, 250′, — Coils

ALPHLEX NUMBER	SIZE	NOM. INSIDE DIA. (Inch.)	NOM. WALL THICK-NESS (Inch.)	*STOCK COLORS	STANDARD PUT-UPS
PVC-105/2	2	.263	.020	1 - 6	100′, 250′ Coils
PVC-105/1	1	.294	.020	1,2,3	100′, 250′ Coils
PVC-105/0	0	.330	.020	1,2,3	100′, 250′ Coils
PVC-105/5/16″	5/16″	.312	.025	1,2,3	100′, 250′ Coils
PVC-105/3/8″	3/8″	.375	.025	1,2,3	100′, 250′ Coils
PVC-105/7/16″	7/16″	.438	.025	1,2,3	25′, 100′, — Coils
PVC-105/1/2″	1/2″	.500	.025	1,2,3	25′, 100′, — Coils
PVC-105/9/16″	9/16″	.562	.030	1,2,3	25′, 100′, — Coils
PVC-105/5/8″	5/8″	.625	.030	1,2,3	25′, 100′, — Coils
PVC-105/3/4″	3/4″	.750	.035	1,2,3	25′, 50′, — Coils
PVC-105/7/8″	7/8″	.875	.035	1,2,3	25′, 50′, — Coils
PVC-105/1″	1″	1.000	.035	1,2,3	25′, 50′, — Coils
PVC-105/1 1/8″	1 1/8″	1.125	.035	1,2	25′, 50′, — Coils
PVC-105/1 1/4″	1 1/4″	1.250	.040	1,2	25′, 50′, — Coils
PVC-105/1 3/8″	1 3/8″	1.375	.040	1,2	25′, 50′, — Coils
PVC-105/1 1/2″	1 1/2″	1.500	.045	1,2	25′, 50′, — Coils
PVC-105/1 3/4″	1 3/4″	1.750	.055	1,2	25′, 50′, — Coils
PVC-105/2″	2″	2.000	.060	1,2	25′, 50′, — Coils
PVC-105/2 1/4″	2 1/4″	2.250	.065	1,2	25′, 50′, — Coils
PVC-105/2 1/2″	2 1/2″	2.500	.070	1,2	25′, 50′, — Coils

*** STOCK COLORS** 1—Clear 2—Black 3—White 4—Yellow 5—Red 6—Green

† MIL-I-631D, Type F, Form U, Grade C, Class I, Category 1

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Alphlex® Teflon Extruded Tubing

CONFORMS TO MIL-I-22129B

DESCRIPTION: Alphlex Teflon Tubing is unmatched by any other type of tubing for use in electrical applications at high frequencies and temperatures. Teflon is rated for continuous operation at 250°C, and retains an exceptional toughness and its flexibility throughout its temperature range.

Alphlex Teflon Tubing has the further advantage of a high degree of resistance to flexural fatigue and repetitive stresses; coefficient of friction lower than that of any other known solid; and a dielectric constant and power factor lower than that of any other known solid. This tubing will not crack or become brittle during aging.

Because of its resistance to soldering iron temperature, Alphlex Teflon Tubing will not shrink back during the soldering process. Alphlex Teflon Tubing will not melt and flow as do conventional thermoplastic materials. At high frequencies, its dielectric strength is many times that of other insulating materials.

Alphlex Teflon Tubing is chemically inert, has zero moisture absorption and its insulation resistance properties are unaffected by heat aging or temperature use up to 250°c.

APPLICATIONS: A thin flexible insulation, Alphlex Teflon Tubing permits a miniaturization and compactness of design never before possible. Invaluable in any application where a high heat resistant, flexible, non-flammable, chemical solvent and corrosion-resistant material is required.

ALPHLEX® THIN WALL TEFLON TUBING (TFT-200)

ALPHLEX NUMBER	SIZE	NOM. INSIDE DIA. (Inch.)	NOM. WALL THICK-NESS (Inch.)	STOCK COLORS	STANDARD PUT-UPS
TFT-200/30	30	.012	.009	Nat., Yel., Blk., Red	100′ Spools
TFT-200/28	28	.015	.009	Nat., Yel., Blk., Red	100′ Spools
TFT-200/26	26	.018	.010	Nat., Yel., Blk., Red	100′ Spools
TFT-200/24	24	.022	.010	Nat., Yel., Blk., Red	100′ Spools
TFT-200/22	22	.027	.010	Nat., Yel., Blk., Red	100′ Spools
TFT-200/20	20	.034	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/19	19	.038	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/18	18	.042	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/17	17	.047	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/16	16	.053	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/15	15	.059	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/14	14	.066	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/13	13	.076	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/12	12	.085	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/11	11	.095	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/10	10	.106	.012	Nat., Yel., Blk., Red	100′ Spools
TFT-200/9	9	.118	.015	Nat., Yel., Blk., Red	100′ Coils*
TFT-200/8	8	.133	.015	Nat., Yel., Blk., Red	100′ Coils*
TFT-200/7	7	.148	.015	Natural Only	100′ Coils*
TFT-200/6	6	.166	.015	Natural Only	100′ Coils*
TFT-200/5	5	.186	.015	Natural Only	100′ Coils*
TFT-200/4	4	.208	.015	Natural Only	100′ Coils*
TFT-200/3	3	.234	.015	Natural Only	100′ Coils*
TFT-200/2	2	.263	.015	Natural Only	100′ Coils*
TFT-200/1	1	.294	.015	Natural Only	100′ Coils*
TFT-200/0	0	.330	.015	Natural Only	100′ Coils*

* RANDOM LENGTHS PACKED IN 100′ COILS

ALPHLEX® STANDARD WALL TEFLON TUBING (TFT-250)

Similar in characteristics to TFT-200 (Thin Wall Tubing), but for use in application where additional dielectric values and mechanical strength are necessary.

ALPHLEX NUMBER	SIZE	NOM. INSIDE DIA. (Inch.)	NOM. WALL THICK-NESS (Inch.)	STOCK COLORS	STANDARD PUT-UPS
TFT-250/24	24	.022	.012	Natural Only	100′ Spools
TFT-250/22	22	.027	.012	Natural Only	100′ Spools
TFT-250/20	20	.034	.016	Natural Only	100′ Spools
TFT-250/19	19	.038	.016	Natural Only	100′ Spools
TFT-250/18	18	.042	.016	Natural Only	100′ Spools
TFT-250/17	17	.047	.016	Natural Only	100′ Spools
TFT-250/16	16	.053	.016	Natural Only	100′ Spools
TFT-250/15	15	.059	.016	Natural Only	100′ Spools
TFT-250/14	14	.066	.016	Natural Only	100′ Spools
TFT-250/13	13	.076	.016	Natural Only	100′ Spools
TFT-250/12	12	.085	.016	Natural Only	100′ Spools
TFT-250/11	11	.095	.016	Natural Only	100′ Spools
TFT-250/10	10	.106	.016	Natural Only	100′ Spools
TFT-250/9	9	.118	.020	Natural Only	100′ Coils*
TFT-250/8	8	.133	.020	Natural Only	100′ Coils*
TFT-250/7	7	.148	.020	Natural Only	100′ Coils*
TFT-250/6	6	.166	.020	Natural Only	100′ Coils*
TFT-250/5	5	.186	.020	Natural Only	100′ Coils*
TFT-250/4	4	.208	.020	Natural Only	100′ Coils*
TFT-250/3	3	.234	.020	Natural Only	100′ Coils*
TFT-250/2	2	.263	.020	Natural Only	100′ Coils*
TFT-250/1	1	.294	.020	Natural Only	100′ Coils*
TFT-250/0	0	.330	.020	Natural Only	100′ Coils*

* RANDOM LENGTHS PACKED IN 100′ COILS

alpha **ALPHA WIRE**

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Irradiated Polyolefin Tubing

NEW ALL-PURPOSE SHRINKABLE TUBING — FIT-221

- SHRINKS 50% (2:1 RATIO) WITH ONLY 5% LONGITUDINAL SHRINKAGE
- FEWER SIZES COVERING MORE APPLICATIONS
- AVAILABLE TO MEET U.L. SPECIFICATIONS
- MEETS MIL-1-23053A (WEP)
- AMS SPECIFICATIONS 3636A (COLOR), 3637 (CLEAR)

DESCRIPTION: Alphlex FIT-221 Shrinkable Tubing, when heated, forms a tight-mechanical bond, even over irregularly shaped materials. FIT-221 is available in a range of colors and in clear.

FIT-221 is an all-purpose polyolefin extruded tubing that is simple to use and provides a tight mechanical bond. FIT-221 is an irradiated, thermally stable, modified polyolefin base product. FIT-221 Clear may be used so that jacketed, printed components or cable data is clearly visible and inspection of insulated components, cables or terminations is simplified.

The tubing is supplied in an expanded form and easily slips over the object to be covered. When a temperature of approximately 275°F (135°C) is applied, it immediately returns to its predetermined size (approximately one-half smaller) and forms a permanent tight-fitting mechanical bond. FIT-221 Tubing will not cold-flow or melt but retains form stability throughout its temperature range. No radioactivity exists in or on the material and it will not emit radiation. Longitudinal shrinkage is 5% maximum when completely recovered.

Controlled shrinkage to the correct predetermined size takes place within seven seconds at 225°F to 255°F. Shrinkage will begin at 235°F, but at a somewhat slower rate. When using an oven, temperature may range from 235°F to 300°F. Prolonged exposure to these temperatures will not affect the physical or electrical properties of FIT-221 Shrinkable Tubing. FIT-221 Clear Tubing remains transparent over its entire operating range of −55°C to 135°C.

FLAMMABILITY: Although FIT-221 Clear is a high temperature material, it is flammable and will burn. However, when the tubing is shrunk over non-flammable or flame-resistant components, such as connectors, terminals and wire, the entire assembly will not support combustion.

All Types of FIT Tubing are available from stock and may be cut and/or marked to your specifications.

DIMENSIONS CHART

ALPHLEX NO. FIT-221	EQUIVALENT TO FIT-275/270	SIZE	MIN. I.D. BEFORE SHRINKAGE (Inches)	RECOVERED I.D. AFTER SHRINKAGE (Inches)	RECOVERED NOM. WALL THICKNESS (Inches)	STANDARD PACKAGE* 4′ LENGTHS TOT. FTG.	STANDARD PACKAGE* 4′ LENGTHS NO. OF LGTHS.	STANDARD PACKAGE* 6″ LENGTHS TOT. FTG.	STANDARD PACKAGE* 6″ LENGTHS NO. OF LGTHS.
FIT-221-3/64″	FIT-275-24	3/64	.046	.023	.016	100′	25	20′	40
FIT-221-1/16″	FIT-275-22, 20	1/16	.063	.031	.017	100′	25	18′	36
FIT-221-3/32″	FIT-275-18, 16	3/32	.093	.046	.020	100′	25	16′	32
FIT-221-1/8″	FIT-275-14	1/8	.125	.062	.020	100′	25	14′	28
FIT-221-3/16″	FIT-275-12, 10	3/16	.187	.093	.020	100′	25	12′	24
FIT-221-1/4″	FIT-275-8	1/4	.250	.125	.025	100′	25	10′	20
FIT-221-3/8″	FIT-275-6, 4	3/8	.375	.187	.025	100′	25	8′	16
FIT-221-1/2″	FIT-275-2, 5/16″	1/2	.500	.250	.025	20′	5	7′	14
FIT-221-3/4″	FIT-275-3/8″, 7/16″	3/4	.750	.375	.030	20′	5	6′	12
FIT-221-1″	FIT-275-1/2″, 5/8″	1	1.000	.500	.035	20′	5	4′	8
FIT-221-1 1/2″	FIT-275-3/4″, 7/8″	1 1/2	1.500	.750	.040	20′	5	2.5′	5
FIT-221-2″	FIT-275-1″, 1 1/4″	2	2.000	1.000	.045	20′	5	1.5′	3
FIT-221-3″	FIT-275-1 1/2″, 1 3/4″	3	3.000	1.500	.050	8′	2	1′	2
FIT-221-4″	FIT-275-2″	4	4.000	2.000	.055	8′	2	.5′	1

STOCK COLORS — Black White, Red, Yellow, Blue, and Clear

*STANDARD PACKAGE FIT-221 Tubing is available ONLY in the specified packages. When ordering, indicate package desired (6 inches or 4 foot).

For Details On Alpha's Complete Line Of Shrinkable Tubing – Write For Alpha Catalog.

ALPHA WIRE

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Irradiated Polyvinylchloride Tubing FIT-105

All Types of FIT Tubing are available from stock and may be cut and/or marked to your specifications.

HIGHLY FLEXIBLE — IDEAL FOR CABLE JACKETING

Conforms to MIL-1-631D, Type F, Form U, Grade C, Class 1, Cat. 1

SHRINKAGE RATIO 2:1 (50% Shrinkage)

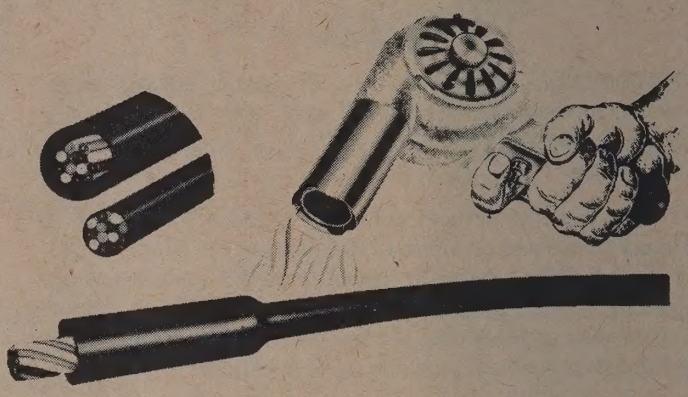
DESCRIPTION: Alphlex FIT-105 is an easy-to-use modified polyvinylchloride that provides a snug, extremely flexible insulation.

Because of its flexibility, strength and its ability to shrink 50% on application of heat, FIT-105 is ideally suited for insulating components and cables with a wide variation in shape and diameter.

Because of the 50% expanded diameter of FIT-105 Tubing, it is an extremely useful cable jacketing material. Cable cores may be pulled through FIT-105 Tubing with comparative ease and shrunk down to form a jacket with all the qualities of the finest extruded plastic jackets.

The tubing is supplied in expanded form and in continuous lengths. When a temperature of approximately 347°F (175°C) is applied, Alphlex FIT-105 Tubing immediately returns to its predetermined size (approximately 50% smaller), and forms a permanent, tight-fitting mechanical bond. FIT-105 Tubing will not cold-flow or melt but retains form stability within its temperature range. No radioactivity exists in or on the material and it will not emit radiation. Longitudinal shrinkage is less than 10%.

Controlled shrinkage to the correct predetermined size takes place within seven seconds at 325°F, or above. When using an oven, temperature may range from 325°F to 350°F.



DIMENSIONS CHART

ALPHLEX NO. (BLACK ONLY)	SIZE (Inches)	MINIMUM I.D. BEFORE SHRINKING (Inches)	RECOVERED I.D. AFTER SHRINKING (Inches)	NOMINAL WALL THICKNESS (Inches)	STANDARD PUT-UP (Feet)
FIT-105-3/64	3/64	.046	.023	.020	25, 100, 500
FIT-105-1/16	1/16	.062	.031	.020	25, 100, 500
FIT-105-3/32	3/32	.093	.046	.020	25, 100, 200
FIT-105-1/8	1/8	.125	.062	.025	25, 100, 200
FIT-105-3/16	3/16	.187	.093	.025	25, 100, 200
FIT-105-1/4	1/4	.250	.125	.025	25, 100, 200
FIT-105-3/8	3/8	.375	.187	.030	25, 100, 200
FIT-105-1/2	1/2	.500	.250	.030	25, 100
FIT-105-3/4	3/4	.775	.375	.035	25, 100
FIT-105-1	1	1.000	.500	.040	25, 100
FIT-105-1 1/2	1 1/2	1.500	.750	.045	25, 100
FIT-105-2	2	2.000	1.000	.050	10, 25, 50

STOCK COLOR — BLACK

LONG LENGTHS — MAXIMUM THREE LENGTHS PER PUT-UP.

alpha **ALPHA WIRE**

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A 105°C - EXTRUDED PLASTIC TUBING

APPROVED FOR 105°C OPERATION ...MEETS MIL-I-631D SPECS... A quality plastic Vinyl tubing designed for electronic and electrical insulation work. Has high dielectric strength, extreme flexibility, non- flammability, abrasion resistance, impervious to oil, water, alkalies, alcohol, solvents, etc., high heat stability and resistance to aging. Meets all A.S.T.M. specifications, Mil. Spec. (Type F, Form U, Grades Aand C, Class 2, Category 1). U. L. Approved.

Catalog Number	Size	Approx I. D., Inches	ASTM Tolerance, Inches		Wall Thickness Inches
A24	24	.022	.020	.027	.012
A22	22	.027	.025	.032	.012
A20	20	.034	.032	.039	.016
A19	19	.038	.044	.036	.016
A18	18	.042	.040	.049	.016
A17	17	.047	.054	.045	.016
A16	16	.053	.051	.061	.016
A15	15	.059	.067	.057	.016
A14	14	.066	.064	.072	.016
A13	13	.076	.080	.072	.016
A12	12	.085	.081	.089	.016
A11	11	.095	.101	.091	.016
A10	10	.106	.102	.112	.016
A9	9	.118	.124	.114	.020
A8	8	.133	.129	.141	.020
A7	7	.148	.158	.144	.020
A6	6	.166	.162	.178	.020
A5	5	.186	.198	.182	.020
A4	4	.208	.204	.224	.020
A3	3	.234	.249	.229	.020
A2	2	.263	.258	.278	.020
A1	1	.294	.311	.289	.020
A0	0	.330	.347	.325	.020
A 5/16"	5/16"	.315	.3125	.334	.025
A 3/8"	3/8"	.375	.375	.399	.025
A 7/16"	7/16"	.438	.462	.438	.025
A 1/2"	1/2"	.500	.500	.524	.025
A 9/16"	9/16"	.562	.592	.562	.030
A 5/8"	5/8"	.625	.625	.655	.030
A 3/4"	3/4"	.750	.750	.186	.035
A 7/8"	7/8"	.875	.875	.911	.035
A 1"	1"	1.000	1.000	1.036	.035
A 1 1/8"	1 1/8"	1.125	1.125	1.161	.035
A 1 1/4"	1 1/4"	1.250	1.250	1.286	.040
A 1 3/8"	1 3/8"	1.375	1.375	1.411	.040
A 1 1/2"	1 1/2"	1.500	1.500	1.536	.045
A 1 3/4"	1 3/4"	1.750	1.812	1.750	.055
A 2"	2"	2.000	2.000	2.070	.060
A 2 1/4"	2 1/4"	2.250	2.250	2.330	.065
A 2 1/2"	2 1/2"	2.500	2.500	2.590	.070

200°C - TEFLON TUBING

Thin Wall -MIL-I-22129C for use in applications for hi frequencies and hi temperatures. Rated for continuous operation of 250 C it retains its toughness and flexibility thruout. Will not shrink back during soldering operation. Non-flammable, flexible, inert to all fungus growth.

Catalog Number	Size	Nom. I. D.	Nom. Wall Thickness
TWT 32	32	.011"	.0085"
TWT 30	30	.012"	.009"
TWT 28	28	.015"	.009"
TWT 26	26	.018"	.010"
TWT 24	24	.022"	.010"
TWT 22	22	.027"	.010"
TWT 20	20	.034"	.012"
TWT 19	19	.038"	.012"
TWT 18	18	.042"	.012"
TWT 17	17	.047"	.012"
TWT 16	16	.053"	.012"
TWT 15	15	.059"	.012"
TWT 14	14	.066"	.012"
TWT 13	13	.076"	.012"
TWT 12	12	.085"	.012"
TWT 11	11	.095"	.012"
TWT 10	10	.106"	.012"
TWT 9	9	.118"	.015
TWT8	8	.133	.015"
TWT 7	7	.148"	.015"
TWT 6	6	.166"	.015"
TWT5	5	.186"	.015"
TWT 4	4	.208"	.015"
TWT 3	3	.234"	.015"
TWT 2	2	.263"	.015"
TWT 1	1	.294"	.015"
TWT 0	0	.330"	.015"
TWT 3/8"	3/8"	.390"	.020"
TWT 7/16	7/16	.453"	.020"
TWT 1/2	1/2	.515"	.025"
TWT 9/16	9/16	.583"	.025"
TWT 5/8	5/8	.640"	.030"
TWT 3/4	3/4	.765"	.030"
TWT 7/8	7/8	.895"	.030"
TWT 1"	1"	1.025"	.030"
TWT 1 1/8"	1 1/8"	1.150"	.030"
TWT 1 1/4"	1 1/4"	1.275	.030"

135°C - SHRINKABLE IRRADIATED POLYOLEFIN TUBING

Catalog Number	Equiv. I. D. AWG	Before Shrinking As Supplied Expanded I. D.	Max. Recovered I. D.	Recovered Nom. Wall
SA 275-1/16"	22-20	.063"	.031"	.016"
SA 275-3/32"	18-16	.093"	.046"	.020"
SA 275-1/8"	14	.125"	.062"	.020"
SA 275-3/16"	12-10	.187"	.093"	.020"
SA 275-1/4"	8	.250"	.125"	.025"
SA 275-5/16"	6	.312"	.156"	.025"
SA 275-3/8"	4	.375"	.187"	.025"
SA 275-1/2"	2	.500"	.250"	.025"
SA 275-3/4"	3/8	.750"	.375"	.030"
SA 275-1"	1/2	1.000"	.500"	.035"

105°C - SHRINKABLE POLYVINYLCHLORIDE

Catalog Number	Equiv. I. D. AWG	Before Shrinking As Supplied Expanded I. D.	Max. Recovered I. D.	Recovered Nom. Wall
SA 265-1/8"	14	.125"	.062"	.025"
SA 265-1/16"	12-10	.187"	.093"	.025"
SA 265-1/4"	8	.250"	.125"	.025"
SA 265-5/16"	6	.312"	.156"	.025"
SA 265-3/8"	4	.375"	.187"	.025"
SA 265-1/2"	2	.500"	.250"	.025"
SA 265-3/4"		.750"	.375"	.025"
SA 265-1"		1.000"	.500"	.030"

Catalog Numbers indicate expanded size shrinkage ratio: 2:1 (50%). When exposed to heat (235° F) the tubing shrinks 50% in diameter, 5% longitudinal contraction. Controlled shrinkage to exact requirement takes place. Meets or exceeds MIL-I-23053A.

250°C - TFE TUBING MIL-I-23053 (WEP) CLASS 2

Made of modified TEFLON* polytetrafluorethylene, will shrink when heated to 621%F. Suitable where hi temp protection is required. Extruded. Will not support combustion, dielectric strength (20 Mil Wall) 850 V/M, low temp. brittle point -65° F, superior chemical resistance.

Catalog Number	Nominal Tubing Size	Minimum Expanded to	Recovered Dimensions Maximum I. D. (1)	Wall Thickness (2)
SA621-26	26	.046"	.022"	.009"
SA-621-24	24*	.050"	.027"	.010"
SA-621-22	22*	.055"	.032"	.010"
SA-621-20	20*	.060"	.039"	.012"
SA-621-19	19	.065"	.043"	.012"
SA-621-18	18*	.076"	.049"	.012"
SA-621-17	17	.085"	.054"	.012"
SA-621-16	16*	.093"	.061"	.012"
SA-621-15	15	.110"	.067"	.012"
SA-621-14	14*	.120"	.072"	.012"
SA-621-13	13	.140"	.080"	.012"
SA-621-12	12*	.150"	.089"	.012"
SA-621-11	11	.170"	.101"	.012"
SA-621-10	10*	.191"	.112"	.012"
SA-621-9	9	.205"	.124"	.015"
SA-621-8	8*	.240"	.141"	.015"
SA-621-7	7	.270"	.158"	.015"
SA-621-6	6*	.302"	.178"	.015"
SA-621-5	5	.320"	.198"	.015"
SA-621-4	4*	.348"	.224"	.015"
SA-621-3	3	.360"	.249"	.015"
SA-621-2	2*	.375"	.278"	.015"
SA-621-1	1	.385"	.311"	.015"
SA-621-0	0*	.400"	.347"	.015"
SA-621-3/8"	3/8"*	.560"	.399"	.020"
SA-621-7/16	7/16"*	.655"	.462"	.020"
SA-621-1/2	1/2"*	.750"	.524"	.020"

TYPE B—MIL-W-16878—VINYL—600V-105°C

Tinned copper, vinyl insulation

Catalog Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O. D. (Inch)
32B7	B-32	32(7 x 40)	.010	.029
30B7	B-30	30(7 x 38)	.010	.032
28B7	B-28	28(7 x 36)	.010	.035
26B7	B-26	26(7 x 34)	.010	.039
24B7	B-24	24(19 x 36)	.010	.045
24B7	B-24	24(7 x 32)	.010	.044
22B19	B-22	22(19 x 34)	.010	.051
22B7	B-22	22(7 x 30)	.010	.050
20B19	B-20	20(19 x 32)	.010	.059
20B17	B-20	20(7 x 28)	.010	.058
18B7	B-18	18(7 x 26)	.010	.068
16B19	B-16	16(19 x 29)	.010	.077

TYPE MW—MIL-W-76— VINYL—1000V-80°C

Tinned copper, vinyl insulated.

Cat. No.	Size AWG	Mil-W-76B Type Designation	Conductor Strand	Insulation Thickness	Nom. O. D.
24MW7	24	MW-C 24(7)U	7/32	.015"	.059"
22MW7	22	MW-C 22(7)U	7/30	.017"	.065"
20MW10	20	MW-C 20(10)U	10/30	.017"	.074"
18MW16	18	MW-C 18(16)U	16/30	.017"	.085"
16MW26	16	MW-C 16(26)U	26/30	.017"	.096"
14MW41	14	MW-C 14(41)U	41/30	.017"	.110"
12MW65	12	MW-C 12(65)U	65/30	.017"	.130"
		SOLID			
22MW1	22	MW-C 22(1)U	1	.017"	.060"
20MW1	20	MW-C 20(1)U	1	.017"	.066"
18MW1	18	MW-C 18(1)U	1	.017"	.074"

TYPE E—MIL-W-16878 TEFLON 600V-200°C

Concentrically stranded silver coated copper conductor, extruded TFE Teflon insulated.

Catalog Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O. D. (Inch)
30E7	E-30	30(7 x 38)	.010	.033
28E7	E-28	28(7 x 36)	.010	.036
26E7	E-26	26(7 x 34)	.010	.041
24E19	E-24	24(19 x 36)	.010	.046
24E7	E-24	24(7 x 32)	.010	.045
22E7	E-22	22(7 x 30)	.010	.051
22E19	E-22	22(19 x 34)	.010	.052
20E7	E-20	20(19 x 32)	.010	.060
20E7	E-20	20(7 x 28)	.010	.059
18E19	E-18	18(19 x 30)	.010	.071
16E19	E-16	16(19 x 29)	.010	.080

ATLAS

ELECTRONIC WIRE and CABLE

- WIRE
- CABLE
- TUBING

FREE CATALOG AVAILABLE

RIBBON CABLE

TYPE "B" - PVC 600V-105° C
TYPE"MW" - PVC 1000V-80° C

Part Number Make-up as per example.

EXAMPLE

AR 2022-7B

Atlas Ribbon | No. of Cond. | AWG | Stranding & Type

MILITARY SPECIFICIFICATIONS

COAXIAL
MIL-C-17-RG

TEFLON POLYETHYLENE HOOK-UP WIRE
MIL-W-76B Types MW-LW-HW
MIL-W-16878D Type B, C, D, E, EE, K, KK, F, FF

AIRCRAFT
MIL-W-5086A Types I, II, III
MIL-W-7078A Types I, II, III
MIL-W-8877
MIL-W-25038
MIL-C-27500
MIL-C-27072
MIL-W-7139
MIL-W-6370 "WS"
MIL-W-7072
MIL-W-22759
MIL-W-81381
MIL-W-27300
MIL-C-23437

RUBBER
MIL-C-3432 "CO"
MIL-C-5756 Portable Cord
MIL-C-3849 Audio Frequency
MIL-C-3883 COS
MIL-C-3884
MIL-C-3885
MIL-C-10392 WD-WM-WT-Miniature
MIL-C-5898
MIL-C-1486 WM 46
MIL-C-10065 Audio
MIL-C-13486 Ignition
MIL-C-3702
MIL-C-8817
MIL-C-3078
MIL-C-13294 WD1 TT, WD 14 TT
MIL-C-13066 Special Purpose
MIL-C-13777 Ground Support
MIL-E-9085 USAF, WM 85
MIL-E-9088 USAF, WF 14
MIL-C-442 Rip Cord
MIL-W-13169 Test Lead

UNINSULATED WIRE
QQW-343 Bus Bar Tinned Copper
QQW-573
MIL-W-3861 Bare
QQB575 Braid Tubing

TUBING
MIL-I-631
MIL-I-3190 GLASS
MIL-I-22129C TEFLON

BRAID
FLAT
OVAL
ROUND

ATLAS WIRE & CABLE CO., INC.

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BELDEN • PRICE LIST

Trade Number	Length in ft.		Suggested Trade Price Each
8205-100			3.30
8205-500			12.40
8205-1000			24.80
8208-100			8.55
8208-500			38.10
8208-1000			76.20
8211-500			24.90
8211-1000			49.80
8211-2000			99.60
8212-500			24.90
8212-1000			49.80
8212-2000			99.60
8213-500			66.00
8213-1000			132.00
8213-2000			264.00
8214-50			8.70
8214-100			16.20
8214-250			33.00
8214-500			63.75
8214-1000			127.50
8215-100			13.50
8215-500			56.65
8215-1000			113.30
8216-100	(RG-174/U)		4.13
8216-500	(RG-174/U)		15.40
8216-1000	(RG-174/U)		30.80
8217-100	TBO (Use		5.70
8217-500	8221)		22.05
8217-1000			44.10
8218-100			5.65
8218-500			20.65
8218-1000			41.30
8219-100			6.40
8219-500			24.15
8219-1000			48.30
8221-100			6.90
8221-500			22.50
8221-1000			45.00
*8228-100			6.30
*8228-500			20.70
*8228-1000			41.40
8232-500			48.00
8232-1000			96.00
8232-2000			192.00
8233-500			92.40
8233-1000			184.80
8233-2000			369.60
8237-50	(RG-8/U)		7.75
8237-100	(RG-8/U)		14.40
8237-250	(RG-8/U)		30.90
8237-500	(RG-8/U)		57.75
8237-1000	(RG-8/U)		115.50
8238-100	(RG-11/U)		12.45
8238-250	(RG-11/U)		29.40
8238-500	(RG-11/U)		49.95
8238-1000	(RG-11/U)		99.90
8239-500	(RG-54A/U)		41.65
8239-1000	(RG-54A/U)		83.30
8240-25	(RG-58/U)		1.86
8240-50	(RG-58/U)		2.91
8240-100	(RG-58/U)		5.10
8240-250	(RG-58/U)		11.05
8240-500	(RG-58/U)		18.85
8240-1000	(RG-58/U)		37.70
8241-25	(RG-59/U)		2.10
8241-50	(RG-59/U)		3.35
8241-100	(RG-59/U)		5.97
8241-250	(RG-59/U)		13.50
8241-500	(RG-59/U)		20.85
8241-1000	(RG-59/U)		41.70
8242-100	(RG-9/U)		39.60
8242-1000	(RG-9/U)		367.50
8243-500	(RG-9B/U)		220.50
8243-1000	(RG-9B/U)		441.00
8245-500	(RG-55/U)		39.75
8245-1000	(RG-55/U)		79.50
8254-100	(RG-62/U)		6.75
8254-500	(RG-62/U)		25.00
8254-1000	(RG-62/U)		50.00
8255-500	(RG-62B/U)		29.10
8255-1000	(RG-62B/U)		58.20
8257-500	(RG-71/U)		42.00
8257-1000	(RG-71/U)		84.00
8258-500	(RG-71B/U)		41.25
8258-1000	(RG-71B/U)		82.50
8259-25	(RG-58A/U)		2.10
8259-50	(RG-58A/U)		3.23
8259-100	(RG-58A/U)		6.08
8259-500	(RG-58A/U)		22.15
8259-1000	(RG-58A/U)		44.30
8261-100	(RG-11A/U)		13.50
8261-500	(RG-11A/U)		57.75
8261-1000	(RG-11A/U)		115.50
8262-500	(RG-58C/U)		24.45
8262-1000	(RG-58C/U)		48.90
8263-500	(RG-59B/U)		26.40
8263-1000	(RG-59B/U)		52.80
8264-500	(RG-5A/U)		142.50
8264-1000	(RG-5A/U)		285.00
TEFLON RG/U CABLE 8265-8266 SEE TEFLON SECTION			
8267-500	(RG-213/U)		64.90
8267-1000	(RG-213/U)		129.80
8268-500	(RG-214/U)		219.75
8268-1000	(RG-214/U)		439.50
TEFLON RG/U CABLE 8269-8270 SEE TEFLON SECTION			
8279-100			9.75
8279-250			22.05
8279-500			44.10
8280§	(Cut to customer's specified length Maximum 1500')		862.50M'
8281-500			90.75
8281-1000			181.50
8282§	(Cut to customer's specified length Maximum 2000')		381.00M'
8283§	(Cut to customer's specified length Maximum 1000')		3099.00M'
8284§	(Cut to customer's specified length Maximum 1000')		1053.00M'
8286§	(Cut to customer's specified length Maximum 1000')		891.00M'
TEFLON HIGH TEMPERATURE WIRES SEE TEFLON SECTION			
8401-15			1.31
8401-25			1.73
8401-50			3.06
8401-100			5.65
8401-250			11.95
8401-500			23.85
8401-1000			47.70
8402-100			12.75
8402-250			30.75
8402-500			61.50
8403-15			2.33
8403-50			6.00
8403-100			11.25
8403-250			25.35
8403-500			50.70
8403-1000			101.40
8404-15			2.55
8404-100			12.30
8404-250			28.15
8404-500			56.25
8404-1000			112.50
8405-250			33.40
8405-500			66.80
8405-1000			133.60
8406-100			14.25
8406-250			34.15
8406-500			68.30
8407-100			27.30
8407-250			66.00
8408-100			21.60
8408-250			52.50
8408-500			105.00
8409			1.20
8410-25			3.15
8410-50			5.55
8410-100			10.35
8410-250			24.00
8410-500			48.00
8411-15			1.05
8411-25			1.47
8411-50			2.34
8411-100			4.45
8411-250			9.45
8411-500			18.90
8411-1000			37.80
8412-25			3.23
8412-50			6.10
8412-100			11.40
8412-250			26.40
8412-500			52.90
8412-1000			105.75
8413-15			2.10
8413-25			3.15
8413-50			5.95
8413-100			10.95
8413-250			26.25
8413-500			52.50
8415-1			1.58
8415-50			1.43
8416-15			1.50
8416-25			1.92
8416-50			3.55
8416-100			6.30
8416-250			14.55
8417-15			1.08
8417-25			1.47
8417-50			2.40
8417-100			4.50
8417-250			9.75
8418-100			27.45
8418-250			66.75
8420-15			1.86
8420-25			2.78
8420-50			4.20
8420-100			7.95
8420-250			18.60
8420-500			37.20
8421-15			1.35
8421-25			1.80
8421-50			3.30
8421-100			5.40
8421-250			12.00
8422-15			1.65
8422-25			2.51
8422-50			4.65
8422-100			8.20
8422-250			18.15
8422-500			36.30
8422-1000			72.60
8423-15			2.67
8423-50			7.15
8423-100			13.45
8423-250			31.50
8423-500			63.00
8423-1000			126.00
8424-15			3.00
8424-50			7.90
8424-100			14.80
8424-250			34.90
8424-500			69.80
8424-1000			139.60
8425-100			18.15
8425-250			44.25
8426-100			22.45
8426-250			55.50
8427-100			24.00
8427-250			58.95
8428-100			15.75
8428-500			73.90
8428-1000			147.80
8434-100			6.40
8434-500			28.95
8434-1000			57.90
8437-500			24.00
8437-1000			48.00
8441-100			6.30
8441-500			28.15
8441-1000			56.30
8442-500			10.90
8442-1000			21.80
8443-25			1.26
8443-100			3.30
8443-250			6.65
8443-500			13.30
8443-1000			26.60
8444-25			1.49
8444-100			4.50
8444-250			9.30
8444-500			18.60
8444-1000			37.20
8445-25			1.68
8445-100			5.18
8445-250			11.10
8445-500			22.20
8445-1000			44.40
8446-15			1.70
8446-100			7.75
8446-250			17.05
8446-500			34.15
8446-1000			68.25
8447-100			8.70
8447-250			19.30
8447-500			38.65
8447-1000			77.30
8448-15			1.86
8448-100			9.30
8448-250			21.10
8448-500			42.15
8448-1000			84.30
8449-15			2.06
8449-100			10.05
8449-250			23.10
8449-500			46.20
8449-1000			92.40
8450-100			3.98
8450-250			7.45
8450-500			14.85
8450-1000			29.70
8451-100			4.50
8451-250			9.30
8451-500			18.60
8451-1000			37.20
8452-25			2.22
8452-50			3.80
8452-100			6.70
8452-250			15.30
8452-500			30.60
8452-1000			61.20
8453-50			4.70
8453-100			8.85
8453-500			43.50
8454-50			5.40
8454-100			10.30
8454-500			47.65
8454-1000			95.25
8455-100			10.45
8455-250			26.10
8456-100			10.20
8456-500			46.80
8456-1000			93.60
8457-100			10.95
8457-500			51.00
8457-1000			102.00
8458-100			18.75
8458-500			84.30
8458-1000			168.60
8459-100			28.50
8459-500			132.75
8459-1000			265.50
8460-100			3.75
8460-500			14.85
8460-1000			29.70
8461-100			4.75
8461-500			19.50
8461-1000			39.00
8462-25 †			1.43
8462-100 †			4.30
8462-250 †			10.35

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Trade Number Length in ft.	Suggested Trade Price Each
8465-100	9.60
8465-250	22.05
8465-500	44.20
8465-1000	88.40
8466-100	24.00
8466-250	58.90
8466-500	117.75
8466-1000	235.50
8467-100	12.90
8467-250	29.65
8467-500	59.25
8467-1000	118.50
8468-100	32.40
8468-500	153.45
8468-1000	306.90
8469-100	17.10
8469-250	40.20
8469-500	80.65
8469-1000	161.30
8470-500	19.90
8470-1000	39.80
8471-500	24.60
8471-1000	49.20
8472-25	3.00
8472-100	10.50
8472-250	25.20
8473-500	40.50
8473-1000	81.00
8474-100	12.55
8474-250	30.15
8477-500	54.75
8477-1000	109.50
8478-100	7.65
8478-250	18.25
8478-1000	72.90
8479-100	14.40
8479-250	35.25
8481-100	2.07
8481-500	6.85
8481-1000	13.70
8482-100	2.63
8482-500	9.75
8482-1000	19.50
8483-100	3.45
8483-500	13.90
8483-1000	27.80
8486-500	12.15
8486-1000	24.30
8487-500	17.10
8487-1000	34.20
8490	1.62
8491	1.86
8492-1000	23.10
8494	1.80
8495	1.41
8497-1	1.56
8497-50	1.43
8499	1.05
8500-100 † Solid Color	2.33
8500-1000† Solid Color	18.15
8500-100 † Striped ¶	2.45
8500-1000† Striped ¶	19.30
8501-100 † Solid Color	1.91
8501-1000† Solid Color	14.40
8501-100 † Striped ¶	2.03
8501-1000† Striped ¶	15.55
8502-100 † Solid Color	1.74
8502-1000† Solid Color	11.40
8502-100 † Striped ¶	1.86
8502-1000† Striped ¶	12.55
8503-100 † Solid Color	1.55
8503-1000† Solid Color	10.20
8503-100 † Striped ¶	1.67
8503-1000† Striped ¶	11.35
8504-100 † Solid Color	1.43
8504-1000† Solid Color	9.40
8504-100 † Striped ¶	1.55
8504-1000† Striped ¶	10.55
8505-100 † Solid Color	1.43
8505-1000† Solid Color	10.05
8505-100 † Striped ¶	1.55
8505-1000† Striped ¶	11.20
8507-100 † Solid Color	1.98
8507-1000† Solid Color	14.25
8507-100 † Striped ¶	2.10
8507-1000† Striped ¶	15.40
8508-100 † Solid Color	1.83
8508-1000† Solid Color	11.70
8508-100 † Striped ¶	1.95
8508-1000† Striped ¶	12.85
8509-100 † Solid Color	1.77
8509-1000† Solid Color	11.20
8509-100 † Striped ¶	1.89
8509-1000† Striped ¶	12.35
8510-100 † Solid Color	2.91
8510-1000† Solid Color	24.00
8511-100 † Solid Color	2.48
8511-1000† Solid Color	18.90
8512-100 † Solid Color	2.01
8512-1000† Solid Color	15.15
8513-100 † Solid Color	1.89
8513-1000† Solid Color	13.75
8514-100 † Solid Color	1.79
8514-1000† Solid Color	12.45
8515-100 † Solid Color	1.91
8515-1000† Solid Color	13.75
8516-100 † Solid Color	2.75
8516-1000† Solid Color	21.60
8517-100 † Solid Color	2.30
8517-1000† Solid Color	17.70
8518-100 † Solid Color	2.24
8518-1000† Solid Color	17.05
8519-100 † Solid Color	1.98
8519-1000† Solid Color	14.85
8520-100 † Solid Color	4.05
8520-1000† Solid Color	34.95
8520-100 † Striped ¶	4.17
8520-1000† Striped ¶	36.10
8521-100 † Solid Color	2.88
8521-1000† Solid Color	22.50
8521-100 † Striped ¶	3.00
8521-1000† Striped ¶	23.65
8522-25 † Solid Color	.87
8522-100 † Solid Color	2.18
8522-1000† Solid Color	16.15
8522-100 † Striped ¶	2.30
8522-1000† Striped ¶	17.30
8523-25 † Solid Color	.78
8523-100 † Solid Color	1.73
8523-1000† Solid Color	11.70
8523-100 † Striped ¶	1.85
8523-1000† Striped ¶	12.85
8524-25 † Solid Color	.68
8524-100 † Solid Color	1.50
8524-1000† Solid Color	10.35
8524-100 † Striped ¶	1.62
8524-1000† Striped ¶	11.50
8525-100 † Solid Color	1.37
8525-1000† Solid Color	8.85
8525-100 † Striped ¶	1.49
8525-1000† Striped ¶	10.00
8527-100 † Solid Color	6.00
8527-1000† Solid Color	49.20
8528-100 † Solid Color	1.92
8528-1000† Solid Color	13.75
8529-25 † Solid Color	.68
8529-100 † Solid Color	1.50
8529-1000† Solid Color	10.05
8529-100 † Striped ¶	1.62
8529-1000† Striped ¶	11.20
8530-25 † Solid Color	.63
8530-100 † Solid Color	1.26
8530-1000† Solid Color	8.10
8530-100 † Striped ¶	1.38
8530-1000† Striped ¶	9.25
8531-100 † Solid Color	2.40
8531-1000† Solid Color	19.35
8535-100 † Solid Color	3.30
8535-1000† Solid Color	23.65
8536-100 † Solid Color	2.37
8536-1000† Solid Color	18.15
8537-100 † Solid Color	2.24
8537-1000† Solid Color	15.55
8538-100 † Solid Color	1.31
8538-1000† Solid Color	7.15
8538-100 † Striped ¶	1.43
8538-1000† Striped ¶	8.30
8541-100	2.76
8541-1000	19.95
8542-100	2.95
8542-1000	21.70
8543-100	3.45
8543-1000	26.40
8544-100	4.00
8544-1000	31.95
8545-100	5.20
8545-1000	45.00
8546-100	7.05
8546-1000	61.50
8547-100	124.50
8548-100	106.50
8549-100	73.50
8550-100	49.95
8550-500	238.50
8551-100	37.95
8551-500	183.00
8552-100	28.95
8552-500	138.00
8553-100	14.40
8553-1000	130.50
8554-100	8.40
8554-1000	72.80
8555-100	6.60
8555-1000	56.25
8556-100	5.55
8556-1000	43.50
8557-100	4.65
8557-1000	37.95
8558-100	4.15
8558-1000	31.50
8559-100	3.72
8559-1000	27.00
8561-100	8.80
8561-1000	74.40
8562-100	5.30
8562-1000	45.25
8563-100	4.71
8563-1000	39.00
8564-100	3.80
8564-1000	32.25
8565-100 †	3.25
8565-1000†	26.40
8566-100 †	2.55
8566-1000†	21.90
8567-100 †	1.59
8567-1000†	10.80
8568-100 †	1.29
8568-1000†	8.40
8569-100 †	1.26
8569-1000†	7.75
8570-100 †	1.16
8570-1000†	7.05
8571-100 †	1.16
8571-1000†	7.00
8580-100 †	37.50
8581-100 †	28.50
8582-100 †	12.60
8582-1000†	115.50
8583-100 †	8.25
8583-1000†	75.75
8584-100 †	6.15
8584-1000†	48.75
8585-100 †	3.60
8585-1000†	28.05
8586-100 †	3.00
8586-1000†	21.75
8597-100 †	1.40
8597-1000†	8.95
8598-100 †	1.41
8598-1000†	9.75
8599-100 †	1.73
8599-1000†	12.60
8601	1.20
8602	1.82
8603	1.85
8604	2.85
8605	1.55
8618-500	48.00
8618-1000	96.00
8619-500	172.50
8619-1000	345.00
8620-100	12.60
8620-500	58.90
8620-1000	117.80
8621-100	21.45
8621-500	96.40
8621-1000	192.80
8622-100	36.00
8622-500	168.00
8622-1000	336.00
8623-100	51.00
8623-500	243.75
8623-1000	487.50
8624-100	61.50
8624-500	288.75
8624-1000	577.50
8627-100	21.60
8627-500	91.90
8627-1000	198.80
8628-100	37.80
8628-500	175.90
8628-1000	351.80
8629-100	61.50
8629-500	297.75
8629-1000	595.50
8640-250	7.00
8640-500	14.00
8641-100	3.90
8641-500	15.75
8641-1000	31.50
8642-250	19.65
8642-500	39.30
8643-25	2.22
8643-50	3.72
8643-100	6.60
8643-250	15.60
8649-100	2.60
8649-500	9.55
8649-1000	19.10
8652-10	.78
8652-50	2.10
8652-250	8.70
8653-10	.83
8653-50	2.25
8653-250	9.60
8654-10	.86
8654-50	2.46
8654-250	10.65
8655-10	3.06
8655-50	13.95
8655-250	69.75
8656-10	5.10
8656-50	22.95
8656-250	111.00
8657-10	6.90
8657-50	31.50
8658-10	9.15
8658-50	42.45
8659-10	13.80
8659-50	64.90
8660-10	.83
8660-50	2.48
8660-250	11.25
8661-10	1.13
8661-50	3.93
8661-250•	18.45
8662-10	2.66
8662-50	11.70
8662-250•	57.00
8663-10	1.20
8663-50	4.15
8663-250	19.50
8864-10	.95
8864-50	2.82
8864-250	12.40
8868-10	1.13
8868-50	3.36
8868-250	14.65

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Trade Number Length in ft.	Suggested Trade Price Each
8669-10	1.95
8669-50	8.35
8669-250•	39.75
8670-10	4.08
8670-50	18.45
8670-250•	88.50
8671-10	2.97
8671-50	13.65
8671-250•	66.45
8672-10	2.15
8672-50	9.55
8672-250•	43.20
8674-10	.69
8674-50	1.71
8674-250	7.80
8676-10	.63
8676-50	1.20
8676-250	5.55
8690-100	12.15
8690-500	55.20
8690-1000	110.40
8691-100	23.70
8691-500	108.75
8691-1000	217.50
8692-100	34.50
8692-500	165.00
8692-1000	330.00
8700-25	1.88
8700-50	3.15
8700-100	5.40
8700-250	12.75
8701-100	2.52
8701-500	9.40
8701-1000	18.75
8718-500	72.00
8718-1000	144.00
8719-500	34.90
8719-1000	69.80
8720-500	54.75
8720-1000	109.50
8722-500	33.45
8722-1000	66.90
8723-100	6.15
8723-500	27.40
8723-1000	54.80
8724-250	13.90
8724-500	27.75
8724-1000	55.50
8725-500	117.75
8725-1000	235.50
8726-100	19.50
8726-500	89.25
8726-1000	178.50
8727-100	39.40
8727-500	197.25
8727-1000	394.50
8728-500	40.90
8728-1000	81.80
8729-500	45.40
8729-1000	90.80
8730-500	34.90
8730-1000	69.80
8731-500	20.25
8731-1000	40.50
8732-100	6.90
8732-500	29.25
8732-1000	58.50
8733-100	6.90
8733-500	29.25
8733-1000	58.50
8734-100	5.40
8734-500	22.80
8734-1000	45.60
8735-15	1.35
8735-50	3.55
8735-100	6.15
8735-500	26.55
8735-1000	53.10
8737-100	4.45
8737-250	9.30
8737-500	19.50
8737-1000	39.00
8738-1000	34.05
8739-100	4.15
8739-500	17.70
8739-1000	35.40
8740-100	2.55
8740-250	4.95
8740-500	9.15
8740-1000	18.30
8741-100	4.30
8741-250	9.45
8741-500	17.25
8741-1000	34.50
8742-100	5.65
8742-250	12.75
8742-500	24.25
8742-1000	45.50
8743-100	9.00
8743-250	20.85
8743-500	41.65
8743-1000	83.30
8744-100	12.90
8744-250	30.15
8744-500	60.40
8744-1000	120.80
8745-100	22.15
8745-250	51.15
8745-500	102.40
8745-1000	204.80
8746§ (Cut to customer's specified length maximum 1500')	375.00M'
8747-100	11.10
8747-250	25.65
8747-500	51.40
8747-1000	102.80
8748-100	15.75
8748-250	37.65
8748-500	75.40
8748-1000	150.80
8749-100	27.30
8749-250	64.90
8749-500	129.80
8749-1000	259.60
8750§ (Cut to customer's specified length maximum 1500')	495.00M'
8751§ (Cut to customer's specified length maximum 1500')	1002.00M'
8752§ (Cut to customer's specified length maximum 1500')	907.50M'
8753-100	16.05
8753-250	38.25
8753-500	76.50
8753-1000	153.00
8754-100	18.00
8754-250	43.50
8754-500	87.00
8754-1000	174.00
8755-500	133.50
8755-1000	267.00
8756-500	157.50
8756-1000	315.00
8757-500	31.00
8757-1000	62.00
8758-100	5.10
8758-500	20.85
8758-1000	41.70
8759-100	5.35
8759-500	22.35
8759-1000	44.70
8760-250	12.85
8760-500	25.05
8760-1000	50.10
8761-500	16.95
8761-1000	32.40
8762-100	5.05
8762-250	10.45
8762-500	20.85
8762-1000	41.70
8763-500	25.80
8763-1000	51.60
8764-100	28.80
8764-250	70.15
8764-500	140.30
8764-1000	280.60
8765-100	34.50
8765-250	83.25
8765-500	166.50
8765-1000	330.00
8766-100	46.50
8766-250	111.40
8766-500	222.80
8766-1000	445.60
8767-100	10.50
8767-250	24.15
8767-500	48.30
8767-1000	96.60
8768-100	20.55
8768-250	48.40
8768-500	96.80
8768-1000	193.60
8769-100	73.50
8769-250	174.75
8769-500	349.50
8769-1000	699.00
8770-500	32.50
8770-1000	65.00
8771-250	10.40
8771-500	20.85
8771-1000	41.70
8772-500	26.25
8772-1000	52.50
8773§ (Cut to customer's specified length maximum 1000')	1056.00M'
8774-100	35.25
8774-250	83.25
8774-500	166.50
8774-1000	333.00
8775-100	41.25
8775-250	99.00
8775-500	198.00
8775-1000	396.00
8776-100	54.75
8776-250	132.00
8776-500	264.00
8776-1000	528.00
8777-100	12.00
8777-250	28.50
8777-500	57.00
8777-1000	114.00
8778-100	24.00
8778-250	58.50
8778-500	117.00
8778-1000	234.00
8779-500	39.40
8779-1000	78.80
8780-100	8.25
8780-500	36.75
8780-1000	73.50
8781-100	1.86
8781-500	5.65
8781-1000	11.25
8782-25	.78
8782-50	1.16
8782-100	1.73
8782-500	5.80
8782-1000	11.60
8783-100	7.05
8783-500	31.50
8784-500	63.30
8786-100	8.10
8786-500	37.50
8787-500	73.50
8788-500	42.75
8789-500	30.75
8789-1000	61.50
8790-100	6.60
8790-250	14.25
8790-500	28.50
8790-1000	57.00
8791-100	8.20
8791-500	36.45
8791-1000	72.90
8794-500	13.15
8794-1000	26.30
8795-500	10.80
8795-1000	21.60
8800	.83
8850-100	10.95
8851-100	9.00
8852-100	6.90
8852-500	31.90
8853-100	6.40
8853-1000	55.50
8854-100	5.55
8854-1000	49.15
8855-100	5.40
8855-1000	45.40
8858-100	11.40
8858-1000	105.00
8859-100	9.15
8859-1000	83.25
8860-100	7.75
8860-1000	69.00
8861-100	6.45
8861-1000	55.50
8862-100	5.70
8862-1000	51.75
8863-100	5.10
8863-1000	45.75
8866-25	2.00
8866-100	5.70
8866-500	24.30
8868-25	1.23
8868-100	3.15
8868-500	12.00
8869-25	1.07
8869-100	2.60
8869-500	9.85
8870-100	37.50
8871-25	42.40
8871-100	169.50
8878	3.45 pr
8879	1.49 pr
8880-100 †	9.15
8880-1000†	84.00
8881-100 †	7.20
8881-1000†	64.50
8882-100 †	4.50
8882-1000†	40.50
8883-100 †	3.75
8883-1000†	31.50
8884-100 †	6.00
8884-1000†	52.50
8886-100 †	4.35
8886-1000†	37.50
8887-100 †	3.60
8887-1000†	30.75
8888-25 †	1.35
8888-100 †	3.70
8888-250 †	7.95
8890-25 †	1.01
8890-100 †	2.52
8890-500 †	10.65
8892-100	6.15
8892-500	25.15
8892-1000	50.30
8893-100	5.40
8893-500	21.75
8893-1000	43.50
8894-100	7.65
8894-1000	67.50
8896-100	5.40
8896-500	24.00
8896-1000	48.00
8897-500	16.75
8897-1000	33.50
8898-10 †	1.17
8898-25 †	2.18

See Pages 1607 thru 1637 for complete BELDEN Catalog Pages.

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BELDEN • PRICE LIST

Trade Number Length in ft.	Suggested Trade Price Each
8898-100 †	5.70
8898-500 †	23.85
8899-10 †	.83
8899-14	.90
8899-25 †	1.31
8899-100 †	4.20
8899-500 †	15.40
8899-1000†	30.80
8916-100 †	4.20
8916-500 †	18.00
8917-100 †	3.21
8917-500 †	13.50
8918-100 †	2.45
8918-1000†	18.75
8919-100 †	2.01
8919-1000†	15.15
8920-100 †	1.73
8920-1000†	12.00
8933-100 †	5.65
8933-500 †	24.30
8934-100 †	3.75
8934-500 †	15.75
8935-100 †	3.10
8935-1000†	23.25
8936-100 †	2.35
8936-1000†	18.00
8937-100 †	2.16
8937-1000†	15.40
8950-100	4.65
8950-1000	37.50
8951-100	3.10
8951-1000	25.80
8952-100 †	2.50
8952-1000†	19.50
8953-100 †	2.10
8953-1000†	16.15
8954-100 †	1.85
8954-1000†	13.35
8955-100	1.68
8955-1000	12.15
8956-100	4.90
8956-1000	44.25
8957-100	3.55
8957-1000	32.25
8958-100 †	3.00
8958-1000†	24.75
8959-100 †	2.66
8959-1000†	21.45
8960-100 †	2.46
8960-1000†	17.45
8963-100	33.75
8963-500	162.00
8964-100	27.00
8964-500	129.75
8965-100	10.20
8965-1000	101.25
8966-100	7.65
8966-1000	76.50
8967-100	4.80
8967-1000	47.25
8968-100	4.65
8968-1000	43.50
8969-100 †	3.30
8969-1000†	29.25
8970-100 †	3.00
8970-1000†	24.00
8971-100 †	2.55
8971-1000†	20.10

* New Item † Specify Color

ALL SPOOLS ARE ONE PIECE EXACT LENGTH. (EXCEPT SPOOLS WITH (•) FOOTNOTE)

• Spools may contain more than one piece, minimum length of any one piece is 25 ft.

When priced per M ft. length may vary ±10% from length shown; all other lengths are exact.

§ Cut to Customer's Specified Length subject to available stock lengths—minimum length 25′; 25′ to 199′, plus 25′, minus 0; 200′ or over, plus 50′, minus 0.

¶ (Vinyl Hook-up Wire) Prices apply to standard stock colors as listed in our current catalog and to non-stock striped colors over stock solid colors in quantities of 10,000′ or more. Non-stock striped colors over stock solid colors in quantities of 1000′ to 9,999′, add pro-rata set-up charge of $4.50 per color combination. Minimum order 1000′ per special stripe combination. Special stripe colors in any quantity will be subject to 2 piece put-up and plus or minus 10% per spool.

COMPLETE CORDS

Trade Number	Single Lot Price Each
17106B †	.26
17106S †	.35
17109B †	.32
17109S †	.46
17112S †	.53
17126B	.32
17126S	.45
17129S	.54
17156S †	.37
17159S †	.43
17162S †	.50
17165S †	.56
17177S TBO	.85
17194S	2.67
17195S	4.43
17205B †	.42
17205S ■	.56
17206B	.50
17206S	.66
*17230C †	1.44
*17231C †	1.55
17236B	.66
17236S	.80
17237B	.58
17237S	.72
17238B	.77
17238S	.91
17239B	.66
17239S	.80
17249S	1.28
17258S	1.10
17259S	.93
17260S	.80
*17275C †	1.82
17308B	.59
17308S	.75
17310B	.67
17310S	.83
17328B	.70
17328S	.88
17330B	.86
17330S	1.02
17359B	.93
17361S	1.10
17370S	1.33
17405B	.61
17405S	.75
17406B	.67
17406S	.83
17407B	.72
17407S	.85
17408B	.80
17408S	.96
17409B	.88
*17410B	.69
17412B	1.18
17412S	1.34
17419B	1.12
17419S	1.30
*17420B	1.04
17422B	1.41
17422S	1.60
17425S	1.95
*17430B	1.34
17447S	1.68
17448S	1.78
17449S	2.48
17460S	1.34
17461S	1.54
17462S	1.89
17475S	4.03
17476S	6.64
17477S	12.24
17491S	2.27
17492S	4.27
17493S	7.44
17494S	2.82
17495S	5.47
17497S	9.68
17555S	3.31
17556S	5.81
17629B	2.05
17629S	2.34
17635S	3.60
*17664S	7.90
*17665S	14.34
17675S	8.06
17676S	14.21
17694S	5.82
17695S	10.69
17697S	18.62
17925S	3.12
17950S	4.96
17995S	6.40
17996S	8.80
17998S	8.64
17999S	11.68

* New Item † Specify Color ■ Black Only ‡ Gray Only ☐ Black/White Only

(TBO) to be obsoleted

PORTABLE CORDAGE

Trade Number & Standard Pkg. In Ft. 2S-250=2-250 Spls. 4S-250=4-250 Spls. C=Coil	Suggested Trade Net Per M Feet 250 to 999
18100 C-250 (TBO)	$324.80
18101 C-250	255.35
18102 C-250	186.50
18103 2S-250	120.95
18104 2S-250	107.50
18105 C-250	459.50
18106 C-250	326.75
18107 C-250 †	246.10
18108 C-250	157.90
18109 C-250	126.85
18110 2S-250	90.70
18111 2S-250	73.90
18115 4S-250 †	40.70
18120 2S-250 †	66.55
18121 2S-250 †	49.90
18122 4S-250 †	30.60
18123 2S-250 †	40.30
18124 2S-250	141.10
18125 2S-250	111.70
18126 2S-250 †	53.75
18127 2S-250	70.55
18128 2S-250	89.05
18129 2S-250	90.70
18130 2S-250	117.60
18140 2S-250	51.25
18141 2S-250 †	68.40
18142 2S-250 †	83.15
18200 C-250	462.00
18201 C-250	361.20
18202 C-250	258.70
18203 2S-250	163.80
18204 2S-250	141.95
18205 C-250	574.55
18206 C-250	440.15
18207 C-250	320.90
18208 C-250	199.10
18209 C-250	161.30
*18210 C-50	850.00
*18210 C-200	850.00
*18211 C-50	1108.80
*18211 C-200	1108.80
*18213 C-25	1478.40
*18213 C-100	1478.40
*18214 C-25	1108.80
*18214 C-100	1108.80
*18215 C-50	693.85
*18215 C-200	693.85
*18216 C-50	527.50
*18216 C-200	527.50
*18217 C-50	388.10
*18217 C-200	388.10
18227 2S-250	87.35
18228 2S-250	105.85
18229 2S-250	108.35
18230 2S-250	138.60
18314 2S-250	146.15
18316 2S-250	101.65
18318 2S-250	89.05
18326 2S-250	74.75
18328 2S-250	57.10
18336 2S-250	93.25
18338 2S-250	78.10

* New Item † Specify Color (TBO) To be obsoleted

Shipped only in standard packages as listed. Production quantities of special wires quoted on request.

Prices Subject to Change Without Notice

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BELDEN · PRICE LIST—TEFLON® WIRES

Trade Number and Length in Ft.	Old Trade Number	Suggested Trade Price Ea.
83000-25†	8300	1.75
83000-100†●	8300	4.50
83000-500†●▲	8300	26.85M′
83000-1000†●▲	8300	25.35M′
83001-25†	8301	1.80
83001-100†●	8301	4.75
83001-500†●▲	8301	28.20M′
83001-1000†●▲	8301	26.70M′
83002-25†	8302	1.95
83002-100†●	8302	5.10
83002-500†●▲	8302	31.90M′
83002-1000†●▲	8302	30.40M′
83003-25†	8303	2.18
83003-100†●	8303	6.25
83003-500†●▲	8303	40.90M′
83004-25†	8304	2.03
83004-100†●	8304	5.40
83004-500†●▲	8304	33.60M′
83004-1000†●▲	8304	32.10M′
83005-25†	8305	2.18
83005-100†●	8305	6.25
83005-500†●▲	8305	40.95M′
83005-1000†●▲	8305	39.45M′
83006-25†	8306	2.33
83006-100†●	8306	6.85
83006-500†●▲	8306	45.90M′
83006-1000†●▲	8306	44.40M′
83007-25†	8307	2.63
83007-100†●	8307	7.90
83007-500†●▲	8307	54.60M′
83007-1000†●▲	8307	53.10M′
83008-25†	8308	2.48
83008-100†●	8308	7.45
83008-500†●▲	8308	51.15M′
83009-25†	8309	3.25
83009-100†●	8309	10.60
83009-500†●▲	8309	77.65M′
83009-1000†●▲	8309	76.15M′
83010-25†	8310	3.85
83010-100†●	8310	12.90
83010-500†●▲	8310	97.05M′
83010-1000†●▲	8310	95.55M′
83023-25†	8323	2.65
83023-100†●	8323	8.10
83023-500†●▲	8323	56.25M′
83025-25†	8325	2.70
83025-100●†	8325	8.40
83025-500†●▲	8325	58.80M′
83026-25†	8326	2.85
83026-100†●	8326	9.10
83026-500†●▲	8326	64.95M′
83026-1000†●▲	8326	63.45M′
83027-25†	8327	3.23
83027-100†●	8327	10.50
83027-500†●▲	8327	77.25M′
83027-1000†●▲	8327	75.75M′
83028-25†	8328	3.08
83028-100†●	8328	10.00
83028-500†●▲	8328	72.15M′
83029-25†	8329	4.15
83029-100†●	8329	14.05
83029-500†●▲	8329	106.35M′
83029-1000†●▲	8329	104.85M′
83030-25†	8330	4.50
83030-100†●	8330	15.60
83030-500†●▲	8330	119.25M′
83030-1000†●▲	8330	117.75M′
*83041-100†●	—	4.50
*83041-1000†●▲	—	24.90M′
*83043-100†●	—	4.60
*83043-1000†●▲	—	25.15M′
*83045-100†●	—	4.75
*83045-1000†●▲	—	26.40M′
*83046-100†●	—	5.05
*83046-1000†●▲	—	28.65M′
*83047-100†●	—	5.20
*83047-1000†●▲	—	30.45M′
*83048-100†●	—	5.80
*83048-1000†●▲	—	35.25M′
*83049-100†●	—	5.70
*83049-1000†●▲	—	34.65M′
*83050-100†●	—	6.00
*83050-1000†●▲	—	37.30M′
*83241-100● (RG-141A/U)	—	48.75
*83241-500● (RG-141A/U)	—	456.00M′
*83241-1000● (RG-141A/U)	—	450.00M′
*83242-100● (RG-142B/U)	—	60.00
*83242-500● (RG-142B/U)	—	570.00M′
*83242-1000● (RG-142B/U)	—	564.00M′
*83264-100● (RG-179B/U)	—	24.00
*83264-500● (RG-179B/U)	—	208.50M′
*83264-1000● (RG-179B/U)	—	204.00M′
83265-100● (RG-178B/U)	8265	13.90
83265-500● (RG-178B/U)	8265	120.00M′
83266-100● (RG-180B/U)	8266	31.50
83266-500● (RG-180B/U)	8266	291.00M′
*83267-100● (RG-187A/U)	—	22.50
*83267-500● (RG-187A/U)	—	204.00M′
*83267-1000● (RG-187A/U)	—	195.00M′
83269-100● (RG-188A/U)	8269	22.50
83269-500● (RG-188A/U)	8269	204.00M′
83270-100● (RG-196A/U)	8270	16.80
83370-500● (RG-196A/U)	8270	142.50M′
*83282-100● (RG-303/U)	—	43.50
*83282-500● (RG-303/U)	—	417.00M′
*83282-1000● (RG-303/U)	—	411.75M′
*83284-100● (RG-316/U)	—	22.50
*83284-500● (RG-316/U)	—	199.50M′
*83284-1000●	—	195.00M′
*83301-100●	—	27.60
*83301-500●	—	223.50M′
*83301-1000●	—	223.50M′
*83302-100●	—	28.65
*83302-500●	—	232.50M′
*83302-1000●	—	232.50M′
*83303-100●	—	33.30
*83303-500●	—	271.50M′
*83303-1000●	—	271.50M′
*83304-100●	—	37.20
*83304-500●	—	300.00M′
*83304-1000●	—	300.00M′
*83305-100●	—	40.50
*83305-500●	—	330.00M′
*83305-1000●	—	330.00M′
*83306-100●	—	45.45
*83306-500●	—	372.00M′
*83306-1000●	—	372.00M′
*83307-100●	—	53.85
*83307-500●	—	442.50M′
*83307-1000●	—	442.50M′
*83308-100●	—	73.20
*83308-500●	—	600.00M′
*83308-1000●	—	600.00M′
*83315-100●	—	51.90
*83315-500●	—	426.00M′
*83315-1000●	—	426.00M′
*83316-100●	—	54.75
*83316-500●	—	450.00M′
*83316-1000●	—	450.00M′
*83317-100●	—	59.25
*83317-500●	—	487.50M′
*83317-1000●	—	487.50M′
*83318-100●	—	63.00
*83318-500●	—	517.50M′
*83318-1000●	—	517.50M′
*83319-100●	—	75.45
*83319-500●	—	622.50M′
*83319-1000●	—	622.50M′
*83320-100●	—	85.50
*83320-500●	—	705.00M′
*83320-1000●	—	705.00M′
*83321-100●	—	101.55
*83321-500●	—	840.00M′
*83321-1000●	—	840.00M′
*83322-100●	—	135.00
*83322-500●	—	1110.00M′
*83322-1000●	—	1110.00M′
*83330-100●	—	65.50
*83330-500●	—	540.00M′
*83330-1000●	—	540.00M′
*83331-100●	—	70.50
*83331-500●	—	577.50M′
*83331-1000●	—	577.50M′
*83332-100●	—	75.00
*83332-500●	—	615.00M′
*83332-1000●	—	615.00M′
*83333-100●	—	84.75
*83333-500●	—	697.50M′
*83333-1000●	—	697.50M′
*83334-100●	—	93.00
*83334-500●	—	765.00M′
*83334-1000●	—	765.00M′
*83335-100●	—	108.75
*83335-500●	—	900.00M′
*83335-1000●	—	900.00M′
*83336-100●	—	126.75
*83336-500●	—	1050.00M′
*83336-1000●	—	1050.00M′
*83337-100●	—	163.50
*83337-500●	—	1350.00M′
*83337-1000●	—	1350.00M′
*83345-100●	—	77.55
*83345-500●	—	639.00M′
*83345-1000●	—	639.00M′
*83346-100●	—	82.50
*83346-500●	—	682.50M′
*83346-1000●	—	682.50M′
*83347-100●	—	91.50
*83347-500●	—	757.50M′
*83347-1000●	—	757.50M′
*83348-100●	—	99.75
*83348-500●	—	825.00M′
*83348-1000●	—	825.00M′
*83349-100●	—	117.75
*83349-500●	—	975.00M′
*83349-1000●	—	975.00M′
*83350-100●	—	138.75
*83350-500●	—	1147.50M′
*83350-1000●	—	1147.50M′
*83351-100●	—	149.25
*83351-500●	—	1237.50M′
*83351-1000●	—	1237.50M′
*83352-100●	—	204.00
*83352-500●	—	1695.00M′
*83352-1000●	—	1695.00M′
83390-25	8390	8.85
83390-100●	8390	33.00
83390-500●	8390	322.50M′
83391-25	8391	11.05
83391-100●	8391	42.00
83391-500●	8391	411.00M′
83392-25	8392	13.20
83392-100●	8392	51.00
83392-500●	8392	498.00M′
83393-25	8393	10.50
83393-100●	8393	43.50
83393-500●	8393	420.00M′

* New Item † Specify Color ■ Trademark of Du Pont

● Spools may contain more than one piece, minimum length of any one piece is 25 feet. When priced per M feet, length may vary ±10% from length shown; all other lengths are exact.

▲ STRIPING ADDERS FOR TYPES E, EE, and ET: 1, 2 or 3 stripes. Minimum order 1,000 feet per stripe combination.
1,000′ to 4,999′ add $10.50/M′ 5,000′ to 24,999′ add $7.50/M′ 25,000′ to 49,999′ add $6.00/M′ 50,000′ and Over add $4.50/M′
AGGREGATION: Sizes, types and colors may be aggregated per order for striping adder quantity price. Prices Subject To Change Without Notice.

See Pages 1607 thru 1637 for complete BELDEN Catalog Pages.

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BELDEN TODAY

BELDEN

new ideas for moving electrical energy

FOREWORD

The purpose of this catalog is to make the selection, purchase and overall usage of Belden Electronic Wire and Cable products easier for you, the customer.

Many of the products listed in this catalog have enjoyed wide acceptance over the years. Some of the newer items are on the way to earning their own reputations for excellence and reliability in the field. They are the recent products of Belden's product development engineering group which starts with the electrical, physical and thermal needs of the applications. Working from the ground up they design and develop a wire, cable or cord that will meet or exceed these requirements.

INNOVATIONS

Over the years, Belden has pioneered the development of a number of significant design breakthroughs and new engineering techniques which have provided remarkable new products to meet the challenging and ever-changing technology.

Whatever your specialized problems . . . whatever your needs for wire and cable, you can count on Belden's experienced design and engineering talents and resources to help you develop the best solution to your wire and cable application problems.

Belden is constantly reviewing new materials, insulations, compounds and shielding applications to develop products to satisfy customer's needs.

TESTING

Belden's products must meet the highest standards of quality control in the industry. High-performance test equipment can simulate practically every known environmental or electrical condition to assure positive, reliable ratings for the most trouble-free operation under known and predictable conditions. Belden's rigid test program assures consistent product reliability from design through packaging.

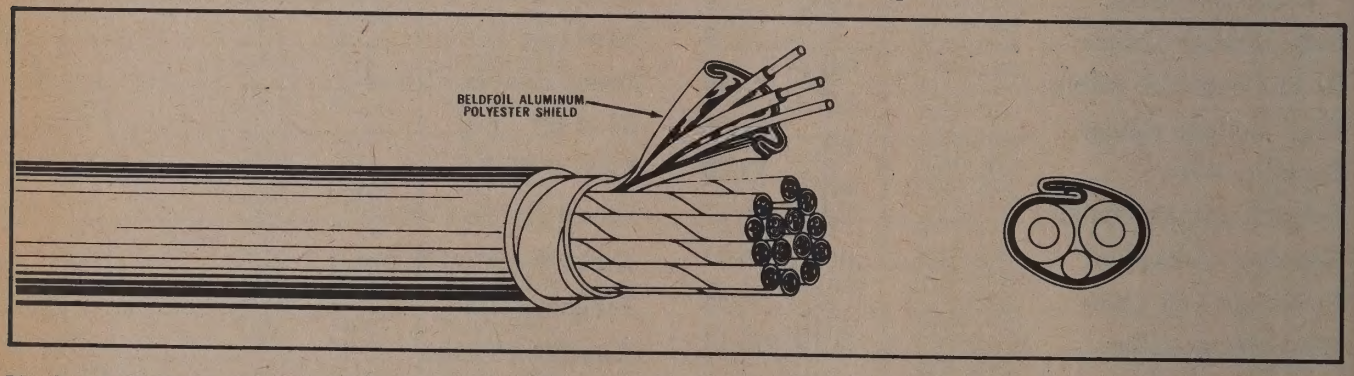
MANUFACTURING

Belden designs and builds much of its own specialized manufacturing equipment. To the customer, this means only one thing: scrupulous and uncompromising supervision of the entire manufacturing process that starts with the equipment used to make the product and assures complete, beginning to end, manufacturing integrity.

SALES ENGINEERING

The total experience and capability of Belden's engineering department is available to you at any time to assist in specifying or developing wiring products that can provide the best and most practical solutions to your specific application requirements.

The Beldfoil® ISO-Shield Story



Much of today's miniaturized, high-gain electronic equipment calls for small diameter cables that are lightweight, flexible and has total electrostatic shielding.

Wire braid and serve type shields have a practical range up to 97 percent maximum coverage. While they provide sufficient electrostatic shielding for many applications, they do not furnish the full-coverage shielding required by many high-gain electronic systems.

Beldfoil ISO-Shield provides 100 percent coverage and adds greater effectiveness to all major shielding functions: excluding external signals, confining the transmitted signal and minimizing crosstalk.

Beldfoil ISO-Shield uses a thin layer of aluminum bonded to a polyester film. The aluminum provides the necessary electrostatic shielding while the polyester film adds a bonus insulation and increased mechanical strength. The 100% shielding is accomplished by an exclusive method of folding back both edges of the tape in such a way as to provide metal-to-metal contact between adjacent wraps, thus providing the same shielding effect as a continuous aluminum tube. As a direct result of using this thin layer of aluminum-polyester shielding, Beldfoil ISO-Shield is lightweight, flexible and small in diameter. Depending on the cable type the polyester film may be used to increase the dielectric strength between the conductors and the shield, or to provide insulation between adjacent shields.

Applications for Beldfoil ISO-Shield range from a single conductor audio and sound cable to complex multi-conductor multi-shield cables. They include cables for data processing systems, telemetering equipment, strain gauge applications, hi-fi systems, instrumentation, TV cameras and receivers, microphones and communications equipment plus many special constructions for both military and commercial use.

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cable finder

BELDEN

●INDICATES SOLID CONDUCTORS, ALL OTHERS STRANDED CONDUCTORS

HOW TO USE THE CABLE FINDER CHART

Match the desired "Number of Conductors" column with the required "Conductor Size" to find the applicable Belden Trade Number and its catalog page.

For cables with more than 8 conductors, see Multiple pair and unpaired unshielded cables on page 9 & 11, Multiple pair individually shielded on pages 6, 7 & 8. For cables combining shielded and unshielded conductors, see Special Audio and Communication cables on page 7.

Unshielded · Braid Shield · Spiral Shield · Beldfoil Shield

No. of Conductors	2 Condr.		3 Condr.		4 Condr.		5 Condr.		6 Condr.		7 Condr.		8 Condr.	
CONDUCTOR SIZE	Belden No.	Page No.	Belden No.	Page No.	Belden No.	Page No.	Belden No.	Page No.	Belden No.	Page No.	Belden No.	Page No.	Belden No.	Page No.
25 AWG or Smaller	8416	14	8643	5										
	●8340	7			8434	6			●8642	7				
24 AWG	8782	10												
Shielded	8413	12	8406	12										
	8420	12												
	8641	4												
22 AWG	●8481	10	8443	10 & 11	●8741	9	8445	11	●8742	9	8447*	11	●8757	9
	●8740	9 & 10	●8794	11	8444	11			8446*	11			8488	
	8442	10	●8701	10	8494	13								
	●8781	10												
	●8795	11												
Shielded	8390	5 & 41	8391	5	8392	6								
	8422	12	8735	5	8732§	6								
	●8437	4	8734	7										
	8441	4												
	●8738	5												
	●8739	4	●8731	5										
	8737	4												
	●8450	4	8771	5	8723	6	8788§	7	●8767	8				
	8451	4	8733	7	8729	6			8777	8				
	8761	4			8724§	6			8786§	7				
					8728	6								
					8730§	6								
20 AWG	8649	10	8783§	7										
	8205	10					8455*	14						
Shielded	8412	12	8423	12	8424	6 & 12	8425	12	8426	12	8427	12	8418	12
	8758	12	8403	12	8404	6 & 12	8405	12						
	8402	5												
	8759	4												
	8762	4	8772	5	8722§	6							8725	8
	8393	5, 8 & 41	8763§	7										
18 AWG	8462	14	8453	14	8454	14	8465	11	8690	9	8467	11		
	8888	14												
	8452	14	●8483†	10										
	8478	14	●8487†	10										
	8460	10												
	8461	10												
	●8482†	10												
	●8492†	10												
	●8486†	10												
Shielded	8428	12												
	8208	4												
	8789	5												
	8790	4	8791	5										
	8760	4	8770	5										
16 AWG	8470	10									8621	11		
	8471	10			8620	11								
	8472	14												
Shielded	8779	5			8407	12								
	8408	12												
	8780	4												
	8719	4	8618	5										
14 AWG	8473	10	8479	14	8627	11								
	8474	14									8628	11		
Shielded	8720	4												
12 AWG	8477	10												
	8718	4												

*2 Conductors are 18 AWG †19 AWG §Not all pairs are shielded, or conductors are more than one size.

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shielded sound and broadcast audio cables

BELDEN

COMMUNICATIONS CABLE

Belden offers a complete line of Communications Cables to provide customers with the best all-around cable for every application requirement. Cables are available in a wide range of sizes, dimensions, shielding constructions and types of insulation. All Communications Cables are designed to protect the desired signal by eliminating or minimizing the interference of hum, noise and crosstalk.

SHIELDING: Because it affords such excellent protection, Beldfoil ISO-Shield is now being specified for many critical applications such as instrumentation systems, tracking station equipment, computer and data processing systems, audio, sound, strain gauge and control cables.

No other type of shield on the market surpasses Beldfoil Shield for full coverage and protection against radiation and penetration at audio and radio frequencies. Beldfoil's unique polyester-aluminum shielding provides 100% coverage.

Braided Copper Shields have high tensile strength and are very effective at audio and radio frequencies in flexing applications. Served Copper Shields usually provide more coverage than Braided Copper Shields; they're also easier to terminate. Both Braided and Served Copper Shields are recommended at audio frequencies.

INSULATIONS: Belden's Communications Cables are available in a variety of insulation materials, each having its own advantages depending upon the size requirements, environmental and electrical conditions dictated by the application.

Vinyl insulation resists flame, most solvents, oil, ozone and sunlight. It has a higher dielectric constant and capacitance than polyethylene. Therefore it is recommended for audio frequency applications. It is easy to strip.

Polyethylene insulation is lightweight and resists ozone. It has a low dielectric constant for low capacitance and provides low electrical loss and is recommended for audio and radio frequency applications. Like vinyl, polyethylene is easy to strip.

Polypropylene insulation provides excellent heat and abrasion resistance. It has a low dielectric constant with equally low capacitance. It is less flexible than polyethylene. Because it has excellent dielectric strength and mechanical ruggedness, polypropylene insulations are widely used for miniaturization applications. Even with low overall diameters, they permit very low loss. Recommended for audio and radio frequencies.

TWO CONDUCTOR SHIELDED CABLES

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Cond. Color Coding	Percent Shield Coverage	Nom. *Cap. (mmf/ft)	Nom. **Cap. (mmf/ft)	Suggested Working Voltage	Standard Spool Lengths in ft.
With JACKET	8640	26 (Solid)	.002	.020	.089	Red, Clear	100	80	140	100	250, 500
BELDFOIL®		*Solid Copper, BELDSOL® (solderable—no stripping required) insulated BELDFOIL aluminum-polyester shield, 30 AWG solid tinned Copperweld▲ ground drain wire, **WHITE** vinyl jacket. Maximum operating temperature 105°C. **Ideal for Instrumentation and Audio Console Work where Subminiaturization is Required.***									
	8450•	22 (Solid)	.006	.018	.118	Blk, Red	100	40	76	200	100, 250, 500, 1000
	8451•	22 (7x30)	.008	.020	.135	Blk, Red	100	34	67	200	100, 250, 500, 1000
BELDFOIL® Miniature Broadcast Audio Cable		*Tinned copper, polypropylene insulated, conductors cabled, stranded tinned copper ground drain wire, BELDFOIL aluminum-polyester shield, paper wrap, **BLACK** or **GRAY** vinyl jacket.* **Belden's Miniature Type Broadcast Audio Cable occupies ½ to ⅔ less space than required by Standard Broadcast Audio Cables. The Beldfoil Shield combines high cable reliability with ease of termination.**									
	8437	22 (Solid)	.015	.025	.200	Blk, Red	88	48	85	200	500, 1000
	8441	22 (16x34)	.015	.025	.210	Blk, Red	88	49	86	200	100, 500, 1000
Broadcast Audio Cable		*Tinned copper, vinyl insulated, conductors cabled, 8437 solid tinned copper drain wire, 8441 stranded tinned copper drain wire, tinned copper braid shield, black vinyl jacket.*									
	8641•	24 (7x32)	.014	.025	.160	Blk, Clear	100	22	42	350	100, 500, 1000
	8761•	22 (7x30)	.014	.025	.167	Blk, Clear	100	24	47	350	500, 1000
	8762•	20 (7x28)	.014	.028	.196	Blk, Clear	100	27	49	350	100, 250, 500, 1000
BELDFOIL®	8760•	18 (16x30)	.018	.028	.222	Blk, Clear	100	24	44	450	250, 500, 1000
	8719	16 (19x29)	.025	.030	.274	Blk, Clear	100	24	47	600	500, 1000
	8720	14 (19x27)	.032	.035	.340	Blk, Clear	100	24	47	750	500, 1000
	8718	12 (19x25)	.037	.040	.400	Blk, Clear	100	25	49	1000	500, 1000
BELDFOIL®		*Tinned copper polyethylene insulated, BELDFOIL aluminum-polyester shield, stranded tinned copper ground drain wire, (24 AWG for 8641, 22 AWG for 8761, and 20 AWG for 8760 and 8762, 18 AWG for 8719, 16 AWG for 8720, 14 AWG for 8718), chrome vinyl jacket.*									
	8739	22 (Solid)	.015	.025	.160	Blk, Red	94.0	38	66	350	100, 500, 1000
	8737	22 (7x30)	.015	.025	.170	Blk, Red	89.3	40	70	350	100, 250, 500, 1000
	8759	20 (7x28)	.015	.025	.195	Blk, Red	81.0	47	79	350	100, 500, 1000
	8790	18 (7x26)	.020	.028	.231	Red, Wht	76.5	53	92	450	100, 250, 500, 1000
	8780	16 (19x29)	.023	.030	.266	Blk, Wht	84.1	57	98	450	100, 500, 1000
		Tinned copper, vinyl insulated, tinned copper spiral wrapped shield, chrome vinyl jacket.									
	8208	18 (16x30)	.020	.025	.255	Red, Wht	69	46	77	200	100, 500, 1000
		Tinned copper, rubber insulated, braided tinned copper shield, chrome vinyl jacket.									

** Capacitance between conductors. ** Capacitance between 1 conductor and other conductor connected to shield. ▲Trademark of Copperweld Steel Co.*

•Belden U.S. Patent 3,032,604.

For underground burial recommendations of all types of vinyl, polyethylene, Hypalon and neoprene jacketed cables, please write for Bulletin #6 Electronic Wire Section.

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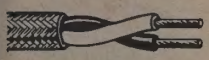
TWO CONDUCTOR SHIELDED CABLES (Cont'd)

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Cond. Color Coding	Percent Shield Coverage	Nom. *Cap. (mmf ft)	Nom. **Cap. (mmf ft)	Suggested Working Voltage	Standard Spool Lengths in ft
High Temperature	8390 TEFLON	22 (19x34)	.015	.015	.180	Blk, Wht	90	23	40	1000	25, 100, 500
		Stranded tinned copper, FEP teflon■ insulated, cabled tinned copper braid shield, white FEP teflon jacket. +200° C maximum, −70° C minimum operating temperature. Ideal where chemical resistance is needed and/ or extremely high or low temperatures are required.									
	8393	20 (7x28)	.020	.030	.245	Blk, Red	100	22	42	1000	25, 100, 500
		Tinned copper FEP Teflon insulated, noise reducing tape, 20AWG (10x30) nickel coated copper drain wire, special Beldfoil shield, Silicone rubber jacket. +150°C maximum, —70°C minimum operating temperature. Jacket working voltage, 1000V DC, shield to ground.									
Without JACKET 	8738	22 (Solid)	.015	—	.130	Blk, Red	72.8	35	61	350	1000
	8758	20 (7x28)	.015	—	.165	Blk, Red	63.8	42	72	350	100, 500, 1000
	8789	18 (7x26)	.020	—	.204	Blk, Wht	74	50	89	450	500, 1000
	8779	16 (19x29)	.023	—	.225	Blk, Wht	83	63	112	600	500, 1000
		Tinned copper, vinyl insulated, braided tinned copper shield.									

INSTRUMENTATION CABLES

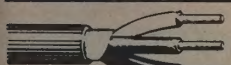
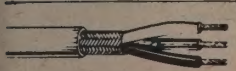
Instrumentation cable provides the vital communications link between sensing devices and read-out equipment. Because of the many and diverse conditions of environment and stress under which instrumentation cables must transmit information — in usable form, without distortion or change — cable characteristics should always be carefully matched with the specific requirements of the particular application.

The scientific, medical and industrial uses of instrumentation cable are vast and ever growing. Some of the common uses for instrumentation cable are such things as measuring pressure, speed, resistance and temperature.

Belden manufactures a wide variety of precision instrumentation wire using several types of insulating materials for conductors and shields to meet a wide variety of electrical, physical and thermal requirements.

Many Belden Instrumentation Cables are unique in the field and have been engineered for specific application problems.

THREE CONDUCTOR SHIELDED

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Cond. Color Coding	Percent Shield Coverage	Nom. *Cap. (mmf ft)	Nom. **Cap. (mmf ft)	Suggested Working Voltage	Standard Spool Lengths in ft
	8731	22 (Solid)	.015	.025	.178	Blk, Red, Wht	76.2	36	63	350	500, 1000
	8791	18 (7x26)	.020	.028	.236	Blk, Red, Wht	78.2	47	84	450	100, 500, 1000
		Tinned copper, vinyl insulated, conductors cabled, tinned copper spiral wrapped shield, chrome vinyl jacket.									
BELDFOIL®	8618•	16 (19x29)	.025	.030	.300	Blk, Red, Wht	100	26	50	600	500, 1000
	8771•	22 (7x30)	.014	.025	.175	Blk, Red, Clear	100	23	41	350	250, 500, 1000
	8772•	20 (7x28)	.014	.028	.200	Blk, Red, Clear	100	27	51	350	500, 1000
	8770•	18 (16x30)	.018	.028	.236	Blk, Red, Clear	100	24	48	450	500, 1000
		Tinned copper, polyethylene insulated, conductors cabled, BELDFOIL® aluminum-polyester shield, stranded tinned copper ground drain wire (22 AWG for 8771, 20 AWG for 8770 and 8772, and 18 AWG for 8618), chrome vinyl jacket.									
	8735	22 (7x30)	.015	.025	.199	Blk, Red, Wht	70	34	60	350	15, 50, 100, 500, 1000
		Tinned copper, vinyl insulated, conductors cabled, tinned copper braid shield, chrome vinyl jacket.									
High Temperature	8391 TEFLON	22 (19x34)	.015	.015	.190	Blk, Red, Wht	90	20	35	1000	25, 100, 500
		Stranded tinned copper, FEP teflon■ insulated, cabled tinned copper braid shield, white FEP teflon jacket. +200° C maximum, −70° C minimum operating temperature. Ideal where chemical resistance is needed and/or extremely high or low temperatures are required.									
	8643	30 (7x38)	.005	.010	.086	Blk, Red, Wht	95	25	43	200	25, 50, 100, 250
		Tinned copper, polypropylene insulated conductors cabled around textile strength member, tinned copper braid shield, chrome vinyl jacket. 105° C max. operating temperature.									

*Capacitance between conductors.
**Capacitance between 1 conductor and other conductor connected to shield.

■Trademark of DuPont.
•Belden U.S. Patent 3,032,604.

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shielded instrumentation, strain gauge and communication cables

BELDEN

STRAIN GAUGE QUAD CABLES

Description	Trade Number	No. of Cond.	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Cond. Color Coding	Percent Shield Coverage	Nom. *Cap. (mmf/ft)	Nom. **Cap. (mmf/ft)	Suggested Working Voltage	Standard Spool Lengths in ft
BELDFOIL®	**8434•**	4	25 (7x33) 3 copper 4 copper-weld	.013	.020	.179	Red, Blk, Grn, Clear	100	25	40	400	100, 500, 1000
	Tinned copper, polyethylene insulated, black and red conductors under BELDFOIL aluminum-polyester shield, stranded ground wire, green and clear conductors under over-all BELDFOIL aluminum-polyester shield, chrome vinyl jacket. Pairs cabled on common axis to reduce diameter. ⊖											
BELDFOIL®	**8723•**	4	22 (7x30) copper	.008	.019	.165	Red, Blk, Grn, Wht	100	35	62	400	100, 500, 1000
	Tinned copper, polypropylene insulated, black and red under a BELDFOIL aluminum-polyester shield. Green and white under a BELDFOIL aluminum-polyester shield, stranded tinned copper drain wire, chrome vinyl jacket. Pairs cabled on common axis to reduce diameter. ⊖											
BELDFOIL®	**8728•**	4	22 (7x30)	.008	.021	.188	Red, Blk, Grn, Wht	100	35	62	400	500, 1000
	Tinned copper, polypropylene insulated, cabled in pairs each pair BELDFOIL aluminum-polyester shielded with stranded copper drain wire, polyester film over each shield, overall BELDFOIL aluminum-polyester shield and stranded tinned copper drain wire, chrome vinyl jacket. Pairs cabled on common axis to reduce diameter. ⊖											
BELDFOIL®	**8729•**	4	22 (19x34)	.015	.050	.265	Clear, Blk, Red, Grn	100	22	42	600	500, 1000
	Tinned copper, polyethylene insulated, cabled BELDFOIL aluminum-polyester shield. 18 AWG stranded tinned copperweld ground drain wire, white vinyl jacket.											
	8404	4	20 (26x34)	.015	.033	.255	Red, Blk, Grn, Clear	87	25	45	600	15, 100, 250, 500, 1000
	Tinned copper, polyethylene insulated, cabled, rayon braid, tinned copper braid shield, chrome vinyl jacket.											
	8407	4	16 (65x34)	.032	.043	.422	Red, Blk, Grn, Wht	84	37	65	600	100, 250
	Tinned copper, separator, rubber insulated, cabled, rayon braid, tinned copper braid shield, cotton wrap, black neoprene jacket.											
	8424	4	20 (26x34)	.020	.040	.295	Red, Blk, Grn, Wht	83.5	55	95	600	15, 50, 100, 250, 500, 1000
	Tinned copper, cotton wrap, rubber insulated, rayon braid, tinned copper braid shield, cotton wrap, black rubber jacket.											
	8392 TEFLON	4	22 (19x34)	.015	.015	.205	Red, Blk, Grn, Wht	90	20	35	1000	25, 100, 500
	Stranded tinned copper, FEP teflon■ insulated, cabled tinned copper braid shield, white FEP teflon jacket. **HIGH TEMPERATURE +200° C maximum, −70° C minimum operating temperature. Ideal where chemical resistance is needed and/or extremely high or low temperatures are required.**											
BELDFOIL®	**8724•**	2 shielded 2 unshielded	22 (7x30) 22 (7x30)	.008 .008	.019	.165	Red, Blk, Grn, Wht	100	34	67	200	250, 500, 1000
	8722•	2 shielded 2 unshielded	20 (7x28) 20 (7x28)	.015 .015	.028	.260	Red, Blk, Grn, Wht	100	60	99	350	500, 1000
	Tinned copper, 8722 vinyl insulated, 8724 polypropylene insulated, BELDFOIL aluminum-polyester shield over 2 conductors, stranded tinned copper ground drain wire (22 AWG for 8722 and 24 AWG for 8724), chrome vinyl jacket. Pairs cabled on common axis to reduce diameter. ⊖											
	8732	2 shielded 2 unshielded	22 (7x30) 22 (7x30)	.015 .015	.030	.188x .296	Blk, Clear Blk, Clear	62	21	37	350	100, 500, 1000
	Tinned copper, polyethylene insulated, tinned copper braid shield over 1 pair, chrome vinyl jacket.											
BELDFOIL®	**8730•**	2 shielded 2 unshielded	22 (7x30) 22 (7x30)	.008 .008	.030	.250	Red, Blk, Grn, Wht	100	34	67	200	500, 1000
	Tinned copper, polypropylene insulated, BELDFOIL aluminum-polyester shield over 1 pair with stranded tinned copper drain wire, chrome vinyl jacket. Pairs cabled on separate axes for reduced magnetic coupling.											

*Capacitance between conductors.
**Capacitance between 1 conductor and other conductor connected to shield.
⊖Request information before planning high and low level circuits in same cable.

•Belden U.S. Patent 3,032,604.
■Trademark of DuPont

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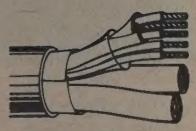
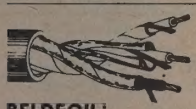
multi-purpose and special communication cables

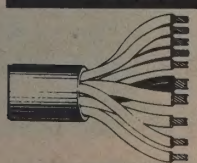
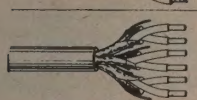
BELDEN

MULTIPLE QUADS AUDIO AND COMMUNICATION CABLES

Description	Trade Number	No. of Cond.	AWG & (Stranding)	Cond. Color Coding	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Percent Shield Coverage	Suggested Working Voltage	Nom. *Cap. (mmf ft)	Nom. **Cap. (mmf ft)	Standard Spool Lengths in ft
 BELDFOIL®	8726*	12 3 (QUADS)	22 (7x30)	Red, Blk, Grn, Wht	.008	.035	.330	100	200	34	67	100, 500, 1000
		Cabled around common axis-request information before planning high and low level circuits in same cable										
	8727*	28 (7 QUADS)	22 (7x30)	Red, Blk, Grn, Wht	.008	.040	.450	100	200	34	67	100, 500, 1000
		Cabled around common axis-request information before planning high and low level circuits in same cable										
		22 AWG tinned copper, polypropylene insulation, cabled in quads, BELDFOIL shield over black and red conductors, 24 AWG stranded tinned copper drain wire. Each quad is 8724 (on page 6) except for tape shield folding and a clear polyester tape instead of a vinyl jacket. Shields color coded, overall chrome vinyl jacket.										

SPECIAL AUDIO AND COMMUNICATION CABLES

	8734	3 Conductors 1 shielded 2 unshielded	 22 (7x30) 22 (7x30)	 Wht Blk, Red	 .015 .015	.025	.194	82	350	—	79	100, 500, 1000
		Tinned copper, vinyl insulated, tinned copper braid shield over 1 conductor, 3 conductors cabled, chrome vinyl jacket.										
BELDFOIL®	8763*	3 Conductors 2 shielded 1 unshielded	 20 (7x28) 20 (7x28)	 Blk, Red Clear	 .014 .014	.028	.210	100	350	26	48	500, 1000
		Tinned copper, polyethylene insulated, BELDFOIL aluminum-polyester shield over 2 conductors, #20 stranded tinned copper ground drain wire, chrome vinyl jacket.										
 BELDFOIL®	8733*	3 Conductors shielded	 22 (7x30)	 Blk, Red, Clear	 .014	.030	.205	100	350	—	51	100, 500, 1000
		Tinned copper, polyethylene insulated, each conductor separately BELDFOIL aluminum-polyester shielded. Ground wire for each conductor is tinned cadmium bronze ribbon under BELDFOIL chrome vinyl jacket.										
BELDFOIL®	8788*	5 Conductors 3 shielded 2 unshielded	 22 (7x30)	 Blk, Red, Grn, Yel, Blue	 .015	.028	.236	100	350	—	125	500
		Tinned copper, vinyl insulated 3 conductors each separately BELDFOIL shielded, ground drain wire for each conductor is tinned cadmium bronze ribbon under BELDFOIL 2 conductors unshielded, cabled around a vinyl filler, chrome vinyl jacket.										
	8783	3 Conductors 3 unshielded	1-20 (10x30) 2-16 (26x30)	Blue, Grn, Org	.020 .020	.025	.250	—	450	—	—	100, 500
		Tinned copper, vinyl insulated, conductors cabled, chrome vinyl jacket.										
BELDFOIL®	8786*	6 Conductors 2 unshielded 4 shielded	 22 (7x30) 24 (7x32)	 Blu, Wht Blk, Grn, Red, Yel	 .015 .015	.028	.256	100	350	—	—	100, 500
		Tinned copper, vinyl insulated, 4 conductors twisted under BELDFOIL aluminum-polyester shield, 2 conductors unshielded, 22 AWG drain wire, chrome vinyl jacket.										
BELDFOIL®	8787*	10 Conductors 4 shielded 4 shielded 2 unshielded	 24 (7x32) 24 (7x32) 22 (7x30)	 Gry, Wht, Blu, Grn Red, Brn, Yel, Org Wht, Blu	 .012 .012 .015	.030	.290	100	350	—	—	500
		Tinned copper, 22 AWG conductors vinyl insulated, 24 AWG conductors polyethylene insulated, cabled in 2 quads, each with transparent polyester tape wrap, 24 AWG tinned copper ground wire. Red BELDFOIL shield over one quad, green BELDFOIL shield over the other quad; plus 2 unshielded conductors, chrome vinyl jacket.										

Description	Trade Number	No. of Cond.	AWG & (Stranding)	Cond. Color Coding	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Percent Shield Coverage	Suggested Working Voltage	Nom. *Cap. (mmf ft)	Nom. **Cap. (mmf ft)	Standard Spool Lengths in ft
	8784	10 un-shielded	2-16 (26x30) 1-20 (10x30) 7-22 (7x30)	Blk, Wht Gray Red, Grn, Org, Yel, Blu, Purple Brown	.016 .018 .013	.040	.295	—	300	—	—	500
		Tinned copper, vinyl insulated, conductors cabled, chrome vinyl jacket.										
 BELDFOIL®	8640	2	26 (Solid) 1 Pair	Red, Clear	.002	.020	.089	100	100	80	140	250, 500
	8642	6	26 (Solid) 3 Pair	Red, Clear	.002	.025	.140	100	100	80	140	250, 500

Solid copper, BELDSOL® (solderable—no stripping required), BELDFOIL aluminum-polyester shield on each pair, red, brown, orange textile marker and isolating polyester tape for each pair on 8642, Copperweld ground drain wire, WHITE vinyl jacket.

Ideal for instrumentation and audio console work where subminiaturization is required.
105°C maximum operating temperature.

**Capacitance between conductors.*
***Capacitance between 1 conductor and other conductor connected to shield.*

•Belden U.S. Patent 3,032,604.

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miniature coaxial and shielded paired instrumentation and sound cables

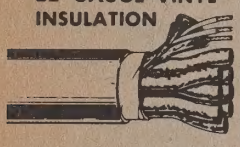
BELDEN

COLOR CODING FOR PAIRED CABLES

Pair Number	Color Combination	Pair Number	Color Combination	Pair Number	Color Combination
1	Black paired with Red	10	Red paired with Blue	19	White paired with Blue
2	Black paired with White	11	Red paired with Yellow	20	White paired with Yellow
3	Black paired with Green	12	Red paired with Brown	21	White paired with Brown
4	Black paired with Blue	13	Red paired with Orange	22	White paired with Orange
5	Black paired with Yellow	14	Green paired with White	23	Blue paired with Yellow
6	Black paired with Brown	15	Green paired with Blue	24	Blue paired with Brown
7	Black paired with Orange	16	Green paired with Yellow	25	Blue paired with Orange
8	Red paired with White	17	Green paired with Brown	26	Brown paired with Yellow
9	Red paired with Green	18	Green paired with Orange	27	Brown paired with Orange

MULTIPLE PAIR INDIVIDUALLY SHIELDED AUDIO AND SOUND CABLES

Description	Trade Number	No. of Pairs	Stranding	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom O.D. (Inch)	Nom *Cap (mmf/ft)	Nom **Cap (mmf/ft)	Standard Spool Lengths in ft
22 GAUGE VINYL INSULATION	8767•	3	Solid	.013	.030	.270	40	77	100, 250, 500, 1000
	8768•	6	Solid	.013	.037	.394	40	77	100, 250, 500, 1000
	8764•	9	Solid	.013	.040	.440	40	77	100, 250, 500, 1000
	8765•	11	Solid	.013	.040	.485	40	77	100, 250, 500, 1000
	8766•	15	Solid	.013	.045	.540	40	77	100, 250, 500, 1000



BELDFOIL•

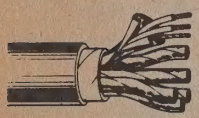
#22 tinned copper, vinyl insulated, cabled in pairs, each pair and its ground wire under BELDFOIL® aluminum-polyester shield, over-all chrome vinyl jacket. 300 Volts suggested working voltage.

Insulation resistance between shields . . . . . 100 megohms/M'
Capacitance between adjacent shields . . . . . 115 mmf/ft
Voltage breakdown between adjacent shields . . . . . 1500 volts
Working voltage between adjacent shields . . . . . 50 volts

Vinyl insulation is used for ease of stripping and soldering. Recommended for audio frequency applications requiring excellent circuit isolation. Maximum operating temperature 80°C.

MULTIPLE PAIR INDIVIDUALLY SHIELDED AUDIO AND DATA CABLES

Description	Trade Number	No. of Pairs	Stranding	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom O.D. (Inch)	Nom *Cap (mmf/ft)	Nom **Cap (mmf/ft)	Standard Spool Lengths in ft
22 GAUGE POLYPROPYLENE INSULATION	8777•	3	(7x30)	.010	.030	.270	30	55	100, 250, 500, 1000
	8778•	6	(7x30)	.010	.037	.394	30	55	100, 250, 500, 1000
	8774•	9	(7x30)	.010	.040	.440	30	55	100, 250, 500, 1000
	8775•	11	(7x30)	.010	.040	.485	30	55	100, 250, 500, 1000
	8776•	15	(7x30)	.010	.045	.540	30	55	100, 250, 500, 1000
	8769•	19	(7x30)	.010	.055	.620	30	55	100, 250, 500, 1000
	8773•	27	(7x30)	.010	.070	.760	30	55	§Cut to customer's specified length. Maximum length 1000'



BELDFOIL•

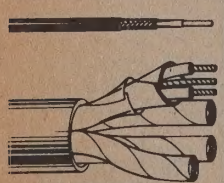
#22 gauge tinned copper, polypropylene insulated, cabled in pairs, each pair and its ground wire under BELDFOIL® aluminum-polyester shield, over-all chrome vinyl jacket. 300 volts suggested working voltage.

Insulation resistance between shields . . . . . 100 megohms/M'
Capacitance between adjacent shields . . . . . 115 mmf/ft
Voltage breakdown between adjacent shields . . . . . 1500 volts
Working voltage between adjacent shields . . . . . 50 volts

Recommended for audio, pulse, and radio frequency applications requiring superior circuit isolation. Polypropylene insulation is used for excellent high frequency properties and mechanical toughness. Maximum operating temperature 105°C.

SPECIAL INSTRUMENTATION CABLES

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom O.D. (Inch)	Cond Color Coding	Percent Shield Coverage	Nom *Cap (mmf/ft)	Nom **Cap (mmf/ft)	Suggested Working Voltage	Standard Spool Lengths in ft
	8700	28 (Solid) Coaxial	.005	.008	.054	Black	80	48	—	100	25,50,100,250
		Solid tinned copper, polypropylene insulation, copper braid, black vinyl jacket. May be steam sterilized for medical research.									
	8725†○	4 pairs 20 (7x28)	.015	.030	.360	Red, Blk Grn, Wht Wht/Red Wht/Blk Wht/Grn Wht/Yel	100	27	49	400	500 1000



BELDFOIL•

Tinned copper conductors, polypropylene insulated, four groups of two conductors with #22 AWG drain wire. Each group individually BELDFOIL® shielded with polyester tape wrap, chrome vinyl jacket. 105° C Maximum operating temperature.

*Capacitance between conductors.
**Capacitance between 1 conductor and other conductor connected to shield.
•Belden U.S. Patent 3,032,604.
§Minimum length 25'
25' to 199', plus 25', minus 0.
200' or over, plus 50', minus 0.
†Cabled around common axis - request information before planning high and low level circuits in same cable.
○Color code is Western Regional Strain Gauge Committee.

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unshielded paired sound cables

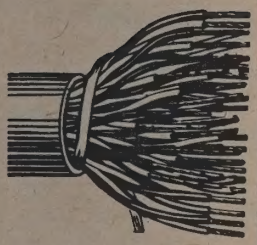
BELDEN

MULTIPLE PAIR UNSHIELDED SOUND CABLES

TYPICAL APPLICATIONS: Balanced line sound systems.

Made with 80°C vinyl plastic compounds for high dielectric strength and the best physical properties, such as free stripping, small diameter, and tear resistance. It also resists the effects of water, sun, oil, grease, and ozone. The conductors are paired with a short-lay twist for conductor balance, providing a quiet circuit, free from cross talk.

ALL CONSTRUCTIONS:
Tinned copper, vinyl insulated cabled in pairs, chrome vinyl jacket.



1 to 27 Pairs	Trade Number	No. of Pairs	AWG & Stranding	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Suggested Working Voltage	Standard Spool Lengths in ft
	8740	1	22 Solid	.015	.025	.150	200	100, 250, 500, 1000
	8741	2	22 Solid	.015	.028	.201	200	100, 250, 500, 1000
	8742	3	22 Solid	.015	.030	.240	200	100, 250, 500, 1000
	8690	3	18 (16x30)	.018	.037	.362	400	100, 500, 1000
	8757	4	22 Solid	.015	.030	.255	200	500, 1000
	8743	6	22 Solid	.010	.035	.305	200	100, 250, 500, 1000
	8747	6	22 (7x30)	.010	.035	.340	200	100, 250, 500, 1000
	8691	6	18 (16x30)	.018	.045	.550	400	100, 500, 1000
	8744	9	22 Solid	.010	.037	.354	200	100, 250, 500, 1000
	8748	9	22 (7x30)	.010	.037	.389	200	100, 250, 500, 1000
	8692	9	18 (16x30)	.018	.055	.638	400	100, 500, 1000
	8753	11	22 Solid	.010	.037	.384	200	100, 250, 500, 1000
	8754	13	22 Solid	.010	.037	.409	200	100, 250, 500, 1000
	8745	15	22 Solid	.010	.040	.420	200	100, 250, 500, 1000
	8749	15	22 (7x30)	.010	.040	.425	200	100, 250, 500, 1000
	8755	19	22 Solid	.010	.040	.480	200	500, 1000
	8756	23	22 Solid	.010	.040	.510	200	500, 1000
	8746	27	22 Solid	.010	.045	.550	200	§Cut to customer's specified length. Maximum length 1500′
	8750	27	22 (7x30)	.010	.045	.595	200	§Cut to customer's specified length. Maximum length 1500′

For color coding please refer to page 8

38 AND 51 PAIR CABLE

Description	Trade Number	No. of Pairs	Conductors	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Standard Spool Lengths in ft
	8752	38	Solid Tinned Copper	.008	.045	.600	§Cut to customer's specified length. Maximum length 1500′
	8751	51	Solid Tinned Copper	.010	.050	.725	

#22 tinned copper, 8751 vinyl insulated, 8752 polypropylene insulated, cabled in pairs, BELDFOIL® aluminum-polyester shield over cabled pairs, #22 (7x30) stranded drain wire, chrome vinyl jacket. 200 Volts suggested working voltage. Color coding available on request.

§Minimum length 25′. 25′ to 199′, plus 25′, minus 0. 200′ or over, plus 50′, minus 0.

For color coding information on 8751 and 8752 write for Technical Data

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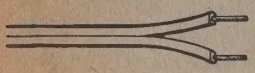
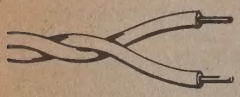
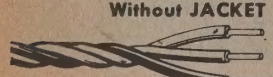
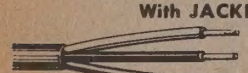
TWO CONDUCTOR UNSHIELDED CABLES

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Conductor Color Coding	Available Jacket Colors	Nominal O.D. (Inch)	Suggested Working Voltage	Standard Spool Lengths in ft
	**8781**	22 (Solid)	.016	—	1 condr. tinned	Chrome	.060x .120	100	100, 500, 1000
	8782	24 (7x32)	.017	—	1 condr. tinned	Chrome, Sand, White, Clear	.058x .115	300	25, 50, 100, 500, 1000
Copper, vinyl insulated, PARALLEL	**8649**	20 (7x28)	.020	—	1 condr. tinned	Chrome, Clear	.073x .146	300	100, 500, 1000
Without JACKET	**8481**	22 (Solid) bare	.015	—	Brn, Tan	—	.112	350	100, 500, 1000
	**8482**	19 (Solid) bare	.015	—	Brn, Tan	—	.130	350	100, 500, 1000
	8492	19 (Solid)	.025	—	Brown or White 1 condr. tinned	—	.170	600	1000
Copper, vinyl insulated, TWISTED.	**8460**	18 (7x26) tinned	.020	—	Blk, Wht	—	.175	450	100, 500, 1000
	8470	16 (19x29) tinned	.023	—	Blk, Wht	—	.195	600	500, 1000
With JACKET	**8740**	22 (Solid) tinned	.015	.025	Blk, Red	Chrome	.150	200	100, 250, 500, 1000
	8442	22 (7x30) tinned	.015	.025	Blk, Red	Chrome	.165	350	500, 1000
SOLID	**8205**	20 (10x30) tinned	.018	.025	Blk, Red	Chrome	.190	350	100, 500, 1000
	8486	19 (Solid) bare	.015	.025	Brn, Tan	Chrome	.162	350	500, 1000
	8461	18 (7x26) tinned	.020	.028	Blk, Wht	Chrome	.226	450	100, 500, 1000
STRANDED	**8471**	16 (19x29) tinned	.023	.030	Blk, Wht	Chrome	.256	600	500, 1000
Copper, vinyl insulated, CABLED, vinyl jacket	**8473**	14 (19x27) tinned	.031	.035	Blk, Wht	Chrome	.332	600	500, 1000
	8477	12 (19x25) tinned	.031	.040	Blk, Wht	Chrome	.384	600	500, 1000

For additional 2 conductor cables see PORTABLE CORDAGE on page 14, 30 and 31.

THREE CONDUCTOR UNSHIELDED CABLES

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Conductor Color Coding	Nominal O.D. (Inch)	Suggested Working Voltage	Standard Spool Lengths in ft
	8701	22 (Solid)	.016	—	Chrome 1 condr. tinned	.060x .190	100	100, 500, 1000
	8475	16 (19x29) bare	.023	—	Wht, Brn, Red	.102x .295	300	100, 500
Copper, vinyl insulated, PARALLEL								
Without JACKET	**8483**	19 (Solid)	.015	—	Brn, Gray, Tan	.132	350	100, 500, 1000
								
Bare copper, vinyl insulated, CABLED								
With JACKET	**8443**	22 (7x30) tinned	.010	.025	Blk, Grn, Red	.150	200	25, 100, 250, 500, 1000
	**8487**	19 (Solid) bare	.015	.025	Brn, Gray, Tan	.180	350	500, 1000
Copper, vinyl insulated, CABLED, chrome vinyl jacket.								

For additional 3 conductor cables see PORTABLE CORDAGE on page 14, 30 and 31.

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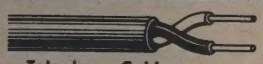
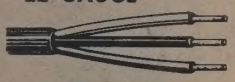
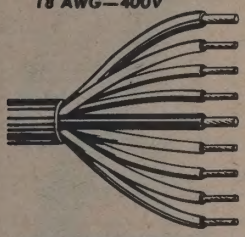
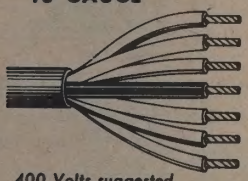
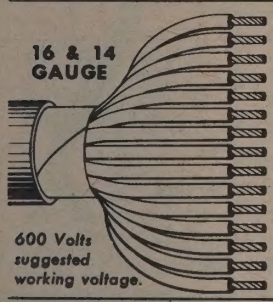
MULTIPLE CONDUCTOR CONTROL AND AUDIO CABLES (NOT PAIRED)

Description and Gauge	Trade Number	No. of Cond.	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Color Code or Chart No.	Standard Spool Lengths in ft.
 **Telephone Cable** *Bare copper, polyethylene insulated, cabled, rose gray vinyl jacket.*	**8795**	2	22 (Solid)	.016	.022	.160	Red, Grn	500, 1000
	8794	3	22 (Solid)	.016	.022	.168	Red, Grn, Yel	500, 1000
All Constructions: *Tinned copper, vinyl plastic insulated, cabled, chrome vinyl jacket.* **22 GAUGE** 	**8443**	3	22 (7x30)	.010	.025	.150	1	25, 100, 250, 500, 1000
	8444	4	22 (7x30)	.010	.025	.168	1	25, 100, 250, 500, 1000
	8445	5	22 (7x30)	.010	.025	.180	1	25, 100, 250, 500, 1000
	8456	10	22 (7x30)	.010	.030	.260	1	100, 500, 1000
COMBINATION GAUGES **Suggested working voltage** *22 AWG—200V* *18 AWG—400V* 	**8457**	12	22 (7x30)	.010	.030	.260	1	100, 500, 1000
	8458	15	22 (7x30)	.010	.040	.320	2	100, 500, 1000
	8459	25	22 (7x30)	.010	.040	.370	2	100, 500, 1000
	8446	6	4-22 (7x30) 2-18 (16x30)	.010 .018	.025	.222	1	15, 100, 250, 500, 1000
	8447	7	5-22 (7x30) 2-18 (16x30)	.010 .018	.028	.246	1	100, 250, 500, 1000
	8448	8	6-22 (7x30) 2-18 (16x30)	.010 .018	.028	.250	1	15, 100, 250, 500, 1000
	8449	9	7-22 (7x30) 2-18 (16x30)	.010 .018	.028	.261	1	15, 100, 250, 500, 1000
18 GAUGE  *400 Volts suggested working voltage.*	**8489**	4	18 (16x30)	.018	.030	.250	1	100, 250, 500, 1000
	8465	5	18 (16x30)	.018	.037	.286	1	100, 250, 500, 1000
	8467	7	18 (16x30)	.018	.037	.324	1	100, 250, 500, 1000
	8469	9	18 (16x30)	.018	.037	.379	1	100, 250, 500, 1000
	8466	12	18 (16x30)	.018	.040	.412	2	100, 250, 500, 1000
	8468	15	18 (16x30)	.018	.045	.490	2	100, 500, 1000
	8619	19	18 (16x30)	.018	.045	.505	2	500, 1000
16 & 14 GAUGE  *600 Volts suggested working voltage.*	**8620**	4	16 (19x29)	.030	.045	.375	2	100, 500, 1000
	8621	7	16 (19x29)	.030	.045	.455	2	100, 500, 1000
	8622	12	16 (19x29)	.030	.060	.600	2	100, 500, 1000
	8623	15	16 (19x29)	.030	.060	.650	2	100, 500, 1000
	8624	19	16 (19x29)	.030	.065	.715	2	100, 500, 1000
	8627	4	14 (19x27)	.045	.045	.495	2	100, 500, 1000
	8628	7	14 (19x27)	.045	.060	.630	2	100, 500, 1000
	8629	12	14 (19x27)	.045	.065	.770	2	100, 500, 1000

COLOR CODE

Chart No. 1

Conductor	Color
1st	Black
2nd	Red
3rd	Green
4th	White
5th	Brown
6th	Blue
7th	Orange
8th	Yellow
9th	Purple
10th	Gray
11th	Pink
12th	Tan

18 Gauge conductors in cables 8446 through 8449 are Black and Red.

IPCEA COLOR CODE (Insulated Power Cable Engineers Association)

Chart No. 2

Conductor	Color	Conductor	Color	Conductor	Color
1st	Black	9th	Green/Black	17th	White/Red
2nd	White	10th	Orange/Black	18th	Orange/Red
3rd	Red	11th	Blue/Black	19th	Blue/Red
4th	Green	12th	Black/White	20th	Red/Green
5th	Orange	13th	Red/White	21st	Orange/Green
6th	Blue	14th	Green/White	22nd	Blk/Wht/Red
7th	White/Black	15th	Blue/White	23rd	Wht/Blk/Red
8th	Red/Black	16th	Black/Red	24th	Red/Blk/Wht
				25th	Grn/Blk/Wht

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microphone and shielded power supply cables

BELDEN

MICROPHONE CABLES

Belden Microphone Cables are designed for flexible service at audio frequencies. They are used not only for microphones, but also for home entertainment equipment, instruments, tape recorders and shielded power supplies.

Shielded single conductor cables are used in high impedance systems, while multiple conductor cables are used in low impedance applications.

All cables are precision-engineered and manufactured to transmit clear signals and to cancel out hum pick-up and crosstalk interference. They are designed to withstand the flexing and normal abuse of studio, laboratory and home usage.

RUBBER, HYPALON AND NEOPRENE MICROPHONE AND SHIELDED POWER SUPPLY CABLES

Description	Trade Number	No. of Cond.	AWG (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Percent Shield Coverage	Suggested Working Voltage	Impedance (Ohms)	Nom. *Cap. (mmf/ft)	Nom. **Cap. (mmf/ft)	Standard Spool Lengths in ft
SINGLE CONDUCTOR	**8410**	1	25 (7x33)	.063	.025	.245	80	3000 DC	52	—	33	25, 50, 100, 250, 500
		3 strands copper, 4 strands Copperweld tinned, cellulose yarn braid, rubber insulated, rayon braid, tinned copper braid shield, cellulose yarn wrap, black rubber jacket.										
MINIATURE	**8413**	2	24 (45x40)	.019	.025	.190	100	300	—	38	71	15, 25, 50, 100, 250, 500
	8406	3	24 (45x40)	.019	.025	.223	100	300	—	43	76	100, 250, 500
		Tinned cadmium bronze, cotton serve, rubber insulated, cabled with fillers, conductive textile serve, tinned copper braid shield, cotton serve, black rubber jacket.										
MULTIPLE CONDUCTOR	**8412**	2	20 (26x34)	.020	.043	.268	84	600	—	42	68	25, 50, 100, 250, 500, 1000
	8402	2	20 (26x34)	.020	.040	.268	84	600	—	42	68	100, 250, 500
		Brown Hypalon jacket.—Heavy Duty.										
	8428	2	18 (41x34)	.022	.038	.295	91	600	—	47	80	100, 500, 1000
		Black neoprene jacket—Heavy Duty										
	8408	2	16 (65x34)	.032	.040	.385	84	600	—	32	56	100, 250, 500
		Brown Hypalon jacket.—Heavy Duty										
	8423	3	20 (26x34)	.020	.040	.277	84	600	—	50	85	15, 50, 100, 250, 500, 1000
	8424	4	20 (26x34)	.020	.040	.295	83.5	600	—	55	95	15, 50, 100, 250, 500, 1000
Tinned copper, cotton wrap, rubber insulated, rayon braid, tinned copper braid shield, cotton wrap, black rubber jacket.	**8407**	4	16 (65x34)	.032	.043	.422	84	600	—	37	65	100, 250
		Black neoprene jacket—Heavy Duty										
	8425	5	20 (26x34)	.020	.040	.323	76	600	—	44	80	100, 250
	8426	6	20 (26x34)	.020	.040	.349	90	600	—	40	78	100, 250
	8427	7	20 (26x34)	.020	.043	.360	90	600	—	40	75	100, 250
	8418	8	20 (26x34)	.020	.043	.386	92	600	—	42	75	100, 250

VINYL MICROPHONE AND SHIELDED POWER SUPPLY CABLES

SINGLE CONDUCTOR	**8411**	1	25 (7x33)	.020	.020	.144	72	3500	52	—	37	15, 25, 50, 100, 250, 500, 1000
	8401▲	1	25 (7x33)	.043	.025	.200	74	5000	57	—	25	15, 25, 50, 100, 250, 500, 1000
		3 strands copper, 4 strands Copperweld, tinned, cellulose yarn braid, polyethylene insulated, tinned copper braid shield, chrome vinyl jacket. See 8421 page 22 for spiral wrapped shield version of these cables. Recommended for Hi-Fi use.										
MINIATURE	**8420**	2	24 (45x40)	.015	.020	.185	77	500	—	22	40	15, 25, 50, 100, 250, 500
		Tinned cadmium bronze, cotton wrap, polyethylene insulated, cabled with fillers, rayon braid, tinned copper braid shield, chrome vinyl jacket.										
MULTIPLE CONDUCTOR	**8422**	2	22 (16x34)	.023	.023	.231	87	1000	—	18	32	15, 25, 50, 100, 250, 500, 1000
	8403	3	20 (26x34)	.015	.033	.244	89	600	—	25	45	15, 50, 100, 250, 500, 1000
Tinned copper, polyethylene insulated, cabled, rayon braid, tinned copper braid shield, chrome vinyl jacket.	**8404**	4	20 (26x34)	.015	.033	.255	87	600	—	25	45	15, 100, 250, 500, 1000
	8405	5	20 (26x34)	.015	.035	.275	83	600	—	25	45	250, 500 ,1000

RUBBER—HYPALON—NEOPRENE—PLASTIC

See page 13 for conductor color coding

▲See 8421 Page 14 for spiral wrapped shield version of 8401—Recommended for Hi-Fi use.

**Capacitance between conductors.* ***Capacitance between 1 conductor and remaining conductors (if any) connected to shield.*

PLASTIC CABLES RECOMMENDED FOR: Lower capacitance, lower loss, greater ozone and oil resistance, lighter weight, smaller diameter.
RUBBER CABLES RECOMMENDED FOR: Greater abrasion and impact resistance, and extra limpness so cable will lie flat on stage or studio floor.
NEOPRENE AND HYPALON CABLES RECOMMENDED FOR: Outside use, cold weather applications. Resistant to effects of sun, oil, and ozone.

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BELDEN

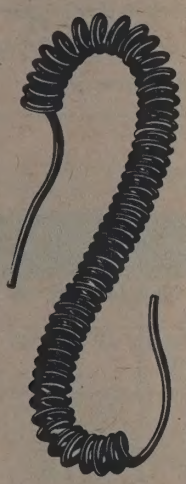
COILED CORDS

Retractile cords keep telephone and microphone cables from tangling and cluttering desk tops, communications consoles and the front seats of motor vehicles. Belden manufactures a full line of high quality retractile coiled cord products for a wide number of applications.

Belden retractile cables and cords are used for telephone equipment; ham and citizen band radios; hand and desktop microphones; language lab equipment; musical instruments; mobile controls and mobile communications equipment and for a variety of assorted industrial applications.

The specially designed conductors and shields of Belden retractile cords are constructed to withstand rugged use and to minimize replacement frequency.

RETRACTILE (COILED) MICROPHONE CABLES



Description	Trade Number	No. of Cond.	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Nom. Coil O.D. (Inch)	Percent Shield Coverage	Nom. ***Cap. (mmf/cord)	Retracted Length (Inch)	Practical Extended Length (Feet)	Standard Put-Up
	8409	4 unshielded	28 (7x36)	.005	.050	.165	5/16	No shield	—	12	6	1
		Tinned copper, nylon insulated, neoprene jacket.										
	8415	4 unshielded	23 (21x36)	.020	.055	.250	7/8	No shield	—	11½	6	1, 50
		5 strands TCW, 16 strands TC rubber insulated, paper tape, neoprene jacket.										
	8499	1 shielded	24 (45x40)	.019	.043	.160	11/16	80	285	7½	4	1
		Tinned cadmium bronze, rubber insulated, spiral TC shield, cotton wrap, neoprene jacket.										
	8605	1 shielded	24 (19x36)	.021	.042	.160	11/16	87	550	21½	12	1
		Tinned copper, polypropylene insulated, spiraled TC shield, Gray PVC jacket.										
	8497	3 1 shielded 2 unshielded	23 (21x36)	.020	.046	.250	7/8	100	480	11½	6	1, 50
		5 strands TCW, 16 strands TC, rubber insulated double BELDFOIL® aluminum polyester shield with drain wire same as conductors, paper tape, neoprene jacket.										
	8491	4 2 individually shielded 2 unshielded	23 (21x36)	.020	.050	.300	1 1/16	100	480	12	6	1
		5 strands, TCW, 16 strands TC, rubber insulated, double BELDFOIL® aluminum polyester shield with drain wire same as conductors, paper tape, neoprene jacket.										
	8490	5 unshielded	23 (21x36)	.020	.045	.265	7/8	No shield	—	11½	6	1
		5 strands TCW, 16 strands TC, rubber insulated, paper tape, neoprene jacket.										

NEOPRENE RETRACTILE (COILED) POWER CONTROL CABLES

Longer lengths are available on request.

Trade Number	No. of Cond.	UL Type	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Nom. Coil O.D. (Inch)	Retracted Length (Inch)	Practical Extended Length (Feet)	Standard Put-Up
8601	2	SVO	18 (41x34)	.016	.045	.270	1	12	6	1
8602	3	SJO	18 (41x34)	.031	.045	.360	1⅜	12	6	1
8603	3	SJO	16 (65x34)	.031	.045	.370	1½	12	6	1
8604	3	SJO	16 (65x34)	.031	.045	.370	1½	22	12	1

Bare copper, paper wrap, rubber insulation, cabled with fillers, paper tape wrap, black neoprene jacket. 6" straight portion each end. Jacket removed 1½" each end.

VINYL RETRACTILE (COILED) TELEPHONE CORDS

Description	Trade Number	No. of Cond.	AWG & (Stranding)	Insulation Thickness (inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Nom. Coil O.D. (Inch)	Retracted Length (Inch)	Practical Extended Length (Feet)	Standard Put-Up
	8495	3	23 (21x36)	.020	.041	.220	7/8	10	4½	1
	8494	4	23 (21x36)	.020	.043	.245	7/8	10	4½	1

Bare cadmium bronze, vinyl insulated, cabled, paper wrapped, black vinyl jacket. 8494 one end stripped 7¾", spade terminals attached and hook strain relief clamped over jacket. Other end stripped 6¼" and spade terminals attached. 8495 one end stripped 2¾", spade terminals attached and hook strain relief clamped over jacket. Other end stripped 3 7/16" and spade terminals attached.

CONDUCTOR COLOR CODING

Color coding of individual conductors for cables on this page and microphone cables on page 12.

(1) White, (2) Black, (3) Red, (4) Green, (5) Blue, (6) Brown, (7) Yellow, (8) Orange.

****Capacitance of shielded conductor.*

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hi-fi and stereo cables, language lab cable, portable cordage and test prod wire

BELDEN

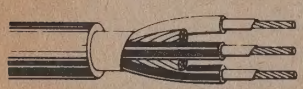
HI-FI AND STEREO CABLES

Description	Trade Number	No. of Cond.	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Cond. Color Coding	Nom. Cap. between condrs. (mmf/ft)	Nom. Cap. condr. to other condr. & shield (mmf/ft)	Standard Spool Lengths in ft
Hi-Fi Connecting Cable	**8421**	1	25 (7x33)	.050	.025	.180	—	18	—	15, 25, 50, 100, 250
			3 strands tinned copper and 4 tinned Copperweld, cellular polyethylene insulated, tinned copper spiral wrapped shield, chrome vinyl jacket.							
BELDFOIL® Miniature Audio Connecting Cable totally shielded	**8417•**	1	25 (7x33)	.020	.026	.140	—	25	—	15, 25, 50, 100, 250
			3 strands tinned copper and 4 tinned Copperweld, cellular polyethylene insulated, double BELDFOIL aluminum-polyester shield, inner shield folded 26 AWG stranded tinned copper, ground drain wire, chrome vinyl jacket.							

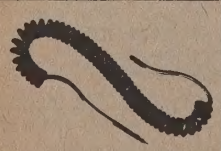
LANGUAGE LAB CABLE

Dual Channel Audio Cable for head set, stereo and language labs	**8416**	2	25 (7x33)	.018	.020	.106 x .213	1 Clear 1 Red	35 each channel	—	15, 25, 50, 100, 250
			3 strands tinned copper and 4 tinned Copperweld, polyethylene insulated, individual tinned copper spiral wrapped shield, chrome vinyl jacket, polarity rib on red conductor.							

RUBBER-VINYL MULTI-CONDUCTOR PORTABLE CORDAGE

Description	Trade Number	Ø U.L. Type	Insulation	No. of Conductors	AWG & (Stranding)	Insulation Thickness (Inch)	Conductor Coding	Jacket Thickness (Inch)	Nominal O.D. (Inch)	Color	Standard Spool Lengths in ft
	8462	SP-1	Rubber	2	18 (41x34) Tinned	.031	Polarity Ribbed	—	.123 x .223	Brown or Ivory	25, 100, 250
	8888	SPT-1	Vinyl	2	18 (41x34)	.031	Polarity Ribbed	—	.110 x .207	Brn, Ivory, or Gray	25, 100, 250
			Two conductors, stranded copper, parallel, insulated with one conductor polarity ribbed.								
 *Stranded copper, rubber insulated, cabled with fillers, rubber jacket.*	**8452**	SV	Rubber	2	18 (41x34)	.016	Blk, Wht	.031	.245	Black	25, 50, 100, 250, 500, 1000
	8478	SJ	Rubber	2	18 (41x34)	.031	Blk, Wht	.031	.298	Black	100, 250, 1000
	8472	SJ	Rubber	2	16 (65x34)	.031	Blk, Wht	.031	.325	Black	25, 100, 250
	8474	—	Rubber	2	14 (41x30)	.031	Blk, Wht	.035	.360	Black	100, 250
	8453	SV	Rubber	3	18 (41x34) Tinned	.016	Blk, Wht, Green	.031	.265	Black	50, 100, 500
	8479	—	Rubber	3	14 (41x30)	.031	Blk, Wht, Green	.035	.380	Black	100, 250
	8454	—	Rubber	4	18 (41x34) Tinned	.016	Blk, Wht, Brn, Red	.031	.265	Black	50, 100, 500, 1000
	8455	—	Rubber	5	3—20 (26x34) 2—18 (41x34) Tinned	.015 .015	Brn, Grn, White Blk, Red	.031	.280	Black	100, 250

TEST PROD WIRE

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Breakdown Voltage	Suggested Working Voltage	Standard Package	Standard Spool Lengths in ft
	8899	18 (65x36)	.045	.144	20,000	5,000	—	10, 14*, 25**, 100**, 500**, 1000
		*7' of red and 7' of black. **Also available in blue, white, gray, green or yellow.*						
Tinned copper, separator, rubber insulated, red or black.	**8897**	18 (65x36)	.045	.144	20,000	5,000	—	500, 1000
		Manufactured per MIL-W-13169						
Miniature	**8898**	18 (65x36)	.088	.230	29,000	10,000	—	10, 25, 100, 500
	8890	24 (45x40)	.019	.066	10,000	1,000	—	25, 100, 500
	**8878** With Prods	20 (42x36)	.063	.173	20,000	5,000	1 pair Red and Black	—
		Stranded tinned copper rubber insulated with 4" long solderless threaded plastic "phone tip" test prod ⅜" diameter on one end and 1" long solderless threaded plastic "phone tip" test prod ⅜" diameter on the other end. 5 ft. in length retracts to 8 inches. Is recommended for use with multimeters.						
	8879 Without Prods	20 (42x36)	.063	.173	20,000	5,000	1 pair Red and Black	—
		Tinned copper, rubber insulated, 5 ft. in length retracts to 8 inches.						

‡For intermittent duty only ⊖U.L. Type rating only: 300V-60°C •Belden U.S. Patent 3,032,604.

All breakdown voltages and suggested working voltages are AC RMS values.

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tv camera cable and 75 ohm video cables

TV CAMERA CABLES

Belden TV Broadcast and Closed Circuit TV Camera Cables assure reliable circuit isolation thereby reducing a-c hum and minimizing crosstalk between circuits. They are made to withstand rugged service and to maintain high conductor insulation resistance regardless of ambient temperature changes.

Major uses for these cables are for controlling, powering and transmitting sound and picture information for monochrome and color TV cameras as well as for remote control, monitor and cue line systems.

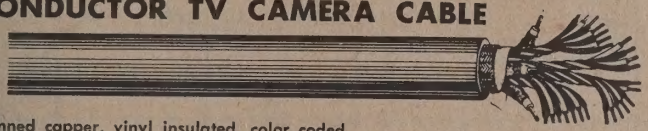
Belden TV Camera Cables are engineered to be lightweight, flexible and easy to terminate. They are manufactured and tested in accordance with Belden's own rigid and time-proven quality control standards in order to assure outstanding reliability, performance and service life.

8283-82 CONDUCTOR TV COLOR CAMERA CABLE

Designed to meet the critical electrical and physical requirements necessary for color television broadcast applications.

4-14 AWG (19x27) tinned copper, vinyl plastic insulated, color coded.
3-16 AWG (26x30) tinned copper, vinyl plastic insulated, color coded.
BELDFOIL® aluminum-polyester wrapped shield around the 7 conductors cabled with stranded tinned copper drain wire.
8 coaxial cables. Nom. Impedance 53.5 ohms, color coded.
67-22 AWG (7x30) tinned copper, vinyl plastic insulated, color coded, 7 under conductive textile shield with stranded ground wire.
Tinned copper braid shield.
Chrome vinyl plastic jacket. 1.22" Nom. O.D.
§Cut to customer's specified length. Maximum length 1000'.

8280-28 CONDUCTOR TV CAMERA CABLE

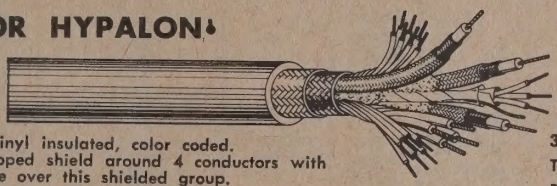


4-18 AWG (16x30) tinned capper, vinyl insulated, color coded.
21-22 AWG (7x30) tinned copper, vinyl insulated, cabled in 3 groups of 7, color coded.
3 coaxial cables. Nom. impedance 51 ohms, color coded.

A smaller, lighter weight cable designed to make long runs easier. For black and white (Monochrome) systems.

Tinned copper braid shield.
Chrome vinyl jacket. .750" Nom. O.D.
§Cut to customer's specified length.
Maximum length 1500'.

8286-28 CONDUCTOR HYPALON♦ TV CAMERA CABLE

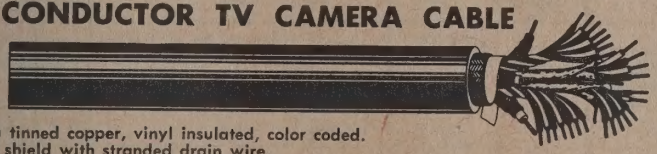


4-18 AWG (16x30) tinned copper, vinyl insulated, color coded. BELDFOIL aluminum-polyester wrapped shield around 4 conductors with stranded drain wire, polyester tape over this shielded group.
21-22 AWG (7x30) tinned copper vinyl insulated, cabled in 3 groups of 7, color coded, one group of 7 has a BELDFOIL aluminum-polyester wrapped shield overall with a stranded drain wire, polyester tape over this shielded group.

A 75 ohm cable designed to remain flexible in cold weather. Recommended for transistorized TV cameras.

3 coaxial cables. Nom. impedance 75 ohms.
Tinned copper braid shield.
Black Hypalon jacket. .730" O.D.
§Cut to customer's specified length.
Maximum length 1000'.

8284-24 CONDUCTOR TV CAMERA CABLE



17-22 AWG (7x30) tinned copper, vinyl insulated, color coded.
3 under BELDFOIL shield with stranded drain wire.
4-16 AWG (26x30) tinned copper, vinyl insulated, color coded.
3 coaxial cables. Nom. impedance 53.5 ohms, color coded.

Designed specifically for color TV transmission. This cable incorporates circuit isolation assuring the reduction in AC hum level and cross talk essential for color TV broadcasting.

Tinned copper braid shield. Heavy cotton braid.
Chrome vinyl plastic jacket. .800" Nom. O.D.
§Cut to customer's specified length. Maximum length 1000'.

8282-13 CONDUCTOR TV EYE CABLE

8-22 AWG (7x30) tinned copper vinyl insulated, color coded.
1-22 AWG (7x30) polyethylene insulated conductor.
2-18 AWG (16x30) tinned copper conductor vinyl insulated.
Black and Red.

Especially engineered for TV Eye Cameras. Recommended for remote control, monitor and cue line applications.

1-RG-58A/U cable 50-ohm coax.
1-72-ohm coax, stranded conductor, polyester tape wrapped.
Chrome vinyl jacket. .470" Nom. O.D.
§Cut to customer's specified length. Maximum length 2000'.

§Minimum length 25'. 25' to 99', plus 25' minus 0. 200' or over, plus 50', minus 0.
♦ DuPont trademark.

75 OHM PRECISION VIDEO CABLE

TYPICAL APPLICATIONS: Video signal transmission in Color and Monochrome TV studios. Provides high quality carrier of video signal with superior picture definition and eliminates problems of periodicity. Cable is manufactured with rigid control of concentricity and all dimensional tolerances. The black polyethylene jacket is inherently a non-contaminating, non-migratory compound. 100% SWEEP TESTED.

Description	Trade Number	AWG & (Stranding) Material	Nom. O.D. (Inch)	Percent Shield Coverage	Nom. Impedance (Ohms)	Nom. Velocity of Propagation	Nom. Cap. (mmf/ft)	Nom. Attenuation per 100' kc or mc	Nom. Attenuation per 100' db	Standard Spool Lengths in ft.
	8281	20 (Solid) bare copper	.304	96.4	75	66%	21.	10 KC 100 KC 1 MC 10 MC 100 MC	.06 .08 .25 .78 2.70	500, 1000
		Conductor, polyethylene insulated, tinned copper double braid shield, black polyethylene jacket.								
Miniature	8279	23 (7x31)	.220	96	75	66%	21.	10 KC 100 KC 1 MC 10 MC 100 MC	.14 .15 .35 1.30 4.90	100, 250 500
		Tinned compacted conductor, polyethylene insulated, tinned copper braid shield, black polyethylene jacket. Fit RG59/U connectors.								

Compacted conductor combines impedance uniformity of solid conductor and "nick-resistance" of stranded conductor.

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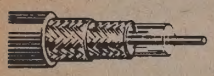
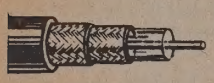
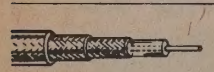
RG/U transmission line cables

BELDEN

COAXIAL CABLES***

Description	Trade Number	RG No.	AWG & (Stranding) Material	Insulation	No. of Shields & Material	Jacket	Nom. O.D. (Inch)	Nom. Imp. (Ohms)	Nom. Vel. of Prop.	Nom. Cap. (mmf/ft.)	Nom. Attenuation per 100' mc	Nom. Attenuation per 100' db	Standard Spool Lengths in ft.
	**8264**	5A/U JAN-C-17A	16 (Solid) silver coated copper	Polyethylene	2 silver-coated copper	Gray non-contaminating vinyl	.328	50	66%	30.8	100 200 400	2.40 3.50 5.25	500 1000
	**8215**	6A/U Type	21 (Solid) bare Copperweld	Polyethylene	2 bare copper	Black polyethylene	.332	75	66%	20.5	50 100 200 300 400	2.0 2.9 4.3 5.4 6.5	100, 500, 1000
			100% SWEEP TESTED										
	8237	8/U JAN-C-17A	13 (7x21) bare copper	Polyethylene	1 bare copper	Black vinyl	.405	52	66%	29.5	100 200 400	2.10 3.30 4.50	50, 100, 250, 500 1000
	8214	8/U Type	11 (7x19) bare copper	Cellular Polyethylene	1 bare copper	Black vinyl	.403	50	78%	26	50 100 200 300 400	1.20 1.80 2.60 3.30 3.80	50, 100 250 500 1000
	8242	9/U JAN-C-17A	13 (7x21) silver coated copper	Polyethylene	2 inner-silver-coated outer-bare copper	Gray non-contaminating vinyl	.420	51	66%	30.0	100 200 400	2.10 3.30 4.50	100 1000
	8243‡	9B/U MIL-C-17D	13 (7x21) silver coated copper	Polyethylene	2 silver coated copper	Black non-contaminating vinyl	.420	50	66%	30.8	100 200 400	2.10 3.30 4.50	500 1000
	8238	11/U JAN-C-17A	18 (7x26) tinned copper	Polyethylene	1 bare copper	Black vinyl	.405	75	66%	20.5	100 200 400	1.90 2.85 4.35	100 250, 500 1000
	8213	11/U Type	14 (Solid) bare copper	Cellular Polyethylene	1 bare copper	Black polyethylene	.405	75	78%	17.3	50 100 200 300 400	1.0 1.5 2.3 2.9 3.4	500, 1000, 2000
			100% SWEEP TESTED										
	8261‡	11A/U MIL-C-17D	18 (7x26) tinned copper	Polyethylene	1 bare copper	Black non-contaminating vinyl	.405	75	66%	20.5	100 200 400	1.90 2.85 4.35	100 500 1000
	8239	54A/U JAN-C-17A	18 (7x.0152) bare copper	Polyethylene	1 tinned copper	Clear polyethylene	.245	58	66%	26.5	100 200 400	3.10 4.40 6.70	500 1000
	**8245**	55/U JAN-C-17A	20 (Solid) bare copper	Polyethylene	2 tinned copper	Clear polyethylene	.201	53.5	66%	28.5	100 200 400	4.10 6.20 9.50	500 1000
	8240	58/U JAN-C-17A	20 (Solid) bare copper	Polyethylene	1 tinned copper	Black vinyl	.195	53.5	66%	28.5	100 200 400	4.10 6.20 9.50	25, 50, 100 250, 500 1000
	8219	58/AU Type	20 (19x32) tinned copper	Cellular Polyethylene	1 tinned copper	Black vinyl	.195	50	78%	26	50 100 200 300 400	3.6 4.8 7.6 8.5 10.1	100 500 1000

‡ Manufactured to current Government specifications and subsequent revisions.

***RG/U cables combine low capacitance and low attenuation. The virgin polyethylene insulation assures constant electrical characteristics regardless of changes in frequency or temperature. Note: Max. rating of polyethylene is 80°C (176°F).

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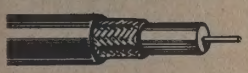
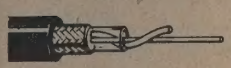
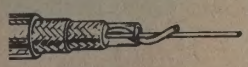
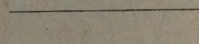
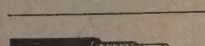
RG/U transmission line cables

BELDEN

COAXIAL CABLES (Cont'd)

Description	Trade Number	RG No.	AWG & (Stranding) Material	Insulation	No. of Shields & Material	Jacket	Nom. O.D (Inch)	Nom. Imp. (Ohms)	Nom. Vel. of Prop.	Nom. Cap. (mmf ft.)	Nom. Attenuation per 100 mc	Nom. Attenuation per 100 db	Standard Spool Lengths in ft.
	8259	58A/U JAN-C-17A	20 (19x.0071) tinned copper	Polyethylene	1 tinned copper	Black vinyl	.195	50	66%	30.8	100 200 400	5.30 8.20 12.60	25,50 100, 500 1000
	8262‡	58C/U MIL-C-17D	20 (19x.0071) tinned copper	Polyethylene	1 tinned copper	Black non-contaminating vinyl	.195	50	66%	30.8	100 200 400	5.30 8.20 12.60	500 1000
	8241	59/U JAN-C-17A	22 (Solid) bare Copperweld	Polyethylene	1 bare copper	Black vinyl	.242	73	66%	21.0	100 200 400	3.75 5.60 8.30	25, 50, 100, 250, 500,1000
	**8211**	59/U Type	22 (Solid) bare Copperweld *100% SWEEP TESTED*	Cellular Polyethylene	1 bare copper	Black Polyethylene	.242	75	78%	16.3	50 100 200 300 400	2.4 3.4 4.8 5.8 6.7	500, 1000, 2000
	8212	59/U Type	20 (Solid) bare Copperweld *100% SWEEP TESTED*	Cellular Polyethylene	1 bare copper	Black Polyethylene	.242	75	78%	17.3	50 100 200 300 400	2.3 3.2 4.5 5.5 6.3	500, 1000, 2000
	8221	59/U Type	22 (Solid) bare Copperweld *100% SWEEP TESTED*	Cellular Polyethylene	1 bare copper	Gray, White, Black vinyl	.242	75	78%	16.3	50 100 200 300 400	2.4 3.4 4.8 5.8 6.7	100, 500, 1000
	8263‡	59B/U MIL-C-17D	.023 (Solid) bare Copperweld	Polyethylene	1 bare copper	Black non-contaminating vinyl	.242	75	66%	20.5	100 200 400	3.75 5.60 8.30	500 1000
	**8254**	62/U JAN-C-17A	22 (Solid) bare Copperweld	Semi-solid Polyethylene	1 bare copper	Black vinyl	.242	93	84%	13.5	100 200 400	3.10 4.40 6.30	100 500 1000
	8255	62B/U MIL-C-17D	24 (7x32) bare Copperweld	Semi-solid Polyethylene	1 bare copper	Black non-contaminating vinyl	.242	93	84%	13.5	100 200 400	3.10 4.40 6.30	500 1000
	**8257**	71/U JAN-C-17A	22 (Solid) bare Copperweld	Semi-solid Polyethylene	2 tinned copper	Clear Polyethylene	.245	93	84%	13.5	100 200 400	3.10 4.40 6.30	500 1000
	8258‡	71B/U MIL-C-17D	22 (Solid) bare Copperweld	Semi-solid Polyethylene	2 tinned copper	Black polyethylene	.245	93	84%	13.5	100 200 400	3.10 4.40 6.30	500 1000
	8216	174/U MIL-C-17D	26 (7x34) bare Copperweld	Polyethylene	1 tinned copper	Black vinyl	.100	50	66%	30.8	100 200 400	8.8 13.0 20.0	100 500 1000
	**8265‡**	178B/U MIL-C-17D	30 (7x38) Silver coated Copperweld	TFE TEFLON	1 Silver coated copper	Brown FEP TEFLON■	.072	50	69.5%	29	400	29.0 Max.	100 500
	**8266‡**	180B/U MIL-C-17D	30 (7x38) Silver coated Copperweld	TFE TEFLON	1 Silver coated copper	Brown FEP TEFLON	.142	95	69.5%	15	400	17.0 Max.	100 500
	8269‡	188A/U MIL-C-17D	26 (7x.0067) Silver coated Copperweld	TFE TEFLON	1 Silver coated copper	White TFE TEFLON	.106	50	69.5%	29	400	20.0 Max.	100 500

■*Trademark of DuPont*

‡Manufactured to current Government specifications and subsequent revisions.

REQUEST QUOTATIONS ON PRODUCTION QUANTITIES OF RG/U CABLES NOT LISTED.

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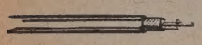
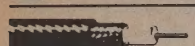
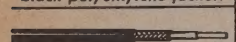
RG/U transmission line and High Voltage cables

BELDEN

COAXIAL CABLES (Cont'd)

Description	Trade Number	RG No.	AWG & (Stranding) Material	Insulation	No. of Shields & Material	Jacket	Nom. O.D. (Inch)	Nom. Imp. (Ohms)	Nom. Vel. of Prop.	Nom. Cap. (mmf ft.)	Nom. Attenuation per 100' mc	Nom. Attenuation per 100' db	Standard Spool Lengths in ft.
	**8270‡**	196A/U MIL-C-17D	30 (7x38) Silver coated Copperweld	TFE TEFLON■	1 Silver coated copper	White TFE TEFLON■	.076	50	69.5%	29	400	29.0 Max.	100 500
	8267‡	213/U MIL-C-17D	13 (7x21) bare copper	Polyethylene	1 bare copper	Black non-contaminating vinyl	.405	50	66%	30.8	100 200 400	2.10 3.30 4.50	500 1000
	8268	214/U MIL-C-17D	13 (7x.0296) Silver coated copper	Polyethylene	2 Silver coated copper	Black non-contaminating vinyl	.425	50	66%	30.8	100 200 400	2.10 3.30 4.50	500 1000
	**8218**	—	27 (7x35) bare Copperweld	Polyethylene	1 tinned copper	Black vinyl	.150	75	66%	20.5	100 200 400	5.7 8.4 12.5	100 500 1000
Triaxial *Conductor, cellular polyethylene insulated, bare copper braid shield, polyethylene insulated, bare copper braid shield, black polyethylene jacket.*	**8232**	59/U Type Double Shield *100% SWEEP TESTED*	20 (Solid) bare Copperweld	Cellular Polyethylene	2 bare copper	Black Polyethylene	.315	75	78%	17.3	50 100 200 300 400	2.3 3.2 4.5 5.5 6.3	500,1000, 2000
	8233	11/U Type Double Shield *100% SWEEP TESTED*	14 (Solid) bare copper	Cellular Polyethylene	2 bare copper	Black Polyethylene	.475	75	78%	17.3	50 100 200 300 400	1.0 1.5 2.3 2.9 3.4	500,1000, 2000
	**8700•**	—	28 (Solid) tinned copper	Polypropylene	1 bare copper	Black vinyl	.054	32	66%	48	400	5.5	25, 50, 100, 250

■*Trademark of DuPont* •*80 Percent shield coverage suggested working voltage 100*

‡Manufactured to current Government specifications and subsequent revisions.

REQUEST QUOTATIONS ON PRODUCTION QUANTITIES OF RG/U CABLES NOT LISTED.

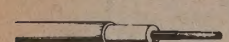
HIGH VOLTAGE CABLES

Belden High Voltage Cables are designed for use by public utilities and laboratories in testing high voltage equipment and apparatus. Through their use, potentially dangerous conditions can be detected both before installation and at intervals during service.

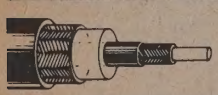
Belden High Voltage Test Cables are engineered to achieve the best possible performance at continual rated voltages. Their special design incorporates the use of conductive polyethylene over the center conductor, bonded to the polyethylene dielectric material. This provides uniform voltage stress distribution around the center conductor and results in an increased elimination of degradation due to internal corona.

For special cables up to 600 KVDC ratings, please ask for individual quotation.

HIGH VOLTAGE CATHODE-RAY TUBE LEAD

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Jacket Color	Breakdown Voltage	Suggested Working Voltage	Standard Spool Lengths in ft.
 *Tinned copper, conductive polyethylene, polyethylene insulated, vinyl jacket.*	**8866**	18 (41x34)	.057	.015	.208	Red	110,000	40,000	25, 100, 500
	8868	22 (7x30)	.045	.015	.150	Red	50,000	25,000	25, 100, 500
	8869	22 (7x30)	.030	.015	.120	Black	35,000	17,000	25, 100, 500

HIGH VOLTAGE CABLE

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Jacket Color	Breakdown Voltage	Suggested Working Voltage	Standard Spool Lengths in ft.
	8870	22 (Solid) Copperweld	.142	.020	.440	Black	160,000 D.C.	80,000 D.C.	100
		Solid Copperweld, conductive polyethylene, polyethylene insulation, tinned copper braid equipotential sheath, black polyethylene jacket.							
	**8871**	16 (Braided)	.270	.025	.830	Black	400,000 D.C.	200,000 D.C.	25, 100
		Tinned copper braid (CMA equivalent to 16 AWG) over solid polyethylene rod, black conductive polyethylene, clear polyethylene insulation, tinned copper braid, black polyethylene jacket.							

Conductive polyethylene over inner conductor combined with a copper wire braid over the dielectric provides uniform distribution of voltage stress. Very high-voltage DC cable applied from 200 KVDC to 600 KVDC is available from Belden on special order. Consult Belden Engineering Department for AC or pulse applications.

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mil-w-16878 vinyl plastic

BELDEN

MILITARY SPECIFICATIONS PERTAINING TO BELDEN HOOK-UP WIRE

Belden's outstanding line of Hook-Up Wire represents a broad selection of quality products that meets the Military Specifications indicated on this and on the following pages.

Basically, from the customer's point of view, Military Specifications can be a helpful guide in determining specific information about cable construction, electrical limits and test data as an aid in comparing and selecting wiring products to meet the needs of specific applications.

The following Military Specifications cover the Belden Hook-Up Wire Products to be found in this catalog:

MIL-W-16878—Wire, Electrical, Insulated, High Temperature. Covers insulated wire for the internal wiring of meters, panels, and electrical and electronic equipment at temperatures ranging from 105°C to 200°C. The many types available in different voltages and thermal ratings are listed on the following pages to meet your individual requirements.

MIL-W-76—Wire and Cable, Hook-Up, Electrical, Insulated. Covers single conductor, plastic-insulated Hook-Up wire for the internal wiring of electrical and electronic equipment. The many types available in different voltages and outer covering are listed on the following pages to meet your individual requirements.

TYPE B—MIL-W-16878—VINYL—600V-105°C

Tinned copper, vinyl insulated.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools		
					100'	500'	1000'
8599	B-32	32 (7x40)	.010	.029	1 thru 10	—	1 thru 10
8598	B-30	30 (7x38)	.010	.032	1 thru 10	—	1 thru 10
8597	B-28	28 (7x36)	.010	.035	1 thru 10	—	1 thru 10
8505	B-26	26 (7x34)	.010	.039	1 thru 10 14 thru 22	— —	1 thru 10 14 thru 22
8509	B-24	24 (19x36)	.010	.045	9, 14 thru 22	—	9, 14 thru 22
8504	B-24	24 (7x32)	.010	.044	1 thru 10 14 thru 22	— —	1 thru 10 14 thru 22
8508	B-22	22 (19x34)	.010	.051	9, 14 thru 22	—	9, 14 thru 22
8503	B-22	22 (7x30)	.010	.050	1 thru 10 14 thru 22	— —	1 thru 10 14 thru 22
8507	B-20	20 (19x32)	.010	.059	9, 14 thru 22	—	9, 14 thru 22
8502	B-20	20 (7x28)	.010	.058	1 thru 10 14 thru 22	— —	1 thru 10 14 thru 22
8501	B-18	18 (7x26)	.010	.068	1 thru 10 14 thru 22	— —	1 thru 10 14 thru 22
8500	B-16	16 (19x29)	.010	.077	1 thru 10 14 thru 22	— —	1 thru 10 14 thru 22

First color in stripe combination is body color and second or third colors are stripes. (EXAMPLE: White/Black/Red.)

TYPE B—MIL-W-16878—VINYL-NYLON JACKET—600V-115°C

Tinned copper, vinyl insulated, nylon jacket overall.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools	
					100'	1000'
8515	B-26	26 (7x34)	.010	.045	1 thru 10	1 thru 10
8519	B-24	24 (19x36)	.010	.051	1 thru 10	1 thru 10
8514	B-24	24 (7x32)	.010	.050	1 thru 10 —	1 thru 10 —
8518	B-22	22 (19x34)	.010	.057	1 thru 10	1 thru 10
8513	B-22	22 (7x30)	.010	.056	1 thru 10 —	1 thru 10 —
8517	B-20	20 (19x32)	.010	.065	1 thru 10 —	1 thru 10 —
8512	B-20	20 (7x28)	.010	.064	1 thru 10 —	1 thru 10 —
8516	B-18	18 (19x30)	.010	.075	—	—
8511	B-18	18 (7x26)	.010	.074	1 thru 10 —	1 thru 10 —
8510	B-16	16 (19x29)	.010	.083	1 thru 10 —	1 thru 10 —

STOCK COLORS

1 Brown	6 Light Blue	11 Tan	16 White/Green	21 White/Gray	26 White/Black/Blue
2 Red	7 Violet (purple)	12 Pink	17 White/Yellow	22 White/Violet	27 White/Black/Brown
3 Orange	8 Gray (slate)	13 Dark Blue	18 White/Blue	23 White/Black/Red	28 White/Black/Orange
4 Yellow	9 White	14 White/Black	19 White/Brown	24 White/Black/Green	29 White/Black/Gray
5 Green	10 Black	15 White/Red	20 White/Orange	25 White/Black/Yellow	30 White/Black/Violet

Manufactured to current Government specifications and subsequent revisions.

First color in stripe combination is body color and second or third colors are stripes. (EXAMPLE: White/Black/Red.)

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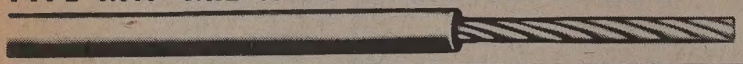
mil-w-76 vinyl plastic

MIL-W-76

Covers single conductor, plastic-insulated Hook-Up wire for the internal wiring of electrical and electronic equipment. The many types available in different voltages and outer covering are listed on the following pages to meet your individual requirements.

TYPE MW—MIL-W-76—VINYL—1000V-80°C



Tinned copper, vinyl insulated, medium wall. The extruded vinyl insulation is flame and ozone-resistant and is inert to most chemicals, oils, and solvents.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools			
					25	100′	500′	1000′
8525	MW-C 24 (7) U	24 (7x32)	.017	.058	—	1 thru 22	—	1 thru 22
8538	MW-C 24 (1) U	24 (Solid	.017	.054	—	1 thru 22	—	1 thru 22
8524	MW-C 22 (7) U	22 (7x30)	.017	.064	1 thru 13	1 thru 30	—	1 thru 30
8530	MW-C 22 (1) U	22 (Solid)	.017	.059	1 thru 13	1 thru 30	—	1 thru 30
8523	MW-C 20 (10) U	20 (10x30)	.017	.070	1 thru 13	1 thru 30	—	1 thru 30
8529	MW-C 20 (1) U	20 (Solid)	.017	.066	1 thru 13	1 thru 22	—	1 thru 22
8522	MW-C 18 (16) U	18 (16x30)	.017	.080	1 thru 13	1 thru 30	—	1 thru 30
8528	MW-C 18 (1) U	18 (Solid)	.017	.074	—	1 thru 13	—	1 thru 13
8521	MW-C 16 (26) U	16 (26x30)	.019	.098	—	1 thru 22	—	1 thru 22
8531	MW-C 16 (1) U	16 (Solid)	.017	.085	—	1 thru 10	—	1 thru 10
8520	MW-C 14 (41) U	14 (41x30)	.020	.111	—	1 thru 22	—	1 thru 22
8527	MW-C 12 (65) U	12 (65x30)	.020	.130	—	1 thru 10	—	1 thru 10

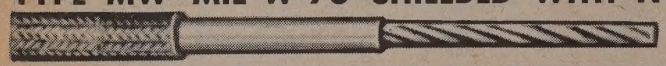
First color in stripe combination is body color and second or third colors are stripes. (EXAMPLE: White/Black/Red.)

TYPE MW—MIL-W-76 VINYL-NYLON—1000V-90°C

Tinned copper, vinyl insulated. Medium wall, clear nylon jacket overall.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools			
					25′	100′	500′	1000′
8537	MW-C 22 (7) J	22 (7x30)	.017	.069	—	1 thru 10	—	1 thru 10
8536	MW-C 20 (10) J	20 (10x30)	.017	.076	—	1 thru 10	—	1 thru 10
8535	MW-C 18 (16) J	18 (16x30)	.017	.086	—	1 thru 10	—	1 thru 10

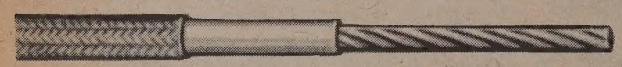
TYPE MW—MIL-W-76—SHIELDED WITH NYLON JACKET—1000V-80°C



Tinned copper, vinyl insulated. Medium wall, tinned copper shield, nylon jacket.

Number Trade	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. Inches)	Stock Colors on Standard Spools		
					100′	500′	1000′
8893	MW-C 22 (7) SJ	22 (7x30)	.017	.096	9	9	9
8896	MW-C 20 (10) SJ	20 (10x30)	.017	.105	9	9	9
8892	MW-C 18 (16) SJ	18 (16x30)	.017	.114	9	9	9
8894	MW-C 16 (26) SJ	16 (26x30)	.019	.132	9	—	9

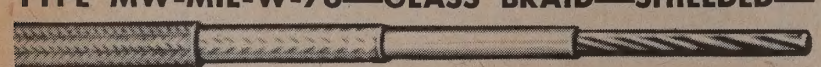
TYPE MW—MIL-W-76—SHIELDED WITHOUT NYLON JACKET—1000V-80°C



Tinned copper, vinyl insulated. Medium wall, tinned copper shield overall.

8887	MW-C 24 (7) S	24 (7x32)	.017	.082	1 thru 10	—	1 thru 10
8883	MW-C 22 (7) S	22 (7x30)	.017	.088	1 thru 10	—	1 thru 10
8886	MW-C 20 (10) S	20 (10x30)	.017	.096	1 thru 10	—	1 thru 10
8882	MW-C 18 (16) S	18 (16x30)	.017	.105	1 thru 10	—	1 thru 10
8884	MW-C 16 (26) S	16 (26x30)	.019	.122	1 thru 10	—	1 thru 10
8881	MW-C 14 (41) S	14 (41x30)	.020	.135	9, 10	—	9, 10
8880	MW-C 12 (65) S	12 (65x30)	.020	.154	9, 10	—	9, 10

TYPE MW-MIL-W-76—GLASS BRAID—SHIELDED— 1000V-80°C



Tinned copper, vinyl insulated. Medium wall, lacquered glass braid, tinned copper shield overall.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools	
					100′	1000′
8863	MW-C 22 (7) BS	22 (7x30)	.017	.102	9	9
8862	MW-C 20 (10) BS	20 (10x30)	.017	.110	9	9
8861	MW-C 18 (16) BS	18 (16x30)	.017	.119	9	9
8860	MW-C 16 (26) BS	16 (26x30)	.019	.136	9	9
8859	MW-C 14 (41) BS	14 (41x30)	.020	.149	9	9
8858	MW-C 12 (65) BS	12 (65x30)	.020	.168	9	9

For miniature shielded hook-up wire see 8700 on page 8

Manufactured to current Government specifications and subsequent revisions.

STOCK COLORS

1 Brown
2 Red
3 Orange
4 Yellow
5 Green
6 Light Blue
7 Violet (purple)
8 Gray (slate)
9 White
10 Black
11 Tan
12 Pink
13 Dark Blue
14 White/Black
15 White/Red
16 White/Green
17 White/Yellow
18 White/Blue
19 White/Brown
20 White/Orange
21 White/Gray
22 White/Violet
23 White/Black/Red
24 White/Black/Green
25 White/Black/Yellow
26 White/Black/Blue
27 White/Black/Brown
28 White/Black/Orange
29 White/Black/Gray
30 White/Black/Violet

BELDEN PAGE 20

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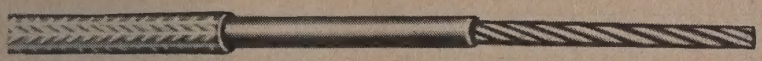
BELDEN

mil-w-76 vinyl plastic

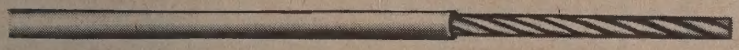
TYPE MW—MIL-W-76—VINYL-GLASS BRAID (OVERALL)— 1000V—80°C



Tinned copper, vinyl insulated. Medium wall, lacquered glass braid overall.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Voltage Rating	Stock Colors on Standard Spools		
						100′	500′	1000′
8566	MW-C 22 (7) B	22 (7x30)	.017	.078	1000V	1 thru 10	—	1 thru 10
8565	MW-C 20 (10) B	20 (10x30)	.017	.086	1000V	1 thru 10	—	1 thru 10
8564	MW-C 18 (16) B	18 (16x30)	.017	.095	1000V	1 thru 10	—	1 thru 10
8563	MW-C 16 (26) B	16 (26x30)	.019	.112	1000V	1 thru 10	—	1 thru 10
8562	MW-C 14 (41) B	14 (41x30)	.020	.125	1000V	9	—	9
8561	MW-C 12 (65) B	12 (65x30)	.020	.144	1000V	9	—	9

TYPE LW—MIL-W-76—VINYL—300V-80°C



Tinned copper, vinyl insulated. Light wall.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Type	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Temperature Rating	Stock Colors on Standard Spools	
							100′	1000′
8571	LW-C 28 (7) U	28 (7x36)	Vinyl	.011	.037	80C	1 thru 10	1 thru 10
8570	LW-C 26 (7) U	26 (7x34)	Vinyl	.011	.041	80C	1 thru 10	1 thru 10
8569	LW-C 24 (7) U	24 (7x32)	Vinyl	.011	.046	80C	1 thru 10	1 thru 10
8568	LW-C 22 (7) U	22 (7x30)	Vinyl	.012	.054	80C	1 thru 10	1 thru 10
8567	LW-C 20 (10) U	20 (10x30)	Vinyl	.012	.060	80C	1 thru 10	1 thru 10

TYPE HW—MIL-W-76—VINYL— Gauges 16-18, 2500V—80°C, Gauges 6-14 600V—80°C

Tinned copper, vinyl insulated. Heavy wall.

Trade Number	Type Designation	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools		
					100′	500′	1000′
8586	HW-C 18 (16) U	18 (16x30)	.034	.115	1 thru 10	—	1 thru 10
8585	HW-C 16 (19) U	16 (26x30)	.034	.128	2, 9, 10	—	2, 9, 10
8584	HW-C 14 (19) U	14 (41x30)	.048	.171	2, 9, 10	—	2, 9, 10
8583	HW-C 12 (19) U	12 (65x30)	.048	.191	2, 9, 10	—	2, 9, 10
8582	HW-C 10 (37) U	10 (105x30)	.048	.220	2, 9, 10	—	2, 9, 10
8581	HW-C 8 (127) U	8 (133x29)	.048	.261	2, 9, 10	—	—
8580	HW-C 6 (127) U	6 (133x27)	.048	.310	2, 9, 10	—	—

Manufactured to current Government specifications and subsequent revisions.
First color in stripe combination is body color and second or third colors are stripes. (EXAMPLE: White/Black/Red.)

STOCK COLORS

1 Brown	6 Light Blue	124 White/Brown	129 White/Blue
2 Red	7 Violet (purple)	125 White/Red	130 White/Violet
3 Orange	8 Gray (slate)	126 White/Orange	131 White/Gray
4 Yellow	9 White	127 White/Yellow	132 White/Black
5 Green	10 Black	128 White/Green	

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mil-w-5086 & mil-w-7078 aircraft wire

BELDEN

MIL-W-5086—TYPES 1 & 2—600V-105°C

Trade Number	MIL Type Designation	AWG & (Stranding)	Nom. O.D. (Inch)	Spec. Type	Stock Colors on Standard Spools 100′	500′	1000′	Stock Color
8541	AN-22	22 (19x34)	.068	No. 1	9	—	9	White only (9)
8542	AN-20	20 (19x32)	.078	No. 1	9	—	9	Additional Description
8543	AN-18	18 (19x30)	.088	No. 1	9	—	9	MIL-W-5086A-Type I
8544	AN-16	16 (19x29)	.098	No. 1	9	—	9	AN-22 thru AN-12.
8545	AN-14	14 (19x27)	.117	No. 1	9	—	9	Stranded tinned copper, white vinyl, clear nylon jacket.
8546	AN-12	12 (19x25)	.137	No. 1	9	—	9	
8559	AN-22	22 (19x34)	.075	No. 2	9	—	9	
8558	AN-20	20 (19x32)	.085	No. 2	9	—	9	MIL-W-5086A-Type II
8557	AN-18	18 (19x30)	.095	No. 2	9	—	9	AN-22 thru AN-12.
8556	AN-16	16 (19x29)	.105	No. 2	9	—	9	Stranded tinned copper, white vinyl insulation, saturated glass braid, clear nylon jacket.
8555	AN-14	14 (19x27)	.125	No. 2	9	—	9	
8554	AN-12	12 (19x25)	.143	No. 2	9	—	9	
8553	AN-10	10 (49x27)	.190	No. 2	9	—	9	
8552	AN-8	8 (133x29)	.240	No. 2	9	9	—	MIL-W-5086A-Type II
8551	AN-6	6 (133x27)	.293	No. 2	9	9	—	AN-12 thru AN-00
8550	AN-4	4 (133x25)	.355	No. 2	9	9	—	Stranded tinned copper, white vinyl insulation, saturated glass braid, nylon braid, nylon lacquer.
8549	AN-2	2 (665x30)	.425	No. 2	9	—	—	
8548	AN-0	0 (1045x30)	.525	No. 2	9	—	—	
8547	AN-00	00 (1330x30)	.590	No. 2	9	—	—	

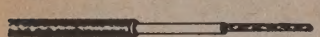
MIL-C-7078—TYPE 1—600V-105°C (MIL-W-5086 Type I Conductor Braided Tinned Copper Shield)

Trade Number	MIL Type Designation	AWG & (Stranding)	Nom. O.D. (Inch)	Spec. Type	Stock Colors on Standard Spools 100′	500′	1000′	Stock Color
8855	AN-22	22 (19x34)	.092	No. 1	9	—	9	White only (9)
8854	AN-20	20 (19x32)	.102	No. 1	9	—	9	Additional Description
8853	AN-18	18 (19x30)	.112	No. 1	9	—	9	Stranded tinned copper, white vinyl insulation, nylon jacket, braided tinned copper shield.
8852	AN-16	16 (19x29)	.122	No. 1	9	9	—	
8851	AN-14	14 (19x27)	.141	No. 1	9	—	—	
8850	AN-12	12 (19x25)	.156	No. 1	9	—	—	

Not certifiable to the latest revision of this specification.

hook-up and lead wires, grid wire, shielding and bonding cable

UL-600V-90°C (CSA-TYPE TRB)



Tinned cooper, vinyl insulated, cotton braid, lacquered.

Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors	Standard Spool Lengths in ft.
8937	22 (7x30)	.016	.091	1, 2, 3, 4, 5, 9, 10, 13	100, 1000
8936	20 (10x30)	.017	.098	1, 2, 3, 4, 5, 9, 10, 13	100, 1000
8935	18 (16x30)	.017	.113	1, 2, 3, 4, 5, 9, 10, 13	100, 1000
8934	16 (26x30)	.017	.126	1, 2, 3, 4, 5, 9, 10, 13	100, 500
8933	14 (41x30)	.031	.177	1, 2, 3, 4, 5, 9, 10, 13	100, 500

For color coding see Page 20.

UL rated 600V for electronic circuits only—300V for other applications.

UL-600V-105°C (CSA-600V-TYPE TEW)

Tinned copper, vinyl insulated.

Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors	Standard Spool Lengths in ft.
8920	22 (7x30)	.031	.095	1, 2, 3, 4, 5, 9, 10, 13	100, 1000
8919	20 (10x30)	.031	.102	1, 2, 3, 4, 5, 9, 10, 13	100, 1000
8918	18 (16x30)	.031	.112	1, 2, 3, 4, 5, 9, 10, 13	100, 1000
8917	16 (26x30)	.031	.126	1, 2, 3, 4, 5, 9, 10, 13	100, 500
8916	14 (41x30)	.031	.141	1, 2, 3, 4, 5, 9, 10, 13	100, 500

For color coding see Page 20.

UL rated 2500 volts peak for electronic circuits.

SHIELDING AND BONDING CABLES

Cables conforming to QQB575 can be manufactured on a special order basis.
Braided tinned copper. Standard Spool: 10, 50, 250 feet.°

Trade Number	Stranding	Approx. CMA	Recommended Current (Amps.)	Oval Max. I.D. (Inch)	Flat Width (Inch)
8676	16x36	400	5.5	1/32	3/64
8674	24x36	600	7.5	3/64	1/16
8652	96x40	920	10.0	1/16	3/32
8653	48x36	1200	12.0	3/32	7/64
8654	72x36	1800	16.0	7/64	1/8
8664	96x36	2400	20.0	1/8	5/32
8660	96x34	3800	27.0	5/32	3/32
8668	120x34	4700	30.0	3/16	5/16
8663	168x34	6700	38.0	5/16	7/16
8661	192x34	7600	42.0	1/2	9/16

Trade Number	Stranding	Approx. CMA	Recommended Current (Amps.)	Oval Max. I.D. (Inch)	Flat Width (Inch)
8669	336x34	13300	61.5	5/8	11/16
8672	528x36	13200	61.0	—	9/16
8671	864x36	21600	84.0	—	11/16
8662	576x34	22900	88.0	—	13/32
8655	360x30	36000	120.0	—	5/8
8670	480x30	48000	145.0	—	3/4
8656	576x30	57600	165.0	—	7/8
8657	768x30	76800	195.0	—	1 1/16
8658	1056x30	105600	235.0	—	1 3/8
8659	1680x30	168000	320.0	—	1 1/2

°8657, 8658, 8659 Available only in 10′ & 50′ put-ups.

For additional sizes, see current BRAIDED AND STRANDED COPPER CABLE CATALOG.

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teflon wire

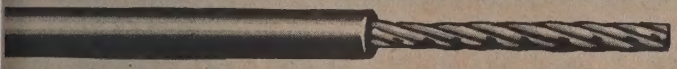
BELDEN

Teflon■ is a fluorinated thermoplastic with outstanding thermal physical and electrical properties. However, because the basic resin and processing costs are relatively high, Teflon is generally restricted to applications requiring its special characteristics.

Belden Teflon wire products are highly recommended for miniature cable applications, because of their superior thermal and electrical properties. Teflon is especially suitable for internal wiring soldering applications where insulation melt back is a specific problem. Belden Teflon wiring products are outstanding in their resistance to oil, oxidation, heat, sunlight, flame and their ability to remain flexible at low temperatures. They all have excellent resistance to ozone, water, alcohol, gasoline, acids, alkalis, aromatic carbon and solvents.

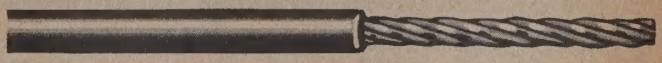
teflon hook-up wire

TYPE E—MIL-W-16878 TEFLON—600V—200°C



Stock Colors 1 thru 10

TYPE EE—MIL-W-16878 TEFLON—1000V—200°C



Stock Colors 1 thru 10

Concentrically stranded silver coated copper conductor, extruded TFE Teflon insulated

Trade Number	Type Designation	AWG & (Stranding)	Nom. O.D. (Inch)	Insulation Thickness (Inch)	Standard Spool Lengths in ft.
83000	E-30	30 (7x38)	.033	.010	25, 100, 500, 1000
83001	E-28	28 (7x36)	.036	.010	25, 100, 500, 1000
83002	E-26	26 (7x34)	.041	.010	25, 100, 500, 1000
83003	E-24	24 (19x36)	.046	.010	25, 100, 500
83004	E-24	24 (7x32)	.045	.010	25, 100, 500, 1000
83005	E-22	22 (7x30)	.051	.010	25, 100, 500, 1000
83006	E-22	22 (19x34)	.052	.010	25, 100, 500, 1000
83007	E-20	20 (19x32)	.060	.010	25, 100, 500, 1000
83008	E-20	20 (7x28)	.059	.010	25, 100, 500
83009	E-18	18 (19x30)	.071	.010	25, 100, 500, 1000
83010	E-16	16 (19x29)	.080	.010	25, 100, 500, 1000

Trade Number	Type Designation	AWG & (Stranding)	Nom. O.D. (Inch)	Insulation Thickness (Inch)	Standard Spool Lengths in ft.
83023	EE-24	24 (19x36)	.053	.014	25, 100, 500
83025	EE-22	22 (7x30)	.058	.014	25, 100, 500
83026	EE-22	22 (19x34)	.060	.014	25, 100, 500, 1000
83027	EE-20	20 (19x32)	.068	.014	25, 100, 500, 1000
83028	EE-20	20 (7x28)	.066	.014	25, 100, 500
83029	EE-18	18 (19x30)	.079	.014	25, 100, 500, 1000
83030	EE-16	16 (19x29)	.086	.014	25, 100, 500, 1000

Stock Colors

1. Brown
2. Red
3. Orange
4. Yellow
5. Green
6. Light Blue
7. Violet (purple)
8. Gray (slate)
9. White
10. Black

Color striping available on 1,000 ft. minimum per item each color on 500′ and 1000′ spools.
Manufactured to current Government specifications and subsequent revisions.

NEW miniature teflon hook-up wire

TYPE ET—MIL-W-16878 TEFLON—250V—200°C

Stock Colors 1 thru 10

Concentrically stranded silver coated copper conductor, extruded TFE Teflon insulated

Trade Number	Type Designation	AWG Stranding	Nom. O.D. (Inch)	Insulation Thickness (Inch)	Standard Spool Lengths in Ft.
83041	ET-32	32 (7x40)	.021	.006	100, 1000
83043	ET-30	30 (7x38)	.024	.006	100, 1000
83045	ET-28	28 (7x36)	.027	.006	100, 1000
83046	ET-26	26 (7x34)	.031	.006	100, 1000
83047	ET-24	24 (7x32)	.036	.006	100, 1000
83048	ET-24	24 (19x36)	.037	.006	100, 1000
83049	ET-22	22 (7x30)	.042	.006	100, 1000
83050	ET-22	22 (19x34)	.044	.006	100, 1000

■ *Trade mark of DuPont*

Color striping available on 1000 foot minimum per item each color on 1000 foot spools.
Manufactured to current Government specifications and subsequent revisions.

Stock Colors

1. Brown
2. Red
3. Orange
4. Yellow
5. Green
6. Light Blue
7. Violet (purple)
8. Gray (slate)
9. White
10. Black

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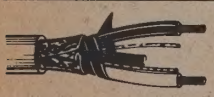
RG/U CABLES

Trade Number	RG No.	AWG (Stranding) Material	Insulation	No. of Shields & Material	Jacket	Nom. O.D. (Inch)	Nom. Imp. (Ohms)	Nom. Vel. of Prop.	Nom. Cap. (mmf ft.)	Nom. Attenuation Per 100' mc	Nom. Attenuation Per 100' db	Standard Spool Lengths in Ft.
83241	141A/U MIL-C-17D	18 (Solid) Silver Coated Copperweld▲	TFE Teflon	1 Silver Coated Copper	Brown Fiberglass	.190	50	69.5	29.0	400	9.0 Max.	100, 500, 1000
83242	142B/U MIL-C-17D	18 (Solid) Silver Coated Copperweld	TFE Teflon	2 Silver Coated Copper	Tinted Brown FEP	.195	50	69.5	29.0	400	9.0 Max.	100, 500, 1000
83265	178B/U MIL-C-17D	30 (7x38) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	Tinted Brown FEP	.070	50	69.5	29.0	400	29.0 Max.	100, 500
83264	179B/U MIL-C-17D	30 (7x38) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	Tinted Brown FEP	.100	75	69.5	19.5	400	21.0 Max.	100, 500, 1000
83266	180B/U MIL-C-17D	30 (7x38) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	Tinted Brown FEP	.140	95	69.5	15.0	400	17.0 Max.	100, 500
83267	187A/U MIL-C-17D	30 (7x38) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	White Teflon Tape	.105	75	69.5	19.5	400	21.0 Max.	100, 500, 1000
83269	188A/U MIL-C-17D	26 (7x.0067) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	White Teflon Tape	.102	50	69.5	29.0	400	20.0 Max.	100, 500
83270	196A/U MIL-C-17D	30 (7x38) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	White Teflon Tape	.076	50	69.5	29.0	400	29.0 Max.	100, 500
83282	303/U MIL-C-17D	18 (Solid) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	Tinted Brown FEP	.170	50	69.5	29.0	400	9.0 Max.	100, 500, 1000
83284	316/U MIL-C-17D	26 (7x.0067) Silver Coated Copperweld	TFE Teflon	1 Silver Coated Copper	Tinted Brown FEP	.098	50	69.5	29.0	400	20.0 Max.	100, 500, 1000

SPECIAL FEP TEFLON INSULATED INSTRUMENTATION CABLES

Description	Trade Number	AWG & (Stranding)	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. (Inch)	Cond. Color Coding	Percent Shield Coverage	Nom. *Cap. (mmf ft)	Nom. **Cap. (mmf ft)	Suggested Working Voltage	Standard Spool Lengths in ft
High Temperature	**83390** (2 condr.)	22 (19x34)	.015	.015	.180	Blk, Wht	90	23	40	1000	25, 100, 500
	83391 (3 condr.)	22 (19x34)	.015	.015	.190	Blk, Red Wht	90	20	35	1000	25, 100, 500
	83392 (4 condr.)	22 (19x34)	.015	.015	.205	Red, Blk, Grn, Wht	90	20	35	1000	25, 100, 500
		Stranded tinned copper, FEP teflon■ insulated, cabled, tinned copper braid shield, white FEP teflon jacket. **HIGH TEMPERATURE +200° C maximum, −70° C minimum operating temperature. Ideal where chemical resistance is needed and/or extremely high or low temperatures are required.**									
	**83393** (2 condr.)	20 (7x28)	.020	.030	.245	Blk, Red	100	22	42	1000	25, 100, 500
		Tinned copper, FEP Teflon insulated, noise reducing tape, 20 AWG (10x30) nickel coated copper drain wire, special Beldfoil shield, Silicone rubber jacket. **+150° C maximum −70° C minimum operating temperature.** *Jacket working voltage 1000V DC, shield to ground.*									

*Capacitance between conductors. **Capacitance between one conductor and other conductor connected to shield.

▲ *Trademark of Copperweld Steel Co.* ■ *Trademark of DuPont*

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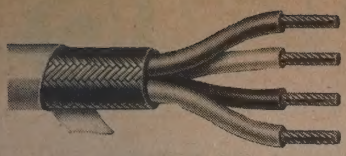

mil-w-16878-type E shielded teflon cables

BELDEN

DESCRIPTION: Stranded silver coated copper conductors, type E extruded TFE Teflon insulation, color coded, cabled, braided silver plated copper shield, white TFE Teflon tape wrapped jacket.

MIL-SPEC: MIL-W-16878 Type E
TEMPERATURE RATING: —65°C to 200°C
VOLTAGE: 600Volts (RMS)

TYPE E—TEFLON, SHIELDED, TEFLON JACKETED CABLES

Trade Number	No. of Cond.	AWG & Stranding	Insulation Thickness (Inch)	Jacket Thickness (Inch)	Nom. O.D. Inch	Conductor Color Coding	Percent Shield Coverage	Nom. *Cap mmf ft.	Nom. **Cap (mmf ft.	Suggested Working Voltage	Standard Spool Lengths in Feet
SINGLE CONDUCTOR											
83301	1	30 (7x38)	.010	.010	.074	White	90	30	—	600	100, 500, 1000
83302	1	28 (7x36)	.010	.010	.078	White	90	35	—	600	100, 500, 1000
83303	1	26 (7x34)	.010	.010	.082	White	90	40	—	600	100, 500, 1000
83304	1	24 (19x36)	.010	.010	.088	White	90	51	—	600	100, 500, 1000
83305	1	22 (19x34)	.010	.010	.094	White	90	60	—	600	100, 500, 1000
83306	1	20 (19x32)	.010	.010	.103	White	90	67	—	600	100, 500, 1000
83307	1	18 (19x30)	.010	.010	.113	White	90	75	—	600	100, 500, 1000
83308	1	16 (19x29)	.011	.012	.123	White	90	89	—	600	100, 500, 1000
TWO CONDUCTOR											
83315	2	30 (7x38)	.010	.010	.106	White, Black	90	15	27	600	100, 500, 1000
83316	2	28 (7x36)	.010	.010	.112	White, Black	90	18	32	600	100, 500, 1000
83317	2	26 (7x34)	.010	.010	.120	White, Black	90	20	36	600	100, 500, 1000
83318	2	24 (19x36)	.010	.010	.132	White, Black	90	22	40	600	100, 500, 1000
83319	2	22 (19x34)	.010	.010	.144	White, Black	90	26	46	600	100, 500, 1000
83320	2	20 (19x32)	.010	.012	.162	White, Black	90	28	52	600	100, 500, 1000
83321	2	18 (19x30)	.010	.012	.188	White, Black	90	30	55	600	100, 500, 1000
83322	2	16 (19x29)	.011	.012	.200	White, Black	90	33	59	600	100, 500, 1000
THREE CONDUCTOR											
83330	3	30 (7x38)	.010	.010	.111	White, Black, Red	90	14	25	600	100, 500, 1000
83331	3	28 (7x36)	.010	.010	.117	White, Black, Red	90	17	30	600	100, 500, 1000
83332	3	26 (7x34)	.010	.010	.126	White, Black, Red	90	19	33	600	100, 500, 1000
83333	3	24 (19x36)	.010	.010	.136	White, Black, Red	90	22	38	600	100, 500, 1000
83334	3	22 (19x34)	.010	.012	.156	White, Black, Red	90	24	41	600	100, 500, 1000
83335	3	20 (19x32)	.010	.012	.175	White, Black, Red	90	27	45	600	100, 500, 1000
83336	3	18 (19x30)	.010	.012	.196	White, Black, Red	90	28	52	600	100, 500, 1000
83337	3	16 (19x29)	.011	.012	.218	White, Black, Red	90	30	56	600	100, 500, 1000
FOUR CONDUCTOR											
83345	4	30 (7x38)	.010	.010	.119	White, Black, Red, Green	90	13	24	600	100, 500, 1000
83346	4	28 (7x36)	.010	.010	.126	White, Black, Red, Green	90	16	28	600	100, 500, 1000
83347	4	26 (7x34)	.010	.010	.135	White, Black, Red, Green	90	18	32	600	100, 500, 1000
83348	4	24 (19x36)	.010	.012	.151	White, Black, Red, Green	90	20	36	600	100, 500, 1000
83349	4	22 (19x34)	.010	.012	.166	White, Black, Red, Green	90	23	40	600	100, 500, 1000
83350	4	20 (19x32)	.010	.012	.185	White, Black, Red, Green	90	25	44	600	100, 500, 1000
83351	4	18 (19x30)	.010	.012	.214	White, Black, Red, Green	90	27	50	600	100, 500, 1000
83352	4	16 (19x29)	.011	.014	.235	White, Black, Red, Green	90	29	54	600	100, 500, 1000

**Capacitance Between Conductors.* ***Capacitance Between One Conductor and Other Conductor Connected to Shield.*
Manufactured to Current Government Specifications and Subsequent Revisions.

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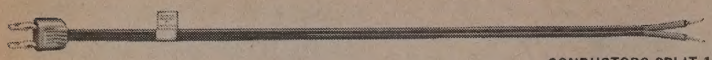
TWO CONDUCTOR POWER SUPPLY CORDS

BELDEN

PARALLEL LAMP CORDS



MOLDED VINYL PLUG

CONDUCTORS SPLIT 1" STRIPPED AND TWISTED 5/8"

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Colors
17106	6	18 (41x34)	.110 x .207	SPT-1 Vinyl	Brown, Gray or Ivory
17109	9	18 (41x34)	.110 x .207	SPT-1 Vinyl	Brown, White
17112	12	18 (41x34)	.110 x .207	SPT-1 Vinyl	Brown, White
17126	6	18 (41x34)	.110 x .213	SP-1 Rubber	Brown
17129	9	18 (41x34)	.110 x .213	SP-1 Rubber	Brown

Information and Application

For Lamps, Radios, Desk Fans and Small Appliances. Long life plastic resists cracking and aging. Popular lengths and colors. UL Tan Flag Label.

UL-TYPE SVT VINYL AND SV RUBBER

MOLDED VINYL CORD-HOLDER PLUG

OUTER JACKET STRIPPED 1½" CONDUCTORS STRIPPED AND TWISTED 5/8"

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Colors
17205	6	18 (41x34)	.243	SVT Vinyl	Black, Gray
17206	6	18 (41x34)	.245	SV Rubber	Gray

For Food Mixers, Blenders and Small Appliances. UL Tan Flag Label.

UL-TYPE SJ RUBBER

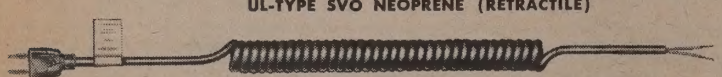
MOLDED VINYL CORD-HOLDER PLUG

OUTER JACKET STRIPPED 1½" CONDUCTORS STRIPPED AND TWISTED 5/8"

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17308	8	18 (16x30)	.298	SJ Rubber	Black
17310	10	18 (16x30)	.298	SJ Rubber	Black
17328	8	16 (26x30)	.323	SJ Rubber	Black
17330	10	16 (26x30)	.323	SJ Rubber	Black

For Mixers, Blenders, Washing Machines and Appliances using fractional horse power motors that do not require a three conductor grounding cord. UL Tan Flag Label.

UL-TYPE SVO NEOPRENE (RETRACTILE)



MOLDED VINYL PLUG

OUTER JACKET STRIPPED 1½", CONDUCTORS STRIPPED ½" AND TINNED

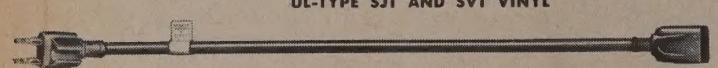
Trade Number	Retracted Length (in.)	Practical Extended Length (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17249	12	6	18 (41x34)	.270	SVO Neoprene	Black

Retractile (coiled)

CONVENIENCE AND SAFETY. Dangling cords can be messy, troublesome and unsafe. Retractile cords stay neat, allow free movement of the appliance or tool, and prevent accidents. Rubber insulation and neoprene jackets meet UL requirements and retain full retracting memory through thousands of stretching cycles. UL Tan Flag Label.

BUSINESS MACHINE CORDS

UL-TYPE SJT AND SVT VINYL



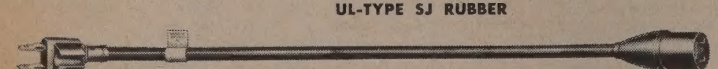
MOLDED VINYL CORD-HOLDER PLUG

MOLDED VINYL CONNECTOR WITH DUMMY CENTER CONTACT

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17359	10	18 (16x30)	.298	SJT Vinyl	Gray
17260	8	18 (41x34)	.243	SVT Vinyl	Gray

17359 fits Burroughs, Monroe and Victor 10 key Adding machines as well as late Friden models and the Burroughs Sensimatic Bookkeeping Machine and Pentron Tape Recorder (Triumph model). 17260 fits Revere Projectors and many business machines. UL Blue Flag Label.

UL-TYPE SJ RUBBER



MOLDED VINYL CORD-HOLDER PLUG

MOLDED RUBBER CONNECTOR

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17370	10	16 (26x30)	.323	SJ Rubber	Black

Fits R. C. Allen Adding Machine and Mimeograph models 100 and 92. Fits following 16MM Motion Picture Projectors: All RCA senior models, all Victor Kalart models, Bell and Howell models 185 through 399. Can also be used as an extension cord where a round connector is required. UL Blue Flag Label.

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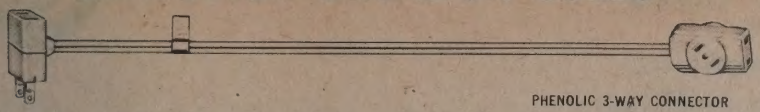
TWO CONDUCTOR EXTENSION CORDS



VINYL ADAPTER PLUG — PHENOLIC 3-WAY CONNECTOR

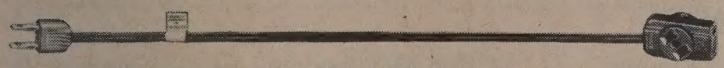
Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
NEW 17178	6	18 (41 x 34)	.110 x .207	SPT-1 Vinyl	Ivory

Information and Application

UL-TYPE SPT VINYL ADD-A-LINE

This new idea in convenience adds a 6′ extension cord and you still have an outlet to plug in another cord. UL Blue Flag Label.

CUBE TAP EXTENSION CORD SETS



MOLDED VINYL PLUG — PHENOLIC 3-WAY CONNECTORS

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Colors
17156	6	18 (41x34)	.110 x .207	SPT-1 Vinyl	Brown, Ivory
17159	9	18 (41x34)	.110 x .207	SPT-1 Vinyl	Brown, Ivory
17162	12	18 (41x34)	.110 x .207	SPT-1 Vinyl	Brown, Ivory
17165	15	18 (41x34)	.110 x .207	SPT-1 Vinyl	Brown, Ivory

Manufactured in Brown and Ivory in all popular lengths. The molded three way connector is particularly sturdy and will last long in steady service. UL Blue Flag Label.

UL-TYPE SV AND SJ RUBBER

MOLDED VINYL CORD-HOLDER PLUG — MOLDED VINYL CONNECTOR

Trade Number	Length of Cord (ft.)	AWG Stranding	Nom. O.D. (Inches)	UL Type of Cordage	Colors
17259	9	18 (41x34)	.245	SV Rubber	Gray
17361	10	16 (26x30)	.323	SJ Rubber	Black

The molded plugs and connectors give long service life. The CORD-HOLDER plug provides easier storage. It can also be used as cord shortener. For longer extension cords of this type, see Lawnmower and Vacuum Cleaner cords. UL Blue Flag Label.

UL-TYPE SJ AND S RUBBER

MOLDED PLUG — MOLDED RUBBER CONNECTOR

Trade Number	Length of Cord (ft.)	AWG Stranding	Nom. O.D. (Inches)	UL Type of Cordage	Color
17370	10	16 (26x30)	.323	SJ Rubber	Black
17555	25	16 (65x34)	.401	S Rubber	Black
17556	50	16 (65x34)	.401	S Rubber	Black

For use where a round connector is required. Also used as a power supply cord for some appliances. For longer extensions where a heavier duty type cord is needed for added insulation and abrasion protection use 17555 or 17556. 17370 features cord-holder plug. UL Blue Flag Label.

THREE CONDUCTOR POWER SUPPLY CORDS

UL-TYPE SJ RUBBER, SJT VINYL AND SJO NEOPRENE

MOLDED VINYL GROUNDING PLUG — OUTER JACKET STRIPPED 2" CONDUCTORS STRIPPED AND TWISTED 5/8"

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Colors
17406	6	18 (16x30)	.328	SJ Rubber	Black
17405	6	18 (16x30)	.328	SJT Vinyl	Gray
17408	8	18 (16x30)	.328	SJ Rubber	Black
17407	8	18 (16x30)	.328	SJT Vinyl	Gray
17409	8	18 (16x30)	.328	SJO Neoprene	Black
17412	12	18 (41x34)	.328	SJ Rubber	Black
17419	9	16 (65x34)	.353	SJ Rubber	Black
17422	12	16 (65x34)	.353	SJ Rubber	Black
17425	15	16 (65x34)	.353	SJ Rubber	Black

Information and Application

For all tools such as sanders, saws, grinders and polishers requiring grounding. Three conductor Cord now listed by UL as mandatory for drills 1/8" and larger. UL Tan Flag Label.

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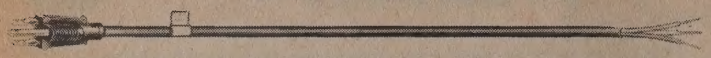
THREE CONDUCTOR POWER SUPPLY CORDS

UL-TYPE SV RUBBER AND SVT VINYL



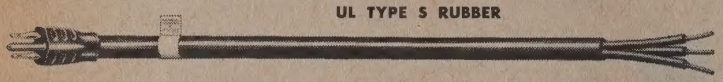
MOLDED VINYL GROUNDING PLUG

OUTER JACKET STRIPPED 1½"
CONDUCTORS STRIPPED AND TWISTED ⅝"

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Colors
17236	6	18 (41x34)	.265	SV Rubber	Black
17238	8	18 (41x34)	.265	SV Rubber	Black
17237	6	18 (41x34)	.253	SVT Vinyl	Gray
17239	8	18 (41x34)	.253	SVT Vinyl	Gray

Three conductor SV and SVT cords now recognized as a UL Standard for some small tools, business machines and instruments which previously required a three conductor SJ Cord. UL Tan Flag Label.

UL TYPE S RUBBER



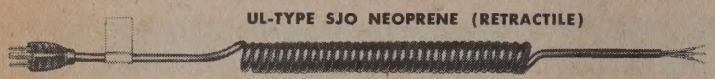
MOLDED VINYL GROUNDING PLUG

OUTER JACKET STRIPPED 2"
CONDUCTORS STRIPPED AND TWISTED ¾"

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Colors
17629	9	14 (41x30)	.558	S Rubber	Black
17635	15	14 (41x30)	.558	S Rubber	Black

For heavy duty power tools and equipment. UL Tan Flag Label.

UL-TYPE SJO NEOPRENE (RETRACTILE)



MOLDED VINYL GROUNDING PLUG OUTER JACKET STRIPPED 1½", CONDUCTORS STRIPPED ½" AND TINNED

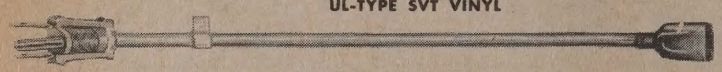
Trade Number	Retracted Length (in.)	Practical Extended Length (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17447	12	6	18 (41x34)	.360	SJO Neoprene	Black
17448	12	6	16 (65x34)	.370	SJO Neoprene	Black
17449	24	12	16 (65x34)	.370	SJO Neoprene	Black

Retractile (coiled)

CONVENIENCE AND SAFETY. Dangling cords can be messy, troublesome and unsafe. Retractile cords stay neat, allow free movement of the appliance or tool, and prevent accidents. Rubber insulation and neoprene jackets meet UL requirements and retain full retracting memory through thousands of stretching cycles. UL Tan Flag Label.

THREE CONDUCTOR PROJECTOR AND BUSINESS MACHINE CORD

UL-TYPE SVT VINYL



MOLDED VINYL GROUNDING PLUG

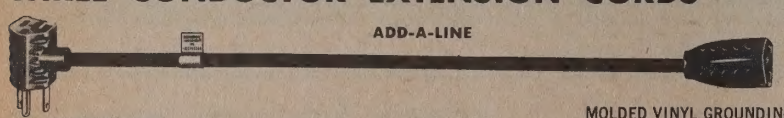
MOLDED VINYL 3-CONTACT CONNECTOR

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17258	8	18 (41x34)	.253	SVT Vinyl	Gray

Can be used for Revere and Eastman Kodak projectors, Friden, Victor, Hewlett-Packard, Marchant business machines, and DuKane audio equipment. UL Blue Flag Label.

THREE CONDUCTOR EXTENSION CORDS

ADD-A-LINE



ADAPTER PLUG

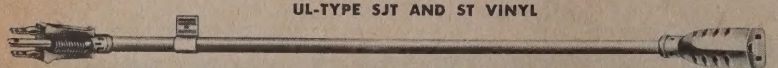
MOLDED VINYL GROUNDING CONNECTOR

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17462	8	18 (16x30)	.328	SJT Vinyl	Black

Information and Application

This new idea in convenience adds an 8' extension cord and you still have an outlet to plug in another cord. UL Blue Flag Label.

UL-TYPE SJT AND ST VINYL



MOLDED VINYL GROUNDING PLUG

MOLDED VINYL GROUNDING CONNECTOR

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17491	25	18 (16x30)	.328	SJT Vinyl	Yellow
17492	50	18 (16x30)	.328	SJT Vinyl	Yellow
17493	100	18 (16x30)	.328	SJT Vinyl	Yellow
17494	25	16 (26x30)	.353	SJT Vinyl	Yellow
17495	50	16 (26x30)	.353	SJT Vinyl	Yellow
17497	100	16 (26x30)	.353	SJT Vinyl	Yellow
17694	25	14 (41x30)	.558	ST Vinyl	Yellow
17695	50	14 (41x30)	.558	ST Vinyl	Yellow
17697	100	14 (41x30)	.558	ST Vinyl	Yellow

YELLOW CORDAGE stands out against green or brown backgrounds and thus reduces hazard of accidental cutting.
These extension cord sets are for lawnmowers and hedge clippers using three conductor power supply cordage. UL Blue Flag Label.

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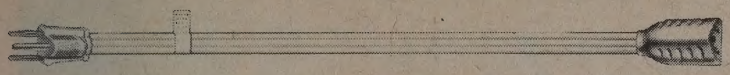
THREE CONDUCTOR EXTENSION CORDS

UL-TYPE SPT-2 VINYL



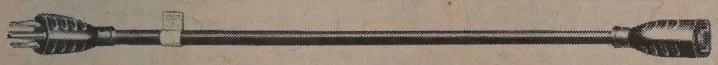
MOLDED VINYL GROUNDING PLUG

MOLDED VINYL GROUNDING CONNECTOR

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17194	25	16 (65x34)	.152 .360	SPT-2	Yellow
17195	50	16 (65x34)	.152 .360	SPT-2	Yellow

FLAT YELLOW 3 conductor extension cords for most light duty purposes. Particularly popular with the marine trade. UL Blue Flag Label.

UL-TYPE SJ RUBBER



MOLDED VINYL GROUNDING PLUG

MOLDED VINYL GROUNDING CONNECTOR

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17460	10	18 (16x30)	.328	SJ Rubber	Black
17461	10	16 (26x30)	.353	SJ Rubber	Black

Power Supply Cord for business, mailing machines and electrical equipment that have a built in receptacle with blades and grounding pin for cord attachment. These can also be used as extension cords for equipment requiring grounding. UL Blue Flag Label.

UL-TYPE SJO AND SO NEOPRENE

MOLDED VINYL GROUNDING PLUG

MOLDED VINYL HEAVY DUTY GROUNDING DUPLEX CONNECTOR

Trade Number	Length of Cord (ft.)	AWG (Stranding)	Nom. O.D. (Inches)	UL Type of Cordage	Color
17475	25	16 (26x30)	.353	SJO Neoprene	Black
17476	50	16 (26x30)	.353	SJO Neoprene	Black
17477	100	16 (26x30)	.353	SJO Neoprene	Black
17675	25	14 (41x30)	.558	SO Neoprene	Black
17676	50	14 (41x30)	.558	SO Neoprene	Black

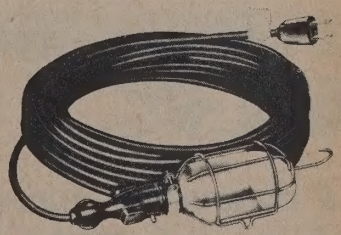
These three conductor extension cords are for use with power tools and other appliances requiring grounding. These extension cords with the rugged Belden duplex connectors will give years of safe, reliable service. UL Blue Flag Label.

CORDLITES®

TWO CONDUCTOR UL-TYPE SJT VINYL CORDLITES

Trade Number	Length of Cord (ft.)	AWG & No. of Conductors	Nom. O.D. (Inches)	UL Type of Cordage	Color
17925	25	18-2	.298	SJT Vinyl	Black
17950	50	18-2	.298	SJT Vinyl	Black

These Cordlites are oil and ozone resistant. The handle has a feed through switch and one tool tap. 17923 lamp guard included.

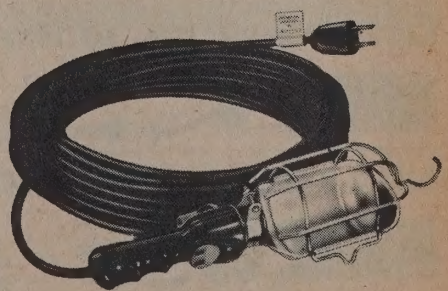


Vinyl Cordlites UL Blue Flag Label

TWO AND THREE CONDUCTOR UL-TYPE SJO NEOPRENE CORDLITES

Trade Number	Length of Cord (ft.)	AWG & No. of Conductors	Nom. O.D. (Inches)	UL Type of Cordage	Color
17995	25	18-2	.298	SJO Neoprene	Black
17996	50	18-2	.298	SJO Neoprene	Black
17998	25	16-3	.353	SJO Neoprene	Black
17999	50	16-3	.353	SJO Neoprene	Black

These Cordlites are oil and ozone resistant. The tool taps on the 3 conductor cords are of the 3-contact 15A - 125V grounding type. 17923 lamp guard included.



Neoprene Cordlites UL Blue Flag Label

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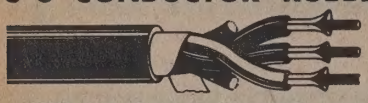
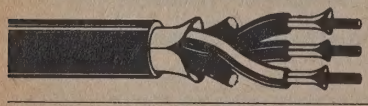
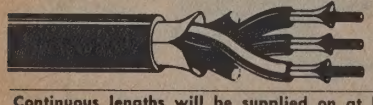
portable cordage

LISTED BY UNDERWRITERS' LABORATORIES, INC.

BELDEN

Description	Trade Number & Standard Pkg. In Ft. 2S — 250 = 2 — 250 Spls. 4S — 250 = 4 — 250 Spls. C = Coil		Size AWG & Stranding	Nom. O.D. (inches)	Weight Std. Pkg. in (lbs.)	Colors
S-2 CONDUCTOR—RUBBER JACKET 600V-60°C						
	18104	2S-250	18 (41x34)	.386	43	Black
	18103	2S-250	16 (65x34)	.401	48	Black
	18102	C-250	14 (41x30)	.528	36	Black
	18101	C-250	12 (65x30)	.599	46	Black
	18100	C-250	10 (105x30)	.643	56	Black
S-3 CONDUCTOR—RUBBER JACKET 600V-60°C						
	18109	C-250	18 (41x34)	.401	22	Black
	18108	C-250	16 (65x34)	.426	27	Black
	18107	C-250	14 (41x30)	.558	45	Black, Nickel Gray
	18106	C-250	12 (65x30)	.634	57	Black
18107—Lateral separator wrap under jacket	18105	C-250	10 (105x30)	.689	74	Black
SO-2 CONDUCTOR—NEOPRENE JACKET 600V-60°C						
	18204	2S-250	18 (41x34)	.386	46	Black
	18203	2S-250	16 (65x34)	.401	51	Black
	18202	C-250	14 (41x30)	.528	39	Black
	18201	C-250	12 (65x30)	.599	50	Black
	18200	C-250	10 (105x30)	.643	60	Black
SO-3 CONDUCTOR—NEOPRENE JACKET 600V-60°C						
	18209	C-250	18 (41x34)	.401	23	Black
	18208	C-250	16 (65x34)	.426	28	Black
	18207	C-250	14 (41x30)	.558	48	Black
	18206	C-250	12 (65x30)	.634	60	Black
	18205	C-250	10 (105x30)	.689	77	Black
	18210	C-50	8 (132x29)	.872	30	Black
	18210	C-200	8 (132x29)	.872	89	Black
18207—Lateral separator wrap under jacket	18211	C-50	6 (133x27)	.961	38	Black
	18211	C-200	6 (133x27)	.961	120	Black
SO-4 CONDUCTOR—NEOPRENE JACKET 600V-60°C						
	18217	C-50	14 (41x30)	.603	16	Black
	18217	C-200	14 (41x30)	.603	50	Black
	18216	C-50	12 (65x30)	.690	22	Black
	18216	C-200	12 (65x30)	.690	66	Black
	18215	C-50	10 (105x30)	.770	27	Black
	18215	C-200	10 (105x30)	.770	85	Black
	18214	C-25	8 (132x29)	.970	22	Black
	18214	C-100	8 (132x29)	.970	67	Black
	18213	C-25	6 (133x27)	1.090	27	Black
	18213	C-100	6 (133x27)	1.090	88	Black
SJ-2 CONDUCTOR—RUBBER JACKET 300V-60°C						
	18127	2S-250	18 (16x30) Flex	.298	26	Black
	18111	2S-250	18 (41x34) X flex.	.298	26	Black
	18128	2S-250	16 (26x30) Flex	.323	32	Black
	18110	2S-250	16 (65x34) X flex.	.323	33	Black
SJ-3 CONDUCTOR—RUBBER JACKET 300V-60°C						
	18129	2S-250	18 (16x30) Flex	.328	35	Black
	18125	2S-250	18 (41x34) X flex.	.328	35	Black
	18130	2S-250	16 (26x30) Flex	.353	42	Black
	18124	2S-250	16 (65x34) X flex.	.353	43	Black
SJO-2 CONDUCTOR—NEOPRENE JACKET 300V-60°C						
	18227	2S-250	18 (16x30) Flex	.298	27	Black
	18228	2S-250	16 (26x30) Flex	.323	35	Black
SJO-3 CONDUCTOR—NEOPRENE JACKET 300V-60°C						
	18229	2S-250	18 (16x30) Flex	.328	36	Black
	18230	2S-250	16 (26x30) Flex	.353	42	Black

Continuous lengths will be supplied on at least 85% of each shipment. When 2 lengths are supplied, 50 ft. will be minimum. Shipped only in standard packages as listed above. See current carrying capacity tables on page 31.

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portable cordage

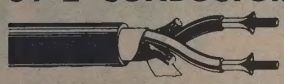
LISTED BY UNDERWRITERS' LABORATORIES, INC.

BELDEN

SJT-2 CONDUCTOR—PLASTIC JACKET 300V-60°C

Trade Number	Standard Pkg. In Ft. 2S — 250 = 2 — 250 Spls. 4S — 250 = 4 — 250 Spls. C = Coil	Size AWG & Stranding	Nom. O.D. (inches)	Weight Std. Pkg. in (lbs.)	Colors
18141	2S-250	18 (41x34) X flex.	.298	26	Black, Red
18142	2S-250	16 (65x34) X flex.	.323	32	

SV-2 CONDUCTOR—RUBBER JACKET 300V-60°C



18120	2S-250	18 (41x34)	.245	20	Black, Nickel Gray

SVT-2 CONDUCTOR—PLASTIC JACKET 300V-60°C

18140	2S-250	18 (41x34)	.243	19	Black

SPT-1, SPT-2 PLASTIC PARALLEL LAMP CORD 300V-60°C

18122	4S-250	18 SPT-1 (41x34)	.110 x .207	24	Black, Brown, Silver Gray White on 18122 only
18123	2S-250	18 SPT-2 (41x34)	.144 x .277	17	
18126	2S-250	16 SPT-2 (65x34)	.155 x .299	21	

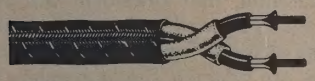
SP-1, SP-2 RUBBER PARALLEL LAMP CORD 300V-60°C

18115	4S-250	18 SP-1 (41x34)	.110 x .213	25	Black, Brown
18121	2S-250	18 SP-2 (41x34)	.140 x .276	17	Black, Brown

HPN-2 CONDUCTOR—NEOPRENE HEATER CORD 300V-90°C

18328	2S-250	18 (41x34)	.140 x .276	18	Black
18326	2S-250	16 (65x34)	.152 x .300	23	Black

HPD-2 CONDUCTOR—GLAZED COTTON HEATER CORD 300V-90°C



18318	2S-250	18 (41x34)	.265	18	Black, 1 White Tracer
18316	2S-250	16 (65x34)	.285	22	
18314	2S-250	14 (104x34)	.320	35	

HPD-2 CONDUCTOR—SOFT COTTON HEATER CORD 300V-90°C

18338	2S-250	18 (41x34)	.265	18	Black 2 White Tracers
18336	2S-250	16 (65x34)	.285	22	

Continuous lengths will be supplied on at least 85% of each shipment. When 2 lengths are supplied, 50 ft. will be minimum. Shipped only in standard packages as listed above. See current carrying capacity tables below.

SUGGESTED AWG SIZE FOR LONG POWER SUPPLY CORDS*

Cord Length**	Current (amperes)**																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
25	18	18	18	18	18	18	18	16	16	16	14	14	14	14	14	12	12	12	12	12	10	10	10	10	10
50	18	18	18	18	18	18	18	16	16	16	14	14	14	14	14	12	12	12	12	12	10	10	10	10	10
75	18	18	18	18	18	18	18	16	16	16	14	14	14	14	14	12	12	12	12	12	10	10	10	10	10
100	18	18	18	18	18	18	18	16	16	16	14	14	14	14	14	12	12	12	12	12	10	10	10	10	10
125	18	18	18	18	18	18	16	16	16	16	14	14	14	14	14	12	12	12	12	12	10	10	10	10	10
150	18	18	18	18	18	16	16	16	14	14	14	14	14	12	12	12	12	12	12	12	10	10	10	10	10

**Rubber and plastic cords, but not including heater cords. Based on a line voltage of 115 and maximum voltage drop (loss) of 10 volts when cord carries rated current.*

***To determine correct AWG, refer to cord length in table, and current nearest the current rating on the name plate of the appliance.*

CURRENT CARRYING CAPACITY OF FLEXIBLE CORDAGE (amperes)*

AWG	Tinsel Cords	Rubber and Plastic Cords	Heater Cords
27	0.5	—	—
18	—	7	10
17	—	—	12
16	—	10	15
15	—	—	17
14	—	15	20
12	—	20	30
10	—	25	—
8	—	35	—
6	—	45	—
4	—	60	—

**Underwriters' laboratories Inc. and National Electrical Code Standard for 2 and 3 conductor cords. For cords with 4 to 6 conductors, the current rating is 80% of the values shown.*

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COLUMBIA

COLUMBIA ELECTRONIC CABLES
A DIVISION OF AVNET, INC.

DURAFOAM®

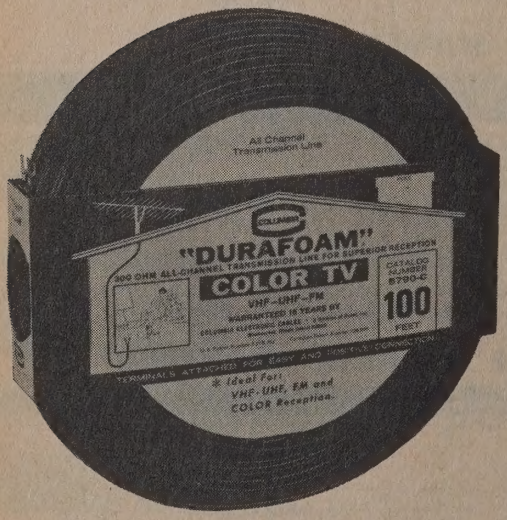
The outstanding success of Durafoam can be attributed to Durafoam's superior performance over the full spectrum of VHF, UHF and FM channels. The increasing popularity of UHF channels make mandatory the use of a low attenuation cable. Durafoam has been used to improve reception under the most adverse conditions such as moisture, ice, heavy snow, chemical fumes, salt air and other factors that seriously affect most transmission lines.

JACKET SURFACE PRINTED:
COLUMBIA 5790 DURAFOAM *VHF – UHF* TV TRANSMISSION LINE U. S. PAT. #3,219,752, CANADIAN PAT. #736,090

VHF • UHF • COLOR • FM Transmission Line

Durafoam installs as easily as flat ribbon line, requiring no special stand-off insulators. Columbia's time proven high molecular weight black polyethylene PERMALINE jacket is so durable that we unconditionally guarantee that Durafoam will not deteriorate for a period of 15 years when used under normal atmospheric conditions. Durafoam's patented design of isolating the 2 foam polyethylene dielectric tubes from each other reduces attenuation. All other types of transmission lines available today have a common dielectric surrounding the copper conductors so that both conductors are affected simultaneously by any combination or other factors in the dielectric which cause increased attenuation.

OVER 100,000,000 FT.
NOW IN USE!



UNCONDITIONALLY GUARANTEED
FOR 15 YEARS!

U. S. PATENT NUMBER 3,219,752
CANADIAN PATENT NUMBER 736,090

CATALOG NUMBER	LENGTH	TYPE PKG.
5790M	1000′	Spool
5790D	500′	Spool
5790C	100′	Flat Pack
5790S	75′	Flat Pack
5790L	50′	Flat Pack

Cable size is .410 inches O.D. width and .150 inches O.D. of cellular polyethylene tubes. Flat packs are display boxed with factory attached terminals on one end and 2 extra terminals are included to assure perfect connections at the antenna and receiver.

An antenna can function no better than the lead-in that connects it to the receiver. For the best reception be sure to specify COLUMBIA DURAFOAM.

Only a partial listing. Ask your local distributor for the complete COLUMBIA CATALOG.

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COLUMBIA ELECTRONIC CABLES
A DIVISION OF AVNET, INC.

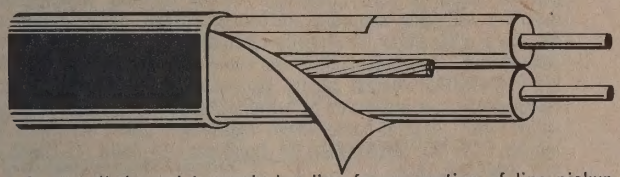
THRIFTFOAM®

Columbia's answer to a growing need for a quality-built, low cost foam transmission line. THRIFTFOAM will deliver clear, sharp reception under adverse conditions. Features a cellular foam polyethylene inner dielectric, providing lower capacitance and lower attenuation losses. Two stranded copper conductors. Jacket: weather-resistant black polyethylene for durability and line protection. THRIFTFOAM is easy to install . . . requires no special stand-off insulators or expensive matching transformers and connectors.

CAT. NO. 5740M – 1000′ spool • CAT. NO. 5740D – 500′ spool • CAT. NO. 5740C – 100′ flat pack • CAT. NO. 5740S – 75′ flat pack • CAT. NO. 5740L – 50′ flat pack

SHIELDED PERMAFOAM®

TV TRANSMISSION LINE
UHF — VHF — COLOR — FM



- A new all-channel transmission line for prevention of line pickup interference especially in areas of high interference.
- Aluminum/Mylar shield for 100% effective coverage.
- Tinned copper ground wire attaches to set.
- High molecular weight PERMALINE® jacket for superior weathering.
- No stand-off insulators or matching transformers necessary . . . can be taped directly to the antenna mast and led through gutters.
- Copperweld conductors for maximum conductivity and high tensile strength.

CABLE SIZE: .275 x .455 – CAT. NO. 5720M (1000′ reel), 5720D (500′ spool), 5720C (100′ coil*), 5720S (75′ coil*), 5720L (50′ coil*)

*** Have factory-attached terminals plus 2 add'l. terminals. Each packed 12 pieces in a floor display carton.**

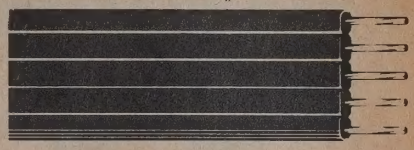
ANTENNA ROTOR CABLES

One outside conductor tinned for polarity. Virgin polyethylene insulation.

FLAT — 4 CONDUCTOR

Cat. No.	Gauge	Approx. Size	Stranding	Put up*
1114M	20	.080 x .335	7/28	1000′
1114D	20	.080 x .335	7/28	500′
1114C	20	.080 x .335	7/28	100′
1114S	20	.080 x .335	7/28	75′
1114L	20	.080 x .335	7/28	50′

FLAT — 5 CONDUCTOR



Cat. No.	Gauge	Approx. Size	Stranding	Put up*
1115M	20	.080 x .450	7/28	1000′
1115D	20	.080 x .450	7/28	500′
1115C	20	.080 x .450	7/28	100′
1115S	20	.080 x .450	7/28	75′
1115L	20	.080 x .450	7/28	50′

* 1000′ and 500′ on spools. Shorter lengths flat pack.

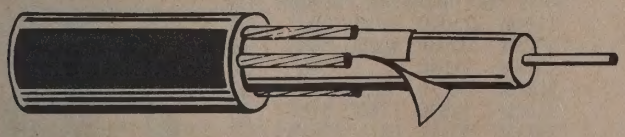
TV WIRE - VHF, FM

Flat, twin lead, 300 OHM Brown Poly . . . for finest reception in black & white or color.

Cat. No.	Gauge	Approx. Size	Stranding	Put up
1004M	20	.100 x .430	7/28	1000′
1004D	20	.100 x .430	7/28	500′
1080M	20	.080 x .395	7/28	1000′
1080D	20	.080 x .395	7/28	500′
1080C	20	.080 x .395	7/28	100′*
1080S	20	.080 x .395	7/28	75′*
1055M	20	.055 x .385	7/28	1000′
1010M	22	.045 x .350	7/30	1000′
1005M	22	.100 x .415	7/30	1000′
1005D	22	.100 x .415	7/30	500′
1053SK	22	.055 x .350	7/30	50′**
1054SK	22	.055 x .350	7/30	100′**

* Flat packed ** Skin packed . . . brown or clear

DURA-COLOR® UHF-VHF 82 Channel RG-59 Type Coaxial Cable



- Lowest loss RG 59U type cable for color TV
- 100% shielding – 100% swept tested
- Black or white jacket
- Uses standard PL259 fittings

Shield is laminated high tensile strength aluminum/Mylar foil totally covering and overlapping a virgin polyethylene core. Four equally spaced tinned copper drain wires are positioned around the shield, providing extra strength and electrical conductivity.

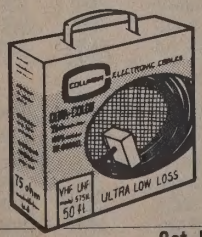
Attenuation (DB loss/100′)

VHF 55 MC = 2.0, 200 MC = 3.8

UHF 500 MC = 6.3, 650 MC = 6.9, 800 MC = 8.3

Cat. No.	Put Up	Jacket Color
5750M	1000′ Spool	Black or White
5750D	500′ Spool	Black or White

DURA-COLOR KITS



5751 — For UHF and VHF – contains BALUN, matching transformer, grounding clamp, and 5750 cable – attractively boxed.

5752 — For UHF and VHF – contains BALUN, grounding clamp, 5750 cable, special band separator with 75 OHM input, and 2 (two) 300 OHM outputs (one UHF, the other VHF) – attractively boxed.

Cat. No.	Length
5751C & 5752C	100′
5751S & 5752S	75′
5751L & 5752L	50′

Ask your local distributor for illustrated Columbia Electronic Cables Catalog showing complete selection of 4, 5, 7, and 8 conductor ROUND rotor cables . . . as well as full details on the full range of Columbia products.

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COLUMBIA ELECTRONIC CABLES
A DIVISION OF AVNET, INC.

SUPER-FLEX® COAXIAL CABLES

Finest coaxial cables available – not only because of appearance and flexibility, but because they actually outperform similar cables now on the market. Cables feature high gloss jackets and have foam polyethylene primary insulation to reduce attenuation as much as 25% below regular coaxial cables. Super-Flex cables stay flexible in severe cold. They use standard connectors. Ideal for citizens band and amateur use. Perfect for MATV. Standard stock colors are Black-white-silver and Beige. Other colors to special order with a minimum of 10,000′ of a color.

RG 8U Super-Flex

52 Ohm impedance (19/.020 conductor). Cap. 22.1 MMFD per ft. Attenuation 1.50 DB per 100′ at 100 MC. Overall size .405. Cat. No. 1198M-1000′. Cat. No. 1198D-500′. Cat. No. 1198C-100′. Cat. No. 1198S-75′*. Cat. No. 1198L-50′*.

RG 58 A/U Super-Flex

50 Ohm impedance (19/.0068 conductor). Cap. 22.9 MMFD per ft. Attenuation 4.25 DB per 100′ at 100 MC. Overall size .195. Cat. No. 1188M-1000′. Cat. No. 1188D-500′. Cat. No. 1188C-100′. Cat. No. 1188S-75′*. Cat. No. 1188L-50′*.

RG 59/U Super-Flex

73 Ohm impedance (22 solid Copperweld conductor). Cap. 16.6 MMFD per ft. Attenuation 2.95 DB per 100′ at 100 MC. Overall size .242. Cat. No. 1135M-1000′. Cat. No. 1135D-500′. Cat. No. 1135C-100′. Cat. No. 1135S-75′*. Cat. No. 1135L-50′

*Flat packs

PERMAFOAM®
LOW LOSS COAXIAL CABLES

A foam polyethylene dielectric replaces the conventional solid polyethylene thus providing far lower capacitance and attenuation. Overall jacket is our PERMALINE® high molecular weight polyethylene. This non-contaminating jacket is unaffected by salt air, chemical fumes, damp rot, fungus, acids, alkalis, etc., and is immune to the deteriorating effects of sunlight and other ultra-violet.

72-75 OHM PERMAFOAM COAXIAL CABLE

Cat. No.	R.G. No.	Nom. Imp.	Atten. 100′ 100 MC	Wire Size	O.D.	Spool Size
5035M	59U	73	2.95 DB	22 cpwld	.240	1000′
5035D	59U	73	2.95 DB	22 cpwld	.240	500′
5025M	11U	75	1.50 DB	14 Solid	.405	1000′
5025D	11U	75	1.50 DB	14 Solid	.405	500′

52-53 OHM PERMAFOAM COAXIAL CABLE

Cat. No.	R.G. No.	Nom. Imp.	Atten. 100′ 100 MC	Wire Size	O.D.	Spool Size
5045M	58U	53	3.10 DB	20 Solid	.195	1000′
5045D	58U	53	3.10 DB	20 Solid	.195	500′
5045C	58U	53	3.10 DB	20 Solid	.195	100′
5015M	8U	52	1.50 DB	7/.034	.405	1000′
5015D	8U	52	1.50 DB	7/.034	.405	500′
5015C	8U	52	1.50 DB	7/.034	.405	100′
5090M	17U	52	.712 DB	5 Solid	.870	1000′
5090D	17U	52	.712 DB	5 Solid	.870	500′
5090C	17U	52	.712 DB	5 Solid	.870	100′

DOUBLE SHIELDED COAXIAL CABLE

Low radiation double shielded PERMALINE coaxial cable for MATV and CATV systems. CAT NO. 5027M – RG 11U – Double Shield/Double Jacket **Permafoam** 1000′ spool.

RG 11U SELF-SUPPORTING MESSENGER TYPE

Low loss weatherproof coaxial cable for CATV systems and other applications requiring steel messenger cables for long runs. Eliminates need for stringing separate messenger cables. 3/16″ seven strand glv. steel messenger has tensile strength of well over 3000 lbs. . . . cannot rust . . . is protected by the same insulation used on all Columbia PERMAFOAM coaxial cables. Unique cable design allows for easy removal of outer insulation at terminating points. Overall dimensions: width .760″, coaxial cable .405″, messenger .300″. Available cut to length. CAT. NO. 5020 – RG 11U, Conductor 14 Solid, 75 OHMS, 66% V.P., MMF/FT. 16.2.

COLUMBIA COAXIAL CABLES

Premium quality coaxial cables.

CATALOG NO. 1000′	500′	100′	R.G. No.	Nom. Imp.	Nom. MMFD/ Ft.	Approx. Size	Wire Size
SOLID POLY DIELECTRIC PREMIUM TYPE							
1104M	1104D	1104C	59U*	73	21	.240	22 cpwld.
5005M	5005D	5005C	59U†	73	21	.240	22 cpwld.
1154M	1154D		8U*	52	29.5	.405	7/21
5017M	5017D	5017C	8U†	52	29.5	.405	7/21
1160M	1160D	1160C	11U*	75	20.5	.405	7/26
5011M	5011D	5011C	11U†	75	20.5	.405	7/26
1166M	1166D	1166C	58U*	53.5	28.5	.195	20 ga.
5023M	5023D	5023C	58U†	53.5	28.5	.195	20 ga.
1178M	1178D	1178C	58A/U*	50	29	.159	19/.0068
COMMERCIAL TYPE FOAM POLY DIELECTRIC							
1112M	1112D		59U*	73	21	.240	22 cpwld.
5135M	5135D		59U†	73	21	.240	22 cpwld.
5013M	5013D		8U‡	52	29.5	.405	7/21
5043M	5043D		58U‡	53	26.0	.195	20 solid
COMMERCIAL TYPE SOLID POLY DIELECTRIC							
1110M	1110D		59U*	73	21	.240	22 cpwld.
S1154M	S1154D		8U*	52	29.5	.405	7/21
S1166M	S1166D		58U*	53.5	28.5	.195	20 ga.

*Vinyl jacket †Black permaline jacket ‡Black polyethylene jacket

Long lengths of any Columbia coaxial cable available on request.

Only a partial listing. Ask your local distributor for the complete COLUMBIA CATALOG.

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COLUMBIA ELECTRONIC CABLES
A DIVISION OF AVNET, INC.

MICROPHONE/SHIELDED Power Supply and Control Cables

ALL TYPES STRANDED

COLUMBIA EXCLUSIVE FLEXFOAM® MICROPHONE CABLES

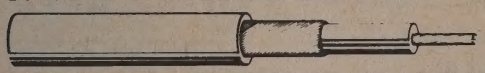
Flexfoam Cables offer up to 35% lower capacitance than the best regular microphone cables available today . . . made possible by the use of foamed polyethylene inner dielectric instead of the solid polyethylene normally used. This low capacitance means cable runs can be increased as much as 50% over standard cables. Flexfoam cables are also ideal for Hi-Fi and high quality sound work because of their extremely low attenuation, particularly at the higher audio-frequencies. A special flexible vinyl outer jacket provides flexibility almost as good as rubber plus a big increase in abrasion resistance.

Color: Silver gray.

BRAIDED SHIELD 25 Ga.

Cat. No.	Type	Approx. Size	Cap. Per ft.	Put up
1399D	crystal size	.190	16 MMF	500′
1399T	crystal size	.190	16 MMF	250′
1379D	lapel size	.140	19 MMF	500′
1379T	lapel size	.140	19 MMF	250′

SPIRAL SHIELD 25 Ga.



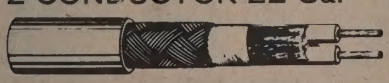
Cat. No.	Type	Approx. Size	Cap. Per ft.	Put up
1395D	crystal size	.250	11 MMF	500′
1395T	crystal size	.250	11 MMF	250′
1395C	crystal size	.250	11 MMF	100′
1389D	crystal size	.190	16 MMF	500′
1389T	crystal size	.190	16 MMF	250′
1389C	crystal size	.190	16 MMF	100′
1314D	crystal size*	.160	25 MMF	500′
1314T	crystal size*	.160	25 MMF	250′
1369M	lapel size	.140	19 MMF	1000′
1369D	lapel size	.140	19 MMF	500′
1369T	lapel size	.140	19 MMF	250′
1369C	lapel size	.140	19 MMF	100′
1366M	lapel size*	.125	33 MMF*	1000′
1366T	lapel size*	.125	33 MMF*	250′
1359M	miniature	.085	39 MMF	1000′
1359D	miniature	.085	39 MMF	500′
1359T	miniature	.085	39 MMF	250′
1359C	miniature	.085	39 MMF	100′

* Solid polyethylene dielectric

COLUMBIA FLEXLIFE® MICROPHONE CABLES

Extra flexible vinyl jacket with superior abrasion resistance and high gloss finish.

BRAIDED SHIELD (Tinned Copper) 2 CONDUCTOR 22 Ga.



Cat. No.	Type	Approx. Size	Cap. Per ft.	Put up
1322D	Low	.230	30 MMF	500′
1322T	imped-	.230	30 MMF	250′
1322C	ance	.230	30 MMF	100′

FLEXLIFE (Cont'd)

BRAIDED SHIELD HEAVY DUTY 18 Ga.

Heavy duty studio type microphone cable plastic jacketed (black or red) to withstand abrasion and rough usage. Tinned copper conductors and shield. Jute fillers. Approx. size .295. Cap. per ft. 75 MMF. Cat. No. 3302D-500′. Cat. No. 3302C-100′

SPIRAL SHIELD 2 CONDUCTOR 22 Ga.

Tinned copper shield. Low impedance. Approx. size .230. Cap. per ft. 30 MMF. Cat. No. 1323D-500′. Cat. No. 1323T-250′. Cat. No. 1323C-100′.

LOW-IMPEDANCE NOISE-RESISTANT 2 CONDUCTOR 22 Ga.

Here is a newly designed Microphone Cable that will withstand the severe abuse that has been a problem with microphone cables used in theaters, night clubs, etc. Cable can be handled roughly without danger of copper strands in shield breaking to cause noise. In this new cable a heavy duty spiral tinned copper shield is applied over a primary shield of conductive vinyl. Repeated tests have shown that this will far outlast conventional shielded two conductor microphone cables. Remarkable flexibility is obtained by use of a Columbia Flexlife Silver Gray Jacket that also imparts an excellent appearance. Silver-gray only. Approx. size .235. Cap. per ft. 35 MMF. Cat. No. 1324D-500′. Cat. No 1324T-250′ Cat. No. 1324C-100′.

RUBBER, VINYL, NEOPRENE

Cables have low loss insulation over extra-flexible copper conductors. Closely woven tinned copper shield is covered with tough wear resistant jacket.

RUBBER JACKET & INSULATION 20 Ga. 26/34 Stranded

CAT. NO.		Approx. Size	Cap. per ft.	No. Cond.
1300	Specify 1000′ 500′ 250′ or 100′	.260	30 MMF	1
1302		.280	70 MMF	2
1304		.285	65 MMF	3
1306		.300	65 MMF	4
1308		.330	60 MMF	5
1310		.350	60 MMF	6
1312		.365	60 MMF	7

VINYL JACKET 20 Ga. 26/34 Stranded

1643	Specify 1000′ 500′ 250′ or 100′	.250	600 VOLT RATING POLY. INS.	3
1644		.260		4
1645		.275		5
1646		.300		6
1648		.330		8
1650		.375		10

Only a partial listing. Ask your local distributor for the complete COLUMBIA CATALOG.

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COLUMBIA ELECTRONIC CABLES
A DIVISION OF AVNET, INC.

MICROPHONE/SHIELDED
POWER SUPPLY and CONTROL CABLES (Cont'd)

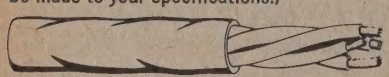
NEOPRENE JACKET RUBBER INSULATION

Available in 100', 500', and 1000' spools. After catalog number, specify "C" for 100', "D" for 500', and "M" for 1000'. Black neoprene jacketed.

Cat. No.	No. Cond.	Ga.	Stranding	Nom. Wall Thick.	Nom. Jkt. Thick.	Approx. Size
1201	1	18	41/34	.040	.035	.240
1202	2	18	41/34	.020	.035	.295
1203	3	18	41/34	.020	.035	.305
1204	4	18	41/34	.020	.035	.330
1206	6	18	41/34	.020	.035	.370
1208	8	18	41/34	.020	.035	.420
1210	10	18	41/34	.020	.035	.480
1212	12	18	41/34	.020	.065	.555
1215	15	18	41/34	.020	.065	.640
1220	20	18	41/34	.020	.065	.730
1602	2	16	65/34	.025	.035	.335
1603	3	16	65/34	.025	.035	.355
1604	4	16	65/34	.025	.035	.385
1606	6	16	65/34	.025	.040	.445
1608	8	16	65/34	.025	.040	.510
1610	10	16	65/34	.025	.040	.575
1612	2	14	41/30	.030	.040	.395
1613	3	14	41/30	.030	.040	.425
1614	4	14	41/30	.030	.040	.455
1616	6	14	41/30	.030	.040	.515
1622	2	12	65/30	.030	.040	.440
1623	3	12	65/30	.030	.040	.465
1624	4	12	65/30	.030	.040	.505
1632	2	10	105/30	.030	.040	.495
1633	3	10	105/30	.030	.040	.520

UNSHIELDED MULTI-CONDUCTOR
PLASTIC INTERCOM CABLES — PAIRED

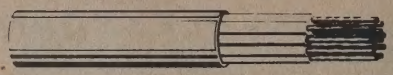
For use in intercom systems as station-to-station wiring, these cables have 22 ga. solid or stranded conductors with .010 durable color-coded plastic insulation. Conductors twisted in pairs. Jacket is .025 gray vinyl. (Other types of paired cables for indoor or outdoor use can be made to your specifications.)



CAT. NO. 500' Spools	CAT. NO. 100' Spools	No. of Pairs	Type	O.D.
4010D	4010C	2 Pair	22 Ga. Solid	.200
6010D	6010C	2 Pair	22 Ga. Stranded	.205
4014D	4014C	3 Pair	22 Ga. Solid	.225
6014D	6014C	3 Pair	22 Ga. Stranded	.245
4016D	4016C	5 Pair	22 Ga. Solid	.260
6016D	6016C	5 Pair	22 Ga. Stranded	.285
4018D	4018C	7 Pair	22 Ga. Solid	.310
6018D	6018C	7 Pair	22 Ga. Stranded	.345
4022D	4022C	11 Pair	22 Ga. Solid	.365
6022D	6022C	11 Pair	22 Ga. Stranded	.410
4026D	4026C	15 Pair	22 Ga. Solid	.395
6026D	6026C	15 Pair	22 Ga. Stranded	.465
4030D	4030C	27 Pair	22 Ga. Solid	.500
6030D	6030C	27 Pair	22 Ga. Stranded	.570
4038D	4038C	51 Pair	22 Ga. Solid	.750

UNSHIELDED MULTI-CONDUCTOR
PLASTIC INTERCOM CABLES (Cont'd)

UNPAIRED

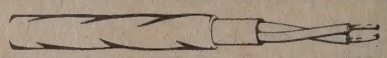


22 ga. stranded conductors with bright .010 vinyl insulation . . . and black .020 vinyl jacket (except No. 4062, 4067, 4069 have gray jackets). All cables spooled.

Cat. No. 1000'	500'	250'	100'	No. Cond.
4062M		4062T		3
4063M		4063T		4
4064M		4064T		5
4065M		4065T		8
	4067D	4067T		12
	4069D		4069C	18
4068M		4068T		4*
4080M		4080T		8**

* 2 – 22 ga. and 2 – 18 ga. cond. ** 6 – 22 ga. and 2 – 18 ga. cond.

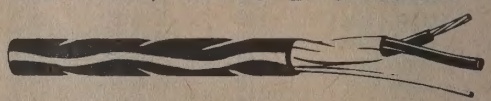
TWO CONDUCTOR SHIELDED
INTERCOM CABLES
TINNED COPPER SPIRAL SHIELD



.020 gray vinyl jacket.

Cat. No. 1000'	250'	Approx. Size	Ga.	Stranding
2884M	2884T	.160	22	solid
2882M	2882T	.160	22	7/30
2888M	2888T	.190	20	10/30

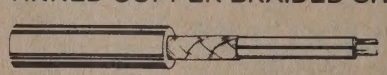
ALUMINUM/POLYESTER SHIELDED



Shielding gives 100% coverage. Cables have stranded tinned copper drain wire and .020 gray vinyl jacket.

Cat. No. 1000'	250'	Approx. Size	Ga.	Stranding
2514M	2514T	.175	22	7/30
2524M	2524T	.190	20	10/30
2534M	2534T	.210	18	16/30

TINNED COPPER BRAIDED SHIELDED



.020 black vinyl jacket.

Cat. No. 1000'	250'	Approx. Size	Ga.	Stranding
2679M	2679T	.175	22	7/30
2681M	2681T	.198	20	10/30
2686M	2686T	.225	18	16/30

CORD SETS

Columbia offers a complete line of UL-listed Cord Sets in plastic, rubber, and neoprene – cheater cords, line cords, extension cords, air conditioner cords, flat yellow cords, range and dryer cords.

Only a partial listing. Ask your local distributor for the complete COLUMBIA CATALOG.

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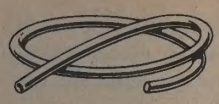
B-105 EXTRUDED PLASTIC TUBING



APPROVED FOR 105°C.-OPERATION — MEETS MIL-1-631D SPECS — A quality plastic Vinyl tubing designed for electronic and electrical insulation work. Has high dielectric strength, extreme flexibility, non-flammabiltiy, abrasion resistance, impervious to oil, water, alkalies, alcohol, solvents, etc., high heat stability and resistance to aging. Meets all A.S.T.M. specifications, Mil. Spec. (Type F, Form U, Grades A and C, Class 2, Category 1).

B&S Gauge Size No.	Birnbach No.	Old Part No.	Nom. I.D.	Nom. Wall
24	B105-24	308	.022	.012
22	B105-22	311	.027	.012
20	B105-20	313	.034	.016
19	B105-19	—	.038	.016
18	B105-18	314	.042	.016
17	B105-17	—	.047	.016
16	B105-16	315	.053	.016
15	B105-15	—	.059	.016
14	B105-14	316	.066	.016
13	B105-13	—	.076	.016
12	B105-12	317	.085	.016
11	B105-11	—	.095	.016
10	B105-10	325	.106	.016
9	B105-9	—	.118	.020
8	B105-8	318	.133	.020
7	B105-7	—	.148	.020
6	B105-6	326	.166	.020
5	B105-5	—	.186	.020
4	B105-4	319	.208	.020
3	B105-3	—	.234	.020
2	B105-2	320	.263	.020
1	B105-1	—	.294	.020
0	B105-0	—	.330	.020
5/16"	B105-5/16"	321	.312	.025
3/8"	B105-3/8"	322	.375	.025
7/16"	B105-7/16"	—	.438	.025
1/2"	B105-1/2"	323	.500	.025
9/16"	B105-9/16"	—	.562	.030
5/8"	B105-5/8"	324	.625	.030
3/4"	B105-3/4"	327	.750	.035
7/8"	B105-7/8"	360	.875	.035
1"	B105-1"	361	1.000	.035
1 1/8"	B105-1 1/8"	—	1.125	.040
1 1/4"	B105-1 1/4"	362	1.250	.040
1 3/8"	B105-1 3/8"	—	1.375	.040
1 1/2"	B105-1 1/2"	363	1.500	.045
1 3/4"	B105-1 3/4"	328	1.750	.055
2"	B105-2"	329	2.000	.060
2 1/4"	B105-2 1/4"	364	2.250	.065
2 1/2"	B105-2 1/2"	365	2.500	.070

STANDARD COLORS

EVEN NUMBERS — #24, 22, 20, 18, 16 — Clear Black, Yellow, Red, Green, Brown, Orange, Blue, White, Violet and Gray; #14, 12, 10, 8, 6, 4, 2, 3/16", 3/8", 1/2", 5/8" — Clear, Black, Yellow, Red, Green, Brown, Orange, Blue and White.

ODD NUMBERS — #19, 17, 15, 13, 11, 9, 7, 5, 3, 1, 0 — Clear, Black White; #3/4" thru 2 1/2" — Clear, Black, White.

STANDARD PUT-UPS

#24 thru #15	1,000' - 500' - 100' - 50' - 25' spools
#14 thru #8	500' - 100' - 50' - 25' spools
#4 thru 1/2"	250' - 100' - 50' - 25' coils
9/16" thru 7/8"	100' - 50' - 25' coils
1" & larger	50 coils

SIZES #24 THRU #15 AVAILABLE IN 36" LENGTHS

TABLE OF PHYSICAL & ELECTRICAL PROPERTIES—B-105 TUBING

Tensile Strength—2500 Psi. (Minimum Average)
Flammability—Non-Flammable
Ultimate Elongation—340%
Recommended for Temperatures to—105° C
Cold Bend— —40° C
Dielectric Strength .020" Wall—800 V/Mil
Varnish Baking—Good
Water Absorption
Weight Increase (1 Week)—0.1%—Fungi Resistance—Yes
Oil Resistance—Indefinitely flexible when immersed in oil.
Insulation Resistance—over 1,000,000 megohms.

IN STOCK

The Birnbach Line of insulated sleeving and tubing is the basic quality line designed for the rigid performance requirements of the Aircraft, Electrical and Electronic Industries.

Meets or exceeds the required MIL Specifications and ASTM and NEMA standards. We invite your inquiries on special problems and requirements.

B-65 — EXTRUDED PLASTIC TUBING LOW TEMPERATURE — Per MIL-I-7444B to —94° F.

No. B-65 meets Air Force spec. Mil-I-7444 specifically designed for operation at sub-zero temperatures. It is fungus resistant and has excellent dielectric strength.

B&S Gauge Size No.	Birnbach No.	Nom. I.D.	Nom. Wall
24	B65-24	.022	.012
22	B65-22	.027	.012
20	B65-20	.034	.016
19	B65-19	.038	.016
18	B65-18	.042	.016
17	B65-17	.047	.016
16	B65-16	.053	.016
15	B65-15	.059	.016
14	B65-14	.066	.016
13	B65-13	.076	.016
12	B65-12	.085	.016
11	B65-11	.095	.016
10	B65-10	.106	.016
9	B65-9	.118	.020
8	B65-8	.133	.020
7	B65-7	.148	.020
6	B65-6	.166	.020
5	B65-5	.186	.020
4	B65-4	.208	.020
3	B65-3	.234	.020
2	B65-2	.263	.020
1	B65-1	.294	.020
0	B65-0	.330	.020
5/16"	B65-5/16"	.312	.025
3/8"	B65-3/8"	.375	.025
7/16"	B65-7/16"	.438	.025
1/2"	B65-1/2"	.500	.025
9/16"	B65-9/16"	.562	.030
5/8"	B65-5/8"	.625	.030
3/4"	B65-3/4"	.750	.035
7/8"	B65-7/8"	.875	.035
1"	B65-1	1.000	.035
1 1/4"	B65-1 1/4"	1.250	.040
1 3/8"	B65-1 3/8"	1.375	.040
1 1/2"	B65-1 1/2"	1.500	.045
1 3/4"	B65-1 3/4"	1.750	.055
2"	B65-2"	2.000	.060
2 1/4"	B65-2 1/4"	2.250	.065
2 1/2"	B65-2 1/2"	2.500	.070

STANDARD COLOR—Clear (Amber)
STANDARD PUT-UPS SAME AS BIRACO 105 EXCEPT OMIT 36" LENGTHS

Applicable Specifications	Dielectric Strength	Temp. Rating	Low Temp. Flexibility	Flame Resistance	Elongation	Tensile Strength
Air Force Spec. MIL-1-7444	750 v/mil	60°C	—65°C	Good	360%	2200 PSI

ALL THE ABOVE TUBING CAN BE ORDERED CUT AND MARKED TO YOUR SPECIFICATIONS

BIRNBACH COMPANY INC. FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.

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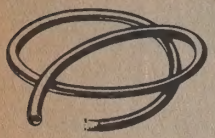
B-130 — VINYL COATED/FIBERGLASS SLEEVING

Per MIL-I-3190B and NEMA Standards to 130° C.



(ASTM, NEMA Grade B-B-1) MEETS MIL-I-3190 SPECS. — Quality Electronic and Electrical Tubing. It is Class B Insulation that combines the best features of the inorganic fiberglass base sleeving with heat resistant, flexible plastic insulation. The plastic compound provides the highest electrical properties, heat stability (130° C.), flexibility and toughness. Meets performance requirements of specs. MIL-I-3190 A, NEMA VSI, ASTM D 372.

Birnbach No.	B&S Ga. Size No.	Old No.	Nom. I.D.
B130-24	24	289	.022
B130-22	22	290	.027
B130-20	20	291	.037
B130-19	19	—	.038
B130-18	18	293	.042
B130-17	17	—	.047
B130-16	16	294	.053
B130-15	15	—	.059
B130-14	14	295	.066
B130-13	13	—	.076
B130-12	12	300	.085
B130-11	11	—	.095
B130-10	10	307	.106
B130-9	9	—	.118
B130-8	8	301	.133
B130-7	7	—	.148
B130-6	6	302	.166
B130-5	5	—	.186
B130-4	4	305	.208
B130-3	3	—	.234
B130-2	2	306	.263
B130-1	1	—	.294
B130-0	0	303	.330
B130-3/8	3/8"	304	.387
B130-7/16	7/16"	—	.450
B130-1/2	1/2"	299	.512
B130-5/8	5/8"	296	.640
B130-3/4	3/4"	—	.768
B130-7/8	7/8"	—	.893
B130-1	1"	—	1.018

SIZES	STANDARD COLORS
#24, 22, 20, 18, 14, 12, 10, 8, 6, 4, 2	Black, Red, White, Yellow, Brown, Orange, Green, Blue, Gray, Purple
3/16", 1/4", 1/2", 3/8"	Black, Red, White, Yellow, Orange, Green, Blue
#19, 17, 15, 13, 11, 9, 7, 5, 3	Black, Red, Yellow, Green
#1, 0, 7/16"	Black, Yellow
3/4", 5/8", 1", 1 1/4", 1 1/2", 1 3/4", 2" 2 1/4", 2 1/2"	Black

OTHER COLORS AVAILABLE TO ORDER

DIMENSIONAL TOLERANCES OF VINYL COATED FIBERGLASS

Size	Apx. I.D.	N.E.M.A. Tolerances Inches
24	.022	.020-.027
22	.027	.025-.032
20	.034	.032-.039
18	.042	.040-.049
16	.053	.051-.061
14	.066	.064-.072
12	.085	.081-.089
10	.106	.102-.112
8	.133	.129-.141
6	.166	.162-.178
4	.208	.204-.224
1/4, 2	.263	.258-.278
5/16, 0	.3125	.312-.328
3/8	.375	.375-.399
1/2	.500	.500-.524
5/8	.625	.625-.655

PHYSICAL & ELECTRICAL PROPERTIES
B130 VINYL COATED FIBERGLASS

Class B
Grade B-1
Dielectric Strength ..... 4000 V.
Temperature Rating ..... 130° C.
Low Temp. Flexibility ..... —30° C.
Non-Flammable
Ins. Resistance Over 1,000,000 MEGS.
Corrosion Resistance ..... Excellent
Oil Resistance ..... Good

COLORS:
Black, Red, White, Yellow, Brown, Orange, Green, Blue, Gray, Purple

STANDARD PUT-UPS

#24 thru #15 ..... 1000' - 500' - 250' - 100' - 50' - 25' - 30"
#14 thru #6 ..... 500' - 250' - 100' - 50' - 25' - 30"
#5 thru #2 ..... 250' - 100' - 50' - 25' - 30"
#1 thru 1/2" ..... 250' - 100' - 50' - 25' - 36"
3/16" to 7/16" ..... 100' - 50' - 25' - 36"
1" thru 2 1/2" ..... 50' - 25'

ALL THE ABOVE TUBING CAN BE ORDERED CUT AND MARKED TO YOUR SPECIFICATIONS

B-1200 — FLEXIBLE FIBERGLASS SLEEVING for Hi-Temperature — applications for 1200° F.

HIGH TEMPERATURE FIBERGLASS SLEEVING — Sleeving of tightly braided 100% fiberglass intended for temperatures as high as 1200° F. It provides maximum mechanical strength consistent with the ultimate in flexibility. It is treated to remove all organic matter as well as keeping the glass braid fray resistant. We can provide special construction to 1/16" double wall construction. It can be colored for coding purposes.

Birnbach No.	B & S Gauge Size	I.D. Nom.
B1200-24	24	.022
B1200-22	22	.027
B1200-20	20	.034
B1200-19	19	.038
B1200-18	18	.042
B1200-17	17	.047
B1200-16	16	.053
B1200-15	15	.059
B1200-14	14	.066
B1200-13	13	.076
B1200-12	12	.085
B1200-11	11	.095
B1200-10	10	.106
B1200-9	9	.118
B1200-8	8	.133
B1200-7	7	.148
B1200-6	6	.166
B1200-5	5	.186
B1200-4	4	.208
B1200-3	3	.234
B1200-2	2	.263
B1200-1	1	.294
B1200-0	0	.330
B1200-3/8	3/8	.387
B1200-7/16	7/16	.450
B1200-1/2	1/2	.512
B1200-5/8	5/8	.640
B1200-3/4	3/4	.768
B1200-7/8	7/8	.893
B1200-1"	1"	1.018

STANDARD COLOR: NATURAL
OTHER COLORS AVAILABLE TO ORDER

STANDARD PUT-UPS

SIZES #24 thru #15 ..... 1000' - 100'
SIZES #14 thru #2 ..... 500' - 100'
SIZES #1 thru 1/2" ..... 250' - 100'
SIZES 5/8" thru 1" ..... 100'

Applicable Specifications	Class	Grade	Dielectric Strength	Temp. Rating	Low Temp. Flexibility	Flame Resistance
Nema VSI	H	—	Determined by Space Factor	1200°F.	—	Non-Flam.

BIRNBACH COMPANY INC. **FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.**

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Birflon — TEFLON* SPAGHETTI TUBING

TFE EXTRUDED TUBING

T-500 T-500 Tubing is extruded from DuPont Tetrafluoroethylene Resin. Used in electronic and electrical equipment for connection of components. Its flexibility, ease of handling has established it as the best and most popular insulation sheathing. This high temperature Class C insulation does not melt and flow as the conventional thermoplastic materials. Birflon T-500 Teflon has unique electrical, chemical and mechanical properties unmatched by any other type tubing for use in applications requiring high frequencies and high temperatures.

Because of Teflon's continuous service temperature of 250° C., which is more than 100° C. above other materials, the soldering technique is simplified since "Teflon" is not harmed by the hot barrel of the soldering iron — therefore, the assembly of aircraft, missile and electronic communication equipment is greatly speeded up. Thin Wall flexible Teflon Tubing can be processed easily into flexible and rigid printed circuits. As a thin, flexible insulation, it permits miniaturization and compactness of design never before possible.

TABLE OF PROPERTIES

Test	ASTM Method	Result
Tensile Strength, 73°F.	D638-52T	1500-3000 Lb/Sq. In.
Elongation, 73°F.	D638-52T	100-200%
Deformation Under Load—122°F.		
1200 Lb/Sq. In., 24 Hrs.	D621-51	4-8%
2000 Lb/Sq. In., 24 Hrs.	D621-51	25%
Hardness Durometer	D676-49T	D50-D65
Heat Distortion Temp, 66 Lb/Sq. In.	D648B-45T	250°F.
Dielectric Strength, .180"	D149-44	400-500 V/MIL
Surface Arc-Resistance	D495-48T	Sec.
Volume Resistivity	D257-52T	10^{15} Ohm-CM
Surface Resistivity, 100% R.H.	D257-52T	3.6×10^{6} Megohms
Dielectric Constant, 60 to 10^{6} Cycles	D150-54T	2.00
Power Factor, 60 to 10^{6} Cycles	D150-54T	0.0003
Specific Gravity	D792-50	2.1-2.2

SMALL PIECE CUTTING AVAILABLE TO ORDER

STOCK COLORS: Natural, Red, Black, Blue, Brown, Green, Orange, Yellow, Gray, Violet, White.

Nos. T-500-3/8 thru T-500-1¼ available in Natural. Additional Colors. Sizes Made to Order.

Teflon Tubing can be ordered cut to your specifications.

Tracer Colors Available—We Invite Your Inquiries For Your Special Requirements

ADDITIONAL ADVANTAGES OF BIRFLON T-500 TEFLON*

- **ELECTRICAL:** Low power factor, low dielectric constant, high volume and surface resistivity, good dielectric strength (500 to 1000 volts/MIL) constant over wide ranges of temperatures and frequencies. Dielectric constant of 2.0 and dissipation factor of 0.0002 are lowest of any solid dielectric.
- **THERMAL:** No change of electrical properties with temperature (25°C. to 250°C.) or frequency (60 CPS to 100 MC). Class C insulation — capable of continuous service at temperatures to 250°C. Has color stability.
- **TOUGHNESS AND FLEXIBILITY:** Has high impact strength. Is tough and flexible over the broad temperature range of —90°C. to 250°C. Service range —320°F. to 500°F.
- **CHEMICAL INERTNESS:** Completely inert to all chemicals and solvents except molten alkali metals and fluorine at elevated temperatures and pressures. Non-corrosive to all metals.
- **MOISTURE ABSORPTION:** Zero moisture absorption. Completely sun and weather resistant.
- **NON-FLAMMABLE** • **LOWEST COEFFICIENT OF FRICTION**
- **FUNGI RESISTANCE:** Inert to all fungi growths.
- **SIZES:** Birflon T-500 Teflon Tubing available in sizes to fit B & S gauge wires. Thin wall available from stock, in sizes No. 32 thru 1¼" I.D. Additional sizes and wall thicknesses made to order.
  Birflon T-500 is made from high molecular weight virgin "Teflon" and meets AMS 3651B, 3653B, 3654, 3655, MIL-C-17B and MIL-I-22129C.

NOTE: When cutting Teflon Tubing, use single edge razor blade for clean unpinched cut.

"Teflon"* DuPont Trade Name for Tetrafluoroethylene Resin

T-500 - Thin Wall

Birnbach No.	B&S Gauge Size No.	Old No.	Nom. I.D.	Nom. Wall
T500-32	32	8013	.011	.0085
T500-30	30	8014	.012	.009
T500-28	28	8015	.015	.009
T500-26	26	8016	.018	.010
T500-24	24	8000	.022	.010
T500-22	22	8001	.027	.010
T500-20	20	8002	.034	.012
T500-19	19	—	.038	.012
T500-18	18	8003	.042	.012
T500-17	17	—	.047	.012
T500-16	16	8004	.053	.012
T500-15	15	—	.059	.012
T500-14	14	8005	.066	.012
T500-13	13	—	.076	.012
T500-12	12	8006	.085	.012
T500-11	11	—	.095	.012
T500-10	10	8007	.106	.012
T500-9	9	—	.118	.015
T500-1/8	1/8	—	.125	.015
T500-8	8	8008	.133	.015
T500-7	7	—	.148	.015
T500-6*	6	8009	.166	.015
T500-5*	5	—	.186	.015
T500-4*	4	8010	.208	.015
T500-3*	3	—	.234	.015
T500-1/4*	1/4	—	.250	.015
T500-2*	2	8011	.263	.015
T500-1*	1	—	.294	.015
T500-5/16*	5/16	—	.312	.015
T500-0*	0	8012	.330	.015
T500-3/8*	3/8	8020	.390	.020
T500-7/16*	7/16	8021	.453	.020
T500-1/2*	1/2	8022	.515	.025
T500-9/16*	9/16	8023	.583	.025
T500-5/8*	5/8	8024	.640	.030
T500-3/4*	3/4	8025	.765	.030
T500-7/8*	7/8	8026	.895	.030
T500-1*	1	8027	1.025	.030
T500-1 1/8*	1 1/8	8028	1.150	.030
T500-1 1/4*	1 1/4	8029	1.275	.030

* In random lengths.

STANDARD PUT-UPS

SIZES #32 thru 26 ..... 1000' - 500' - 250' - 100'
SIZES #24 thru 1¼" ..... 1000' - 500' - 250' - 100' - 50' - 25'

Tolerance — Nos. 32 thru 0 — ±.003" on Wall
Tolerance — Nos. 3/16" thru 1¼" — .020" on I.D., .006" on Wall

T-550 - Standard Wall

Birnbach No.	B&S Gauge Size No.	Nom. I.D.	Nom. Wall
T550-24	24	.022	.012
T550-22	22	.027	.012
T550-20	20	.034	.016
T550-19	19	.038	.016
T550-18	18	.042	.016
T550-17	17	.047	.016
T550-16	16	.053	.016
T550-15	15	.059	.016
T550-14	14	.066	.016
T550-13	13	.076	.016
T550-12	12	.085	.016
T550-11	11	.095	.016
T550-10	10	.106	.016
T550-9	9	.118	.020
T550-1/8	1/8	.125	.020
T550-8	8	.133	.020
T550-7	7	.148	.020
T550-6	6	.166	.020
T550-5	5	.186	.020
T550-4	4	.208	.020
T550-3	3	.234	.020
T550-1/4	1/4	.250	.020
T550-2	2	.263	.020
T550-1	1	.294	.020
T550-5/16	5/16	.312	.020
T550-0	0	.330	.020

STANDARD PUT-UPS

1000' - 500' - 250' - 100' - 50' - 25'

SMALL PIECE CUTTING AVAILABLE TO ORDER

STOCK COLORS: Natural, Red, Black, Blue, Brown, Green, Orange, Yellow, Gray, Violet, White.

OTHER COLORS AVAILABLE TO ORDER

BIRNBACH COMPANY INC. FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.

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HEAT SHRINKABLE TUBING

HEAT SHRINK **PVC** AND **POLYOLEFIN** TUBING

MAXIMUM CONTINUOUS OPERATING TEMPERATURE	BIRNBACH NUMBER	SIZE	MIN. EXPANDED I.D.	MAX. RECOVERED I.D.	NOM. WALL RECOVERED
		SK-265			
VINYL					
	SK265-1/32"	1/32"	.062	.031	.020
	SK265-3/64"	3/64"	.094	.047	.025
	SK265-1/16"	1/16"	.125	.063	.025
	SK265-3/32"	3/32"	.184	.094	.025
105°C	SK265-1/8"	1/8"	.250	.125	.025
	SK265-3/16"	3/16"	.375	.188	.025
	SK265-1/4"	1/4"	.500	.250	.025
MIL-I-23053 A-Grade 5	SK265-3/8"	3/8"	.750	.375	.025
	SK265-1/2"	1/2"	1.00	.500	.030
MIL-I-631 Grade C	SK265-3/4"	3/4"	1.50	.750	.035
	SK265-1"	1"	2.00	1.00	.040
		SK-275			
IRRADIATED POLYOLEFIN	SK275-1/32"	1/32"	.062	.031	.020
	SK275-3/64"	3/64"	.094	.047	.025
	SK275-1/16"	1/16"	.125	.063	.025
	SK275-3/32"	3/32"	.184	.094	.025
135°C	SK275-1/8"	1/8"	.250	.125	.025
	SK275-3/16"	3/16"	.375	.188	.025
	SK275-1/4"	1/4"	.500	.250	.025
	SK275-3/8"	3/8"	.750	.375	.025
MIL-I-23053 (wep) Class I	SK275-1/2"	1/2"	1.00	.500	.030
	SK275-3/4"	3/4"	1.50	.750	.035
	SK275-1"	1"	2.00	1.00	.040

SK-265 & SK-275 TUBING PROPERTIES CHART

	RATING	TEST
TENSILE STRENGTH	2960 PSI	ASTM D-876-59-T
ULTIMATE ELONGATION	200%	ASTM D-876-59-T
BRITTLENESS TEMPERATURE	—34° C.	ASTM D-746-57-T
SPECIFIC GRAVITY	1.34	MIL-I-631 D, 4. 6. 12
WATER ABSORPTION	0.06% 24 Hours	ASTM D-570-57-T Proc. A
DIELECTRIC STRENGTH	1050 Volts/Mil	ASTM D-149-55-T
VOLUME RESISTIVITY	5.2 x 10^{14} Ohm-cm	ASTM D-257-58 MIL-I-631 D 4. 6. 13
FUNGUS RESISTIVITY	0-1	MIL-I-631 D 3. 5. 7 and 4. 6. 16
FLAMMABILITY	Self-Extinguishing	ASTM D-876-60-T MIL-I-631 D, 4. 6. 13
FLEXIBILITY AFTER HEAT AGING 200 Hrs. a 100° C. BEND OVER 1/8" MANDREL	GOOD	
CORROSION ON COPPER, BRASS AND ALUMINUM AFTER 14 DAYS a 100° C.	EXCELLENT	MIL-I-7444 B

CHEMICAL RESISTANCE CHART

FUEL JP-4 MIL-J-5624	EXCELLENT
AVIATION GASOLINE 100/130	EXCELLENT
HYDRAULIC OIL MIL-O-5606	EXCELLENT
HYDROCHLORIC ACID 35%	EXCELLENT
WATER	EXCELLENT
SODIUM CHLORIDE 5%	EXCELLENT
ALKALIS	EXCELLENT

*NOTE: SK265 PVC tubing is unsuitable in contact with organic solvents.
SK265 PVC tubing has a higher resistance to oils than low density Polythylene.

All SK-275 available in 4 foot lengths.

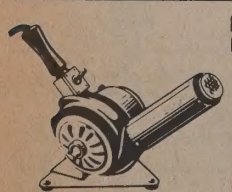
STOCK COLORS: BLACK, WHITE, CLEAR

1/32" Thru 1/8" 500' — 250' — 100' — 50' — 25'
3/32" Thru 1/4" 250' — 100' — 50' — 25'
3/8" Thru 1" 100' — 50' — 25'

HEAT SHRINKABLE TEFLON* TUBING
Birflon Shrink Series, TE Tubing

TEFLON*	Birnbach No.	SK-621 Nominal Tubing Size	Minimum Expanded ID	Recovered Dimensions Maximum ID (1)	Wall Thickness (2)
	SK-621-22	22*	.055"	.032"	.010"
	SK-621-20	20*	.060"	.039"	.012"
	SK-621-19	19	.065"	.043"	.012"
	SK-621-18	18*	.076"	.049"	.012"
	SK-621-17	17	.085"	.054"	.012"
	SK-621-16	16*	.093"	.061"	.012"
	SK-621-15	15	.110"	.067"	.012"
	SK-621-14	14*	.120"	.072"	.012"
250°C	SK-621-13	13	.140"	.080"	.012"
	SK-621-12	12*	.150"	.089"	.012"
	SK-621-11	11	.170"	.101"	.012"
	SK-621-10	10*	.191"	.112"	.012"
	SK-621-9	9	.205"	.124"	.015"
	SK-621-8	8*	.240"	.141"	.015"
	SK-621-7	7	.270"	.158"	.015"
	SK-621-6	6*	.302"	.178"	.015"
	SK-621-5	5	.320"	.198"	.015"
MIL-I-23053 (wep) Class II	SK-621-4	4*	.348"	.224"	.015"
	SK-621-3	3	.360"	.249"	.015"
	SK-621-2	2*	.375"	.278"	.015"
	SK-621-1	1	.385"	.311"	.015"
	SK-621-0	0*	.400"	.347"	.015"
	SK-621-3/8	3/8"*	.560"	.399"	.020"
	SK-621-7/16	7/16"*	.655"	.462"	.020"
	SK-621-1/2	1/2"*	.750"	.524"	.020"

Standard Put-up—36" Straight Lengths



HAG-12 500/750°F Hot Air Gun For PVC Series
HAG-13 750/1000°F Hot Air Gun For TE Series

The quickest and most versatile method for applying heat is the hot air gun noted herein. Also, use of an oven, radiant heat, dipping in hot liquids, or using a soldering iron or the flame of a match.

BIRFLON SHRINK SERIES TE TUBING

HEAT SHRINKABLE TEFLON* TUBING

Is a Class C material modified from polytetrafluorethylene. The tubing will shrink when heated to 621 F. (It should be heated until it turns semi-transparent, then the heating process immediately stopped. Overheating can cause splitting, therefore trial and error testing is recommended to establish the proper time and temperature for each application.) Correct procedure will result in a snug-fitting insulating wrap possessing hi-heat resistance, superior chemical resistance, and excellent electrical characteristics. The tubing is available in a full range of colors. Stock colors: black, white, natural.

* Dupont Polytetrafluoroethelene

SK621 TEFLON* TUBING PROPERTIES CHART

	TE SERIES Shrinkable "Teflon"*
DIELECTRIC STRENGTH (20 Mil Wall)	850 Volts/Mil
DIELECTRIC CONSTANT	2.2
POWER FACTOR	.00
VOLUME RESISTIVITY	10^{17} Ohms/CM
FUNGUS RESISTANCE	Inert
FLAMMABILITY	Will Not Support Combustion
FUEL and OIL RESISTANCE	Superior
HYDRAULIC FLUID RESISTANCE	Superior
SOLVENT RESISTANCE	Superior
ACID and ALKALI RESISTANCE	Superior
CORROSION RESISTANCE	Excellent
TENSILE STRENGTH	5000-7500 PSI
ULTIMATE ELONGATION	300-500%
WATER ABSORPTION	Nil
LOW TEMPERATURE BRITTLE POINT	—66°F
HARDNESS	98 Shore A
SPECIFIC GRAVITY	2.2

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BUSS BAR, TINNED AND UNTINNED

MAGNET WIRE PER MIL-W-583B

SOLID TINNED (SOFT DRAWN) SYMBOL TC

Specification MIL-W-3861 Type S, QQ-W-343 Type S, ASTM-B-33

Cat. No.	¼ lb. SPOOL Size B&S	¼ lb. SPOOL Ft.	½ lb. SPOOL Size B&S	½ lb. SPOOL Ft.	1 lb. SPOOL Size B&S	1 lb. SPOOL Ft.	Nom. O.D.
BST-10	10	8	10	16	10	32	.103"
BST-12	12	12	12	25	12	50	.082"
BST-14	14	20	14	40	14	80	.065"
BST-16	16	32	16	63	16	126	.051"
BST-18	18	50	18	100	18	201	.040"
BST-20	20	80	20	160	20	320	.033"
BST-22	22	127	22	254	22	508	.025"
BST-24	24	201	24	403	24	806	.020"
BST-26	26	320	26	640	26	1280	.016"
BST-28	28	507	28	1015	28	2030	.013"
BST-30	30	805	30	1610	30	3220	.010"
BST-32	32	1282	32	2564	32	5128	.008"
BST-34	34	2037	34	4075	34	8150	.006"
BST-36	36	3221	36	6443	36	12887	.005"
BST-38	38	5132	38	10246	38	20492	.004"
BST-40	40	8143	40	16286	40	32573	.003"

ALL SOLID TINNED COPPER AVAILABLE IN 1000 FT. SPOOLS
BARE COPPER — SOFT DRAWN AVAILABLE FROM STOCK

TINNED COPPER WIRE — SOLID SOFT BRAND

Pure Electrolytic, Copper, annealed, tinned for quick soldering MIL-W-3861 Type S, ASTM-B-33 specifications, QQ-W-343 Type S

Cat. No.	Size AWG	Area Circular Mills	O.D.
1433/4	4	41,704	.204"
1433/6	6	26,250	.162"
1433	8	16,510	.129"
1402	10	10,380	.103"
1406	12	6,530	.082"
1410	14	4,107	.065"
1414	16	2,583	.051"
1418	18	1,624	.040"
1422	20	1,022	.033"
1434	22	624.4	.025"
1424	24	404.0	.020"
1426	26	254.1	.016"
1428	28	159.8	.013"
1430	30	100.5	.010"
1430/32	32	63.21	.008"
1430/34	34	39.75	.006"
1430/36	36	25.00	.005"
1430/38	38	15.72	.004"

HEAVY FORMVAR (HF) TYPE T2

Single conductor round bare copper, baked film insulation from a varnish based on a vinyl acetal resin. 105°C.

Has new tough abrasion resisting film. Replaces enamel and fabric insulations for certain applications requiring exceptional abrasion resistance. Stable under heat. High dielectric strength. Infinite resistance to water and moisture. Does not fail after two hours at 105°C. Takes up less winding space.

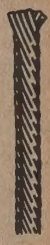
ALL MAGNET WIRE AVAILABLE IN LARGER PUT-UPS

Cat. No.	¼ lb. SPOOL Size B&S	¼ lb. SPOOL Ft.	½ lb. SPOOL Size B&S	½ lb. SPOOL Ft.	1 lb. SPOOL Size B&S	1 lb. SPOOL Ft.	Nom. O.D.
BHF-10	10	8	10	16	10	32	.1056"
BHF-12	12	12	12	25	12	50	.0842"
BHF-14	14	20	14	39	14	78	.0673"
BHF-16	16	31	16	62	16	124	.0539"
BHF-18	18	49	18	99	18	198	.0432"
BHF-20	20	78	20	156	20	313	.0346"
BHF-22	22	125	22	250	22	501	.0277"
BHF-24	24	200	24	399	24	798	.0224"
BHF-26	26	300	26	600	26	1200	.0180"
BHF-28	28	500	28	1000	28	1999	.0144"
BHF-30	30	800	30	1600	30	3200	.0116"
BHF-32	32	1225	32	2450	32	4900	.0095"
BHF-34	34	1988	34	3975	34	7950	.0075"
BHF-36	36	3200	36	6400	36	12800	.0060"
BHF-38	38	5050	38	10100	38	20200	.0049"
BHF-40	40	7975	40	15850	40	31700	.0038"
BHF-42	42	12375	42	24750	42	49500	.0032"
BHF-44	44	14500	44	29000	44	58000	.0026"

UNINSULATED COPPER WIRE

SILICON BRONZE AERIAL WIRE

Especially designed for ships, airports, short wave and transmitting antennas where high tensile strength and resistance to the elements are important.



Cat. No.	Size AWG	Strand	Breaking Strength/Lbs.	Nom. O.D.
529	4	7/12	3670	.240"
528	6	7/14	2140	.190"
527	8	7/16	1600	.150"
499	10	7/18	1000	.122"
524	12	7/20	650	.100"
526	14	7/22	420	.075"

#528 & #499 meets MIL-W-13074; #524 meets MIL-W-13276
STANDARD PUT-UPS: 100' — 500' — 1000'

BUS BAR WIRE (Hard Drawn)

QQ-W-343 type S—MIL-W-3861 type S, ASTM-B-33, ASTM-B-246-51 specifications

For hooking up all types of transmitters, especially ultra short wave equipment. All bus wire is made of hard drawn copper, tinned, straightened, and cut in 2 ft. lengths.

STANDARD PACKAGE: 100 pieces

Cat. No.	No.		
2010	10	Round	Tinned
2013	12	Round	Tinned
2015	14	Round	Tinned
2016	16	Round	Tinned
2018	18	Round	Tinned
2020	20	Round	Tinned
2022	22	Round	Tinned

STRANDED TINNED COPPER WIRE

Cat. No.	Size AWG	Strand	Nom. O.D.
495	12	7/20	.102"
1671	14	7/22	.076"
1674	15	7/23	.069"
1628	16	7/24	.062"

#1671 meets H4.4—1940 type W—1
Also available in stranded bare.

JUMPER CABLE

PURE ELECTROLYTIC COPPER, annealed, tinned for quick soldering MIL-W-3861 Type B, ASTM-B-33 Specifications

Cat. No.	Class Descr.	Size AWG	Strand	Nom. O.D.
1622	K	22	7/30	.030"
1620	K	20	10/30	.037"
1618	K	18	16/30	.045"
1616	K	16	26/30	.059"
1614	K	14	41/30	.073"
1612	K	12	65/30	.091"

STANDARD PUT-UPS:
100' — 500' — 1000'

STRANDED BARE COPPER WIRE

Cat. No.	Size AWG	Strand	Nom. O.D.
493	12	7/20	.100"
1670	14	7/22	.075"
1673	15	7/23	.068"
1680	16	7/24	.060"
681	18	7/26	.050"
700	19	7/27	.041"

STANDARD PUT-UPS:
100' — 500' — 1000'

SOLID ENAMEL COPPER WIRE

Cat. No.	Size AWG	Nom. O.D.
497	10	.103"
492	12	.083"
490	14	.066"

STANDARD PUT-UPS:
100' — 250' — 500' — 1000'

BARE COPPER WIRE (Soft Drawn)

QQ—W—341A specifications

SOLID

Cat. No.	Size AWG	Area Circular Mills	Nom. O.D.
1560	8	16,510	.1285"
1562	10	10,380	.102"
1566	12	6,530	.081"
1570	14	4,107	.064"
1574	16	2,583	.051"

STANDARD PUT-UPS: 100' — 500' — 1000'

PLAIN ENAMEL (PE) TYPE T

Single conductor round bare copper covered with a continuous insulating film of enamel. 105°C.

Cat. No.	¼ lb. SPOOL Size B&S	¼ lb. SPOOL Ft.	½ lb. SPOOL Size B&S	½ lb. SPOOL Ft.	1 lb. SPOOL Size B&S	1 lb. SPOOL Ft.	Nom. O.D.
BPE-10	10	8	10	16	10	32	.1037"
BPE-12	12	12	12	25	12	50	.0825"
BPE-14	14	20	14	40	14	80	.0657"
BPE-16	16	32	16	63	16	126	.0522"
BPE-18	18	50	18	100	18	201	.0416"
BPE-20	20	80	20	160	20	320	.0332"
BPE-22	22	127	22	254	22	508	.0266"
BPE-24	24	201	24	403	24	806	.0212"
BPE-26	26	320	26	640	26	1280	.0169"
BPE-28	28	507	28	1015	28	2030	.0135"
BPE-30	30	805	30	1610	30	3220	.0108"
BPE-32	32	1282	32	2564	32	5128	.0087"
BPE-34	34	2037	34	4075	34	8150	.0069"
BPE-36	36	3221	36	6443	36	12887	.0055"
BPE-38	38	5132	38	10246	38	20492	.0044"
BPE-40	40	8143	40	16286	40	32573	.0034"
BPE-42	42	12803	42	25605	42	51211	.0028"
BPE-44	44	20455	44	40910	44	81819	.0023"

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MIL-W-76B PLASTIC WIRE

*** STOCK COLORS**

1—White	16—White/Brown
2—Black	17—White/Orange
3—Red	18—White/Gray
4—Green	19—White/Violet
5—Yellow	20—White/Black/Red
6—Light Blue	21—White/Black/Green
7—Brown	22—White/Black/Yellow
8—Orange	23—White/Black/Blue
9—Gray (state)	24—White/Black/Brown
10—Violet (purple)	25—White/Black/Orange
11—White/Black	26—White/Black/Gray
12—White/Red	27—White/Black/Violet
13—White/Green	28—Tan
14—White/Yellow	29—Pink
15—White/Blue	30—Dark Blue

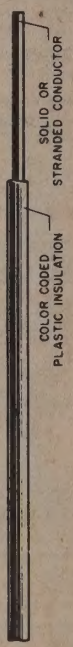
*Other striped color combinations available to order.

MW	C	22	(7)	j
Type OF WIRE	CONDUCTOR MATERIAL	CONDUCTOR SIZE (AWG)	STRANDING	CONSTRUCTION
LW .... 300 Volt Light Wall	TINNED COPPER	30 thru 20	SOLID 7 STRAND 16 STRAND 26 STRAND 41 STRAND 65 STRAND 105 STRAND 133 STRAND	Symbol — Covering Over Insulated Wire U — None J — Jacket B — Braid S — Shield JS — Jacket and Shield BS — Braid and Shield SJ — Shield & Outer Jacket JSJ — Jacket, Shield and Outer Jacket BSJ — Braid, Shield and Outer Jacket
MW ....1,000 Volt Medium Wall	TINNED COPPER	24 thru 12		
HW ....2500 Volt Heavy Wall	TINNED COPPER	22 thru 12		
HW .... 600 Volt Heavy Wall	TINNED COPPER	10 thru 6		

TYPE MW—UNCOVERED PLASTIC 1,000 V

DESCRIPTION: Solid or extra flexible tinned copper, color coded **medium wall** polyvinylchloride insulation.

CHARACTERISTICS: Temperature rating —40° to +80°C, Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.



STRANDED

Cat. No.	Size AWG	Mil-W-76B Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7024	24	MW-C 24(7)U	7/32	015"	1000	059"
7001	22	MW-C 22(7)U	7/30	017"	1000	066"
7003	20	MW-C 20(10)U	10/30	017"	1000	074"
7005	18	MW-C 18(16)U	16/30	017"	1000	085"
7007	16	MW-C 16(26)U	26/30	017"	1000	098"
7009	14	MW-C 14(41)U	41/30	017"	1000	114"
7011	12	MW-C 12(65)U	65/30	017"	1000	132"

SOLID

7025	24	MW-C 24(1)U	1	017"	1000	056"
7000	22	MW-C 22(1)U	1	017"	1000	061"
7002	20	MW-C 20(1)U	1	017"	1000	068"
7004	18	MW-C 18(1)U	1	017"	1000	075"
7026	16	MW-C 16(1)U	1	017"	1000	084"

STANDARD PUT-UPS: 100' - 500' - 1000'
STOCK COLORS — 1 thru 30

MIL-W-76B-PLASTIC WIRE
Type MW — Glass Braid — Shielded
TINNED COPPER SHIELD OVER LACQUERED BRAID

DESCRIPTION: Extra flexible stranded tinned copper, white medium wall polyvinylchloride insulation, white flame retardant lacquered glass braided with tinned copper shield overall, 80% coverage.

CHARACTERISTICS: Temperature rating —40°C to +80°C, Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Cat. No.	Size AWG	Type Designation	Strand	Wall Thickness	Nom. O.D.
831	22	MW-C 22(7)BS	7/30	.016"	.095"
832	20	MW-C 20(10)BS	10/30	.016"	.105"
833	18	MW-C 18(16)BS	16/30	.016"	.125"
834	16	MW-C 16(26)BS	26/30	.016"	.135"
835	14	MW-C 14(41)BS	41/30	.016"	.155"
835/12	12	MW-C 12(65)BS	65/30	.016"	.175"
835/10	10	MW-C 10(105)BS	105/30	.025"	.200"

STOCK COLOR: White
STANDARD PUT-UPS: 100' - 500' - 1000'

SHIELDED PLASTIC HOOK-UP WIRE
SPECIFICATIONS MIL-W-76B
TEMPERATURE RATING: —40°C TO +80°C
TYPE MW (Medium Wall) — SHIELDED

DESCRIPTION: One conductor stranded tinned copper with **WHITE** thermoplastic insulation and tinned copper shielded braid overall.

Cat. No.	Size AWG	Mil-W-76B Type Designation	Minimum Strand	Nom. Wall	Volt Rating	Nom. O.D.
7074	24	MW-C 24(7)S	7/32	.015"	1000	.074"
7072	22	MW-C 22(7)S	7/30	.017"	1000	.084"
7070	20	MW-C 20(10)S	10/30	.017"	1000	.094"
7068	18	MW-C 18(16)S	16/30	.017"	1000	.106"
7067	16	MW-C 16(26)S	26/30	.017"	1000	.121"
*7066	14	MW-C 14(41)S	41/30	.017"	1000	.137"
*7065	12	MW-C 12(65)S	65/30	.017"	1000	.155"

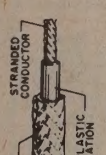
STANDARD PUT-UPS: 100' - 500' - 1000'

SPECIFICATION MIL-W-76B TYPE MW
(Med. Wall)—NYLON JACKET 1000 V (Fungus Proof)

DESCRIPTION: One conductor stranded tinned copper with thermoplastic insulation and extruded nylon jacket overall.

Cat. No.	Size AWG	Mil-W-76B Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.	Stock Colors
7224	24	MW-C 24(7)J	7/32	.015"	1000	.068"	1-10
7222	22	MW-C 22(7)J	7/30	.017"	1000	.075"	1-10
7220	20	MW-C 20(10)J	10/30	.017"	1000	.087"	1-10
7218	18	MW-C 18(16)J	16/30	.017"	1000	.100"	1-10
7216	16	MW-C 16(26)J	26/30	.017"	1000	.112"	1-10
7214	14	MW-C 14(41)J	41/30	.017"	1000	.122"	1-10
7212	12	MW-C 12(65)J	65/30	.017"	1000	.140"	1-3
7210	10	MW-C 10(105)J	105/30	.017"	1000	.150"	1-3

STANDARD PUT-UPS: 100' - 500' - 1000'



SPECIFICATION MIL-W-76B
TYPE MW (Medium Wall)
GLASS BRAID 1000 VOLTS

DESCRIPTION: Extra flexible stranded tinned copper, white medium wall polyvinylchloride insulation, color coded flame retardant lacquered glass braid overall.

CHARACTERISTICS: Temperature rating —40° to +80°C, Voltage rating 1000 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Cat. No.	Size AWG	Mil-W-76B Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.	Stock Colors As Listed
7022	22	MW-C 22(7)B	7/30	.017"	1000	.079"	1-12
7020	20	MW-C 20(10)B	10/30	.017"	1000	.084"	1-12
7018	18	MW-C 18(16)B	16/30	.017"	1000	.100"	1-12
7016	16	MW-C 16(26)B	26/30	.017"	1000	.116"	1-12
*7014	14	MW-C 14(41)B	41/30	.017"	1000	.129"	1, 11, 12
*7012	12	MW-C 12(65)B	65/30	.017"	1000	.149"	1, 11, 12

STANDARD PUT-UPS: 100' - 500' - 1000'

ALL ITEMS AVAILABLE CUT, STRIPPED AND TINNED

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MIL-W-76B PLASTIC WIRE

MIL-W-76B — TYPE MW — SHIELDED — NYLON JACKET

DESCRIPTION: One conductor stranded tinned copper, **WHITE** medium wall polyvinyl chloride insulation, shielded tinned copper braid, minimum 80% coverage, clear nylon (polymide) jacket overall. Temperature rating —40° to +90°C. Resistant to acids, alkalis, oil, flame, moisture, fungus.

Cat. No.	Size AWG	MIL-W-76B Type Designation	Strand	Nom. Wall	Volt Rating	Nom. O.D.
7074J	24	MW-C 24(7)SJ	7/32	.016"	1000	.087"
7072J	22	MW-C 22(7)SJ	7/30	.017"	1000	.094"
7070J	20	MW-C 20(10)SJ	10/30	.017"	1000	.100"
7068J	18	MW-C 18(16)SJ	16/30	.017"	1000	.110"
7067J	16	MW-C 16(26)SJ	26/30	.017"	1000	.125"
7066J	14	MW-C 14(41)SJ	41/30	.017"	1000	.138"
7065J	12	MW-C 12(65)SJ	65/30	.017"	1000	.160"

Additional colors available to order.
STANDARD PUT-UPS: 100' - 500' - 1000'

MIL-W-76B TYPE HW (Heavy Wall) 2500 VOLTS (Fungus Proof)

DESCRIPTION: Similar to type MW. One conductor stranded tinned copper with larger wall of primary thermoplastic insulation.

CHARACTERISTICS: Temperature rating —40°C to +80°C. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Cat. No.	Size AWG	Mil-W-76B Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.	Stock Colors As Listed
7322	22	HW-C 22(7)U	7/30	.033"	2500	.094"	1-10
7320	20	HW-C 20(10)U	10/30	.033"	2500	.102"	1-10
7318	18	HW-C 18(16)U	16/30	.033"	2500	.114"	1-10
7316	16	HW-C 16(26)U	26/30	.033"	2500	.128"	1-10
7314	14	HW-C 14(41)U	41/30	.045"	600	.175"	1-10
7312	12	HW-C 12(65)U	65/30	.045"	600	.188"	1-10
*7013	10	HW-C 10(105)U	105/30	.045"	600	.217"	1-3
*7015	8	HW-C 8(133)U	133/29	.045"	600	.268"	1-3
*7017	6	HW-C 6(133)U	133/27	.045"	600	.315"	1-3

STANDARD PUT-UPS: 100' - 500' - 1000'

MIL-W-76B — TYPE LW (Light Wall) TYPE LW — LW — VINYL — 300 VOLTS

TEMP. RATING —40°C TO 80+°C

DESCRIPTION: One conductor stranded tinned copper with light wall of primary thermoplastic insulation. Nom. Wall .010".

CHARACTERISTICS: Temperature rating —40°C to +80°C. Voltage rating 300 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Cat. No.	Size AWG	MIL-W-76B Type Designation	Conductor Strand	Nom. O.D.	Standard Colors
7330	30	LW-C 30(7)U	7/38	.033"	1-10
7328	28	LW-C 28(7)U	7/36	.035"	1-10
7326	26	LW-C 26(7)U	7/34	.040"	1-10
7324	24	LW-C 24(7)U	7/32	.044"	1-19
7324/22	22	LW-C 22(7)U	7/30	.050"	1-19
7324/20	20	LW-C 20(7)U	7/28	.060"	1-19

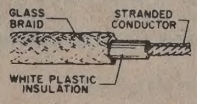
STANDARD PUT-UPS: 100' - 500' - 1000'

MIL-W-76B — TYPE MW — SHIELDED — VINYL JACKET

DESCRIPTION: One conductor stranded tinned copper, **WHITE** medium wall polyvinyl chloride insulation, shielded tinned copper braid, minimum 80% coverage, black PVC (polyvinylchloride) jacket overall. Temperature rating —40° to +90°C. Resistant to acids, alkalis, oil, flame, moisture, fungus.

Cat. No.	Size AWG	Mil-W-76B Type Designation	Strand	Nom. Wall	Volt Rating	Nom. O.D.
7074VJ	24	MW-C 24(7)SJ	7/32	.015"	1000	.095"
7072VJ	22	MW-C 22(7)SJ	7/30	.017"	1000	.105"
7070VJ	20	MW-C 20(10)SJ	10/30	.017"	1000	.112"
7068VJ	18	MW-C 18(16)SJ	16/30	.017"	1000	.120"
7067VJ	16	MW-C 16(26)SJ	26/30	.017"	1000	.133"
7066VJ	14	MW-C 14(41)SJ	41/30	.017"	1000	.148"
7065VJ	12	MW-C 12(65)SJ	65/30	.017"	1000	.170"

Additional colors available to order.
STANDARD PUT-UPS: 100' - 500' - 1000'



MIL-W-76B — PLASTIC WIRE TYPE HW (Glass Braid)

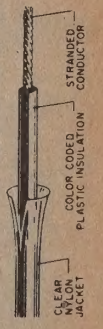
Cat. No.	Size AWG	Type Designation	Conductor Strand	Nom. Wall	Volt Rating	Nom. O.D.
7010	10	HW-C 10(105)B	105/30	.045"	600	.237"
7008	8	HW-C 8(133)B	133/29	.045"	600	.293"
7006	6	HW-C 6(133)B	133/27	.045"	600	.340"

STOCK COLOR: White. **STANDARD PUT-UPS:** 100' - 500 - 1000'

MIL-W-76B — TYPE LW (Light Wall) NYLON — 300 VOLTS

DESCRIPTION: Stranded tinned copper, color coded light wall polyvinylchloride insulation, clear nylon (polyamide) jacket overall. Nominal Jacket Thickness, .002".

CHARACTERISTICS: Temperature rating —40°C to +90°C. Voltage rating 300 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus.



Cat. No.	Size AWG	MIL-W-76B Type Designation	Conductor Strand	Nom. O.D.	Standard Colors
7330N	30	LW-C 30(7)J	7/38	.036"	1-10
7328N	28	LW-C 28(7)J	7/36	.039"	1-10
7326N	26	LW-C 26(7)J	7/34	.042"	1-10
7324N	24	LW-C 24(7)J	7/32	.047"	1-19
7324/22N	22	LW-C 22(7)J	7/30	.053"	1-19
7324/20N	20	LW-C 20(7)J	7/28	.065"	1-19

STANDARD PUT-UPS: 100' - 500' - 1000'

STOCK COLORS

1—White	4—Green	7—Brown	10—Violet (purple)	13—White/Green	16—White/Brown	19—White/Violet
2—Black	5—Yellow	8—Orange	11—White/Black	14—White/Yellow	17—White/Orange	
3—Red	6—Light Blue	9—Gray (slate)	12—White/Red	15—White/Blue	18—White/Gray	

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MIL-W-16878D TEFLON*— HOOK-UP WIRE

MIL-W-16878D — TEFLON† WIRE

Type E—Extruded (600 Volts) — High Temperature Rating — 90° To + 260°C

Chemically inert, non-flammable, excellent flexibility, easy stripping, high dielectric strength, unaffected by fungus. Exceeds Class H insulation requirements. Unaffected by high or low temperature. Outstanding for its dependability and long life under all operating conditions indoors or outdoors. Teflon permits miniaturization and compactness in electronic designs of sub-miniature components, computers, UHF equip., slip ring assemblies, leads to hermetically sealed and potted components, telemetering equip. and guided missiles. Nom. wall .010". TFE extruded.

DESCRIPTION: Single conductor silver plated copper wire concentrically stranded and insulated with extruded or Teflon insulation.

Cat. No.	Size AWG	Mil Type Designation	Strand	Diam. Over Insulation Max.
8532	32	E-32	7/40	.033"
8530	30	E-30	7/38	.036"
8528	28	E-28	7/36	.039"
8526	26	E-26	7/34	.043"
8524	24	E-24	19/36	.048"
8522	22	E-22	19/34	.054"
8520	20	E-20	19/32	.062"
8518	18	E-18	19/30	.074"
8516	16	E-16	19/29	.087"
8514	14	E-14	19/27	.097"
8512	12	E-12	19/25	.120"
8510	10	E-10	37/26	.139"

***STOCK COLORS:** 1 thru 19, as listed.
STANDARD PUT-UPS: 25' - 50' - 100' - 250' - 500' - 1000'

MIL-W-16878D — TEFLON* WIRE

Type EE—Extruded (1000 Volts) MIL-W-16878D

DESCRIPTION: Single conductor silver plated copper wire concentrically stranded and insulated with .016" TFE extruded TEFLON* insulation. Temperature rating —90°C to +260°C 1000 volts.

Cat. No.	Mil Type Designation	Size AWG	Strand	Nom. O.D.
9524	EE-24	24	19/36	.055"
9522	EE-22	22	19/34	.062"
9520	EE-20	20	19/32	.070"
9518	EE-18	18	19/30	.080"
9516	EE-16	16	19/29	.089"
9514	EE-14	14	19/27	.106"
9512	EE-12	12	19/25	.124"
9510	EE-10	10	37/26	.145"
9508	EE- 8	8	133/29	.210"

***STOCK COLORS:** 1 thru 19, as listed.
STANDARD PUTUPS: 100' - 250' - 500' - 1000'

SHIELDED AND UNSHIELDED TEFLON* CABLES TO MIL-W-16878D

DESCRIPTION: One or more conductors, each conductor silver plated concentrically stranded copper wire, Type E Extruded TFE .010" insulation. When shielded, braided silver plated copper shield over conductor(s), 90% shield coverage. When covered, either a TEFLON* impregnated fiberglass braid or a .010" TEFLON* fused, double reversed tape jacket overall. Temperature —65°C to +260°C. Voltage rating 600V. Fungus, solvent, moisture, flame, acid, alkali and oil resistant.

TEFLON* IMPREGNATED FIBERGLASS BRAID OVER SHIELD

Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.
8706	1	24	19/36	.081"
8706/2	2	24	19/36	.126"
8706/3	3	24	19/36	.133"
8706/4	4	24	19/36	.144"
8706/5	5	24	19/36	.156"
8709	1	22	19/34	.088"
8709/2	2	22	19/34	.137"
8709/3	3	22	19/34	.144"
8709/4	4	22	19/34	.158"
8709/5	5	22	19/34	.172"
8712	1	20	19/32	.093"
8712/2	2	20	19/32	.154"
8712/3	3	20	19/32	.163"
8712/4	4	20	19/32	.180"
8712/5	5	20	19/32	.195"
8715	1	18	19/32	.097"
8715/2	2	18	19/30	.162"
8715/3	3	18	19/30	.172"
8715/4	4	18	19/30	.192"
8715/5	5	18	19/30	.207"

STANDARD PUT-UPS: 250' - 500' - 1000'
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow. Special colors and constructions available.

TEFLON* TAPE WRAP JACKET OVER SHIELD

Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.
8521	1	24	19/36	.084"
8521/2	2	24	19/36	.128"
8521/3	3	24	19/36	.135"
8521/4	4	24	19/36	.148"
8521/5	5	24	19/36	.162"
8523	1	22	19/34	.090"
8523/2	2	22	19/34	.140"
8523/3	3	22	19/34	.148"
8523/4	4	22	19/34	.162"
8523/5	5	22	19/34	.183"
8525	1	20	19/32	.099"
8525/2	2	20	19/32	.158"
8525/3	3	20	19/32	.167"
8525/4	4	20	19/32	.184"
8525/5	5	20	19/32	.204"
8527	1	18	19/30	.109"
8527/2	2	18	19/30	.178"
8527/3	3	18	19/30	.189"
8527/4	4	18	19/30	.208"
8527/5	5	18	19/30	.230"

STANDARD PUT-UPS: 250' - 500' - 1000'
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow. Special colors and constructions available.

TEFLON* INNERS, NO JACKET SHIELDED BRAID OVERALL

Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.
8704	1	24	19/36	.068"
8704/2	2	24	19/36	.112"
8704/3	3	24	19/36	.120"
8704/4	4	24	19/36	.132"
8704/5	5	24	19/36	.140"
8707	1	22	19/34	.075"
8707/2	2	22	19/34	.124"
8707/3	3	22	19/34	.132"
8707/4	4	22	19/34	.146"
8707/5	5	22	19/34	.154"
8710	1	20	19/32	.082"
8710/2	2	20	19/32	.142"
8710/3	3	20	19/32	.151"
8710/4	4	20	19/32	.168"
8710/5	5	20	19/32	.180"
8713	1	18	19/30	.093"
8713/2	2	18	19/30	.162"
8713/3	3	18	19/30	.172"
8713/4	4	18	19/30	.191"
8713/5	5	18	19/30	.210"

STANDARD PUT-UPS: 250' - 500' - 1000'
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow. Special colors and constructions available.

NO SHIELD — TEFLON* IMPREGNATED FIBERGLASS

Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.
8705	1	24	19/36	.044"
8705/2	2	24	19/36	.088"
8705/3	3	24	19/36	.096"
8705/4	4	24	19/36	.108"
8705/5	5	24	19/36	.116"
8708	1	22	19/34	.051"
8708/2	2	22	19/34	.100"
8708/3	3	22	19/34	.108"
8708/4	4	22	19/34	.122"
8708/5	5	22	19/34	.131"
8711	1	20	19/32	.058"
8711/2	2	20	19/32	.118"
8711/3	3	20	19/32	.127"
8711/4	4	20	19/32	.144"
8711/5	5	20	19/32	.156"
8714	1	18	19/30	.069"
8714/2	2	18	19/30	.138"
8714/3	3	18	19/30	.148"
8714/4	4	18	19/30	.167"
8714/5	5	18	19/30	.186"

STANDARD PUT-UPS: 250' - 500' - 1000'
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow. Special colors and constructions available.

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PLASTIC HOOK-UP WIRE — MIL-W-16878D

PLASTIC HOOK-UP WIRE — MIL-W-16878D — Type B — High Temperature Vinyl — 600 Volt

Suitable for general purpose wiring for miniature high temperature hook-ups in aircraft, electronic instruments, devices, etc., where excellent resistance to moisture and solvents may be required.

DESCRIPTION: One conductor stranded tinned copper with rated —55°C to +105°C high temperature thermoplastic light wall insulation. Resistant to acids, alkalis, oil, flame, moisture, solvents, and fungus. Nominal wall: 0.010.

Cat. No.	MIL-W-16878D Type Designation	Size AWG	Conductor Strand	Nom. O.D.
7190	B-32	32	7/40	.028″
7191	B-30	30	7/38	.030″
7192	B-28	28	7/36	.033″
7193	B-26	26	7/34	.037″
7194	B-24	24	7/32	.043″
7194/19	B-24	24	19/36	.043″
7195	B-22	22	7/30	.048″
7195/19	B-22	22	19/34	.048″
7196	B-20	20	7/28	.057″
7196/19	B-20	20	19/32	.057″
7197	B-18	18	7/26	.067″
7197/19	B-18	18	19/30	.067″
7198	B-16	16	19/29	.077″
7199	B-14	14	19/27	.091″

***STOCK COLORS:** 1 thru 19, as listed.
STANDARD PUT-UPS: 100′ - 500′ - 1000′

PLASTIC HOOK-UP WIRE — MIL-W-16878D — Type B — Nylon Jacket — 600 Volt

Suitable for general purpose wiring for miniature high temperature hook-ups in aircraft, electronic instruments, devices, etc., where excellent resistance to moisture and solvents may be required.

DESCRIPTION: Stranded tinned copper, color coded. .010″ polyvinylchloride insulation, clear nylon (polyamide) jacket overall.

CHARACTERISTICS: Temperature rating —55°C to +115°C. Voltage rating 600 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents, and fungus.

Cat. No.	Mil-W-16878D Type Designation	Size AWG	Conductor Strand	Nom. O.D.
7190N	B-32	32	7/40	.034″
7191N	B-30	30	7/38	.038″
7192N	B-28	28	7/36	.040″
7193N	B-26	26	7/34	.043″
7194N	B-24	24	7/32	.048″
7194N/19	B-24	24	19/36	.048″
7195N	B-22	22	7/30	.055″
7195N/19	B-22	22	19/34	.055″
7196N	B-20	20	7/28	.065″
7196N/19	B-20	20	19/32	.065″
7197N	B-18	18	7/26	.075″
7197N/19	B-18	18	19/30	.075″
7198N	B-16	16	19/29	.085″
7199N	B-14	14	19/27	.099″

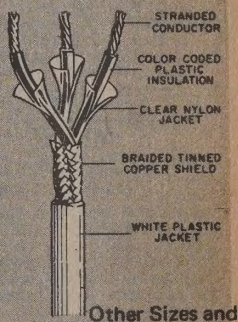
STANDARD PUT-UPS: 100′ - 500′ - 1000′
***STOCK COLORS:** 1 thru 19, as listed.

MIL-W-16878D — MULTI-CONDUCTOR CABLE — Type B — Nylon Shielded-Plastic Jacket

DESCRIPTION: Each conductor stranded tinned copper, .010″ polyvinylchloride insulation, color coded, clear nylon .003 (polyamide) jacket, conductors cabled, braided tinned copper shield 90% coverage, with polyvinylchloride jacket overall.

CHARACTERISTICS: Temperature rating —55°C to +105°C. Voltage rating 600 volts, resistant to acids, alkalis, oil, flame, moisture, fungus, solvents.

Birnbach No.	No. of Cond.	Conductor Size	Conductor Strand	Nom. Overall Jacket	Nom. O.D.
7366-1	1	24	19/36	.010″	.092″
7366-2	2	24	19/36	.016″	.152″
7366-3	3	24	19/36	.016″	.161″
7366-4	4	24	19/36	.017″	.166″
7367-1	1	22	19/34	.010″	.100″
7367-2	2	22	19/34	.016″	.168″
7367-3	3	22	19/34	.017″	.178″
7367-4	4	22	19/34	.019″	.174″
7368-1	1	20	19/32	.010″	.106″
7368-2	2	20	19/32	.019″	.186″
7368-3	3	20	19/32	.019″	.196″
7368-4	4	20	19/32	.021″	.193″
7369-1	1	18	19/30	.012″	.120″
7369-2	2	18	19/30	.021″	.210″
7369-3	3	18	19/30	.022″	.227″
7369-4	4	18	19/30	.023″	.231″
7370-1	1	16	19/29	.016″	.137″
7370-2	2	16	19/29	.023″	.236″
7370-3	3	16	19/29	.024″	.240″
7370-4	4	16	19/29	.025″	.274″



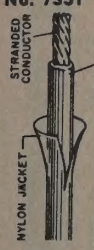
Other Sizes and Colors Available

STANDARD PUT-UP: 100′ - 500′ - 1000′ **COLOR CODE OF CONDUCTORS:** 1—White 2—Black 3—Red 4—Green

SPECIAL CONSTRUCTION AVAILABLE AT ANY TIME.

AIRCRAFT PLASTIC HOOK-UP WIRE — MIL-W-5086A and MIL-C-7078A (105°C Rating)

No. 7351



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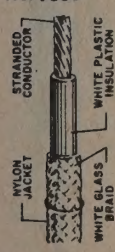

DESCRIPTION: MIL-W-5086A—**Type I**—AN-22 thru AN-12—Single conductor stranded tinned copper, white polyvinylchloride insulation, clear nylon (polyamide) jacket overall. MIL-W-5086A—**Type II**—AN-22 thru AN-12—Single conductor stranded tinned copper, white polyvinylchloride insulation, white glass braid, clear nylon (polyamide) jacket overall. MIL-W-5086A—**Type III**—AN-10 thru AN-00—Single conductor stranded tinned copper, white polyvinylchloride insulation, white glass braid, flame retardant nylon lacquered nylon braid overall. MIL-C-7078A—**Type I**—Single conductor stranded tinned copper, white polyvinylchloride insulation, clear nylon jacket, braided tinned copper shield overall, 85% coverage.

CHARACTERISTICS: Temperature rating: —55°C. to +105°C. Voltage Rating: 600 volts. Resists effects of water, oil, aircraft fuels, hydraulic fluid, skydral, ethyleneglycol, alcohol, dilute acids, alkalis, fungus and abrasion.

NYLON JACKET No. 7371

MIL-W-5086A — UNSHIELDED — 600 Volt Rating

Cat. No.	Size AWG	Mil. Type	Type	Cond. Strand	Nom. O.D.	Cat. No.	Size AWG	Mil. Type	Type Cond.	Conds. Strand	Nom. O.D.
7351	22	AN-22	No. 1	19/34	.100″	7365/2	2	AN-2	No. 2	665/30	.412″
7353	20	AN-20	No. 1	19/32	.080″	7365/0	0	AN-0	No. 2	1045/30	.518″
7355	18	AN-18	No. 1	19/30	.090″	7365/00	00	AN-00	No. 2	1330/30	.588″
7357	16	AN-16	No. 1	19/29	.100″	7351 NB	22	AN-22	No. 2	19/34	.068″
7359	14	AN-14	No. 1	19/27	.125″	7353 NB	20	AN-20	No. 2	19/32	.078″
7361	12	AN-12	No. 1	19/25	.140″	7355 NB	18	AN-18	No. 2	19/30	.088″
7363	8	AN-8	No. 2	133/29	.240″	7357 NB	16	AN-16	No. 2	19/29	.098″
7364	6	AN-6	No. 2	133/27	.297″	7359 NB	14	AN-14	No. 2	19/27	.117″
7365	4	AN-4	No. 2	133/25	.355″	7361 NB	12	AN-12	No. 2	19/25	.137″
						7362 NB	10	AN-10	No. 2	49/27	.189″

MIL-C-7078A — SHIELDED

7371	22	AN-22	No. 1	19/34	.100″	7374	16	AN-16	No. 1	19/29	.139″
7372	20	AN-20	No. 1	19/32	.110″	7375	14	AN-14	No. 1	19/27	.158″
7373	18	AN-18	No. 1	19/30	.124″	7376	12	AN-12	No. 1	19/25	.177″

STANDARD PUT-UPS: 100′ - 500′ - 1000′

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MULTI-CONDUCTOR, INTERCOM & AUDIO CABLES

SPIRAL WRAPPED SHIELDED AUDIO and MULTI-CONDUCTOR CABLE

Plastic Jacketed — with Spiral wrapped copper shield
Designed for P.A. and sound systems, installations in schools, hospitals, and institutions, recording studios, transmitters, paging and call systems.
DESCRIPTION: Each conductor copper tinned, ¼ plastic insulation, color coded, twisted, spiral wrapped tinned copper shield, gray plastic jacket overall.

Cat. No.	Cond.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	Nom. O.D.
941	2	22	7/30	.017"	.020"	.171"
941/1	1	22	7/30	.017"	.020"	.120"
941/3	3	22	7/30	.017"	.020"	.190"
941/4	4	22	7/30	.017"	.020"	.205"
941/6	6	22	7/30	.017"	.020"	.240"
950	2	22	1	.017"	.020"	.169"
942	2	20	10/30	.017"	.020"	.190"
942/1	1	20	10/30	.017"	.020"	.129"
943	3	20	10/30	.017"	.020"	.208"
944	4	20	10/30	.017"	.020"	.222"
945	6	20	10/30	.017"	.020"	.260"
946	1	18	16/30	.017"	.020"	.139"
947	2	18	16/30	.017"	.020"	.230"
947/3	3	18	16/30	.017"	.020"	.228"
947/4	4	18	16/30	.017"	.020"	.243"
948	2	16	26/30	.017"	.020"	.250"
949	3	16	26/30	.017"	.020"	.249"

CONDUCTOR COLOR CODE: 1-Black, 2-Red, 3-White, 4-Green
STANDARD PUT-UP: 100′ - 250′ - 500′ - 1000′

SHIELDED PLASTIC JACKETED CABLE with ALUMINUM MYLAR* FOIL SHIELD

This cable is extremely light in weight and provides 100% shield coverage at audio and radio frequencies.
DESCRIPTION: Each conductor tinned copper, color coded polyethylene insulation, twisted with #22 7/30 stranded tinned copper drain wire, aluminum Mylar* foil shield, gray polyvinylchloride jacket overall.

Cat. No.	Cond.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	Nom. O.D.
1890	2	22	7/30	.015"	.020"	.165"
1890/3	3	22	7/30	.015"	.020"	.175"
1890/4	4	22	7/30	.015"	.020"	.190"
1891	2	20	10/30	.015"	.020"	.180"
1891/3	3	20	10/30	.015"	.020"	.190"
1891/4	4	20	10/30	.015"	.020"	.200"
1892	2	18	16/30	.017"	.020"	.220"
1892/3	3	18	16/30	.017"	.020"	.230"
1892/4	4	18	16/30	.017"	.020"	.240"

CONDUCTOR COLOR CODE: 1-Black, 2-Red, 3-White, 4-Green
STANDARD PUT-UP: 100′ - 500′ - 1000′

TWISTED PAIRS — STRANDED CONDUCTORS

DESCRIPTION: Each Conductor #22 7/30 Stranded Tinned Copper, .010" Vinyl plastic insulation, twisted pairs cabled, conductors color coded, tubed gray Vinyl plastic jacket overall.

Cat. No.	Pairs	Cond.	Size AWG	Strand	Nom. O.D.
4731	1	2	22	7/30	.145"
4732	2	4	22	7/30	.210"
4733	3	6	22	7/30	.225"
4734	4	8	22	7/30	.235"
4735	5	10	22	7/30	.245"
4736	6	12	22	7/30	.270"
4739	9	18	22	7/30	.325"
4740	11	22	22	7/30	.365"
4745	15	30	22	7/30	.455"
4745/19	19	38	22	7/30	.480"
4746	23	46	22	7/30	.530"
4747	27	54	22	7/30	.570"
4748	31	62	22	7/30	.635"
4749	41	82	22	7/30	.710"
4750	51	102	22	7/30	.800"

STANDARD PUT-UPS: 50′ - 100′ - 250′ - 1000′

SPECIAL CABLE CONSTRUCTIONS AVAILABLE AT ANY TIME.

SHIELDED BROADCAST AUDIO CABLE

Designed to provide maximum performance on all equipment. Conductors twisted correctly assures quiet, clear operation which eliminates interference and cross talk. Used by Broadcast studios, for P.A. and sound systems, rack wiring, etc.

DESCRIPTION: #938—#22 Solid Tinned Copper Conductor, enameled, heavy cellulose acetate yarn wrap, cotton braid waxed; cabled with #22 AWG solid tinned copper wire laid parallel to twisted pair under tinned copper braid shield; tubed-on Vinyl plastic jacket overall.

#939—#22-7/30 Stranded Tinned Copper, plastic insulation, color coded, twisted, copper braid shield, tubed-on Vinyl plastic jacket overall.

#940—2 Conductors #22 solid plastic insulation, color coded, twisted with #22 AWG solid tinned copper ground wire under tinned copper shield with vinyl plastic jacket overall.

#940/1 same construction as #940 however with tinned copper spiral wrapped shield.

#822 and #824 have solid enameled copper wire, cotton wrap, cotton braid waxed twisted pair, bare copper braid overall.

Cat. No.	Cond.	Size AWG	Strand	Nom. O.D.
938	2	22	Solid	.210"
939	2	22	7/30	.170"
940	2	22	Solid	.160"
940/1	2	22	Solid	.160"
822	2	22	Solid	.125"
824	2	19	Solid	.145"
927	2	20	Solid	.210"
928	2	18	Solid	.220"

STANDARD PUT-UP: 100′ - 250′ - 500′ - 1000′
CONDUCTOR COLOR CODE: Black and Red

MULTIPLE PAIR INDIVIDUALLY SHIELDED INTERCOM CABLE

Useful where several mikes are operated from a single cable. This series is helpful in reducing the bulk of required cables.

DESCRIPTION: Multi-pairs #22 solid tinned copper, vinyl insulated .013" cabled in pairs. Each pair and ground wire is under aluminum foil mylar shield, overall grey vinyl jacket; Nom. Cap. between Conds. 40 Mmft/ft.; Nom. Cap. between 1 Cond. and others connected to shield — 77Mmf/ft.

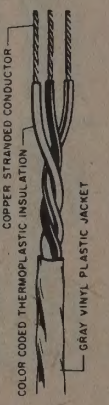
Cat. No.	Pairs	Cond.	Nom. Jkt.	Nom O.D.
4800/3	3	6	.030	.298
4800/6	6	12	.037	.394
4800/9	9	18	.040	.425
4800/11	11	22	.040	.485
4800/15	15	30	.045	.510
4800/19	19	38	.055	.678
4800/27	27	54	.070	.860

4800/19 and 4800/27 is #22 strand 7/30 with .015 wall
STANDARD PUT-UPS: 100′ — 250′ — 500′ — 1000′

MULTI-CONDUCTOR FLEXIBLE CABLE

DESCRIPTION: Each conductor #22 7/30 tinned copper stranded .010"thermoplastic insulation, color coded, conductors twisted, gray vinyl plastic jacket overall. Used for signal, P.A. systems. Electronic computer cable, suitable for outdoor use.

Cat. No.	Cond.	Size AWG	Strand	Nom. Insul.	Nom. Jacket	Nom. O.D.
156	2	22	7/30	.010"	.020"	.140"
157	3	22	7/30	.010"	.020"	.145"
158	4	22	7/30	.010"	.020"	.170"
159	5	22	7/30	.010"	.020"	.175"
160	6	22	7/30	.010"	.020"	.185"
161	7	22	7/30	.010"	.020"	.190"
162	8	22	7/30	.010"	.020"	.200"
163	9	22	7/30	.010"	.020"	.225"
164	10	22	7/30	.010"	.020"	.235"
165	12	22	7/30	.010"	.020"	.255"
165/15	15	22	7/30	.010"	.020"	.280"
165/20	20	22	7/30	.010"	.020"	.310"
165/25	25	22	7/30	.010"	.020"	.340"
165/30	30	22	7/30	.010"	.020"	.365"
165/40	40	22	7/30	.010"	.020"	.425"
165/50	50	22	7/30	.010"	.020"	.500"
165/60	60	22	7/30	.010"	.020"	.530"



STANDARD PUT-UPS: 100′ - 250′ - 500′ - 1000′

BIRNBACH COMPANY INC. **FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.**

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HOOK-UP AND TEST LEAD WIRES

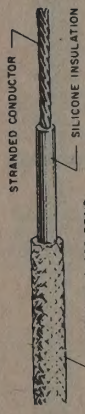
SUBMINIATURE TEFLON* HOOK-UP WIRE

Per MIL-W-16878D Type ET 250 Volts, 250°C
Thin Wall .006"

This new exceptionally thin miniature hook-up wire is suitable in miniature slip ring assemblies, as interconnecting wire between wafers in microminiature electronic circuitry, instrument wire, medical wire, subminiature thermo-couple lead wire, strain gauge wire, etc. Provides lighter weight, greater flexibility and hi temperature resistance. Size Nos. 32 thru 20 conform to MIL-W-16878D type ET 250 volts, 250 °C.

Cat. No.	Mil Type Designation	Size AWG	Strand	Nom. O.D.
8550/36	——	36	7/44	.018"
8550/34	——	34	7/42	.020"
8550/32	ET-32	32	7/40	.021"
8550/30	ET-30	30	7/38	.024"
8550/28	ET-28	28	7/36	.027"
8550/26	ET-26	26	7/34	.031"
8550/24	ET-24	24	7/32	.036"
8550/22	ET-22	22	7/30	.042"
8550/20	ET-20	20	7/28	.049"

200° C — Birsil Silicone Rubber Hook-Up Lead Wire — 600 Volt

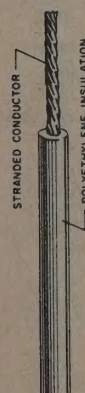


This Birsil Silicone Rubber Hook up lead wire withstands extreme temperature range and flexibility from —104°C. to +400°F. with retention of physical properties and is highly resistant to flex cracking at temperature extremes; fungus resistant; corona resistant; engineered for high-heat and hi-frequency applications; low power factor; acid-alkali-oil resistant; low dielectric constant; insulation approaching mica. Approved by U.L. but consumer must apply for Underwriter's Laboratories approval for individual product.
DESCRIPTION—One conductor, tinned copper strands, silicone rubber insulation, glass braid, lacquered. Color: White.

Cat. No.	Size AWG	Strand	Nom. Ins. Wall	Volt Rating	Breakdown Voltage AC	Nom. O.D.
7622	22	7/30	1/32"	600	11,500	.105"
7620	20	10/30	1/32"	600	18,000	.121"
7618	18	16/30	1/32"	600	21,000	.128"
7616	16	26/30	1/32"	600	20,000	.144"
7614	14	41/30	1/32"	600	15,500	.165"
7612	12	65/30	1/32"	600	14,500	.185"
7610	10	65/28	3/64"	600	20,000	.240"
7608	8	84/27	1/16"	2300	20,000	.320"

Additional sizes and colors available to order.
Types F and FF per MIL-W-16878C available to order.
STANDARD PUT-UPS: 100' - 500' - 1000'

Hi-Voltage and Cathode Ray Cable



Used for 10,000, 20,000, 40,000, 60,000 volt applications as for cathode ray tubes in TV receivers, oscilloscopes and other electronic devices. Has dielectric constant of 2.7 and power factor of .002. Shielded Hi-Voltage type used to shield RF radiation in X-Ray, diathermy, medical equipment, and in transmitters.
DESCRIPTION—One conductor stranded copper tinned rulan (flame retarding type) polyethylene insulation. Available white/red tracer. Temp. Rating: 105°C
Shielded—Same as above with tinned copper braided shield overall.

UNSHIELDED

Cat. No.	Size AWG	Strand	Nom. Ins. Wall	Suggested Working Vol.	Nom. O.D.
7402	20	10/30	.047"	10,000	.125"
7412	20	10/30	.068"	20,000	.169"
7418	18	16/30	.047"	10,000	.135"
7428	18	16/30	.069"	20,000	.179"
7448	18	16/30	.095"	40,000	.231"
7449	18	16/30	.123"	60,000	.285"
SHIELDED					
7458	18	16/30	.095"	40,000	.256"

STANDARD PUT-UPS: 100' - 500' - 1000'

KINKLESS TEST LEAD WIRE

Used with portable test equipment; as tested, leads in analyzers, oscillators, instruments; wherever extreme flexibility and limpness is required. Has excellent dielectric properties.

DESCRIPTION:

No. 61—#20—41/36 extra flexible annealed tinned copper, stranded.

No. 66—#18—65/36 extra flexible annealed tinned copper stranded; paper serve; 3/64" special low capacity rubber, wax finish.

Colors: Red, Black.

Types WS-16/U Black, WS-17/U Red; No. 70 per MIL-W-13169 Specification available same construction as Birnbach #66 except compound per specification.

Cat. No.	Size AWG	Strand	Ins.	Puncture Voltage	Nom. O.D.
61	20	41/36	3/64"	20,000 V	.137"
66	18	65/36	3/64"	22,000 V	.145"
70*	18	65/36	3/64"	22,000 V	.145"

*** MILITARY TYPE SPECIFICATION MIL-W-13169B**
WS-16/U Black WS-17/U Red
STANDARD PUT-UPS: 100' - 250' - 500' - 1000'

NEW PLASTIC KINKLESS TEST LEAD WIRE

New formulation vinyl compound insulation allows maximum flexibility; rough treatment; extreme variation in climatic conditions; excellent abrasion resistance; greater temperature stability from —80°C to +115°C; fungus resistant; self extinguishing-flame proof; smooth surface. Resists exposure to gasoline and oil. 5000 volts

DESCRIPTION: One conductor tinned copper stranded. special formulation vinyl insulation.

Colors: Black, Red, Yellow, Green, White, Blue.

Cat. No.	Size AWG	Strand	Ins.	Nom. O.D.
1922	22	26/36	.032"	.100"
1920	20	26/34	.032"	.104"
1918	18	65/36	.032"	.112"
1916	16	65/34	.032"	.129"

For portable test equipment; as test leads for instrumentation exceeds the requirements for MIL-I-3930A type JP (PVC). It is superior to synthetic rubber spec MIL-R-6855 Class II Grade 60.

STANDARD PUT-UPS: 100' - 250' - 500' - 1000'

HEAVY DUTY HI-VOLTAGE TYPE

DESCRIPTION:

No. 68—#18—65/36 extra flexible annealed tinned copper; stranded; paper serve; 3/64" special low capacity rubber, wax finish.

Colors: Red, Black.

Used for oscillators, analyzers, TV, therapeutic instruments, etc.; wherever an extremely flexible high voltage lead is indicated.

Cat. No.	Size AWG	Strand	Ins.	Puncture Voltage	Nom. O.D.
68	18	65/36	5/64"	29,000 V	.210"

STANDARD PUT-UPS: 100' - 250' - 500' - 1000'

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RETRACTILE HEAVY DUTY AND POWER CORD SETS

RETRACTILE Super Heavy Duty POWER CORDS

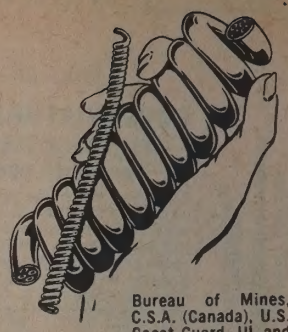
GUARANTEED TO RETRACT FOR 4 YEARS MILITARY INDUSTRIAL. AWG SIZES — 12, 14, 16, 3 and 4 COND.

Especially desirable in the maintenance of **industrial automation** equipment, refrigerated trucks and trailers, mass assembly and production equipment, plane maintenance, control cable for cherry pickers, magnetic cranes, standby power distribution, heavy duty machinery.

Useful whenever and wherever a tougher, more rugged heavy duty power cable is indicated as in foundries, aboard ships, reelins on overhead cranes and hoists, tanks, plug-in power for refrigeration and immersion heaters, etc. Usable around salt water, chemicals and many other areas which makes the use of reels undesirable . . . 48" retracted — 25' extended.

THIS IS A NEW CORD and should not be confused with cords of lesser quality.

BB Cat. No.	Conds.	Size AWG	Strand.	Nom. JKT. Thkns.	Nom. O.D.
1300	3	16	65/34	7/64"	.505"
1300/4	4	16	65/34	7/64"	.535"
1301	3	14	41/30	7/64"	.620"
1301/4	4	14	41/30	7/64"	.660"
1302	3	12	65/30	8/64"	.715"
1302/4	4	12	65/30	8/64"	.770"



Bureau of Mines, C.S.A. (Canada), U.S. Coast Guard, UL and Army/Navy approved

RETRACTILE (KINKLESS) POWER CORDS RUBBER, NEOPRENE AND PLASTIC — UL AND CSA APPROVED

DESCRIPTION: Multi-conductor power cords, each conductor stranded copper, tough rubber, neoprene or geon plastic jacket overall UL and CSA approved. Available from stock in indicated lengths, can be cut to desired length.

Cat. No.	Retracted Length	Approx. Length Ext.	No. Cond.	Size AWG	Strand	UL Type	Amp. Rating	Volt Rating	Coil Nom. O.D.	Cord. Nom. O.D.
886-2	24"	12'	2	18	41/34	SVO	7	300	7/16"	.250
886	36"	18'	2	18	41/34	SVO	7	300	7/16"	.250
886-4	48"	25'	2	18	41/34	SVO	7	300	7/16"	.250
886/3-2	24"	12'	3	18	41/34	SVO	7	300	1"	.275
886/3-3	36"	18'	3	18	41/34	SVO	7	300	1"	.275
886/3	48"	25'	3	18	41/34	SVO	7	300	1"	.275
887-2	24"	12'	2	18	41/34	SVT	7	300	7/16"	.250
887	36"	18'	2	18	41/34	SVT	7	300	7/16"	.250
887-4	48"	25'	2	18	41/34	SVT	7	300	7/16"	.250
889-2	24"	12'	2	18	41/34	SJO	7	300	1 3/16"	.310
889	36"	18'	2	18	41/34	SJO	7	300	1 3/16"	.310
889-4	48"	25'	2	18	41/34	SJO	7	300	1 3/16"	.310
890-2	24"	12'	2	18	41/34	SJT	7	300	1 3/16"	.310
890	36"	18'	2	18	41/34	SJT	7	300	1 3/16"	.310
890-4	48"	25'	2	18	41/34	SJT	7	300	1 3/16"	.310
889/3-2	24"	12'	3	18	41/34	SJO	7	300	1 3/16"	.330
889/3	36"	18'	3	18	41/34	SJO	7	300	1 3/16"	.330
889/3-4	48"	25'	3	18	41/34	SJO	7	300	1 3/16"	.330
889/4-2	24"	12'	4	18	41/34	SJO	5.6	300	1 7/16"	.360
889/4	36"	18'	4	18	41/34	SJO	5.6	300	1 7/16"	.360
889/4-4	48"	25'	4	18	41/34	SJO	5.6	300	1 7/16"	.360
889/5-2	24"	12'	5	18	41/34	—	5.6	300	1 3/4"	.440
889/5	48"	25'	5	18	41/34	—	5.6	300	1 3/4"	.440
889/7-2	24"	12'	7	18	41/34	—	5.6	300	1 7/8"	.500
889/7	48"	25'	7	18	41/34	—	5.6	300	1 7/8"	.500
891-2	24"	12'	2	16	65/34	SJO	10	300	1 3/8"	.330
891	36"	18'	2	16	65/34	SJO	10	300	1 3/8"	.330
891-4	48"	25'	2	16	65/34	SJO	10	300	1 3/8"	.330
891/3-2	24"	12'	3	16	65/34	SJO	10	300	1 7/16"	.365
891/3	36"	18'	3	16	65/34	SJO	10	300	1 7/16"	.365
891/3-4	48"	25'	3	16	65/34	SJO	10	300	1 7/16"	.365
891/4-2	24"	12'	4	16	65/34	SJO	8	300	1 5/8"	.395
891/4	36"	18'	4	16	65/34	SJO	8	300	1 5/8"	.395
891/4-4	48"	25'	4	16	65/34	SJO	8	300	1 5/8"	.395
891/5-2	24"	12'	5	16	65/34	—	8	600	2"	.540
891/5	48"	25'	5	16	65/34	—	8	600	2"	.540
891/6-2	24"	12'	6	16	65/34	—	8	600	2 1/8"	.550
891/6	48"	25'	6	16	65/34	—	8	600	2 1/8"	.550
891/7-2	24"	12'	7	6/16 1/14	#16-65/34 #14-41/30	— —	#16-8 #14-12	600	2 1/4"	.600
891/7	48"	25'	7	6/16 1/14	#16-65/34 #14-41/30	— —	#16-8 #14-12	600	2 1/4"	.600
893-2	24"	12'	2	14	41/30	SO	15	600	2"	.535
893	36"	18'	2	14	41/30	SO	15	600	2"	.535
893-4	48"	25'	2	14	41/30	SO	15	600	2"	.535
893/3-2	24"	12'	3	14	41/30	SO	15	600	2 1/8"	.560
893/3	36"	18'	3	14	41/30	SO	15	600	2 1/8"	.560
893/3-4	48"	25'	3	14	41/30	SO	15	600	2 1/8"	.560
893/4-2	24"	12'	4	14	41/30	SO	12	600	2 1/4"	.605
893/4	36"	18'	4	14	41/30	SO	12	600	2 1/4"	.605
893/4-4	48"	25'	4	14	41/30	SO	12	600	2 1/4"	.605
894-2	24"	12'	2	12	65/30	SO	20	600	2 1/4"	.605
894	36"	18'	2	12	65/30	SO	20	600	2 1/4"	.605
894-4	48"	25'	2	12	65/30	SO	20	600	2 1/4"	.605
894/3-2	24"	12'	3	12	65/30	SO	20	600	2 3/8"	.635
894/3	36"	18'	3	12	65/30	SO	20	600	2 3/8"	.635
894/3-4	48"	25'	3	12	65/30	SO	20	600	2 3/8"	.635
894/4-2	24"	12'	4	12	65/30	SO	16	600	2 1/2"	.665
894/4	36"	18'	4	12	65/30	SO	16	600	2 1/2"	.665
894/4-4	48"	25'	4	12	65/30	SO	16	600	2 1/2"	.665
894/6-2	24"	12'	6	2-12 4-18	#12-65/30 #18-41/34	— —	#12-17 #18-6	600	2 1/4"	.605
894/6	48"	25'	6	2-12 4-18	#12-65/30 #18-41/34	— —	#12-17 #18-6	600	2 1/4"	.605
894/7-2	24"	12'	7	12	65/30	—	16	600	2 5/8"	.775
894/7	48"	25'	7	12	65/30	—	16	600	2 5/8"	.775

CONDUCTOR COLOR CODING: 1-Black, 2-White, 3-Green, 4-Red, 5-Blue, 6-Brown, 7-Yellow

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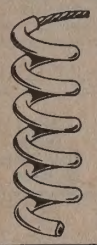
RETRACTILE CORDS

This series of Birnbach Coiled Kinkless Retractile Cords are permanently coiled into a spring-like shape without the use of metal springs or elastic bands. They have inherent "Recovery" properties. These Retractile cords extend approximately six times its retracted length, returning to its original shape and length when released. Always as long as you need them and no longer, they will not kink, tangle, trail, knot or dangle on the floor or bench and cause accidents. Useful wherever cords or cables must change length or position.

RETRACTILE TEST LEAD WIRE



Stretch coiled kinkless test lead wire description. 12" coil—stretches to approx. 6 feet. One conductor #20 stranded copper rubber insulation .165 O.D. Coil O.D. ¾". 6" straight lead on each end.

Cat. No.		Pkge. Std.
64	12" Retracted - Approx. 6' Extended	6
65	24" Retracted - Approx. 12' Extended	6

BIRNBACH MINIATURE RETRACTILE CORD

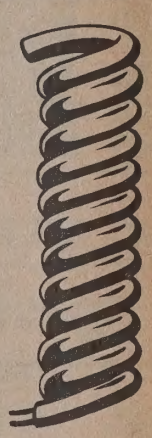
This small size is suitable where compact equipment is required. 2 ft. retracted, approximately 10 ft. extended Black plastic jacket overall.

Nom. Cond. resistance: .07 OHMS per linear foot (approx. .6 OHMS per retracted ft.)
Maximum working voltage: 100; current capacity ½ amp.

Cat. No.	Cond.	Size AWG	Strand	Coil O.D.	Cond. O.D.	Std. Pkg.
875/28	2	28	19/40TC	½"	.135	10
877/28	4	28	19/40TC	½"	.150	10

CONDUCTOR COLOR CODE: 1-Black, 2-White, 3-Red, 4-Green. For 3 conductors, use 4 cond. and cut one dead.

RETRACTILE COILED COMMUNICATION CORD

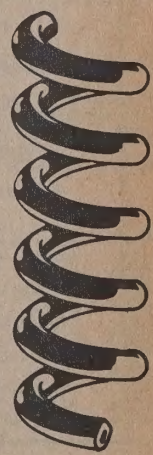


Multi-conductors stranded communication cord No. 23 AWG. Tinned copper wire neoprene or Geon plastic jacketed. Long lengths can be cut to exact requirement. Adds product reliability. Useful wherever cords must change length or position. Nom. cond. resistance .022 ohms per linear foot, .185 ohms per retracted foot. Maximum working voltage 120 volts. Current carrying capacity 1 ampere.

Cat. No.	Retracted Length	Approx. Length Extended	Cond.	Size AWG	Strand	Coil O.D.	Nom. O.D.
875-2	24"	12 Ft.	2	23	21/36	¾"	.200"
875	36"	18 Ft.	2	23	21/36	¾"	.200"
875-4	48"	25 Ft.	2	23	21/36	¾"	.200"
876-2	24"	12 Ft.	3	23	21/36	¾"	.210"
876	36"	18 Ft.	3	23	21/36	¾"	.210"
876-4	48"	25 Ft.	3	23	21/36	¾"	.210"
877-2	24"	12 Ft.	4	23	21/36	13/16"	.240"
877	36"	18 Ft.	4	23	21/36	13/16"	.240"
877-4	48"	25 Ft.	4	23	21/36	13/16"	.240"
878-2	24"	12 Ft.	5	23	21/36	1"	.285"
878	36"	18 Ft.	5	23	21/36	1"	.285"
878-4	48"	25 Ft.	5	23	21/36	1"	.285"
878/6-2	24"	12 Ft.	6	23	21/36	1⅛"	.305"
878/6	36"	18 Ft.	6	23	21/36	1⅛"	.305"
878/6-4	48"	25 Ft.	6	23	21/36	1⅛"	.305"
878/7-2	24"	12 Ft.	7	23	21/36	1¼"	.320"
878/7	36"	18 Ft.	7	23	21/36	1¼"	.320"
878/7-4	48"	25 Ft.	7	23	21/36	1¼"	.320"
878/8	48"	25 Ft.	8	23	21/36	1⅜"	.360"
878/10	48"	25 Ft.	10	23	21/36	1⅜"	.380"
878/12	48"	25 Ft.	12	23	21/36	1⅜"	.410"
878/15	48"	25 Ft.	15	23	21/36	1½"	.470"
878/37	48"	25 Ft.	37	23	21/36	2½"	.680"

CONDUCTOR COLOR CODING: 1-Black, 2-White, 3-Red, 4-Green, 5-Blue, 6-Yellow, 7-Brown, 8-Orange, 9-White/Black Tracer, 10-White/Red Tracer, 11-White/Green Tracer, 12-White/Blue Tracer, 13-White/Yellow Tracer, 14-White/Brown Tracer, 15-White/Orange Tracer. Also available in retracted lengths of 12", 24" and 48".

RETRACTILE (KINKLESS) COILED SHIELDED COMMUNICATION CORDS



DESCRIPTION: Single and multi-conductor shielded microphone cable neoprene or geon plastic jacketed. This cable remains neat and compact with no danger of tripping or of the wire becoming entangled in equipment. Also suitable for stereo and additional speaker extensions. Shield can be pigtailed for soldering. No. 24 AWG Str. is 41/40 tinned soft cad. copper: No. 23 has 21/36 tinned soft cad. copper. Spiral wrapped tinned soft copper shielding.

Cat. No.	Retr. Length	Approx. Length Extended	Cond.	Size AWG	Coil O.D.	Nom. O.D.	Maximum Working Voltage	Capacitance MMF Lin. Ft.	Capacitance MMF Retr. Ft.	Std. Pkg.
895	48"	25 Ft.	1	No. 24 Shielded	5/16"	.160"	75	56	440	10
895A	12"	6 Ft.	1	No. 24 Shielded	5/16"	.160"	75	56	440	10
895B	6"	3 Ft.	1	No. 24 Shielded	5/16"	.160"	75	56	440	10
896	48"	25 Ft.	2	1-No. 23 1-No. 24 Shielded	7/16"	.200"	#23-120 #24- 75	56	450	10
896A	12"	6 Ft.	2	1-No. 23 1-No. 24 Shielded	7/16"	.200"	#23-120 #24- 75	56	450	10
897	48"	25 Ft.	3	2-No. 23 1-No. 24 Shielded	7/16"	.240"	#23-120 #24- 75	56	450	10
897A	12"	6 Ft.	3	2-No. 23 1-No. 24 Shielded	7/16"	.240"	#23-120 #24- 75	56	450	10
899	48"	25 Ft.	2	2-No. 24 Shielded	7/16"	.210"	75	56	450	10
899A	12"	6 Ft.	2	2-No. 24 Shielded	7/16"	.210"	75	56	450	10
898	48"	25 Ft.	4	2-No. 23 2-No. 24 Shielded	1"	.270"	#23-120 #24- 75	56	460	10
898A	12"	6 Ft.	4	2-No. 23 2-No. 24 Shielded	1"	.270"	#23-120 #24- 75	56	460	10

Additional conductors and sizes available. CONDUCTORS ARE COLOR CODED.

RETRACTILE COMMUNICATION CORDS

PREPARED FOR EASY INSTALLATION AND REPLACEMENT

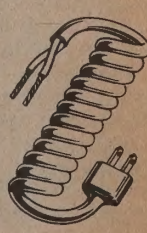
RETRACTED LENGTH 12" — EXTENDED LENGTH 6 FEET

DESCRIPTION: Same as communication cords except each end is prepared as indicated.

Cat. No.	Cond.	Size AWG	Nom. Coil O.D.	Nom. Cord O.D.	Preparation
883	3	23-21/36	13/16"	.220"	**1 end:** total length 1½". Conductors stripped and tinned. **Other end:** total length 1½" jacket removed.
884	4	23-21/36	13/16"	.250"	**1 end:** total length 1". Conductors stripped and tinned. **Other end:** total length 1½" jacket removed.
885	5	23-21/36	1⅛"	.285"	**1 end:** total length 4⅛". Conductors stripped and tinned. **Other end:** total length 4⅛" conductors stripped and tinned.

RETRACTILE POWER CORD SETS

Excellent for portable use. All mobile equipment and office equipment wherever the device application is synonymous with repetitive movement. The "Answer" to most tough hazard problems. 2 and 3 conductors SVO and SJO Retractile Kinkless Neoprene Service Cord Sets with Molded Male Plug one end, other end stripped for application. Adds reliability, compactness and portability.



Cat. No.	Retracted Length	Ext.	Cond.	Size AWG	UL Type	Strand	Coil O.D.
880	18"	9 Ft.	2	18	SVO	41/34	1"
880/3	18"	9 Ft.	3	18	SVO	41/34	1⅛"
881	18"	9 Ft.	2	18	SJO	41/34	1¼"
881/3	18"	9 Ft.	3	18	SJO	41/34	1½"
882	18"	9 Ft.	2	16	SJO	65/34	1½"
882/3	18"	9 Ft.	3	16	SJO	65/34	1½"

CONDUCTOR COLOR CODING: 1-Black, 2-White, 3-Green.

BIRNBACH COMPANY INC. FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.

Shielding Braid, Insulated Copper Wire, Braiding

UNINSULATED COPPER WIRE

TINNED COPPER SHIELDING

Used for shielding and bonding on aircraft, marine and auto radio wires and cables. Shields speaker leads, lead-ins, amplifier wires. Extremely flexible, slides over wires and cables.
DESCRIPTION:
No. 853 thru 856/7—Composed of extremely flexible fine soft annealed copper tinned wires closely woven, braided and **Rolled Flat.**
No. 860—Composed of extremely flexible fine soft annealed copper wires closely woven, braided and **Rolled Flat.**

TINNED

Cat. No.	Size & No. of Wires	Inside Diam. Flat.	Approx. O.D. Flat.	Approx. AWG Equiv.	Nom. Circ. Mills	Current Carrying Cap./Amps.
853	12x 2/36	1/32"	3/64"	24	400	6.0
854	12x 2/36	3/64"	1/16"	22	600	7.0
855	16x 3/36	1/16"	3/64"	20	1200	11.00
858	24x 5/36	1/8"	5/32"	18	1800	16.00
859	24x 5/36	5/16"	1/32"	15	3000	25.00
863	24x 7/36	1/4"	9/32"	14	4200	32.00
864	48x 4/36	3/8"	13/32"	12	7200	46.00
868	48x 7/36	1/2"	17/32"	10	9600	53.00
865	48x 8/36	5/8"	21/32"	10	9600	53.00
865/1	48x11/36	3/4"	13/16"	7	20,800	85.00
857	48x19/36	25/32"	27/32"	7	20,800	85.00
856	48x19/36	1"	1 1/16"	7	20,800	85.00
856/1	48x19/36	1 3/8"	1 7/16"	7	53,064	85.00
856/2	48x19/36	1 1/2"	1 3/4"	3	125,425	150.00
856/3	48x27/30	1 3/4"	1 7/8"	001	154,368	280.00
856/4	48x32/30	2"	2 1/4"	000	192,000	310.00
856/6	48x45/30	2 1/2"	2 3/4"	000	216,000	340.00
856/7	48x64/30	3"	3 1/4"	0000	225,000	390.00

BARE

860	24x10/36	1/4"	9/32"	14	4200	32.00

STANDARD PUT-UPS:
#853 thru #856/1 — 50' — 100' — 250' — 500' — 1000'
#856/2 thru #856/7 — 50' — 100' — 250'
#860 — 50' — 100' — 250' — 500' — 1000'

TUBULAR BRAID PER MIL SPEC. QQ-B-575

Manufactured completely round as noted in MIL Spec. QQ-B-575, this tinned copper shielded braid has self-supporting characteristics which enables it to maintain its round shape. The shielding coverage percentage is 95% or more. This tubular braid is used in military applications where maximum shielding against electrostatic interference is indicated. In addition, it is used as a protective covering against mechanical abrasion and stresses for the wires, cables and other components.

Cat. No.	Nom. Inside Diam. When Rounded	Construction Total No. of Wires	Carriers	AWG of Indiv. Wires	Approx. AWG Equiv.	Nom. Circular Circular Mills	*Current Carrying Capacity Amps
2250-1/32	1/32"	24	24	36	22	640	7.0
2250-1/16	1/16"	48	24	36	19	1,290	11.0
2250-5/64	5/64"	72	24	36	17	1,900	18.0
2250-7/64	7/64"	96	24	36	16	2,500	22.0
2250-1/8	1/8"	120	24	36	15	3,260	28.0
2250-5/32	5/32"	240	24	36	12	6,200	39.0
2250-11/64	11/64"	168	24	36	14	4,500	32.0
2250-3/16	3/16"	192	24	36	13	5,100	35.0
2250-13/64	13/64"	312	24	36	11	8,200	46.0
2250-1/4	1/4"	384	24	36	10	10,400	53.0
2250-3/8	3/8"	384	48	36	10	10,400	53.0
2250-1/2	1/2"	528	48	36	9	13,200	70.0
2250-9/16	9/16"	528	48	36	9	13,200	70.0
2250-11/16	11/16"	720	48	36	7	19,000	82.0
2250-25/32	25/32"	864	48	36	7	21,750	85.0
2250-13/16	13/16"	864	48	36	7	21,750	85.0
2250-1"	1"	864	48	36	4	38,600	120.0

STANDARD SPOOL PUT-UPS: 50' — 100' — 250', 500' — 1000'
*Values based on copper in free air at 65°F.
Additional constructions and variations made to order. Also available in silver plated copper, bare copper and stainless steel.

SILVER PLATED TUBULAR BRAID AVAILABLE

ELECTRONIC LACING CORD/TAPE

To Meet MIL-T-43435 — COMP-P - Type S — MIL-T-713A - Type P*

FLAT BRAIDED LACING TAPE — NYLON

Flat braided Hi-Tenacity Nylon Fiber impregnated with (MW) microcrystalline fungicidal wax. Engineered to stay flat. Distributes stress evenly over a wide area. Resistant to fungus, flame, abrasion, acids. Will not cut or damage insulation. Has strength, toughness and stability.

PUT UP ON 500 YARDS PER TUBE

Cat No.		Class	Width	Thick.	Test lbs.	Yd./Lb.
1035	Natural White	—	.200"	.014"	150	250
1035B	Black	—	.200"	.014"	150	250
1036	Natural White	1	.120"	.014"	80	550
1036B	Black	1	.120"	.014"	80	550
1037	Natural White	2*	.090"	.014"	50	750
1037B	Black	2*	.090"	.014"	50	750
1038	Natural White	3	.062"	.010"	30	1500
1038B	Black	3	.062"	.010"	30	1500
1039	Natural White	4	.046"	.010"	15	2400
1039B	Black	4	.046"	.010"	15	2400

ROUND NYLON LACING CORDS

This nylon lacing cord manufactured to meet Spec. MIL-T-713A Type P, Composition P, Classes 3, 2, 1. Wax finished — compounded with a fungicide to resist mildew.

PUT UP ON 1 LB. TUBES

	Cat. No. Natural	Cat. No. Black	Yds.	Diam.	Breaking Strength Lbs.
Class 1	1070	1070B	600	.039"	70
Class 2	1071	1071B	800	.029"	48
Class 3	1072	1072B	1140	.025"	32
Class 4	1072/1	1072/1B	2400	.020"	20

TEFLON, DACRON AND G.E. FINISH LACING CORDS AVAILABLE.

HarnessRAP

This new spiral wrapping provides a readily flexible and strong protection for groups of conductors. Because of the facility with which it is applied it is particularly useful for temporary or experimental wiring as well as permanent installations. Leads can be brought out at any point to make a "tailor-made" harness, strong, secure, tight-fitting.

Harnessrap retains its elasticity and can be removed as easily as it is applied, then reused again and again.

Because of its flexibility it is especially useful for harnesses that carry wiring around sharp corners or that are subject to repeated flexing or bending.

Part No.	Outside Diameter	Wall Thickness
POLYETHYLENE		
BHR-1/8	1/8"	.031
BHR-1/4	1/4"	.032
BHR-3/8	3/8"	.058
BHR-1/2	1/2"	.058
FLAME RETARDANT (RULAN)		
BHRF-1/4	1/4"	.058
BHRF-3/8	3/8"	.058

MADE IN FOUR SIZES
1/8" O.D. 1/16" to 1/2" wire groups
1/4" O.D. 3/16" to 1 1/2" wire groups
3/8" O.D. 3/4" to 2" wire groups
1/2" O.D. 3/4" to 4" wire groups

PHYSICAL CHARACTERISTICS

	Standard Polyethylene	Flame Retarded Polyethylene
Temp. Range	—140°F+200°F	—90°F+180°F
Flammability	0.94	Self. Ext.
Tensile Strgth.	1700	1500
Water Absorp. 24 hours	.03	.02
Dielectric Con.	2.3	2.7
Wgt. thous. ft.	10	15

COLORS: Natural (White). Additional colors and sizes available on request.

AVAILABLE IN 25' - 100' - 500' - 2000' Lgths.

BIRNBACH COMPANY INC. **FOR MORE INFORMATION ON COMPLETE LINES, WRITE FOR NEW CATALOG.**

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Consolidated Number	Length Feet	Distributors Net Price Each
801*	25	.30
801*	100	1.20
801	500	4.65
801	1000	7.20
803	100	1.20
803	500	3.83
803	1000	6.45
811*	25	.35
811*	100	1.43
811	500	5.25
811	1000	8.25
819	100	1.20
819	500	3.98
819	1000	6.45
821*	25	.35
821*	100	1.43
821	500	5.25
821	1000	7.88
823	100	1.43
823	500	6.38
823	1000	8.33
827	100	1.58
827	500	6.38
827	1000	8.63
831*	25	.38
831*	100	1.65
831	500	5.63
831	1000	9.75
833	100	1.65
833	500	6.30
833	1000	10.95
837	100	1.88
837	500	6.60
837	1000	11.55
841*	25	.68
841*	100	2.48
841	500	6.83
841	1000	11.85
843	100	2.25
843	500	9.68
843	1000	17.25
846*	25	.68
846*	100	1.95
846	500	9.45
846	1000	15.23
847	100	2.48
847	500	10.05
847	1000	17.85
851*	25	.53
851*	100	1.58
851	500	5.03
851	1000	8.93
856*	25	.68
856*	100	2.25
856	500	9.38
856	1000	18.00
861*	25	.75
861*	100	2.63
861	500	11.85
861	1000	22.88
865	100	1.88
865	500	7.43
865	1000	10.58
866*	25	.68
866*	100	1.73
866	500	6.75
866	1000	10.28
869	100	2.03
869	500	7.58
869	1000	11.03
871*	25	.80
871*	100	1.95
871	500	8.55
871	1000	12.15
875	100	2.18
875	500	9.00
875	1000	13.43
876*	25	.83
876*	100	2.33
876	500	9.75
876	1000	15.60
879	100	2.33
879	500	9.38
879	1000	14.03
881	100	3.45
881	500	16.50
881	1000	31.50
885	100	2.55
885	500	10.50
885	1000	17.25
889	100	2.78
889	500	11.03
889	1000	17.93
1001*	10	.38
1001	100	2.40
1001	250	6.00
1001	500	10.73
1001	1000	21.00
1002	100	3.38
1002	250	7.13
1002	500	14.25
1002	1000	26.25
1006*	10	.68
1006	100	5.40
1006	250	12.75
1006	500	23.25
1006	1000	43.88
1007	100	3.60
1007	250	7.50
1007	500	13.73
1007	1000	26.25
1310	100	2.70
1310	250	6.00
1311	100	5.25
1311	250	11.70
1312	100	6.00
1312	250	13.50
1314	100	8.18
1314	250	19.13
1315	100	8.85
1315	250	19.80
1316	100	13.80
1316	250	37.50
1317	100	10.88
1317	250	25.50
1318	100	16.73
1318	250	41.25
1319	100	21.75
1319	250	54.38
1320	100	23.25
1320	250	55.73
1321	100	22.13
1321	250	52.43
1322	100	36.75
1322	250	89.63
1323	100	31.88
1323	250	78.15
1324	100	55.20
1324	250	134.25
1325	100	86.85
1325	250	214.50
1326	100	43.20
1326	250	110.46
1340	100	2.70
1340	500	12.38
1341	100	3.60
1341	500	16.73
1342	100	5.63
1342	500	25.50
1343	100	6.75
1343	500	31.05
1344	100	8.85
1344	500	40.65
1345	100	9.68
1345	500	45.00
1345	1000	88.50
1346	100	11.40
1346	500	54.00
1346	1000	106.50
1347	100	13.05
1347	500	61.80
1347	1000	123.00
1348	100	24.60
1348	500	120.00
1348	1000	235.50
1349	100	26.85
1349	500	133.50
1349	1000	262.50
1350	100	33.00
1350	500	167.33
1350	1000	325.50
1351	100	36.15
1351	500	180.00
1351	1000	345.00
1386	50	2.03
1386	100	3.75
1386	250	8.25
1386	500	16.13
1386	1000	31.50
1387	50	2.33
1387	100	4.05
1387	250	9.38
1387	500	18.00
1387	1000	33.00
1388	50	2.70
1388	100	4.73
1388	250	10.88
1388	500	19.50
1388	1000	37.50
1389	50	3.15
1389	100	4.80
1389	250	11.63
1389	500	20.63
1389	1000	39.75
1390	50	3.00
1390	100	4.95
1390	250	12.75
1390	500	25.13
1390	1000	47.25
1391	50	3.23
1391	100	6.00
1391	250	13.50
1391	500	26.25
1391	1000	50.25
1392	50	3.98
1392	100	7.50
1392	250	18.00
1392	500	34.88
1392	1000	68.25
1393	50	6.75
1393	100	12.75
1393	250	27.75
1393	500	50.63
1393	1000	93.75
1394	50	8.25
1394	100	15.75
1394	250	36.75
1394	500	69.00
1394	1000	135.00
1395	50	8.63
1395	100	16.13
1395	250	40.50
1395	500	75.75
1395	1000	150.00
1396	50	18.75
1396	100	36.75
1396	250	91.13
1396	500	168.75
1396	1000	330.00
1397	50	15.75
1397	100	26.23
1397	250	62.25
1397	500	117.75
1397	1000	232.50
1398	50	19.88
1398	100	38.25
1398	250	91.50
1398	500	176.25
1398	1000	337.50
1399	50	21.75
1399	100	42.75
1399	250	101.25
1399	500	195.00
1399	1000	375.00
1455	100	25.50
1455	250	60.00
1455	500	117.00
1455	1000	232.50
1456	15	2.21
1456	25	3.53
1456	50	6.90
1456	100	13.73
1456	250	31.50
1456	500	60.00
1456	1000	118.13
1457*	9	.53
1457	10	.75
1457	25	1.28
1457	50	2.48
1457	100	4.65
1457	250	41.63 M'
1457	500	41.63 M'
1457	1000	41.63 M'
1458*	8	.60
1458	15	1.20
1458	25	1.80
1458	50	3.45
1458	100	6.68
1458	250	64.88 M'
1458	500	60.75 M'
1458	1000	60.38 M'
1459	25	1.49
1459	50	2.78
1459	100	5.40
1459	250	52.13 M'
1459	500	50.63 M'
1459	1000	50.63 M'
1460	15	1.50
1460	25	2.48
1460	50	4.28
1460	100	7.88
1460	250	78.00 M'
1460	500	75.00 M'
1460	1000	75.00 M'
1461*	10	.45
1461*	15	.68
1461*	25	1.05
1461	50	1.95
1461	100	3.75
1461	250	8.63
1461	500	16.88
1461	1000	32.25
1462	25	2.93
1462	50	5.48
1462	100	10.35
1462	250	24.38
1462	500	48.38
1462	1000	90.00
1463	15	2.75
1463	25	3.23
1463	50	6.23
1463	100	11.33
1463	250	27.75
1463	500	108.75
1463	1000	108.75
1464	15	2.40
1464	25	4.13
1464	50	7.50
1464	100	13.88
1464	250	33.75
1464	500	65.25
1464	1000	129.75
1465	50	9.00
1465	100	16.35
1465	250	43.50
1465	500	75.00
1465	1000	150.00
1466	100	20.63
1466	250	51.38
1466	500	100.50
1466	1000	200.25
1467	100	21.75
1467	250	52.50
1467	500	103.50
1467	1000	205.50
1469	100	6.23
1469	250	14.63
1469	500	26.25
1469	1000	52.50
1701	100	12.00
1701	250	30.00
1701	500	60.00
1701	1000	120.00
1702	100	13.50
1702	250	33.75
1702	500	71.25
1702	1000	127.50
1703	100	22.05
1703	250	51.75
1703	500	100.50
1703	1000	198.00
1704	100	26.25
1704	250	63.75
1704	500	124.50
1704	1000	247.50
1705	100	21.75
1705	250	54.38
1705	500	105.00
1705	1000	207.00
1706	100	26.25
1706	250	65.25
1706	500	127.50
1706	1000	253.50
1707	100	26.33
1707	250	61.50
1707	500	122.25
1707	1000	243.75
1708	100	38.55
1708	250	89.55
1708	500	175.50
1708	1000	349.50
1709	100	51.75
1709	250	119.25
1709	500	235.50
1709	1000	468.00
1721	100	4.35
1721	250	9.23
1721	500	18.38
1721	1000	35.63
1722	100	9.23
1722	250	21.90
1722	500	42.00
1722	1000	78.75
1723	100	9.53
1723	250	24.00
1723	500	45.00
1723	1000	88.50
1724	100	11.40
1724	250	26.25
1724	500	52.50
1724	1000	103.88
1725	100	13.35
1725	250	30.90
1725	500	61.80
1725	1000	123.30
1726	100	15.75
1726	250	38.25
1726	500	74.25
1726	1000	146.25
1727	100	20.55
1727	250	49.50
1727	500	93.75
1727	1000	181.50
1728	100	20.25
1728	250	49.50
1728	500	96.00
1728	1000	189.00
1732	100	6.75
1732	250	16.50
1732	500	30.25
1732	1000	58.95
1733	100	7.13
1733	250	20.25
1733	500	33.75
1733	1000	64.88
1734	100	8.33
1734	250	20.63
1734	500	38.25
1734	1000	73.65
1735	100	10.73
1735	250	27.75
1735	500	52.05
1735	1000	99.75
1736	100	12.75
1736	250	32.25
1736	500	60.38
1736	1000	118.50
1737	100	18.00
1737	250	42.75
1737	500	81.00
1737	1000	157.50
1738	100	18.25
1738	250	43.35
1738	500	81.75
1738	1000	159.75
2000		25%
3815	100	1.73
3815	1000	12.75
3816	100	1.43
3816	1000	10.88
3817	100	.83
3817	1000	6.38
3818	100	.68
3818	1000	4.43
3819	100	.65
3819	1000	3.75
3821	100	2.10
3821	1000	20.93
3831	100	3.23
3831	1000	32.18
3841	100	5.93
3841	1000	55.13
3845	100	8.48
3845	1000	80.25
3846	100	.66
3846	1000	3.53
3847	100	.63
3847	1000	3.23
3848	100	.53
3848	1000	2.85
4401	100	5.76
4401	500	39.90 M'
4401	1000	39.90 M'
4402	100	6.08
4402	500	47.63 M'
4402	1000	46.88 M'
4403	100	6.08
4403	500	47.63 M'
4403	1000	46.88 M'
4404	500	691.58 M'
4404	1000	675.00 M'
4405	100	4.95
4405	500	43.13 M'
4405	1000	42.38 M'
4406	500	1611.00 M'
4406	1000	1573.50 M'
4407	500	567.00 M'
4407	1000	551.25 M'
4408	500	1077.75 M'
4408	1000	1041.38 M'
4409	500	1482.00 M'
4409	1000	1414.13 M'
4410	500	174.38 M'
4410	1000	168.60 M'
4411	500	513.23 M'
4411	1000	502.50 M'
4412	500	89.25 M'
4412	1000	82.05 M'
4415	100	13.73
4415	500	110.25 M'
4415	1000	108.00 M'
4419	100	11.85
4419	500	95.03 M'
4419	1000	95.03 M'
4422	500	377.25 M'
4422	1000	367.13 M'
4423	500	377.25 M'
4423	1000	367.13 M'
4426	500	180.38 M'
4426	1000	175.13 M'
4427	500	209.25 M'
4427	1000	199.43 M'
4428	500	407.63 M'
4428	1000	396.38 M'
4429	500	536.63 M'
4429	1000	523.35 M'
4430	500	133.88 M'
4430	1000	129.00 M'
4431	100	26.25 M'
4431	500	247.50 M'
4431	1000	247.50 M'
4432	100	26.25
4432	500	247.50 M'
4432	1000	247.50 M'
4433	100	15.75
4433	500	149.25 M'
4433	1000	146.63 M'
4434	100	19.50
4434	500	147.00 M'
4434	1000	132.00 M'
4435	100	14.63
4435	500	121.50 M'
4435	1000	121.50 M'
4436	100	35.35
4436	500	318.75 M'
4436	1000	318.75 M'
4437	100	45.00
4437	500	390.00 M'
4437	1000	390.00 M'
4438	100	45.00
4438	500	390.00 M'
4438	1000	390.00 M'
4439	100	38.85
4439	500	330.00 M'
4439	1000	259.50 M'
4440	100	12.98
4440	500	110.25 M'
4440	1000	110.25 M'
4441	100	37.50
4441	500	300.00 M'
4441	1000	250.50 M'
4442	100	22.50
4442	500	210.00 M'
4442	1000	204.38 M'
4443	100	19.50
4443	500	158.25 M'
4443	1000	157.13 M'

* Spools fit our self service spool "O" wire display stand.

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Consolidated Number	Length Feet	Distributors Net Price Each
4444	100	35.25
4444	500	297.00 M'
4444	1000	297.00 M'
4445	100	35.35
4445	500	297.00 M'
4445	1000	297.00 M'
4446	100	7.50
4446	500	66.00 M'
4446	1000	66.00 M'
4447	100	9.15
4447	500	82.50 M'
4447	1000	81.38 M'
4448	100	18.00
4448	500	157.50 M'
4448	1000	150.00 M'
4449	100	5.85
4449	500	42.60 M'
4449	1000	42.60 M'
4450	100	6.00
4450	500	50.63 M'
4450	1000	49.88 M'
4451	100	6.38
4451	500	51.30 M'
4451	1000	51.30 M'
4452	100	6.15
4452	500	48.00 M'
4452	1000	48.00 M'
4453	100	6.38
4453	500	51.38 M'
4453	1000	50.63 M'
4454	100	10.73
4454	500	96.75 M'
4454	1000	96.00 M'
4455	100	11.55
4455	500	100.50 M'
4455	1000	99.75 M'
4456	100	9.60
4456	500	83.63 M'
4456	1000	82.88 M'
4457	100	6.98
4457	500	57.00 M'
4457	1000	56.25 M'
4458	500	232.50 M'
4458	1000	223.88 M'
4459	100	4.50
4459	500	34.50 M'
4459	1000	34.50 M'
4460	100	15.00
4460	500	132.75 M'
4460	1000	131.25 M'
4461	100	27.75
4461	500	231.00 M'
4461	1000	228.75 M'
4462	100	31.50
4462	500	285.00 M'
4462	1000	283.13 M'
4463	100	12.75
4463	500	114.00 M'
4463	1000	112.50 M'
4464	100	7.88
4464	500	68.63 M'
4464	1000	67.88 M'
4465	100	7.83
4465	500	68.63 M'
4465	1000	67.88 M'
4466	100	10.80
4466	500	93.38 M'
4466	1000	92.63 M'
4467	100	40.50
4467	500	306.00 M'
4467	1000	303.75 M'
4468	100	40.50
4468	500	306.00 M'
4468	1000	303.75 M'
4469	100	10.58
4469	500	101.25 M'
4469	1000	99.83 M'
4470	100	7.50
4470	500	51.30 M'
4470	1000	51.30 M'
4471	100	23.25
4471	500	187.50 M'
4471	1000	165.00 M'
4472	100	6.45
4472	500	55.05 M'
4472	1000	55.05 M'
4473	100	600.00
4473	500	5625.00 M'
4473	1000	5625.00 M'
4474	100	6.38
4474	500	57.00 M'
4474	1000	56.25 M'
4475	100	24.75
4475	500	202.50 M'
4475	1000	201.75 M'
4476	100	15.00
4476	500	115.50 M'
4476	1000	112.50 M'
4477	100	15.00
4477	500	120.75 M'
4477	1000	120.75 M'
4478	100	7.80
4478	500	44.63 M'
4478	1000	42.98 M'
4479	100	13.50
4479	500	132.00 M'
4479	1000	132.00 M'
4480	100	27.00
4480	500	232.50 M'
4480	1000	232.50 M'
4481	100	15.00
4481	500	138.75 M'
4481	1000	138.75 M'
4482	100	60.00
4482	500	540.00 M'
4482	1000	540.00 M'
4483	500	975.00 M'
4483	1000	975.00 M'
4484	500	90.00 M'
4484	1000	86.25 M'
4485	500	84.60 M'
4485	1000	83.85 M'
4486	500	562.50 M'
4486	1000	548.63 M'
4487	500	300.00 M'
4487	1000	247.50 M'
4488	500	390.00 M'
4488	1000	315.00 M'
4489	500	118.50 M'
4489	1000	118.50 M'
4490	500	405.00 M'
4490	1000	397.50 M'
4491	500	225.00 M'
4491	1000	210.75 M'
4492	500	412.50 M'
4492	1000	393.75 M'
4493	500	900.00 M'
4493	1000	735.00 M'
4494	500	1200.00 M'
4494	1000	1005.00 M'
4495	500	337.50 M'
4495	1000	328.13 M'
4496	500	142.50 M'
4496	1000	142.50 M'
4497	500	285.00 M'
4497	1000	281.25 M'
4498	100	7.13
4498	500	46.50 M'
4498	1000	46.50 M'
4499	500	294.75 M'
4499	1000	280.50 M'
4601	25	.65
4601	100	1.95
4601	500	8.75
4601	1000	17.00
4611	25	1.28
4611	100	4.50
4611	500	21.75
4611	1000	40.50
4616	25	.75
4616	100	2.33
4616	500	10.88
4616	1000	21.00
4621	25	1.35
4621	100	4.13
4621	500	20.25
4621	1000	39.75
4622	100	4.50
4622	500	20.63
4622	1000	41.25
4623	100	1.88
4623	500	7.50
4623	1000	15.00
4700	100	1087.50 M'
4700	250	3350.00 M'
4700	500	921.00 M'
4700	1000	885.00 M'
4701	100	3610.88 M'
4701	250	3075.00 M'
4701	500	2563.50 M'
4701	1000	2160.00 M'
4702	100	2190.00 M'
4702	250	2085.00 M'
4702	500	1825.20 M'
4702	1000	1747.50 M'
4703	100	3053.25 M'
4703	250	2911.43 M'
4703	500	2547.45 M'
4703	1000	2441.25 M'
4704	100	1860.38 M'
4704	250	1771.95 M'
4704	500	1650.00 M'
4704	1000	1612.50 M'
4705	100	2007.00 M'
4705	250	1911.53 M'
4705	500	1687.50 M'
4705	1000	1627.50 M'
4706	100	3151.50 M'
4706	250	2865.00 M'
4706	500	2681.25 M'
4706	1000	2574.00 M'
4707	100	9487.50 M'
4707	250	9215.63 M'
4707	500	8625.00 M'
4707	1000	8280.00 M'
4708	100	9487.50 M'
4708	250	9215.63 M'
4708	500	8625.00 M'
4708	1000	8280.00 M'
4709	100	10,620.30 M'
4709	250	9735.00 M'
4709	500	8850.00 M'
4709	1000	8280.00 M'
4710	100	10,620.30 M'
4710	250	9735.00 M'
4710	500	8850.00 M'
4710	1000	8280.00 M'
4711	100	3526.05 M'
4711	250	3205.50 M'
4711	500	3168.00 M'
4711	1000	2880.00 M'
4712	100	3786.75 M'
4712	250	3606.75 M'
4712	500	3306.00 M'
4712	1000	3006.00 M'
4713	100	2700.75 M'
4713	250	2455.13 M'
4713	500	2343.75 M'
4713	1000	2232.00 M'
4714	100	868.88 M'
4714	250	789.75 M'
4714	500	718.20 M'
4714	1000	684.00 M'
4715	100	571.50 M'
4715	250	519.75 M'
4715	500	472.50 M'
4715	1000	450.00 M'
4716	100	599.63 M'
4716	250	544.95 M'
4716	500	499.50 M'
4716	1000	475.88 M'
4717	100	708.75 M'
4717	250	644.25 M'
4717	500	585.75 M'
4717	1000	558.00 M'
4718	100	753.00 M'
4718	250	686.03 M'
4718	500	623.63 M'
4718	1000	567.00 M'
4719	100	777.53 M'
4719	250	706.87 M'
4719	500	642.60 M'
4719	1000	612.00 M'
4720	100	2137.88 M'
4720	250	1943.70 M'
4720	500	1767.00 M'
4720	1000	1683.00 M'
4721	100	2137.88 M'
4721	250	1943.70 M'
4721	500	1767.00 M'
4721	1000	1683.00 M'
4722	100	2880.00 M'
4722	250	2619.39 M'
4722	500	2231.40 M'
4722	1000	2272.50 M'
4723	100	8505.75 M'
4723	250	8107.50 M'
4723	500	7371.00 M'
4723	1000	7020.00 M'
4724	100	163.58 M'
4724	250	148.73 M'
4724	500	135.15 M'
4724	1000	128.70 M'
4725	100	2881.13 M'
4725	250	2619.38 M'
4725	500	2381.25 M'
4725	1000	2268.00 M'
4726	100	3087.00 M'
4726	250	2806.50 M'
4726	500	2551.50 M'
4726	1000	2430.00 M'
4727	100	152.13 M'
4727	250	138.75 M'
4727	500	126.00 M'
4727	1000	120.00 M'
4728	100	149.63 M'
4728	250	136.13 M'
4728	500	123.75 M'
4728	1000	117.75 M'
4729	100	153.75 M'
4729	250	139.88 M'
4729	500	127.13 M'
4729	1000	119.63 M'
4730	100	237.90 M'
4730	250	216.23 M'
4730	500	196.58 M'
4730	1000	187.20 M'
4731	100	254.20 M'
4731	250	231.00 M'
4731	500	210.00 M'
4731	1000	198.88 M'
4732	100	407.03 M'
4732	250	370.05 M'
4732	500	336.38 M'
4732	1000	320.25 M'
4733	100	411.75 M'
4733	250	374.25 M'
4733	500	340.13 M'
4733	1000	324.00 M'
4734	100	416.63 M'
4734	250	378.75 M'
4734	500	344.25 M'
4734	1000	327.75 M'
4735	100	263.25 M'
4735	250	239.25 M'
4735	500	217.50 M'
4735	1000	207.00 M'
4736	100	263.25 M'
4736	250	239.25 M'
4736	500	217.50 M'
4736	1000	207.00 M'
4737	100	255.45 M'
4737	250	232.20 M'
4737	500	211.13 M'
4737	1000	201.75 M'
4738	100	255.45 M'
4738	250	232.20 M'
4738	500	211.13 M'
4738	1000	201.75 M'
4739	100	465.00 M'
4739	250	436.50 M'
4739	500	396.75 M'
4739	1000	378.00 M'
4740	100	465.00 M'
4740	250	436.50 M'
4740	500	396.75 M'
4740	1000	378.00 M'
4741	100	165.00 M'
4741	250	150.00 M'
4741	500	136.50 M'
4741	1000	124.13 M'
4742	100	165.00 M'
4742	250	150.00 M'
4742	500	136.50 M'
4742	1000	124.13 M'
4743	100	1292.10 M'
4743	250	1174.65 M'
4743	500	1067.85 M'
4743	1000	1017.00 M'
4744	100	933.75 M'
4744	250	849.00 M'
4744	500	771.75 M'
4744	1000	734.40 M'
4745	100	10,159.50 M'
4745	250	9563.25 M'
4745	500	8694.00 M'
4745	1000	8280.00 M'
4746	100	10,159.50 M'
4746	250	9563.25 M'
4746	500	8694.00 M'
4746	1000	8250.00 M'
4747	100	2950.13 M'
4747	250	2682.00 M'
4747	500	2438.25 M'
4747	1000	2322.00 M'
4748	100	3018.75 M'
4748	250	2744.25 M'
4748	500	2494.88 M'
4748	1000	2376.00 M'
4749	100	3407.63 M'
4749	250	3093.75 M'
4749	500	2816.25 M'
4749	1000	2682.00 M'
4750	100	11,892.00 M'
4750	250	10,810.88 M'
4750	500	9828.00 M'
4750	1000	9360.00 M'
4751	100	11,892.00 M'
4751	250	10,810.88 M'
4751	500	9828.00 M'
4751	1000	9360.00 M'
4752	100	3041.25 M'
4752	250	2764.88 M'
4752	500	2633.25 M'
4752	1000	2394.00 M'
4753	100	7180.88 M'
4753	250	6528.00 M'
4753	500	5934.75 M'
4753	1000	5652.00 M'
4754	100	18,499.88 M'
4754	250	16,818.00 M'
4754	500	15,024.00 M'
4754	1000	14,580.00 M'
4755	100	6238.35 M'
4755	250	2016.68 M'
4755	500	1833.38 M'
4755	1000	1746.00 M'
4756	100	770.42 M'
4756	250	725.00 M'
4756	500	713.63 M'
4756	1000	680.40 M'
4757	100	667.73 M'
4757	250	607.05 M'
4757	500	551.85 M'
4757	1000	525.60 M'
4758	100	2046.75 M'
4758	250	1860.75 M'
4758	500	1691.55 M'
4758	1000	1611.00 M'
4759	100	235.58 M'
4759	250	214.13 M'
4759	500	181.20 M'
4759	1000	185.40 M'
4761	100	210.00 M'
4761	250	195.75 M'
4761	500	174.75 M'
4761	1000	159.38 M'
4762	100	376.80 M'
4762	250	348.00 M'
4762	500	318.60 M'
4762	1000	290.18 M'
5151	100	2.33
5151	500	10.20
5151	1000	19.50
5152	100	4.35
5152	500	20.63
5152	1000	39.60
5153	100	5.55
5153	500	26.93
5153	1000	51.30
5155	100	10.43
5155	500	51.00
5155	1000	98.25
5156	100	11.85
5156	500	57.00
5156	1000	112.13
5157	100	13.35
5157	500	64.65
5157	1000	127.43
5158	100	14.85
5158	500	72.30
5158	1000	143.25
5159	100	17.25
5159	500	76.88
5159	1000	153.75
5161	100	21.38
5161	500	99.38
5161	1000	195.68
5165	100	25.35
5165	500	120.75
5165	1000	241.50
5167	100	45.75
5167	500	225.00
5167	1000	450.00
5171	100	64.50
5171	500	307.50
5171	1000	607.50
5181	100	88.50
5181	500	427.50
5181	1000	847.50
5191	100	102.00
5191	500	982.50
5191	1000	982.50
5201	100	2.40
5201	500	8.55
5201	1000	17.10
5205	100	3.90
5205	500	15.90
5205	1000	32.03
5211	100	5.63
5211	500	22.50
5211	1000	43.88
5221	100	9.75
5221	500	43.50
5221	1000	86.25
5226	100	10.28
5226	500	46.80
5226	1000	90.23
5231	100	13.50
5231	500	58.50
5231	1000	116.25
5236	100	15.00
5236	500	65.25
5236	1000	128.25
5241	100	16.50
5241	500	71.25
5241	1000	140.63
5251	100	17.25
5251	500	77.25
5251	1000	150.00
5271	100	20.63
5271	500	95.25
5271	1000	190.50
5286	100	36.00
5286	500	174.75
5286	1000	349.50
5289	100	44.85
5289	500	215.25
5289	1000	426.00
5292	100	63.00
5292	500	307.50
5292	1000	607.50
5297	100	81.00
5297	500	390.00
5297	1000	772.50
5303	100	22.58
5303	500	45.75
5303	1000	90.53
5306	100	45.75
5306	500	91.50
5306	1000	183.00
5309	100	30.00
5309	500	142.50
5309	1000	271.88
5311	100	31.50
5311	500	158.25
5311	1000	312.75
5315	100	45.00
5315	500	211.50
5315	1000	418.50
5323	100	11.18
5323	500	53.25
5323	1000	106.50
5326	100	22.28
5326	500	110.25
5326	1000	219.75
5329	100	78.15
5329	500	156.00
5329	1000	310.50
5331	100	37.88
5331	500	186.00
5331	1000	369.75
5335	100	51.00
5335	500	247.50
5335	1000	490.88
5339	100	69.00
5339	500	328.50
5339	1000	652.50

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Consolidated Number	Length Feet	Distributors Net Price Each
5347	100	49.50
5347	500	493.50
5347	1000	976.88
5400	100	2.40
5400	500	9.75
5400	1000	18.75
5401	10	.38
5401	25	1.05
5401	100	3.08
5401	500	12.15
5401	1000	24.23
5406	25	1.65
5406	100	3.98
5406	500	16.13
5406	1000	31.13
5411	25	1.88
5411	100	4.65
5411	500	20.25
5411	1000	39.30
5416	15	1.28
5416	100	6.38
5416	500	27.00
5416	1000	52.88
5421	100	7.88
5421	500	31.50
5421	1000	62.25
5426	15	1.50
5426	100	7.50
5426	500	30.75
5426	1000	59.25
5431	15	1.88
5431	100	8.63
5431	500	39.00
5431	1000	76.88
5434	100	9.90
5434	500	46.50
5434	1000	92.25
5438	100	16.13
5438	500	74.25
5438	1000	138.75
5440	100	22.13
5440	500	101.63
5440	1000	198.75
5442	100	32.40
5442	500	93.00
5442	1000	186.00
5446	100	32.25
5446	500	161.25
5446	1000	315.00
5448	100	57.00
5448	500	255.00
5448	1000	495.00
5450	100	69.00
5450	500	311.25
5450	1000	615.00
5460	100	81.75
5460	500	375.00
5460	1000	742.50
5470	100	71.25
5470	500	31.50
5470	1000	63.00
5471	100	8.78
5471	500	40.05
5471	1000	80.10
5472	100	11.70
5472	500	53.63
5472	1000	107.25
5473	100	15.68
5473	500	73.50
5473	1000	147.00
5474	100	21.90
5474	500	107.25
5474	1000	214.50
5475	100	29.70
5475	500	140.25
5475	1000	280.50
5476	100	33.75
5476	500	157.50
5476	1000	315.00
5480	100	11.50
5480	500	53.63
5480	1000	107.25
5481	100	19.65
5481	500	87.75
5481	1000	175.50
5482	100	33.00
5482	500	153.00
5482	1000	306.00
5483	100	46.50
5483	500	222.75
5483	1000	445.50
5484	100	56.10
5484	500	264.00
5484	1000	528.00
5485	100	19.80
5485	500	90.75
5485	1000	181.50
5486	100	34.65
5486	500	160.88
5486	1000	321.75
5487	100	56.10
5487	500	272.25
5487	1000	544.50
5501	100	3.75
5501	500	17.25
5501	1000	34.50
5506	100	5.48
5506	500	24.75
5506	1000	49.50
5511	100	4.13
5511	500	18.00
5511	1000	32.25
5516	100	7.58
5516	500	33.00
5516	1000	63.75
5521	100	6.75
5521	500	24.00
5521	1000	46.50
5526	100	5.25
5526	500	21.00
5526	1000	41.25
5531	100	7.88
5531	500	36.00
5531	1000	71.25
5536	100	8.25
5536	500	33.00
5536	1000	66.00
5538	100	6.23
5538	500	26.70
5538	1000	53.40
5541	100	7.65
5541	500	36.00
5541	1000	70.88
5543	100	5.03
5543	500	21.00
5543	1000	42.00
5547	25	.38
5547	50	.68
5547	100	1.13
5547	250	3.00
5547	500	9.75
5547	1000	9.38
5551	10	.45
5551	25	1.05
5551	50	1.95
5551	100	3.75
5551	500	16.88
5551	1000	32.25
5556	100	2.43
5556	500	8.78
5556	1000	17.55
5557	500	21.75
5557	1000	21.45
5561	100	3.15
5561	500	12.45
5561	1000	24.90
5566	500	20.25
5566	1000	39.00
5568	100	4.58
5568	500	20.25
5568	1000	39.38
5569	100	7.13
5569	500	27.38
5569	1000	53.25
5570	100	4.13
5570	500	16.88
5570	1000	32.63
5571	500	26.25
5571	1000	49.50
5572	500	15.60
5572	1000	31.20
5573	500	19.88
5573	1000	39.75
5574	500	24.00
5574	1000	47.25
5575	500	33.60
5575	1000	67.20
5576	500	19.65
5576	1000	39.30
5577	500	24.75
5577	1000	49.50
5578	500	30.38
5578	1000	60.75
5579	500	10.05
5579	1000	19.95
5580	500	12.75
5580	1000	24.75
5581	500	17.85
5581	1000	35.55
5582	500	26.55
5582	1000	52.05
5583	500	36.75
5583	1000	73.50
5584	500	8.63
5584	1000	16.50
5585	500	16.50
5585	1000	31.50
5586	500	19.80
5586	1000	38.63
5587	500	24.75
5587	1000	48.75
5588	100	3.75
5588	500	14.03
5588	1000	28.05
5589	100	10.65
5589	500	51.60
5589	1000	99.38
5590	100	9.23
5590	500	43.50
5590	1000	87.00
5591	100	12.75
5591	500	61.05
5591	1000	120.60
5594	100	9.08
5594	500	41.63
5594	1000	81.75

Consolidated Number	Length Feet	Distributors Net Price Each
To Customers Specified Length		
6006		290.40 M'
6012		415.80 M'
6018		496.65 M'
6025		584.55 M'
6050		1009.80 M'
6075		1423.95 M'
6100		1762.50 M'
6106		450.00 M'
6110		3135.00 M'
6112		687.75 M'
6118		907.50 M'
6125		1215.00 M'
6150		2479.95 M'
6170		2137.50 M'
6175		2820.00 M'
6200		3255.45 M'
6220		6037.50 M'
6250		4462.50 M'
6300		4950.00 M'
6400		6375.00 M'
6606		247.50 M'
6610		1620.00 M'
6612		337.50 M'
6615		2437.50 M'
6618		420.00 M'
6620		3150.00 M'
6625		533.25 M'
6630		4822.50 M'
6640		5985.75 M'
6650		915.38 M'
6675		1312.50 M'
6706		307.50 M'
6710		2775.75 M'
6712		472.50 M'
6715		3886.05 M'
6718		539.25 M'
6720		6152.50 M'
6725		791.25 M'
6750		1498.13 M'
6775		2182.50 M'
7502		142.50 M'
7503		300.00 M'
7505		457.50 M'
7506		487.50 M'
7507		540.00 M'
7508		600.00 M'
7510		667.50 M'
7512		787.50 M'
7514		960.00 M'
7516		1057.50 M'
7519		1192.50 M'
7521		1372.50 M'
7522		1477.50 M'
7524		1530.00 M'
7526		1620.00 M'
7530		1815.00 M'
7537		2130.00 M'
7540		2287.50 M'
7550		2850.00 M'
7560		3255.00 M'
7602		175.00 M'
7603		285.00 M'
7604		322.50 M'
7605		426.00 M'
7606		457.50 M'
7607		517.50 M'
7608		600.00 M'
7609		637.50 M'
7610		757.50 M'
7612		885.00 M'
7614		1135.50 M'
7616		1297.50 M'
7619		1785.00 M'
7624		2505.00 M'
7627		2640.00 M'
7630		2872.50 M'
7634		3360.75 M'
7637		3607.50 M'
7640		4725.00 M'
7702		322.50 M'
7703		517.50 M'
7704		645.00 M'
7705		907.50 M'
7706		1020.00 M'
7707		1087.50 M'
7708		1245.00 M'
7709		1360.50 M'
7710		1492.50 M'
7712		1815.00 M'
7714		1942.50 M'
7715		2115.00 M'
7716		2362.50 M'
7718		2655.00 M'
7719		2835.00 M'
7720		3262.50 M'
7722		3450.00 M'
7725		3727.50 M'
7727		3885.00 M'
7730		4492.50 M'
7734		4612.50 M'
7737		5235.00 M'
7802		405.00 M'
7803		622.50 M'
7804		885.00 M'
7805		1057.50 M'

Consolidated Number	Length Feet	Distributors Net Price Each
7806		1185.00 M'
7807		1320.00 M'
7808		1537.50 M'
7809		1725.00 M'
7810		1822.50 M'
7812		2160.00 M'
7815		2242.50 M'
7816		2805.00 M'
7820		3480.00 M'
7902		585.00 M'
7903		786.00 M'
7904		1035.00 M'
7905		1200.00 M'
7906		1474.50 M'
7907		1593.00 M'
7908		1768.50 M'
7909		1882.50 M'
7910		2079.00 M'
7912		2220.00 M'
7915		2865.00 M'
7916		3292.50 M'
7920		3711.00 M'
8006		241.50 M'
8012		329.25 M'
8016		298.13 M'
8018		410.25 M'
8025		524.40 M'
8050		904.43 M'
8100		1602.00 M'
8110		2756.25 M'
8112		462.00 M'
8118		576.75 M'
8125		777.60 M'
8150		1472.85 M'
8200		3127.50 M'
8220		5085.00 M'
8306		286.88 M'
8310		1743.75 M'
8312		403.50 M'
8318		486.08 M'
8320		3188.25 M'
8325		560.63 M'
8350		988.43 M'
8406		438.90 M'
8410		3068.25 M'
7412		659.10 M'
8418		885.00 M'
8420		5873.63 M'
8425		1196.25 M'
8450		2078.85 M'
9001	100	1.20
9001	500	4.05
9001	1000	6.75
9002	100	1.20
9002	500	4.43
9002	1000	7.73
9003	100	1.35
9003	500	5.25
9003	1000	9.68
9004	100	1.95
9004	500	8.03
9004	1000	14.18
9005	100	2.73
9005	500	11.03
9005	1000	21.00
9006	100	3.98
9006	500	18.00
9006	1000	31.20
9007	100	5.70
9007	500	24.60
9007	1000	47.10
9010	100	1.13
9010	500	3.90
9010	1000	6.08
9011	100	1.28
9011	500	5.10
9011	1000	8.33
9012	100	1.80
9012	500	6.75
9012	1000	11.93
9013	100	2.25
9013	500	9.30
9013	1000	18.08
9014	100	2.93
9014	500	13.50
9014	1000	22.95
9015	100	3.23
9015	500	15.00
9015	1000	24.90
9016	100	3.45
9016	500	16.65
9016	1000	29.55
9017	100	3.90
9017	500	19.35
9017	1000	34.65
9018	100	5.40
9018	500	25.80
9018	1000	46.80
9019	100	6.75
9019	500	31.05
9019	1000	57.23
9020	100	8.85
9020	500	39.23
9020	1000	72.00
9021	100	4.50
9021	500	20.63
9021	1000	37.05

Consolidated Number	Length Feet	Distributors Net Price Each
9022	100	4.55
9022	500	22.65
9022	1000	40.73
9023	100	5.55
9023	500	24.75
9023	1000	45.00
9024	100	6.75
9024	500	32.85
9024	1000	58.80
9025	100	2.63
9025	500	11.03
9025	1000	19.50
9026	100	2.85
9026	500	13.50
9026	1000	23.48
9027	100	3.30
9027	500	16.35
9027	1000	28.80
9028	100	4.28
9028	500	19.65
9028	1000	35.25
9029	100	4.65
9029	500	22.35
9029	1000	40.73
9030	100	7.95
9030	500	36.75
9030	1000	65.55
9031	100	4.50
9031	500	21.30
9031	1000	40.80
9032	100	4.95
9032	500	24.30
9032	1000	46.50
9033	100	5.70
9033	500	26.55
9033	1000	49.65
9034	100	6.75
9034	500	33.60
9034	1000	61.95
9035	100	8.25
9035	500	39.00
9035	1000	74.25
9036	100	9.80
9036	500	46.95
9036	1000	93.30
9037	100	2.03
9037	500	8.10
9037	1000	14.25
9038	100	2.18
9038	500	9.75
9038	1000	17.10
9039	100	2.93
9039	500	12.23
9039	1000	22.35
9040	100	3.90
9040	500	18.23
9040	1000	31.88
9041	100	5.33
9041	500	24.15
9041	1000	45.30
9042	100	7.20
9042	500	34.35
9042	1000	66.75
9100	100	1.35
9100	500	5.93
9100	1000	10.73
9101	100	1.47
9101	500	7.05
9101	1000	12.38
9102	100	2.55
9102	500	9.08
9102	1000	16.65
9103	100	3.15
9103	500	12.15
9103	1000	23.63
9104	100	4.77
9104	500	22.88
9104	1000	43.80
9105	100	6.08
9105	500	28.80
9105	1000	54.60
9106	100	10.73
9106	500	51.75
9106	1000	93.30
9107	100	24.00
9107	500	117.00
9107	1000	221.25
9108	100	28.13
9108	500	132.38
9108	1000	240.00
9110	100	11.40
9110	500	55.80
9110	1000	103.73
9111	100	23.40
9111	500	112.05
9111	1000	214.50
9112	100	29.70
9112	500	142.50
9112	1000	279.38
9200	100	1.65
9200	500	6.00
9200	1000	9.00
9201	100	1.10
9201	500	4.80
9201	1000	6.53

Net

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Consolidated Number	Length Feet	Distributors Net Price Each
9202	100	1.10
9202	500	4.58
9202	1000	6.60
9203	100	1.05
9203	500	3.90
9203	1000	6.30
9204	100	1.20
9204	500	4.73
9204	1000	7.20
9205	100	1.43
9205	500	6.30
9205	1000	9.25
9210	100	2.03
9210	500	8.63
9210	1000	12.75
9211	100	1.58
9211	500	7.35
9211	1000	10.50
9212	100	1.88
9212	500	7.58
9212	1000	11.03
9213	100	2.03
9213	500	8.85
9213	1000	11.33
9214	100	1.50
9214	500	7.35
9214	1000	11.93
9215	100	2.03
9215	500	8.55
9215	1000	14.70
9300	100	1.62
9300	500	7.13
9300	1000	11.70
9301	100	1.37
9301	500	7.05
9301	1000	9.30
9302	100	1.35
9302	500	5.63
9302	1000	8.48
9303	100	1.40
9303	500	5.25
9303	1000	8.78
9304	100	1.73
9304	500	7.20
9304	1000	10.80
9305	100	1.20
9305	500	4.73
9305	1000	7.95
9306	100	1.73
9306	500	7.20
9306	1000	11.18
9307	100	1.28
9307	500	5.10
9307	1000	8.63
9308	100	1.88
9308	500	8.10
9308	1000	13.50
9309	100	1.65
9309	500	6.00
9309	1000	10.88
9310	100	2.18
9310	500	8.70
9310	1000	14.10
9311	100	2.10
9311	500	8.55
9311	1000	13.95
9312	100	2.25
9312	500	9.30
9312	1000	17.40
9313	100	1.88
9313	500	8.25
9313	1000	14.40
9314	100	1.80
9314	500	8.85
9314	1000	13.20
9315	100	1.73
9315	500	7.43
9315	1000	12.60
9316	100	1.95
9316	500	8.93
9316	1000	13.28
9317	100	1.88
9317	500	8.85
9317	1000	14.25
9318	100	1.50
9318	500	7.35
9318	1000	11.85
9319	100	2.18
9319	500	9.45
9319	1000	15.75
9320	100	1.35
9320	500	6.30
9320	1000	10.65
9321	100	1.95
9321	500	8.85
9321	1000	14.10
9322	100	1.95
9322	500	8.55
9322	1000	14.70
9323	100	2.33
9323	500	10.58
9323	1000	17.55
9324	100	2.25
9324	500	10.50
9324	1000	17.40
9325	100	2.78
9325	500	12.15
9325	1000	21.60
9400	100	1.47
9400	500	5.55
9400	1000	8.78
9401	100	1.58
9401	500	6.00
9401	1000	9.25
9402	100	1.62
9402	500	7.13
9402	1000	11.63
9403	100	2.03
9403	500	9.23
9403	1000	16.05
9404	100	2.40
9404	500	11.85
9404	1000	22.13
9405	100	4.05
9405	500	16.95
9405	1000	32.85
9410	100	2.10
9410	500	8.55
9410	1000	15.33
9411	100	2.27
9411	500	8.78
9411	1000	15.60
9412	100	2.28
9412	500	10.65
9412	1000	19.43
9413	100	2.58
9413	500	11.85
9413	1000	21.00
9414	100	3.06
9414	500	15.23
9414	1000	28.88
9415	100	4.73
9415	500	22.20
9415	1000	38.55
9500	100	2.01
9500	500	9.15
9500	1000	16.50
9501	100	1.88
9501	500	9.00
9501	1000	15.60
9502	100	2.33
9502	500	10.13
9502	1000	17.85
9503	100	2.55
9503	500	12.30
9503	1000	21.75
9504	100	4.79
9504	500	20.63
9504	1000	39.38
9505	100	5.45
9505	500	23.10
9505	1000	44.55
9506	100	7.88
9506	500	36.30
9506	1000	70.95
9507	100	11.18
9507	500	52.65
9507	1000	99.15
9508	100	20.25
9508	500	96.75
9508	1000	180.88
9509	100	26.25
9509	500	122.55
9509	1000	210.00
9600	100	4.08
9600	500	20.25
9600	1000	39.00
9601	100	3.98
9601	500	19.20
9601	1000	37.95
9602	100	4.23
9602	500	20.85
9602	1000	40.50
9603	100	5.70
9603	500	27.00
9603	1000	50.10
9604	100	4.35
9604	500	21.60
9604	1000	42.00
9605	100	4.88
9605	500	24.00
9605	1000	47.85
9606	100	4.35
9606	500	21.30
9606	1000	41.85
9607	100	5.40
9607	500	26.25
9607	1000	50.85
9608	100	5.10
9608	500	25.13
9608	1000	47.93
9609	100	6.83
9609	500	33.23
9609	1000	64.80
9610	100	6.23
9610	500	30.60
9610	1000	59.10
9611	100	8.33
9611	500	40.73
9611	1000	78.75
9612	100	8.18
9612	500	40.50
9612	1000	78.80
9613	100	10.80
9613	500	53.55
9613	1000	104.85
9614	100	14.40
9614	500	71.25
9614	1000	139.88
9615	100	21.38
9615	500	99.15
9615	1000	203.25
9616	100	36.00
9616	500	177.00
9616	1000	350.55
9620	100	7.05
9620	500	31.20
9620	1000	60.23
9621	100	7.20
9621	500	31.50
9621	1000	60.75
9622	100	7.50
9622	500	31.88
9622	1000	62.55
9623	100	7.95
9623	500	36.23
9623	1000	70.35
9624	100	6.68
9624	500	31.05
9624	1000	58.35
9625	100	5.63
9625	500	27.30
9625	1000	51.68
9626	100	5.48
9626	500	26.25
9626	1000	50.93
9627	100	6.75
9627	500	32.63
9627	1000	60.38
9628	100	6.38
9628	500	31.20
9628	1000	59.63
9629	100	8.03
9629	500	39.30
9629	1000	76.80
9630	100	7.95
9630	500	39.38
9630	1000	75.23
9631	100	9.75
9631	500	48.00
9631	1000	90.00
9632	100	9.68
9632	500	47.55
9632	1000	89.25
9633	100	12.75
9633	500	63.30
9633	1000	121.50
9634	100	18.75
9634	500	90.00
9634	1000	165.00
9635	100	27.75
9635	500	128.55
9635	1000	225.00
9636	100	45.00
9636	500	217.50
9636	1000	420.00
9700	100	2.13
9700	500	8.63
9700	1000	15.23
9701	100	2.63
9701	500	10.50
9701	1000	18.23
9702	100	3.15
9702	500	12.30
9702	1000	22.13
9703	100	3.08
9703	500	13.65
9703	1000	25.35
9704	100	4.05
9704	500	19.50
9704	1000	34.13
9705	100	5.55
9705	500	25.80
9705	1000	49.05
9706	100	2.63
9706	500	11.55
9706	1000	19.13
9707	100	2.78
9707	500	11.63
9707	1000	21.75
9708	100	3.30
9708	500	16.20
9708	1000	26.78
9709	100	3.60
9709	500	16.80
9709	1000	31.05
9710	100	4.50
9710	500	21.00
9710	1000	41.63
9711	100	6.98
9711	500	33.60
9711	1000	61.13
9713	100	12.75
9713	500	56.85
9713	1000	106.13
9714	100	20.70
9714	500	97.50
9714	1000	168.75
9715	100	27.00
9715	500	127.50
9715	1000	240.75
9716	100	36.75
9716	500	177.30
9716	1000	341.25
9717	100	63.00
9717	500	256.50
9717	1000	540.38
9718	100	102.00
9718	500	457.50
9718	1000	787.88
9719	100	120.00
9719	500	555.00
9719	1000	1057.50
9720	100	6.15
9720	500	28.73
9720	1000	52.80
9721	100	6.38
9721	500	30.30
9721	1000	54.75
9722	100	6.83
9722	500	32.63
9722	1000	59.55
9723	100	7.58
9723	500	34.80
9723	1000	64.88
9724	100	9.08
9724	500	42.23
9724	1000	80.25
9725	100	10.65
9725	500	52.35
9725	1000	99.30
9800	100	10.05
9800	500	49.73
9800	1000	96.75
9801	100	21.30
9801	500	103.35
9801	1000	197.78
9802	100	31.05
9802	500	152.25
9802	1000	288.98
9803	100	35.10
9803	500	174.00
9803	1000	340.28
9804	100	10.88
9804	500	53.55
9804	1000	102.45
9805	100	23.70
9805	500	114.75
9805	1000	221.63
9806	100	44.55
9806	500	162.90
9806	1000	314.25
9807	100	39.75
9807	500	190.73
9807	1000	361.80
9808	100	13.58
9808	500	66.23
9808	1000	121.35
9809	100	30.15
9809	500	142.80
9809	1000	276.60
9810	100	38.55
9810	500	182.40
9810	1000	359.63
9811	100	60.75
9811	500	295.20
9811	1000	464.25
9812	100	16.20
9812	500	78.23
9812	1000	146.18
9813	100	45.15
9813	500	214.50
9813	1000	328.80
9814	100	43.35
9814	500	213.75
9814	1000	417.38
9815	100	56.25
9815	500	274.35
9815	1000	537.75
9820	100	21.98
9820	500	105.15
9820	1000	202.88
9821	100	35.63
9821	500	172.50
9821	1000	330.98
9822	100	51.30
9822	500	177.00
9822	1000	493.50
9823	100	72.30
9823	500	311.40
9823	1000	581.33
9824	100	23.85
9824	500	113.55
9824	1000	220.73
9825	100	43.35
9825	500	210.00
9825	1000	409.88
9826	100	57.75
9826	500	277.73
9826	1000	547.20
9827	100	74.25
9827	500	363.75
9827	1000	712.50
9828	100	28.43
9828	500	135.01
9828	1000	267.60
9829	100	49.73
9829	500	242.55
9829	1000	473.25
9830	100	66.30
9830	500	328.05
9830	1000	641.25
9831	100	84.38
9831	500	417.30
9831	1000	824.85
9832	100	33.38
9832	500	164.25
9832	1000	316.88
9833	100	72.75
9833	500	316.05
9833	1000	596.25
9834	100	87.75
9834	500	397.50
9834	1000	768.68
9835	100	104.63
9835	500	472.80
9835	1000	914.55
9840	100	18.60
9840	500	83.55
9840	1000	153.30
9841	100	38.40
9841	500	165.38
9841	1000	201.75
9842	100	42.75
9842	500	166.35
9842	1000	319.80
9843	100	39.30
9843	500	195.23
9843	1000	382.88
9844	100	28.35
9844	500	86.55
9844	1000	167.18
9845	100	27.53
9845	500	136.35
9845	1000	266.25
9846	100	36.00
9846	500	178.28
9846	1000	347.55
9847	100	43.80
9847	500	218.48
9847	1000	431.40
9848	100	19.43
9848	500	94.73
9848	1000	181.50
9849	100	34.28
9849	500	160.13
9849	1000	302.55
9850	100	47.85
9850	500	232.20
9850	1000	437.03
9851	100	60.23
9851	500	296.25
9851	1000	580.13
9852	100	23.85
9852	500	113.55
9852	1000	211.43
9853	100	42.00
9853	500	191.25
9853	1000	366.60
9854	100	57.75
9854	500	252.00
9854	1000	493.65
9855	100	75.75
9855	500	326.85
9855	1000	643.78
9901	100	9.38
9901	500	45.00
9901	1000	76.50
9902	100	10.58
9902	500	50.25
9902	1000	91.05
9903	100	12.90
9903	500	60.15
9903	1000	112.73
9904	100	15.23
9904	500	73.05
9904	1000	136.13
9905	100	19.05
9905	500	90.23
9905	1000	170.10
9906	100	21.75
9906	500	105.30
9906	1000	198.75
9907	100	39.38
9907	500	191.40
9907	1000	360.75
9941	100	18.75
9941	500	87.23
9941	1000	157.50
9942	100	20.63
9942	500	96.23
9942	1000	183.95
9943	100	23.33
9943	500	110.63
9943	1000	210.00
9944	100	30.68
9944	500	150.30
9944	1000	287.75
9945	100	33.15
9945	500	160.13
9945	1000	311.25
9946	100	37.43
9946	500	181.73
9946	1000	356.25
9947	100	49.58
9947	500	243.00
9947	1000	472.88

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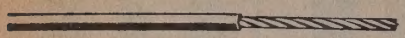
TYPE MW — VINYL — 1000V — 80C



Tinned copper, vinyl insulated, medium wall. The polyvinylchloride insulation is flame and ozone resistant and is inert to most chemicals, oils, and solvents.

STRANDED CONDUCTOR

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9001	MW-C-24-(7)-U	24(7x32)	.017	.058	As Listed	As Listed	As Listed
9002	MW-C-22-(7)-U	22(7x30)	.017	.064	As Listed	As Listed	As Listed
9003	MW-C-20-(10)-U	20(10x30)	.017	.070	As Listed	As Listed	As Listed
9004	MW-C-18-(16)-U	18(16x30)	.017	.080	As Listed	As Listed	As Listed
9005	MW-C-16-(26)-U	16(26x30)	.019	.098	As Listed	As Listed	As Listed
9006	MW-C-14-(41)-U	14(41x30)	.020	.111	As Listed	As Listed	As Listed
9007	MW-C-12-(65)-U	12(65x30)	.020	.130	As Listed	As Listed	As Listed

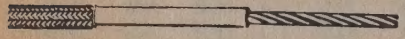
SOLID CONDUCTOR

9010	MW-C-22-(1)-U	22 (Solid)	.017	.059	As Listed	As Listed	As Listed
9011	MW-C-20-(1)-U	20 (Solid)	.017	.066	As Listed	As Listed	As Listed
9012	MW-C-18-(1)-U	18 (Solid)	.017	.074	As Listed	As Listed	As Listed
9013	MW-C-16-(1)-U	16 (Solid)	.017	.085	As Listed	As Listed	As Listed

Stock Colors*

0	Black	92	White/Red
1	Brown	93	White/Orange
2	Red	94	White/Yellow
3	Orange	95	White/Green
4	Yellow	96	White/Blue
5	Green	97	White/Violet
6	Dark Blue	98	White/Gray
7	Violet (Purple)	901	White/Black/Brown
8	Gray (Slate)	902	White/Black/Red
9	White	903	White/Black/Orange
11	Tan	904	White/Black/Yellow
12	Pink	905	White/Black/Green
13	Light Blue	906	White/Black/Blue
90	White/Black	907	White/Black/Violet
91	White/Brown	908	White/Black/Gray

TYPE MW — SHIELDED — 1000V — 80C



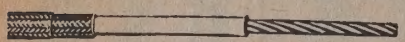
Tinned copper, polyvinylchloride insulation. Medium wall, tinned copper shield overall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9014	MW-C-24-(7)-S	24(7x32)	.017	.082	As Listed	As Listed	As Listed
9015	MW-C-22-(7)-S	22(7x30)	.017	.088	As Listed	As Listed	As Listed
9016	MW-C-20-(10)-S	20(10x30)	.017	.094	As Listed	As Listed	As Listed
9017	MW-C-18-(16)-S	18(16x30)	.017	.104	As Listed	As Listed	As Listed
9018	MW-C-16-(26)-S	16(26x30)	.019	.122	As Listed	As Listed	As Listed
9019	MW-C-14-(41)-S	14(41x30)	.020	.135	0, 2, 9	0, 2, 9	0, 2, 9
9020	MW-C-12-(65)-S	12(65x30)	.020	.154	0, 2, 9	0, 2, 9	0, 2, 9

Stock Colors*

0	Black	5	Green
1	Brown	6	Dark Blue
2	Red	7	Violet (Purple)
3	Orange	8	Gray (Slate)
4	Yellow	9	White

TYPE MW — SHIELDED — NYLON JACKET — 1000V — 80C



Tinned copper, polyvinylchloride insulation. Medium wall, tinned copper shield, nylon jacket.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9021	MW-C-22-(7)-SJ	22(7x30)	.017	.095	9	9	9
9022	MW-C-20-(7)-SJ	20(10x30)	.017	.101	9	9	9
9023	MW-C-18-(16)-SJ	18(16x30)	.017	.112	9	9	9
9024	MW-C-16-(19)-SJ	16(26x30)	.019	.131	9	9	9

Stock Color*

9 Vinyl insulation. White only.

TYPE MW — GLASS BRAID — 1000V — 80C

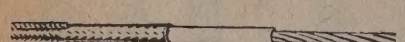
Tinned copper, polyvinylchloride insulated. Medium wall, lacquered glass braid overall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9025	MW-C-22(7)-B	22(7x30)	.017	.076	As Listed	As Listed	As Listed
9026	MW-C-20(10)-B	20(10x30)	.017	.084	As Listed	As Listed	As Listed
9027	MW-C-18(16)-B	18(16x30)	.017	.094	As Listed	As Listed	As Listed
9028	MW-C-16(26)-B	16(26x30)	.019	.112	As Listed	As Listed	As Listed
9029	MW-C-14(41)-B	14(41x30)	.020	.125	9,90 thru 98	9,90 thru 98	9,90 thru 98
9030	MW-C-12(65)-B	12(65x30)	.020	.144	9, 90, 92	9, 90, 92	9, 90, 92

Stock Colors*

0	Black	90	White/Black
1	Brown	91	White/Brown
2	Red	92	White/Red
3	Orange	93	White/Orange
4	Yellow	94	White/Yellow
5	Green	95	White/Green
6	Dark Blue	96	White/Blue
7	Violet (Purple)	97	White/Violet
8	Gray (Slate)	98	White/Gray
9	White		

TYPE MW — GLASS BRAID — SHIELDED — 1000V — 80C



Tinned copper, polyvinylchloride insulated. Medium wall, lacquered glass braid, tinned copper shield overall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9031	MW-C-22(7)-BS	22(7x30)	.017	.102	9	9	9
9032	MW-C-20(7)-BS	20(10x30)	.017	.108	9	9	9
9033	MW-C-18(16)-BS	18(16x30)	.017	.118	9	9	9
9034	MW-C-16(19)-BS	16(26x30)	.019	.136	9	9	9
9035	MW-C-14(19)-BS	14(41x30)	.020	.149	9	9	9
9036	MW-C-12(19)-BS	12(65x30)	.020	.168	9	9	9

Stock Color*

9 Vinyl insulation. White only.

* Stock Color Numbers in Accordance to Military Type Designation and EIA Color Coding.

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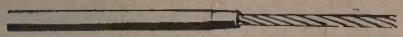
TYPE MW — NYLON JACKET — 1000V — 90C



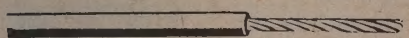
Tinned copper, polyvinylchloride insulated. Medium wall, clear nylon jacket overall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9037	MW-C-22(7)-J	22(7x30)	.017	.069	As Listed	As Listed	As Listed
9038	MW-C-20(10)-J	20(10x30)	.017	.075	As Listed	As Listed	As Listed
9039	MW-C-18(16)-J	18(16x30)	.017	.086	As Listed	As Listed	As Listed
9040	MW-C-16(26)-J	16(26x30)	.019	.106	As Listed	As Listed	As Listed
9041	MW-C-14(41)-J	14(41x30)	.020	.118	0,1,3,4,5,9	0,1,3,4,5,9	0,1,3,4,5,9
9042	MW-C-12(65)-J	12(65x30)	.020	.139	0,1,3,4,5,9	0,1,3,4,5,9	0,1,3,4,5,9

Stock Colors*

0 Black
1 Brown
2 Red
3 Orange
4 Yellow
5 Green
6 Dark Blue
7 Violet (Purple)
8 Gray (Slate)
9 White
90 White/Black
91 White/Brown
92 White/Red
93 White/Orange
94 White/Yellow
95 White/Green
96 White/Blue
97 White/Violet
98 White/Gray

TYPE HW — VINYL — Gauges 16-22 2500V, Gauges 6-14 600V — 80C



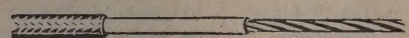
Tinned copper, polyvinylchloride insulated. Heavy wall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9100	HW-C-22(7)-U	22(7x30)	.034	.098	As Listed	As Listed	As Listed
9101	HW-C-20(10)-U	20(10x30)	.034	.104	As Listed	As Listed	As Listed
9102	HW-C-18(16)-U	18(16x30)	.034	.114	As Listed	As Listed	As Listed
9103	HW-C-16(26)-U	16(26x30)	.034	.128	0, 2, 9	0, 2, 9	0, 2, 9
9104	HW-C-14(41)-U	14(41x30)	.048	.171	0, 2, 9	0, 2, 9	0, 2, 9
9105	HW-C-12(65)-U	12(65x30)	.048	.191	0, 2, 9	0, 2, 9	0, 2, 9
9106	HW-C-10(105)-U	10(105x30)	.048	.214	0, 2, 9	0, 2, 9	0, 2, 9
9107	HW-C-8(133)-U	8(133x29)	.048	.261	0, 2, 9	0, 2, 9	0, 2, 9
9108	HW-C-6(133)-U	6(133x27)	.048	.296	0, 2, 9	0, 2, 9	0, 2, 9

Stock Colors*

0 Black
1 Brown
2 Red
3 Orange
4 Yellow
5 Green
6 Dark Blue
7 Violet (Purple)
8 Gray (Slate)
9 White

TYPE HW — GLASS BRAID — 600V — 80C



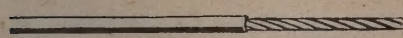
Tinned copper, polyvinylchloride insulated. Heavy wall, lacquered glass braid.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9110	HW-C-10(105)-B	10(105x30)	.048	.235	As Listed	As Listed	As Listed
9111	HW-C-8(133)-B	8(133x29)	.048	.279	As Listed	As Listed	As Listed
9112	HW-C-6(133)-B	6(133x27)	.048	.314	As Listed	As Listed	As Listed

Stock Colors*

9 White
90 White/Black
92 White/Red

TYPE LW — VINYL — 300V — 80C



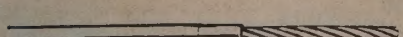
Tinned copper, polyvinylchloride insulated. Light wall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9200	LW-C-30(7)-U	30(7x38)	.011	.034	0 thru 9	0 thru 9	0 thru 9
9201	LW-C-28(7)-U	28(7x36)	.011	.037	As Listed	As Listed	As Listed
9202	LW-C-26(7)-U	26(7x34)	.011	.041	As Listed	As Listed	As Listed
9203	LW-C-24(7)-U	24(7x32)	.011	.046	As Listed	As Listed	As Listed
9204	LW-C-22(7)-U	22(7x30)	.012	.054	As Listed	As Listed	As Listed
9205	LW-C-20(10)-U	20(10x30)	.012	.060	As Listed	As Listed	As Listed

Stock Colors*

0 Black
1 Brown
2 Red
3 Orange
4 Yellow
5 Green
6 Dark Blue
7 Violet (Purple)
8 Gray (Slate)
9 White
90 White/Black
91 White/Brown
92 White/Red
93 White/Orange
94 White/Yellow
95 White/Green
96 White/Blue
97 White/Violet
98 White/Gray

TYPE LW — NYLON JACKET — 300V — 90C



Tinned copper, polyvinylchloride insulated. Light wall, clear nylon jacket overall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9210	LW-C-30(7)-J	30(7x38)	.011	.039	0 thru 9	0 thru 9	0 thru 9
9211	LW-C-28(7)-J	28(7x36)	.011	.042	As Listed	As Listed	As Listed
9212	LW-C-26(7)-J	26(7x34)	.011	.046	As Listed	As Listed	As Listed
9213	LW-C-24(7)-J	24(7x32)	.011	.051	As Listed	As Listed	As Listed
9214	LW-C-22(7)-J	22(7x30)	.012	.059	As Listed	As Listed	As Listed
9215	LW-C-20(10)-J	20(10x30)	.012	.065	As Listed	As Listed	As Listed

Stock Colors*

0 Black
1 Brown
2 Red
3 Orange
4 Yellow
5 Green
6 Dark Blue
7 Violet (Purple)
8 Gray (Slate)
9 White
90 White/Black
91 White/Brown
92 White/Red
93 White/Orange
94 White/Yellow
95 White/Green
96 White/Blue
97 White/Violet
98 White/Gray

* Stock Color Numbers in Accordance to Military Type Designation and EIA Color Coding.

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TYPE B — VINYL — 600V — 105C

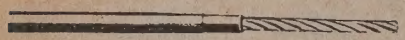
Tinned copper, polyvinylchloride insulated.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9300	B-32	32(7x40)	.010	.029	0 thru 9	0 thru 9	0 thru 9
9301	B-30	30(7x38)	.010	.032	0 thru 9	0 thru 9	0 thru 9
9302	B-28	28(7x36)	.010	.035	0 thru 9 90 thru 98	0 thru 9 90 thru 98	0 thru 9 90 thru 98
9303	B-26	26(7x34)	.010	.039	0 thru 9 90 thru 98	0 thru 9 90 thru 98	0 thru 9 90 thru 98
9304	B-24	24(19x36)	.010	.045	9,90 thru 98	9,90 thru 98	9,90 thru 98
9305	B-24	24(7x32)	.010	.044	As Listed	As Listed	As Listed
9306	B-22	22(19x34)	.010	.051	9,90 thru 98	9,90 thru 98	9,90 thru 98
9307	B-22	22(7x30)	.010	.050	As Listed	As Listed	As Listed
9308	B-20	20(19x32)	.010	.059	9,90 thru 98	9,90 thru 98	9,90 thru 98
9309	B-20	20(7x28)	.010	.058	As Listed	As Listed	As Listed
9310	B-18	18(19x30)	.010	.069	9,90 thru 98	9,90 thru 98	9,90 thru 98
9311	B-18	18(7x26)	.010	.068	0 thru 9 90 thru 98	0 thru 9 90 thru 98	0 thru 9 90 thru 98
9312	B-16	16(19x29)	.010	.077	0 thru 9 90 thru 98	0 thru 9 90 thru 98	0 thru 9 90 thru 98

Stock Colors*

0	Black	90	White/Black
2	Brown	91	White/Brown
2	Red	92	White/Red
3	Orange	93	White/Orange
4	Yellow	94	White/Yellow
5	Green	95	White/Green
6	Dark Blue	96	White/Blue
7	Violet (Purple)	97	White/Violet
8	Gray (Slate)	98	White/Gray
9	White		
11	Tan		
12	Pink		
13	Light Blue		

TYPE B — VINYL-NYLON JACKET — 600V — 115C



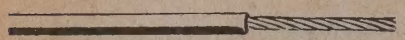
Tinned copper, polyvinylchloride insulated, nylon jacket overall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9313	B-32	32(7x40)	.010	.035	0 thru 9	0 thru 9	0 thru 9
9314	B-30	30(7x38)	.010	.038	0 thru 9	0 thru 9	0 thru 9
9315	B-28	28(7x36)	.010	.041	As Listed	As Listed	As Listed
9316	B-26	26(7x34)	.010	.045	As Listed	As Listed	As Listed
9317	B-24	24(19x36)	.010	.051	As Listed	As Listed	As Listed
9318	B-24	24(7x32)	.010	.050	As Listed	As Listed	As Listed
9319	B-22	22(19x34)	.010	.057	As Listed	As Listed	As Listed
9320	B-22	22(7x30)	.010	.056	As Listed	As Listed	As Listed
9321	B-20	20(19x32)	.010	.065	As Listed	As Listed	As Listed
9322	B-20	20(7x28)	.010	.064	As Listed	As Listed	As Listed
9323	B-18	18(19x30)	.010	.075	9,90 thru 98	9,90 thru 98	9,90 thru 98
9324	B-18	18(7x26)	.010	.074	As Listed	As Listed	As Listed
9325	B-16	16(19x29)	.010	.083	As Listed	As Listed	As Listed

Stock Colors*

0	Black	90	White/Black
1	Brown	91	White/Brown
2	Red	92	White/Red
3	Orange	93	White/Orange
4	Yellow	94	White/Yellow
5	Green	95	White/Green
6	Dark Blue	96	White/Blue
7	Violet (Purple)	97	White/Violet
8	Gray (Slate)	98	White/Gray
9	White		

TYPE C — VINYL — 1000V — 105C



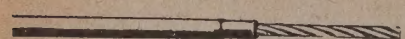
Tinned copper, polyvinylchloride insulated.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9400	C-24	24(7x32)	.018	.060	9,90 thru 98	9,90 thru 98	9,90 thru 98
9401	C-22	22(7x30)	.018	.066	As Listed	As Listed	As Listed
9402	C-20	20(7x28)	.018	.074	As Listed	As Listed	As Listed
9403	C-18	18(7x26)	.018	.084	As Listed	As Listed	As Listed
9404	C-16	16(19x29)	.018	.093	9,90 thru 98	9,90 thru 98	9,90 thru 98
9405	C-14	14(19x27)	.018	.107	9,90 thru 98	9,90 thru 98	9,90 thru 98

Stock Colors*

0	Black	90	White/Black
1	Brown	91	White/Brown
2	Red	92	White/Red
3	Orange	93	White/Orange
4	Yellow	94	White/Yellow
5	Green	95	White/Green
6	Dark Blue	96	White/Blue
7	Violet (Purple)	97	White/Violet
8	Gray (Slate)	98	White/Gray
9	White		

TYPE C — VINYL-NYLON JACKET — 1000V — 115C



Tinned copper, polyvinylchloride insulated, nylon jacket overall.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9410	C-24	24(7x32)	.018	.066	9,90 thru 98	9,90 thru 98	9,90 thru 98
9411	C-22	22(7x30)	.018	.072	As Listed	As Listed	As Listed
9412	C-20	20(7x28)	.018	.080	As Listed	As Listed	As Listed
9413	C-18	18(7x26)	.018	.091	As Listed	As Listed	As Listed
9414	C-16	16(19x29)	.018	.100	9,90 thru 98	9,90 thru 98	9,90 thru 98
9415	C-14	14(19x27)	.018	.114	9,90 thru 98	9,90 thru 98	9,90 thru 98

Stock Colors*

0	Black	90	White/Black
1	Brown	91	White/Brown
2	Red	92	White/Red
3	Orange	93	White/Orange
4	Yellow	94	White/Yellow
5	Green	95	White/Green
6	Dark Blue	96	White/Blue
7	Violet (Purple)	97	White/Violet
8	(Gray (Slate)	98	White/Gray
9	White		

* Stock Color Numbers in Accordance to Military Type Designation and EIA Color Coding.

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MIL-W-16878

TYPE D — VINYL — 3000V — 105C

Tinned copper, polyvinylchloride insulated.

Catalog Number	Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9500	D-24	24(7x32)	.030	.084	9,90thru98	9,90thru98	9,90thru98
9501	D-22	22(7x30)	.030	.090	As Listed	As Listed	As Listed
9502	D-20	20(7x28)	.030	.098	As Listed	As Listed	As Listed
9503	D-18	18(7x26)	.030	.108	As Listed	As Listed	As Listed
9504	D-16	16(19x29)	.030	.117	9,90thru98	9,90thru98	9,90thru98
9505	D-14	14(19x27)	.030	.131	9,90thru98	9,90thru98	9,90thru98
9506	D-12	12(19x25)	.035	.160	9,90thru98	9,90thru98	9,90thru98
9507	D-10	10(37x26)	.035	.181	9,90thru98	9,90thru98	9,90thru98
9508	D- 8	8(133x29)	.040	.245	9,90thru98	9,90thru98	9,90thru98
9509	D- 6	6(133x27	.040	.290	9,90thru98	9,90thru98	9,90thru98

Stock Colors*

0 Black
1 Brown
2 Red
3 Orange
4 Yellow
5 Green
6 Dark Blue
7 Violet (Purple)
8 Gray (Slate)
9 White
90 White/Black
91 White/Brown
92 White/Red
93 White/Orange
94 White/Yellow
95 White/Green
96 White/Blue
98 White/Gray

MIL-W-5086A

AIRCRAFT WIRE & CABLE TYPES 1 & 2 — 600V

UNSHIELDED

Catalog Number	MIL Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9700	AN-22	22(19x34)	.068	No.1	9	9	9
9701	AN-20	20(19x32)	.078	No.1	9	9	9
9702	AN-18	18(19x30)	.088	No.1	9	9	9
9703	AN-16	16(19x29)	.098	No.1	9	9	9
9704	AN-14	14(19x27)	.117	No.1	9	9	9
9705	AN-12	12(19x25)	.137	No.1	9	9	9
9706	AN-22	22(19x34)	.075	No.2	9	9	9
9707	AN-20	20(19x32)	.085	No.2	9	9	9
9708	AN-18	18(19x30)	.095	No.2	9	9	9
9709	AN-16	16(19x29)	.105	No.2	9	9	9
9710	AN-14	14(19x27)	.125	No.2	9	9	9
9711	AN-12	12(19x25)	.143	No.2	9	9	9
9713	AN-10	10(49x27)	.189	No.2	9	9	9
9714	AN-8	8(133x29)	.240	No.2	9	9	9
9715	AN-6	6(133x27)	.293	No.2	9	9	9
9716	AN-4	4(133x25)	.355	No.2	9	9	9
9717	AN-2	2(665x30)	.425	No.2	9	9	9
9718	AN-0	0(1045x30)	.525	No.2	9	9	9
9719	AN-00	00(1330x30)	.590	No.2	9	9	9

Stock Color*

White only (9)

Additional Description

MIL-W-5086A-Type I
AN-22 thru AN-12.

Stranded tinned copper, white polyvinyl-chloride clear nylon jacket insulation.

MIL-W-5086A-Type II
AN-22 thru AN-12

Stranded tinned copper, white polyvinyl-insulation, saturated glass braid, clear nylon jacket.

MIL-W-5086A-Type II
AN-10 thru AN-00

Stranded tinned copper, white polyvinyl-chloride insulation, saturated glass braid, nylon braid, nylon lacquer.

MIL-C-7078A — TYPE 1 — 600 VOLT

(MIL-W-5086A Type I Conductor Braided Tinned Copper Shield)

SHIELDED

Catalog Number	MIL Type Designation	Size & (Stranding)	Insulation Thickness (Inch)	Nom. O.D. (Inch)	Stock Colors on Standard Spools 100′	500′	1000′
9720	AN-22	22(19x34)	.092	No.1	9	9	9
9721	AN-20	20(19x32)	.102	No.1	9	9	9
9722	AN-18	18(19x30)	.112	No.1	9	9	9
9723	AN-16	16(19x29)	.122	No.1	9	9	9
9724	AN-14	14(19x27)	.141	No.1	9	9	9
9725	AN-12	12(19x25)	.161	No.1	9	9	9

Stock Color*

White only (9)

Additional Description

Stranded tinned copper, white polyvinyl-chloride insulation, nylon jacket, braided tinned copper shield.

* Stock Color Numbers in Accordance to Military Type Designation and EIA Color Coding.

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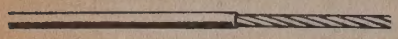
MIL-W-16878-D

TYPE E — TFE TEFLON — 600V — 200C



Concentrically stranded silver coated copper conductor, extruded TFE Teflon insulated.

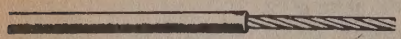
Catalog Number	Type Designation	Size & (Stranding)	Nom. O.D. (Inch)	Stock Colors on Standard Spools		
				100′	500′	1000′
9600	E-32	32(7x40)	.032	As Listed	As Listed	As Listed
9601	E-30	30(7x38)	.032	As Listed	As Listed	As Listed
9602	E-28	28(7x36)	.035	As Listed	As Listed	As Listed
9603	E-26	26(19x38)	.039	As Listed	As Listed	As Listed
9604	E-26	26(7x34)	.039	As Listed	As Listed	As Listed
9605	E-24	24(19x36)	.044	As Listed	As Listed	As Listed
9606	E-24	24(7x32)	.044	As Listed	As Listed	As Listed
9607	E-22	22(19x34)	.050	As Listed	As Listed	As Listed
9608	E-22	22(7x30)	.050	As Listed	As Listed	As Listed
9609	E-20	20(19x32)	.058	As Listed	As Listed	As Listed
9610	E-20	20(7x28)	.058	As Listed	As Listed	As Listed
9611	E-18	18(19x30)	.069	As Listed	As Listed	As Listed
9612	E-18	18(7x26)	.069	As Listed	As Listed	As Listed
9613	E-16	16(19x29)	.080	As Listed	As Listed	As Listed
9614	E-14	14(19x27)	.095	As Listed	As Listed	As Listed
9615	E-12	12(19x25)	.115	As Listed	As Listed	As Listed
9616	E-10	10(37x26)	.131	As Listed	As Listed	As Listed

Stock Colors*

0 Black	5 Green
1 Brown	6 Dark Blue
2 Red	7 Violet (Purple)
3 Orange	8 Gray (Slate)
4 Yellow	9 White

NOTE: Tracer colors available upon customer request. Minimum quantity 500 feet.

TYPE EE — TFE TEFLON — 1000V — 200C



Concentrically stranded silver coated copper conductor, extruded TFE Teflon insulated.

Catalog Number	Type Designation	Size & (Stranding)	Nom. O.D. (Inch)	Stock Colors on Standard Spools		
				100′	500′	1000′
9620	EE-32	32(7x40)	.042	As Listed	As Listed	As Listed
9621	EE-30	30(7x38)	.042	As Listed	As Listed	As Listed
9622	EE-28	28(7x36)	.045	As Listed	As Listed	As Listed
9623	EE-26	26(19x38)	.049	As Listed	As Listed	As Listed
9624	EE-26	26(7x34)	.049	As Listed	As Listed	As Listed
9625	EE-24	24(19x36)	.054	As Listed	As Listed	As Listed
9626	EE-24	24(7x32)	.054	As Listed	As Listed	As Listed
9627	EE-22	22(19x34)	.060	As Listed	As Listed	As Listed
9628	EE-22	22(7x30)	.060	As Listed	As Listed	As Listed
9629	EE-20	20(19x32)	.068	As Listed	As Listed	As Listed
9630	EE-20	20(7x28)	.068	As Listed	As Listed	As Listed
9631	EE-18	18(19x30)	.079	As Listed	As Listed	As Listed
9632	EE-18	18(7x26)	.079	As Listed	As Listed	As Listed
9633	EE-16	16(19x29)	.089	As Listed	As Listed	As Listed
9634	EE-14	14(19x27)	.110	As Listed	As Listed	As Listed
9635	EE-12	12(19x25)	.129	As Listed	As Listed	As Listed
9636	EE-10	10(37x26)	.149	As Listed	As Listed	As Listed

Stock Colors*

0 Black	5 Green
1 Brown	6 Dark Blue
2 Red	7 Violet (Purple)
3 Orange	8 Gray (Slate)
4 Yellow	9 White

NOTE: Tracer colors available upon customer request. Minimum quantity 500 feet.

MIL-W-8777B — MS25471
SILICONE RUBBER AIRCRAFT WIRE

Silver plated copper, silicone rubber insulation, impregnated, lacquered glass and dacron braid overall −55°C to +150°C.

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Nominal O.D.
9901	22	19x34	.014	600	.084
9902	20	19x32	.016	600	.095
9903	18	19x30	.018	600	.110
9904	16	19x29	.022	600	.125
9905	14	19x27	.025	600	.140
9906	12	19x25	.025	600	.160
9907	10	49x27	.025	600	.195

STANDARD SPOOL PUT UP 100 FT., 500 FT., 1000 FT.
NOTE: MINIMUM PURCHASE PER ITEM 1000 FT.

MIL-W-7139B — CLASS 1
TEFLON AIRFRAME CABLE

Silver plated copper, teflon tape wrap and teflon impregnated fiberglass braid overall −65°C to +200°C.

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Nominal O.D.
9941	22	19x34	.014	600	.087
9942	20	19x32	.014	600	.098
9943	18	19x30	.014	600	.112
9944	16	19x29	.014	600	.132
9945	14	19x27	.014	600	.147
9946	12	19x25	.015	600	.167
9947	10	49x27	.018	600	.200

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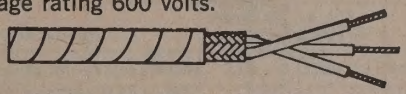
SHIELDED TEFLON CABLES — MIL-W-16878

Each conductor stranded silver plated copper Type E extruded Teflon .010" insulation — 90% braided silver copper shield, also supplied with either a Teflon impregnated Fiberglass braid or Teflon fused tape overall jacket.

Temperature rating −65°C to +260°C. Voltage rating 600 volts.

NO OUTER COVERING OVER SHIELD

Catalog Number	Number of Conductors	Size & (Stranding)	Nom. O.D. (Inch)
9800	1	24(19x36)	.069
9801	2	24(19x36)	.112
9802	3	24(19x36)	.120
9803	4	24(19x36)	.132
9804	1	22(19x34)	.075
9805	2	22(19x34)	.124
9806	3	22(19x34)	.132
9807	4	22(19x34)	.146
9808	1	20(19x32)	.083
9809	2	20(19x32)	.142
9810	3	20(19x32)	.151
9811	4	20(19x32)	.168
9812	1	18(19x30)	.093
9813	2	18(19x30)	.162
9814	3	18(19x30)	.172
9815	4	18(19x30)	.192



TEFLON TAPE WRAP JACKET OVER SHIELD

Number Catalog	Conductors Number of	(Stranding) Size &	(Inch) Nom. O.D.
9820	1	24(19x36)	.084
9821	2	24(19x36)	.128
9822	3	24(19x36)	.135
9823	4	24(19x36)	.148
9824	1	22(19x34)	.090
9825	2	22(19x34)	.140
9826	3	22(19x34)	.148
9827	4	22(19x34)	.162
9828	1	20(19x32)	.099
9829	2	20(19x32)	.158
9830	3	20(19x32)	.167
9831	4	20(19x32)	.184
9832	1	18(19x30)	.109
9833	2	18(19x30)	.178
9834	3	18(19x30)	.189
9835	4	18(19x30)	.208

TEFLON IMPREGNATED BRAID OVER SHIELD

Number Catalog	Conductors Number of	(Stranding) Size &	(Inch) Nom. O.D.
9840	1	24(19x36)	.081
9841	2	24(19x36)	.126
9842	3	24(19x36)	.133
9843	4	24(19x36)	.144
9844	1	22(19x34)	.088
9845	2	22(19x34)	.137
9846	3	22(19x34)	.144
9847	4	22(19x34)	.158
9848	1	20(19x32)	.097
9849	2	20(19x32)	.154
9850	3	20(19x32)	.163
9851	4	20(19x32)	.180
9852	1	18(19x30)	.106
9853	2	18(19x30)	.174
9854	3	18(19x30)	.185
9855	4	18(19x30)	.205

Stock Colors* Catalog Numbers 9800 thru 9855 specify color coding when ordering.
Standard spool put up Catalog Numbers 9800 thru 9855: 100 Ft., 500 Ft., 1000 Ft.
* Stock Color Numbers in Accordance to Military Type Designation and EIA Color Coding.

U/L APPROVED HOOK-UP WIRE

UL — 300V — 80C

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Max. Dia. Inches
803	24	Solid	1/64	300	.055
801	22	Solid	1/64	300	.065
811	20	Solid	1/64	300	.071
841	18	Solid	1/64	300	.080
819	24	7 x No. 32	1/64	300	.059
821	22	7 x No. 30	1/64	300	.069
831	20	10 x No. 30	1/64	300	.078
846	18	16 x No. 30	1/64	300	.085
881	20 2/Condr.	10 x No. 30	.025	300	.170

ROME SYNTHINOL — UL TYPE HOOK-UP AND LEAD WIRES

TINNED COPPER

UL — 600V — 105C (CSA-TEW)

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Max. Dia. Inches
851	22	Solid	1/32	600	.097
856	20	Solid	1/32	600	.104
861	18	Solid	1/32	600	.112
866	22	7 x No. 30	1/32	600	.102
871	20	10 x No. 30	1/32	600	.110
876	18	16 x No. 30	1/32	600	.119

† "TOPCOAT" COPPER CONDUCTOR

† Stranded copper conductor passed through molten tin bath bonding individual strands together.

UL — 300V — 80C

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Max. Dia. Inches
823	22	7 x No. 30	1/64	300	.069
833	20	10 x No. 30	1/64	300	.078
843	18	16 x No. 30	1/64	300	.085

UL — 600V — 105C (CSA-TEW)

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Max. Dia. Inches
865	22	7 x No. 30	1/32	600	.102
875	20	10 x No. 30	1/32	600	.110
885	18	16 x No. 30	1/32	600	.119

‡ "HEAVY TIN" COPPER CONDUCTOR

‡ Stranded "Double" Tin Copper Conductor — Tinning sufficiently thick to allow fusing of strands during induction heating.

UL — 300V — 80C

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Max. Dia. Inches
827	22	7 x No. 30	1/64	300	.069
837	20	10 x No. 30	1/64	300	.078
847	18	16 x No. 30	1/64	300	.085

UL — 600V — 105C (CSA-TEW)

Catalog Number	Size AWG	Stranding	Nominal Ins. Thickness	Volts	Max. Dia. Inches
869	22	7 x No. 30	1/32	600	.102
879	20	10 x No. 30	1/32	600	.110
889	18	16 x No. 30	1/32	600	.119

Stock Colors: Black, Blue, Brown, Green, Orange, Pink, Red, Slate, White, Yellow.
Spool Put-Up: 25 Ft., 100 Ft., 500 Ft., 1,000 Ft., 5,000 Ft., 7,500 Ft., 10,000 Ft.

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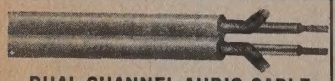
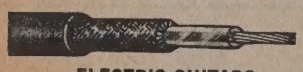
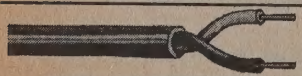
INTERCOMMUNICATION AND SOUND SYSTEM CABLES

STANDARD SPOOL PUT-UP — 10 FT., 25 FT., 50 FT., 100 FT., 500 FT. and 1000 FT.

	No.	Type	Size & Stranding	Insulation Thickness (Inches)	SPECIFICATIONS AND GENERAL APPLICATIONS	Nominal Diameter (Inches)
STATION-TO-STATION EXTENSION WIRING SHIELDED	5501	2 Condr.	22 Solid	.015	Tinned copper vinyl plastic insulation, wires twisted together—1 condr. red—1 condr. black—closely woven braided tinned copper shield.	.110
	5506	3 Condr.	22 Solid	.015	Same as 5501—1 condr. red—1 condr. black—1 condr. blue.	.145
	5521	2 Condr.	20 Solid	.015	Tinned copper vinyl plastic insulation, wires twisted together—1 condr. red—1 condr. black—closely woven braided tinned copper shield.	.155
EXTENSION WIRING SHIELDED — PLASTIC JACKET	5511	2 Condr.	22 Solid	.015	Tinned copper vinyl plastic insulation, wires twisted together—1 condr. red—1 condr. black—and a spiral tinned copper shield with .020" tubed gray vinyl plastic jacket.	.170
PAIRED CABLE — SHIELDED PLASTIC JACKET	5516	2 Pair 4 Condr.	22(7x30)	.015	Stranded tinned copper vinyl plastic insulation. 2 pair cabled (4 conductors)—1 pair black & white with braided tinned copper shield mylar tape—1 pair black & brown unshielded—both pair bunched and .020" gray vinyl plastic jacket overall.	.168x.276
EXTENSION-SPEAKERS SHIELDED FOR LONG RUNS	5526	2 Condr.	20(10x30)	.015	Tinned copper vinyl plastic insulation, wires twisted together—1 condr. red—1 condr. black—closely woven braided tinned copper shield.	.215
	5531	3 Condr.	20(10x30)	.015	Same as 5526—1 condr. red—1 condr. black—1 condr. blue.	.230
	5536	2 Condr.	18(16x30)	.015	Stranded tinned copper vinyl plastic insulation, wires twisted together. 1 condr. red—1 condr. white, closely woven braided tinned copper shield.	.235
EXTENSION-SPEAKERS SHIELDED — PLASTIC JACKET	5568	2 Condr.	22(7x30)	.015	Tinned copper vinyl plastic insulation, 2 condrs.—cabled black and red—tinned copper **spiral** wrapped shield .023" chrome vinyl plastic jacket.	.166
	5569	3 Condr.	22(7x30)	.015	Tinned copper vinyl plastic insulation, 3 condrs.—cabled black, red, white—tinned copper **spiral** shield—chrome vinyl plastic jacket.	.193
	5538	2 Condr.	18(16x30)	.015	Stranded tinned copper vinyl plastic insulation, wires twisted together. 1 condr. red, 1 condr. white. **Spiral** tinned copper shield and .020" gray vinyl plastic jacket overall.	.225
	5543	2 Condr.	20(10x30)	.015	Same as 5538—1 condr. red—1 condr. black.	.185
	5541	2 Condr.	18(16x30)	.015	Stranded tinned copper vinyl plastic insulation, wires twisted together. 1 condr red—1 condr. white, closley woven braided tinned copper shield and .020" gray vinyl plastic jacket overall.	.260
JUKE BOX SPEAKER CABLE	5547	2 Condr.	24(7x32)	.015	Stranded 1 condr. bare copper—1 condr. tinned copper—2 condrs. parallel vinyl plastic insulation. Colors: gray, white, brown, clear.	.058x.115
 DUAL CHANNEL AUDIO CABLE For Stereo & Language Laboratories	5587	2 Condr.	24(7x32)	.018	Tinned copper conductor. **Spiral** tinned copper individual shield, .020" gray vinyl jacket.	.106x.213
 ELECTRIC GUITARS High Impedance Lapel Microphones	5551	1 Condr.	22(16x34)	.020	Stranded tinned copper polyethylene insulation closely spiral tinned. copper shield with .020" gray vinyl jacket.	.135
INTER COMMUNICATING SOUND SYSTEM	5556	2 Condr.	19 Solid	.015	Bare copper vinyl plastic insulation, wires twisted together—1 condr. brown—1 condr. tan.	.115
	5561	3 Condr.	19 Solid	.015	Same as 5556—1 condr. brown—1 condr. tan—1 condr. gray.	.132
 INTER COMMUNICATING SOUND SYSTEM — JACKETED	5557	2 Condr.	19 Solid	.015	Same as 5556 except .025" outer gray PVC jacket.	.162
INTER COMMUNICATING SOUND SYSTEM - WEATHER-PROOF	5566	2 Condr.	22 Solid	.015	Bare copper .015 rubber insulation with a black cotton braid weatherproof finish. Conductors coded for easy identification. Ideal for exterior or interior communication installations.	.131x.203

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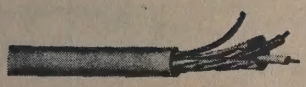
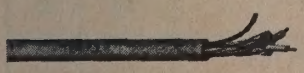
INTERCOMMUNICATION AND SOUND SYSTEM CABLES

STANDARD SPOOL PUT-UP — 100 FT., 500 FT., 1000 FT.

	No.	Type	Size & Stranding	Nom. Jacket Thickness (Inches)	SPECIFICATIONS AND GENERAL APPLICATIONS	Nominal Diameter (Inches)
 SHIELDED 2 AND 3 CONDUCTOR	5572	2 Condr.	22(7x30)	.025	Tinned copper conductors. .012" polyethylene insulation. Mylar aluminum shield stranded tinned copper drain wire vinyl jacket.	.170
	5573	2 Condr.	20(10-30)	.025	Same as 5572	.200
	5574	2 Condr.	18(16x30)	.030	Same as 5572	.225
	5575	2 Condr.	16(26x30)	.030	Same as 5572	.250
	5589	2 Condr.	14(41x30)	.030	Same as 5572	.320
	5576	3 Condr.	22(7x30)	.025	Same as 5572	.210
	5577	3 Condr.	20(10x30)	.025	Same as 5572	.235
	5578	3 Condr.	18(16x30)	.025	Same as 5572	.260
	5590	3 Condr.	16(26x30)	.030	Same as 5572	.290
	5591	3 Condr.	14(41x30)	.030	Same as 5572	.340
UNSHIELDED WITH JACKET	5579	2 Condr.	22(7x30)	.025	Tinned copper conductors .015". Vinyl insulation.	.165
	5580	2 Condr.	20(10x30)	.025	Same as 5579	.190
	5581	2 Condr.	18(16x30)	.030	Same as 5579	.225
	5582	2 Condr.	16(26x30)	.030	Same as 5579	.245
	5583	2 Condr.	14(41x30)	.030	Same as 5579	.310
UNSHIELDED WITHOUT JACKET	5584	2 Condr.	22 Solid		Tinned copper conductors .015" Vinyl insulation twisted.	.115
	5585	2 Condr.	18(16x30)		.020" insulation. Same as 5584.	.175
	5586	2 Condr.	16(26x30)		Same as 5585	.195
 MINIATURE BROADCAST AUDIO CABLE	5570	2 Condr.	22(7x30)	.020	Tinned copper .010" Polyethylene insulation Mylar aluminum shield stranded tinned copper drain wire vinyl jacket.	.140
	5588	2 Condr.	22 Solid	.020	Same as 5570	.120
2 PAIR MINIATURE AUDIO AND SOUND CABLE	5594	2 Pair	22(7x30)	.019	Tinned copper polypropylene insulation. Each pair shielded. Mylar aluminum shield and drain wire. Color coded same as 5571.	.165
	5571	2 Pair	22(7x30	.019	Tinned copper .009" Polyethylene insulation. 1 pair black and red with Mylar aluminum shield. 1 pair white and green. Both pairs twisted with standed tinned copper ground wire. Vinyl jacket.	.165

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CONSOLIDATED

SHIELDED CONTROL AND MICROPHONE CABLES

SHIELDED RUBBER JACKET

CONDUCTOR COLOR CHART: 1—Black; 2—White; 3—Red; 4—Green; 5—Yellow; 6—Blue; 7—Brown; 8—Orange.

STANDARD SPOOL PUT-UP: 9 FT., 10 FT., 25 FT., 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

SHIELDED: Weatherproof rubber and Neoprene jacket for all microphone Electronic Power, Control Circuits, or weatherproof extension work. (Longer continuous lengths if desired).

No.	No. of Condr.	Size & Stranding	Special Use	Specifications	Finished O.D. (Inches)	Nominal Capacity per ft. (mmf)
1460	1	20 (26x34)	Crystal microphone	Tinned copper, yarn serve; wall of live rubber; cotton fillers and wrap; tinned copper braid shield; cotton wrap rubber jacket overall.	.240	33.
1462	2	20 (26x34)	Low impedance microphones	Same as 1460; color coded	.268	68.
1456	2	18 (41x34)	Heavy duty studio cable	Same as 1460; color coded	.295	80.
1463	3	20 (26x34)	Low impedance microphones	Same as 1460; color coded	.277	85.
1464	4	20 (26x34)	Low impedance microphones	Same as 1460; color coded	.295	95.
1465	5	20 (26x34)	Interconnecting power cable for all electronic uses	Same as 1460; color coded	.323	
1466	6	20 (26x34)	Same as 1465	Same as 1460; color coded	.349	
1467	7	20 (26x34)	Same as 1465	Same as 1460; color coded	.360	
1455	8	20 (26x34)	Same as 1465	Same as 1460; color coded	.386	

SHIELDED NEOPRENE JACKET

No.	No. of Condr.	Size & Stranding	Specifications	Finished O.D. (Inches)
1701	1	18 (41x34)	Tinned copper, yarn serve; wall of live rubber; cotton fillers and wrap; tinned copper braid shield; cotton wrap neoprene jacket overall.	.250
1702	2	18 (41x34)	Same as 1701, color coded	.305
1703	3	18 (41x34)	Same as 1701, color coded	.325
1704	4	18 (41x34)	Same as 1701, color coded	.335
1705	2	16 (65x34)	Same as 1701, color coded	.345
1706	3	16 (65x34)	Same as 1701, color coded	.365
1707	4	16 (65x34)	Same as 1701, color coded	.390
1708	6	18 (41x34)	Same as 1701, color coded	.430
1709	8	18 (41x34)	Same as 1701, color coded	.465

SHIELDED PLASTIC JACKET

No.	No. of Condr.	Size & Stranding	Special Use	Specifications	Finished O.D. (Inches)	Nominal Capacity per ft. (mmf)
1721	1	24 (7x32)	Low capacitance	Tinned copper polyethylene insulation with a close spiral tinned copper shield. Grey plastic jacket.	.132	29.
1461	1	22 (16x34)	Lapel microphone	Same as 1721	.125	36.
1457	1	22 (16x34)	Crystal, Ribbon and other high impedance microphones	Same as 1721 except heavier polyethylene insulation on conductor.	.200	25.
1458	2	22 (16x34)	Low impedance microphones	Tinned copper polyethylne insulation; black and clear. Cabled with fillers rayon braid spiral tinned copper shield. Gray vinyl plastic jacket.	.231	32.
1459	1	20 (26x34)	Lapel microphone	Tinned copper wire, with polyethylene to .087" O.D. with a closely tinned copper shielded braid, and a heavy black plastic jacket overall.	.175	40.
1722	2	20 (26x34)	Same as 1458	Same as 1458 except braided tinned copper shield.	.245	32.
1723	3	20 (26x34)	Same as 1458	Same as 1722	.250	45.
1724	4	20 (26x34)	Same as 1458	Same as 1722	.255	45.
1725	5	20 (26x34)	Same as 1458	Same as 1722	.275	45.
1726	6	20 (26x34)	Same as 1458	Same as 1722	.300	
1727	7	20 (26x34)	Same as 1458	Same as 1722	.330	
1728	8	20 (26x34)	Same as 1458	Same as 1722	.375	

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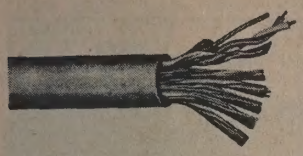
MULTIPLE PAIR INDIVIDUALLY SHIELDED AUDIO & SOUND CABLE

Standard Spool Put-up: 100 ft., 200 ft., 500 ft., 1000 ft.

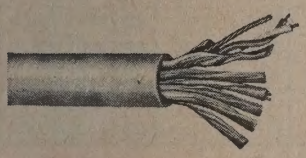
Specifications: Tinned copper conductor .013". Semi rigid vinyl insulation. Mylar aluminum shield and tinned copper drain wire, each pair. Overall Gray vinyl jacket.



No.	Type	Size & Stranding	Nominal Jacket Thickness (Inches)	Nominal Diameter (Inches)
5303	3 pair	22 (Solid)	.050	.340
5306	6 pair	22 (Solid)	.057	.435
5309	9 pair	22 (Solid)	.060	.540
5311	11 pair	22 (Solid)	.060	.575
5315	15 pair	22 (Solid)	.065	.660

MULTIPLE PAIR INDIVIDUALLY SHIELDED AUDIO & DATA CABLE

Specifications: Tinned copper .010" polypropylene insulation. Mylar aluminum shield and tinned copper drain wire each pair. Overall gray vinyl jacket.



No.	Type	Size & Stranding	Nominal Jacket Thickness (Inches)	Nominal Diameter (Inches)
5323	3 pair	22 (7x30) overall	.030	.275
5326	6 pair	22 (7x30)	.037	.400
5329	9 pair	22 (7x30)	.040	.440
5331	11 pair	22 (7x30)	.040	.485
5335	15 pair	22 (7x30)	.045	.540
5339	19 pair	22 (7x30)	.055	.620
5347	27 pair	22 (7x30)	.070	.760

COLOR CODING FOR PAIRED INTERCOM CABLES

Identification is simple with Consolidated Intercom Cables because they are all color coded. See chart below.

1 Black paired with Red
2 Black paired with White
3 Black paired with Green
4 Black paired with Blue
5 Black paired with Yellow
6 Black paired with Brown
7 Black paired with Orange
8 Red paired with White
9 Red paired with Green
10 Red paired with Blue
11 Red paired with Yellow
12 Red paired with Brown
13 Red paired with Orange
14 Green paired with White
15 Green paired with Blue
16 Green paired with Yellow
17 Green paired with Brown
18 Green paired with Orange
19 White paired with Blue
20 White paired with Yellow
21 White paired with Brown
22 White paired with Orange
23 Blue paired with Yellow
24 Blue paired with Brown
25 Blue paired with Orange
26 Brown paired with Yellow
27 Brown paired with Orange

MULTIPLE CONDUCTOR RUBBER CABLE UNSHIELDED

Standard Spool Put-up: 25 ft., 50 ft., 100 ft., 250 ft., 500 ft., 1000 ft.

Specifications: Stranded Tinned Copper Rubber Insulation, Conductor Color Coded Twisted Fillers Wrap Black Rubber Jacket.

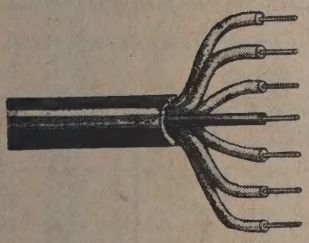
No.	No. of Condr.	Size & Stranding	Insulation Thickness (Inches)	Jacket Thickness (Inches)	Finished O.D. (Inches)
1732	2	20 (26x34)	.020	.035	.240
1733	3	20 (26x34)	.020	.035	.255
1734	4	20 (26x34)	.020	.035	.275
1735	5	20 (26x34)	.020	.035	.300
1736	6	20 (26x34)	.020	.035	.315
1737	7	20 (26x34)	.020	.035	.325
1738	8	20 (26x34)	.020	.035	.360

Color Code Conductors: 1 Black — 2 White — 3 Red — 4 Green — 5 Yellow — 6 Blue — 7 Brown — 8 Orange

UNSHIELDED AUDIO CABLE MULTICONDUCTOR — PLASTIC JACKET

300 VOLTS — STRANDED CONDUCTORS

Specifications: Tinned copper conductor .010" vinyl plastic insulated cabled .020" gray vinyl plastic jacket overall.



No.	No. of Condr.	Size & Stranding	Nominal Diameter (Inches)
5400	2	22(7x30)	.130
5401	3	22(7x30)	.145
5406	4	22(7x30)	.175
5411	5	22(7x30)	.180
5416	6	22(7x30)	.205
5421	7	22(7x30)	.215
5426	8	22(7x30)	.225
5431	9	22(7x30)	.245
5434	12	22(7x30)	.275
5438	15	22(7x30)	.295
5440	20	22(7x30)	.320
5442	25	22(7x30)	.350
5446	30	22(7x30)	.375
5448	40	22(7x30)	.425
5450	50	22(7x30)	.500
5460	60	22(7x30)	.530

400 VOLTS — STRANDED CONDUCTORS

Specifications: Tinned copper condr. PVC cabled. Gray outer PVC Jacket.

.018" PVC cabled.

No.	No. of Condr.	Size & Stranding	Jacket Thick-ness	Nominal Diameter (Inches)
5470	4	18(16x30)	.030	.250
5471	5	18(16x30)	.037	.286
5472	7	18(16x30)	.037	.324
5473	9	18(16x30)	.037	.379
5474	12	18(16x30)	.040	.412
5475	15	18(16x30)	.045	.440
5476	19	18(16x30)	.045	.505

600 VOLTS — STRANDED CONDUCTORS

.030" PVC cabled.

No.	No. of Condr.	Size & Stranding	Jacket Thick-ness	Nominal Diameter (Inches)
5480	4	16(19x29)	.045	.375
5481	7	16(19x29)	.045	.455
5482	12	16(19x29)	.060	.600
5483	15	16(19x29)	.060	.650
5484	19	16(19x29)	.065	.715

.045" PVC cabled.

No.	No. of Condr.	Size & Stranding	Jacket Thick-ness	Nominal Diameter (Inches)
5485	4	14(19x27)	.045	.495
5486	7	14(19x27)	.060	.630
5487	12	14(19x27)	.065	.770

COLOR CODING CHART 1 — For Catalog Numbers 5400 thru 5473.

1 Black
2 Red
3 White
4 Green
5 Orange
6 Blue
7 Brown
8 Yellow
9 Purple
10 Slate
11 Pink
12 Tan
13 Red/Green
14 Red/Yellow
15 Red/Black
16 White/Black
17 White/Red
18 White/Green
19 White/Yellow
20 White/Blue
21 White/Brown
22 White/Orange
23 White/Gray
24 White/Violet
25 White/Black/Red
26 White/Black/Green
27 White/Black/Yellow
28 White/Black/Blue
29 White/BlackBrown
30 White/Black/Orange
31 White/Black/Slate
32 White/Black/Purple
33 White/Black/Black
34 White/Red/Black
35 White/Red/Red
36 White/Red/Green
37 White/Red/Blue
38 White/Red/Brown
39 White/Red/Purple
40 White/Green/Black
41 White/Green/Red
42 White/Green/Green
43 White/Green/Blue
44 White/Green/Brown
45 White/Green/Purple
46 White/Blue/Black
47 White/Blue/Red
48 White/Blue/Green
49 White/Blue/Blue
50 White/Blue/Brown
51 White/Blue/Purple
52 White/Brown/Black
53 White/Brown/Red
54 White/Brown/Green
55 White/Brown/Blue
56 White/Brown/Brown
57 White/Brown/Purple
58 White/Purple/Red
59 White/Purple/Green
60 White/Purple/Blue

COLOR CODING CHART 2 — For Catalog Numbers 5474 thru 5487.

1 Black
2 White
3 Red
4 Green
5 Orange
6 Blue
7 White/Black
8 Red/Black
9 Green/Black
10 Orange/Black
11 Blue/Black
12 Black/White
13 Red/White
14 Green/White
15 Blue/White
16 Black/Red
17 White/Red
18 Orange/Red
19 Blue/Red

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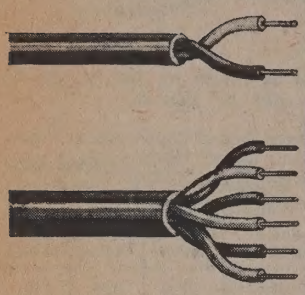
UNSHIELDED INTERCOM CABLE — PAIRED CONDUCTORS SOLID AND STRANDED PLASTIC JACKET

STANDARD SPOOL PUT-UP: 100 FT., 500 FT., 1000 FT.

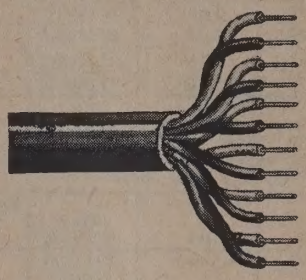
Specifications: Tinned copper conductor .010" vinyl plastic insulation. Cabled .020" gray vinyl plastic jacket overall.

SOLID



No.	Type	Size & Stranding	Nom. Dia. (Ins.)
5201	1 Pr. 2 Condr.	22 Solid	.130
5205	2 Pr. 4 Condr.	22 Solid	.190
5211	3 Pr. 6 Condr.	22 Solid	.220
5221	5 Pr. 10 Condr.	22 Solid	.250
5226	6 Pr. 12 Condr.	22 Solid	.275
5231	7 Pr. 14 Condr.	22 Solid	.280
5236	8 Pr. 16 Condr.	22 Solid	.300
5241	9 Pr. 18 Condr.	22 Solid	.320
5251	11 Pr. 22 Condr.	22 Solid	.340
5271	15 Pr. 30 Condr.	22 Solid	.400
5286	27 Pr. 54 Condr.	22 Solid	.510
5289	31 Pr. 62 Condr.	22 Solid	.555
5292	41 Pr. 82 Condr.	22 Solid	.630
5297	51 Pr. 102 Condr.	22 Solid	.735

STRANDED



No.	Type	Size & Stranding	Nom. Dia. (Ins.)
5151	1 Pr. 2 Condr.	22(7x30)	.145
5152	2 Pr. 4 Condr.	22(7x30)	.210
5153	3 Pr. 6 Condr.	22(7x30)	.230
5155	5 Pr. 10 Condr.	22(7x30)	.265
5156	6 Pr. 12 Condr.	22(7x30)	.290
5157	7 Pr. 14 Condr.	22(7x30)	.300
5158	8 Pr. 16 Condr.	22(7x30)	.320
5159	9 Pr. 18 Condr.	22(7x30)	.355
5161	11 Pr. 22 Condr.	22(7x30)	.370
5165	15 Pr. 30 Condr.	22(7x30)	.450
5167	27 Pr. 54 Condr.	22(7x30)	.570
5171	31 Pr. 62 Condr.	22(7x30)	.635
5181	41 Pr. 82 Condr.	22(7x30)	.710
5191	51 Pr. 102 Condr.	22(7x30)	.800

COLOR CODING FOR PAIRED INTERCOM CABLES

Identification is simple with Consolidated Intercom Cables because they are all color coded. See chart below.

1 Black paired with Red
2 Black paired with White
3 Black paired with Green
4 Black paired with Blue
5 Black paired with Brown
6 Black paired with Yellow
7 Black paired with Orange
8 Red paired with Green
9 Red paired with White
10 Red paired with Blue
11 Red paired with Yellow
12 Red paired with Brown
13 Red paired with Orange
14 Green paired with Blue
15 Green paired with White
16 Green paired with Brown
17 Green paired with Orange
18 Green paired with Yellow
19 White paired with Blue
20 White paired with Brown
21 White paired with Orange
22 White paired with Yellow
23 Blue paired with Brown
24 Blue paired with Orange
25 Blue paired with Yellow
26 Brown paired with Oronge
27 Brown paired with Yellow
28 Purple paired with Red
29 Purple paired with White
30 Purple paired with Green
31 Purple paired with Blue
32 Purple paired with Brown
33 Purple paired with Yellow
34 Purple paired with Orange
35 Purple paired with Slate
36 Purple paired with Black
37 Slate paired with Red
38 Slate paired with White
39 Slate paired with Green
40 Slate paired with Blue
41 Slate paired with Brown
42 Slate paired with Yellow
43 Slate paired with Orange
44 Slate paired with Black
45 White/Black paired with Red
46 White/Black paired with Green
47 White/Black paired with Blue
48 White/Black paired with Brown
49 White/Black paired with Yellow
50 White/Black paired with Orange
51 White/Black paired with Purple

TELEPHONE AND COMMUNICATION CABLE

AERIAL & DUCT INSTALLATION — MEETS REA-PE-22

Description: Each conductor bare solid copper, color coded polyethylene insulation, insulated conductors paired, pairs cabled with non-hygroscopic tape wrap, .008" corrugated aluminum shield, black polyethylene jacket overall.

Characteristics: Average mutual capacitance — .083 microfarads/mile. Minimal cross talk.

Applications: A tough, long lasting communication cable that can withstand moisture, ultra-violet and weathering.

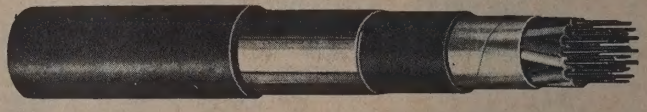
#22 AWG — SOLID

Catalog Number	No. of Pairs	Nom. Jacket Thickness (Inches)	Nom. O.D. (Inches)	Ship. Wt. Lbs. M/Ft.
6606	6	.060	.420	95
6612	12	.060	.490	137
6618	18	.060	.560	201
6625	25	.060	.630	245
6650	50	.060	.800	420
6675	75	.060	.980	596
6610	100	.070	1.120	807
6615	150	.070	1.320	1,083
6620	200	.070	1.500	1,485
6630	300	.080	1.810	2,160
6640	400	.090	2.050	2,705

#19 AWG — SOLID

6706	6	.060	.500	136
6712	12	.060	.630	235
6718	18	.060	.730	318
6725	25	.060	.820	419
6750	50	.070	1.120	753
6775	75	.070	1.320	1,070
6710	100	.080	1.520	1,455
6715	150	.080	1.790	2,051
6720	200	.090	2.090	2,657

DIRECT BURIAL INSTALLATION — MEETS REA-PE-23



Description: Each conductor bare solid copper, color coded polyethylene insulation, insulated conductors paired, pairs cabled with non-hygroscopic tape wrap, polyethylene inner jacket, .005" corrugated copper shield, black polyethylene jacket overall.

Characteristics: Average mutual capacitance — .166 microfarads/mile. Minimal cross talk.

Applications: Impervious to moisture, abrasion resistant, suitable for direct burial.

#22 AWG — SOLID

Catalog Number	No. of Pairs	Nom. Outer Jacket Thickness (Inches)	Nom. O.D. (Inches)	Ship. Wt. Lbs. M/Ft.
6006	6	.040	.480	150
6012	12	.040	.550	170
6018	18	.040	.620	241
6025	25	.040	.690	302
6050	50	.040	.860	478
6075	75	.040	1.040	680
6100	100	.040	1.180	886
6150	150	.050	1.400	1,258
6200	200	.050	1.560	1,557
6300	300	.060	1.890	2,173
6400	400	.060	2.130	2,853

#19 AWG — SOLID

6106	6	.040	.560	168
6112	12	.040	.690	290
6118	18	.040	.790	367
6125	25	.040	.880	480
6170	50	.050	1.180	871
6175	75	.050	1.400	1,246
6110	100	.050	1.580	1,568
6250	150	.060	1.890	2,236
6220	200	.060	2.170	2,986

STANDARD PUT-UP: CUT TO SPECIFICATIONS — MIN. 25 FT. — COLOR CODE — PER IPCEA.

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TELEMETERING & DATA SHIELDED CONTROL CABLE

STANDARD PUT-UP: CUT TO SPECIFICATION — MIN. 25 FT.

Description: Each conductor bare solid copper, high molecular weight polyethylene insulation, color coded, twisted into pairs, cabled with a non-hygroscopic binder tape .008″ aluminum shield, black polyethylene jacket overall. Operating voltage 300 volts.

Double jacketed types, (8306-8420 below) same except for additional inner black polyethylene jacket over binder, and .005″ copper shield.

Applications: Remote control of rocket recording data and test-firing control, transmission of signals which telemeter temperature, voltage, pressure, etc., control of multiple circuits, measuring devices, quality control equipment, radar antenna. For aerial, duct and conduit installations. Double jacketed types have higher dielectric strength and suited for direct burial installations.

#22 AWG — SOLID

Catalog Number	No. of Pairs	Nom. Insul. Thickness (Inches)	Nom. Jacket Thickness (Inches)	Nom. O.D. (Inches)	Approx. Lbs./M′
8006	6	.012	.060	.420	95
8012	12	.012	.060	.490	137
8018	18	.012	.060	.560	201
8025	25	.012	.060	.630	245
8050	50	.012	.060	.800	420
8100	100	.012	.060	1.120	807
8200	200	.012	.060	1.500	1,485

#19 AWG — SOLID

8016	6	.015	.060	.500	136
8112	12	.015	.060	.630	235
8118	18	.015	.060	.730	318
8125	25	.015	.060	.820	419
8150	50	.015	.060	1.120	753
8110	100	.015	.060	1.520	1,455
8220	200	.015	.060	2.090	2,657

DOUBLE JACKET — HEAVY DUTY #22 AWG — SOLID

Catalog Number	No. of Pairs	Nom. Insul. Thickness (Inches)	Nom. Jacket Thickness Inner (Inches)	Outer (Inches)	Nom.O.D. (Inches)	Approx. Lbs./M′
8306	6	.012	.047	.040	.480	150
8312	12	.012	.047	.040	.550	170
8318	18	.012	.047	.040	.620	241
8325	25	.012	.047	.040	.690	302
8350	50	.012	.047	.040	.860	478
8310	100	.012	.047	.050	1.180	886
8320	200	.012	.047	.050	1.560	1,597

#19 AWG — SOLID

8406	6	.015	.047	.040	.560	168
8412	12	.015	.047	.040	.690	290
8418	18	.015	.047	.040	.790	367
8425	25	.015	.047	.040	.880	480
8450	50	.015	.047	.040	1.180	871
8410	100	.015	.047	.050	1.580	1,568
8420	200	.015	.047	.050	2.220	2,986

UNSHIELDED STATION CONTROL CABLE

HEAVY DUTY MULTI-CONDUCTOR PLASTIC JACKET — TYPE CT-B CONTROL CABLE — 600 VOLTS

Description: Each conductor, stranded bare copper, .020″ polyethylene insulation, .010″ polyvinylchloride jacket over each conductor, color coded, cabled with fillers where necessary, moisture resistant tape, black polyvinylchloride jacket overall. 600 volt operating voltage. Approved per IPCEA-NEMA standards.

16 GAUGE — 26x30 BARE COPPER

Catalog Number	No. of Conductors	Nom. Jacket Thickness (Inches)	Nominal O.D. (Inches)
7502	2	.045	.330
7503	3	.045	.350
7505	5	.045	.410
7506	6	.045	.440
7507	7	.045	.440
7508	8	.045	.480
7510	10	.045	.580
7512	12	.045	.600
7514	14	.045	.630
7516	16	.045	.660
7519	19	.060	.690
7521	21	.060	.730
7522	22	.060	.760
7524	24	.060	.810
7526	26	.060	.820
7530	30	.060	.900
7537	37	.060	.960
7540	40	.060	1.00
7550	50	.080	1.10
7560	60	.080	1.19

14 GAUGE — 7x22 BARE COPPER

Catalog Number	No. of Conductors	Nom. Jacket Thickness (Inches)	Nominal O.D. (Inches)
7602	2 Twin	.045	*
7603	3 Rd.	.045	.419
7604	4	.045	.425
7605	5	.045	.462
7606	6	.045	.481
7607	7	.045	.502
7608	8	.060	.556
7609	9	.060	.622
7610	10	.060	.657
7612	12	.060	.696
7614	14	.060	.744
7616	16	.060	.798
7619	19	.060	.808
7624	24	.080	.947
7627	27	.080	1.002
7630	30	.080	1.110
7634	34	.080	1.118
7637	37	.080	1.124
7640	40	.080	1.290

12 GAUGE — 7x20 BARE COPPER

Catalog Number	No. of Conductors	Nom. Jacket Thickness (Inches)	Nominal O.D. (Inches)
7702	2 Twin	.045	**
7703	3 Rd.	.045	.460
7704	4	.045	.471
7705	5	.045	.523
7706	6	.045	.564
7707	7	.060	.599
7708	8	.060	.644
7709	9	.060	.690
7710	10	.060	.727
7712	12	.060	.775
7714	14	.060	.807
7715	15	.060	.832
7716	16	.060	.901
7718	18	.080	.928
7719	19	.080	.943
7720	20	.080	.966
7722	22	.080	1.01
7725	25	.080	1.09
7727	27	.080	1.129
7730	30	.080	1.168
7734	34	.080	1.201
7737	37	.080	1.257

* Flat Dimension .233″ x .366″

** Flat Dimension .252″ x .404″

10 GAUGE — 7x18 BARE COPPER

Catalog Number	No. of Conductors	Nom. Jacket Thickness (Inches)	Nominal O.D. (Inches)
7802	2	.045	.27x.45
7803	3	.045	.483
7804	4	.060	.569
7805	5	.060	.618
7806	6	.060	.640
7807	7	.060	.671
7808	8	.060	.700
7809	9	.060	.777
7810	10	.060	.830
7812	12	.080	.915
7815	15	.080	.93
7816	16	.080	.99
7820	20	.080	1.11

9 GAUGE — 19x22 BARE COPPER

Catalog Number	No. of Conductors	Nom. Jacket Thickness (Inches)	Nominal O.D. (Inches)
7902	2	.045	.29x.48
7903	3	.045	.526
7904	4	.060	.604
7905	5	.060	.659
7906	6	.060	.670
7907	7	.060	.716
7908	8	.060	.760
7909	9	.060	.831
7910	10	.060	.900
7912	12	.080	.978
7915	15	.080	.99
7916	16	.080	1.10
7920	20	.080	1.70

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RG TYPE COAXIAL CABLES

Non-Contaminating Low Temp. Black Jacket		Vinyl & Poly. Jackets					Shields							
Number RG-/U	Catalog Number	Number RG-/U	Catalog Number	Armor O.D.	Jacket O.D.	Vinyl Jacket	Outer	Inner	Dielectric O.D.	Center Conductor	V.P. %	Cap. Mmfd./Ft.	Max. Oper. Volts Rms.	Nom. Imp. Ohms
		5	4431		.332	Black	C	C	.185	16	65.9	28.5	3000	52.5
5B	4432				.332	Black	S	S	.185	.053S	65.9	29.5	3000	50
6A	4433				.332	Black	C	S	.185	21CW	65.9	20	2700	75
		7	4434		.370	Black	—	C	.250†	19	84	12.5	1000	97
		8	4415		.405	Black	—	C	.285	7/21	65.9	29.5	4000	52
8A	4435				.405	Black	—	C	.285	7/.0296	65.9	30.5	4000	52
		9	4436		.420	Grey	C	S	.280	7/21S	65.9	30	4000	51
9A	4437				.420	Grey	S	S	.285	7/21S	65.9	30	4000	51
9B	4438				.425	Black	S	S	.280	7/.0296S	65.9	30.5	4000	50
10A	4439			.475	.405	Black	—	C	.285	7/.0296	65.9	30.5	4000	50
		11	4419		.405	Black	—	C	.285	7/26T	65.9	20.5	4000	75
11A	4440				.405	Black	—	C	.285	7/26T	65.9	20.5	4000	75
12A	4441			.475	.405	Black	—	C	.285	7/26T	65.9	20.5	4000	75
		13	4442		.425	Black	C	C	.285	7/26T	65.9	20.5	4000	75
13A	4443				.425	Black	C	C	.285	7/26T	65.9	20.5	4000	75
14A	4467				.545	Grey	C	C	.370	10	65.9	29.5	5500	52
14A	4468				.545	Black	C	C	.370	.106	65.9	30	5500	52
17A	4482				.870	Black	—	C	.680	188C	65.9	29.5	11000	52
18A	4483			.945	.870	Black	—	C	.680	188C	65.9	29.5	11000	52
		21	4444		.322	Grey	S	S	.185	16N	65.9	29	2700	53
21A	4445				.332	Black	S	S	.185	.053N	65.9	30	2700	50
		22	4471		.405	Black	—	T	.285	Two 7/.0152	65.9	16	1000	95
22B	4475				.420	Black	T	T	.285	Two 7/.0152	65.9	16	1000	95
		29	4446		.184	Poly	—	T	.116	20	65.9	28.5	1900	53.5
		54A	4469		.250	Poly	—	T	.178	7/.0152	65.9	26.5	3000	58
		55	4447		.206	Poly	T	T	.116	20	65.9	28.5	1900	53.5
55A	4448				.216	Black	S	S	.116	.035S	65.9	29.5	1900	50
55B	4484				.206	Black	T	T	.116	20S	65.9	28.5	1900	53.5
		58	4405		.195	Black	—	T	.116	20	65.9	28.5	1900	53.5
58A	4449				.195	Black	—	T	.116	19/.0071T	65.9	29.5	1900	50
58B	4474				.195	Black	—	T	.116	20	65.9	28.5	1900	53.5
58C	4450				.195	Black	—	T	.116	19/.0071T	65.9	29.5	1900	50
		59	4401		.242	Black	—	C	.146	22CW	65.9	21	2300	73
		59	4402		.242	Grey	—	C	.146	22CW	65.9	21	2300	73
59	4403				.242	White	—	C	.146	22CW	65.9	21	2300	73
59A	4451				.242	Black	—	C	.146	.023CW	65.9	20.5	2300	75
59B	4470				.242	Black	—	C	.146	.023CW	65.9	20.5	2300	75
		62	4452		.242	Black	—	C	.146†	22CW	84	13.5	750	93
62A	4453				.242	Black	—	C	.146†	22CW	84	13.5	750	93
62B	4472				.242	Black	—	C	.146	7x32CW	84	13.5	750	93
		63	4454		.405	Black	—	C	.285†	22CW	84	10	1000	125
63B	4455				.405	Black	—	C	.285†	22CW	84	10	1000	125
65A	4473				.405	Black	—	C	.340	32F	65	44	3000	950
		71	4456		.250	Poly	T	T or C	.146†	22CW	84	13.5	750	93
71A	4466				.245	Black	T	T or C	.146†	22CW	84	13.5	750	93
71B	4485				.250	Black	T	C	.146	22CW	84	13.5	750	93
74A	4486			.615	.545	Black	C	C	.370	10C	65.9	29.5	7000	52
79B	4487			.475	.405	Black	—	C	.285	22CW	84	10	1000	125
		83	4410		.405	Black	—	C	.240	10C	65.9	44	2000	35
		100	4412		.242	Black	—	C	.146	19/.0147C	65.9	44	2000	35
		108	4464		.235	Black	—	T	.079 ea.	Two 7/28T	68	23.5	1000	78
108A	4465				.235	Black	—	T	.079 ea.	Two .7/28T	65.9	23.5	1000	78
		111	4422	.480	.420	Gray	T	T	.285	Two 7/.152T	65.9	16	1000	95
111A	4423			.490	.420	Gray	T	T	.285	Two 7/.152T	65.9	16	1000	95
		114	4426		.405	Black	—	C	.285	.007CW	—	6.8	1000	185
114A	4427				.405	Black	—	C	.285	.007CW	—	6.8	1000	185
122	4457				.160	Black	—	T	.096	27/36T	65.9	29.5	1900	50
130	4428				.625	Black	—	T	.472	Two 7/21C	65.9	17	3000	95

† Semi-Solid Dielectric N — Nichrome C — Copper S — Silvered Copper CW — Copperweld T — Tinned Copper F — Formvar

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RG TYPE COAXIAL CABLES

Non-Contaminating Low Temp. Black Jacket		Vinyl & Poly. Jackets					Shields							
Number RG-/U	Catalog Number	Number RG-/U	Catalog Number	Armor O.D.	Jacket O.D.	Vinyl Jacket	Outer	Inner	Dielectric O.D.	Center Conductor	V.P. %	Cap. Mmfd./Ft.	Max. Oper. Volts Rms.	Nom. Imp. Ohms
131	4429			.710	.625	Black	—	T	.472	Two 7/21C	65.9	17	3000	95
133	4430				.405	Black	—	C	.285	21C	65.9	16.2	1000	95
149	4458				.405	Black	—	C		7/26T	—	—	—	75
150	4499			.470	.405	Black	—	C		7/26T	—	—	—	75
		164	4404		.870	Black	—	C	.680	.1045C	—	—	10000	75
		177	4406		.895	Black	S	S	.680	.195C	—	—	11000	50
		181	4407		.640	Black	—	C	.210	Two 7/26C	—	12	3500	125
212	4488				.332	Black	S	S	.185	.0556S	65.9	29.5	3000	50
213	4489				.405	Black	—	C	.285	7X.0296C	65.9	29.5	5000	50
214	4490				.425	Black	S	S	.285	7X.0296C	65.9	29.5	5000	50
215	4497				.475	Black	—	C	.285	7/.029C	65.9	29.5	4000	50
216	4491				.425	Black	C	C	.285	7X26TC	65.9	20.5	5000	75
217	4492				.545	Black	C	C	.370	.106C	65.9	29.5	7000	50
218	4493				.870	Black	—	C	.680	.195C	65.9	29.5	11000	50
219	4494			.945	.870	Black	—	C	.680	.195C	65.9	29.5	11000	50
		220	4408		1.120	Black	—	C	.910	.260C	65.9	29.5	14000	50
		221	4409	1.195	1.120	Black	—	C	.910	.260C	65.9	29.5	14000	50
222	4495				.332	Black	S	S	.185	.0556N	65.9	29.0	2700	50
223	4496				.216	Black	S	S	.116	.035S	65.9	29.5	1900	50
		224	4411	.615	.545	Gray	C	C	.370	.106C	65.9	29.5	5500	52

† Semi-Solid Dielectric N — Nichrome C — Copper S — Silvered Copper CW — Copperweld T — Tinned Copper F — Formvar

MINIATURE COAXIAL CABLE

Non-Contaminating Low Temp. Black Jacket		Vinyl & Poly. Jackets					Shields							
Number RG-/U	Catalog Number	Number RG-/U	Catalog Number	Armor O.D.	Jacket O.D.	Vinyl Jacket	Outer	Inner	Dielectric O.D.	Center Conductor	V.P. %	Cap. Mmfd./Ft.	Max. Oper. Volts Rms.	Nom. Imp. Ohms
		174	4459		.105	Black	—		.060†	7/.0063CW		30		50

† Semi-Solid Dielectric N — Nichrome C — Copper S — Silvered Copper CW — Copperweld T — Tinned Copper F — Formvar

FOAM POLYETHYLENE COAXIAL CABLE

		8	4477		.405	Black	—	C	.285	7/19C	80	24.5	1500	50
11	4476				.405	Black	—	C	.285	14C	80	16.5	3000	75
		58	4498		.195	Black	—	T	.116	20C	80	28.5	1900	53.5
		59	4478		.195	Black	—	C	.107	22CW	80	17	500	72
62	4479				.242	Black	—	C	.146	.023CW	80	14.5	700	93

† Semi-Solid Dielectric N — Nichrome C — Copper S — Silvered Copper CW — Copperweld T — Tinned Copper F — Formvar

FOAM POLYETHYLENE TRIAXIAL CABLE DOUBLE SHIELD DOUBLE JACKET

11	4480				.406	Black	—	C	.285	14C	80	16.5	3000	75
59	4481				.242	Black	—	C	.107	.107	80	17	500	72

† Semi-Solid Dielectric N — Nichrome C — Copper S — Silvered Copper CW — Copperweld T — Tinned Copper F — Formvar

TRIAXIAL CABLE DOUBLE SHIELD DOUBLE JACKET

RG/U Type	Catalog Number	Impedance in Ohms	Jacket Diameter	Vinyl Jacket	Shields		O.D. Dielectric	Inner Conductor	V.P. %	Cap. Mmfd./Ft.	Max. Oper. Volts-RMS
					1st	2nd					
Triaxial 58A	4463	50	.285	Black	T	T	.116	19 .0071T	65.9	28.5	1,900
Triaxial 59	4460	73	.242	Black	C	C	.146	22CW	65.9	21.0	2,300
Triaxial 11	4461	75	.460	Black	C	C	.285	7 26T	65.9	20.5	4,000
Triaxial 8	4462	52	.490	Black	C	C	.285	7 21C	65.9	29.5	4,000

† Semi-Solid Dielectric N — Nichrome C — Copper S — Silvered Copper CW — Copperweld T — Tinned Copper F — Formvar

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CONSOLIDATED

TEFLON COAXIAL CABLE

Number RG/U	Catalog Number	Inner Conductor	Dielectric Material	Nominal Diameter of Dielectric (Inch)	Type of Shielding Braids	Protective Covering	Nominal Over-all Diameter (Inch)	Nominal Capacitance (Mmfd./Ft.)	Maximum Operating Voltage (Volts rms)	Nominal Impedance (Ohms)
62C	4700	.0253 Silver Covered Copper Steel	F-3	.146	Silver Covered Copper Single Braid	V	.242	14.5	750	93
87A	4701	7/.032 Silver Covered Copper	F-1	.280	Silver Coated Copper Double Braid	V	.425	29.5	5000	50
94	4702	19/.0225 Silver Covered Copper	F-2	.292	Copper Double Braid	V	.445	29.0	7000	50
94A	4703	19/.0254 Silver Plated Copper	F-2	.370	Copper Double Braid	V	.500	27.0	7000	50
115	4704	7/.028 Silver Covered Copper	F-2	.250	Silver Coated Copper Double Braid	V	.375	29.5	5000	50
115A	4705	7/.028 Silver Covered Copper	F-2	.255	Silver Coated Copper Double Braid	V	.415	29.5	4000	50
116	4706	7/.032 Silver Covered Copper	F-1	.280	Silver Coated Copper Double Braid	V with armor	.490	29.5	5000	50
117	4707	.188 Copper	F-1	.620	Copper Single Braid	V	.730	29.0	7000	50
117A	4708	.188 Copper	F-1	.620	Copper Single Braid	V	.730	—	7000	50
118	4709	.188 Copper	F-1	.620	Copper Single Braid	V with armor	.795	29.0	7000	50
118A	4710	.188 Copper	F-1	.620	Copper Single Braid	V with armor	.780	—	7000	50
119	4711	.102 Copper	F-1	.332	Copper Double Braid	V	.465	29.0	6000	50
120	4712	.102 Copper	F-1	.332	Copper Double Braid	V with armor	.525	29.0	6000	50
126	4713	7/.0203 Karma or Equal	F-1	.185	Karma or Equal Single Braid	V	.280	29.0	3000	50
140	4714	.025 Silver Coated Copper Steel	F-1	.146	Silver Coated Copper Single Braid	V	.233	21.0	2300	75
141	4715	.0359 Silver Plated Copper Weld	F-1	.116	Silver Coated Copper Single Braid	V	.190	28.5	1900	50
141A	4716	.039 Silver Covered Copper Steel	F-1	.116	Silver Coated Copper Single Braid	V	.190	28.5	1900	50
142	4717	.0359 Silver Covered Copper Steel	F-1	.116	Silver Coated Copper Double Braid	V	.206	28.5	1900	50
142A	4718	.039 Silver Covered Copper Steel	F-1	.116	Silver Coated Copper Double Braid	V	.206	28.5	1900	50
142B	4719	.039 Silver Covered Copper Steel	F-1	.116	Silver Coated Copper Double Braid	FEP	.195	28.5	1900	50
143	4720	.057 Silver Plated Copper Weld	F-1	.185	Silver Coated Copper Double Braid	V	.325	28.5	3000	50
143A	4721	.059 Silver Covered Copper Steel	F-1	.185	Silver Coated Copper Double Braid	V	.325	28.5	3000	50
144	4722	7/.0179 Silver Covered Copper Steel	F-1	.285	Silver Coated Copper Single Braid	V	.410	20.5	5000	75
146	4723	.007 Copper Covered Steel	F-3	.285	Copper Single Braid	V	.375	6.0	1000	190
161	4724	7/38 Silver Plated Cadmium Bronze	F-1	.057	Single Silver Copper	Extruded Black Nylon	.090	20.0	1000	70
165	4725	7/.032 Silver Covered Copper	F-1	.285	Silver Covered Copper Single Braid	V	.410	—	5000	50
166	4726	7/.032 Silver Covered Copper	F-1	.285	Silver Covered Copper Single Braid	V with armor	.460	—	5000	50
178	4727	7/.0039 Silver Plated Copper Weld	F-1	.036	Silver Plated Copper Single Braid	KEL-F	.079	27.9	1000	50
178A	4728	7/.004 Silver Covered Copper Steel	F-1	.034	Silver Plated Copper Single Braid	KEL-F	.075	27.9	1000	50
178B	4729	7/.004 Silver Covered Copper Steel	F-1	.034	Silver Covered Copper Single Braid	FEP	.075	—	1000	50
179	4761	7/.004 Silver Covered Copper Steel	F-1	.063	Silver Covered Copper Single Braid	KEL-F	.100	—	1200	75
179A	4730	7/.004 Silver Covered Copper Steel	F-1	.063	Silver Plated Copper Single Braid	KEL-F	.105	20.0	1200	75

Continued on following page

F-1 — Solid Teflon F-2 — Taped Teflon F-3 — Air Spaced Teflon
V — High Temperature Lacquer Impregnated Fiberglass Braid with Teflon Tape Between Shield and Jacket
VI — Polyester Fiber Impregnated with High Temperature Lacquer over Wrapped or Extruded Silicone Impregnated Fiberglass
IIA — Low Temperature Black Polyvinylchloride Non-Contaminating
FEP — Fluorinated Ethylene Propylene Copolymar, 200°C Teflon
TFE — Tetrafluoride Ethylene Propylene Copolymar, 250°C Teflon

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TEFLON COAXIAL CABLE

Number RG/U	Catalog Number	Inner Conductor	Dielectric Material	Nominal Diameter of Dielectric (Inch)	Type of Shielding Braids	Protective Covering	Nominal Over-all Diameter (Inch)	Nominal Capacitance (Mmfd./Ft.)	Maximum Operating Voltage (Volts rms)	Nominal Imped-ance (Ohms)
179B	4731	7/.004 Silver Covered Copper Steel	F-1	.063	Silver Covered Copper Single Braid	FEP	.105	—	1200	75
180	4732	7/.0039 Silver Plated Copper Weld	F-1	.103	Silver Plated Copper Single Braid	KEL-F	.141	15.3	1500	93
180A	4733	7/.004 Silver Covered Copper Steel	F-1	.102	Silver Plated Copper Single Braid	KEL-F	.145	14.5	1500	95
180B	4734	7/.004 Silver Covered Copper Steel	F-1	.102	Silver Covered Copper Single Braid	FEP	.145	—	1500	95
187	4735	7/.004 Silver Covered Copper Steel	F-1	.060	Silver Covered Copper Single Braid	Teflon	.110	—	1200	75
187A	4736	7/.004 Silver Covered Copper Steel	F-1	.060	Silver Covered Copper Single Braid	TFE	.110	—	1200	75
188	4737	7/.004 Silver Covered Copper Steel	F-1	.060	Silver Covered Copper Single Braid	Teflon	.110	—	1200	50
188A	4738	7/.004 Silver Covered Copper Steel	F-1	.060	Silver Covered Copper Single Braid	TFE	.110	—	1200	50
195	4739	7/.004 Silver Covered Copper Steel	F-1	.102	Silver Covered Copper Single Braid	Teflon	.155	—	1500	95
195A	4740	7/.004 Silver Covered Copper Steel	F-1	.102	Silver Covered Copper Single Braid	TFE	.155	—	1500	95
196	4741	7/.004 Silver Covered Copper Steel	F-1	.034	Silver Covered Copper Single Braid	Teflon	.080	—	1000	50
196A	4742	7/.004 Silver Covered Copper Steel	F-1	.034	Silver Covered Copper Single Braid	TFE	.080	—	1000	50
209	4743	19/.037 Silver Covered Copper	F-3	.500	Silver Covered Copper Double Braid	VI	.750	—	3200	50
210	4744	.0253 Silver Covered Copper Steel	F-3	.146	Silver Covered Copper Single Braid	V	.242	14.5	750	93
211	4745	.190 Copper	F-1	.620	Copper Single Braid	V	.730	—	7000	50
211A	4746	.190 Copper	F-1	.620	Copper Single Braid	V	.730	—	7000	50
225	4747	7/.0312 Silver Covered Copper	F-1	.285	Silver Covered Copper Double Braid	V	.430	—	5000	50
226	4748	19/.0254 Silver Covered Copper	F-2	.370	Copper Double Braid	V	.500	—	7000	50
227	4749	7/.0312 Silver Covered Copper	F-1	.285	Silver Covered Copper Double Braid	V with armor	.490	—	5000	50
228	4750	.190 Copper	F-1	.620	Copper Single Braid	V with armor	.795	—	7000	50
228A	4751	.190 Copper	F-1	.620	Copper Single Braid	V with armor	.795	—	7000	50
235	4752	7/.028 Copper	F-2	.255	Silver Covered Copper Double Braid	VI	.490	—	5000	50
279	4762	19/.005 Silver Covered Copper Steel	F-1	.110	Silver Covered Copper Single Braid	V	.145	17.3	1500	75
280	4753	.1144 Copper	F-2	.327	Silver Covered Copper Double Braid	IIA	.480	27.5	4000	50
281	4754	19/.0378 Silver Covered Copper	F-2	.500	Silver Covered Copper Double Braid	VI	.750	29.5	4000	50
301	4755	7/.0203 Karma	F-1	.185	Karma Single Braid	FEP	.245	29.0	3000	50
302	4756	.025 Silver Covered Copper Steel	F-1	.146	Silver Covered Copper Single Braid	FEP	.206	21.0	2300	75
303	4757	.039 Silver Covered Copper Steel	F-1	.146	Silver Covered Copper Single Braid	FEP	.170	28.5	1900	50
304	4758	.059 Silver Covered Copper Steel	F-1	.185	Silver Covered Copper Double Braid	FEP	.280	28.5	3000	50
316	4759	7/.0067 Silver Covered Copper Steel	F-1	.060	Silver Covered Copper Single Braid	FEP	.102	—	1200	50

F-1 — Solid Teflon F-2 — Taped Teflon F-3 — Air Spaced Teflon
V — High Temperature Lacquer Impregnated Fiberglass Braid with Teflon Tape Between Shield and Jacket
VI — Polyester Fiber Impregnated with High Temperature Lacquer over Wrapped or Extruded Silicone Impregnated Fiberglass
IIA — Low Temperature Black Polyvinylchloride Non-Contaminating
FEP — Fluorinated Ethylene Propylene Copolymar, 200°C Teflon
TFE — Tetrafluoride Ethylene Propylene Copolymar, 250°C Teflon

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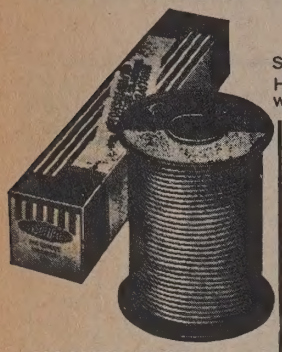
PROTECTA-METAL SPOOLS

Popular, profitable specialty wire packaged for easy selling in radio-electrical, scientific, specialty and hardware.
Wide variety of sizes and insulations.
Keeps stock in perfect order, always saleable.
Supplied on Spools as Shown and in Heavier Weights.
Here is a handy and convenient way to stock small quantities of wire. It prevents wire from matting or tangling.



MAGNET WIRE #2000

The correct wire for practically any application. Magnet wire is indispensible in the manufacture and repair of both radio and audio frequency coils, transformers, chokes, speaker field coils, short wave coils, tuners, transmitters, etc. Also widely used in the construction and repair of motors, generators, dynamos, etc.

Larger Quantities At Same Per Pound List

SPECIAL MAGNET WIRES

In addition to the standard listing shown here, we maintain an extensive stock of all other sizes in round, rectangular and square magnet wire.

Size	Plain Enamel ¼ Lb.	½ Lb.	1 Lb.	Single Formvar ¼ Lb.	½ Lb.	1 Lb.	Heavy Formvar ¼ Lb.	½ Lb.	1 Lb.	Size
14	$0.43	$0.72	$1.28	$0.57	$0.96	$1.73	$0.61	$1.04	$1.86	14
15	.44	.75	1.29	.58	1.02	1.76	.62	1.10	1.90	15
16	.46	.77	1.30	.62	1.05	1.78	.67	1.13	1.92	16
17	.47	.80	1.31	.63	1.08	1.79	.68	1.17	1.93	17
18	.48	.81	1.32	.65	1.10	1.80	.70	1.19	1.94	18
19	.49	.83	1.34	.68	1.14	1.84	.73	1.22	1.99	19
20	.50	.84	1.36	.69	1.15	1.86	.74	1.23	2.01	20
21	.51	.85	1.42	.70	1.16	1.93	.76	1.24	2.09	21
22	.52	.86	1.49	.71	1.18	2.05	.77	1.28	2.22	22
23	.54	.87	1.53	.72	1.20	2.10	.78	1.30	2.26	23
24	.55	.88	1.60	.73	1.21	2.22	.79	1.31	2.39	24
25	.56	.95	1.66	.77	1.31	2.28	.88	1.52	2.68	25
26	.57	.96	1.71	.78	1.32	2.38	.91	1.53	2.78	26
27	.59	.98	1.78	.82	1.37	2.48	.95	1.58	2.90	27
28	.61	1.02	1.86	.85	1.40	2.59	1.01	1.64	3.01	28
29	.62	1.06	1.89	.88	1.46	2.65	1.03	1.70	3.08	29
30	.66	1.08	1.92	.92	1.51	2.69	1.07	1.76	3.15	30
31	.71	1.11	1.99	1.01	1.55	2.79	1.23	1.88	3.40	31
32	.72	1.15	2.02	1.02	1.61	2.85	1.24	1.95	3.45	32
33	.76	1.21	2.11	1.06	1.71	2.97	1.29	2.06	3.63	33
34	.79	1.35	2.19	1.12	1.93	3.09	1.36	2.32	3.77	34
35	.84	1.47	2.44	1.21	2.08	3.47	1.47	2.43	4.24	35
36	.97	1.54	2.68	1.39	2.20	3.83	1.70	2.70	4.70	36
37	1.09	1.71	3.01	1.56	2.45	4.33	1.92	2.99	5.32	37
38	1.25	1.87	3.34	1.80	2.70	4.82	2.22	3.21	5.93	38
39	1.36	2.20	3.67	1.98	3.19	5.32	2.43	3.94	6.35	39
40	1.78	2.70	4.33	2.60	3.94	6.30	3.22	4.86	7.80	40
41	2.00	3.75	5.65	2.50	4.50	8.40	3.45	5.06	9.10	41
42	2.32	4.40	8.59	2.85	4.93	8.95	3.85	5.43	9.81	42
43	2.90	5.00	10.50	3.45	5.25	9.50	4.00	5.75	10.05	43
44	3.25	6.25	12.30	4.40	7.80	15.05	4.45	8.60	15.55	44

VARIOUS OTHER INSULATONS

Film	Technical Classification
ENAMEL	— oleoresinous
FORMVAR	— poly vinyl acetal
POLY THERMALEZE	
SODEREZE	— polyurethane
THERMALEZE	— epoxide polyester
NYFORM	— formvar, nylon sheath
NYLEZE	— polyurethane nylon sheath
NYLON	
BONDEZE	
GRIPEZE	
LECTRON	— acrylic
ISONSEL	— terephthalic polyester
ALKANVAR	— terephthalic polyester
SYLKYD ENAMELED	
COTTON & COMBINATIONS	
SILK AND COMBINATIONS	
CELANESE AND COMBINATIONS	
GLASS AND COMBINATIONS	
PAPER AND COMBINATIONS	

Size	Double Cotton Covered ¼ Lb.	½ Lb.	1 Lb.	Single Nyleze ¼ Lb.	½ Lb.	1 Lb.	Heavy Nyleze ¼ Lb.	½ Lb.	1 Lb.	Size
14	$0.64	$1.10	$2.08	$0.62	$1.06	$1.90	$0.67	$1.14	$2.05	14
15	.66	1.13	2.10	.64	1.12	1.93	.68	1.21	2.09	15
16	.67	1.14	2.15	.68	1.15	1.96	.74	1.24	2.11	16
17	.69	1.18	2.20	.69	1.19	1.97	.76	1.28	2.13	17
18	.70	1.24	2.24	.71	1.21	1.98	.77	1.31	2.14	18
19	.72	1.27	2.43	.75	1.25	2.02	.80	1.34	2.19	19
20	.73	1.35	2.48	.76	1.27	2.05	.81	1.35	2.21	20
21	.82	1.43	2.63	.77	1.28	2.12	.84	1.36	2.30	21
22	.86	1.48	2.73	.78	1.30	2.25	.85	1.41	2.44	22
23	.92	1.57	2.85	.79	1.32	2.32	.86	1.43	2.49	23
24	.96	1.65	3.05	.80	1.33	2.44	.87	1.44	2.63	24
25	.99	1.70	3.17	.85	1.44	2.51	.97	1.67	2.95	25
26	1.01	1.79	3.38	.86	1.45	2.62	1.00	1.68	2.96	26
27	1.14	1.90	3.59	.90	1.51	2.73	1.04	1.74	3.19	27
28	1.20	2.12	3.91	.94	1.54	2.84	1.11	1.80	3.31	28
29	1.27	2.32	4.34	.97	1.61	2.92	1.13	1.87	3.39	29
30	1.28	2.43	4.55	1.01	1.66	2.96	1.18	1.94	3.46	30
31	1.46	2.64	4.78	1.11	1.71	3.07	1.35	2.07	3.73	31
32	1.66	2.86	5.30	1.13	1.77	3.17	1.36	2.15	3.80	32
33	1.78	3.17	5.84	1.17	1.88	3.27	1.42	2.26	3.99	33
34	1.99	3.61	6.49	1.23	2.13	3.39	1.49	2.55	4.15	34
35	2.21	3.94	6.92	1.33	2.28	3.82	1.61	2.67	4.66	35
36	2.52	4.47	7.88	1.53	2.42	4.21	1.87	2.97	5.17	36
37	2.95	5.66	10.24	1.71	2.69	4.76	2.11	3.30	5.84	37
38	4.24	7.70	14.62	1.98	3.00	5.35	2.44	3.53	6.51	38
39	5.19	10.15	17.64	2.18	3.52	5.85	2.67	4.31	6.99	39
40	5.73	13.16	24.61	4.85	8.58	16.60	3.56	5.35	8.58	40

AERIAL WIRE

STANDARD PUT-UP: 50 FT., 75 FT., 100 FT., 1000 FT.

COPPER — AERIAL AND BUS BAR SOLID TINNED

No.	Stranding	Size	Breaking Strength (Pounds)	Type	Nom. Dia. (Inches)
3848	Solid	30	—	Tinned Copper	.010
3847	Solid	28	—	Tinned Copper	.013
3846	Solid	26	—	Tinned Copper	.016
3819	Solid	24	12 Lbs.	Tinned Copper	.020
3818	Solid	22	20 Lbs.	Tinned Copper	.025
3817	Solid	20	31 Lbs.	Tinned Copper	.032
3816	Solid	18	49 Lbs.	Tinned Copper	.040
3815	Solid	16	73 Lbs.	Tinned Copper	.051
3821	Solid	14	124 Lbs.	Tinned Copper	.064
3831	Solid	12	197 Lbs.	Tinned Copper	.081
3841	Solid	10	314 Lbs.	Tinned Copper	.102
3845	Solid	8	480 Lbs.	Tinned Copper	.128

RESISTANCE WIRE #2000

ON PROTECTA-METAL SPOOLS

Recommended for electrical heating appliances and other devices where the hghest quality in performance is required, whose operating temperatures do not exceed 1850°F. Particularly suited for heavy duty rheostats and controls which require compact resistance.

BARE NICKEL CHROMIUM

Size	1 Oz.	¼ Lb.	1 Lb.
14	—	$1.52	$5.56
15	—	1.56	5.65
16	—	1.58	5.73
17	—	1.63	5.80
18	—	1.67	5.87
19	—	1.71	6.02
20	$0.67	1.76	6.17
21	.71	1.85	6.49
22	.72	1.93	6.79
23	.74	2.08	7.44
24	.76	2.22	8.09
25	.82	2.37	8.74
26	.87	2.53	9.39
27	.89	2.57	9.96
28	.92	2.84	10.53
29	1.00	2.98	11.18
30	1.09	3.11	11.83
31	1.14	3.28	12.28
32	1.18	3.43	12.73
33	1.31	3.79	14.73
34	1.44	4.16	16.73
35	1.58	4.55	17.71
36	1.71	4.94	18.69
37	2.22	6.50	23.86
38	2.74	8.05	29.03
39	2.86	8.39	31.62
40	2.98	8.95	34.20

BUS BAR WIRE #2000

BARE COPPER WIRE

Size	¼ Lb.	½ Lb.	1 Lb.
14	$0.48	$0.86	$1.38
15	.50	.88	1.42
16	.51	.94	1.58
17	.52	.96	1.60
18	.54	.97	1.62
19	.55	.99	1.65
20	.56	1.01	1.69
21	.57	1.02	1.73
22	.59	1.03	1.77
23	.60	1.05	1.80
24	.61	1.08	1.82
25	.62	1.08	1.83
26	.63	1.10	1.86
27	.64	1.12	1.88
28	.65	1.14	1.95
29	.66	1.15	1.99
30	.67	1.16	2.00
31	.68	1.18	2.04
32	.70	1.19	2.08
33	.71	1.20	2.14
34	.72	1.21	2.19
35	.73	1.24	2.28
36	.74	1.27	2.37
37	.75	1.37	2.49
38	.78	1.47	2.61
39	.79	1.52	2.64
40	.81	2.53	2.68

TINNED COPPER WIRE

Size	¼ Lb.	½ Lb.	1 Lb.
14	$0.56	$0.97	$1.52
15	.61	1.05	1.63
16	.65	1.14	1.69
17	.67	1.16	1.71
18	.70	1.19	1.73
19	.72	1.21	1.76
20	.74	1.23	1.80
21	.75	1.24	1.84
22	.76	1.25	1.88
23	.77	1.26	1.91
24	.78	1.27	1.93
25	.79	1.29	1.94
26	.81	1.30	1.95
27	.82	1.32	2.10
28	.85	1.37	2.28
29	.87	1.43	2.30
30	.89	1.48	2.32
31	.92	1.54	2.37
32	.94	1.59	2.41
33	.96	1.65	2.47
34	.98	1.70	2.52
35	.99	1.74	2.61
36	1.00	1.76	2.70
37	1.01	1.81	2.82
38	1.03	1.87	2.94
39	1.04	1.92	2.97
40	1.05	1.98	3.01

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TINNED COPPER SHIELDING

STANDARD SPOOL PUT-UP: 50 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

SHIELDING AND BONDING TYPE CABLE

FLAT BRAID

No.	Approx. I.D.	Size & Number of Wires	Approx. AWG	Carrying Capacity (Amperes)
1386	1/32"	16x36	24	7
1387	3/64"	24x36	23	7
1388	3/32"	48x36	19	12
1389	7/64"	72x36	18	14
1390	1/8"	96x36	18	15
1391	3/16"	120x36	15	23
1392	1/4"	168x36	14	30
1393	3/8"	288x36	11	50
1394	1/2"	386x36	10	55
1395	5/8"	528x36	10	61
1396	3/4"	832x36	7	80
1397	25/32"	832x36	7	80
1398	1"	912x36	7	84
1399	1 3/8"	336x30	7	105

TUBULAR BRAID PER QQ-B-575

1310	1/32"	24x36	22	7
1311	1/16"	48x36	19	11
1312	5/64"	72x36	18	16
1314	7/64"	96x36	16	19
1315	1/8"	120x36	15	25
1316	5/32"	240x36	12	40
1317	11/64"	168x36	14	32
1318	13/16"	192x34	11	46
1319	1/4"	384x36	10	53
1320	9/32"	120x30	9	60
1321	3/8"	384x36	10	53
1322	7/16"	240x30	6	90
1323	1/2"	528x36	9	62
1324	9/16"	480x30	3	145
1325	21/32"	768x30	1	190
1326	25/32"	864x36	7	88

OVAL COMMERCIAL BRAID

1340	1/32"	24x34	20	9
1341	1/16"	32x34	19	11
1342	7/64"	64x34	16	20
1343	1/8"	72x34	15	25
1344	11/64"	120x34	14	32
1345	3/16"	144x34	13	38
1346	1/4"	168x34	12	41
1347	3/8"	192x34	11	46
1348	1/2"	336x34	9	62
1349	5/8"	384x34	8	64
1350	11/16"	480x34	7	81
1351	25/32"	528x34	7	85

TEST PROD WIRE

STANDARD SPOOL PUT-UP: 10 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

Single conductor, extra flexible stranded tinned soft annealed copper, wrap, color coded rubber insulation.

No.	Size	Stranding	Nom. Wall Thickness	Voltage Breakdown	Nominal O.D.
1001	20	41x36	.043	10,000	.140
1002	18	65x36	.045	12,000	.140
1006	18	65x36	.088	25,000	.230

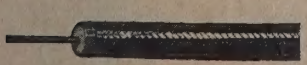
MILITARY TYPE MIL-W-13169B

1007	18	65x36	.047	12,000	.150

HIGH VOLTAGE AND ANODE LEAD CABLE

STANDARD SPOOL PUT-UP: 25 FT., 100 FT., 250 FT., 500 FT., 1000 FT.

Flame Retardant Polyethylene Plastic Insulation for high voltage leads to cathode-ray tubes in television receivers, oscilloscopes, power supplies and other uses requiring a high-voltage cable. Special features: minimum surface leakage, corona resistance and high dielectric strength.



No.	Size	Description	Stranding	Inches	Working Volts	Nom. O.D
4601	20	Extra flexible tinned copper wire; Flame retardent Polyethylene Plastic Insulation; red cellulose acetate yard braid with 2 white tracers; lacquer coating.	7x28	.035	10,000	.136
4611	20	Same as No. 4601 except heavier insulation; solid red braid.	7x28	.065	20,000	.198
4616	20	Extra flexible tinned copper flame retardant polyethylene insulation, White.	10x30	.035	10,000	.108
4621	20	Same as No. 4616 except heavier insulation, White & Red.	10x30	.065	20,000	.168
4622	18	Same as No. 4621 except .015" red PVC outer jacket.	41x34	.057	40,000	.209
4623	22	Same as No. 4622 except outer .020" PVC jacket. Colors black, red and blue.	7x30	.030	17,000	.130

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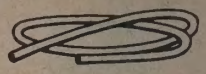
DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

DAFLEX 105 PLASTIC TUBING



105°C POLYVINYLCHLORIDE (PVC) MEETS MIL-I-631D SPECS

Specifically compounded vinyl resins for superior all around performance. UL approved for 105°C, conforms to Spec MIL-I-631D Type F, Form U, Grades A and C. Class 1 and 2, Category 1. Resistant to heat, oil, water, chemical corrosion, fungi and aging. Very hi abrasion resistance. Will retain its flexibility. Suitable for covering and protecting wires and cables. Designed for electrical, electronic and aircraft applications. Non-flammable. Meets ASTM—D876, ASTM—D922.

D105 compounded with non-migratory resin type plasticizors. Retains its flexibility, permitting it to cling and protect irregular shapes. D105 snakes well under practically all conditions.

DIMENSIONAL TOLERANCES OF DAFLEX 105

DAFLEX No.	Size	Old Daburn No.	Nom. I.D.	Nom. Wall	Specify Std. Put-Up Spool or Coil	ASTM Tolerance, Inches		Wall Thickness Inches
D105-24	24	808	.022″	.012″	25′, 100′, 1000′	.020	.027	.012 ± .002
D105-22	22	811	.027″	.012″	25′, 100′, 1000′	.025	.032	.012 ± .002
D105-20	20	813	.034″	.016″	25′, 100′, 1000′	.032	.039	.016 ± .003
D105-19	19	—	.038″	.016″	100′, 1000′	.044	.036	.016 ± .003
D105-18	18	814	.042″	.016″	25′, 100′, 1000′	.040	.049	.016 ± .003
D105-17	17	—	.047″	.016″	100′, 1000′	.054	.045	.016 ± .003
D105-16	16	815	.053″	.016″	25′, 100′, 1000′	.051	.061	.016 ± .003
D105-15	15	—	.059″	.016″	100′, 500′	.067	.057	.016 ± .003
D105-14	14	816	.066″	.016″	25′, 100′, 500′	.064	.072	.016 ± .003
D105-13	13	—	.076″	.016″	100′, 500′	.080	.072	.016 ± .003
D105-12	12	817	.085″	.016″	25′, 100′, 500′	.081	.089	.016 ± .003
D105-11	11	—	.095″	.016″	100′, 500′	.101	.091	.016 ± .003
D105-10	10	825	.106″	.016″	25′, 100′, 500′	.102	.112	.016 ± .003
D105-9	9	—	.118″	.020″	100′, 500′	.124	.114	.020 ± .003
D105-8	8	818	.135″	.020″	25′, 100′, 500′	.129	.141	.020 ± .003
D105-7	7	—	.148″	.020″	100′, 500′	.158	.144	.020 ± .003
D105-6	6	826	.166″	.020″	25′, 100′, 250′	.162	.178	.020 ± .003
D105-5	5	—	.186″	.020″	100′, 250′	.198	.182	.020 ± .003
D105-4	4	819	.208″	.020″	25′, 100′, 250′	.204	.224	.020 ± .003
D105-3	3	—	.234″	.020″	100′, 250′	.249	.229	.020 ± .003
D105-2	2	820	.263″	.020″	100′, 250′	.258	.278	.020 ± .003
D105-1	1	—	.330″	.020″	100′, 250′	.311	.289	.020 ± .003
D105-0	0	—	.330″	.020″	100′, 250′	.347	.325	.020 ± .003
D105-5/16″	5/16″	821	.312″	.025″	100′, 250′	.3125	.334	.025 ± .003
D105-3/8″	3/8″	822	.375″	.025″	100′, 250′	.375	.399	.025 ± .003
D105-7/16″	7/16″	—	.438″	.025″	100′, 250′	.462	.438	.025 ± .003
D105-1/2″	1/2″	823	.500″	.025″	100′, 250′	.500	.524	.025 ± .003
D105-9/16″	9/16″	—	.562″	.030″	50′, 100′	.592	.562	.030 ± .003
D105-5/8″	5/8″	824	.625″	.030″	50′, 100′	.625	.655	.030 ± .005
D105-3/4″	3/4″	827	.750″	.035″	50′, 100′	.750	.786	.035 ± .005
D105-7/8″	7/8″	860	.875″	.035″	50′, 100′	.875	.911	.035 ± .005
D105-1″	1″	861	1.000″	.035″	50′	1.000	1.036	.035 ± .005
D105-1 1/8″	1 1/8″	—	1.125″	.040″	50′	1.125	1.161	.035 ± .005
D105-1 1/4″	1 1/4″	862	1.250″	.040″	50′	1.250	1.286	.040 ± .005
D105-1 3/8″	1 3/8″	—	1.375″	.040″	50′	1.375	1.411	.040 ± .005
D105-1 1/2″	1 1/2″	863	1.500″	.045″	50′	1.500	1.536	.045 ± .005
D105-1 3/4″	1 3/4″	863	1.750″	.055″	50′	1.812	1.750	.055 ± .008
D105-2″	2″	829	2.000″	.060″	50′	2.000	2.070	.060 ± .010
D105-2 1/4″	2 1/4″	864	2.250″	.065″	50′	2.250	2.330	.065 ± .010
D105-2 1/2″	2 1/2″	865	2.500″	.070″	50′	2.500	2.590	.070 ± .010

IN STOCK

PROPERTIES OF DAFLEX-105 TUBING

Recommended for Temperatures to
105°C (220°F)

•

Low Temperature Flexibility to
−30°C

•

Dielectric Strength — .020″ Wall
800 V/MIL

•

Dielectric Constant
6.0

•

Tensile Strength — Min. (PSI)
2700

•

Ultimate Elongation
300%

•

Oil Resistance
Excellent

•

Fungus Resistance
Excellent

•

Flammability
Self-Extinguishing

•

Corrosion and Abrasion Resistance
Excellent

COLORS AVAILABLE FROM STOCK:
All sizes 24 thru 2½″: Clear, black, white.

ALSO STOCKED—Sizes 2 thru 7: Clear, black, white, yellow.
Sizes 8 thru 14: All above plus green, red.
Sizes 15 thru 24: All above plus blue. **Additional Colors to Order**

ALL THE ABOVE TUBING CAN BE ORDERED CUT AND MARKED TO YOUR SPECIFICATIONS

DAFLEX AND DAFLON TUBING

PLASTIC - FIBERGLASS - TEFLON TUBING COMPARATIVE PROPERTIES CHART

DAFLEX AND DAFLON TUBING	D105	D74	D130	D1200	DTT500 DTT550
Maximum Operating Temperature	105°C	80°C	130°C	1200°F	Continuous Service 250°C
Maximum Low Temperature Flexibility	−20°C	−94°C	−20°C	—	−90°C
Dielectric Strength Dry-V/MIL	1000 @ .015 Wall 900 @ .030 Wall	650 @ .015 Wall 300 @ .030 Wall	4000	Determined by Space Factor	1400 @ .010 Wall 850 @ .020 Wall
Dielectric Constant	6.0	4.5	7.0	—	2.2
Flammability	Self-Extinguishing	Self Extinguishing	Self Extinguishing	Will not burn	Non-flammable
Tensile Strength (PSI)	2700-3300	2200	1500-2000 (coating material only)	—	5000 - 7500
Ultimate Elongation	300 - 400%	375 - 450%	300 - 400%	—	300 - 500%
Minimum Volume Resistance Ohm-CM	10^{13}	10^{9}	10^{7}	—	10^{17}
Fungus Resistance	Excellent	Excellent	Good	Excellent	Completely Inert
Oil Resistance	Excellent	Excellent	Excellent	Excellent	Superior
Abrasion Resistance	Excellent	Fair	Excellent	—	Fair
Chemical Corrosion Resistance	Excellent	Good	Excellent	Excellent	Completely Inert
Applicable Specs	MIL-I-631D ULE-20344 Grade A & C Type F, Form U Class 1 & 2 Category 1 ASTM-D876 ASTM-D922 MIL-T-5438	MIL-I-7444B MIL-I-22076B	MIL-I-3190B Class B, Grade B ASTM-D372 NEMA-VS-1 MIL-I-21557 MIL-T-5438 UL E-20344	NEMA VSI	MIL-T-22129C MIL-P-14078A AMS-3651B AMS-3653 AMS-3654 AMS-3655 MIL-C-17D UL E-20344
Gamma Radiation Dosage to 25% Degradation Ergs/Gram	10^{10}	10^{9}	10^{9}	—	10^{7}
Corona Resistance	Excellent	Good	Excellent	—	Good

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DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

DAFLON TEFLON® SPAGHETTI TUBING

Daflon 500 and 550 tubing is extruded from Dupont Tetrafluoroethylene resin and is unmatched by any other tubing for use in applications for hi frequencies and hi temperatures. Rated for continuous operation of 250°C it retains its toughness and flexibility thruout. Has high resistance to fatigue and stresses. Will not shrink back during soldering operation. Non-flammable, flexible, it permits miniaturization of design and compactness. Lowest coefficient of friction. Inert to all fungus growth. Conforms to **MIL-I-22129C Spec.** AMS 3651B, 3653B, 3654, 3655.

TABLE OF PROPERTIES

Test	ASTM Method	Result
Tensile Strength, 73°F.	D638-52T	1500-300 Lb/Sq. In.
Elongation, 73°F.	D638-52T	100-200%
Deformation Under Load—122°F.		
1200 Lb/Sq. In., 24 Hrs.	D621-51	4-8%
2000 Lb/Sq. In., 24 Hrs.	D621-51	25%
Hardness Durometer	D676-49T	D50-D65
Heat Distortion Temp., 6 Lb/Sq. In.	D648B-45T	250°C
Dielectric Strength, .080"	D149-44	400-500 V/MIL
Surface Arc-Resistance	D495-48T	Sec.
Volume Resistivity	D257-52T	10^{15} Ohm-CM
Surface Resistivity, 100% R.H.	D257-52T	$3.6x10^{6}$ Megohms
Dielectric Constant, 60 to 10^{6} Cycles	D150-54T	2.00
Power Factor, 60 to 10^{6} Cycles	D150-54T	0.0003
Specific Gravity	D792-50	2.1-2.2

DAFLON THIN WALL TEFLON® TUBING (DTT-500) MIL-I-22129C

DAFLON No.	Size	Nom. I.D.	Nom. Wall Thickness	Specify Std. Put-Up Spool or Coil
DTT500-32	32	.011"	.0085"	100', 500', 1000'
DTT500-30	30	.012"	.009"	100', 500', 1000'
DTT500-28	28	.015"	.009"	100', 500', 1000'
DTT500-26	26	.018"	.010"	100', 500', 1000'
DTT500-24	24	.022"	.010"	25', 50', 100', 500', 1000'
DTT500-22	22	.027"	.010"	25', 50', 100', 500', 1000'
DTT500-20	20	.034"	.012"	25', 50', 100', 500', 1000'
DTT500-19	19	.038"	.012"	100', 500', 1000'
DTT500-18	18	.042"	.012"	25', 50', 100', 500', 1000'
DTT500-17	17	.047"	.012"	100', 500', 1000'
DTT500-16	16	.053"	.012"	25', 50', 100', 500', 1000'
DTT500-15	15	.059"	.012"	100', 500', 1000'
DTT500-14	14	.066"	.012"	25', 50', 100', 500', 1000'
DTT500-13	13	.076"	.012"	100', 500', 1000'
DTT500-12	12	.085"	.012"	25', 50', 100', 500', 1000'
DTT500-11	11	.095"	.012"	100', 500', 1000'
DTT500-10	10	.106"	.012"	25', 50', 100', 500', 1000'
DTT500-9	9	.118"	.015"	100', 500', 1000'*
DTT500-⅛	⅛	.125"	.015"	25', 50', 100', 500', 1000'
DTT500-8	8	.133"	.015"	25', 50', 100', 500', 1000'*
DTT500-7	7	.148"	.015"	100', 500', 1000'*
DTT500-6	6	.166"	.015"	25', 50', 100', 500', 1000'*
DTT500-5	5	.186"	.015"	100', 500', 1000'*
DTT500-4	4	.208"	.015"	25', 50', 100', 500', 1000'*
DTT500-3	3	.234"	.015"	100', 500', 1000'*
DTT500-¼	¼	.250"	.015"	25', 50', 100', 500', 1000'
DTT500-2	2	.263"	.015"	25', 50', 100', 500', 1000'*
DTT500-1	1	.294"	.015"	100', 500', 1000'*
DTT500-5/16	5/16	.312"	.015"	25', 50', 100', 500', 1000'
DTT500-0	0	.330"	.015"	25', 50', 100', 500', 1000'*
DTT500-⅜	⅜	.390"	.020"	50', 100'*
DTT500-7/16	7/16	.453"	.020"	50', 100'*
DTT500-½	½	.515"	.025"	25', 50', 100'*
DTT500-9/16	9/16	.583"	.025"	25', 50', 100'*
DTT500-⅝	⅝	.640"	.030"	25', 50', 100'*
DTT500-¾	¾	.765"	.030"	25', 50', 100'*
DTT500-⅞	⅞	.895"	.030"	25', 50', 100'*
DTT500-1"	1"	1.025"	.030"	25', 50', 100'*
DTT500-1¼"	1¼"	1.150"	.030"	25', 50', 100'*
DTT500-1¼"	1¼"	1.275"	.030"	25'. 50'. 100'*

*Random Lengths in Coils.

STOCK COLORS AVAILABLE:
Natural, Red, Black, Yellow, Blue, Brown, Green, Orange, Gray, Violet, White.
If No Color Is Specified, Natural Will Be Supplied

SMALL PIECE CUTTING AVAILABLE TO ORDER

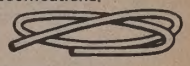
STOCK COLORS: Natural, Red, Black, Blue, Brown, Green, Orange, Yellow, Gray, Violet, White.

Nos. **DTT500-⅜** thru **1¼"** available in Natural. Additional Colors, Sizes Made to Order.

Teflon Tubing can be ordered cut to your specifications.

•

Tracer Colors Available



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We Invite Your Inquiries For Your Special Requirements

•

WIRE — CABLE — TUBING DIVISION

PROPERTIES OF DAFLON 500 & 550 TEFLON TUBING

Continuous Service to	250°C
Low Temperature Flexibility	—90°C
Color Stability	
Dielectric Constant	2.0
Dielectric Strength	500 to 1000 V/MIL
Fungus, Oil, Chemical Corrosion	Completely Inert

DAFLON STANDARD WALL TEFLON® TUBING (DTT-550) MIL-I-22129C Spec.

FOR USE WHERE GREATER MECHANICAL STRENGTH IS INDICATED

DAFLON No.	Nom. Size	Nom. I.D.	Nom. Wall Thickness	Spool or Coil Std. Put-Up
DTT550-24	24	.022"	.012"	100'
DTT550-22	22	.027"	.012"	100'
DTT550-20	20	.034"	.016"	100'
DTT550-19	19	.038"	.016"	100'
DTT550-18	18	.042"	.016"	100'
DTT550-17	17	.047"	.016"	100'
DTT550-16	16	.053"	.016"	100'
DTT550-15	15	.059"	.016"	100'
DTT550-14	14	.066"	.016"	100'
DTT550-13	13	.076"	.016"	100'
DTT550-12	12	.085"	.016"	100'
DTT550-11	11	.095"	.016"	100'
DTT550-10	10	.106"	.016"	100'
DTT550-9	9	.118"	.020"	100'*
DTT550-⅛	⅛	.125"	.020"	100'
DTT550-8	8	.133"	.020"	100'*
DTT550-7	7	.148"	.020"	100'*
DTT550-6	6	.166"	.020"	100'*
DTT550-5	5	.186"	.020"	100'*
DTT550-4	4	.208"	.020"	100'*
DTT550-3	3	.234"	.020"	100'*
DTT550¼	¼	.250"	.020"	100'
DTT550-2	2	.263"	.020"	100'*
DTT550-1	1	.294"	.020"	100'*
DTT550-5/16	5/16	.312"	.020"	100'
DTT550-0	0	.330"	.020"	100'*

STOCK COLORS: Natural
Available All Other Colors.

*Random Lengths in Coils.
Made from Hi Molecular Weight Virgin "TEFLON." TFE-Dupont.

DAFLEX VINYL COATED FIBERGLASS TUBING 130°C
MEETS MIL-I-3190B SPECS (ASTM, NEMA GRADE B-B-1)

DAFLEX 130, Class B, Grade B-1 is recommended for continuous temperatures up to 130°C. Constructed to provide a tough, flexible, heat resistant tubing. Made from an inorganic fiberglass base sleeving with heat resistant coating, extremely flexible tough plastic insulation. Will not support combustion. Meets MIL-I-3190B, NEMA VSI ASTM D372. MIL-I-21557.

DAFLEX No.	Size	Old Daburn No.	Nom. I.D.	Specify Std. Put-Up Spool or Coil
D130-24	24	889	.022"	100', 1000'
D130-22	22	890	.027"	100', 1000'
D130-20	20	891	.034"	25', 100', 1000'
D130-19	19	—	.038"	100', 1000'
D130-18	18	893	.042"	25', 100', 1000'
D130-17	17	—	.047"	100', 1000'
D130-16	16	894	.053"	25', 100', 1000'
D130-15	15	—	.059"	100', 1000'
D130-14	14	895	.066"	25', 100', 500'
D130-13	13	—	.076"	100', 500'
D130-12	12	800	.085"	25', 100', 500'
D130-11	11	—	.095"	100', 500'
D130-10	10	807	.106"	25', 100', 500'
D130-9	9	—	.118"	100', 500'
D130-8	8	801	.133"	25', 100', 500'

The above Cat. No.'s also available in 250' put-up.

DAFLEX No.	Size	Old Daburn No.	Nom. I.D.	Specify Std. Put-Up Spool or Coil
D130-7	7	—	.148"	100', 250'
D130-6	6	802	.166"	100', 250'
D130-5	5	—	.186"	100', 250'
D130-4	4	805	.208"	100', 250'
D130-3	3	—	.234"	100', 250'
D130-2	2	806	.263"	100', 250'
D130-1	1	—	.294"	100', 250'
D130-0	0	803	.330"	100' 250'
D130-⅜"	⅜"	804	.375"	100' 250'
D130-7/16"	7/16"	—	.438"	100' 250'
D130-½"	½"	899	.500"	100' 250'
D130-⅝"	⅝"	896	.625"	100' 250'
D130-¾"	¾"	—	.750"	100' 250'
D130-⅞"	⅞"	—	.875"	100' 250'
D130-1"	1"	—	1.018"	100' 250'

All the Above Tubing Can Be Ordered Cut to Your Specifications

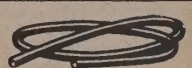
Your Inquiries Invited

COLORS AVAILABLE FROM STOCK

#24 thru #15: Black, Red, Green, Yellow, Brown, Blue
#14 thru #2: Black, Red, Green, Yellow
#1 thru ½": Black, Yellow
#⅝" thru 1": Black

DIMENSIONAL TOLERANCES OF VINYL COATED FIBERGLASS

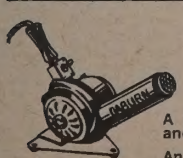
24	.022	.020-.027
22	.027	.025-.032
20	.034	.032-.039
19	.038	.044-.036
18	.042	.040-.049
17	.047	.054-.045
16	.053	.051-.061
15	.059	.067-.057
14	.066	.064-.072
13	.076	.080-.072
12	.085	.081-.089
11	.095	.101-.091
10	.106	.102-.112
9	.118	.124-.114
8	.133	.129-.141
7	.148	.158-.144
6	.166	.162-.178
5	.186	.198-.182
4	.208	.204-.224
3	.234	.249-.229
2	.263	.258-.278
1	.294	.311-.289
0	.330	.347-.325
⅜	.375	.399-.375
7/16	.4375	.462-.438
½	.500	.500-.524
⅝	.625	.625-.655
¾	.750	.786-.750
⅞	.875	.911-.078
1"	1.000	1.036-1.000



PROPERTIES OF DAFLEX 130 VINYL COATED FIBERGLASS
Recommended for Temperatures to
130°C
•
Ins. Resistance
Max. Low Temperature Flexibility
—20°C
•
Over 1,000,000 Megs.
Dielectric Strength
4000 V/MIL
•
Dielectric Constant
7.0
•
Oil Resistance — Excellent
Tensile Strength — Min. (PSI)
1500
•
Ultimate Elongation
350%
•
Non-Flammable
Will not support Combustion, Abrasion, Oil, Chemical Corrosion Resistance
Excellent
•
Fungus Resistance
Good
•
Gamma Radiation Dosage to 25%
10^{9}
•
Degradation ERGS/GRAM
Color Stability even on Prolonged Baking at Elevated Temperatures

Hot Air Gun
FOR DAFLEX SHRINKABLE TUBING
DABURN No.

HG1—For SH265, SH275, SH290 & SH160 Series
HG2—For SH400 & SH621 Series



A flameless heat source; light in weight; portable and/or permanent mounting.

An oven, hot liquids, radiant heat, open flame or soldering iron may also be used for all types of shrinkable tubing with excellent results.

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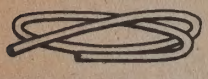
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

LOW TEMPERATURE TUBING

DAFLEX 74 EXTRUDED PLASTIC TUBING

LOW TEMPERATURE PER MIL-SPEC MIL-I-7444B MIL-I-22076B TO −94°C



Low temperature applications at sub-zero. Meets Mil spec. Fungus resistant. 750 V/Mil dielectric strength. Tensile strength 2200 ps. Elongation — 360%

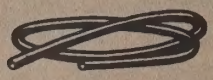
DAFLEX No.	Size	Nom. I.D.	Nom. Wall
D74-24	24	.022"	.012"
D74-22	22	.027"	.012"
D74-20	20	.034"	.016"
D74-19	19	.038"	.016"
D74-18	18	.042"	.016"
D74-17	17	.047"	.016"
D74-16	16	.053"	.016"
D74-15	15	.059"	.016"
D74-14	14	.066"	.016"
D74-13	13	.076"	.016"
D74-12	12	.085"	.016"
D74-11	11	.095"	.016"
D74-10	10	.106"	.016"
D74-9	9	.118"	.020"
D74-8	8	.133"	.020"
D74-7	7	.148"	.020"
D74-6	6	.166"	.020"
D74-5	5	.186"	.020"
D74-4	4	.208"	.020"
D74-3	3	.234"	.020"
D74-2	2	.263"	.020"
D74-1	1	.294"	.020"
D74-0	0	.330"	.020"
D74-3/16	3/16	.312"	.025"
D74-3/8	3/8	.375"	.025"
D74-7/16	7/16	.438"	.025"
D74-1/2	1/2	.500"	.025"
D74-9/16	9/16	.562"	.030"
D74-5/8	5/8	.625"	.030"
D74-3/4	3/4	.750"	.035"
D74-7/8	7/8	.875"	.035"
D74-1"	1"	1.000"	.035"
D74-1 1/4"	1 1/4"	1.250"	.040"
D74-1 3/8"	1 3/8"	1.375"	.040"
D74-1 1/2"	1 1/2"	1.500"	.045"
D74-1 3/4"	1 3/4"	1.750"	.055"
D74-2"	2"	2.000"	.060"
D74-2 1/4"	2 1/4"	2.250"	.065"
D74-2 1/2"	2 1/2"	2.500"	.070"

STNDARD COLOR: CLEAR (NATURAL) ADDITIONAL COLORS AVAILABLE TO ORDER.
STD. PUT-UP: 100 FT., 500 FT., 1000 FT.

FIBERGLASS SLEEVING

DAFLEX 1200–FOR HIGH TEMPERATURE APPLICATIONS TO 1200°F

FLEXIBLE FIBERGLASS SLEEVING



Extremely flexible class H, it is non-flammable and treated for removal of all organic matter. Glass braid is fray resistant. Will provide maximum mechanical strength. Tightly braided. Applicable specs—Nema VSI. Dielectric strength determined by space factor.

DAFLEX No.	Size	Nom. I.D.
D1200-24	24	.022"
D1200-22	22	.027"
D1200-20	20	.034"
D1200-19	19	.038"
D1200-18	18	.042"
D1200-17	17	.047"
D1200-16	16	.053"
D1200-15	15	.059"
D1200-14	14	.066"
D1200-13	13	.076"
D1200-12	12	.085"
D1200-11	11	.095"
D1200-10	10	.106"
D1200-9	9	.118"
D1200-8	8	.133"
D1200-7	7	.148"
D1200-6	6	.166"
D1200-5	5	.186"
D1200-4	4	.208"
D1200-3	3	.234"
D1200-2	2	.263"
D1200-1	1	.294"
D1200-0	0	.330"
D1200-3/16"	3/16"	.387"
D1200-7/16"	7/16"	.450"
D1200-1/2"	1/2"	.512"
D1200-5/8"	5/8"	.640"
D1200-3/4"	3/4"	.768"
D1200-7/8"	7/8"	.893"
D1200-1"	1"	1.018"

STANDARD COLOR: NATURAL. ADDITIONAL COLORS AVAILABLE TO ORDER.
STD. PUT-UP: 100 FT., 500 FT., 1000 FT.

ALL THE ABOVE CAN BE CUT AND MARKED TO YOUR SPECIFICATIONS.

DAFLEX AND DAFLON SHRINKABLE TUBING COMPARATIVE PROPERTIES CHART

DAFLEX AND DAFLON HEAT SHRINKABLE TUBING	Shrinkable Irradiated Polyolefin SH-275	Shrinkable Semi-Rigid Polyolefin SH-290	Shrinkable Vinyl (PVC) In Colors SH-265	Shrinkable Teflon* FEP SH-400	Shrinkable Teflon* TFE SH-621	Shrinkable Neoprene* SH-160
Continuous Operating Temperature	135°C 275°F	135°C 275°C	105°C 220°F	200°C 400°F	250°C 480°F	212°F
Shrinkage Temperature	120°C 250°F	120°C 250°F	95°C 200°F	300°F	327°C 621°F	160°F
Shrinkage Ratio Minimum	2:1 (50%)	2:1 (50%)	2:1 (50%)	1¼:1	1½:1	3:1 (66⅔%)
Longitudinal Change	5%	5%	10%	10 - 20%	10 - 20%	50%
Tensile Strength, PSI Minimum	2400	2600	2000	3000	3000	1500
Ultimate Elongation %	400	400	200	20	200	400
Low Temperature Flexibility	−55°C −67°F	−55°C −67°F	−10°C +14°F	−67°C −85°F	−67°C −85°F	−55°C −67°F
Specific Gravity (ASTM D792)	1.30 Color Tubing 1.0 Clear Tubing	1.26 Color 1.0 Clear	1.40	2.16	2.20	1.40
V/MIL. Minimum Dielectric Strength (ASTM D149)	500	500	700	500	500	400
Water Absorption Maximum (MIL-I-23053)	.1%	.1%	1%	.01%	.01%	1.0%
Fungus Resistance (MIL-I-7444)	Excellent	Excellent	Excellent	Excellent	Excellent	Good
Corrosion (MIL-I-23053)	Non-corrosive	Non-corrosive	2.0% Max. Per MIL-I-631	Non-corrosive	Non-corrosive	Good
Flammability (MIL-I-23053)	Self-Ext.†	Self-Ext.†	Self-Ext.	Non-flammable	Non-flammable	Self-Ext.
Resistance to Soldering Iron	Good	Good	Poor	Excellent	Excellent	Poor
Applicable Specs	MIL-I-23053A MIL-I-7444B ASTM-D-792 ASTM-D-149 ASTM-D-638 ASTM-D-150 ASTM-14-53T ASTM-150-54T MIL. STD. 104 L-P 406 UL E-20344	MIL-I-2353A MIL-I-7444B ASTM-D-792 ASTM-D-149 ASTM-D-638 ASTM-D-150 MIL. STD. 104 UL E-20344	MIL-I-20353A MIL-I-631 ASTM-D-792 ASTM-D-149 ASTM-D-638 ASTM-D-150 MIL. STD. 104 UL E-20344	SH-400	MIL-I-20353A MIL-I-22129C MIL-I-7444B ASTM-D-638 ASTM-D-149 ASTM-D-792 ASTM-D-150 MIL. Std. 104 L-P 406	MIL-I-23053B
Temperature Limits	−67 to +275°F	−67 to +275°F	−25 to +221°F	−275 to +400°F	−275 to +500°F	−67 to 212°F

* Dupont. † Clear tubing is not flame retardant.

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HEAT SHRINKABLE TUBING

SHRINKABLE IRRADIATED POLYOLEFIN TUBING

This series is designed for maximum mechanical strength at stress or points of connection. It is strong and abrasion resistant and is supplied in expanded sizes. It insulates, jackets, splices, encapsulates, weatherproofs components, connectors, cables and irregular shaped objects. When exposed to heat (235°F) the tubing shrinks 50% in diameter,, 5% longitudinal contraction. Controlled shrinkage to exact requirement takes place. Meets or exceeds MIL-I-23053A Class 1 and 2. Available with UL approval. AMS 3636, 3637.

Cat. Nos. Indicate EXPANDED Size. Shrinkage Ratio: 2:1 (50%)

DAFLEX SH-275 All Purpose	DAFLEX SH-290 Semi-Rigid	Equiv. I.D. AWG	Before Shrinkage As Supplied Expand. I.D.	Recovered I.D.	Recovered Nom. Wall*	Standard Package
SH-275-1/16"	SH-290-1/16"	22-20	.063"	.031"	.016"	100', 250'
SH-275-3/32"	SH-290-3/32"	18-16	.093"	.046"	.020"	100', 250'
SH-275-1/8"	SH-290-1/8"	14	.125"	.062"	.020"	100', 250'
SH-275-1/16"	SH-290-1/16"	12-10	.187"	.093"	.020"	100', 250'
SH-275-1/4"	SH-290-1/4"	8	.250"	.125"	.025"	100', 250'
SH-275-5/16"	SH-290-5/16"	6	.312"	.156"	.025"	100', 250'
SH-275-3/8"	SH-290-3/8"	4	.375"	.187"	.025"	100', 250'
SH-275-1/2"	SH-290-1/2"	2	.500"	.250"	.025"	100'
SH-275-3/4"	SH-290-3/4"	3/8	.750"	.375"	.030"	100'
SH-275-1"	SH-290-1"	1/2	1.000"	.500"	.035"	100'
SH275-1 1/2"	SH290-1 1/2"	3/4"	1.500"	.750"	.040"	12'**, 24'**
SH275-2"	SH290-2"	1"	2.000"	1.000"	.045"	12'**, 24'**
SH275-3"	SH290-3"	1 1/2"	3.000"	1.500"	.050"	12'**, 24'**
SH275-4"	SH290-4"	2"	4.000"	2.000"	.055"	12'**, 24'**

STOCK COLORS: Black, White, Red, Clear. Additional colors available. Although processed by hi-energy radiation the **Daflex SH-275** and **SH-290** shrinkable tubings **do not** at any time become radioactive or possess any residual radioactivity. *Wall thickness will be less if recovery is restricted.
**4' lengths.

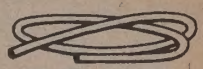
SPECIFICATIONS—All Tests Made on Tubing in Recovered Dimension

Continuous Operating Temp: 135°C	Shrinkage Ratio: 2:1 (50%)
Longitudinal Change: 5% Max.	Dielectric Strength: 500 V/MIL Min.
Tensile Strength: 1500 PSI Min.	Dielectric Constant: 2.87 Max.
Ultimate Elongation: 200% Min.	Corrosive Resistance: Non-Corrosive
Special Gravity: 1.29 Max.	Resistance to Soldering Iron: Excellent
Low Temp. Flexibility (−54°C): No Cracking	Fuel, Oil, Solvent, Acid, Alkali, Hydraulic Fluid Resistance: Excellent

DABURN SHRINKABLE POLYVINYLCHLORIDE ALL PURPOSE

Shrinkage Ratio: 2:1 (50%)

Flexible, shrinks 50% on heat application, less than 10% longitudinal contraction. Suitable for insulating components and cables in varying shapes and diameters. Has a higher resistance to oils than low density polyethylene. Conforms to MIL-I-631D, Type F, Form V, Grade A and C, Class 1 and 2, Cat. 1. Controlled shrinkage on application of heat to predetermined size takes place at temperatures below 200°F (one minute or less). Meets or exceeds MIL-I-23053A, Grade 5.
OPERATING TEMPERATURE: −20° to +105°C.



CAT. NOS. INDICATE EXPANDED SIZE

DAFLEX SH-265	Equiv. I.D. AWG	Before Shrinking As Supplied Expanded I.D.	Max. Recovered I.D.	Recovered Nom. Wall†	Standard Package
SH-265-1/16"	22-20	.063"	.031"	.020"	100', 250'
SH-265-3/32"	18-16	.093"	.046"	.025"	100', 250'
SH-265-1/8"	14	.125"	.062"	.025"	100', 250'
SH-265-3/16"	12-10	.187"	.093"	.025"	100', 250'
SH-265-1/4"	8	.250"	.125"	.025"	100', 250'
SH-265-5/16"	6	.312"	.156"	.025"	100', 250'
SH-265-3/8"	4	.375"	.187"	.025"	100', 250'
SH-265-1/2"	2	.500"	.250"	.025"	25', 100'
SH-265-3/4"		.750"	.375"	.025"	25', 100'
SH-265-1"		1.000"	.500"	.030"	25', 50'
SH-265-1 1/2"		1.500"	.750"	.035"	25', 50'
SH-265-2"		2.000"	1.000"	.040"	25', 50'

COLORS: Black, White, Clear, Red.

PACK ASSORTMENTS

DAFLEX Cat. No.	Lengths Per Pack	Tubing Size
SH-275-PA1	30	1/16" thru 3/16"
SH-275-PA2	16	1/4" thru 3/4"
SH-275-PA3	10	1"

COLORS: Black, White, Clear, Red. Each pack contains an assortment of 6" lengths in mixed sizes and colors (specify).

HEAT SHRINKABLE TEFLON‡ TUBING

DAFLON SH-400 (FEP)

Made with Modified TEFLON* FEP will shrink over inserted objects upon exposure to moderate heat. Heretofore, many joints, parts, components, devices could not be protected because of hi temperature required for shrinkage. FEP TEFLON*, which has a continuous service temperature of 400°F., will shrink at 300°F. Supplied in natural color. Complete shrinkage at 350°F. Now, many heat sensitive products can use the permanent protection of TEFLON.* Will not burn or support flame, long lengths available. Extruded.

DABURN No.	Size	I.D.	Min. Exp. I.D.	Recovered Max. I.D.	Recovered Wall Thickness
SH-400-24	24	.023"	.031"	.027"	.008"
SH-400-22	22	.028"	.036"	.032"	.008"
SH-400-20	20	.034"	.045"	.039"	.008"
SH-400-18	18	.042"	.060"	.049"	.008"
SH-400-16	16	.053"	.075"	.061"	.009"
SH-400-14	14	.066"	.092"	.072"	.009"
SH-400-12	12	.085"	.115"	.089"	.009"
SH-400-10	10	.108"	.141"	.114"	.010"
SH-400-9	9	.118"	.158"	.124"	.010"
SH-400-8	8	.136"	.180"	.143"	.010"
SH-400-7	7	.148"	.197"	.158"	.011"
SH-400-6	6	.170"	.225"	.180"	.011"
SH-400-5	5	.186"	.248"	.198"	.011"
SH-400-4	4	.214"	.290"	.226"	.011"
SH-400-3	3	.234"	.310"	.249"	.011"
SH-400-2	2	.268"	.365"	.280"	.012"
SH-400-1	1	.294"	.400"	.311"	.012"
SH-400-0	0	.336"	.440"	.349"	.012"
SH-400-3/8	3/8"	.375"	.500"	.383"	.015"
SH-400-7/16	7/16"	.437"	.580"	.448"	.020"
SH-400-1/2	1/2"	.500"	.666"	.510"	.020"
SH-400-5/8	5/8"	.625"	.830"	.637"	.025"
SH-400-3/4	3/4"	.750"	1.000"	.764"	.030"
SH-400-7/8	7/8"	.875"	1.170"	.891"	.035"
SH-400-1	1"	1.000"	1.330"	1.020"	.035"

STANDARD PACKAGE: 100 Ft. ‡ DUPONT

DAFLON SHRINK SERIES SH-621

TFE TUBING MIL-I-23053A CLASS 6

Made of modified TEFLON‡ polytetrafluorethylene will shrink when heated to 621°F. Suitable where hi temp protection is required. Extruded. Will not support combustion, dielectric strength (20 Mil Wall) 850 V/M, low temp. brittle point −66°F, superior chemical resistance.

DAFLON No.	Nominal Tubing Size	Minimum Expanded ID	Recovered Dimensions Maximum ID (1)	Recovered Dimensions Wall Thickness (2)
SH-621-26	26	.046"	.022"	.009"
SH-621-24	24*	.050"	.027"	.010"
SH-621-22	22*	.055"	.032"	.010"
SH-621-20	20*	.060"	.039"	.012"
SH-621-19	19	.065"	.043"	.012"
SH-621-18	18*	.076"	.049"	.012"
SH-621-17	17	.085"	.054"	.012"
SH-621-16	16*	.093"	.061"	.012"
SH-621-15	15	.110"	.067"	.012"
SH-621-14	14*	.120"	.072"	.012"
SH-621-13	13	.140"	.080"	.012"
SH-621-12	12*	.150"	.089"	.012"
SH-621-11	11	.170"	.101"	.012"
SH-621-10	10*	.191"	.112"	.012"
SH-621-9	9	.205"	.124"	.015"
SH-621-8	8*	.240"	.141"	.015"
SH-621-7	7	.270"	.158"	.015"
SH-621-6	6*	.302"	.178"	.015"
SH-621-5	5	.320"	.198"	.015"
SH-621-4	4*	.348"	.224"	.015"
SH-621-3	3	.360"	.249"	.015"
SH-621-2	2*	.375"	.278"	.015"
SH-621-1	1	.385"	.311"	.015"
SH-621-0	0*	.400"	.347"	.015"
SH-621-3/8	3/8"*	.560"	.399"	.020"
SH-621-7/16	7/16"*	.655"	.462"	.020"
SH-621-1/2	1/2"*	.750"	.524"	.020"

STANDARD PACKAGE: 100 Feet.
STANDARD PUT-UP: 36" Straight Lengths — One Foot Minimums.
WALL TOLERANCES: 26 thru 22 ± .002; 20 thru 10 ± .003; 9 thru 0 ± .004.
(*) Stock Sizes.

Daburn No. HG1 — Heat Gun for **SH-265, SH-275, SH-290, SH-160** Series.

Daburn No. HG2 — Heat Gun for **SH-400** and **SH-621** Series

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TUBULAR BRAID PER MIL SPEC QQ-B-575

Tinned copper shielded braid mf'd completely round per Mil Spec QQ-B-575. Maintains its round configuration. Shielding coverage is 95% or more. Used in military applications where maximum shielding is required against electrostatic interference. Useful against mechanical abrasion and stresses for cables — as grounding cable.

DABURN No.	Nom. Inside Diam. When Rounded	Construction Total No. of Wires	Carriers	AWG of Indiv. Wires	Approx. AWG Equiv.	Nom. Circular Mils	*Current Carrying Cap.
2350-1/32	1/32"	24	24	#36	#22	640	7.0 amps.
2350-1/16	1/16"	48	24	#36	#19	1,290	11.0 amps.
2350-5/64	5/64"	72	24	#36	#17	1,900	18.0 amps.
2350-7/64	7/64"	96	24	#36	#16	2,500	22.0 amps.
2350-1/8	1/8"	120	24	#36	#15	3,260	28.0 amps.
2350-5/32	5/32"	240	24	#36	#12	6,200	39.0 amps.
2350-11/64	11/64"	168	24	#36	#14	4,500	32.0 amps.
2350-3/16	3/16"	192	24	#36	#13	5,100	35.0 amps.
2350-13/64	13/64"	312	24	#36	#11	8,200	46.0 amps.
2350-1/4	1/4"	384	24	#36	#10	10,400	53.0 amps.
2350-9/32	9/32"	120	24	#30	# 9	12,060	60.0 amps.
2350-3/8	3/8"	384	48	#36	#10	10,400	53.0 amps.
2350-7/16	7/16"	240	24	#30	# 6	24,120	90.0 amps.
2350-1/2	1/2"	528	48	#36	# 9	13,200	70.0 amps.
2350-9/16	9/16"	528	48	#36	# 9	13,200	70.0 amps.
2351-9/16	9/16"	480	48	#30	# 3	48,240	145.0 amps.
2350-11/16	11/16"	720	48	#36	# 7	19,000	82.0 amps.
2350-25/32	25/32"	864	48	#36	# 7	21,750	85.0 amps.
2350-13/16	13/16"	864	48	#36	# 7	21,750	85.0 amps.
2350-7/8	7/8"	336	48	#30	# 5	33,700	100.0 amps.
2350-1	1"	384	48	#30	# 4	38,600	120.0 amps.
2350-1 1/8	1 1/8"	432	48	#30	# 4	43,330	130.0 amps.
2350-1 1/4	1 1/4"	480	48	#30	# 3	48,150	145.0 amps.
2350-1 3/8	1 3/8"	528	48	#30	# 3	53,000	150.0 amps.
2350-1 1/2	1 1/2"	576	48	#30	# 2	57,775	165.0 amps.

STANDARD SPOOL PUT-UP: 50 Ft., 100 Ft., 250 Ft.
Larger Spools Available — Advise.

*Values based on copper in free air at 65°F.
Additional constructions and variations made to order. Also available in silver plated copper, bare copper and stainless steel.

TINNED COPPER SHIELDING — FLAT BRAID

Soft annealed tinned copper woven braid, rolled flat at time of manufacture. It is extremely flexible. Used as battery grounding, bonding strap for aircraft, vehicles, marine equipment. Eliminates ignition interference and moving parts. Slides over wire and cables.

DABURN No.	Size and No. of Wires	I.D. Flat	O.D. Flat	Approx. AWG Equiv.	Nom. Circular Mils	*Current Carrying Cap.
2355-1/32	12 x 2 x 36	1/32"	3/64"	24	400	6.0
2355-3/64	12 x 2 x 36	3/64"	1/16"	22	600	7.0
2355-1/16	16 x 3 x 36	1/16"	5/64"	20	1,200	11.0
2355-1/8	24 x 5 x 36	1/8"	5/32"	18	1,800	16.0
2355-3/16	24 x 5 x 36	3/16"	7/32"	15	3,000	25.0
2355-1/4	24 x 7 x 36	1/4"	9/32"	14	4,200	32.0
2355-3/8	48 x 4 x 36	3/8"	15/32"	12	7,200	46.0
2355-1/2	48 x 7 x 36	1/2"	19/32"	10	9,600	53.0
2355-5/8	48 x 8 x 36	5/8"	23/32"	10	9,600	53.0
2355-3/4	48 x 11 x 36	3/4"	13/16"	7	20,800	85.0
2355-25/32	48 x 19 x 36	25/32"	27/32"	7	20,800	85.0
2355-1	48 x 19 x 36	1"	1 1/16"	7	20,800	85.0
2355-1 3/8	48 x 19 x 36	1 3/8"	1 7/16"	7	33,700	85.0
2355-1 1/2	48 x 19 x 36	1 1/2"	1 5/16"	3	53,064	150.0
2355-1 3/4	48 x 27 x 30	1 3/4"	1 7/8"	00	125,425	280.0
2355-2	48 x 32 x 30	2"	2 1/4"	000	154,368	310.0
2355-2 1/4	48 x 35 x 30	2 1/4"	2 1/2"	000	168,840	320.0
2355-2 1/2	48 x 45 x 30	2 1/2"	2 3/4"	000	192,000	340.0
2355-3	48 x 64 x 30	3"	3 1/4"	0000	225,000	390.0

STANDARD SPOOL PUT-UP: 50 Ft., 100 Ft., 500 Ft., 1000 Ft.

ADDITIONAL CONSTRUCTION AND VARIATIONS MADE TO ORDER.

HEAT SHRINKABLE NEOPRENE* TUBING

This unique tubing meets or exceeds MIL-T-23053B specs. Shrinks down to under 33% of its supplied inside diameter. Upon exposure to heat of 160°F — will remain elastomeric — with no cracks (longitudinal shrinkage 50%). Will protect components, solder joints, terminals, fittings, harnessing and jacketing of wires, medical equipment, etc. Resistant to abrasion, flame, chemicals. Suitable electrical and mechanical properties. Has continuous range of −67° to +212°F. Tubing is self extinguishing when flame is removed. Variety of intermediate recovered sizes. Available expanded sizes: 1/2", 1", 1 1/2", 2".

COLOR: Black. Tubing must be stored below 100°F.

PROPERTIES:

ELECTRICAL
Dielectric Strength: V/M, 400 Min.
Volume Resistivity: OHM/CM, 1×10^{14} Min.

CHEMICAL
Solvent Resistance: Excellent
Corrosion: Good.
Water Absorption: 1.0 Max.
Flammability: Self-Extinguishing in 15 Seconds

PHYSICAL
Elongation: 400% Min.
Temperature Range: −67° to +212°F
Tensile Strength: 1500 PSI Min.
Dielectric Strength: 360 V/M Min.
Heat Resistance: 212°F for 96 Hours — No cracking.
Specific Gravity: 1.40 Max.

HARDNESS
Shore A Durometer: 85 ±5.

HEAT SHOCK
302°F for 4 Hours — No cracking, flowing or dripping.

SH160 HEAT SHRINKABLE NEOPRENE* TUBING — COLOR: BLACK

DABURN No.	Size	Before Shrinking As Supplied Expanded I.D.	RECOVERED DIMENSIONS (After Heating) I.D. Maximum	Wall Thickness
SH160-1/2"	1/2"	.500"	.165"	.035" ±.010"
SH160-1"	1"	1.00"	.330"	.048" ±.010"
SH160-1 1/2"	1 1/2"	1.500"	.495"	.057" ±.010"
SH160-2"	2"	2.00"	.660"	.070" ±.010"

STD. PKGE.: 100 ft. (random lengths — 10 ft. minimum). * Neoprene—Dupont.

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DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

TINNED COPPER WIRE

Pure Electrolytic, Copper, annealed, tinned for quick soldering—Solid Soft Drawn MIL—W—3861 Type S, ASTM—B—33 Specifications, QQ—W—343 Type S

DABURN No.	Size AWG	Area Circ. Mils	O.D.	DABURN No.	Size AWG	Area Circ. Mils	O.D.
2360/4	4	41,704	.204″	2360/18	18	1,624	.040″
2360/6	6	26,250	.162″	2360/20	20	1,022	.033″
2360/8	8	16,510	.129″	2360/22	22	624.4	.025″
2360/10	10	10,380	.103″	2360/24	24	404.0	.020″
2360/12	12	6,530	.082″	2360/26	26	254.1	.016″
2360/14	14	4,107	.065″	2360/28	28	159.8	.013″
2360/16	16	2,583	.051″	2360/30	30	100.5	.010″

STANDARD PUT-UP: 100 Ft., 1000 Ft. See Magnet Wire Section For Additional Sizes

BARE COPPER WIRE (Soft Drawn)

QQ—W—341A SPECIFICATIONS
SOLID

DABURN No.	Size AWG	Area Circular Mils	O.D.
2375/8	8	16,510	.1285″
2375/10	10	10,380	.102″
2375/12	12	6,530	.081″
2375/14	14	4,107	.064″
2375/16	16	2,583	.051″

STANDARD PUT-UP: 100 Ft., 1000 Ft.

SOLID FORMVAR COPPER WIRE

DABURN No.	Size AWG	O.D.
2380/10	10	.103″
2380/12	12	.083″
2380/14	14	.066″

STANDARD PUT-UP: 100 Ft., 150 Ft., 200 Ft., 1000 Ft.

DABURN COPPERWELD WIRE

Bare Copper Welded to Core. 40% Conductivity. Hard Drawn; will not stretch. Used for hi tensile strength.

DABURN No.	Size AWG	Nom. O.D.	DABURN No.	Size AWG	Nom. O.D.
2386/20	20	.033″	2386/12	12	.080″
2386/18	18	.040″	2386/10	10	.102″
2386/16	16	.050″	2386/8	8	.129″
2386/14	14	.064″	2386/6	6	.162″

STANDARD PUT-UP: 500 Ft., 1000 Ft.

BUS BAR WIRE (Hard Drawn)

QQ—W—343 Type S

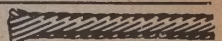
For hooking up all types of transmitters, especially ultra short wave equipment. All bus wire is made of hard drawn copper, tinned, straightened, and cut in 2 ft. lengths.

MIL—W—3861 Types S, ASTM—B—33, ASTM—B—246—51 Specifications

DABURN No.	Nom. Circ. Mil Area	Size	Nom. O.D.
2362/10	10,380	10	.103″
2362/12	6,530	12	.082″
2362/14	4,107	14	.065″
2362/16	2,583	16	.051″
2362/18	1,642	18	.040″
2362/20	1,022	20	.033″
2362/22	624	22	.025″

STANDARD PUT-UP: 100 Per Package in two foot lengths.

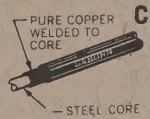
SILICON BRONZE AERIAL WIRE



Especially designed for ships, airports, short wave and transmitting antennas where high tensile strength and resistance to the elements are important.

DABURN No.	Size AWG	Strand	Breaking Strength	O.D.
2364/4	4	7/12	3670 lbs.	.240″
2364/6	6	7/14	2140 lbs.	.190″
2364/8	8	7/16	1600 lbs.	.150″
2364/10	10	7/18	1000 lbs.	.122″
2364/12	12	7/20	650 lbs.	.100″.
2364/14	14	7/22	420 lbs.	.075″

STANDARD PUT-UP: 100 Ft., 500 Ft., 1000 Ft.
2364/10 and **2364/6** meets MIL-W-13074, **2364/12** meets MIL-W-13276 Specs.



COPPERWELD ANTENNA WIRE

Used where high tensile strength is required as for short wave and transmitting aerials. Has low R.F. resistance and is ideal for transmitting doublet and directional antennas. Will maintain frequency characteristics because of its stretchless qualities. 40% conductivity.

DABURN No.	Size AWG	Tensile Strength	O.D.
2382/10	10	1130 lbs.	.103″
2382/12	12	720 lbs.	.082″
2382/14	14	400 lbs.	.065″

STANDARD PUT-UP: 100 Ft., 250 Ft., 500 Ft., 1000 Ft., 2500 Ft.

STRANDED BARE COPPER WIRE

DABURN No.	Size AWG	Strand	O.D.
2366/12	12	7/20	.100″
2366/14	14	7/22	.075″
2366/16	16	7/24	.060″
2366/18	18	7/26	.050″
2366/19	19	7/27	.041″

PUT-UP: 100 Ft., 1000 Ft. Spool.

DABURN MAGNET WIRE — Per MIL-W-583B Spec.

DESCRIPTION: Plain Enamel — Single conductor round bare copper covered with a continuous insulating film of enamel. 105°C, Type T per MIL-W-583B.

DESCRIPTION: Heavy Formvar: — Single conductor round baked copper, baked film insulation from varnish base on a vinyl acetal resin. 105C°C, Type T2 per MIL-W-583B.

DESCRIPTION: Single conductor soft drawn annealed copper tinned per Spec MIL-W-3861 Type S, QQ-W-343 Type S, ASTM-B-33.

PLAIN ENAMEL (PE)

DABURN No.	Size	Nom. O.D.
DPE-10	10	.1037″
DPE-12	12	.0825″
DPE-14	14	.0657″
DPE-16	16	.0522″
DPE-18	18	.0416″
DPE-20	20	.0332″
DPE-22	22	.0266″
DPE-24	24	.0212″
DPE-26	26	.0169″
DPE-28	28	.0135″
DPE-30	30	.0108″
DPE-32	32	.0087″
DPE-34	34	.0069″
DPE-36	36	.0055″
DPE-38	38	.0044″
DPE-40	40	.0034″
DPE-42	42	.0028″
DPE-44	44	.0023″

HEAVY FORMVAR (HF)

DABURN No.	Size	Nom. O.D.
DHF-10	10	.1056″
DHF-12	12	.0842″
DHF-14	14	.0673″
DHF-16	16	.0539″
DHF-18	18	.0432″
DHF-20	20	.0346″
DHF-22	22	.0277″
DHF-24	24	.0224″
DHF-26	26	.0180″
DHF-28	28	.0144″
DHF-30	30	.0116″
DHF-32	32	.0095″
DHF-34	34	.0075″
DHF-36	36	.0060″
DHF-38	38	.0049″
DHF-40	40	.0038″
DHF-42	42	.0032″
DHF-44	44	.0026″

TINNED COPPER (TC)

DABURN No.	Size	Nom. O.D.
DTC-10	10	.103″
DTC-12	12	.082″
DTC-14	14	.065″
DTC-16	16	.051″
DTC-18	18	.040″
DTC-20	20	.033″
DTC-22	22	.025″
DTC-24	24	.020″
DTC-26	26	.016″
DTC-28	28	.013″
DTC-30	30	.010″
DTC-32	32	.008″
DTC-34	34	.006″
DTC-36	36	.005″
DTC-38	38	.004″
DTC-40	40	.003″

STANDARD PUT-UP: ¼ lb., ½ lb., 1 lb., 5 lbs., 10 lbs. **SIZES:** 34, 36. Largest Put-up 5 lbs

SIZES: 38, 40, 42, 44. Largest Put-up 1 lb.

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PER MIL-W-76B PLASTIC HOOK-UP WIRE

300 VOLTS — TYPE LW (Light Wall)

SPEC. MIL-W-76B

CONDUCTOR COLOR CODE PER MIL-W-76B SPEC.								
0-Black	1-Brown	2-Red	3-Orange	4-Yellow	5-Green	6-Blue	7-Violet	8-Gray	9-White

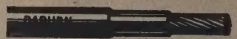
DESCRIPTION: One conductor stranded tinned copper with light wall of primary thermoplastic insulation. Nom. Wall .010".

TEMPERATURE RATING: —40°C to +80°C.

TYPE LW — UNCOVERED VINYL

DABURN Cat. No.	Size AWG	MIL-W-76B Type Designation	Conductor Strand	Nom. O.D.
2585/30	30	LW-C 30(7)U	7/38	.033"
2585/28	28	LW-C 28(7)U	7/36	.035"
2585/26	26	LW-C 26(7)U	7/34	.040"
2585/24	24	LW-C 24(7)U	7/32	.044"
2585/22	22	LW-C 22(7)U	7/30	.050"
2585/20	20	LW-C 20(7)U	7/28	.060"

TEMPERATURE RATING: —40°C to +90°C. Nominal Nylon Jacket Thickness, .002".



TYPE LW — NYLON JACKET

DABURN Cat. No.	AWG Size	MIL-W-76B Type Designation	Conductor Strand	Nom. O.D.
2590/30	30	LW-C 30(7)J	7/38	.036"
2590/28	28	LW-C 28(7)J	7/36	.039"
2590/26	26	LW-C 26(7)J	7/34	.042"
2590/24	24	LW-C 24(7)J	7/32	.047"
2590/22	22	LW-C 22(7)J	7/30	.053"
2590/20	20	LW-C 20(7)J	7/28	.065"

1000 VOLTS — TYPE MW (Medium Wall) — Fungus Proof

SPEC. MIL-W-76B

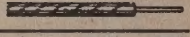
DESCRIPTION: One conductor tinned copper with thermoplastic insulation.

TEMP. RATING: —40°C to +80°C.

TYPE MW — UNCOVERED VINYL STRANDED

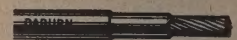
DABURN Cat. No.	Spool	Size AWG	MIL-W-76B Type Designation	Conductor Strand	Nom. Wall	Nom. O.D.
2555/24	1000'	24	MW-C 24(7)U	7/32	.015"	.059"
*2555/22	1000'	22	MW-C 22(7)U	7/30	.017"	.065"
*2555/20	1000'	20	MW-C 20(10)U	10/30	.017"	.074"
*2555/18	1000'	18	MW-C 18(16)U	16/30	.017"	.085"
2555/16	1000'	16	MW-C 16(26)U	26/30	.017"	.096"
2555/14	1000'	14	MW-C 14(41)U	41/30	.017"	.110"
2555/12	1000'	12	MW-C 12(65)U	65/30	.017"	.130"

SOLID



2560/24	1000'	24	MW-C 24(1)U	1	.015"	.056"
2560/22	1000'	22	MW-C 22(1)U	1	.017"	.060"
2560/20	1000'	20	MW-C 20(1)U	1	.017"	.066"
2560/18	1000'	18	MW-C 18(1)U	1	.017"	.074"

TEMPERATURE RATING: —40°C to +90°C.



TYPE MW — NYLON JACKET STRANDED

DABURN Cat. No.	Size AWG	Mil-W-76B Type Designation	Conductor Strand	Nom. Wall	Nom. O.D.
2565/24	24	MW-C 24(16)J	16/36	.015"	.068"
2565/22	22	MW-C 22(7)J	7/30	.017"	.075"
2565/20	20	MW-C 20(10)J	10/30	.017"	.087"
2565/18	18	MW-C 18(16)J	16/30	.017"	.100"
2565/16	16	MW-C 16(26)J	26/30	.017"	.122"
2565/14	14	MW-C 14(41)J	41/30	.017"	.122"
2565/12	12	MW-C 12(65)J	65/30	.017"	.140"
2565/10	10	MW-C 10(105)J	105/30	.045"	.240"

STD. PUT-UP 2565 SERIES: 100 Ft.-1000 Ft. **STD. PUT-UP 2555 & 2560 SERIES:** 100', 500', 1000'.

NYLON JACKET THICKNESS: #24 .002; 22, 20, 18 .003; 16, 14 .004; 12 .005; 10 .007.

STOCK COLORS, Type MW: White, Orange, Purple, Black, Yellow, Gray, Brown, Green, Red, Blue, Tan, Pink, Lt. Blue, Lt. Green. White/Black, White/Brown, White/Red, White/Orange, White/Yellow, White/Green, White/Blue, White/Purple, White/Gray. Additional spiral tracer combinations available.

Nos. 2565/12 and /10 available from stock, solid colors only.

GLASS BRAID PER SPEC. MIL-W-76B

DESCRIPTION: One conductor stranded tinned copper with thermoplastic insulation and lacquered glass braid overall.

GLASS BRAID — TYPE HW (Heavy Wall)

TEMPERATURE RATING: —40°C to +80°. **NOM WALL: .045"**

DABURN Cat. No.	Spool	Size AWG	MIL-W-76B Type Designation	Conductor Strand	Nom. O.D.
2575/10	100'-1000'	10	HW-C 10(105)B	105/30	.237"
2575/8	100'-1000'	8	HW-C 8(133)B	133/29	.293"
2575/6	100'-1000'	6	HW-C 6(133)B	133/27	.340"

STOCK COLORS: White, Black.

ALSO multi-conductors can be formed to order twisted, shielded with or without plastic jacket overall.

GLASS BRAID — 1000 VOLTS — TYPE MW (Medium Wall)

TEMPERATURE RATING: —40°C to +80°C. **NOM. WALL: .017"**

DABURN Cat. No.	Spool	Size AWG	MIL-W-76B Type Designation	Conductor Strand	Nom. O.D.
2570/22	100'-1000'	22	MW-C 22(7)B	7/30	.079"
2570/20	100'-1000'	20	MW-C 20(10)B	10/30	.084"
2570/18	100'-1000'	18	MW-C 18(16)B	16/30	.100"
2570/16	100'-1000'	16	MW-C 16(26)B	26/30	.116"
*2570/14	100'-1000'	14	MW-C 14(41)B	41/30	.129"
*2570/12	100'-1000'	12	MW-C 12(65)B	65/30	.149"

STOCK COLORS: White, Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White/Brown, White/Black, White/Orange, White/Yellow, White/Green, White/Blue, White/Red, White/Gray, White/Purple. Additional color combinations available.

*Nos. 2570/14 and /12, available stock in solid colors.

2500 VOLTS (Fungus Proof) — TYPE HW (Heavy Wall)

SPEC MIL-W-76B

600 VOLTS: Sizes 14 through 6 — (Supersedes Jan-C-76 Type SRHV).
TEMP. RATING: —40°C to 80°C. NOM. WALL SIZE: 22 through 16 .033: Size 14 through 6 .045

DESCRIPTION: Similar to type MW. One conductor stranded tinned copper with larger walls of primary thermoplastic insulation to take 2500 V RMS.

DABURN No.	Size AWG	Mil-W-76B Type Designation	Conductor Strand	Nom. O.D.
2580/22	22	HW-C 22(7)U	7/30	.092"
2580/20	20	HW-C 20(10)U	10/30	.100"
2580/18	18	HW-C 18(16)U	16/30	.112"
2580/16	16	HW-C 16(26)U	26/30	.126"
2580/14	14	HW-C 14(41)U	41/30	.170"

No. DABURN	AWG Size	Type Designation Mil-W-76B	Strand Conductor	O.D. Nom.
2580/12	12	HW-C 12(65)U	65/30	.186"
2580/10	10	HW-C 10(105)U	105/30	.210"
2580/8	8	HW-C 8(133)U	133/29	.260"
2580/6	6	HW-C 6(133)U	133/27	.305"

STD. PUT-UP: 100-1000 Ft.

STOCK COLORS: White, Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, Additional sizes, colors available to order.

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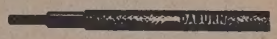
SHIELDED PLASTIC HOOK-UP WIRE

1000 VOLT — TYPE MW (Medium Wall) SHIELDED — SPEC. MIL-W-76B
TEMPERATURE RATING −40°C TO +80°C

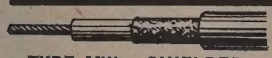
DESCRIPTION: One conductor stranded tinned copper with thermoplastic insulation and tinned copper shielded braid overall.



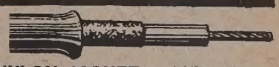
DABURN Cat. No.	Size AWG	MIL-W-76B Type Designation	Strand	Nom. Wall	Nom. O.D.
2592/24	24	MW-C24(7)S	7/32	.015″	.074″
2593	24	MW-C24(16)S	16/36	.015″	.075″
2592/22	22	MW-C22(7)S	7/30	.017″	.084″
2592/20	20	MW-C20(10)S	10/30	.017″	.094″
2592/18	18	MW-C18(16)S	16/30	.017″	.106″
2592/16	16	MW-C16(26)S	26/30	.017″	.121″
2592/14	14	MW-C14(41)S	41/30	.017″	.137″
2592/12	12	MW-C12(65)S	65/30	.017″	.155″

STOCK COLORS: (Underneath Shield) Black, White, Red, Yellow, Brown, Green, Blue, Gray. Nos. 2592/14 and /12, available from stock in Black, White or Red.
STANDARD PUT-UP: 100 Ft., 500 Ft., 1000 Ft.

Also multiconductors can be formed to order twisted shielded, with or without plastic Jacket overall.



SHIELDED PLASTIC HOOK-UP WIRE



TYPE MW — SHIELDED — VINYL JACKET — 1000 V SPEC. MIL-W-76B

DESCRIPTION: One conductor stranded tinned copper, white medium wall polyvinyl chloride insulation, shielded tinned copper braid, minimum 80% coverage, PVC (polyvinylchloride) jacket overall. Resistant to acids, alkalis, oil, flame, moisture, fungus.
TEMPERATURE RATING: −40°C to +90°C.

DABURN Cat. No.	Size AWG	MIL-W-76A Type Designation	Min. Strand	Nom. Wall	Nom. O.D.
2597/24	24	MW-C24(7)SJ	7/32	.015″	.095″
2597/22	22	MW-C22(7)SJ	7/30	.017″	.105″
2597/20	20	MW-C20(7)SJ	7/28	.017″	.112″
2597/18	18	MW-C18(19)SJ	19/30	.017″	.120″
2597/16	16	MW-C16(19)SJ	19/29	.017″	.133″
2597/14	14	MW-C14(19)SJ	19/27	.017″	.148″
2597/12	12	MW-C12(19)SJ	19/25	.017″	.170″

Additional colors available to order.
STANDARD PUT-UP: 100 Ft., 500 Ft. 1000 Ft.

TYPE MW — SHIELDED — NYLON JACKET — 1000 V SPEC. MIL-W-76B

DESCRIPTION: One conductor stranded tinned copper, white medium wall polyvinyl chloride insulation, shielded tinned copper braid, minimum 80% coverage, clear nylon (polymide) jacket overall. Resistant to acids, alkalis, oil, flame, moisture, fungus.
TEMPERATURE RATING: −40°C to +90°C.

DABURN Cat. No.	Size AWG	MIL-W-76A Type Designation	Min. Strand	Nom. Wall	Nom. O.D.
2595/24	24	MW-C24(7)SJ	7/32	.015″	.091″
2595/22	22	MW-C22(7)SJ	7/30	.017″	.100″
2595/20	20	MW-C20(7)SJ	7/28	.017″	.105″
2595/18	18	MW-C18(19)SJ	19/30	.017″	.115″
2595/16	16	MW-C16(19)SJ	19/29	.017″	.125″
2595/14	14	MW-C14(19)SJ	19/29	.017″	.138″
2595/12	12	MW-C12(19)SJ	19/25	.017″	.160″

Additional colors available to order.
STANDARD PUT-UP: 100 Ft., 500 Ft., 1000 Ft.

MIL-W-16878D — SHIELDED PLASTIC HOOK-UP WIRE

1000 VOLTS — TYPE C — SHIELDED SPEC. MIL-W-16878D

DESCRIPTION: Stranded tinned copper, .016″ wall white polyvinylchloride insulation, braided tinned copper shield overall temp. rating −55°C to +105°C 1000 volts.

DABURN Cat. No.	Size AWG	Min. Strand	Nom. Wall	Nom. O.D.
2530/24	24	7/32	.016″	.075″
2530/22	22	7/30	.016″	.085″
2530/20	20	7/28	.016″	.095″
2530/18	18	7/26	.016″	.105″
2530/16	16	19/26	.016″	.115″
2530/14	14	19/27	.016″	.140″
2530/12	12	19/25	.016″	.152″

STD. PUT-UP: 1000 Ft.

1000 VOLTS — TYPE C SHIELDED WITH VINYL JACKET — SPEC. MIL-W-16878D

DESCRIPTION: Stranded tinned copper, .016″ wall white with polyvinylchloride insulation braided tinned copper shield with polyvinylchloride jacket overall. Resistant to acids, oils, alkalies, flame, fungus, solvents, moisture.
TEMPERATURE RATING: −55°C to +105°C.

DABURN No.	Size AWG	Min. Strand	Nom. Wall	Nom. O.D.
2535/24	24	7/32	.016″	.094″
2535/22	22	7/30	.016″	.104″
2535/20	20	7/28	.016″	.112″
2535/18	18	7/26	.016″	.120″
2535/16	16	19/29	.016″	.133″
2535/14	14	19/27	.016″	.150″
2535/12	12	19/25	.016″	.165″

STD. PUT-UP: 1000 Ft.

1000 VOLTS — TYPE C SHIELDED NYLON JACKET SPEC. MIL-W-16878D

DESCRIPTION Stranded tinned copper .016″ wall polyvinylchloride insulation, braided tinned copper shield, 90% coverage, clear nylon (polyamide) jacket overall. Nylon nominal jacket thickness .005″.
TEMPERATURE RATING: −55°C to +115°C.

DABURN No.	Size AWG	Min. Strand	Nom. Wall	Nom. O.D.
2533/24	24	7/32	.016″	.090″
2533/22	22	7/30	.016″	.096″
2533/20	20	7/28	.016″	.105″
2533/18	18	7/26	.016″	.115″
2533/16	16	19/29	.016″	.125″
2533/14	14	19/27	.016″	.145″
2533/12	12	19/25	.016″	.157″

STD. PUT-UP: 1000 Ft.

MULTI-CONDUCTOR CABLE TYPE B NYLON SHIELDED-PLASTIC JACKET PER MIL-W-16878D — 600 V

DESCRIPTION: One or more conductors stranded tinned copper, PVC insulation, color coded, clear nylon (polyamide) jacket, cabled conductors, 90% coverage braided tinned copper, white polyvinylchloride jacket overall.

TEMPERATURE RATING: −55°C to +105°C. Voltage rating 600 volts. Resistant to acids, alkalis, flame, fungus, oil, moisture, solvents.

DABURN Cat. No.	No. of Cond.	Size	Strand	Nom. Wall	Nom. Nylon Wall	Nom. Overall Jacket	Nom. O.D.
2540	1	26	7/34	.010″	.003″	.010″	.087″
2540/2	2	26	7/34	.010″	.003″	.014″	.138″
2540/3	3	26	7/34	.010″	.003″	.014″	.142″
2540/4	4	26	7/34	.010″	.003″	.016″	.162″
2541	1	24	19/36	.010″	.003″	.010″	.092″
2541/2	2	24	19/36	.010″	.003″	.016″	.152″
2541/3	3	24	19/36	.010″	.003″	.016″	.161″
2541/4	4	24	19/36	.010″	.003″	.017″	.162″
2542	1	22	19/34	.010″	.003″	.010″	.100″
2542/2	2	22	19/34	.010″	.003″	.016″	.168″
2542/3	3	22	19/34	.010″	.003″	.017″	.178″
2542/4	4	22	19/34	.010″	.003″	.019″	.174″
2543	1	20	19/32	.010″	.003″	.010″	.106″
2543/2	2	20	19/32	.010″	.003″	0.19″	.186″
2543/3	3	20	19/32	.010″	.003″	.019″	.196″
2543/4	4	20	19/32	.010″	.003″	.021″	.193″
2544	1	18	19/30	.010″	.003″	.012″	.120″
2544/2	2	18	19/30	.010″	.003″	.021″	.210″
2544/3	3	18	19/30	.010″	.003″	.022″	.227″
2544/4	4	18	19/30	.010″	.003″	.023″	.218″
2545	1	16	19/29	.010″	.003″	.016″	.137″
2545/2	2	16	19/29	.010″	.003″	.023″	.236″
2545/3	3	16	19/29	.010″	.003″	.023″	.240″
2545/4	4	16	19/29	.010″	.003″	.025″	.275″

STD. PUT-UP: 500 Ft., 1000 Ft. **CONDUCTOR COLOR CODE:** 1-White, 2-Black, 3-Red, 4-Green. Additional sizes, conductors - variations - available to order.

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DABURN

DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

PLASTIC HOOK-UP WIRE

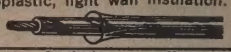
TYPE B — HIGH TEMPERATURE VINYL 600 VOLT — PER MIL-W-16878D

DESCRIPTION: One conductor stranded tinned copper, with −55°C to +105°C rated high temperature thermoplastic, light wall insulation.

TYPE B — UNCOVERED VINYL

DABURN Cat. No.	Mil-W-16878D Type Designation	Size AWG	Conductor Strand	Nom. O.D.
2500/32	B-32	32	7/40	.028″
2500/30	B-30	30	7/38	.030″
2500/28	B-28	28	7/36	.033″
2500/26	B-26	26	7/34	.037″
2500/24	B-24	24	7/32	.043″
2501/24	B-24	24	19/36	.043″
2500/22	B-22	22	7/30	.048″
2501/22	B-22	22	19/34	.048″
2500/20	B-20	20	7/28	.057″
2501/20	B-20	20	19/32	.057″
2500/18	B-18	18	7/26	.067″
2501/18	B-18	18	19/30	.067″
2500/16	B-16	16	19/29	.077″
2500/14	B-14	14	19/27	.091″

STD. PUT-UP: 100 Ft.-1000 Ft.



TYPE B — NYLON JACKET

DABURN Cat. No.	Mil-W-16878D Type Designation	Size AWG	Conductor Strand	Nom. O.D.
2510/32	B-32	32	7/40	.032″
2510/30	B-30	30	7/38	.036″
2510/28	B-28	28	7/36	.039″
2510/26	B-26	26	7/34	.042″
2510/24	B-24	24	7/32	.047″
2511/24	B-24	24	19/36	.047″
2510/22	B-22	22	7/30	.053″
2511/22	B-22	22	19/34	.053″
2510/20	B-20	20	7/28	.065″
2511/20	B-20	20	19/32	.065″
2510/18	B-18	18	7/26	.075″
2511/18	B-18	18	19/30	.075″
2510/16	B-16	16	19/29	.085″
2510/14	B-14	14	19/27	.099″

STD. PUT-UP: 100 Ft., 1000 Ft. **NYLON JACKET THICKNESS:** 32-20 .002, 18-16 .003

STOCK COLORS: Black, Red, Brown, Blue, Orange, White, Yellow, Green, Gray, Purple, White/Black, White/Red, White/Green, White/Yellow, White/Blue, White/Brown, White/Orange, White/Gray, White/Violet.

TYPE C — HIGH TEMPERATURE VINYL 1000 VOLT

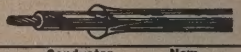
SPECIFICATION MIL-W-16878D

DESCRIPTION: One conductor similar to Type B — Heavier wall Hi-Temp. Thermoplastic insulation. Nom. wall .016″.

TYPE C — UNCOVERED VINYL

DABURN Cat. No.	Mil-W-16878D Type Designation	Size AWG	Minimum Strand	Nom. O.D.
2515/24	C-24	24	7/32	.058″
2515/22	C-22	22	7/30	.064″
2515/20	C-20	20	7/28	.079″
2515/18	C-18	18	7/26	.090″
2515/16	C-16	16	19/29	.099″
2515/14	C-14	14	19/27	.114″
2515/12	C-12	12	19/25	.135″

STD. PUT-UP: 100 Ft., 1000 Ft.



TYPE C — NYLON JACKET

DABURN Cat. No.	Mil-W-16878D Type Designation	Size AWG	Conductor Strand	Nom. O.D.
2520/24	C-24	24	7/32	.065″
2520/22	C-22	22	7/30	.064″
2520/20	C-20	20	7/28	.079″
2520/18	C-18	18	7/26	.090″
2520/16	C-16	16	19/29	.099″
2520/14	C-14	14	19/27	.114″
2520/12	C-12	12	19/25	.135″

STD. PUT-UP: 100 Ft., 1000 Ft. **NYLON JACKET THICKNESS:** 24 .002, 22-18, .003, 16-14 .004

STOCK COLORS: Black, Red, Brown, Blue, Orange, White, Yellow, Green, Gray, Purple. Also available in tracer colors.

TYPE D — HIGH TEMPERATURE VINYL 3000 VOLT

SPECIFICATION MIL-W-16878D

DESCRIPTION: One conductor stranded tinned copper similar to Type C — Heavier wall Hi-Temp. thermoplastic insulation. Nom. wall: 24 thru 14 .032″, 12 thru 6 .040″, 4 thru 2 .045″.

TYPE D — UNCOVERED VINYL

DABURN Cat. No.	Mil-W-16878D Type Designation	Size AWG	Conductor Strand	Nom. O.D.
2525/24	D-24	24	7/32	.084″
2525/22	D-22	22	7/32	.089″
2525/20	D-20	20	10/30	.097″
2525/18	D-18	18	16/30	.107″
2525/16	D-16	16	26/30	.116″
2525/14	D-14	14	41/30	.130″
2525/12	D-12	12	65/30	.163″
2525/10	D-10	10	105/30	.182″
2525/8	D- 8	8	133/29	.247″
2525/6	D- 6	6	133/27	.291″
2525/4	D- 4	4	133/25	.355″
2525/2	D- 2	2	665/30	.425″

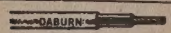
STD. PUT-UP: 100 Ft.-1000 Ft.

TYPE D — NYLON JACKET

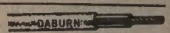
DABURN Cat. No.	Mil-W-16878D Type Designation	Size AWG	Conductor Strand	Nom. O.D.
2525N/24	D-24	24	7/32	.090″
2525N/22	D-22	22	7/30	.096″
2525N/20	D-20	20	10/30	.104″
2525N/18	D-18	18	16/30	.114″
2525N/16	D-16	16	26/30	.125″
2525N/14	D-14	14	41/30	.139″
2525N/12	D-12	12	65/30	.168″
2525N/10	D-10	10	105/30	.197″
2525N/8	D- 8	8	133/29	.265″
2525N/6	D- 6	6	133/27	.310″

STD. PUT-UP: 100 Ft., 1000 Ft. Nylon Jacket; Clear Polymide.

ALL THE ABOVE CAN BE ORDERED CUT AND STRIPPED TO YOUR SPECIFICATIONS.



AIRCRAFT PLASTIC HOOK-UP WIRE



SPECIFICATIONS MIL-W-5086A and MIL-C-7078A (105°C Rating)

DESCRIPTION: Type 1 MIL-W-5086A — one conductor stranded tinned copper with plastic insulation nylon jacket overall. **Type 2 Mil-W-5086A** — one conductor stranded tinned copper, plastic insulation, nylon lacquered glass braid. Color: White. Additional colors available to order.

MIL-W-5086A UNSHIELDED (Supersedes AN-J-C-48A) — 600 V RATING

DABURN Cat. No.	Mil. Type	Type	Conductor Strand.	Nom. O.D.
2601/22	AN-22	No. 1	19/34	.070″
2601/20	AN-20	No. 1	19/32	.080″
2601/18	AN-18	No. 1	19/30	.090″
2601/16	AN-16	No. 1	19/29	.100″
2601/14	AN-14	No. 1	19/27	.120″
2601/12	AN-12	No. 1	19/25	.140″
2602/22	AN-22	No. 2	19/34	.068″
2602/20	AN-20	No. 2	19/32	.078″
2602/18	AN-18	No. 2	19/30	.088″
2602/16	AN-16	No. 2	19/29	.098″
2602/14	AN-14	No. 2	19/27	.117″
2602/12	AN-12	No. 2	19/25	.137″
2602/10	AN-10	No. 2	49/27	.189″
2602/8	AN-8	No. 2	133/29	.240″
2602/6	AN-6	No. 2	133/27	.297″
2602/4	AN-4	No. 2	133/25	.355″
2602/2	AN-2	No. 2	665/30	.412″
2602/0	AN-0	No. 2	1045/30	.518″
2602/00	AN-00	No. 2	1330/30	.588″

STANDARD PUT-UP: 100 Ft., 1000 Ft.

MIL-C-7078A SHIELDED (Supersedes AN-C-168) 600 V RATING

DESCRIPTION: One conductor stranded tinned copper with plastic insulation, nylon jacket with tinned copper shielded braid overall. Color: White under shield. Additional types to order.

DABURN Cat. No.	Size AWG	Mil. Type	Type	Conductor Strand.	Nom. O.D.
2605/22	22	AN-22	No. 1	19/34	.100″
2605/20	20	AN-20	No. 1	19/32	.110″
2605/18	18	AN-18	No. 1	19/30	.124″
2605/16	16	AN-16	No. 1	19/29	.139″
2605/14	14	AN-14	No. 1	19/27	.158″
2605/12	12	AN-12	No. 1	19/25	.177″

STANDARD PUT-UP: 100 Ft., 1000 Ft.

ALL WIRE ON THIS PAGE CAN BE CUT AND STRIPPED TO YOUR SPECIFICATION.

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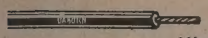
DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

TEFLON* WIRE
TYPE E — 600 VOLTS



SPEC. MIL-W-16878D

High Temperature Rating −90°C to +250°C

Single conductor, stranded silver plated copper, .010" TFE Teflon® insulation. Acid, alkalis, oil, flame, moisture, fungus, solvent resistant.

DABURN Extruded Cat. No.	DABURN Wrapped Cat. No.	Size MIL Type Designation	Strand	Max. Dia. Over Insul.
2401	—	E-32	7/40	.033"
2402	—	E-30	7/38	.036"
2403	2415/28	E-28	7/36	.039"
2404	2415/26	E-26	7/34	.043"
2405	2415/24	E-24	19/36	.048"
2405-7	—	E-24	7/32	.048"
2406	2415/22	E-22	19/34	.054"
2406-7	—	E-22	7/30	.054"
2407	2415/20	E-20	19/32	.062"
2407-7	—	E-20	7/28	.062"
2408	2415/18	E-18	19/30	.074"
2409	2415/16	E-16	19/29	.079"
2409/14	—	E-14	19/27	.097"
2409/12	—	E-12	19/25	.120"
2409/10	—	E-10	37/26	.139"

STD. PUT-UP: 100 Ft., 500 Ft., 1000 Ft. **Solid conductors available.**

COLORS: Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White, White/Black, White/Red, White/Green, White/Yellow, White/Blue, White/Brown, White/Orange, White/Gray, White/Violet.

Additional special custom construction available to order.

TEFLON* WIRE

MIL-W-16878D — TYPE EE
Extruded (1000 Volts) MIL-W-16878D

DESCRIPTION: Single conductor silver plated copper wire concentrically stranded and insulated with .016 TFE extruded TEFLON* insulation.

TEMPERATURE RATING: −90°C to +260°C, 1000 volts.

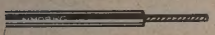
DABURN Cat. No.	Mil Type Designation	Size AWG	Strand	Nom. O.D.
2428/24	EE-24	24	19/36	.055"
2428/22	EE-22	22	19/34	.062"
2428/20	EE-20	20	19/32	.070"
2428/18	EE-18	18	19/30	.080"
2428/16	EE-16	16	19/29	.089"
2428/14	EE-14	14	19/27	.106"
2428/12	EE-12	12	19/25	.124"
2428/10	EE-10	10	37/26	.145"
2428/8 (wrapped)	EE-8	8	133/29	.210"

STANDARD SPOOL PUT-UP: 250 Ft., 500 Ft., 1000 Ft. Solid conductors available.

STOCK COLORS: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow, 6—Blue, 7—Brown, 8—Orange, 9—Gray (Slate), 10—Violet (Purple).

SUBMINIATURE TEFLON* HOOK-UP WIRE

PER MIL-W-16878D — TYPE ET — 250 VOLTS, 200°C



Thin miniature hook-up wire is suitable in miniature slip ring assemblies, as interconnecting wire between wafers in microminiature electronic circuitry, instrument wire, medical wire, subminiature thermo-couple lead wire, strain gauge wire, etc. Provides lighter weight, greater flexibility and hi temperature resistance. Size Nos. 32 thru 20 conform to MIL-W-16878D type ET 250 volts, 200°C. Silver plated copper conductor.

DABURN Cat. No.	Mil Type	AWG Size	Min. Strand	Nom. O.D.
2427/36	—	36	7/44	.018"
2427/34	—	34	7/42	.020"
2427/32	ET-32	32	7/40	.021"
2427/30	ET-30	30	7/38	.024"
2427/28	ET-28	28	7/36	.027"
2427/26	ET-26	26	7/34	.031"
2427/24	ET-24	24	7/32	.036"
2427/22	ET-22	22	7/30	.042"
2427/20	ET-20	20	7/28	.049"

STANDARD SPOOL PUT-UPS: 500 Ft., 1000 Ft.

TEFLON* TFE AIRFRAME LEAD WIRE MIL-W-7139B

CLASS 1: 600V Silver Coated Copper Conductor for −65 to +200°C Operation.

CLASS 2: 600V Nickel Coated Copper Conductor for +260°C Operation.

DABURN Cat. No. Class 1	DABURN Cat. No. Class 2	Size AWG	Strand	Nom. O.D.
2426-22	2425-22	22	19/34	.085"
2426-20	2425-20	20	19/32	.095"
2426-18	2425-18	18	19/30	.110"
2426-16	2425-16	16	19/29	.130"
2426-14	2425-14	14	19/27	.143"
2426-12	2425-12	12	19/25	.163"

STANDARD SPOOL PUT-UPS: 500 Ft., 1000 Ft.

STANDARD COLOR: Class: 1 — White/Blue Tracer; Class 2 — White/Orange Tracer. ADDITIONAL SIZES AVAILABLE.

*TEFLON—Dupont

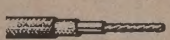
INSTRUMENTATION CABLES

TEFLON* CABLES — Shielded and Unshielded
TO MIL-W-16878D

DESCRIPTION: One or more conductors, each conductor silver plated concentrically stranded copper wire, Type E Extruded TFE .010" insulation. When shielded, braided silver plated copper shield over conductor(s), 90% shield coverage. When covered, either a TEFLON* impregnated fiberglass braid or a .010" TEFLON* fused, double reversed tape jacket overall. Fungus, solvent, moisture, flame, acid, alkali and oil resistant Multiconductors are twisted.

TEMPERATURE RATING: −65°C to +260°C. **VOLTAGE RATING:** 600 Volts

TEFLON* IMPREGNATED BRAID OVER SHIELD



Daburn No.	Conds.	AWG Size	Strand	Nom. O.D.	Daburn No.	Conds.	AWG Size	Strand	Nom. O.D.
2444	1	26	7/34	.075"	2447	1	20	19/32	.093"
2444/2	2	26	7/34	.119"	2447/2	2	20	19/32	.154"
2445	1	24	19/36	.081"	2447/3	3	20	19/32	.163"
2445/2	2	24	19/36	.126"	2447/4	4	20	19/32	.180"
2445/3	3	24	19/36	.133"	2447/5	5	20	19/32	.195"
2445/4	4	24	19/36	.144"	2448	1	18	19/30	.097"
2445/5	5	24	19/36	.156"	2448/2	2	18	19/30	.162"
2446	1	22	19/34	.088"	2448/3	3	18	19/30	.172"
2446/2	2	22	19/34	.137"	2448/4	4	18	19/30	.192"
2446/3	3	22	19/34	.144"	2448/5	5	18	19/30	.207"
2446/4	4	22	19/34	.158"	2449	1	16	19/29	.117"
2446/5	5	22	19/34	.172"	2449/2	2	16	19/29	.196"

STANDARD SPOOL PUT-UPS: 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow.

TEFLON* TAPE WRAP JACKET OVER SHIELD

Daburn No.	Conds.	AWG Size	Strand	Nom. O.D.	Daburn No.	Conds.	AWG Size	Strand	Nom. O.D.
2454	1	26	7/34	.078"	2457	1	20	19/32	.099"
2454/2	2	26	7/34	.125"	2457/2	2	20	19/32	.158"
2455	1	24	19/36	.084"	2457/3	3	20	19/32	.167"
2455/2	2	24	19/36	.128"	2457/4	4	20	19/32	.184"
2455/3	3	24	19/36	.135"	2457/5	5	20	19/32	.204"
2455/4	4	24	19/36	.148"	2458	1	18	19/30	.109"
2455/5	5	24	19/36	.162"	2458/2	2	18	19/30	.178"
2456	1	22	19/34	.090"	2458/3	3	18	19/30	.189"
2456/2	2	22	19/34	.140"	2458/4	4	18	19/30	.208"
2456/3	3	22	19/34	.148"	2458/5	5	18	19/30	.230"
2456/4	4	22	19/34	.162"	2459	1	16	19/29	.130"
2456/5	5	22	19/34	.183"	2459/2	2	16	19/29	.230"

STANDARD SPOOL PUT-UPS: 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow.

SHIELDED BRAID OVERALL

Daburn Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.	Daburn Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.
2434	1	26	7/34	.066"	2437	1	20	19/32	.082"
2434/2	2	26	7/34	.104"	2437/2	2	20	19/32	.142"
2435	1	24	19/36	.068"	2437/3	3	20	19/32	.151"
2435/2	2	24	19/36	.112"	2437/4	4	20	19/32	.168"
2435/3	3	24	19/36	.120"	2437/5	5	20	19/32	.180"
2435/4	4	24	19/36	.132"	2438	1	18	19/30	.093"
2435/5	5	24	19/36	.140"	2438/2	2	18	19/30	.162"
2436	1	22	19/34	.075"	2438/3	3	18	19/30	.172"
2436/2	2	22	19/34	.124"	2438/4	4	18	19/30	.191"
2436/3	3	22	19/34	.132"	2438/5	5	18	19/30	.210"
2436/4	4	22	19/34	.146"	2439	1	16	19/29	.103"
2436/5	5	22	19/34	.154"	2439/2	2	16	19/29	.184"

STANDARD SPOOL PUT-UPS: 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow.

NO SHIELD—TEFLON* IMPREGNATED FIBERGLASS OVERALL

Daburn Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.	Daburn Cat. No.	Conds.	AWG Size	Strand	Nom. O.D.
2464	1	26	7/34	.040"	2467	1	20	19/32	.058"
2464/2	2	26	7/34	.080"	2467/2	2	20	19/32	.118"
2465	1	24	19/36	.044"	2467/3	3	20	19/32	.127"
2465/2	2	24	19/36	.088"	2467/4	4	20	19/32	.144"
2465/3	3	24	19/36	.096"	2467/5	5	20	19/32	.156"
2465/4	4	24	19/36	.108"	2468	1	18	19/30	.069"
2465/5	5	24	19/36	.116"	2468/2	2	18	19/30	.138"
2466	1	22	19/34	.051"	2468/3	3	18	19/30	.148"
2466/2	2	22	19/34	.100"	2468/4	4	18	19/30	.167"
2466/3	3	22	19/34	.108"	2468/5	5	18	19/30	.186"
2466/4	4	22	19/34	.122"	2469	1	16	19/29	.086"
2466/5	5	22	19/34	.131"	2469/2	2	16	19/29	.172"

STANDARD SPOOL PUT-UPS: 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green, 5—Yellow.
Special cable constructions and colors available.

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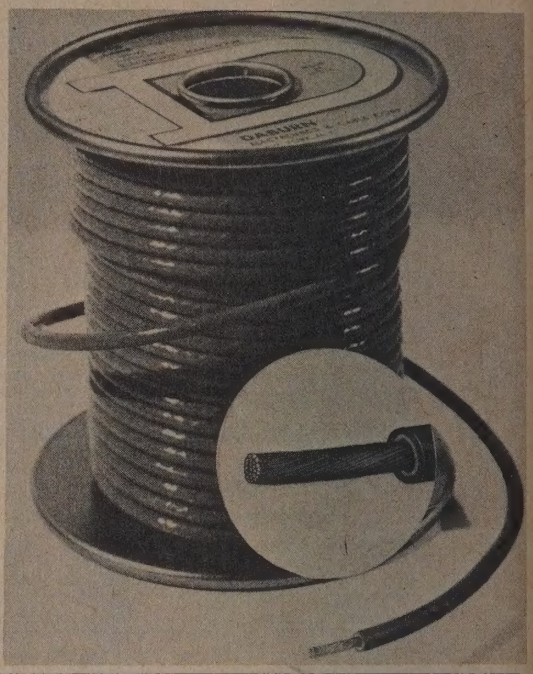
DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

NEW CRT HI-VOLT CORONA RESISTANT TEFLON* CABLE©

Voltage Rating at Sea Level • Voltage Rating at 80,000 feet, approximately 1/3 lower • Minimum life expectancy: 10,000 hours.

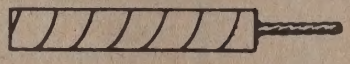


SMALL SIZE:
You do not need bulky, thick, insulation jacketing as used wtih silicone rubber and polyethylene insulations to get your hi-voltage requirements. Wire used is MIL-SPEC QQ-W-343 and MIL-W-16878D. insulation used conforms and surpasses MIL-SPEC-W-16878D

AVOID CORONA PROBLEMS:
Corona resistant Teflon construction is specifically designed to retard and prevent corona penetration.
Temperature variations from −60° to +300°C have no life effect on the corona resistant Teflon. In addition, there is no stress or crack failure under severe, adverse conditions including mechanical strain, moisture, corona or chemical conditions.

DESCRIPTION:
Single Conductor, Stranded Silver Plated Copper, Corona Resistant Teflon* Insulation.

TEMPERATURE RATING:
−90°C to +250°C.



VOLTAGE RATING:
Based on insulation thickness.

AVAILABLE COLORS:
White, Black, Red, Green, Yellow, Lt. Blue, Brown, Orange, Gray, Violet. (Also available in tracer colors)

PUT-UP: 250′, 500′, 1000′

*DUPONT

ADDITIONAL SIZES AND VOLTAGES AVAILABLE

DABURN No.	AWG Size	Strand	Voltage Rating AC	Voltage Rating DC	Nom. O.D.
CRT-12-2	12	19/25	2500	10,000	.142″
CRT-12-2.5	12	19/25	3750	12,500	.152″
CRT-12-3	12	19/25	4500	15,000	.162″
CRT-12-3.5	12	19/25	5300	17,500	.172″
CRT-12-4	12	19/25	6000	20,000	.182″
CRT-12-5	12	19/25	7500	25,000	.202″
CRT-12-6.5	12	19/25	10,000	32,500	.232″
CRT-12-8	12	19/25	12,000	40,000	.262″
CRT-12-10	12	19/25	15,000	50,000	.302″
CRT-14-2	14	19/27	2500	10,000	.124″
CRT-14-2.5	14	19/27	3750	12,500	.134″
CRT-14-3	14	19/27	4500	15,000	.144″
CRT-14-3.5	14	19/27	5300	17,500	.154″
CRT-14-4	14	19/27	6000	20,000	.164″
CRT-14-5	14	19/27	7500	25,000	.184″
CRT-14-6.5	14	19/27	10,000	32,500	.214″
CRT-14-8	14	19/27	12,000	40,000	.244″
CRT-14-10	14	19/27	15,000	50,000	.284″
CRT-16-2	16	19/29	2500	10,000	.109″
CRT-16-2.5	16	19/29	3750	12,500	.119″
CRT-16-3	16	19/29	4500	15,000	.129″
CRT-16-3.5	16	19/29	5300	17,500	.139″
CRT-16-4	16	19/29	6000	20,000	.149″
CRT-16-5	16	19/29	7500	25,000	.169″
CRT-16-6.5	16	19/29	10,000	32,500	.199″
CRT-16-8	16	19/29	12,000	40,000	.229″
CRT-16-10	16	19/29	15,000	50,000	.269″
CRT-18-2	18	19/30	2500	10,000	.102″
CRT-18-2.5	18	19/30	3750	12,500	.112″
CRT-18-3	18	19/30	4500	15,000	.122″
CRT-18-3.5	18	19/30	5300	17,500	.132″
CRT-18-4	18	19/30	6000	20,000	.142″
CRT-18-5	18	19/30	7500	25,000	.162″
CRT-18-6.5	18	19/30	10,000	32,500	.192″
CRT-18-8	18	19/30	12,000	40,000	.222″
CRT-18-10	18	19/30	15,000	50,000	.272″
CRT-20-2	20	19/32	2500	10,000	.092″
CRT-20-2.5	20	19/32	3750	12,500	.102″
CRT-20-3	20	19/32	4500	15,000	.112″
CRT-20-3.5	20	19/32	5300	17,500	.122″
CRT-20-4	20	19/32	6000	20,000	.132″
CRT-20-5	20	19/32	7500	25,000	.152″
CRT-20-6.5	20	19/32	10,000	32,500	.192″
CRT-20-8	20	19/32	12,000	40,000	.212″
CRT-20-10	20	19/32	15,000	50,000	.252″
CRT-22-2	22	19/34	2500	10,000	.084″
CRT-22-2.5	22	19/34	3750	12,500	.094″
CRT-22-3	22	19/34	4500	15,000	.104″
CRT-22-3.5	22	19/34	5300	17,500	.114″
CRT-22-4	22	19/34	6000	20,000	.124″
CRT-22-5	22	19/34	7500	25,000	.144″
CRT-22-6.5	22	19/34	10,000	32,500	.174″
CRT-22-8	22	19/34	12,000	40,000	.204″
CRT-22-10	22	19/34	15,000	50,000	.244″
CRT-24-2	24	19/36	2500	10,000	.077″
CRT-24-2.5	24	19/36	2750	12,500	.087″
CRT-24-3	24	19/36	4500	15,000	.097″
CRT-24-3.5	24	19/36	5300	17,500	.107″
CRT-24-4	24	19/36	6000	20,000	.117″
CRT-24-5	24	19/36	7500	25,000	.137″
CRT-24-6.5	24	19/36	10,000	32,500	.167″
CRT-24-8	24	19/36	12,000	40,000	.197″
CRT-24-10	24	19/36	15,000	50,000	.237″
CRT-26-2	26	7/34	2500	10,000	.071″
CRT-26-2.5	26	7/34	3750	12,500	.081″
CRT-26-3	26	7/34	4500	15,000	.091″
CRT-26-3.5	26	7/34	5300	17,500	.101″
CRT-26-4	26	7/34	6000	20,000	.111″
CRT-26-5	26	7/34	7500	25,000	.131″
CRT-26-6.5	26	7/34	10,000	32,500	.161″
CRT-26-8	26	7/34	12,000	40,000	.191″
CRT-26-10	26	7/34	15,000	50,000	.231″
CRT-28-2	28	7/36	2500	10,000	.067″
CRT-28-2.5	28	7/36	3750	12,500	.077″
CRT-28-3	28	7/36	4500	15,000	.087″
CRT-28-3.5	28	7/36	5300	17,500	.097″
CRT-28-4	28	7/36	6000	20,000	.117″
CRT-28-5	28	7/36	7500	25,000	.127″
CRT-28-6.5	28	7/36	10,000	32,500	.157″
CRT-28-8	28	7/36	12,000	40,000	.187″
CRT-28-10	28	7/36	15,000	50,000	.227″

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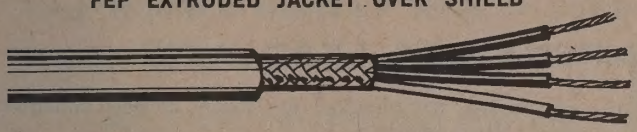
DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

FEP TEFLON* CABLE

FEP EXTRUDED JACKET OVER SHIELD



DESCRIPTION: Each conductor silver plated stranded copper wire, Type E extruded TFE .010″ insulation. Color coded, cabled, braided silver plated copper shield — 90% coverage, FEP white teflon jacket overall.

TEMPERATURE RATING: −65°C to +200°C. **VOLTAGE RATING:** 600 V.

DABURN No.	Conds.	AWG Size	Strand	Nom. O.D.
2480	1	24	19/36	.085″
2480/2	2	24	19/36	.130″
2480/3	3	24	19/36	.135″
2480/4	4	24	19/36	.148″
2481	1	22	19/34	.091″
2481/2	2	22	19/34	.150″
2481/3	3	22	19/34	.158″
2481/4	4	22	19/34	.172″
2482	1	20	19/32	.100″
2482/2	2	20	19/32	.168″
2482/3	3	20	19/32	.178″
2482/4	4	20	19/32	.193″
2483	1	18	19/30	.110″
2483/2	2	18	19/30	.188″
2483/3	3	18	19/30	.207″
2483/4	4	18	19/30	.222″
2484	1	16	19/29	.123″
2484/2	2	16	19/29	.220″

CONDUCTOR COLOR CODE: 1—White, 2—Black, 3—Red, 4—Green *Dupont

STD. PUT-UP: 500 Ft., 1000 Ft.

H FILM KAPTON* WIRE

DALITE™

HIGH TEMPERATURE HOOK-UP AND AIRFRAME WIRE 200°C CONTINUOUS TEMPERATURE RATING (a)

INSULATED WITH DUPONT KAPTON* POLYMIDE FILM WITH TEFLON* — FEP HEAT SEALED COATING CONFORMS TO MIL-W-81381.

CHARACTERISTICS: Dalite™ insulated wire provides high temperature stability, low temperature flexibility, high radiation resistance, resistance to cold flow, impervious to most chemicals, high dielectric strength, low dielectric constant, smaller diameters and lighter weight than any other comparable wire used for continuous operation up to 200°C. This hook-up wire meets the test requirements of MIL-W-16878 for 300 V, 600 V and 1000 V with **smaller wall thicknesses, weight and dimensions.**

(a) Temperature based on lowest temperature rating of materials in the insulation — FEP 200°C. Will pass 96 hour heat age tests at 290°C per MIL-W-16878.

DESCRIPTION: Single conductor, silver plated annealed copper conductors, Type H* Polymide film with Teflon* FEP coating tape wrapped overall.

DABURN No.	Type Designation	Size AWG	Strand	Voltage Rating (rms)	Nom. Wall	Nom. O.D.	Weight Per 1000′ (lbs.)
2490/30	HF 30	30	7/38	600	.0045″	.021″	0.52
2495/30	HHF 30	30	7/38	1000	.006″	.024″	0.57
2490/28	HF 28	28	7/36	600	.0045″	.024″	0.75
2495/28	HHF 28	28	7/36	1000	.006″	.027″	0.83
2490/26	HF 26	26	7/34	600	.0045″	.028″	1.11
2495/26	HHF 26	26	7/34	1000	.006″	.031″	1.21
2490/24	HF 24	24	19/36	600	.0045″	.034″	1.78
2495/24	HHF 24	24	19/36	1000	.006″	.037″	1.90
2490/22	HF 22	22	19/34	600	.0045″	.041″	2.71
2495/22	HHF 22	22	19/34	1000	.006″	.044″	2.86
2490/20	HF 20	20	19/32	600	.0045″	.049″	4.18
2495/20	HHF 20	20	19/32	1000	.006″	.052″	4.35
2490/18	HF 18	18	19/30	600	.0045″	.059″	6.46
2495/18	HHF 18	18	19/30	1000	.006″	.062″	6.67
2490/16	HF 16	16	19/29	600	.0045″	.066″	8.16
2495/16	HHF 16	16	19/29	1000	.006″	.069″	8.39

STD. COLOR: Natural Gold. Striping and solid colors available. Variations of conductor material—to special order.

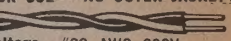
STD. PUT-UP: 1000 Ft.

*DUPONT *KAPTON - DUPONT

UNSHIELDED AUDIO CABLE

SOLID AND STRANDED CONDUCTORS (2 & 3)

FOR INDOOR USE — NO OUTER JACKET



Tinned copper, vinyl plastic insulation, color coded, conductors twisted.

Operating Temp.: −20°C to +60°C. **Operating Voltage:** #22 AWG 200V, #20 AWG 350V, #18 AWG 400V, #16, #14 AWG 600V.

DABURN No.	Cond.	Size	Strand	Insul. Wall	Nom. O.D.
3004	2	22 Solid	1	.016″	.100″
3004/3	3	22 Solid	1	.016″	.115″
3005	2	20 Solid	1	.016″	.120″
3005/3	3	20 Solid	1	.016″	.140″
3006	2	18 Solid	1	.016″	.145″
3006/3	3	18 Solid	1	.016″	.155″
3007	2	16 Solid	1	.016″	.175″
3007/3	3	16 Solid	1	.016″	.190″
3011	2	22 Stranded	7/30	.016″	.125″
3011/3	3	22 Stranded	7/30	.016″	.140″
3012	2	20 Stranded	10/30	.016″	.145″
3012/3	3	20 Stranded	10/30	.016″	.160″
3013	2	18 Stranded	16/30	.016″	.165″
3013/3	3	18 Stranded	16/30	.016″	.180″
3014	2	16 Stranded	26/30	.016″	.190″
3014/3	3	16 Stranded	26/30	.016″	.210″
3015	2	14 Stranded	41/30	.016″	.220″
3015/3	3	14 Stranded	41/30	.016″	.240″
3016	2	12 Stranded	65/30	.020″	.250″
3016/3	3	12 Stranded	65/30	.020″	.275″

CONDUCTOR COLOR CODE: 1—Brown, 2—Tan, 3—Gray.

STD. PUT-UP: 1000 Ft.

PLASTIC JACKET OVERALL

FOR OUTDOOR USE

Tinned copper, vinyl plastic insulation, color coded, twisted, plastic jacket overall.

Operating Temp.: −20°C to +60°C.

Operating Voltage: #22 AWG 200V, #20 AWG 350V, #18 AWG 400V, #16, #14 AWG 600V.

DABURN No.	Cond.	Size	Strand	Nom. Wall	Jacket	Nom. O.D.
3020	2	22	1	.010″	.020″	.125″
3020/3	3	22	1	.010″	.020″	.130″
3020/4	4	22	1	.010″	.020″	.150″
3021	2	20	1	.016″	.020″	.170″
3021/3	3	20	1	.016″	.020″	.180″
3021/4	4	20	1	.016″	.020″	.200″
3022	2	18	1	.016″	.020″	.185″
3022/3	3	18	1	.016″	.020″	.190″
3022/4	4	18	1	.016″	.020″	.220″
3022/5	5	18	1	.016″	.020″	.235″
3022/6	6	18	1	.016″	.020″	.265″
3027	2	22	7/30	.010″	.020″	.130″
3027/3	3	22	7/30	.010″	.020″	.140″
3027/4	4	22	7/30	.010″	.020″	.165″
3028	2	20	10/30	.016″	.020″	.175″
3028/3	3	20	10/30	.016″	.020″	.185″
3028/4	4	20	10/30	.016″	.020″	.195″
3029	2	18	16/30	.016″	.020″	.195″
3029/3	3	18	16/30	.016″	.020″	.205″
3029/4	4	18	16/30	.016″	.020″	.235″
3029/6	6	18	16/30	.016″	.020″	.290″
3030	2	16	26/30	.016″	.020″	.220″
3030/3	3	16	26/30	.016″	.020″	.245″
3030/4	4	16	26/30	.016″	.020″	.270″
3031	2	14	41/30	.016″	.020″	.260″
3031/3	3	14	41/30	.016″	.020″	.280″

CONDUCTOR COLOR CODE: 1—Black, 2—Red, 3—White, 4—Green, 5—Orange. 6—Blue.

STD. PUT-UP: 1000 Ft.

SPECIAL CONSTRUCTION AVAILABLE

PLASTIC INTER-COM CABLE

Station to station wiring to eliminate cross-talk. Each conductor tinned copper stranded, color coded PVC, T.C. braid, shield where indicated, paired, grey polyvinylchloride jacket overall.

2935 — Suitable for unbalanced systems.

2935/4 — Suitable for balanced systems.

2935/5 — Suitable for coin operated phonographs.

OPERATING VOLTAGE: 350 Volts.

OPERATING TEMPERATURE: −20°C to +60°C.

DABURN Cat. No.	Cond.	Size	Strand	No. Cond. Shield	Nom. Wall	Nom. Jacket	O.D.
2935	3	22	7/30	1	.016″	.020″	.200″
2935/4	4	22	7/30	2	.016″	.020″	.180″x.285″
2935/5	5	22	7/30	3	.016″	.020″	.200″x.300″

CONDUCTOR COLOR CODE: **STD. PUT-UP:** 500 Ft., 1000 Ft.

2935 — White — shielded; Black, Red — unshielded.

2935/4 — Black, White — Shielded; Black, Red — unshielded.

2935/5 — Black, White, Red — shielded; Black, Red — unshielded.

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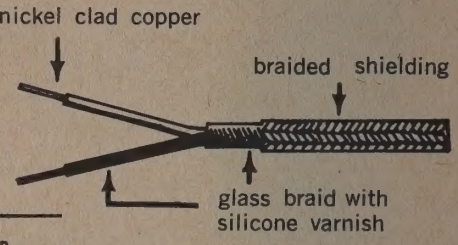
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

NEW DABURN HIGH TEMPERATURE LEAD WIRE

Small Diameters and High Temperature performance make an outstanding combination for these unique constructions. Basic wire conforms to MIL-W-3861 spec. shielding per MIL-N-46026A. 600V RMS.

800°F TEMPERATURE RATING

High temperature aircraft and missile lead wire for operation between 500°F and 800°F. Nickel clad copper conductors with glass braided fiber insulation impregnated with silicone varnish. Multiconductor and shielded construction will be manufactured to customer's specifications.

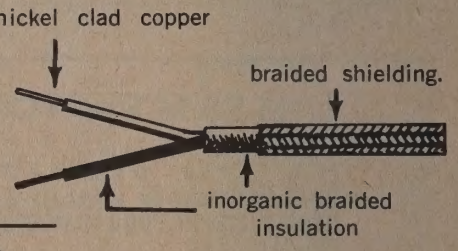


DABURN Cat. No.	Size	Strand	CMA	Nom. O.D.
2497/18	18	19/.010″	755	.085″
2497/20	20	19/.008″	1216	.075″
2497/22	22	19/.0063″	1900	.070″

STD. PUT-UP: 500 Ft., 1000 Ft.

1500°F TEMPERATURE RATING

High temperature radiation resistant aircraft and missile lead wire for operation between 800°F and 1500°F. Nickel clad copper conductors with inorganic braided insulation. Useful up to 1500°F providing moisture resistance is not required. Multiconductor and shielded construction can be made to customer's specifications.

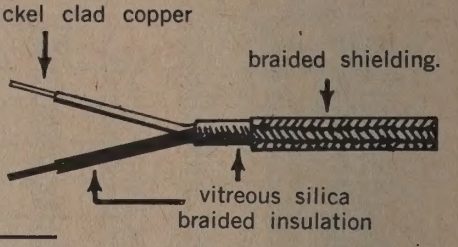


DABURN Cat. No.	Size	Strand	CMA	Nom. O.D.
2498/18	18	19/.010″	755	.085″
2498/20	20	19/.008″	1216	.075″
2498/22	22	19/.0063″	1900	.070″

STD. PUT-UP: 500 Ft., 1000 Ft.

2000°F TEMPERATURE RATING

High temperature radiation resistant aircraft and missile lead wire for operation between 1500°F and 2000°F. Nickel clad copper conductors with vitreous silica braided insulation and a braided shielding. Useful up to 200°F providing no initial moisture resistance or abrasion resistance is required. Multiconductor construction can be made to customer's specifications.



DABURN Cat. No.	Size	Strand	CMA	Nom. Insulation Thickness	Braid Ni. Shield	Nom. O.D.
2499/18	18	19/.010″	755	.025″	16-5-36	.122″
2499/20	20	19/.008″	1216	.025″	24-3-36	.112″
2499/22	22	19/.0063″	1900	.027″	24-3-36	.108″

STD. PUT-UP: 500 Ft., 1000 Ft.

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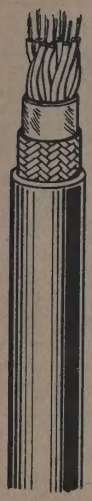
CONTROL AND INSTRUMENTATION CABLE, TYPES F & FF PER MIL-W-16878D PLASTIC, SILICONE RUBBER HOOK-UP WIRE — HIGH VOLTAGE CABLE, UL & CSA HOOK-UP WIRE

MINIATURIZED SHIELDED CONTROL AND INSTRUMENTATION CABLE

PER MIL-W 16878D — TYPE B — 600 VOLT



DESCRIPTION: Each conductor stranded tinned copper, .010" wall high temperature PVC, cabled with a mylar tape wrap, braided tinned copper shield for 90% coverage overall, covered with gray PVC jacket.

Rated: −55°C to +105°C, 600 volt.

Resists acid, alkalis, flame, moisture, oil, solvents, fungus. Used as interconnecting cable for electronic equipment. Control and instrumentation cable, telemetry and remote control with sensitive recording instruments.

Daburn No.	Conductor No.	Size	Strand	Nom. Wall	Nom. Jacket	Nom. O.D.
2550	2	B-28	7/36	.010"	.010"	.120"
2550/3	3	B-28	7/36	.010"	.012"	.130"
2550/4	4	B-28	7/36	.010"	.012"	.140"
2550/6	6	B-28	7/36	.010"	.015"	.170"
2550/8	8	B-28	7/36	.010"	.015"	.175"
2550/10	10	B-28	7/36	.010"	.018"	.210"
2550/12	12	B-28	7/36	.010"	.018"	.215"
2550/15	15	B-28	7/36	.010"	.020"	.230"
2550/20	20	B-28	7/36	.010"	.022"	.260"

STD. PUT-UP: 500 Ft., 1000 Ft.

Additional sizes and constructions to order.

1—White	6—Lt. Blue	11—Blue/Blk	16—Black/Red
2—Black	7—Wh/Black	12—Black/Wh	17—White/Red
3—Red	8—Red/Black	13—Red/White	18—Orange/Red
4—Green	9—Green/Blk	14—Green/Wh	19—Blue/Red
5—Orange	10—Orange/Blk	15—Blue/White	20—Red/Green

SEMI-RIGID BUSINESS MACHINE WIRE — U.L.

300 VOLT 80°C — STYLE 1061

Stranded tinned copper, color coded semi-rigid polyvinlchloride insulation. Has Temperature Rating of −10°C to +80°C, 300 volts in electronic computers or business machines only.

DESCRIPTION: One Conductor stranded tinned copper, semi-rigid PVC.

DABURN No.	Size	Strand	Nom. Ins. Wall	Nom. O.D.
2660/26	26	7/34	.009"	.039"
2660/24	24	7/32	.009"	.041"
2660/22	22	7/30	.009"	.048"
2660/20	20	7/28	.009"	.056"
2660/18	18	7/26	.009"	.072"

STD. PUT-UP: 500 Ft., 1000 Ft.

MIL-W-16878D — TYPES F & FF

TYPE F—600V • TYPE FF—1000V
Single conductor, stranded tinned copper. Extruded silicone rubber overall. Temp. to 200°C.

DABURN No.	MIL Type Designation	Size AWG	Strand	Nom. O.D.
2620/28	F-28	28	7/36	.046"
2622/28	FF-28	28	7/36	.078"
2620/26	F-26	26	7/34	.050"
2622/26	FF-26	26	7/34	.082"
2620/24	F-24	24	19/36	.055"
2622/24	FF-24	24	19/36	.087"
2620/22	F-22	22	19/34	.062"
2622/22	FF 22	22	19/34	.094"
2620/20	F-20	20	19/32	.070"
2622/20	FF-20	20	19/32	.102"
2620/18	F-18	18	19/30	.080"
2622/18	FF-18	18	19/30	.112"
2620/16	F-16	16	19/29	.088"
2622/16	FF-16	16	19/29	.120"
2620/14	F-14	14	19/27	.118"
2622/14	FF-14	14	19/27	.165"
2620/12	F-12	12	19/25	.137"
2622/12	FF-12	12	19/25	.184"
2622/10	FF-10	10	37/26	.205"
2622/8	FF-8	8	133/29	.290"
2622/6	FF-6	6	133/27	.333"
2622/4	FF-4	4	133/25	.390"

COLOR: White. Additional colors, sizes and types to order, thru size 4/0
STD. PUT-UP: 500 Ft., 1000 Ft.

SILICONE RUBBER LEAD WIRE

600 VOLT — 200°C

FLEXIBILITY FROM −104°C TO +400°F

Suitable for high-heat and hi-frequency applications. Resistant to acids, alkali, oil. Retains physical properties under extremes. Low power factor, low dielectric constant. Tinned copper, stranded, silicone rubber insulation, glass braid, lacquered. Color: White.

DESCRIPTION: One conductor, tinned copper strands, silicone rubber insulation, glass braid, lacquered.

COLOR: White

DABURN No.	Size	Strand	Nom. Ins. Wall	Nom. O.D.
2625/22	22	7/30	1/32"	.105"
2625/20	20	10/30	1/32"	.121"
2625/18	18	16/30	1/32"	.128"
2625/16	16	26/30	1/32"	.144"
2625/14	14	41/30	1/32"	.165"
2625/12	12	65/30	1/32"	.185"
2625/10	10	65/28	3/64"	.240"
2625/8	8	84/27	1/16"	.320"

STD. PUT-UP: 100 Ft., 500 Ft., 1000 Ft.

HI-VOLTAGE CABLE

One conductor, stranded copper tinned, rulan — flame retardant — polyethylene insulation, braided tinned copper overall when shielded. Used as hi-voltage leads in electronic equipment to minimize RF radiation in equipment.

DESCRIPTION: One conductor; stranded copper tinned; rulan (flame retarding type) polyethylene insulation. Available white/red tracer. Temp. Rating: 105°C.

Shielded: Same as above with tinned copper braided shield overall. Special construction available to order.

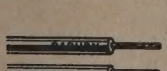
Daburn No.	Size AWG	Strand	Nom. Ins.Wall	Voltage Breakdown AC	DC	Nom. O.D.
UNSHIELDED						
2641	22	7/30	.047"	5,000	10,000	.124"
2642	20	10/30	.047"	5,000	10,000	.125"
2643	20	10/30	.068"	10,000	20,000	.168"
2644	18	16/30	.047"	5,000	10,000	.134"
2645	18	16/30	.068"	10,000	20,000	.178"
2648	18	16/30	.095"	16,000	40,000	.235"
2649	18	16/30	.124"	26,000	60,000	.280"
SHIELDED						
2652	20	10/30	.095"	16,000	40,000	.252"
2655	18	16/30	.095"	16,000	40,000	.255"
2656	16	26/30	.095"	16,000	40,000	.276"

STD. PUT-UP: 100 Ft., 500 Ft., 1000 Ft.

PLASTIC HOOK-UP WIRE

600 VOLT UL APPROVED — 105°C (CSA 600V — 90°C) STYLE 1015, CSA TR-32

Resistant to acids, alkalis, oil, flame, fungus and moisture. Temperature Rating: −10°C to +105°C.



DESCRIPTION: One conductor stranded annealed copper tinned, plastic insulation.

DABURN No.	Size	Strand	Nom. Ins. Wall	Nom. O.D.
STRANDED				
2630	22	7/30	.032"	.095"
2631	20	10/30	.032"	.102"
2632	18	16/30	.032"	.112"
2633	16	26/30	.032"	.126"
2633/14	14	41/30	.032"	.142"
SOLID				
2635/22	22	1	.032"	.095"
2635/20	20	1	.032"	.102"

COLORS: Black, Red, Green, Yellow, Blue, White, Orange, Gray, Purple.
STD. PUT-UP: 100 Ft.. 500 Ft.. 1000 Ft.

300 VOLT UL APPROVED — 80°C STYLE 1007, CSA TR-64

DABURN No.	Size	Strand	Nom. Ins. Wall	Nom. O.D.
2628/24	24	7/32	.016"	.057"
2628/22	22	7/30	.016"	.065"
2628/20	20	10/30	.016"	.070"
2628/18	18	16/30	.016"	.080"
2628/16	16	26/30	.016"	.095"

COLORS: Black, Red, Green, Yellow, Blue, Brown, White, Orange, Gray, Purple.
STD. PUT-UP: 100 Ft.. 500 Ft.. 1000 Ft.

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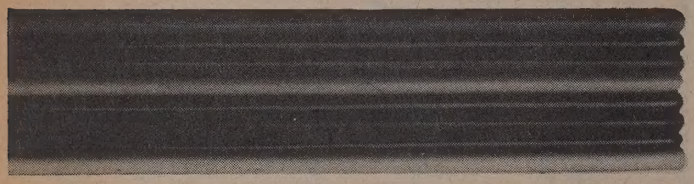
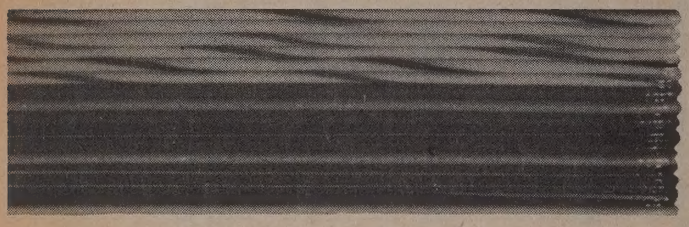
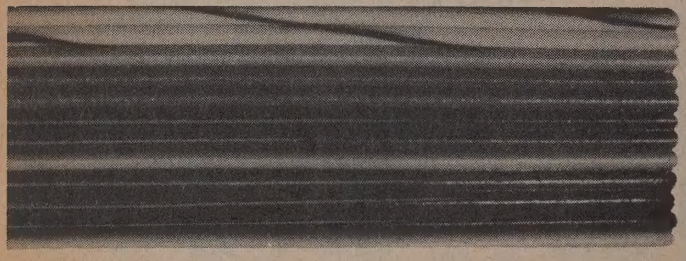
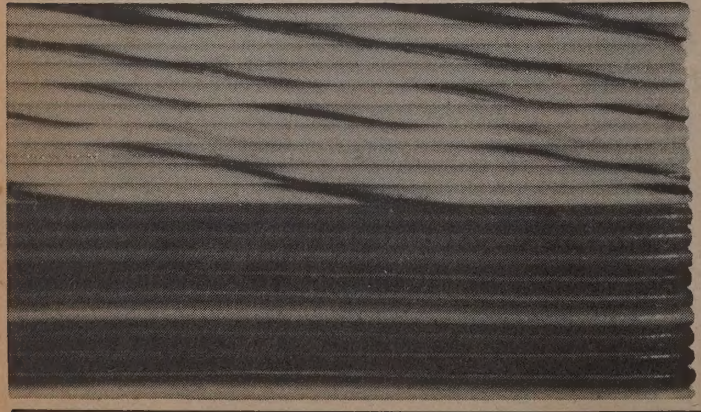
FLAT RIBBON CABLE, TYPES B & C PER MIL-W-16878D









MULTI-CONDUCTOR — POLYVINYLCHLORIDE INSULATION CONDUCTORS Per MIL-W-16878D — TYPE B — 600 V

DESCRIPTION: Each conductor stranded tinned copper .010" polyvinylchloride insulation bonded to form flat ribbon cable.

Rated: −55°C to +105°C. Voltage Rating: 600 volts. Resists acid, alkalis, flame, moisture, oil, solvents, fungus. Conductors are color coded and separate easily for clean terminations. Saves space, time on circuit and interconnecting assemblies, wiring harnesses, sliding drawers and drop assemblies.

DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.
1804/4	4	24	7/32	.010"	.043" x .172"
1804/8	8	24	7/32	.010"	.043" x .344"
1804/12	12	24	7/32	.010"	.043" x .516"
1804/16	16	24	7/32	.010"	.043" x .688"
1804/20	20	24	7/32	.010"	043" x .860"

STD. PUT-UP: 250 Ft., 500 Ft., 1000 Ft.

CONDUCTOR COLOR CODE: Same as noted below for C-22 Series.

FLAT RIBBON CABLE MULTI-CONDUCTOR — POLYVINYLCHLORIDE INSULATION CONDUCTORS Per MIL-W-16878D TYPE C

VOLTAGE RATING: 1000 VOLTS

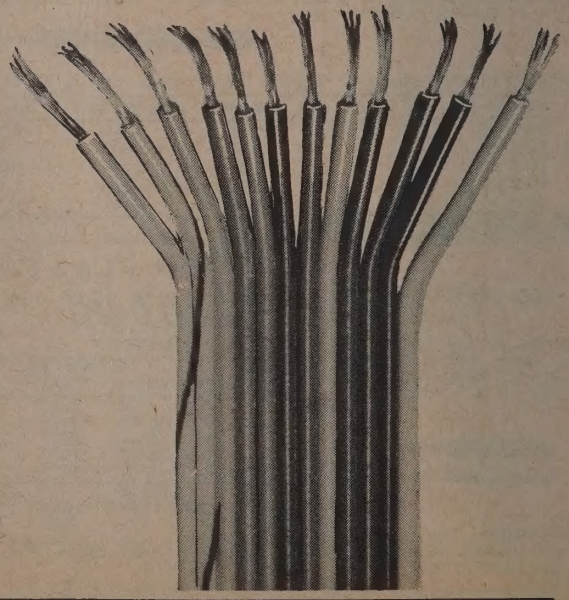
DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.
1822/4	4	22	7/30	.016"	.065" x .260"
1822/8	8	22	7/30	.016"	.065" x .520"
1822/12	12	22	7/30	.016"	.065" x .780"
1822/16	16	22	7/30	.016"	.065" x 1.040"
1822/20	20	22	7/30	.016"	.065" x 1.300"

STD. PUT-UP: 250 Ft., 500 Ft., 1000 Ft.

CONDUCTOR COLOR CODE:

1—White	6—Lt. Blue	11—Wh/Black	16—Wh/Brown
2—Black	7—Brown	12—Wh/Red	17—Wh/Orange
3—Red	8—Orange	13—Wh/Green	18—Wh/Gray
4—Green	9—Gray	14—Wh/Yellow	19—Wh/Violet
5—Yellow	10—Violet	15—Wh/Blue	20—Wh/Blk, Red

ADDITIONAL SIZES & TYPES AVAILABLE TO ORDER



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PORTABLE CORD, CONTROL CABLES — MIL-C-3432B SERVICE CORD

RUBBER, NEOPRENE & PLASTIC PORTABLE CORD
UL APPROVED — 300 AND 600 VOLT

For power line requirement where rough usage is indicated as for amplifiers, sound systems, speakers, vacuum cleaners, washing machines, trouble lights, refrigerators, etc. Color coded. Underwriters approved. Neoprene and plastic construction recommended for equipment exposed to oil, acids, outdoor use, direct burial, etc.

SUGGESTED OPERATING TEMPERATURE: −20°C to +60°C.
Each conductor, copper conductor, paper separtor, color coded, rubber insulation, filler, (where necessary) separator, tough rubber or neoprene jacket, black.

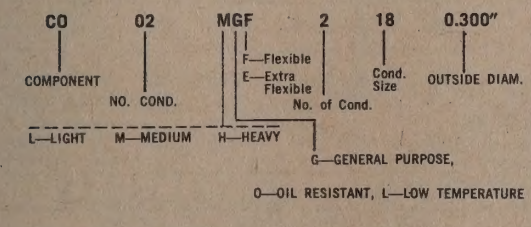
UL TYPE	VOLT RATING
SV, SVO, SVTO	300V
SJ, SJO, SJTO	300V
S, SO, STO	600V

RUBBER Daburn No.	RUBBER UL Type	NEOPRENE Daburn No.	NEOPRENE UL Type	PLASTIC Daburn No.	PLASTIC UL Type	Conds. No.	Conds. Size	Amp. Rating	Nom. O.D.
2860	SV	2890	SVO	2870	SVTO	2	18	7	.250″
2860/3	SV	2890/3	SVO	2870/3	SVTO	3	18	7	.265″
2861	SJ	2891	SJO	2871	SJTO	2	18	7	.300″
2861/3	SJ	2891/3	SJO	2871/3	SJTO	3	18	7	.330″
2861/4	SJ	2891/4	SJO	2871/4	SJTO	4	18	6	.360″
2862	SJ	2892	SJO	2872	SJTO	2	16	10	.325″
2862/3	SJ	2892/3	SJO	2872/3	SJTO	3	16	10	.365″
2862/4	SJ	2892/4	SJO	2872/4	SJTO	4	16	8	.395″
2863	S	2893	SO	2873	STO	2	18	7	.390″
2863/3	S	2893/3	SO	2873/3	STO	3	18	7	.405″
2863/4	S	2893/4	SO	2873/4	STO	4	18	6	.435″
2864	S	2894	SO	2874	STO	2	16	10	.410″
2864/3	S	2894/3	SO	2874/3	STO	3	16	10	.430″
2864/4	S	2894/4	SO	2874/4	STO	4	16	8	.485″
2865	S	2865	SO	2875	STO	2	14	15	.540″
2865/3	S	2895/3	SO	2875/3	STO	3	14	15	.560″
2865/4	S	2895/4	SO	2875/4	STO	4	14	12	.605″
2866	S	2896	SO	2876	STO	2	12	20	.600″
2866/3	S	2896/3	SO	2876/3	STO	3	12	20	.635″
2866/4	S	2896/4	SO	2876/4	STO	4	12	16	.665″
2867	S	2807	SO	2877	STO	2	10	25	.640″
2867/3	S	2897/3	SO	2877/3	STO	3	10	25	.690″
2867/4	S	2897/4	SO	2877/4	STO	4	10	20	.745″
2868	—	2898	—	—	—	2	8†	35	.700″
2868/3	—	2898/3	—	—	—	3	8†	35	.750″
2868/4	—	2898/4	—	—	—	4	8†	28	.820″
2869	—	2899	—	—	—	2	6†	45	.820″
2869/3	—	2899/3	—	—	—	3	6†	45	.885″
2869/4	—	2899/4	—	—	—	4	6†	36	.975″

Additional conductors and sizes available † Not listed by UL.
CONDUCTOR COLOR CODE: 1-White, 2-Black, 3-Green, 4-Red.
STD. PUT-UP: 250 Ft.

COMPONENT CABLE TYPE SPECIFICATIONS

TYPICAL EXAMPLE:



SPEC MIL-C-3432C SERVICE CORD

DABURN Cat. No.	MIL Type	Spec. Design.	Conds.	Size	Spec. No.	Nom. O.D.
2812	CO-02	MGF	2	18	MIL-C-3432C	.300″
2813	CO-02	HGF	2	18	MIL-C-3432C	.380″
2814	CO-02	LGF	2	18	MIL-C-3432C	.250″
2815	CO-02	HGF	2	16	MIL-C-3432C	.405″
2816	CO-02	MGF	2	16	MIL-C-3432C	.338″
2817	CO-02	MGF	2	14	MIL-C-3432C	.400″
2818	CO-02	HGF	2	14	MIL-C-3432C	.535″
2819	CO-02	MGF	3	18	MIL-C-3432C	.340″
2820	CO-03	MGF	3	16	MIL-C-3432C	375″
2821	CO-03	HOE	3	12	MIL-C-3432C	.635″

Additional Numbers Available From Stock — Your Inquiries Invited

CONTROL CABLE
HEAVY DUTY MULTI-CONDUCTOR
PORTABLE TYPE SO
NEOPRENE JACKETED — 600 VOLT

DESCRIPTION: Stranded bare copper each conductor, rubber insulation color coded, filler where necessary, wrap over conductors, flexible heavy duty black Neoprene jacket overall.

Recommended for outside installation, this heavy duty control cable resists oil, ozone, sunlight, moisture, impact and abrasion. Suitable for remote control automatic equipment, telemetering, signal transmission.

No. 18 AWG-SO CONTROL CABLE

DABURN Cat. No.	Cond.	Size AWG	Strand	Nom. O.D.
3300/5	5	18	16/30	.495″
3300/6	6	18	16/30	.525″
3300/7	7	18	16/30	.525″
3300/8	8	18	16/30	.565″
3300/10	10	18	16/30	.635″
3300/12	12	18	16/30	.665″
3300/14	14	18	16/30	.715″
3300/16	16	18	16/30	.745″
3300/18	18	18	16/30	.775″
3300/20	20	18	16/30	.815″
3300/22	22	18	16/30	.875″
3300/24	24	18	16/30	.895″
3300/26	26	18	16/30	.915″
3300/30	30	18	16/30	.945″
3300/36	36	18	16/30	1.060″
3300/40	40	18	16/30	1.085″

No. 16 AWG-SO CONTROL CABLE

3305/5	5	16	26/30	.525″
3305/6	6	16	26/30	.560″
3305/7	7	16	26/30	.560″
3305/8	8	16	26/30	.605″
3305/10	10	16	26/30	.710″
3305/12	12	16	26/30	.745″
3305/14	14	16	26/30	.760″
3305/16	16	16	26/30	.800″
3305/18	18	16	26/30	.840″
3305/20	20	16	26/30	.890″
3305/22	22	16	26/30	.930″
3305/24	24	16	26/30	1.02″
3305/26	26	16	26/30	1.03″
3305/30	30	16	26/30	1.05″
3305/36	36	16	26/30	1.12″
3305/40	40	16	26/30	1.18″

No. 14 AWG-SO CONTROL CABLE

3310/5	5	14	41/30	.685″
3310/6	6	14	41/30	.745″
3310/7	7	14	41/30	.800″
3310/8	8	14	41/30	.860″
3310/10	10	14	41/30	.875″
3310/12	12	14	41/30	.945″
3310/14	14	14	41/30	1.000″
3310/16	16	14	41/30	1.075″
3310/18	18	14	41/30	1.115″
3310/20	20	14	41/30	1.155″

No. 12 AWG-SO CONTROL CABLE

3315/5	5	12	65/30	.760″
3315/6	6	12	65/30	.810″
3315/7	7	12	65/30	.860″
3315/8	8	12	65/30	.945″
3315/10	10	12	65/30	1.000″
3315/12	12	12	65/30	1.100″
3315/14	14	12	65/30	1.120″
3315/16	16	12	65/30	1.150″
3315/18	18	12	65/30	1.30″
3315/20	20	12	65/30	1.33″

STD. PUT-UP: Cut to Specific Lengths — Min. 100 Ft.
The Color Code for Neoprene Jacket Control Cables Conforms to IPCEA Standards.

MULTI-CONDUCTOR MICROPHONE AND CONTROL CABLE — PLASTIC

Each conductor tinned copper, polyethylene insulation — color coded.
Multi-conductors cabled with fillers, textile wrapped, tinned copper braided shield, gray polyvinyl jacket overall.
OPERATING TEMPERATURE: −20°C to +60°C, 600 Volts.

2782	2	22	16/34	31 MMF	1000 V	.231″
2782/20	2	20	26/34	45 MMF	600 V	.240″
2782/24	2	24	10/34	38 MMF	1000 V	.190″

DABURN Cat. No.	Cond.	Size	Strand	Nom. Wall	Nom. Jacket	Nom. O.D.
2783	3	20	26/34	.014″	.030″	.250″
2784	4	20	26/34	.014″	.035″	.260″
2785	5	20	26/34	.014″	.035″	.275″
2786	6	20	26/34	.014″	.035″	.300″
2786/8	8	20	26/34	.014″	.035″	.330″
2786/10	10	20	26/34	.014″	.035″	.375″
2786/12	12	20	26/34	.014″	.035″	.380″
2786/15	15	20	26/34	.014″	.035″	.410″
2786/20	20	20	26/34	.014″	.035″	.455″

STD. PUT-UP: 100 Ft., 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1-White, 2-Black, 3-Red, 4-Green, 5-Yellow, 6-Blue, 7-Brown, 8-Orange, 9-Purple, 10-Slate, 11-White/Black, 12-White/Red, 13-White/Green, 14-White/Yellow, 15-White/Blue, 16-White/Brown, 17-White/Purple, 18-White/Slate, 19-Black/Red, 20-Black/Yellow.

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DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

TELEPHONE CABLE

(Meets REA-PE-22)

EXCHANGE AREA — COMMUNICATION CABLE AERIAL, DUCT AND CONDUIT INSTALLATION

DESCRIPTION: Color coded polyethylene insulation over each bare copper conductor. Conductors are paired. Pairs are cabled with non-hygroscopic tape wrap, corrugated aluminum shield, .008" thick and black polyethylene jacket overall.

Minimal cross talk .083 microfarads/mile — average mutual capacitance, 1 KC. This is a tough, long lasting cable — withstands weathering, ultra-violet and weathering.

#22 AWG — SOLID CONDUCTORS

DABURN Cat No.	No. of Pairs	Nom. Jkt. T'kness	Nom. O.D.	Ship. Wt. Lbs. M/Ft.
3510/3	3	.060"	.320"	60
3510/6	6	.060"	.390"	100
3510/12	12	.060"	.475"	145
3510/18	18	.060"	.540"	180
3510/25	25	.060"	.605"	226
3510/50	50	.060"	.775"	412
3510/75	75	.060"	.920"	576
3510/100	100	.070"	1.050"	706
3510/150	150	.070"	1.270"	1095
3510/200	200	.070"	1.455"	1382
3510/300	300	.080"	1.750"	1978
3510/400	400	.090"	1.970"	2600
3510/600	600	.100"	2.365"	3900
#19 AWG — SOLID CONDUCTORS				
3515/6	6	.060"	.490"	145
3515/12	12	.060"	.660"	231
3515/18	18	.060"	.710"	310
3515/25	25	.060"	.790"	391
3515/50	50	.070"	1.060"	716
3515/75	75	.070"	1.290"	1105
3515/100	100	.080"	1.490"	1380
3515/150	150	.080"	1.750"	2045
3515/200	200	.090"	1.990"	2630
3515/300	300	.100"	2.370"	3900

STD. PUT-UP: 100 Ft. and over. **CONDUCTOR COLOR CODE:** Per IPCEA. Cut to specification.

TELEPHONE CABLE

DIRECT BURIAL INSTALLATION

(Meets REA-PE-23)

DESCRIPTION: Color coded polyethylene insulation over each bare copper conductor. Conductors are paired. Pairs are cabled with non-hygroscopic tape-wrap, inner jacket of polyethylene, corrugated .005" copper shield, overall black polyethylene jacket.

Minimal cross talk .083 microfarads/mile — average mutual capacitance 1 KC. Suitable for direct burial. Tough, impervious to moisture and abrasion resistant.

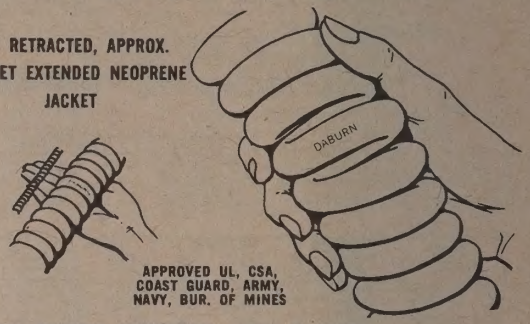
#22 AWG — SOLID CONDUCTORS

DABURN Cat No.	No. of Pairs	Nom. Jkt. T'kness	Nom. O.D.	Ship. Wt. Lbs. M/Ft.
3525/3	3	.040"	.380"	95
3525/6	6	.040"	.455"	145
3525/12	12	.040"	.535"	195
3525/18	18	.040"	.610"	251
3525/25	25	.040"	.675"	305
3525/50	50	.040"	.860"	507
3525/75	75	.040"	.985"	681
3525/100	100	.040"	1.115"	847
3525/150	150	.050"	1.350"	1240
3525/200	200	.050"	1.505"	1557
3525/300	300	.060"	1.810"	2173
3525/400	400	.060"	2.025"	2853
#19 AWG — SOLID CONDUCTORS				
3530/3	3	.040"	.455"	119
3530/6	6	.040"	.500"	206
3530/12	12	.040"	.550"	305
3530/18	18	.040"	.675"	406
3530/25	25	.040"	.770"	519
3530/50	50	.050"	.860"	867
3530/75	75	.050"	1.115"	1250
3530/100	100	.050"	1.350"	1575
3530/150	150	.060"	1.505"	2265
3530/200	200	.060"	1.810"	2900
3530/300	300	.060"	2.025"	4042

STD. PUT-UP: 100 Ft. and over. **CONDUCTOR COLOR CODE:** Per IPCEA. Cut to specification.

RETRACTILE

SUPA HEAVY DUTY POWER CORDS

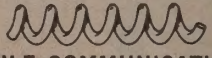


SUGGESTED OPERATING TEMPERATURE: −20°C to +60°C.

Suitable for maintenance of industrial automation equip., refrigerated trucks, mass production, cherry pickers, magnetic cranes, standby power distribution. Wherever a tougher requirement is indicated. Std. Pkg. 6

Retracted length 48" — extends to 25 ft.

DABURN Cat. No.	No. Cond.	Size	Stranding	Nom. Jacket Thickness	Nom. Cord O.D.
960	3	16	65/34	7/64"	.505"
960/4	4	16	65/34	7/64"	.535"
961	3	14	41/30	7/64"	.620"
961/4	4	14	41/30	7/64"	.660"
962	3	12	65/30	8/64"	.715"
962/4	4	12	65/30	8/64"	.770"



RETRACTILE COMMUNICATION CORD

PREPARED

Retracted length 12" — extended length 6 feet.

Same as our regular communication cord but each end is prepared, stripped and tinned as indicated.

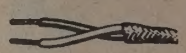
Daburn No.	No. Cond.	Size & Strand	Coil O.D.	Cord O.D.	PREPARED
966	3	#23-21/36	13/16"	.220"	1 END: L'gth 1½". Conductor stripped and tinned. Other end: Total L'gth 1½" Jacket removed.
967	4	#23-21/36	15/16"	.250"	1 END: Total length 1". Conductors stripped and tinned. Other end: Total lgth 1½" jacket removed.
968	5	#23-21/36	1-1/16"	.285"	1 END: Total l'gth 4⅛". Conductors stripped and tinned. Other end: Total l'gth 4⅛" conds. stripped and tinned.

Std. Pkg. 10

AUDIO CABLE — SHIELDED 2 CONDUCTOR SHIELDED

NO OUTER JACKET

Each conductor copper tinned, plastic insulation, color coded, twisted, tinned copper shield. Suitable for sound systems, industrial paging systems, broadcast-audio cable, rack panel wiring, etc.
OPERATING TEMPERATURE: −20°C to +60°C.



DABURN Cat. No.	Conds.	Size AWG.	Strand	Nom. Wall	Nom. O.D.	Nom. Operating Voltage
2902/30	2	30	7/38	.010"	.085"	200V
2902/28	2	28	7/36	.010"	.090"	200V
2902/26	2	26	7/34	.010"	.095"	200V
2902/24	2	24	16/36	.017"	.120"	350V
2902/22	2	22	7/30	.017"	.140"	350V
2902/20	2	20	10/30	.017"	.155"	350V
2902/18	2	18	16/30	.017"	.170"	350V
2902/16	2	16	26/30	.020"	.210"	450V
2902/14	2	14	41/30	.020"	.225"	450V
2902/12	2	12	65/30	.025"	.295"	600V
2902/10	2	10	105/30	.025"	.375"	600V

STD. PUT-UP: 100 Ft., 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—Black, 2—Red.

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DABURN

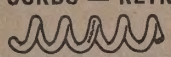
DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

Long Lasting Service — useful wherever cords must change length or position. Extend to approximately six times its retracted length. Returns to its original shape or length when released. Eliminates tangling, twisting or knots. Cords are UL and CSA approved.

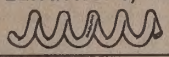
RETRACTILE COILED CORDS

POWER CORDS — RETRACTED LENGTHS: 1, 2, 3 & 4 FT. • EXTENDED LENGTHS: 6, 12, 18 & 25 FT.



UL APPROVED — NEOPRENE JACKETED CORD

Operating Temperature: −20°C to +60°C



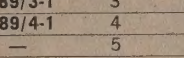
DABURN CAT. NOS. RETRACTED LENGTHS 4 Ft.† Length	3 Ft. Length	2 Ft. Length	1 Ft. Length	No. Conds.	Size	Strand	UL* and CSA Type	Amps	Volt Rating	Coil Nom. O.D.	Cord Nom. O.D.
986-4	986-3	986-2	986-1	2	18	41/34	SVO	7	300	⅞″	.250″
986/3-4	986/3-3	986/3-2	986/3-1	3	18	41/34	SVO	7	300	1″	.275″
987-4	—	—	—	2	18	41/34	SVT	7	300	⅞″	.250″
989-4	989-3	989-2	989-1	2	18	41/34	SJO	7	300	1 3/16″	.310″
989/3-4	989/3-3	989/3-2	989/3-1	3	18	41/34	SJO	7	300	1⅜″	.330″
989/4-4	989/4-3	989/4-2	989/4-1	4	18	41/34	SJO	5.6	300	1 7/16″	.360″
989/5-4	—	989/5-2	—	5	18	41/34	—	5.6	300	1¾″	.440″
989/7-4	—	989/7-2	—	7	18	41/34	—	5.6	300	1⅞″	.500″
990-4	—	—	—	2	18	41/34	SJT	7	300	1 3/16″	.310″
991-4	991-3	991-2	991-1	2	16	65/34	SJO	10	300	1⅜″	.330″
991/3-4	991/3-3	991/3-2	991/3-1	3	16	65/34	SJO	10	300	1 7/16″	.365″
991/4-4	991/4-3	991/4-2	—	4	16	65/34	SJO	8	300	1⅝″	.395″
991/5-4	—	991/5-2	—	5	16	65/34	—	8	600	2″	.540″
991/6-4	—	991/6-2	—	6	16	65/34	—	8	600	2⅛″	.550″
991/7-4	—	991/7-2		7	6/16 1/14	#16-65/34 #14-41/30	— —	#16-8 #14-12	600	2¼″	.600″
993-4	993-3	993-2	—	2	14	41/30	SO	15	600	2″	.535″
993/3-4	993/3-3	993/3-2	—	3	14	41/30	SO	15	600	2⅛″	.560″
993/4-4	993/4-3	993/4-2	—	4	14	41/30	SO	12	600	2¼″	.605″
994-4	994-3	994-2	—	2	12	65/30	SO	20	600	2¼″	.605″
994/3-4	994/3-3	994/3-2	—	3	12	65/30	SO	20	600	2⅜″	.635″
994/4-4	994/4-3	994/4-2	—	4	12	65/30	SO	16	600	2½″	.665″
994/6-4	—	994/6-2		6	2/12 4/18	#12-65/30 #18-41/34	— —	#12-17 #18-6	600	2¼″	.605″
994/7-4	—	994/7-2	—	7	12	65/30	—	16	600	2⅝″	.775″

* Wherever UL type is shown, approved by CSA Testing Laboratories.
† Preferred Put-up.

Std. Pkg. 5

CONDUCTOR COLOR CODE: 1-Black, 2-White, 3-Green, 4-Red, 5-Blue, 6-Brown, 7-Yellow.

DABURN MINIATURE RETRACTILE COMMUNICATION CORDS



2 Feet Retracted — 10 Ft. Extended

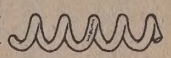
Miniature size. Suitable for compact equipment. Black plastic jacket overall. Operating Temperature: −20°C to +60°C

Std. Pkg. 10

DABURN No.	Conds.	Size	Strand	Coil O.D.	Cond. O.D.
975/28	2	28	19/40 T.C.	½″	.135″
977/28	4	28	19/40 T.C.	½″	.150″

RETRACTILE TEST LEAD WIRE

Stretch coiled kinkless test lead wire description. 12″ coil — stretches to approx. 6 feet. One conductor #20 stranded copper rubber insulation .165 O.D. Colors: Red, Black. Coil O.D. ¾″. Working Voltage: 1000V, 4 Amps.



DABURN No.	Lg'th.	Size	Strand	Coil O.D.	Cord O.D.
984 A	12″	20	41/36	¾″	.165″
984	24″	20	41/36	¾″	.165″

12″ Extends Approx. 6 Ft.
24″ Extends Approx. 12 Ft.

Specify Color, Red or Black
Std. Pkg. 6

UL APPROVED RETRACTILE POWER CORD SETS

18″ Retracted — Approx. 9 Ft. Extended — 300V — UL Approved

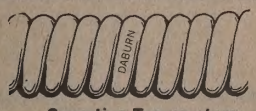
For portable use. Mobile and office equipment.. Neoprene jacketed cord sets with molded male plug on one end.

OPERATING VOLTAGE 300 VOLTS

DABURN Cat. No.	Conds.	AWG Size	Strand	Type UL	Coil O.D.	Cord O.D.
980	2	18	41/34	SVO	⅞″	.250″
980/3	3	18	41/34	SVO	1″	.275″
981	2	18	41/34	SJO	1 3/16″	.310″
981/3	3	18	41/34	SJO	1⅜″	.330″
982	2	16	65/34	SJO	1⅜″	.330″
982/3	3	16	65/34	SJO	1 7/16″	.365″

CONDUCTOR COLOR CODE: 1-Black, 2-White, 3-Green.

Std. Pkg. 10



RETRACTILE COMMUNICATION COIL CORDS

RETRACTED LENGTHS 2, 3 & 4 FT. — EXTENDED LENGTHS 12, 18 & 25 FT.

Multi-conductors stranded extra flexible #23 AWG 21/36 tinned soft copper for long flex life, Neoprene or "Danyon" plastic jacketed cable for long life. 120 volt working, current carrying capacity 1 ampere. Nom. cond. resist. .022 ohms per linear foot., .185 ohms per retracted foot.
For communication equip. such as ham operations, telephone car carriers, radio equip., head sets, etc.

Operating Temperature: −20°C to +60°C

DABURN CAT. NOS. RETRACTED LENGTHS 4 Ft.*	3 Ft.	2 Ft.	No. Conds.	Size	Strand	Nom. Coil O.D.	Nom. Cord O.D.
975-4	975-3	975-2	2	23	21/36	¾″	.200″
976-4	976-3	976-2	3	23	21/36	1 3/16″	.210″
977-4	977-3	977-2	4	23	21/36	⅞″	.240″
978-4	978-3	978-2	5	23	21/36	1″	.285″
978/6-4	978/6-3	978/6-2	6	23	21/36	1⅛″	.305″
978/7-4	978/7-3	978/7-2	7	23	21/36	1¼″	.320″

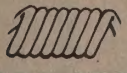
SPECIAL CONSTRUCTION AVAILABLE TO ORDER

DABURN CAT. NOS. RETRACTED LENGTHS 4 Ft.*	3 Ft.	2 Ft.	No. Conds.	Size	Strand	Nom. Coil O.D.	Nom. Cord O.D.
978/8-4	—	978/8-2	8	23	21/36	1 3/32″	.360″
978/10-4	978/10-3	978/10-2	10	23	21/36	1 5/32″	.380″
978/12-4	—	978/12-2	12	23	21/36	1 7/32″	.410″
978/15-4	—	978/15-2	15	23	21/36	1 9/32″	.470″
978/37-4	—	978/37-2	37	23	21/36	2½″	.680″

CONDUCTOR COLOR CODING: 1-Black, 2-White, 3-Red, 4-Green, 5-Blue, 6-Yellow, 7-Brown, 8-Orange, 9-White / Black Tracer, 10-White / Red Tracer, 11-White / Green Tracer, 12-White/Blue Tracer, 13-White/Yellow Tracer, 14-White/Brown Tracer, 15-White / Orange Tracer. *Preferred Put-Up.

Std. Pkg. 5

SHIELDED RETRACTILE COMMUNICATION CORDS



RETRACTED LENGTHS 1, 2 & 4 FT.—EXTENDED LENGTHS 6, 12 & 25 FT.

Single and multi-cond. Shielded mike cables Neoprene or "Danyon" plastic jacketed shielded conductors are individually shielded. Shield can be pigtailed for soldering. Safe — Reliable.

OPERATING TEMPERATURE: −20°C TO +60°C

DABURN CAT. NOS. RETRACTED LENGTHS 4 Ft. L'gth.	2 Ft. L'gth.	1 Ft. L'gth.	No. Conds.	Size	Strand	Nom. Coil O.D.	Nom. Cord O.D.	Volt Rating	CAPACITANCE MMF Lin. Ft.	CAPACITANCE MMF Retr. Ft.
995-4†	995-2	995-1	1	24 Shielded	41/40	5/16″	.160″	75	56	440
996-4	996-2	996-1	2	1-23 1-24 Shielded	21/36 41/40	⅞″	.210″	#23-120 #24-75	56	450
997-4	997-2	997-1	3	2-23 1-24 Shielded	21/36 41/40	⅞″	.240″	#23-120 #24-75	56	450
999-4	999-2	999-1	2	2-24 Shielded	41/40	⅞″	.210″	75	56	450
998-4	998-2	998-1	4	2-23 2-24 Shielded	21/36 41/40	1″	.270″	#23-120 #24-75	56	460

† Preferred Put-Up

Conductors are Color Coded.

Std. Pkg. 10

SPECIAL CONSTRUCTIONS AVAILABLE TO ORDER

DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

HEAVY DUTY TWISTED PAIRS INTERCOM CABLES — (Stranded)

Where larger conductors are indicated, we suggest these No. 18 gauge cables. Rugged yet flexible — abrasion resistant. Gray vinyl jacket overall.
Standard intercom color coding for paired cables applies.

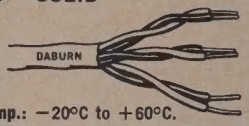
DABURN No.	Pairs	Cond.	Size	Nom. O.D.
3003/3	3	6	18-16/30	.365″
3003/6	6	12	18-16/30	.560″
3003/9	9	18	18-16/30	.650″
3003/15	15	30	18-16/30	.875″

STD. PUT-UP: 500 Ft., 1000 Ft.

PLASTIC INTERCOMMUNICATION CABLES

TWISTED PAIRS — SOLID

Each Cond. #22 **Solid** Tinned Copper, .010″ wall (Operating Temp. −20°C to +60°C). Vinyl plastic insulation, conductors color coded, twisted pairs, cabled, gray vinyl jacket overall. Suitable for outdoor installations.
Operating Voltage: 200 Volts. **Operating Temp.:** −20°C to +60°C.



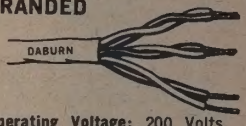
DABURN No.	Pairs	Cond.	Size	Nom. Jacket	Nom. O.D.
3000	1	2	22 Solid	.020″	.130″
3000/2	2	4	22 Solid	.020″	.205″
3000/3	3	6	22 Solid	.020″	.215″
3000/6	6	12	22 Solid	.020″	.275″
3000/9	9	18	22 Solid	.020″	.310″
3000/11	11	22	22 Solid	.020″	.340″
3000/13	13	26	22 Solid	.025″	.385″
3000/15	15	30	22 Solid	.025″	.390″
3000/16	16	32	22 Solid	.025″	.415″
3000/27	27	54	22 Solid	.035″	.505″
3000/31	31	62	22 Solid	.035″	.555″
3000/41	41	82	22 Solid	.035″	.630″
3000/51	51	102	22 Solid	.045″	.735″
3000/76	76	152	22 Solid	.070″	.970″
3000/101	101	202	22 Solid	.080″	1.140″

STD. PUT-UP: 100 Ft., 500 Ft., 1000 Ft. Other pairs available to order.

PLASTIC INTERCOMMUNICATION CABLES

TWISTED PAIRS — STRANDED

Each Cond. #22 7/30 Tinned Copper, .010″ wall vinyl plastic insulation, conductors color coded, twisted pairs, cabled, gray vinyl jacket overall. Suitable outdoor installations.
Operating Temperature: −20°C to +60°C. **Operating Voltage:** 200 Volts.



DABURN No.	Pairs	Cond.	Size	Strand	Nom. O.D.
3002	1	2	22	7/30	.145″
3002/2	2	4	22	7/30	.210″
3002/3	3	6	22	7/30	.225″
3002/4	4	8	22	7/30	.235″
3002/5	5	10	22	7/30	.245″
3002/6	6	12	22	7/30	.290″
3002/9	9	18	22	7/30	.350″
3002/11	11	22	22	7/30	.365″
3002/15	15	30	22	7/30	.455″
3002/19	19	38	22	7/30	.480″
3002/23	23	46	22	7/30	.530″
3002/27	27	54	22	7/30	.570″
3002/31	31	62	22	7/30	.635″
3002/41	41	82	22	7/30	.710″
3002/51	51	102	22	7/30	.800″

STD. PUT-UP: 100 Ft., 500 Ft., 1000 Ft.

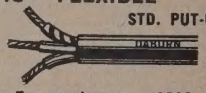
CONDUCTOR COLOR CODE CHART FOR PAIRED INTERCOM CABLES

PAIR NO.	COLOR COMBINATION
1	Black paired with Red
2	Black paired with White
3	Black paired with Green
4	Black paired with Blue
5	Black paired with Brown
6	Black paired with Yellow
7	Black paired with Orange
8	Red paired with Green
9	Red paired with White
10	Red paired with Blue
11	Red paired with Yellow
12	Red paired with Brown
13	Red paired with Orange
14	Green paired with Blue
15	Green paired with White
16	Green paired with Brown
17	Green paired with Orange
18	Green paired with Yellow
19	White paired with Blue
20	White paired with Brown
21	White paired with Orange
22	White paired with Yellow
23	Blue paired with Brown
24	Blue paired with Orange
25	Blue paired with Yellow
26	Brown paired with Orange
27	Brown paired with Yellow
28	Purple paired with Red
29	Purple paired with White
30	Purple paired with Green
31	Purple paired with Blue
32	Purple paired with Brown
33	Purple paired with Yellow
34	Purple paired with Orange
35	Purple paired with Slate
36	Purple paired with Black
37	Slate paired with Red
38	Slate paired with White
39	Slate paired with Green
40	Slate paired with Blue
41	Slate paired with Brown
42	Slate paired with Yellow
43	Slate paired with Orange
44	Slate paired with Black
45	White/Black paired w. Red
46	White/Black paired w. Green
47	White/Black paired w. Blue
48	White/Black paired w. Brown
49	White/Black paired w. Yellow
50	White/Black paired w. Orange
51	White/Black paired w. Purple

MULTI-CONDUCTOR — PLASTIC JACKET

UNSHIELDED AUDIO — FLEXIBLE

Each Cond. #22 7/30 Tinned Copper, stranded, .010″ wall plastic insulation, color coded, twisted, gray vinyl jacket overall. Suitable for signal, P.A. systems, computer cable—for outdoor use.
STD. PUT-UP: 500 Ft.
Operating Voltage: 200 Volts. **Operating Temperatures:** −20°C to +60°C.



DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. Jacket	Nom. O.D.
3054/2	2	22	7/30	.010″	.020″	.140″
3054/3	3	22	7/30	.010″	.020″	.145″
3054/4	4	22	7/30	.010″	.020″	.170″
3054/5	5	22	7/30	.010″	.020″	.175″
3054/6	6	22	7/30	.010″	.020″	.185″
3054/7	7	22	7/30	.010″	.020″	.190″
3054/8	8	22	7/30	.010″	.020″	.200″
3054/9	9	22	7/30	.010″	.020″	.225″
3054/10	10	22	7/30	.010″	.020″	.235″
3054/12	12	22	7/30	.010″	.020″	.255″
3054/15	15	22	7/30	.010″	.020″	.280″
3054/20	20	22	7/30	.010″	.020″	.310″
3054/25	25	22	7/30	.010″	.020″	.340″
3054/30	30	22	7/30	.010″	.020″	.365″
3054/40	40	22	7/30	.010″	.025″	.425″
3054/50	50	22	7/30	.010″	.035″	.500″
3054/60	60	22	7/30	.010″	.035″	.530″

STD. PUT-UP: From 2 thru 7 cond. 500 ft.; from 8 thru 30 cond. 250 ft.

MULTI-CONDUCTOR COLOR CODE CHART

CONDUCTOR COLOR CODE:

1 — Black	21 — White/Brown	41 — White/Green/Red
2 — Red	22 — White/Orange	42 — White/Green/Green
3 — White	23 — White/Gray	43 — White/Green/Blue
4 — Green	24 — White/Violet	44 — White/Green/Brown
5 — Orange	25 — White/Black/Red	45 — White/Green/Purple
6 — Blue	26 — White/Black/Green	46 — White/Blue/Black
7 — Brown	27 — White/Black/Yellow	47 — White/Blue/Red
8 — Yellow	28 — White/Black/Blue	48 — White/Blue/Green
9 — Violet	29 — White/Black/Brown	49 — White/Blue/Blue
10 — Slate	30 — White/Black/Orange	50 — White/Blue/Brown
11 — Pink	31 — White/Black/Slate	51 — White/Blue/Purple
12 — Tan	32 — White/Black/Purple	52 — White/Brown/Black
13 — Red/Green	33 — White/Black/Black	53 — White/Brown/Red
14 — Red/Yellow	34 — White/Red/Black	54 — White/Brown/Green
15 — Red/Black	35 — White/Red/Red	55 — White/Brown/Blue
16 — White/Black	36 — White/Red/Green	56 — White/Brown/Brown
17 — White/Red	37 — White/Red/Blue	57 — White/Brown/Purple
18 — White/Green	38 — White/Red/Brown	58 — White/Purple/Red
19 — White/Yellow	39 — White/Red/Purple	59 — White/Purple/Green
20 — White/Blue	40 — White/Green/Black	60 — White/Purple/Blue

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DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

AUDIO, DATA SHIELDED, MICROPHONE & CONTROL CABLES

AUDIO & DATA SHIELDED CABLE
INDIVIDUALLY ALUMINUM MYLAR FOIL SHIELDED PAIRS

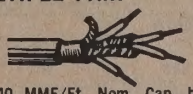
DESCRIPTION: Each conductor **stranded,** copper tinned, hi density polyethylene insulation, color coded, conductors — twisted pairs. #22 **stranded** tinned copper wire. Aluminum foil mylar shield over each pair and copper tinned drain wire. Overall chrome grey PVC jacket. Nom. cap. between conds. of a pair, 25 PF/FT. Capacitance of a single conductor to shield, 45 PF/FT. **Sugg. Working Voltage:** 300V.

DABURN Cat. No.	No. of Pairs	No. of Conds.	Cond. Strand	Nom. Wall	Nom. Jkt.	Nom. O.D.
2932/3	3	6	7/30	.010″	.025″	.235″
2932/6	6	12	7/30	.010″	.030″	.320″
2932/9	9	18	7/30	.010″	.035″	.370″
2932/11	11	22	7/30	.010″	.040″	.415″
2932/15	15	30	7/30	.010″	.040″	.485″
2932/19	19	38	7/30	.010″	.050″	.530″
2932/27	27	54	7/30	.010″	.055″	.645″

STD. PUT-UP: 500 Ft., 1000 Ft. **Construction variations to order.**

AUDIO & DATA SHIELDED CABLE
ALUMINUM MYLAR FOIL SHIELD
INDIVIDUALLY SHIELDED MULTIPLE PAIR

This construction reduces the bulk in required cables. Multipaired #22 **solid** tinned copper, vinyl insulated .013″, cabled in pairs. Aluminum foil mylar shield over each pair and drain wire, overall grey vinyl jacket. Nom. Cap. between Conds. 40 MMF/Ft. Nom. Cap. between 1 Cond. and others connected to shield — 77 MMF/Ft.



DABURN Cat. No.	Pairs	Conds.	Nom. Jacket	Nom. O.D.
2930/3	3	6	.030″	.252″
2930/6	6	12	.037″	.345″
2930/9	9	18	.040″	.410″
2930/11	11	22	.040″	.458″
2930/15	15	30	.045″	.510″
2930/19	19	38	.055″	.630″
2930/27	27	54	.070″	.770″

STD. PUT-UP: 500 Ft., 1000 Ft. **Construction Variations Available to Order.**

ALUMINUM MYLAR FOIL SHIELD
PLASTIC JACKETED CABLE

Extremely light in weight, provides 100% shield coverage — small diameters. Each cond. tinned copper, stranded color coded polyethylene insulation, twisted, drain wire, aluminum mylar foil shield, gray polyvinylchloride jacket overall. Drain wire provides quick and easy grounding.

OPERATING TEMPERATURE: −20°C to +60°C. **OPERATING VOLTAGE:** 400 Volts.

DABURN Cat. No.	Cond.	Size	Strand	Nom. Wall	Nom. Jacket	Nom. O.D.
2960	2	22	7/30	.015″	.020″	.160″
2960/3	3	22	7/30	.015″	.020″	.185″
2960/4	4	22	7/30	.015″	.020″	.205″
2961	2	20	10/30	.015″	.020″	.185″
2961/3	3	20	10/30	.015″	.020″	.205″
2961/4	4	20	10/30	.015″	.020″	.225″
2962	2	18	16/30	.017″	.020″	.220″
2962/3	3	18	16/30	.017″	.020″	.235″
2962/4	4	18	16/30	.017″	.020″	.255″
2963	2	16	26/30	.017″	.020″	.255″
2963/3	3	16	26/30	.017″	.020″	.275″
2964	2	14	41/30	.017″	.020″	.295″
2964/3	3	14	41/30	.017″	.020″	.305″

STD. PUT-UP: 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—Black, 2—Red, 3—White, 4—Green.

SHIELDED CABLE
PLASTIC JACKETED BRAIDED COPPER SHIELD

Suitable for P.A. and sound systems, installation in schools, hospitals and institutions, transmitters, electronic circuits, etc. Construction allows ease of pigtailing. Shield provides additional strength for cable. Each conductor tinned copper, PVC insulation, color coded, twisted, braided T-C shield, gray PVC jacket overall. Suitable for outdoor installations.

OPERATING TEMPERATURE: −20°C to +60°C.

DABURN Cat. No.	Cond.	Size	Strand	Nom. Wall	Nom. Jacket	Operating Voltage	Nom. O.D.
2970	2	22	7/30	.017″	.020″	350V	.175″
2970/3	3	22	7/30	.017″	.020″	350V	.195″
2971	2	20	10/30	.017″	.020″	350V	.195″
2971/3	3	20	10/30	.017″	.020″	350V	.215″
2972	2	18	16/30	.017″	.020″	350V	.235″
2972/3	3	18	16/30	.017″	.020″	350V	.245″
2974	2	16	26/30	.017″	.020″	350V	.255″
2974/3	3	16	26/30	.017″	.020″	350V	.260″
2975	2	14	41/30	.020″	.020″	450V	.290″
2975/3	3	14	41/30	.020″	.020″	450V	.295″
2976	2	12	65/30	.020″	.020″	450V	.235″
2976/3	3	12	65/30	.020″	.020″	450V	.340″

CONDUCTOR COLOR CODE: 1—Black, 2—Red, 3—White.
STD. PUT-UP: 500 Ft., 1000 Ft.
CONSTRUCTION VARIATION TO ORDER

SHIELDED PLASTIC MICROPHONE CABLE

Will withstand abuse and is resistant to oil, moisture, aging. Have low capacitance, Hi insulation resistance and low attenuation. Will not strain or mark.

2772 — For hi impedance microphone
2773 — For crystal, ribbon, etc. Mikes all are suitable for hi-fi interconnecting
2774 — For hi impedance lapel mikes.
OPERATING TEMPERATURE: −20°C to +60°C.

SHIELDED MICROPHONE CABLE ONE CONDUCTOR

Uses tinned copper spiral shield — for ease in soldering — extremely flexible-plastic.

DABURN Cat. No.	Cond.	Size	Strand	Shield	Nom. Cap./Ft. MMF	Sugg. Work Voltage	Nom. O.D.
2770	1	25	7/33	Spiral	23	3000	.159″
2771	1	25	7/33	Spiral	33	1000	.120″
2772	1	20	26/34	Braid	36	4000	.175″
2773	1	25	7/33*	Braid	34	3500	.144″
2774	1	25	7/33*	Braid	23	5000	.190″

*3 strand tinned copper, 4 strand tinned copperweld.

MULTICONDUCTOR MICROPHONE CABLE

Each conductor tinned copper, polyethylene insulation — color coded, twisted with fillers, textile wrap, tinned copper braid shield, gray vinyl jacket overall.
OPERATING TEMPERATURE: −20° to +60°C, 600 Volts.

2782	2	22	16/34	31 MMF	1000	.231″
2782/20	2	20	26/34	45 MMF	600	.240″
2782/24	2	24	10/34	38 MMF	1000	.190″

SHIELDED ULTRA LOW CAPACITY MICROPHONE CABLE
Plastic Jacket — Cellular Foam Polyethylene Insulation
BRAIDED SHIELD

DESCRIPTION: Constructed with white foam polyethylene insulation, braided tinned copper shield, chrome gray vinyl jacket. The low loss foam polyethylene construction has lower capacitance and attenuation than standard polyethylene mike cables as much as 50%. This increases the effective length of cable as much as 50% without signal loss.

OPERATING TEMPERATURE −20°C to +60°C.

DABURN Cat. No.	Cond.	Size	Strand	Nom. Cap./Ft.	Nom. Jacket	Nom. O.D.
2690	1	26	7/34*	30MMF	.020″	.114″
2691	1	24	10/34	20MMF	.030″	.180″
2692	1	24	10/34	15MMF	.030″	.220″
2693	2	22	16/34	11MMF	.030″	.295″

STD. PUT-UP: 100 Ft., 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—White, 2—Black.
*3 strands tinned copper, 4 strands tinned copperweld.

PLASTIC JACKETED AUDIO AND MULTICONDUCTOR CABLE
SPIRAL WRAPPED COPPER SHIELD

Suitable for P.A. and sound systems, schools, hospitals, institutions, recording studios, paging and call systems. Each conductor copper tinned, plastic insulation, color coded, twisted, spiral wrapped tinned, copper shield, gray plastic jacket. Temp.: −20 to +60°C. Simplifies pigtailing. Provides almost 100% shielding coverage.

DABURN Cat. No.	Cond.	Size	Strand	Nom. Insul.	Nom. Jacket	Sugg. Working Voltage	Nom. O.D.
2950	2	22	7/30	.017″	.020″	350V	.170″
2950/1	1	22	7/30	.017″	.020″	350V	.115″
2950/3	3	22	7/30	.017″	.020″	350V	.190″
2950/4	4	22	7/30	.017″	.020″	350V	.200″
2950/6	6	22	7/30	.017″	.020″	350V	.235″
2949	2	22	1	.017″	.020″	350V	.170″
2952	2	20	10/30	.017″	.020″	350V	.190″
2952/1	1	20	10/30	.017″	.020″	350V	.129″
2952/3	3	20	10/30	.017″	.020″	350V	.205″
2952/4	4	20	10/30	.017″	.020″	350V	.222″
2952/6	6	20	10/30	.017″	.020″	350V	.260″
2953	2	18	16/30	.017″	.020″	350V	.230″
2953/1	1	18	16/30	.017″	.020″	350V	.133″
2953/3	3	18	16/30	.017″	.020″	350V	.230″
2953/4	4	18	16/30	.017″	.020″	350V	.245″
2954	2	16	26/30	.017″	.020″	350V	.235″
2954/4	4	16	26/30	.017″	.020″	350V	.255″
2954/3	3	16	26/30	.017″	.020″	350V	.245″
2955	2	14	41/30	.020″	.025″	450V	.285″
2955/3	3	14	41/30	.020″	.025″	450V	.292″
2955/4	4	14	41/30	.020″	.025″	450V	.310″
2956	2	12	65/30	.020″	.025″	450V	.325″
2956/3	3	12	65/30	.020″	.025″	450V	.335″

STD. PUT-UP: 250 Ft., 500 Ft., 1000 Ft.
CONDUCTOR COLOR CODE: 1—Black, 2—Red, 3—White, 4—Green.
CONSTRUCTION VARIATION TO ORDER

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DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

TEST LEAD WIRE • MINIATURIZATION WIRE & CABLE PHONO & STEREO WIRE & CABLE—HI TENSION CABLE

RUBBER KINKLESS TEST LEAD WIRE

Suitable as Test Lead Wire in analyzers, instruments, oscillators, meters, etc. Wherever extra flexibility and limpness is necessary. Single conductor, extra flexible stranded soft tinned copper, separator, wall color coded rubber, smooth wax finish.

OPERATING TEMPERATURE: −20°C to +60°C. Colors: Red, black

DABURN No.	Size	Strand	Nom. Insul. Wall	Sugg. Voltage	O.D. Nom.
2715	20	41/36	3/64"	3,000V	.137"
2716	18	65/36	3/64"	5,000V	.145"
*2718	18	65/36	3/64"	5,000V	.145"
2717	18	65/36	3/64"	10,000V	.210"

* Types WS-16/U Black, WS17/U Red Per MIL-W-13169.

STD. PUT-UP: 100 Ft., 500 Ft., 1000 Ft.

PLASTIC KINKLESS TEST LEAD WIRE

Soft formulation vinyl maximum flexibility. Temperature stability from −80°C to +115°C. Exceed requirements for MIL-I-3930A Type JP (PVC). Suitable for test leads, etc. Resistant to gasoline and oil. Excellent abrasion Resistance.

DESCRIPTION: One conductor tinned copper stranded, special formulation vinyl insulation — smooth surface.

OPERATING TEMPERATURE: −80°C to +115°C, 5000V rating.

COLORS: Black, Red, Yellow, Green, White, Blue.

DABURN No.	Size	Strand	Ins.	Nom. O.D.
2722/22	22	26/36	.032"	.100"
2722/20	20	26/34	.032"	.104"
2722/18	18	65/36	.032"	.112"
2722/16	16	65/34	.032"	.129"

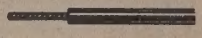
STD. PUT-UP: 100 Ft., 500 Ft., 1000 Ft.

MINIATURIZATION HOOK-UP WIRE AND CABLE Conforms to MIL-W-16878D Spec.

UNSHIELDED — ONE CONDUCTOR 105°C — 600V RATING

Used as lead computers, transistor circuits, instruments — where fine sizes are required with high temperature conditions. One conductor stranded tinned copper, 105°C vinyl resin overall.

DABURN No.	Conductor	Size	Strand	Nom. Wall	Nom. O.D.
2670/32	1	32	7/40	.010"	.029"
2670/30	1	30	7/38	.010"	.030"
2670/28	1	28	7/36	.010"	.035"
2670/26	1	26	10/36	.010"	.038"
2670/24	1	24	16/36	.015"	.055"



DESCRIPTION
One conductor stranded tinned copper with 105°C. high temperature thermoplastic insulation overall.

STOCK COLORS: Black, Red, Green, Yellow, Blue, Brown, White, Orange and Purple.

STD. PUT-UP: 500 Ft., 1000 Ft.

SHIELDED HOOK-UP WIRE SUB-MINIATURE • SUPER FLEXIBLE • 600V RATING

One conductor stranded tinned copper, 105°C vinyl resin overall.

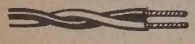
DABURN No.	Conductor	Size	Strand	Nom. Wall	Nom. O.D.
2682	1	30	7/38	.010"	.052"
2684	1	28	7/36	.010"	.057"
2686	1	26	10/36	.010"	.060"
2688	1	24	16/36	.010"	.073"

DESCRIPTION
One conductor stranded tinned copper with 105°C. high temperature thermoplastic insulation and tinned copper shielded braid overall.

STOCK COLOR: White (Under Shield).

STD. PUT-UP: 500 Ft., 1000 Ft.

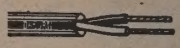
MULTI CONDUCTOR CABLE



SUB-MINIATURE • NOT SHIELDED • FLEXIBLE

Tinned Copper Conductors — Conforms to MIL-W-16878D Spec

Suggested Operating Temperature: −55°S to +105°C



TWISTED — NO OUTER JACKET — 600V RATING

DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.
2672	2	30	7/38	.010"	.058"
2672/3	3	30	7/38	.010"	.064"
2672/4	4	30	7/38	.010"	.072"

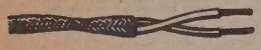
COND. COLOR CODE: 1—Black, 2—White, 3—Red, 4—Green.
STD. PUT-UP: 500 Ft., 1000 Ft.

TWISTED—CLEAR VINYL JACKET OVERALL—600V RATING

DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.
2674	2	28	7/36	.010"	.079"
2674/3	3	28	7/36	.010"	.086"
2674/4	4	28	7/36	.010"	.095"

COND. COLOR CODE: 1—Black, 2—White, 3—Red, 4—Green.
STD. PUT-UP: 500 Ft., 1000 Ft.

SHIELDED SUB-MINIATURE MULTI-CONDUCTOR CABLE



Tinned Copper Conductors — Conforms to MIL-W-16878D Spec

Suggested Operating Temperature: −55°S to +105°C

TWISTED — SHIELDED — NO OUTER JACKET

1,000V Rating

DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.
2676	2	24	16/36	.015"	.114"
2676/3	3	24	16/36	.015"	.123"
2676/4	4	24	16/36	.015"	.144"

COND. COLOR CODE: 1—Black, 2—White, 3—Red, 4—Green.
STD. PUT-UP: 500 Ft., 1000 Ft.

TWISTER — SHIELDED — CLEAR VINYL JACKET OVERALL

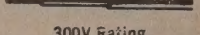
600V Rating

DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.
2678	2	28	7/36	.010"	.105"
2678/3	3	28	7/36	.010"	.115"
2678/4	4	28	7/36	.010"	.120"

COND. COLOR CODE: 1—Black, 2—White, 3—Red, 4—Green.
STD. PUT-UP: 500 Ft., 1000 Ft.

NOTE: Multi-conductors can be formed to order twisted, shielded with or without plastic jacket overall.

TINNED COPPER SHIELDED PHONO WIRE



Suitable where small diameter, limpness and extremely flexibility is necessary as for phono pickups, stereo, etc.

OPERATING TEMPERATURE: −20°C to +60°C.

300V Rating

DABURN No.	Size	Strand	Overall Insul Wall	Nom. O.D.
2737	24	16/36	.010"	.075"
2738	22	7/30	.010"	.080"
COTTON BRAID OVER-SHIELD				
2739	24	16/36	.010"	.095"

STD. PUT-UP: 100 Ft., 500 Ft.

SHIELDED HOOK-UP WIRE

One conductor, tinned copper stranded, polyvinyl-chloride insulation, lacquered glass braid, overall tinned copper shileded braid.

OPERATING TEMPERATURE: −20°C to +60°C.

600V Rating

DABURN No.	Size	Strand	Nom. Wall	Nom. O.D.
2727/22	22	7/30	.016"	.095"
2727/20	20	10/30	.016"	.105"
2727/18	18	16/30	.016"	.125"
2727/16	16	26/30	.016"	.135"
2727/14	14	41/30	.016"	.155"
2727/12	12	65/30	.016"	.175"
2727/10	10	105/30	.025"	.200"

STD. PUT-UP: 1000 Ft.

7MM HIGH TENSION CABLE

#2730 — unshielded one conductor, in sulation, cotton braid highly lacquered.

#2731 — same construction as above plus a closely woven tinned copper shielded braid overall.

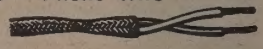
DABURN No.	Size	Strand	Insul.	O.D.
2730	16	19/29	3/32"	.275"
*2731 (Shielded)	16	19/29	3/32"	.295"

STD. PUT-UP: 100 Ft., 500 Ft. *10 amps at 25KV

Suitable for auto and aircraft ignition systems where grounding is indicated.

HI-FI STEREO

Interconnecting Cable — Phono Wire



Extremely flexible. Designed for low hum and noise pickup. Special PVC formulation −40°C to +80°C operation.

TWISTED — UNSHIELDED 200V Rating

DABURN No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.
2741	1	32	7/40	.010"	.028"
2742	2	32	7/40	.010"	.047"
2743	3	32	7/40	.010"	.053"
2744	4	32	7/40	.010"	.061"
TWISTED — SHIELDED					
2745	1	32	7/40	.010"	.040"
2746	2	32	7/40	.010"	.067"
2747	3	32	7/40	.010"	.072"
2748	4	32	7/40	.010"	.080"
2751#	2	32	7/40	.010"	.080"

STD. PUT-UP: 500 Ft., 1000 Ft. **#2751** Individually Shielded.

CONDUCTOR COLOR CODE: 1—White, 2—Red, 3—Black, 4—Green.

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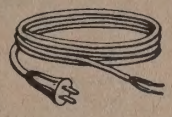
DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

POWER CORDS • COAXIAL CABLE • ROTOR • SPEAKER CABLE

SERVICE CORD — HEAVY DUTY

UL and CSA approved

Suitable for replacement on machinery, tools, refrigerators, electronic devices



DESCRIPTION: Two and three conductors, stranded bare copper, serve, rubber insulation, filler, wrap, tough black rubber jacket overall. Molded plug one end, free end stripped and tinned — Hanked.

VOLTAGE RATING: 300V

DABURN No.	Cord L'gth.Ft.	Cond.	Size	Strand	Type	Amp Rating	Cord O.D.
1980	8	2	16	65/34	SJ	10	.325″
1980/3	8	3	16	65/34	SJ	10	.355″
1982/3	8	3	18	41/34	SJ	7	.330″
1984	9	2	18	41/34	SV	7	.245″
1984/3	9	3	18	41/34	SV	7	.265″

Std Pkg. 25

UL APPROVED — SERVICE LINE CORD

Use as an all purpose power supply cord for small appliances, lamps, radios, etc.

DESCRIPTION: Two conductors parallel SP-1 (POSJ) with molded-on male plug, double brass blades, conductor end stripped and tinned — Hanked. Available in black and brown. 300V rating.

DABURN No.	Length	Cond.	Size	Strand	Nom. O.D.	Std. Pkg.
1987	6	2	18	41/34	130″ x .235″	50
1988	7½	2	18	41/34	130″ x .235″	50

LAMP CORD

Types SP-1 (POSJ-64) — Type SP-1 (POT) UL Approved

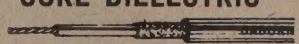
An all purpose approved cord both SP-1 (rubber) and SP-1 (Plastic) for lamps, radios and small instruments and appliances. 300V rating.

DABURN No.	Cond.	Size	Strand	Insul.	Type	UL Type	Nom. O.D.
1990	2	18	41/34	Rubber	SP-1	POSJ	.130″x.235″
1991	2	18	41/34	Plastic	SPT-1	POT	.130″x.225″
1993	2	18	41/34	Pl. Clear	SPT-1	POT	.115″x.215″
1994	2	16	65/34	Pl. Brown	SPT-2	POT	.160″x.300″

STD. PUT-UP: 100 Ft., 250 Ft., 500 Ft., 1000 Ft.
COLORS: (Rubber) Brown, Black, White; (Plastic) Brown, Black, Ivory.

DABURN COAXIAL CABLES WITH HIGH TEMPERATURE TEFLON* CORE DIELECTRIC

Meets MIL-C-17C



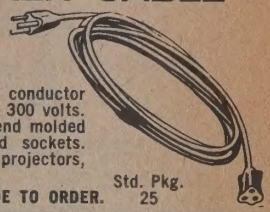
These Teflon* Core Dielectric Co-Axial Cables combine both miniaturization and hi-temperature qualities. The Teflon Jackets are weatherproof, resistant to fuels and are extremely flexible. Shield: Silver Covered Copper.

DABURN No.	Military Number RG/U Type	Ohms	Cap. MMFT/ Ft.	Inner Conductor	O.D. Inches	Max. Oper. Volts RMS	Nom. Atten. DB/100′ 400 Mc	RG/U Type
D187A/U	187A/U	75	19.5	7/28 Silvered Copperweld	.110	1200	16.0	187A/U
D188/U	188/U	50	29.0	7/.0067 Silvered Copperweld	.110	1200	16.7	188/U
D188A/U	188A/U	50	29.0	7/.0067 Silvered Copperweld	.110	1200	16.7	188A/U
D195/U	195/U	95	15.0	7/38 Silvered Copperweld	.155	1500	11.0	195/U
D195A/U	195A/U	95	15.0	7/38 Silvered Copperweld	.155	1500	11.0	195A/U
D196/U	196/U	50	28.5	7/38 Silvered Copperweld	.080	1000	28.0	196/U
D196A/U	196A/U	50	28.5	7/38 Silvered Copperweld	.080	1000	28.0	196A/U

STD. PUT-UP: 500 Ft., 1000 Ft. *TEFLON—DUPONT
JKT MTL.: D187A/U Teflon. All others TFE Teflon.

POWER CORD SETS

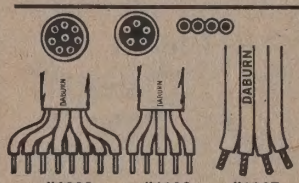
UL and CSA approved



Manufactured for lasting service these 2 and 3 conductor quality black rubber cords are flexible. Rated at 300 volts. One end has molded plastic male plug, other end molded female plug. Will fit conventional plugs and sockets. Useful for business and data machines, projectors, vacuum cleaners, appliances, etc. Std. Pkg. 25

CUSTOM CONSTRUCTION OF POWER CORDS MADE TO ORDER.

Cat. No.	Size & Conds.	Cord Length Ft.	UL Type	Strand	Amp Rating	Nom. O.D.
9-201	2/18	6	SV	41/34	7	.245″
9-202	2/18	9	SV	41/34	7	.245″
9-203	2/18	10	SJ	16/30	7	.300″
9-204	2/18	25	SJ	16/30	7	.300″
9-206	2/16	10	SJ	26/30	10	.325″
9-207	2/16	25	SJ	26/30	10	.325″
9-208	2/16	50	SJ	26/30	10	.325″
9-211	3/18	10	SJ	16/30	7	.330″
9-212	3/18	25	SJ	16/30	7	.330″
9-213	3/18	50	SJ	16/30	7	.330″
9-215	3/16	15	SJ	26/30	10	.365″
9-216	3/16	25	SJ	26/30	10	.365″
9-217	3/16	50	SJ	26/30	10	.365″



#1909 #1908 #1907

ANTENNA CONTROL ROTOR CABLE

#1907 — 4 cond. flat parallel polyethylene plastic insulation — one outer conductor tinned, balance bare copper.
#1908 — 5 cond. twisted, color coded, vinyl plastic jacket overall.
#1909 — 8 cond. twisted, color coded vinyl plastic jacket overall.

DABURN No.	Cond.	Size	Strand	Nom. O.D.
1907	4	20	7/28	.072″ x .390″
1908	5	20	7/28	.180″
1909	8	22	7/30	.205″

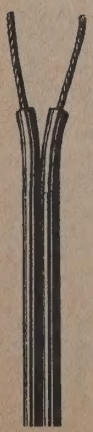
CONDUCTOR COLOR CHART FOR #1908, 1909
1-Black, 2-White, 3-Red, 4-Green, 5-Yellow, 6-Blue, 7-Brown, 8-Orange.
STD. PUT-UP: 500 Ft., 1000 Ft.

RG/U COAXIAL CABLE

DESCRIPTION: One conductor, polyethylene insulation, copper braid shield, plastic jacket overall.

DABURN No.	Spool	Type	Nom. Imp.	Size	Nom. MMFD/ Ft.	Strand	O.D.
1925	500′	RG-8/U	52	13	29.5	7/21 Bare	.405″
1926	500′	RG-9/U	51	13	30.0	7/21 S	.420″
1927	500′	RG-11/U	75	18	20.5	7/26 Tinned	.405″
1928	1000′	RG-58A/U	50	20	29.0	19/.0068 Tinned	.195″
1929	1000′	RG-58/U	53.5	20	28.5	Solid	.195″
1930	1000′	RG-59/U	73	22	21.0	Solid C.W.	.242″
1931	1000′	RG-62/U	93	22	13.5	Solid	.242″

Additional RG numbers available conforming to MIL-C-17B Specs.



PLASTIC SPEAKER CABLE

CLEAR AND COLORED INSULATION

DESCRIPTION: Conductors are parallel, stranded bare copper, color coded and clear polyvinylchloride insulation. Conductors separate quickly when split apart. Suitable for hi-fi speaker cable, miniature juke-box speaker connection, rear auto speaker extension cable. Clear insulation blends with any interior.
TEMPERATURE RATING: −20°C to +60°C. **OPER. VOLTAGE:** 300V

Daburn No.	Cond.	Size	Strand	Nom. Wall	Nom. O.D.	Stock Colors
2754	2*	24	7/32	.016″	.057″x.120″	Brn.,Blk.,Wh., Gray, Tan
2755	2*	24	7/32	.016″	.057″x.120″	Clear
2756	2	20	10/30	.016″	.085″x.175″	Brn.,Blk.,Wh., Gray, Tan
2757	2	20	10/30	.016″	.085″x.175″	Clear
2758	2	18	41/34	.032″	.115″x.215″	Brn.,Blk.,Wh., Gray, Tan
2759	2	18	41/34	.032″	.115″x.215″	Clear

* 1 conductor tinned, 1 bare.
STD. PUT-UP: 100 Ft., 250 Ft., 500 Ft., 1000 Ft.

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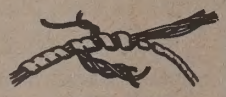
DABURN

DABURN ELECTRONICS & CABLE CORP.

WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

SPIRAL WRAP FOR HARNESSES • PUSH BUTTON TIES WIRE TIES • TEST LEADS • COMPONENT CLIPS

SPIRAL WRAP — PLASTIC TUBING FOR HARNESSES



Available in four formulations: Polyethylene, Rulan (flame retardant) Polyethylene, Nylon and Teflon. Easily applied. Twists on easily. Can be flexed repeatedly without cracking or breaking. Reusable, bends around sharp corners. Expandable.
Per MIL-P-22692, MIL-I-631C, MIL-P-3803

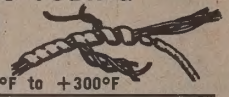
POLYETHYLENE (Clear) — **TEMP. RANGE −105° to +200°F**

DABURN Cat. No.	Covers Wire Groups	Outside Diam.	Nom. Wall	Standard Package
605-1/8"	1/16" to 1/2"	1/8"	.031"	100', 500', 1000'
605-3/16"	1/8" to 1 1/2"	3/16"	.031"	100', 500', 1000'
605-1/4"	3/16" to 2"	1/4"	.045"	100', 500', 1000'
605-3/8"	5/16" to 3"	3/8"	.058"	100', 500', 1000'
605-1/2"	3/4" to 4"	1/2"	.058"	100', 500', 1000'

(Carbon Impregnated) Polyethylene) — RULAN (White) — TEMP. RANGE: −10F° to +200°F

606-1/8"	1/16" to 1/2"	1/8"	.030"	100', 500', 1000'
606-1/4"	3/16" to 1 1/2"	1/4"	.058"	100', 500', 1000'
606-3/8"	5/16" to 2"	3/8"	.058"	100', 500', 1000'
606-1/2"	3/4" to 4"	1/2"	.060"	100', 500', 1000'

SPIRAL WRAP — PLASTIC TUBING FOR HARNESSES



NYLON
Per MIL-P-17091B & MIL-P-20693 −150°F to +300°F

Cat. No. DABURN	Wire Range Covers	Diam. Outside	Wall Nom.
607-1/8"	1/16" to 1/2"	1/8"	.031"
607-1/4"	3/16" to 2"	1/4"	.058"
607-3/8"	5/16" to 3"	3/8"	.030"
607-1/2"	3/4" to 4"	1/2"	.058"

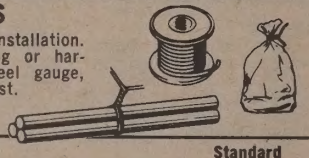
COLOR: Natural (White). **STD. PUT-UP:** 100 Ft., 500 Ft.

TEFLON
Per MIL-I-22129 −450°F to +500°F

608-1/8"	1/16" to 1/2"	1/8"	.031"
608-1/4"	3/16" to 2"	1/4"	.030"
608-3/8"	5/16" to 3"	3/8"	.030"
608-1/2"	3/4" to 4"	1/2"	.030"

COLOR: Natural (White). **STD. PUT-UP:** 100 Ft., 500 Ft.

PLASTIC WIRE TIES



Useful for temporary or permanent installation. Can be adapted for immediate bundling or harnessing. Vinyl insulated. Has .016" steel gauge, wire reinforcement, 3/32" wide, 30 lb. test.

TEMPERATURE: −20°F to +90°C.

DABURN Cat. No.		Standard Package
603	Plastic Wire Ties	100', 500', 1000'

COLORS: White, Blue, Red, Green, Yellow.

DABURN PUSH BUTTON WIRE TIES

Push button wire ties for harnessing wire. 4 1/2" in length, each tie is adjustable to 30 different diameters. Made of strong polyethylene, it is inert chemically and heat resistant. Breaking strength 45 to 95 lbs. After the tie is placed in hole for anchoring, wires can be replaced or added by loosening tie and pulling tight again. Designed to fit .250" to .265" hole in a .031" to .140" thick panel. Material conforms to Spec. LP590. **Temp. to +200°F**

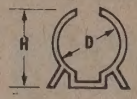
DABURN Cat. No.	(Specify Color)	Standard Package
601-4	Red, Blue, Yellow	100, 1000

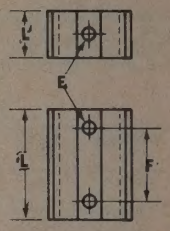
DABURN NYLON PUSH BUTTON WIRE TIES

Same description as No. 601-4. **Temp. to 300°F.**
5 1/2" long. Made of tough Nylon. Higher temperature range than Polyethylene.

DABURN Cat. No.	Color	Standard Package
601-5	Clear	100, 1000

DABURN COMPONENT CLIPS



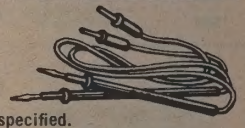


Hold and insulate, electrical and electronic components, accessories — spare parts. Holds firmly and still permits fast and easy insertion. Convenient for fastening clips and retainers for transistors, batteries, fuses, capacitors, resistors, lamps, etc. These Daburn clips are made of black vinyl (polyvinylchloride). Has high dielectric strength. Can be mounted with screws, rivets or other fastening means.

MATERIAL: Rigid Vinyl.
TEMPERATURE RANGE: −20° to +165°F.
STANDARD PACKAGE: 100, 1000.

DABURN Stock No.	D Diam.	H Height	L Length	E Diam. of Hole	F Dist. Bet. Holes
600-1/4"	1/4"	13/32"	1/2"	3/32"	—
600-5/16"	5/16"	15/32"	1/2"	3/32"	—
600-3/8"	3/8"	1/2"	1/2"	3/32"	—
600-7/16"	7/16"	1/2"	1/2"	3/32"	—
600-1/2"	1/2"	5/8"	1/2"	3/32"	—
600-9/16"	9/16"	5/8"	1/2"	3/32"	—
600-5/8"	5/8"	5/8"	1/2"	3/32"	—
600-11/16"	11/16"	3/4"	1/2"	5/32"	—
600-3/4"	3/4"	7/8"	1/2"	5/32"	—
600-7/8"	7/8"	1"	1/2"	5/32"	3/4"
600-1"	1"	1 1/4"	1 1/8"	5/32"	3/4"
600-1 3/8"	1 3/8"	1 15/32"	1 1/8"	5/32"	3/4"

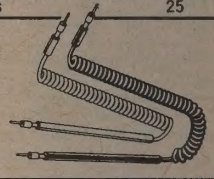
TEST LEADS
NEEDLEPOINT AND SOLDERLESS OVERALL LENGTH 50"



Black and red kinkless test lead wire, handles as specified.

DABURN No.	Description	Standard Package
17-308	Pencil Type Bakelite, 6" Handles	10
17-360	Deluxe Solderless Prod, 5" Handles	25
17-361	Deluxe Needlepoint Prod, 5" Handles	25
17-320	Needlepoint Prods, 4" Handles	25
17-322	Solderless Prods, 4" Handles	25

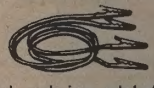
TEST LEADS
RETRACTILE KINKLESS WIRE RETRACTED LENGTH OF WIRE 9". EXTENDS TO 6 FT. NON-TANGLING.



Black and red wire.

DABURN No.	Description	Standard Package
17-364	Solderless Phone Tip, Retractile Wire, Solderless Prod	10

TEST LEADS
ALLIGATOR CLIP TEST LEADS



Black and red kinkless test lead wire with steel cadmium plated clips at each end.

DABURN No.	Wire Length	Standard Package
17-275	12"	12
17-276	24"	12
17-277	36"	12
17-278	48"	12

TEST LEADS
INSULATED ALLIGATOR CLIPS

Black and red kinkless test lead wire with steel, cadmium plated clips; vinyl plastic boot.

DABURN No.	Wire Length	Standard Package
17-280	12"	12
17-281	24"	12
17-282	36"	12
17-283	48"	12

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DABURN ELECTRONICS & CABLE CORP.
WIRE • CABLE • TUBING • MIL/COMM • SWITCHES • ELECTRONIC HARDWARE

ELECTRONIC LACING CORDS AND TAPES, CABLE CLAMPS & CLIPS

LACING CORD-TAPE TO MEET MIL-T-713C TYPE P* AND MIL-T-43435 COMP. P-TYPE S

NYLON FLAT BRAIDED LACING TAPE

Nylon fiber flat braided impregnated with MW microcrystalline fungicidal wax. Stays flat. Designed to create a wider contact to distribute the stress. Flexible. Won't slip when knotted. Resistant to fungus, flame, abrasion, acids, MIL-T-43435 (new) supersedes MIL-T-713 (old).

Daburn No.	Color	(New) Size	(Old) Class	Nom. Width	Nom. Thickness	Tensile Strength	Standard Put-Up Tubes
2035	Natural White	—	—	.200″	.014″	150 lbs.	500 yd.
2035B	Black	—	—	.200″	.014″	150 lbs.	500 yd.
2036	Natural White	2	1	.120″	.014″	80 lbs.	500 yd.
2036B	Black	2	1	.120″	.014″	80 lbs.	500 yd.
2037	Natural White	3	2*	.090″	.014″	50 lbs.	500 yd.
2037B	Black	3	2*	.090″	.014″	50 lbs.	500 yd.
2038	Natural White	4	3	.065″	.010″	30 lbs.	500 yd.
2038B	Black	4	3	.065″	.010″	30 lbs.	500 yd.
2039	Natural White	5	4	.046″	.010″	15 lbs.	500 yd.
2039B	Black	5	4	.046″	.010″	15 lbs.	500 yd.

DACRON FLAT BRAIDED LACING TAPE

Dacron fiber flat braided impregnated with non-slip fungicidal finish. Will not cut or damage insulation. Stays flat. Has all characteristics of nylon with elongation, better resistance to acids.

DABURN No.	Color	Nom. Width	Thickness Nom.	Strength Tensile	Standard Put-Up Tubes
2041	Natural White	.120″	.014″	80	500 yd.
2041B	Black	.120″	.014″	80	500 yd.
2042	Natural White	.090″	.014″	48	500 yd.
2042B	Black	.090″	.014″	48	500 yd.
2043	Natural White	.060″	.010″	35	500 yd.
2043B	Black	.060″	.010″	35	500 yd.
2044	Natural White	.046″	.010″	25	500 yd.
2044B	Black	.046″	.010″	25	500 yd.

TEFLON* FIBERGLASS FLAT BRAIDED LACING TAPE

Teflon coated fiberglass flat braided lacing tape bonded for high temp. operations (550°F). Stays flat — for strength, stability. Teflon finish increases strength and abrasion resistant surface. Will not cut or damage insulation.

DABURN No.	Color	Nom. Width	Thickness Nom.	lbs. Test	Standard Put-Up Tubes
2045	White	.170″	.025″	150	500 yd.
2046	White	.120″	.020″	90	500 yd.
2047	White	.080″	.020″	70	500 yd.

TEFLON* FLAT BRAIDED LACING TAPE
for high temperature operations (550°F)

DABURN No.	Color	Nom. Width	Nom. Thickness	Test lbs.	Standard Put-Up Tubes
2048	Brown	.100″	.016″	35	500 yd.
2049	Brown	.075″	.010″	15	500 yd.

ROUND TWISTED NYLON LACING CORD

Manufactured to meet MIL-T-713A Type P specification, Composition P, Classes 3, 2, 1. Wax finish — compounded with fungicide to resist mildew. Easy to tie.

PUT-UP ON 1 LB. TUBES

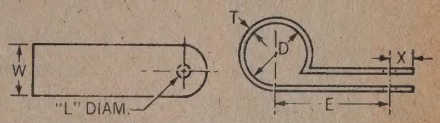
DABURN No.	Color	Class	Tensile Strength	Nom. Diam.	Yds. Per Tube
2070	Natural	1	70 lbs.	.039″	600
2070B	Black	1	70 lbs.	.039″	600
2071	Natural	2	48 lbs.	.029″	800
2071B	Black	2	48 lbs.	.029″	800
2072	Natural	3	32 lbs.	.025″	1140
2072B	Black	3	32 lbs.	.025″	1140
2072/1	Natural	4	20 lbs.	.020″	2400
2072/1B	Black	4	20 lbs.	.020″	2400

ROUND TWISTED LINEN LACING CORD

Manufactured from pure flax treated with microcrystalline wax compounded with fungicide to resist mildew. Classes 1, 2, 3 meet MIL-T-713C Type N specifications.

4 OZ. TUBE DABURN No.	Yds.	8 OZ. TUBE DABURN No.	Yds.	1 LB. TUBES DABURN No. Nat.	DABURN No. Blk.	Yds.	Class	Ply	Diam.	Lb. Test
2073	210	2074	425	2075	2075B	850	—	4	.036″	22
2076	150	2077	300	2078	2078B	600	3	6	.044″	33
2082	115	2083	235	2084	2084B	470	2	8	.051″	50
2079	100	2080	200	2081	2081B	400	—	9	.054″	56
2085	75	2086	150	2087	2087B	300	1	12	.063″	72

NYLON CABLE CLAMPS



MADE OF DU PONT "ZYTEL" 101 NYLON RESIN

Meets MIL-P-26093A and MIL-P-17091A Amend. 2

Light and tough these nylon cable clamps are used as a clamp, strain relief, clip hanger, fastener or strap. Smooth non-abrasive surfaces, rounded edges will not cause shorts or grounds in cable. Insoluble in solvents, gasoline, oils, hydraulic fluids, alcohol, acids, alkalies. Temperature range −60°F to +300°F. Does not support combustion. Inside matte finish. Prevents slippage and is self aligning. Snaps on cable. Meets MIL-P-20693A specs. fungus resistant.

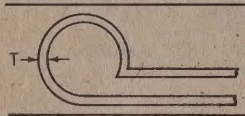
DABURN No.	To Fit Size	D	E	W	T	L	X
625	1/8″	.125	.316	3/8	.050	.177	.227
626	3/16″	.187	.378	3/8	.050	.177	.277
627	1/4″	.250	.409	3/8	.050	.177	.227
628	5/16″	.312	.441	3/8	.050	.177	.277
629	3/8″	.375	.471	3/8	.050	.177	.277
630	7/16″	.437	.519	3/8	.050	.177	.277
631	1/2″	.500	.550	3/8	.050	.177	.277
631A	9/16″	.563	.625	1/2	.060	.177	.227
632	5/8″	.625	.634	1/2	.060	.177	.227
632A	11/16″	.687	.752	1/2	.060	.177	.227
633	3/4″	.750	.718	1/2	.060	.177	.227
634	7/8″	.875	.760	1/2	.060	.177	.227
635	1″	1.000	.802	1/2	.060	.177	.227
636	1 1/8″	1.125	.968	1/2	.062	.204	.250
637	1 1/4″	1.250	1.156	1/2	.062	.204	.250
638	1 1/2″	1.500	1.188	5/8	.070	.204	.250

Std. Pkg. 100, 500, 1000

ETHYL CELLULOSE CABLE CLAMPS

Ethocel recommended for general use. Combines light weight and chemical resistance with excellent shock resisting properties in temp. range from −40°F to +185°F. Approved 7-21-44 Army-Navy Aeronautical AN-742. Also made to meet MIL STD. 242A (Ships). Suitable indoor-outdoor. Std. Pkg. 100, 1000.

DABURN No.	To Fit Size	D	E	W	L	H	X
615	1/8″	.125	.325	1/2	.060	.204	7/32
615A	3/16″	.188	.390	1/2	.060	.204	7/32
615B	1/4″	.250	.421	1/2	.060	.204	7/32
615C	5/16″	.313	.457	1/2	.060	.204	7/32
615D	3/8″	.375	.483	1/2	.060	.204	7/32
615E	7/16″	.438	.531	1/2	.060	.204	7/32
616	1/2″	.500	.562	1/2	.060	.204	7/32
616A	9/16″	.563	.625	1/2	.060	.204	7/32
616B	5/8″	.625	.610	1/2	.060	.204	7/32
616C	11/16″	.688	.666	1/2	.060	.204	7/32
616D	3/4″	.750	.766	1/2	.060	.204	7/32
616E	7/8″	.875	.813	1/2	.060	.204	7/32
617	1″	1.000	.906	1/2	.060	.204	7/32
617A	1 1/8″	1.125	.969	1/2	.060	.204	7/32
617B	1 1/4″	1.250	1.156	1/2	.060	.204	7/32
617C	1 1/2″	1.5	1.0625	5/8	.070	.204	7/32
617D	2″	2.0	1.313	5/8	.070	.204	7/32
617E	2 1/2″	2.5	1.563	5/8	.070	.204	7/32



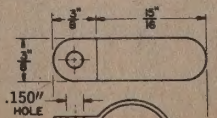
DABURN ALUMINUM CABLE CLAMPS

Made of hard drawn aluminum, light weight. Useful when mounting resonant lines, elements for beams, etc. Strong, durable, rust-proof.

DABURN No.	To Fit Size	Width	Length	Thickness	Clearance Hole For	Std. Pkg.
651A	1/8″	1/2″	13/16″	.050″	10	100
651	1/4″	1/2″	7/8″	.050″	10	100
652	5/16″	1/2″	15/16″	.050″	10	100
653	3/8″	1/2″	1″	.050″	10	100
654	1/2″	1/2″	1 1/8″	.050″	10	100
654A	5/8″	1/2″	1 1/4″	.050″	10	50
655	3/4″	3/4″	1 3/16″	.090″	1/4-20	50
657	7/8″	3/4″	1 5/8″	.090″	1/4-20	50
656	1″	3/4″	1 3/4″	.090″	1/4-20	50
656A	1 1/8″	3/4″	1 7/8″	.090″	1/4-20	50
656B	1 1/4″	3/4″	2″	.090″	1/4-20	50

NYLON TENSION CLIPS

Holds cable-wire-tubing-pipe-panels-many and varied uses. Made of nylon, they are insulating, non-corrosive and weather resistant. Easily fastened, easily removed. Strong and elastic.



DABURN Cat. No.	STD. PKG.
641	100, 1000

Natural Color

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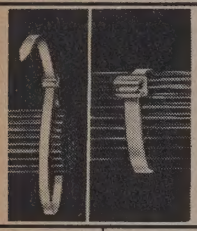
ELECTROVERT INC.

COMPONENTS DIVISION

WIRE/CABLE HARNESSING, PVC WIRING DUCT



CABLE TIES

- SELF LOCKING HEAD
- INFINITELY ADJUSTABLE
- HAND OR TOOL APPLIED
- MEETS MIL-S-23190, MS-17821, MS-18034

Meets MIL standards MS-17821, MS-18034 and MIL-S-23190. Superior locking system permits application either by hand or tool. When used with tool, universally applicable with all approved tools. Neat and permanent, four sizes, infinitely adjustable within given range, fit all bundles 1/16" thru 4 3/16" dia. Molded of virgin nylon; lightweight; abrasion resistant high tensile strength, exceptional dielectric properties and resilience; minimum absorption rate; resistant to common solvents, alkalies, dilute acids, oils and grease.

Bundle Dia. Min.	Bundle Dia. Max.	Type	Mil. No.	Electrovert Number	Net per 100	Net per 1000			
					100 to 900	Electrovert Number	1,000 4,500	5,000 14,500	15,000 24,500	25,000 49,500
1/16"	1"	Miniature	—4	EL—AC	3.00	EL—AD	$24.50	$23.00	$22.45	$21.50
1/4"	1 5/16"	Intermediate	—1	EL—BC	4.20	EL—BD	35.00	27.00	26.35	25.30
1/16"	4 3/16"	Standard	—2	EL—CC	9.50	EL—CD	75.00	60.00	58.50	56.00
3/16"	4"	Heavy Duty	—3	EL—DC	13.20	EL—DD	93.00	88.50	86.10	83.70

Standard carton of 500, standard package of 100. Sizes may be combined for quantity prices.
Also available in a complete range of colors and ultra-resistant for outdoor applications at 10% additional.

ADJUSTABLE P-CLIPS

- REDUCES INVENTORY
- TENSION CONTROL
- SIMPLIFIES CHANGES IN BUNDLE MAKE-UP

Designed with adjustable feature to accommodate a wide range of bundle diameters. Ratchet teeth provide positive locking action to prevent slipping even under conditions of vibration and shock. Virgin nylon construction provides lightweight, abrasion resistance, high tensile strength, exceptional dielectric properties, resilience and minimum absorption rate with chemical resistance to common solvents, alkalies, dilute acids, oils and grease.

TENSILE STRENGTH: 11,000 psi. MELTING POINT: 482-500°F self-extinguishing. ENDURANCE LIMIT: 3000 psi; no failures to 2,000,000 cycles.

Bundle Dia., In. Min.	Bundle Dia., In. Max.	Electrovert No.	Width In.	Screw Size	Net per 100 100-900	Net per 1000, Lots of 1,000-2,400	2,500-9,900	10,000-49,900
1/8	3/16	AP-0	.250	No. 4	$2.30	$21.10	$16.90	$15.85
3/16	1/4	AP-1	.250	No. 4	2.45	22.20	17.75	16.65
1/4	3/8	AP-2	.312	No. 6	2.60	23.65	18.90	17.70
3/8	5/16	AP-3	.375	No. 6	3.05	27.85	22.30	20.90
5/16	7/8	AP-4	.500	No. 6	3.95	35.70	28.60	26.80
7/8	1 3/16	AP-5	.550	No. 10	5.65	51.25	41.00	38.45
1 3/16	1 1/2	AP-6	.560	No. 10	7.05	64.10	51.30	48.10
1 1/2	1 3/4	AP-7	.560	No. 10	10.75	97.55	78.05	73.20
1 3/4	2	AP-8	.560	No. 10	11.15	101.20	80.95	75.90

Sizes may be combined for quantity prices.

ELECTRO-DUCT PVC WIRING DUCT

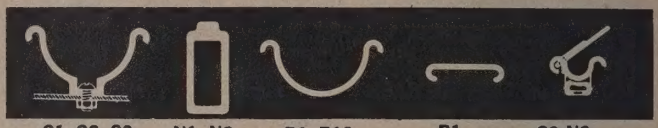
- HIGH IMPACT PVC
- INTERLOCKING CHANNEL AND SNAP-ON COVER
- TEMPORARY ADHESIVE MOUNTING
- SNAP-OFF TYPE PLASTIC FINGERS

High-impact vinyl duct won't peel, chip or crack; resists oils, grease, salt solution, most dilute acids, fungus. Non-flammable and warp-proof. High dielectric; will withstand temperatures of approx. 150°F. Easily cut and installed with any hand or power cutting tool for butt or mitred joints. Open slot design. Snap-on, non-slip cover eliminates vibration slippage. Temporary adhesive mounting permits drilling and lining up mounting holes easily. Surface indentations on inside of channel provide positive starting point for drilling and prevents drill-bit slippage, scored snap-off type plastic fingers permit slot enlargement for lead-offs to accommodate any size wire and/or wire bundles. Choice of gray or white. CSA Approved. As listed, items include channel and cover. Standard length, 6 ft.

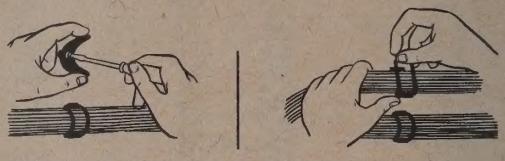
Electrovert No.	Nominal W & H	Stnd. Ctn.*	Net per ft.* Under 200'	200' to 900'	1,000' to 1,999'
1010A	1" x 1"	96	$ .62	$ .48	$ .46
1020A	1" x 2"	90	.80	.63	.61
1030A	1" x 3"	60	.97	.79	.76
2020A	2" x 2"	54	.92	.75	.73
2030A	2" x 3"	36	1.15	.92	.88
3010A	3" x 1"	60	1.05	.86	.83
3030A	3" x 3"	24	1.30	1.05	1.00

*Catalog number and price includes complete unit of channel and cover. For grey add suffix letter "G"; for white add suffix letter "W" to Cat. No.
**Also sold in broken cartons.

CRADLECLIP



C1, C2, C3 | N1, N3, N5, N7 | B2, B12 | B1 | C0-N0 Miniature with captive clip



- VERSATILE HARNESSING SYSTEM
- FAST & SIMPLE: ONLY 5 SECONDS PER FIXING POINT
- ON-THE-SPOT WIRING CHANGES WITHOUT REPLACEMENT OR TOOLS

The only system of its kind for both supported and unsupported wiring. Consists of two pieces: Binders and clips for unsupported wiring; cradles and clips for supported. When used for supported wiring, cradles may be secured to panels by conventional bolt and nut, speed drives or drive-rivets. Also available with captive nut for preassembly of harness prior to mounting from rear of panel. Binders and cradles are nylon; clips are neoprene. Secure design will withstand vibration without damage to wire insulation. Standard color is black. Available in colors.

Recommended Combinations

Diameter of Cable Form	Supported Wiring Cradle	Supported Wiring Clip	Unsupported Wiring Binder	Unsupported Wiring Clip
1/8"-5/16"	CO+NO		—	—
1/4"-3/8"	C1	N1	B1	N1
1/2"-1 1/16"	C1	N3	B1	N5
11/16"-1 5/16"	C2	N3	B12	N3
1 3/16"-1 1/16"	C2	N5	B12	N5
1"-1 1/4"	C3	N3	B2	N3
1 1/4"-1 1/2"	C3	N5	B2	N5
1 1/2"-2"	C3	N7	B2	N7
Over 2"	Use combination of above sizes.			

Ordering Data

Electrovert No.	Description	Net/100 100-900	Net per 1000 1,000-4,900	5,000-9,900	10,000-14,900	15,000-24,900	25,000-49,900
C0/N0	Cradle*	$8.15	$74.00	$70.30	$66.60	$62.90	$59.20
C1	Cradle	6.65	60.50	57.50	54.45	51.45	48.40
C2	Cradle	7.50	68.20	64.80	61.40	57.95	54.55
C3	Cradle	8.35	75.90	72.10	68.30	64.50	60.70
C1M	Cradle†	12.35	112.20	106.60	101.00	95.35	89.75
C2M	Cradle†	15.05	136.80	129.95	123.10	116.30	109.45
C3M	Cradle†	16.65	151.20	143.65	136.10	128.50	120.95
B1	Binder	5.00	45.65	43.35	41.10	38.80	36.50
B12	Binder	6.25	56.75	53.90	51.10	48.25	45.40
B2	Binder	7.80	70.80	67.25	63.70	60.20	56.65
N1	Clip	3.35	30.25	28.75	27.20	25.70	24.20
N3	Clip	4.65	42.40	40.30	38.20	36.05	33.95
N5	Clip	5.95	54.30	51.60	48.85	46.15	43.45
N7	Clip	7.05	64.15	60.95	57.75	54.55	51.35

*Miniature cradle supplied with Type NO. captive clip.
†Has molded-in, cadmium-plated, chromate-treated nut to take 6-32 thread studs.
All sizes of Cradles and Binders may be combined for quantity prices.
All sizes of Clips may be combined for quantity prices.

Net

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ELECTROVERT INC.

COMPONENTS DIVISION

WIRE/CABLE HARNESSING, MARKING, GROMMET STRIPS

- SAVES TO 50% IN INSTALLATION TIME
- PERMANENT MARKING TO LAST THE LIFE OF THE WIRE & CABLE
- PVC MATERIAL RESISTS OIL, GREASE, CHEMICALS, ABRASION

SLIP-ON Z MARKERS

For single wire or cable before terminal attached or connection is made. One-piece, sleeve type expandable to fit a given wire diameter range and grip firmly. Positive "non-slip-grip" is a result of unique accordion pleat design of the marker and ability to expand up to 350% of its original size. The accordion pleat expands to slip on the cable and retracts to hold firm in position. It is made of flexible, durable PVC (MIL-I-631C) to comply with military, civil, and trade association specifications (JIC, MIL-E-5400, MIL-E-4158A, MIL-E-16400) Specify letter (A-Z); numeral (0-9), or electrical symbol desired when ordering. Minimum order is one package of 50 of any letter or numeral. Also available in feed-out reels of 500, in colors and multiple markings.

Type Z in Pkgs. of 50

Size No.*	AWG. Size	Wire/Cable Range, In.	Lgth., In.	Net per Package of 50, Lots of			
				1-49	50-99	100-249	250-499
Z22 P	22	.045-.065	.140	$0.60	$0.55	$0.50	$0.45
Z20 P	20	.066-.085	.140	.60	.55	.50	.45
Z18 P	18	.086-.115	.140	.60	.55	.50	.45
Z16 P	16	.110-.135	.140	.60	.55	.50	.45
Z14 P	14	.130-.160	.160	.60	.55	.50	.45
Z12 P	12	.150-.175	.160	.60	.55	.50	.45
Z10 P	10	.170-.195	.160	.62	.56	.51	.46
Z9 P	9	.190-.215	.160	.63	.57	.53	.46
Z8 P	8	.210-.250	.190	.65	.59	.54	.48
Z7 P	7	.245-.295	.190	.73	.65	.61	.53
Z6 P	6	.290-.360	.224	.83	.74	.69	.61
Z4-1 P	4-1	.355-.460	.224	.95	.85	.78	.70

Type Z in Reel of 500

Size No.*	AWG. Size	Wire/Cable Range, In.	Lgth., In.	Net per Reel of 500, Lots of				
				1-4	5-9	10-24	25-49	50-99
Z22 R	22	.045-.065	.140	$4.40	$4.00	$3.70	$3.35	$3.10
Z20 R	20	.066-.085	.140	4.40	4.00	3.70	3.35	3.10
Z18 R	18	.086-.115	.140	4.40	4.00	3.70	3.35	3.10
Z16 R	16	.110-.135	.140	4.40	4.00	3.70	3.35	3.10
Z14 R	14	.130-.150	.160	4.40	4.00	3.70	3.35	3.10
Z12 R	12	.150-.175	.160	4.40	4.00	3.70	3.35	3.10
Z10 R	10	.170-.195	.160	4.55	4.15	3.85	3.50	3.25
Z9 R	9	.190-.215	.160	4.70	4.25	3.90	3.60	3.35
Z8 R	8	.210-.250	.190	4.95	4.45	4.25	3.80	3.55
Z7 R	7	.245-.295	.190	5.50	4.95	4.60	4.20	3.90
Z6 R	6	.290-.360	.224	6.40	5.80	5.35	4.85	4.55
Z4-1 R	4-1	.355-.460	.224	7.50	6.75	6.25	5.70	5.35

*Same as AWG PVC insulated wire.

SPIROBAND SPIRAL-WRAPPING

Spiral wrapping for flexible electric harnesses and cable. Unusual flexibility and elasticity make it ideal for temporary and experimental as well as permanent applications. It permits lead-off or additions of wire at any point. Handles easily, without special tools or skills. Provides excellent abrasion resistance, protection, and insulation to wire bundle. Available in a variety of materials — natural, ultra-violet resistant, and fire retardent polyethylene; nylon and teflon for high temperature applications (nylon to 250°F; teflon to 500°F).

Natural Polyethylene

Electrovert No.	Bundle Dia., In.		Std. Coil, Feet	Net per 100 feet		
	Min.	Max.		100-999′	1,000-4,999′	5,000-9,999′
SP ⅛ CP	1/16	½	100	$ 3.15	$ 2.80	$ 2.50
SP ¼ CP	3/16	2	100	5.60	5.00	4.60
SP ⅜ CP	5/16	3	50	9.00	7.95	7.00
SP ½ CP	⅜	4	25	14.00	12.75	10.25

Ultraviolet-Resistant Polyethylene (Black)

SP ⅛ UV	1/16	½	100	$ 3.60	$ 3.00	$ 2.65
SP ¼ UV	3/16	2	100	5.95	5.25	4.70
SP ⅜ UV	5/16	3	50	9.50	8.20	7.25
SP ½ UV	⅜	4	25	14.50	13.00	10.50

Fire-Retardant (Rulan)

SP ⅛ FR	1/16	½	100	$ 4.65	$ 4.10	$ 3.50
SP ¼ FR	3/16	2	100	9.00	7.90	6.80
SP ⅜ FR	5/16	3	50	13.00	11.40	9.90
SP ½ FR	⅜	4	25	18.00	15.80	13.60

Nylon (to 250°F)

SP ⅛ NN	1/16	½	100	$ 7.10	$ 6.55	$ 5.40
SP ¼ NN	3/16	2	100	14.95	14.05	12.00
SP ⅜ NN	5/16	3	50	34.75	33.60	30.45
SP ½ NN	⅜	4	25	42.10	41.00	36.80

Teflon* (to 500°F)

Electrovert No.	Bundle Dia., In.		Std. Coil, Feet	Net/ Foot, 25-99′	Net per 100 feet		
	Min.	Max.			100-999′	1,000-4,999′	5,000-9,999′
SP ⅛ TF	1/16	½	25	$1.50	$110.00	$ 87.50	$ 82.20
SP ¼ TF	3/16	2	25	1.75	135.00	96.75	94.50
SP ⅜ TF	5/16	3	25	3.25	257.10	193.20	182.90
SP ½ TF	⅜	4	25	4.75	370.00	275.00	260.00

*Registered DuPont trademark.

CLIP-ON C MARKERS

A clip-on type marker specifically designed for application either before or after terminal connection has been made. May be removed for re-coding without breaking terminal connection. Quick, easy to apply, requiring no tools. Rigid PVC material. For single wire or cable. Same size fits a given range cable diameter. Specify letter (A-Z), numeral (0-9) or electrical symbol desired when ordering. Minimum order is one package of 50 of any letter or numeral.

Packages of 50

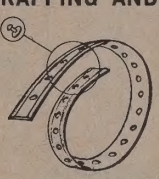
Electrovert No.	For Cable Diameter	Per Package of 50, Lots of		
		1-9	10-99	100 and up
C2 P	.080-.100	$1.10	$ .98	$ .88
C3 P	.100-.118	1.10	.98	.88
C4 P	.118-.138	1.10	.98	.88
C5 P	.138-.156	1.10	.98	.88
C6 P	.156-.187	1.15	1.00	.90
C7 P	.187-.218	1.15	1.00	.90
C8 P	.218-.250	1.35	1.20	1.05
C9 P	.250-.280	1.35	1.20	1.05
C10 P	.280-.315	2.25	1.95	1.75
C11 P	.315-.350	2.30	2.00	1.80
C12 P	.350-.400	2.45	2.15	1.95
C13 P	.400-.460	2.60	2.30	2.05
C14 P	.460-.510	2.80	2.45	2.20
C15 P	.510-.570	3.15	2.75	2.45

STRAP-ON S MARKERS

For identification of large cables, bundles of wire, busbars, tubing, etc. with ½" O.D. or greater. There is no limit to the diameter that can be identified with this system. Consists of a flat rigid PVC marking tab, ⅜"x⅝", and a PVC-covered aluminum strap. To apply, marking tab is placed on cable, strap inserted in slots, and then cut to size and crimp strap ends. **Markings:** Letters A-Z, numerals 0-9, symbols.

Type-S Markers — Specify marking. Net Pkg. of 50 ..... **$ 1.65**
Wire Strap — Net per 165 ft. coil **18.85**

STRAPPING AND STUDS



- TWO SINGLE COMPONENTS
- LOWEST COST

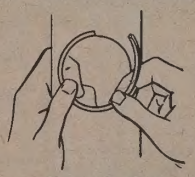
High grade PVC Strapping with holes conveniently spaced for securing with nylon studs. Easiest, fastest, and most economical method of securing or grouping unsupported bundles of wires or cables; suitable for all types, any form or diameter. Extremely strong and applicable within a temperature range of —26° to +146°F. Standard in black; colors available. In two size widths.

Cat. No.	Width	Net per Coil		
		100′ Coil	500′ Coil	1000′ Coil
AV 5	5/16"	$3.00	$13.50	$24.05
AV 8	½"	5.00	23.65	40.10

AVS Studs; 1000 per box for above — Net per box $5.00

GROMMET STRIP WITH SNIP-N-FIT FEATURE

Versatile, economical grommet strip designed to replace pre-formed grommets, and provide excellent insulation and abrasion protection wherever a peripheral opening exists. Advantage of one strip only application to round, square, rectangular or oval openings. No adhesive or special tools required. Versatile, economical. Comes in six sizes for all gauges from 20 gauge to ¼" thick. Standard natural polyethylene with high dielectric strength provides excellent insulation. Moisture-proof, non-staining, non-toxic, grease and oil proof at ordinary temperatures.



Natural Polyethylene

Electrovert No.	Range, Inches Min.-Max.	Std. Coil, Feet	Net per 100 feet		
			100-900′	1,000-4,900′	5,000-9,900′
GS-2 CP	.020-.039	100	$ 4.00	$ 3.60	$ 3.40
GS-2A CP	.040-.062	100	4.35	4.05	3.60
GS-3 CP	.063-.099	100	4.65	4.30	3.75
GS-4 CP	.100-.144	100	5.35	4.95	4.45
GS-5 CP	.145-.187	100	9.35	8.50	7.80
GS-6 CP	.187-.250	50	13.50	12.00	10.80

Ultra Violet-Resistant (Black)

GS-2 UV	.020-.039	100	$ 4.80	$ 4.15	$ 3.75
GS-2A UV	.040-.062	100	5.20	4.65	3.95
GS-3 UV	.063-.099	100	5.60	4.95	4.15
GS-4 UV	.100-.144	100	6.40	5.70	4.90
GS-5 UV	.145-.187	100	11.20	9.80	8.60
GS-6 UV	.187-.250	50	16.20	13.80	11.90

Fire-Retardant (Rulan)

GS-2 FR	.020-.039	100	$ 5.60	$ 4.05	$ 4.75
GS-2A FR	.040-.062	100	6.10	5.65	5.05
GS-3 FR	.063-.099	100	6.50	6.00	5.25
GS-4 FR	.100-.144	100	7.50	6.95	6.25
GS-5 FR	.145-.187	100	13.10	11.90	10.90
GS-6 FR	.187-.250	50	18.90	16.80	15.10

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ESSEX
electronic wire & cable

RG COAXIAL CABLE

Military Number RG/U	ESSEX Number	Armour O.D.	Jacket O.D.	Jacket Type	Shields Outer	Shields Inner	Dielectric O.D. & Type	Center Conductor	V.P. %	Cap. Mmfd. /Ft.	Max. Oper. Volts Rms.	Nom. Imp. Ohms	Lbs./ 1000 Ft.	Connector Series
5B	21-294	—	.328	IIa	S	S	.181P	16S	65.9	28.5	3000	50	83	N, C
6A	21-330	—	.332	IIa	C	S	.185P	21CW	65.9	20	2700	75	80	N, C
8	21-004	—	.405	I	—	C	.285P	7/21C	65.9	29.5	5000	52	105	N, C, HN, UHF
8A	21-290	—	.405	IIa	—	C	.285P	7/21C	65.9	29.5	5000	52	105	
9	21-005	—	.420	II Grey	C	S	.280P	7/21S	65.9	30	5000	51	128	N, C, HN, UHF
9A	21-231	—	.420	II Grey	S	S	.280P	7/21S	65.9	30	5000	51	128	N, C, HN, UHF
9B	21-332	—	.420	IIa	S	S	.280P	7/21S	65.9	30	5000	50	127	
10A	21-338	.475 Max.	.405	IIa	—	C	.285P	7/21C	65.9	29.5	5000	52	129	N, C, HN, UHF
11	21-007	—	.405	I	—	C	.285P	7/26TC	65.9	20.5	5000	75	92	N, C, HN, UHF
11A	21-296	—	.405	IIa	—	C	.285P	7/26TC	65.9	20.5	5000	75	90	
12A	21-340	.475 Max.	.405	IIa	—	C	.285P	7/26TC	65.9	20.5	5000	75	114	N, C, HN, UHF
13	21-009	—	.420	I	C	C	.280P	7/26TC	65.9	20.5	5000	74	121	N, C, HN, UHF
13A	21-334	—	.420	IIa	C	C	.280P	7/26TC	65.9	20.5	5000	74	121	
14A	21-336	—	.545	IIa	C	C	.370P	10C	65.9	29.5	7000	52	200	N, C, UHF

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ESSEX
electronic wire & cable

Note: S—Silvered Copper
SCW—Silver Copperweld
TC—Tinned Copper
TT—Teflon Tape
N-Nichrome
T—Teflon
SST—Semi-Solid Teflon
CW—Copperweld
P—Polyethylene
C—Copper

Military Number RG/U	ESSEX Number	Armour O.D.	Jacket O.D.	Jacket Type	Shields Outer	Shields Inner	Dielectric O.D. & Type	Center Conductor	V.P. %	Cap. Mmfd. /Ft.	Max. Oper. Volts Rms.	Nom. Imp. Ohms	Lbs./ 1000 Ft.	Connector Series
17	21-013	—	.870	II Grey	—	C	.680P	.188C	65.9	29.5	11000	52	463	N, C, HN, LC
17A	21-298	—	.870	IIa	—	C	.680P	.188C	65.9	29.5	11000	52	460	
18A	21-300	.945 Max.	.870	IIa	—	C	.680P	.188C	65.9	29.5	11000	52	515	N, C, HN, LC
19A	21-303	—	1.120	IIa	—	C	.910P	.250C	65.9	29.5	14000	52	740	LC
20A	21-305	1.195 Max.	1.120	IIa	—	C	.910P	.250C	65.9	29.5	14000	52	800	LC
21A	21-308	—	.332	IIa	S	S	.185P	16N	65.9	29	2700	53	80	N, C
22	21-038	—	.405	I	—	TC	.285P	Two 7/.0152C	65.9	16	1000	95	103	TWIN
22B	21-310	—	.420	IIa	TC	TC	.285P	Two 7/.0152C	65.9	16	1000	95	120	TWIN

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ESSEX
electronic wire & cable

RG COAXIAL CABLE

Military Number RG/U	ESSEX Number	Armour O.D.	Jacket O.D.	Jacket Type	Shields Outer	Shields Inner	Dielectric O.D. & Type	Center Conductor	V.P. %	Cap. Mmfd. /Ft.	Max. Oper. Volts Rms.	Nom. Imp. Ohms	Lbs./ 1000 Ft.	Connector Series
34B	21-792	—	.630	IIa	—	C	.460P	7/.0249C	65.9	21.5	6500	75	224	UHF
35B	21-793	.945 Max.	.870	IIa	—	C	.680P	.1045C	65.9	21	10000	75	454	N, C, HN
55B	21-802	—	.206	IIIa	TC	TC	.116P	20S	65.9	28.5	1900	53.5	34	TNC, BNC, BN, C, UHF
57A	21-313	—	.625	IIa	—	C	.472P	7/21C	65.9	15.5	3000	95	241	TWIN
58	21-024	—	.195	I	—	TC	.116P	20C	65.9	28.5	1900	53.5	27	
58A	21-199	—	.195	I	—	TC	.116P	19/.0071 TC	65.9	30	1900	50	27	TNC, BNC, BN, C, UHF, N, PLUG-IN
58C	21-316	—	.195	IIa	—	TC	.116P	19/.0071 TC	65.9	30	1900	50	27	
59	21-025	—	.242	I	—	C	.146P	22CW	65.9	21.5	2300	73	37	TNC, BNC, BN, C, UHF, N, PLUG-IN
59B	21-794	—	.242	IIa	—	C	.146P	.023CW	65.9	21	2300	75	35	
62	21-026	—	.242	I	—	C	.146SSP	22CW	84	13.5	750	93	36	
62A	21-318	—	.242	IIa	—	C	.146SSP	22CW	84	13.5	750	93	35	TNC, BNC, BN C, UHF, N, PLUG-IN
62B	21-771	—	.242	IIa	—	C	.146SSP	7/32CW	84	13.5	750	93	30	
63	21-027	—	.405	I	—	C	.285SSP	22CW	84	10	1000	125	88	
63B	21-320	—	.405	IIa	—	C	.285SSP	22CW	84	10	1000	125	84	N, C, HN, UHF,
71A	21-723	—	.250 Max.	I	TC	C	.146SSP	22CW	84	13.5	750	93	43	
71B	21-804	—	.250 Max.	IIIa	TC	C	.146SSP	22CW	85	13.5	750	93	43	TNC, BNC, BN, C, UHF, N, PLUG-IN

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A DIVISION OF RALLY INDUSTRIES

INSULATE-HARNESS-PROTECT!
COMPLETE ELECTRO-PLASTIC MATERIALS AND WIRING DEVICES FROM A SINGLE SOURCE

RALLY RAP — Spirally Cut Tubing

CAT. NO.		
	SWP	Polyethylene — general purpose — Sizes ⅛" to 1" for bundle sizes ½" to 8". Black for outdoor use.
	SWN	Nylon—top mechanical strength—Sizes ⅛" to 1".
	SWR	Flame Retardant (Rulan)—self extinguishing—Sizes ⅛" to ½".
	SWT	Teflon—High temperature—Sizes ⅛" to 1" for bundle sizes ½" to 6".

HEATRAX® — Heat Shrinkable Tubing

CAT. NO.		
	HIX	Irradiated Polyolefin—Shrink ratio 2 to 1—general purpose—Sizes 3/64" to 4"—Conforms to MIL-I-23053
	HRX	Semi-Rigid Irradiated Polyolefin—Shrink ratio 2 to 1—strain relief applications—Sizes 3/64" to ½"—Color coded by size. Conforms to MIL-I-23053
	HCX	Irradiated Flexible Vinyl—Shrink ratio 2 to 1—irradiation enhances flexibility and crack resistance—Sizes 3/64" to 2"—Conforms to MIL-I-23053
	HVX	Flexible Vinyl—low cost—Shrink ratio 2 to 1—Sizes 1/16" to 2". Available in color and clear. Conforms to MIL-I-23053
	HTX	Thin Wall Teflon—Shrink ratio 1½ to 1—Sizes AWG 30 to 0—Conforms to MIL-I-23053
	HSX	Standard Wall Teflon—Shrink ratio 1½ to 1—Sizes AWG 24 to 0—Conforms to MIL-I-23053
	HFX	Fractional Sizes Teflon — Shrink ratio 4 to 1 — Sizes 5/64" to 1¼" — Conforms to MIL-I-23053
	HKX	Kynar—Shrink ratio 2 to 1—Sizes ⅛" to 1" clear. Extremely tough, cut-through and abrasion resistance.
	HCS	Vinyl—Shrinkable outside, sticky meltable inside. Adheres to form waterproof seal. Sizes ¼", ½", ¾". Color—black.
	HIM	Polyolefin—Sizes from ⅛" to 1"—Shrinkable outside, meltable inside. Does not adhere but forms tight mechanical seal. Color-coded by size.

VINYL, FIBERGLASS & TEFLON TUBING

CAT. NO.		
	SLV-105	Vinyl, Temperature to 105°C. Class A—Sizes AWG 24 to 2½"—Conforms to MIL-I-631D, Grade C, Class 1 & 2.
	SLV-40	Vinyl, Low Temperature down to —65°C—Sizes AWG 24 to 2½"—Conforms to MIL-I-7444B; MIL-I-22076.
	SLV-130	Fiberglass High Temperature to 130°C Class B, Grade B—Sizes AWG 24 to 1"—Conforms to MIL-I-3190B; NEMA-VS1.
	SLV-1200	Fiberglass High Temperature to 650°C, Class C—Sizes AWG 24 to 1"—Conforms to NEMA-VS1.
	STT	Teflon Thin Wall—Sizes AWG 30 to 0—Conforms to AMS 3651B, 3655; MIL-I-22129B.
	STS	Teflon Standard Wall—Sizes AWG 24 to 0—Conforms to AMS 3651B, 3653; MIL-I-22129B.
	STL	Teflon (Extra Thin) Lightweight—Sizes AWG 28 to 0—Conforms to AMS 3651B, 3654.
	TTF	Teflon (Heavy Wall) fractional sizes—Conforms to MIL-I-22129B, AMS-3651B.

ZIPPER TUBING

CAT. NO.		
	Z63	General Purpose Vinyl — Temperature to 105°C—Conforms to MIL-I-631D, Class C.
	Z74	Low Temperature, Flexible Vinyl for applications down to —70°C. Conforms to MIL-I-7444B.
	ZHN	Nylon with aluminum foil. Excellent RFI shielding—Conforms to MIL-C-20696, Type I, Class 2, MIL-A-148A.

LACING TAPE & CORD

CAT. NO.		
	LTN	Flat Braided Nylon—Widths. .250", .125", .090", .062", .045". Conforms to MIL-T-43435, Type I; MIL-T-713A, Type P.
	LTD	Flat Braided Dacron—Width .090"; Conforms to MIL-T-43435, Type II; MIL-T-713A, Type D.
	LTT	Flat Braided Teflon Tape—Width .090"—Conforms to MIL-T-43435, Type III; MIL-T-713A, Type PTFE.
	LCN	Round Twisted Nylon Cord—Diameter .050", .035", .030". Conforms to MIL-T-713C, Type P.
	LCL	Round Twisted Linen Cord—Diameter .035"—Conforms to MIL-T-713C, Type N.
	LCV	Round Vinyl Cord—Diameter .065"; material Virgin PVC, Type A.

CABLE CLAMPS

CAT. NO.		
	CLE	Ethyl Cellulose—General Purpose—Sizes ⅛" to 1½"—Conforms to 7-21-44 Army-Navy Aeronautical AN742.
	CLN	Nylon—Temperature to 135°C, Sizes ⅛" to 1½"—Conforms to MIL-P-17091A & B, P-20693, C-2165 and MS-39014.
	CLT	Teflon—High temperature to 260°C, Sizes ⅛" to 1¼".

GROMSTRIP® — Continuous Extruded Grommet

CAT. NO.		
	GSP	Polyethylene for general application, sizes for thicknesses #24 gauge to ½".
	GSN	Nylon for excessive abrasion, sizes for thicknesses #24 gauge to ½".

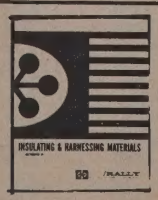
GROMMETS

CAT. NO.		
	GV	Vinyl for general application—Sizes for edge protection of holes from ⅛" to 1 1/16" diameter. Black and White.

CABLE TIES

CAT. NO.		
	CTN	Self-locking virgin Nylon, no metal parts. Conforms to MS-17821, MS-18034 and MIL-S-23190. Apply by hand or any standard assembly tool.

PLASTIC ROD, SHEET & TUBING
A wide selection of plastic materials available in standard cut lengths.



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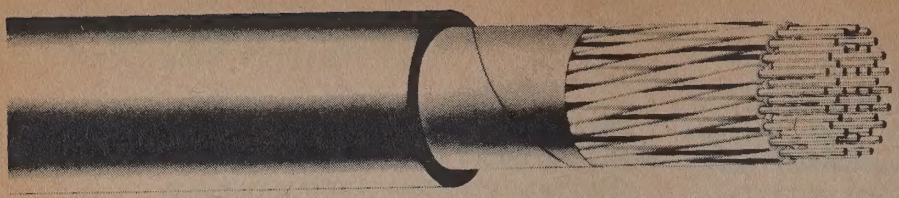
Complete source for materials and size ranges.



In Stock MIL-SPEC

Multiple Conductor Control Cables

National Wire & Cable Corporation manufactures a complete line of multiple conductor control cables. Conductors are of tinned copper strand with ¼" vinyl primary insulation for use up to 105°C per MIL-W-16878D Type C†. Insulated for **1000** volts working voltage. Conductors are color coded using 10 standard basic colors, plus spiral tracers on white per MIL-STD. 122.

All conductors are planetary cabled and contra-helically laid with a Mylar tape serve over the cable bundle. The overall jacket is a 105° C black polyvinyl-chloride thermoplastic, meeting specification MIL-I-631 Class F, or may be Neoprene to MIL-R-6855 Class 2 Grade 60 specification. (Neoprene jackets at added cost.)*

National Multiple Conductor SHIELDED CABLES are to the same specifications as above with addition of tinned copper braided shield over cable complex with 85-90% coverage to MIL-C-7078A. STANDARD PUT-UPS: 500 ft. and 1000 ft. No-deposit reels.

*(Standard put-up for Neoprene jacketed cable is 250 ft.)

†Insulated Conductors are also UL approved under UL type 1007 AWM, and are CSA approved as type TR 64.

TECHNICAL DATA (all cables)

Insulation Breakdown Voltage:	Greater than 8000 volts AC RMS, 60 cps.
Capacitance:	Nominal capacitance from a wire to all else in the cable ranges from 40 to 65 mmfd per ft., @ 1000 cps; dependent on gauge and position.
Insulation Leakage Res.:	200. megohms/1000 ft. min. at 500 VDC from any conductor to all else in cable.
Sheath Leakage Res.:	10. megohms/1000 ft. min. at 500 VDC from overall shield through sheath to outside world.
Usable Temp. Range:	Suitable for continuous use from +105°C to −55°C.
Cold Bending Capability:	All cables are suitable for flexing to a circle diam. of approx. 6 cable diameters from +105°C to −20°C; Recommended flex diameter should be greater than 20 cable diam. for flexing at −40°C., or for continuous flexing service to −55°C, specify our neoprene sheath, in lieu of plastic sheath.

MULTI-CONDUCTOR STOCK CABLES

Conductor sizes 22, 20, 18, 16, 14 & 12 gauge. 22 AWG is 7 strand. All others 19 strand.

UNSHIELDED

PART NO.	NO. COND.	COND. AWG	JKT. THICK	CABLE O.D.	WEIGHT PER M'
NW-722 J	7	22	.040	.295	40 Lbs.
NW-1222J	12	22	.050	.390	70 Lbs.
NW-1922J	19	22	.060	.460	110 Lbs.
NW-2722J	27	22	.060	.530	160 Lbs.
NW-3722J	37	22	.060	.600	200 Lbs.
NW-4822J	48	22	.060	.670	245 Lbs.
NW-6022J	60	22	.060	.730	300 Lbs.
NW-7222J	72	22	.060	.775	360 Lbs.
NW-8822J	88	22	.060	.835	425 Lbs.
NW-10222J	102	22	.060	.880	485 Lbs.
NW-720 J	7	20	.040	.300	50 Lbs.
NW-1220J	12	20	.050	.400	105 Lbs.
NW-1920J	19	20	.060	.470	160 Lbs.
NW-2720J	27	20	.060	.560	210 Lbs.
NW-3720J	37	20	.060	.610	280 Lbs.
NW-4820J	48	20	.060	.700	360 Lbs.
NW-6020J	60	20	.060	.750	435 Lbs.
NW-7220J	72	20	.060	.840	485 Lbs.
NW-8820J	88	20	.060	.900	580 Lbs.
NW-10220J	102	20	.060	.975	670 Lbs.
NW-718 J	7	18	.040	.350	75 Lbs.
NW-1218J	12	18	.050	.460	135 Lbs.
NW-1918J	19	18	.060	.560	225 Lbs.
NW-2718J	27	18	.060	.650	300 Lbs.
NW-3718J	37	18	.060	.730	390 Lbs.
NW-4818J	48	18	.060	.820	510 Lbs.
NW-6018J	60	18	.060	.900	600 Lbs.
NW-7218J	72	18	.060	1.100	720 Lbs.
NW-716 J	7	16	.040	.370	95 Lbs.
NW-1216J	12	16	.050	.500	155 Lbs.
NW-1916J	19	16	.060	.600	230 Lbs.
NW-2716J	27	16	.060	.700	320 Lbs.
NW-3716J	37	16	.060	.785	430 Lbs.
NW-4816J	48	16	.060	.900	625 Lbs.
NW-6016J	60	16	.060	.980	750 Lbs.
NW-714 J	7	14	.050	.450	150 Lbs.
NW-1214J	12	14	.050	.560	240 Lbs.
NW-1914J	19	14	.060	.675	370 Lbs.
NW-2714J	27	14	.060	.800	515 Lbs.
NW-512 J	5	12	.050	.480	175 Lbs.
NW-712 J	7	12	.050	.525	225 Lbs.
NW-1212J	12	12	.060	.700	375 Lbs.
NW-1912J	19	12	.060	.820	560 Lbs.

OVERALL SHIELDED

PART NO.	NO. COND	COND AWG	T.C. SHIELD	JKT. THICK	CABLE O.D.	WEIGHT PER M'
NW-722 SJ	7	22	No. 36	.040	.320	55 Lbs.
NW-1222SJ	12	22	No. 34	.050	.420	90 Lbs.
NW-1922SJ	19	22	No. 34	.060	.490	145 Lbs.
NW-2722SJ	27	22	No. 34	.060	.560	200 Lbs.
NW-3722SJ	37	22	No. 34	.060	.630	245 Lbs.
NW-4822SJ	48	22	No. 34	.060	.700	300 Lbs.
NW-6022SJ	60	22	No. 34	.060	.760	355 Lbs.
NW-7222SJ	72	22	No. 34	.060	.810	425 Lbs.
NW-8822SJ	88	22	No. 34	.060	.870	500 Lbs.
NW-10222SJ	102	22	No. 34	.060	.915	560 Lbs.
NW-720 SJ	7	20	No. 34	.040	.335	68 Lbs.
NW-1220SJ	12	20	No. 34	.050	.435	125 Lbs.
NW-1920SJ	19	20	No. 34	.060	.500	195 Lbs.
NW-2720SJ	27	20	No. 34	.060	.595	250 Lbs.
NW-3720SJ	37	20	No. 34	.060	.650	325 Lbs.
NW-4820SJ	48	20	No. 34	.060	.735	415 Lbs.
NW-6020SJ	60	20	No. 34	.060	.785	500 Lbs.
NW-7220SJ	72	20	No. 34	.060	.875	555 Lbs.
NW-8820SJ	88	20	No. 34	.060	.935	660 Lbs.
NW-10220SJ	102	20	No. 34	.060	1.010	750 Lbs.
NW-718 SJ	7	18	No. 34	.040	.380	95 Lbs.
NW-1218SJ	12	18	No. 34	.050	.490	170 Lbs.
NW-1918SJ	19	18	No. 34	.060	.590	265 Lbs.
NW-2718SJ	27	18	No. 34	.060	.680	350 Lbs.
NW-3718SJ	37	18	No. 34	.060	.760	445 Lbs.
NW-4818SJ	48	18	No. 34	.060	.850	575 Lbs.
NW-6018SJ	60	18	No. 34	.060	.935	680 Lbs.
NW-7218SJ	72	18	No. 34	.060	1.135	820 Lbs.
NW-716 SJ	7	16	No. 34	.040	.400	125 Lbs.
NW-1216SJ	12	16	No. 34	.050	.535	195 Lbs.
NW-1916SJ	19	16	No. 34	.060	.635	275 Lbs.
NW-2716SJ	27	16	No. 34	.060	.735	375 Lbs.
NW-3716SJ	37	16	No. 34	.060	.820	500 Lbs.
NW-4816SJ	48	16	No. 34	.060	.935	700 Lbs.
NW-6016SJ	60	16	No. 34	.060	1.015	830 Lbs.
NW-714 SJ	7	14	No. 34	.050	.485	180 Lbs.
NW-1214SJ	12	14	No. 34	.050	.600	280 Lbs.
NW-1914SJ	19	14	No. 34	.060	.710	420 Lbs.
NW-2714SJ	27	14	No. 34	.060	.835	575 Lbs.
NW-512 SJ	5	12	No. 34	.050	.515	210 Lbs.
NW-712 SJ	7	12	No. 34	.050	.560	265 Lbs.
NW-1212SJ	12	12	No. 34	.060	.735	430 Lbs.
NW-1912SJ	19	12	No. 34	.060	.850	625 Lbs.

NATIONAL WIRE & CABLE CORP.

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SPECIAL SHIELDED DATA & INSTRUMENTATION CABLES

Designed for Low Level or Low Capacitance Needs • All feature extremely low dielectric leakage both in insulation and outer sheath • Suitable for very long runs in tray or conduit. (1000 ft and up).

SINGLE CONDUCTOR SHIELDED

Part Number	AWG & Stranding	Drain AWG & Str.	Insulation & Thickness	Jacket Thickness	Nom. O.D.	Shld % Coverage	Cap. mmfd/ft	Working Voltage	Surge Impedance Ohms	Temp. °F
S10-516	28(7 x 38)	—	.086" NAFOAM	.015" pvc	.242"	TC Braid 90%*	12.	3000.	120.	+180
S10-328-1 S10-328-2	22(19 x 34)	—	.042" NAFOAM	.020" pvc	.182"	(1) 90% Braid* (2) 100% NAFOIL & Braid	20.7 20.7	1000. 1000.	60.	+180
S10-680	22(19 x 34)	22 7 x 30	.032" poly	.016" pvc	.135"	NAFOIL & Drain	30.	3000.	—	+180
S10-679	22(19 x 34)	24 7 x 32	.010" pvc .002" nylon	.015" pvc	.091"	100% NAFOIL & Drain	100.	600.	25.	+221

TWO CONDUCTOR SHIELDED

S10-010-1 S10-010-2 S10-010-3	22(19 x 24)	—	.042" NAFOAM	.020" pvc	.295"	(1) 90% Braid (2) 100% NAFOIL + Braid (3) NAFOIL only	10.6 W-W	1000.	120.	+180
S10-681	22(19 x 34)	22 7 x 30	.025" NAFOAM	.020" poly	.210"	100% NAFOIL & Drain	15. W-W	600.	84.	+180
S10-686	22(19 x 34)	22 7 x 30	.018" NAFOAM	.020" poly	.178"	100% NAFOIL & Drain	20.	600.	63.	+180
S10-362	22(19 x 34)	22 7 x 30	.010" pvc .002" nylon	.020" poly	.166"	100% NAFOIL & Drain	40. W-W	600.	52.	+180

THREE CONDUCTOR SHIELDED

S10-683	22(19 x 34)	18 19 x 30	.042" NAFOAM	.020" pvc	.297"	100% NAFOIL & Drain	10.	1000.	—	+180
S10-684	22(19 x 34	20 19 x 32	.018" NAFOAM	.020" pvc	.185"	100% NAFOIL & Drain	20.	600.	—	+180

NEW PRODUCT RELEASE (Pat. Applied For)

DIGITAL DATA TRANSMISSION CABLES

THE D-200 SERIES CABLES ARE MULTIPLE-PAIR FLEXIBLE CABLES DESIGNED FOR TRANSMISSION OF DIGITAL PULSE SIGNALS BETWEEN A COMPUTER AND ITS PERIPHERAL EQUIPMENT.

These cables are specifically designed for use with TTL, ECL, DTL or RTL logic systems. They feature signal pairs with a uniform high surge impedance, low delay, low capacitance and attenuation.

The cables may be directly driven by I.C.s' in either balanced or single-ended systems. The compact cable dimensions allow convenient connector installation and tight installation bends.

All cables have an overall shield and black vinyl outer sheath.

The D-200 series cables are designed to be used in either balanced or single-ended systems without the need for individual shields on each pair. By omitting the shields, the surge impedance is kept high yet the cable size is small. The cable geometry, pair and layer lay lengths, rotation directions, and the insulation materials and sizes have been carefully designed for low cross-talk and exact surge impedance.

All cable lengths are factory-tested for surge impedance accuracy using time-domain reflectometry techniques; and are certified to meet the impedance tolerances specified.

STANDARD DATA CABLE CONSTRUCTIONS

PART NO.	NO. OF PAIRS	Z_0	DELAY NS/FT	COND. AWG	CABLE DIAM.	SHEATH
D-200-15	15	110.	1.61	24	.500	PVC
D-200-20	20	110.	1.61	24	.550	PVC
D-200-24	24	110.	1.61	24	.680	PVC
D-200-27	27	110.	1.61	24	.690	PVC
D-200-30	30	110.	1.61	24	.710	PVC
D-200-33	33	110.	1.61	24	.750	PVC
D-200-42	42	110.	1.61	24	.850	PVC
D-200-48	48	110.	1.61	24	.890	PVC
D-200-50	50	110.	1.61	24	.910	PVC

***All items available in 50 ft. multiples.*

TECHNICAL DATA

CHARACTERISTIC	BALANCED	SINGLE-ENDED*
Surge Impedance	110. ohms±5%	78. ohms±4%
Capacitance	14. pf/ft.	21. pf/ft.
Signal Delay	1.61 ns/ft.	1.61 ns/ft.
DC Resistance/100 ft.	5.6 ohms loop	2.8 ohms
Insulation Breakdown	6. KV min. DC	6. KV min. DC
Insulation Resistance	>1000. megohms/M'	>1000. megohms/M'
Temperature Range	−20. C. up to +80. C.	
Min. Bend Radius	6 x cable diameter	

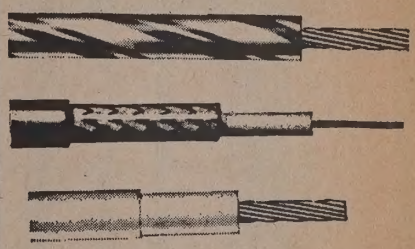
**One conductor of each pair tied to common.*

COMPLETE WIRE AND CABLE INVENTORY ALWAYS AVAILABLE FOR IMMEDIATE SHIPMENT!

National Wire and Cable Corporation maintains one of the largest and most complete stocks of electronic and aircraft wire and cable in the nation. **Total footage of floor stocks exceeds 50 million feet!**

Your immediate source for "MIL and Jan-Spec" wires, coaxial cables and vinyl sleeving.

Special color coded. shielded and jacketed combinations of hook-up wire and multi-conductor cables can be made to your specifications and delivered promptly without delay.



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MIL-W-76 A
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MIL-W-16878/D
B, BN, C, CN, D, DN
E, EE, K, KK
J, JN

NAS -702
CLASS A, B, C

MIL-W-5086 A
Type I, II, III

MIL-C-7078/A
Type I, II, III

JAN-C-76
SRIR, SRHV

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NATIONAL WIRE & CABLE CORP.

In Stock

U. L. APPROVED

COMPUTER GRADE

Miniature SIGNAL & CONTROL CABLES

National Wire & Cable Corp. manufactures a complete line of MINIATURE low voltage signal and control cable. Available as cabled pairs or cabled singles, with optional overall shield. Conductors are stranded tinned copper with .010" wall of vinyl primary insulation for use up to 105°C. per MIL-W-16878 Type B. Insulated for **600 volts** working voltage. (Also meets U.L. AWM Type 1061; 300 volt, 80°C.) All are coded using 10 standard colors plus stripes on white per MIL-STD-681.

All conductors are planetary cabled and contra-helically laid for optimum flexibility, with a Mylar tape barrier under shields. Shielded cables have a tinned copper braid overall, of 85–90% coverage per MIL-C-7078; and braid angles below 40° for easy pushback.

The outer jacket is black abrasion-resistant 105°C. vinyl meeting MIL-I-631 Type F. All materials are self-extinguishing and fungus resistant. All items are U.L. APPROVED STYLE 2343 COMPUTER CABLE; rated 300 volt, 80°C. (Higher temp. ratings apply for any non-U.L. service.)

Standard Putups: 500 & 1000 ft. No-deposit reels.

*Denotes U.L. Style 2344.

TECHNICAL DATA (all cables)

Insulation Breakdown Voltage:	Greater than 5000 volts AC RMS, 60 cps.
Capacitance:	Nominal capacitance from a wire to all else in a cable ranges from 45. to 70. pf/ft at 1. kc, depending on gauge and position.
Insulation Leakage:	200. megohms/1000 ft. min. @ 500. VDC from any conductor to all else in cable.
Sheath Leakage:	10. megohms/1000 ft. min. @ 500 VDC from shield or conductor group through sheath to ground.
Temperature Range:	Suitable for continuous use from −40°C. to +105°C. (U.L. Service limited to +80°C.)
Bending Characteristics:	All cables are suitable for flexing to a circle diameter of 6. cable diameters from +105°C. to −20°C. Recommended flex diameter should be greater than 20 cable diameters for flexing at −40°C.

MULTI-CONDUCTOR STOCK CABLES SINGLES

Cond: 22, 24 are 7 strand; 20 AWG is 19 strand

UNSHIELDED CABLES

PART NO.	NO. COND.	COND. AWG	COND. O.D.	JKT. WALL	CABLE O.D.	WEIGHT LB/M'
NX-524 J	5	24	.045	.062	.220	32 Lbs.
NX-724 J	7	24	.045	.062	.250	40 Lbs.
NX-1224J	12	24	.045	.062	.300	53 Lbs.
NX-1524J	15	24	.045	.062	.330	65 Lbs.
NX-1924J	19	24	.045	.062	.340	73 Lbs.
NX-2724J	27	24	.045	.062	.390	85 Lbs.
NX-3724J	37	24	.045	.062	.420	120 Lbs.
NX-4824J	48	24	.045	.062	.470	142 Lbs.
NX-6024J	60	24	.045	.062	.510	170 Lbs.
NX-522 J	5	22	.050	.062	.200	40 Lbs.
NX-722 J	7	22	.050	.062	.270	48 Lbs.
NX-1222J	12	22	.050	.062	.330	72 Lbs.
NX-1522J	15	22	.050	.062	.350	85 Lbs.
NX-1922J	19	22	.050	.062	.370	96 Lbs.
NX-2722J	27	22	.050	.062	.430	130 Lbs.
NX-3722J	37	22	.050	.062	.480	163 Lbs.
NX-4822J	48	22	.050	.062	.530	210 Lbs.
NX-6022J	60	22	.050	.062	.570	255 Lbs.
NX-520 J	5	20	.057	.062	.275	49 Lbs.
NX-720 J	7	20	.057	.062	.290	59 Lbs.
NX-1220J	12	20	.057	.062	.360	90 Lbs.
NX-1520J	15	20	.057	.062	.390	110 Lbs.
NX-1920J	19	20	.057	.062	.410	128 Lbs.
NX-2720J	27	20	.057	.062	.490	166 Lbs.
NX-3720J	37	20	.057	.062	.520	220 Lbs.
NX-4820J	48	20	.057	.062	.580	275 Lbs.
NX-6020J	60	20	.057	.062	.640	335 Lbs.

OVERALL SHIELDED CABLES

PART NO.	NO. COND.	COND. AWG	COND. O.D.	JKT. WALL	SHLD. AWG	CABLE O.D.	WEIGHT LB/M'
NX-524 SJ	5	24	.045	.062	36	.245	44 Lbs.
NX-724 SJ	7	24	.045	.062	36	.275	55 Lbs.
NX-1224SJ	12	24	.045	.062	36	.325	68 Lbs.
NX-1524SJ	15	24	.045	.062	36	.350	80 Lbs.
NX-1924SJ	19	24	.045	.062	36	.365	88 Lbs.
NX-2724SJ	27	24	.045	.062	36	.415	102 Lbs.
NX-3724SJ	37	24	.045	.062	36	.445	140 Lbs.
NX-4824SJ	48	24	.045	.062	36	.495	172 Lbs.
NX-6024SJ	60	24	.045	.062	36	.535	205 Lbs.
NX-522 SJ	5	22	.050	.062	36	.285	50 Lbs.
NX-722 SJ	7	22	.050	.062	36	.295	58 Lbs.
NX-1222SJ	12	22	.050	.062	36	.355	87 Lbs.
NX-1522SJ	15	22	.050	.062	36	.380	101 Lbs.
NX-1922SJ	19	22	.050	.062	36	.395	111 Lbs.
NX-2722SJ	27	22	.050	.062	36	.455	150 Lbs.
NX-3722SJ	37	22	.050	.062	34	.510	193 Lbs.
NX-4822SJ	48	22	.050	.062	34	.560	245 Lbs.
NX-6022SJ	60	22	.050	.062	34	.600	295 Lbs.
NX-520 SJ	5	20	.057	.062	36	.300	59 Lbs.
NX-720 SJ	7	20	.057	.062	36	.315	69 Lbs.
NX-1220SJ	12	20	.057	.062	36	.385	105 Lbs.
NX-1520SJ	15	20	.057	.062	36	.415	137 Lbs.
NX-1920SJ	19	20	.057	.062	36	.435	158 Lbs.
NX-2720SJ	27	20	.057	.062	36	.515	196 Lbs.
NX-3720SJ	37	20	.057	.062	34	.550	255 Lbs.
NX-4820SJ	48	20	.057	.062	34	.610	320 Lbs.
NX-6020SJ	60	20	.057	.062	34	.670	385 Lbs.

MULTI-CONDUCTOR STOCK CABLED PAIRS

UNSHIELDED CABLES

PART NO.	NO. PAIRS	COND. AWG	COND. O.D.	JKT. WALL	CABLE O.D.	WEIGHT LB/M'
NXP-524 J	5	24	.045	.062	.330	52 Lbs.
NXP-724 J	7	24	.045	.062	.350	60 Lbs.
NXP-1224J	12	24	.045	.062	.435	90 Lbs.
NXP-1524J	15	24	.045	.062	.485	110 Lbs.
NXP-1924J	19	24	.045	.062	.505	126 Lbs.
NXP-2724J	27	24	.045	.062	.590	167 Lbs.
NXP-3724J	37	24	.045	.062	.660	216 Lbs.
NXP-4824J	48	24	.045	.062	.745	270 Lbs.
NXP-6024J	60	24	.045	.062	.815	325 Lbs.
NXP-522 J	5	22	.050	.062	.365	56 Lbs.
NXP-722 J	7	22	.050	.062	.390	82 Lbs.
NXP-1222J	12	22	.050	.062	.470	120 Lbs.
NXP-1522J	15	22	.050	.062	.545	145 Lbs.
NXP-1922J	19	22	.050	.062	.550	170 Lbs.
NXP-2722J	27	22	.050	.062	.670	230 Lbs.
NXP-3722J	37	22	.050	.062	.750	300 Lbs.
NXP-4822J*	48	22	.050	.080	.850	375 Lbs.
NXP-6022J*	60	22	.050	.080	.930	460 Lbs.
NXP-520 J	5	20	.057	.062	.395	82 Lbs.
NXP-720 J	7	20	.057	.062	.440	108 Lbs.
NXP-1220J	12	20	.057	.062	.540	163 Lbs.
NXP-1520J	15	20	.057	.062	.600	196 Lbs.
NXP-1920J	19	20	.057	.062	.630	235 Lbs.
NXP-2720J	27	20	.057	.062	.745	320 Lbs.
NXP-3720J	37	20	.057	.062	.820	420 Lbs.
NXP-4820J*	48	20	.057	.080	.950	530 Lbs.
NXP-6020J*	60	20	.057	.080	1.040	650 Lbs.

OVERALL SHIELDED CABLES

PART NO.	NO. PAIRS	COND. AWG	COND. O.D.	JKT. WALL	T.C. SHIELD	CABLE O.D.	WEIGHT LB/M'
NXP-524 SJ	5	24	.045	.062	No. 36	.355	67 Lbs.
NXP-724 SJ	7	24	.045	.062	No. 36	.375	75 Lbs.
NXP-1224SJ	12	24	.045	.062	No. 36	.460	115 Lbs.
NXP-1524SJ	15	24	.045	.062	No. 36	.510	140 Lbs.
NXP-1924SJ	19	24	.045	.062	No. 36	.530	161 Lbs.
NXP-2724SJ	27	24	.045	.062	No. 34	.620	211 Lbs.
NXP-3724SJ	37	24	.045	.062	No. 34	.690	266 Lbs.
NXP-4824SJ	48	24	.045	.062	No. 34	.775	330 Lbs.
NXP-6024SJ*	60	24	.045	.062	No. 34	.845	390 Lbs.
NXP-522 SJ	5	22	.050	.062	No. 36	.390	77 Lbs.
NXP-722 SJ	7	22	.050	.062	No. 36	.415	100 Lbs.
NXP-1222SJ	12	22	.050	.062	No. 36	.495	150 Lbs.
NXP-1522SJ	15	22	.050	.062	No. 34	.575	185 Lbs.
NXP-1922SJ	19	22	.050	.062	No. 34	.580	210 Lbs.
NXP-2722SJ	27	22	.050	.062	No. 34	.600	280 Lbs.
NXP-3722SJ	37	22	.050	.062	No. 34	.780	357 Lbs.
NXP-4822SJ*	48	22	.050	.080	No. 34	.880	445 Lbs.
NXP-6022SJ*	60	22	.050	.080	No. 34	.960	535 Lbs.
NXP-520 SJ	5	20	.057	.062	No. 36	.420	102 Lbs.
NXP-720 SJ	7	20	.057	.062	No. 36	.465	123 Lbs.
NXP-1220SJ	12	20	.057	.062	No. 34	.570	203 Lbs.
NXP-1520SJ	15	20	.057	.062	No. 34	.630	241 Lbs.
NXP-1920SJ	19	20	.057	.062	No. 34	.660	280 Lbs.
NXP-2720SJ	27	20	.057	.062	No. 34	.775	380 Lbs.
NXP-3720SJ*	37	20	.057	.080	No. 34	.850	490 Lbs.
NXP-4820SJ*	48	20	.057	.080	No. 34	.980	605 Lbs.
NXP-6020SJ*	60	20	.057	.080	No. 34	1.070	735 Lbs.

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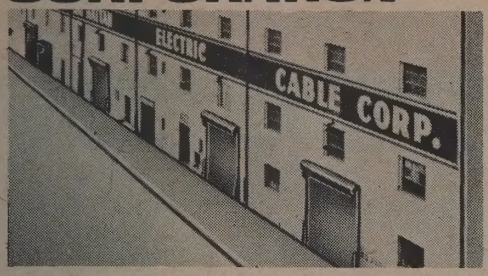
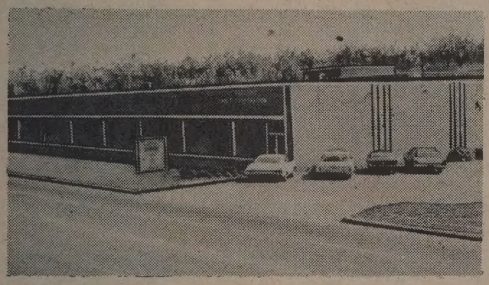


Brooklyn, New York



Atlanta, Georgia

Los Angeles, California

Burlingame, California

Independence, Ohio

The nation's leading supplier of electric wire and cable, from Service and Distribution Centers throughout the United States, continues its program of expansion with the formation of an Electronic Division.

The company was founded in 1929, under the direction of Sidney Cannold, a pioneer in the concept of supplying from stock diversified types of electric wire and cable.

Under the direction of Dan Cannold, the concept of Local Service & Distribution Centers supplying regional requirements was established so that today Manhattan Electric Cable has seven regional warehouses occupying approximately a half million square feet of facilities.

All requirements for wire and cable are sold through recognized wholesalers and distributors. These Local Service Centers can provide 24 hour delivery to all points in the continental United States.

Since the 1940's, Manhattan Electric Cable continued to expand its product line and services until it carried the largest and most diversified stock of quality wire available in the United States. , as it continues to do today.

The product line listed in this catalog represents an expansion into the electronic wire and cable market. This product category concentrates primarily on Communications, Instrumentation and Control applications and has been designated the CIC-Product Line of Manhattan Cable, the Electronic Division.

All products listed in this catalog will be available from stock and will be serviced by the regional warehouses and sales offices listed below:

- **Brooklyn, New York**
- **Atlanta, Georgia**
- **Los Angeles, California**
- **Burlingame, California**
- **Independence, Ohio**
- **Houston, Texas**
- **St. Louis, Missouri**

Inasmuch as electronic wire and cable is a constantly developing marketing area, new products and items will supplement this catalog as they are innovated and the demand pattern established.

Manhattan Electric Cable is a specialist in wire and cable covering all phases of industry. We specialize in wire and cable: wire and cable is our only business.

Manhattan - the vital link to distribution of wire and cable.

Houston, Texas

St. Louis, Missouri

MANHATTAN ELECTRIC CABLE CORPORATION ELECTRONIC DIVISION

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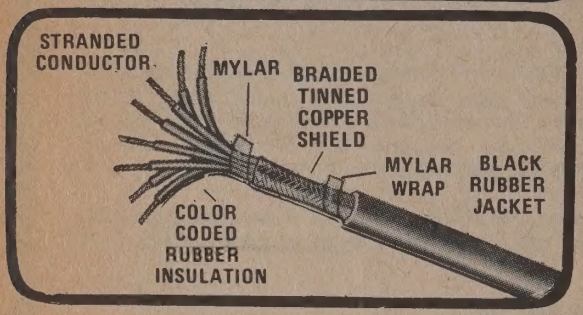
MANHATTAN

CIC-R

Rubber Jacketed Control Cable Shielded and Unshielded

APPLICATIONS: Flexible inside control cable for instruments, automatic equipment, relaying devices, control circuits, microphones, audio, and broadcast studio use.

CONDUCTOR: No. 20-26/34 tinned copper
INSULATION: .020" Color coded rubber
CABLING: Conductor cabled with fillers when necessary, mylar wrap.
SHIELD: Braided tinned copper, mylar wrap over shield.
JACKET: 035" BLACK HEAVY DUTY RUBBER
SUGGESTED WORKING VOLTAGE: 600 Volts RMS
STANDARD PUT-UP: 500 ft. and 1000 ft.



SHIELDED			UNSHIELDED		
NO. of CONDUCTORS	NOM. O.D. (In.)	PART NO.	NO. of CONDUCTORS	NOM. O.D. (In.)	PART NO.
2	.260	M1022	2	.230	M1002
3	.270	M1023	3	.240	M1003
4	.290	M1024	4	.260	M1004
6	.335	M1026	6	.310	M1006
8	.360	M1028	8	.330	M1008
10	.400	M1030	10	.370	M1010
12	.415	M1032	12	.390	M1012
15	.540	M1035	COLOR CODE OF CONDUCTORS (SEE BELOW)		
20	.600	M1040			

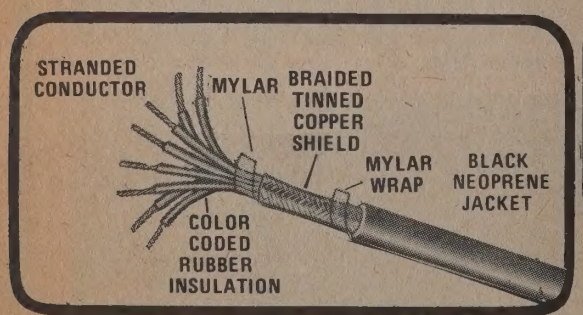
CIC-N

Heavy Duty Shielded Neoprene Jacketed Control Cable

APPLICATIONS: Neoprene recommended for outside installation shielded power supply, instrumentation, low impedance application, and audio and broadcast outside use.

CONDUCTOR: Flexible stranded tinned copper.
INSULATION: Color coded rubber.
CABLING: Conductors cabled with fillers when necessary, mylar wrap.
SHIELD: Braided tinned copper, mylar wrap.
JACKET: .040" BLACK RUGGED NEOPRENE
SUGGESTED WORKING VOLTAGE: 600 Volts RMS
STANDARD PUT-UP: Cut to requirements.

No. 18 - 41/34 - .022" INS.			No. 14 - 41/30 - .032" INS.		
NO. of COND.	NOM. O.D. (In.)	PART NO.	NO. of COND.	NOM. O.D. (In.)	PART NO.
2	.295	M1042	2	.395	M1062
3	.310	M1043	3	.415	M1063
4	.335	M1044	4	.455	M1064
6	.390	M1046			
8	.415	M1048			
10	.440	M1049			
12	.450	M1050			
15	.570	M1051			
20	.650	M1051/20			



No. 16 - 65/34 - .025" INS.			No. 12 - 65/30 - .032" INS.		
NO. of COND.	NOM. O.D. (In.)	PART NO.	NO. of COND.	NOM. O.D. (In.)	PART NO.
2	.330	M1052	2	.440	M1072
3	.350	M1053	3	.465	M1073
4	.380	M1054			

COLOR CODE OF CONDUCTORS

1-Black	7-Brown
2-White	8-Orange
3-Red	9-Slate
4-Green	10-Purple
5-Yellow	11-Wh/Blk
6-Blue	12-Wh/Red

MANHATTAN ELECTRIC CABLE CORPORATION ELECTRONIC DIVISION

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CIC-V MANHATTAN

Vinyl Jacketed Shielded Control Cable

APPLICATIONS: Small diameter shielded instrumentation cable for sensing, recording, and monitoring devices, telemetering and high signal isolation. Low capacitance provides low energy loss in video and audio applications.

No. 24 - 10/34TC - .012" INSULATION

NO. of COND.	NOM. JKT. THK. (in.)	NOM. O.D. (in.)	PART NO.
2	.020	.160	M1102
3	.020	.165	M1103
4	.020	.180	M1104
5	.020	.195	M1105
6	.020	.210	M1106

No. 22 - 16/34TC - .012" INSULATION

NO. of COND.	NOM. JKT. THK. (in.)	NOM. O.D. (in.)	PART NO.
2	.020	.170	M1112
3	.020	.180	M1113
4	.020	.195	M1114
5	.020	.210	M1115
6	.020	.225	M1116
8	.025	.260	M1118

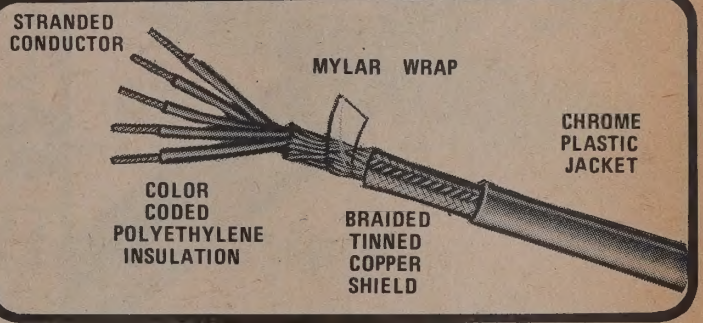
No. 20 - 26/34TC - .014" INSULATION

NO. of COND.	NOM. JKT. THK. (in.)	NOM. O.D. (in.)	PART NO.
2	.025	.205	M1122
3	.030	.225	M1123
4	.030	.240	M1124
5	.030	.260	M1125
6	.030	.280	M1126
8	.035	.310	M1128
10	.035	.345	M1130
12	.035	.360	M1132

COLOR CODE OF CONDUCTORS

1-Black	7-Brown
2-White	8-Orange
3-Red	9-Slate
4-Green	10-Purple
5-Yellow	11-White/Black
6-Blue	12-White/Red

CONDUCTOR: Flexible stranded tinned copper
INSULATION: Color coded low density polyethylene insulation.
CABLING: Conductors cabled with fillers when necessary, mylar wrap.
SHIELD: Braided tinned copper shield
JACKET: SMOOTH CHROME PLASTIC (Vinyl)
SUGGESTED WORKING VOLTAGE: 600 Volts RMS
STANDARD PUT-UP: Cut to requirements



No. 18 - 41/34 TC - .016" INSULATION

NO. of COND.	NOM. JKT. THK. (in.)	NOM. O.D. (in)	PART NO.
2	.030	.245	M1142
3	.030	.255	M1143
4	.030	.275	M1144
6	.035	.335	M1146

No. 16 - 65/34 TC - .020" INSULATION

NO. of COND.	NOM. JKT. THK. (in.)	NOM. O.D. (in.)	PART NO.
2	.035	.295	M1162
3	.035	.310	M1163
4	.035	.335	M1164

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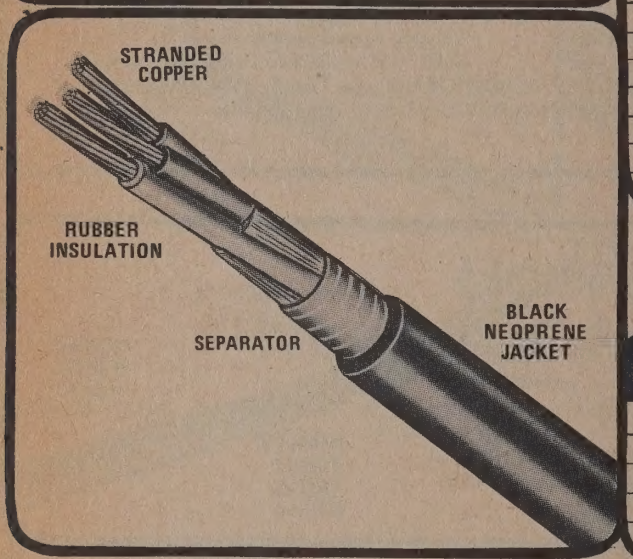
MANHATTAN

CIC-MSO

Neoprene Jacketed Control Cable 600 Volts

APPLICATIONS: Designed for heavy duty use in relay control, power and signal transmission, lighting, motor and turbine control, telemetering, switching control of automatic electronic and electrical equipment, substation operations, traffic control and fire alarm control. Neoprene has exceptional flexibility, mechanical strength and suited for either indoor or outdoor installation.

CONDUCTOR: Stranded bare copper-minimum strands*
INSULATION: Color coded rubber per National Electric Code standards
CABLING: Cabled with fillers when necessary, separator over conductors
JACKET: RUGGED BLACK NEOPRENE
VOLTAGE TEMPERATURE RATING: 600 Volts - 60°C
STANDARD PUT-UP: Cut to requirements.



No. 16 - 26/30 BARE COPPER* - 1/32" INSULATION

NO. of COND.	NOM. JKT. THK. (In.)	NOM. O.D. (In.)	PART NO.	NO. of COND.	NOM. JKT. THK.	NOM. O.D. (In.)	PART NO.
2	.060	.405	M2042	14	.090	.775	M2054
3	.060	.430	M2043	16	.090	.825	M2056
4	.060	.485	M2044	20	.090	.900	M2060
5	.075	.525	M2045	24	.105	1.015	M2064
6	.075	.565	M2046	26	.105	1.020	M2066
7	.075	.605	M2047	30	.105	1.070	M2070
8	.075	.645	M2048	37	.105	1.160	M2077
9	.090	.720	M2049	40	.105	1.235	M2080
10	.090	.725	M2050	50	.120	1.350	M2090
12	.090	.740	M2052	60	.120	1.470	M2100

No. 14 - 41/30 BARE COPPER - 3/64" INSULATION

NO. of COND.	NOM. JKT. THK.	NOM. O.D. (In.)	PART NO.	NO. of COND.	NOM. JKT. THK.	NOM. O.D. (In.)	PART NO.
2	.075	.530	M2102	7	.090	.795	M2107
3	.075	.560	M2103	8	.090	.845	M2108
4	.075	.605	M2104	9	.090	.905	M2109
5	.090	.685	M2105	10	.090	.910	M2110
6	.090	.740	M2106	12	.090	.930	M2112

No. 18 - 16/30 BARE COPPER* - 1/32" INSULATION

NO. of COND.	NOM. JKT. THK. (In.)	NOM. O.D. (In.)	PART NO.
2	.060	.390	M2002
3	.060	.405	M2003
4	.060	.435	M2004
5	.075	.500	M2005
6	.075	.525	M2006
7	.075	.565	M2007
8	.075	.600	M2008
9	.075	.640	M2009
10	.075	.650	M2010
12	.075	.660	M2012
14	.090	.715	M2014
16	.090	.760	M2016
20	.090	.835	M2020

No. 12 - 65/30 BARE COPPER - 3/64" INSULATION

2	.090	.605	M2142	10	.105	1.020	M2150
3	.090	.635	M2143	12	.105	1.045	M2152
4	.090	.665	M2144	14	.105	1.100	M2154
5	.090	.730	M2145	16	.105	1.155	M2156
6	.090	.800	M2146	20	.105	1.285	M2160
7	.090	.860	M2147	26	.120	1.445	M2166
8	.090	.915	M2148	30	.120	1.525	M2170
9	.105	1.015	M2149				

No. 10 - 105/30 BARE COPPER - 3/64" INSULATION

2	.090	.640	M2182	6	.105	.880	M2186
3	.090	.690	M2183	7	.105	.980	M2187
4	.090	.745	M2184	8	.105	1.050	M2188
5	.090	.815	M2185	10	.105	1.125	M2190

A wide selection of multi-conductor rubber & neoprene jacketed control cable made to MIL-C-3432 available from stock. Contact our offices on individual requirements.

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CIC-TLM MANHATTAN

Telemetering Control Cable

300 VOLT - AERIAL AND DIRECT BURIAL

APPLICATIONS: Highly reliable communication and control cable for transmission of telemetered data such as temperature, voltage - pressure sensing devices, safety control circuits, recording data, radar antenna and QC equipment.

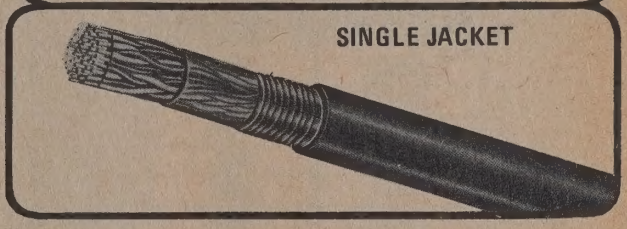
Aerial and Duct Installations

No. 22 - .015" PE INSULATION				No. 19-.015" PE INS.		
NO. of PAIRS	JKT. THK.	NOM. O.D.	PART NO.	JKT. THK.	NOM. O.D.	PART NO.
6	.060	.510	M2501	.060	.560	M2511
12	.060	.620	M2502	.060	.700	M2512
18	.060	.710	M2503	.060	.800	M2513
25	.060	.790	M2504	.060	.910	M2514
50	.070	1.050	M2505	.070	1.200	M2515
100	.080	1.390	M2508	.080	1.650	M2518

No. 16 - .020" POLYETHYLENE INSULATION

3	.060	.560	M2520
6	.060	.690	M2521
12	.060	.880	M2522
18	.070	1.040	M2523
25	.070	1.180	M2524
50	.080	1.620	M2525

CONDUCTOR: Bare solid copper
INSULATION: High molecular weight color coded polyethylene
PAIRED: Conductors twisted into pairs
CABLING: Pairs cabled with varying lay, non-hygroscopic tape over core
SHIELD: Corrugated .008" aluminum tape applied longitudinally
JACKET: BLACK HIGH MOLECULAR WEIGHT POLYETHYLENE TO REA SPECIFICATIONS
VOLTAGE RATINGS: 300 Volts per IPCEA S61-402
STANDARD PUT-UP: Cut on requirements.



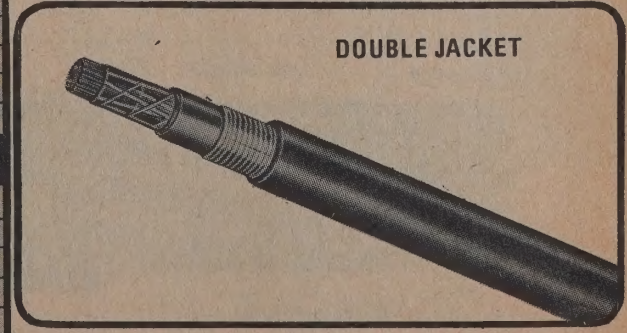
Direct Burial Installation

APPLICATIONS: Same as above except suitable for direct burial heavy duty use.

No. 22 - 015" POLYETHYLENE INSULATION				
	NOM JACKET THICKNESS (INCH)			
NO. of PAIRS	INNER	OUTER	NOM. O.D.	PART NO.
3	.050	.060	.480	M2530
6	.050	.060	.560	M2531
12	.050	.060	.670	M2532
18	.050	.060	.760	M2533
25	.050	.060	.840	M2534
50	.050	.070	1.100	M2535
100	.060	.070	1.430	M2538
No. 19 - .015" POLYETHYLENE INSULATION				
3	.050	.060	.520	M2540
6	.050	.060	.610	M2541
12	.050	.060	.750	M2542
18	.050	.060	.850	M2543
25	.050	.060	.960	M2544
50	.050	.070	1.250	M2545
100	.060	.080	1.720	M2548

Color code in accordance with REA standards.

Construction same as above except with a double polyethylene jacket. Additional jacket between cable core and shield. Shield construction .005" corrugated copper longitudinally applied. Double jacket separated by shield protects the cable from moisture penetration and provides high dielectric strength.



MANHATTAN ELECTRIC CABLE CORPORATION ELECTRONIC DIVISION

MANHATTAN

CIC-PT

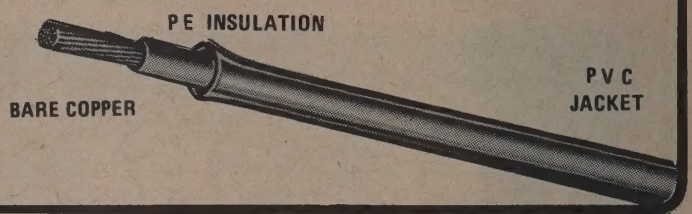
Control Cable-600Volts-90°C

GENERAL PURPOSE—PLASTIC JACKET IPCEA

APPLICATIONS: Small diameter control cable used in process control equipment, remote sub-station operations, signalling and indicating devices, measurement and recording equipment, telemetering and switchgear operating.

CONDUCTOR: Flexible stranded copper
INSULATION: Polyethylene insulation with PVC jacket over primary insulation, color code IPCEA
CABLING: Conductors cabled with fillers when necessary, mylar tape over core
JACKET:- BLACK PVC PLASTIC
VOLTAGE RATING: 600 Volts
TEMPERATURE RATING: 90°C
SPECIFICATION: IPCEA-NEMA S 61-402
STANDARD PUT-UP: Cut to requirements.

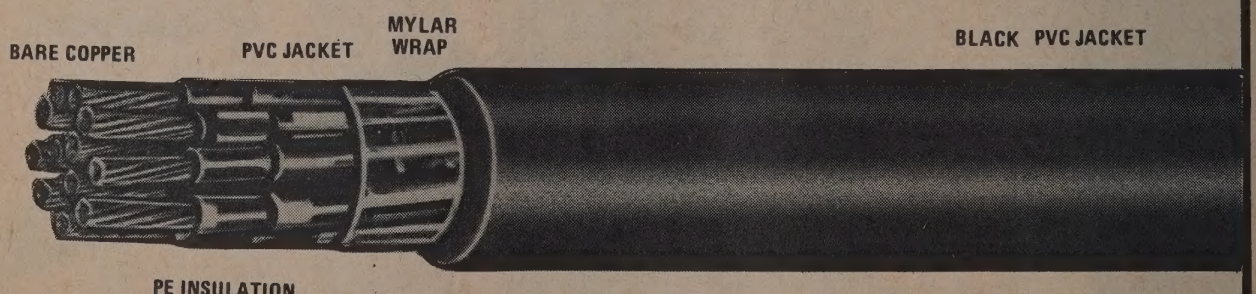
INDIVIDUAL CONDUCTOR



No. 16 - 26/30 BARE COPPER - .015" PE - .010" PVC

NO. of COND.	NOM. JKT. THK. (INCH)	NOM. O.D. (In.)	PART NO.	NO. of COND.	NOM. JKT. THK. (Inch)	NOM. O.D. (In.)	PART NO.
2	.045"	NOTE 1	M2242	19	.060	.690	M2259
3	.045"	.350	M2243	20	.060	.730	M2260
4	.045"	.380	M2244	21	.060	.740	M2261
5	.045"	.410	M2245	22	.060	.760	M2262
6	.045"	.440	M2246	24	.060	.810	M2264
7	.045"	.450	M2247	26	.060	.820	M2266
8	.045"	.480	M2248	27	.060	.840	M2267
9	.045"	.510	M2249	30	.080	.900	M2270
10	.060"	.580	M2250	34	.080	.940	M2274
11	.060"	.590	M2251	37	.080	.960	M2277
12	.060"	.600	M2252	40	.080	1.000	M2280
14	.060"	.630	M2254	45	.080	1.050	M2285
15	.060"	.640	M2255	50	.080	1.110	M2290
16	.060"	.660	M2256	55	.080	1.150	M2295
				60	.080	1.190	M2300

NOTE 1 Flat dimension .200" x .310"
NOTE 2 Flat dimension .230" x .370"
NOTE 3 Flat dimension .250" x .400"
NOTE 4 Flat dimension .280" x .450"
NOTE 5 Flat dimension .290" x .480"



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CIC-PT MANHATTAN

Control Cable-600 Volts-90°C

GENERAL PURPOSE - PLASTIC JACKET IPCEA

No. 14 - STRANDED BARE COPPER - .020" PE - .010" PVC

NO. of COND.	NOM.JKT.THK. (Inch)	NOM. O.D. (Inch)	PART NO.	NO. of COND.	NOM. JKT. THK. (Inch)	NOM. O.D. (Inch)	PART NO.
2	.045	NOTE 2	M2302	16	.060	.760	M2316
3	.045	.380	M2303	18	.060	.800	M2318
4	.045	.420	M2304	19	.060	.810	M2319
5	.045	.460	M2305	20	.080	.880	M2320
6	.045	.500	M2306	24	.080	.975	M2324
7	.045	.510	M2307	26	.080	1.015	M2326
8	.060	.570	M2308	27	.080	1.036	M2327
9	.060	.610	M2309	30	.080	1.070	M2330
10	.060	.665	M2310	34	.080	1.150	M2334
11	.060	.685	M2311	37	.080	1.160	M2337
12	.060	.690	M2312				
14	.060	.720	M2314				

No. 12 - STRANDED BARE COPPER - .020" PE - .010" PVC

2	.045	NOTE 3	M2372	19	.080	.940	M2389
3	.045	.425	M2373	20	.080	.985	M2390
4	.045	.465	M2374	21	.080	1.030	M2391
5	.045	.510	M2375	22	.080	1.040	M2392
6	.060	.585	M2376	24	.080	1.090	M2394
7	.060	.590	M2377	25	.080	1.130	M2395
8	.060	.635	M2378	26	.080	1.135	M2396
9	.060	.680	M2379	27	.080	1.150	M2397
10	.060	.740	M2380	30	.080	1.190	M2400
12	.060	.765	M2382	34	.080	1.285	M2404
14	.060	.805	M2384	37	.080	1.290	M2407
15	.080	.890	M2385	40	.080	1.335	M2410
16	.080	.900	M2386	50	.080	1.455	M2420
18	.080	.935	M2388	60	.080	1.545	M2430

No. 10 - STRANDED BARE COPPER .020" PE - .010"PVC

2	.045	NOTE 4	M2432
3	.045	.490	M2433
4	.060	.570	M2434
5	.060	.620	M2435
6	.060	.685	M2436
7	.060	.685	M2437
8	.060	.730	M2438
9	.060	.790	M2439
10	.080	.900	M2440
12	.080	.930	M2442
14	.080	.980	M2444
19	.080	1.090	M2449
24	.080	1.270	M2454
26	.080	1.275	M2456
30	.080	1.340	M2460
37	.080	1.450	M2467

No. 9 - 19/22 BARE COPPER .020" PE - .010" PVC

2	.045	NOTE 5	M2482
3	.045	.520	M2483
4	.060	.600	M2484
5	.060	.650	M2485
6	.060	.710	M2486
7	.060	.715	M2487
8	.060	.770	M2488
10	.060	.950	M2490
15	.080	1.060	M2495

NOTE 1 Flat dimension .200" x 310"
NOTE 2 Flat dimension .230" x 370"
NOTE 3 Flat dimension .250" x 400"
NOTE 4 Flat dimension .280" x 450"
NOTE 5 Flat dimension .290" x 480"

All dimensions are nominal and subject to manufacturing tolerances.

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MANHATTAN

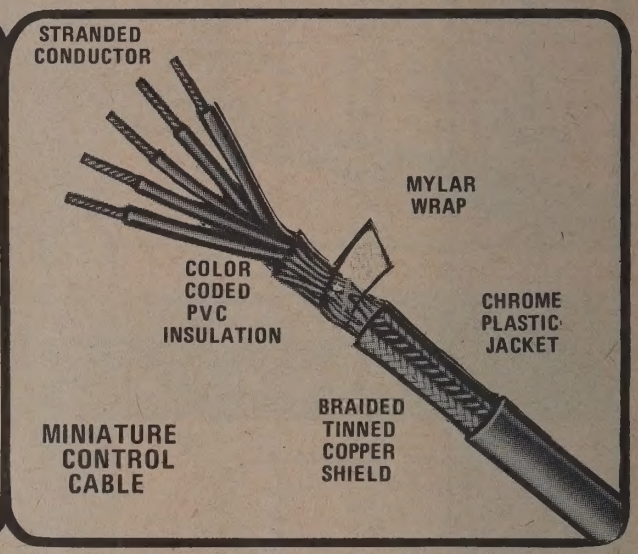
CIC-MCC

Multi-Conductor Control Cable

SHIELDED PLASTIC JACKET - PER MIL-W-16878D

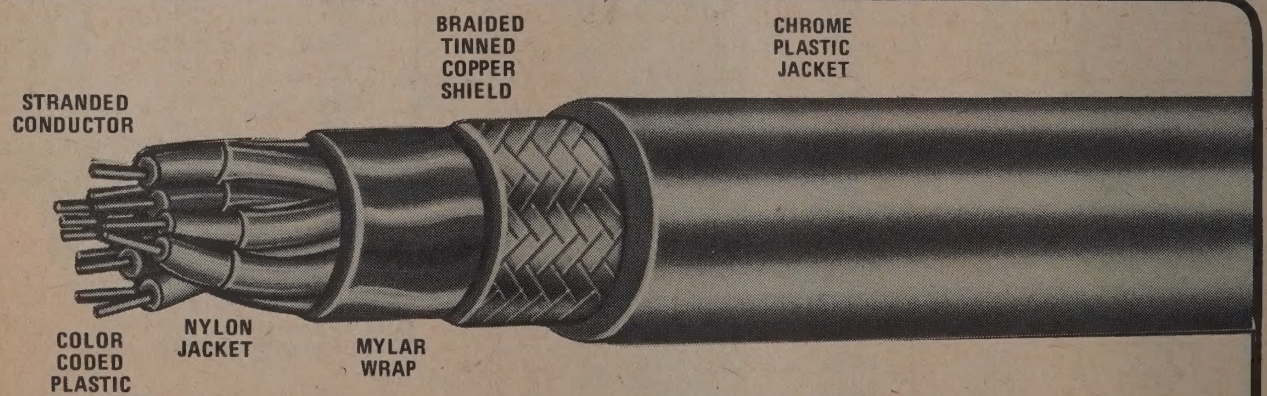
APPLICATIONS: Shielded interconnecting and instrumentation cable for electronic equipment, sensing and recording devices, telemetering data transmission, remote control of instruments requiring electrostatic and R.F.I. shielding.

CONDUCTOR: Stranded tinned copper
INSULATION: Either .010" or .016" 105°C PVC with or without nylon, MIL-W-16878D color coded per method 1, IPCEA
CABLING: Conductors cabled with filler when necessary for roundness and maximum flexibility, clear mylar wrap over core
SHIELD: Braided tinned copper shield 90% coverage
JACKET: SMOOTH CHROME GRAY 105°C PVC PER MIL-W-16878D
VOLTAGE & TEMPERATURE RATINGS: - 1000 Volts RMS 105°C
STANDARD PUT-UP: Cut to requirements



MINIATURE SHIELDED CONTROL CABLE - 600 VOLTS
No. 28 - 7/36 TINNED COPPER - .010" 105°C INSULATION - TYPE B

NO. of COND.	NOM. JKT. THK. (Inch)	NOM. O.D. (In.)	PART NO.	NO. of COND.	NOM. JKT. THK. (Inch)	NOM. O.D. (In.)	PART NO.
4	.013	.135	M1604	14	.021	.215	M1614
5	.014	.140	M1605	16	.022	.225	M1616
6	.015	.150	M1606	19	.024	.245	M1619
8	.017	.170	M1608	27	.028	.280	M1627
10	.018	.185	M1610	37	.031	.325	M1637
12	.020	.200	M1612				



MANHATTAN ELECTRIC CABLE CORPORATION ELECTRONIC DIVISION

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CIC-MCC MANHATTAN

Multi-Conductor Control Cable

SHIELDED—PLASTIC JACKET PER MIL-W-16878D

GENERAL PURPOSE SHIELDED CONTROL CABLE - 600 VOLTS

No. 22 - 19/34 TINNED COPPER - .010" 105°C INS. - NYLON JKT - TYPE B/NYLON

NO. of COND.	NOM. JKT. THK. (Inch)	NOM. O.D. (In.)	PART NO.	NO. of COND.	NOM. JKT. THK. (Inch)	NOM. O.D. (In.)	PART NO.
4	.019	.190	M1644	14	.030	.330	M1654
5	.021	.210	M1645	16	.031	.350	M1656
6	.022	.230	M1646	19	.035	.380	M1659
8	.025	.255	M1648	27	.040	.445	M1667
10	.026	.280	M1650	37	.047	.515	M1677
12	.028	.305	M1652	48	.053	.590	M1687

HEAVY DUTY-SHIELDED CONTROL CABLE - 1000 VOLTS

No. 18 - 19/30 TINNED COPPER - .016" 105°C INS. - NYLON JKT - TYPE C/NYLON

4	.029	.300	M1704	16	.049	.535	M1716
5	.030	.310	M1705	19	.052	.580	M1719
6	.032	.340	M1706	27	.061	.680	M1727
8	.036	.390	M1708	37	.070	.790	M1737
10	.040	.430	M1710	48	.080	.900	M1748
12	.043	.460	M1712	60	.090	1.010	M1760
14	.046	.500	M1714				

No. 16 - 19/29 TINNED COPPER - .016" 105°C - NYLON JKT - TYPE C/NYLON

4	.031	.325	M1764	12	.047	.510	M1772
5	.033	.345	M1765	16	.053	.590	M1776
6	.035	.370	M1766	19	.057	.630	M1779
8	.040	.425	M1768	27	.067	.760	M1787
10	.043	.470	M1770				

COLOR CODE OF CONDUCTORS - METHOD 1 IPCEA S61-402

COLOR CODE FOR 60 CONDUCTORS

COND. NO.	BACK-GROUND or BASE COLOR	FIRST TRACER COLOR
1	Black	....
2	White	....
3	Red	....
4	Green	....
5	Orange	....
6	Blue	....
7	White	Black
8	Red	Black
9	Green	Black
10	Orange	Black
11	Blue	Black
12	Black	White
13	Red	White
14	Green	White
15	Blue	White
16	Black	Red
17	White	Red
18	Orange	Red
19	Blue	Red
20	Red	Green
21	Orange	Green

22 or More - Color Code Repeated in Sequence

MANHATTAN ELECTRIC CABLE CORPORATION ELECTRONIC DIVISION

CIC-SPC MANHATTAN

Shielded Paired Communication Cable

MULTIPLE PAIRS INDIVIDUALLY SHIELDED - PLASTIC JACKET

APPLICATIONS: Multiple speaker and sound systems requiring circuit isolation, shielded audio, instrumentation and data cables.

No. 22 - 7/30 TINNED COPPER - .010" PE INSULATION

NO. of PAIRS	NO. of COND.	NOM. JKT. THK. (Inch)	NOM. O.D. (Inch)	NO.
3	6	.020	.245	M3103
6	12	.025	.330	M3106
9	18	.030	.400	M3109
11	22	.035	.460	M3111
15	30	.040	.515	M3115
19	38	.045	.560	M3119
23	46	.045	.610	M3123
27	54	.050	.700	M3127
31	62	.050	.740	M3131

No. 18 - 16/30 TINNED COPPER - .016" PE INSULATION

3	6	.030	.360	M3173
6	12	.040	.510	M3176
9	18	.050	.620	M3179
11	22	.055	.680	M3181
15	30	.060	.790	M3185

CONDUCTOR: Stranded tinned copper

INSULATION: Color coded high molecular weight polyethylene

PAIRED: Conductor paired with short lay for balance, free from cross talk, drain wire twisted together

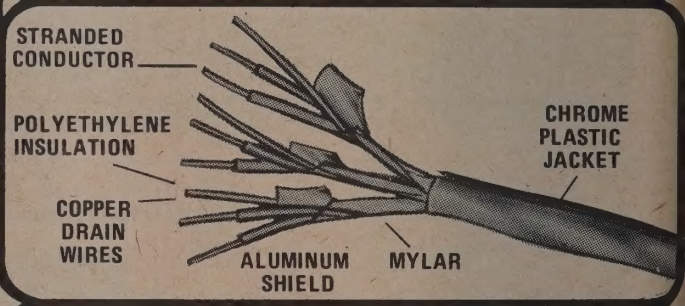
SHIELD: Each pair shielded with aluminum foil, bonded mylar wrap over pair with individual drain in contact with aluminum foil. 100% coverage

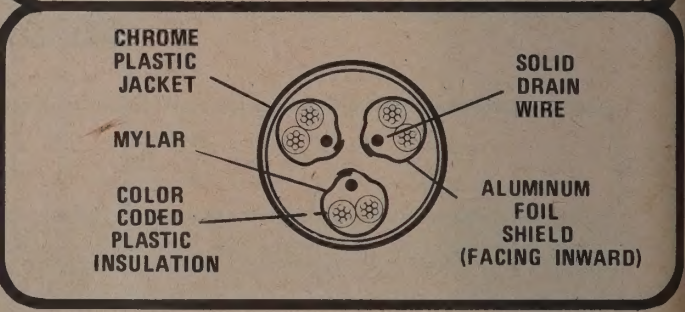
CABLING: Shielded pairs cabled on planetary cabler to eliminate conductor strain and distortion, mylar tape wrap over core

JACKET: SMOOTH CHROME GRAY PVC PLASTIC

VOLTAGE RATING NO. 22 GAUGE - 300 Volts RMS
NO. 18 GAUGE - 600 Volts RMS

STANDARD PUT-UP: Cut to requirements





COLOR CODE OF PAIRS

1-Black/Red
2-Black/White
3-Black/Green
4-Black/Blue
5-Black/Brown
6-Black/Yellow
7-Black/Orange
8-Red/Green
9-Red/White
10-Red/Blue
11-Red/Yellow
12-Red/Brown
13-Red/Orange
14-Green/Blue
15-Green/White
16-Green/Brown
17-Green/Orange
18-Green/Yellow
19-White/Blue
20-White/Brown
21-White/Orange
22-White/Yellow
23-Blue/Brown
24-Blue/Orange
25-Blue/Yellow
26-Brown/Orange
27-Brown/Yellow
28-Purple/Red
29-Purple/White
30-Purple/Green
31-Purple/Blue

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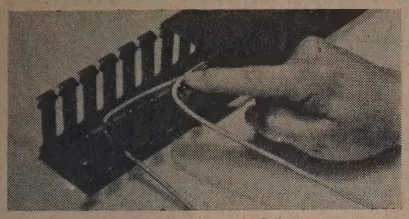
PANDUIT® wiring components



Type E — Open Slot

PART NUMBER SYSTEM

Channel Only

Example: E 1.5 x 2 DG 6

Type — 1.5" Wide — 2" High — Dark Gray — 6' Long

Cover Only

Example: C 1.5 DG 6

Cover — 1.5" Wide — Dark Gray — 6' Long

Color Code:
Dark Gray (DG);
Light Gray (LG);
White (WH).

PANDUCT® CHANNEL ONLY

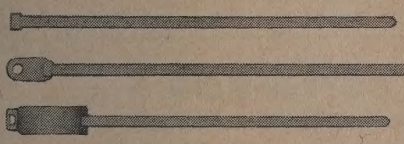
Types Avail.	Nominal Width x Height (Inches)	Approx. Shpg. Wt. Per 100'	Price/Foot Under 200 ft.	200 to 1999 ft.	2000 to 4999 ft.
E	.5x.5	11 lbs.	$0.43	$0.34	$0.31
E	.5x.62	12 lbs.	.45	.36	.34
E	.5x1	16 lbs.	.49	.39	.37
E	.5x1.25	16 lbs.	.56	.44	.40
E	.5x1.75	16 lbs.	.58	.47	.44
E	.75x.75	14 lbs.	.48	.38	.36
E	.75x1	16 lbs.	.49	.39	.37
E	.75x1.5	19 lbs.	.58	.46	.43
E	.75x2	23 lbs.	.71	.57	.52
E	1x1	16 lbs.	.49	.40	.37
E	1x1.5	18 lbs.	.65	.53	.49
E	1x2	21 lbs.	.69	.55	.51
E	1x3	31 lbs.	.88	.71	.65
E	1.5x1.5	20 lbs.	.69	.56	.50
E	1.5x2	20 lbs.	.75	.60	.55
E	1.5x3	30 lbs.	.95	.76	.70
E	1.5x4	40 lbs.	1.21	.97	.89
E	2x1	18 lbs.	.68	.55	.49
E	2x2	23 lbs.	.76	.61	.56
E	2x3	36 lbs.	.98	.78	.72
E	2x4	48 lbs.	1.26	1.01	.93
E	2.5x3	41 lbs.	1.04	.83	.77
E	3x1	20 lbs.	.82	.65	.61
E	3x2	33 lbs.	.89	.71	.65
E	3x3	43 lbs.	1.07	.85	.78
E	3x4	53 lbs.	1.32	1.06	.97
E	4x1.5	33 lbs.	.94	.75	.70
E	4x2	38 lbs.	.96	.77	.71
E	4x3	48 lbs.	1.14	.92	.84
E	4x4	58 lbs.	1.42	1.13	1.04

CORRESPONDING COVER ONLY

Nominal Width (Inches)	Approx. Shpg. Wt./100'	Price/Foot Under 200 ft.	200 to 1999 ft.	2000 to 4999 ft.
.5	4 lbs.	$0.10	$0.08	$0.07
.75	6 lbs.	.11	.09	.08
1	9 lbs.	.14	.11	.10
1.5	10 lbs.	.16	.13	.12
2	12 lbs.	.20	.16	.14
2.5	14 lbs.	.24	.20	.17
3	17 lbs.	.28	.23	.21
4	22 lbs.	.36	.28	.26

Order by Total No. of Ft. Req'd. (must be multiple of length per part). Standard Mounting Holes: No Charge — Supplied Only if Specified — See Duct Catalog For Dimensions.
NOTE: Standard Length: 6 ft. Other lengths available. Standard Color: Dark Gray. White and Light Gray available.
NOTE: Total length of all sizes of duct and cover, ordered for shipment at one time to one location, determines price columns.

STA-STRAP® CABLE TIES AND CLAMPS



SST — Cable Ties

SSC — Clamps

SSM — Markers

**** Part Number System:**

SST 2 M-6

Type — Size — Pkg. Size — Color

STANDARD PKG. OF 100 (C)

**Part Number	Maximum Bundle Diameter	Approx. Shpg. Wt. lbs./1000	Price Per 100 Base Price 100 - 400	500
SST1C	¾"	1	$ 3.60	$ 2.85
SST1.5C	1¼"	1.5	3.75	3.00
SST2C	1¾"	2.6	4.30	3.40
SST3IC	3"	2.6	7.00	5.65
SST3C	3"	3.5	7.60	6.05
SST4C	4"	4.5	9.80	7.80
SST4HC	4"	12	14.50	11.50
SST8HC	8"	24	22.50	18.00
SSC2C	1¾"	3.2	4.90	3.90
SSC4C	4"	5.5	10.80	8.60
SSC4HC	4"	14	17.00	13.60
SSM2C	1¾"	3.3	8.60	6.80
SSM4C	4"	6	14.10	11.20

Order by Number of Pieces Required.
Colors: Standard Color — Natural Nylon White.
Other Colors — 10% additional price.

BULK PACKAGING*

These items available in bulk packaging quantities only as designated.

**Part Number	Approx. Shpg. Wt. lbs./1000	Price Per M (1000) 1M-24.5M	25M-49.5M	50M
SST1M	1	$ 23.00	$ 21.85	$ 20.70
SST1.5M	1.5	24.00	22.80	21.60
SST2M	2.6	27.00	25.65	24.30
SST3IM	2.6	45.00	42.75	40.50
SST3M	3.5	48.50	46.00	43.70
SST4M	4.5	60.00	57.00	54.00
SST4HD	12	93.00	88.35	83.70
SST8HD	24	140.00	136.00	126.00
SSC2M	3.2	30.00	28.50	27.00
SSC4M	5.5	66.00	62.70	59.40
SSC4HD	14	111.80	106.20	100.75
SSM2D	3.3	55.00	52.25	49.50
SSM4D	6	87.50	83.15	78.25

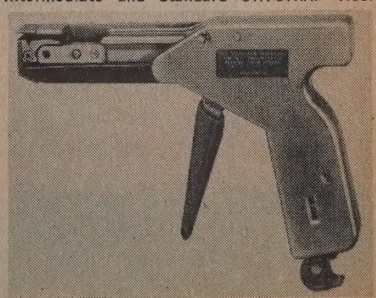
*Bulk packaging quantities indicated by letter suffix in part no. D = 500; M = 1000.
Order by Number of Pieces Required.

In Canada: Add 37% plus Canadian sales tax for F.O.B. local stocking distributor prices.

Delivery: F.O.B. Tinley Park, Ill. Minimum Billing: $25.00 net, each customer-designated shipment. Terms: Cash Discount 2%, 10th prox. FREIGHT ALLOWED via Panduit routing on domestic shipments of $300.00 or more net billing. All prices subject to change without notice.

STA-STRAP® Installation Tools

GS2B — Manual $19.00 ea. net. Installs all Miniature, Intermediate and Standard STA-STRAP Ties.



GS4H — Manual $40.00 ea. net. Heavy Duty — installs all Standard and Heavy STA-STRAP Ties.

PANDUIT CORP.

SAXTON PRODUCTS INC. is a Complete Source for all Types of Industrial, Commercial and Military Wire and Cable. Listed here are only a few of the Product Groups which Saxton regularly carries in Stock. Many more Stock types are available and countless types can be made to order.

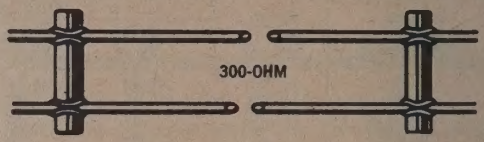
SMALL OR LARGE QUANTITIES PROMPTLY HANDLED

COAXIAL CABLE

COMMERCIAL TYPES AND MIL TYPES

SAXTON CAN supply all types of RG/U Cable. This includes 50 ohm, 75 ohm and 93 ohm with solid polyethylene dielectric and foam polyethylene dielectric for general purpose, television and military application.

OPEN WIRE TRANSMISSION LINE



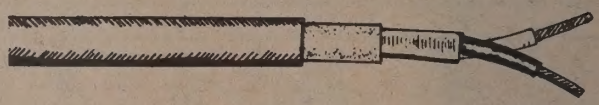
SAXTON SUPPLIES all types of low loss air dielectric open wire transmission line made with copperweld wire or solid copper wire. 300 ohm, 450 ohm, 475 ohm transmission lines are available with 7/16" spacing, 1" spacing, and 2" spacing using 12 gauge, 14 gauge, 16 gauge and 18 gauge conductors.

HIGH VOLTAGE WIRE

FLAME-RETARDANT RULAN INSULATION

SAXTON MANUFACTURES all types of High Voltage Wire including shielded and unshielded types with 18 and 20 gauge conductors.

MIL-C-3432 SPECIAL CABLES



SAXTON OFFERS all types of MIL-C-3432 Cable in all gauges and number of conductors.

TEFLON MIL-W-16878D

SAXTON OFFERS a complete selection of Teflon Wire made to military specifications. This includes gauges from 14 through 30 with Type E, Type EE.

UNINSULATED COPPERWELD

40% COPPERWELD CONDUCTOR NON-STRETCH HARD-DRAWN

SAXTON HAS uninsulated copperweld wire in all gauges from No. 6 to No. 18.

Saxton PRODUCTS, INC.

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MULTI-CONDUCTOR JACKETED CABLE

SAXTON MANUFACTURES all types of multi-conductor cable. Both solid and stranded conductors are available in 18, 20 and 22 gauge. Stock items include cables of from two conductors through 12 conductors.

MULTI-CONDUCTOR SHIELDED JACKETED CABLE

SAXTON CAN supply 1, 2, 3, or 4 conductor cable with solid or stranded conductors from 16 gauge thru 24 gauge with either a spiral wrapped shield aluminum foil or a braided shield.

UNSHIELDED AUDIO CABLE

SAXTON OFFERS multi-conductor unshielded unjacketed Audio Cable with solid or stranded conductors from 16 gauge thru 22 gauge.

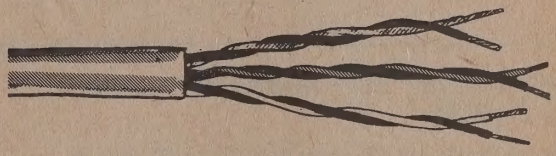
AUDIO CABLE

SAXTON MANUFACTURES all types of Audio Cable with solid conductors or stranded conductors running from 12 thru 22 gauge. The selection includes 2 conductor shielded, 3 conductor wherein 2 conductors are shielded and one is not and four conductor wherein two conductors are shielded and two are not.

MICROPHONE CABLE

SAXTON MANUFACTURES all types of low capacity microphone cable. Gauges run from 20 through 26 with 1 through 6 conductors. The choice of shields include braided, spiral wrap and aluminum foil.

INTERCOM CABLE



SAXTON PROVIDES all types of Intercom Cable from 1 pair through 51 pairs with 22 gauge solid or stranded conductors.

UNINSULATED TINNED COPPER

SAXTON SUPPLIES solid and stranded uninsulated tinned bare copper wire in all gauges from 12 through 20.

PLASTIC HOOK-UP WIRE

SAXTON MANUFACTURES all types of Plastic Hook-Up Wire with either solid or stranded conductors from 14 gauge to 22 gauge.

SHIELDED PLASTIC HOOK-UP WIRE

SAXTON MANUFACTURES all types of Shielded Plastic Hook-Up Wire with either solid or stranded conductors from 14 gauge to 22 gauge.

TEST LEAD WIRE

SAXTON PROVIDES all types of Test Lead Wire with 18 gauge and 20 gauge conductors in voltage breakdown ratings from 5,000 volts to 22,000 volts.

Saxton PRODUCTS, INC.

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NYLON & BUTYRATE CABLE CLAMPS, STRAPPING & STUD BUTTONS

NYLON CABLE CLAMPS

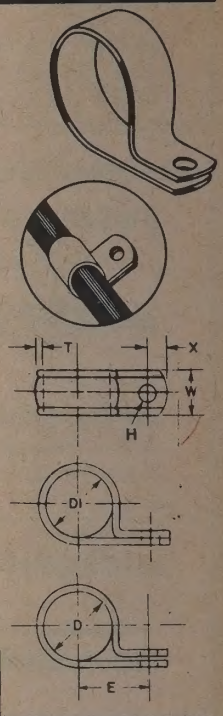
D	D_1	E	BLUE LINE Pkg. of 100 or as shown ( ) Part No.	BLUE LINE Per Pkg.	BULK PACK Pkg. of 1000 Part No.	BULK PACK 1-4 Per Bag	BULK PACK 5 or more Per Bag
1/8″	.125	.310	CCN-31-C	3.14	CCN-31-M	26.75	21.15
3/16″	.188	.373	CCN-32-C	3.30	CCN-32-M	28.30	22.40
1/4″	.250	.407	CCN-33-C	3.63	CCN-33-M	30.95	24.50
5/16″	.313	.448	CCN-34-C	4.03	CCN-34-M	34.15	27.05
3/8″	.375	.479	CCN-35-C (50)	2.23	CCN-35-M	35.90	28.45
7/16″	.438	.510	CCN-36-C (50)	2.32	CCN-36-M	38.00	30.05
1/2″	.500	.542	CCN-37-C (50)	2.45	CCN-37-M	40.45	32.00
9/16″	.563	.623	CCN-38-C (25)	1.87	CCN-38-M	49.90	39.50
5/8″	.625	.638	CCN-39-C (25)	1.98	CCN-39-M	58.50	46.30
11/16″	.688	.752	CCN-40-C (20)	1.78	CCN-40-M	63.45	50.25
3/4″	.750	.783	CCN-41-C (20)	1.90	CCN-41-M	69.40	54.95
7/8″	.875	.845	CCN-42-C (20)	2.02	CCN-42-M	75.20	59.50
1″	1.000	.908	CCN-43-C (15)	1.79	CCN-43-M	84.70	67.05

Width: Up to CCN-37, 3/8″. All others are 1/2″. 3/8″ width have .167 mounting hole, 1/2″ width have 13/64″ mounting hole. 3/8″ width are .040 thickness, 1/2″ width are .060 thickness.

BUTYRATE CABLE CLAMPS

D	D_1	E	BLUE LINE Pkg. of 100 or as shown ( ) Part No.	BLUE LINE Per Pkg.	BULK PACK Pkg. of 1000 Part No.	BULK PACK 1-4 Per Bag	BULK PACK 5 or more Per Bag
1/8″	.115	.310	CCB-1-C	2.06	CCB-1-M	17.65	13.95
3/16″	.172	.373	CCB-2-C	2.08	CCB-2-M	17.75	14.05
1/4″	.234	.407	CCB-3-C	2.29	CCB-3-M	19.55	15.50
5/16″	.297	.448	CCB-4-C (50)	1.33	CCB-4-M	21.60	17.10
3/8″	.359	.479	CCB-5-C (50)	1.39	CCB-5-M	23.85	18.00
7/16″	.422	.510	CCB-6-C (40)	1.20	CCB-6-M	24.80	19.65
1/2″	.484	.542	CCB-7-C (40)	1.36	CCB-7-M	26.40	20.90
9/16″	.547	.623	CCB-8-C (30)	1.35	CCB-8-M	30.90	24.45
5/8″	.609	.654	CCB-9-C (25)	1.29	CCB-9-M	35.00	28.10
11/16″	.672	.752	CCB-10-C (20)	1.25	CCB-10-M	38.05	30.10
3/4″	.734	.783	CCB-11-C (20)	1.29	CCB-11-M	39.90	31.55
7/8″	.859	.845	CCB-12-C (20)	1.36	CCB-12-M	43.30	34.25
1″	.934	.908	CCB-13-C (15)	1.23	CCB-13-M	45.95	36.
1-1/8″	1.102	.970	CCB-14-C (15)	1.23	CCB-14-M	46.10	38.85
1-1/4″	1.227	1.062	CCB-15-C (10)	1.40	CCB-15-M	51.85	41.05

Thickness .060. Width 1/2″. Mounting hole 13/64″, 7/32″ from end of clamp.

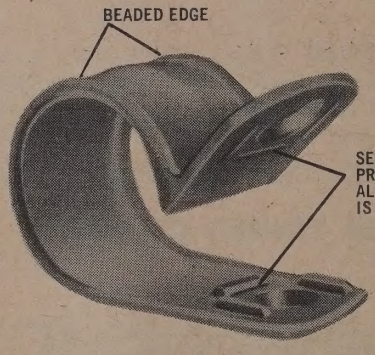


MOLDED NYLON "SELF-ALIGNING" CABLE CLAMPS

These clamps meet military specifications MIL-P-20693, NAS-1397, MIL-STD-242A and 242B. They have the same general characteristics as CCN Series.

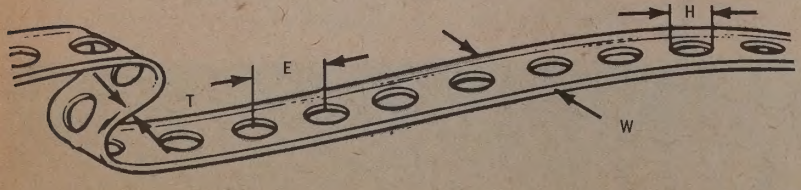
Part No.	D	D_1	E	Net Prices Pkg. of 100 or as shown	Net Prices 1000 to 4999 Per M	Net Prices 5000 or More Per M
CCS-63	5/16	.297	.448	4.13	34.80	27.70
CCS-64	3/8	.359	.479	2.19 (50)	36.90	29.40
CCS-65	1/2	.484	.542	2.40 (50)	40.35	32.15

Width 1/2″! Thickness .060



PERFORATED NYLON STRAPPING

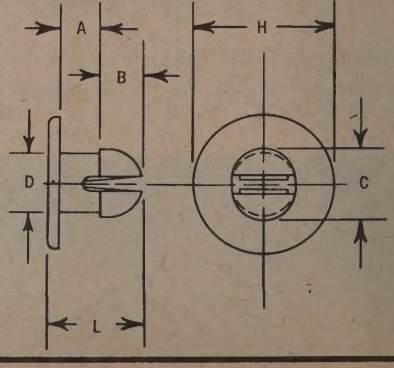
Part No.	W	T	H	E	Average Breaking Load in Pounds	Net Prices 25 ft. Roll	Net Prices 50 ft. Roll	Suggested Fastening and Mounting Methods
NS-932-25	9/32	.032	.096	3/16	23	$5.35		SB-4 Stud Button, #2 Machine Screw or 3/32″ Rivet
NS-932-50							$ 9.60	
NS-38-25	3/8	.040	.167	5/16	51	5.85		#8 Machine Screw or SB-5 Stud Button
NS-38-50							11.70	
NS-12-25	1/2	.060	.203	25/64	107	7.50		#10 Machine Screw or SB-6 Stud Button
NS-12-50							13.35	



STUD BUTTONS

Part No.	H	A	B	C	D	L	Net Prices 100-999 Per C	Net Prices 1 M—Over Per M
*SB-4	9/32	.093	.078	.105	.093	.206	$1.45	$11.50
†SB-5	11/32	.125	.137	.202	.165	.297	3.25	25.65
‡SB-6	15/32	.156	.153	.238	.200	.359	3.35	26.35

*SB-4 for use with Strapping NS-932 — 25 or 50
†SB-5 for use with Strapping NS-38 — 25 or 50
‡SB-6 for use with Strapping NS-12 — 25 or 50



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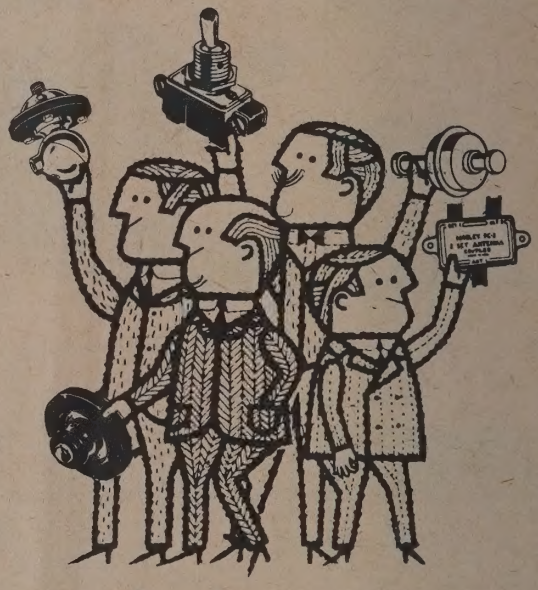

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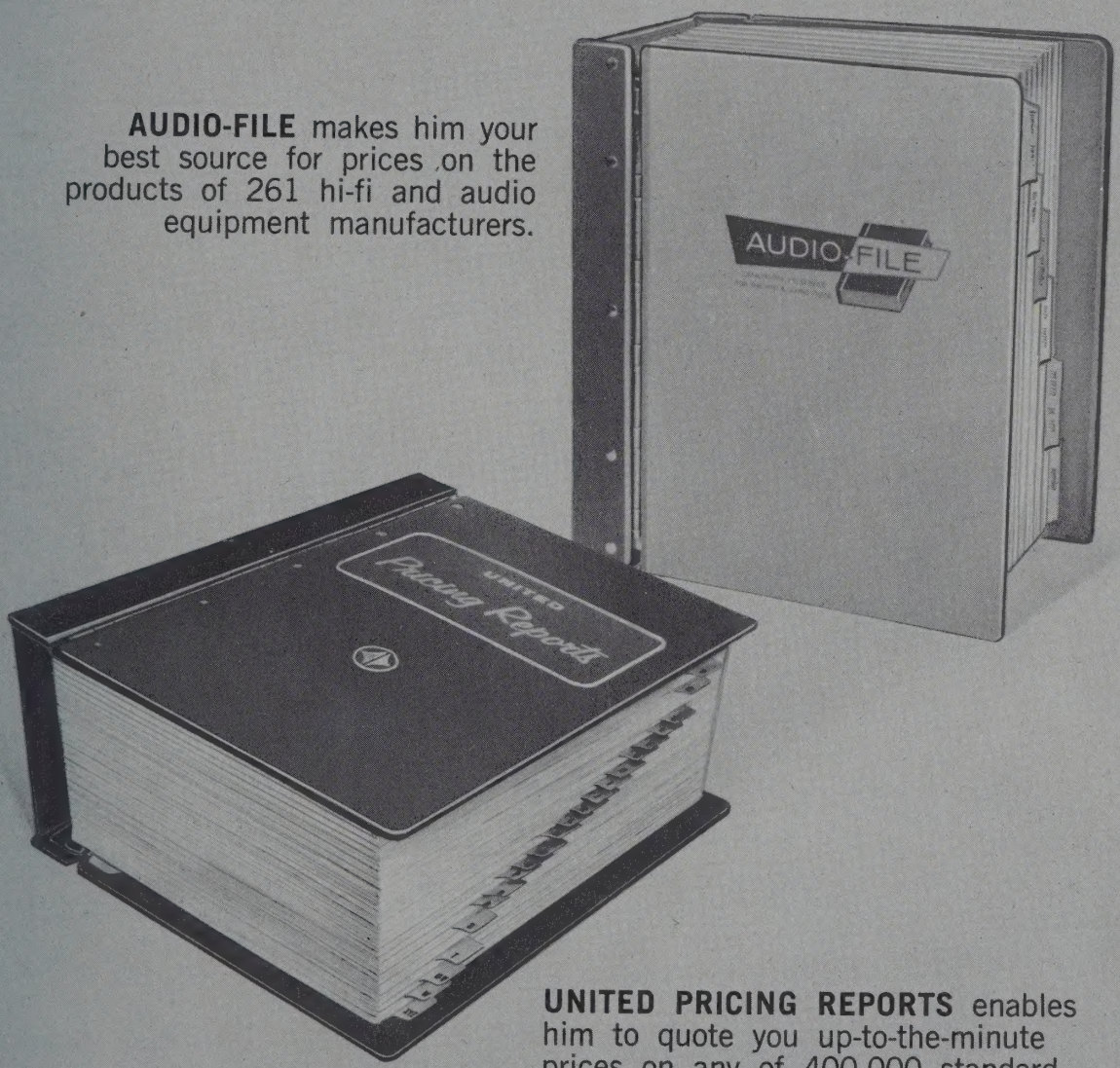

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